

Appendix A

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

Product Name: wireless speaker

Trade Mark:



Test Model: M3S02

Environmental Conditions

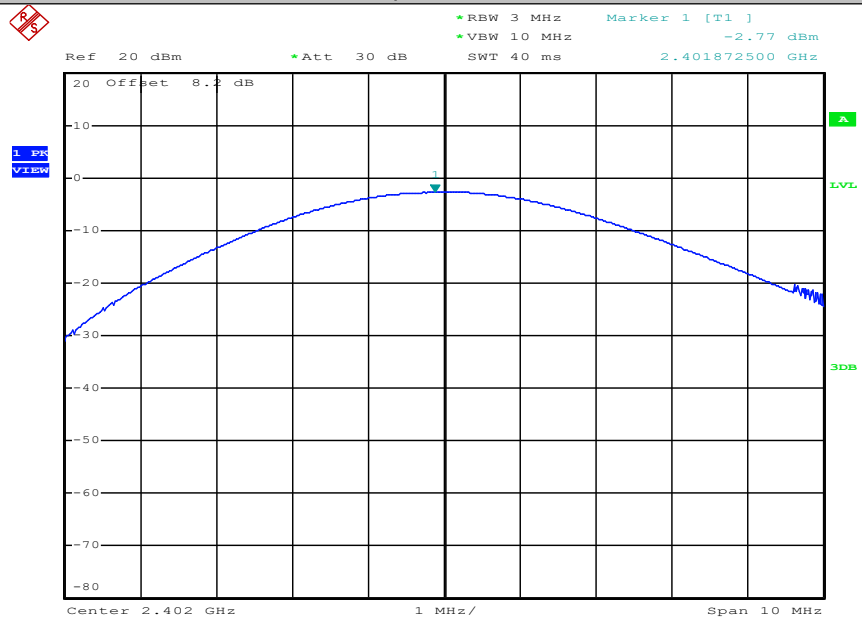
Temperature:	23.6 ° C
Relative Humidity:	52.6%
ATM Pressure:	100.0 kPa
Test Engineer:	QUXIN
Supervised by:	Wang.Chuang

A.1 Maximum Conducted Peak Output Power

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.770	30	PASS
	MCH	-1.360	30	PASS
	HCH	-1.790	30	PASS
$\pi/4$ DQPSK	LCH	-3.380	21	PASS
	MCH	-2.040	21	PASS
	HCH	-2.400	21	PASS
8DPSK	LCH	-3.260	21	PASS
	MCH	-1.730	21	PASS
	HCH	-2.520	21	PASS

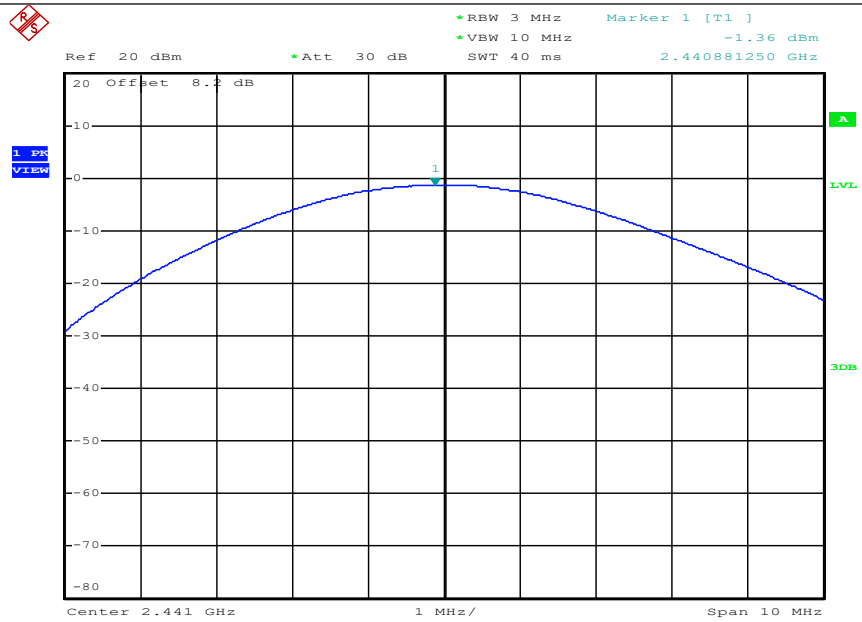
Test Graphs

GFSK/LCH



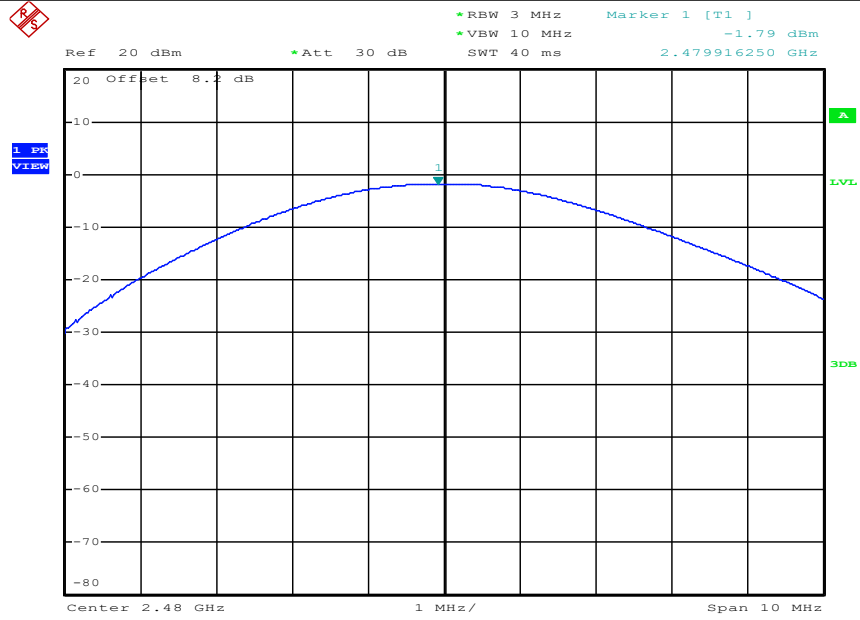
Date: 22.AUG.2019 14:40:38

GFSK/MCH



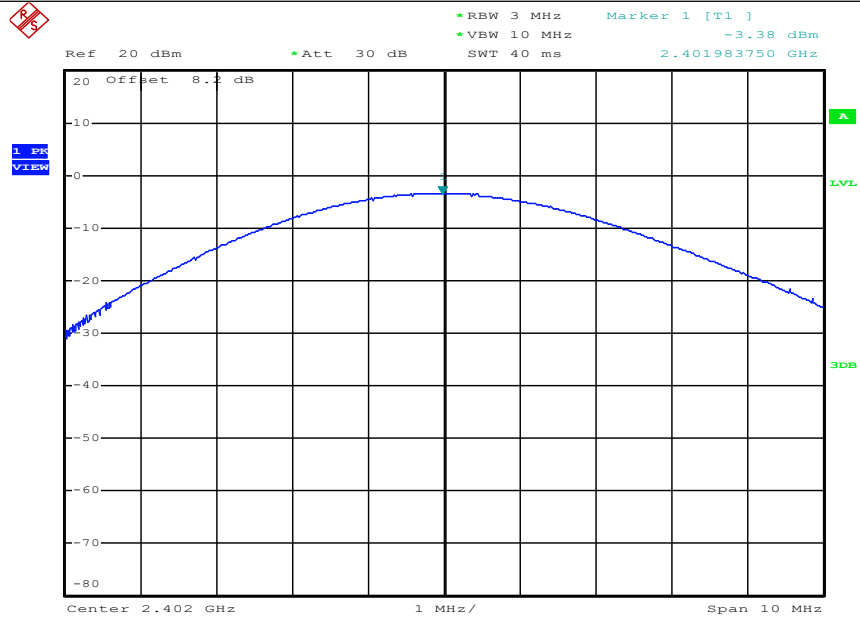
Date: 22.AUG.2019 14:43:35

GFSK/HCH



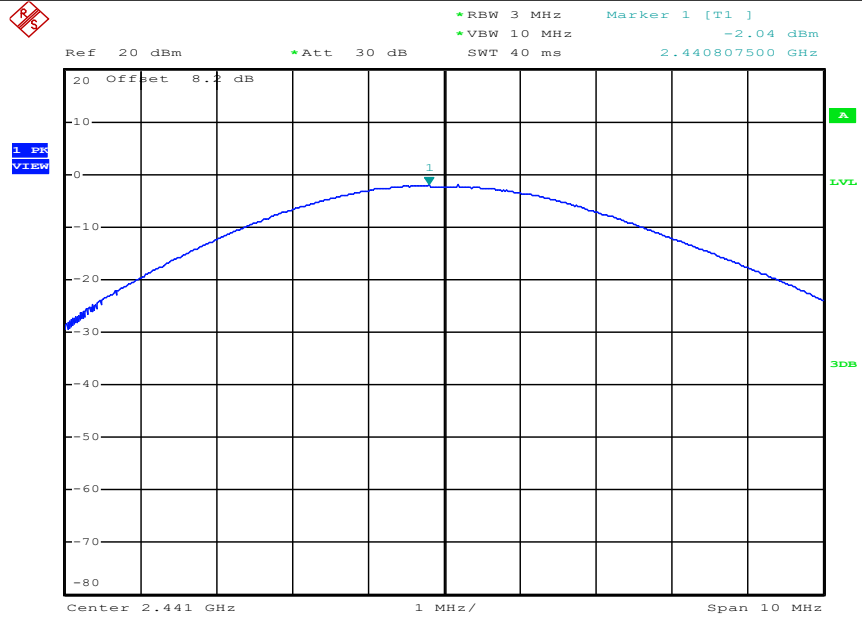
Date: 22.AUG.2019 14:45:21

$\pi/4$ DQPSK/LCH



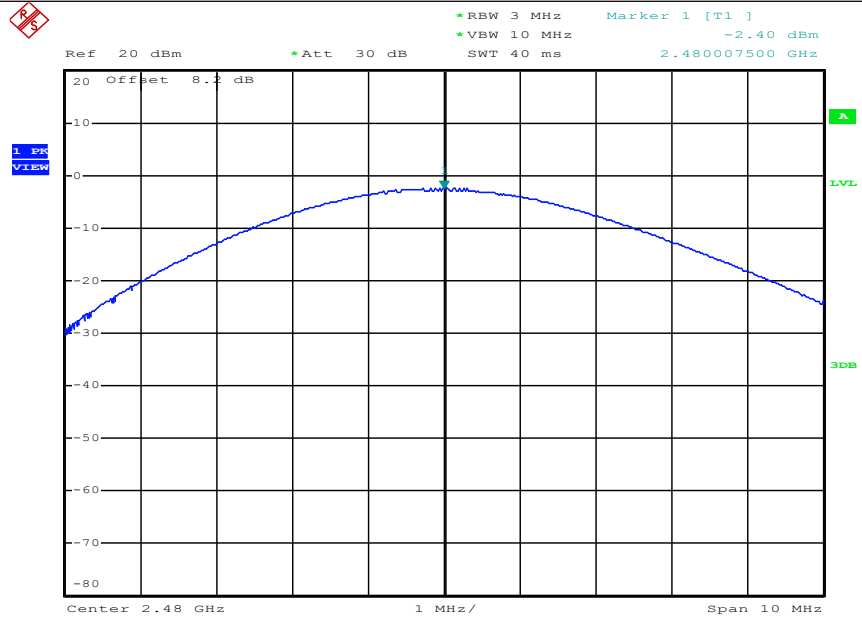
Date: 22.AUG.2019 14:48:03

$\pi/4$ DQPSK/MCH



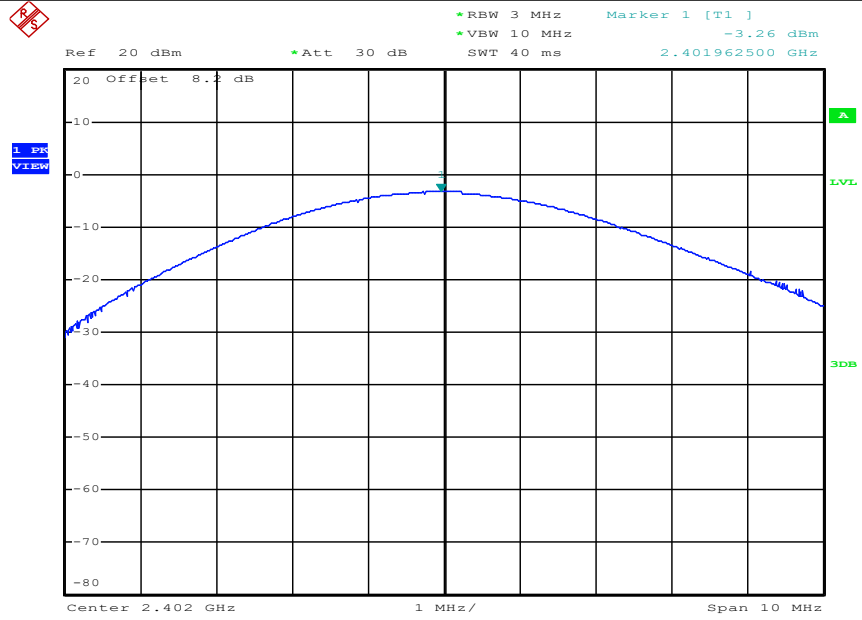
Date: 22.AUG.2019 14:50:57

$\pi/4$ DQPSK/HCH



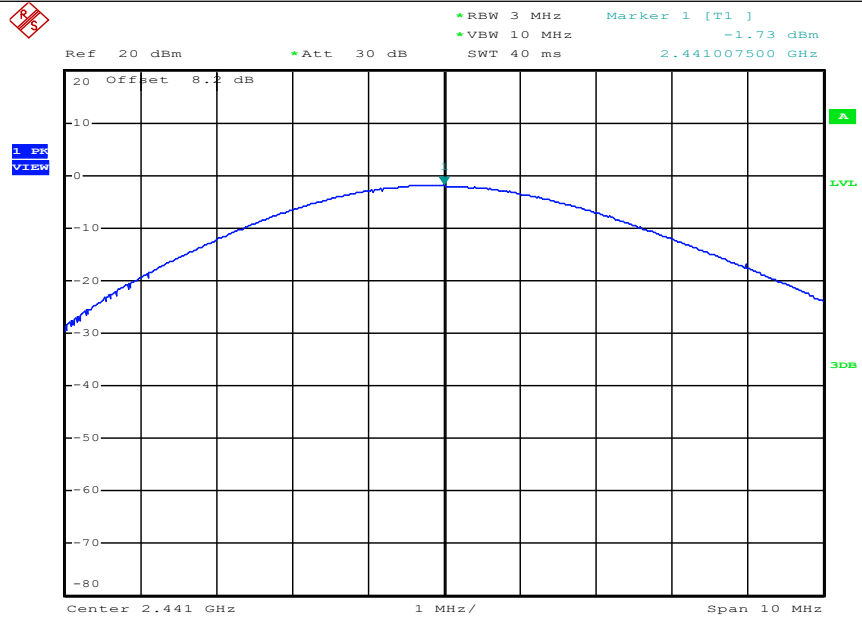
Date: 22.AUG.2019 14:52:53

8DPSK/LCH



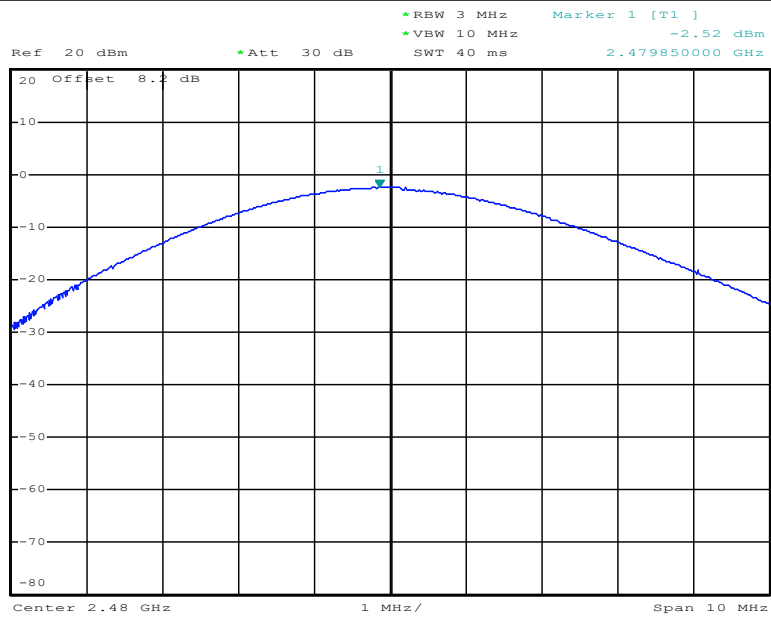
Date: 22.AUG.2019 14:55:45

8DPSK/MCH



Date: 22.AUG.2019 14:58:26

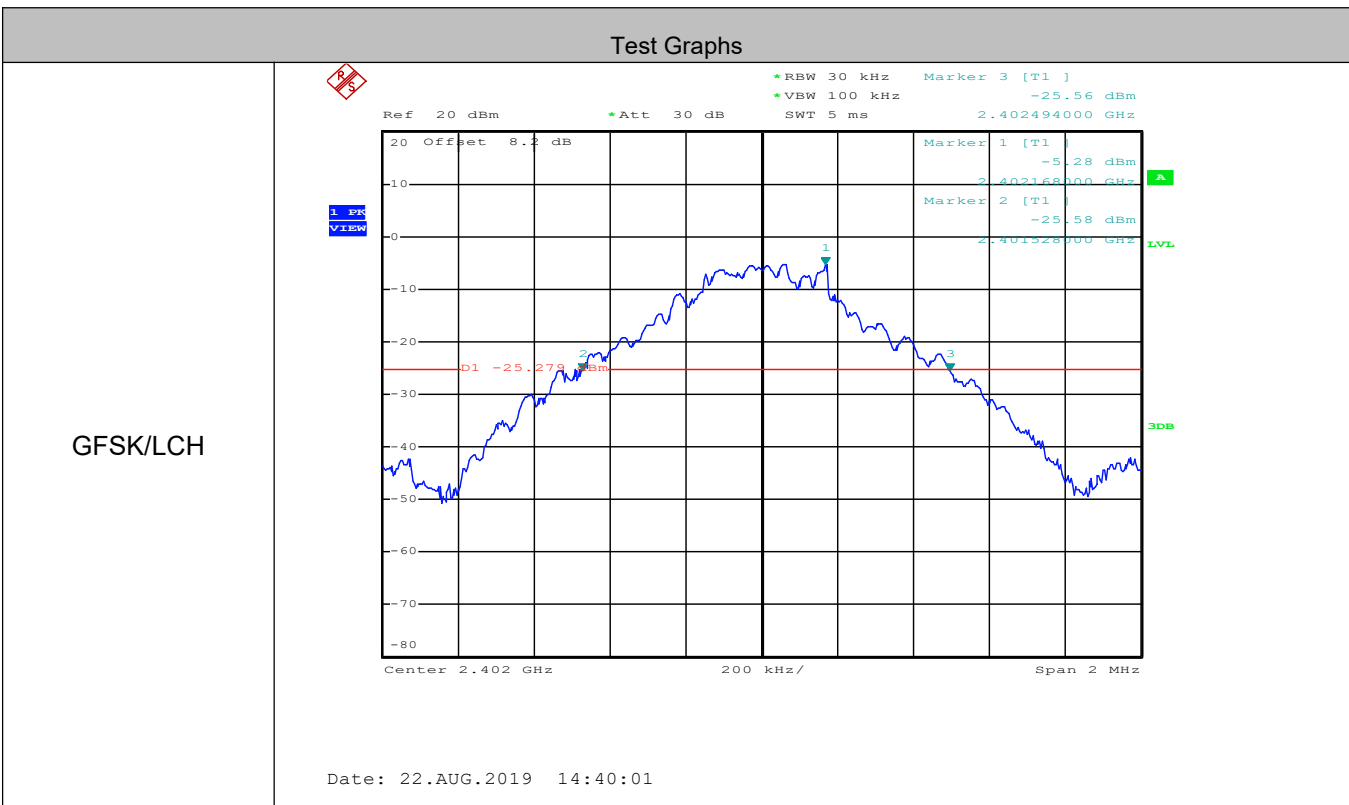
8DPSK/HCH



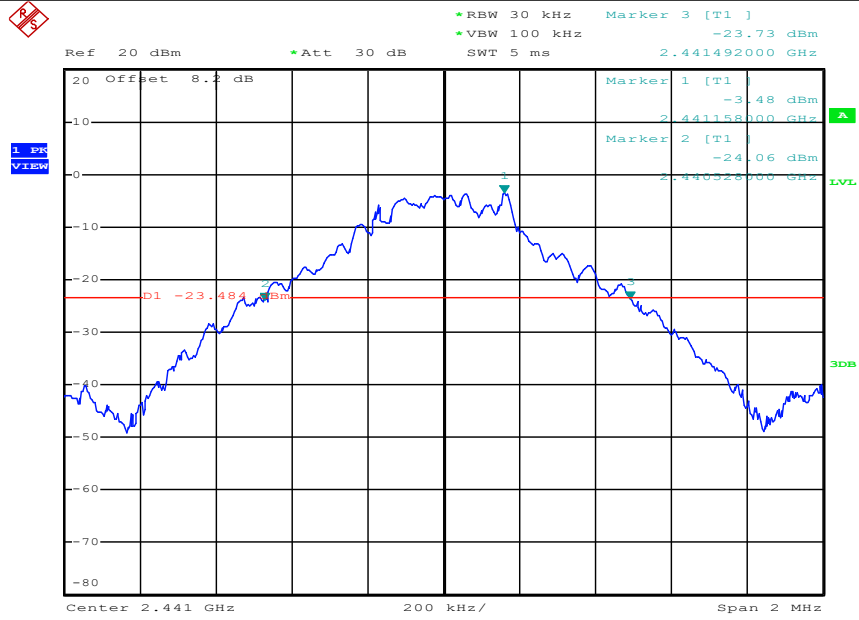
Date: 22.AUG.2019 15:00:15

A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.966	Not Specified	PASS
	MCH	0.964	Not Specified	PASS
	HCH	0.960	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.316	Not Specified	PASS
	MCH	1.316	Not Specified	PASS
	HCH	1.288	Not Specified	PASS
8DPSK	LCH	1.304	Not Specified	PASS
	MCH	1.294	Not Specified	PASS
	HCH	1.296	Not Specified	PASS

