

## Appendix A

### RF Test Data for BT V4.0(BDR/EDR) (Conducted Measurement)

Product Name: 4G PHONE

Test Model: BSCUS01

#### Environmental Conditions

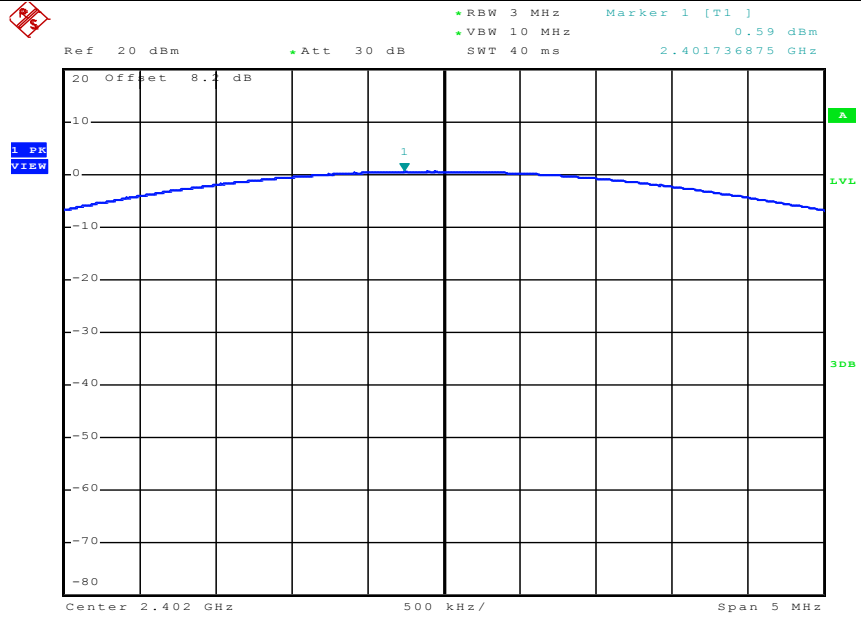
Temperature:	24.5 ° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Wang Chuang

#### A.1 Maxmum Conducted Peak Output Power

Mode	Channel.	Maximum Peak Output Power [dBm]	Maximum Average Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.590	0.400	21	PASS
	MCH	1.170	0.967	21	PASS
	HCH	-0.140	-0.349	21	PASS
$\pi/4$ DQPSK	LCH	-0.480	-0.653	21	PASS
	MCH	0.160	-0.046	21	PASS
	HCH	-0.880	-1.101	21	PASS
8DPSK	LCH	-0.230	-0.430	21	PASS
	MCH	0.160	-0.037	21	PASS
	HCH	-1.090	-1.310	21	PASS

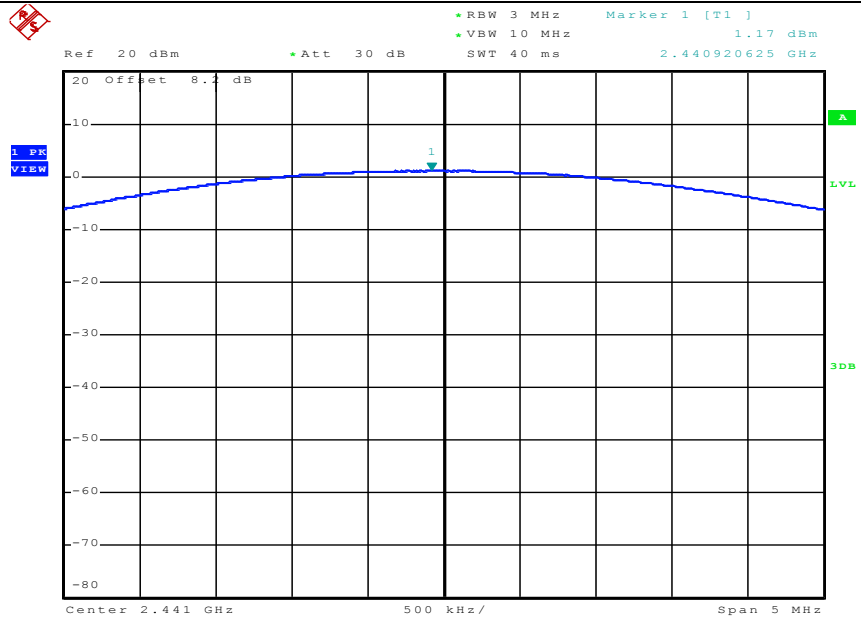
Test Graphs

GFSK/LCH



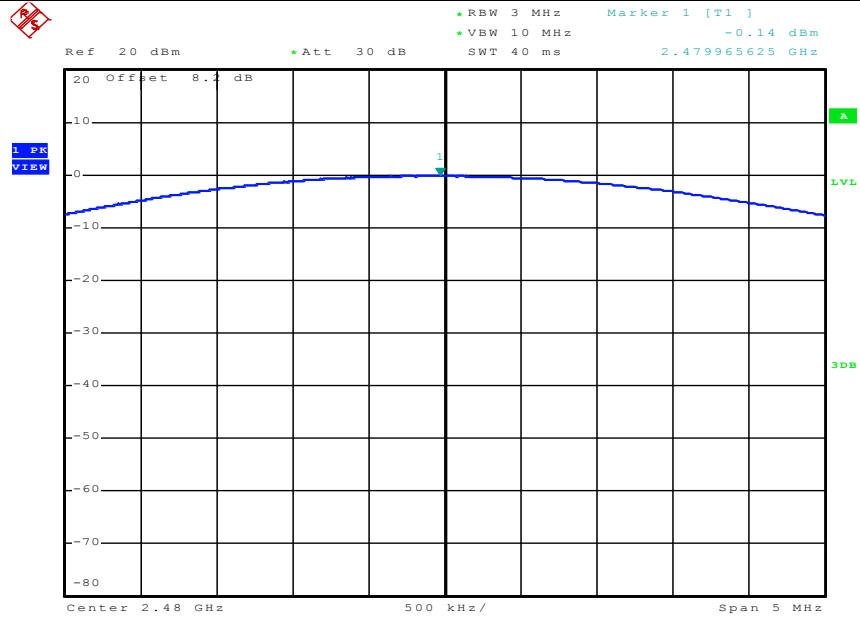
Date: 5.AUG.2019 12:53:54

GFSK/MCH



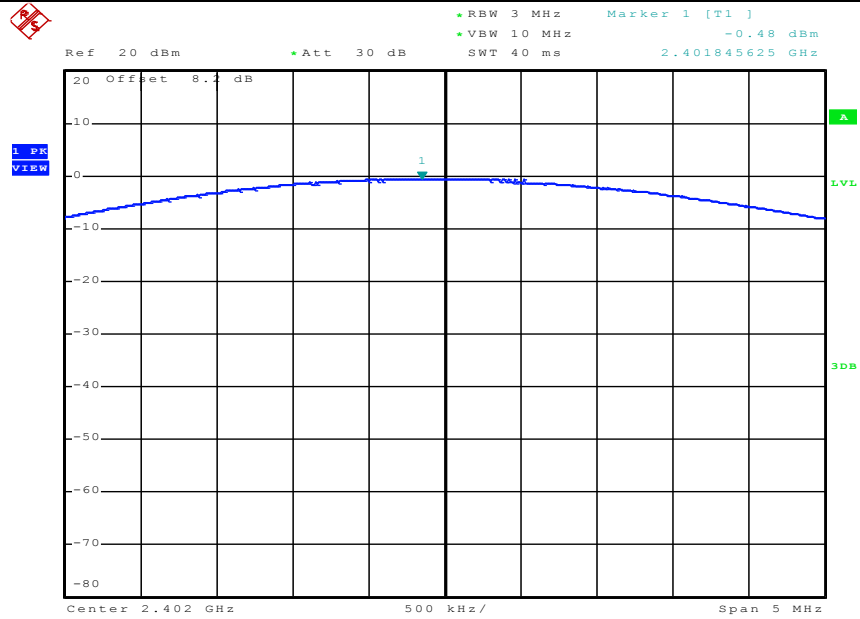
Date: 5.AUG.2019 12:56:35

GFSK/HCH



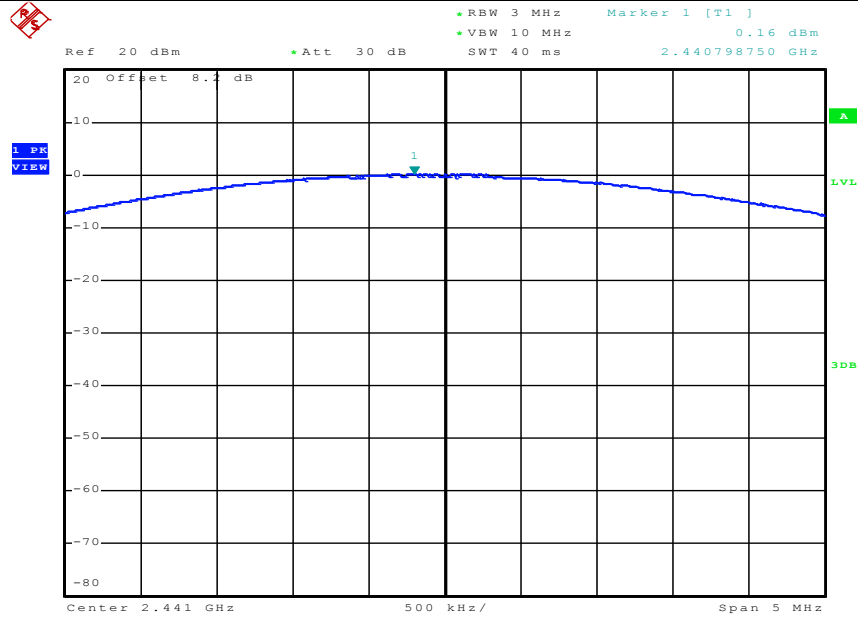
Date: 5.AUG.2019 12:58:25

$\pi/4$ DQPSK/LCH



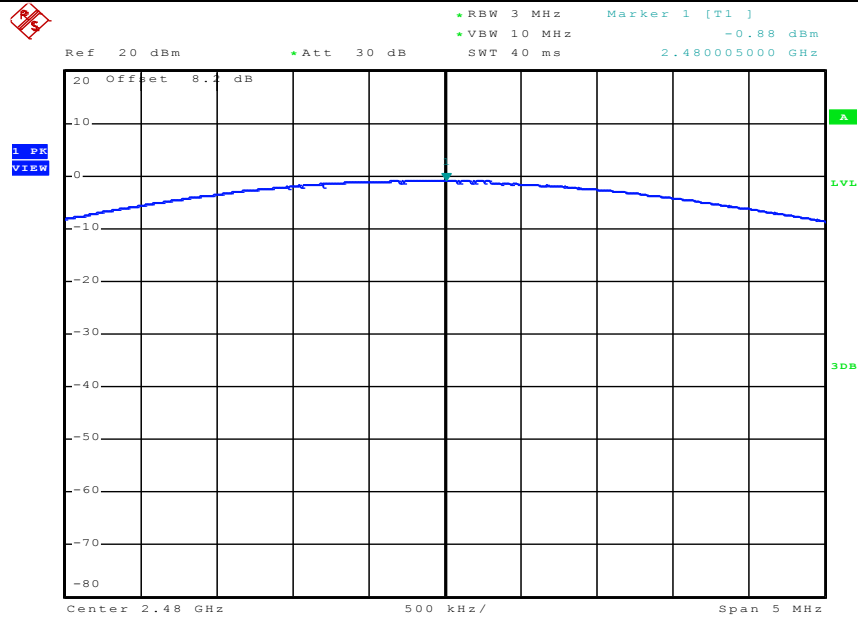
Date: 5.AUG.2019 13:00:59

$\pi/4$ DQPSK/MCH



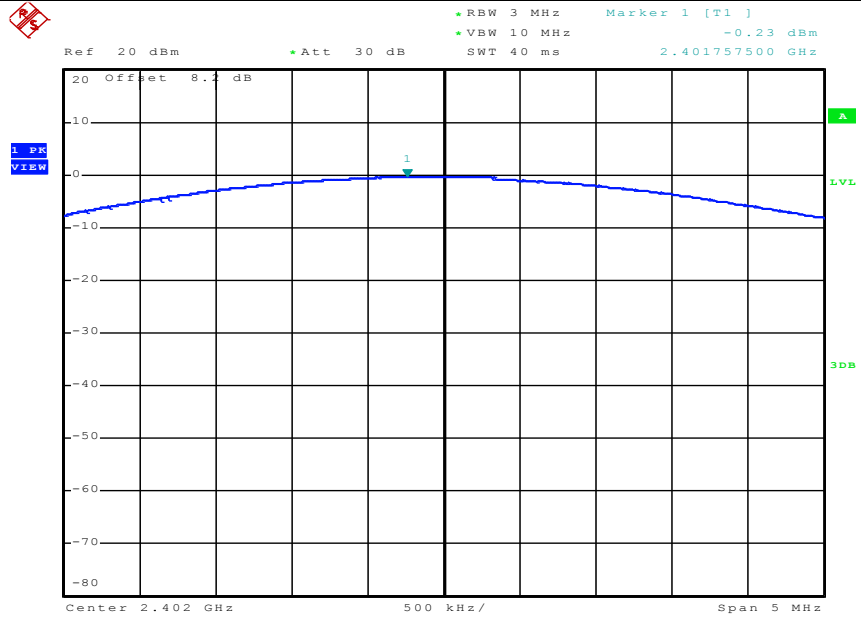
Date: 5.AUG.2019 13:04:34

$\pi/4$ DQPSK/HCH



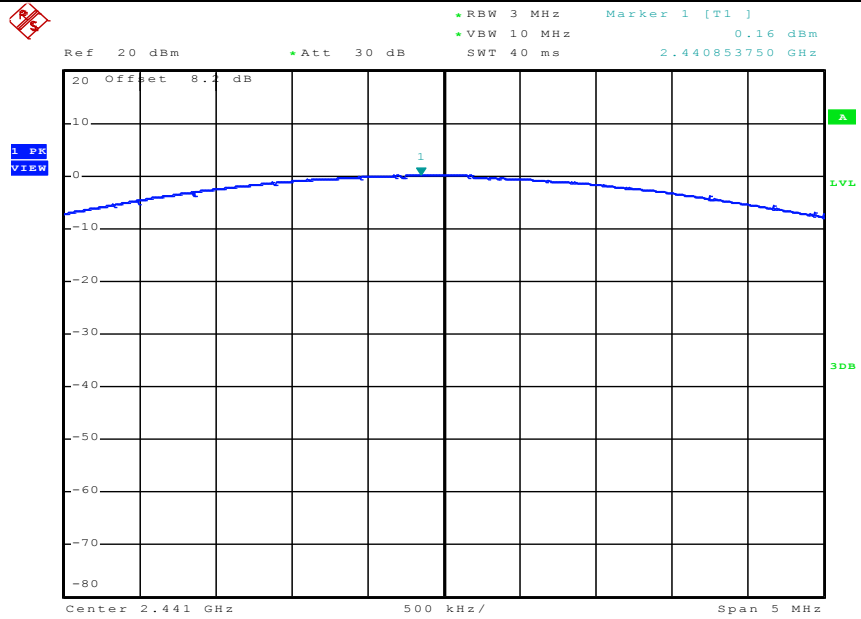
Date: 5.AUG.2019 13:06:15

8DPSK/LCH



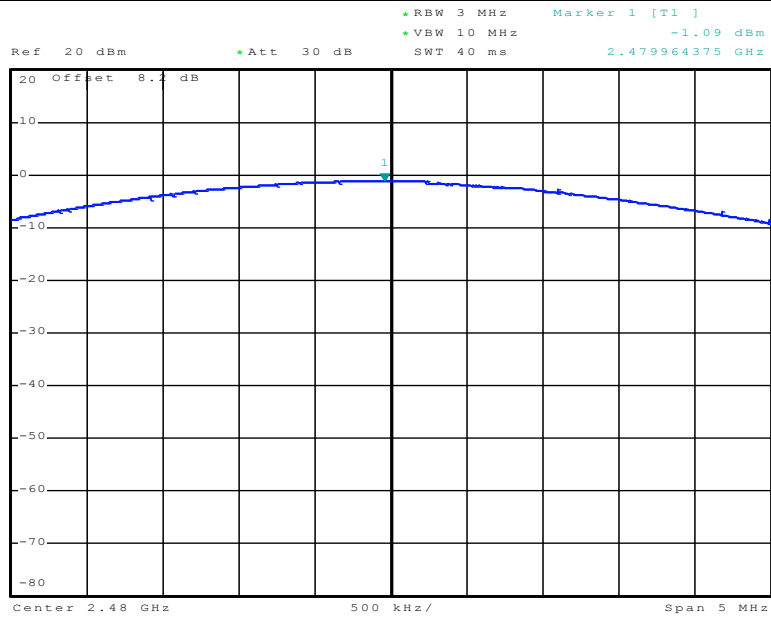
Date: 5.AUG.2019 13:08:53

8DPSK/MCH



Date: 5.AUG.2019 13:11:26

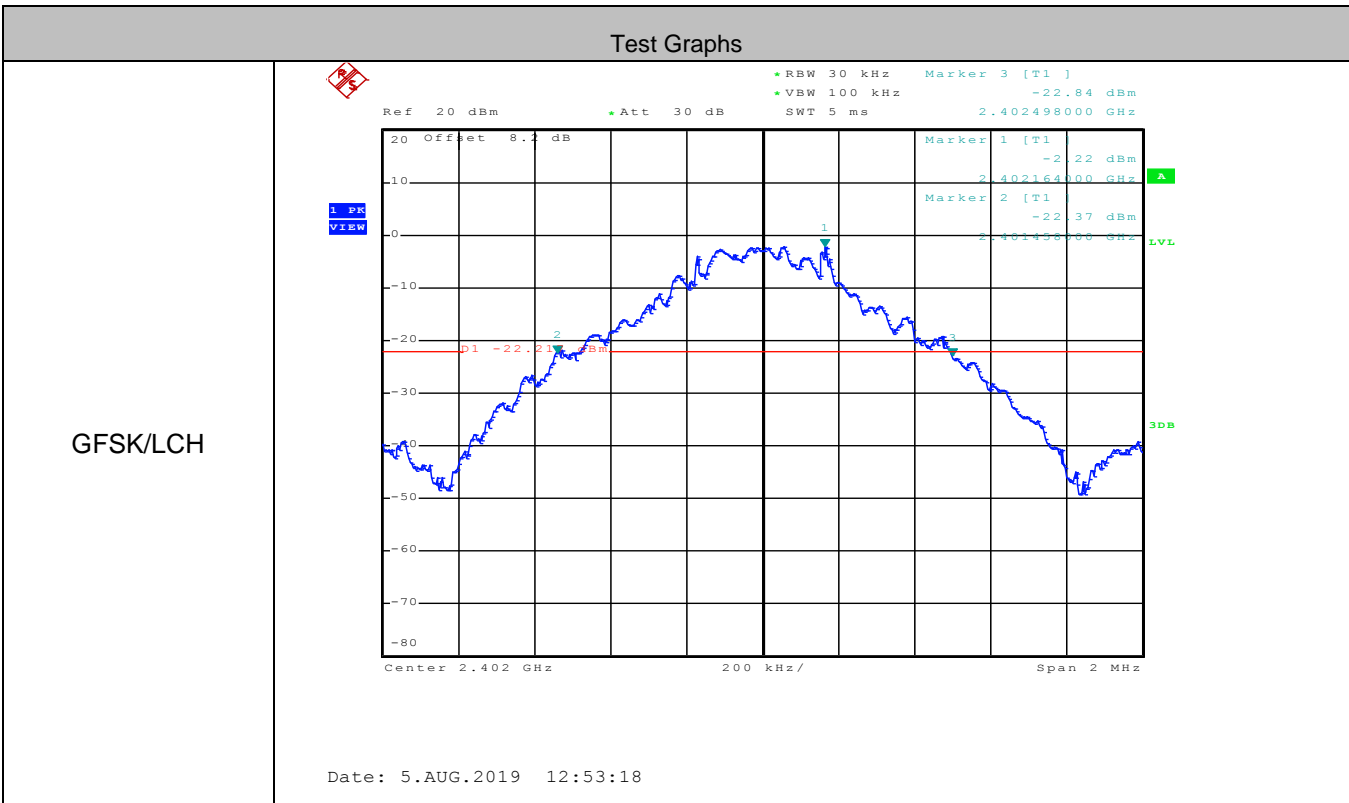
8DPSK/HCH



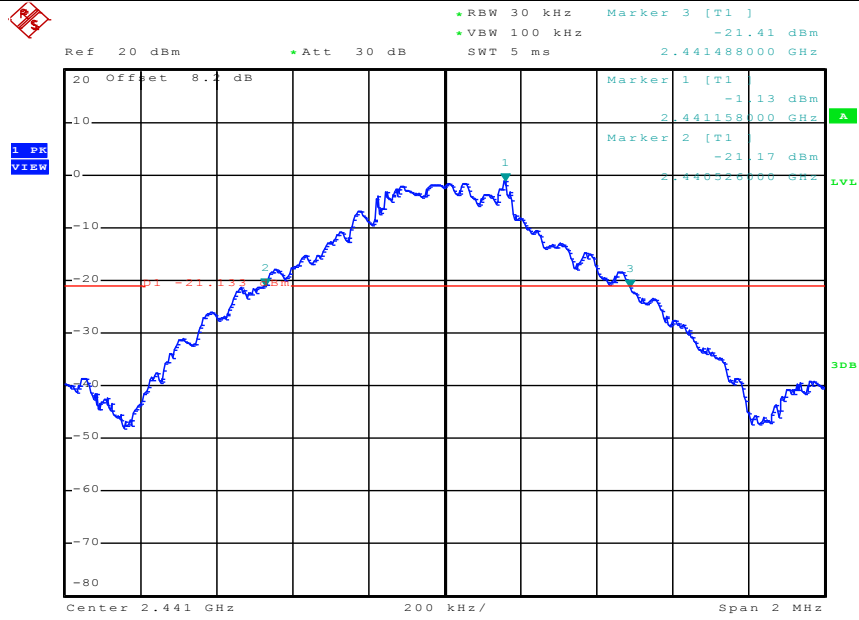
Date: 5.AUG.2019 13:14:05

**A.2 20dB Bandwidth**

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.040	Not Specified	PASS
	MCH	0.962	Not Specified	PASS
	HCH	1.042	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.298	Not Specified	PASS
	MCH	1.316	Not Specified	PASS
	HCH	1.288	Not Specified	PASS
8DPSK	LCH	1.290	Not Specified	PASS
	MCH	1.292	Not Specified	PASS
	HCH	1.292	Not Specified	PASS

