

FCC Part 15.247

Test Information:

Serial No.:	2KOL-1	Test Date:	2024/04/29
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25.8	Relative Humidity: (%)	61	ATM Pressure: (kPa)	100.1
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	100147	2024/04/01	2025/03/31
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).

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

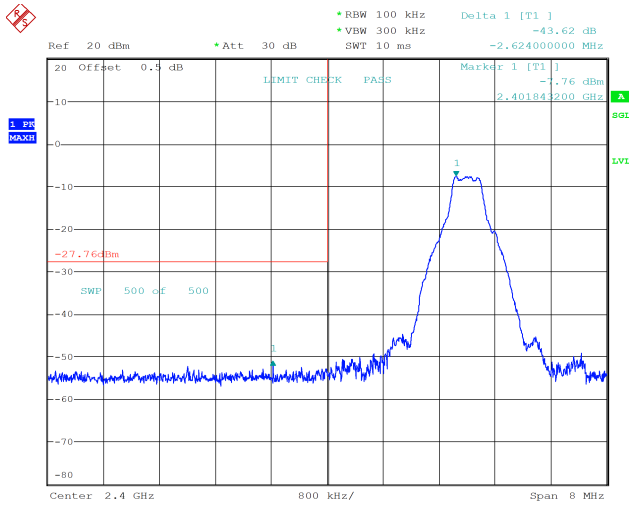
Mode	Value (dB)	Limit (dB)	Result
GFSK_Low	43.62	20.00	Pass
GFSK_High	42.46	20.00	Pass
GFSK_Hopping_Lower	41.98	20.00	Pass
GFSK_Hopping_Upper	42.10	20.00	Pass

EDR

Mode	Value (dB)	Limit (dB)	Result
$\pi/4$ -DQPSK_Low	42.74	20.00	Pass
$\pi/4$ -DQPSK_High	42.30	20.00	Pass
$\pi/4$ -DQPSK_Hopping_Lower	42.00	20.00	Pass
$\pi/4$ -DQPSK_Hopping_Upper	41.74	20.00	Pass
8DPSK_Low	42.20	20.00	Pass
8DPSK_High	41.76	20.00	Pass
8DPSK_Hopping_Lower	42.15	20.00	Pass
8DPSK_Hopping_Upper	41.36	20.00	Pass

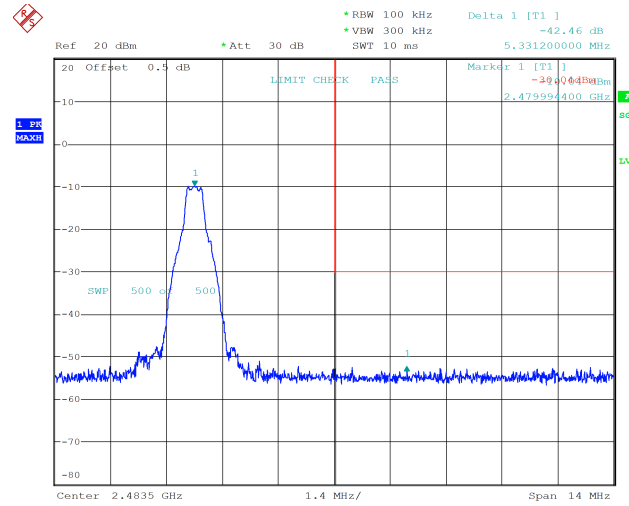
BDR

GFSK_Low 43.62 dB



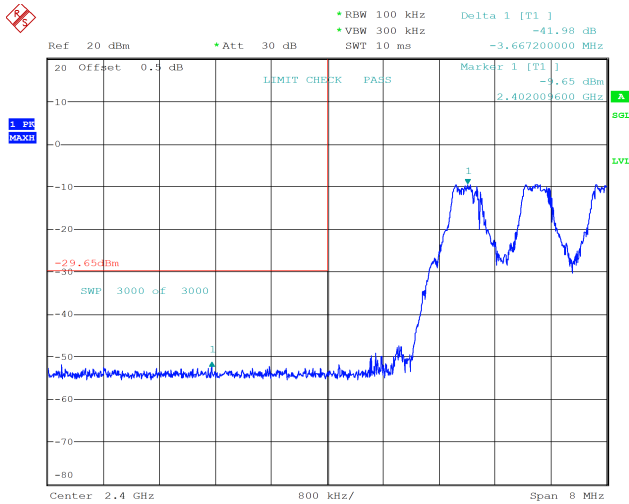
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:11:26

GFSK_High 42.46 dB



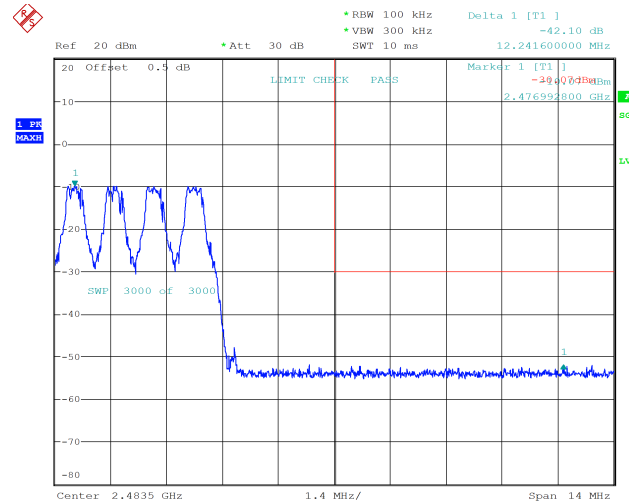
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:17:24

GFSK_Hopping_Lower 41.98 dB



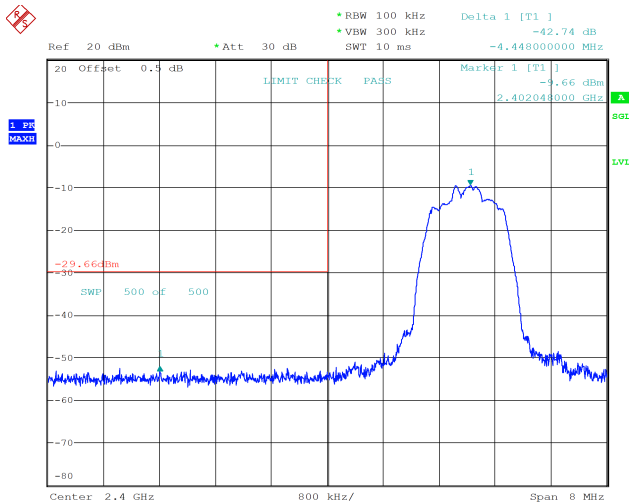
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 18:20:20