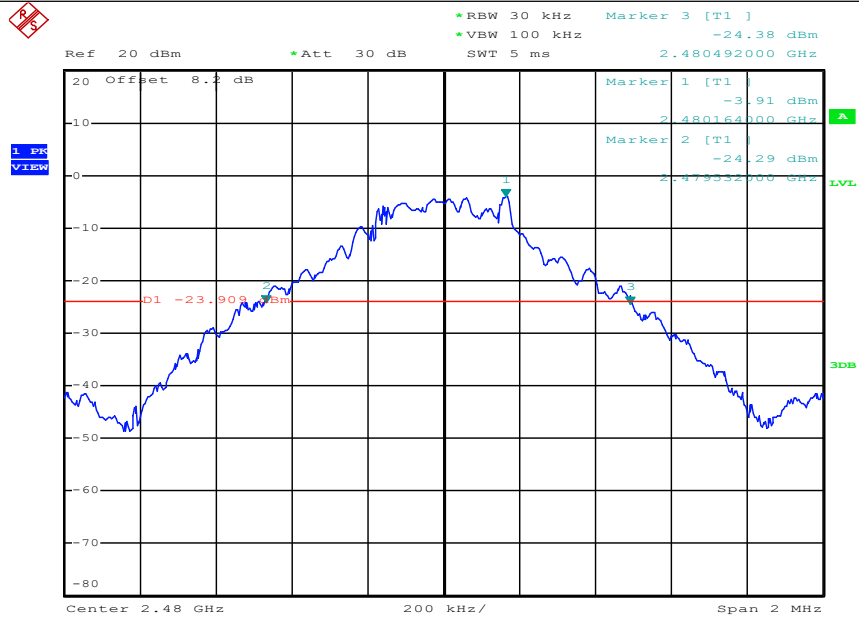


GFSK/MCH



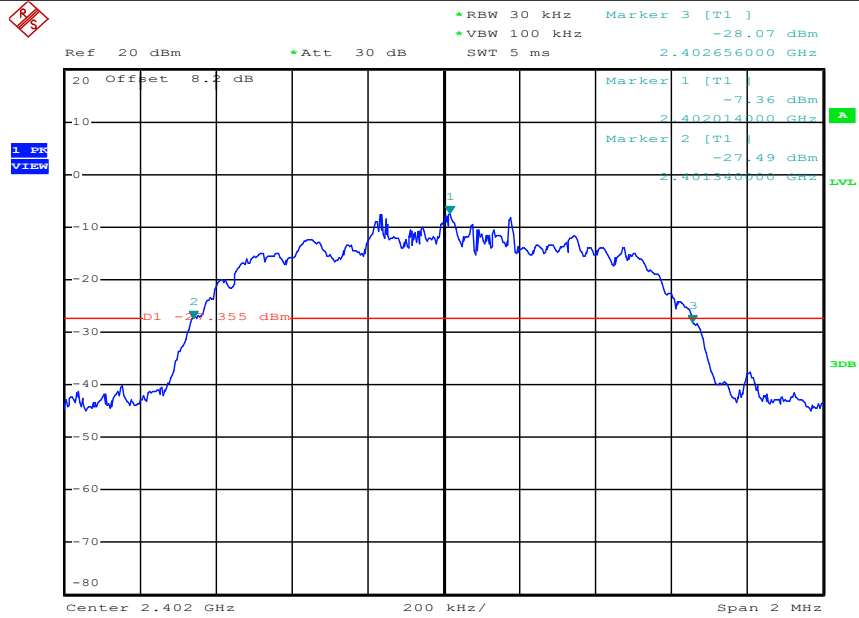
Date: 22.AUG.2019 14:42:58

GFSK/HCH



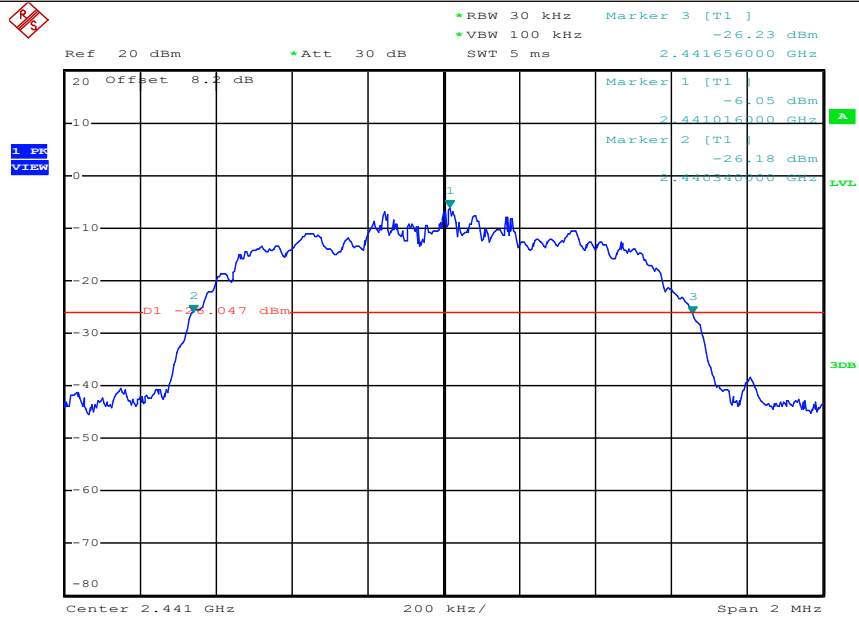
Date: 22.AUG.2019 14:44:44

$\pi/4$ DQPSK/LCH



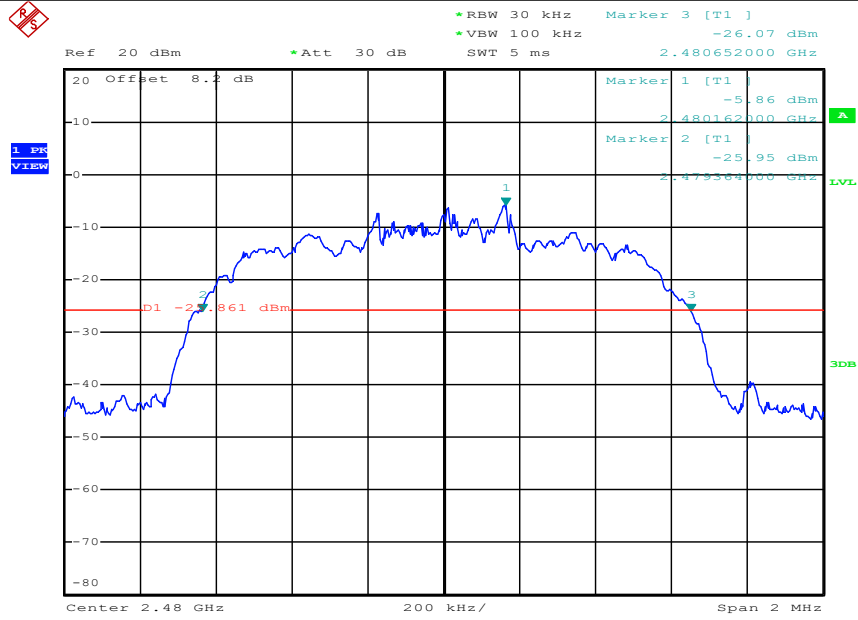
Date: 22.AUG.2019 14:47:27

$\pi/4$ DQPSK/MCH



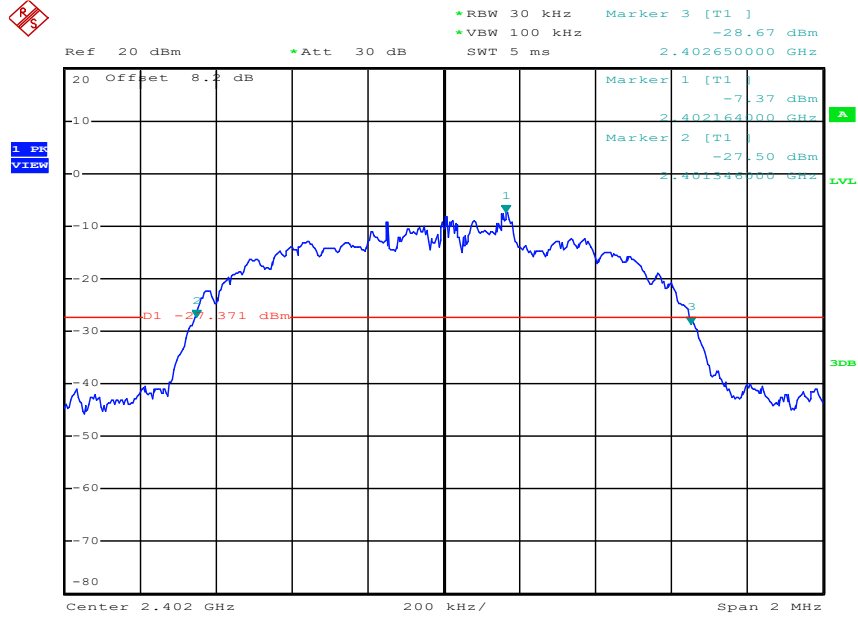
Date: 22.AUG.2019 14:50:20

$\pi/4$ DQPSK/HCH



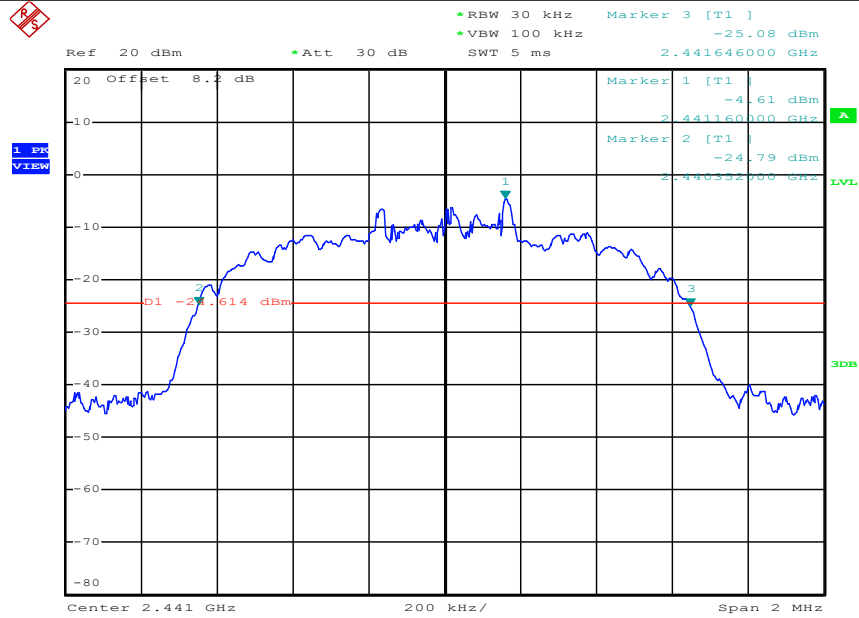
Date: 22.AUG.2019 14:52:17

8DPSK/LCH



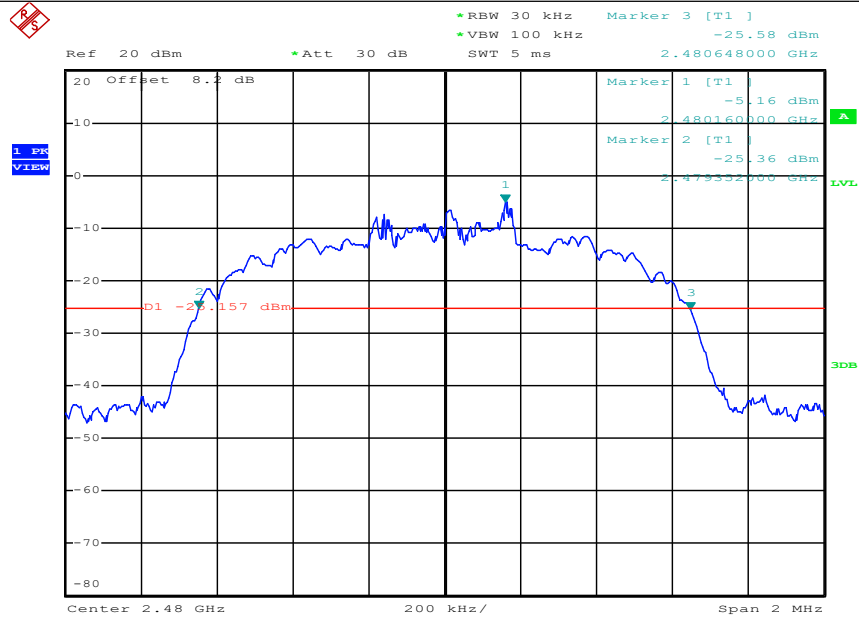
Date: 22.AUG.2019 14:55:08

8DPSK/MCH



Date: 22.AUG.2019 14:57:49

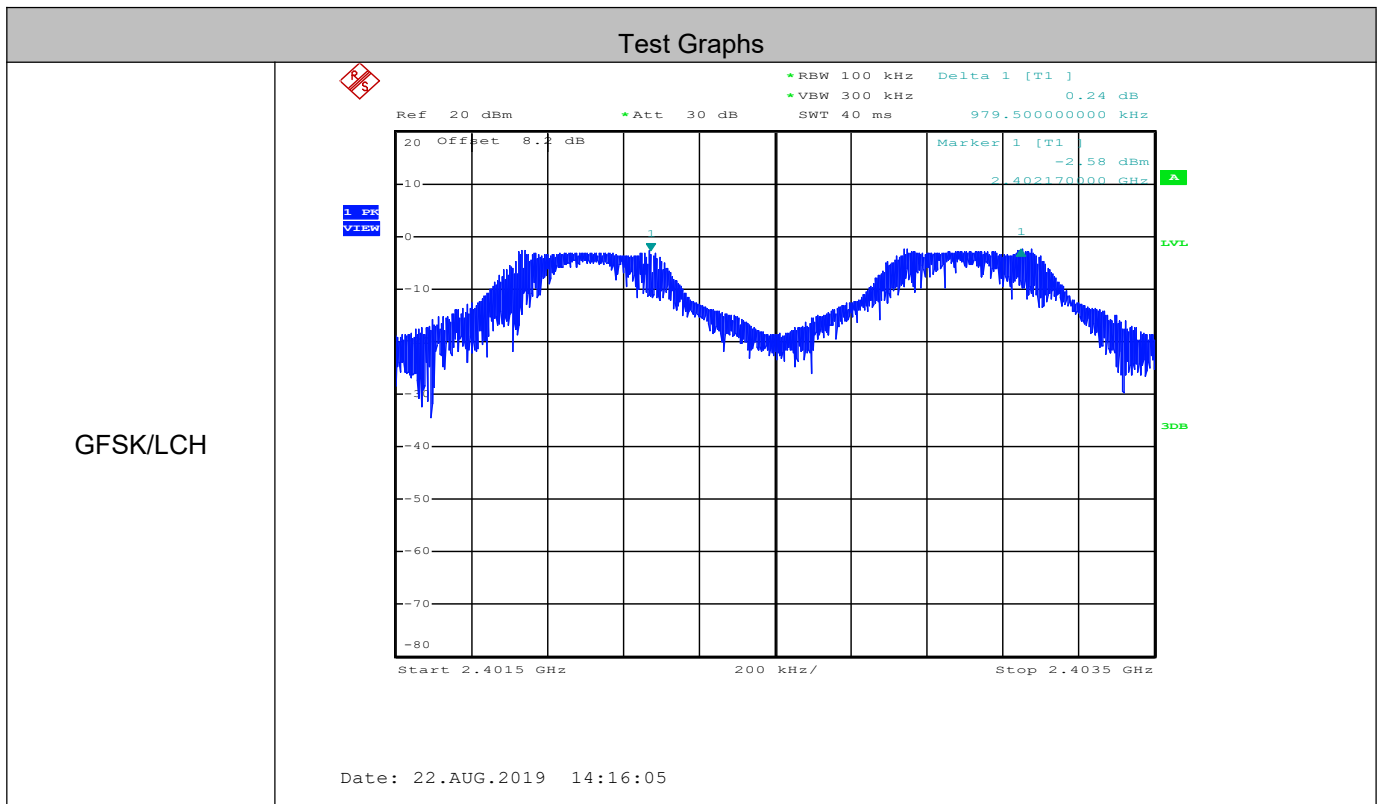
8DPSK/HCH



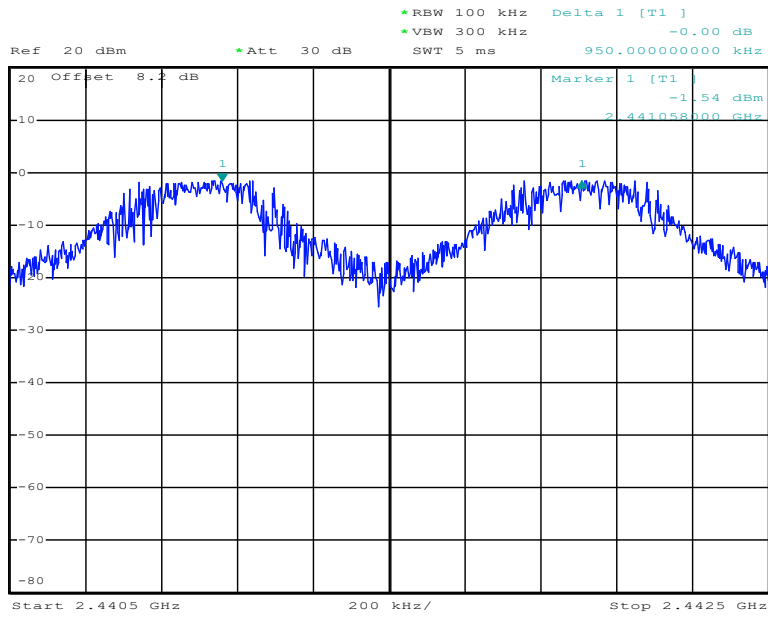
Date: 22.AUG.2019 14:59:38

A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.979	0.025	PASS
	MCH	0.950	0.025	PASS
	HCH	0.954	0.025	PASS
π/4DQPSK	LCH	1.004	0.025	PASS
	MCH	0.900	0.025	PASS
	HCH	1.310	0.025	PASS
8DPSK	LCH	1.116	0.025	PASS
	MCH	1.302	0.025	PASS
	HCH	0.930	0.025	PASS

