

Appendix A

RF Test Data for BT V4.2(BDR/EDR) (Conducted Measurement)

Product Name: WIRELESS EARPHONES

Trade Mark: ITFIT

Test Model: ITFIT-A08C

Environmental Conditions

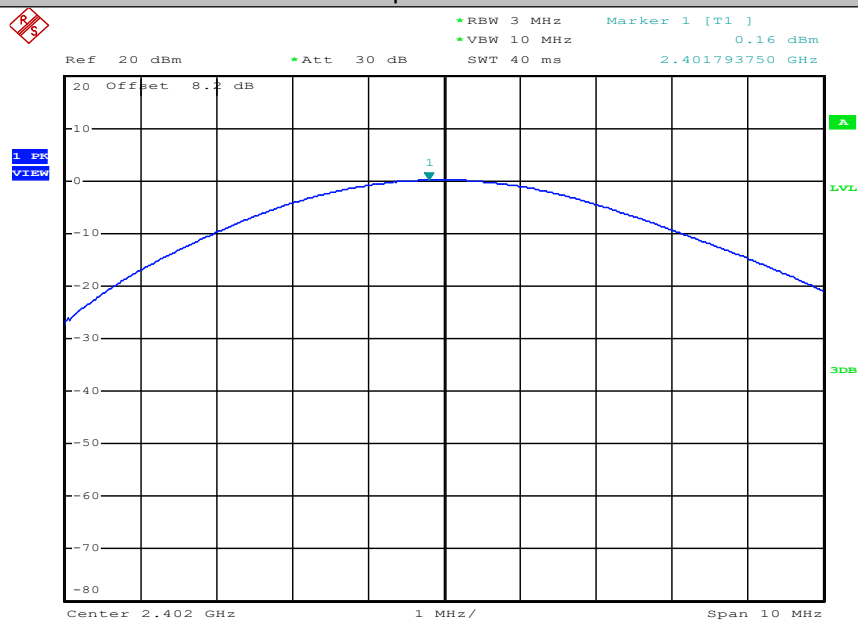
Temperature:	22.6 ° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Alisa Huang
Supervised by:	Wang.Chuang

A.1 Maximum Conducted Peak Output Power

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	0.160	30	PASS
	MCH	0.500	30	PASS
	HCH	0.890	30	PASS
$\pi/4$ DQPSK	LCH	0.010	21	PASS
	MCH	0.280	21	PASS
	HCH	0.680	21	PASS
8DPSK	LCH	0.100	21	PASS
	MCH	0.410	21	PASS
	HCH	0.830	21	PASS

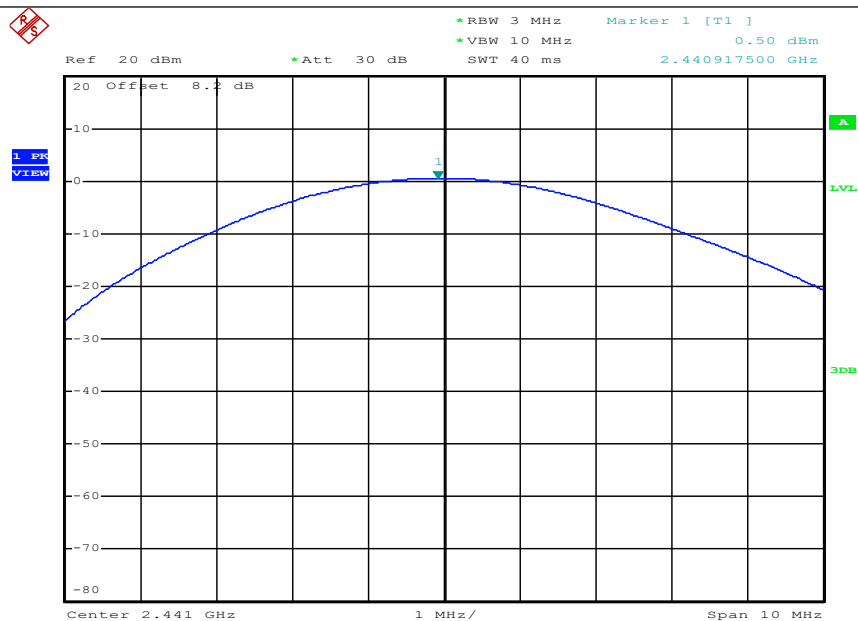
Test Graphs

GFSK/LCH



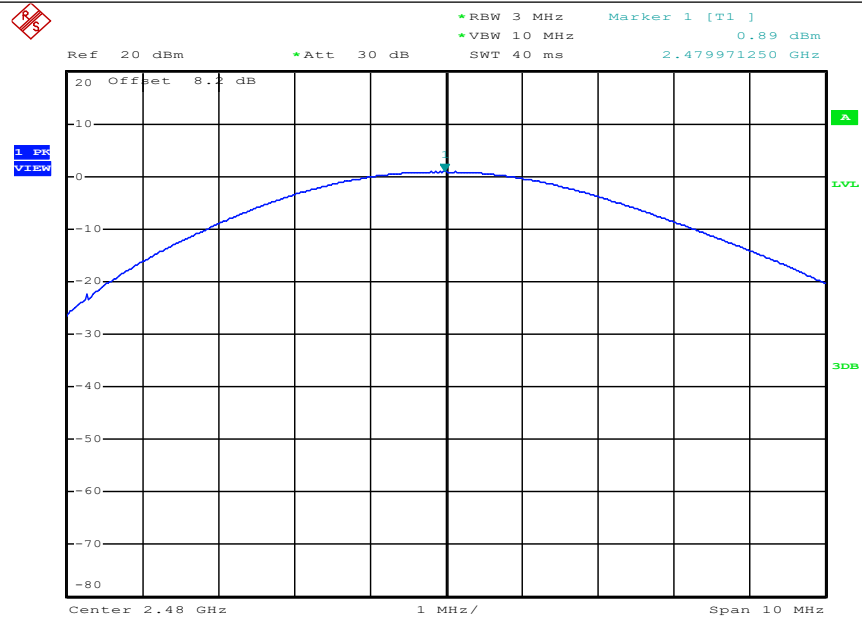
Date: 29.SEP.2019 10:27:37

GFSK/MCH

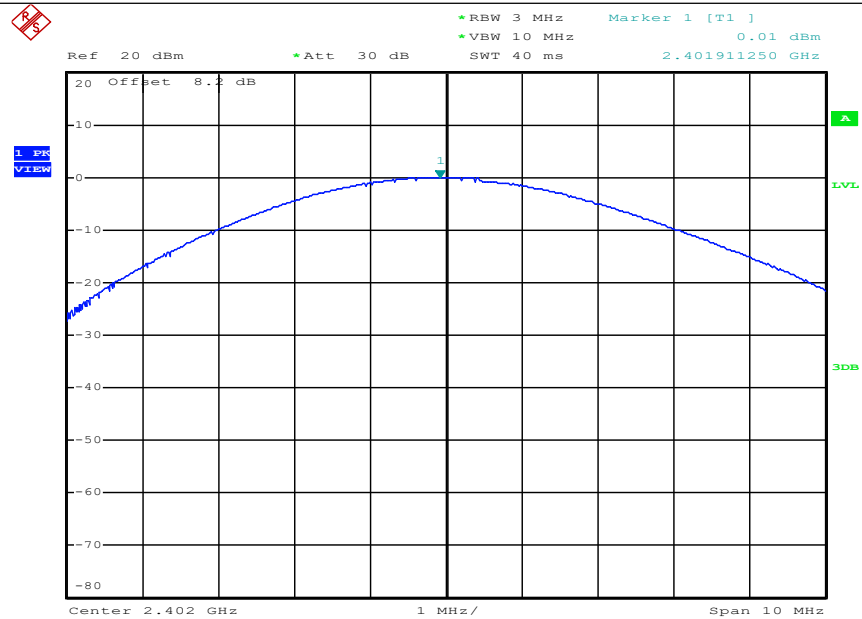


Date: 29.SEP.2019 10:30:57

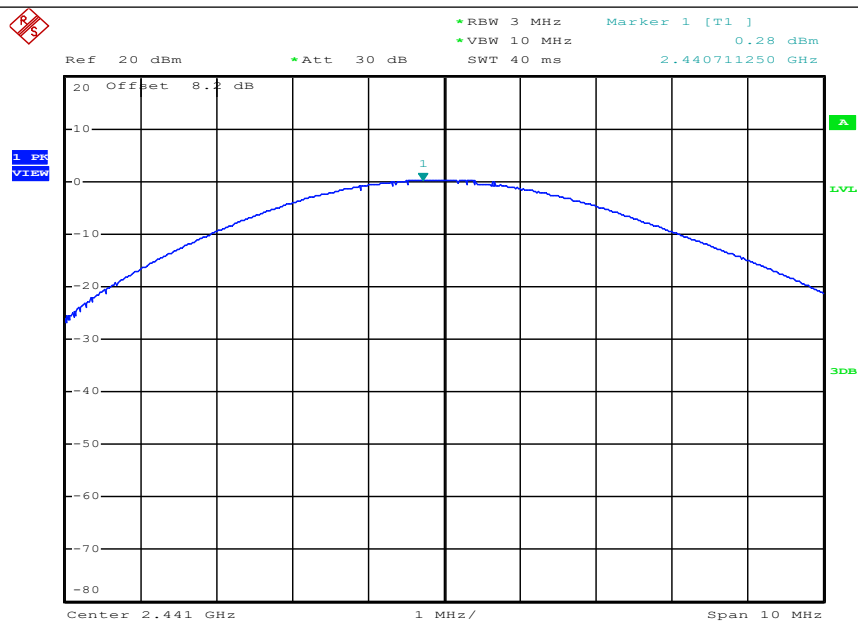
GFSK/HCH



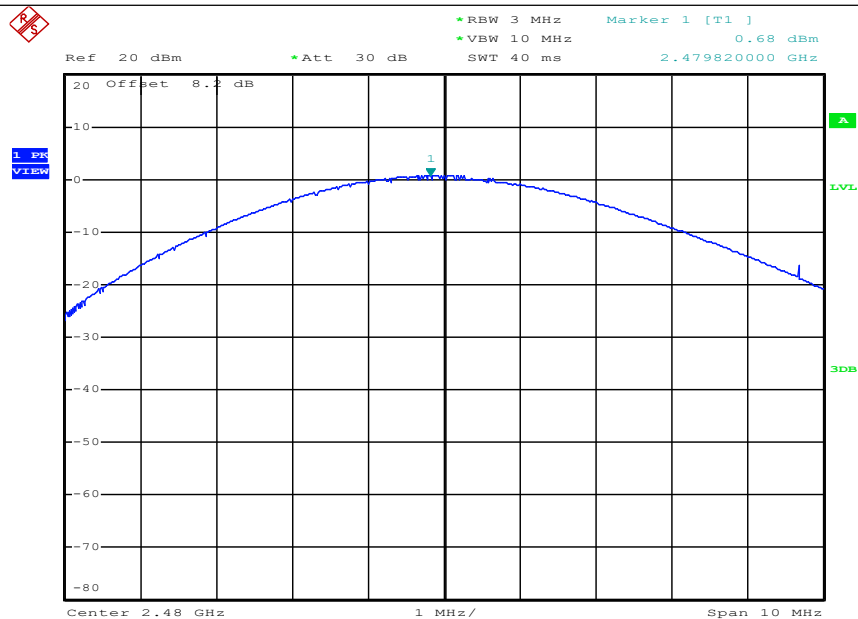
Date: 29.SEP.2019 10:36:13

 π /4DQPSK/LCH

Date: 29.SEP.2019 10:39:19

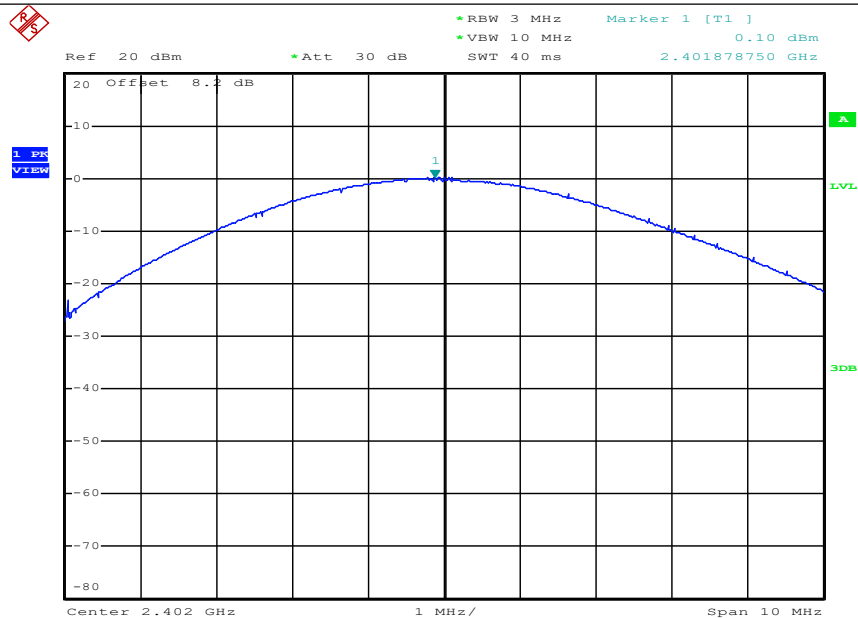
$\pi/4$ DQPSK/MCH

Date: 29.SEP.2019 10:41:49

 $\pi/4$ DQPSK/HCH

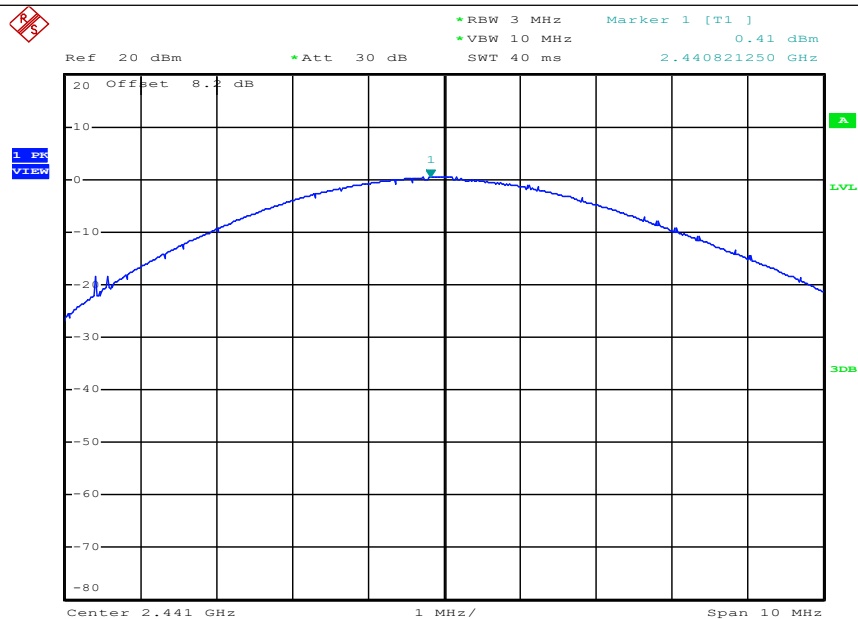
Date: 29.SEP.2019 10:43:36

8DPSK/LCH



Date: 29.SEP.2019 10:46:21

8DPSK/MCH



Date: 29.SEP.2019 10:49:12

Ref 20 dBm *Att 30 dB RBW 3 MHz VBW 10 MHz SWT 40 ms Marker 1 [T1] 0.83 dBm

Offset 8.2 dB

1 PR
VIEW

1

3dB

Center 2.48 GHz 1 MHz/ Span 10 MHz

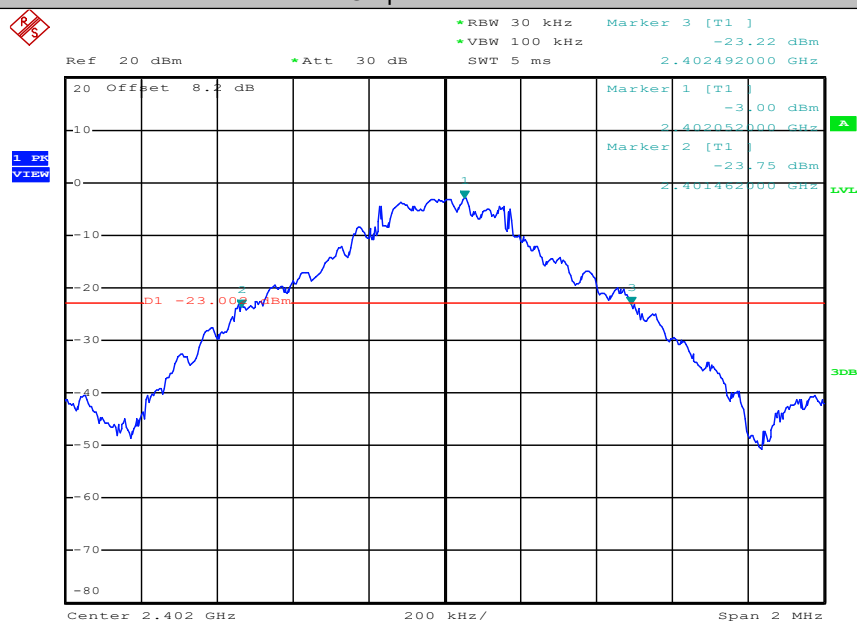
Date: 29.SEP.2019 10:50:58

A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.030	Not Specified	PASS
	MCH	1.024	Not Specified	PASS
	HCH	0.970	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.284	Not Specified	PASS
	MCH	1.286	Not Specified	PASS
	HCH	1.290	Not Specified	PASS
8DPSK	LCH	1.302	Not Specified	PASS
	MCH	1.284	Not Specified	PASS
	HCH	1.294	Not Specified	PASS

