

Appendix A

RF Test Data for BT V5.0(BDR/EDR) (Conducted Measurement)

Product Name: Bluetooth Speaker

Trade Mark: Brookstone

Test Model: BSSK9015

Environmental Conditions

Temperature:	24.5 ° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	David Luo
Supervised by:	Wang.Chuang

A.1 Maximum Conducted Peak Output Power

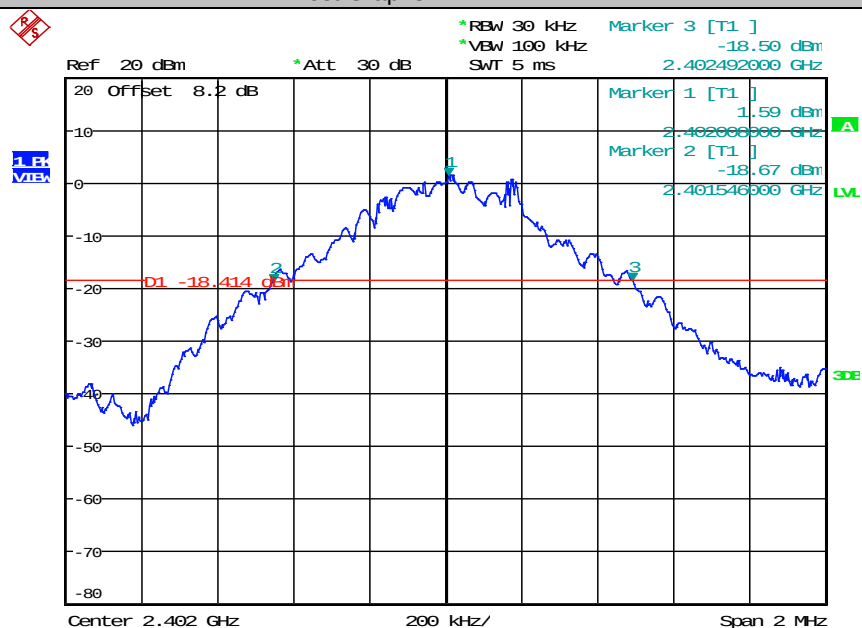
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.060	21	PASS
	MCH	4.400	21	PASS
	HCH	4.590	21	PASS
$\pi/4$ DQPSK	LCH	0.710	21	PASS
	MCH	2.210	21	PASS
	HCH	2.420	21	PASS
8DPSK	LCH	1.260	21	PASS
	MCH	2.700	21	PASS
	HCH	2.880	21	PASS

A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.946	Not Specified	PASS
	MCH	0.948	Not Specified	PASS
	HCH	0.950	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.264	Not Specified	PASS
	MCH	1.236	Not Specified	PASS
	HCH	1.260	Not Specified	PASS
8DPSK	LCH	1.298	Not Specified	PASS
	MCH	1.266	Not Specified	PASS
	HCH	1.262	Not Specified	PASS