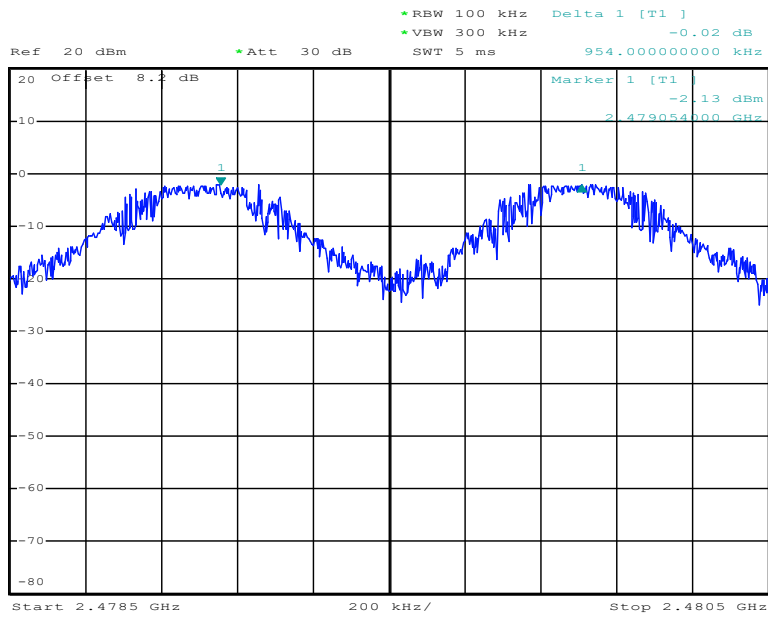


GFSK/MCH



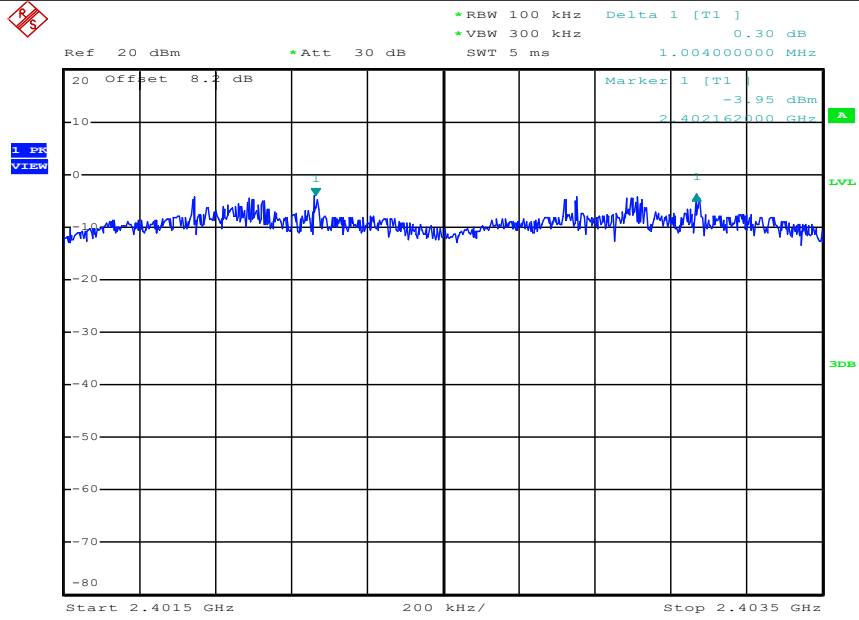
Date: 22.AUG.2019 14:19:46

GFSK/HCH



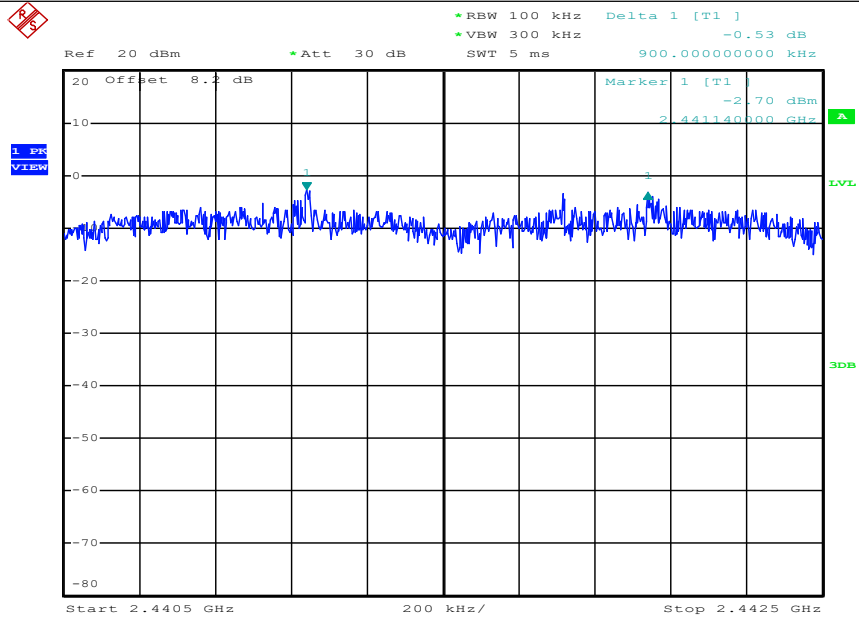
Date: 22.AUG.2019 14:20:10

$\pi/4$ DQPSK/LCH



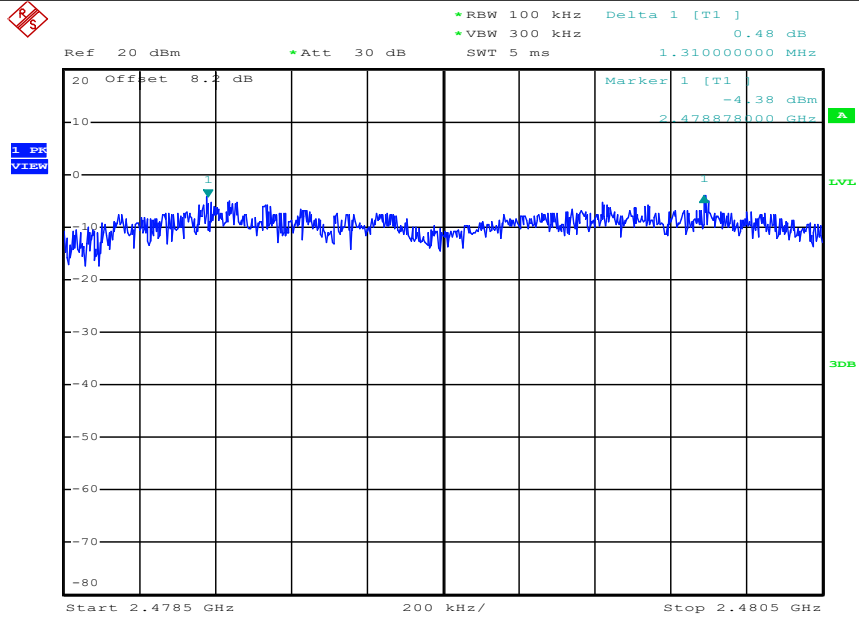
Date: 22.AUG.2019 14:26:52

$\pi/4$ DQPSK/MCH



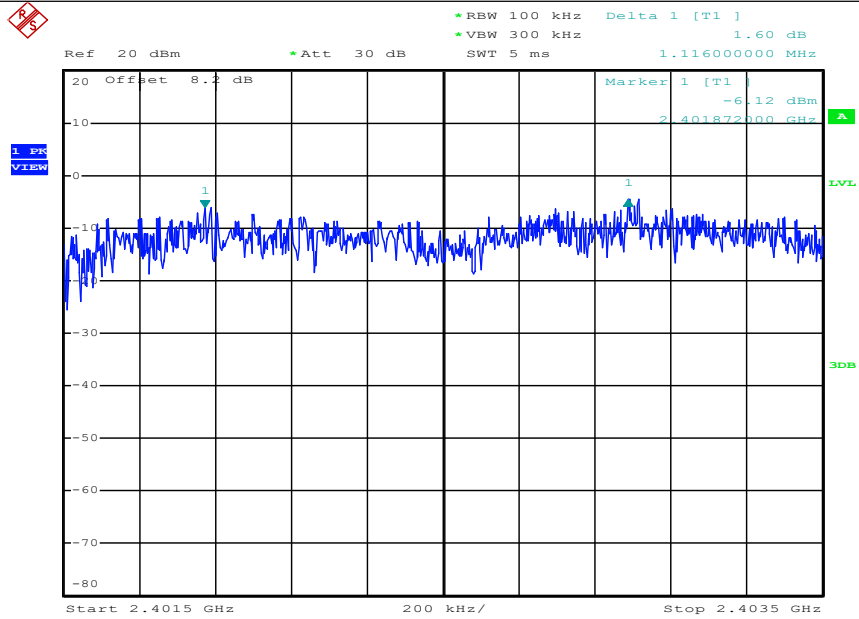
Date: 22.AUG.2019 14:28:58

π /4DQPSK/HCH

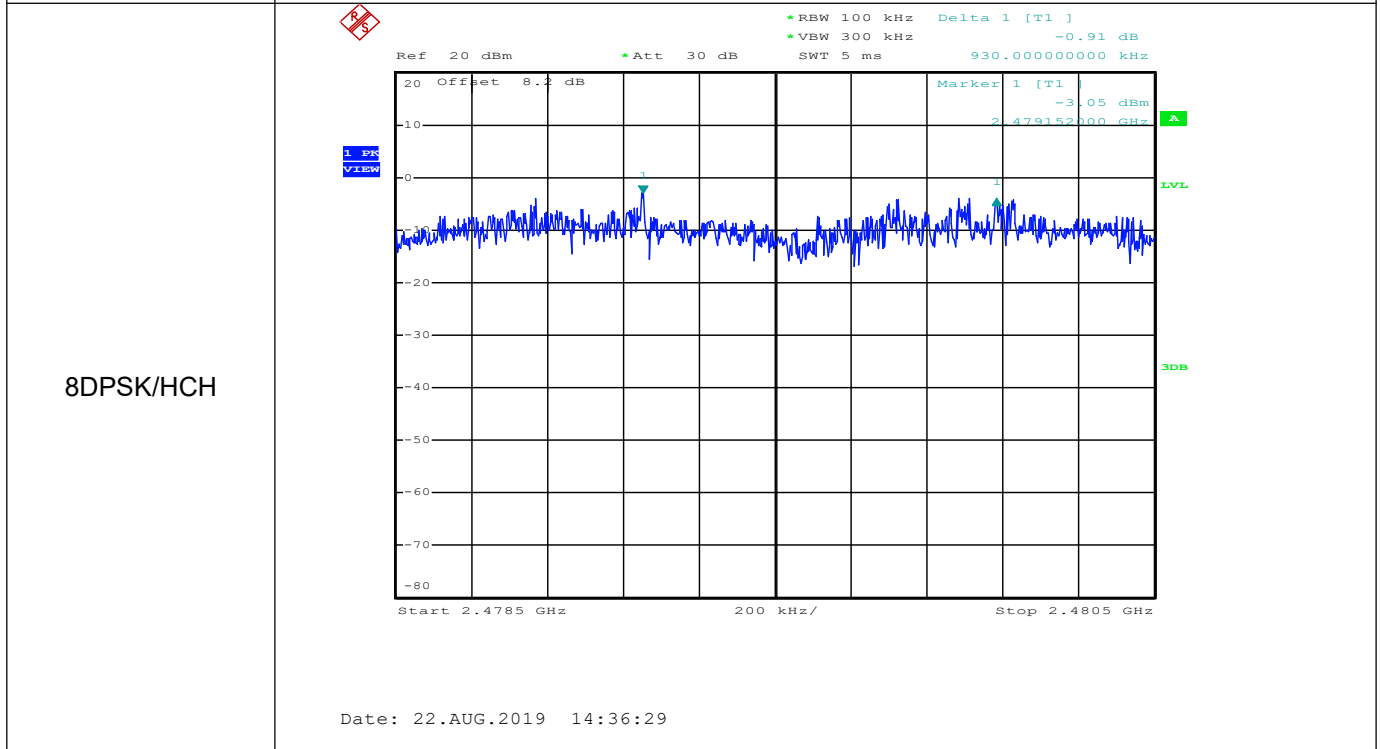
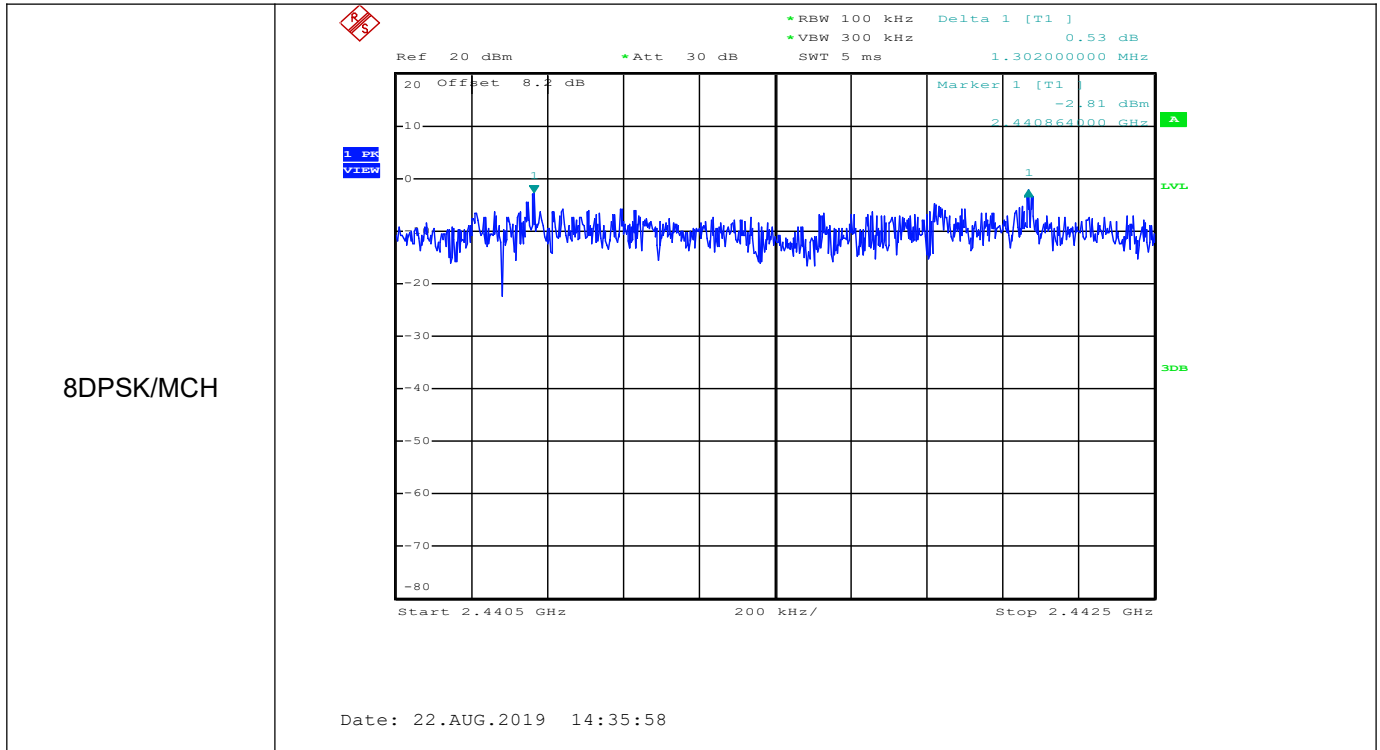