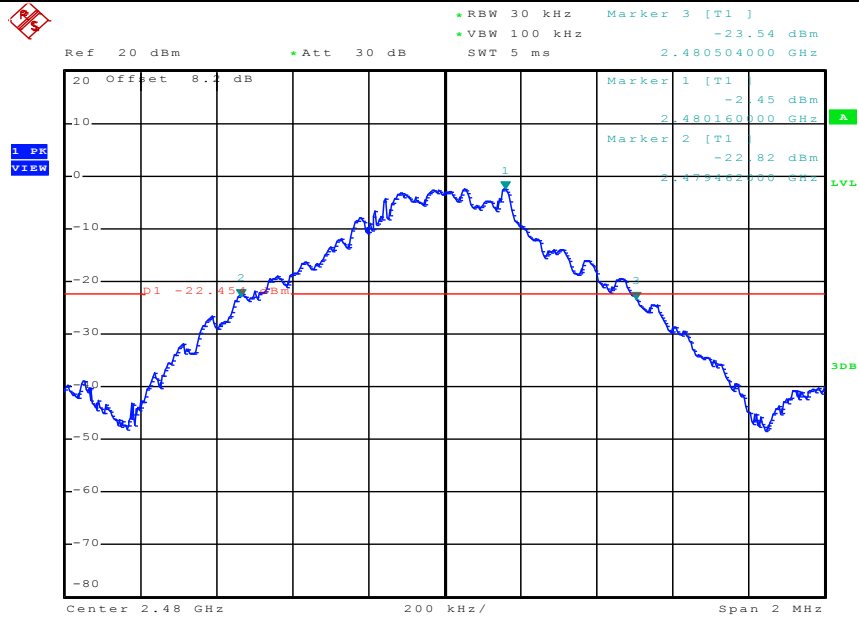


GFSK/MCH



Date: 5.AUG.2019 12:55:59

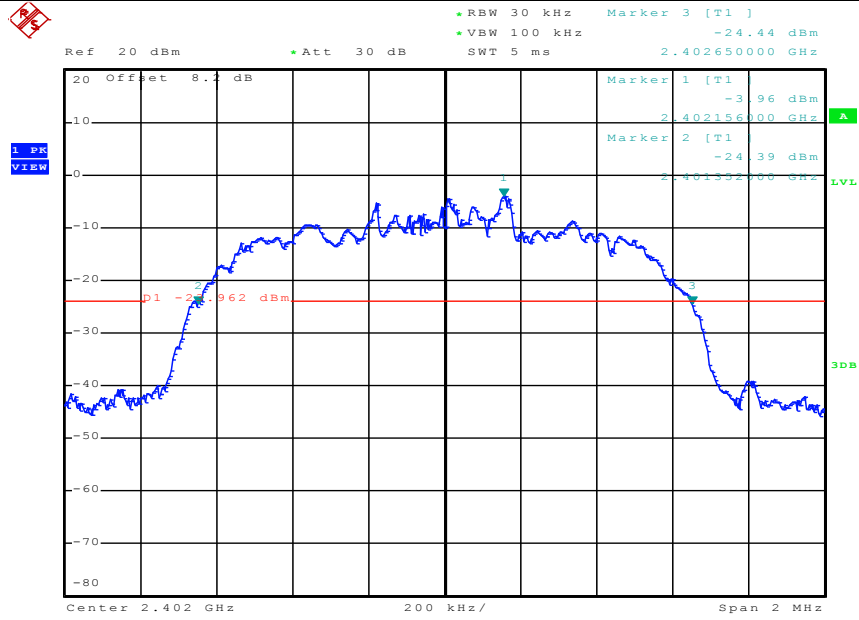
GFSK/HCH



Date: 5.AUG.2019 12:57:48

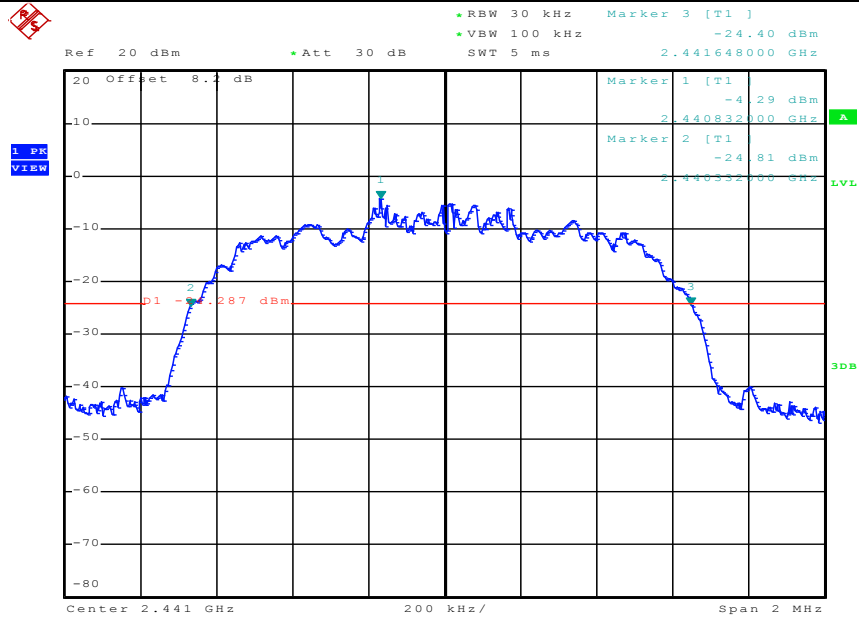


$\pi/4$ DQPSK/LCH



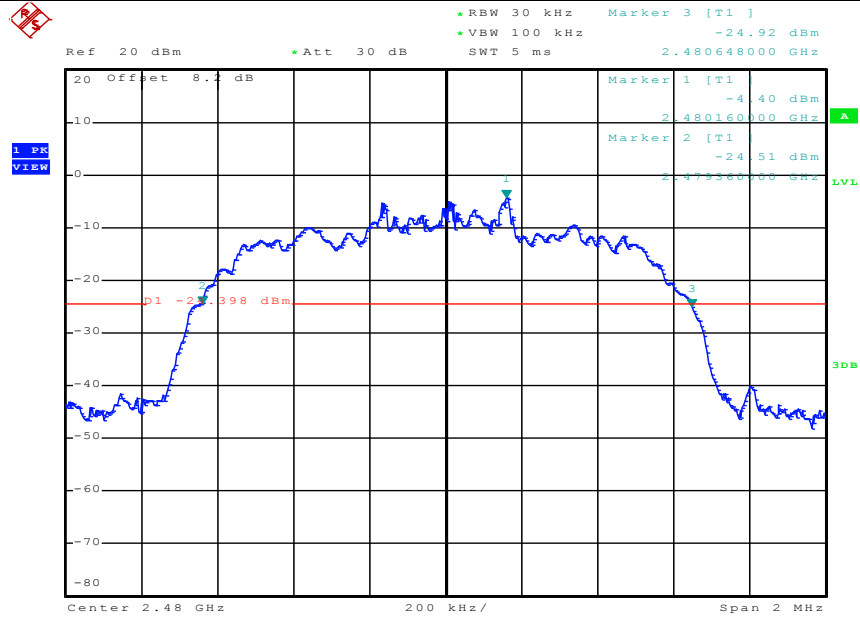
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$\pi/4$ DQPSK/MCH



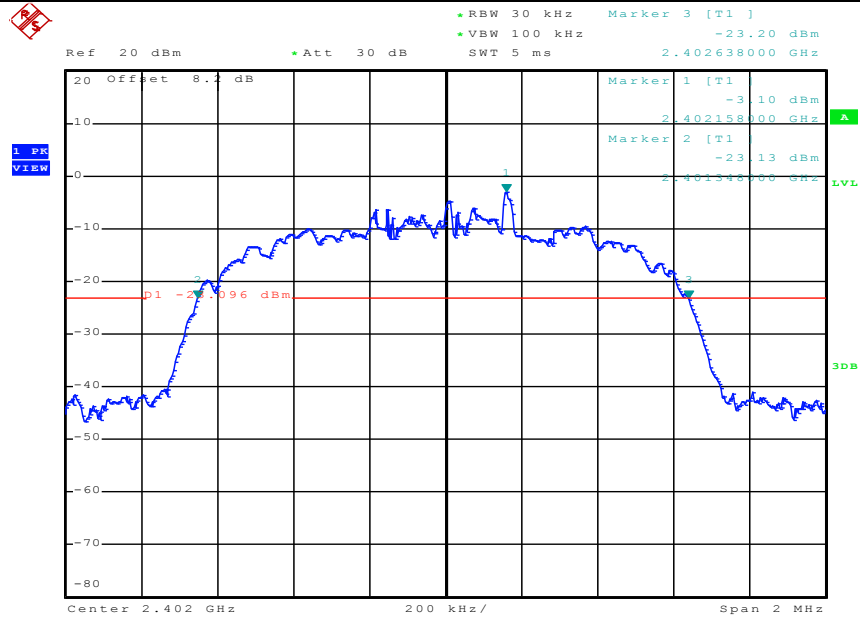
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$\pi/4$ DQPSK/HCH



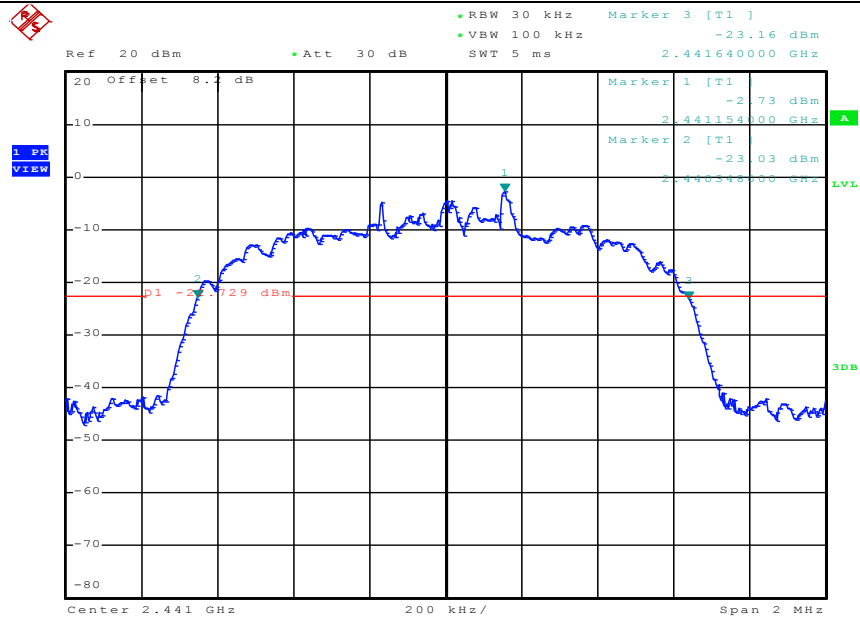
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8DPSK/LCH



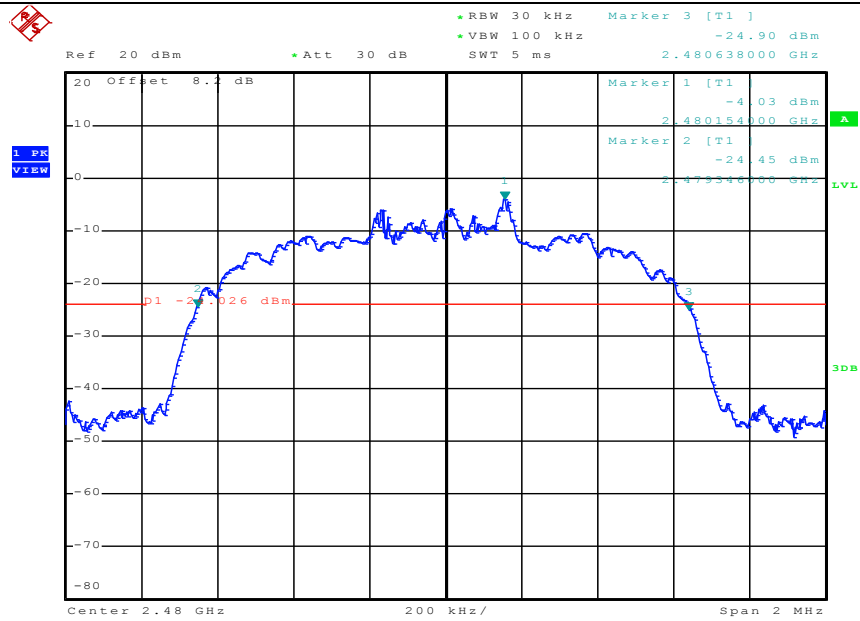
Date: 5.AUG.2019 13:08:16

8DPSK/MCH



Date: 5.AUG.2019 13:10:49

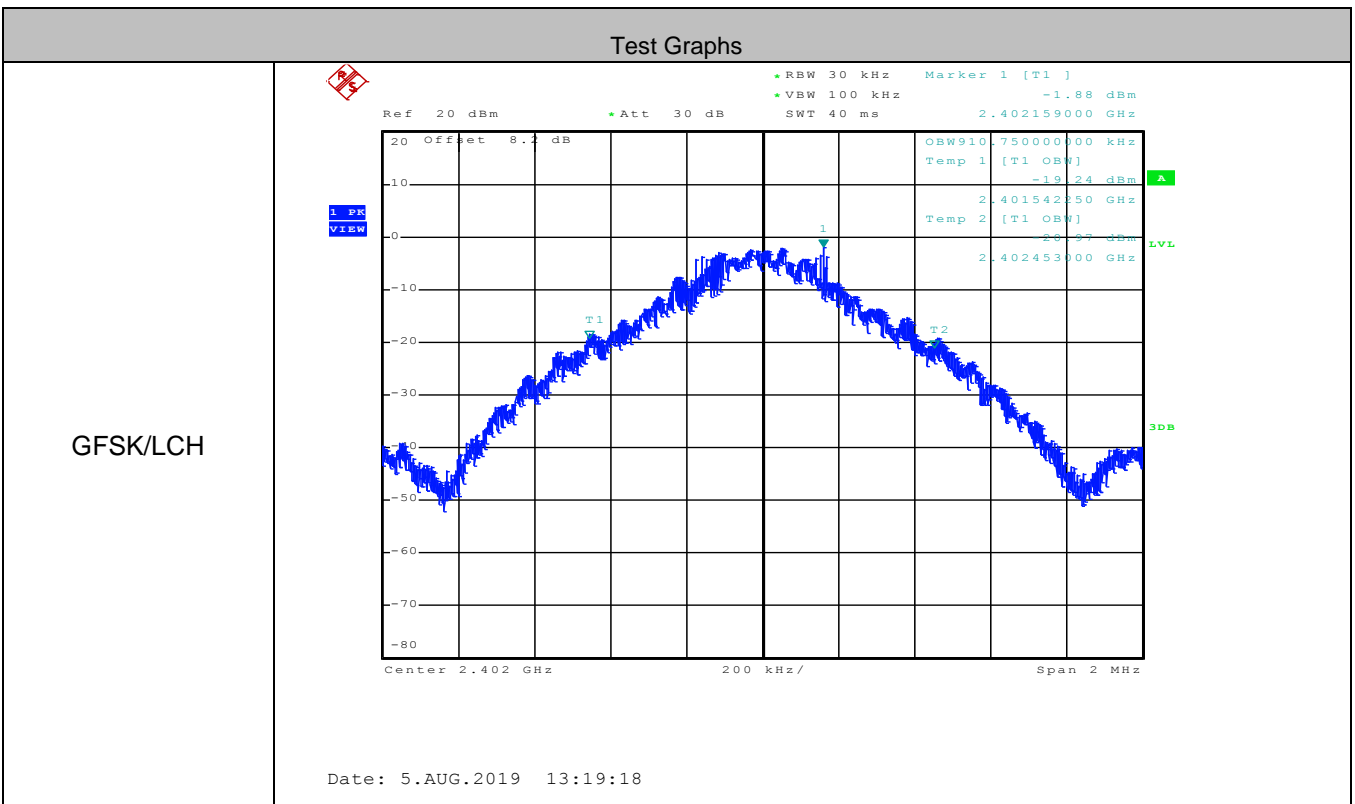
8DPSK/HCH



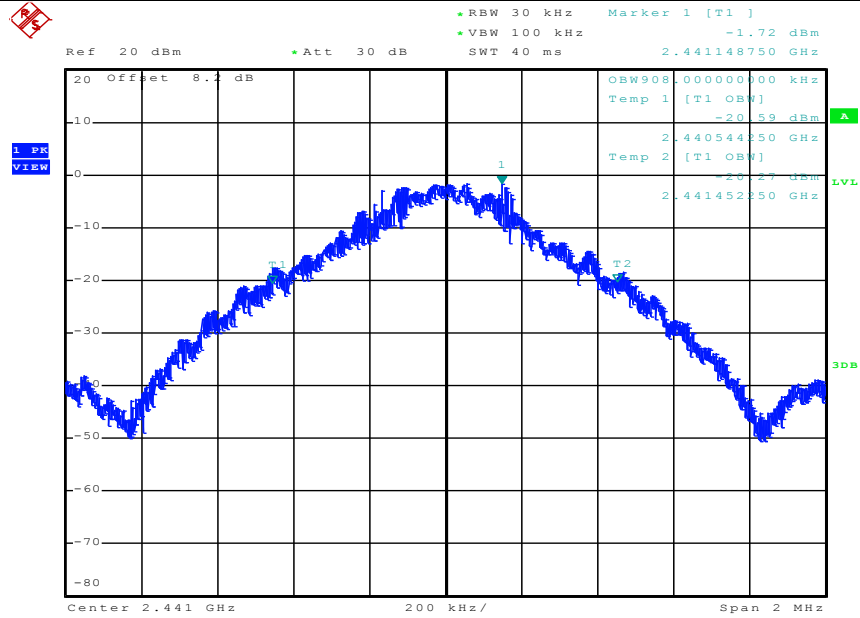
Date: 5.AUG.2019 13:13:29

### Occupied Bandwidth

Mode	Channel.	Occupied Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.911	Not Specified	PASS
	MCH	0.908	Not Specified	PASS
	HCH	0.907	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.194	Not Specified	PASS
	MCH	1.193	Not Specified	PASS
	HCH	1.191	Not Specified	PASS
8DPSK	LCH	1.198	Not Specified	PASS
	MCH	1.197	Not Specified	PASS
	HCH	1.199	Not Specified	PASS

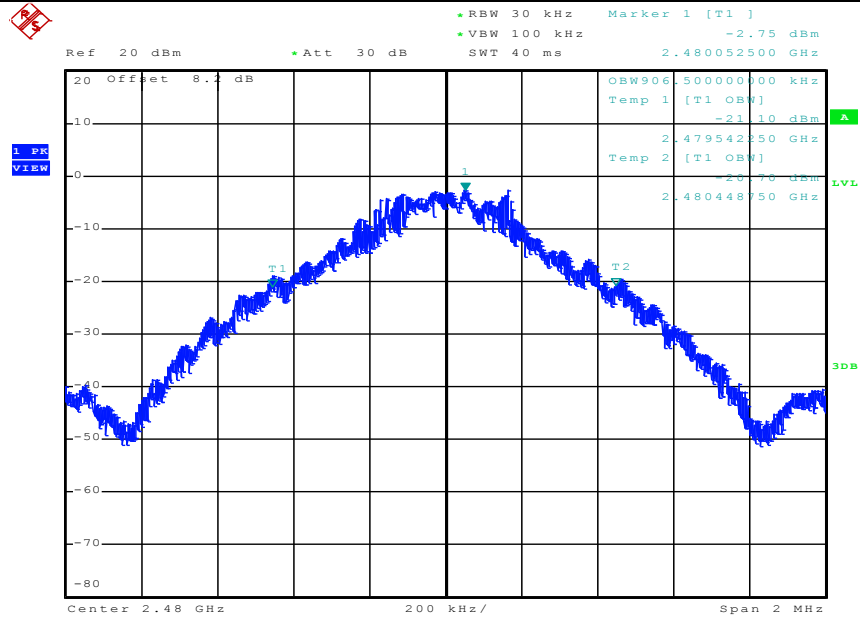


GFSK/MCH



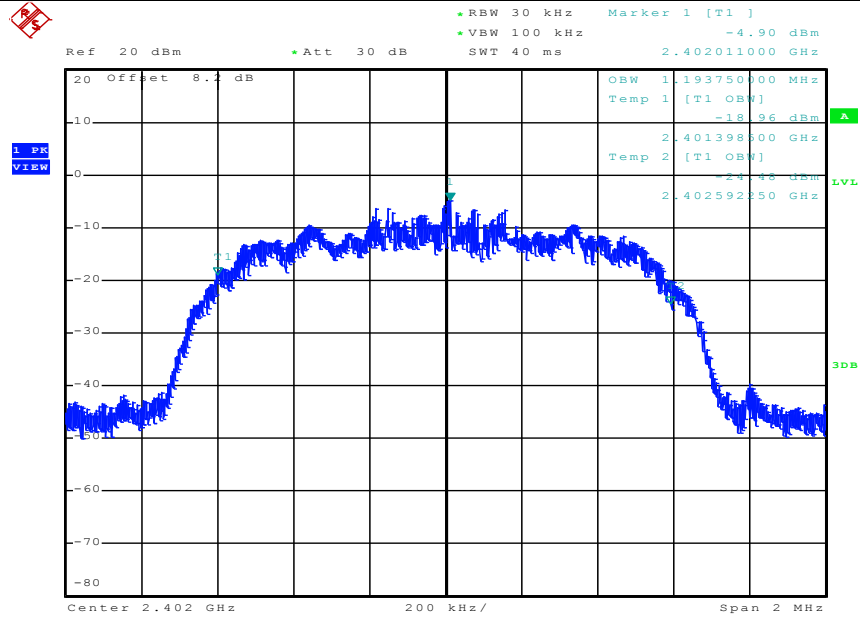
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GFSK/HCH