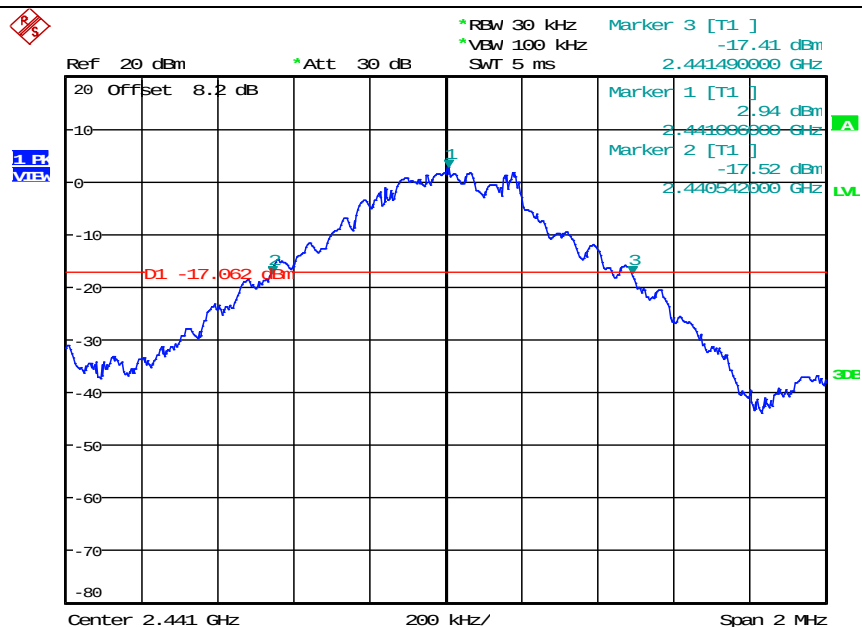
Test Graphs

GFSK/LCH



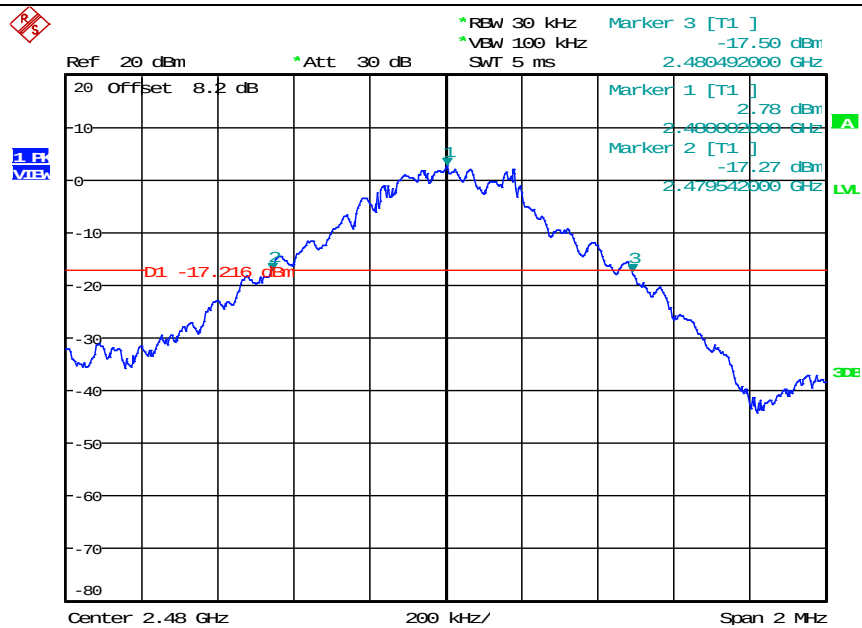
Date: 1.AUG.2019 12:58:54

GFSK/MCH

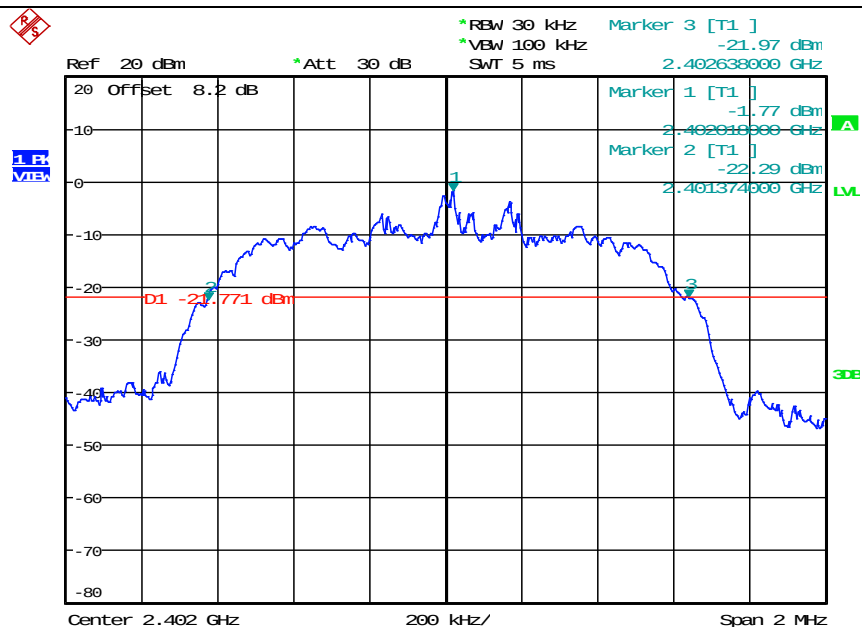


Date: 1.AUG.2019 13:01:31

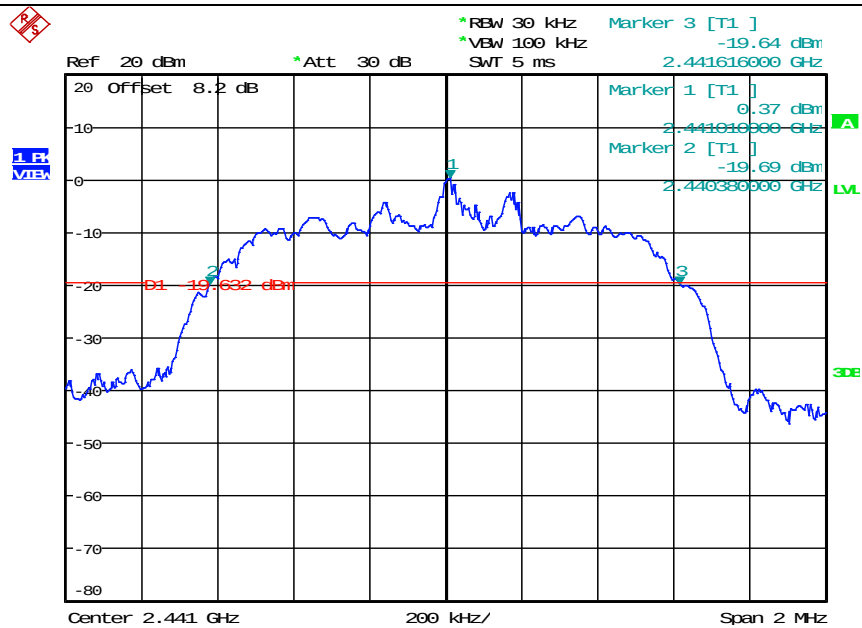
GFSK/HCH



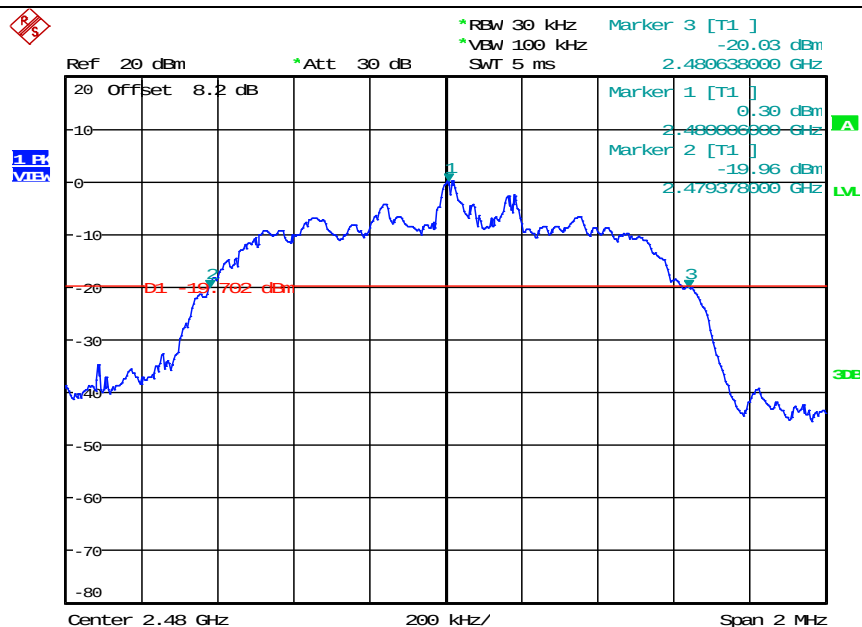
Date: 1.AUG.2019 13:03:15

$\pi/4$ DQPSK/LCH

Date: 1.AUG.2019 13:06:08

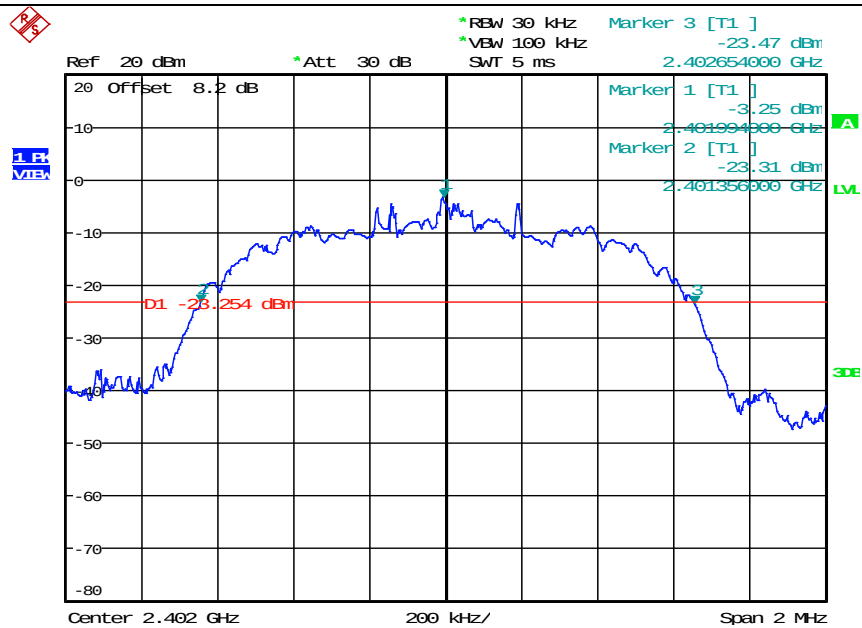
 $\pi/4$ DQPSK/MCH

Date: 1.AUG.2019 13:09:29

$\pi/4$ DQPSK/HCH

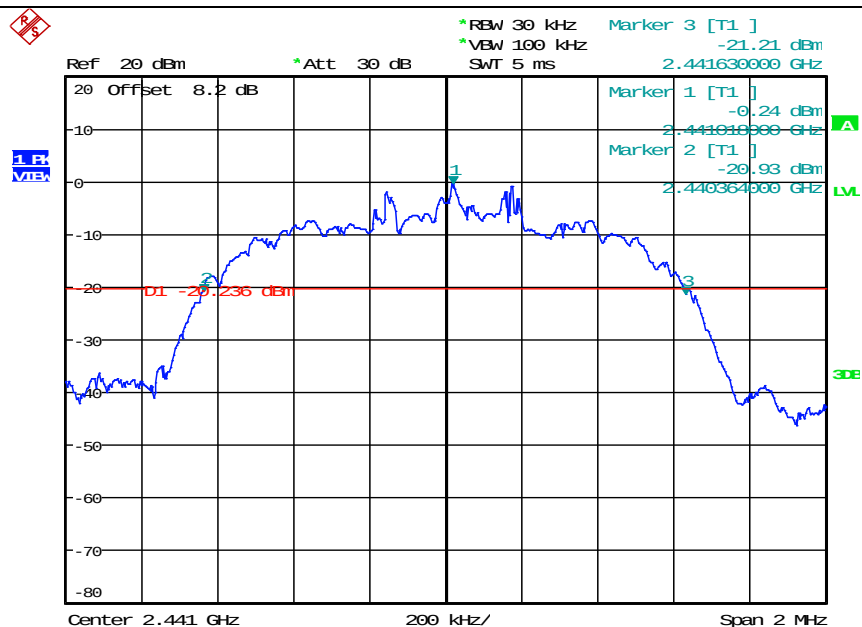
Date: 1.AUG.2019 13:11:21

8DPSK/LCH



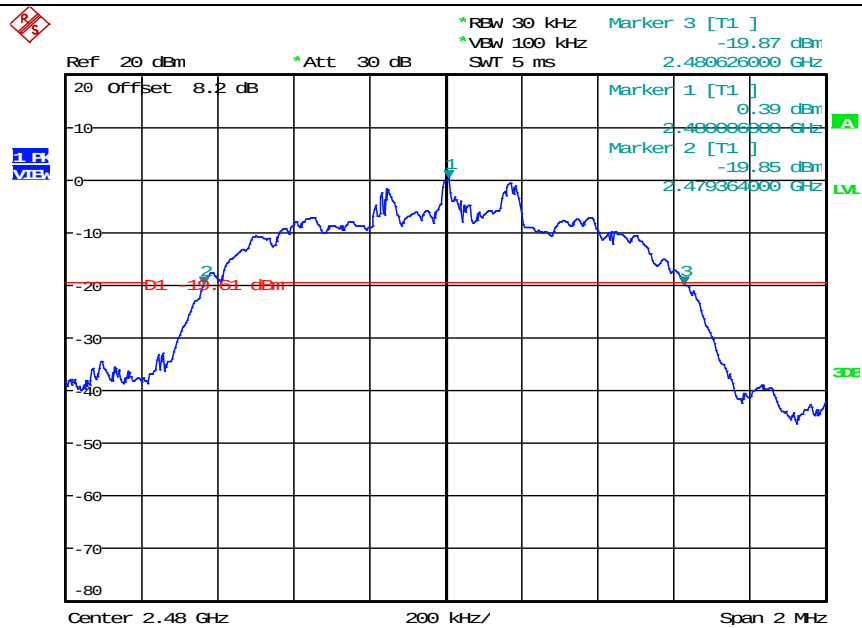
Date: 1.AUG.2019 13:14:01

8DPSK/MCH



Date: 1.AUG.2019 13:16:29

8DPSK/HCH



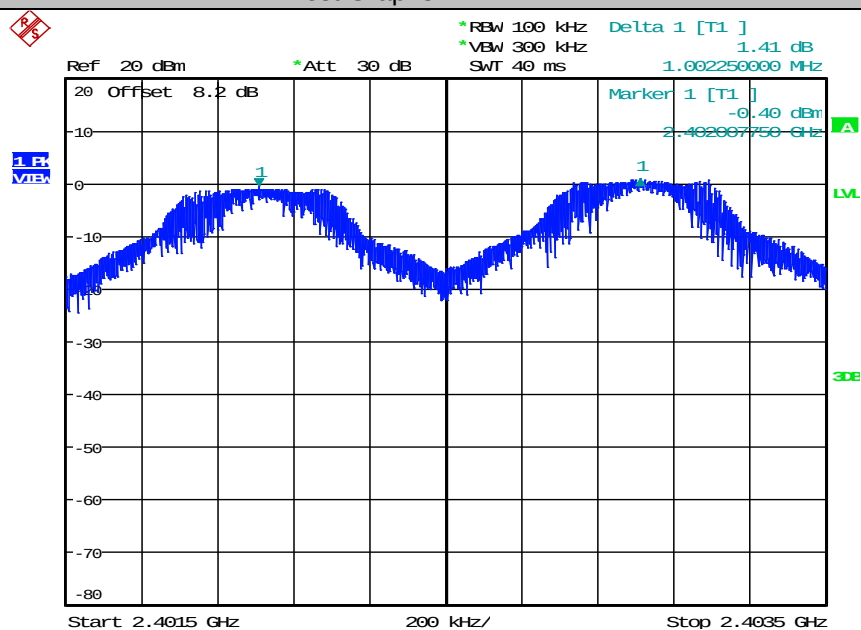
Date: 1.AUG.2019 13:18:13

A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.002	0.633	PASS
	MCH	1.010	0.633	PASS
	HCH	0.976	0.633	PASS
$\pi/4$ DQPSK	LCH	0.886	0.843	PASS
	MCH	1.066	0.843	PASS
	HCH	1.152	0.843	PASS
8DPSK	LCH	1.008	0.865	PASS
	MCH	1.156	0.865	PASS
	HCH	0.994	0.865	PASS

