

FCC Part 15.247

Test Information:

Serial No.:	2GUJ-1	Test Date:	2024/02/02
Test Site:	RF	Test Mode:	Transmitting
Tester:	Chin	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23	Relative Humidity: (%)	49	ATM Pressure: (kPa)	101.1
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	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).

Tester: Chin Qin

Reviewer: Gary Ling

20 dB Emission Bandwidth**BDR**

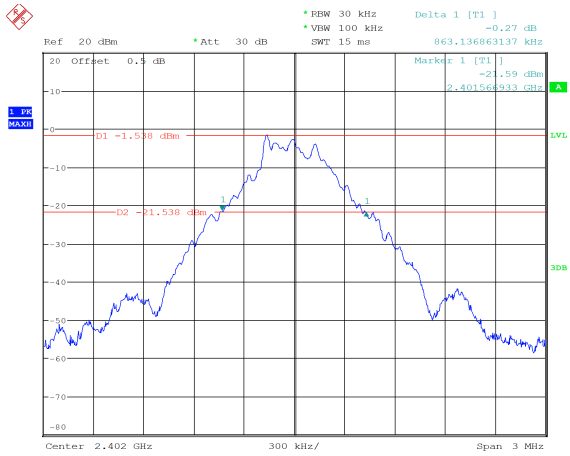
Mode	Value (MHz)
GFSK_Low	0.863
GFSK_Middle	0.875
GFSK_High	0.893

EDR

Mode	Value (MHz)
$\pi/4$ -DQPSK_Low	1.250
$\pi/4$ -DQPSK_Middle	1.247
$\pi/4$ -DQPSK_High	1.247

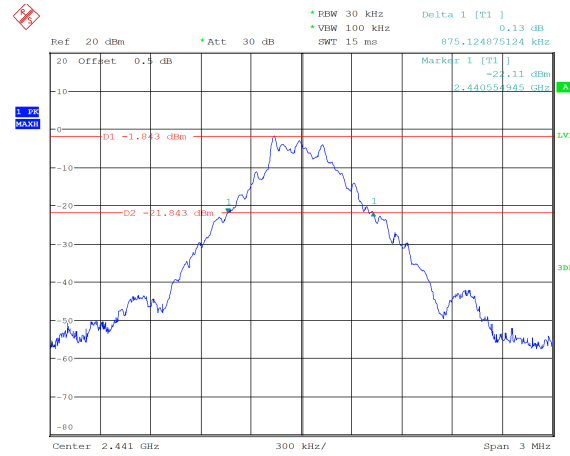
BDR

GFSK_Low 0.863 MHz



ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:52:48

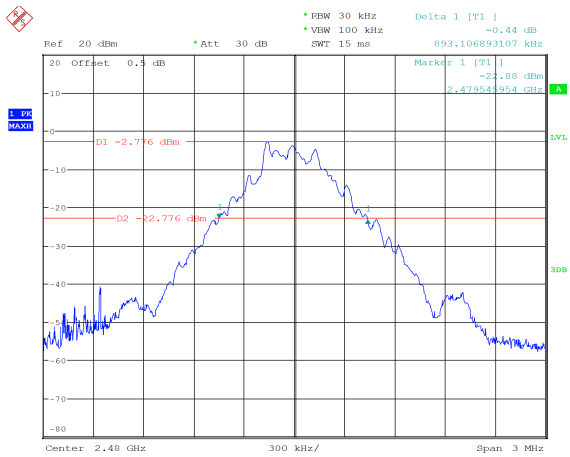
GFSK_Middle 0.875 MHz



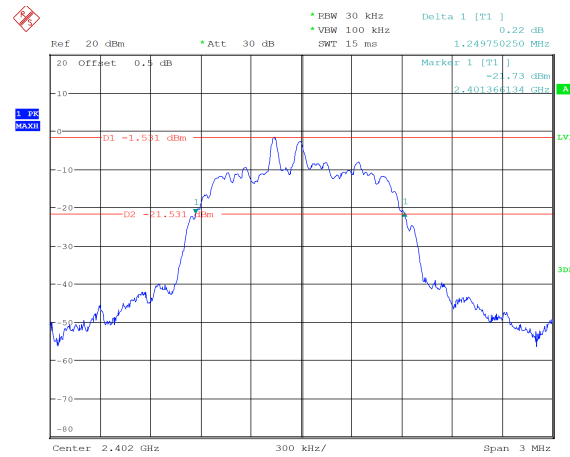
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:55:13