Date: 22.AUG.2019 14:29:29

8DPSK/LCH



Date: 22.AUG.2019 14:34:09

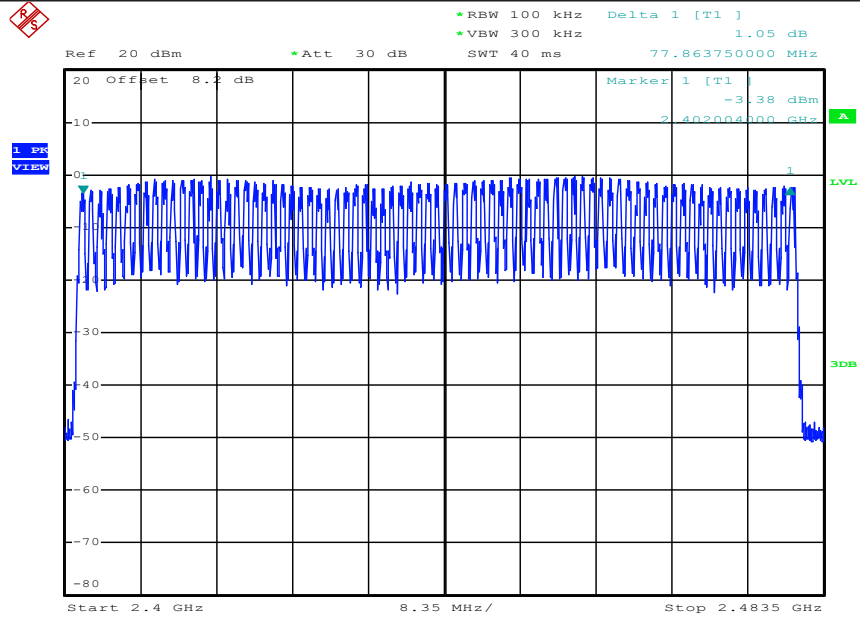


A.4 Hopping Channel Number

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

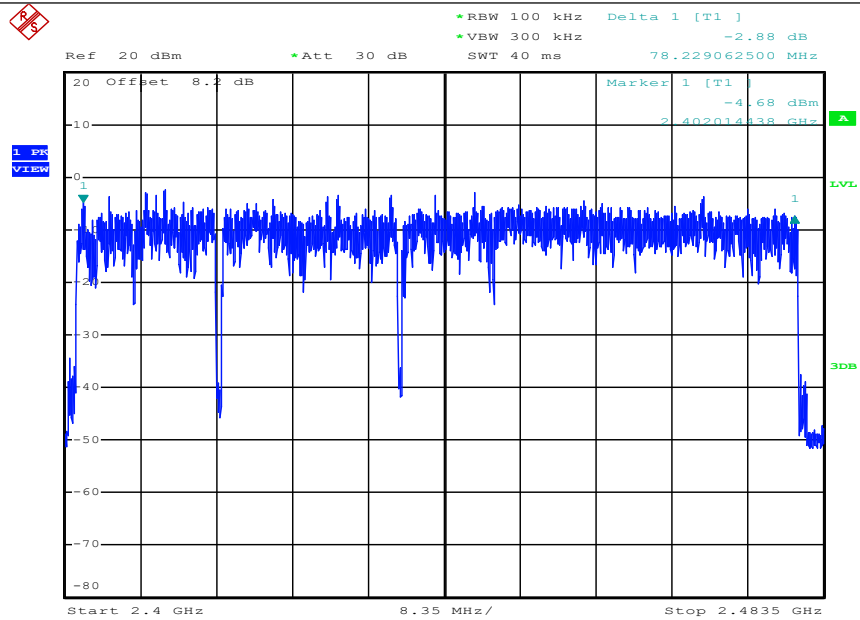
Test Graphs

GFSK/Hop



Date: 22.AUG.2019 14:25:07

$\pi/4$ DQPSK/Hop

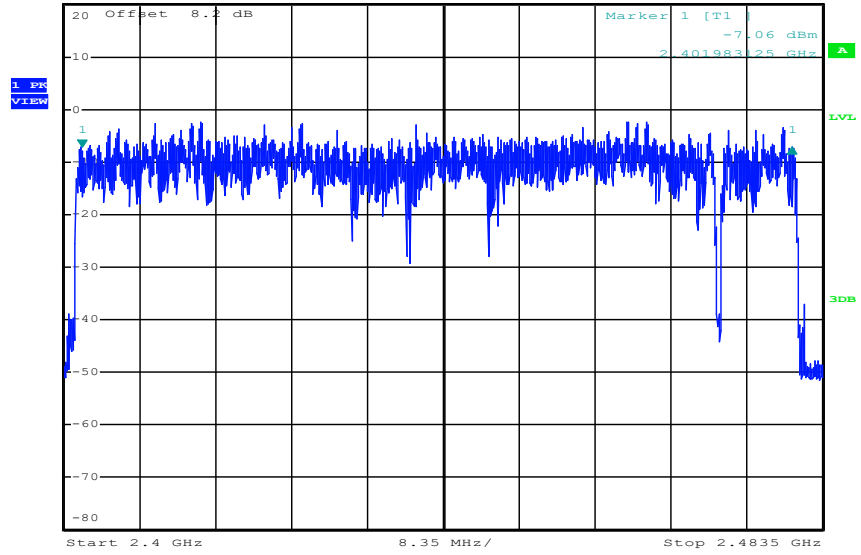


Date: 22.AUG.2019 14:33:01

8DPSK/Hop



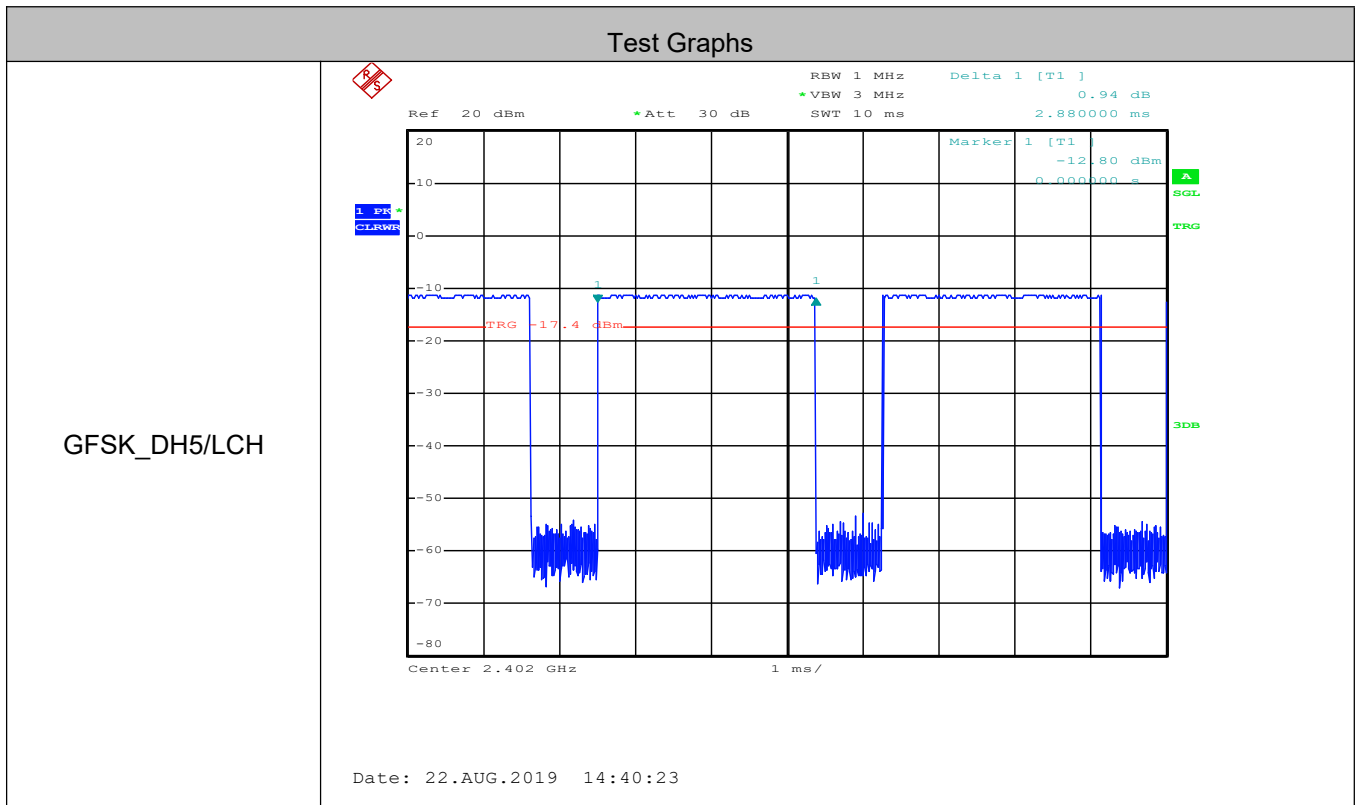
Ref 20 dBm *Att 30 dB *RBW 100 kHz Delta 1 [T1] -0.10 dB
*VBW 300 kHz SWT 40 ms 78.166437500 MHz



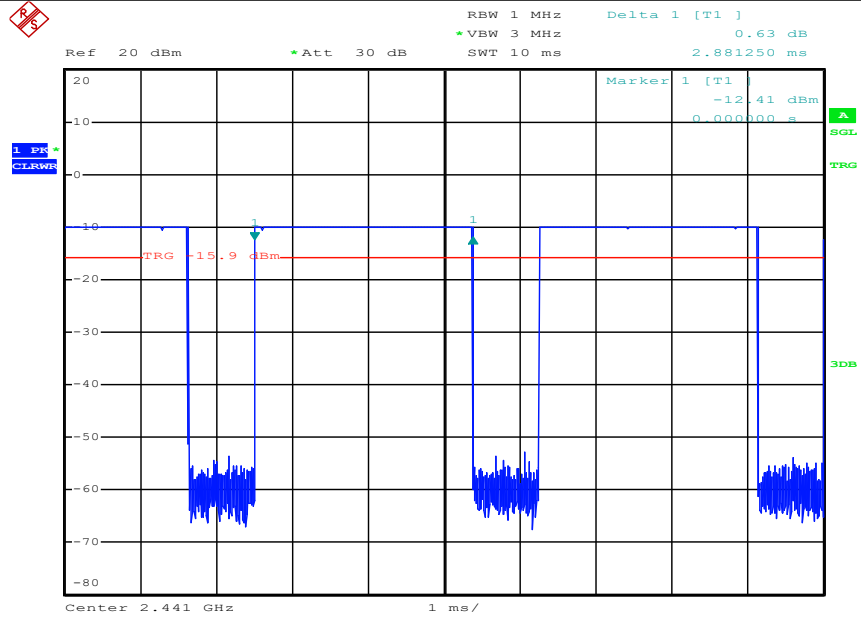
Date: 22.AUG.2019 14:38:59

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
π/4DQPSK	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	2.88	106.7	0.308	0.4	PASS
	3DH5	MCH	2.88	106.7	0.308	0.4	PASS
	3DH5	HCH	2.88	106.7	0.308	0.4	PASS