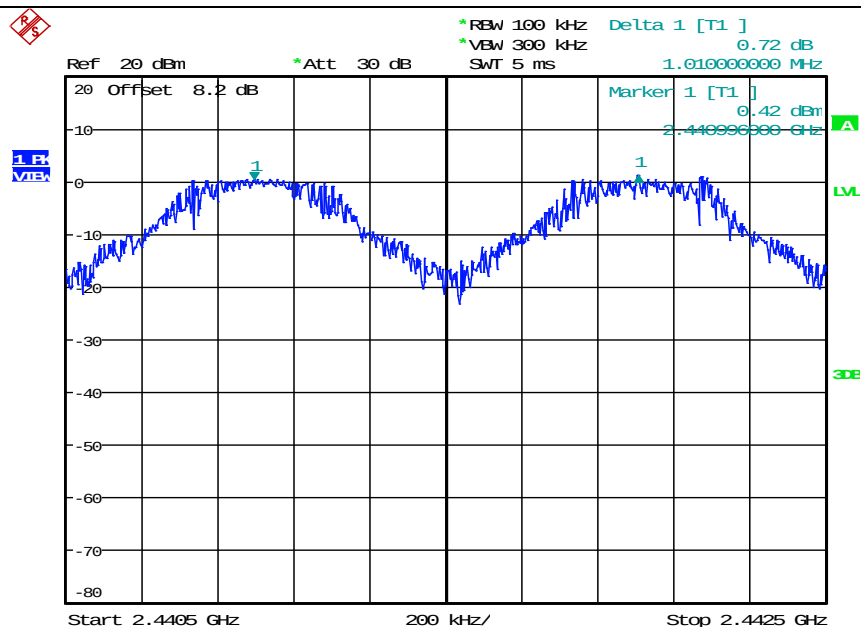
Test Graphs

GFSK/LCH



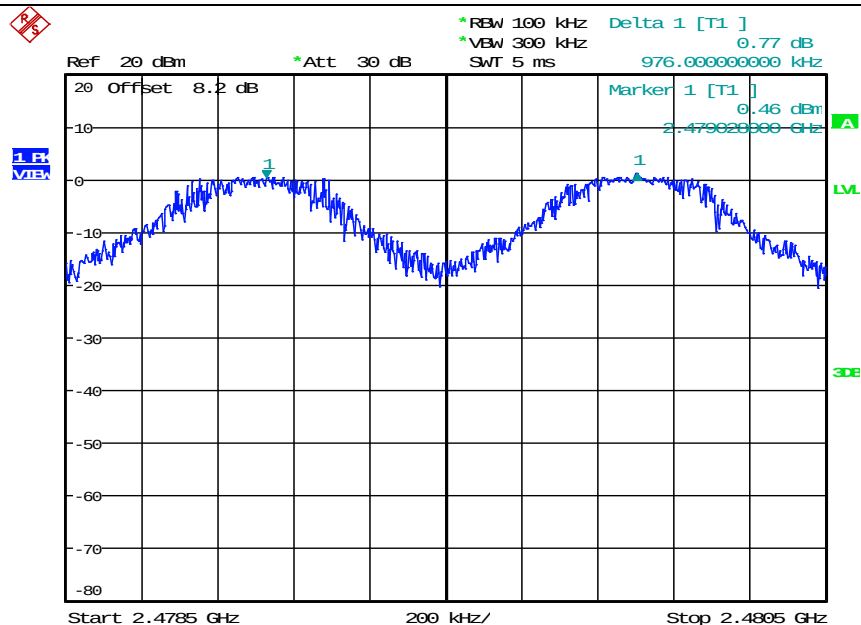
Date: 1.AUG.2019 13:45:25

GFSK/MCH

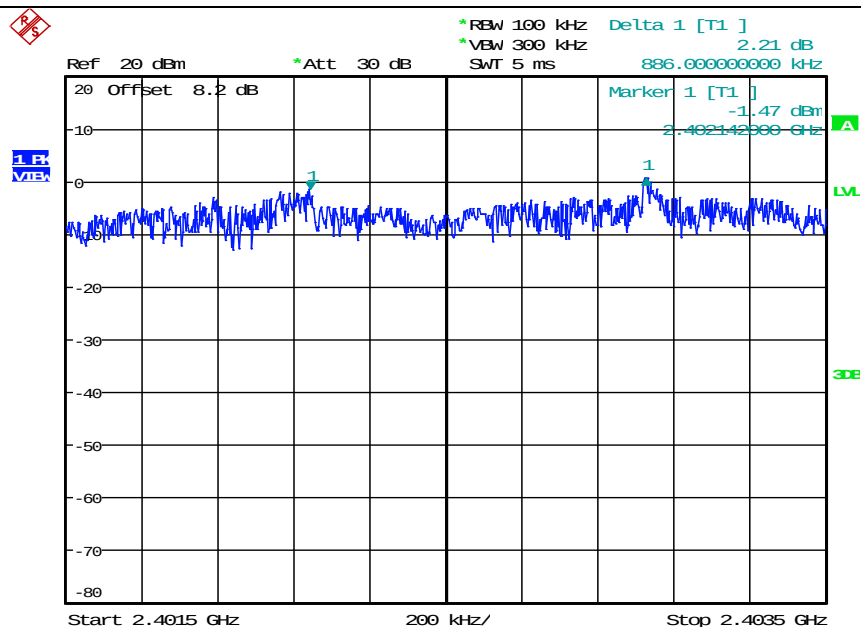


Date: 1.AUG.2019 13:23:09

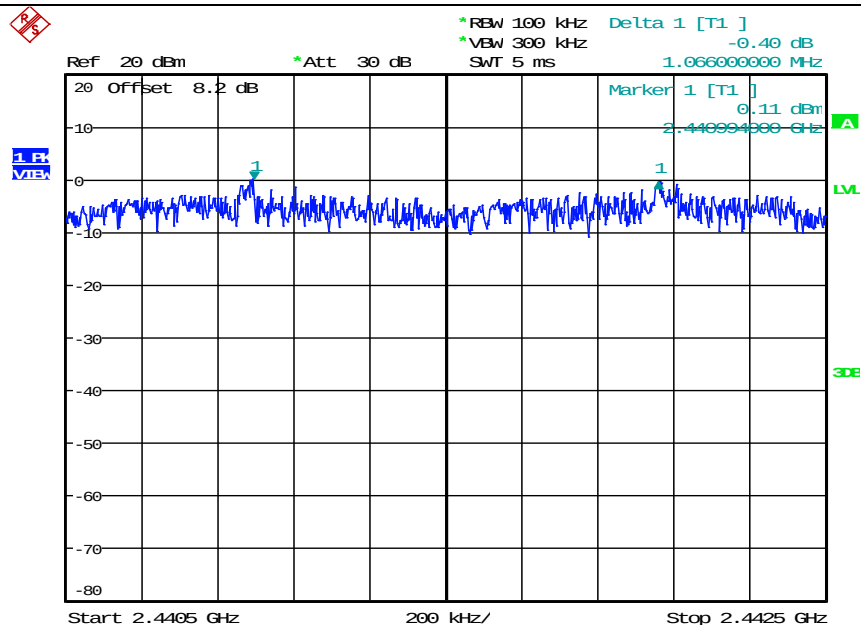
GFSK/HCH



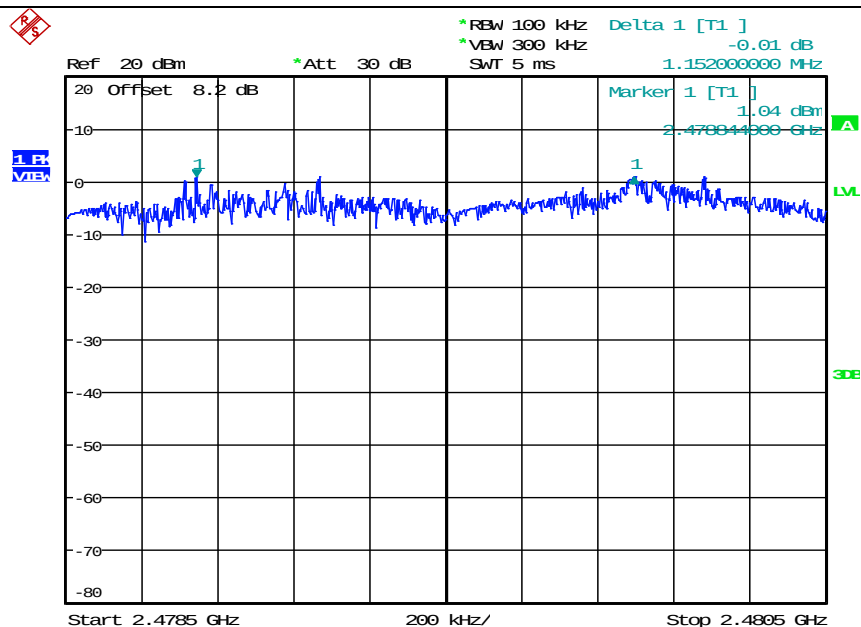
Date: 1.AUG.2019 13:23:41

$\pi/4$ DQPSK/LCH

Date: 1.AUG.2019 13:27:06

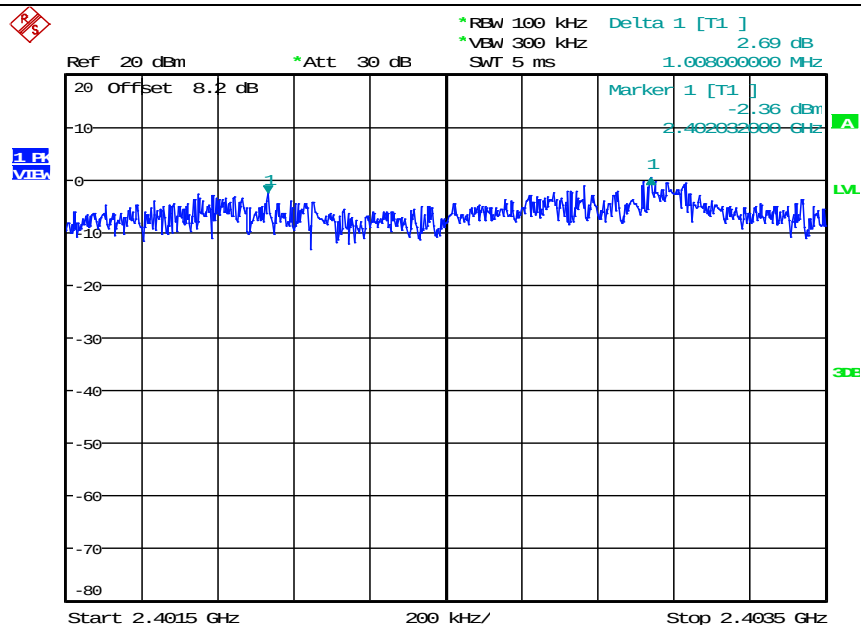
 $\pi/4$ DQPSK/MCH

Date: 1.AUG.2019 13:46:03

$\pi/4$ DQPSK/HCH

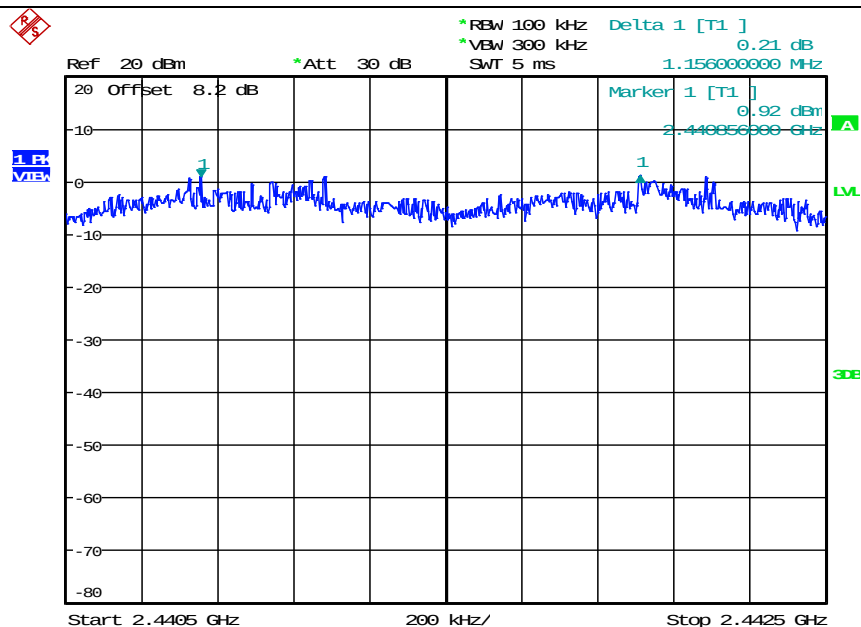
Date: 1.AUG.2019 13:30:22

8DPSK/LCH



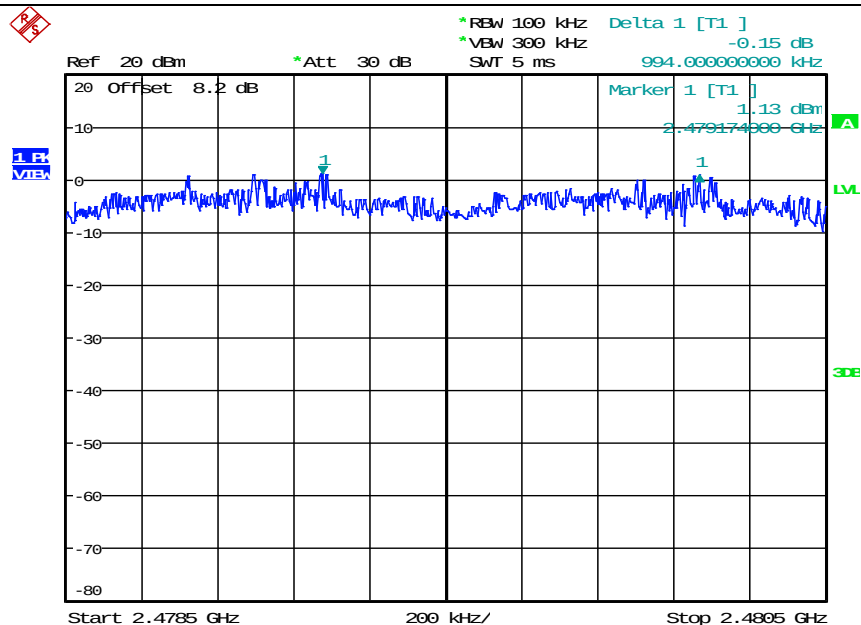
Date: 1.AUG.2019 13:35:47

8DPSK/MCH



Date: 1.AUG.2019 13:38:27

8DPSK/HCH



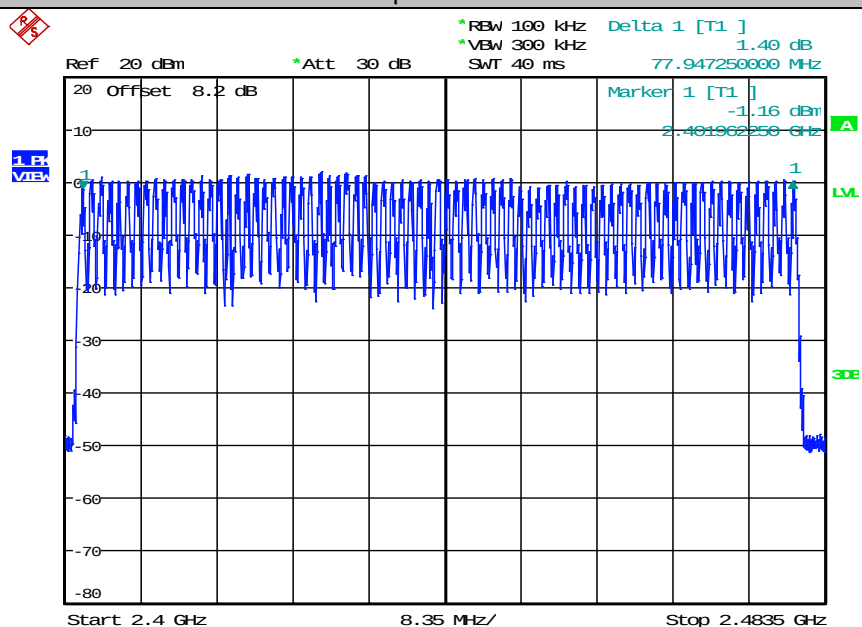
Date: 1.AUG.2019 13:39:23

A.4 Hopping Channel Number

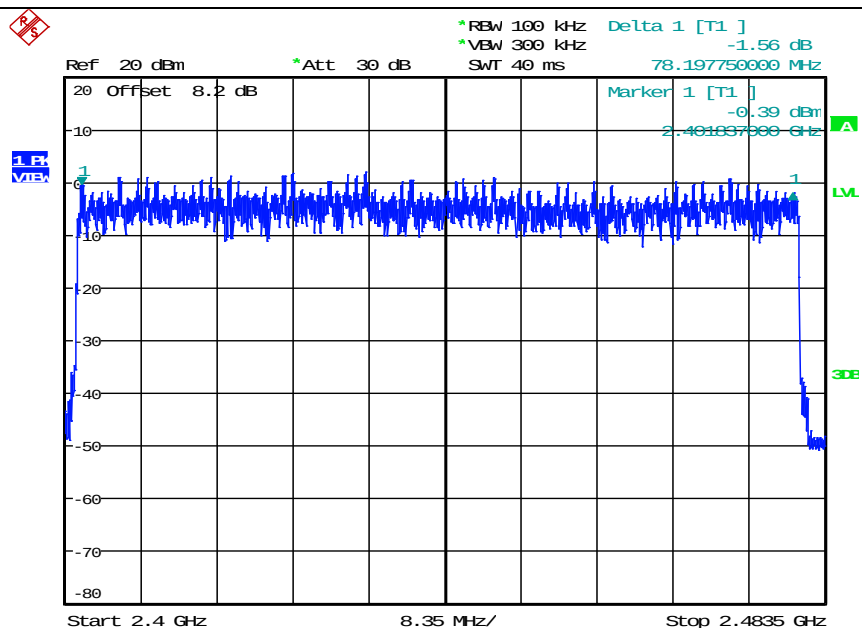
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

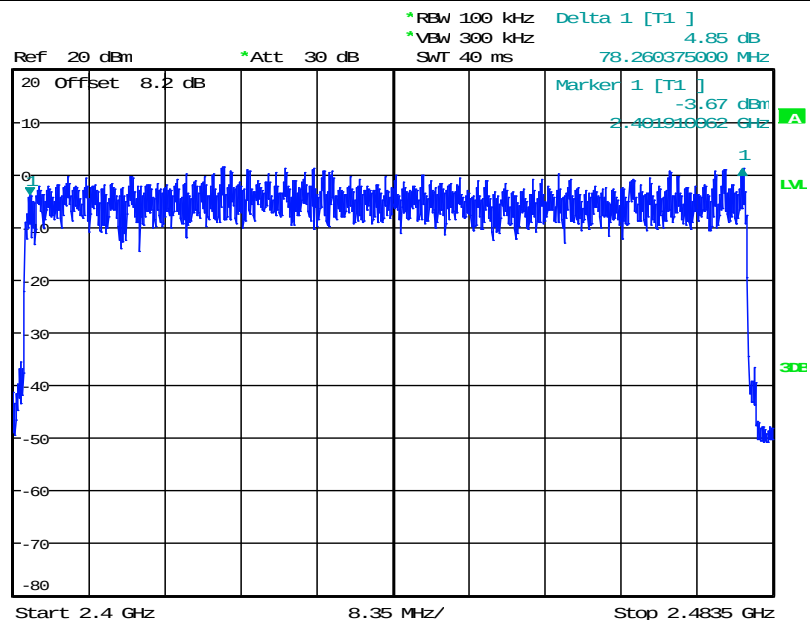


Date: 1.AUG.2019 13:26:19

 $\pi/4$ DQPSK/Hop

Date: 1.AUG.2019 13:34:47

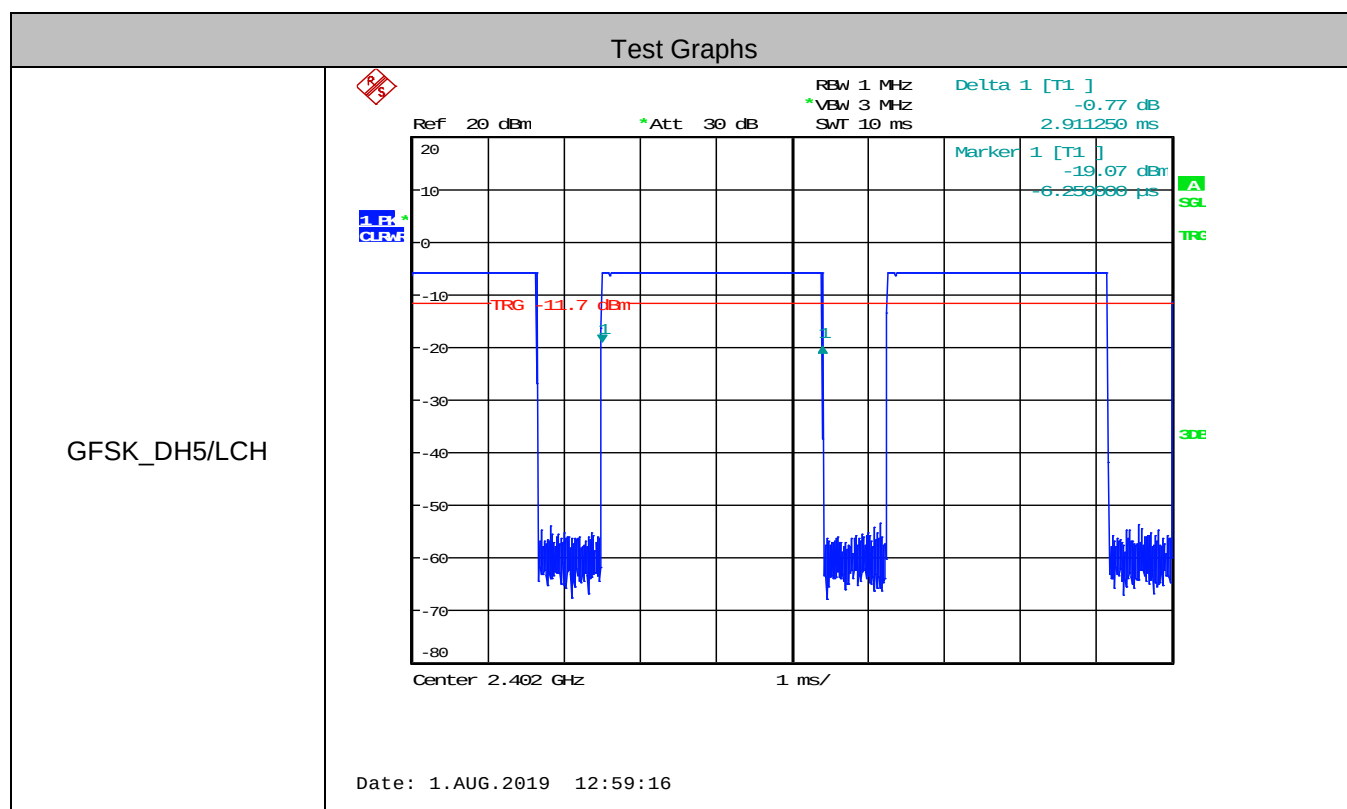
8DPSK/Hop

1 R
VIEW

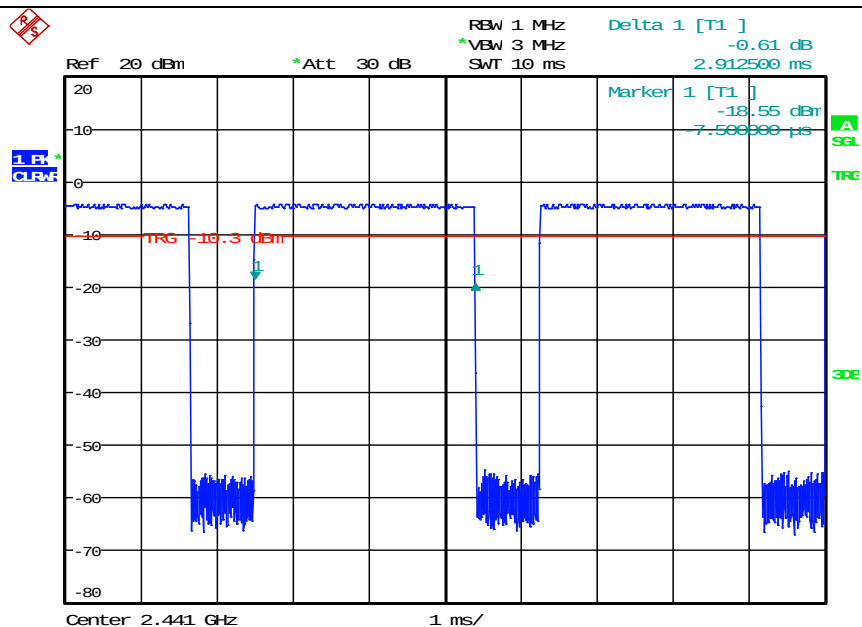
Date: 1.AUG.2019 13:43:14

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	2.91	106.7	0.31	0.4	PASS
	DH5	MCH	2.91	106.7	0.31	0.4	PASS
	DH5	HCH	2.91	106.7	0.31	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	2.91	106.7	0.312	0.4	PASS
	2DH5	MCH	2.91	106.7	0.312	0.4	PASS
	2DH5	HCH	2.91	106.7	0.312	0.4	PASS
8DPSK	3DH5	LCH	2.91	106.7	0.312	0.4	PASS
	3DH5	MCH	2.91	106.7	0.312	0.4	PASS
	3DH5	HCH	2.91	106.7	0.312	0.4	PASS