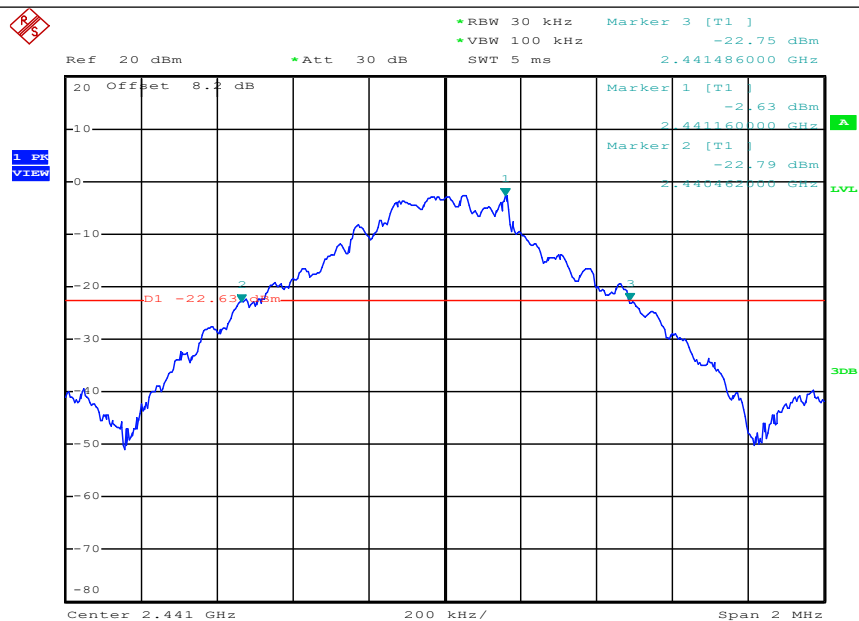
Test Graphs

GFSK/LCH



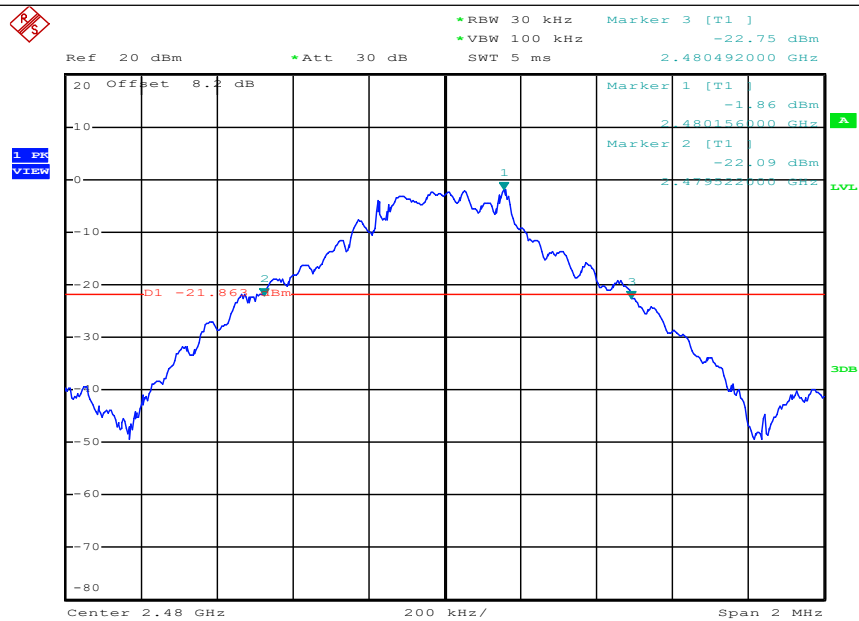
Date: 29.SEP.2019 10:27:01

GFSK/MCH

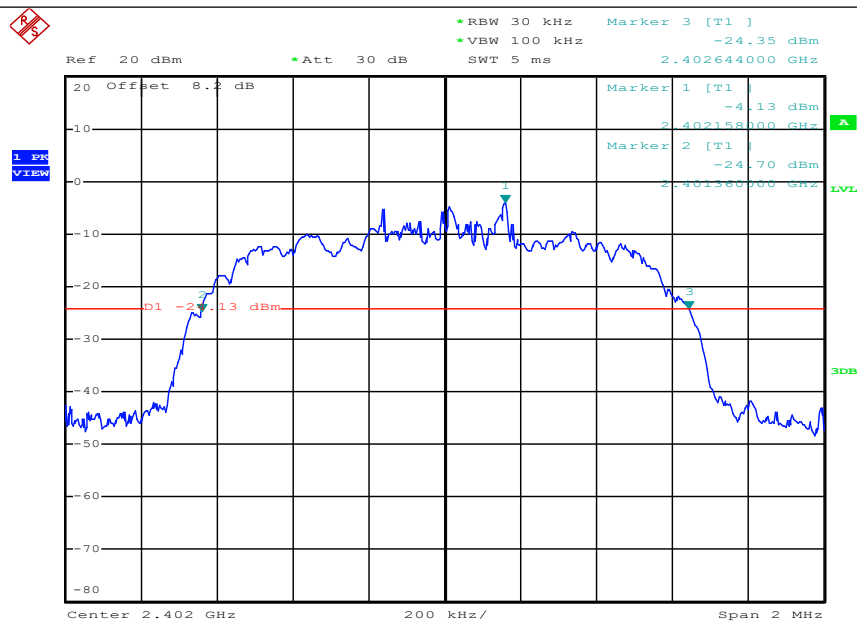


Date: 29.SEP.2019 10:30:21

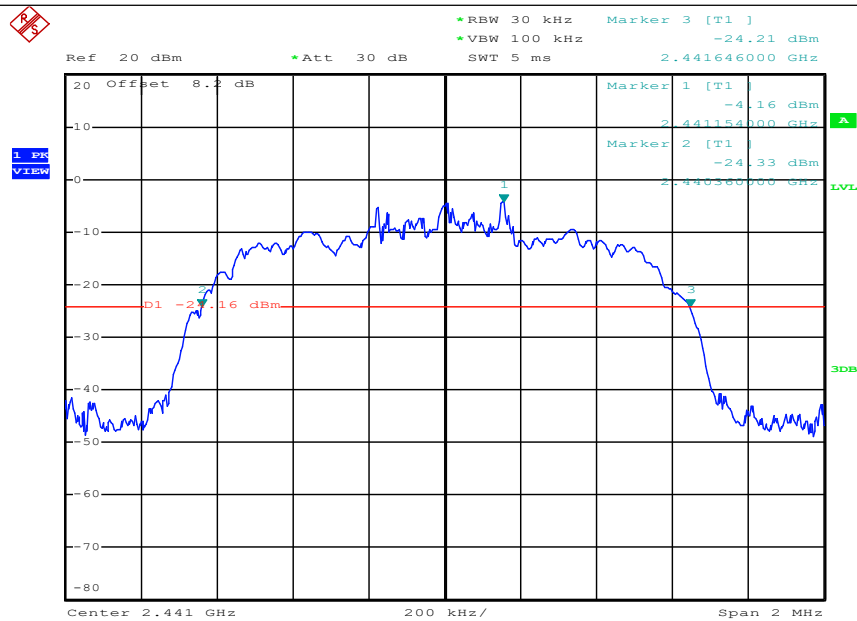
GFSK/HCH



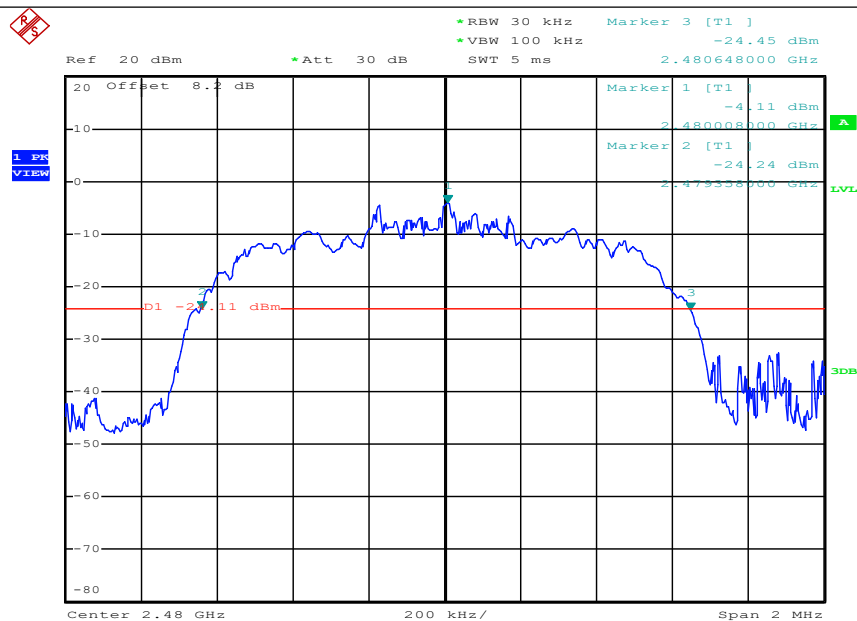
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$\pi/4$ DQPSK/LCH

Date: 29.SEP.2019 10:38:43

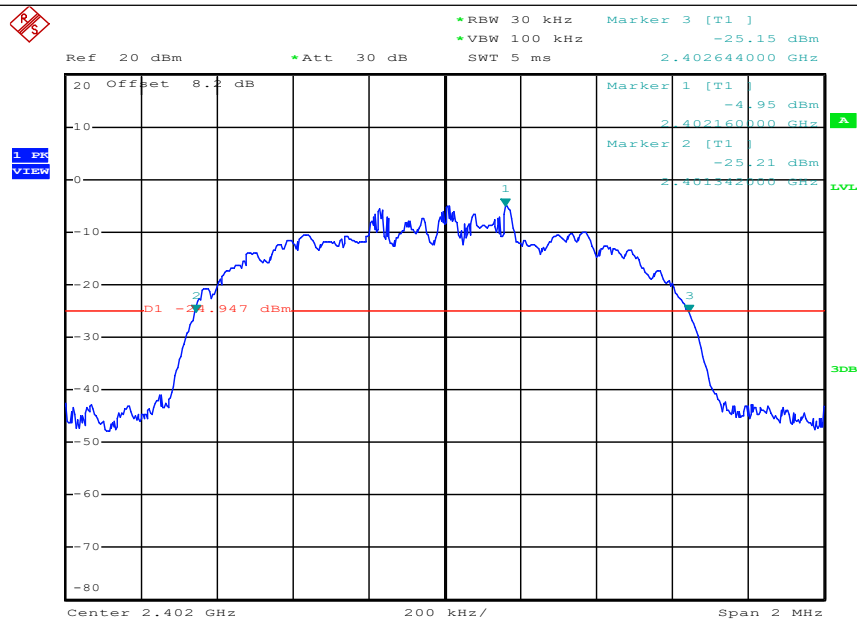
 $\pi/4$ DQPSK/MCH

Date: 29.SEP.2019 10:41:13

$\pi/4$ DQPSK/HCH

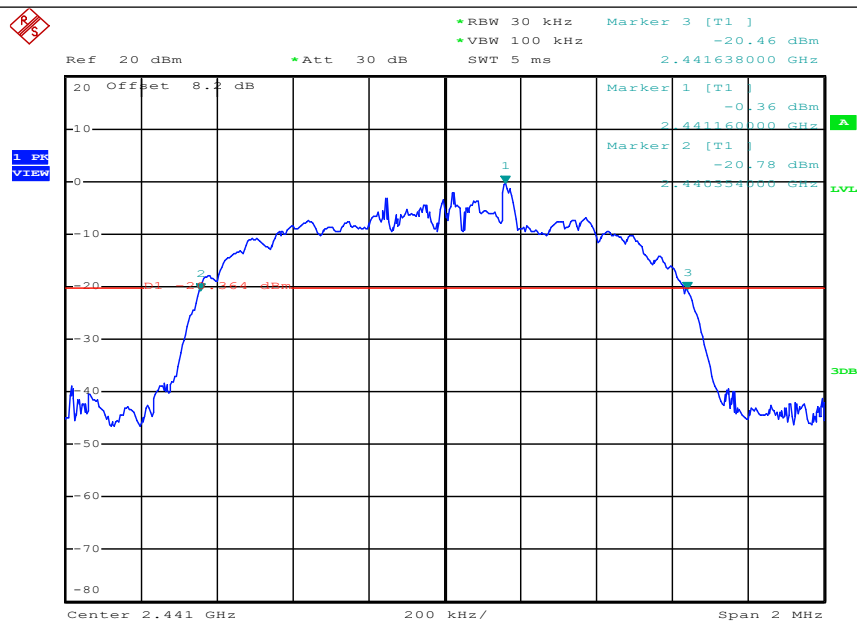
Date: 29.SEP.2019 10:43:00

8DPSK/LCH



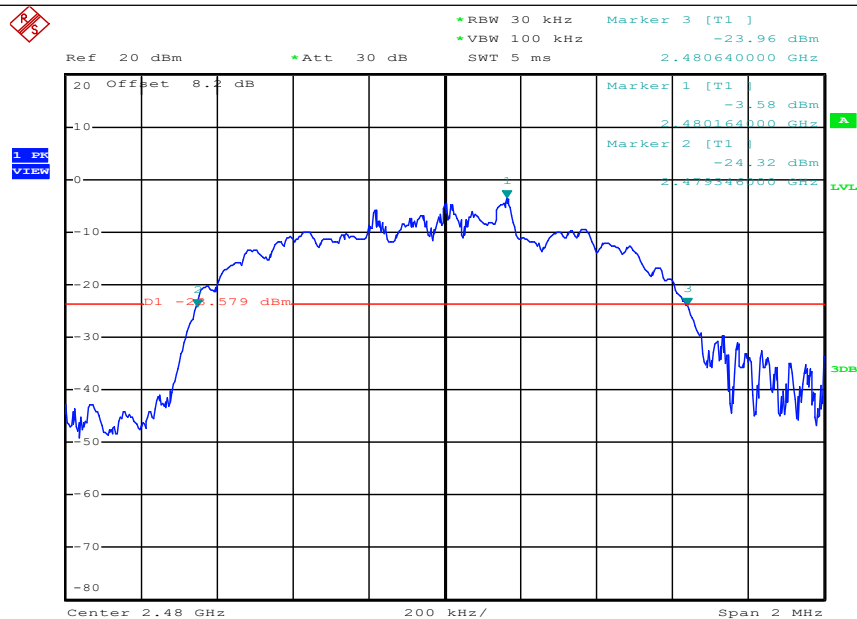
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8DPSK/MCH



Date: 29.SEP.2019 11:21:52

8DPSK/HCH



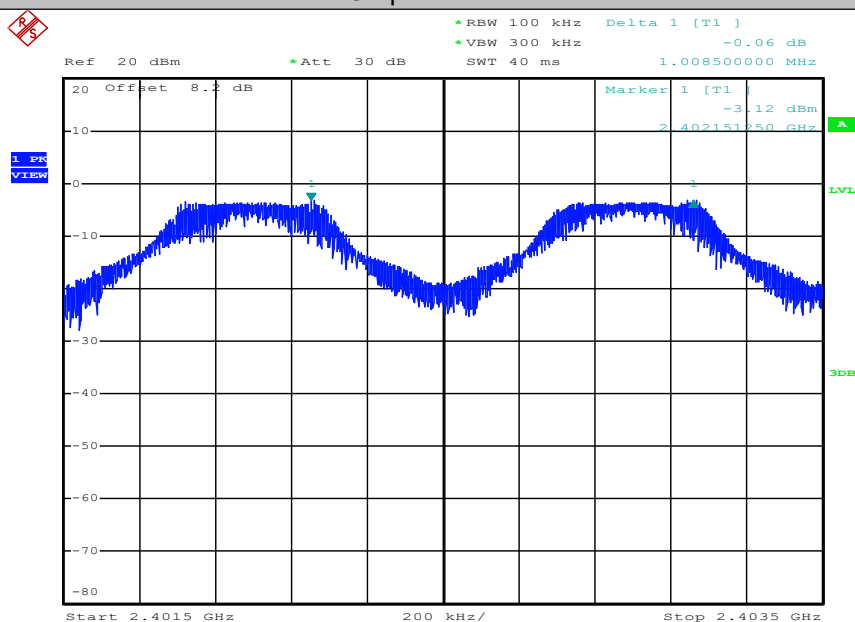
Date: 29.SEP.2019 10:50:23

A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.008	0.687	PASS
	MCH	0.830	0.687	PASS
	HCH	1.006	0.687	PASS
$\pi/4$ DQPSK	LCH	0.860	0.860	PASS
	MCH	1.346	0.860	PASS
	HCH	1.294	0.860	PASS
8DPSK	LCH	0.944	1.329	PASS
	MCH	1.332	1.329	PASS
	HCH	0.836	1.329	PASS