EDR

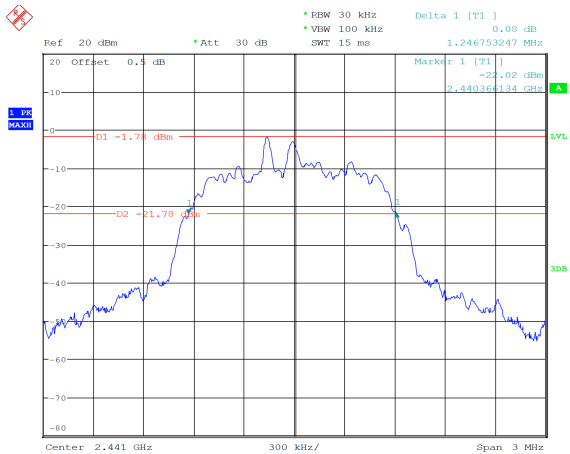
GFSK_High 0.893 MHz



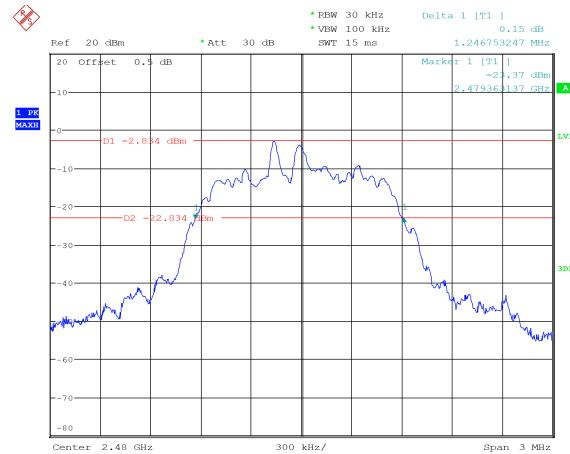
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:57:19

 $\pi/4$ -DQPSK_Low 1.250 MHz

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:18:52

 $\pi/4$ -DQPSK_Middle 1.247 MHz

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:21:33

 $\pi/4$ -DQPSK_High 1.247 MHz

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:26:54

99% Occupied Bandwidth**BDR**

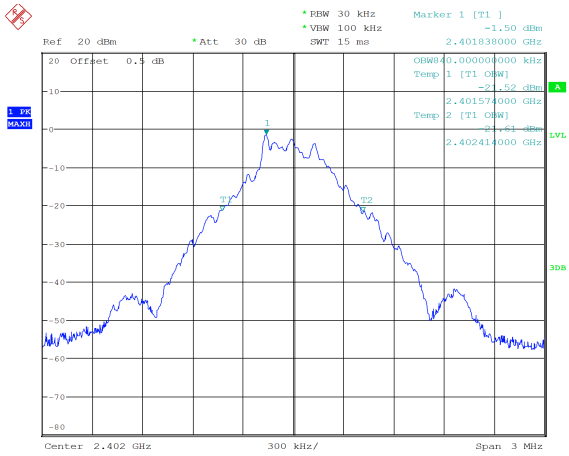
Mode	99% OBW (MHz)
GFSK_Low	0.840
GFSK_Middle	0.843
GFSK_High	0.855

EDR

Mode	99% OBW (MHz)
$\pi/4$ -DQPSK_Low	1.170
$\pi/4$ -DQPSK_Middle	1.170
$\pi/4$ -DQPSK_High	1.170

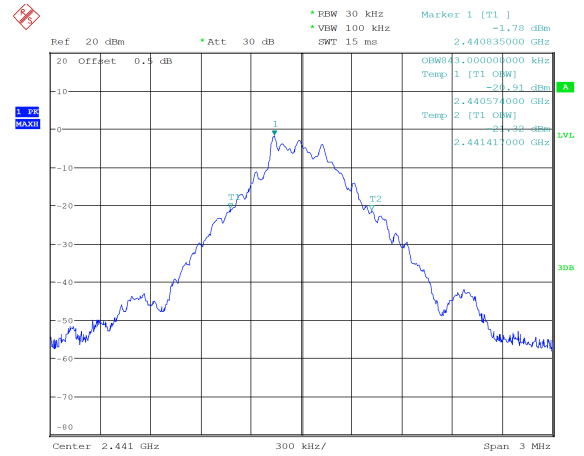
BDR

GFSK_Low 0.840 MHz



ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 10:51:57

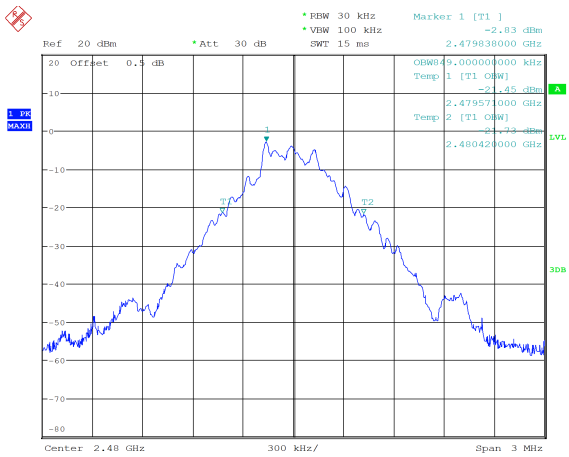
GFSK_Middle 0.843 MHz



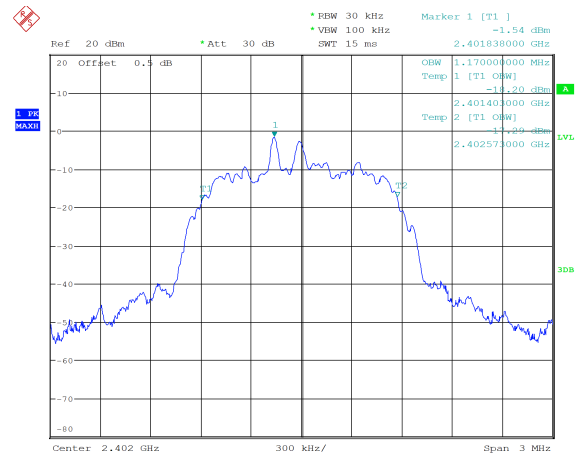
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 10:55:00