GFSK_Hopping_Upper 42.10 dB

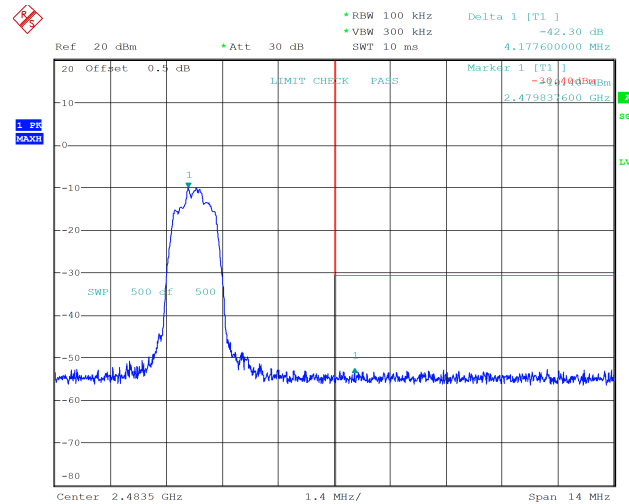


Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 18:24:08

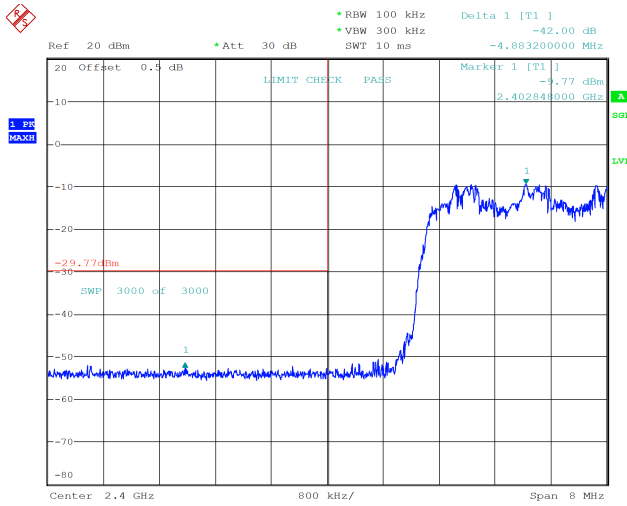
EDR

 $\pi/4$ -DQPSK_Low 42.74 dB

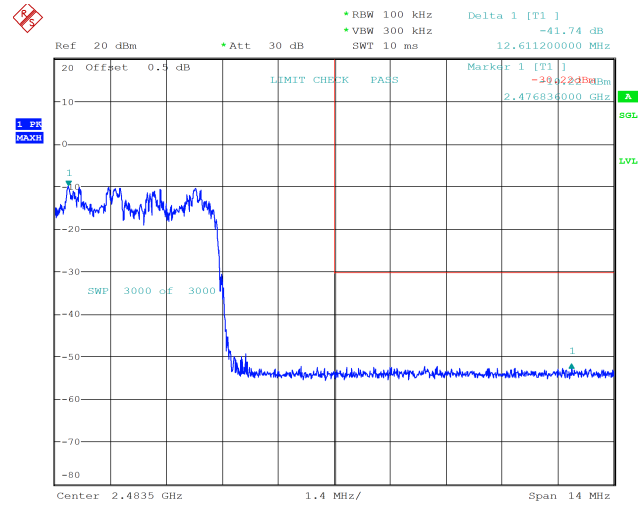
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:20:42

 $\pi/4$ -DQPSK_High 42.30 dB

Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:26:40

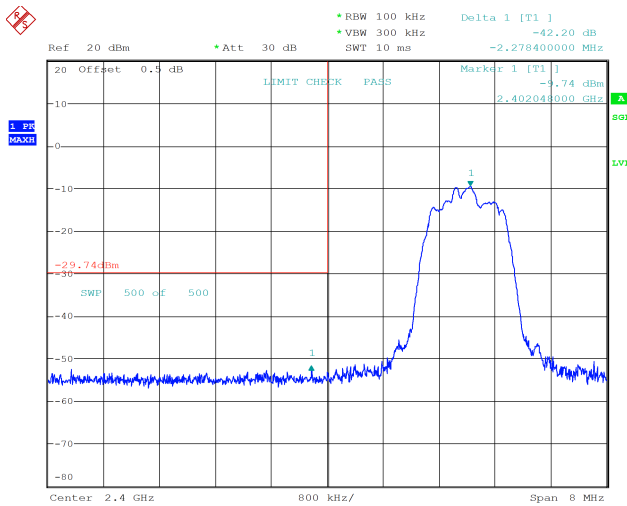
$\pi/4$ -DQPSK_Hopping_Lower 42.00 dB

Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 18:27:22

 $\pi/4$ -DQPSK_Hopping_Upper 41.74 dB

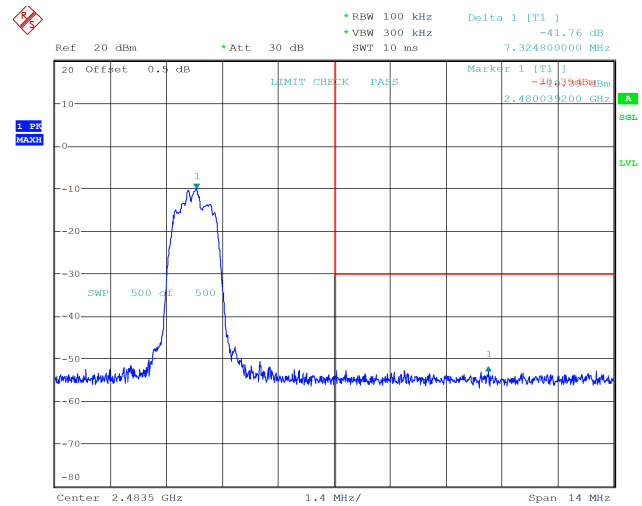
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 18:31:09

8DPSK_Low 42.20 dB



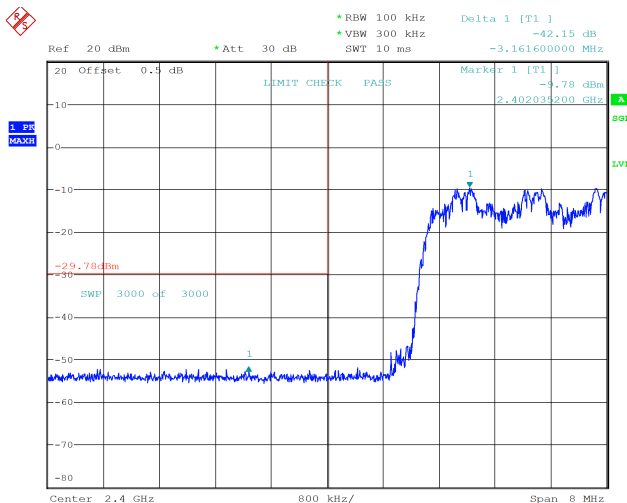
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:30:33

8DPSK_High 41.76 dB



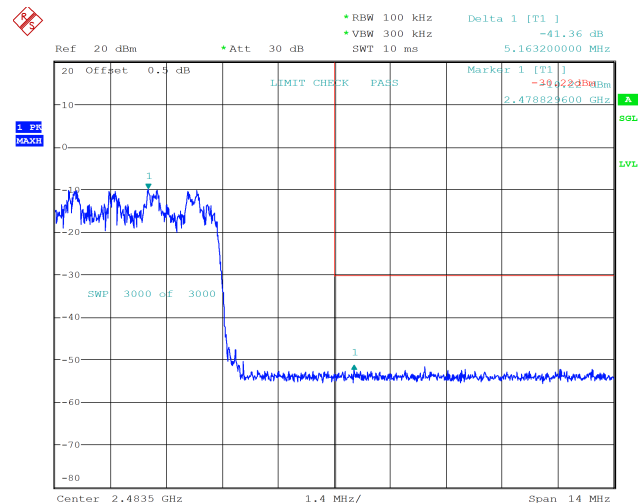
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:36:09

8DPSK_Hopping_Lower 42.15 dB



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 18:34:26

8DPSK_Hopping_Upper 41.36 dB



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 18:38:13

20 dB Emission Bandwidth**BDR**

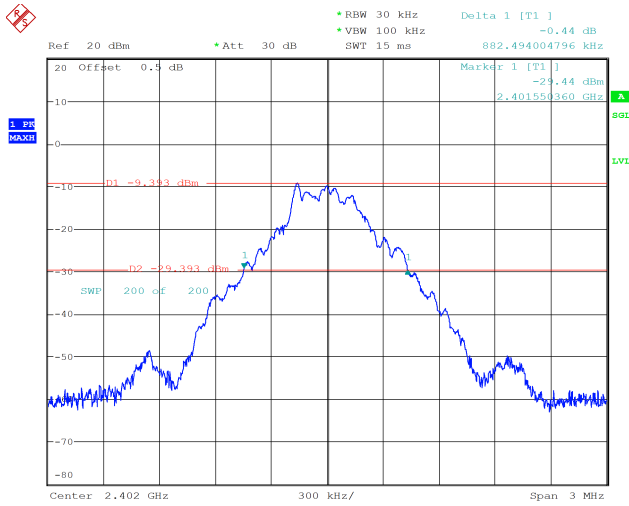
Mode	Value (MHz)
GFSK_Low	0.882
GFSK_Middle	0.882
GFSK_High	0.887