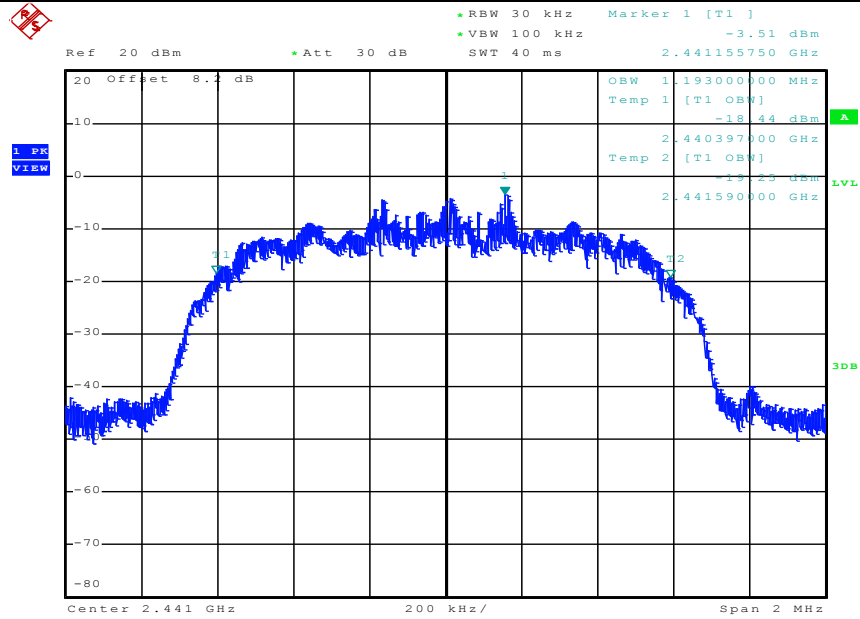
Date: 5.AUG.2019 13:20:11

$\pi/4$ DQPSK/LCH



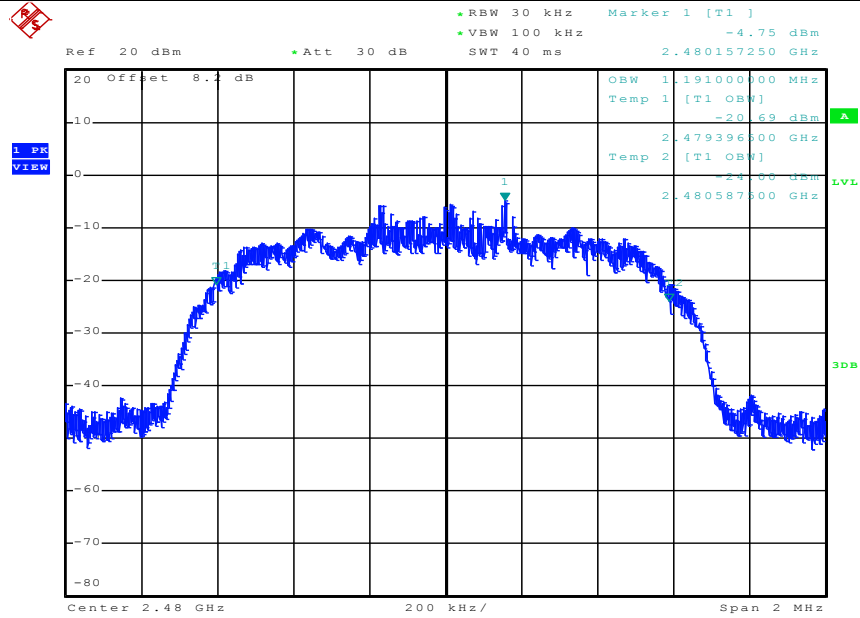
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$\pi/4$ DQPSK/MCH



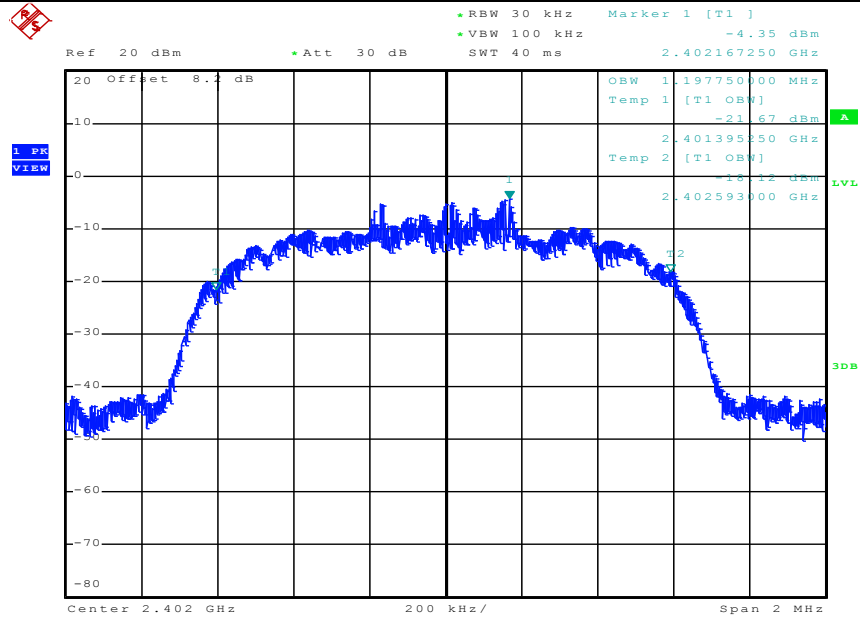
Date: 5.AUG.2019 13:21:16

$\pi/4$ DQPSK/HCH



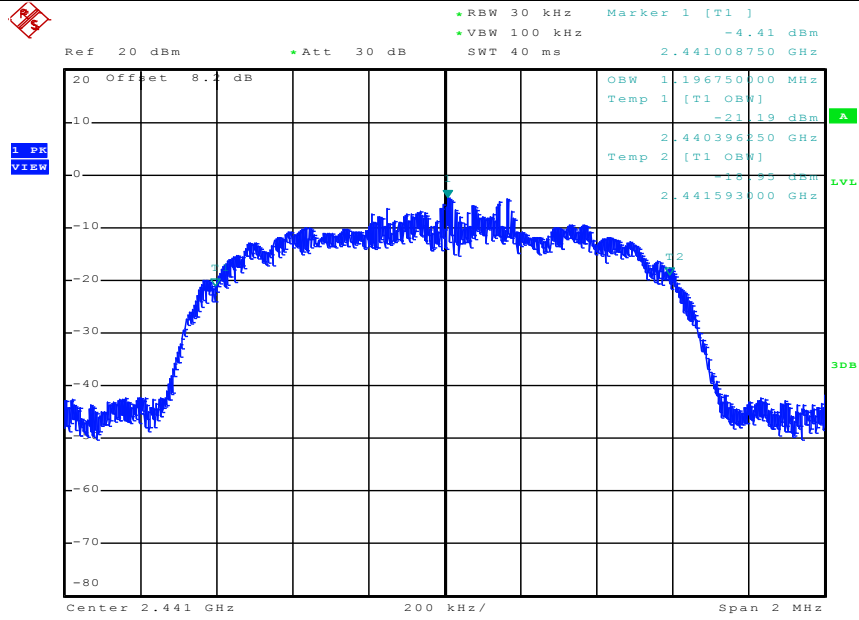
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8DPSK/LCH



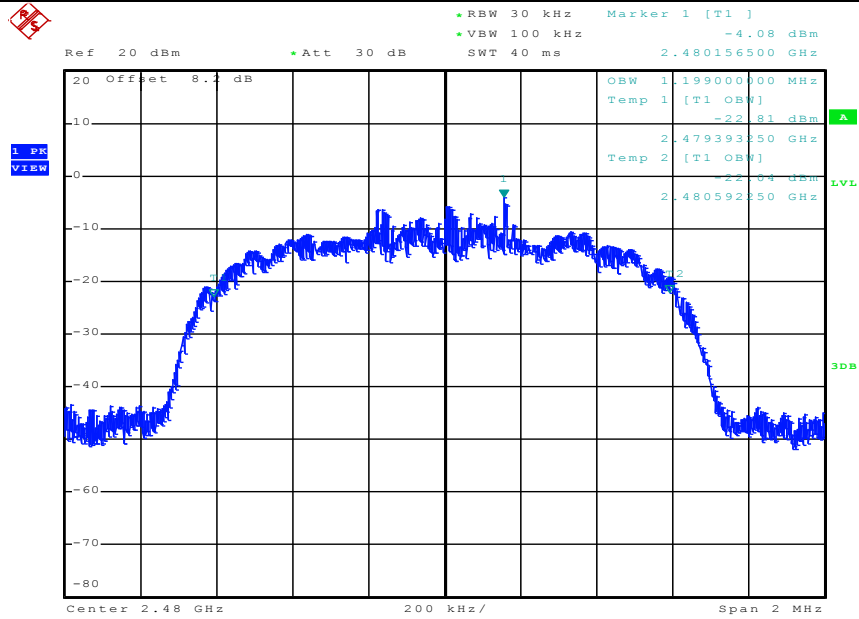
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8DPSK/MCH



Date: 5.AUG.2019 13:22:39

8DPSK/HCH

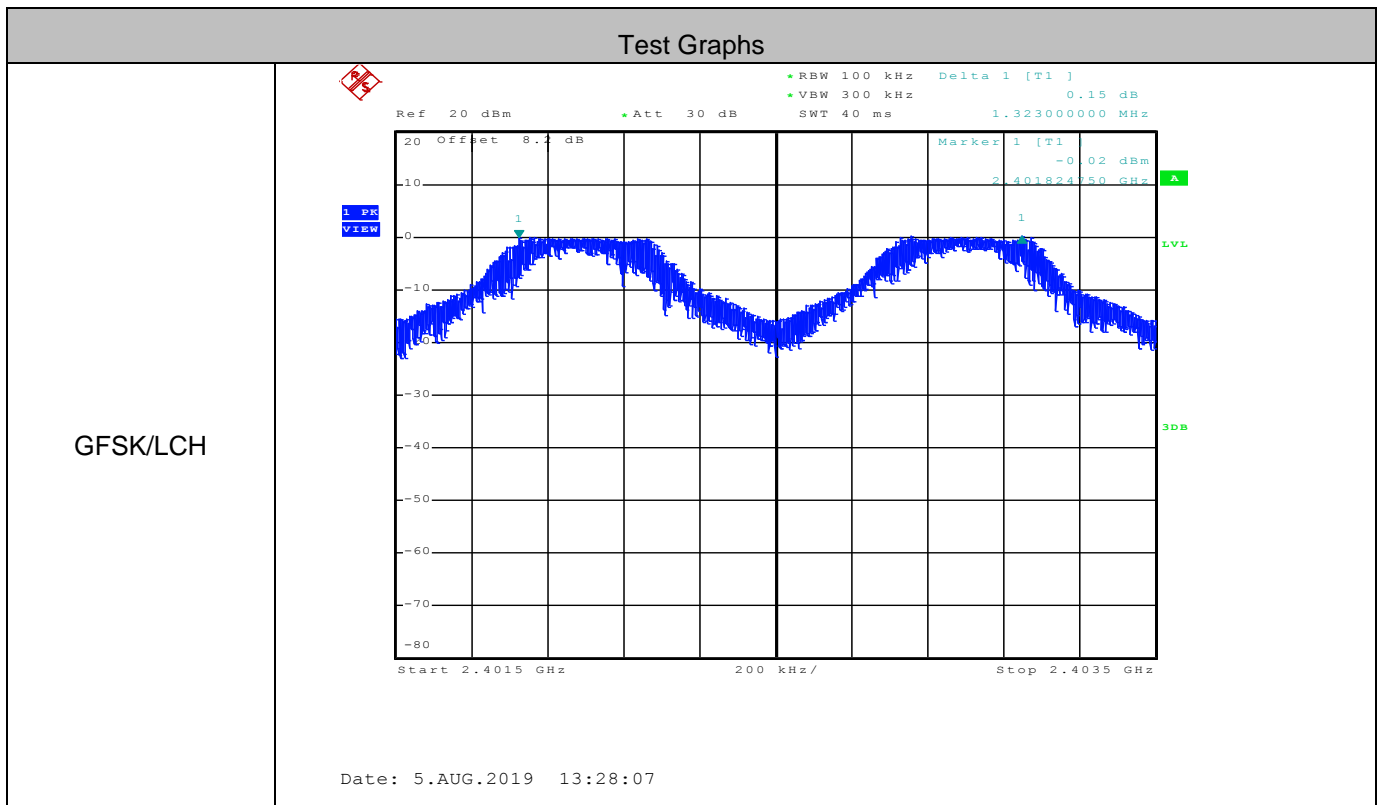


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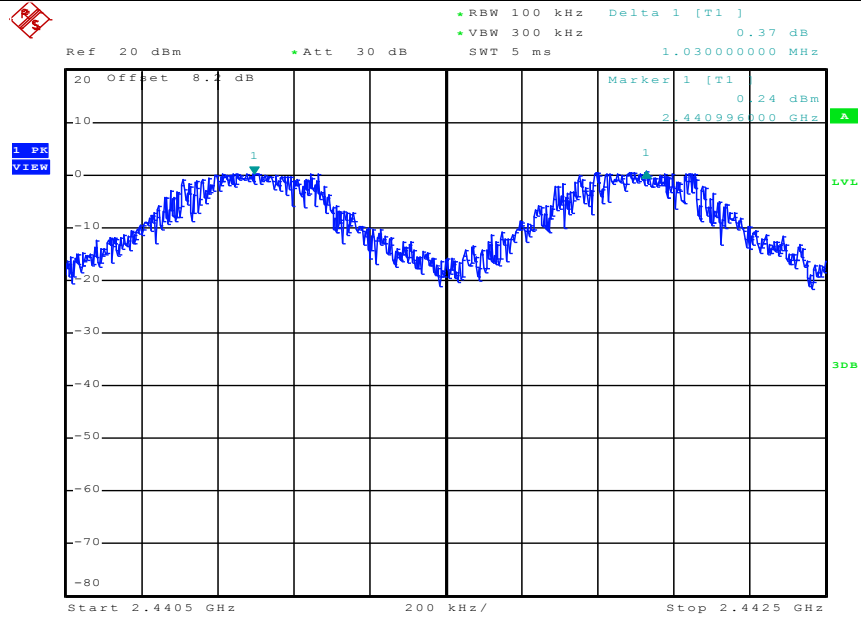


### A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.323	0.695	PASS
	MCH	1.030	0.695	PASS
	HCH	0.926	0.695	PASS
$\pi/4$ DQPSK	LCH	1.014	0.877	PASS
	MCH	1.006	0.877	PASS
	HCH	1.152	0.877	PASS
8DPSK	LCH	0.964	0.861	PASS
	MCH	1.058	0.861	PASS
	HCH	1.020	0.861	PASS