EDR

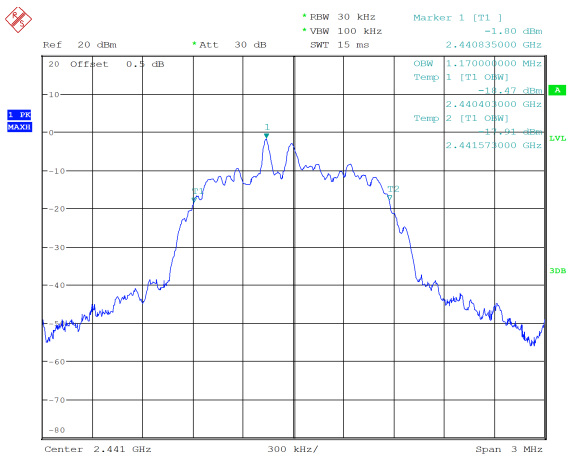
GFSK_High 0.855 MHz



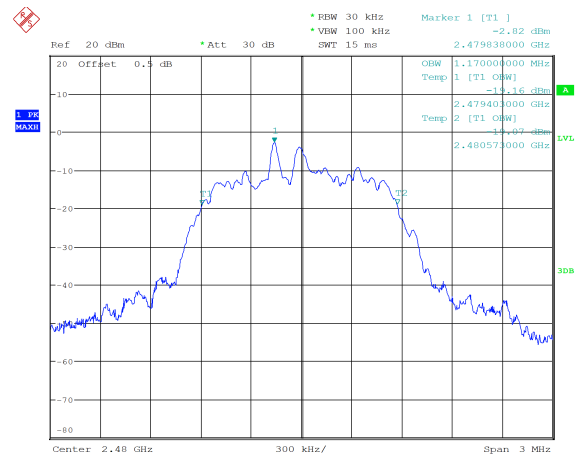
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:05:01

 $\pi/4$ -DQPSK_Low 1.170 MHz

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:19:24

 $\pi/4$ -DQPSK_Middle 1.170 MHz

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:21:58

 $\pi/4$ -DQPSK_High 1.170 MHz

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:27:20

Channel Separation**BDR**

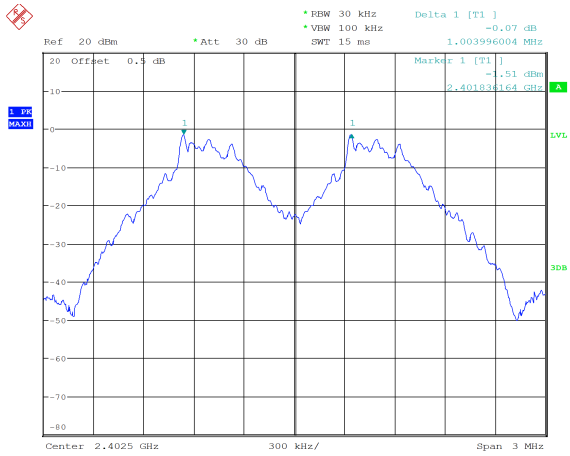
Mode	Value (MHz)	Limit (MHz)	Result
GFSK_Low	1.004	0.575	Pass
GFSK_Middle	1.001	0.583	Pass
GFSK_High	1.007	0.595	Pass

EDR

Mode	Value (MHz)	Limit (MHz)	Result
$\pi/4$ -DQPSK_Low	1.004	0.833	Pass
$\pi/4$ -DQPSK_Middle	1.001	0.831	Pass
$\pi/4$ -DQPSK_High	1.007	0.831	Pass