EDR

Mode	Value (MHz)
$\pi/4$ -DQPSK_Low	1.269
$\pi/4$ -DQPSK_Middle	1.266
$\pi/4$ -DQPSK_High	1.283
8DPSK_Low	1.269
8DPSK_Middle	1.269
8DPSK_High	1.269

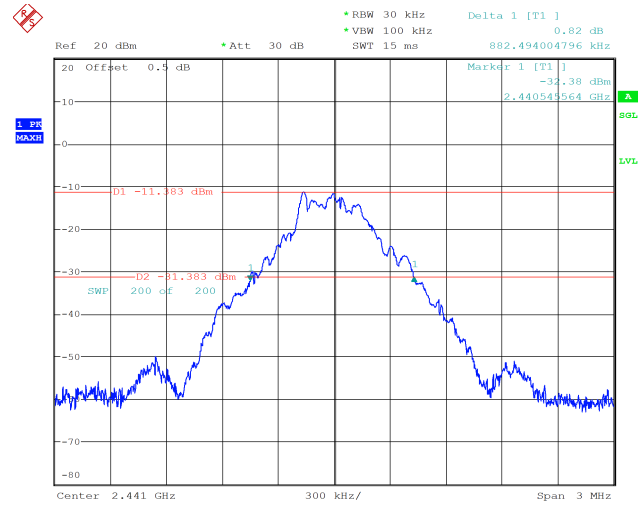
BDR

GFSK_Low 0.882 MHz



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:05:19

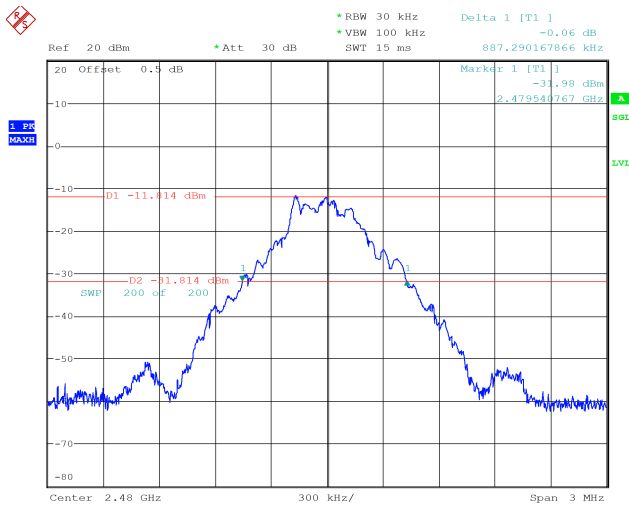
GFSK_Middle 0.882 MHz



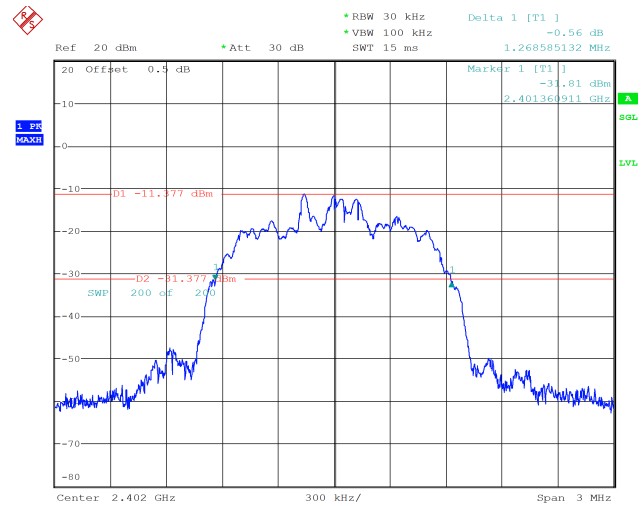
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:14:15

EDR

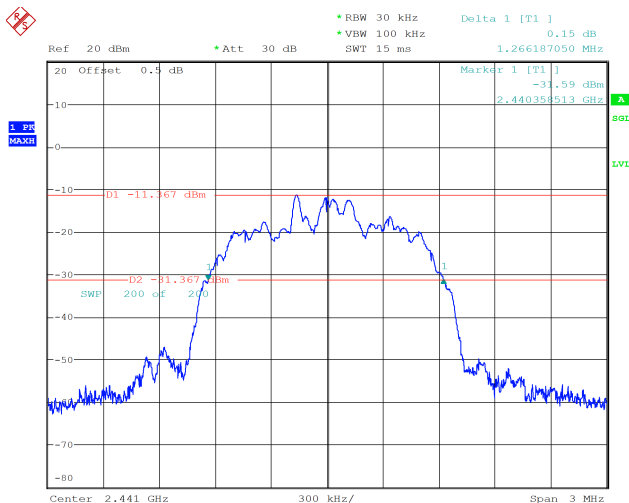
GFSK_High 0.887 MHz



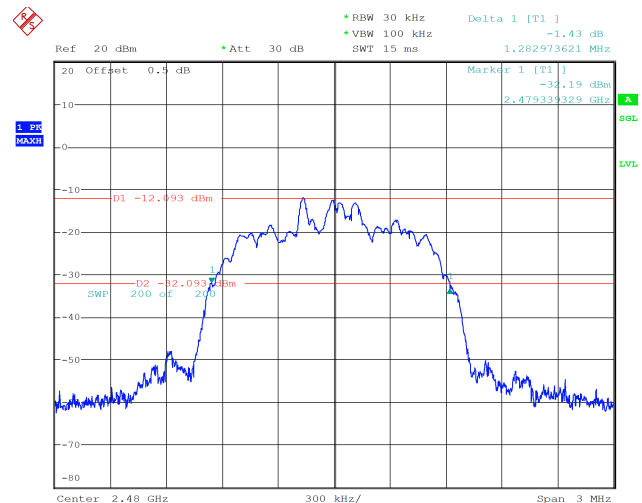
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:16:36

 $\pi/4$ -DQPSK_Low 1.269 MHz

Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:19:59

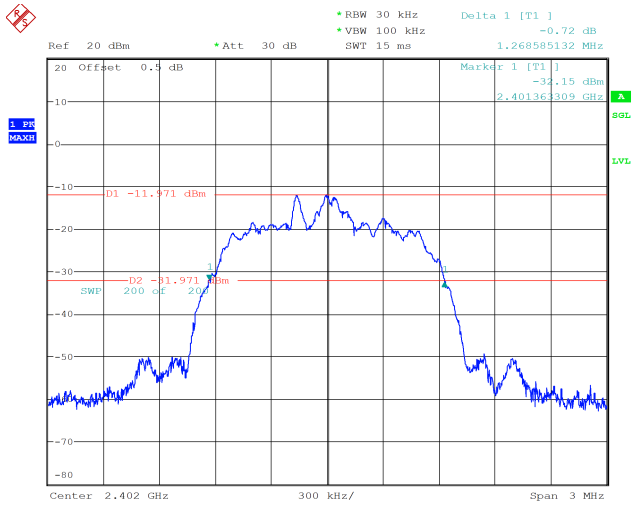
 $\pi/4$ -DQPSK_Middle 1.266 MHz

Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:23:18

 $\pi/4$ -DQPSK_High 1.283 MHz

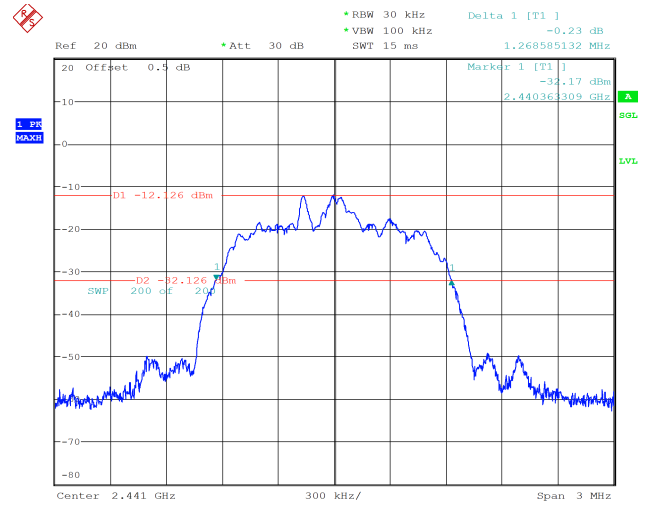
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:25:51

