

FCC Part 15.247

Test Information:

Serial No.:	2EMM-2	Test Date:	2024-01-16
Test Site:	RF	Test Mode:	Transmitting
Tester:	Lingling Li	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.4	Relative Humidity: (%)	55	ATM Pressure: (kPa)	101.2
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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	211002	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).

20 dB Emission Bandwidth**BDR**

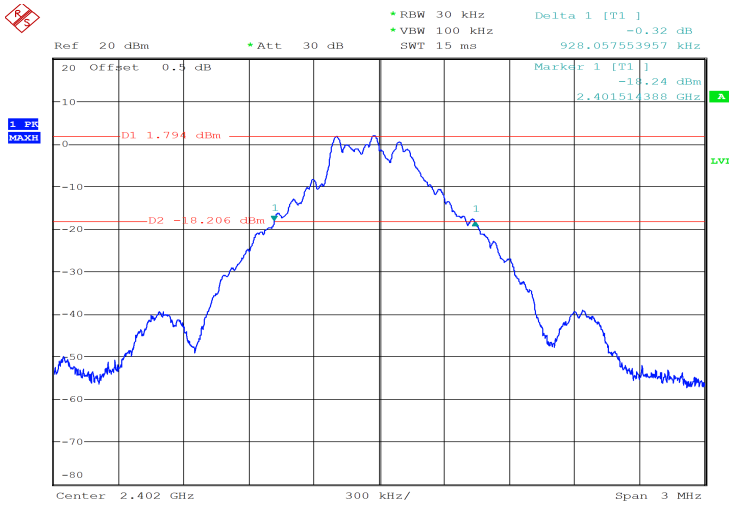
Mode	Value (MHz)	Result
GFSK_Low	0.928	Pass
GFSK_Middle	0.933	Pass
GFSK_High	0.933	Pass

EDR

Mode	Value (MHz)	Result
$\pi/4$ -DQPSK_Low	1.221	Pass
$\pi/4$ -DQPSK_Middle	1.247	Pass
$\pi/4$ -DQPSK_High	1.247	Pass
8DPSK_Low	1.213	Pass
8DPSK_Middle	1.213	Pass
8DPSK_High	1.216	Pass

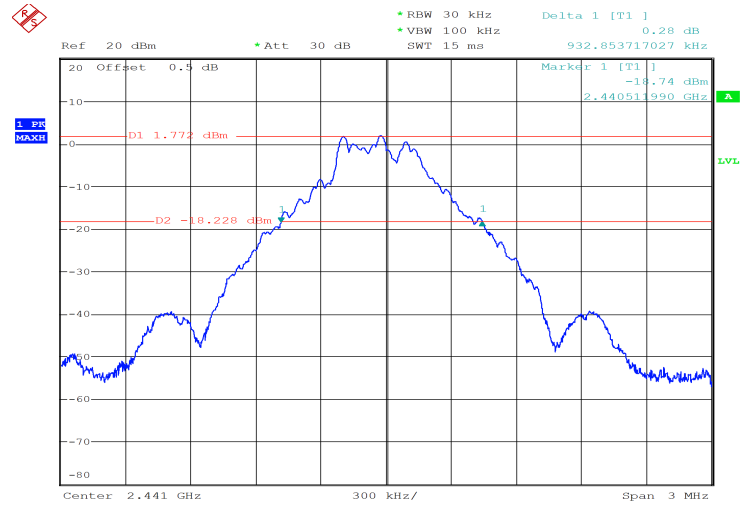
BDR

GFSK_Low 0.928 MHz



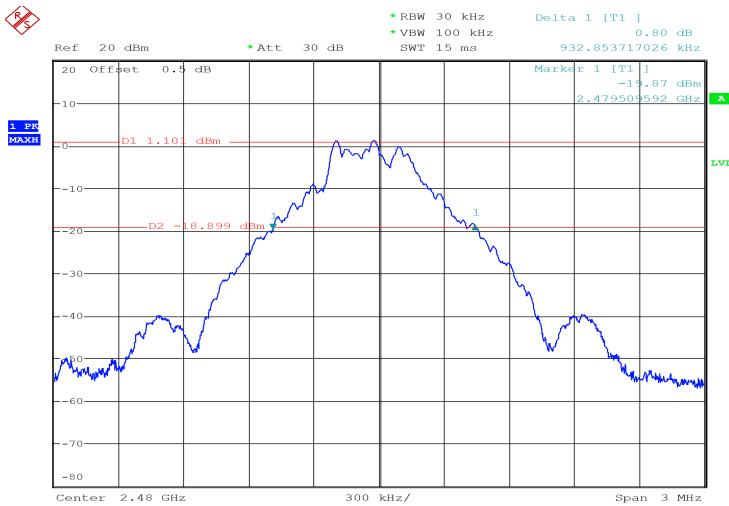
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 11:43:45

GFSK_Middle 0.933 MHz



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 11:46:44

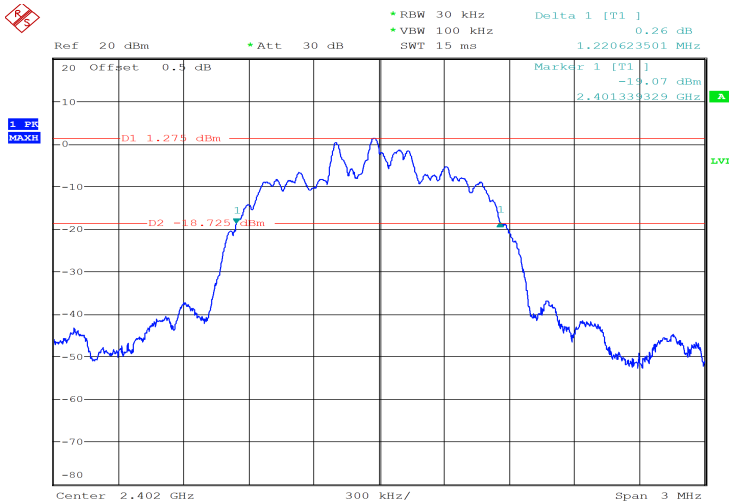
GFSK_High 0.933 MHz



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 11:51:33

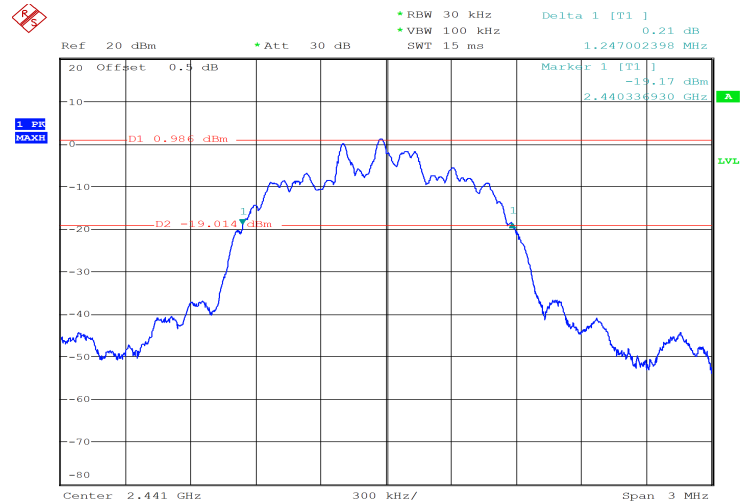
EDR

$\pi/4$ -DQPSK_Low 1.221 MHz



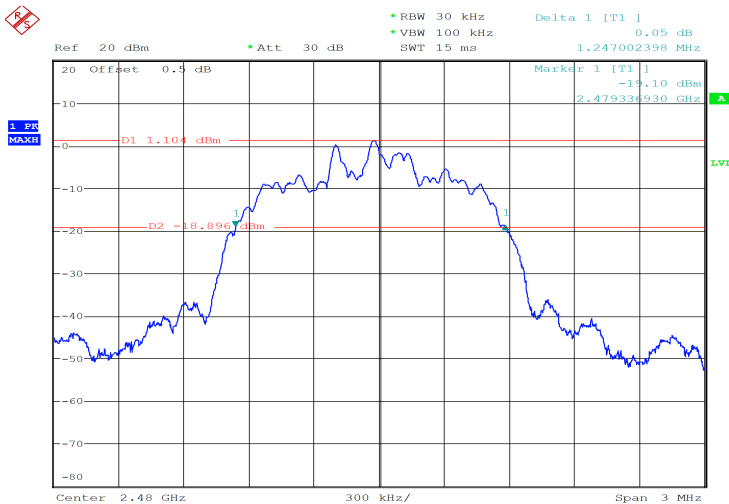
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 13:18:11

$\pi/4$ -DQPSK_Middle 1.247 MHz



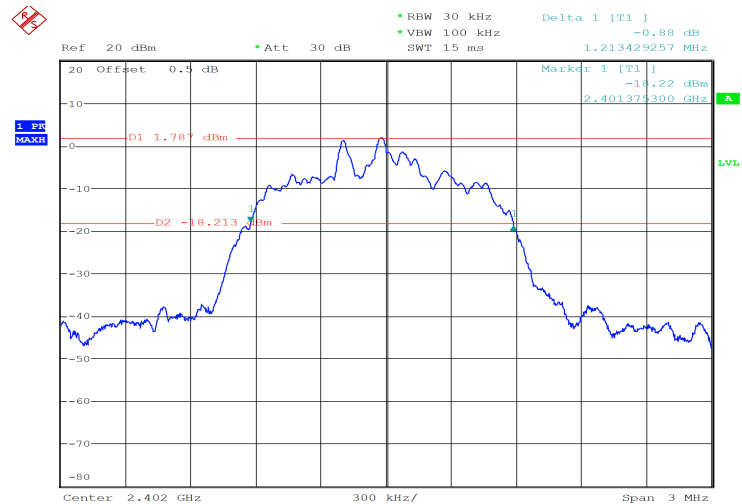
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 13:24:04