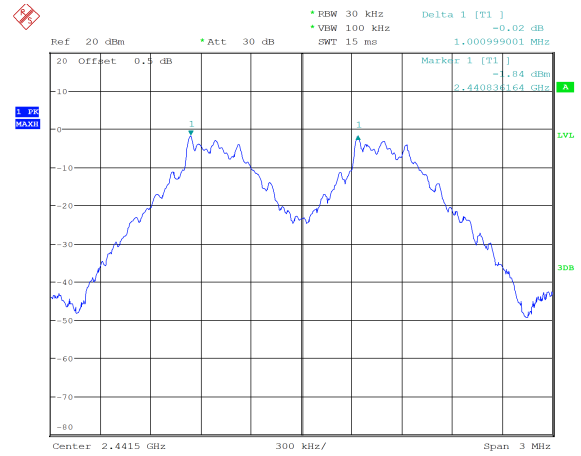
BDR

GFSK_Low 1.004 MHz



ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:53:54

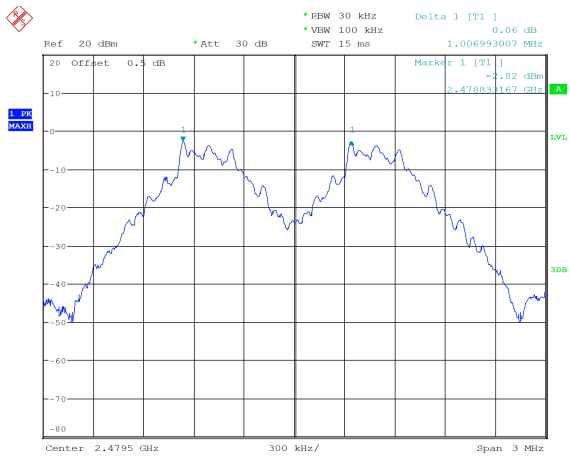
GFSK_Middle 1.001 MHz



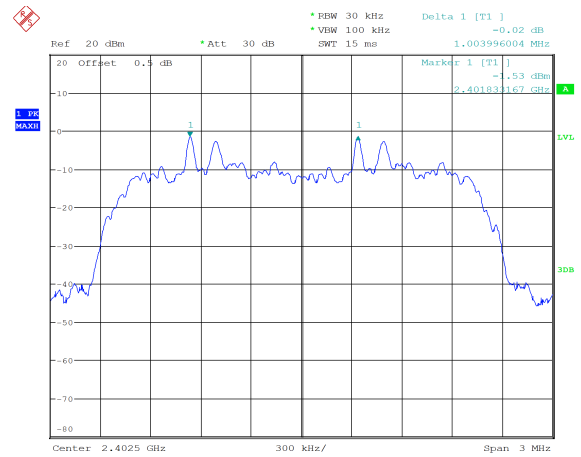
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:56:10

EDR

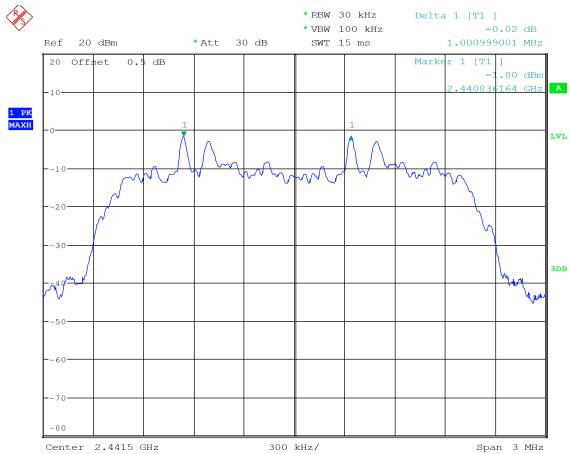
GFSK_High 1.007 MHz



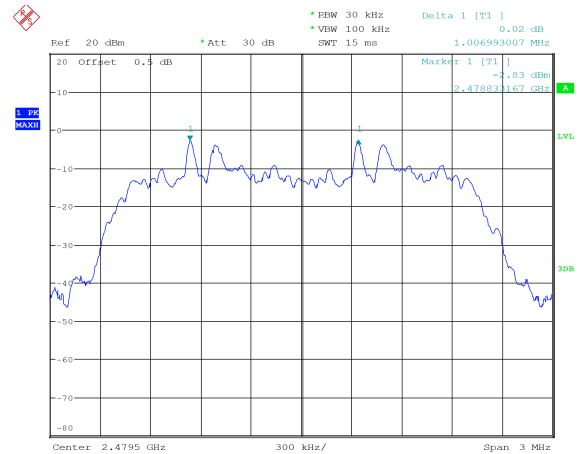
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:58:39

 $\pi/4$ -DQPSK_Low 1.004 MHz

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:20:31

 $\pi/4$ -DQPSK_Middle 1.001 MHz

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:23:17

 $\pi/4$ -DQPSK_High 1.007 MHz

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:28:22

Number of Hopping Frequency**BDR**

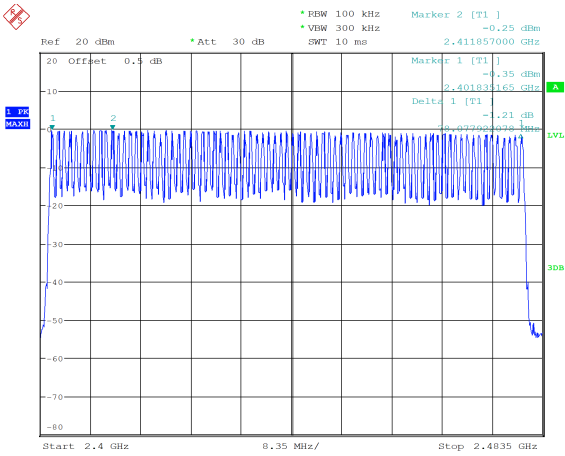
Mode	Value	Limit	Result
GFSK_Hopping	79	15	Pass

EDR

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

BDR

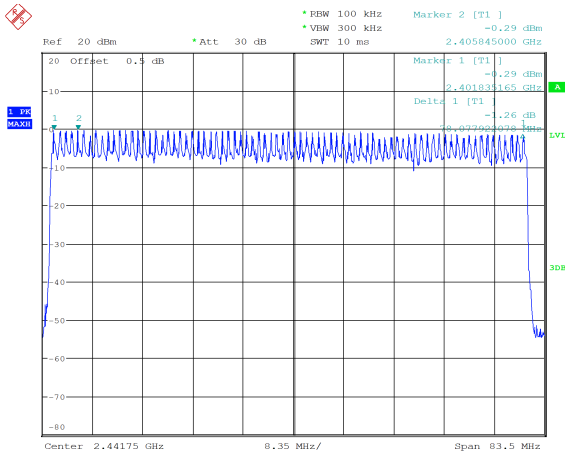
GFSK_Hopping 79



ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 13:04:59

EDR

$\pi/4$ -DQPSK_Hopping 79



ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 13:10:17

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

Mode	Pulse width (ms)	Dwell time (s)	Limit (s)	Result
GFSK_Hopping_DH1	0.395	0.126	0.400	Pass
GFSK_Hopping_DH3	1.660	0.266	0.400	Pass
GFSK_Hopping_DH5	2.927	0.312	0.400	Pass