8DPSK_Low 1.269 MHz



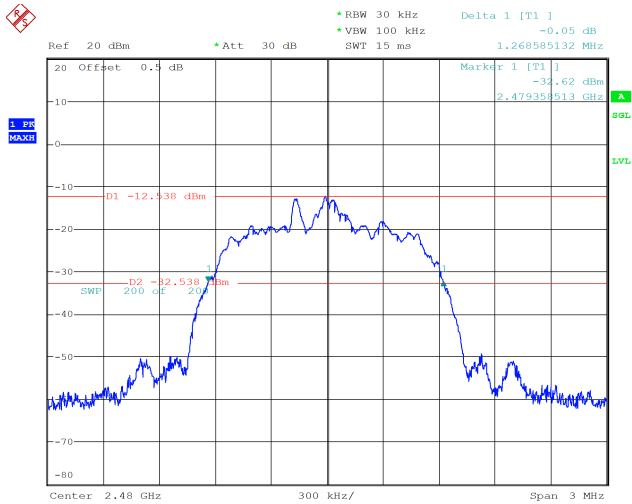
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:29:51

8DPSK_Middle 1.269 MHz



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:33:09

8DPSK_High 1.269 MHz



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:35:21

Channel Separation

BDR

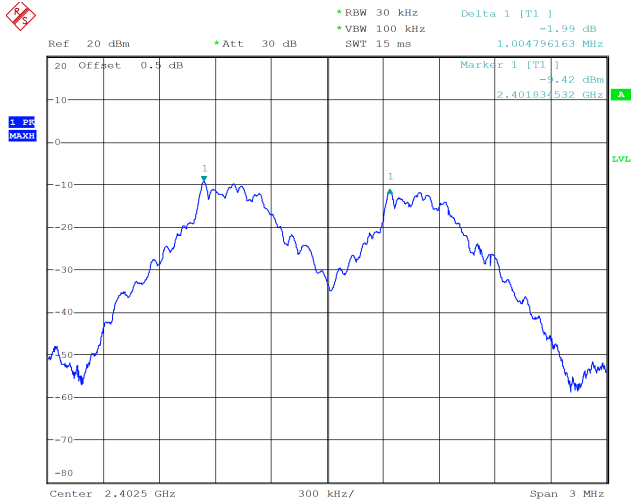
Mode	Value (MHz)	Limit (MHz)	Result
GFSK_Low	1.005	0.591	Pass
GFSK_Middle	1.000	0.588	Pass
GFSK_High	1.002	0.591	Pass

EDR

Mode	Value (MHz)	Limit (MHz)	Result
$\pi/4$ -DQPSK_Low	1.002	0.846	Pass
$\pi/4$ -DQPSK_Middle	1.002	0.844	Pass
$\pi/4$ -DQPSK_High	1.002	0.855	Pass
8DPSK_Low	1.002	0.846	Pass
8DPSK_Middle	1.005	0.846	Pass
8DPSK_High	1.002	0.846	Pass

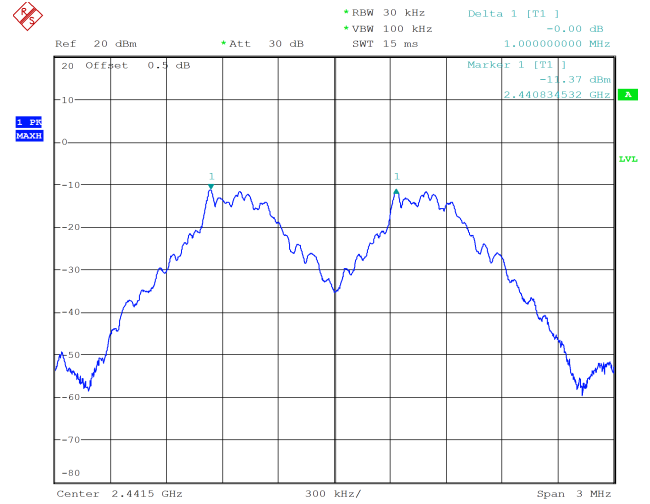
BDR

GFSK_Low 1.005 MHz



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:13:28

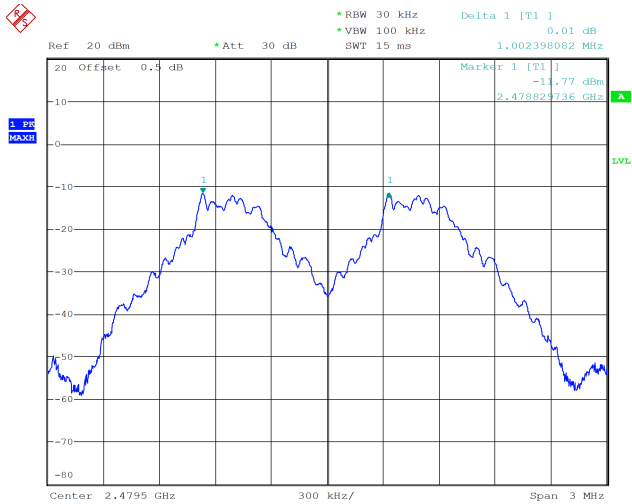
GFSK_Middle 1.000 MHz



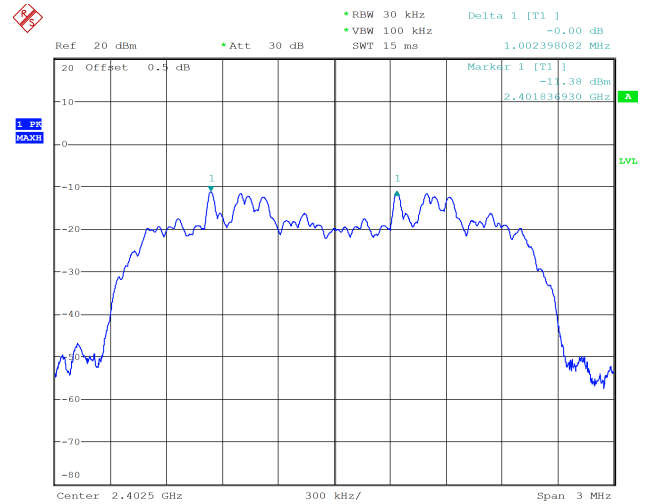
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:16:05