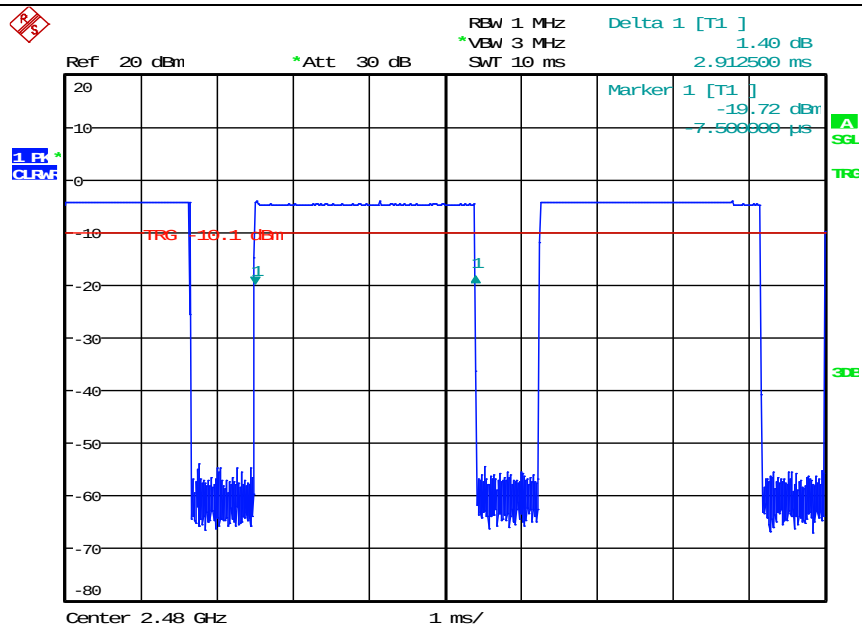


GFSK_DH5/MCH



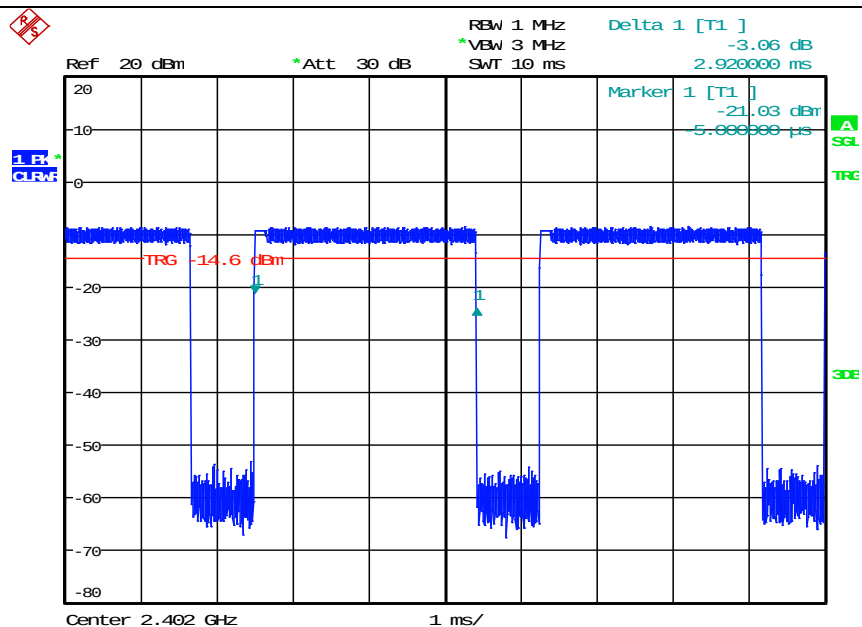
Date: 1.AUG.2019 13:01:53

GFSK_DH5/HCH



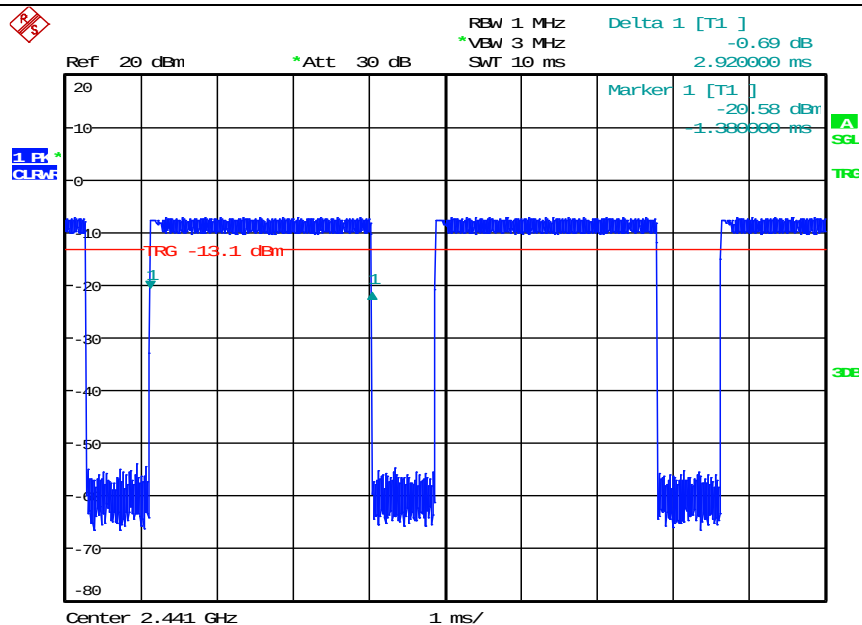
Date: 1.AUG.2019 13:03:36

$\pi/4$ DQPSK
_2DH5/LCH



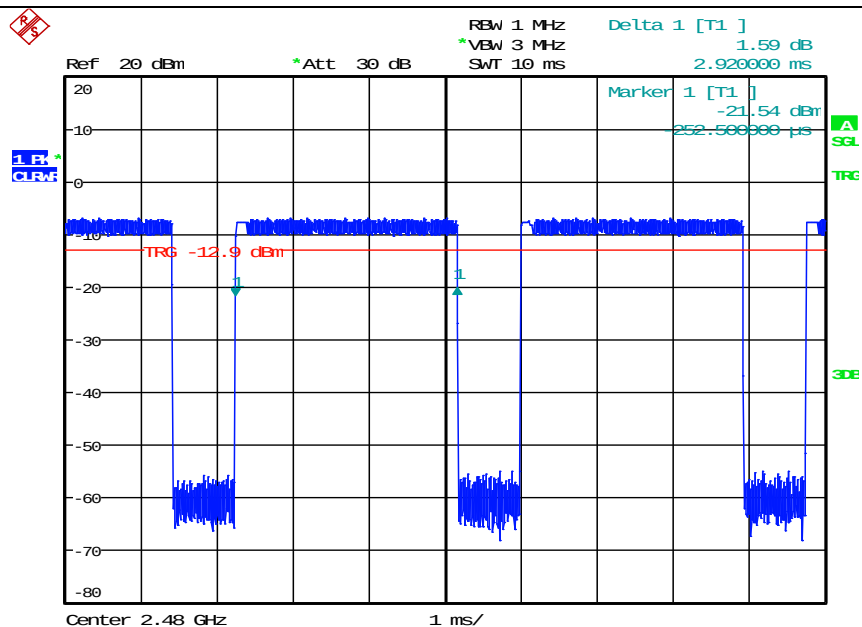
Date: 1.AUG.2019 13:06:29

$\pi/4$ DQPSK
_2DH5/MCH



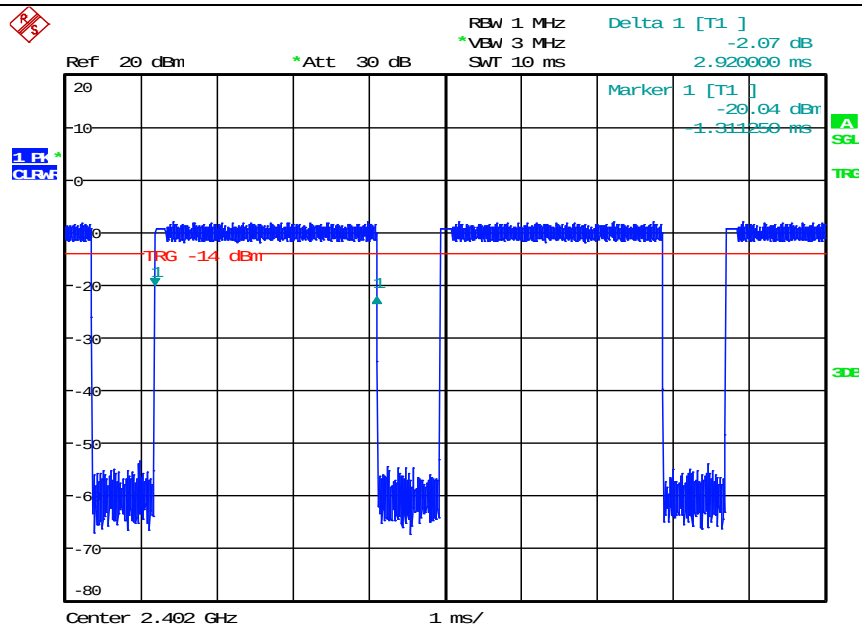
Date: 1.AUG.2019 13:09:50

$\pi/4$ DQPSK
_2DH5/HCH



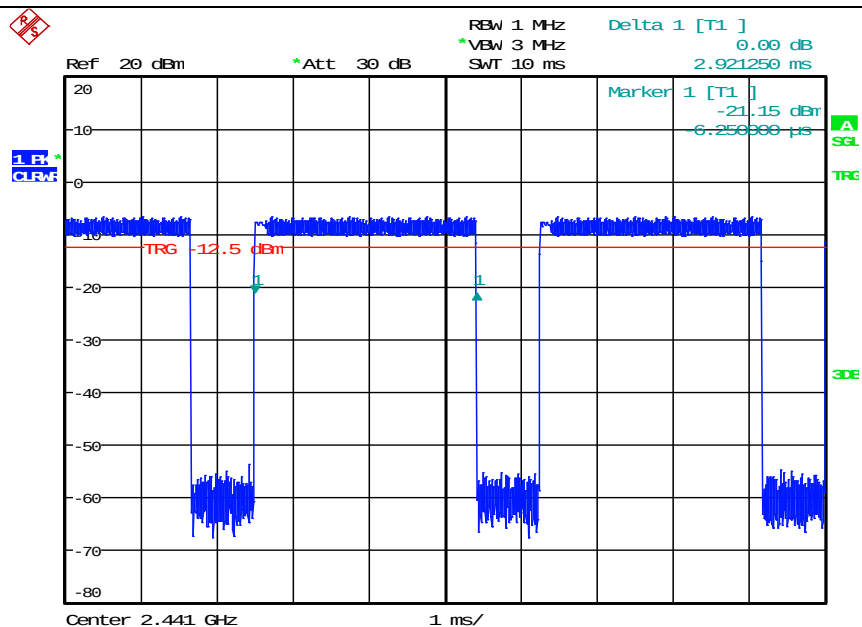
Date: 1.AUG.2019 13:11:42

8DPSK_3DH5/LCH



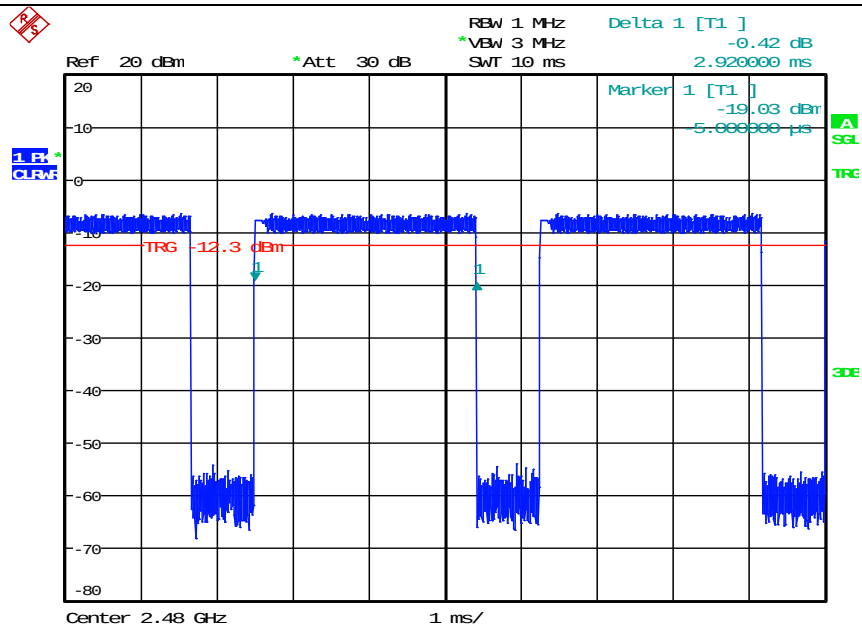
Date: 1.AUG.2019 13:14:22

8DPSK_3DH5/MCH



Date: 1.AUG.2019 13:16:51

8DPSK_3DH5/HCH



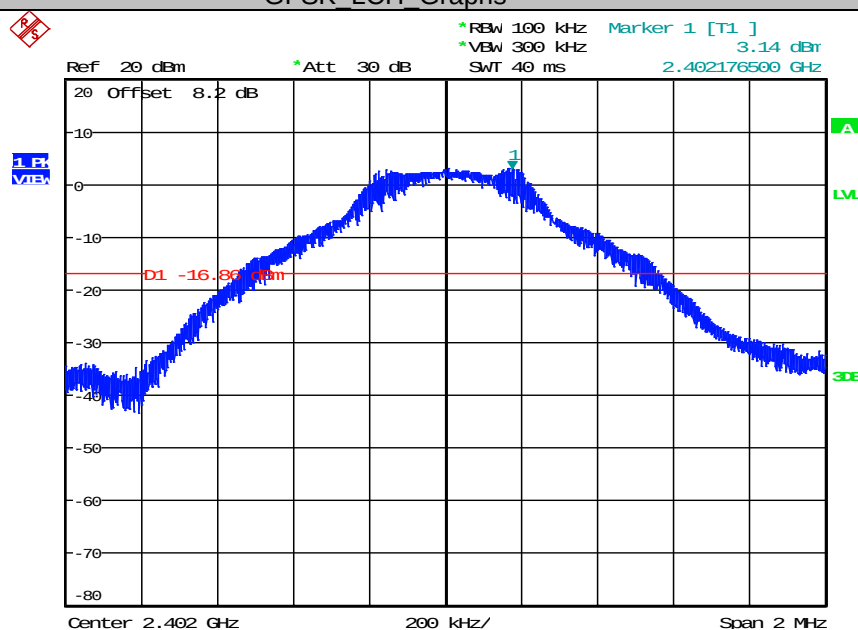
Date: 1.AUG.2019 13:18:35

A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.14	-31.720	-16.860	PASS
	MCH	4.39	-31.730	-15.610	PASS
	HCH	4.59	-32.350	-15.410	PASS
$\pi/4$ DQPSK	LCH	-0.47	-32.530	-20.470	PASS
	MCH	1.1	-32.530	-18.900	PASS
	HCH	1.22	-32.040	-18.780	PASS
8DPSK	LCH	-0.35	-32.360	-20.350	PASS
	MCH	1.1	-32.340	-18.900	PASS
	HCH	1.3	-32.440	-18.700	PASS