EDR

Mode	Pulse width (ms)	Dwell time (s)	Limit (s)	Result
$\pi/4$ -DQPSK_Hopping_2DH1	0.406	0.130	0.400	Pass
$\pi/4$ -DQPSK_Hopping_2DH3	1.666	0.267	0.400	Pass
$\pi/4$ -DQPSK_Hopping_2DH5	2.937	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

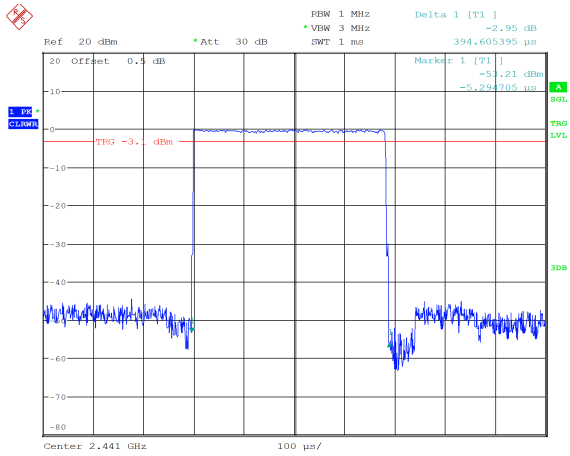
2DH1: Dwell time = Pulse time (ms) $\times$ (1600/2/79) $\times$ 31.6 s

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

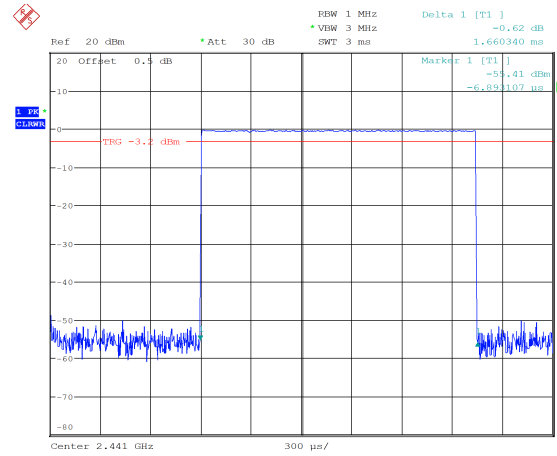
BDR

GFSK_Hopping_DH1 0.395ms



ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 13:22:49

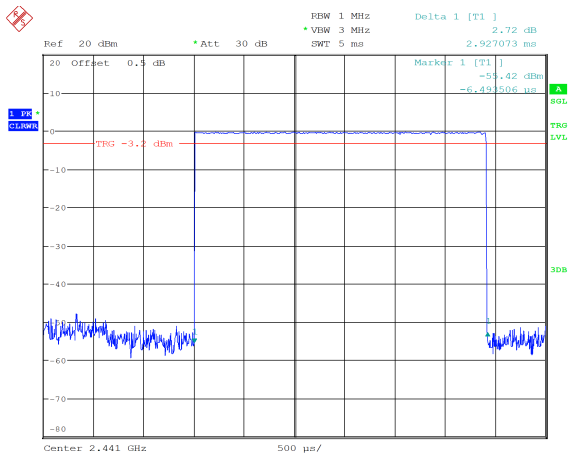
GFSK_Hopping_DH3 1.660ms



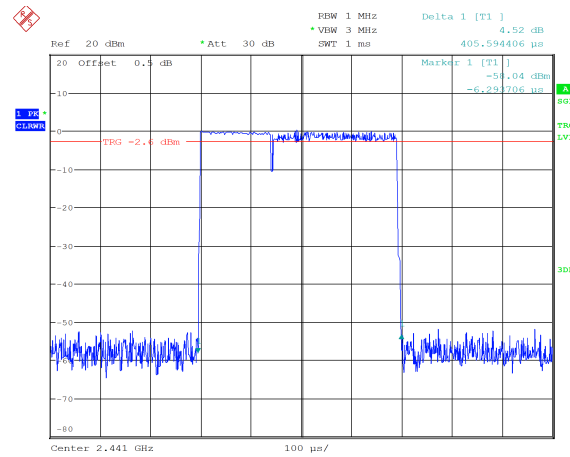
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 13:24:13