EDR

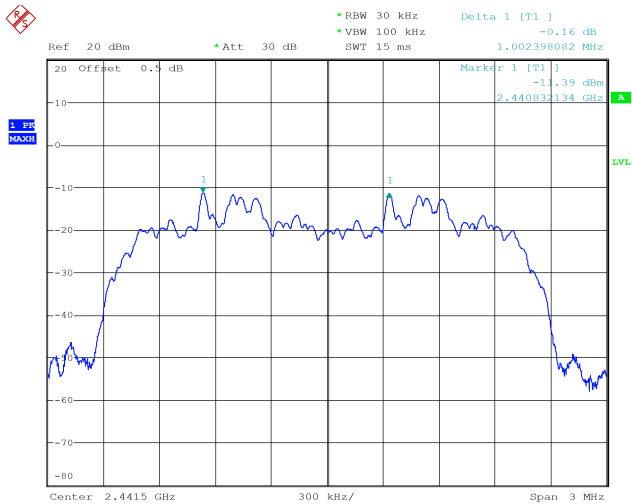
GFSK_High 1.002 MHz



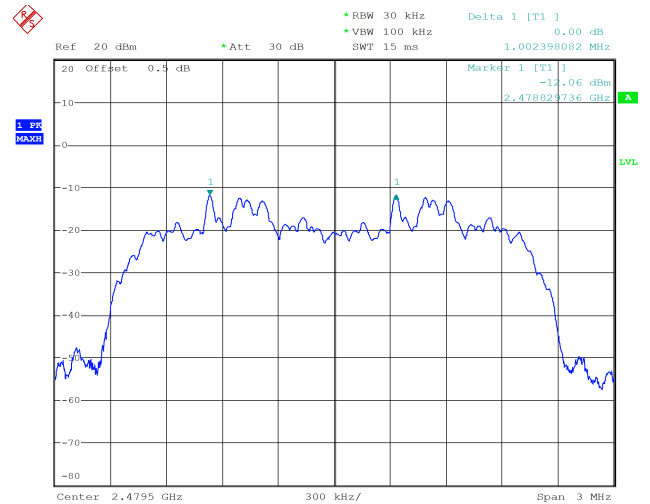
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:19:18

 $\pi/4$ -DQPSK_Low 1.002 MHz

Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:22:42

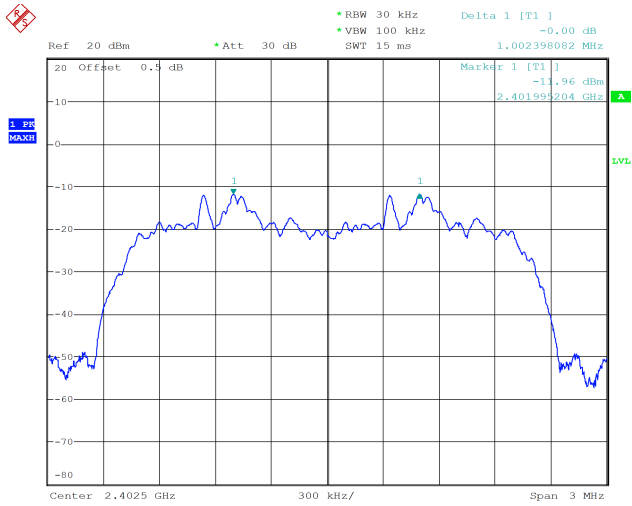
 $\pi/4$ -DQPSK_Middle 1.002 MHz

Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:25:13

 $\pi/4$ -DQPSK_High 1.002 MHz

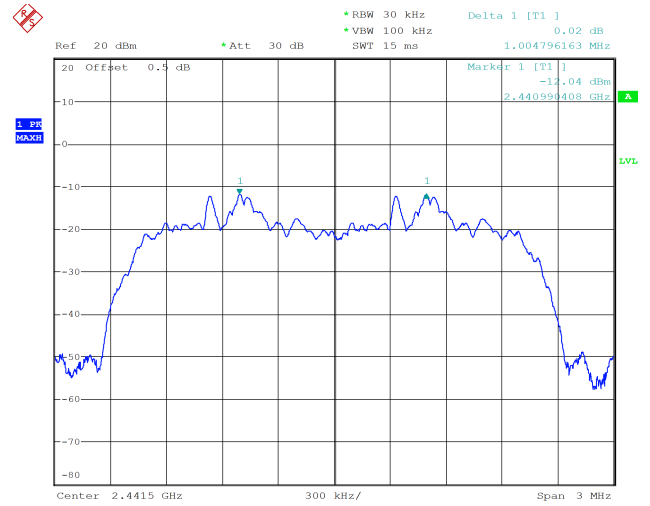
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:29:07

8DPSK_Low 1.002 MHz



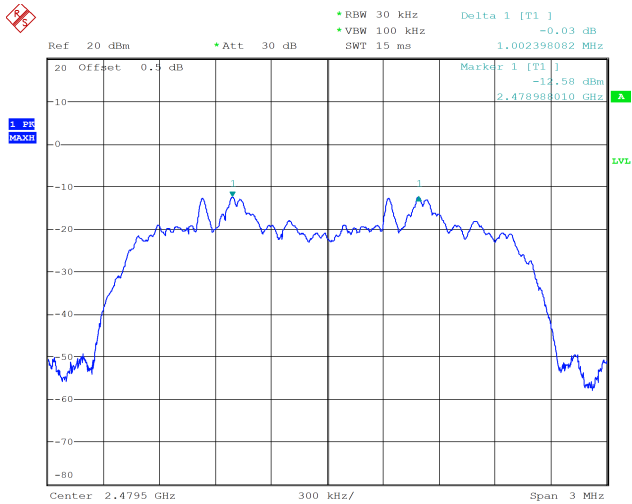
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:32:24

8DPSK_Middle 1.005 MHz



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:34:48

8DPSK_High 1.002 MHz



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:37:58

Maximum Conducted Output Power**BDR**

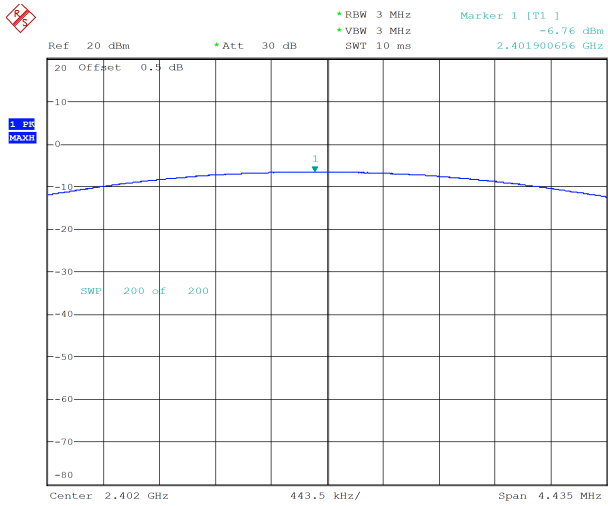
Mode	Value (dBm)	Limit (dBm)	Result
GFSK_Low	-6.76	21.00	Pass
GFSK_Middle	-8.45	21.00	Pass
GFSK_High	-8.87	21.00	Pass

EDR

Mode	Value (dBm)	Limit (dBm)	Result
$\pi/4$ -DQPSK_Low	-6.78	21.00	Pass
$\pi/4$ -DQPSK_Middle	-6.74	21.00	Pass
$\pi/4$ -DQPSK_High	-7.47	21.00	Pass
8DPSK_Low	-6.55	21.00	Pass
8DPSK_Middle	-6.68	21.00	Pass
8DPSK_High	-7.18	21.00	Pass