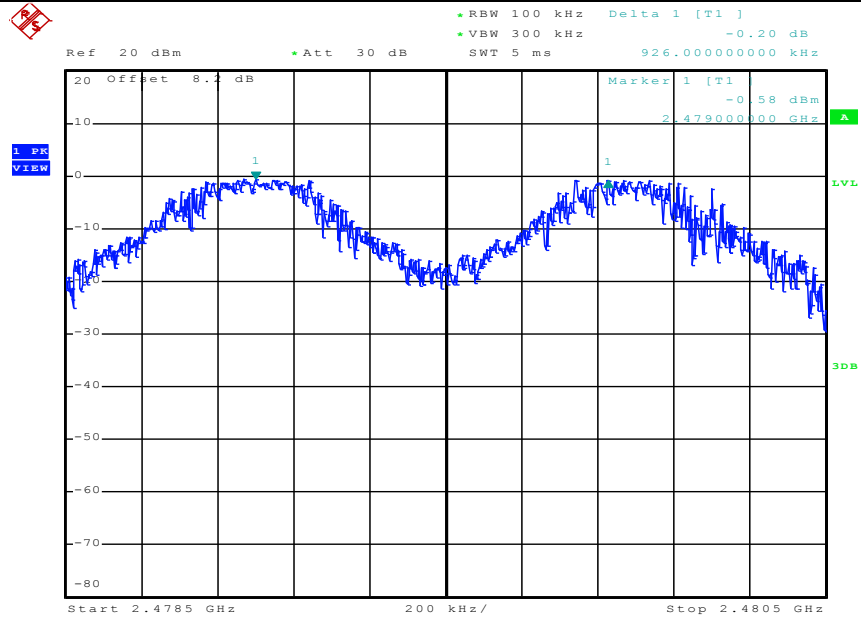


GFSK/MCH



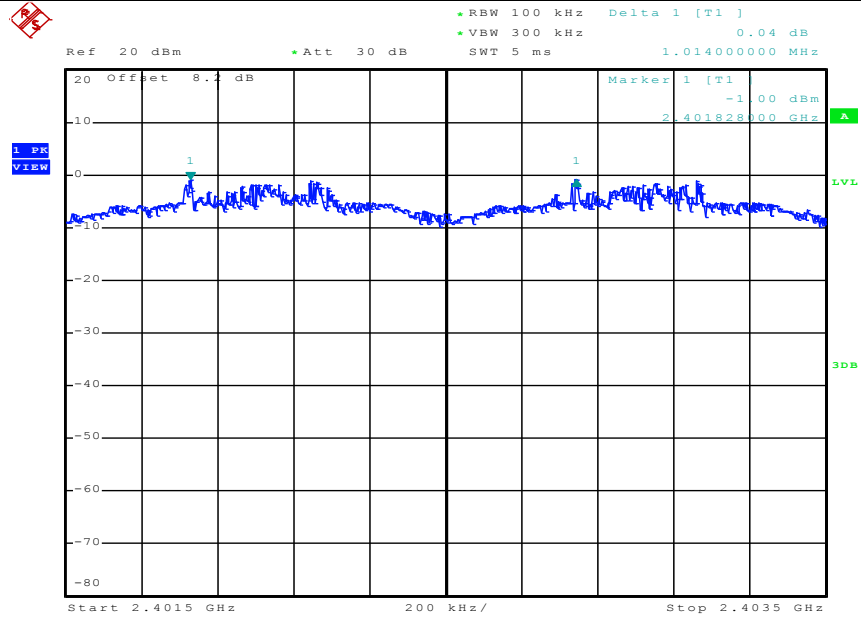
Date: 5.AUG.2019 13:33:31

GFSK/HCH



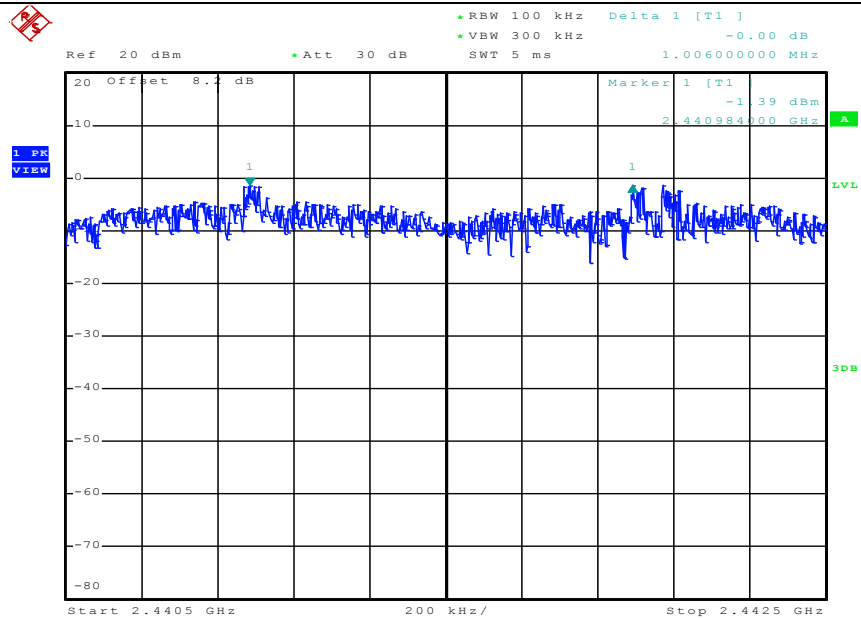
Date: 5.AUG.2019 13:33:51

$\pi/4$ DQPSK/LCH



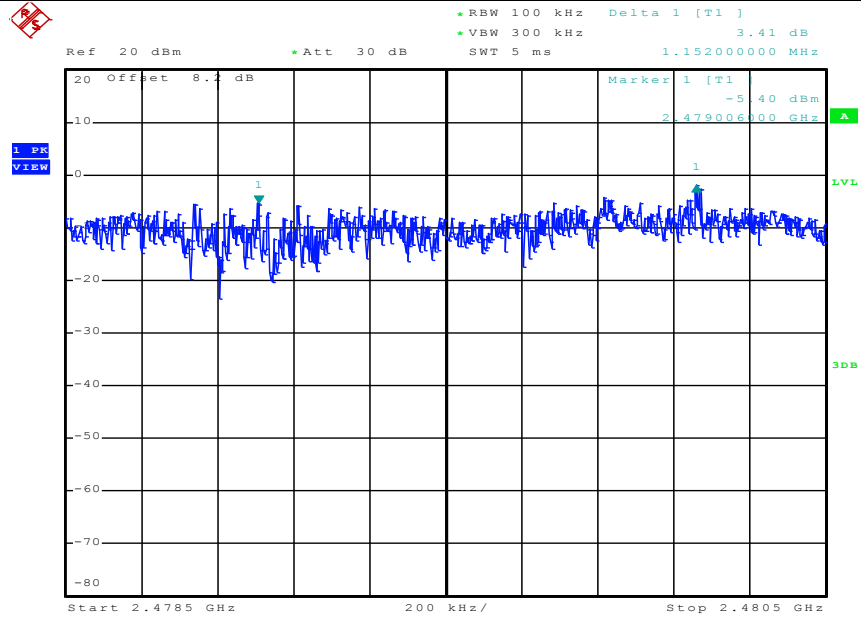
Date: 5.AUG.2019 13:41:34

$\pi/4$ DQPSK/MCH



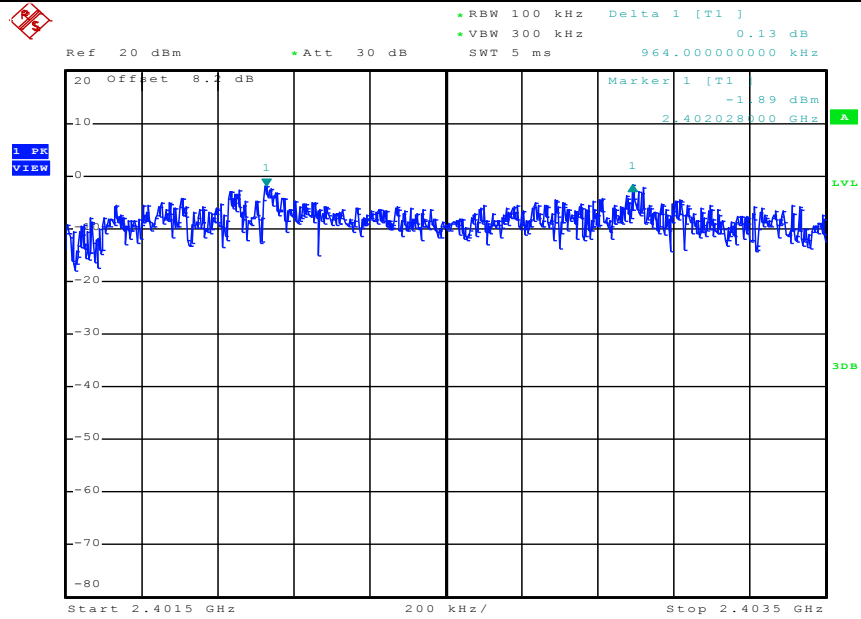
Date: 5.AUG.2019 13:44:53

$\pi$ /4DQPSK/HCH



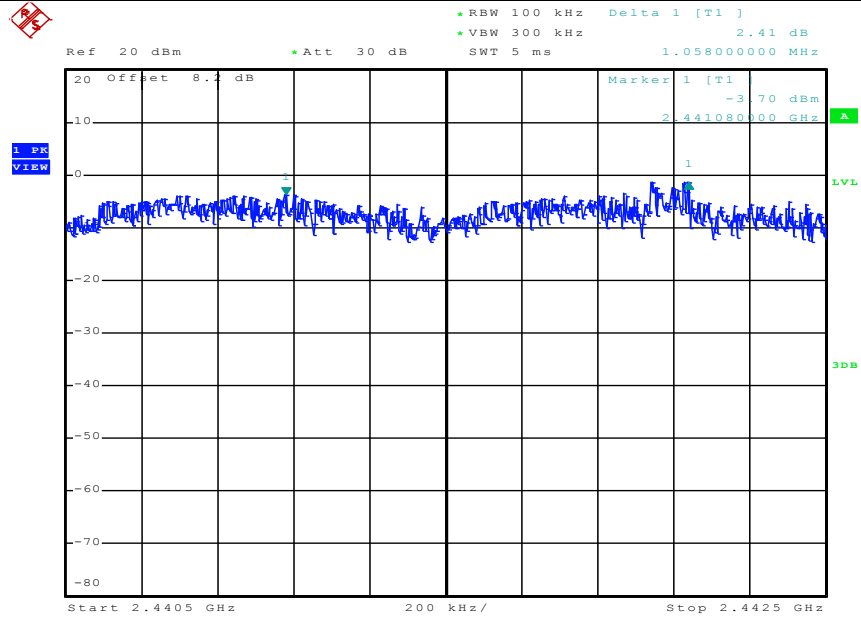
Date: 5.AUG.2019 13:45:18

8DPSK/LCH



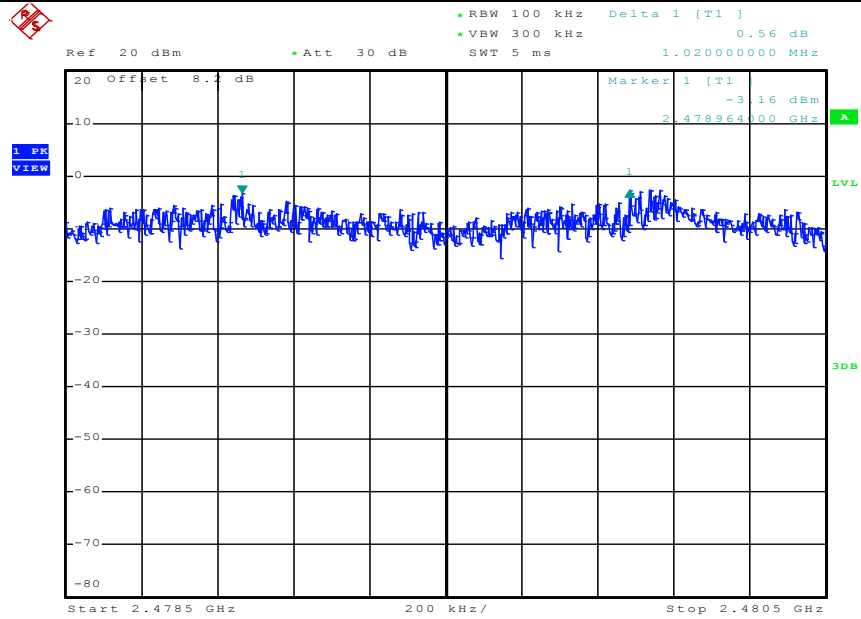
Date: 5.AUG.2019 13:50:33

8DPSK/MCH



Date: 5.AUG.2019 13:52:32

8DPSK/HCH



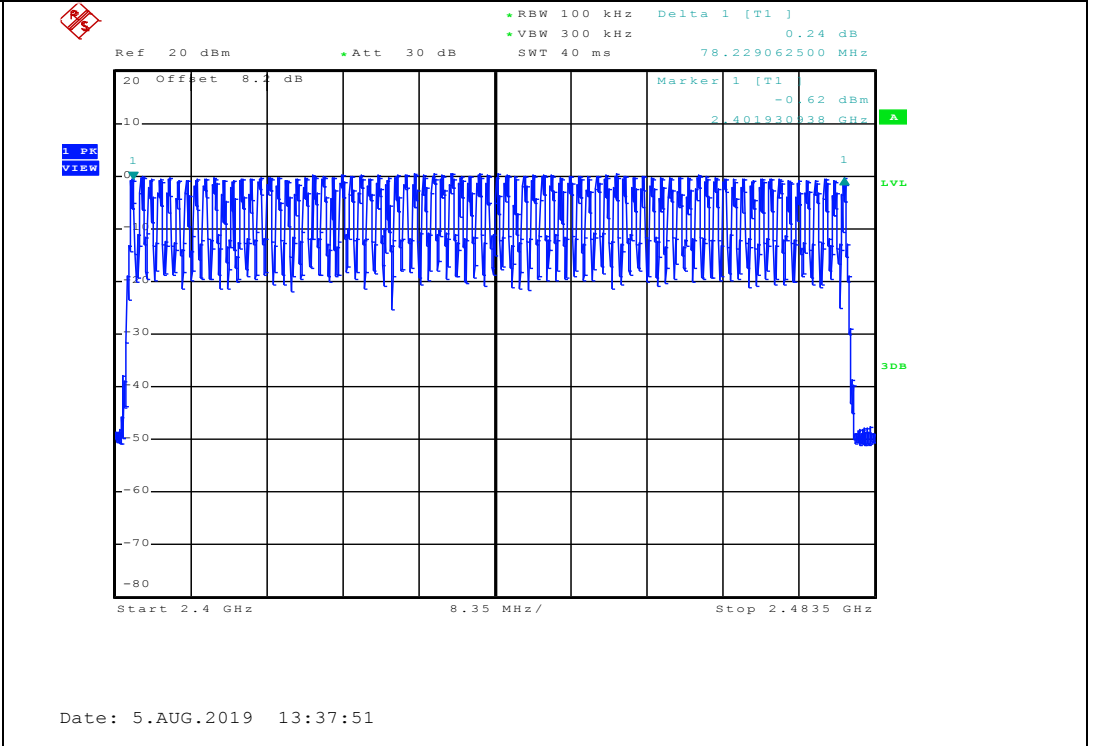
Date: 5.AUG.2019 13:54:54

### A.4 Hopping Channel Number

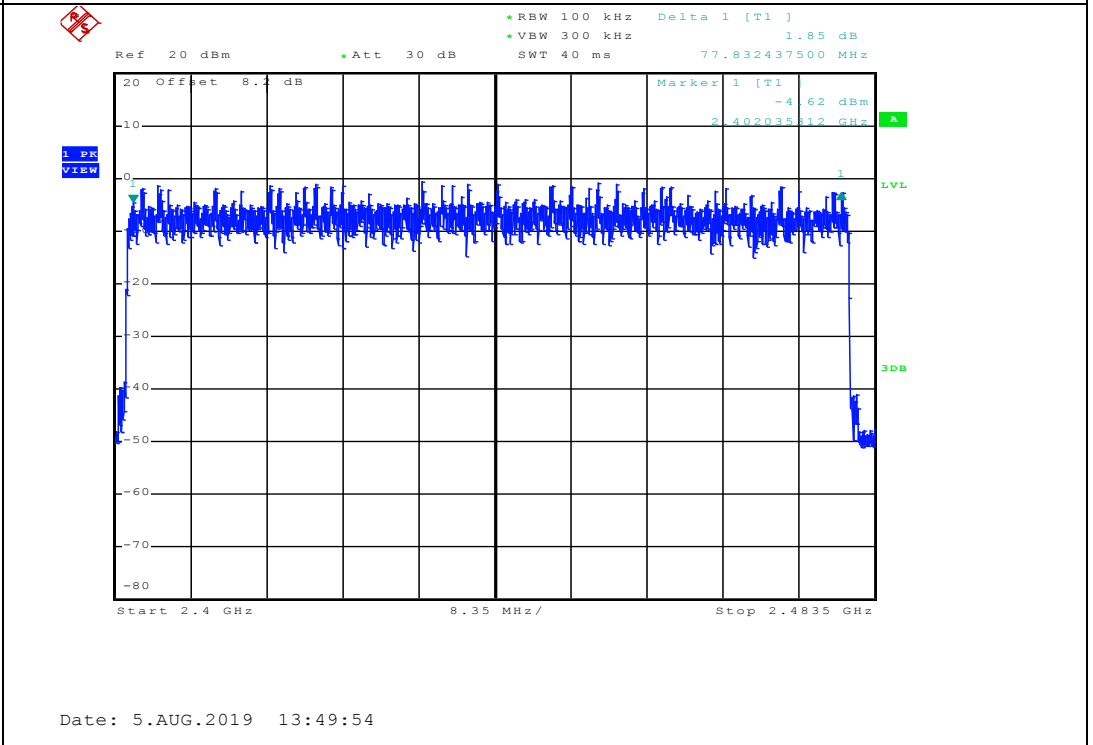
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

#### Test Graphs

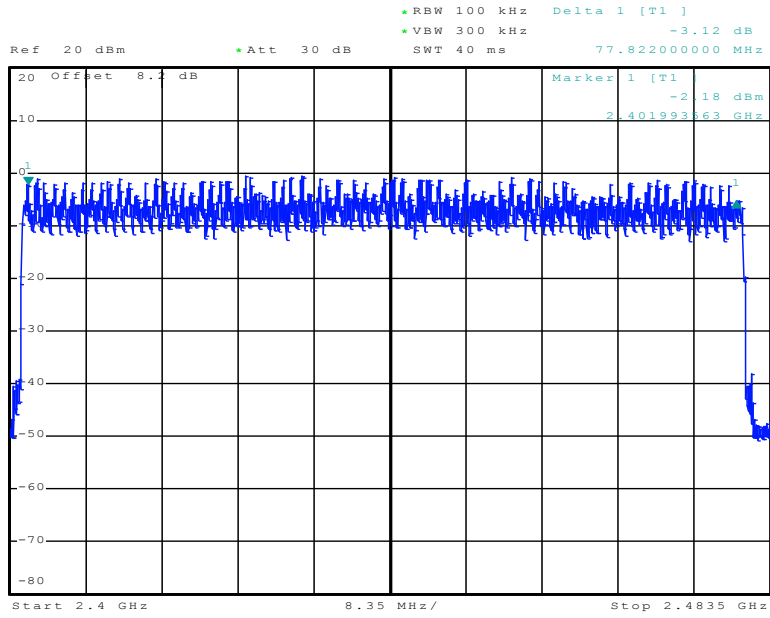
GFSK/Hop



$\pi/4$ DQPSK/Hop



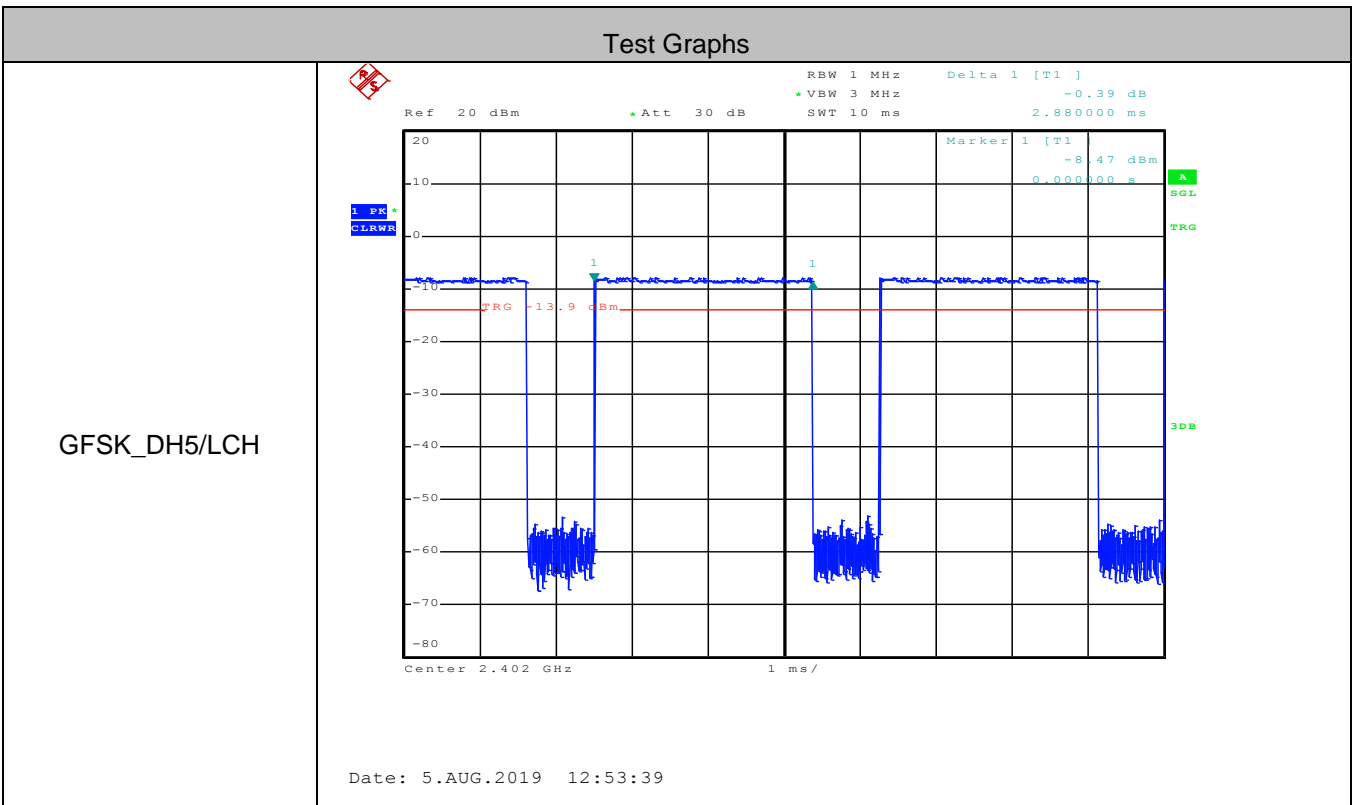
8DPSK/Hop



Date: 5.AUG.2019 14:00:05

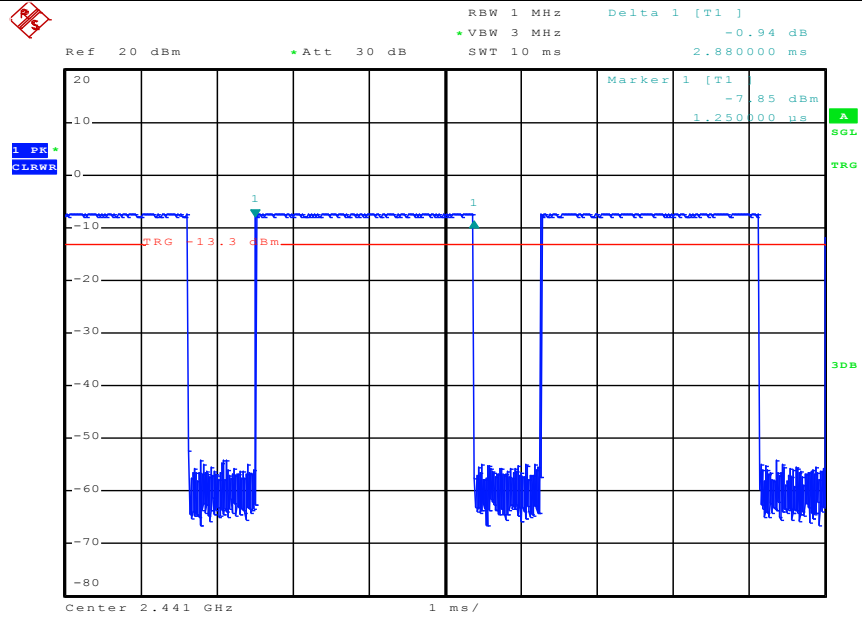
### A.5 Dwell Time

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.89	106.7	0.308	0.4	PASS
	3DH5	MCH	2.89	106.7	0.308	0.4	PASS
	3DH5	HCH	2.89	106.7	0.308	0.4	PASS