EDR

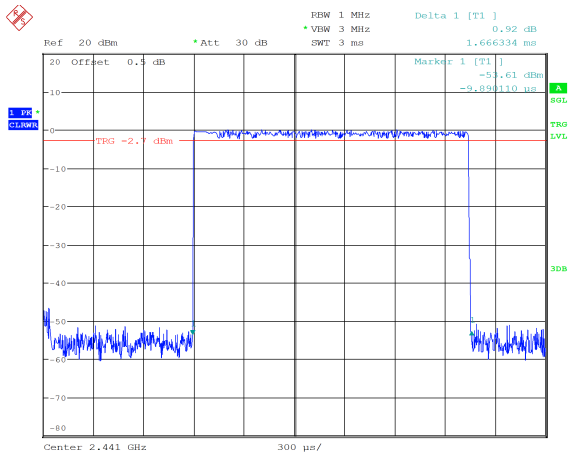
GFSK_Hopping_DH5 2.927ms



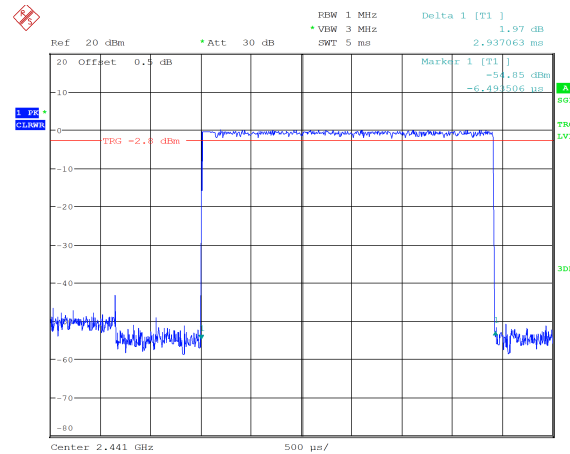
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 13:25:39

 $\pi/4$ -DQPSK_Hopping_2DH1 0.406ms

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 13:27:12

 $\pi/4$ -DQPSK_Hopping_2DH3 1.666ms

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 13:28:54

 $\pi/4$ -DQPSK_Hopping_2DH5 2.937ms

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 13:30:22

Maximum Conducted Output Power**BDR**

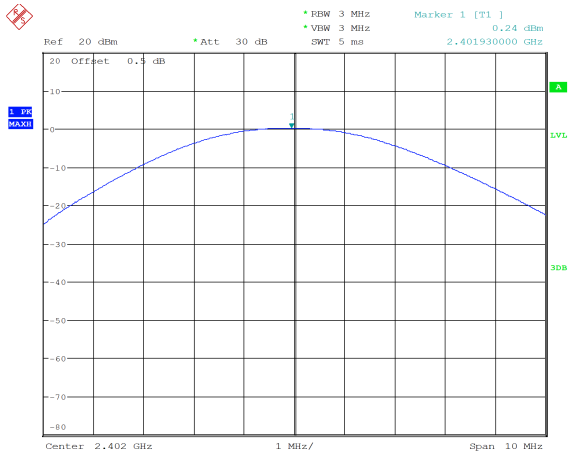
Mode	Value (dBm)	Limit (dBm)	Result
GFSK_Low	0.24	21.00	Pass
GFSK_Middle	-0.07	21.00	Pass
GFSK_High	-1.07	21.00	Pass

EDR

Mode	Value (dBm)	Limit (dBm)	Result
$\pi/4$ -DQPSK_Low	1.05	21.00	Pass
$\pi/4$ -DQPSK_Middle	0.78	21.00	Pass
$\pi/4$ -DQPSK_High	-0.23	21.00	Pass

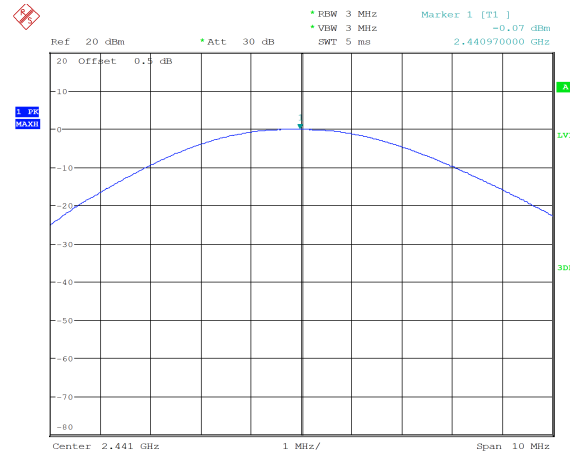
BDR

GFSK_Low 0.24 dBm



ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 10:49:19

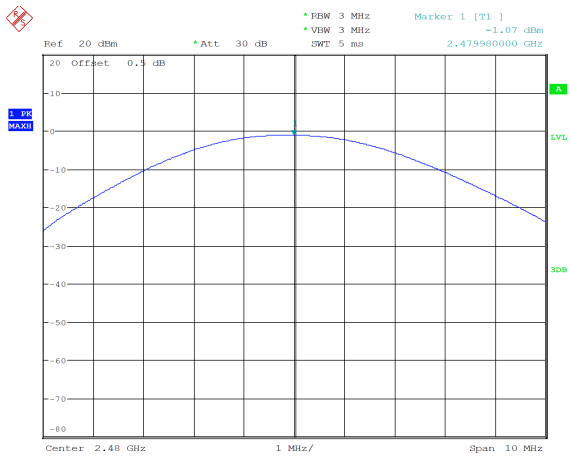
GFSK_Middle -0.07 dBm



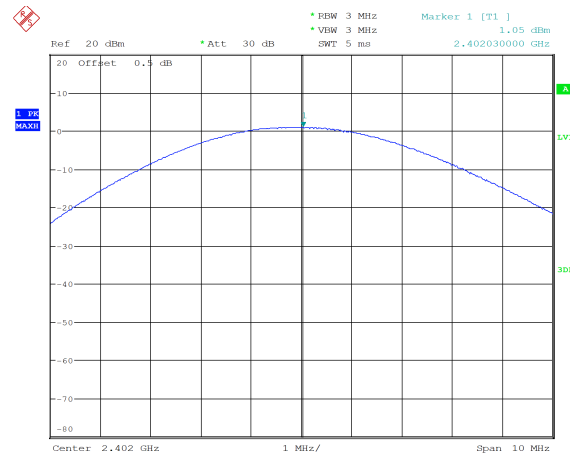
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 10:53:41