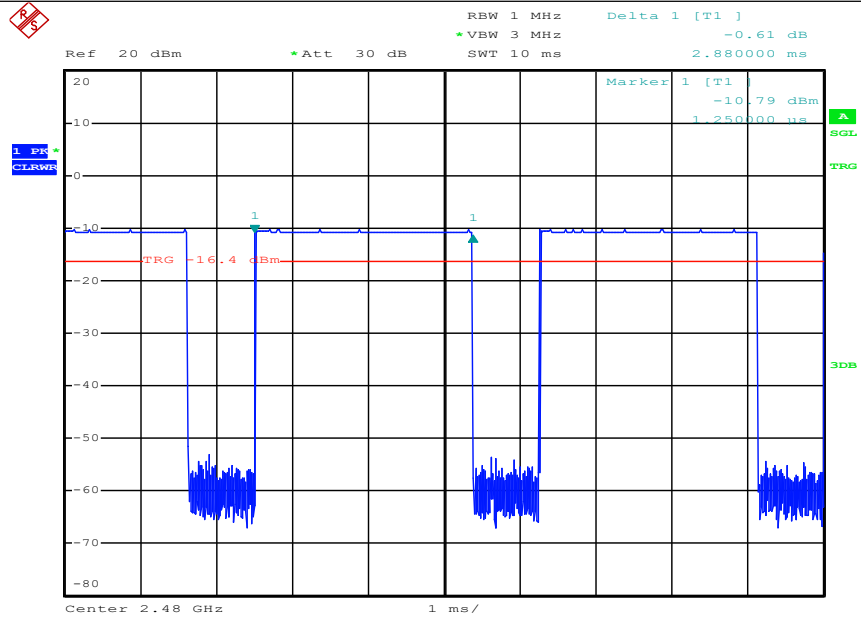


GFSK_DH5/MCH



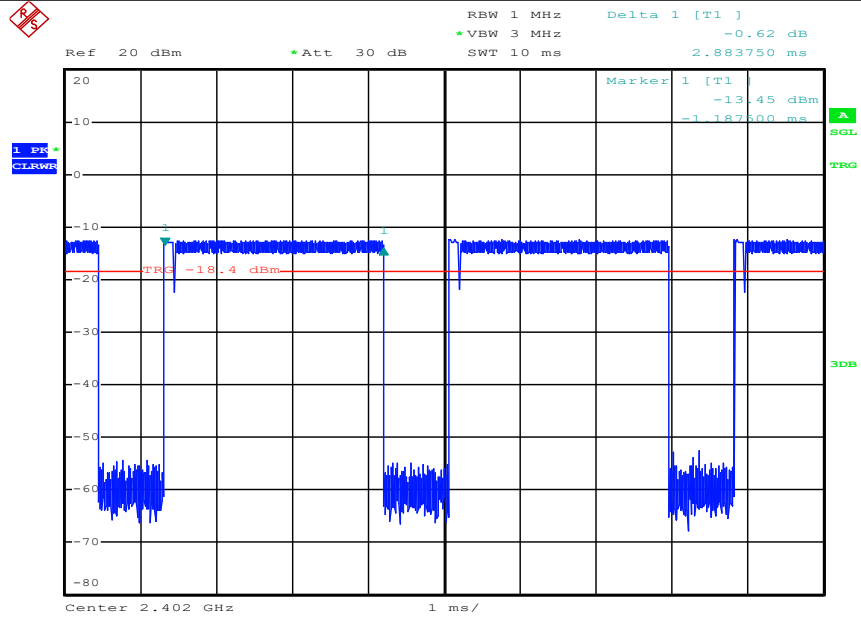
Date: 22.AUG.2019 14:43:20

GFSK_DH5/HCH



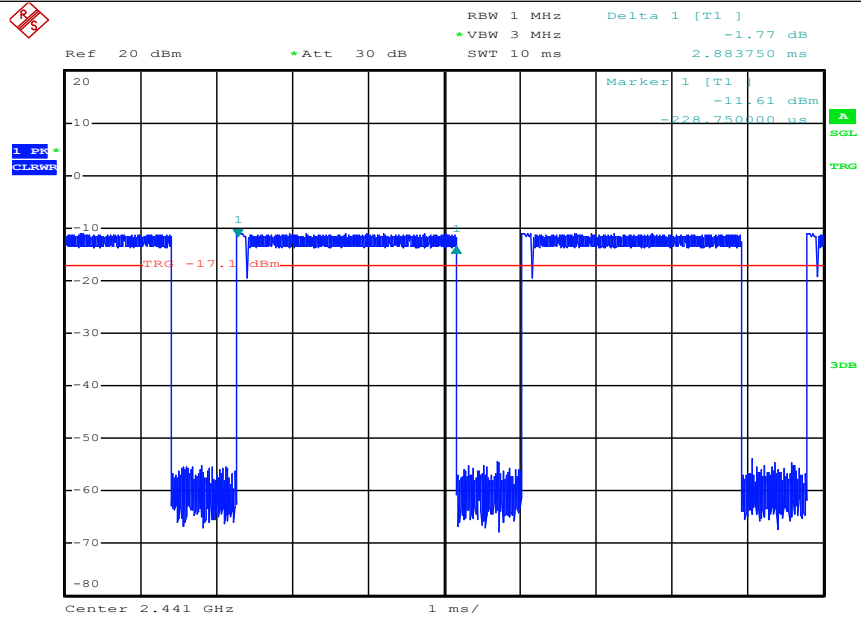
Date: 22.AUG.2019 14:45:06

$\pi/4$ DQPSK
_2DH5/LCH



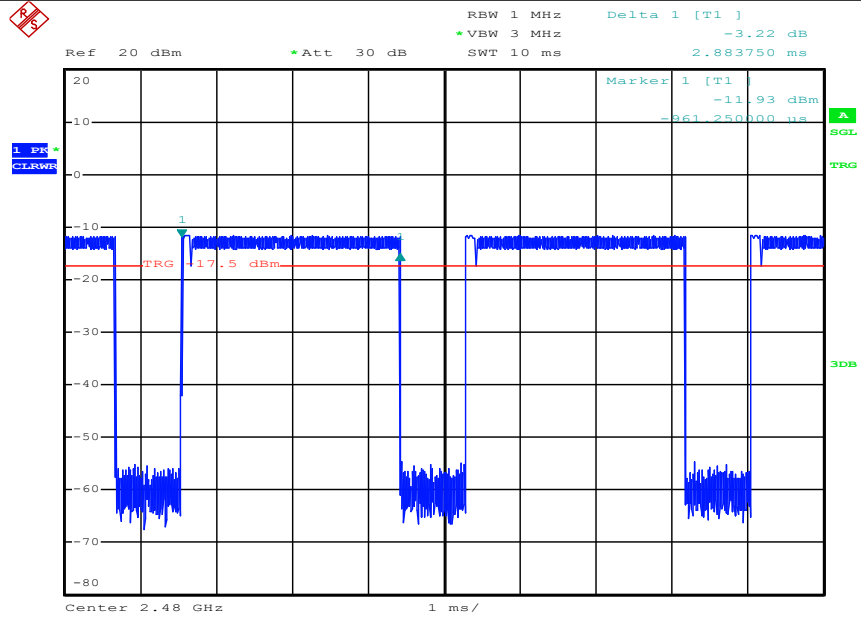
Date: 22.AUG.2019 14:47:48

$\pi/4$ DQPSK
_2DH5/MCH



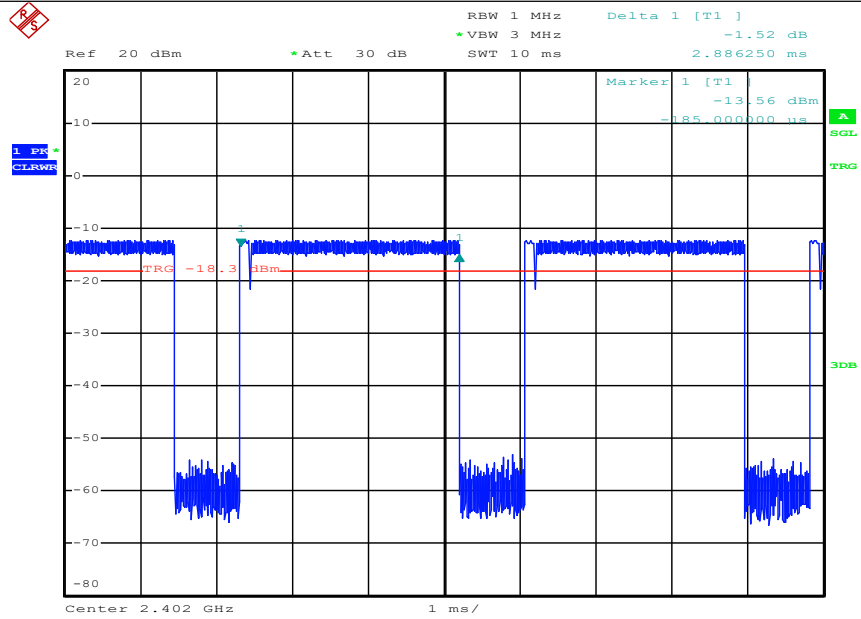
Date: 22.AUG.2019 14:50:42

$\pi/4$ DQPSK
_2DH5/HCH



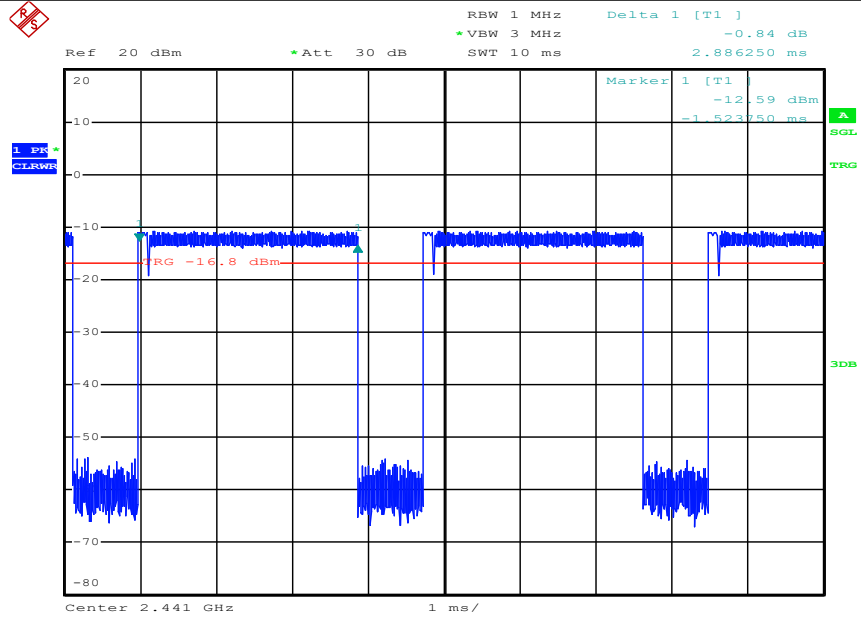
Date: 22.AUG.2019 14:52:38

8DPSK_3DH5/LCH



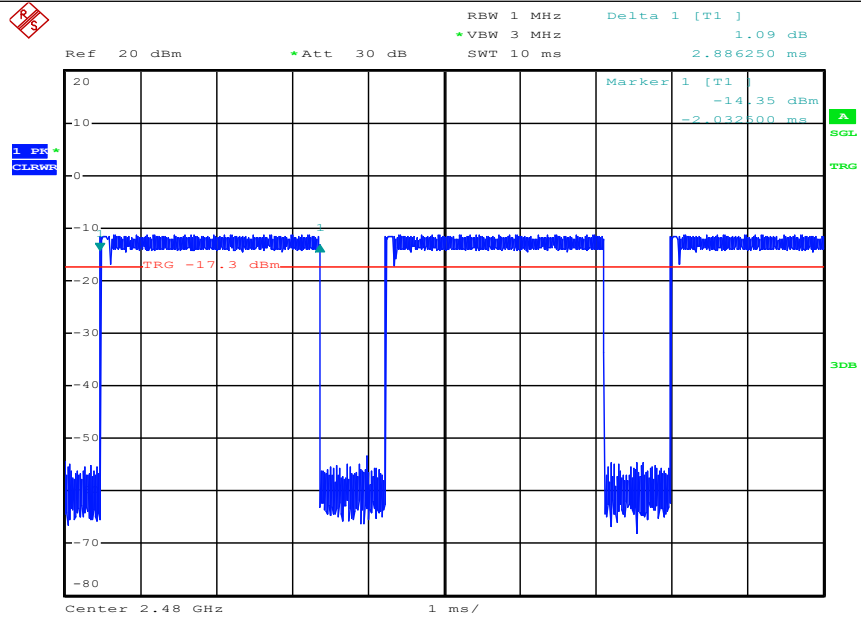
Date: 22.AUG.2019 14:55:29

8DPSK_3DH5/MCH



Date: 22.AUG.2019 14:58:11

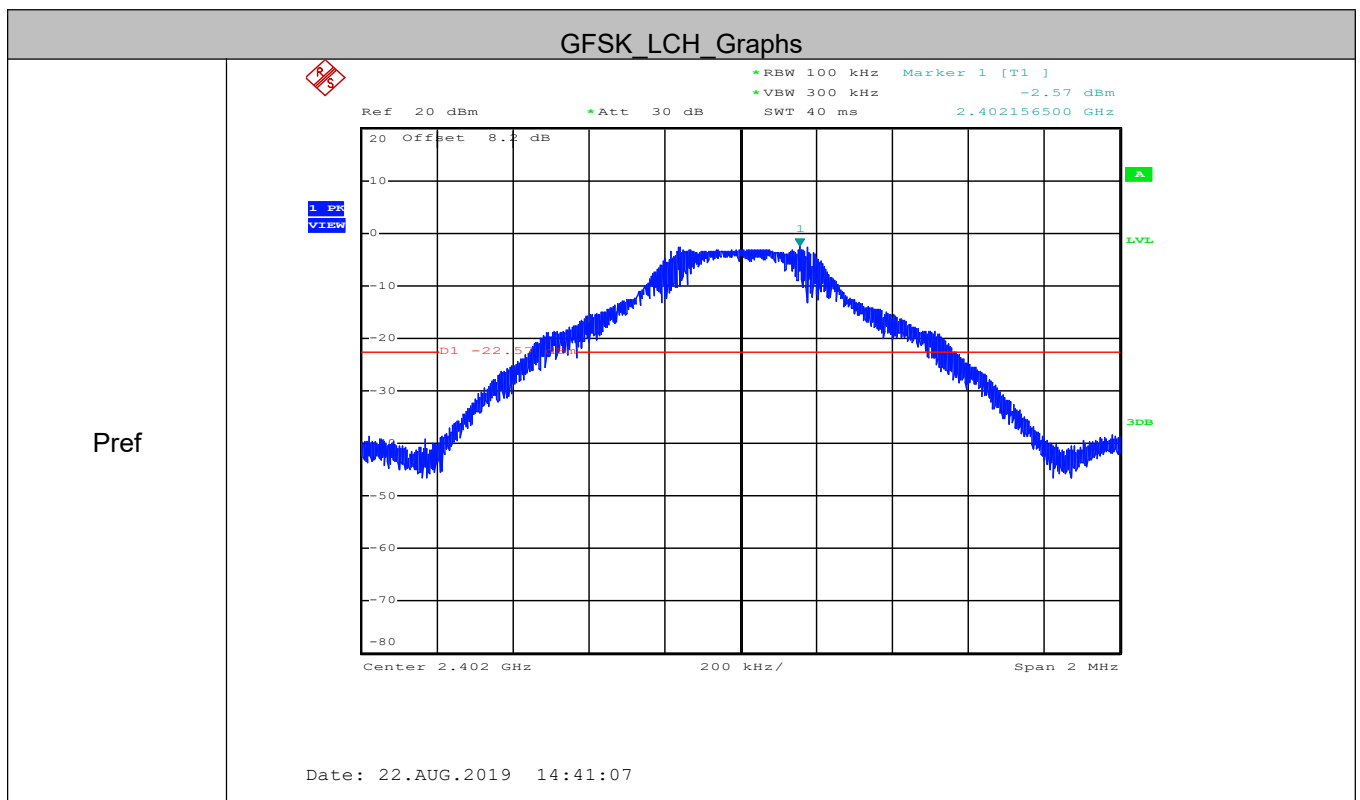
8DPSK_3DH5/HCH



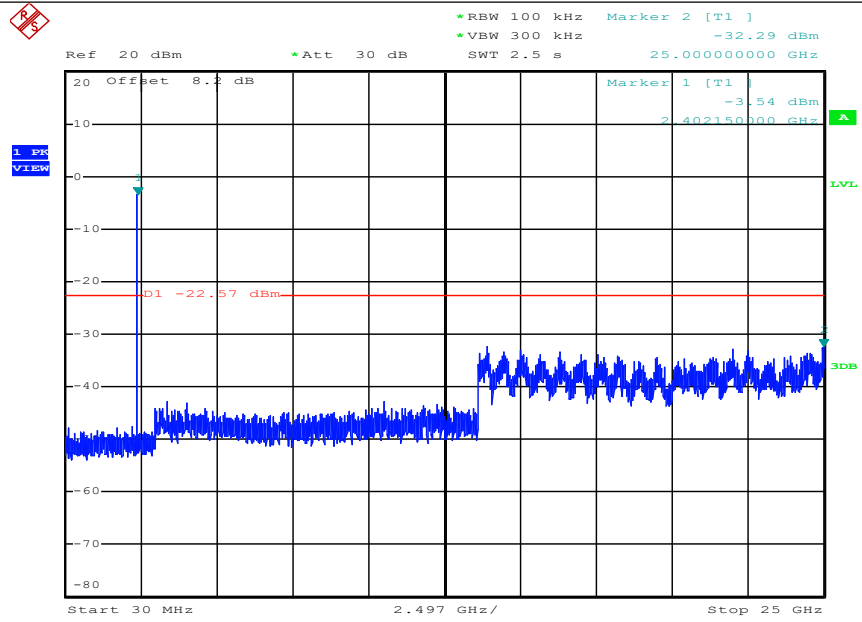
Date: 22.AUG.2019 14:59:59

A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-2.57	-32.290	-22.570	PASS
	MCH	-1.1	-31.970	-21.100	PASS
	HCH	-1.64	-32.800	-21.640	PASS
π/4DQPSK	LCH	-3.81	-32.420	-23.810	PASS
	MCH	-2.49	-32.790	-22.490	PASS
	HCH	-2.89	-31.450	-22.890	PASS
8DPSK	LCH	-4.03	-29.700	-24.030	PASS
	MCH	-2.32	-32.150	-22.320	PASS
	HCH	-3.21	-32.530	-23.210	PASS