$\pi/4$ -DQPSK_High 1.247 MHz



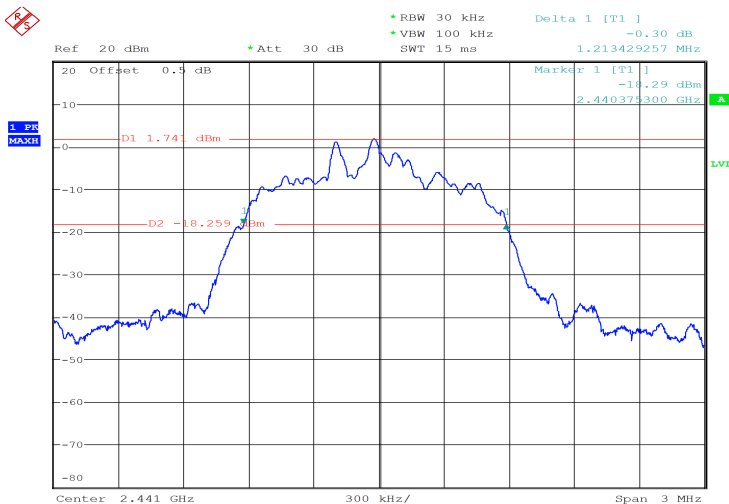
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 13:29:36

8DPSK_Low 1.213 MHz



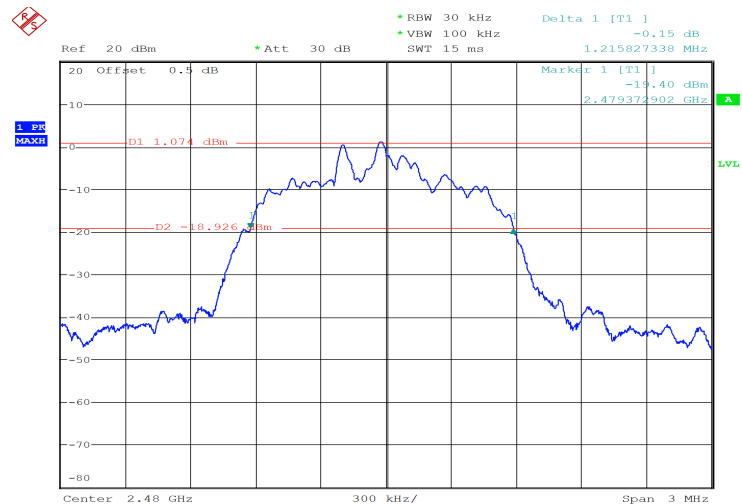
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 13:37:11

8DPSK_Middle 1.213 MHz



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 13:40:15

8DPSK_High 1.216 MHz



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 13:44:43

99% Occupied Bandwidth**BDR**

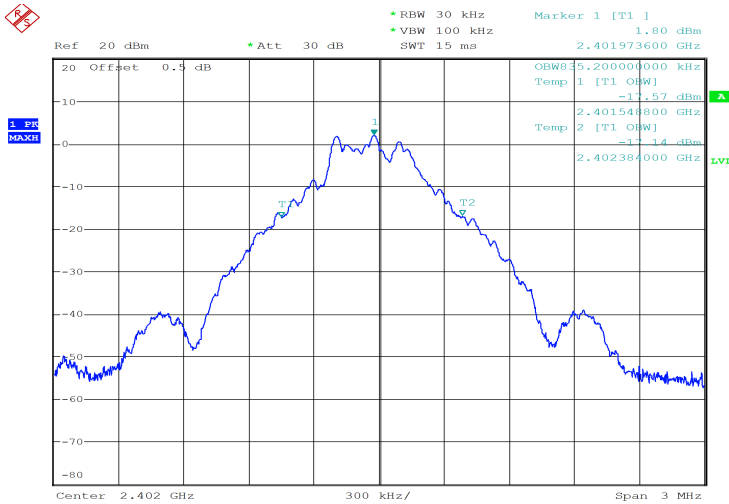
Mode	99% OBW (MHz)
GFSK_Low	0.835
GFSK_Middle	0.840
GFSK_High	0.838

EDR

Mode	99% OBW (MHz)
$\pi/4$ -DQPSK_Low	1.142
$\pi/4$ -DQPSK_Middle	1.145
$\pi/4$ -DQPSK_High	1.145
8DPSK_Low	1.135
8DPSK_Middle	1.140
8DPSK_High	1.138

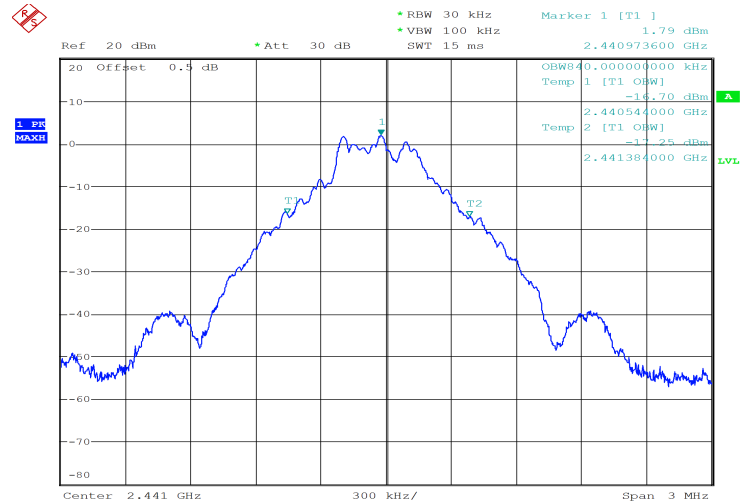
BDR

GFSK_Low 0.835 MHz



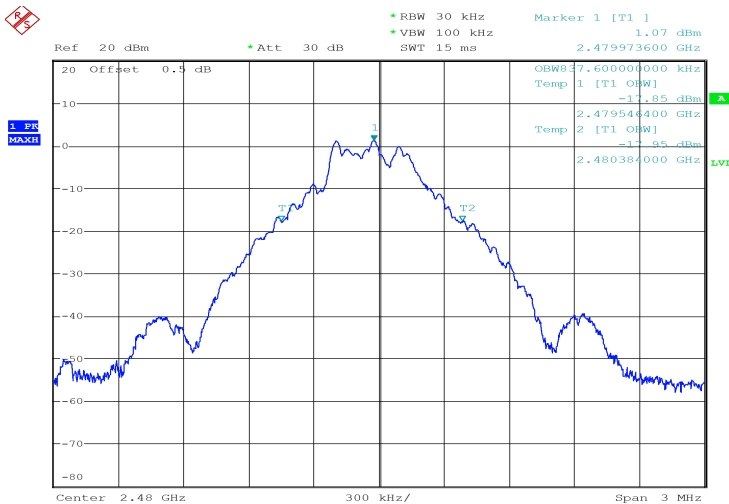
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 11:44:38

GFSK_Middle 0.840 MHz



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 11:47:36

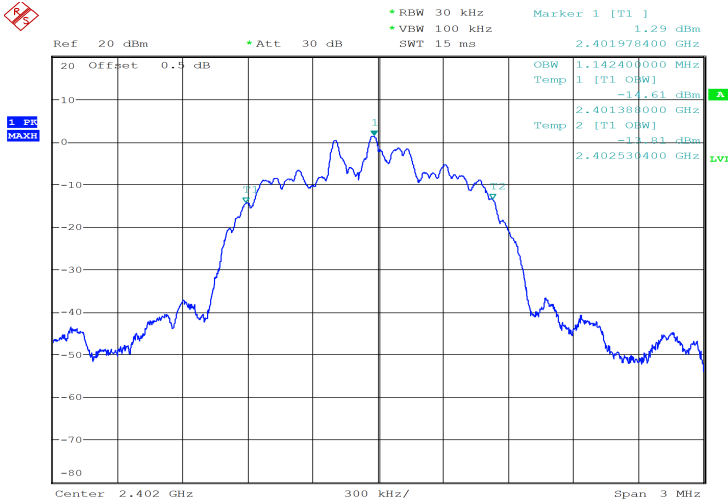
GFSK_High 0.838 MHz



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 11:52:16

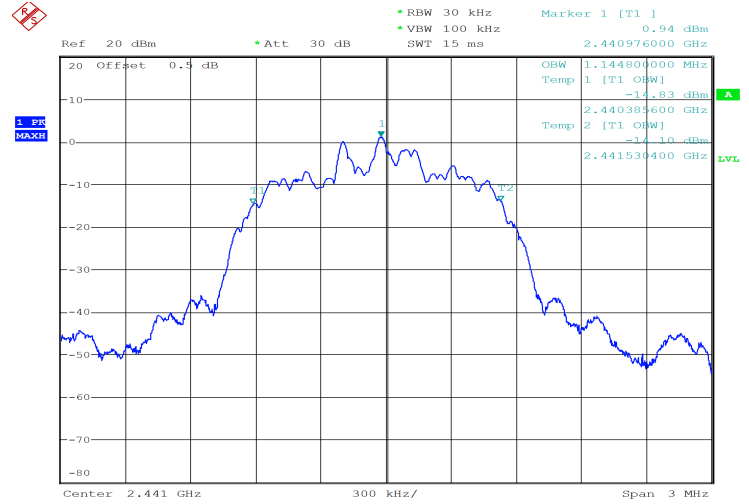
EDR

$\pi/4$ -DQPSK_Low 1.142 MHz



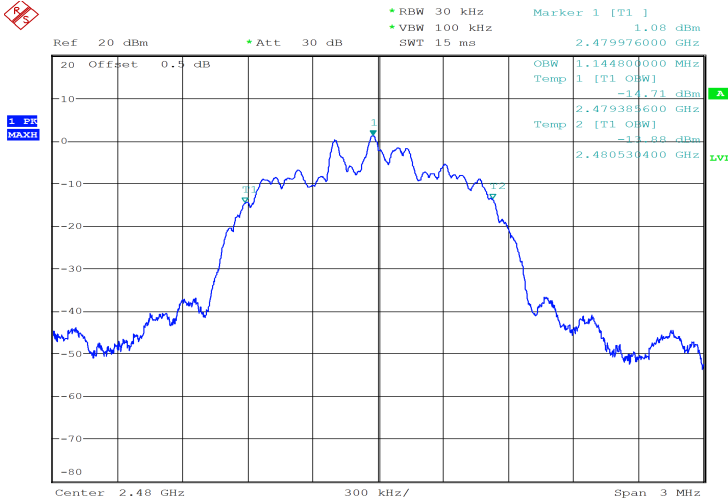
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 13:18:48