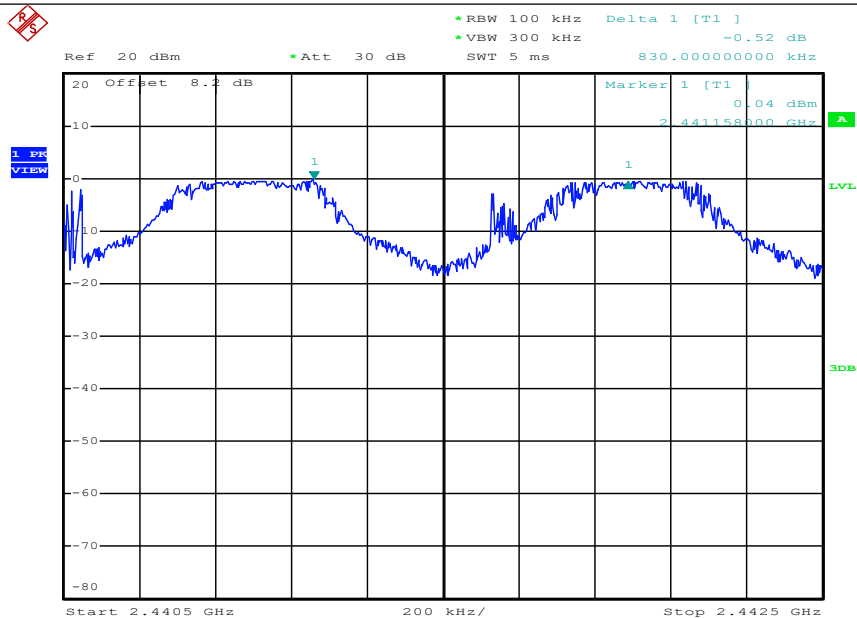
Test Graphs

GFSK/LCH



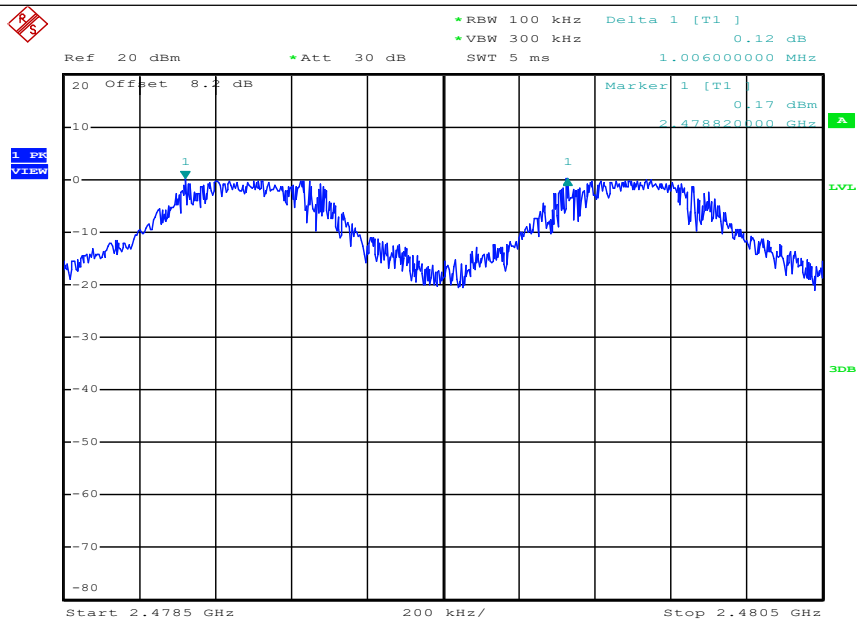
Date: 29.SEP.2019 11:36:13

GFSK/MCH

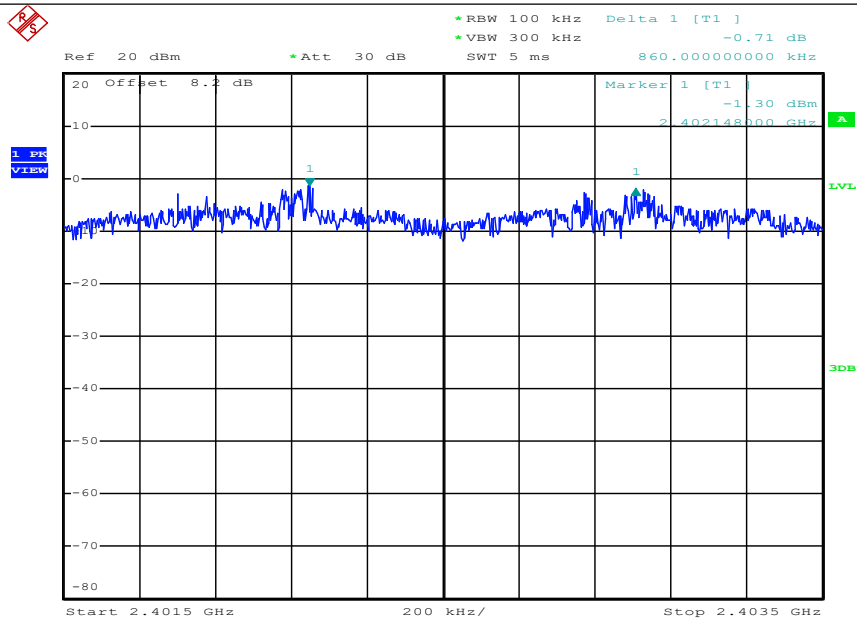


Date: 29.SEP.2019 10:58:56

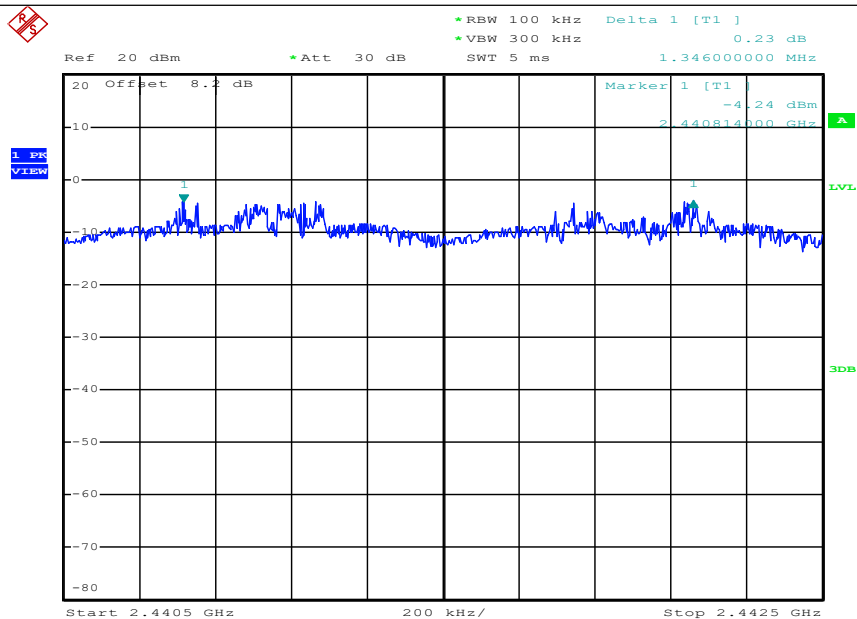
GFSK/HCH



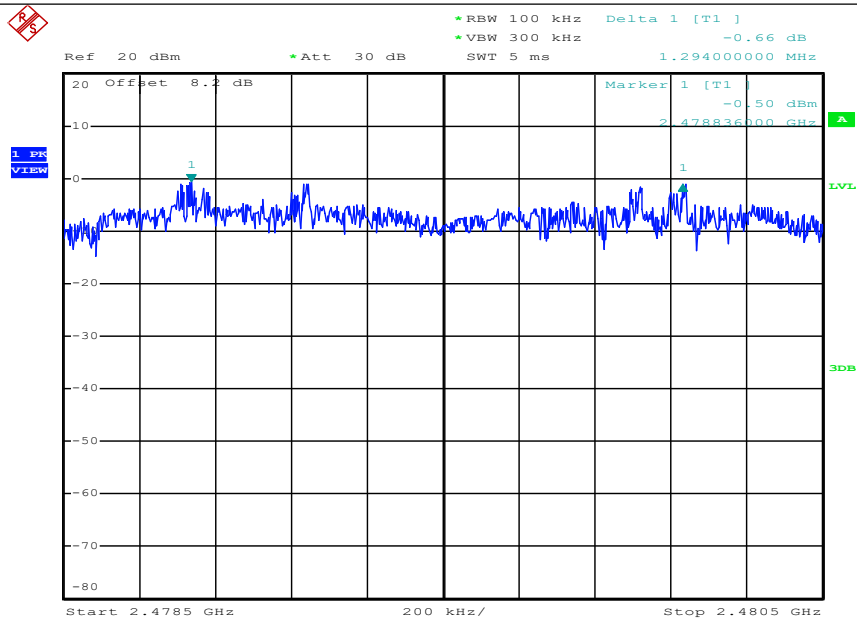
Date: 29.SEP.2019 10:59:30

$\pi/4$ DQPSK/LCH

Date: 29.SEP.2019 11:04:44

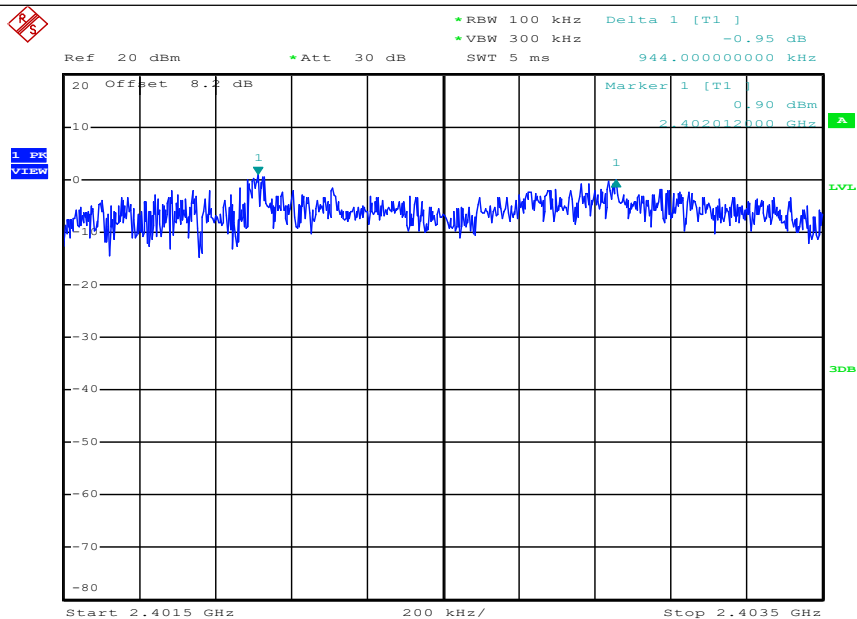
 $\pi/4$ DQPSK/MCH

Date: 29.SEP.2019 11:29:33

π /4DQPSK/HCH

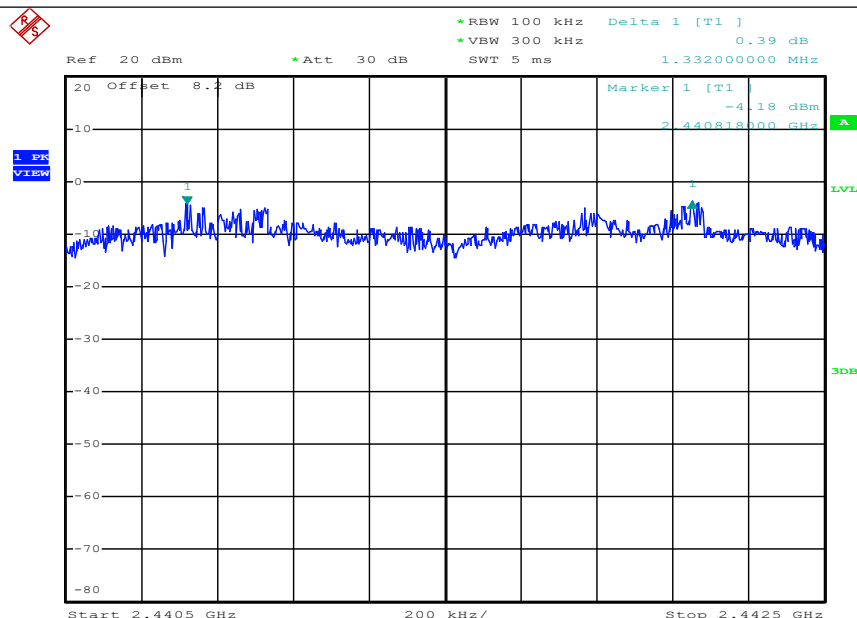
Date: 29.SEP.2019 11:08:16

8DPSK/LCH



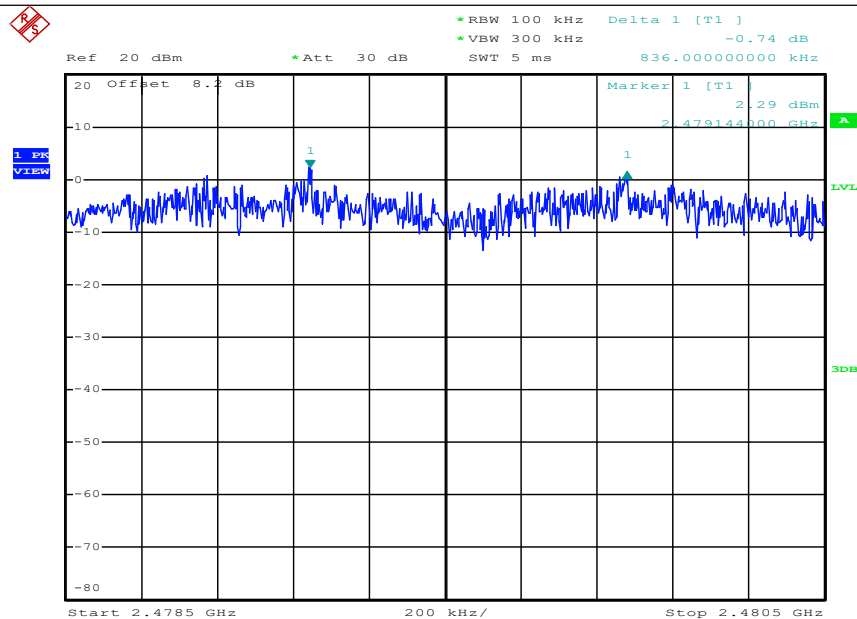
Date: 29.SEP.2019 11:45:51

8DPSK/MCH



Date: 29.SEP.2019 11:32:13

8DPSK/HCH



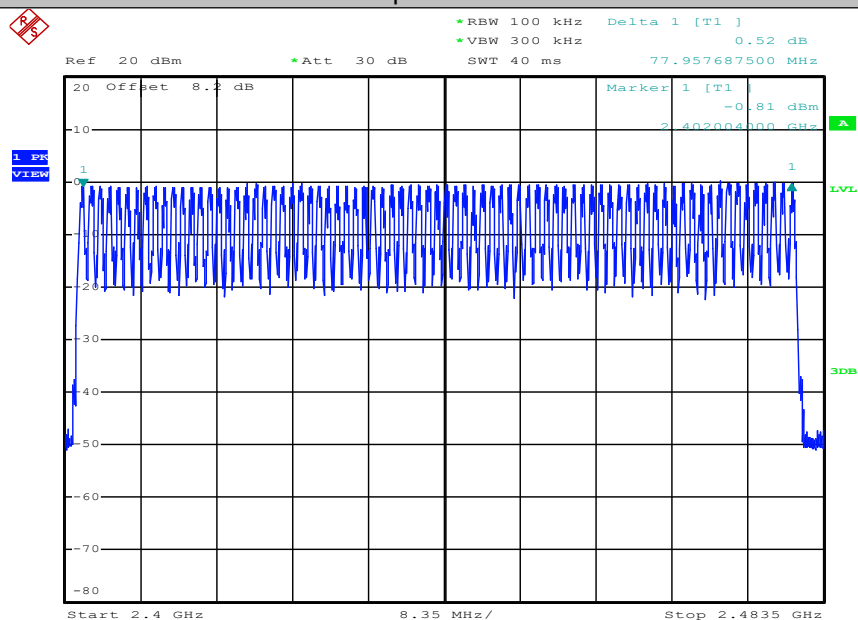
Date: 29.SEP.2019 11:46:55

A.4 Hopping Channel Number

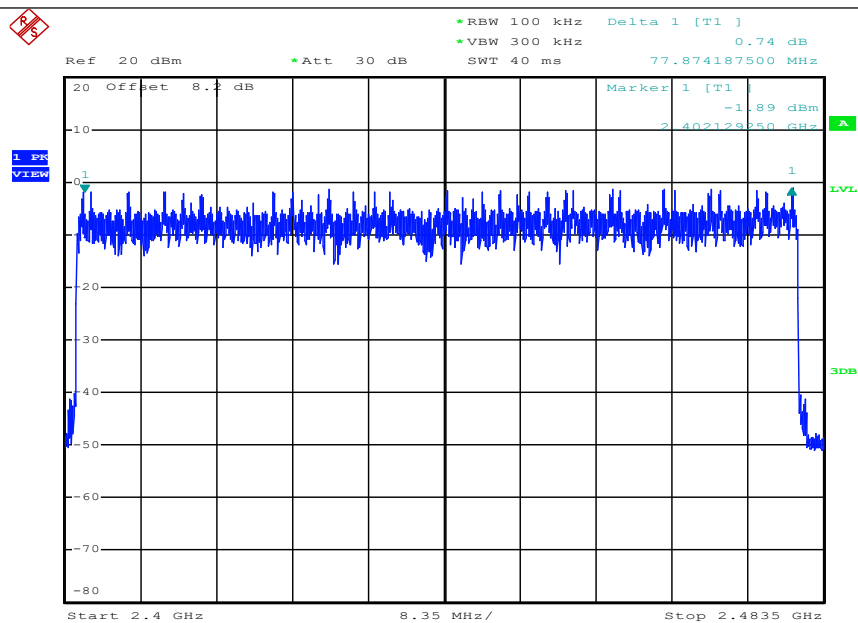
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	≥ 15	PASS
$\pi/4$ DQPSK	Hop	79	≥ 15	PASS
8DPSK	Hop	79	≥ 15	PASS

Test Graphs

GFSK/Hop

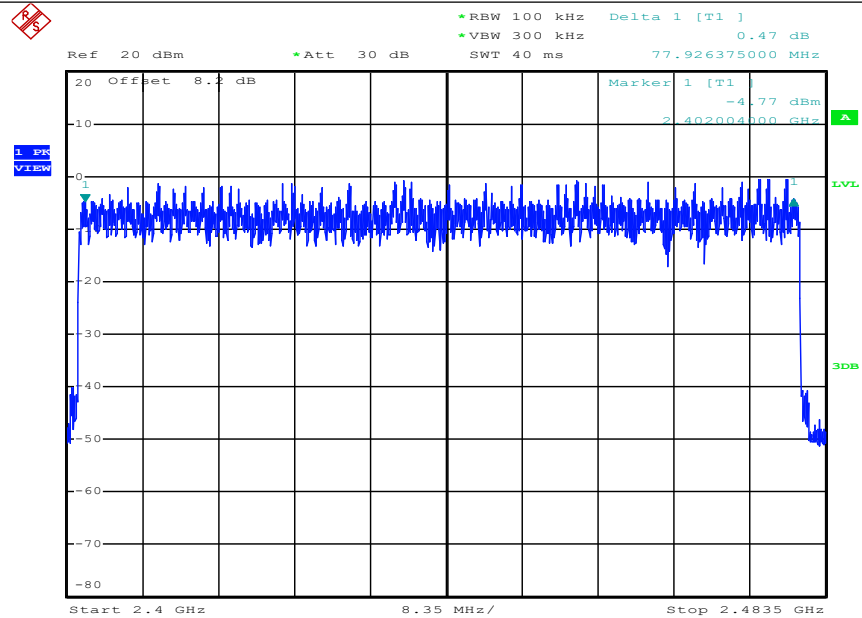


Date: 29.SEP.2019 11:03:20

 $\pi/4$ DQPSK/Hop

Date: 29.SEP.2019 11:12:58

8DPSK/Hop



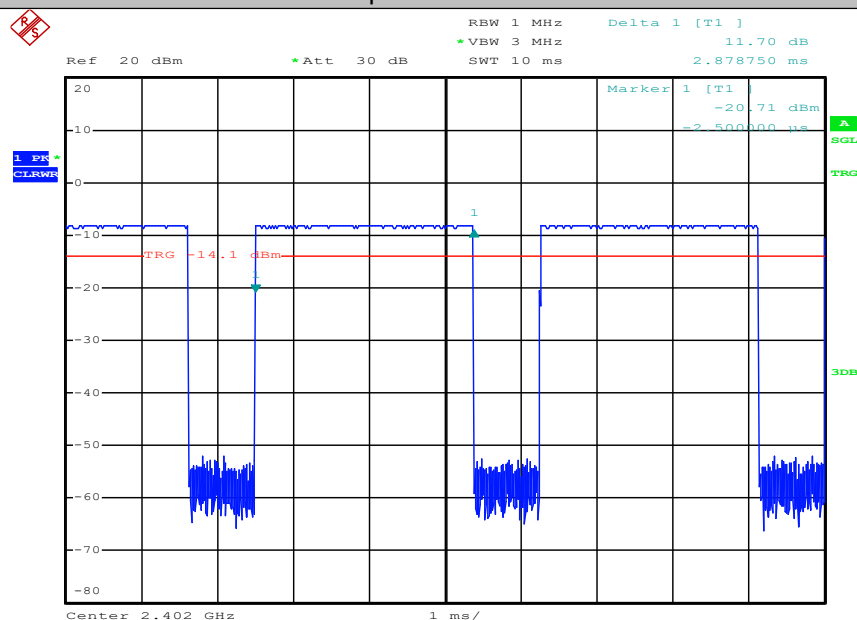
Date: 29.SEP.2019 11:23:27

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	2.88	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