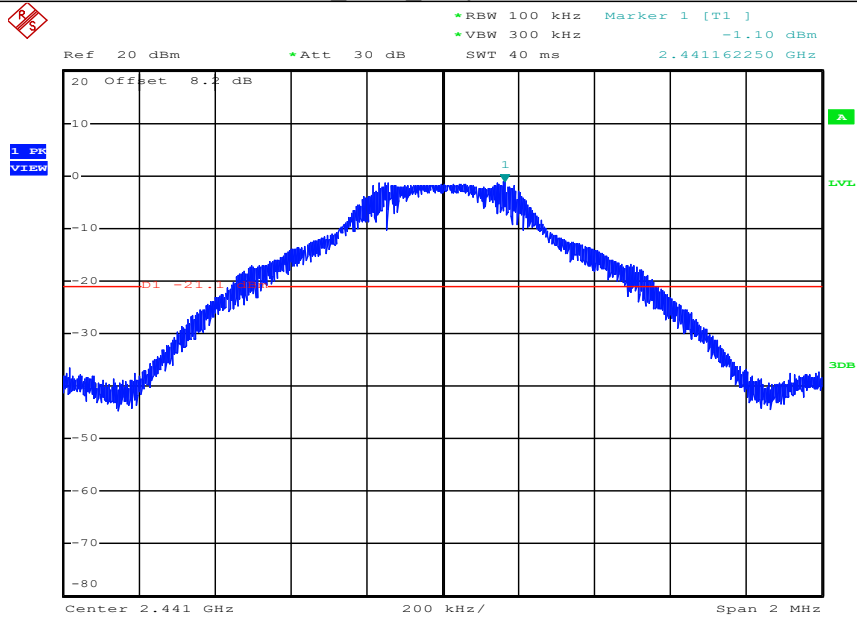
P_{uw}



Date: 22.AUG.2019 14:41:22

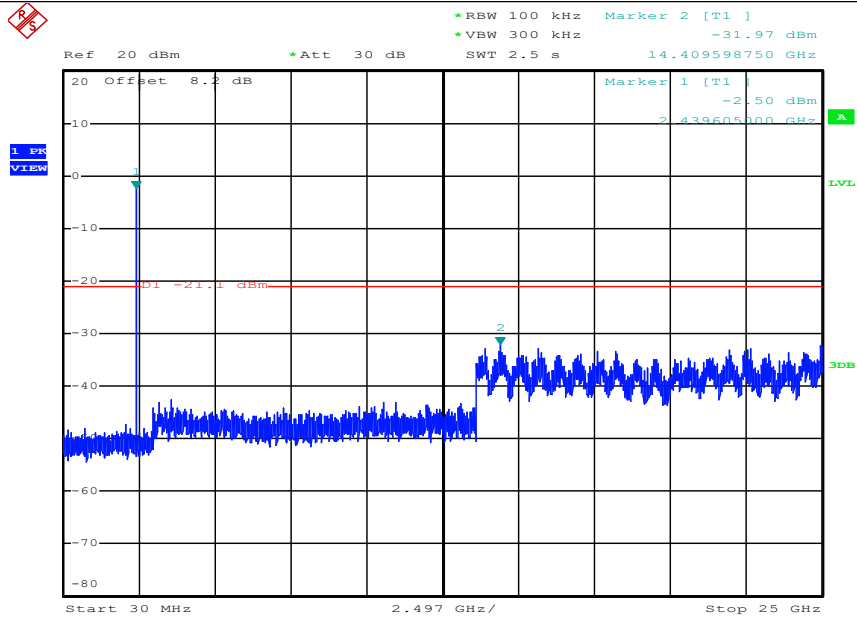
GFSK_MCH_Graphs

Pref



Date: 22.AUG.2019 14:43:47

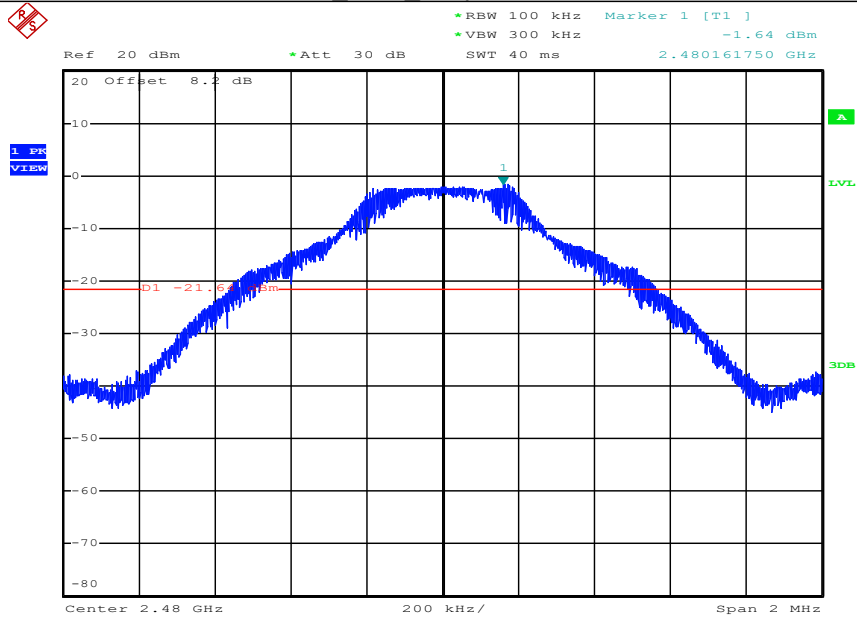
Puw



Date: 22.AUG.2019 14:44:02

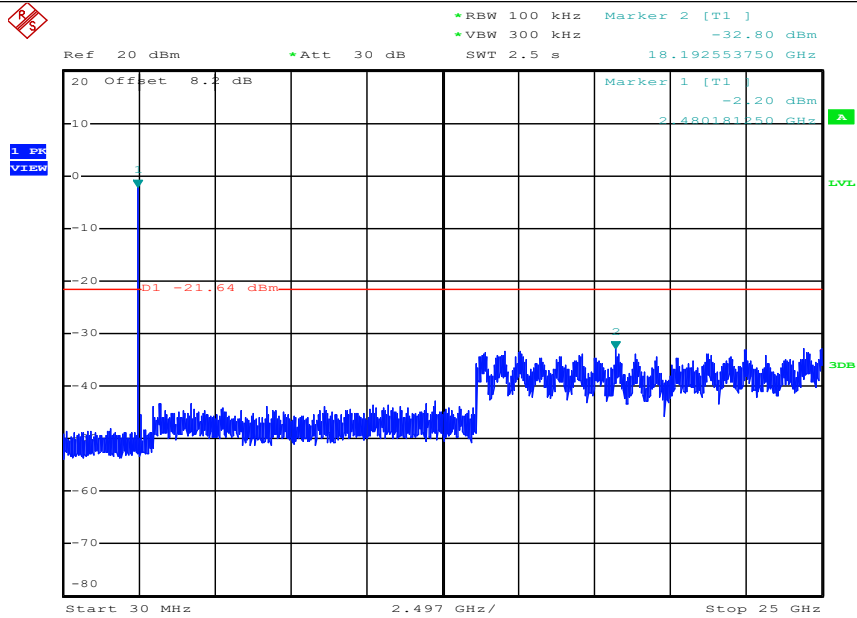
GFSK_HCH_Graphs

Pref



Date: 22.AUG.2019 14:45:50

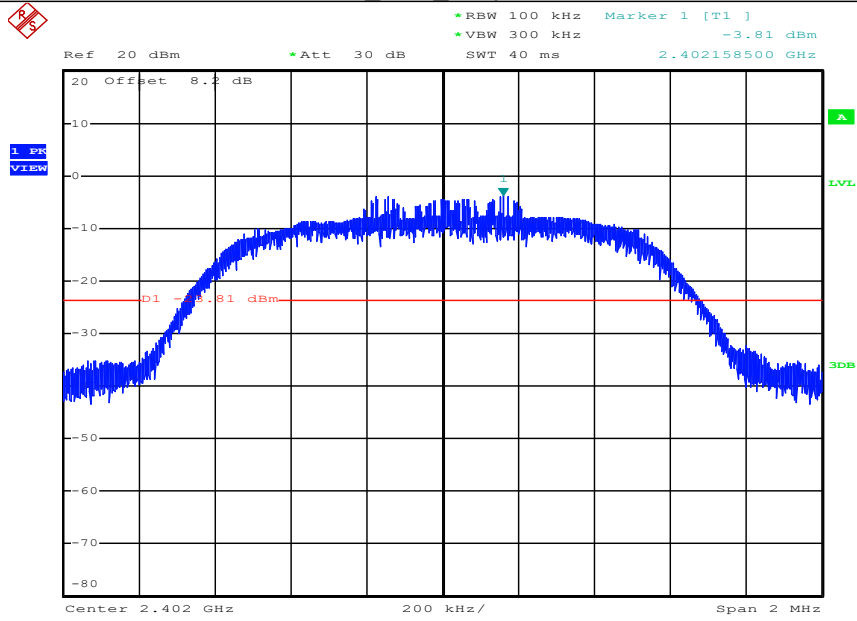
Puw



Date: 22.AUG.2019 14:46:05

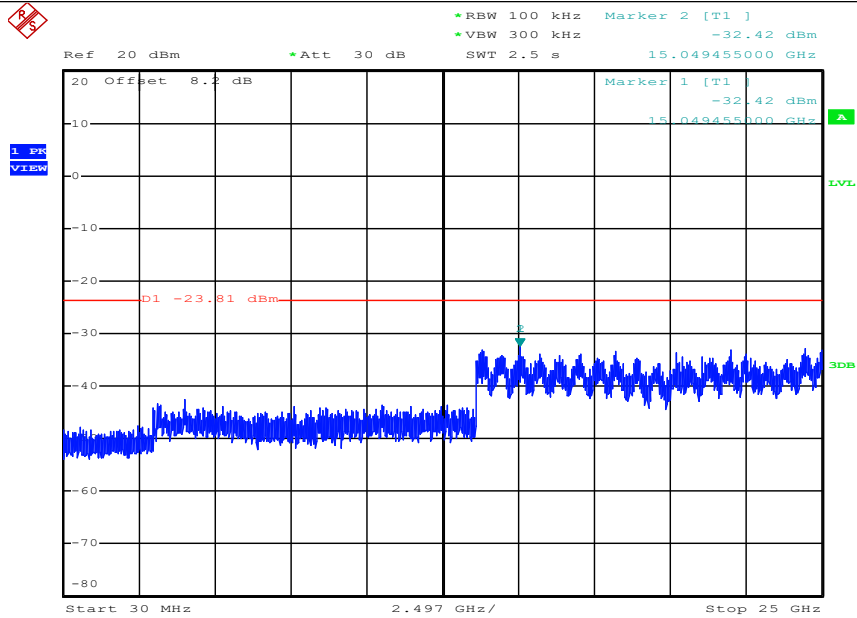
$\pi/4$ DQPSK_LCH_Graphs

Pref



Date: 22.AUG.2019 14:48:33

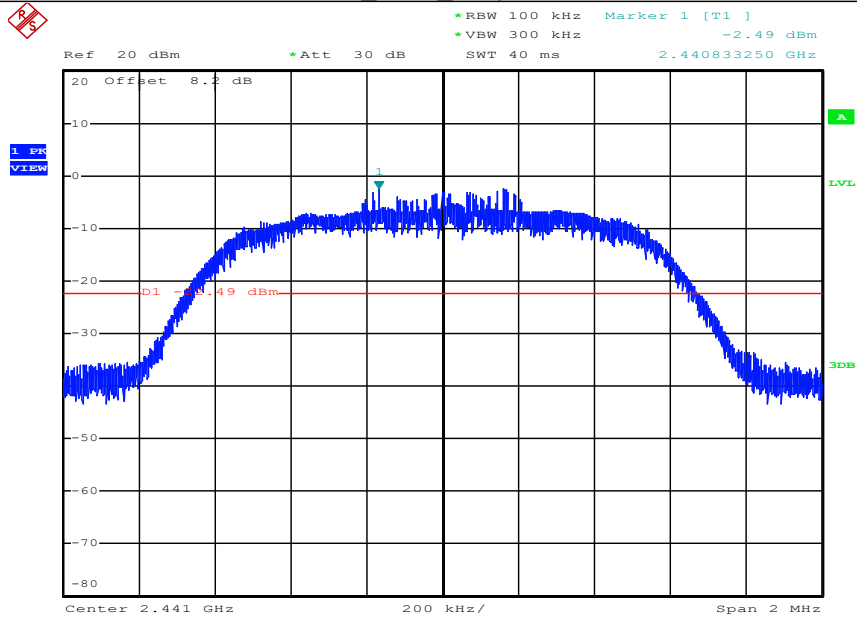
Puw



Date: 22.AUG.2019 14:48:48

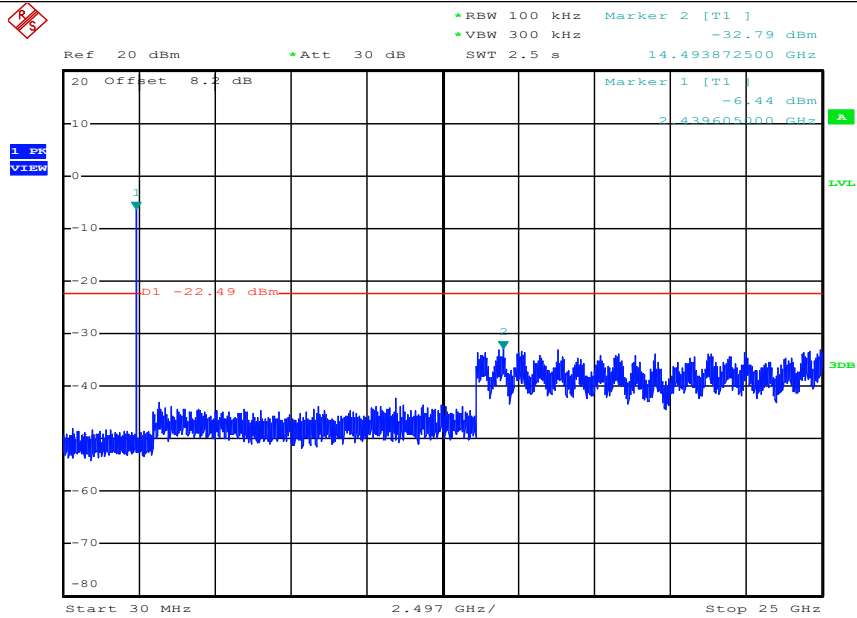
$\pi/4$ DQPSK_MCH_Graphs

Pref



Date: 22.AUG.2019 14:51:09

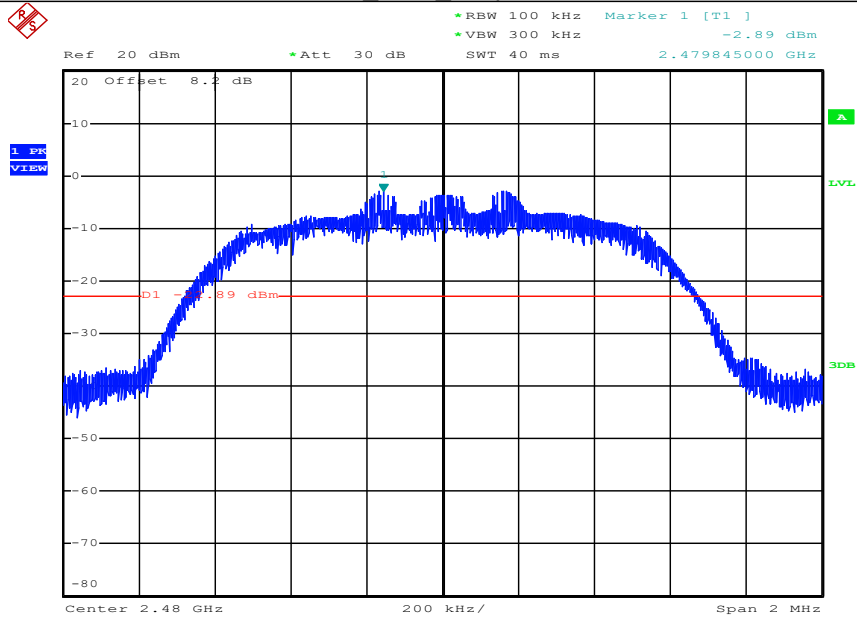
Puw



Date: 22.AUG.2019 14:51:24

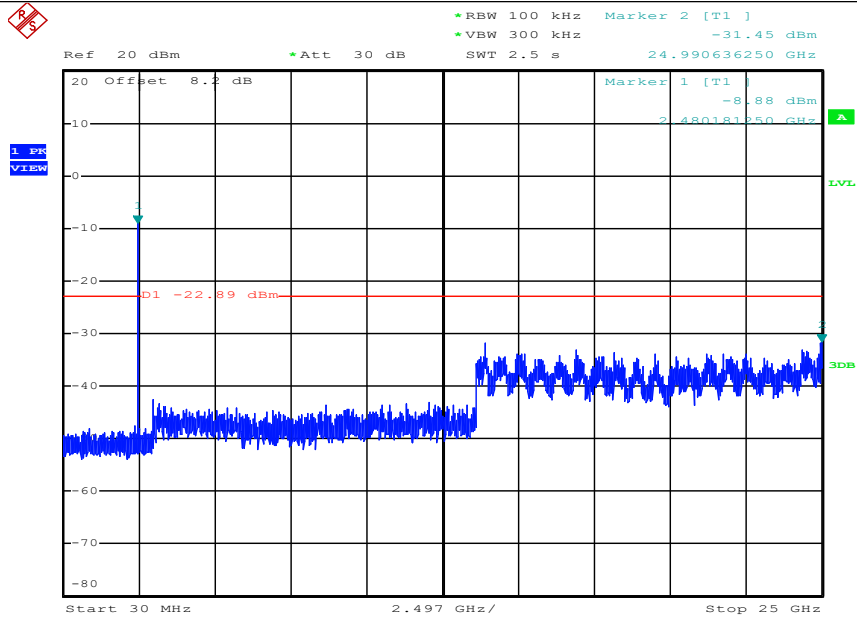
$\pi/4$ DQPSK_HCH_Graphs

Pref



Date: 22.AUG.2019 14:53:23

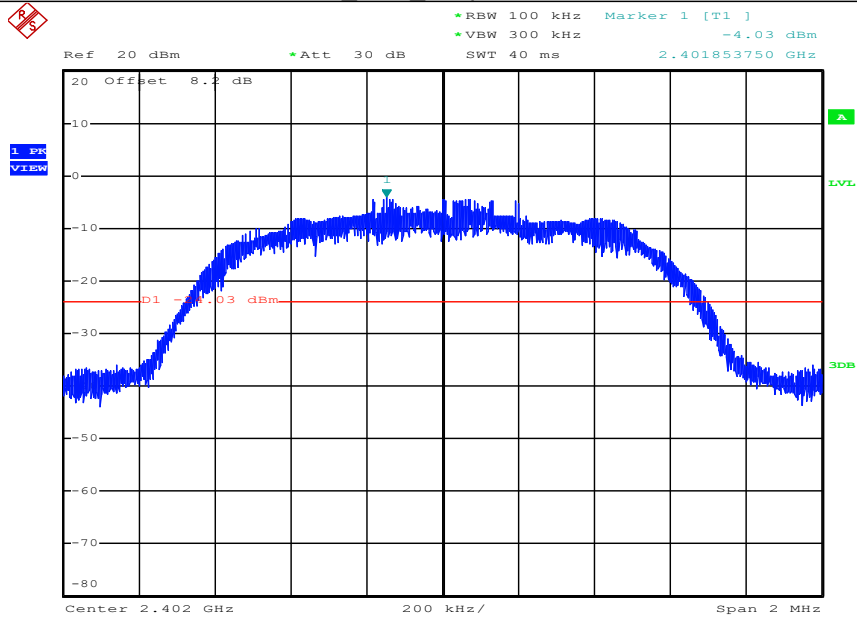
Puw



Date: 22.AUG.2019 14:53:38

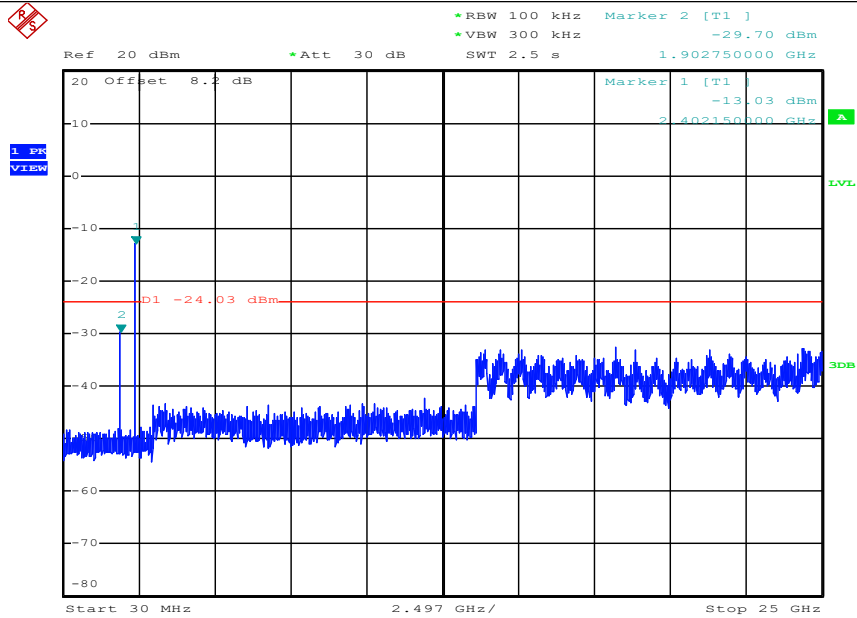
8DPSK_LCH_Graphs

Pref



Date: 22.AUG.2019 14:56:15

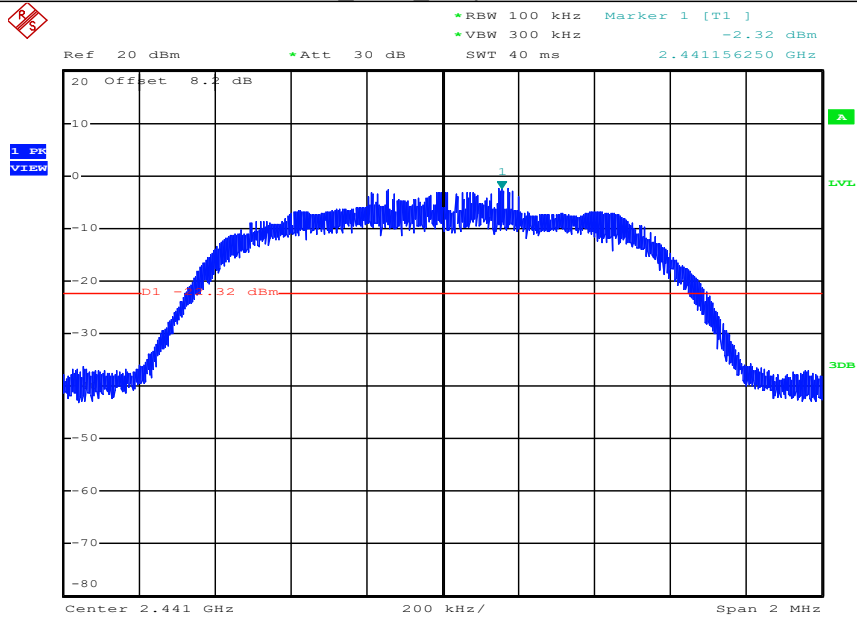
Puw



Date: 22.AUG.2019 14:56:29

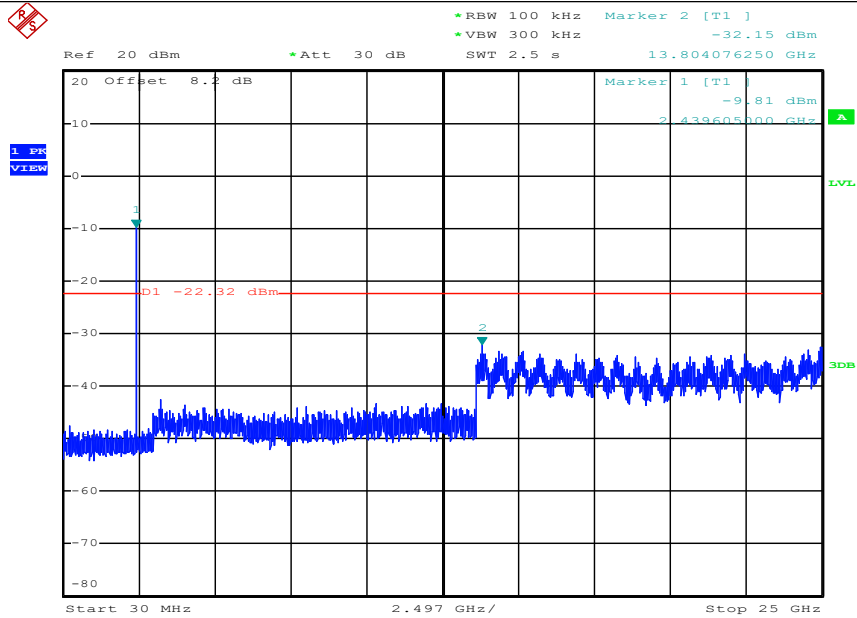
8DPSK_MCH_Graphs

Pref



Date: 22.AUG.2019 14:58:38

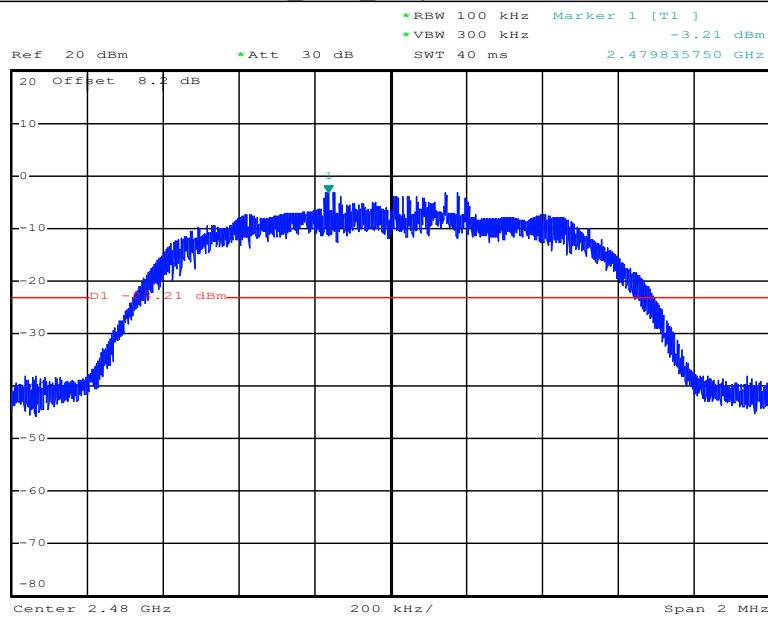
Puw



Date: 22.AUG.2019 14:58:53

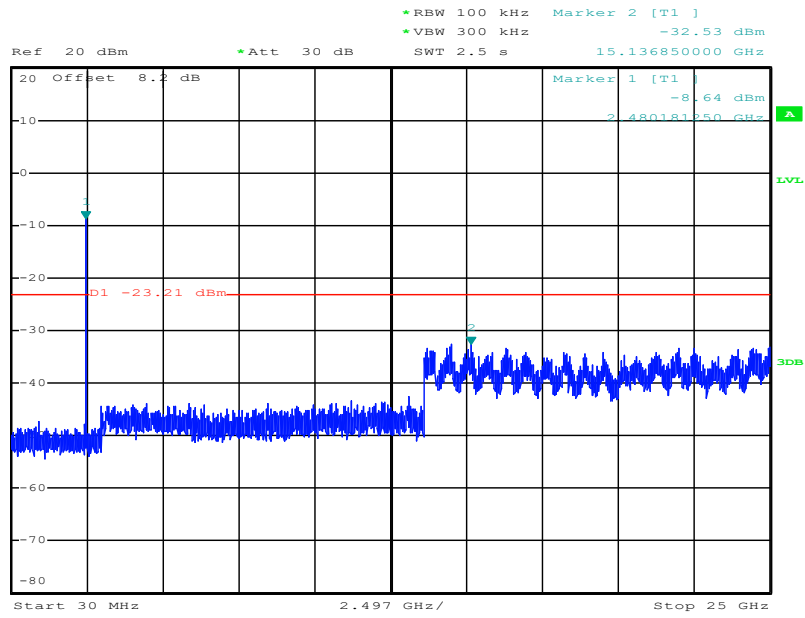
8DPSK_HCH_Graphs

Pref



Date: 22.AUG.2019 15:00:44

Puw



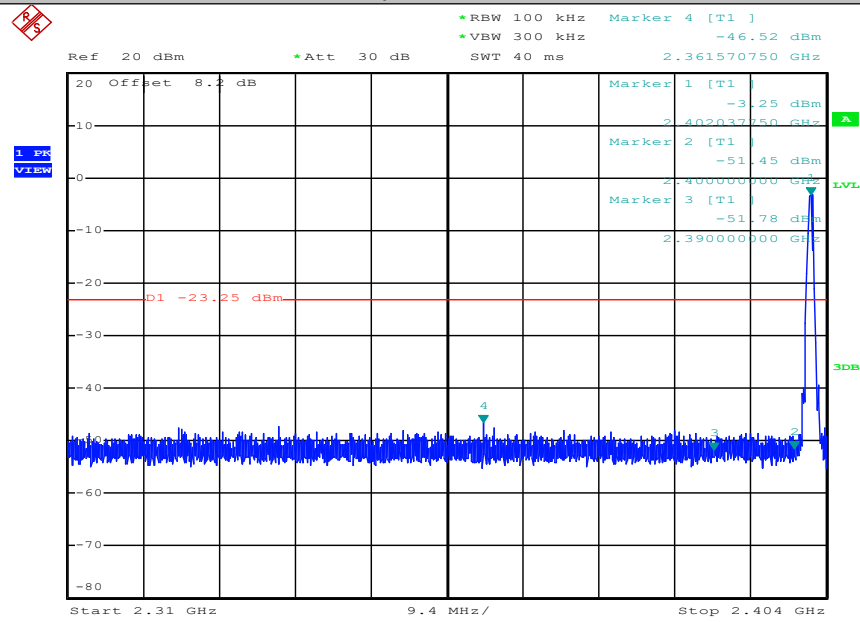
Date: 22.AUG.2019 15:00:59

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	-3.250	Off	-46.522	-23.25	PASS
			-0.130	On	-46.700	-20.13	PASS
	HCH	2480	-1.770	Off	-46.992	-21.77	PASS
			0.110	On	-46.902	-19.89	PASS
$\pi/4$ DQPSK	LCH	2402	-4.620	Off	-47.223	-24.62	PASS
			-2.030	On	-46.688	-22.03	PASS
	HCH	2480	-3.660	Off	-47.308	-23.66	PASS
			-2.650	On	-46.628	-22.65	PASS
8DPSK	LCH	2402	-4.530	Off	-47.684	-24.53	PASS
			-2.880	On	-46.744	-22.88	PASS
	HCH	2480	-3.170	Off	-47.437	-23.17	PASS
			-2.270	On	-47.455	-22.27	PASS