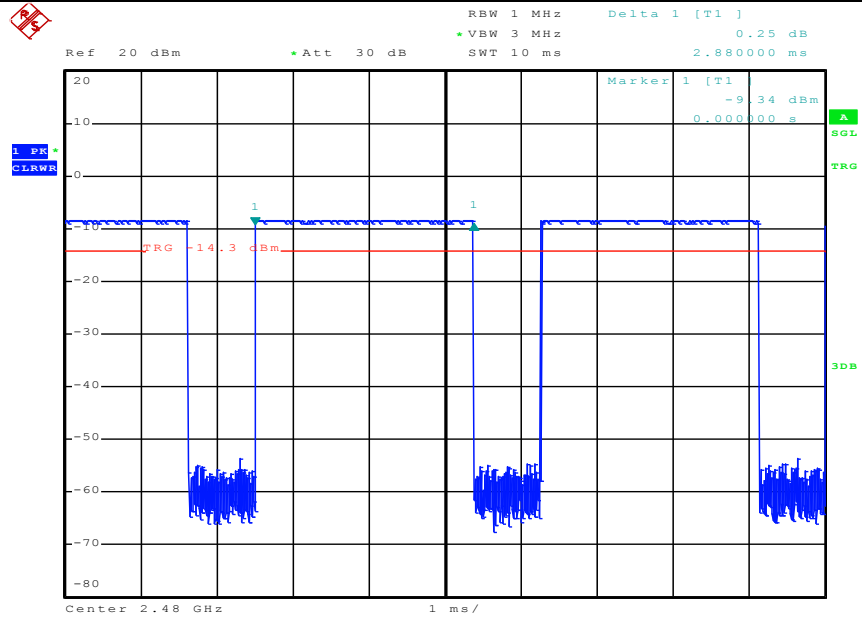


GFSK\_DH5/MCH



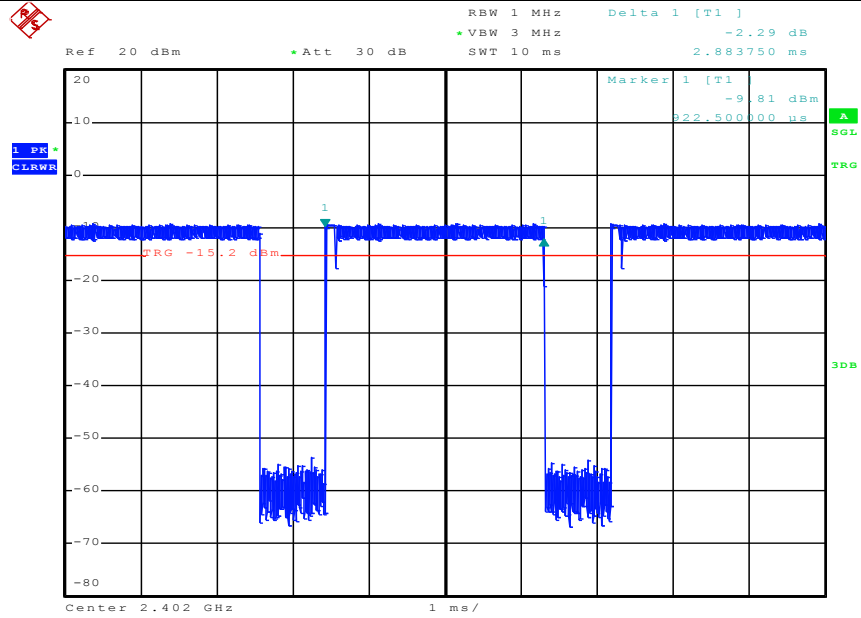
Date: 5.AUG.2019 12:56:20

GFSK\_DH5/HCH



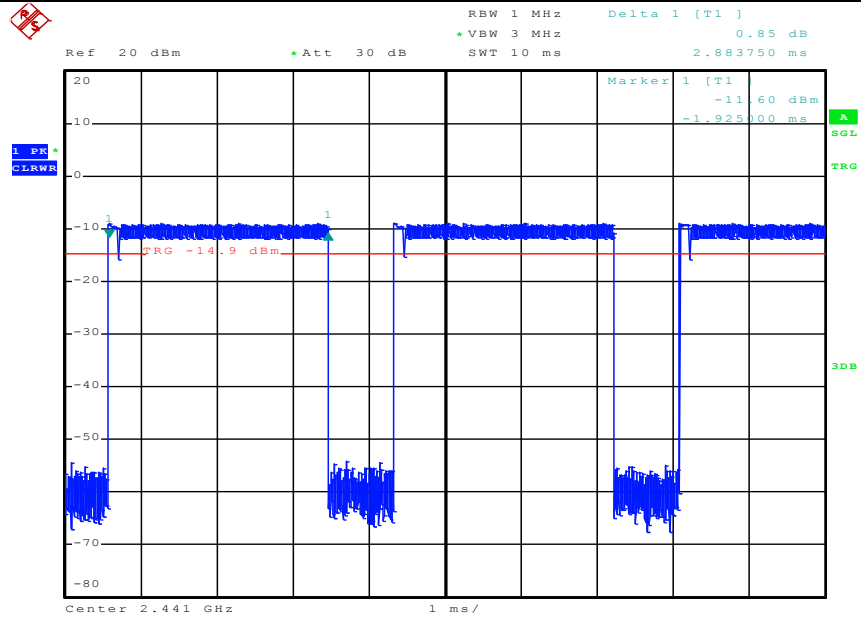
Date: 5.AUG.2019 12:58:10

$\pi/4$ DQPSK  
\_2DH5/LCH



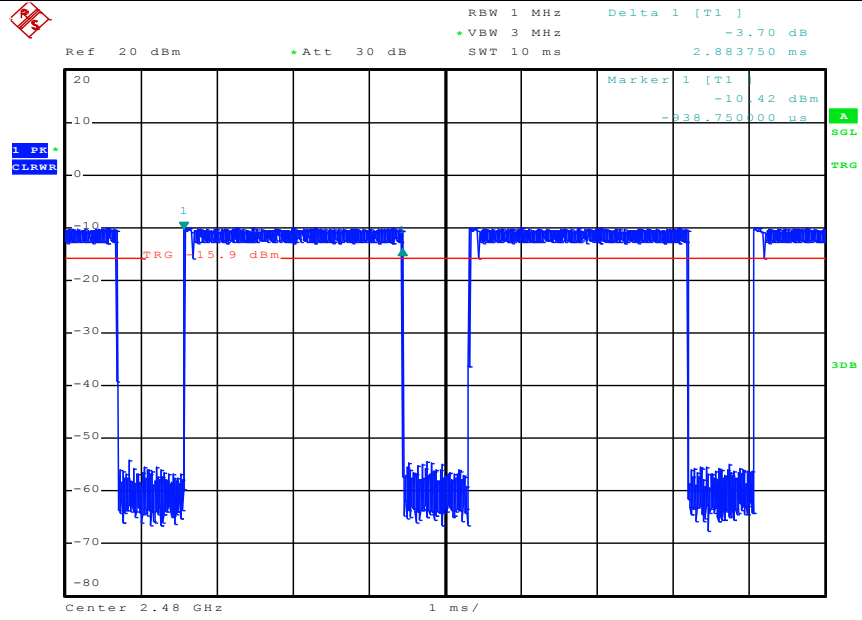
Date: 5.AUG.2019 13:00:45

$\pi/4$ DQPSK  
\_2DH5/MCH



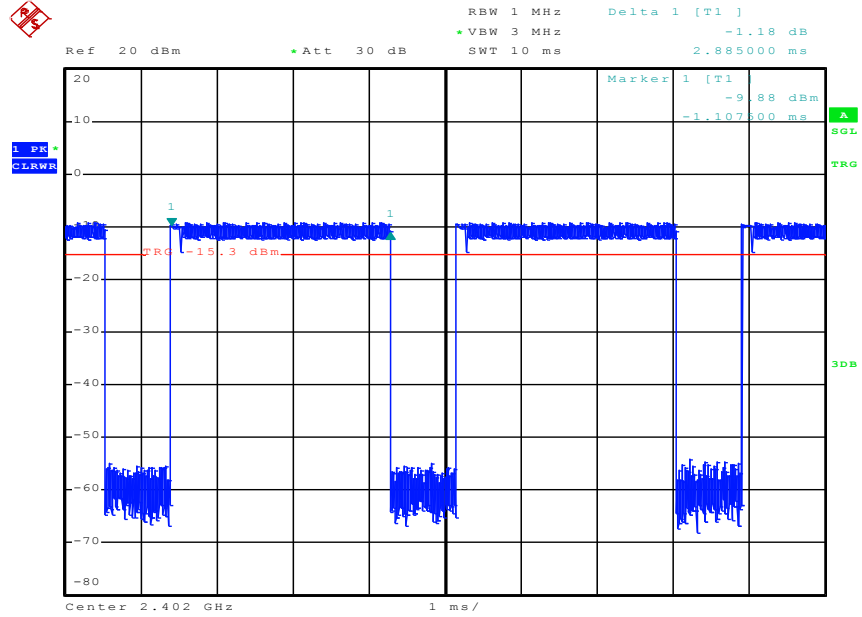
Date: 5.AUG.2019 13:03:13

$\pi/4$ DQPSK  
\_2DH5/HCH



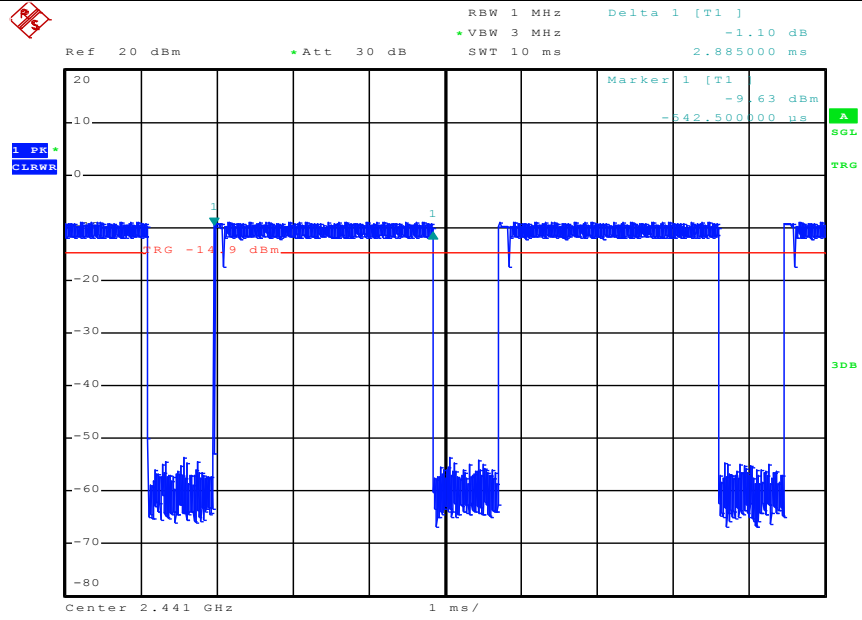
Date: 5.AUG.2019 13:06:00

8DPSK\_3DH5/LCH



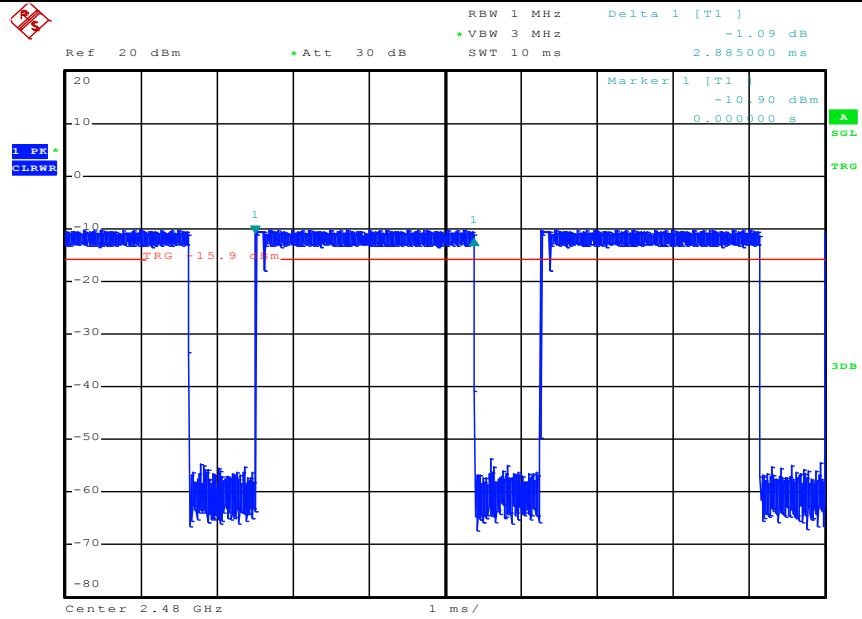
Date: 5.AUG.2019 13:08:38

8DPSK\_3DH5/MCH



Date: 5.AUG.2019 13:11:10

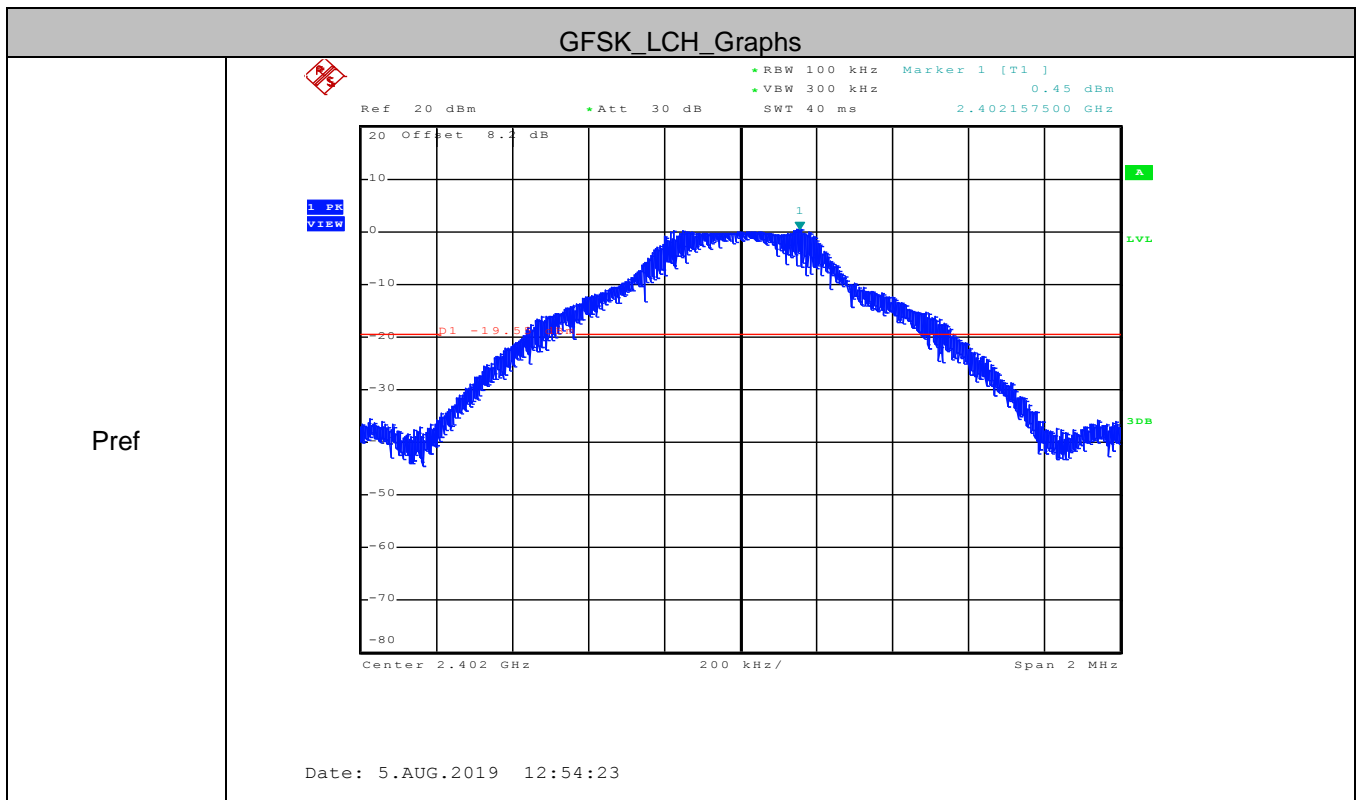
8DPSK\_3DH5/HCH

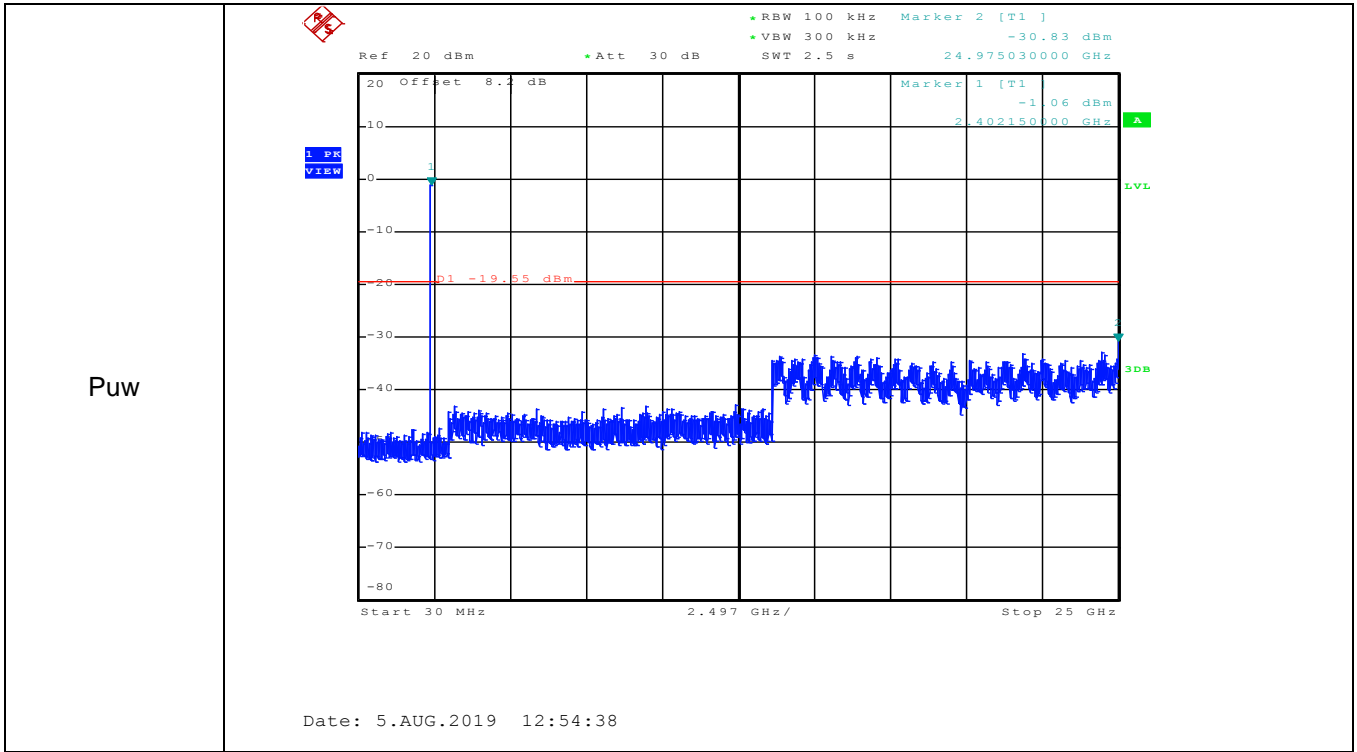


Date: 5.AUG.2019 13:13:50

**A.6 RF Conducted Spurious Emissions**

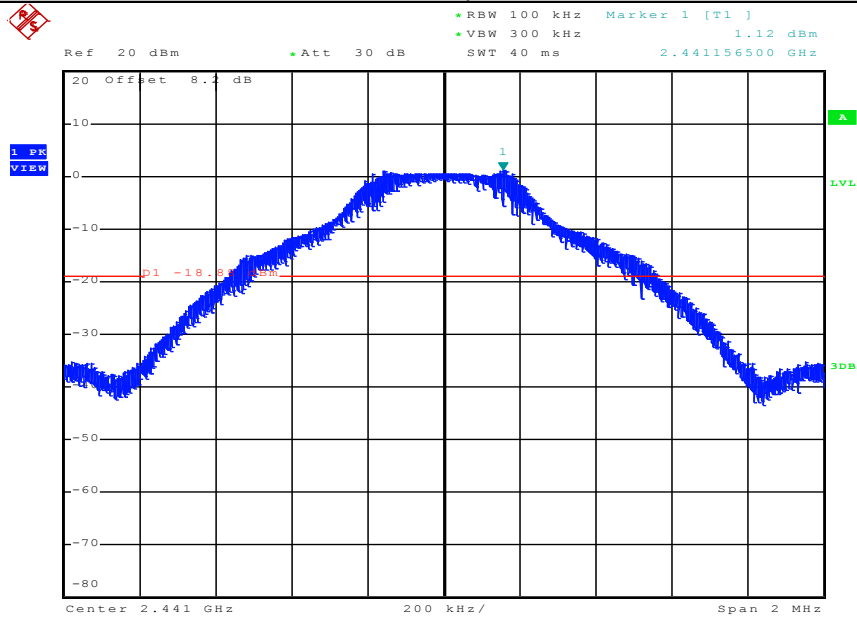
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.45	-30.830	-19.550	PASS
	MCH	1.12	-32.210	-18.880	PASS
	HCH	-0.17	-32.390	-20.170	PASS
$\pi/4$ DQPSK	LCH	-1.09	-31.710	-21.090	PASS
	MCH	-0.47	-31.260	-20.470	PASS
	HCH	-1.42	-32.140	-21.420	PASS
8DPSK	LCH	-0.84	-32.280	-20.840	PASS
	MCH	-0.48	-31.460	-20.480	PASS
	HCH	-1.76	-32.760	-21.760	PASS