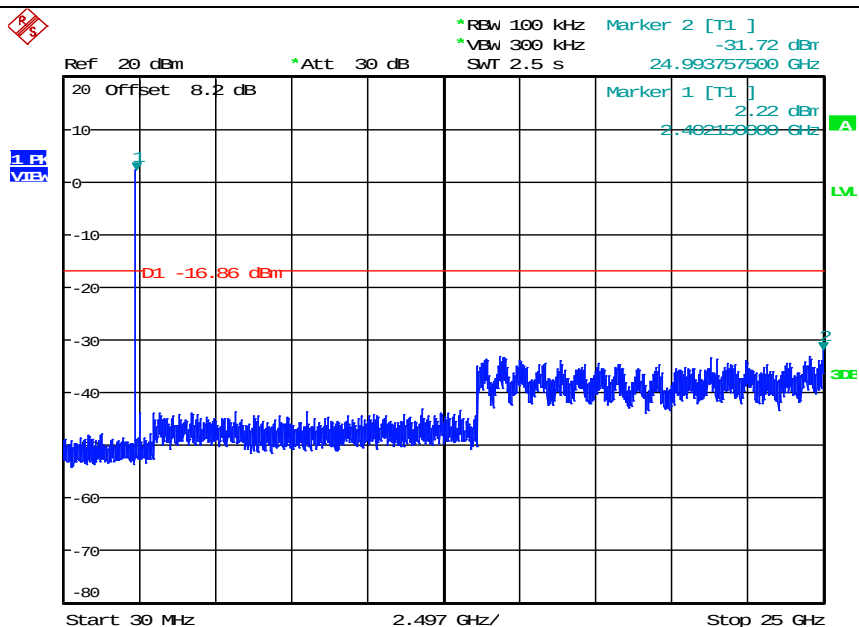
GFSK LCH Graphs

Pref



Date: 1.AUG.2019 13:00:00

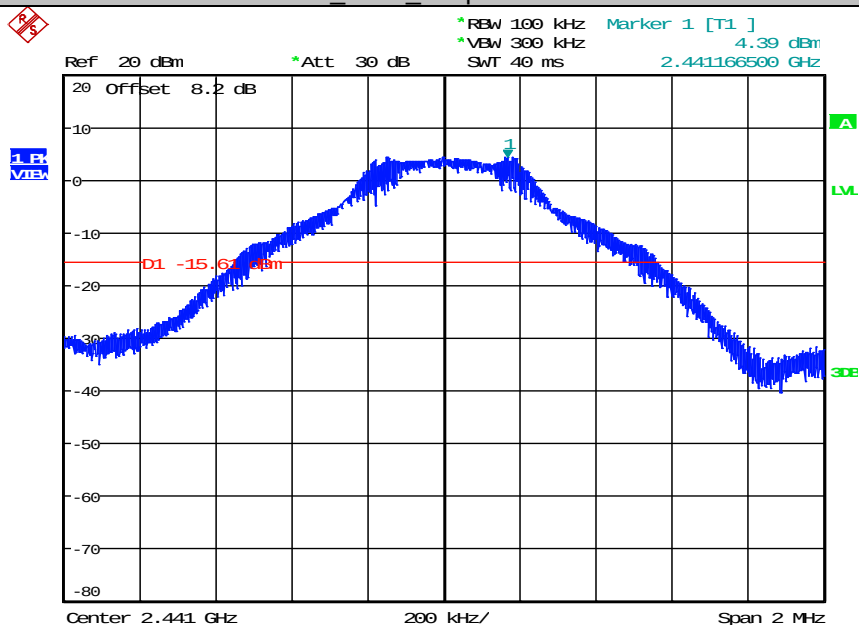
P_uw



Date: 1.AUG.2019 13:00:15

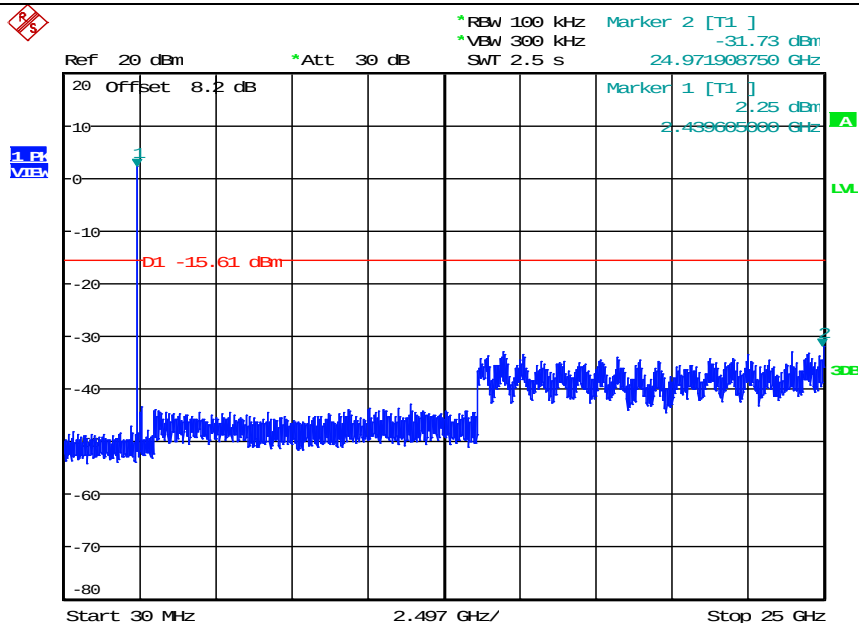
GFSK_MCH_Graphs

Pref



Date: 1.AUG.2019 13:02:20

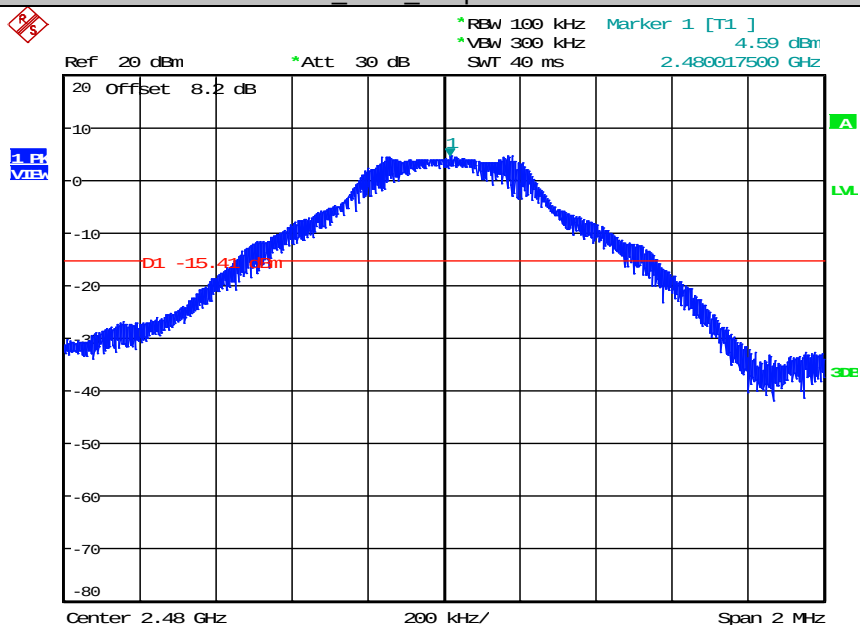
Puw



Date: 1.AUG.2019 13:02:35

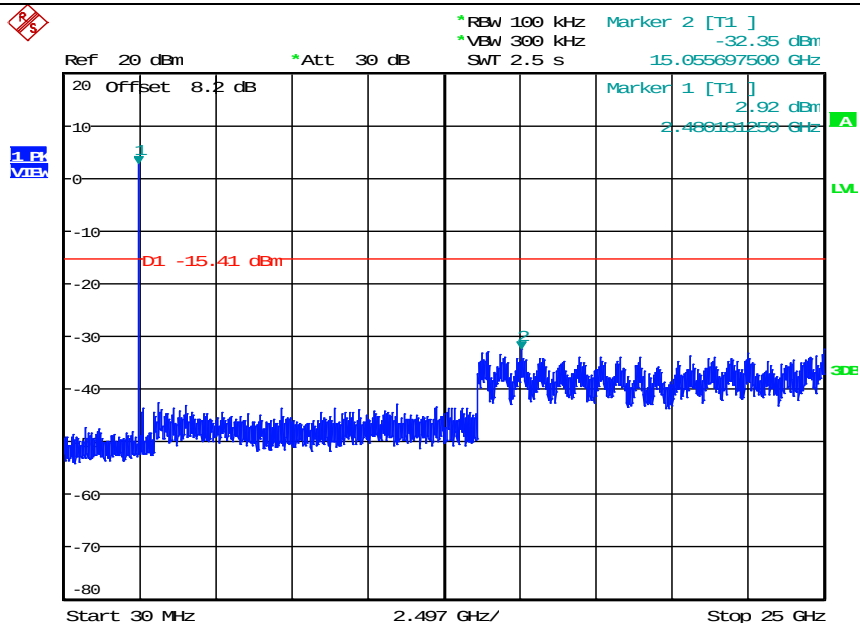
GFSK_HCH_Graphs

Pref



Date: 1.AUG.2019 13:04:20

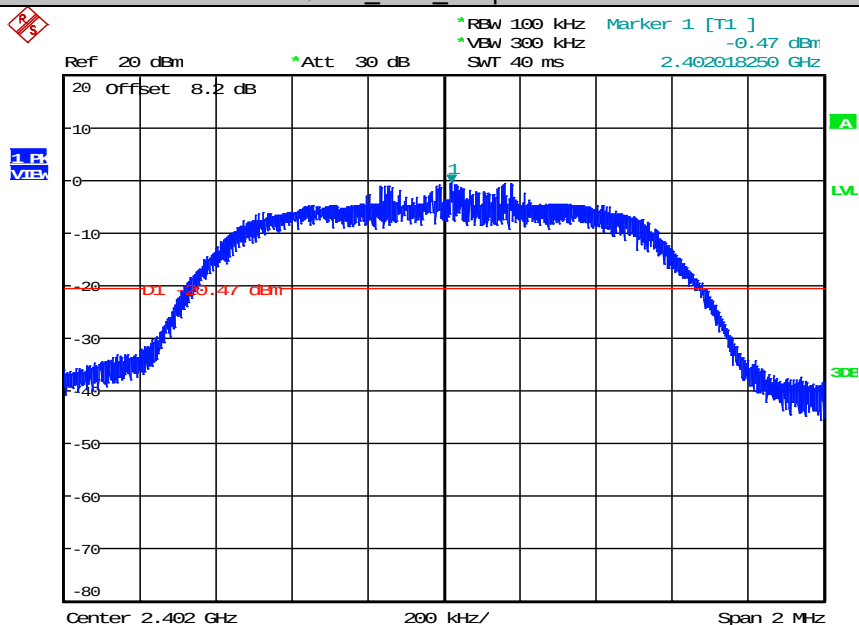
Puw



Date: 1.AUG.2019 13:04:35

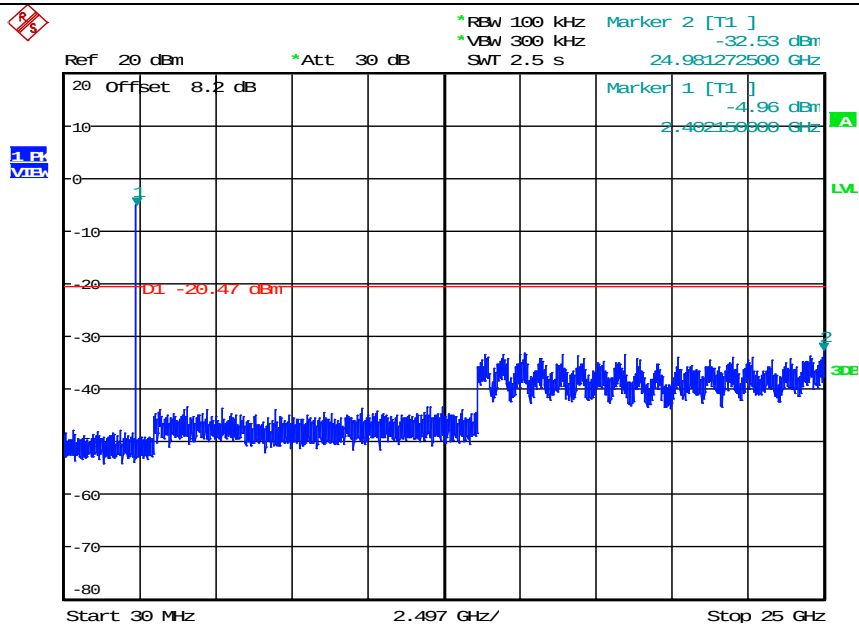
$\pi/4$ DQPSK_LCH_Graphs

Pref



Date: 1.AUG.2019 13:07:14

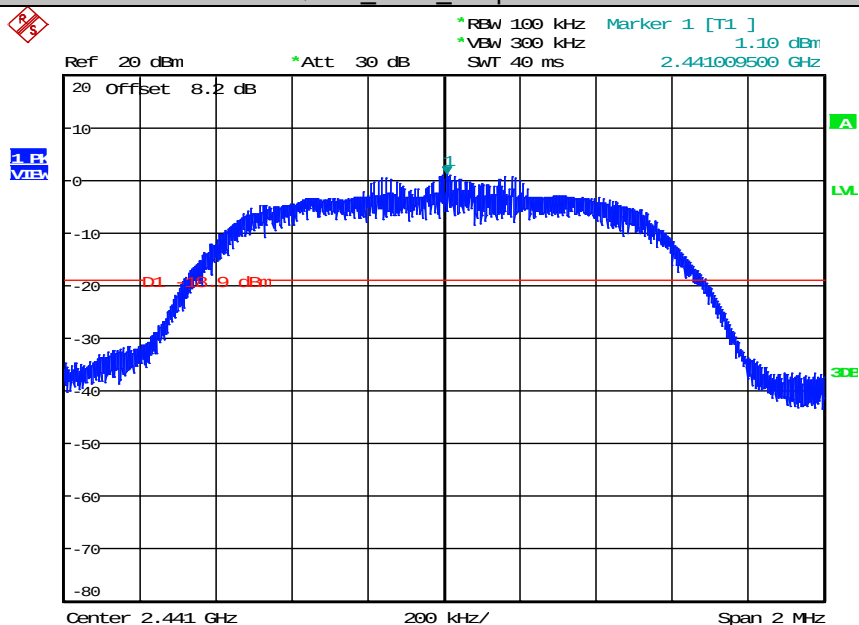
Puw



Date: 1.AUG.2019 13:07:29

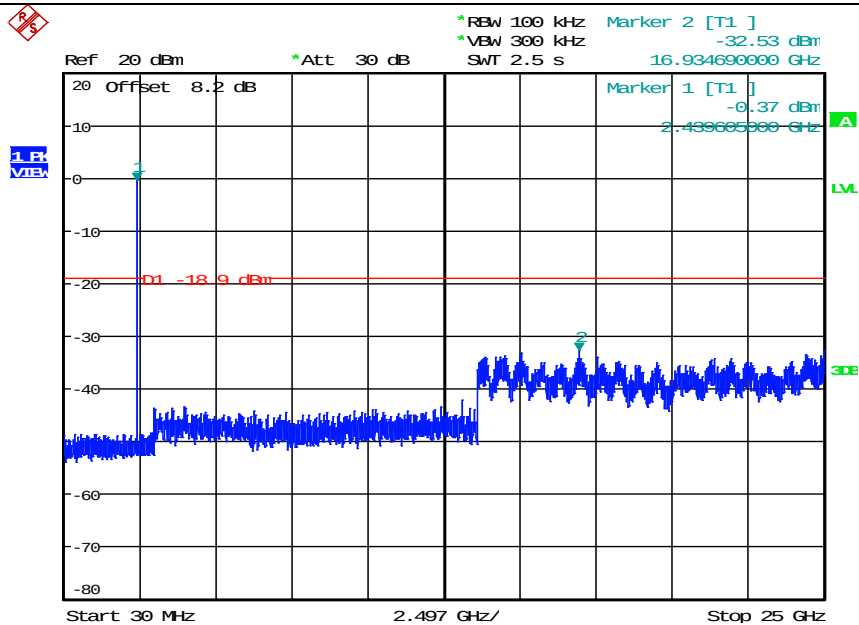
$\pi/4$ DQPSK_MCH_Graphs

Pref



Date: 1.AUG.2019 13:10:18

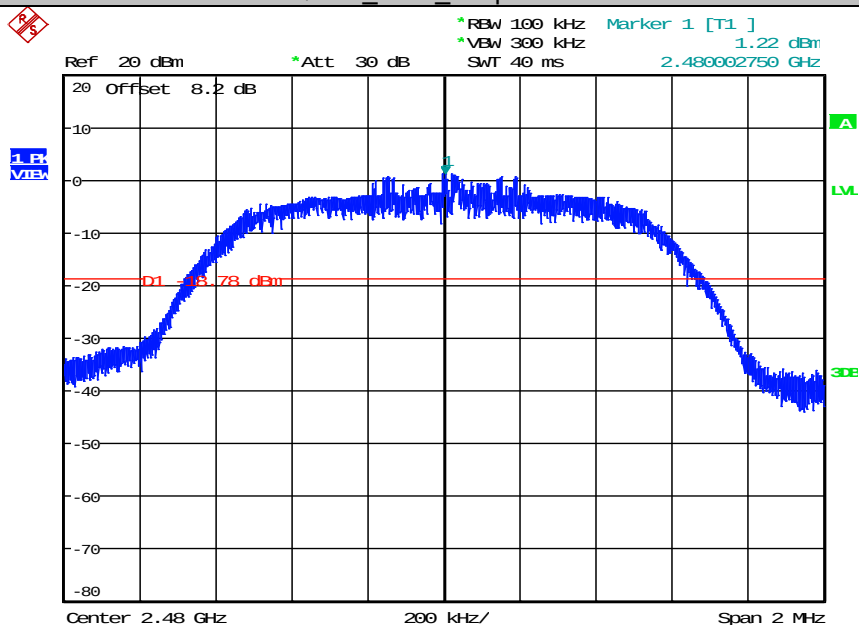
Puw



Date: 1.AUG.2019 13:10:33

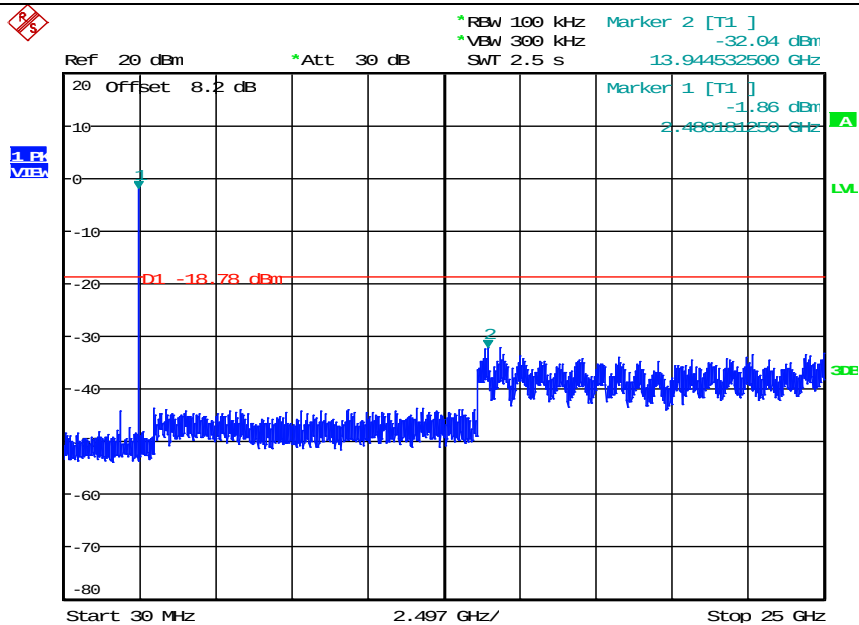
$\pi/4$ DQPSK_HCH_Graphs

Pref



Date: 1.AUG.2019 13:12:27

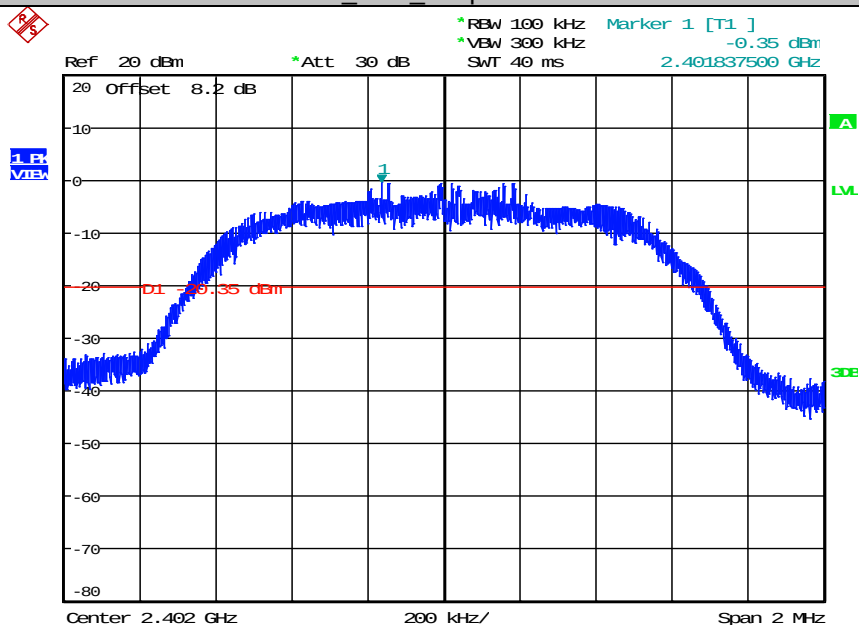
Puw