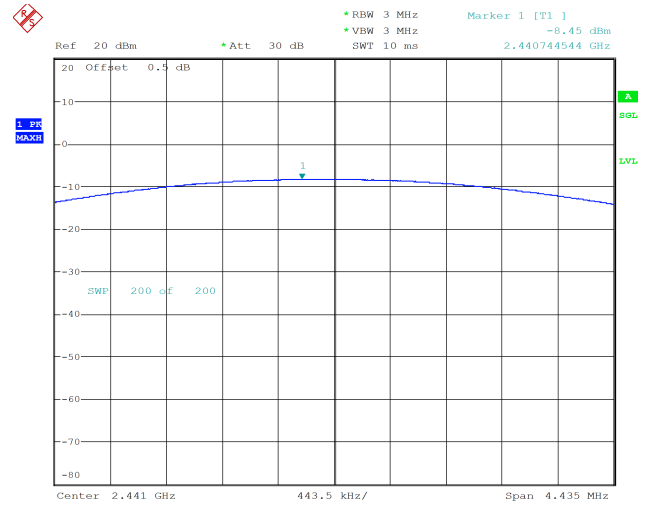
BDR

GFSK_Low -6.76 dBm



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:11:48

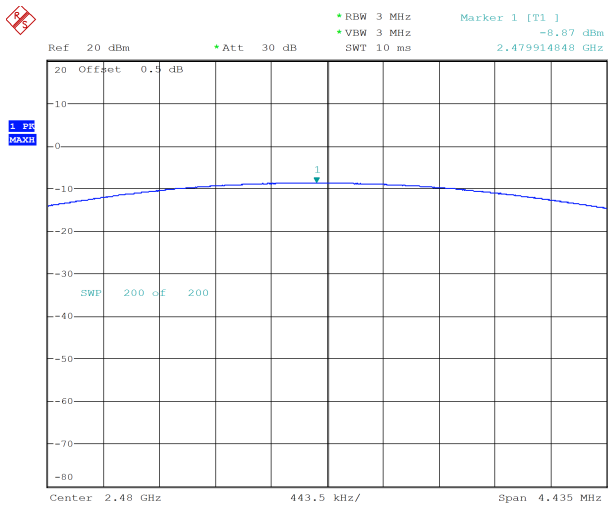
GFSK_Middle -8.45 dBm



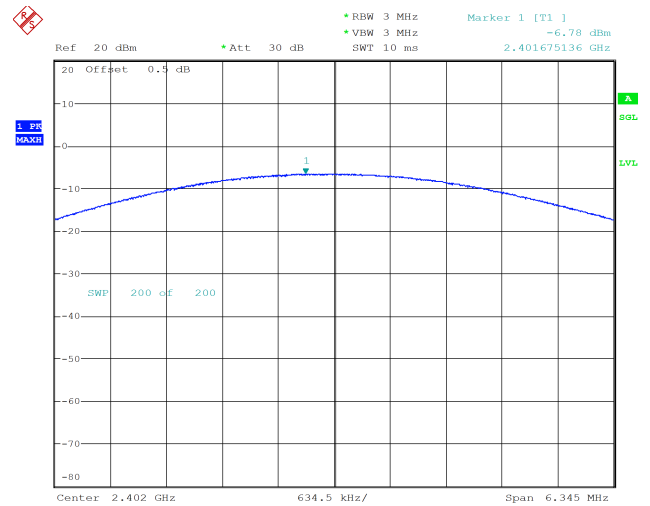
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:14:36

EDR

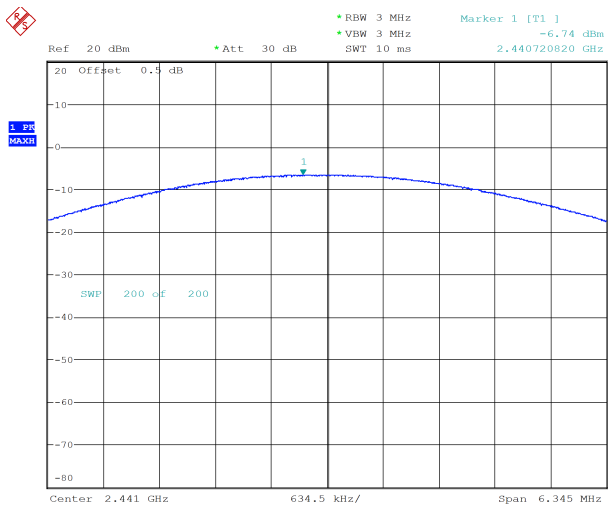
GFSK_High -8.87 dBm



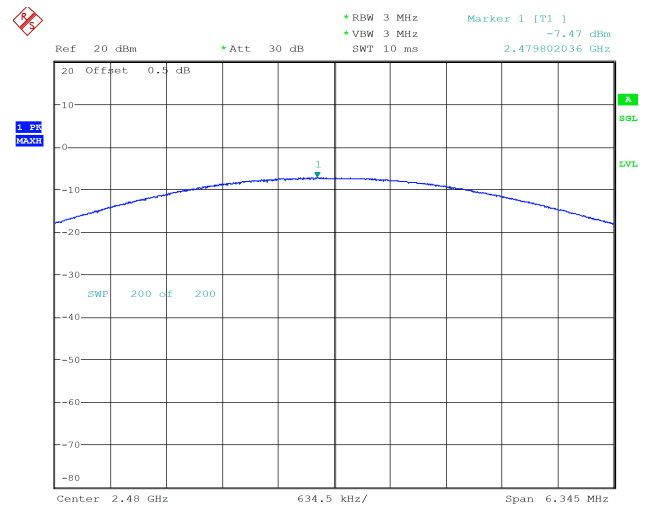
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:17:49

 $\pi/4$ -DQPSK_Low -6.78 dBm

Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:21:03

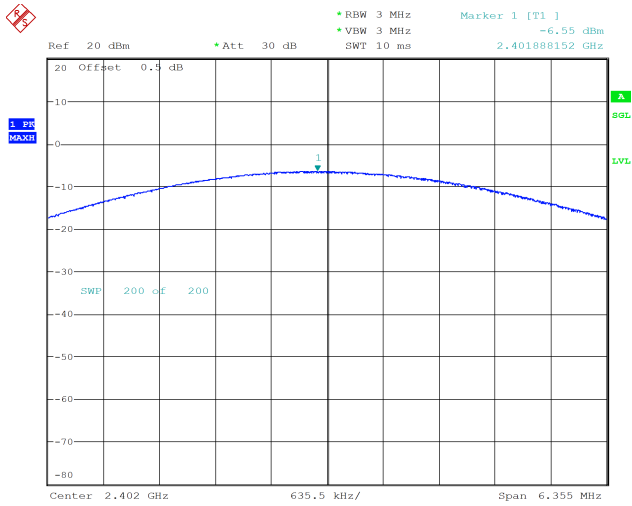
 $\pi/4$ -DQPSK_Middle -6.74 dBm

Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:23:45

 $\pi/4$ -DQPSK_High -7.47 dBm

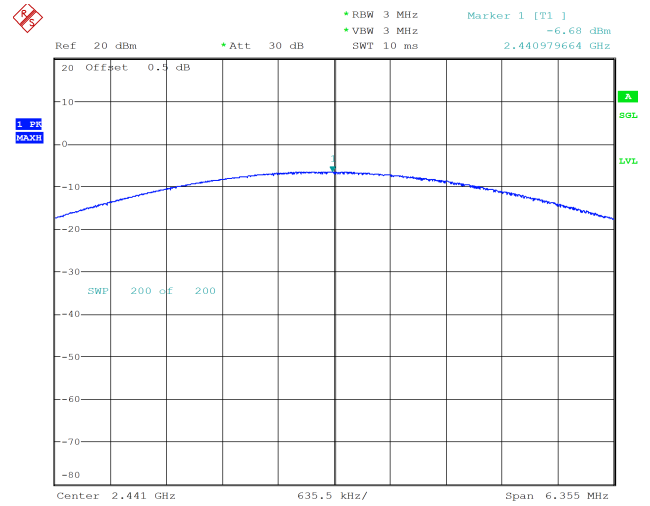
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:27:25

8DPSK_Low -6.55 dBm



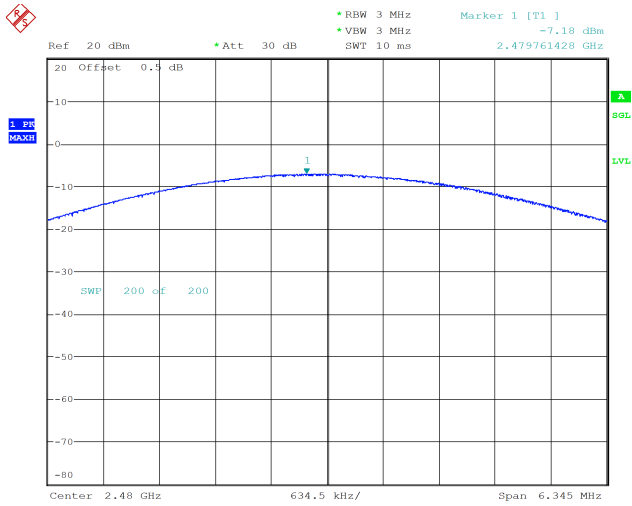
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:30:56