EDR

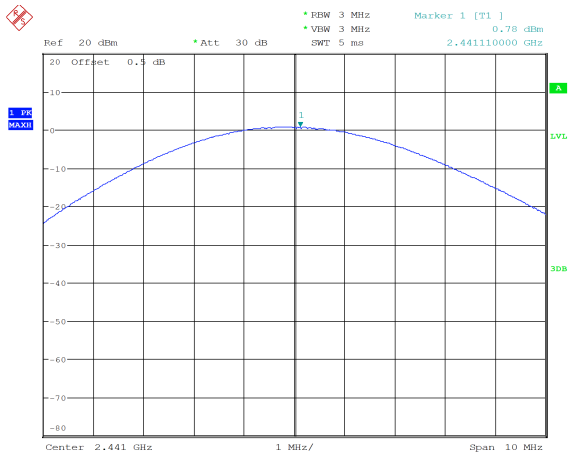
GFSK_High -1.07 dBm



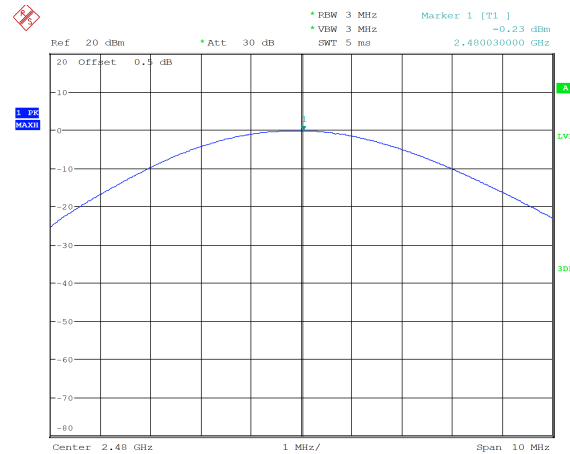
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:02:51

 $\pi/4$ -DQPSK_Low 1.05 dBm

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:17:21

 $\pi/4$ -DQPSK_Middle 0.78 dBm

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:21:02

 $\pi/4$ -DQPSK_High -0.23 dBm

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:25:17

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

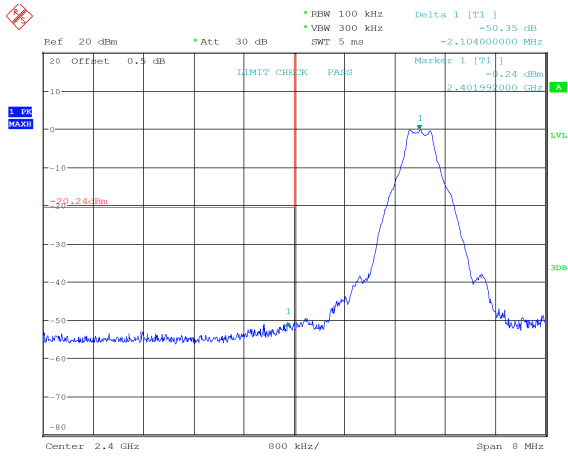
Mode	Value (dB)	Limit (dB)	Result
GFSK_Low	50.35	20.00	Pass
GFSK_High	50.85	20.00	Pass
GFSK_Hopping_Lower	51.61	20.00	Pass
GFSK_Hopping_Upper	50.94	20.00	Pass

EDR

Mode	Value (dB)	Limit (dB)	Result
$\pi/4$ -DQPSK_Low	48.09	20.00	Pass
$\pi/4$ -DQPSK_High	50.89	20.00	Pass
$\pi/4$ -DQPSK_Hopping_Lower	49.43	20.00	Pass
$\pi/4$ -DQPSK_Hopping_Upper	50.28	20.00	Pass

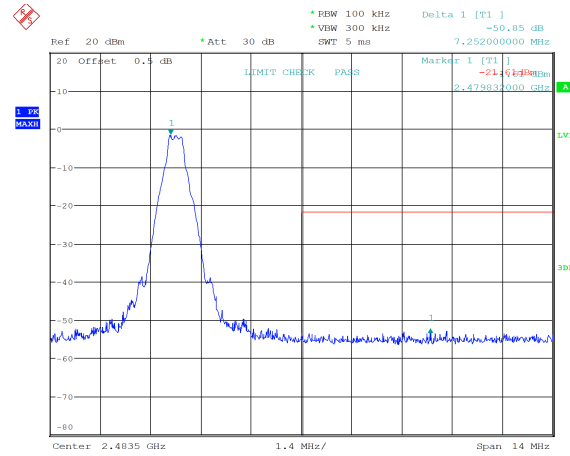
BDR

GFSK_Low 50.35 dB



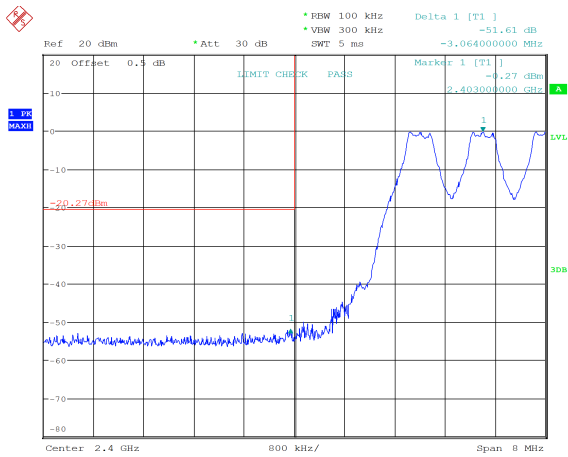
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 10:50:25