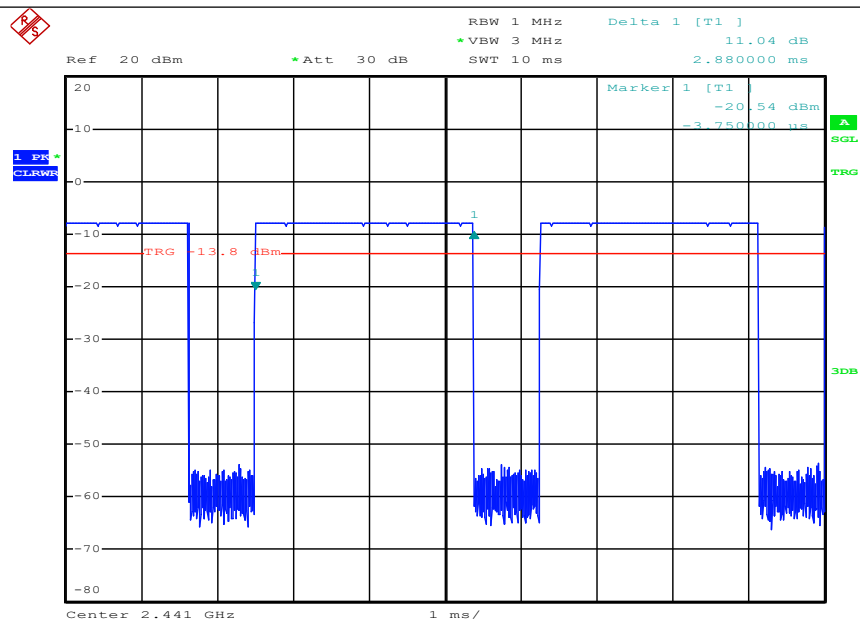
Test Graphs

GFSK_DH5/LCH



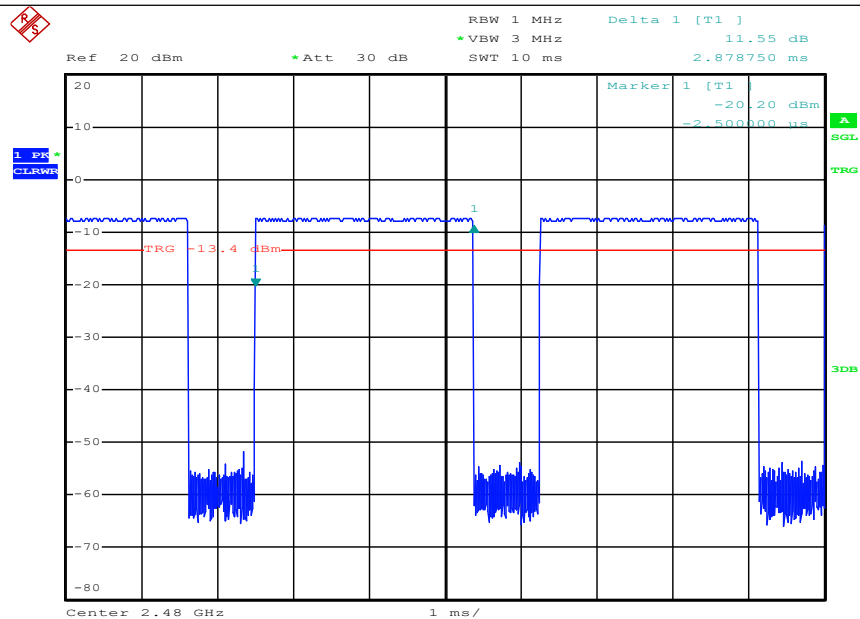
Date: 29.SEP.2019 10:27:22

GFSK_DH5/MCH



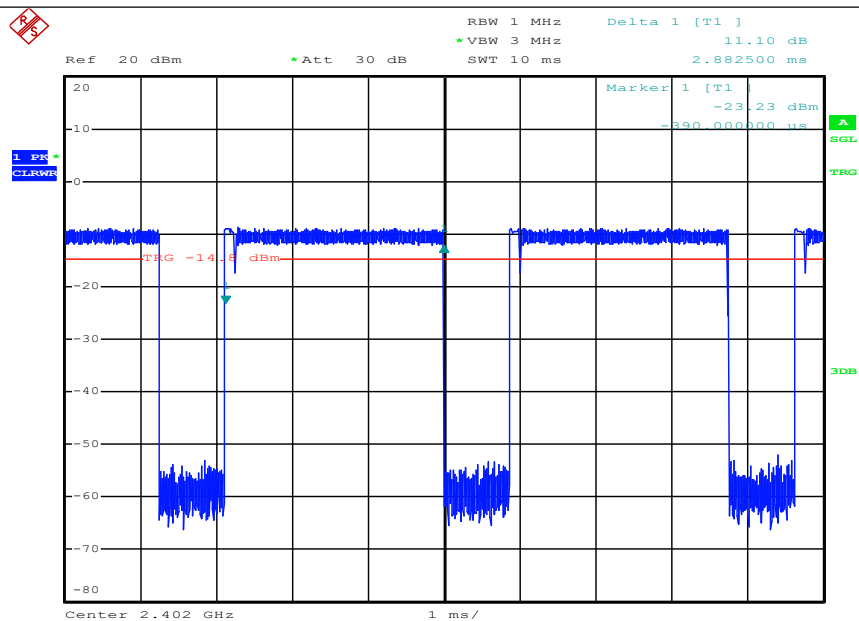
Date: 29.SEP.2019 10:30:42

GFSK_DH5/HCH



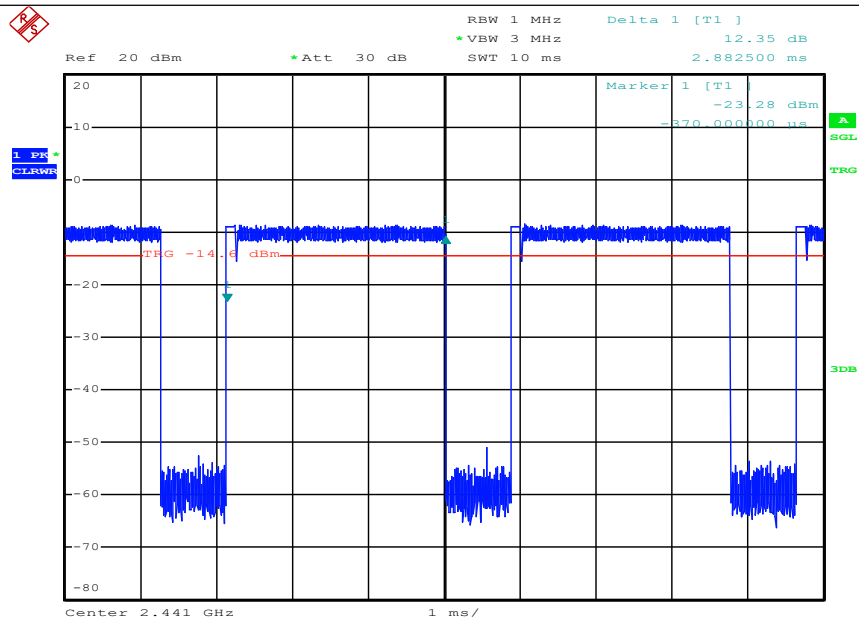
Date: 29.SEP.2019 10:35:58

$\pi/4$ DQPSK
_2DH5/LCH



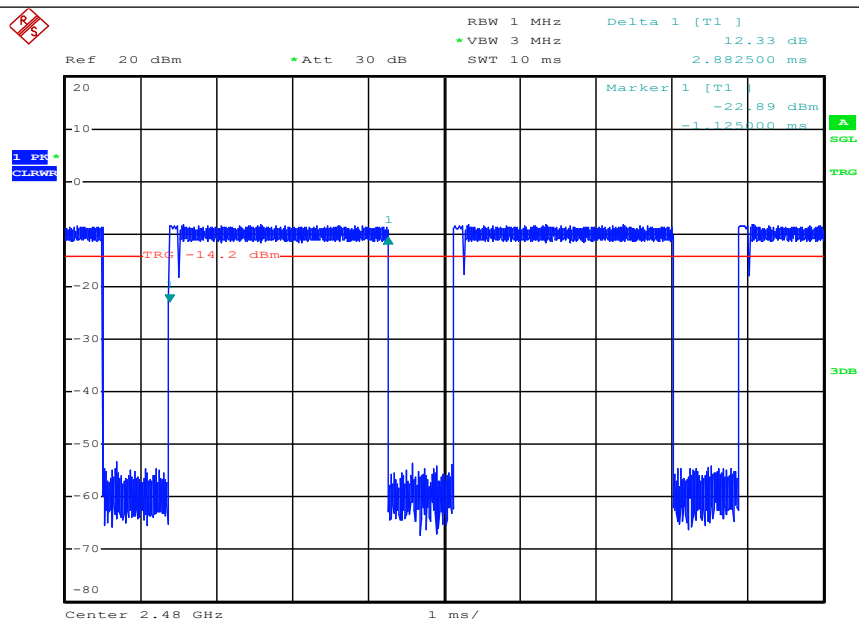
Date: 29.SEP.2019 10:39:04

$\pi/4$ DQPSK
_2DH5/MCH



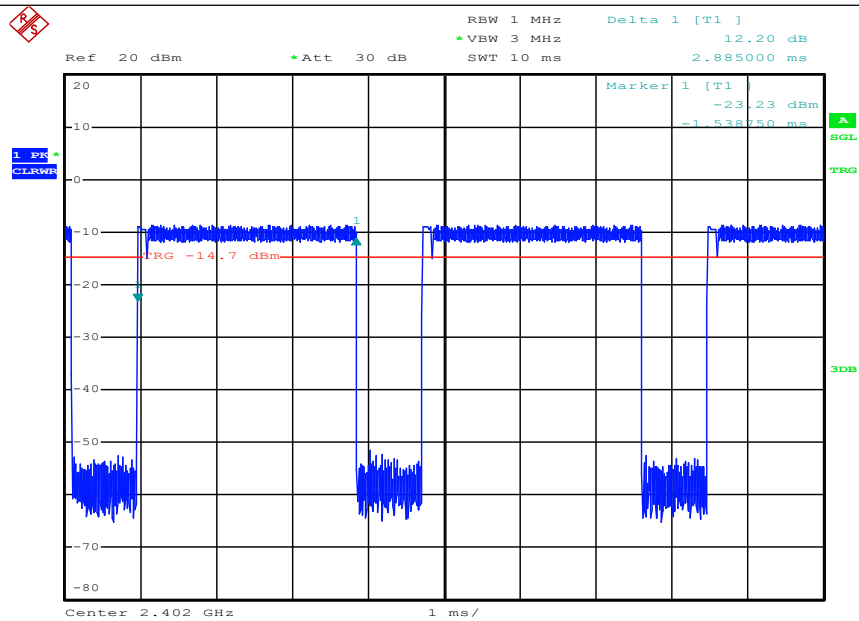
Date: 29.SEP.2019 10:41:34

$\pi/4$ DQPSK
_2DH5/HCH



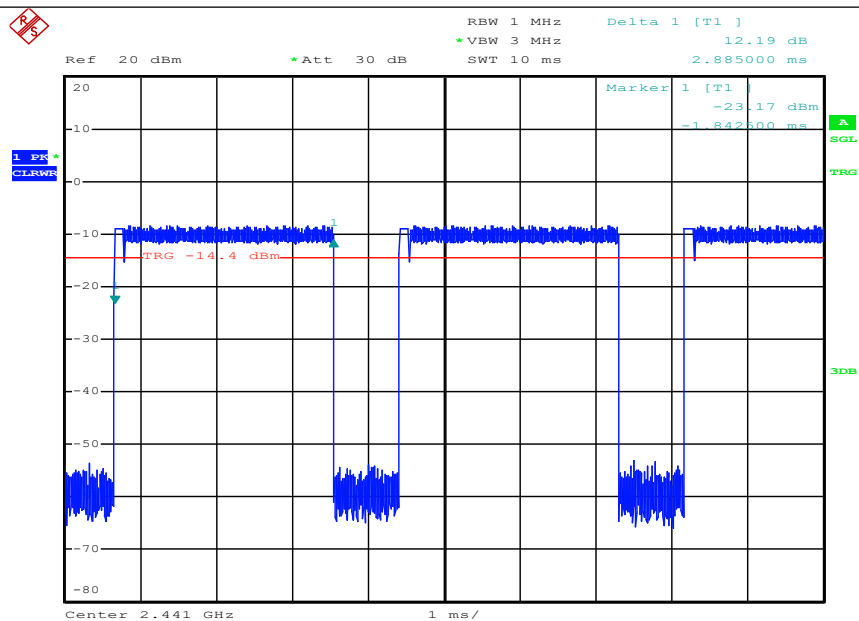
Date: 29.SEP.2019 10:43:21

8DPSK_3DH5/LCH



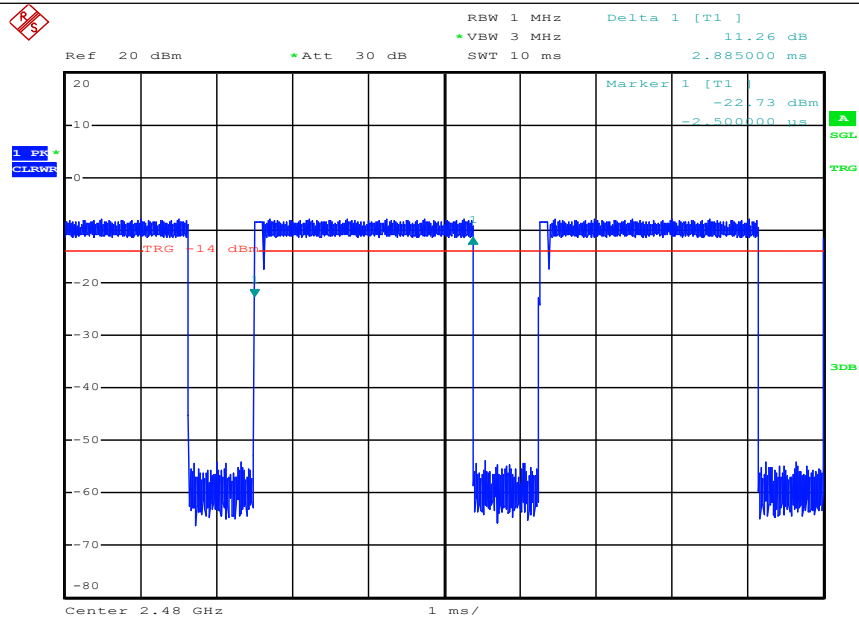
Date: 29.SEP.2019 10:46:06

8DPSK_3DH5/MCH



Date: 29.SEP.2019 10:48:57

8DPSK_3DH5/HCH



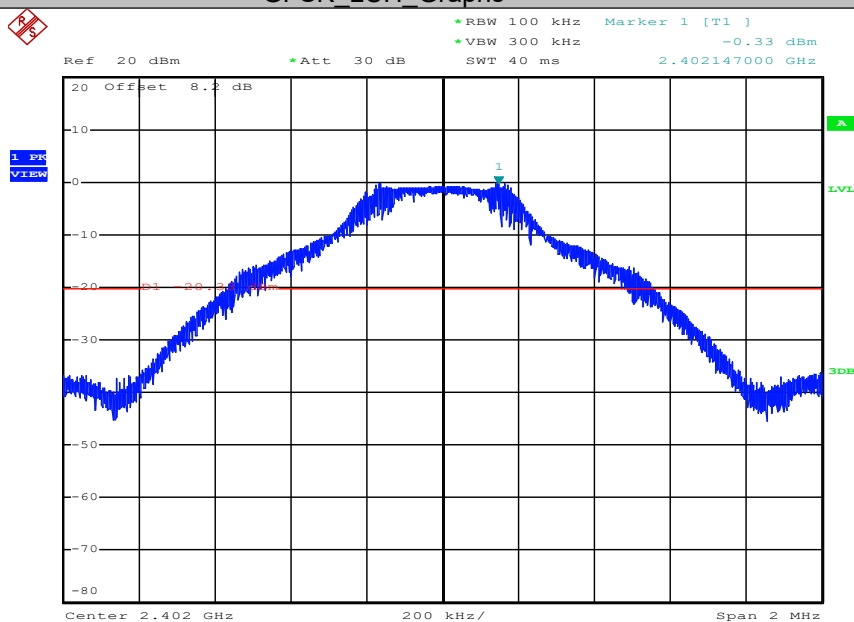
Date: 29.SEP.2019 10:50:44

A.6 RF Conducted Spurious Emissions

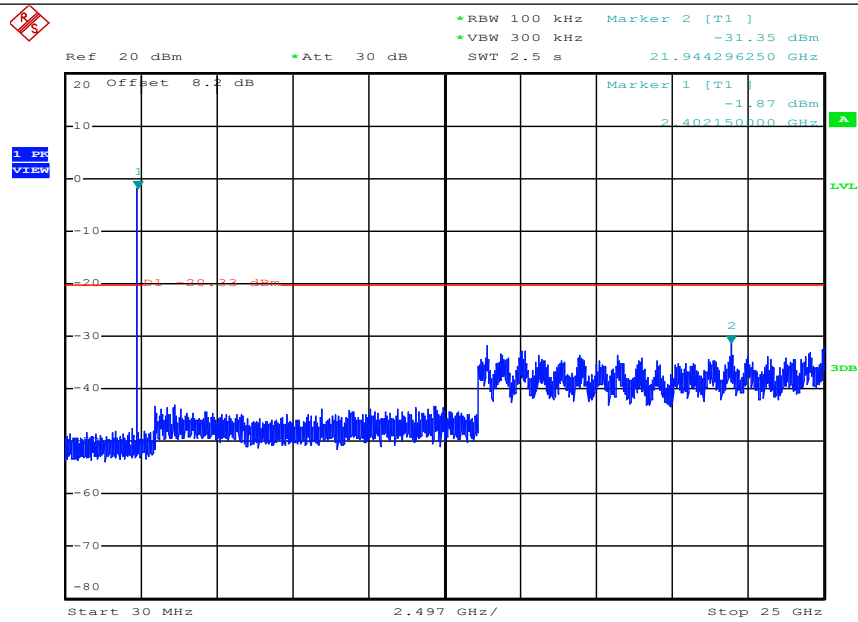
Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.33	-31.350	-20.330	PASS
	MCH	0	-31.720	-20.000	PASS
	HCH	0.42	-32.140	-19.580	PASS
$\pi/4$ DQPSK	LCH	-1.14	-32.730	-21.140	PASS
	MCH	-1.03	-31.630	-21.030	PASS
	HCH	-0.63	-32.290	-20.630	PASS
8DPSK	LCH	-1.15	-31.840	-21.150	PASS
	MCH	-0.96	-31.700	-20.960	PASS
	HCH	-0.55	-32.060	-20.550	PASS