8DPSK_Middle -6.68 dBm



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:33:30

8DPSK_High -7.18 dBm



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:36:32

Number of Hopping Frequency**BDR**

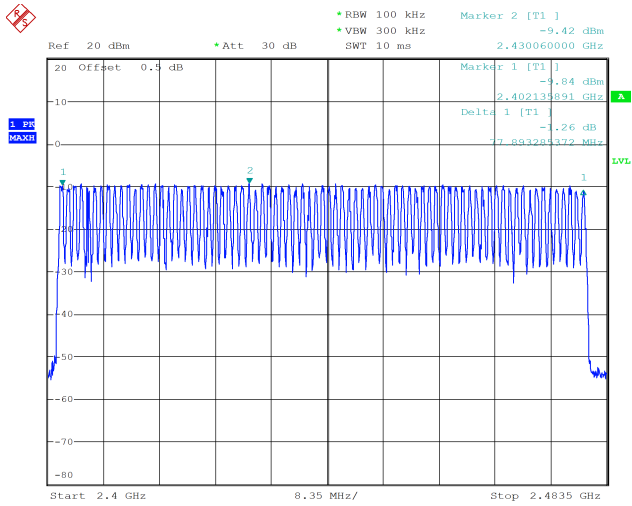
Mode	Value	Limit	Result
GFSK_Hopping	79	15	Pass

EDR

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

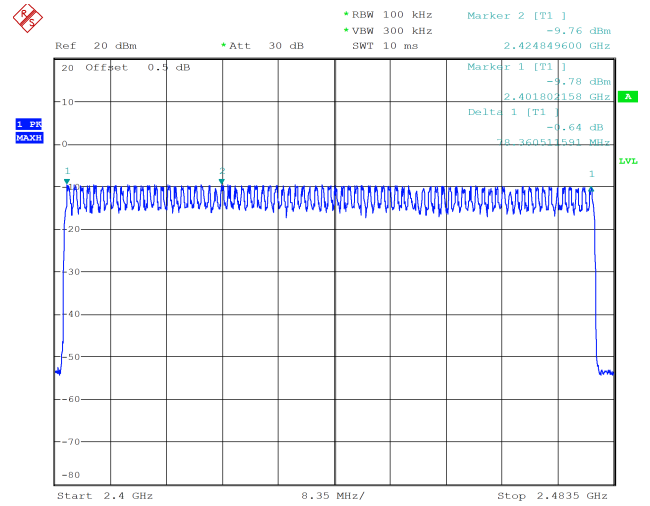
BDR

GFSK_Hopping 79



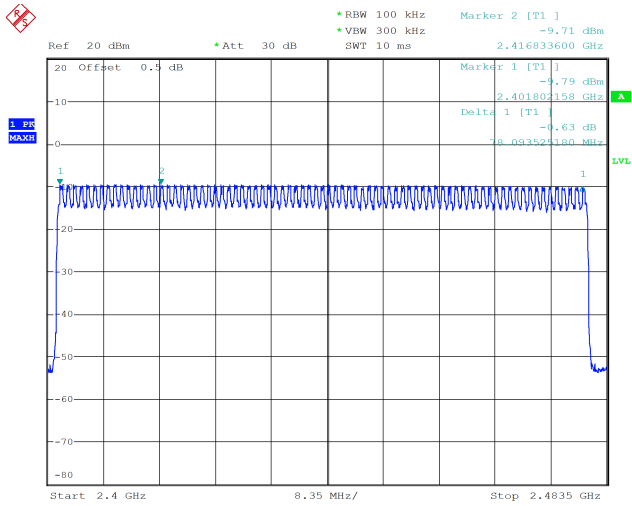
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:47:53

EDR

 $\pi/4$ -DQPSK_Hopping 79

Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:54:55

8DPSK_Hopping 79



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 18:14:55

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

Mode	Pulse width (ms)	Dwell time (s)	Limit (s)	Result
GFSK_Hopping_DH1	0.421	0.135	0.400	Pass
GFSK_Hopping_DH3	1.683	0.269	0.400	Pass
GFSK_Hopping_DH5	2.938	0.313	0.400	Pass

EDR

Mode	Pulse width (ms)	Dwell time (s)	Limit (s)	Result
$\pi/4$ -DQPSK_Hopping_2DH1	0.432	0.138	0.400	Pass
$\pi/4$ -DQPSK_Hopping_2DH3	1.688	0.270	0.400	Pass
$\pi/4$ -DQPSK_Hopping_2DH5	2.942	0.314	0.400	Pass
8DPSK_Hopping_3DH1	0.432	0.138	0.400	Pass
8DPSK_Hopping_3DH3	1.688	0.270	0.400	Pass
8DPSK_Hopping_3DH5	2.946	0.314	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

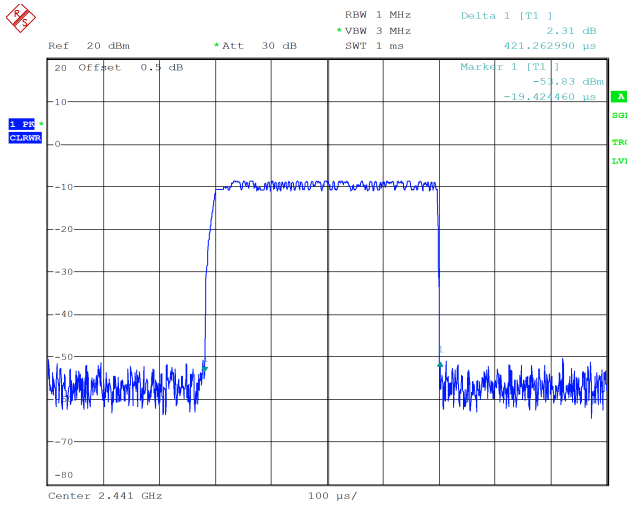
3DH1: Dwell time=Pulse time (ms) $\times$ (1600/2/79) $\times$ 31.6 s