$\pi/4$ -DQPSK_Middle 1.145 MHz



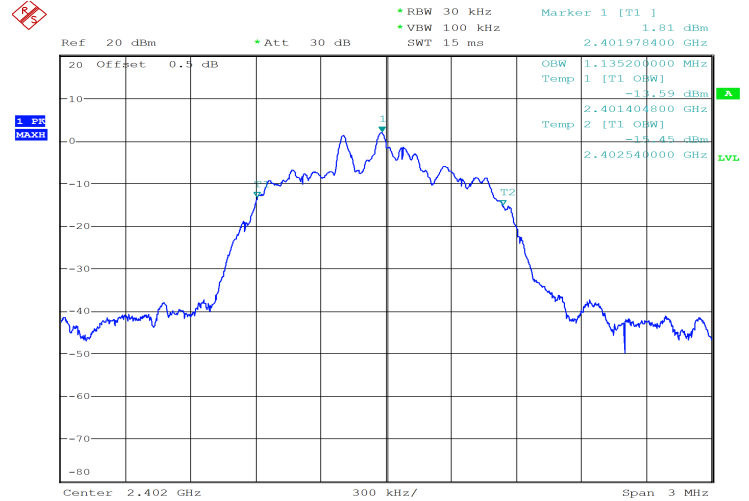
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 13:24:50

$\pi/4$ -DQPSK_High 1.145 MHz



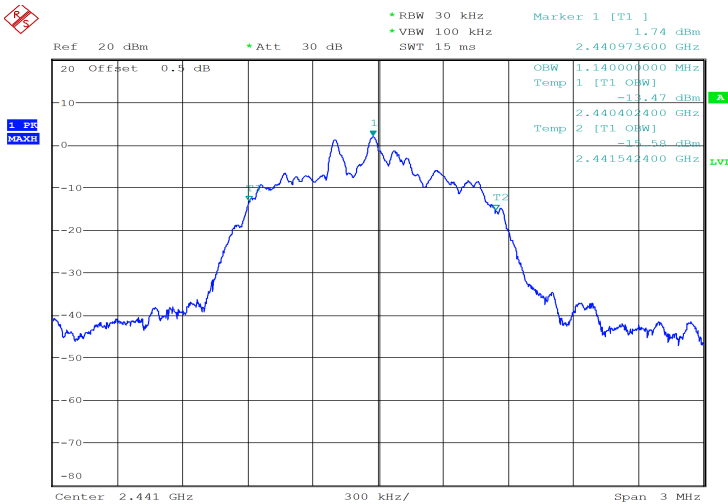
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 13:30:13

8DPSK_Low 1.135 MHz



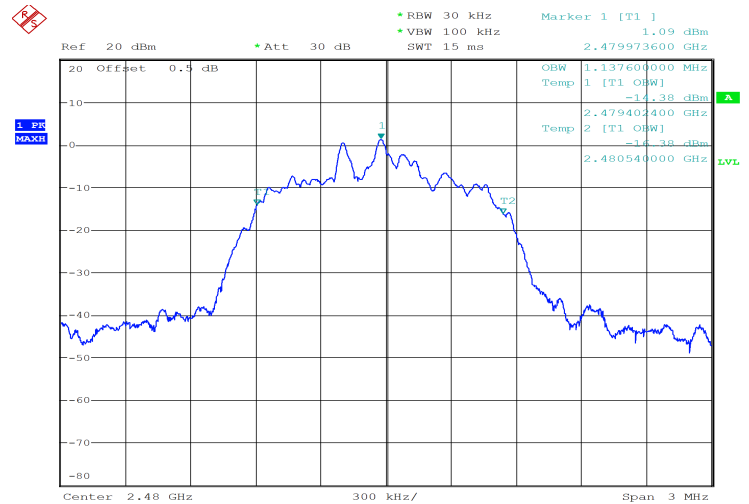
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 13:37:49

8DPSK_Middle 1.140 MHz



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 13:40:54

8DPSK_High 1.138 MHz



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 13:45:20

Channel Separation

BDR

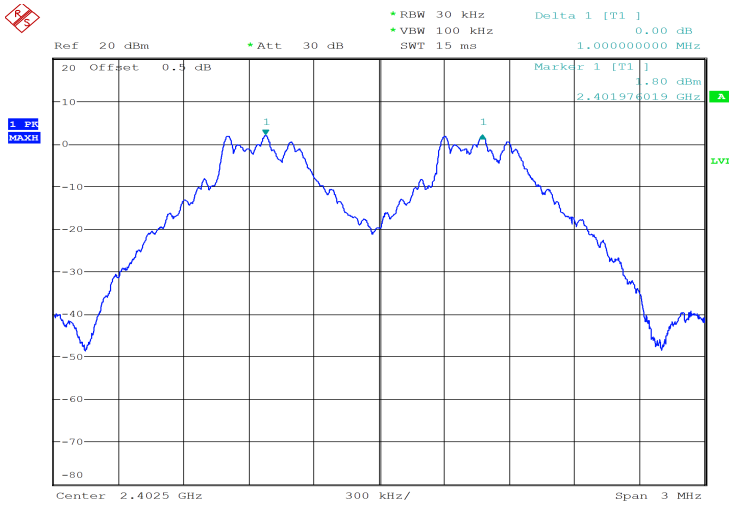
Mode	Value (MHz)	Limit (MHz)	Result
GFSK_Low	1.000	0.619	Pass
GFSK_Middle	1.000	0.622	Pass
GFSK_High	1.002	0.622	Pass

EDR

Mode	Value (MHz)	Limit (MHz)	Result
$\pi/4$ -DQPSK_Low	1.000	0.814	Pass
$\pi/4$ -DQPSK_Middle	1.007	0.831	Pass
$\pi/4$ -DQPSK_High	1.002	0.831	Pass
8DPSK_Low	1.005	0.809	Pass
8DPSK_Middle	1.005	0.809	Pass
8DPSK_High	1.002	0.811	Pass

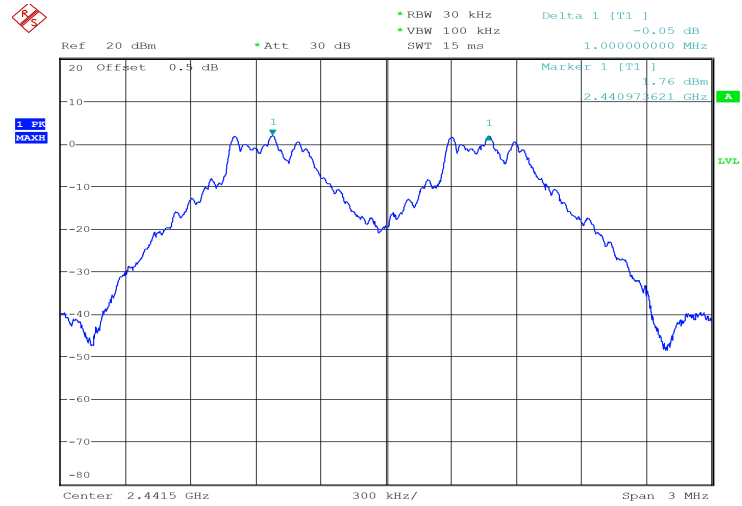
BDR

GFSK_Low 1.000 MHz



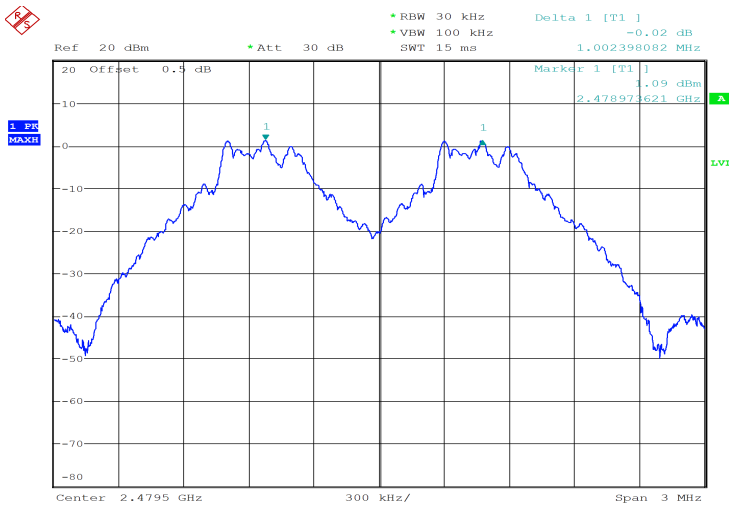
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 11:45:36

GFSK_Middle 1.000 MHz



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 11:48:50

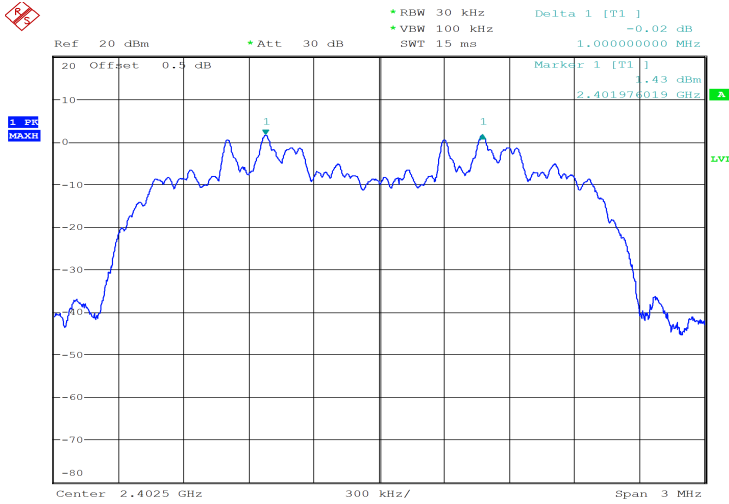
GFSK_High 1.002 MHz



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
Date: 16.JAN.2024 11:53:15

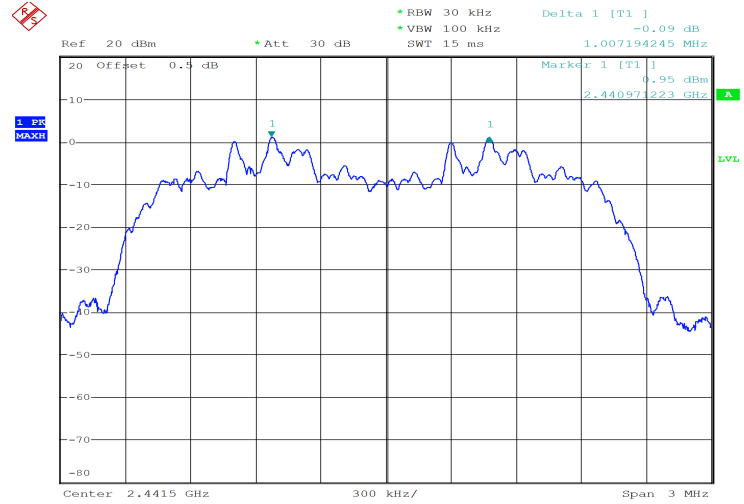
EDR

$\pi/4$ -DQPSK_Low 1.000 MHz



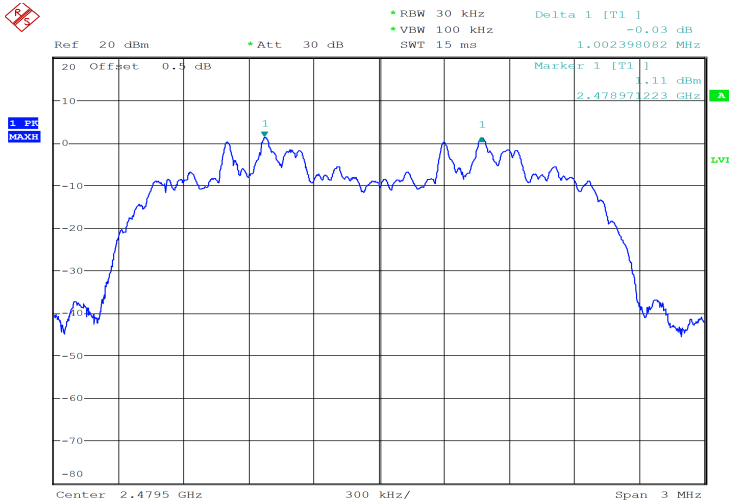
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:20:01