Date: 1.AUG.2019 13:12:42

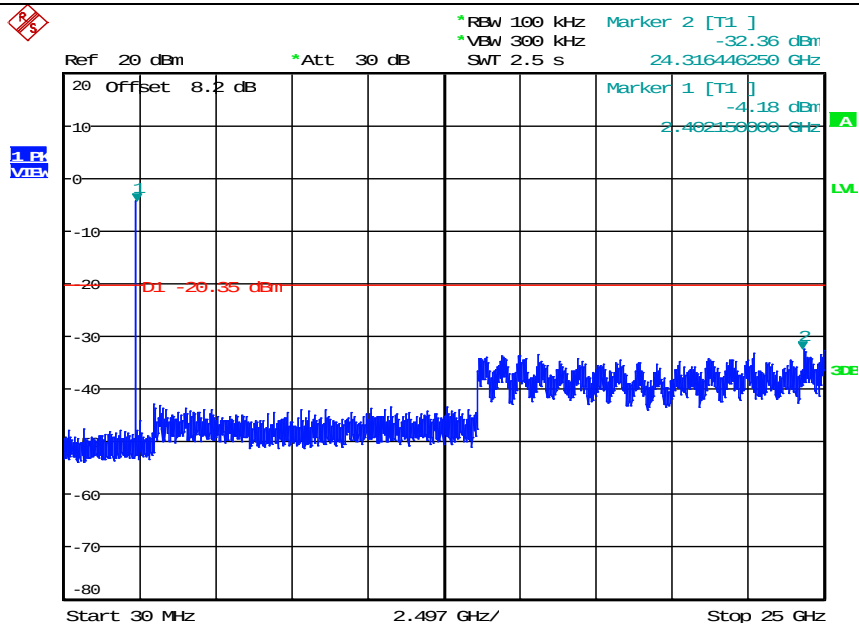
8DPSK_LCH_Graphs

Pref



Date: 1.AUG.2019 13:15:07

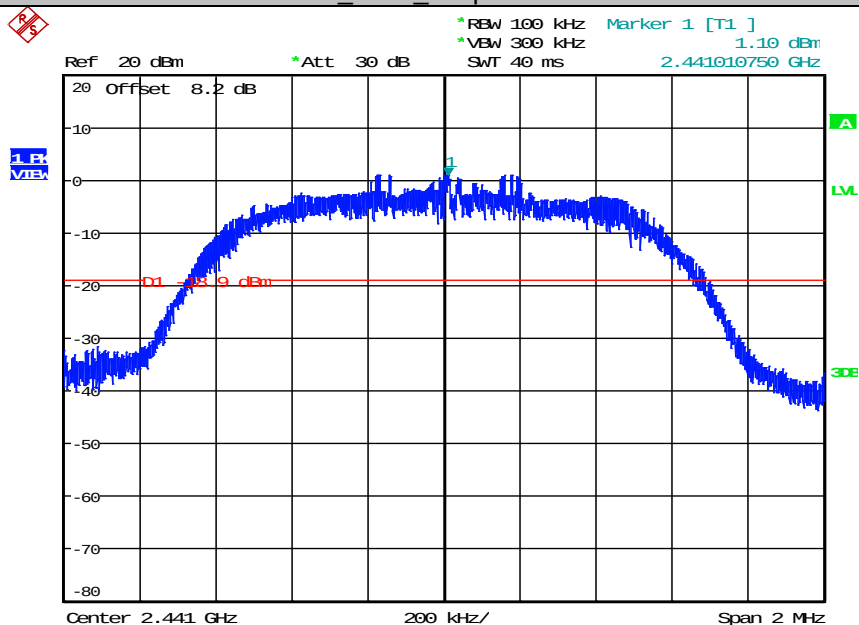
Puw



Date: 1.AUG.2019 13:15:22

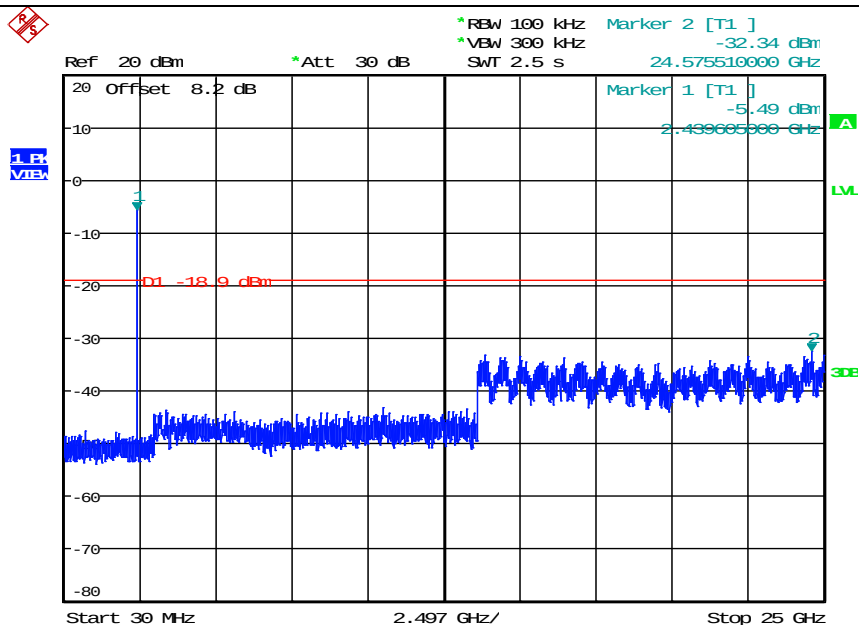
8DPSK MCH Graphs

Pref



Date: 1.AUG.2019 13:17:18

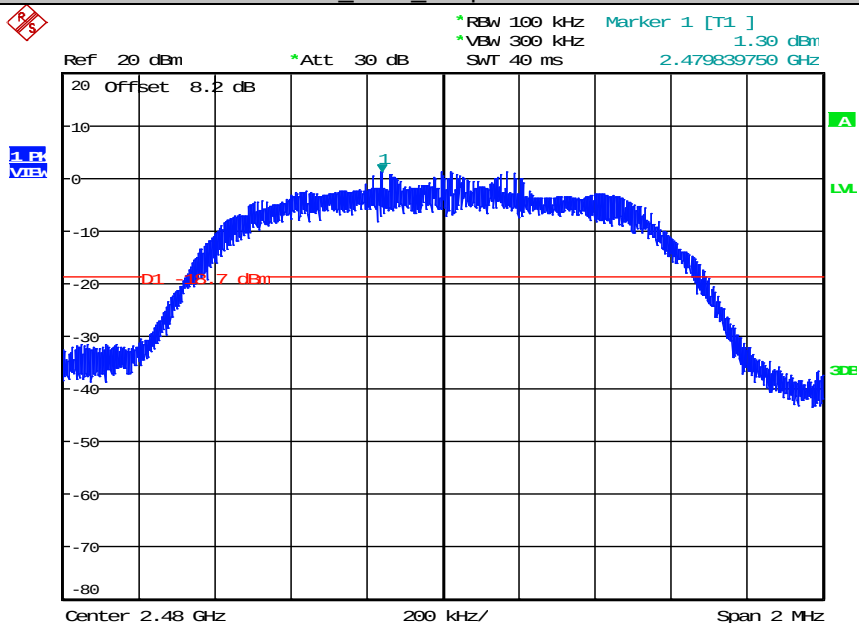
Puw



Date: 1.AUG.2019 13:17:33

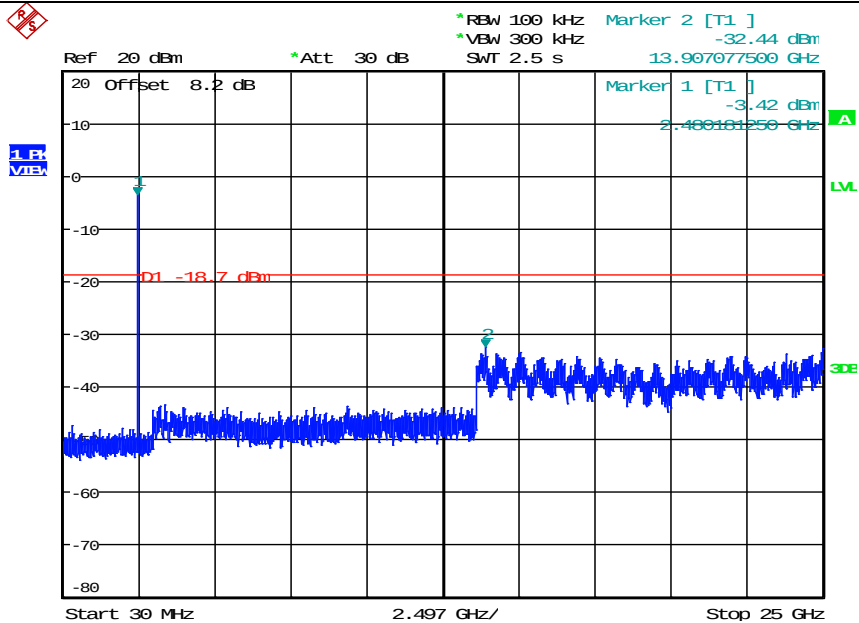
8DPSK_HCH_Graphs

Pref



Date: 1.AUG.2019 13:19:19

Puw



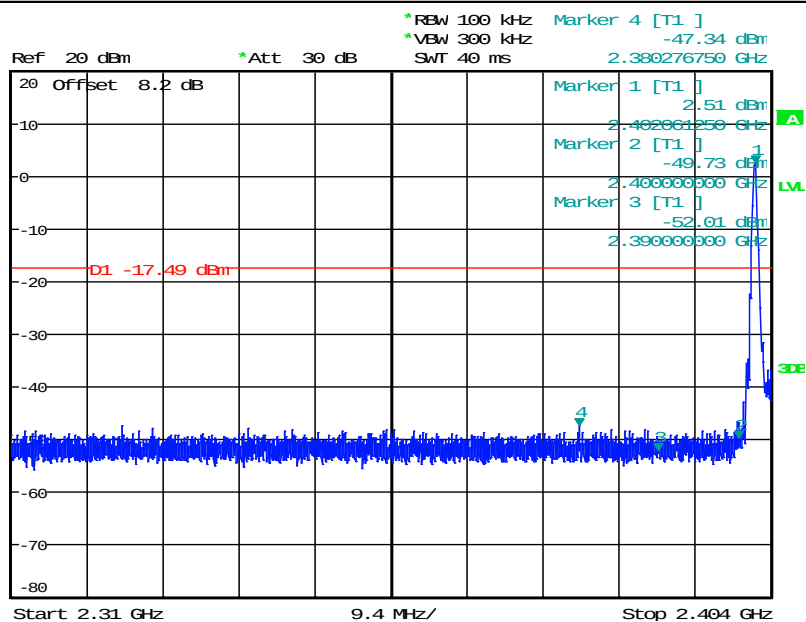
Date: 1.AUG.2019 13:19:34

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	2.510	Off	-47.342	-17.49	PASS
			1.670	On	-46.573	-18.33	PASS
	HCH	2480	4.250	Off	-47.197	-15.75	PASS
			1.080	On	-47.117	-18.92	PASS
$\pi/4$ DQPSK	LCH	2402	-0.680	Off	-47.299	-20.68	PASS
			1.820	On	-46.352	-18.18	PASS
	HCH	2480	1.190	Off	-47.130	-18.81	PASS
			0.640	On	-47.134	-19.36	PASS
8DPSK	LCH	2402	-1.710	Off	-47.446	-21.71	PASS
			1.680	On	-47.059	-18.32	PASS
	HCH	2480	1.200	Off	-47.042	-18.8	PASS
			0.960	On	-47.403	-19.04	PASS