GFSK LCH_Graphs

Pref



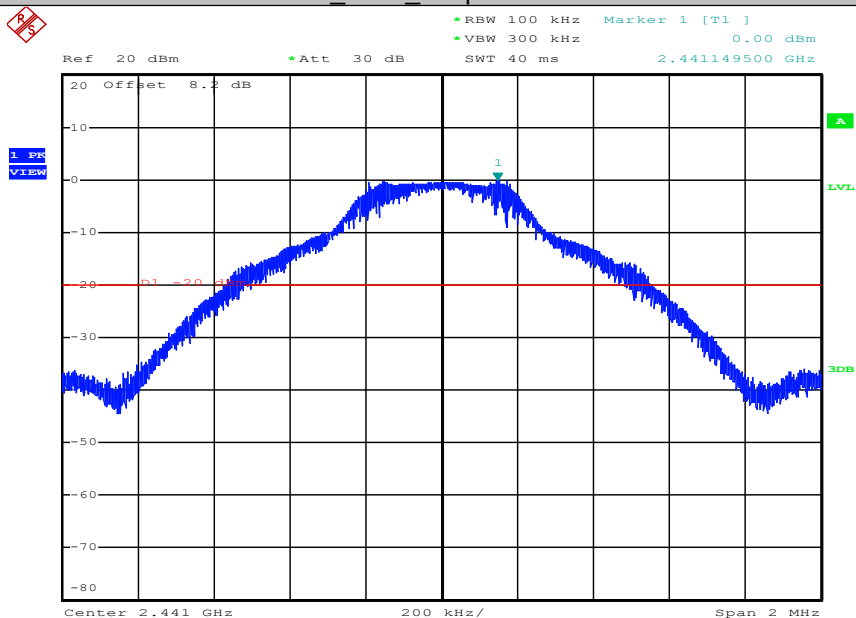
Date: 29.SEP.2019 10:28:06

P_{uw}

Date: 29.SEP.2019 10:28:21

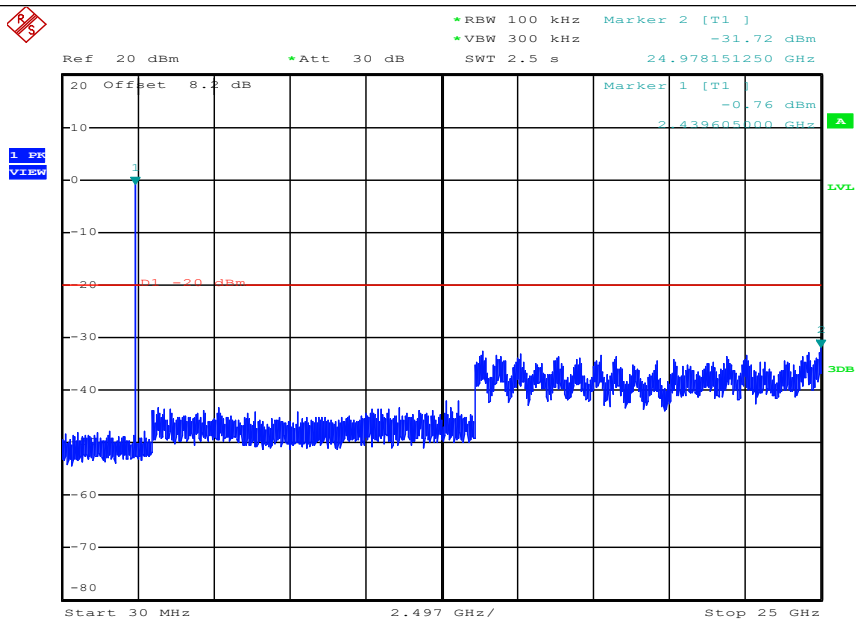
GFSK_MCH_Graphs

Pref



Date: 29.SEP.2019 10:31:10

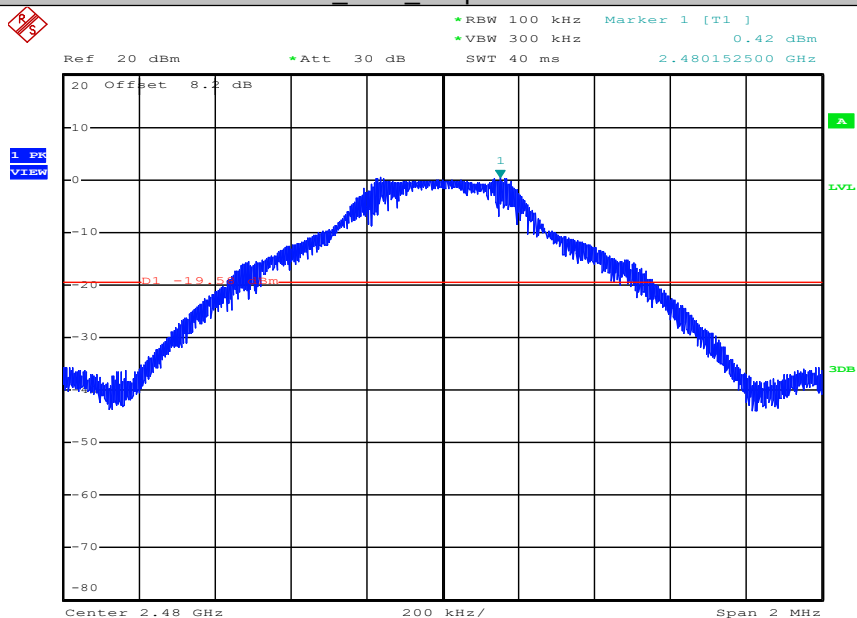
Puw



Date: 29.SEP.2019 10:31:24

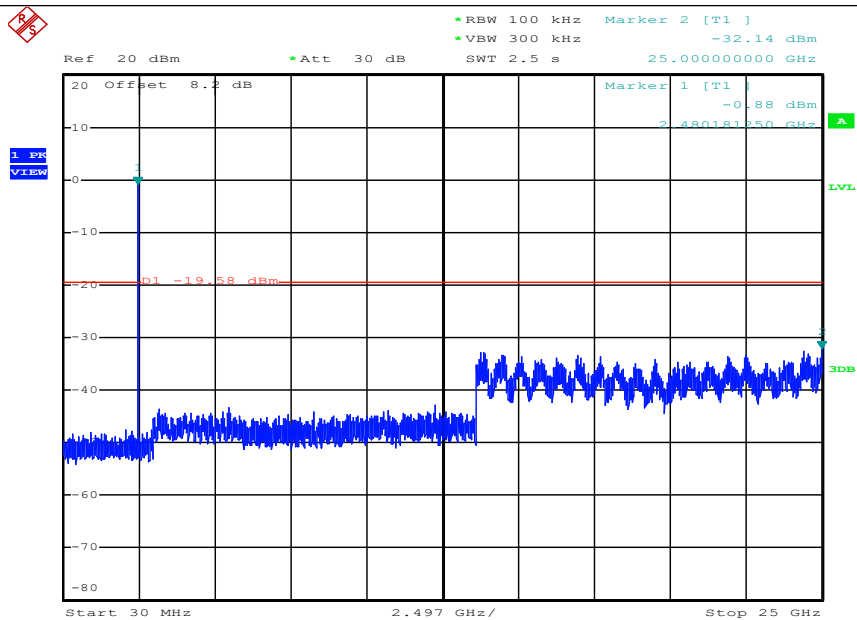
GFSK_HCH_Graphs

Pref



Date: 29.SEP.2019 10:36:42

Puw



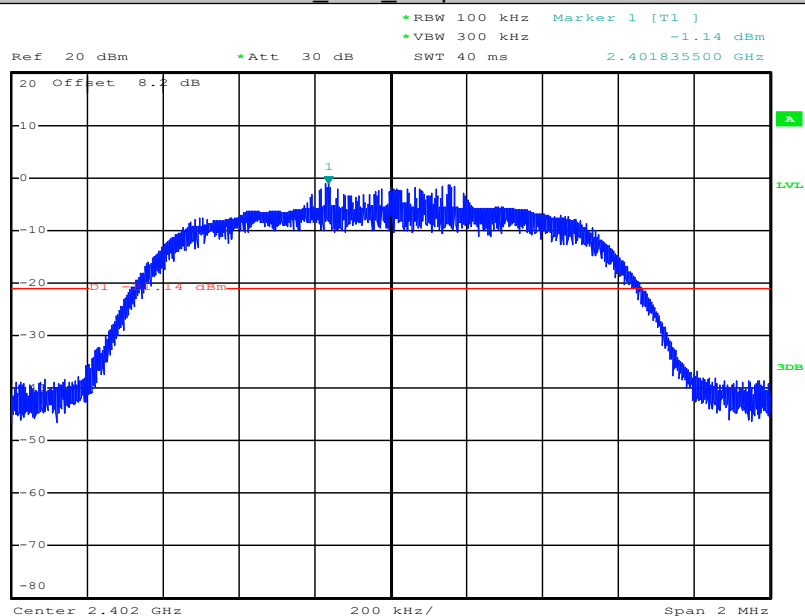
Date: 29.SEP.2019 10:36:57

$\pi/4$ DQPSK_LCH_Graphs

Pref



1 PR
VIEW

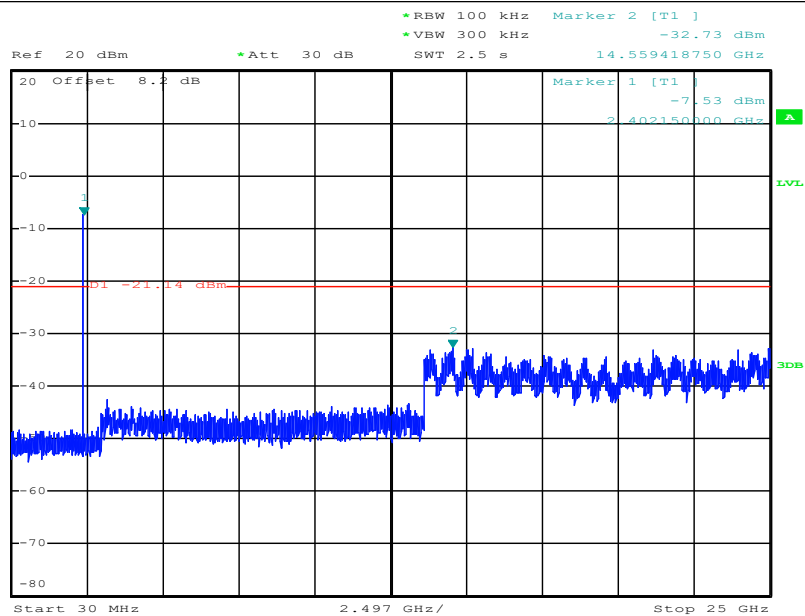


Date: 29.SEP.2019 10:39:47

Puw



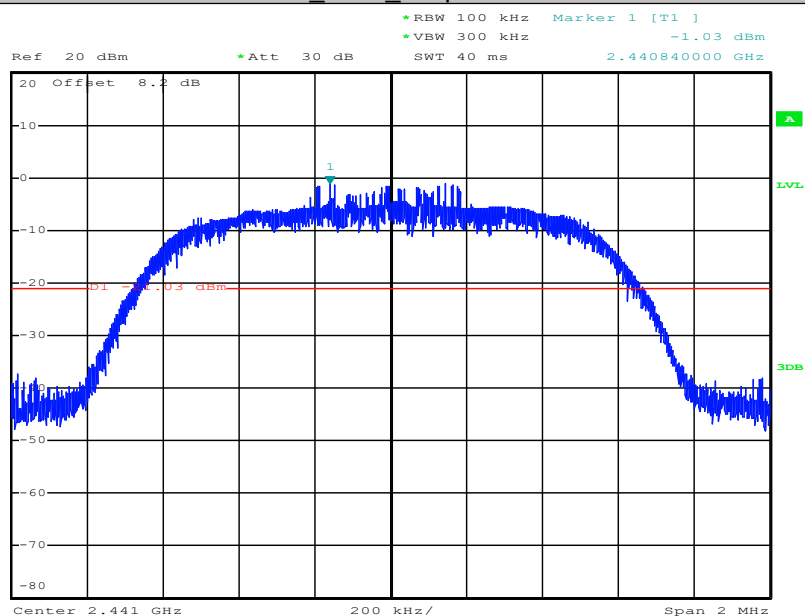
1 PR
VIEW



Date: 29.SEP.2019 10:40:02

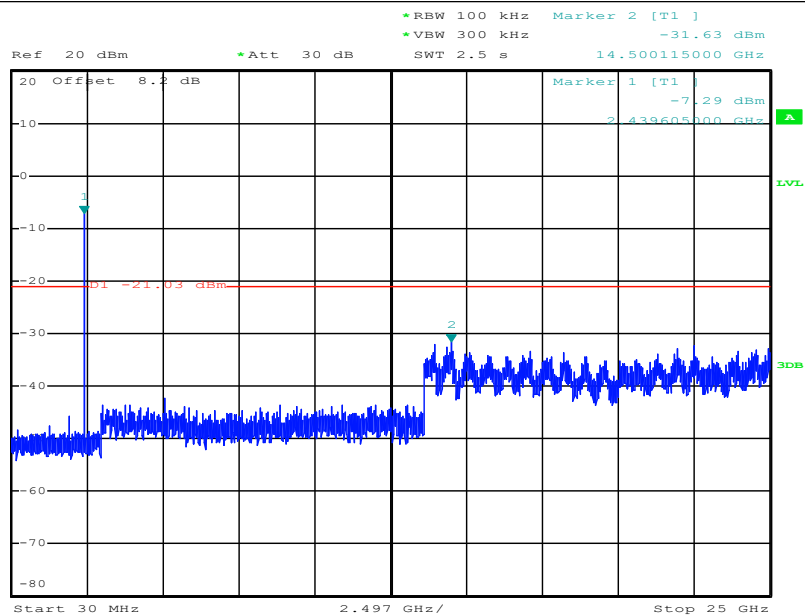
$\pi/4$ DQPSK_MCH_Graphs

Pref

1 PR
VIEW

Date: 29.SEP.2019 10:42:02

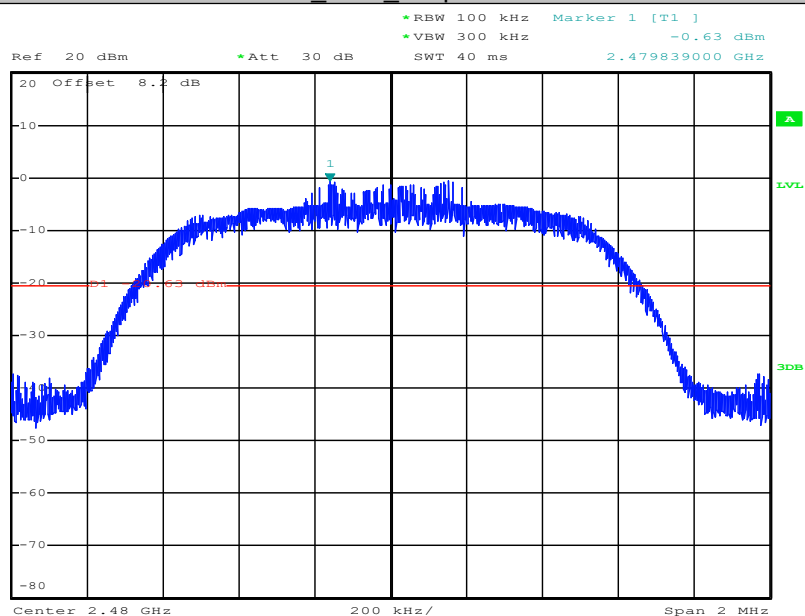
Puw

1 PR
VIEW

Date: 29.SEP.2019 10:42:16

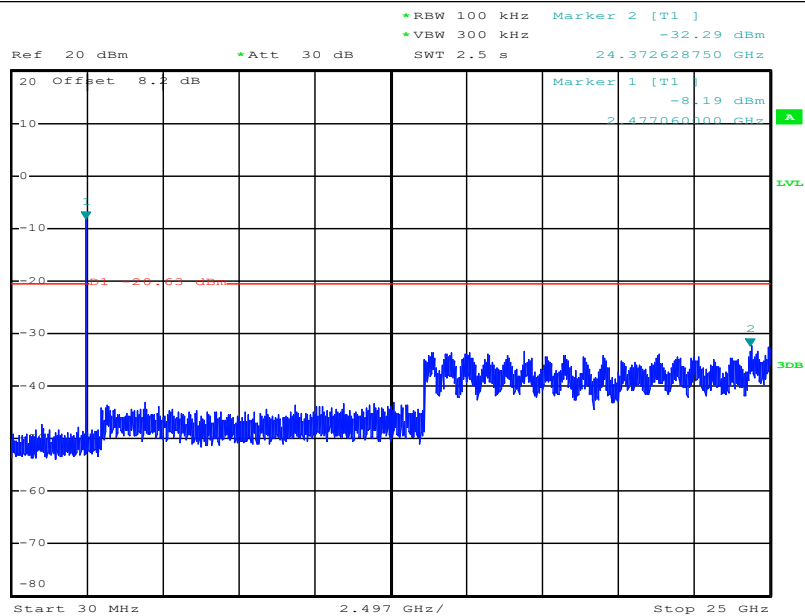
$\pi/4$ DQPSK_HCH_Graphs

Pref

1 PR
VIEW

Date: 29.SEP.2019 10:44:05

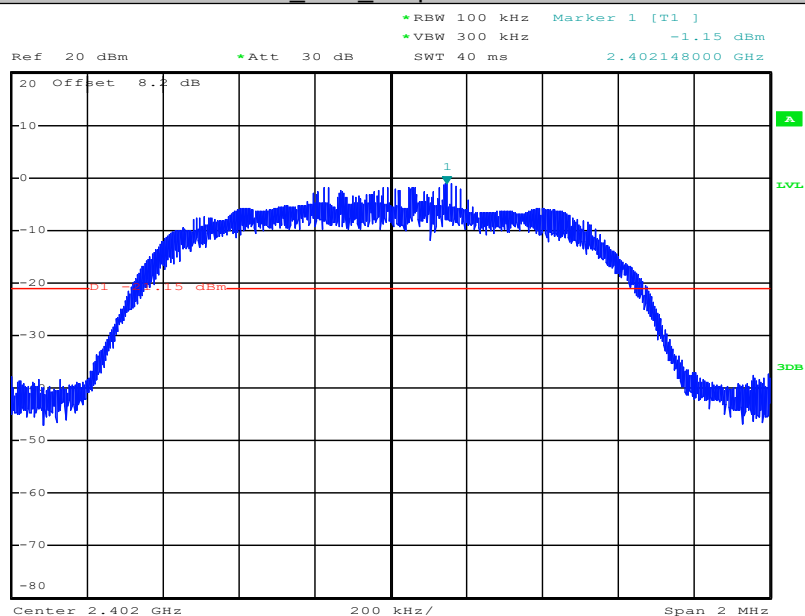
Puw

1 PR
VIEW