$\pi/4$ -DQPSK_Middle 1.007 MHz



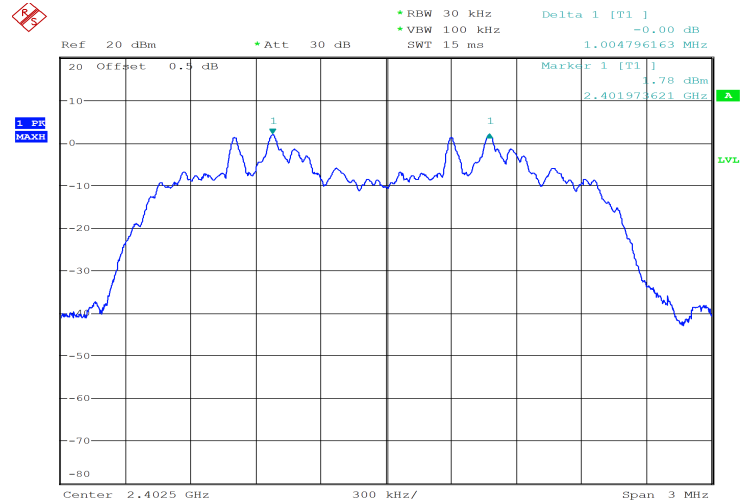
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:25:52

$\pi/4$ -DQPSK_High 1.002 MHz



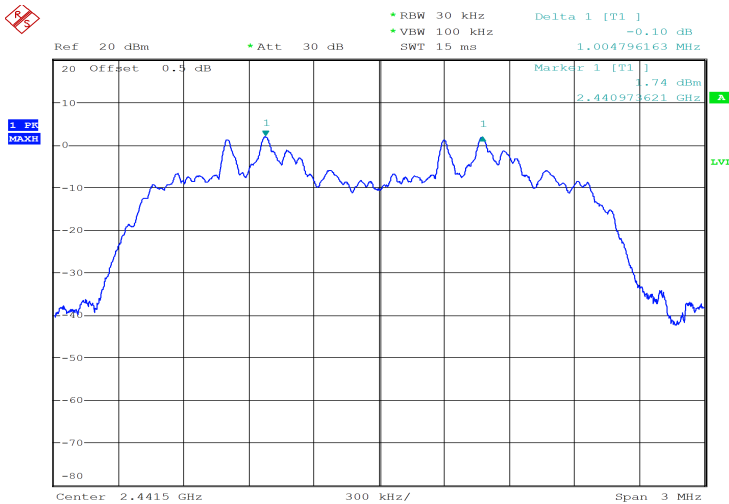
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:31:21

8DPSK_Low 1.005 MHz



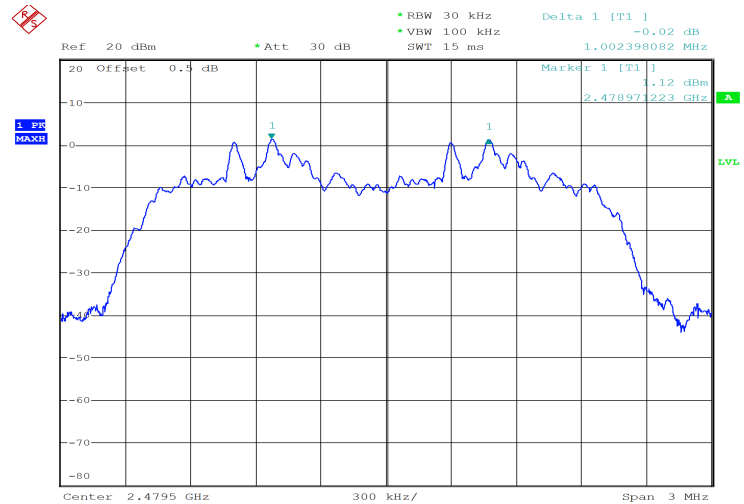
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:38:37

8DPSK_Middle 1.005 MHz



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:42:03

8DPSK_High 1.002 MHz



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:46:22

Number of Hopping Frequency**BDR**

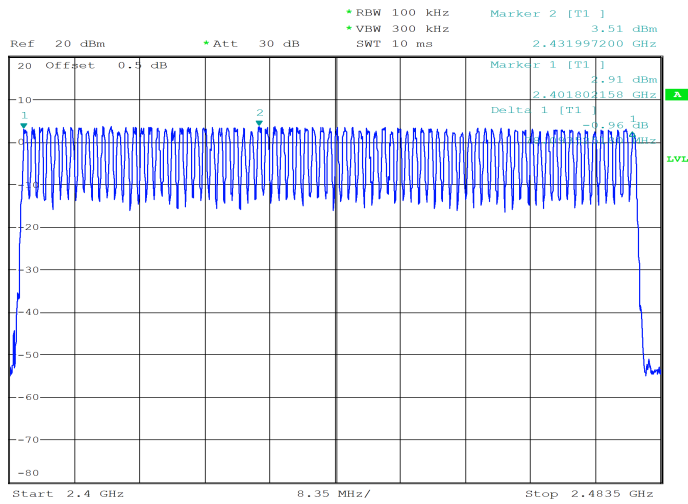
Mode	Value	Limit	Result
GFSK_Hopping	79	15	Pass

EDR

Mode	Value	Limit	Result
$\pi/4$ -DQPSK_Hopping	79	15	Pass
8DPSK_Hopping	79	15	Pass

BDR

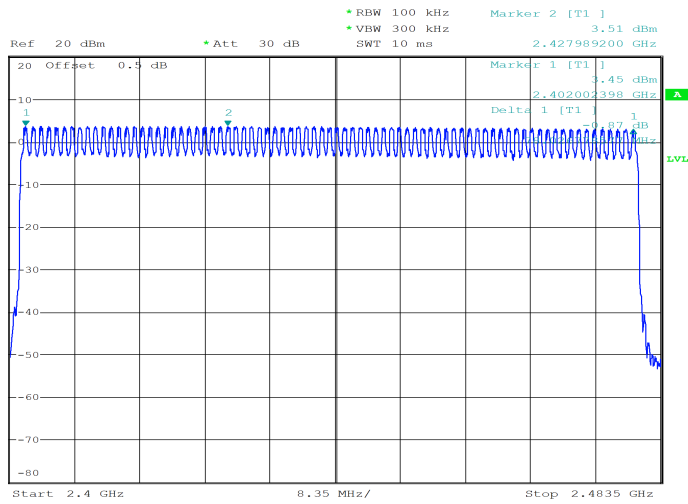
GFSK_Hopping 79



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:14:16

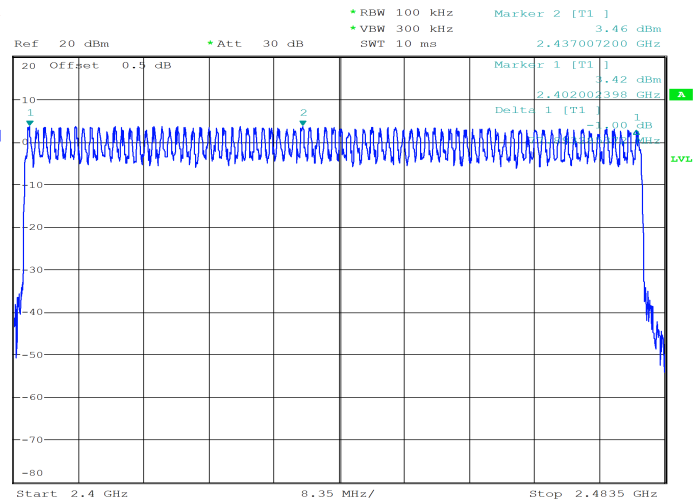
EDR

$\pi/4$ -DQPSK_Hopping 79



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:03:23

8DPSK_Hopping 79



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:10:26

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

Mode	Pulse width (ms)	Dwell time (s)	Limit (s)	Result
GFSK_Hopping_DH1	0.413	0.132	0.400	Pass
GFSK_Hopping_DH3	1.676	0.268	0.400	Pass
GFSK_Hopping_DH5	2.934	0.313	0.400	Pass

EDR

Mode	Pulse width (ms)	Dwell time (s)	Limit (s)	Result
$\pi/4$ -DQPSK_Hopping_2DH1	0.424	0.136	0.400	Pass
$\pi/4$ -DQPSK_Hopping_2DH3	1.681	0.269	0.400	Pass
$\pi/4$ -DQPSK_Hopping_2DH5	2.938	0.313	0.400	Pass
8DPSK_Hopping_3DH1	0.426	0.136	0.400	Pass
8DPSK_Hopping_3DH3	1.681	0.269	0.400	Pass
8DPSK_Hopping_3DH5	2.938	0.313	0.400	Pass

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 time=Pulse time (ms) \times (1600/6/79) \times 31.6 s