GFSK_High 50.85 dB



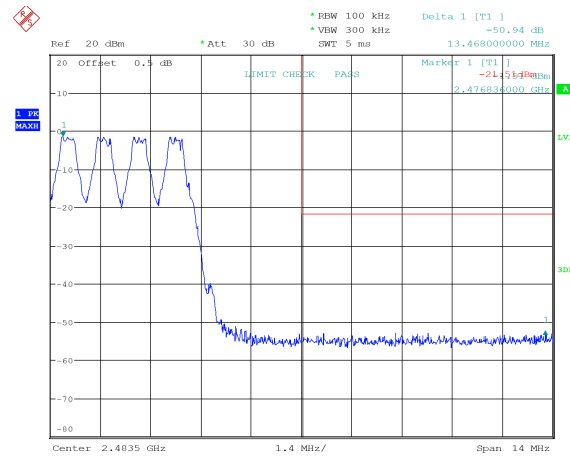
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:03:56

GFSK_Hopping_Lower 51.61 dB



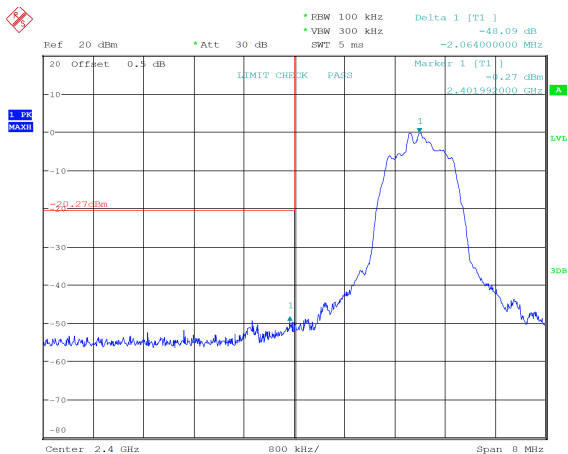
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:08:06

GFSK_Hopping_Upper 50.94 dB

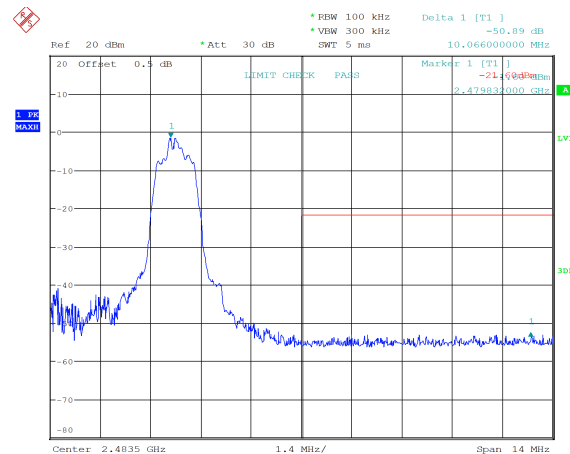


ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:09:40

EDR

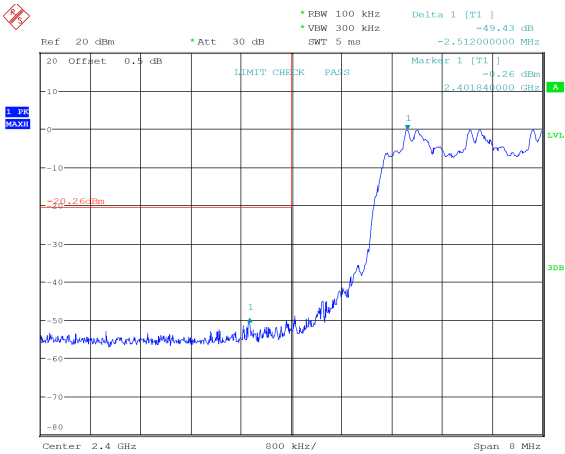
 $\pi/4$ -DQPSK_Low 48.09 dB

ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:18:18

 $\pi/4$ -DQPSK_High 50.89 dB

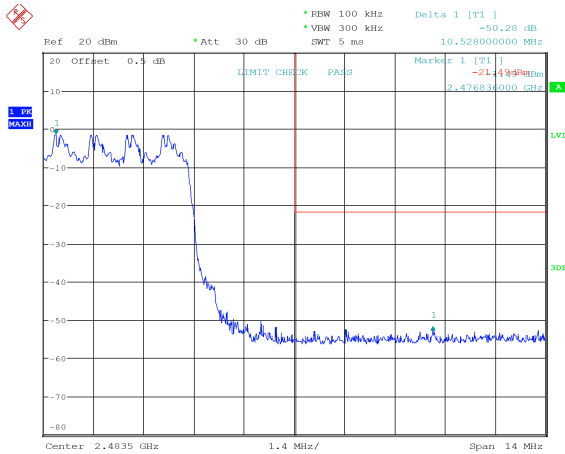
ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:26:26

$\pi/4$ -DQPSK_Hopping_Lower 49.43 dB



ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:34:01

$\pi/4$ -DQPSK_Hopping_Upper 50.28 dB



ProjectNo.:CR240104514-RF Tester:Chin
Date: 2.FEB.2024 11:35:29