Date: 29.SEP.2019 10:44:19

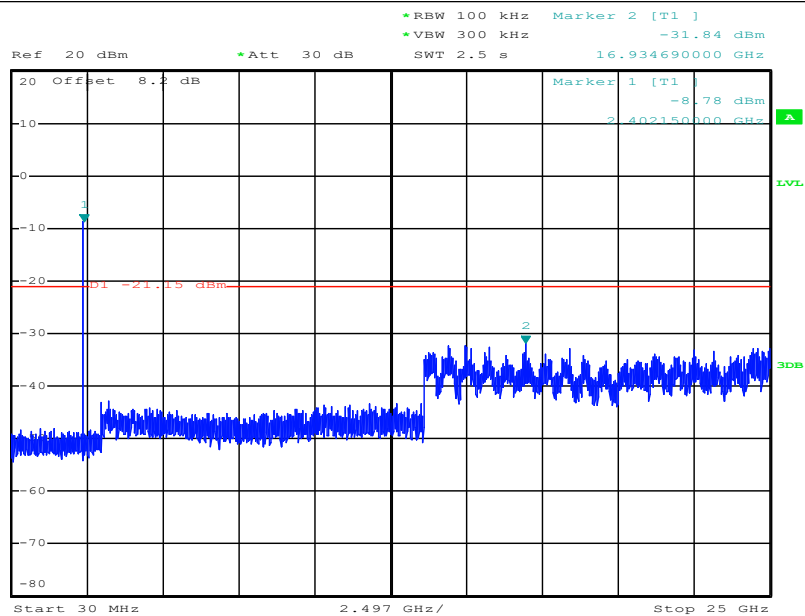
8DPSK_LCH_Graphs

Pref

1 PR
VIEW

Date: 29.SEP.2019 10:46:50

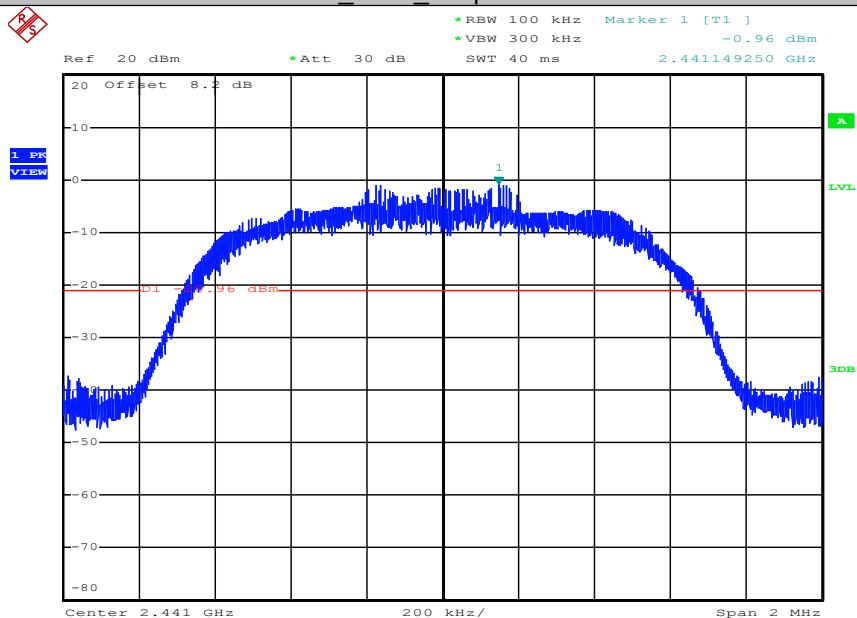
Puw

1 PR
VIEW

Date: 29.SEP.2019 10:47:05

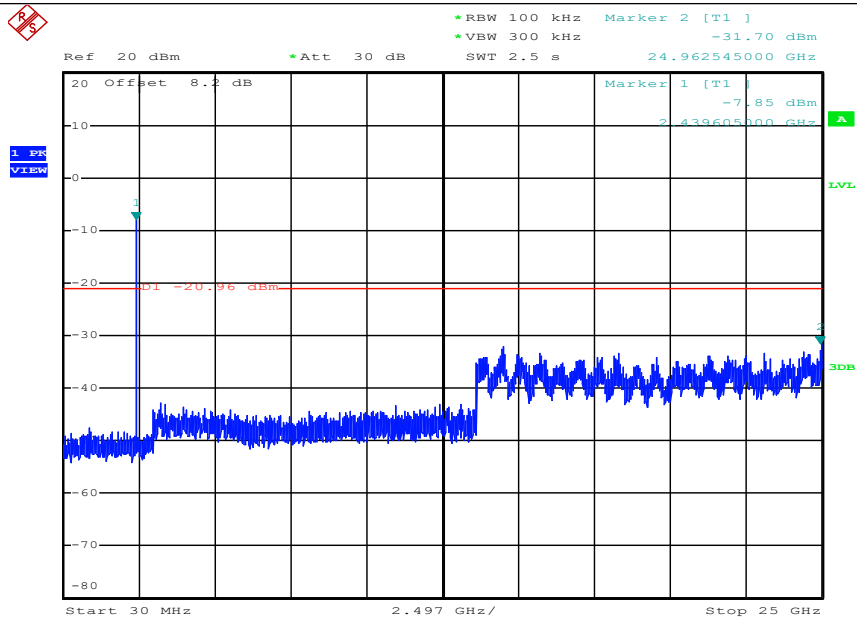
8DPSK_MCH_Graphs

Pref



Date: 29.SEP.2019 10:49:25

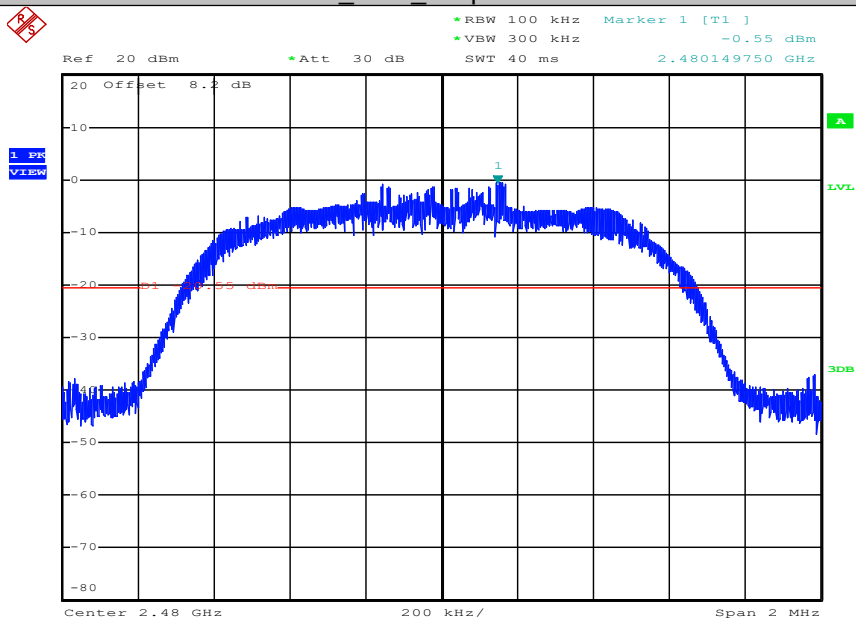
Puw



Date: 29.SEP.2019 10:49:39

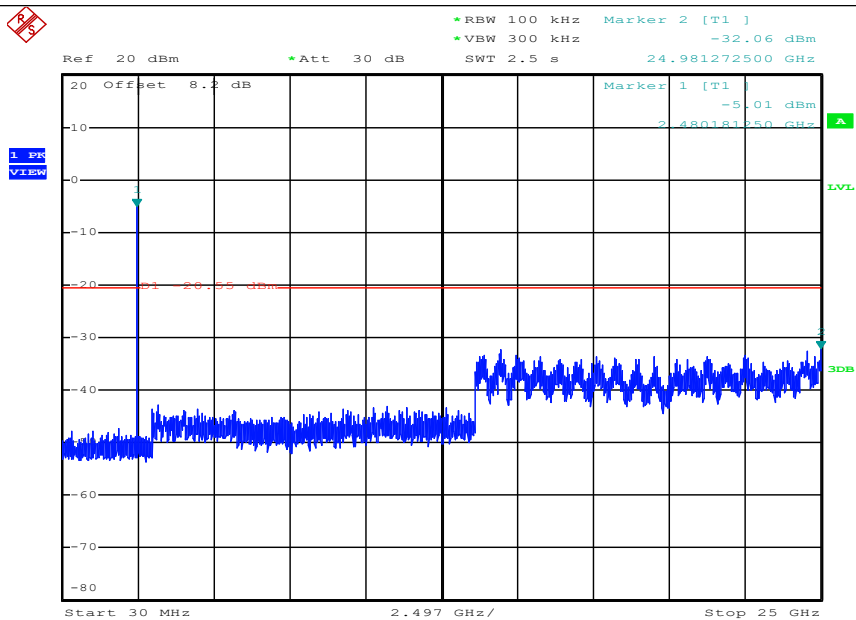
8DPSK_HCH_Graphs

Pref



Date: 29.SEP.2019 10:51:27

Puw



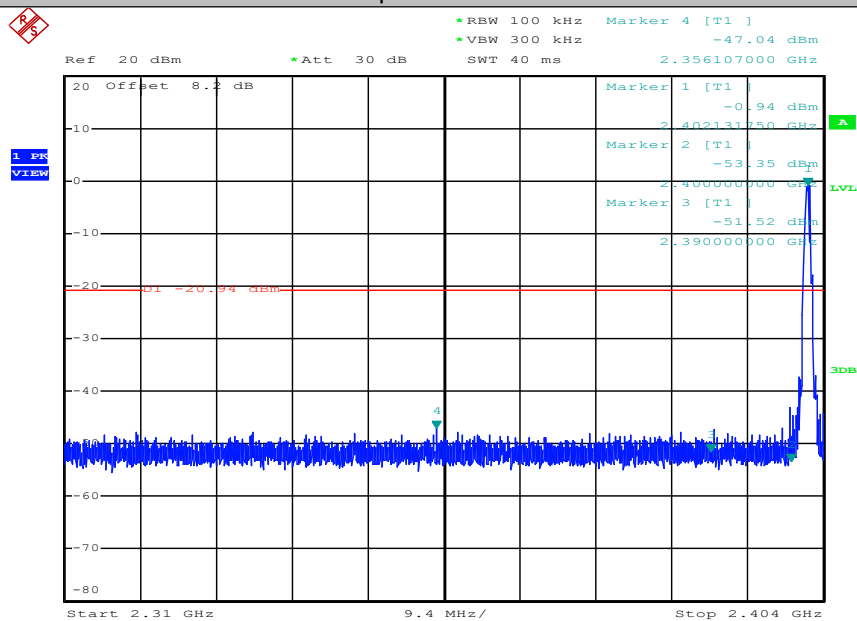
Date: 29.SEP.2019 10:51:41

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	-0.940	Off	-47.041	-20.94	PASS
			-0.310	On	-46.369	-20.31	PASS
	HCH	2480	0.310	Off	-45.944	-19.69	PASS
			0.220	On	-46.697	-19.78	PASS
$\pi/4$ DQPSK	LCH	2402	-4.910	Off	-47.008	-24.91	PASS
			-1.370	On	-46.697	-21.37	PASS
	HCH	2480	-0.590	Off	-47.473	-20.59	PASS
			-0.870	On	-46.865	-20.87	PASS
8DPSK	LCH	2402	-1.480	Off	-47.548	-21.48	PASS
			-1.290	On	-46.873	-21.29	PASS
	HCH	2480	-1.000	Off	-46.752	-21	PASS
			-1.280	On	-46.582	-21.28	PASS