2DH1: Dwell time=Pulse time (ms) \times (1600/2/79) \times 31.6 s

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

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

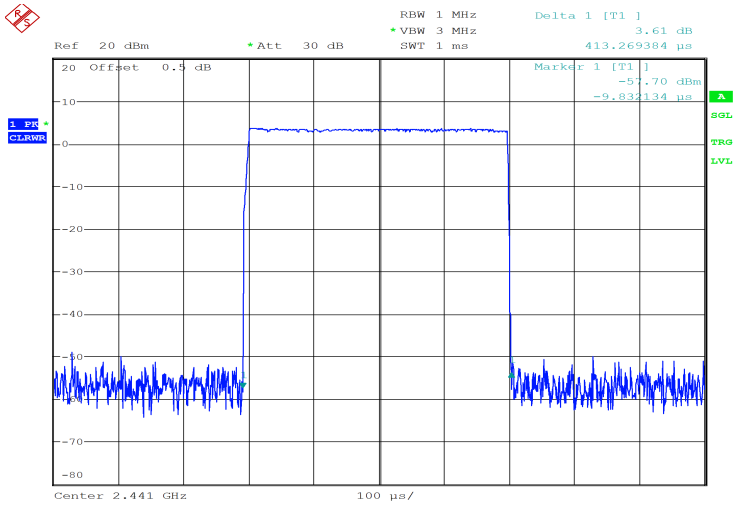
3DH1: Dwell time=Pulse time (ms) \times (1600/2/79) \times 31.6 s

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

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

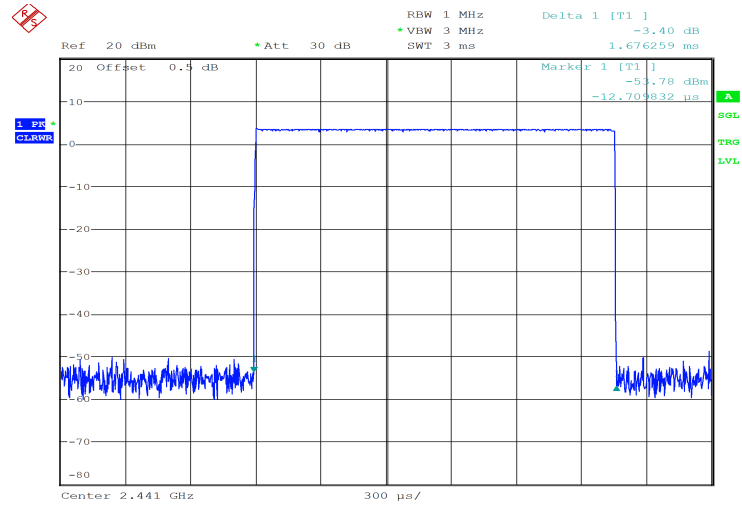
BDR

GFSK_Hopping_DH1 0.413ms



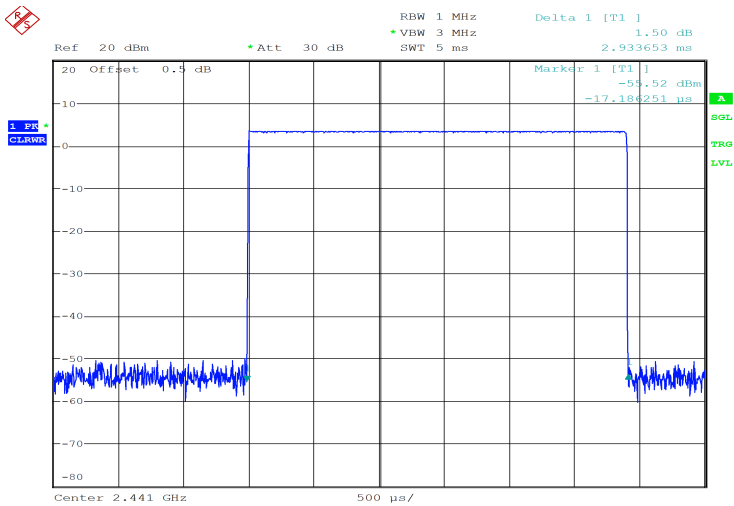
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:52:19

GFSK_Hopping_DH3 1.676ms



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:53:50

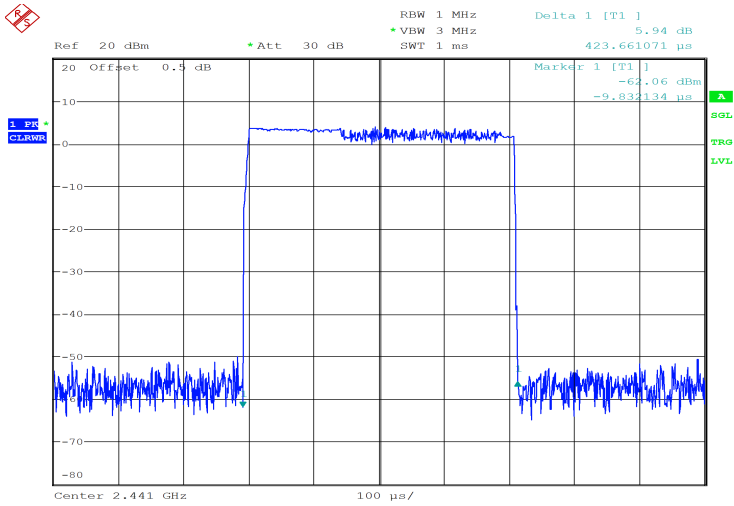
GFSK_Hopping_DH5 2.934ms



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:56:02

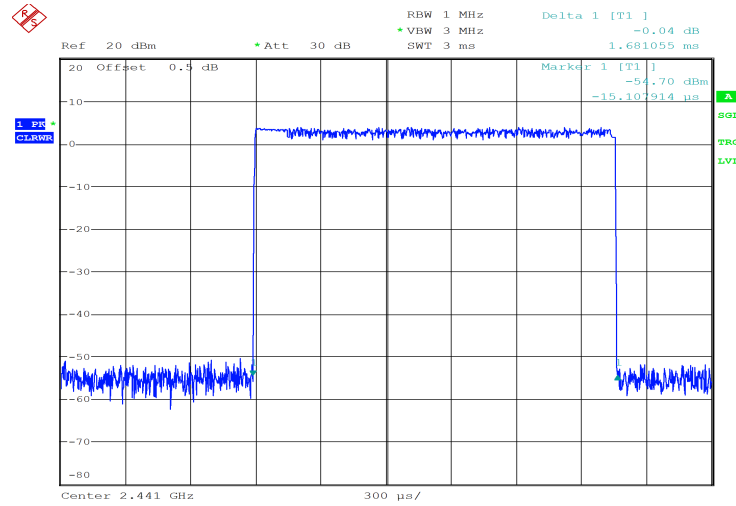
EDR

$\pi/4$ -DQPSK_Hopping_2DH1 0.424ms



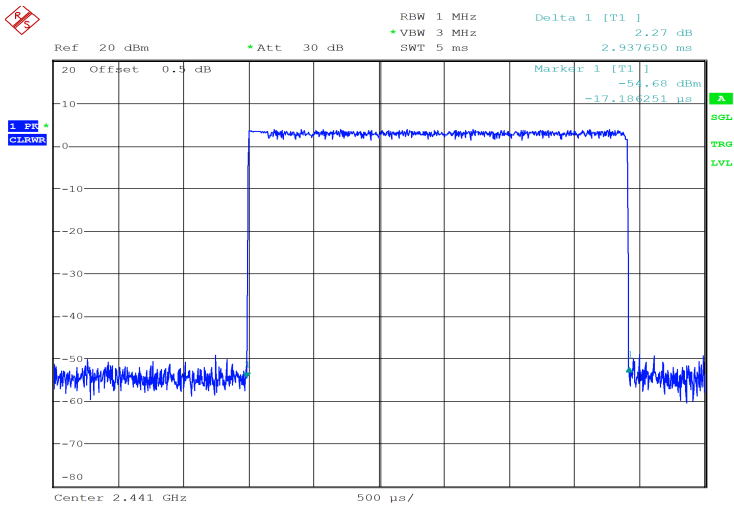
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:57:50

$\pi/4$ -DQPSK_Hopping_2DH3 1.681ms



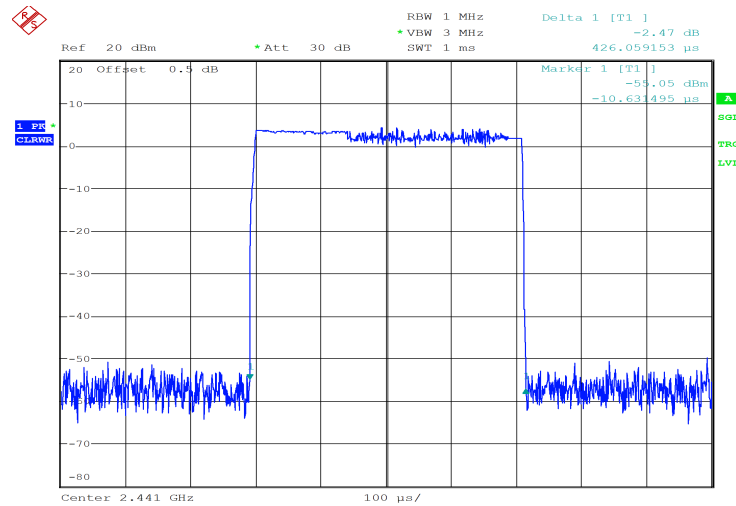
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:59:22

$\pi/4$ -DQPSK_Hopping_2DH5 2.938ms



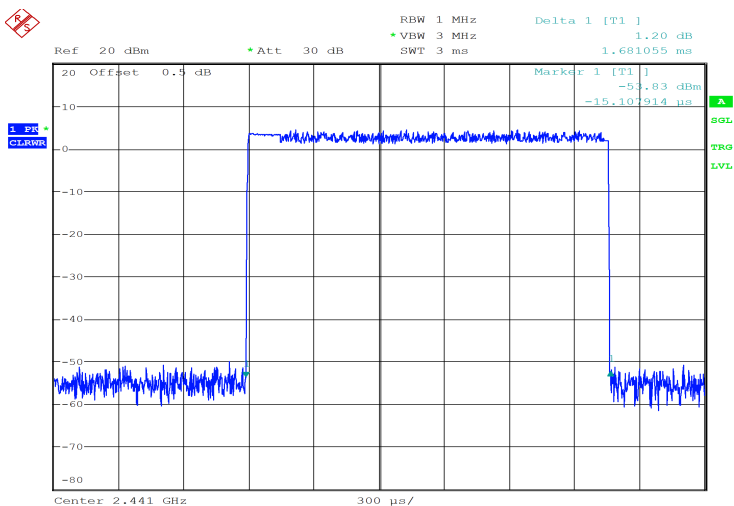
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 14:00:46