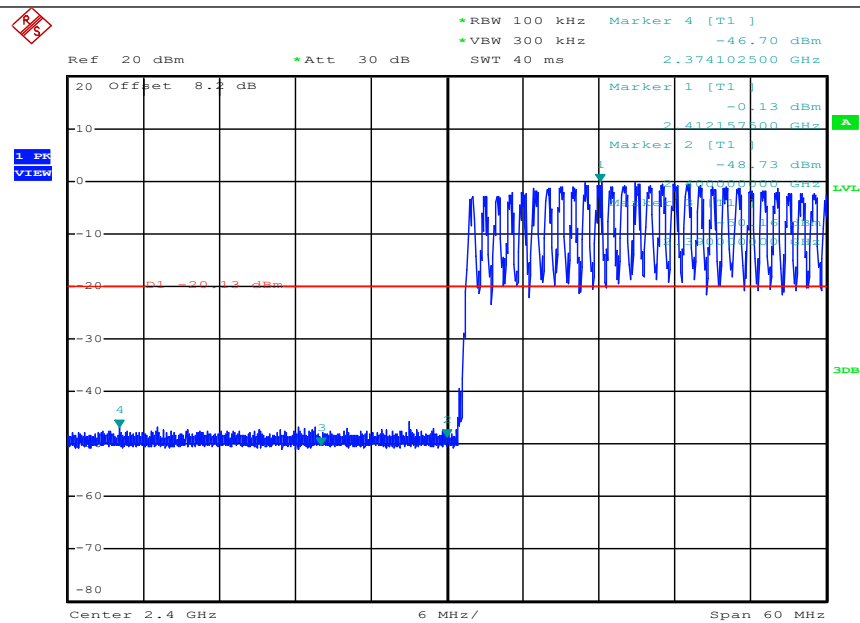
Test Graphs

GFSK/LCH/No Hop



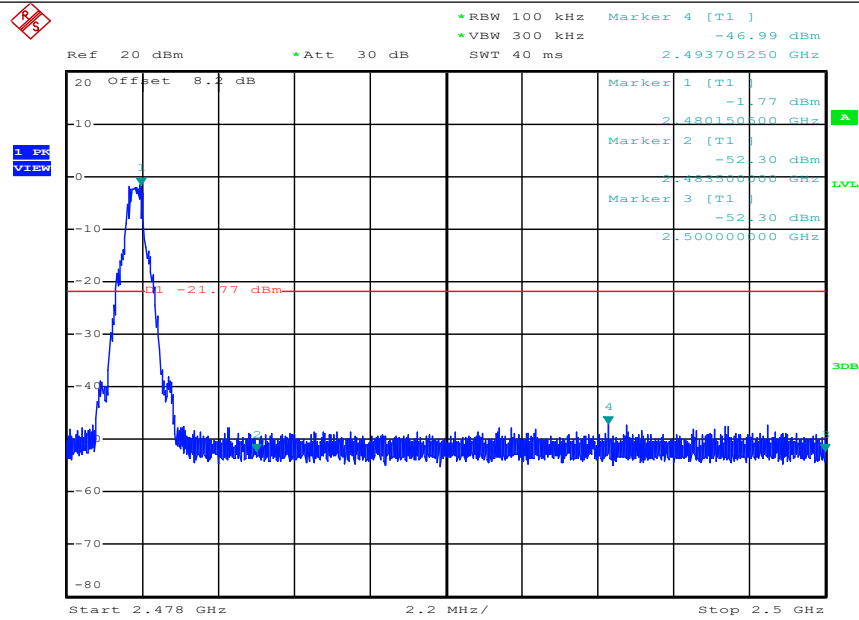
Date: 22.AUG.2019 14:40:54

GFSK/LCH/Hop



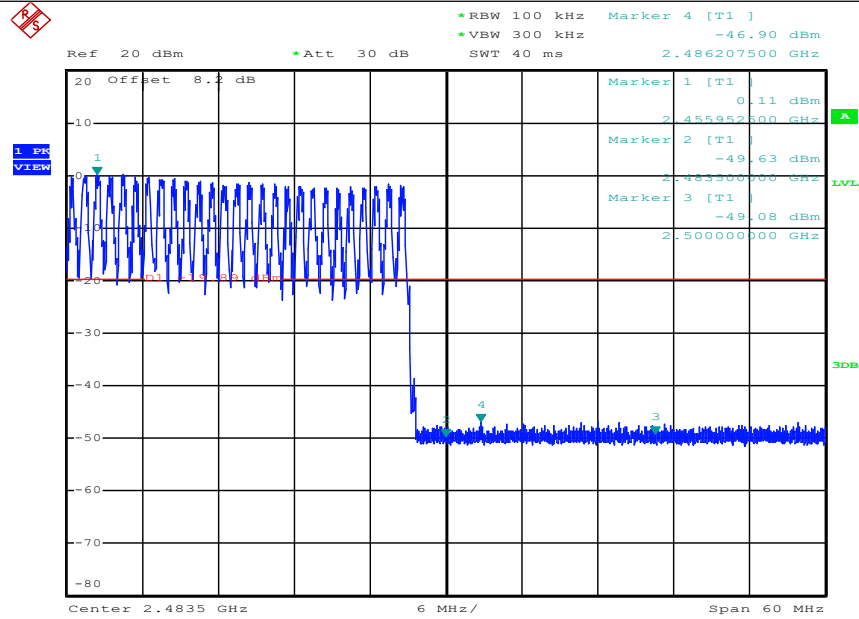
Date: 22.AUG.2019 14:19:23

GFSK/HCH/No Hop



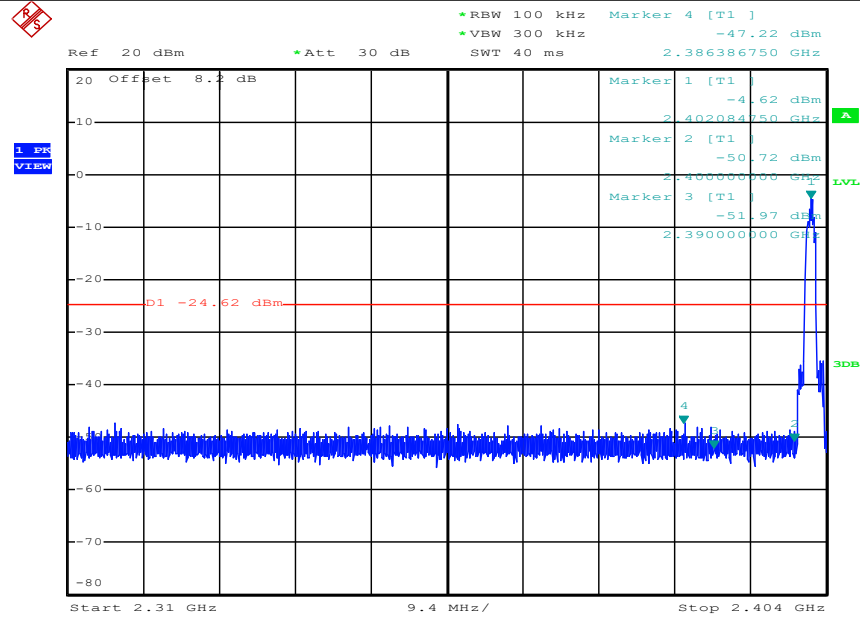
Date: 22.AUG.2019 14:45:37

GFSK/HCH/Hop



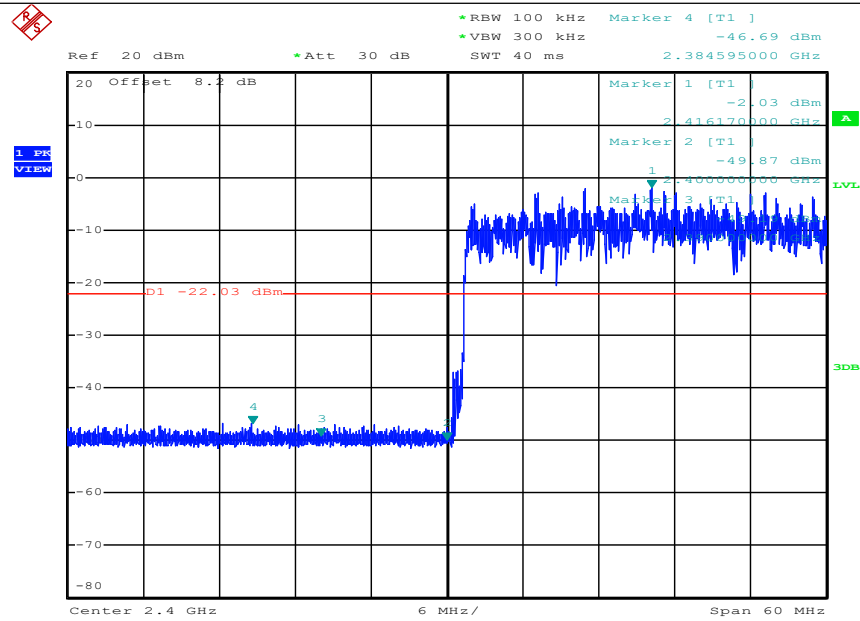
Date: 22.AUG.2019 14:22:04

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



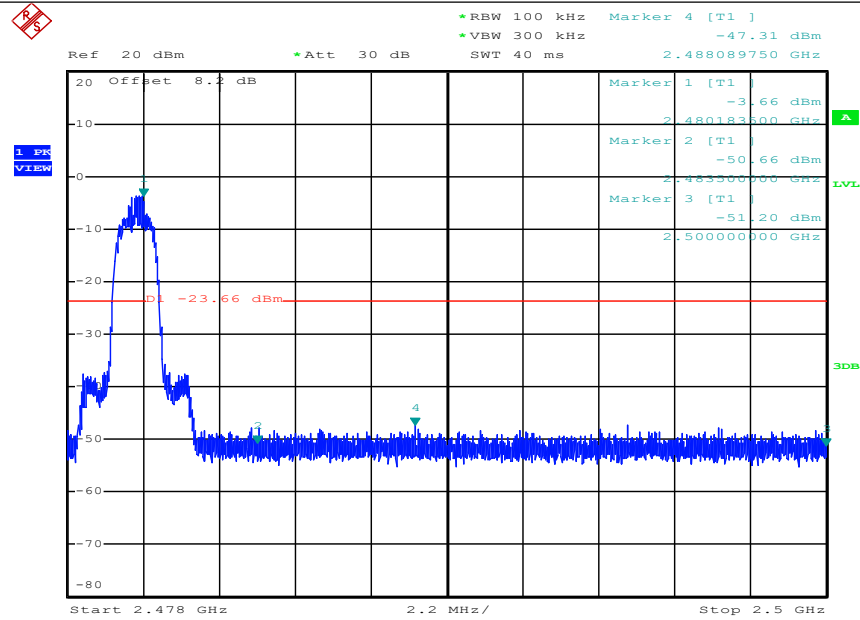
Date: 22.AUG.2019 14:48:20

$\pi/4$ DQPSK/LCH/Hop



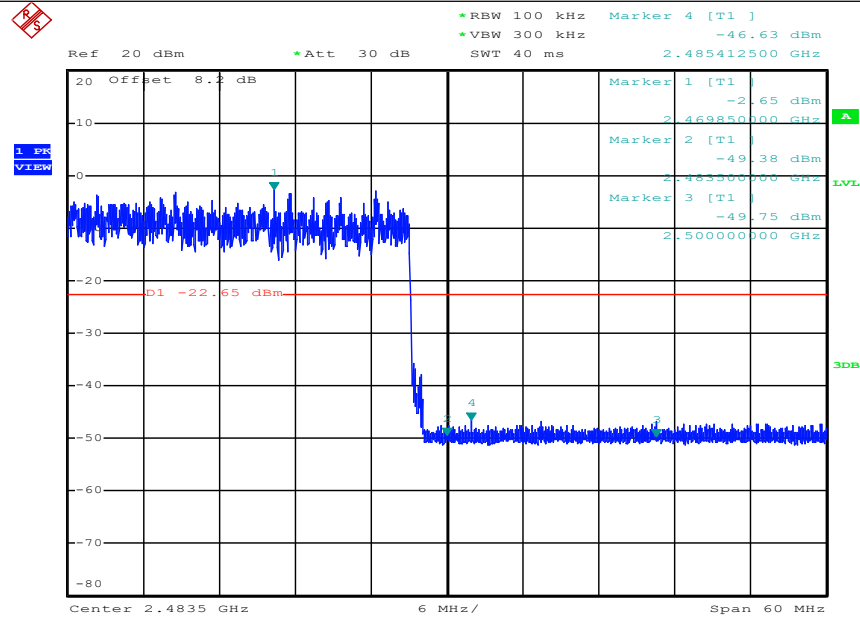
Date: 22.AUG.2019 14:28:30

π /4DQPSK/HCH/No
Hop



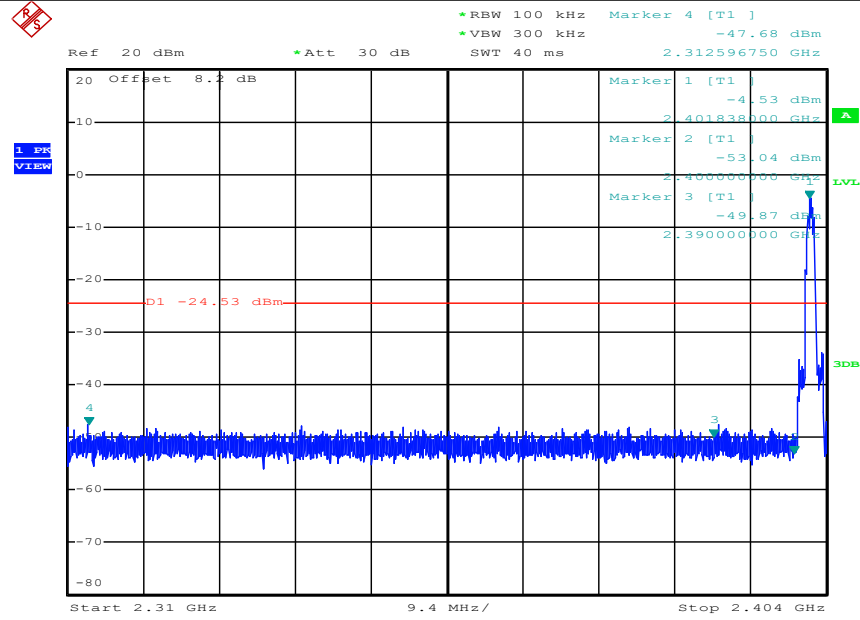
Date: 22.AUG.2019 14:53:10

π /4DQPSK/HCH/Hop



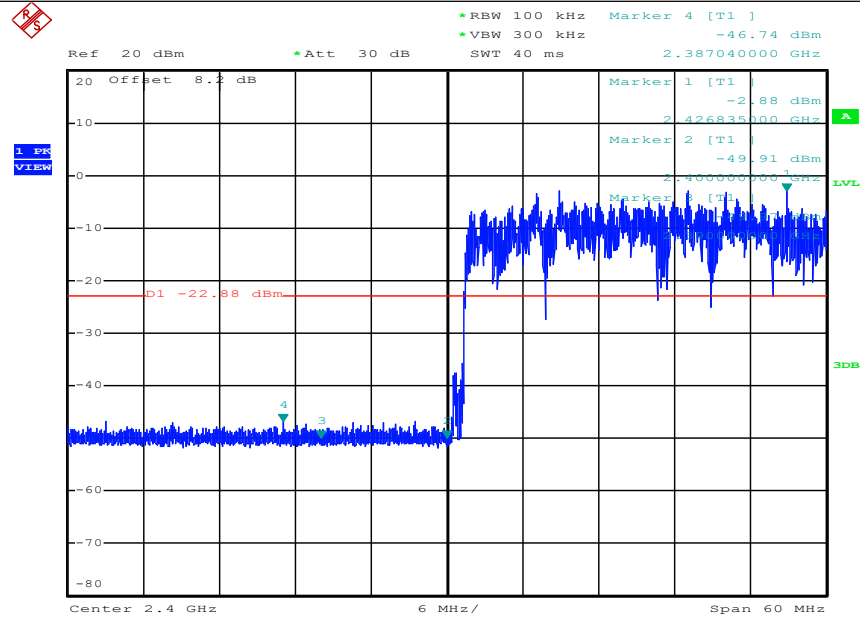
Date: 22.AUG.2019 14:31:45

8DPSK/LCH/No Hop



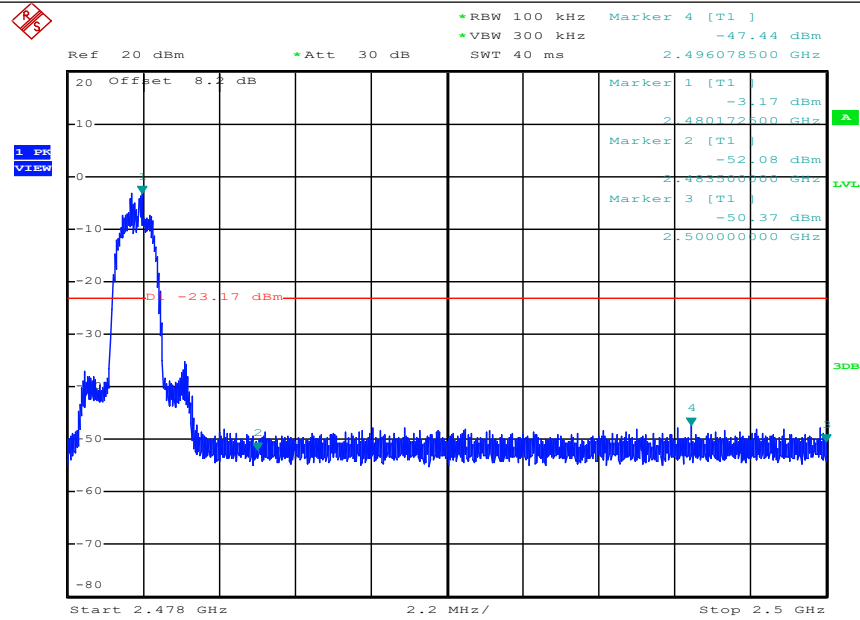
Date: 22.AUG.2019 14:56:01

8DPSK/LCH/Hop



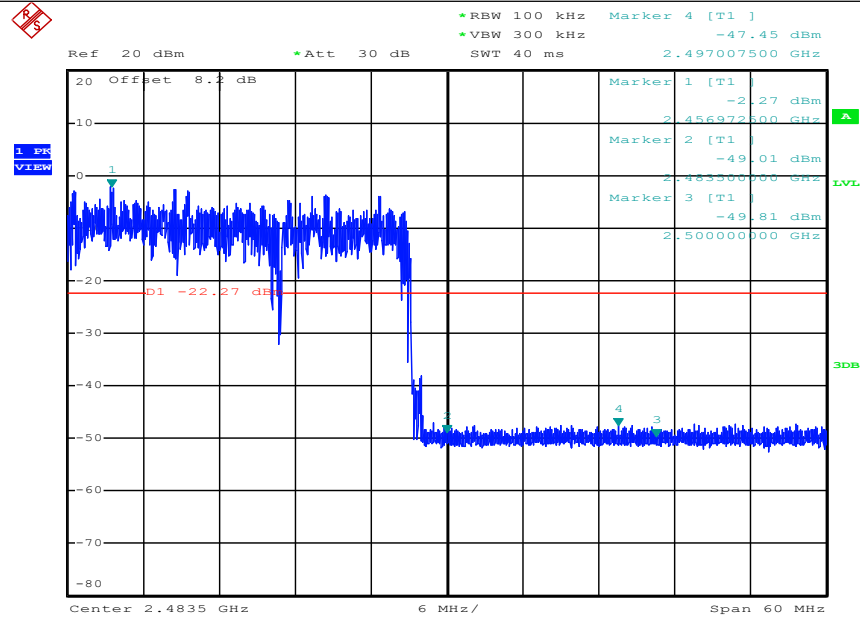
Date: 22.AUG.2019 14:35:24

8DPSK/HCH/No Hop



Date: 22.AUG.2019 15:00:31

8DPSK/HCH/Hop

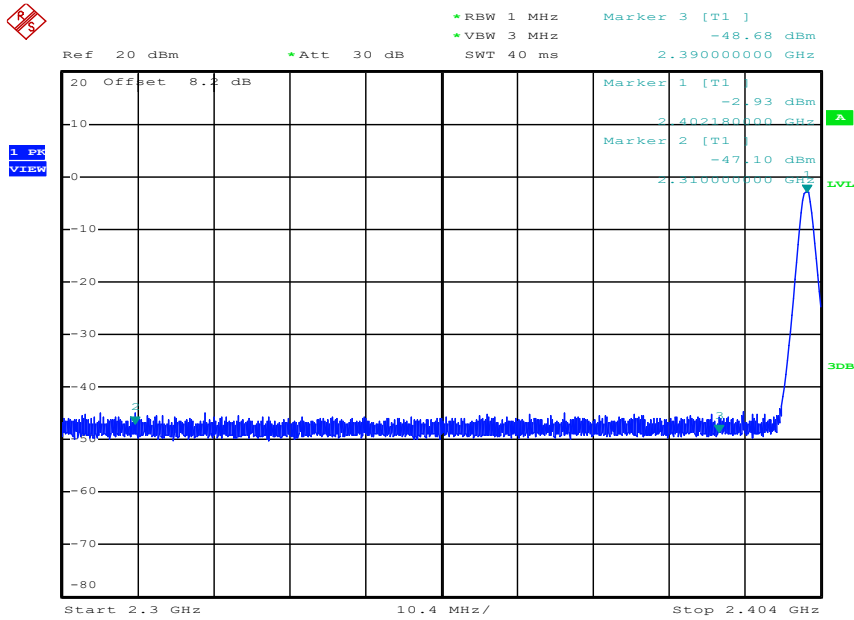


Date: 22.AUG.2019 14:37:44

A.8 Restrict-band band-edge measurements

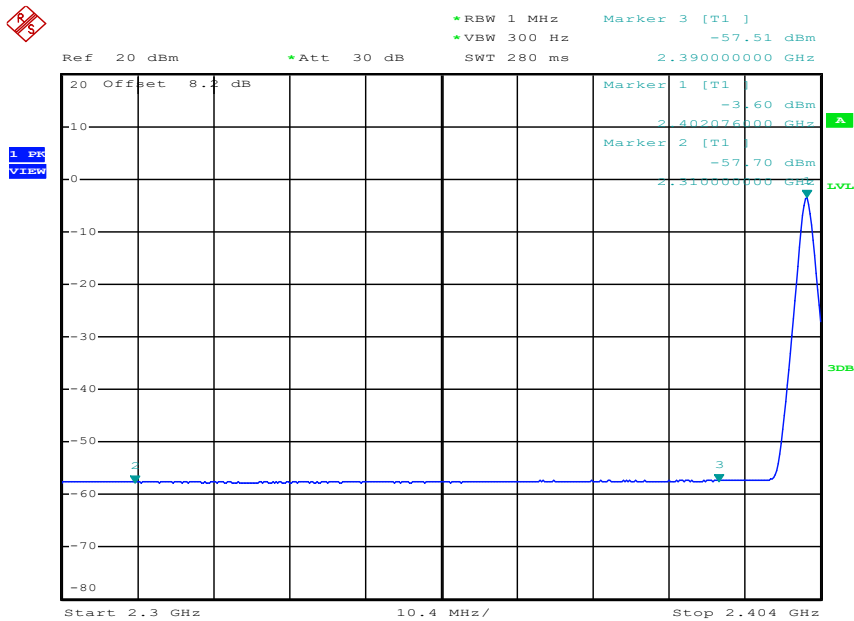
Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-47.10	2.0	0	48.16	PEAK	74	PASS
	Off	2310.0	-57.70	2.0	0	37.56	AV	54	PASS
	Off	2390.0	-48.68	2.0	0	46.58	PEAK	74	PASS
	Off	2390.0	-57.51	2.0	0	37.75	AV	54	PASS
	Off	2483.5	-40.93	2.0	0	54.33	PEAK	74	PASS
	Off	2483.5	-44.77	2.0	0	50.49	AV	54	PASS
	Off	2500.0	-47.43	2.0	0	47.83	PEAK	74	PASS
	Off	2500.0	-57.99	2.0	0	37.27	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-48.65	2.0	0	46.61	PEAK	74	PASS
	Off	2310.0	-57.58	2.0	0	37.68	AV	54	PASS
	Off	2390.0	-47.29	2.0	0	47.97	PEAK	74	PASS
	Off	2390.0	-57.39	2.0	0	37.87	AV	54	PASS
	Off	2483.5	-41.22	2.0	0	54.04	PEAK	74	PASS
	Off	2483.5	-46.97	2.0	0	48.29	AV	54	PASS
	Off	2500.0	-48.38	2.0	0	46.88	PEAK	74	PASS
	Off	2500.0	-58.01	2.0	0	37.25	AV	54	PASS
8DPSK	Off	2310.0	-48.28	2.0	0	46.98	PEAK	74	PASS
	Off	2310.0	-57.72	2.0	0	37.54	AV	54	PASS
	Off	2390.0	-47.59	2.0	0	47.67	PEAK	74	PASS
	Off	2390.0	-57.44	2.0	0	37.82	AV	54	PASS
	Off	2483.5	-41.40	2.0	0	53.86	PEAK	74	PASS
	Off	2483.5	-47.03	2.0	0	48.23	AV	54	PASS
	Off	2500.0	-48.34	2.0	0	46.92	PEAK	74	PASS
	Off	2500.0	-58.00	2.0	0	37.26	AV	54	PASS