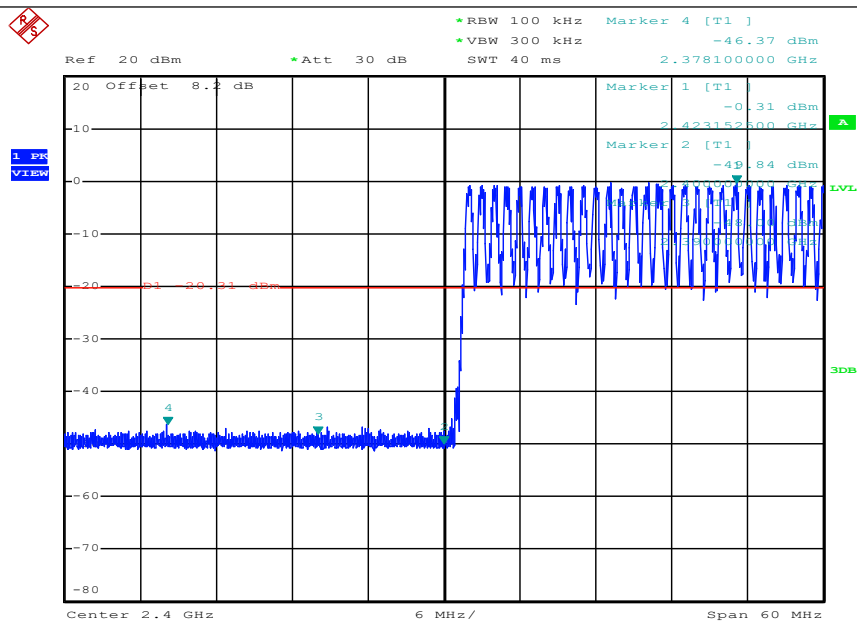
Test Graphs

GFSK/LCH/No Hop



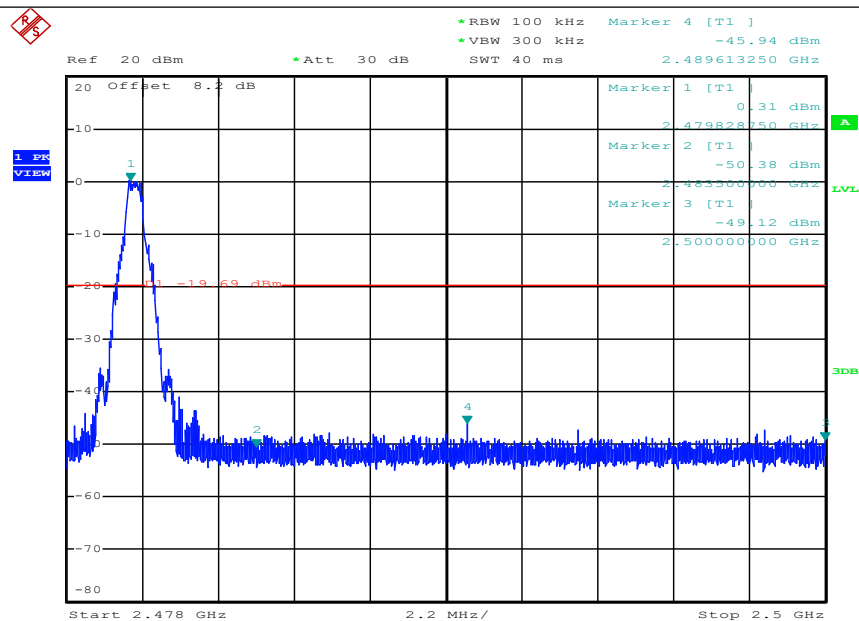
Date: 29.SEP.2019 10:27:54

GFSK/LCH/Hop



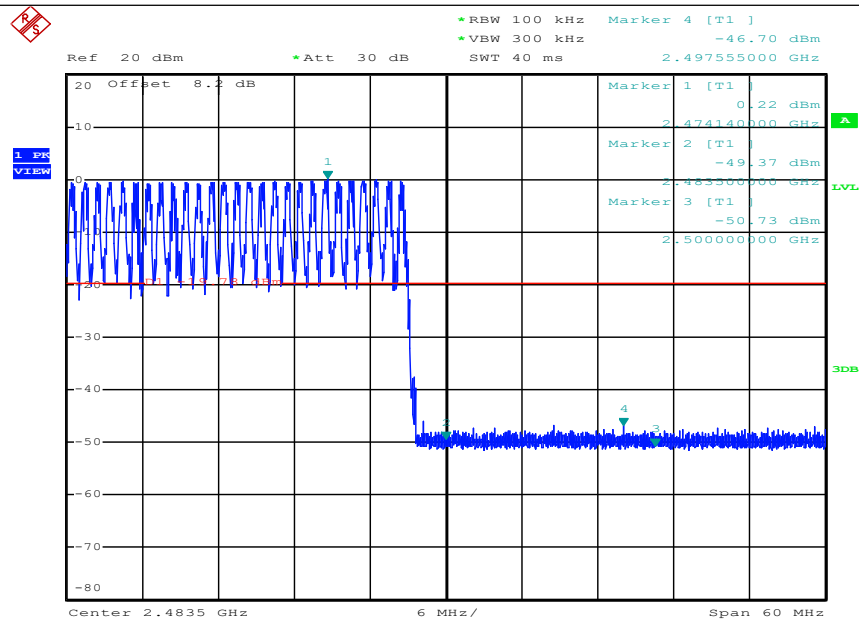
Date: 29.SEP.2019 10:57:50

GFSK/HCH/No Hop



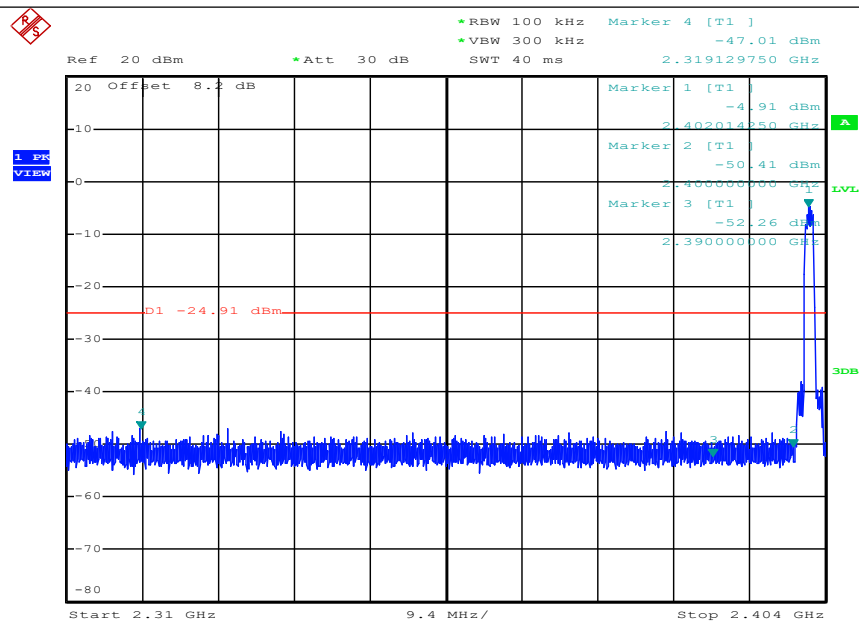
Date: 29.SEP.2019 10:36:29

GFSK/HCH/Hop



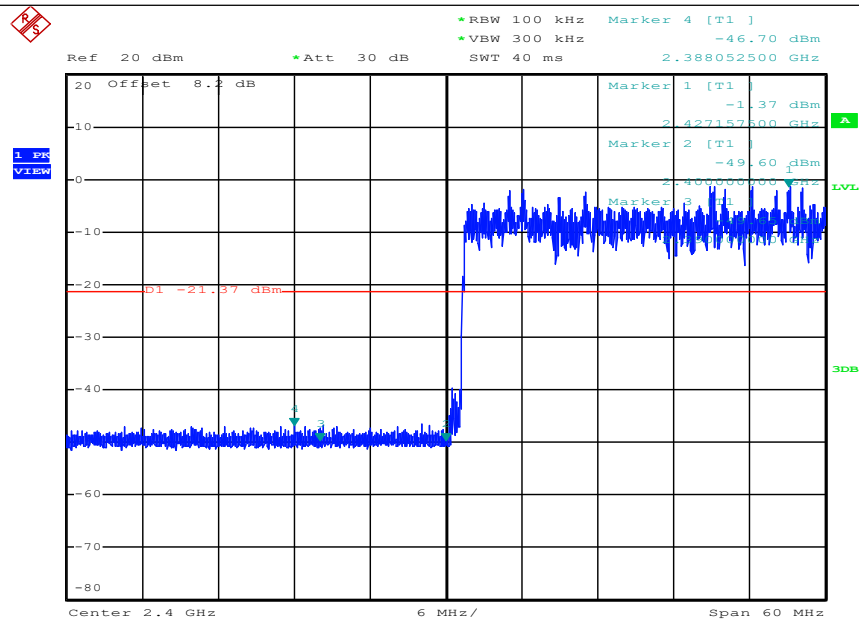
Date: 29.SEP.2019 11:01:07

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



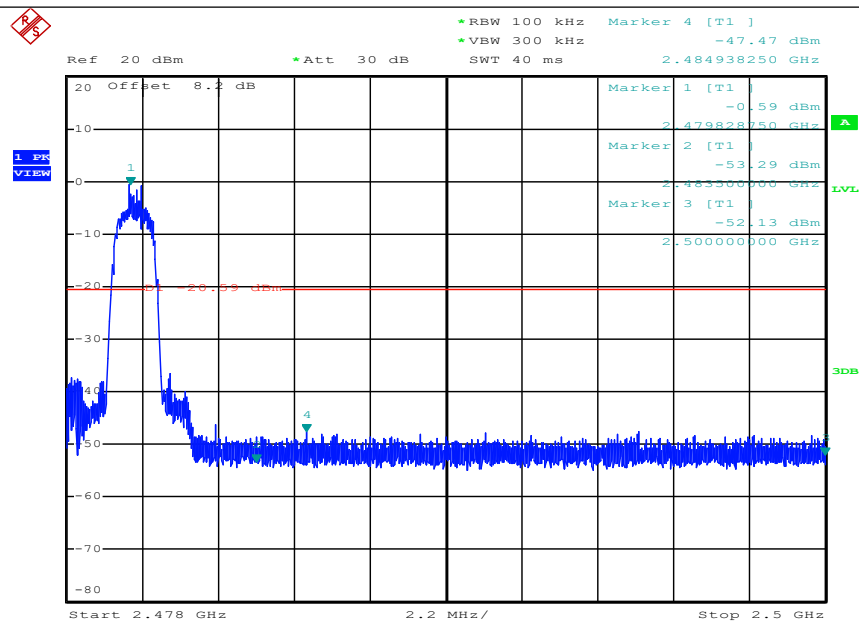
Date: 29.SEP.2019 10:39:35

$\pi/4$ DQPSK/LCH/Hop



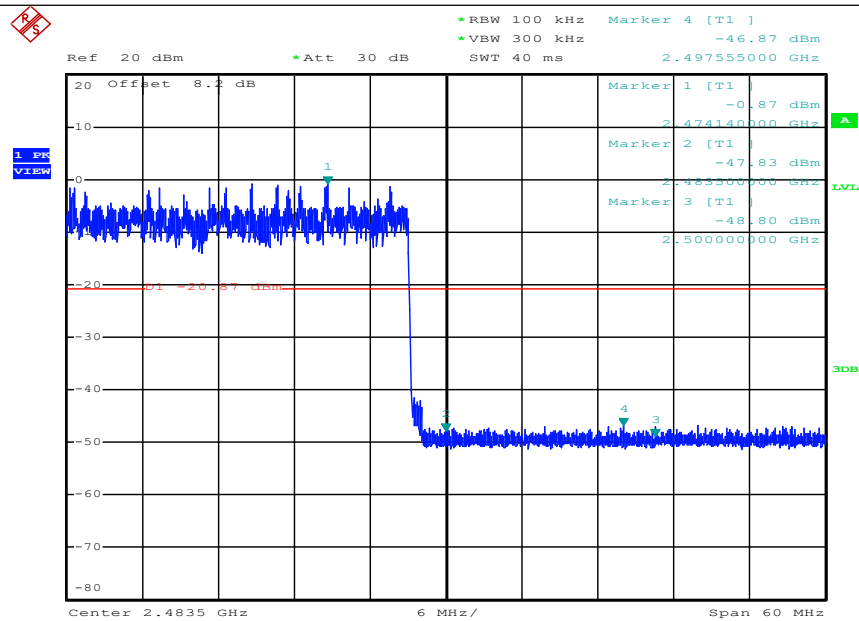
Date: 29.SEP.2019 11:06:44

π /4DQPSK/HCH/No
Hop



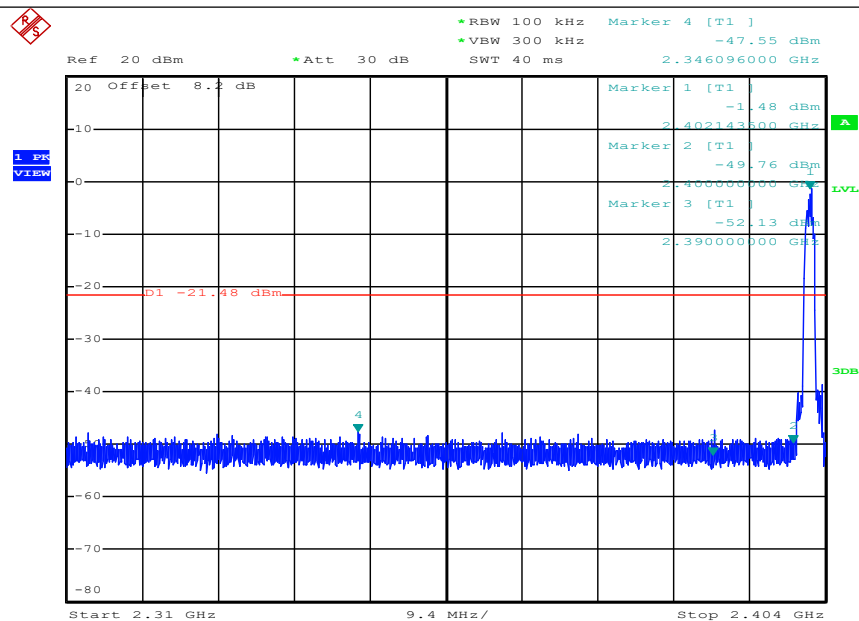
Date: 29.SEP.2019 10:43:52

π /4DQPSK/HCH/Hop



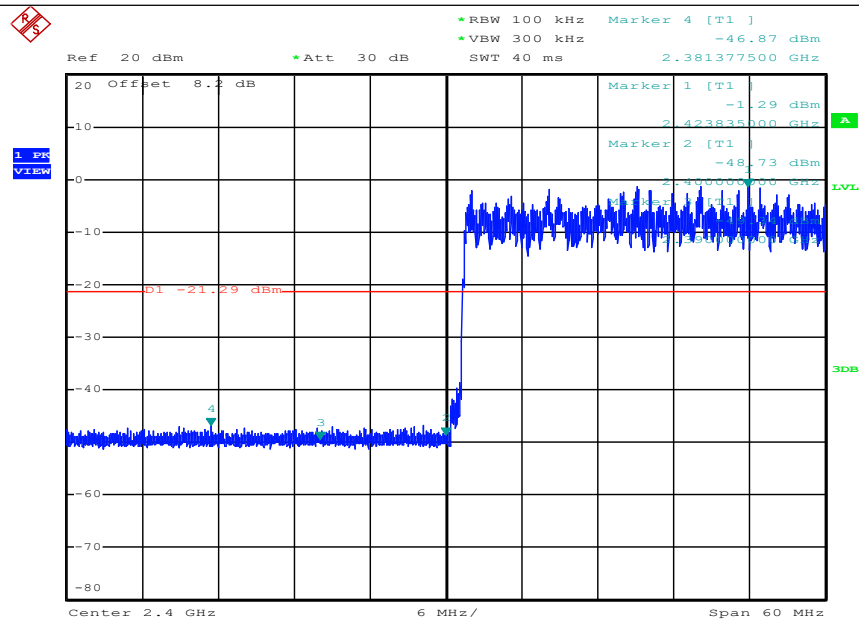
Date: 29.SEP.2019 11:10:38

8DPSK/LCH/No Hop



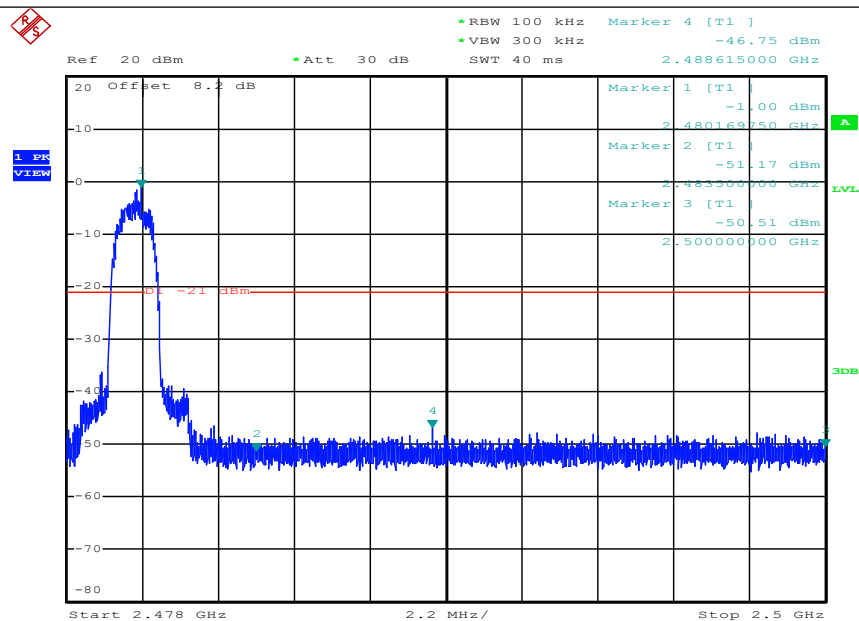
Date: 29.SEP.2019 10:46:37

8DPSK/LCH/Hop



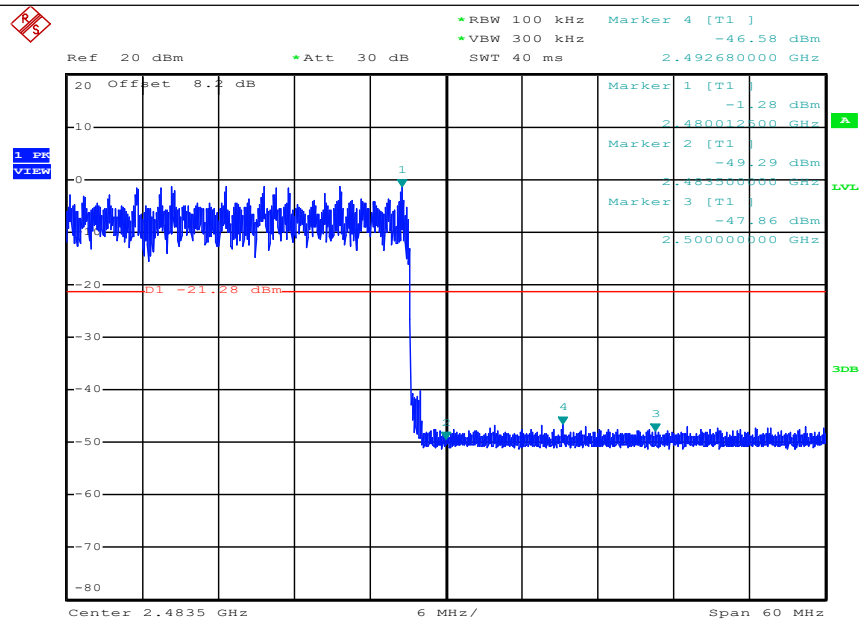
Date: 29.SEP.2019 11:17:10

8DPSK/HCH/No Hop



Date: 29.SEP.2019 10:51:14

8DPSK/HCH/Hop

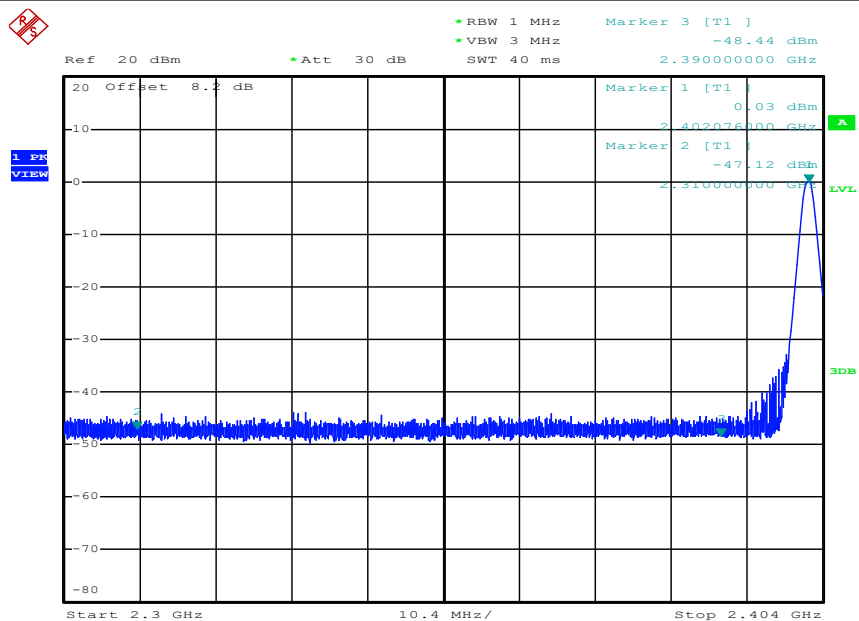


Date: 29.SEP.2019 11:20:39

A.8 Restrict-band band-edge measurements

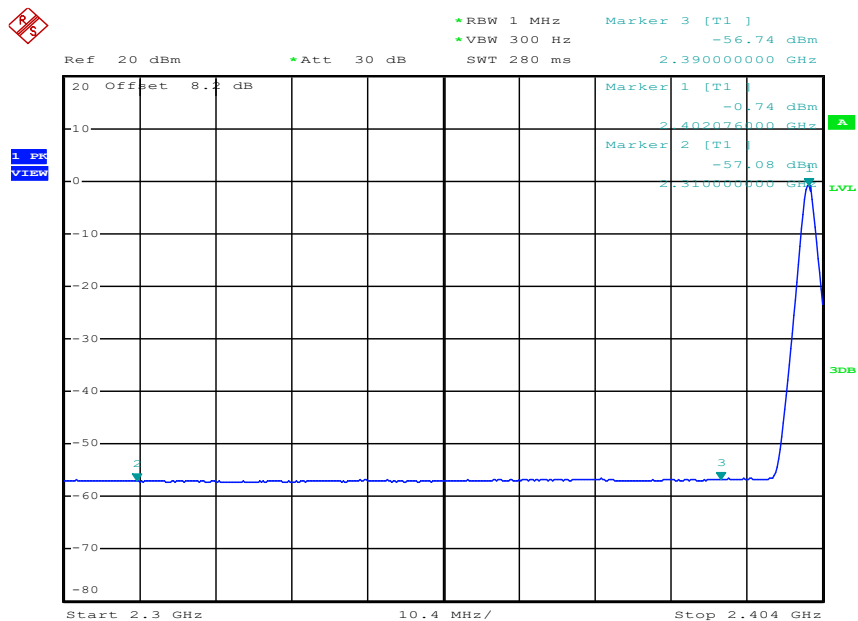
Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-47.12	2.0	0	48.64	PEAK	74	PASS
	Off	2310.0	-57.08	2.0	0	38.68	AV	54	PASS
	Off	2390.0	-48.44	2.0	0	47.32	PEAK	74	PASS
	Off	2390.0	-56.74	2.0	0	39.02	AV	54	PASS
	Off	2483.5	-40.28	2.0	0	55.48	PEAK	74	PASS
	Off	2483.5	-43.96	2.0	0	51.80	AV	54	PASS
	Off	2500.0	-47.46	2.0	0	48.30	PEAK	74	PASS
	Off	2500.0	-57.41	2.0	0	38.35	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-47.91	2.0	0	47.85	PEAK	74	PASS
	Off	2310.0	-57.02	2.0	0	38.74	AV	54	PASS
	Off	2390.0	-45.50	2.0	0	50.26	PEAK	74	PASS
	Off	2390.0	-56.67	2.0	0	39.09	AV	54	PASS
	Off	2483.5	-37.99	2.0	0	57.77	PEAK	74	PASS
	Off	2483.5	-43.52	2.0	0	52.24	AV	54	PASS
	Off	2500.0	-47.55	2.0	0	48.21	PEAK	74	PASS
	Off	2500.0	-57.41	2.0	0	38.35	AV	54	PASS
8DPSK	Off	2310.0	-49.20	2.0	0	46.56	PEAK	74	PASS
	Off	2310.0	-57.05	2.0	0	38.71	AV	54	PASS
	Off	2390.0	-48.13	2.0	0	47.63	PEAK	74	PASS
	Off	2390.0	-56.79	2.0	0	38.97	AV	54	PASS
	Off	2483.5	-38.35	2.0	0	57.41	PEAK	74	PASS
	Off	2483.5	-43.50	2.0	0	52.26	AV	54	PASS
	Off	2500.0	-46.26	2.0	0	49.50	PEAK	74	PASS
	Off	2500.0	-57.31	2.0	0	38.45	AV	54	PASS