8DPSK_Hopping_3DH1 0.426ms



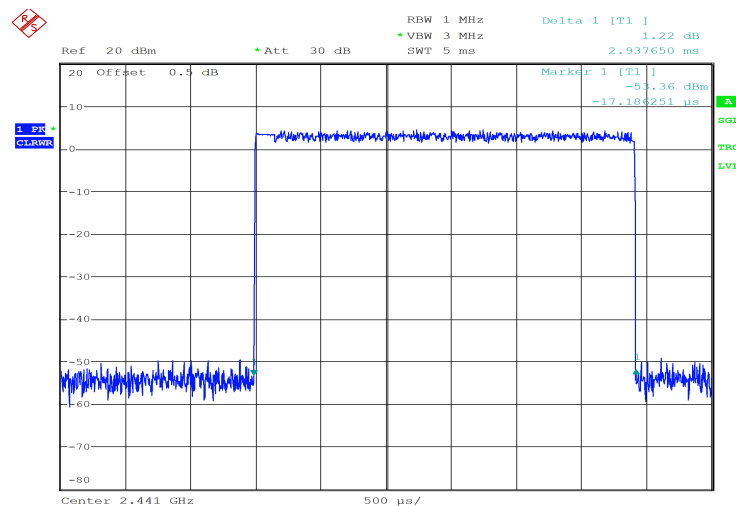
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 14:02:15

8DPSK_Hopping_3DH3 1.681ms



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 14:03:41

8DPSK_Hopping_3DH5 2.938ms



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 14:05:08

Maximum Conducted Output Power**BDR**

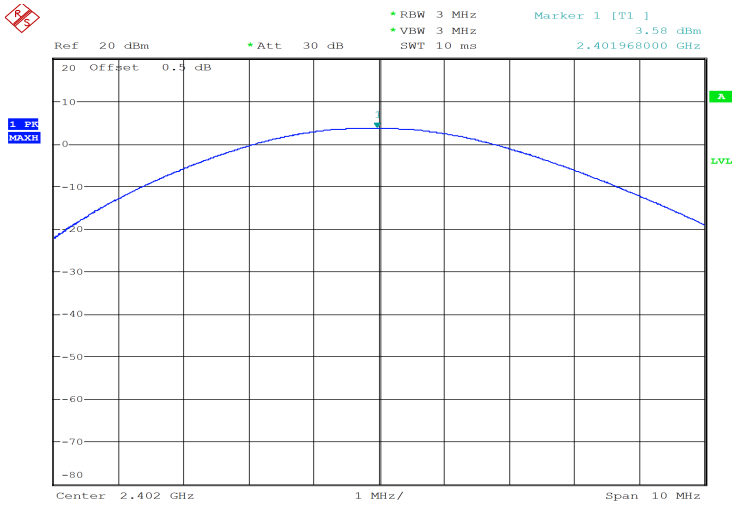
Mode	Value (dBm)	Limit (dBm)	Result
GFSK_Low	3.58	21.00	Pass
GFSK_Middle	3.56	21.00	Pass
GFSK_High	2.91	21.00	Pass

EDR

Mode	Value (dBm)	Limit (dBm)	Result
$\pi/4$ -DQPSK_Low	3.85	21.00	Pass
$\pi/4$ -DQPSK_Middle	3.54	21.00	Pass
$\pi/4$ -DQPSK_High	3.72	21.00	Pass
8DPSK_Low	4.87	21.00	Pass
8DPSK_Middle	4.84	21.00	Pass
8DPSK_High	4.23	21.00	Pass

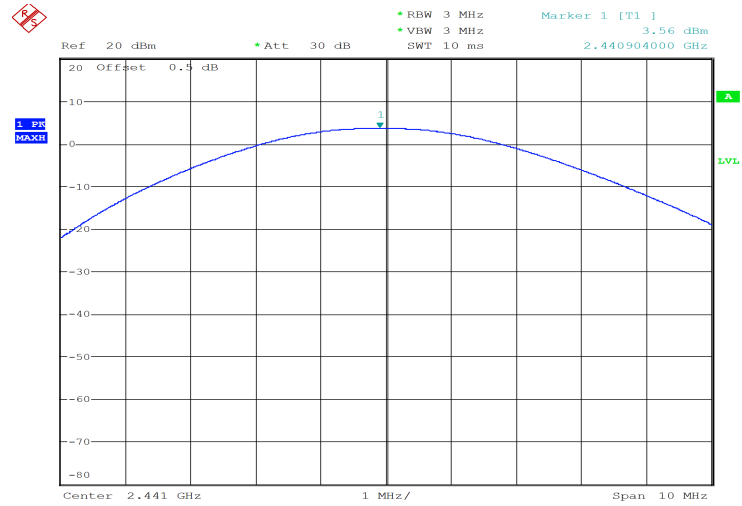
BDR

GFSK_Low 3.58 dBm



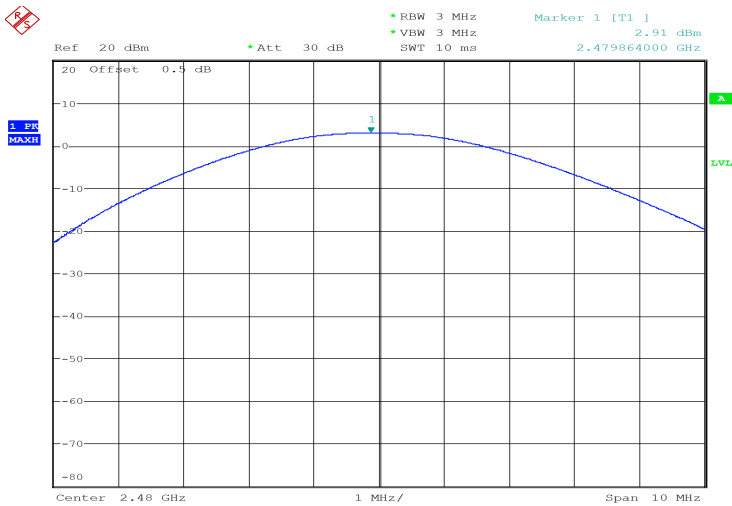
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 11:41:37

GFSK_Middle 3.56 dBm



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 11:45:56

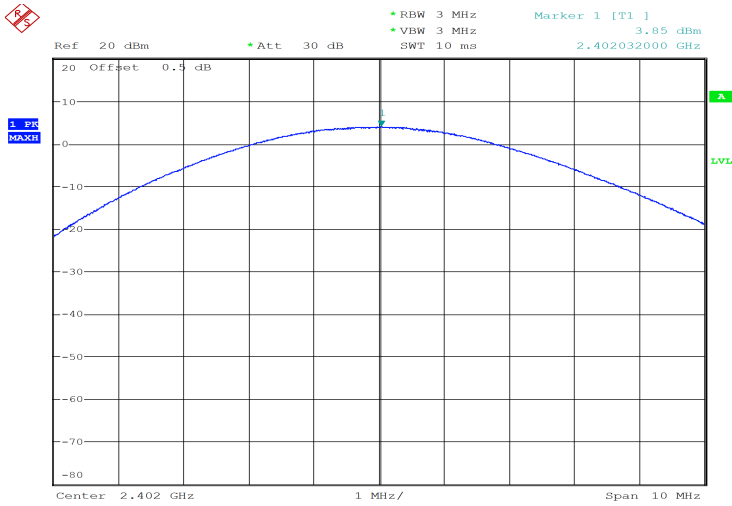
GFSK_High 2.91 dBm



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 11:49:16

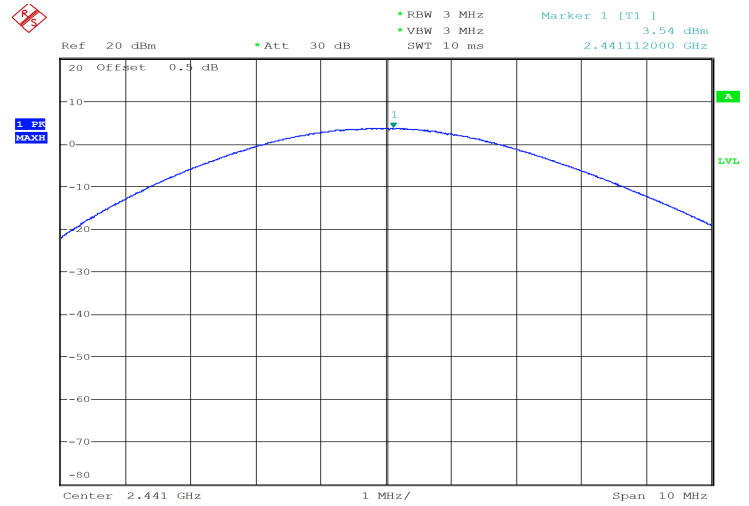
EDR

$\pi/4$ -DQPSK_Low 3.85 dBm



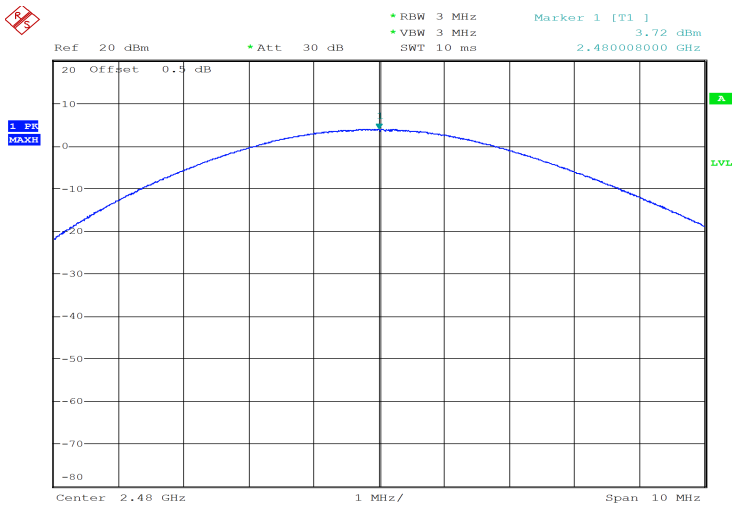
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:16:19