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

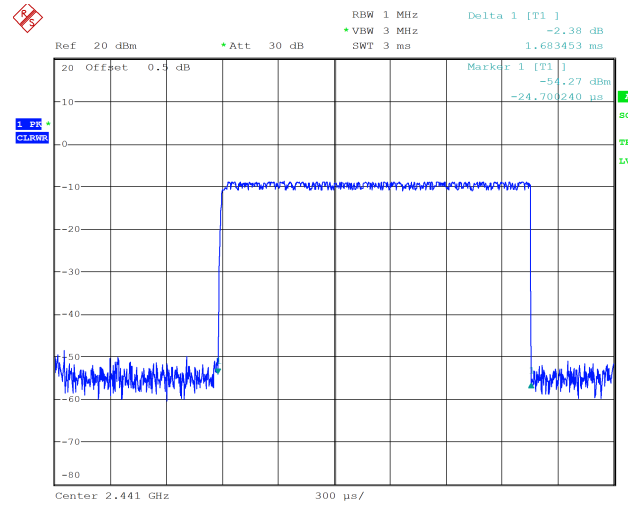
BDR

GFSK_Hopping_DH1 0.421ms



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:39:56

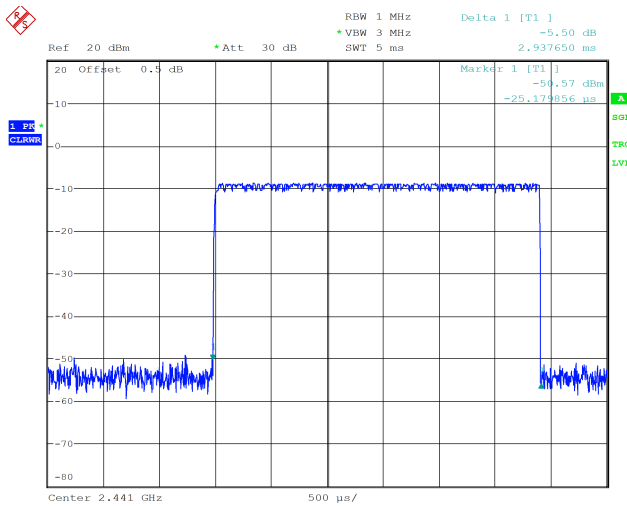
GFSK_Hopping_DH3 1.683ms



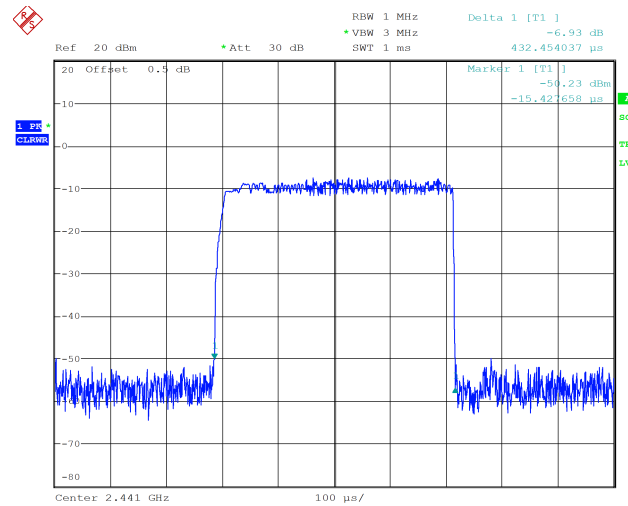
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:40:32

EDR

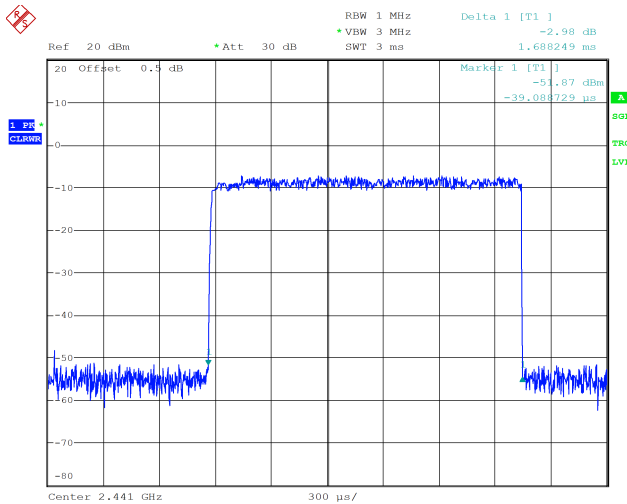
GFSK_Hopping_DH5 2.938ms



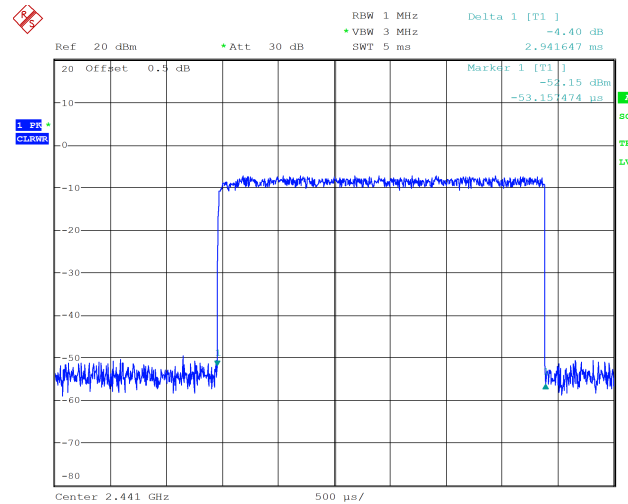
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:41:04

 $\pi/4$ -DQPSK_Hopping_2DH1 0.432ms

Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:41:41

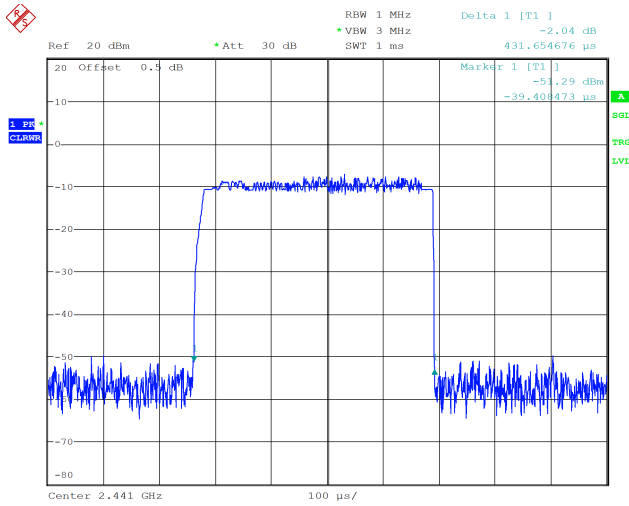
 $\pi/4$ -DQPSK_Hopping_2DH3 1.688ms

Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:42:18

 $\pi/4$ -DQPSK_Hopping_2DH5 2.942ms

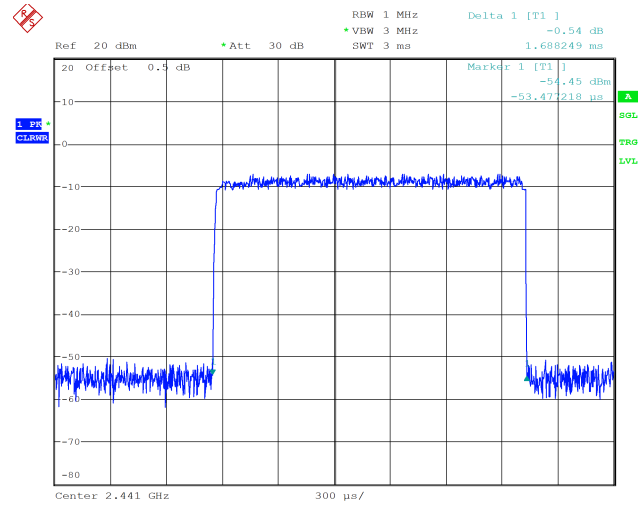
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:42:52

8DPSK_Hopping_3DH1 0.432ms



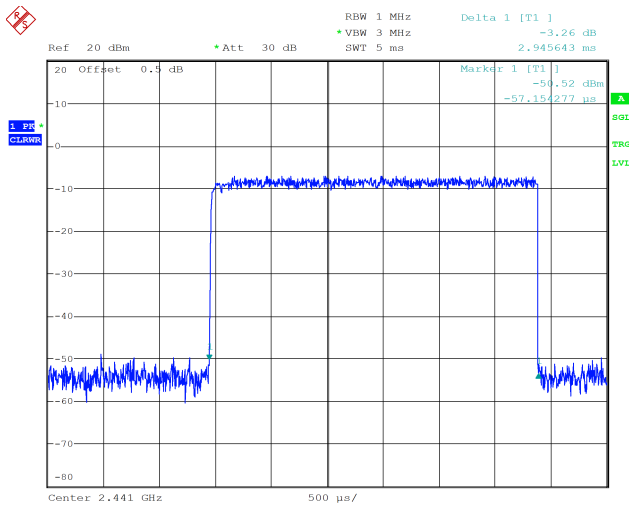
Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:43:41

8DPSK_Hopping_3DH3 1.688ms



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:44:15

8DPSK_Hopping_3DH5 2.946ms



Comment: ProjectNo.:2403S52639E-RF Tester:Arthur Su
Date: 29.APR.2024 17:44:50