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



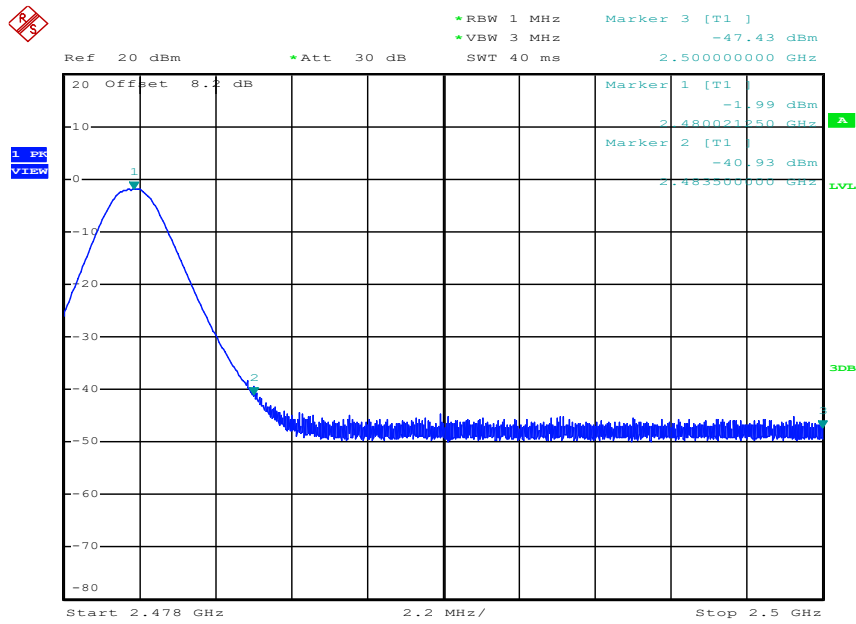
Date: 22.AUG.2019 14:41:41

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



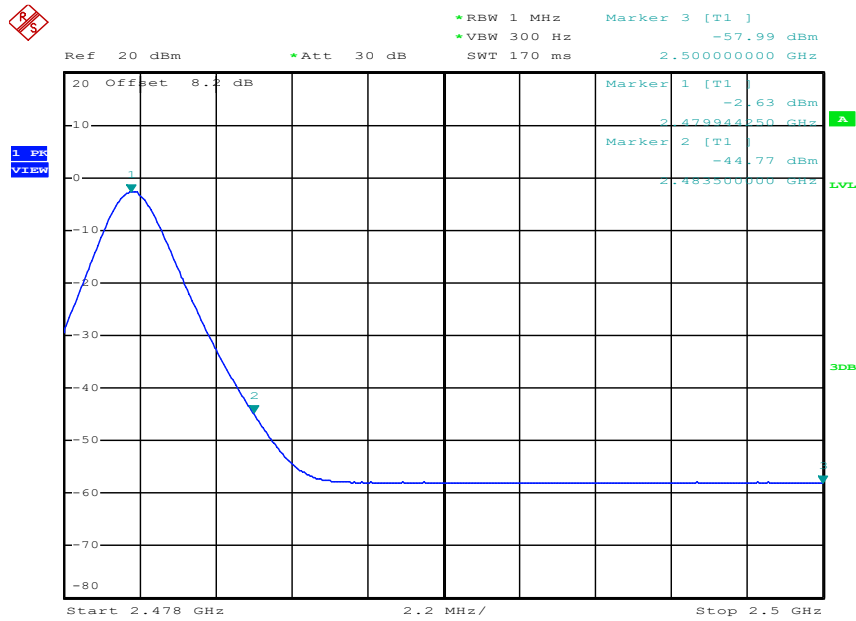
Date: 22.AUG.2019 14:41:54

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



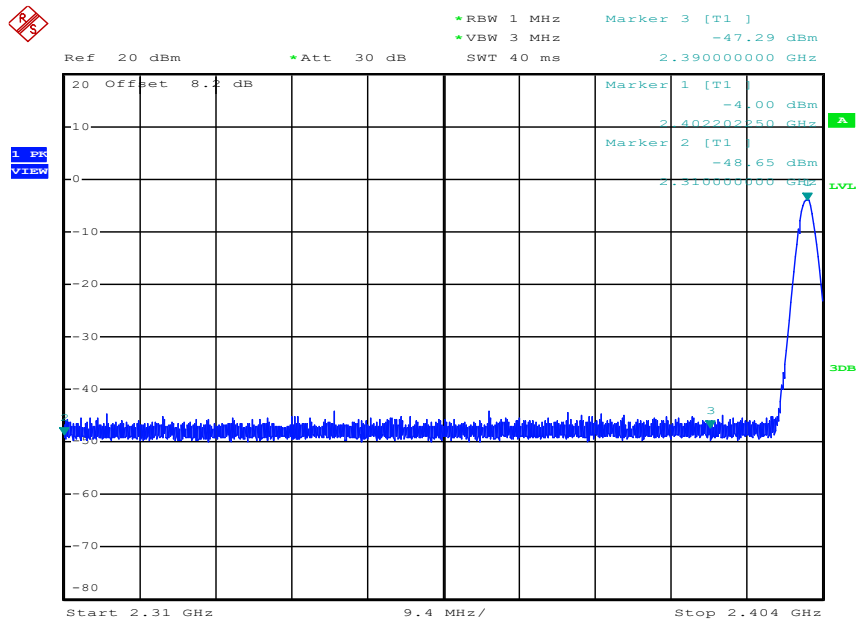
Date: 22.AUG.2019 14:46:24

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



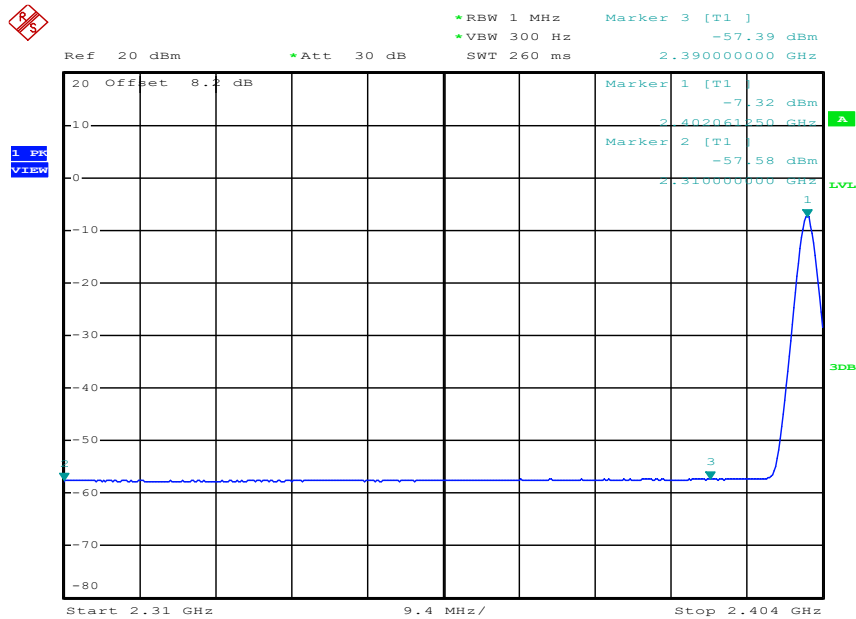
Date: 22.AUG.2019 14:46:37

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



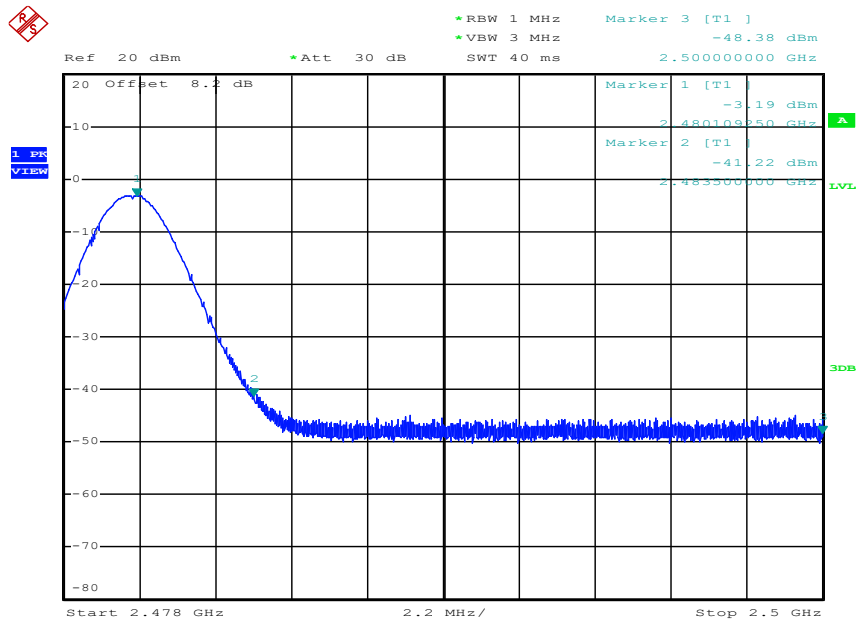
Date: 22.AUG.2019 14:49:06

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



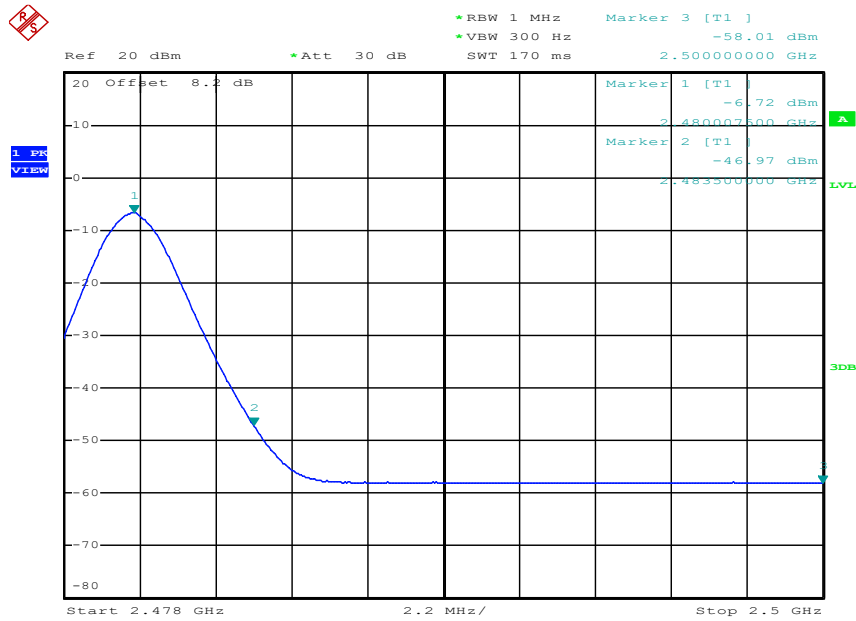
Date: 22.AUG.2019 14:49:20

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



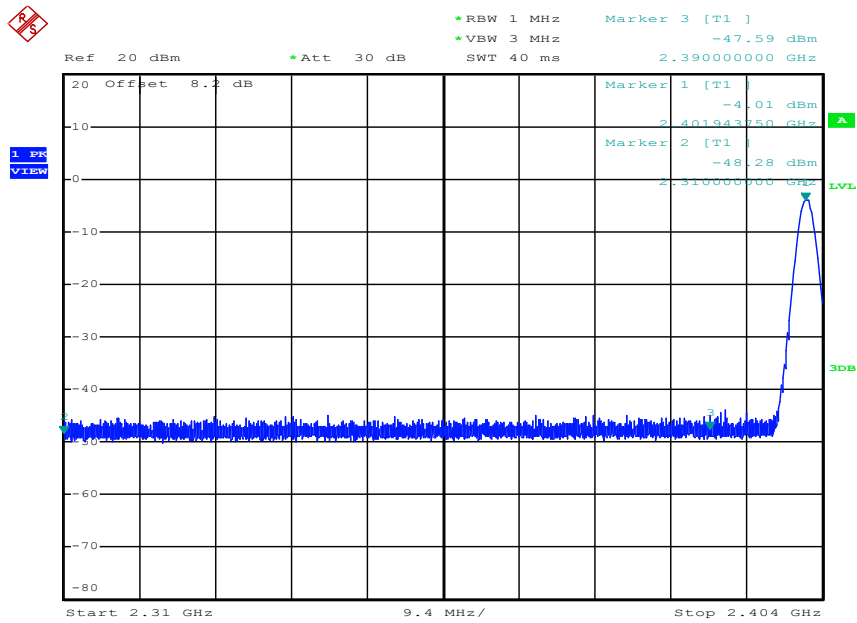
Date: 22.AUG.2019 14:53:56

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



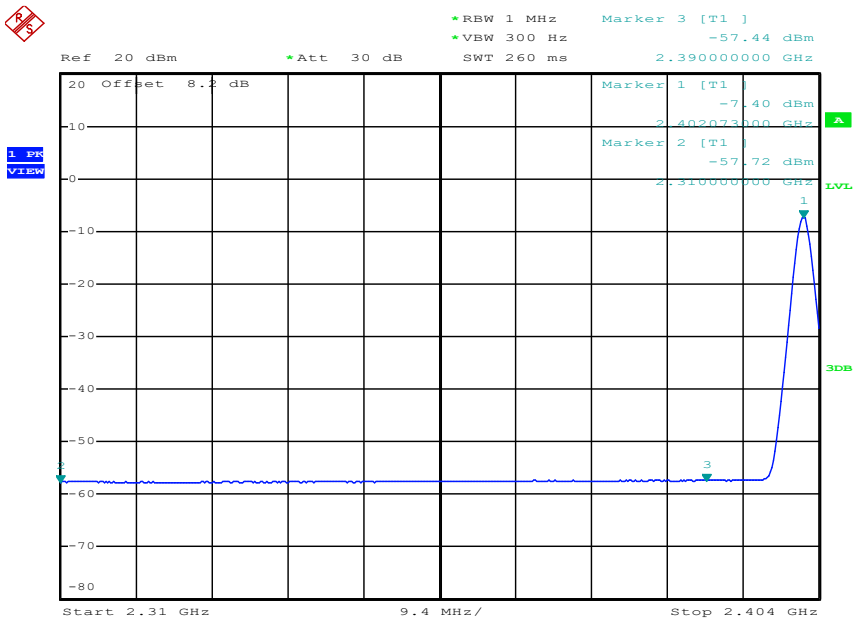
Date: 22.AUG.2019 14:54:10

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



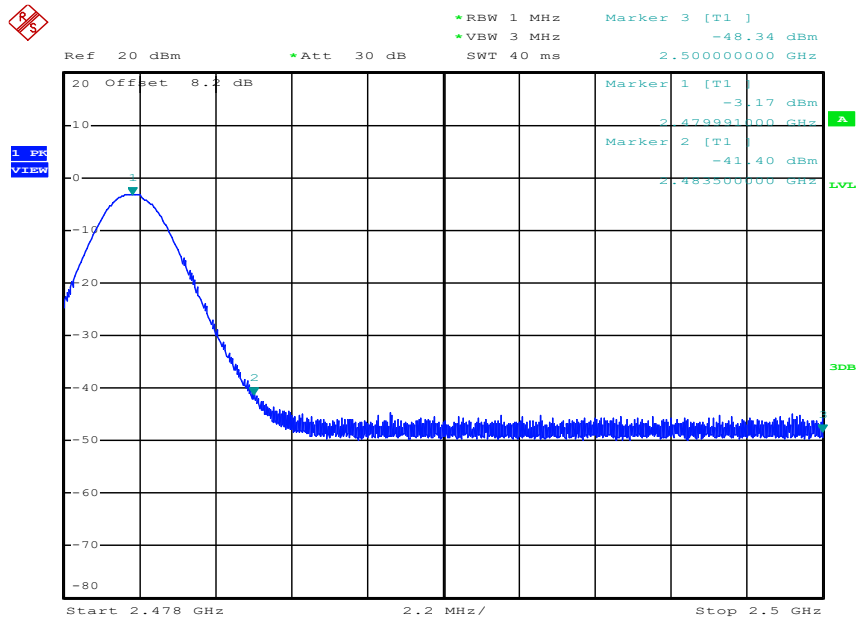
Date: 22.AUG.2019 14:56:48

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



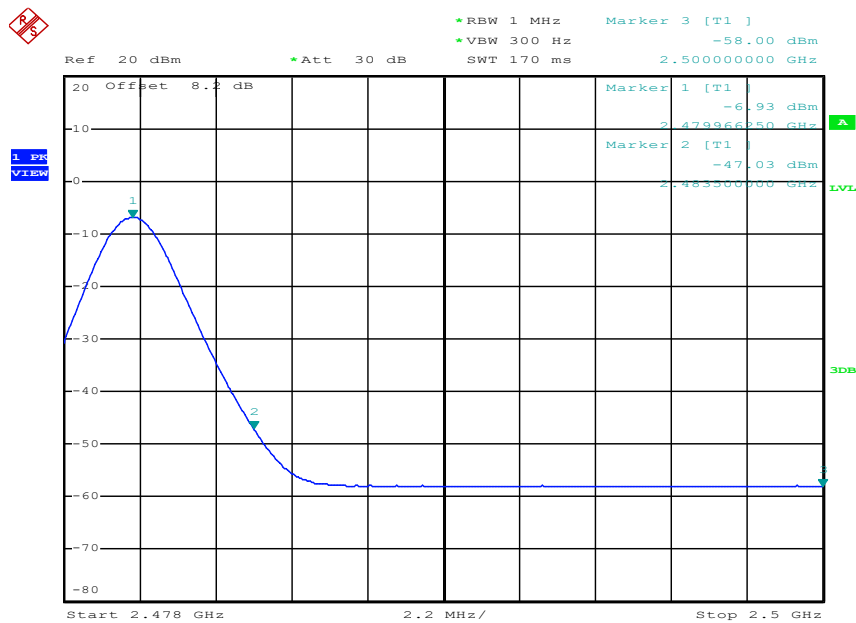
Date: 22.AUG.2019 14:57:01

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



Date: 22.AUG.2019 15:01:18

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



Date: 22.AUG.2019 15:01:31