$\pi/4$ -DQPSK_Middle 3.54 dBm



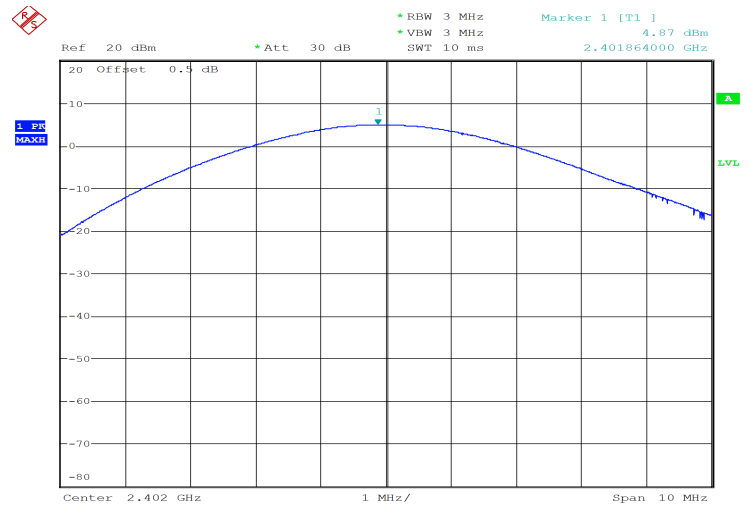
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:23:26

$\pi/4$ -DQPSK_High 3.72 dBm



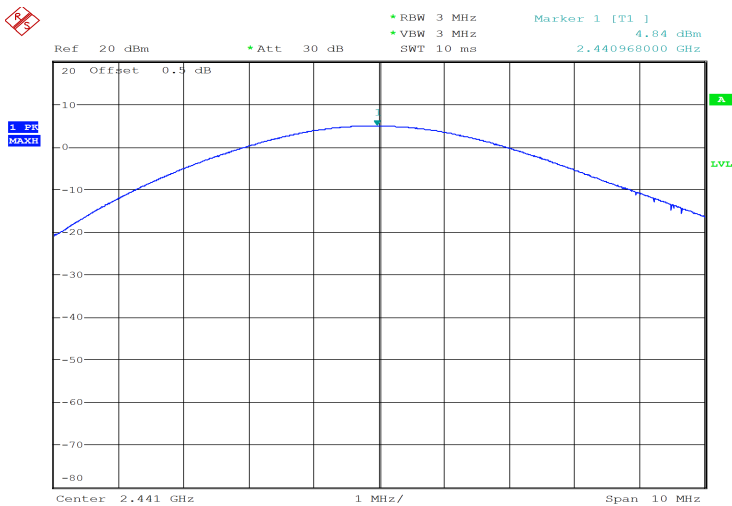
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:27:38

8DPSK_Low 4.87 dBm



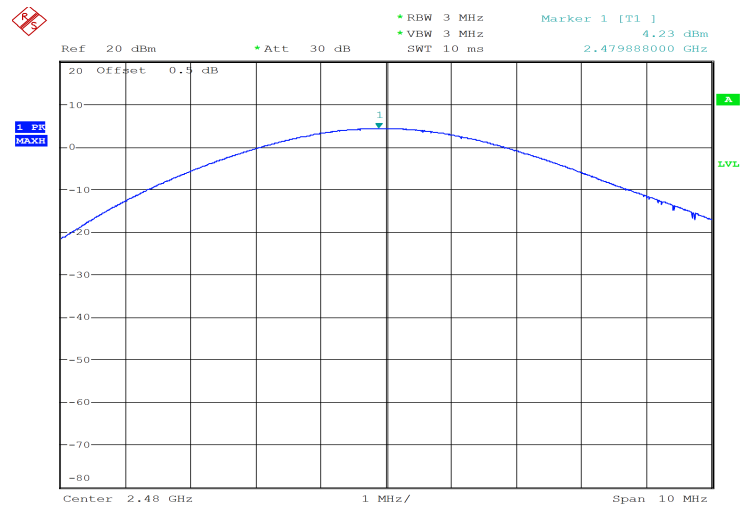
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:35:10

8DPSK_Middle 4.84 dBm



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:39:39

8DPSK_High 4.23 dBm



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:42:47

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

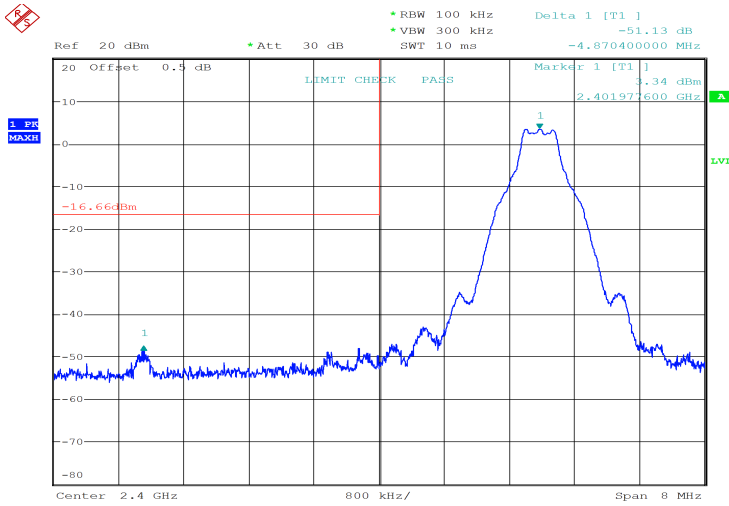
Mode	Value (dB)	Limit (dB)	Result
GFSK_Low	51.13	20.00	Pass
GFSK_High	52.05	20.00	Pass
GFSK_Hopping_Lower	52.41	20.00	Pass
GFSK_Hopping_Upper	52.63	20.00	Pass

EDR

Mode	Value (dB)	Limit (dB)	Result
$\pi/4$ -DQPSK_Low	50.28	20.00	Pass
$\pi/4$ -DQPSK_High	52.28	20.00	Pass
$\pi/4$ -DQPSK_Hopping_Lower	50.75	20.00	Pass
$\pi/4$ -DQPSK_Hopping_Upper	53.01	20.00	Pass
8DPSK_Low	42.83	20.00	Pass
8DPSK_High	47.41	20.00	Pass
8DPSK_Hopping_Lower	42.92	20.00	Pass
8DPSK_Hopping_Upper	48.15	20.00	Pass

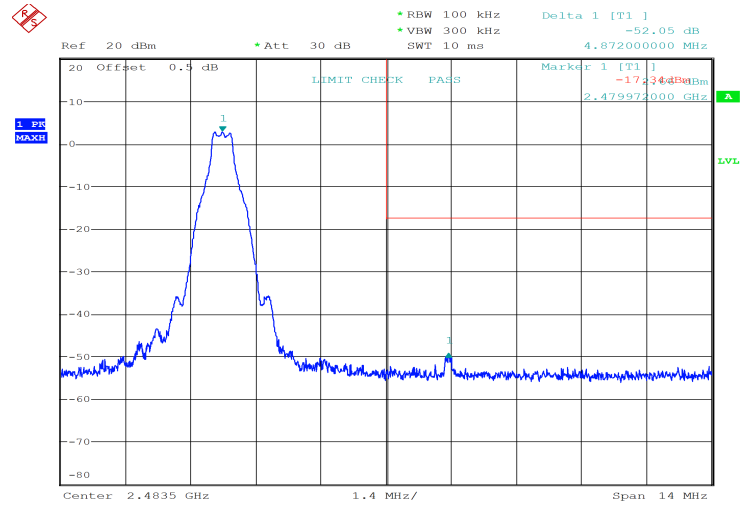
BDR

GFSK_Low 51.13 dB



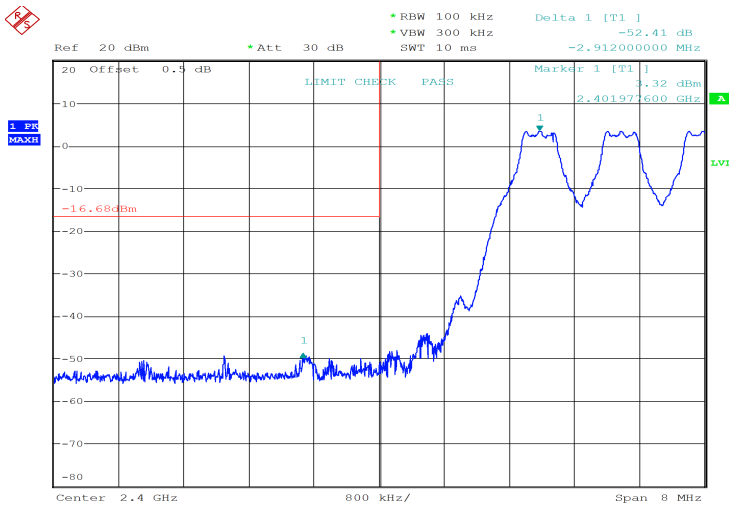
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 11:43:00

GFSK_High 52.05 dB



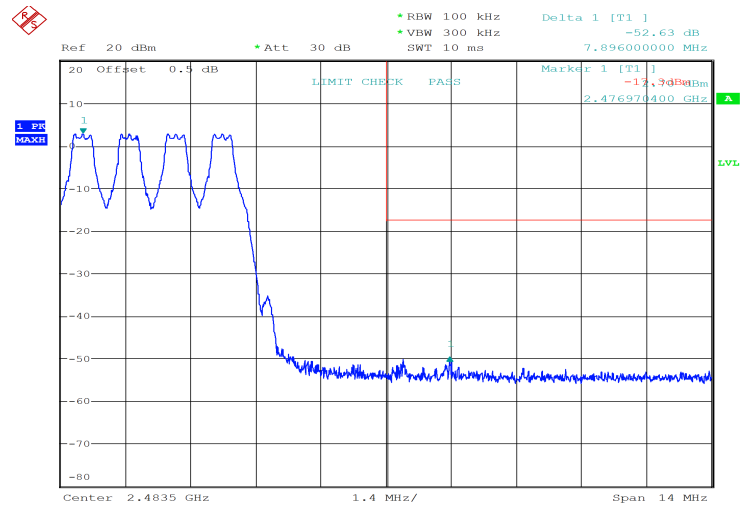
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 11:50:36