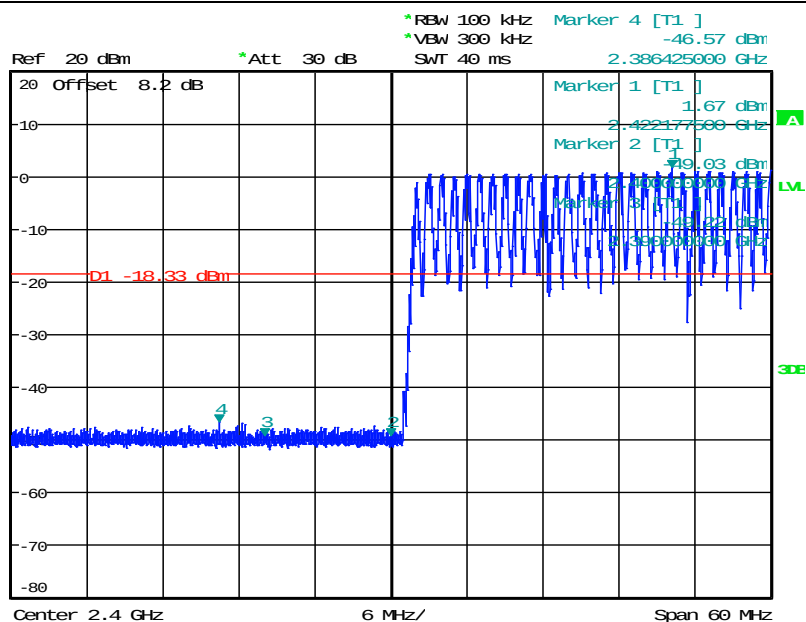
Test Graphs

GFSK/LCH/No Hop



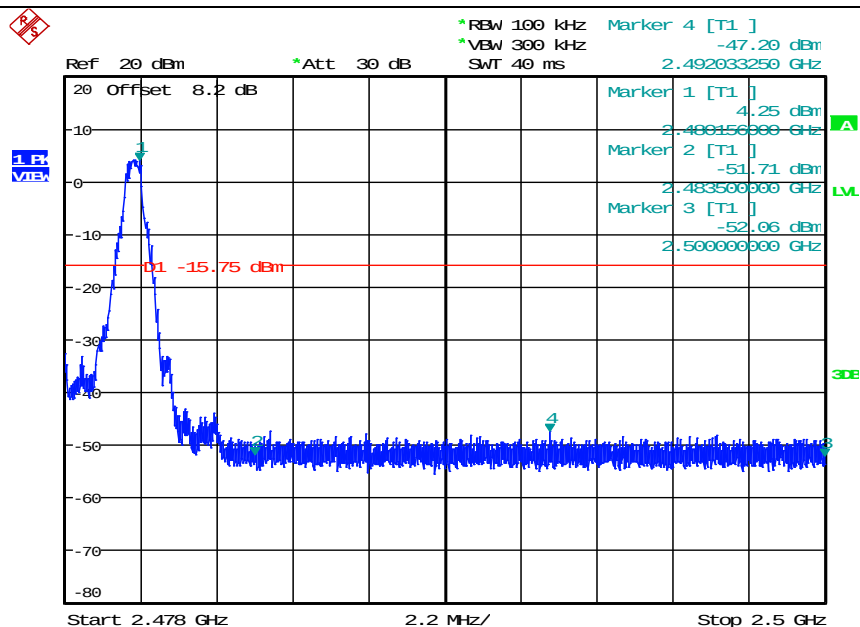
Date: 1.AUG.2019 12:59:47

GFSK/LCH/Hop



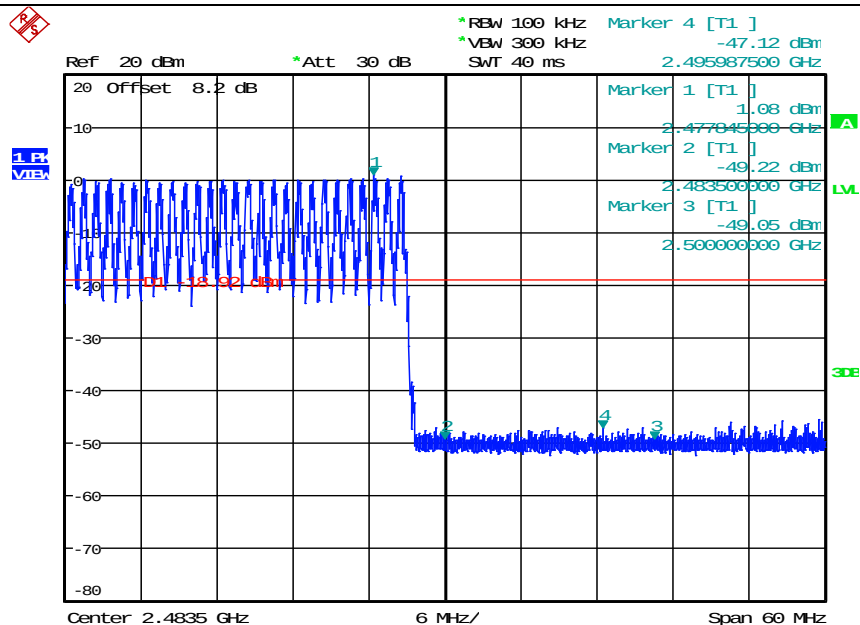
Date: 1.AUG.2019 13:22:40

GFSK/HCH/No Hop



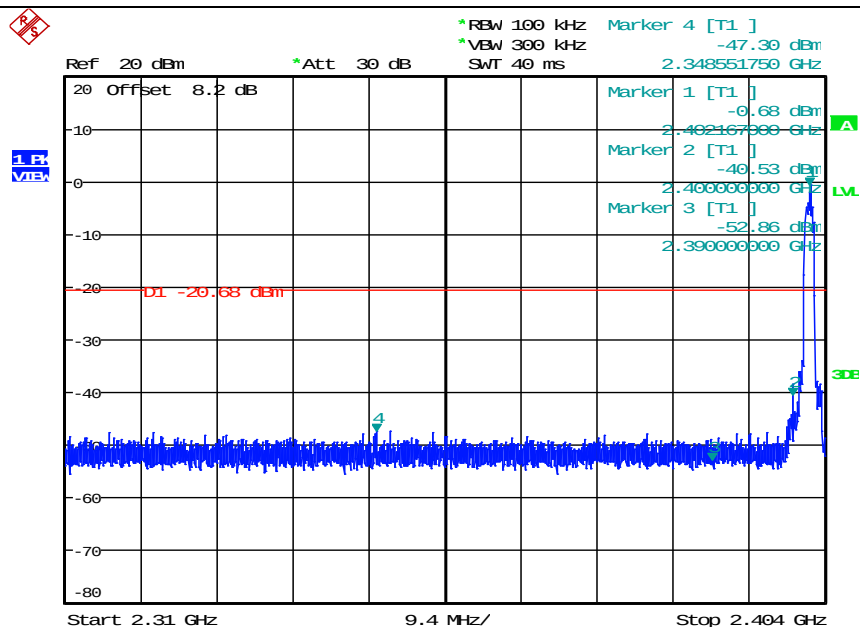
Date: 1.AUG.2019 13:04:07

GFSK/HCH/Hop



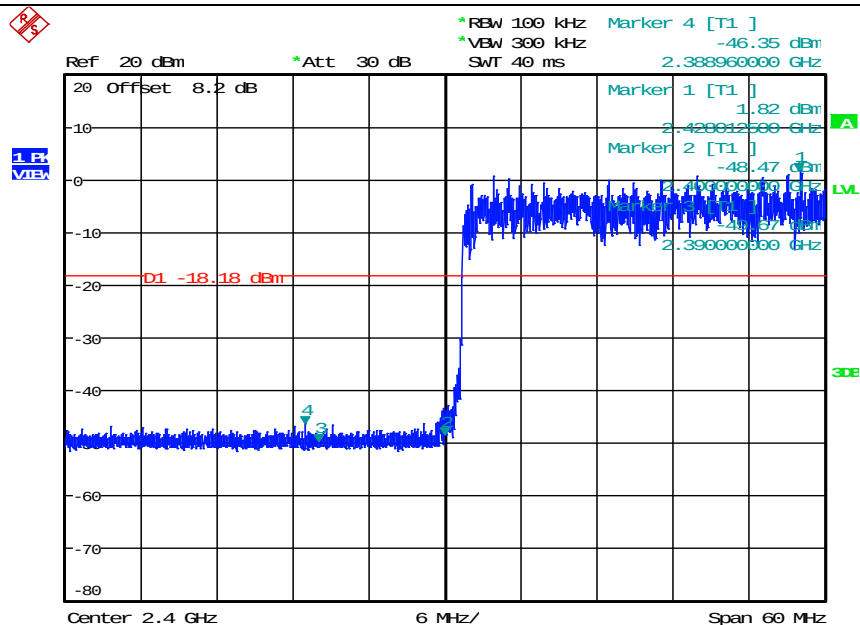
Date: 1.AUG.2019 13:24:37

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



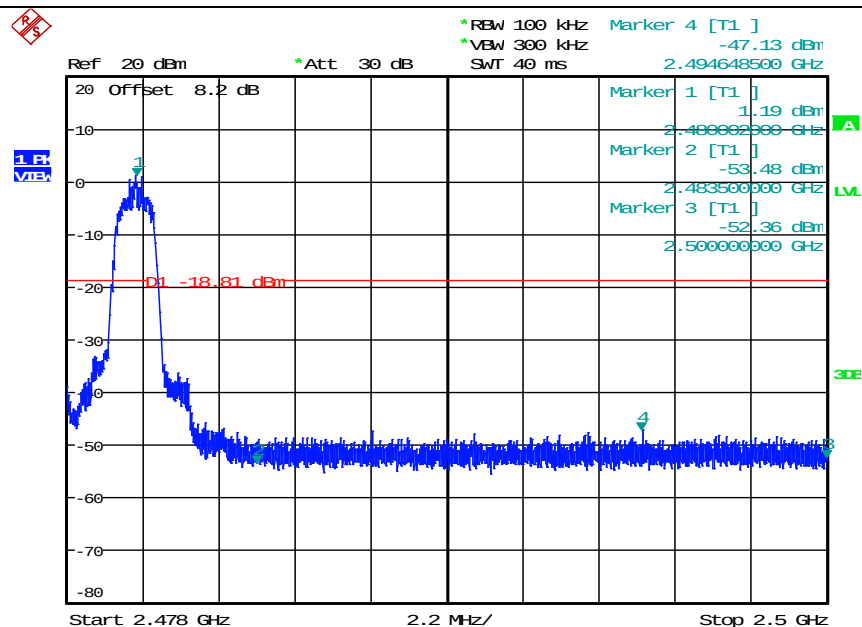
Date: 1.AUG.2019 13:07:01

$\pi/4$ DQPSK/LCH/Hop



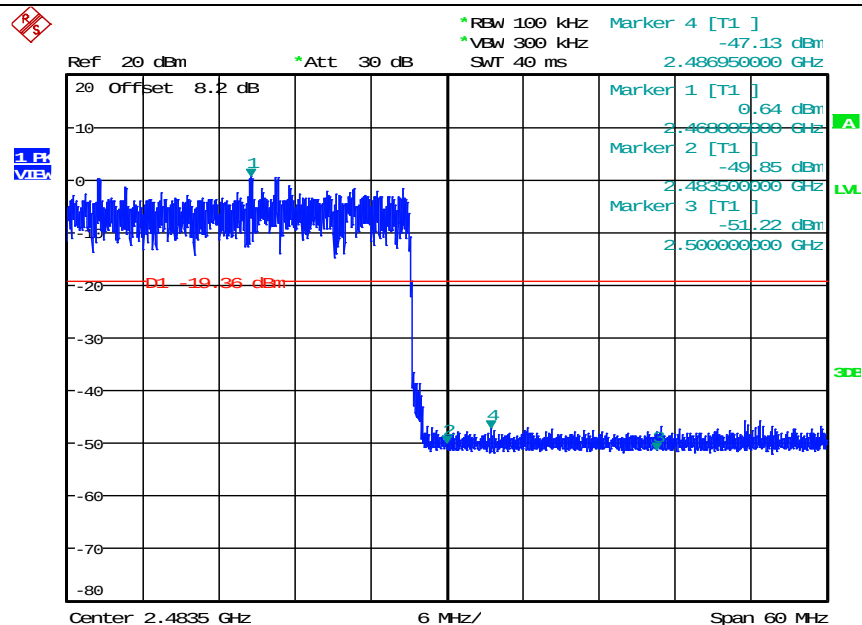
Date: 1.AUG.2019 13:29:00

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



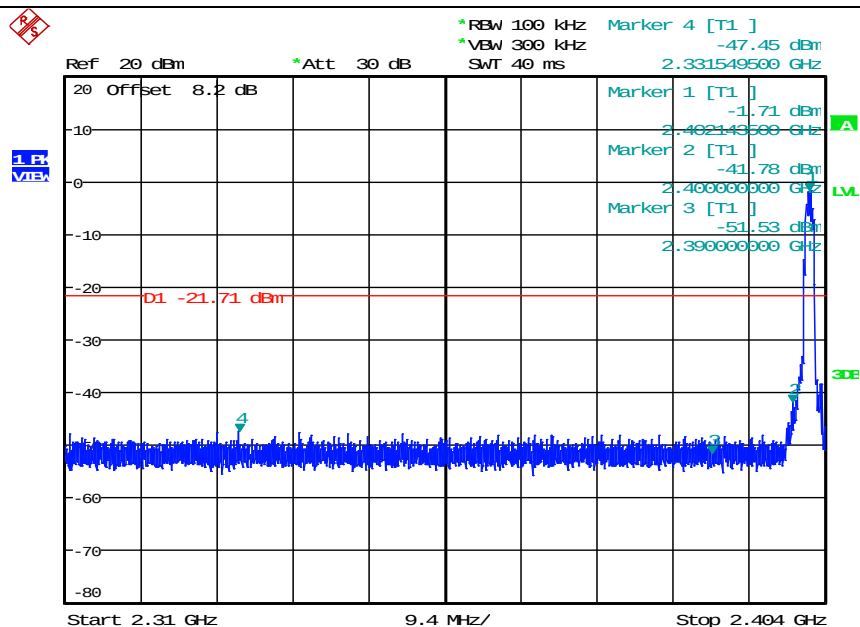
Date: 1.AUG.2019 13:12:14

$\pi/4$ DQPSK/HCH/Hop



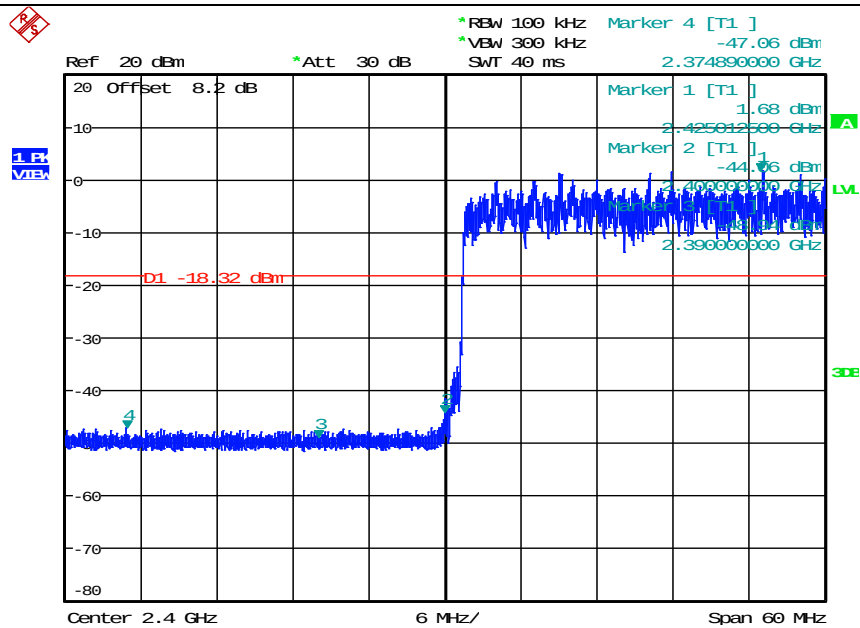
Date: 1.AUG.2019 13:31:41

8DPSK/LCH/No Hop



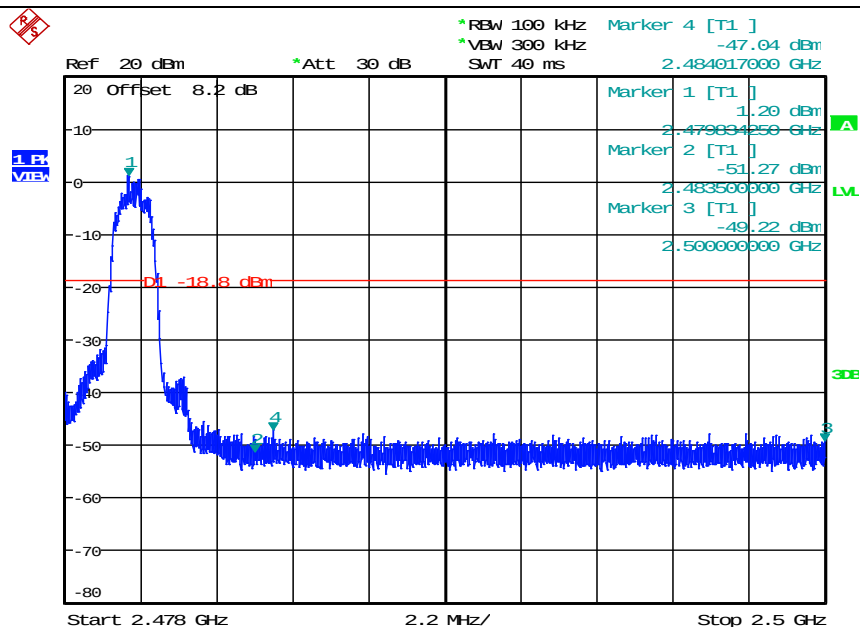
Date: 1.AUG.2019 13:14:54

8DPSK/LCH/Hop



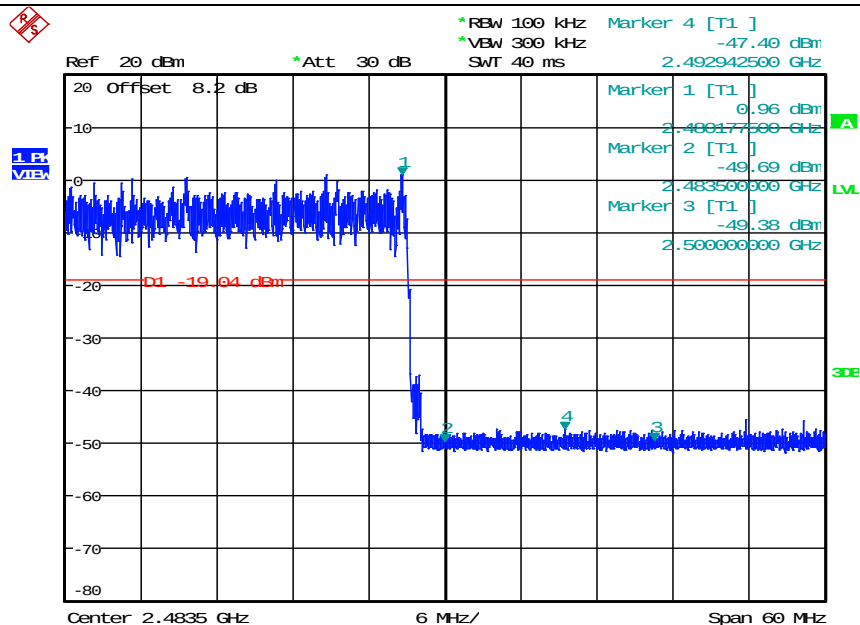
Date: 1.AUG.2019 13:37:28

8DPSK/HCH/No Hop



Date: 1.AUG.2019 13:19:06

8DPSK/HCH/Hop

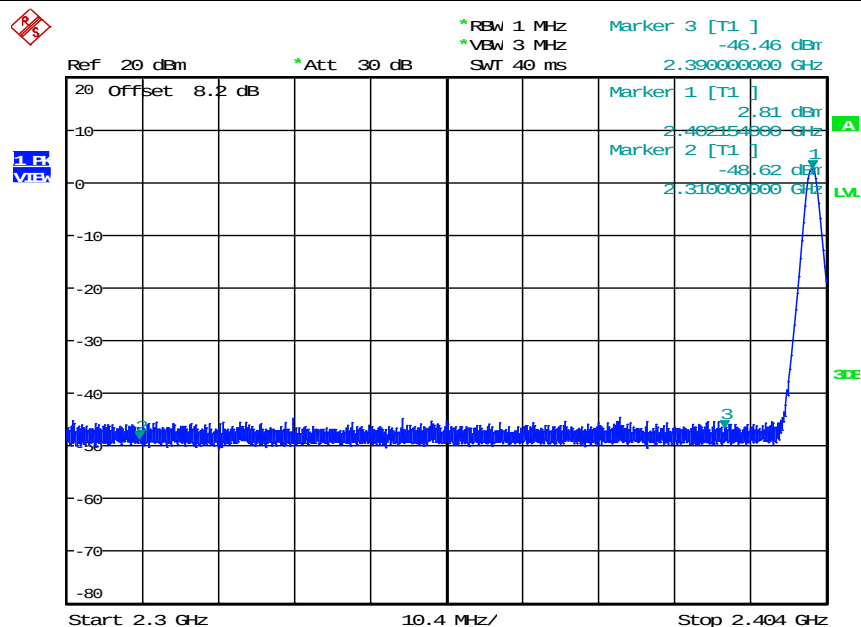


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A.8 Restrict-band band-edge measurements

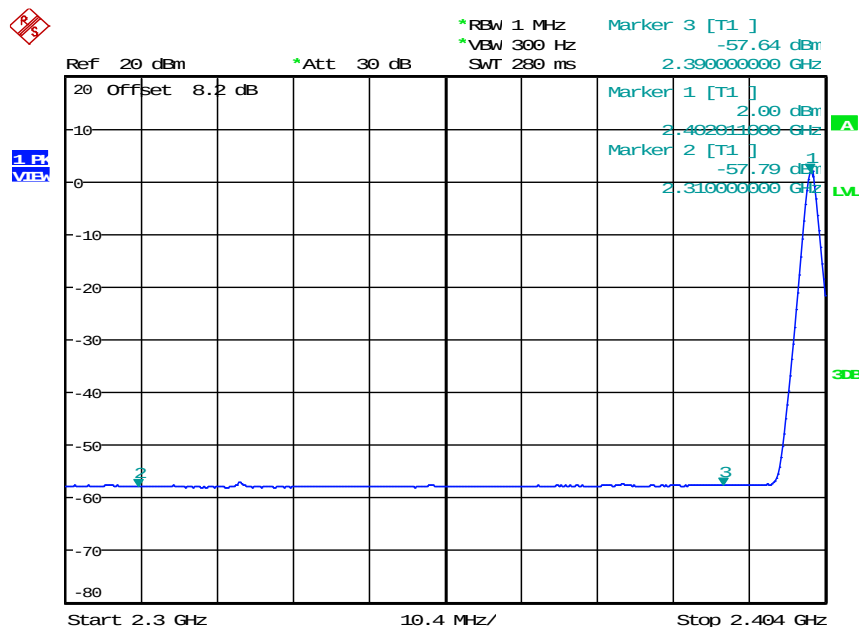
Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-48.62	2.0	0	48.64	PEAK	74	PASS
	Off	2310.0	-57.79	2.0	0	39.47	AV	54	PASS
	Off	2390.0	-46.46	2.0	0	50.80	PEAK	74	PASS
	Off	2390.0	-57.64	2.0	0	39.62	AV	54	PASS
	Off	2483.5	-39.36	2.0	0	57.90	PEAK	74	PASS
	Off	2483.5	-43.85	2.0	0	53.41	AV	54	PASS
	Off	2500.0	-47.50	2.0	0	49.76	PEAK	74	PASS
	Off	2500.0	-58.24	2.0	0	39.02	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-48.50	2.0	0	48.76	PEAK	74	PASS
	Off	2310.0	-57.81	2.0	0	39.45	AV	54	PASS
	Off	2390.0	-48.16	2.0	0	49.10	PEAK	74	PASS
	Off	2390.0	-57.60	2.0	0	39.66	AV	54	PASS
	Off	2483.5	-40.77	2.0	0	56.49	PEAK	74	PASS
	Off	2483.5	-46.40	2.0	0	50.86	AV	54	PASS
	Off	2500.0	-48.91	2.0	0	48.35	PEAK	74	PASS
	Off	2500.0	-58.25	2.0	0	39.01	AV	54	PASS
8DPSK	Off	2310.0	-49.18	2.0	0	48.08	PEAK	74	PASS
	Off	2310.0	-57.89	2.0	0	39.37	AV	54	PASS
	Off	2390.0	-48.35	2.0	0	48.91	PEAK	74	PASS
	Off	2390.0	-57.52	2.0	0	39.74	AV	54	PASS
	Off	2483.5	-41.25	2.0	0	56.01	PEAK	74	PASS
	Off	2483.5	-46.34	2.0	0	50.92	AV	54	PASS
	Off	2500.0	-48.89	2.0	0	48.37	PEAK	74	PASS
	Off	2500.0	-58.28	2.0	0	38.98	AV	54	PASS

Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (Low Channel)



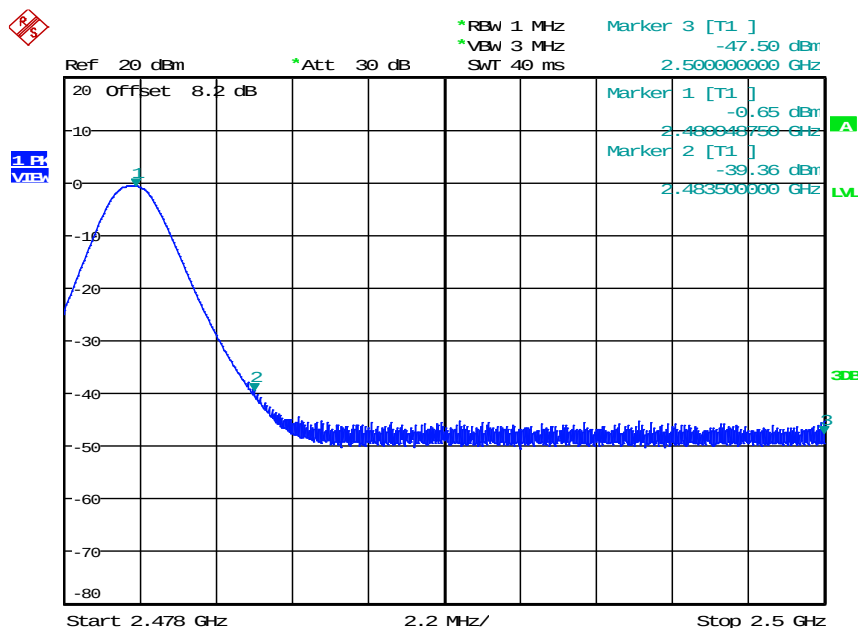
Date: 1.AUG.2019 13:00:34

Restrict-band band-edge measurements_Hopping Off_GFSK_Average (Low Channel)



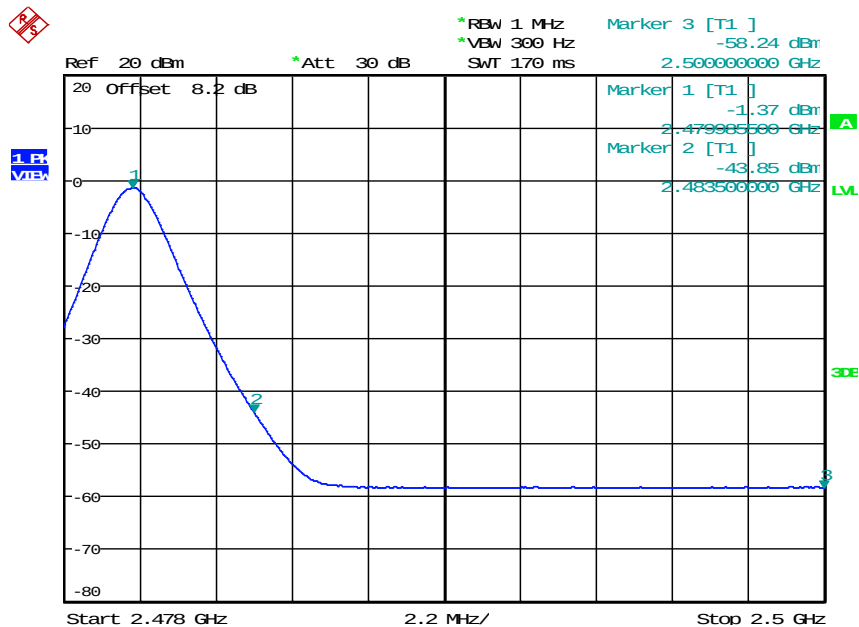
Date: 1.AUG.2019 13:00:47

Restrict-band band-edge measurements_Hopping Off_GFSK_PEAK (High Channel)

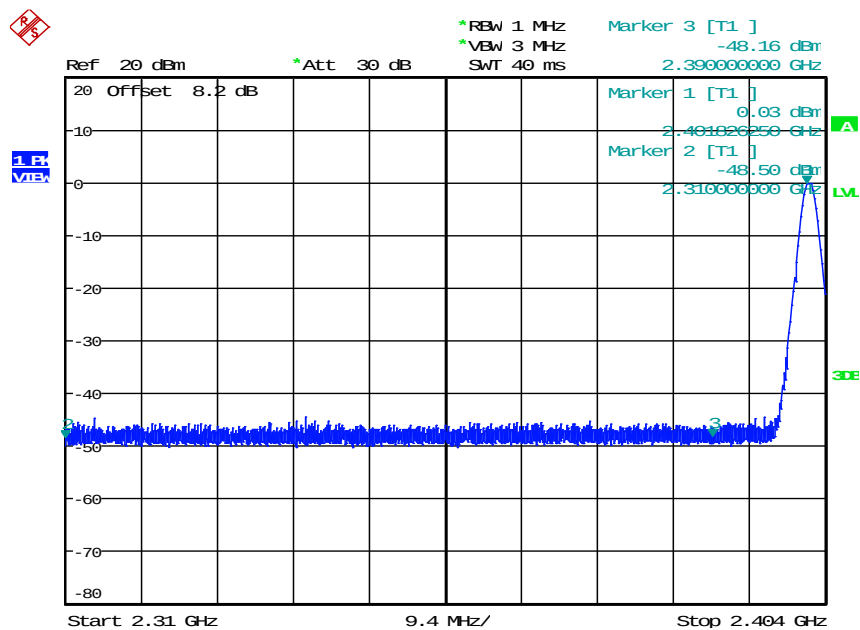


Date: 1.AUG.2019 14:13:40

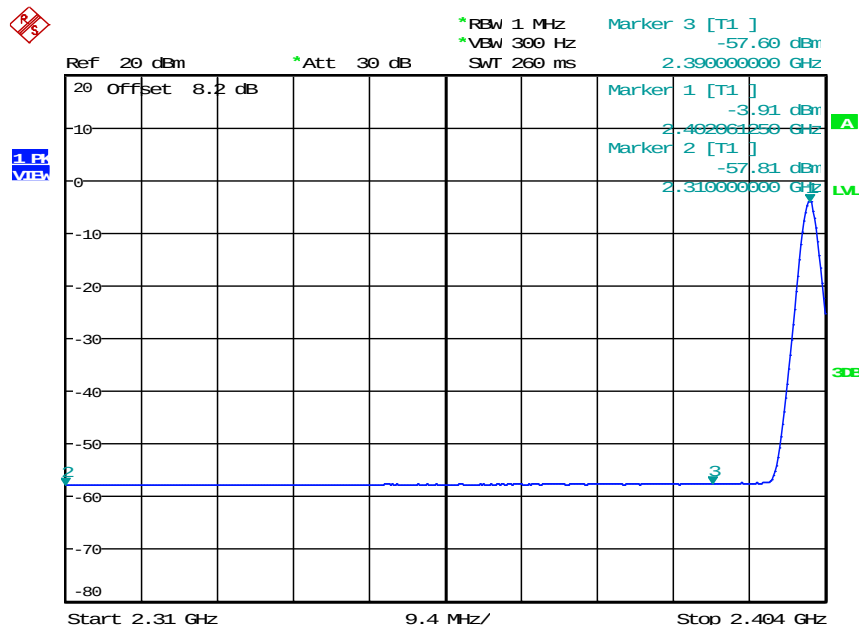
Restrict-band band-edge measurements_Hopping Off_GFSK_Average (High Channel)



Date: 1.AUG.2019 14:13:53

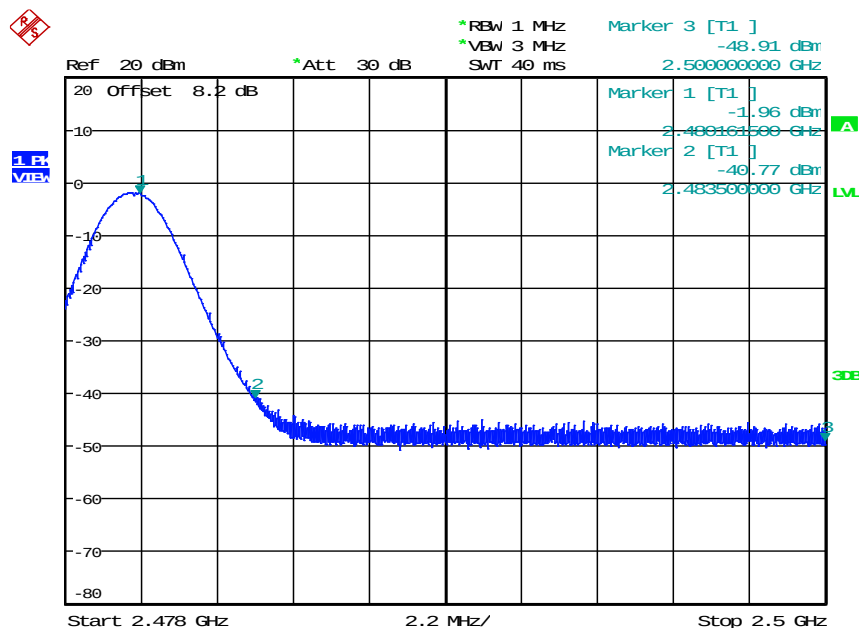
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (Low Channel)

Date: 1.AUG.2019 13:07:48

Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_Average (Low Channel)

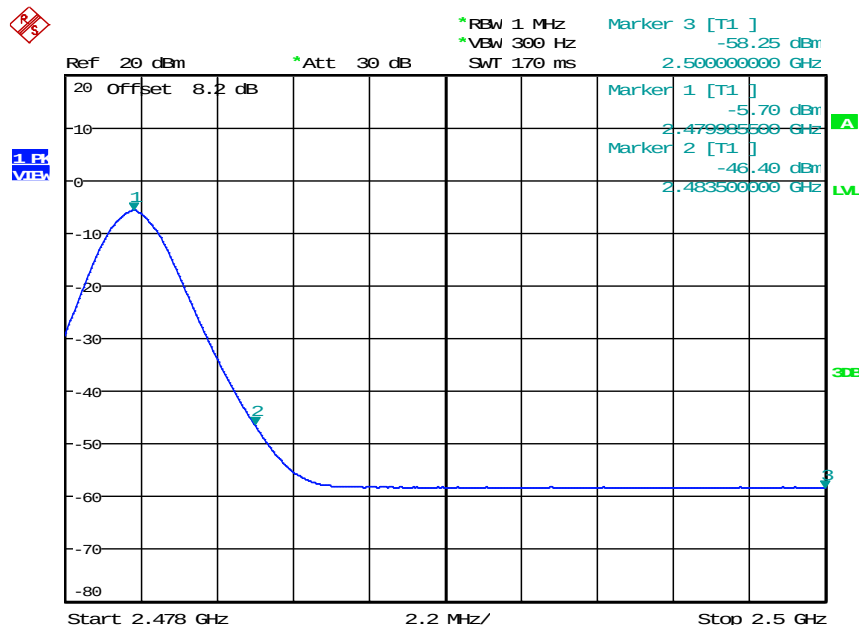
Date: 1.AUG.2019 13:08:01

Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_PEAK (High Channel)



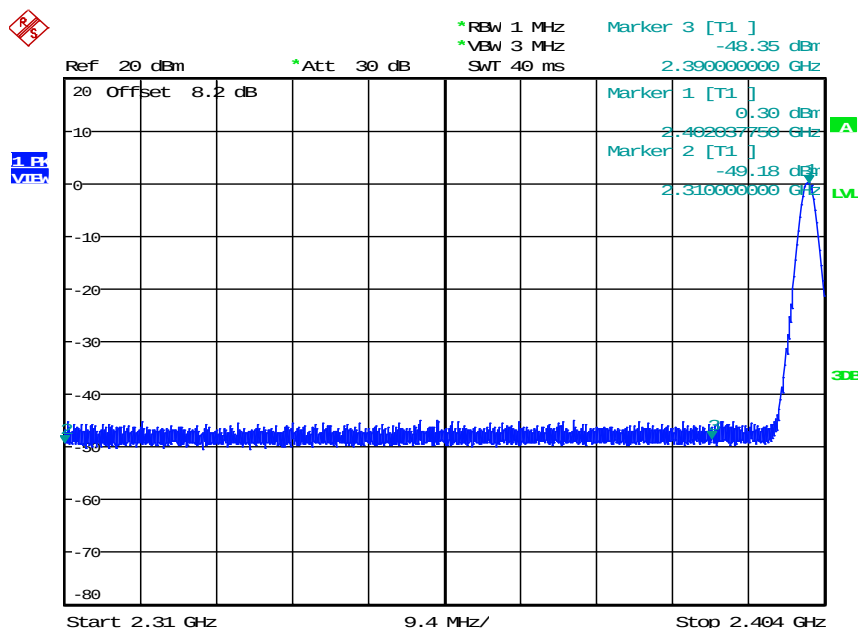
Date: 1.AUG.2019 14:15:36

Restrict-band band-edge measurements_Hopping Off_π/4-DQPSK_Average (High Channel)



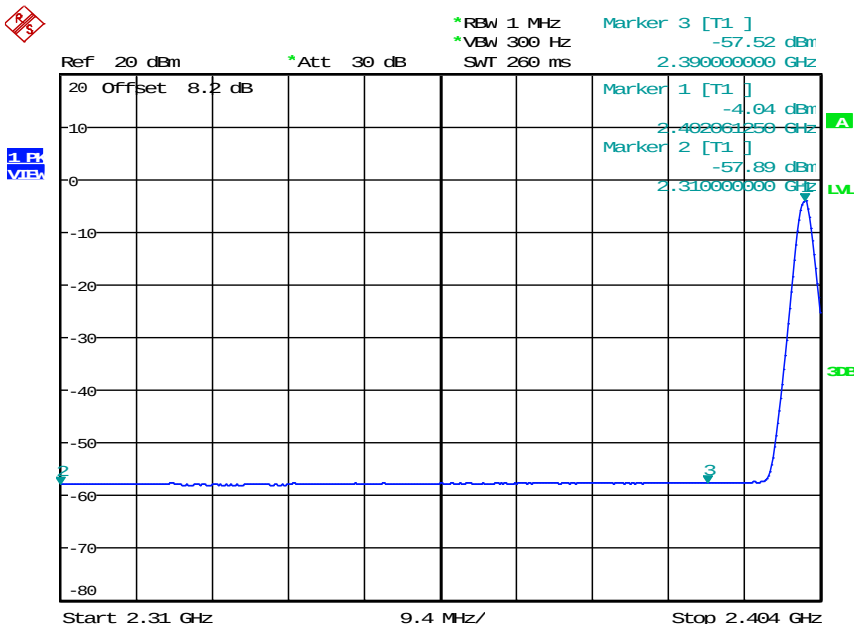
Date: 1.AUG.2019 14:15:49

Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (Low Channel)



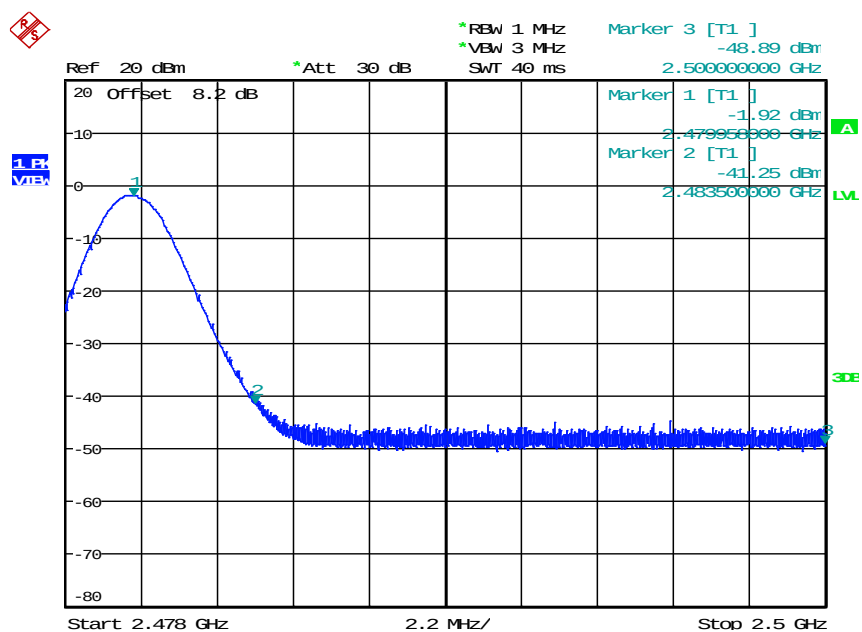
Date: 1.AUG.2019 13:15:40

Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (Low Channel)



Date: 1.AUG.2019 13:15:54

Restrict-band band-edge measurements_Hopping Off_8DPSK_PEAK (High Channel)



Restrict-band band-edge measurements_Hopping Off_8DPSK_Average (High Channel)