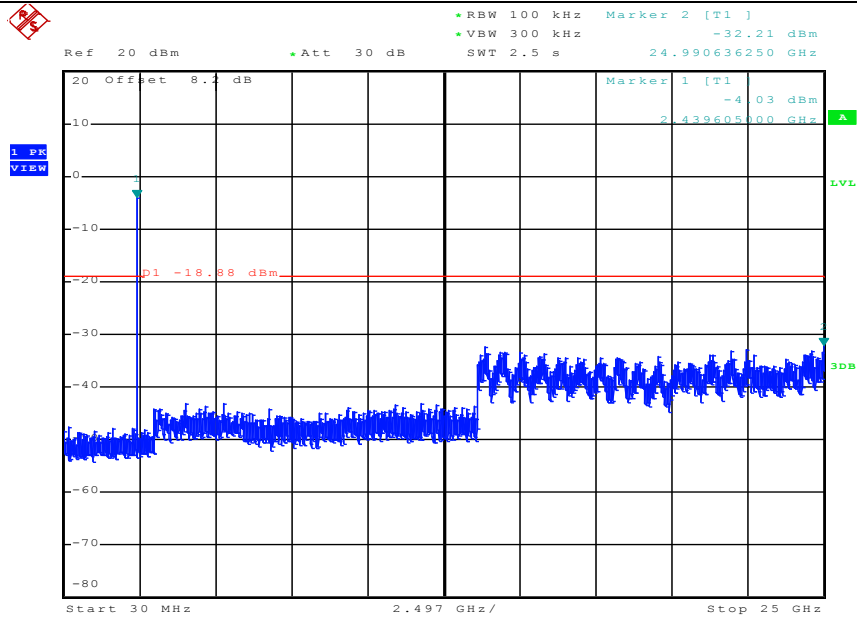
### GFSK\_MCH\_Graphs

Pref



Date: 5.AUG.2019 12:56:48

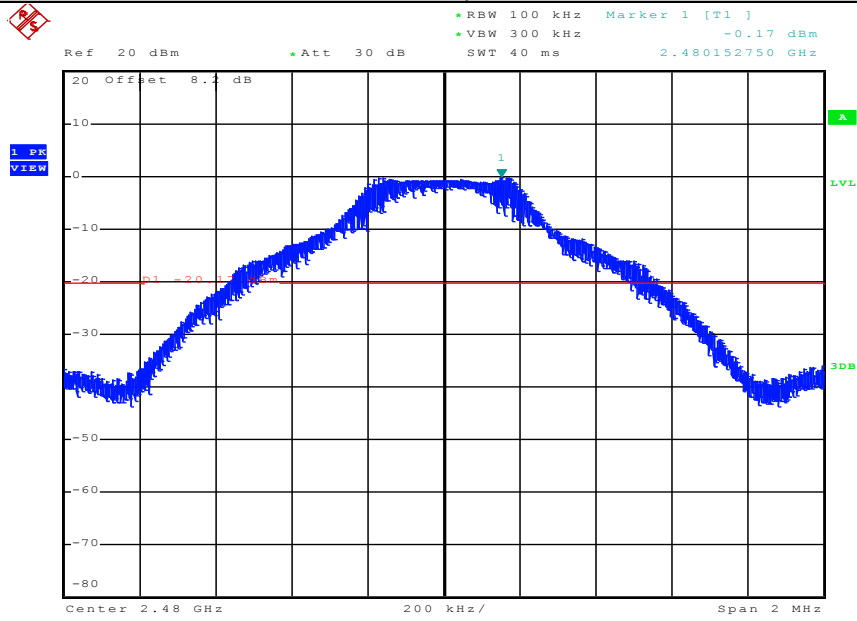
Puw



Date: 5.AUG.2019 12:57:03

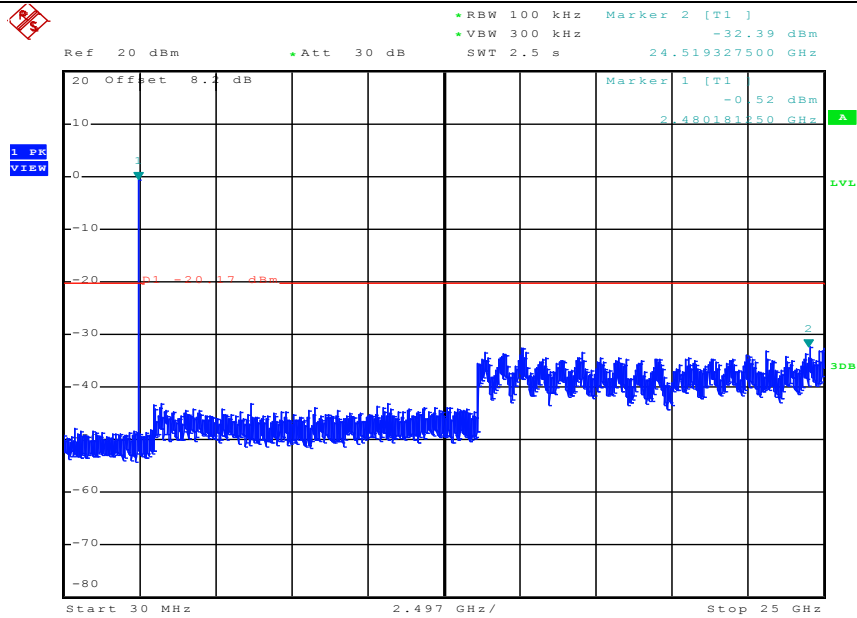
### GFSK\_HCH\_Graphs

Pref



Date: 5.AUG.2019 12:58:54

Puw

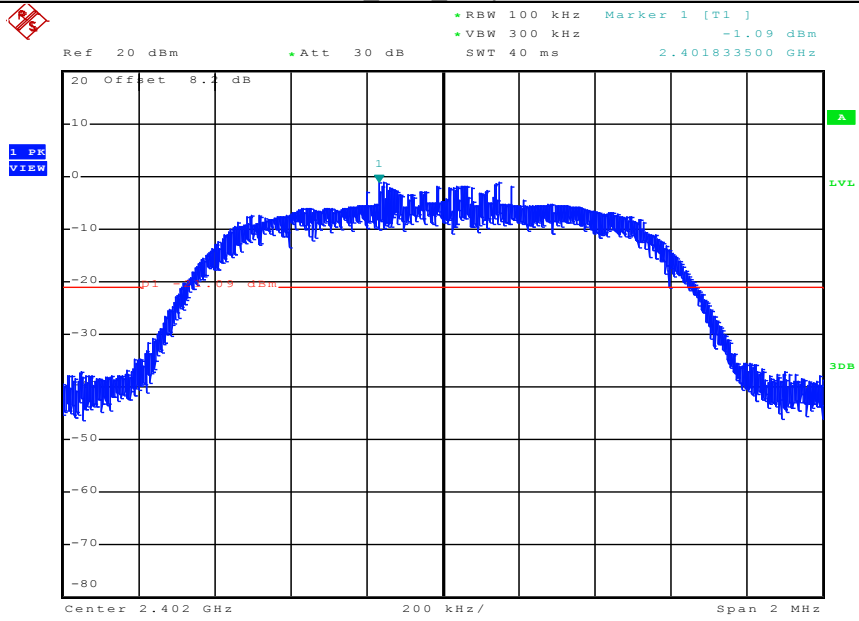


Date: 5.AUG.2019 12:59:09



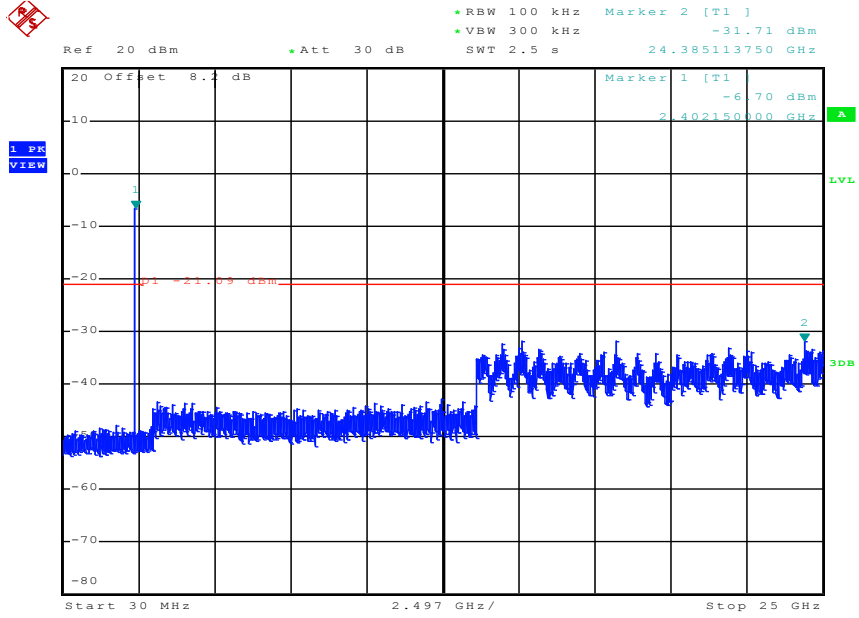
$\pi/4$ DQPSK\_LCH\_Graphs

Pref



Date: 5.AUG.2019 13:01:28

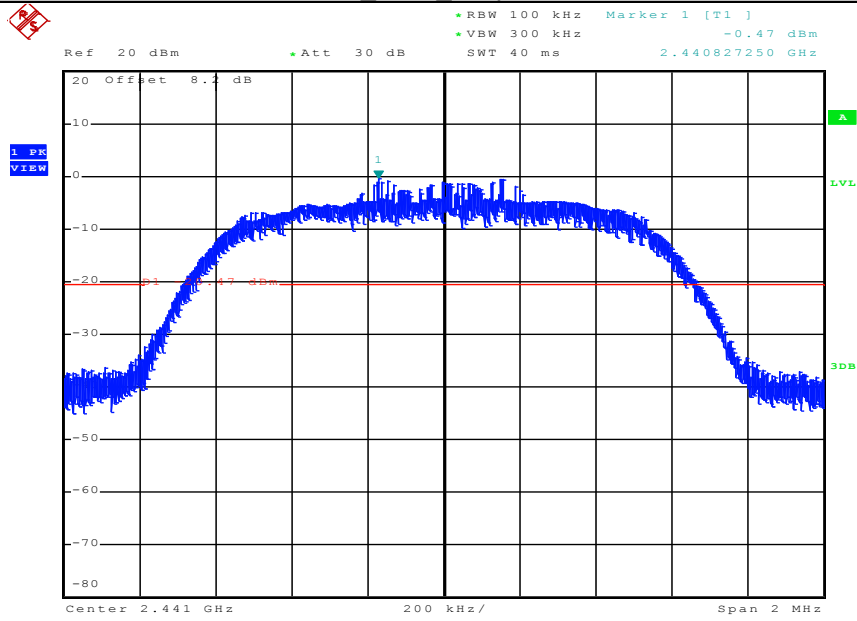
Puw



Date: 5.AUG.2019 13:01:42

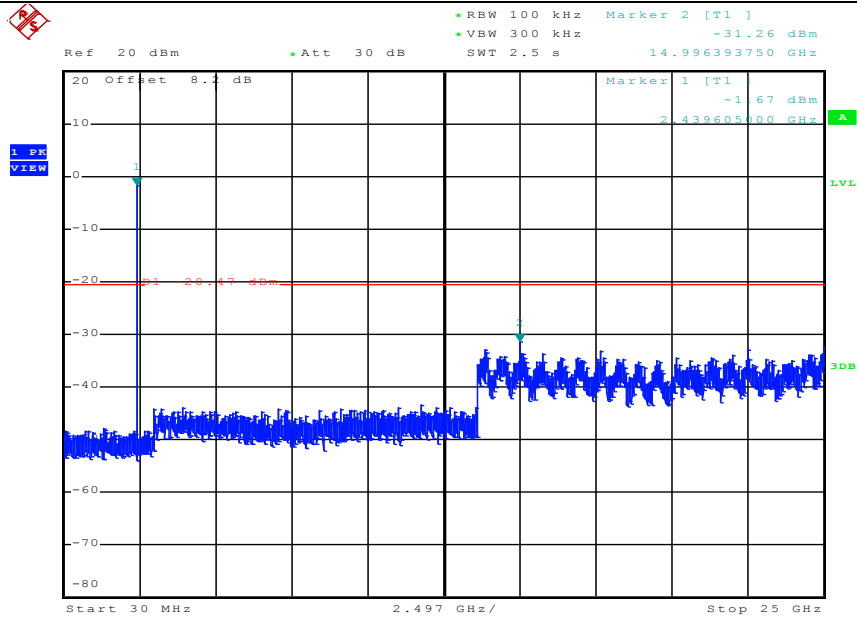
$\pi/4$ DQPSK\_MCH\_Graphs

Pref



Date: 5.AUG.2019 13:04:46

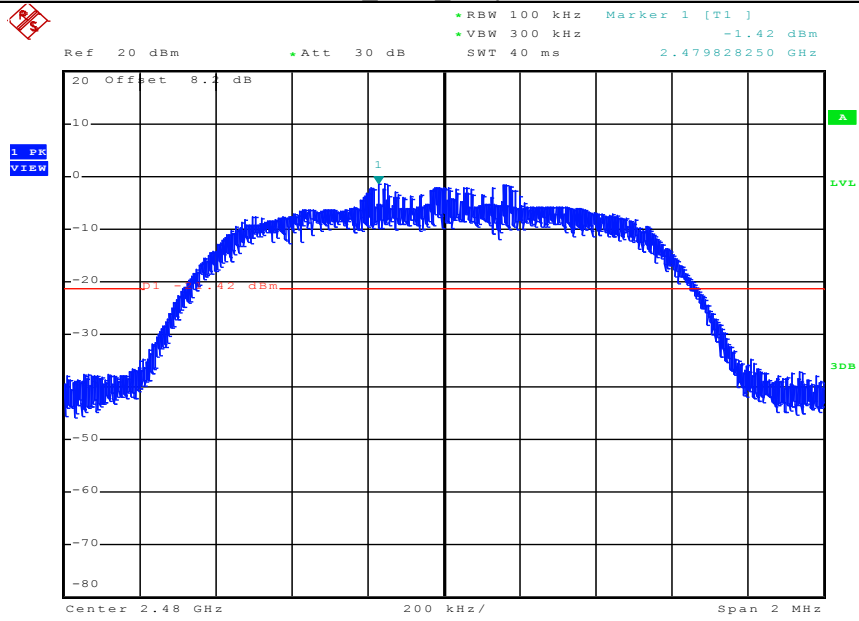
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Date: 5.AUG.2019 13:05:01

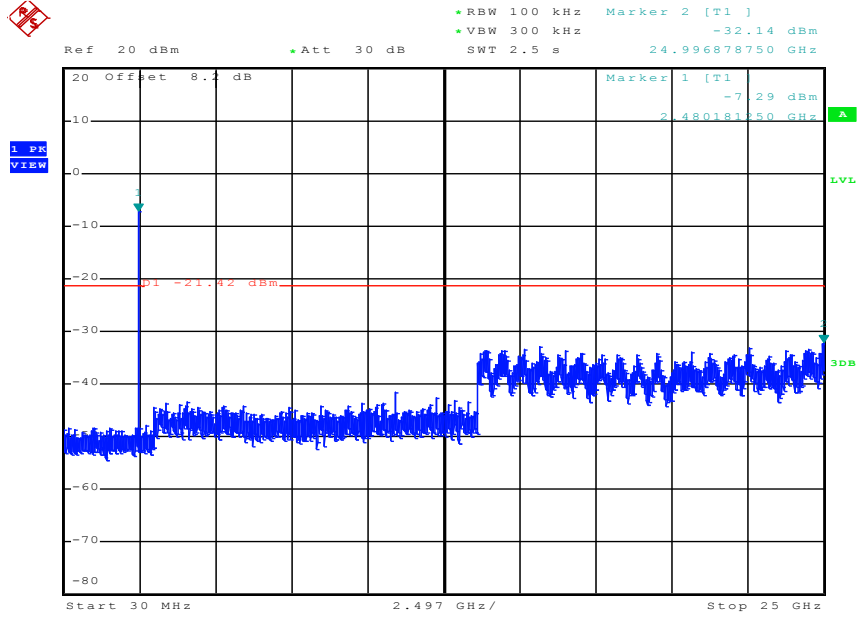
$\pi/4$ DQPSK\_HCH\_Graphs

Pref



Date: 5.AUG.2019 13:06:44

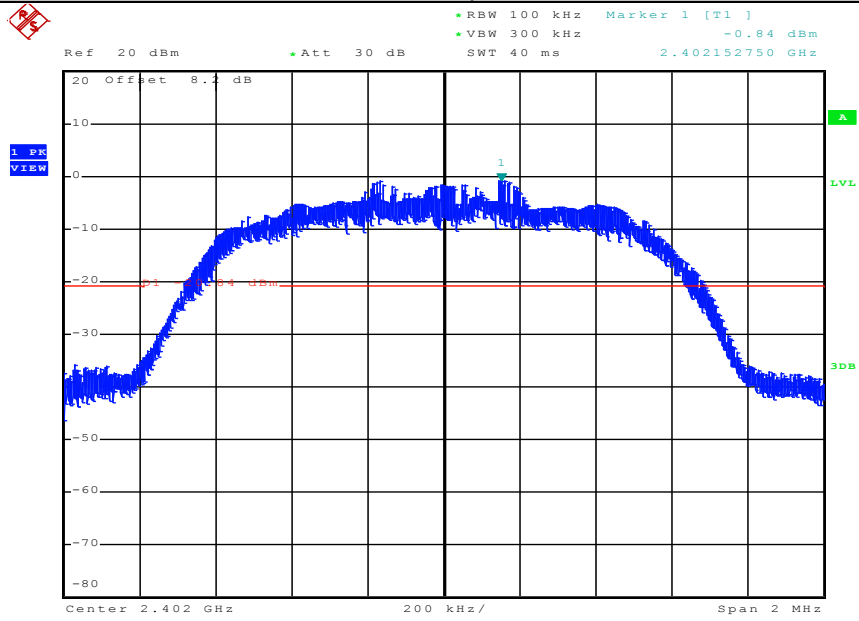
Puw



Date: 5.AUG.2019 13:06:59

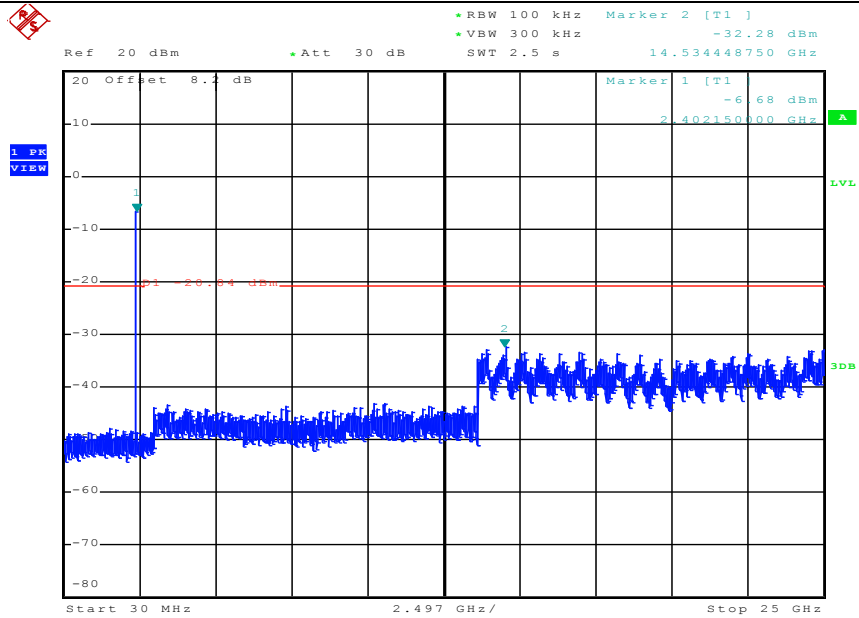
### 8DPSK\_LCH\_Graphs

Pref



Date: 5.AUG.2019 13:09:22

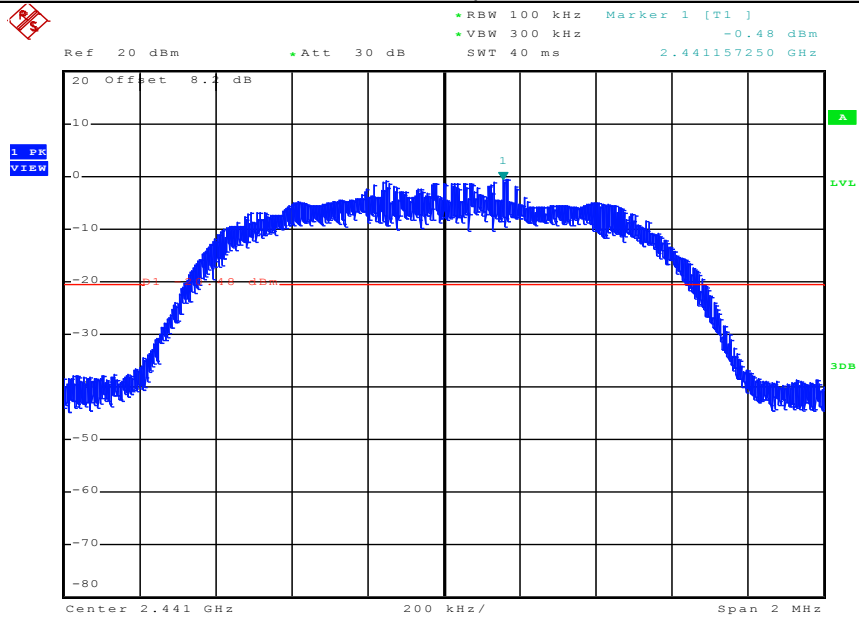
Puw



Date: 5.AUG.2019 13:09:37

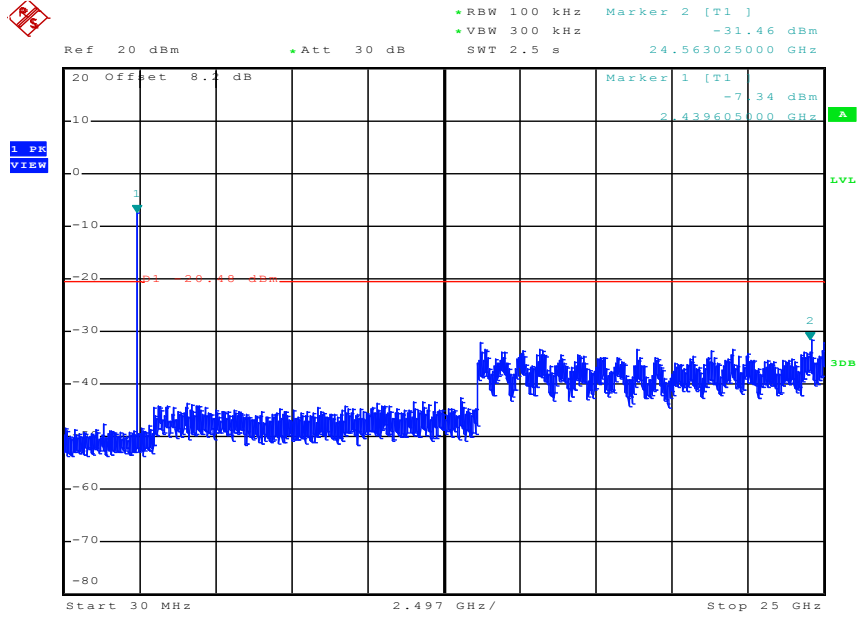
8DPSK\_MCH\_Graphs

Pref



Date: 5.AUG.2019 13:11:38

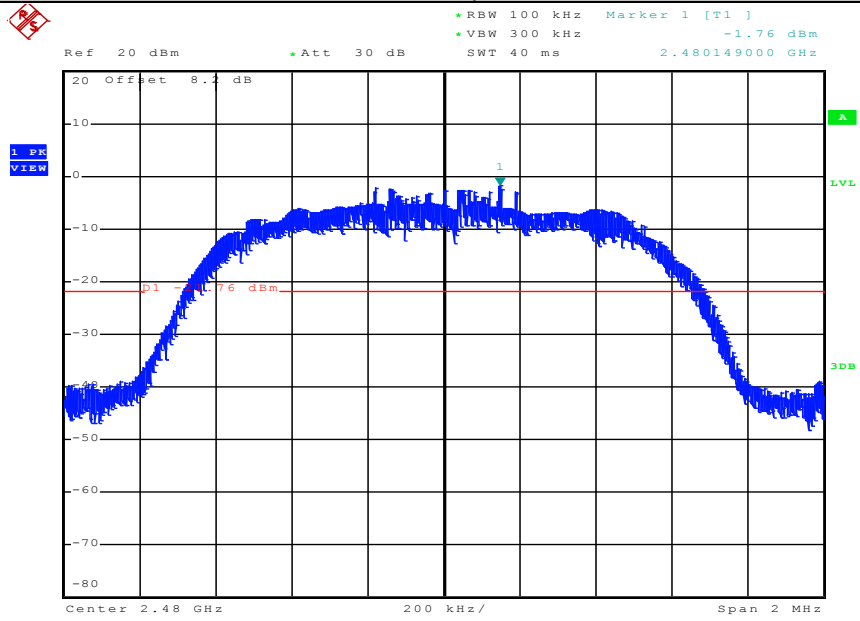
Puw



Date: 5.AUG.2019 13:11:53

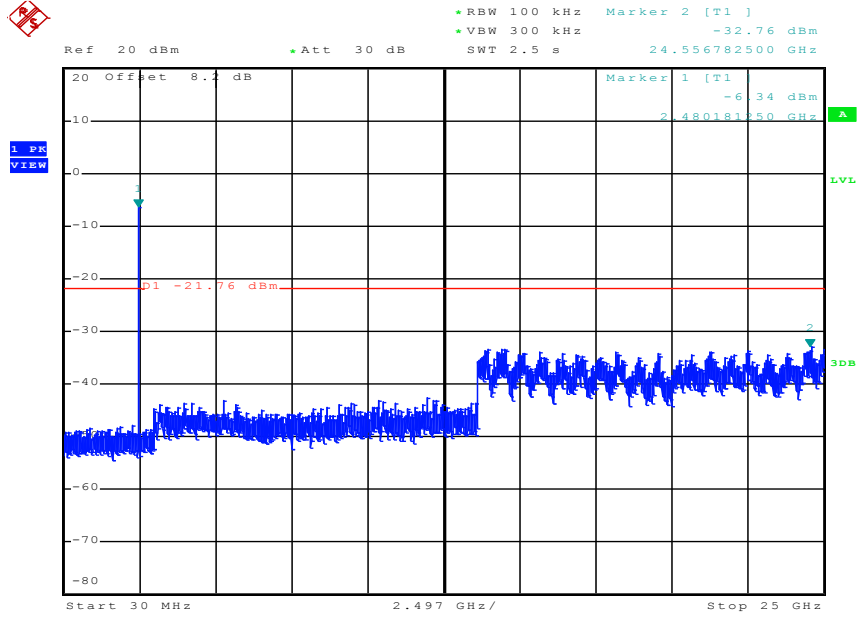
### 8DPSK\_HCH\_Graphs

Pref



Date: 5.AUG.2019 13:16:21

Puw



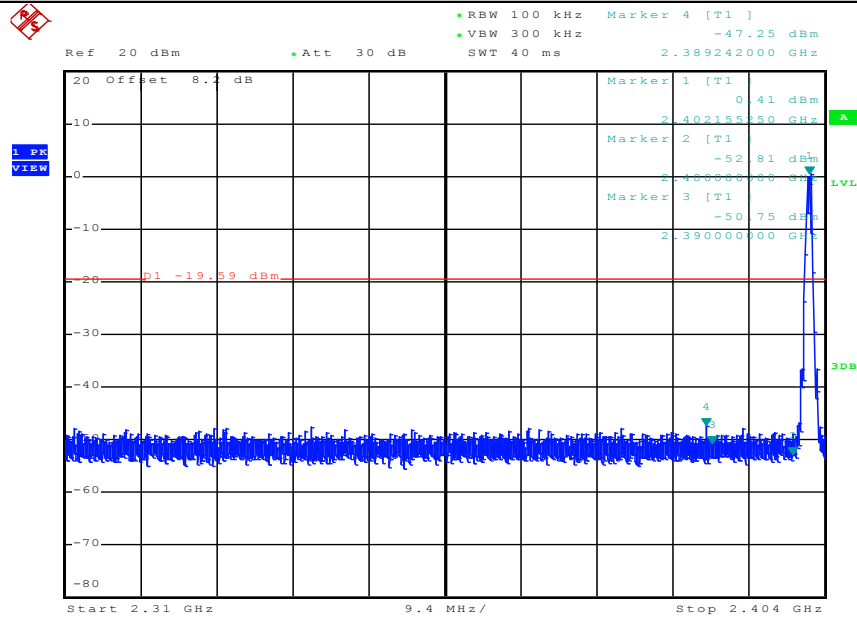
Date: 5.AUG.2019 13:16:36

## A.7 Band-edge for RF Conducted Emissions

Mode	Channel	Carrier Frequency [MHz]	Carrier Power [dBm]	Frequency Hopping	Max Spurious Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	2402	0.410	Off	-47.248	-19.59	PASS
			0.490	On	-46.154	-19.51	PASS
	HCH	2480	-0.730	Off	-47.176	-20.73	PASS
			0.620	On	-47.240	-19.38	PASS
$\pi/4$ DQPSK	LCH	2402	-2.790	Off	-47.001	-22.79	PASS
			-0.760	On	-46.660	-20.76	PASS
	HCH	2480	-1.640	Off	-47.026	-21.64	PASS
			-1.080	On	-47.088	-21.08	PASS
8DPSK	LCH	2402	-1.600	Off	-46.927	-21.6	PASS
			-0.780	On	-46.760	-20.78	PASS
	HCH	2480	-1.830	Off	-47.635	-21.83	PASS
			-1.840	On	-46.886	-21.84	PASS