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



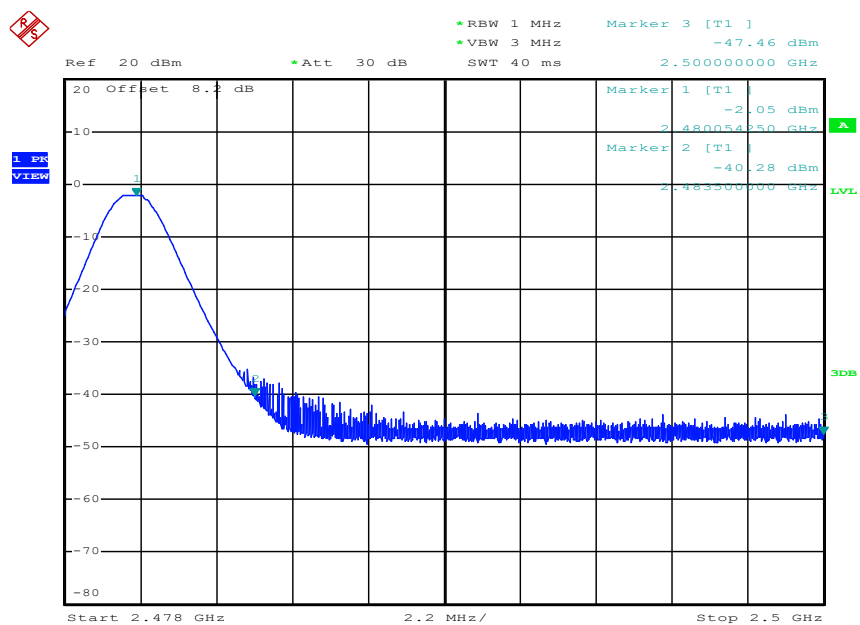
Date: 29.SEP.2019 10:28:40

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



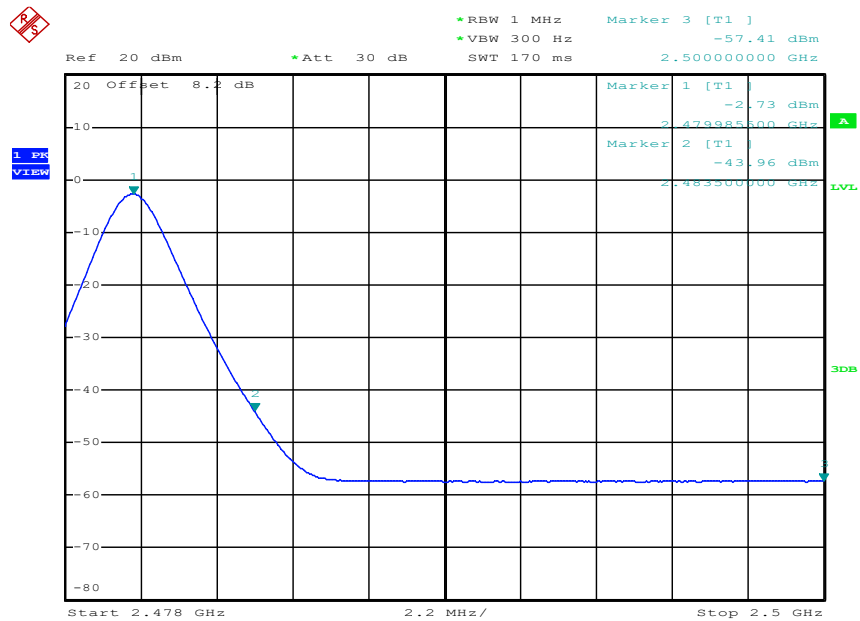
Date: 29.SEP.2019 10:28:52

Restrict-band band-edge measurements_Hopping Off_ GFSK_PEAK (High Channel)

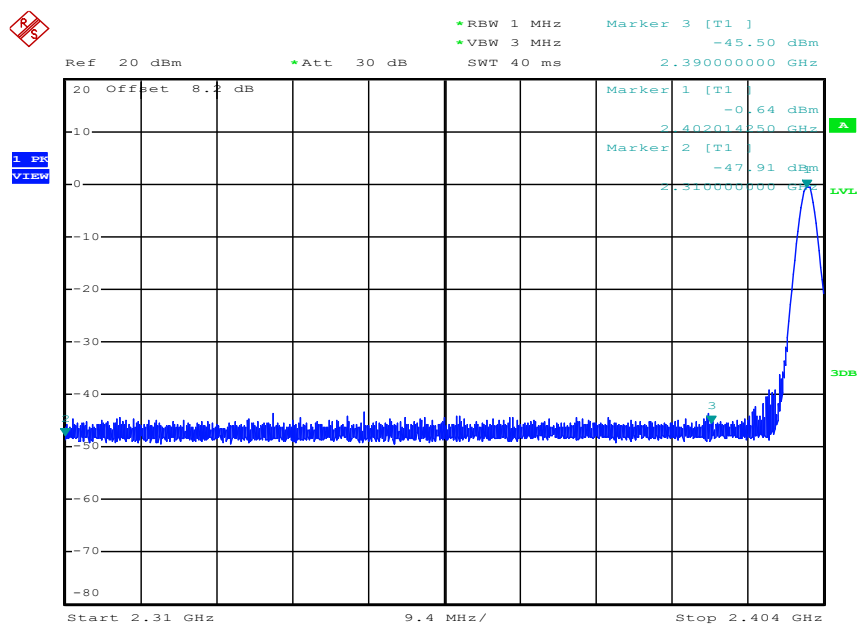


Date: 29.SEP.2019 11:27:02

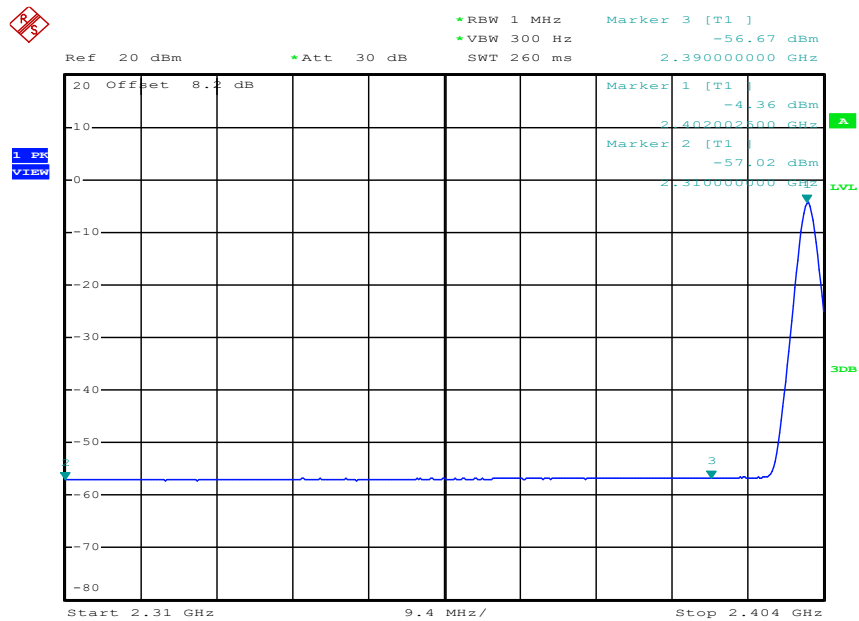
Restrict-band band-edge measurements_Hopping Off_ GFSK_Average (High Channel)



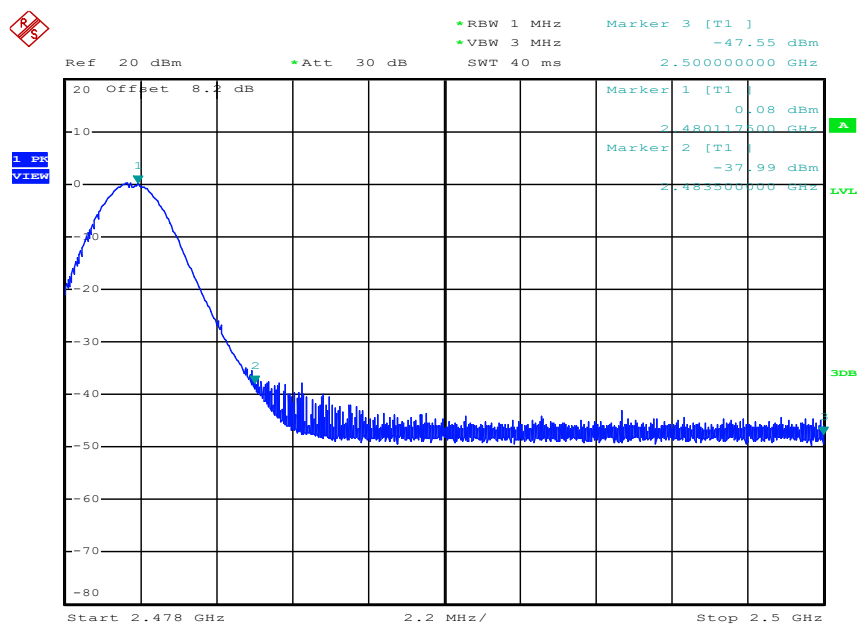
Date: 29.SEP.2019 11:27:15

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

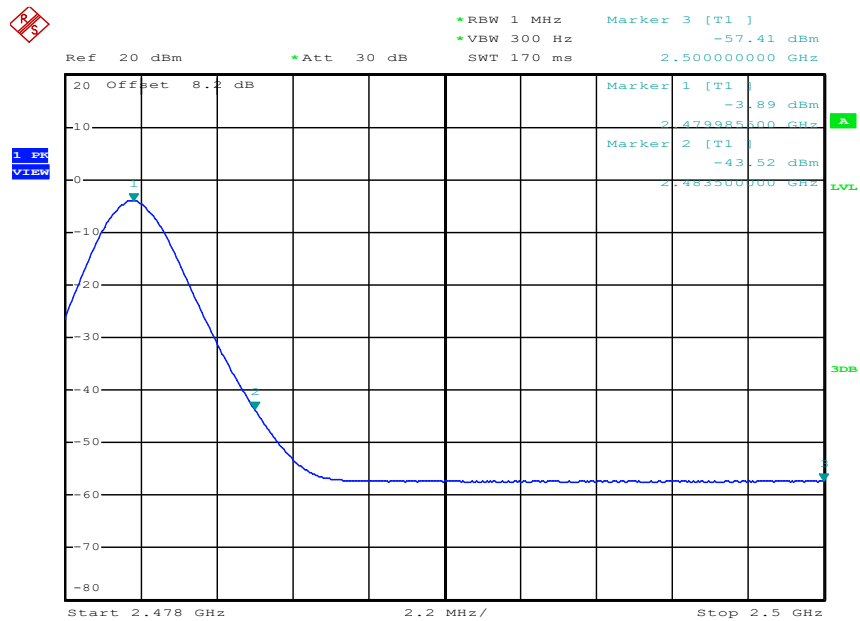
Date: 29.SEP.2019 10:40:20

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

Date: 29.SEP.2019 10:40:33

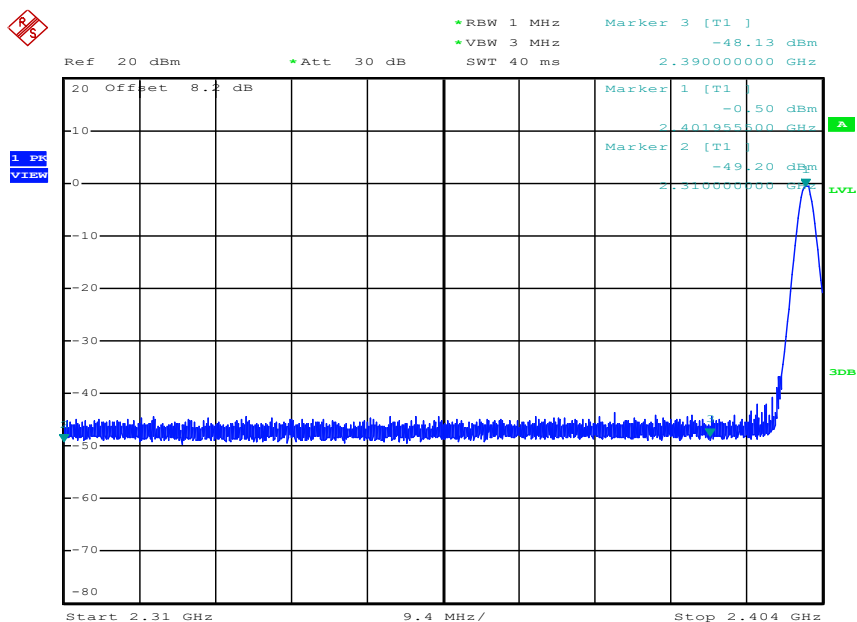
Restrict-band band-edge measurements_Hopping Off $\pi/4$ -DQPSK_PEAK (High Channel)

Date: 29.SEP.2019 10:44:38

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

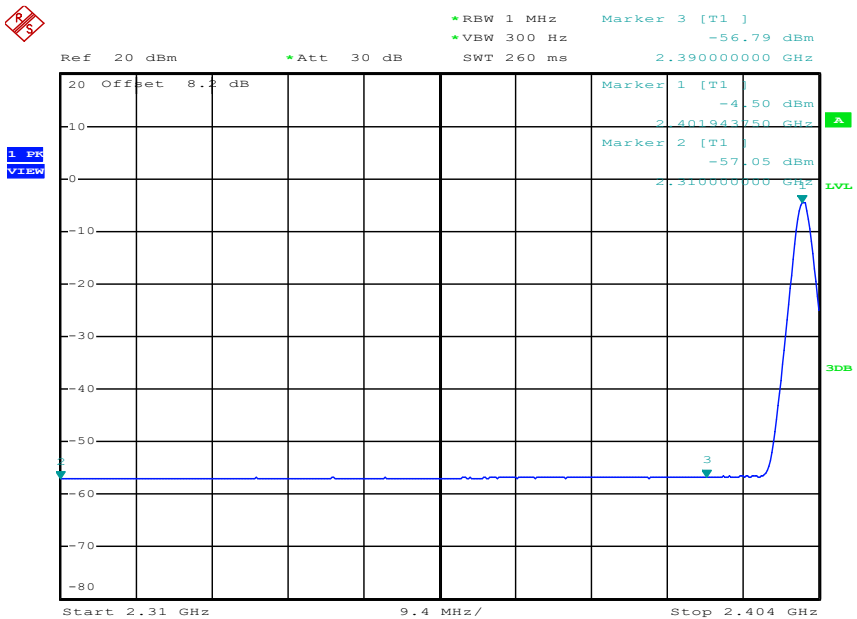
Date: 29.SEP.2019 10:44:50

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



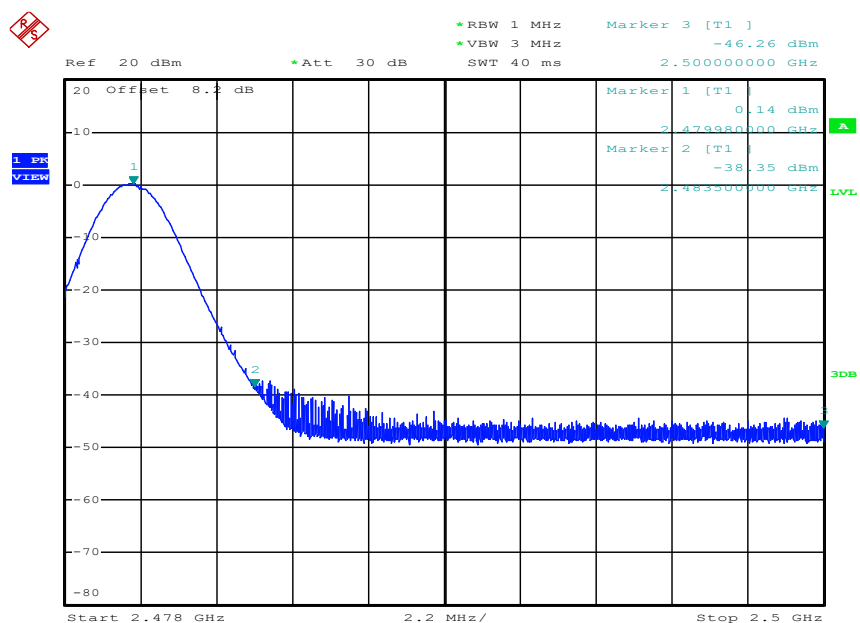
Date: 29.SEP.2019 10:47:23

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



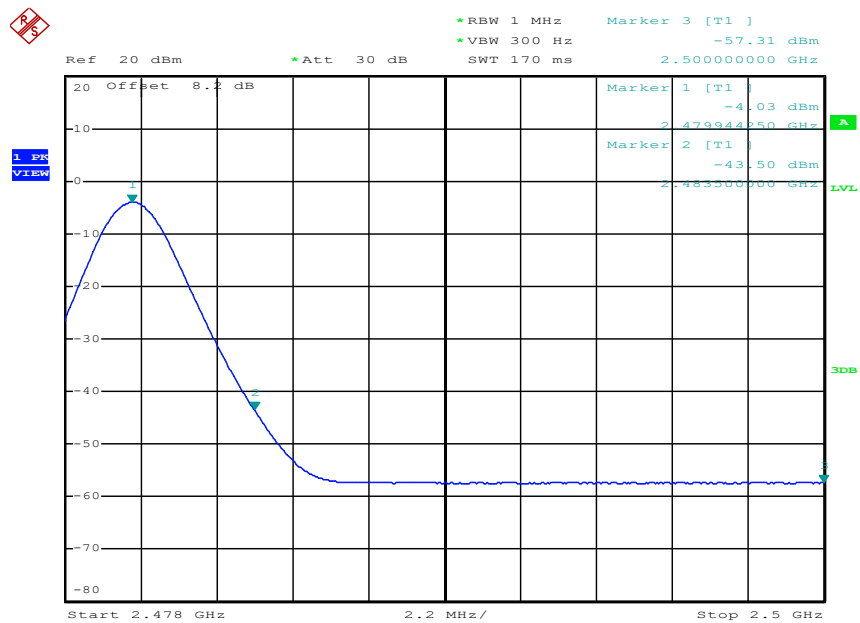
Date: 29.SEP.2019 10:47:36

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



Date: 29.SEP.2019 10:52:00

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



Date: 29.SEP.2019 10:52:13