GFSK_Hopping_Lower 52.41 dB



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 11:54:36

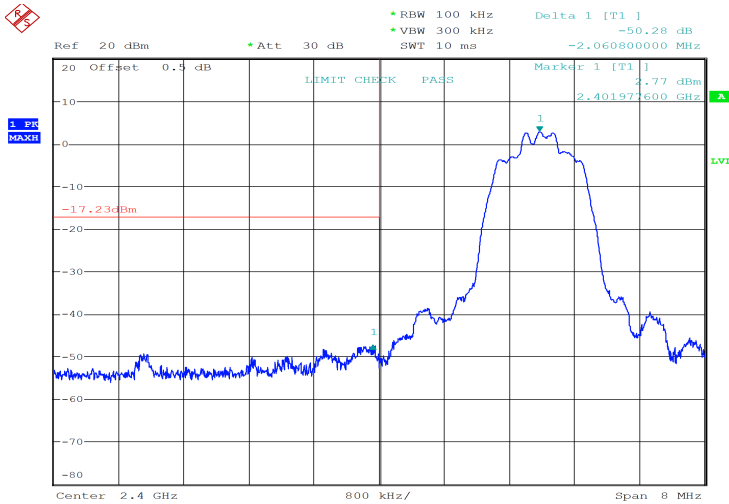
GFSK_Hopping_Upper 52.63 dB



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 11:56:11

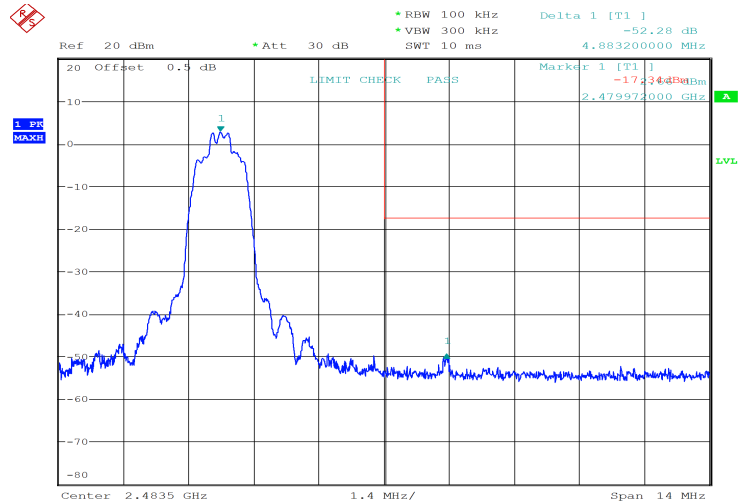
EDR

$\pi/4$ -DQPSK_Low 50.28 dB



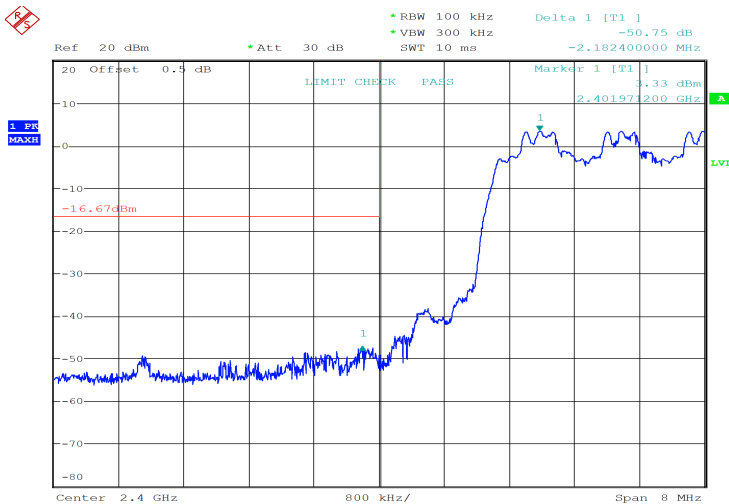
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:17:39

$\pi/4$ -DQPSK_High 52.28 dB



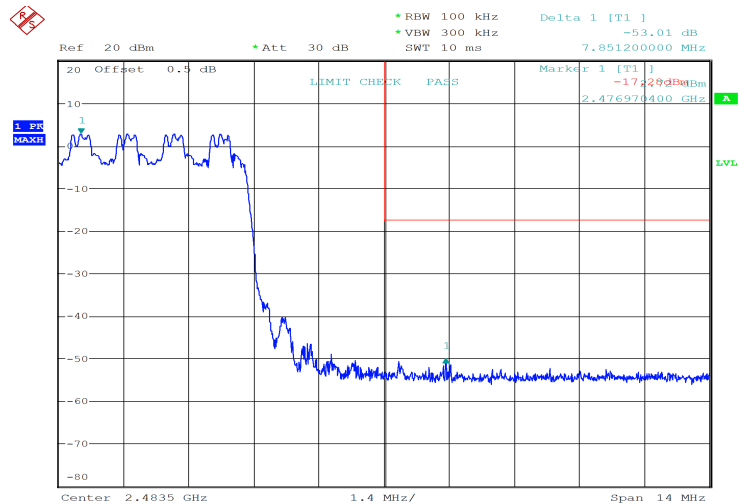
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:28:59

$\pi/4$ -DQPSK_Hopping_Lower 50.75 dB



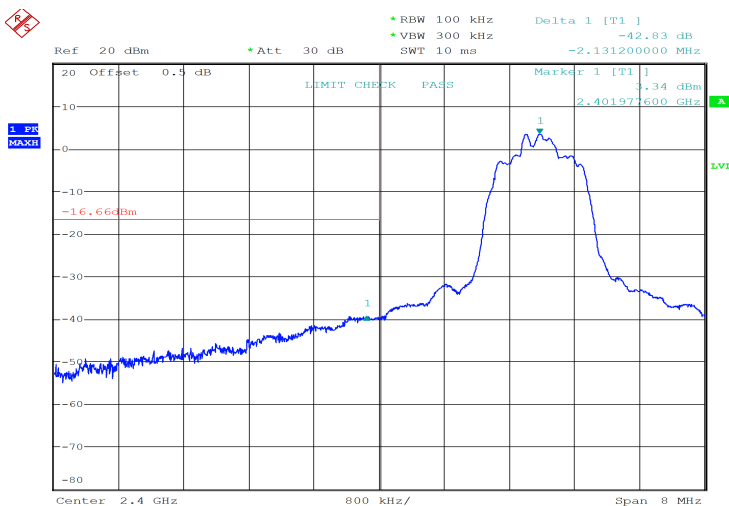
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:32:45

$\pi/4$ -DQPSK_Hopping_Upper 53.01 dB



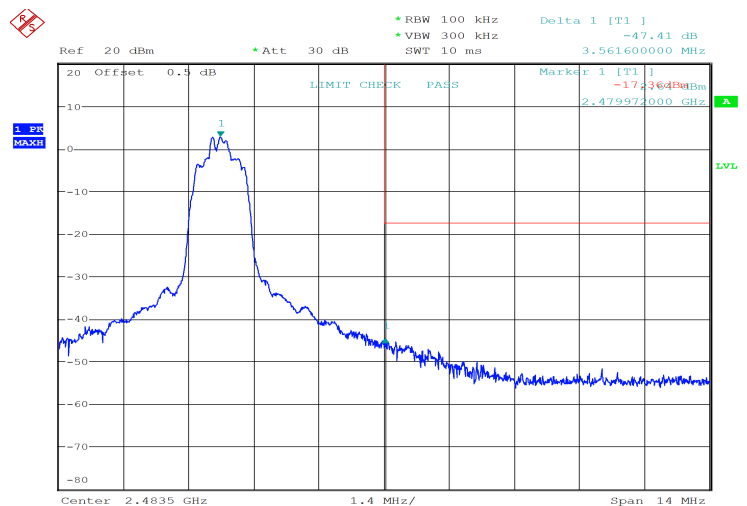
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:34:24

8DPSK_Low 42.83 dB



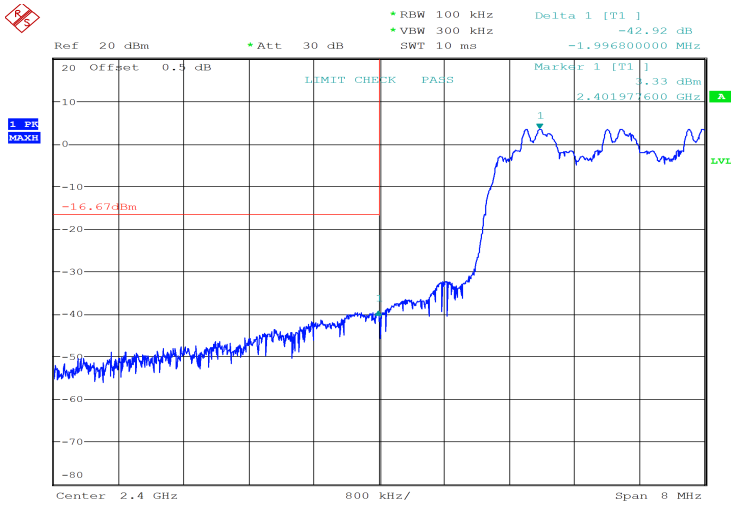
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:36:34

8DPSK_High 47.41 dB



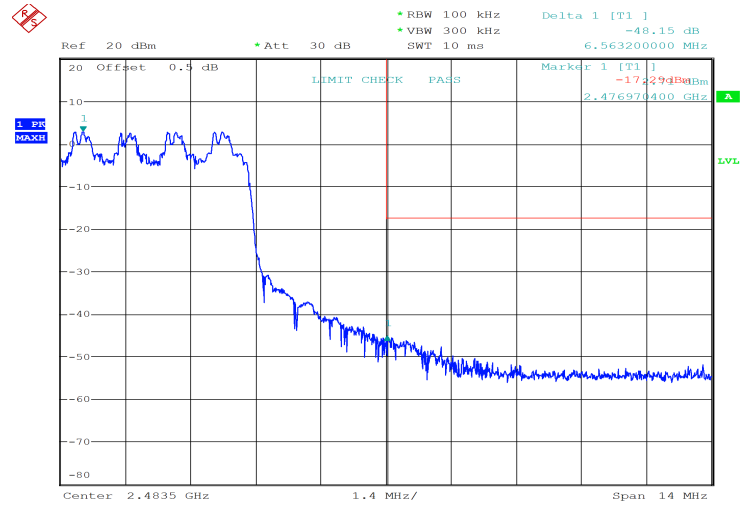
Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:44:04

8DPSK_Hopping_Lower 42.92 dB



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:47:37

8DPSK_Hopping_Upper 48.15 dB



Comment: ProjectNo.:CR231272099-RF Tester:Lingling Li
 Date: 16.JAN.2024 13:49:02