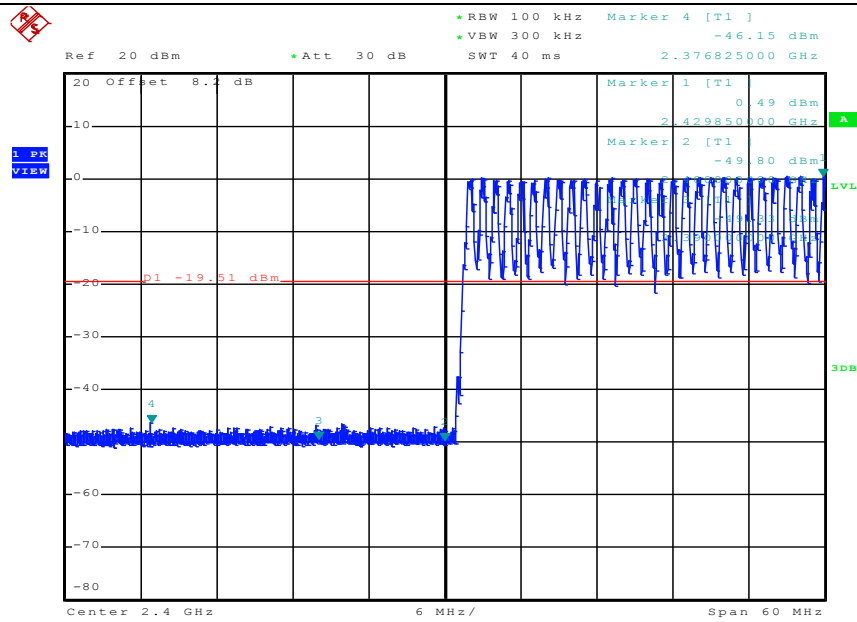
Test Graphs

GFSK/LCH/No Hop



Date: 5.AUG.2019 12:54:10

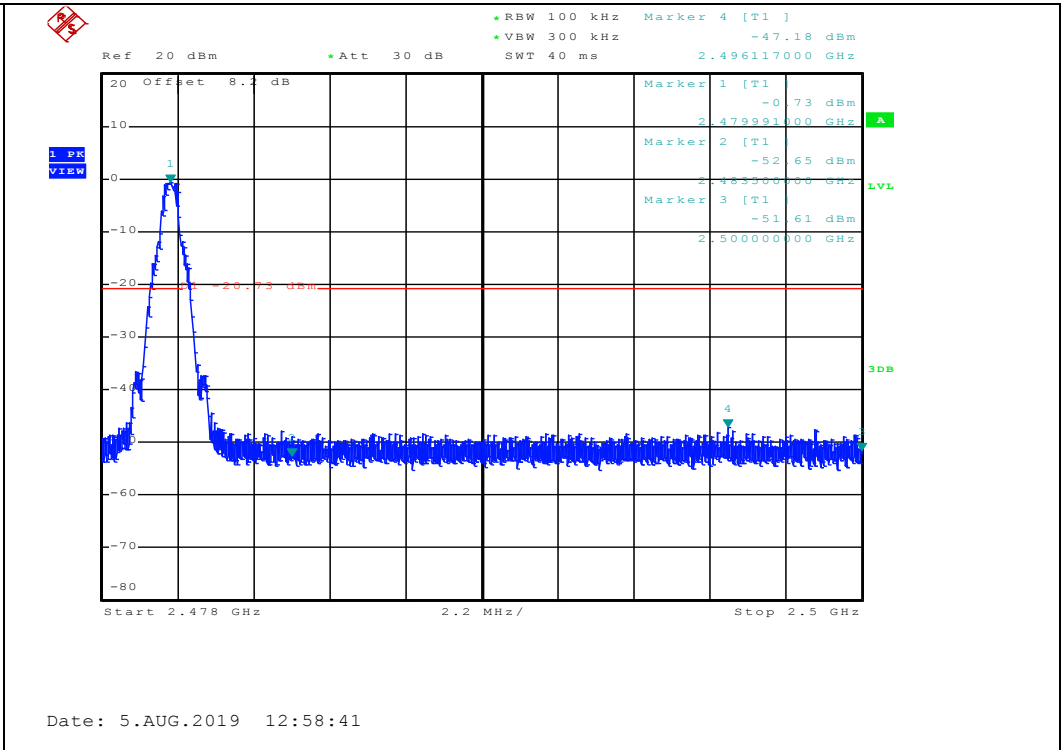
GFSK/LCH/Hop



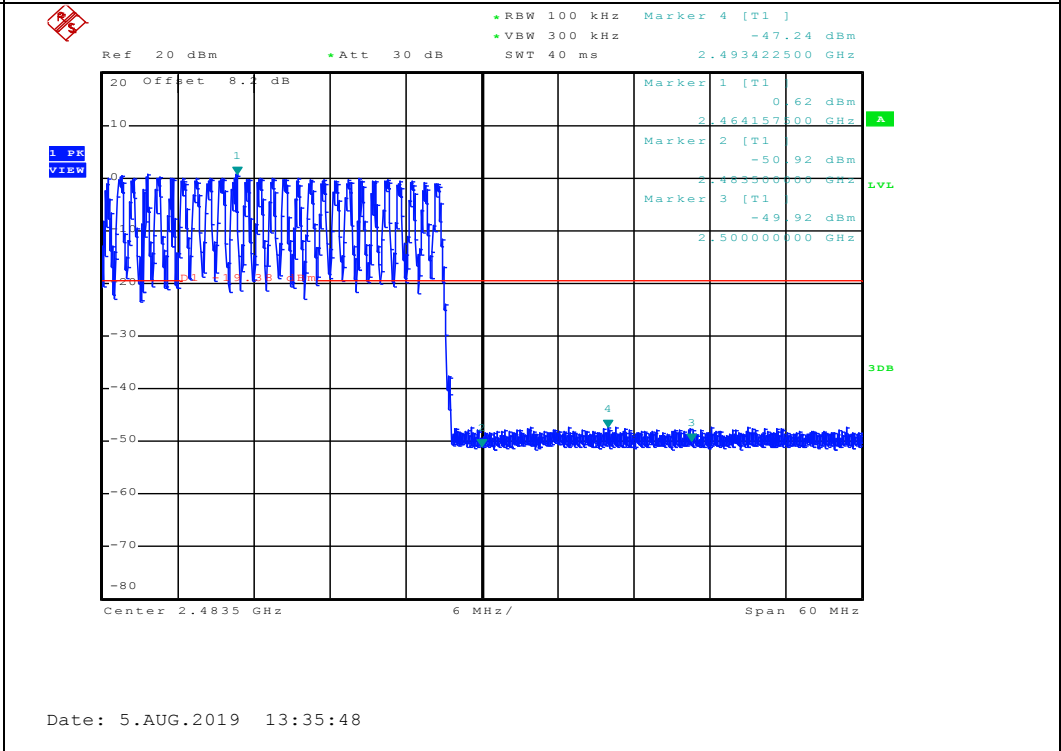
Date: 5.AUG.2019 13:31:38



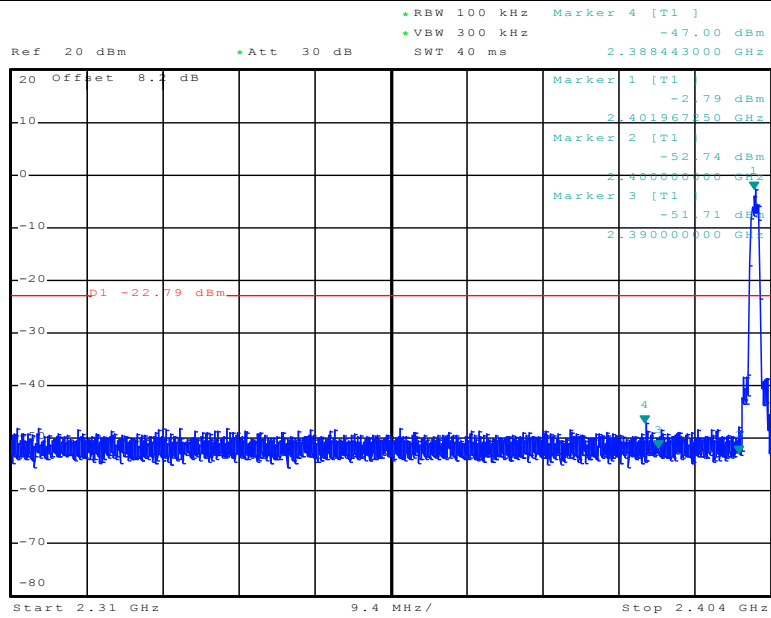
GFSK/HCH/No Hop



GFSK/HCH/Hop

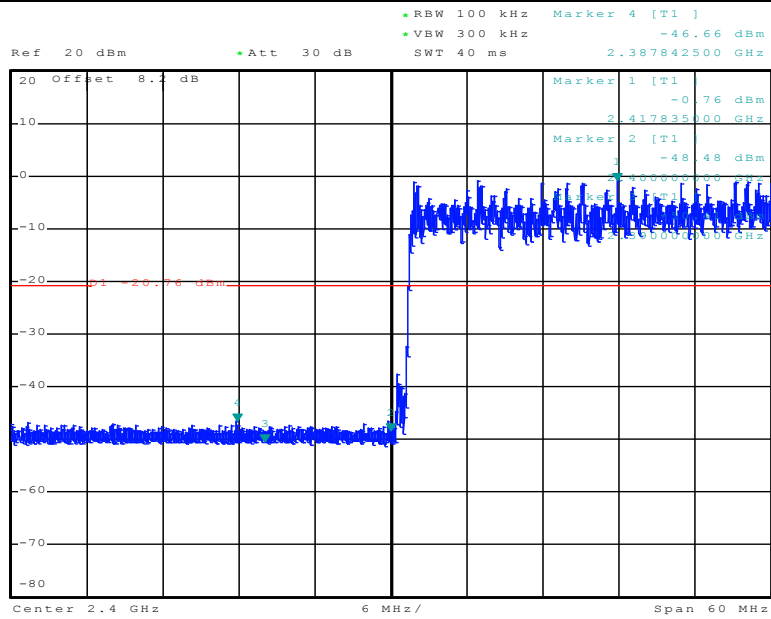


$\pi$ /4DQPSK/LCH/No  
Hop



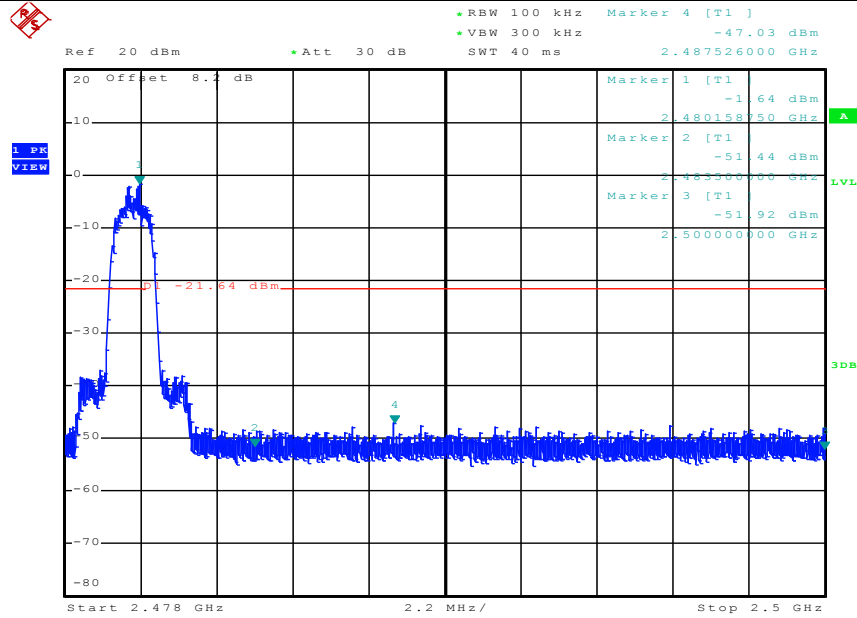
Date: 5.AUG.2019 13:01:15

$\pi$ /4DQPSK/LCH/Hop



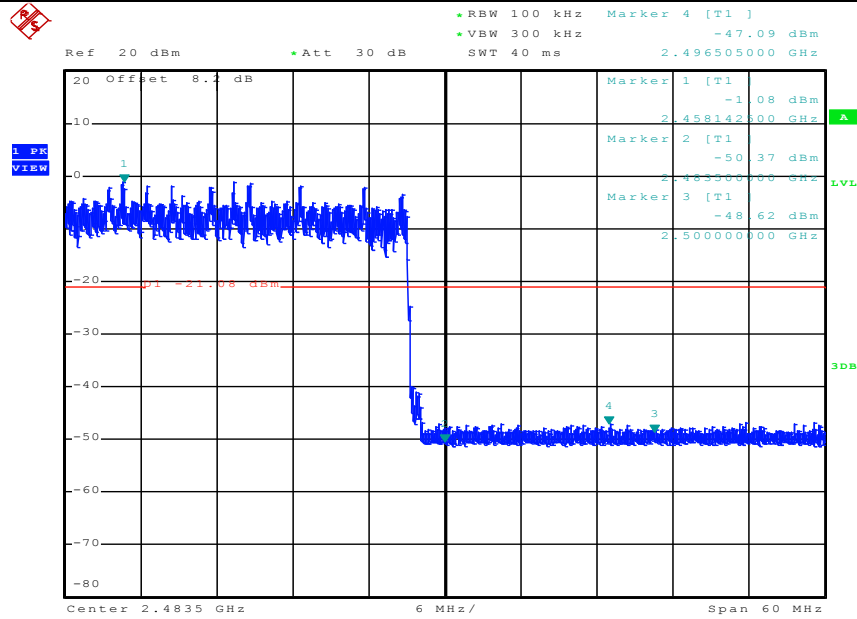
Date: 5.AUG.2019 13:44:28

$\pi$ /4DQPSK/HCH/No  
Hop



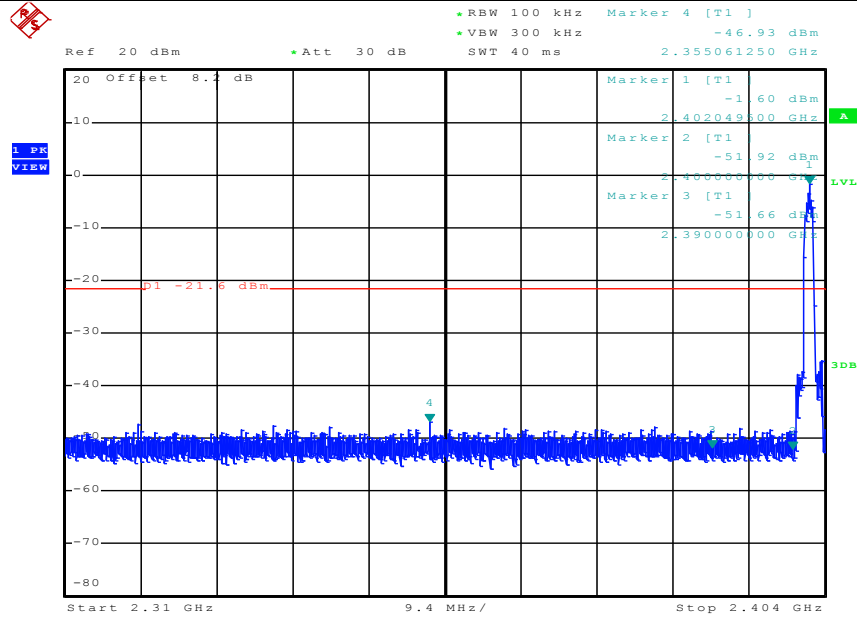
Date: 5.AUG.2019 13:06:31

$\pi$ /4DQPSK/HCH/Hop



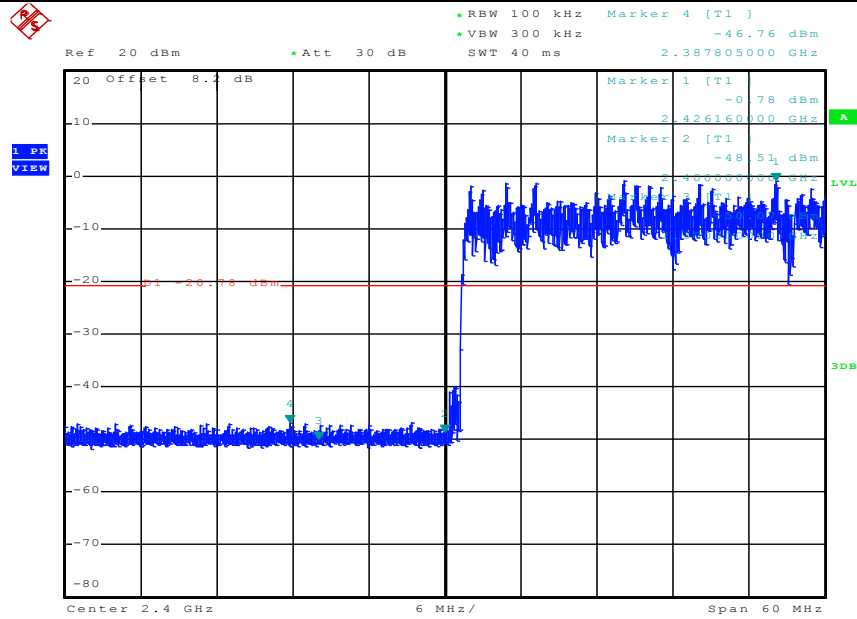
Date: 5.AUG.2019 13:47:24

8DPSK/LCH/No Hop



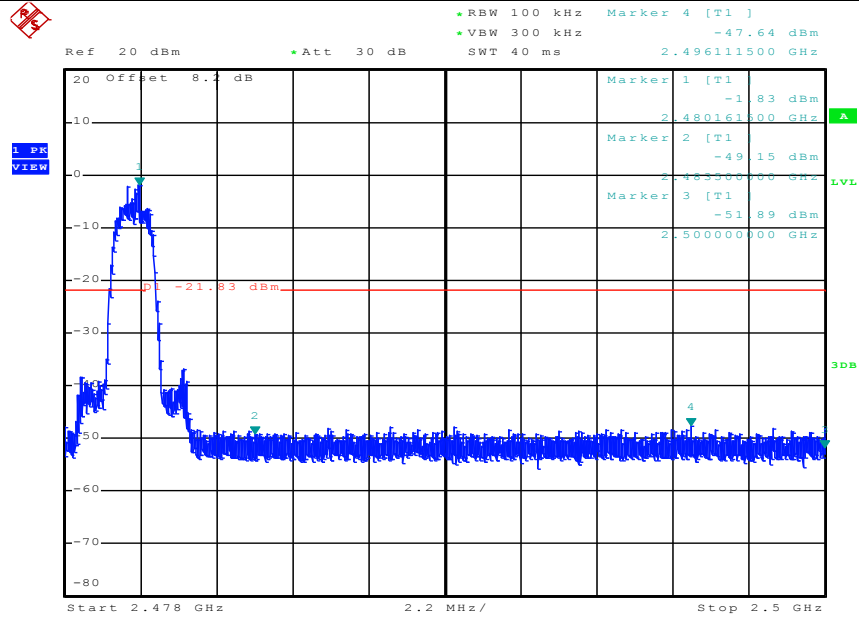
Date: 5.AUG.2019 13:09:09

8DPSK/LCH/Hop



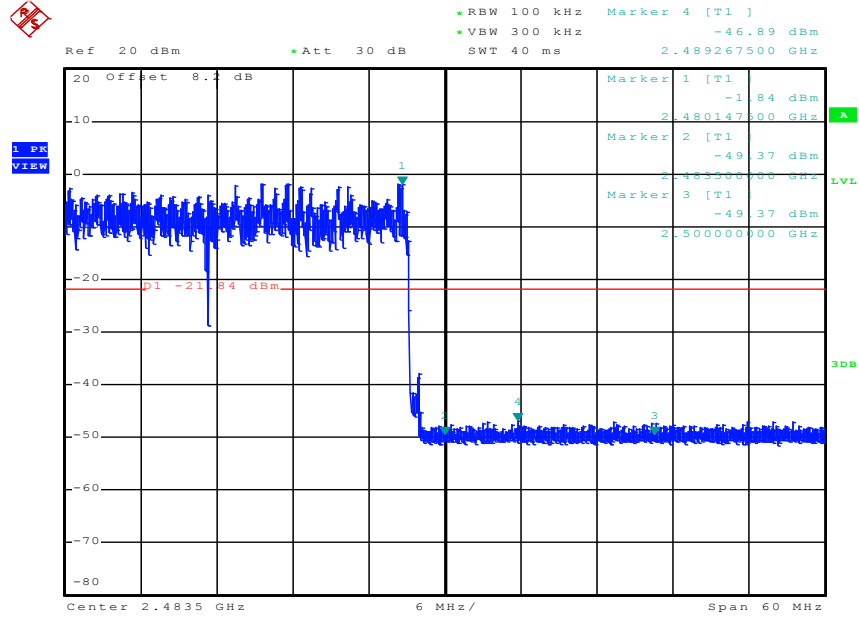
Date: 5.AUG.2019 13:52:07

8DPSK/HCH/No Hop



Date: 5.AUG.2019 13:14:22

8DPSK/HCH/Hop

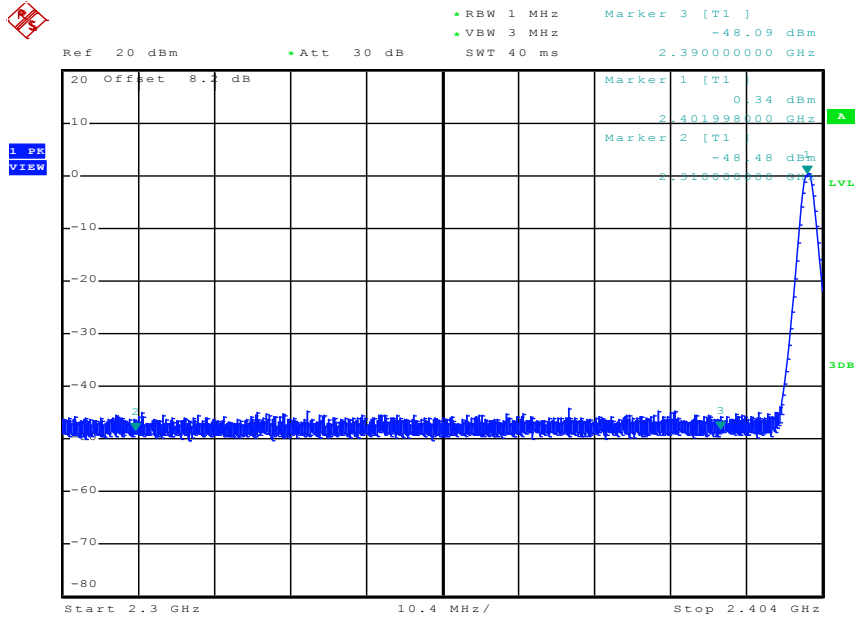


Date: 5.AUG.2019 13:56:49

## A.8 Restrict-band band-edge measurements

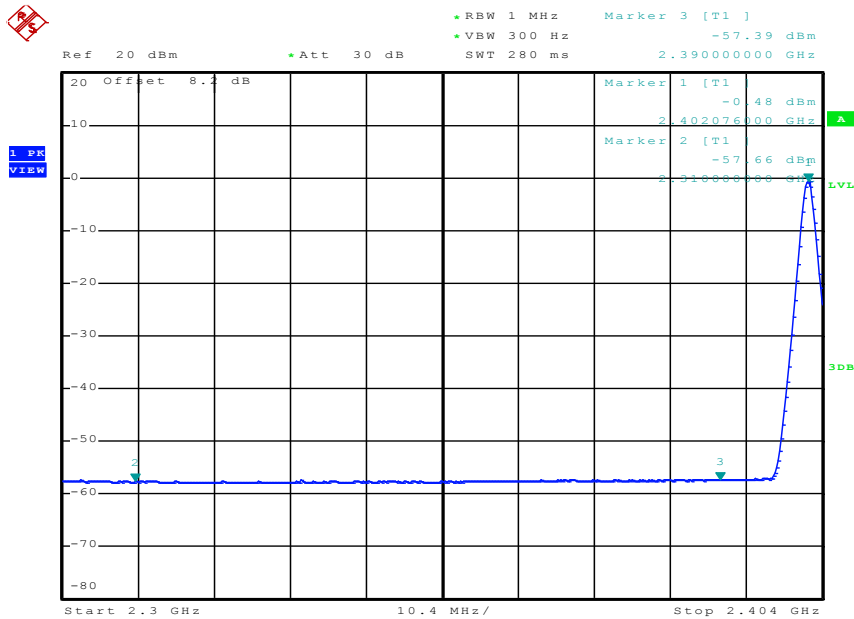
Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-48.48	2.0	0	48.78	PEAK	74	PASS
	Off	2310.0	-57.66	2.0	0	39.60	AV	54	PASS
	Off	2390.0	-48.09	2.0	0	49.17	PEAK	74	PASS
	Off	2390.0	-57.39	2.0	0	39.87	AV	54	PASS
	Off	2483.5	-39.61	2.0	0	57.65	PEAK	74	PASS
	Off	2483.5	-43.34	2.0	0	53.92	AV	54	PASS
	Off	2500.0	-46.98	2.0	0	50.28	PEAK	74	PASS
	Off	2500.0	-57.93	2.0	0	39.33	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-47.45	2.0	0	49.81	PEAK	74	PASS
	Off	2310.0	-57.71	2.0	0	39.55	AV	54	PASS
	Off	2390.0	-46.61	2.0	0	50.65	PEAK	74	PASS
	Off	2390.0	-57.47	2.0	0	39.79	AV	54	PASS
	Off	2483.5	-40.23	2.0	0	57.03	PEAK	74	PASS
	Off	2483.5	-45.77	2.0	0	51.49	AV	54	PASS
	Off	2500.0	-48.84	2.0	0	48.42	PEAK	74	PASS
	Off	2500.0	-58.09	2.0	0	39.17	AV	54	PASS
8DPSK	Off	2310.0	-47.36	2.0	0	49.90	PEAK	74	PASS
	Off	2310.0	-57.81	2.0	0	39.45	AV	54	PASS
	Off	2390.0	-48.49	2.0	0	48.77	PEAK	74	PASS
	Off	2390.0	-57.53	2.0	0	39.73	AV	54	PASS
	Off	2483.5	-40.18	2.0	0	57.08	PEAK	74	PASS
	Off	2483.5	-46.21	2.0	0	51.05	AV	54	PASS
	Off	2500.0	-47.63	2.0	0	49.63	PEAK	74	PASS
	Off	2500.0	-58.18	2.0	0	39.08	AV	54	PASS

### Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (Low Channel)



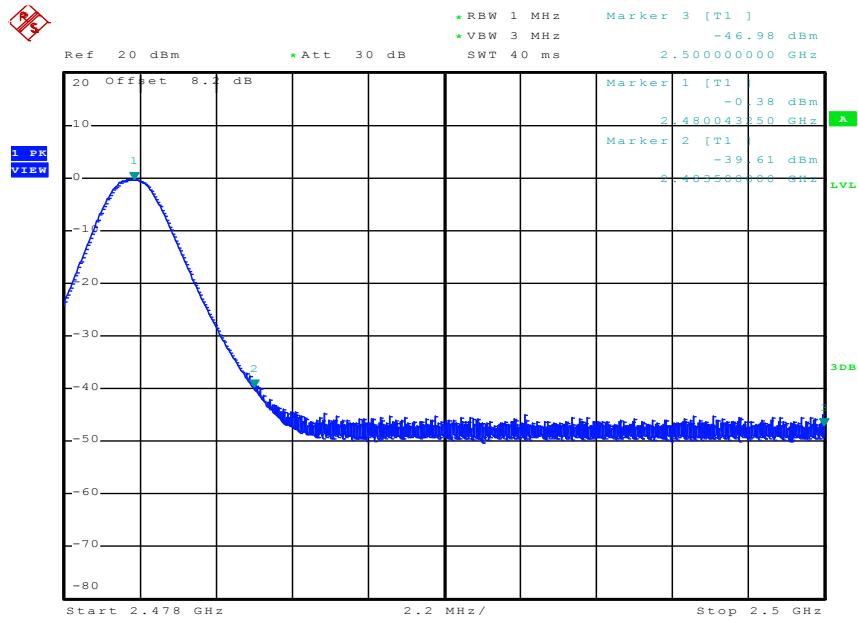
Date: 5.AUG.2019 12:54:56

### Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (Low Channel)



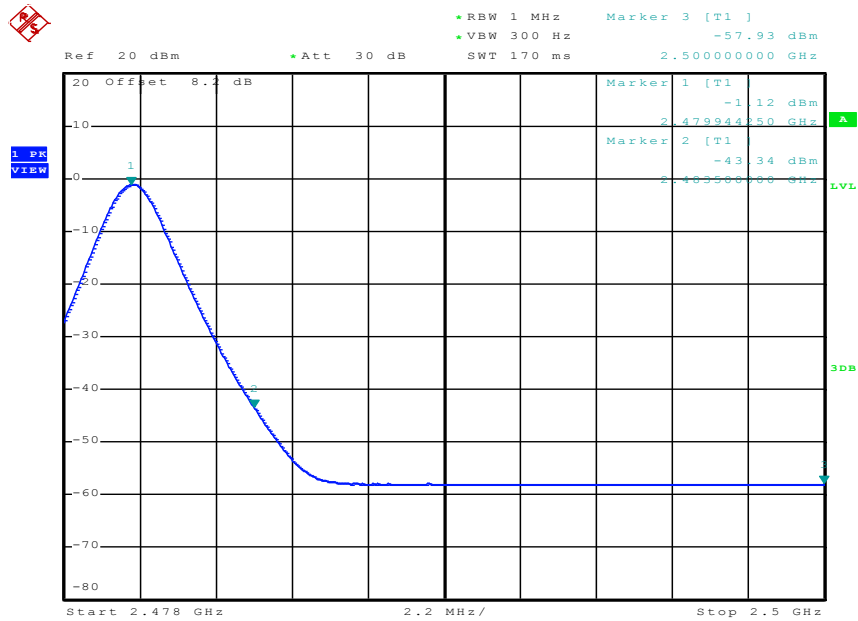
Date: 5.AUG.2019 12:55:10

Restrict-band band-edge measurements\_Hopping Off\_GFSK\_PEAK (High Channel)



Date: 5.AUG.2019 12:59:28

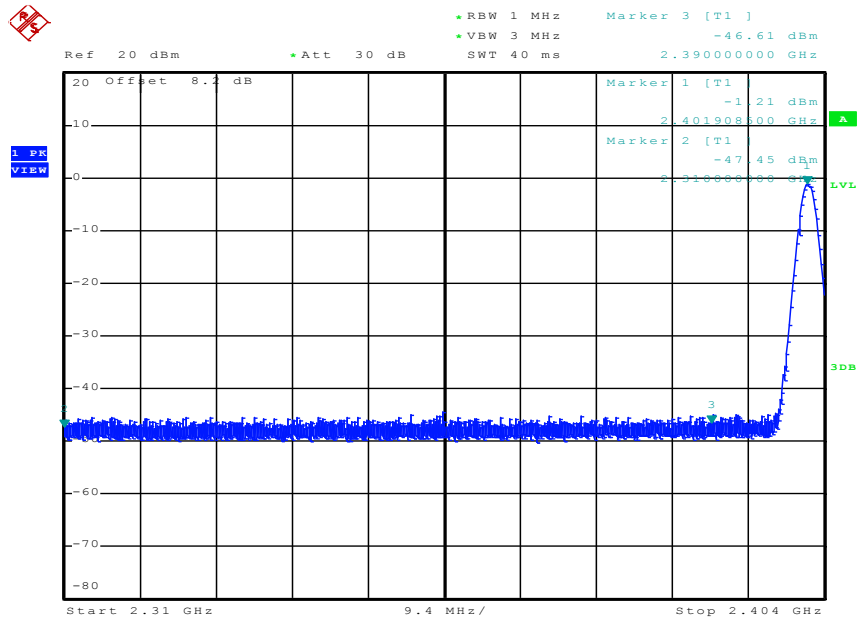
Restrict-band band-edge measurements\_Hopping Off\_GFSK\_Average (High Channel)



Date: 5.AUG.2019 12:59:41

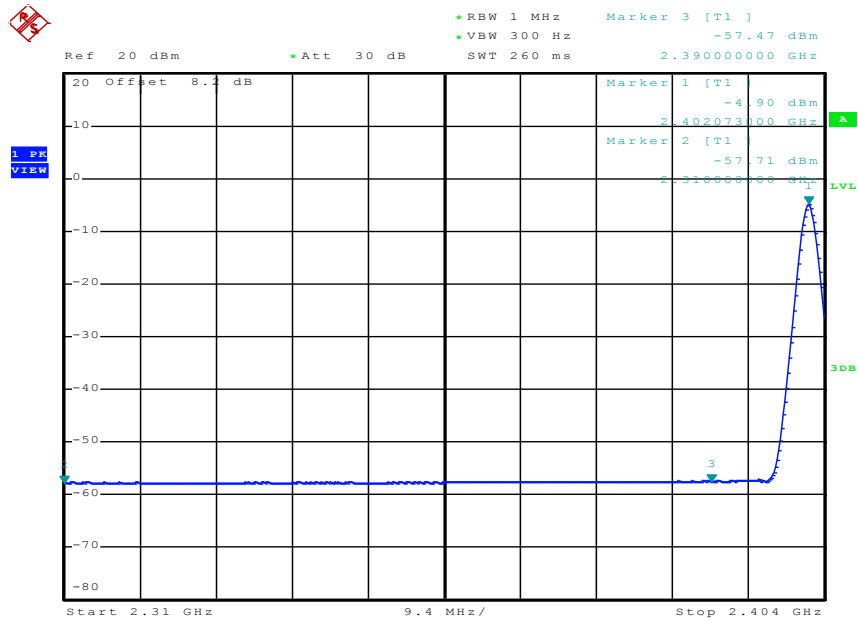


Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_PEAK (Low Channel)



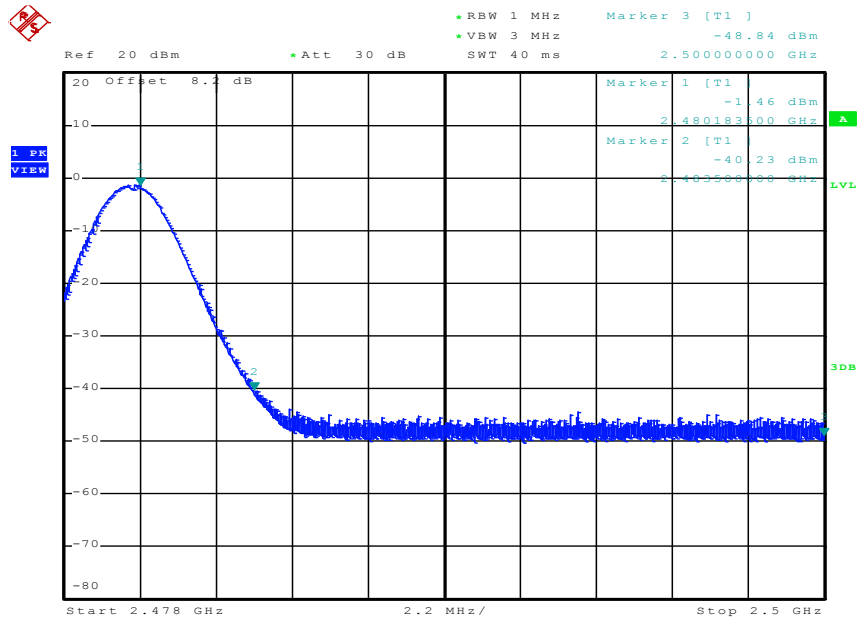
Date: 5.AUG.2019 13:02:01

Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_Average (Low Channel)



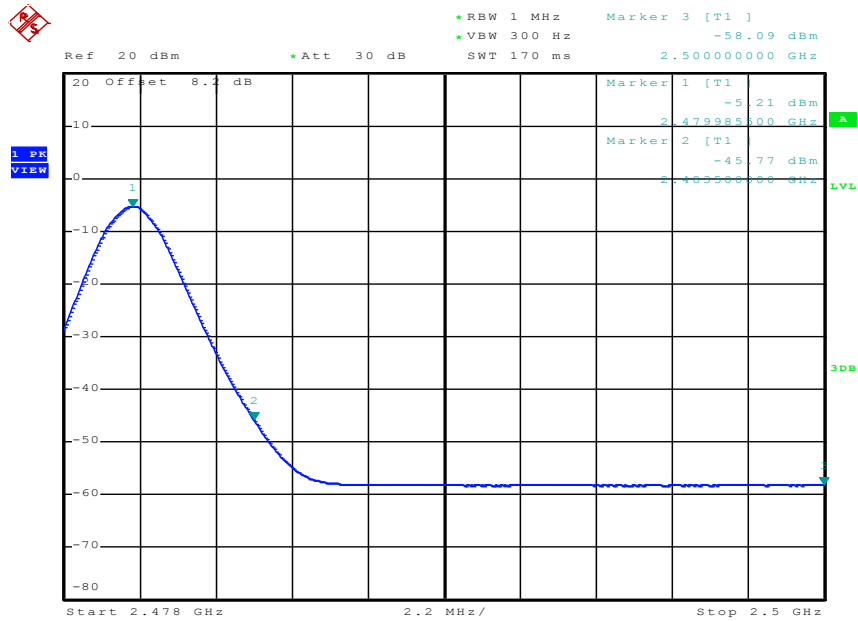
Date: 5.AUG.2019 13:02:15

Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_PEAK (High Channel)



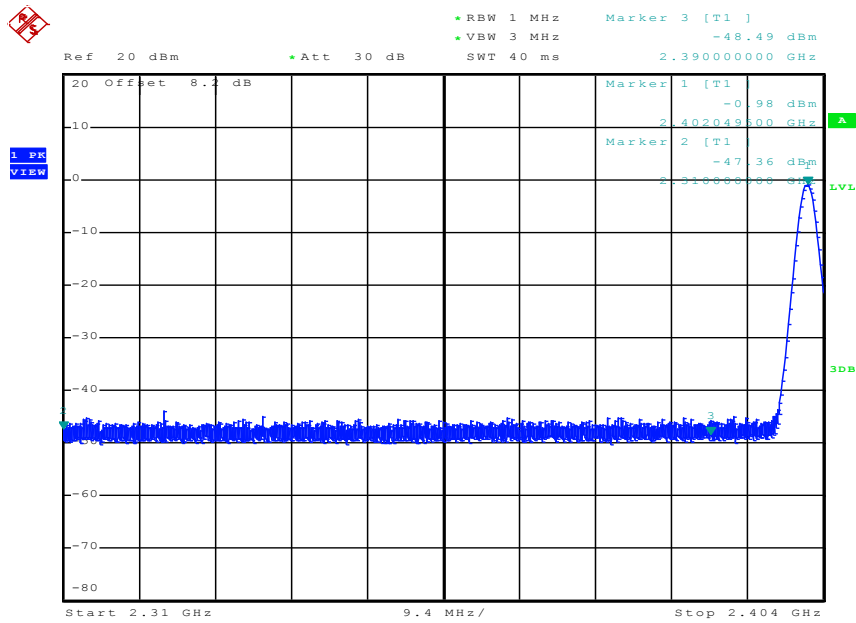
Date: 5.AUG.2019 13:07:18

Restrict-band band-edge measurements\_Hopping Off  $\pi/4$ -DQPSK\_Average (High Channel)



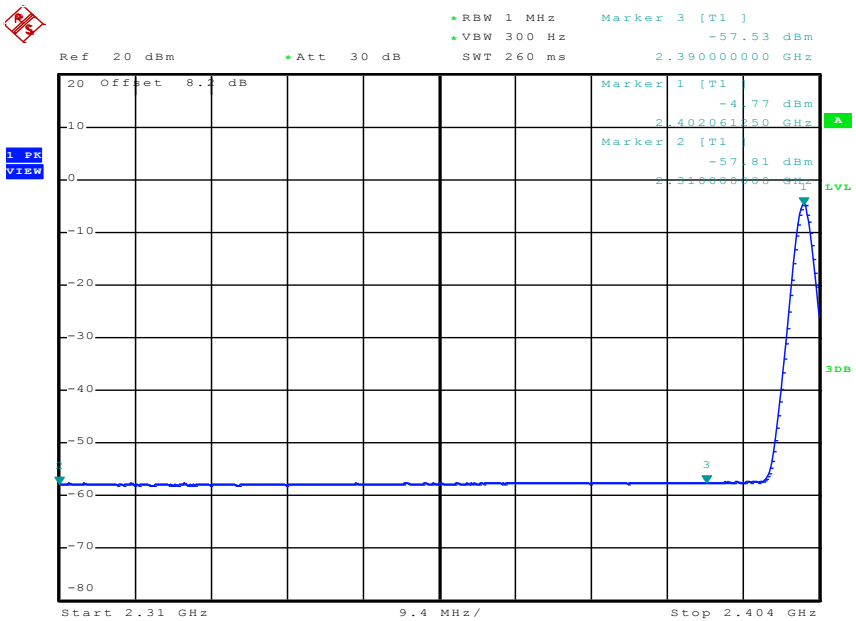
Date: 5.AUG.2019 13:07:32

Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (Low Channel)



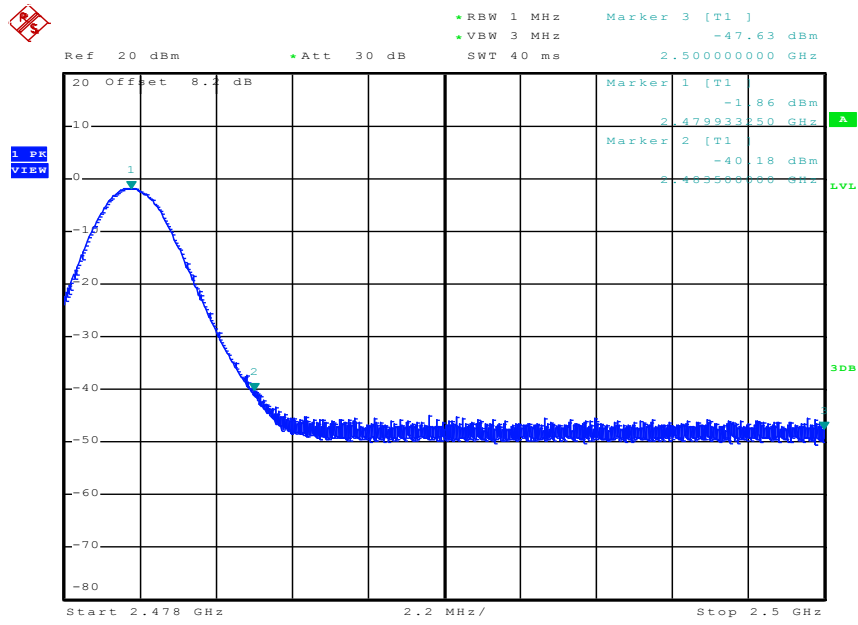
Date: 5.AUG.2019 13:09:56

Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_Average (Low Channel)



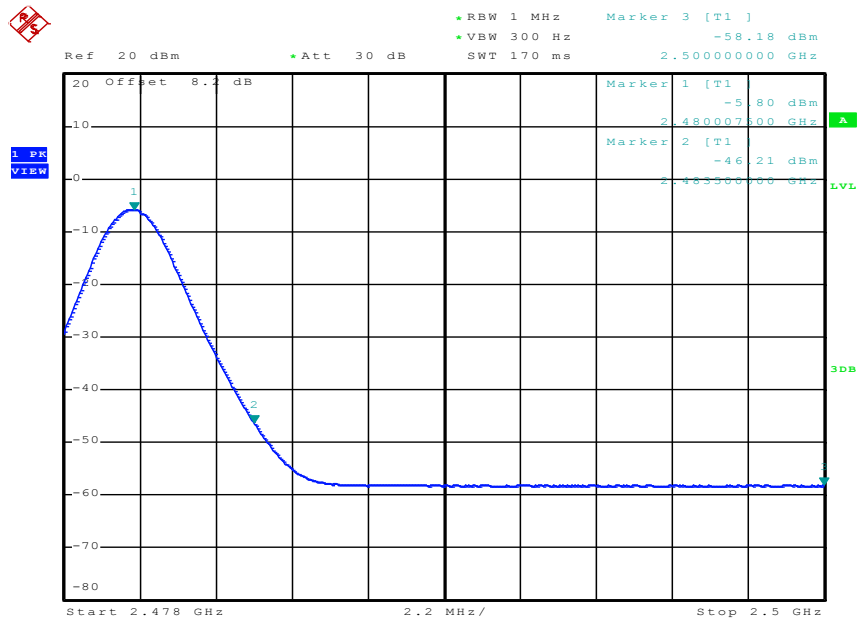
Date: 5.AUG.2019 13:10:10

Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_PEAK (High Channel)



Date: 5.AUG.2019 13:15:08

Restrict-band band-edge measurements\_Hopping Off\_8DPSK\_Average (High Channel)



Date: 5.AUG.2019 13:15:22