

Appendix A

RF Test Data for BT (DSS) (Conducted Measurement)

Product Name: BLUETOOTH SPEAKER

Trade Mark: Brookstone

Test Model: BSSK9065

Environmental Conditions

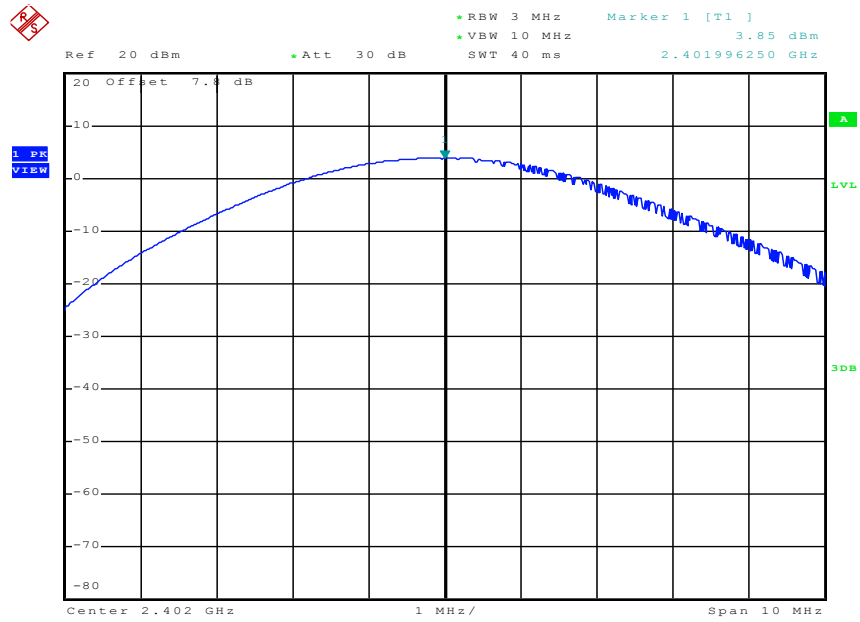
Temperature:	23.5 ° C
Relative Humidity:	53.6%
ATM Pressure:	100.0 kPa
Test Engineer:	Wang Chuang
Supervised by:	Tom Liu

A.1 Maxmum Conducted Peak Output Power

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	3.850	30	PASS
	MCH	3.850	30	PASS
	HCH	4.100	30	PASS
$\pi/4$ DQPSK	LCH	2.970	21	PASS
	MCH	3.060	21	PASS
	HCH	3.370	21	PASS

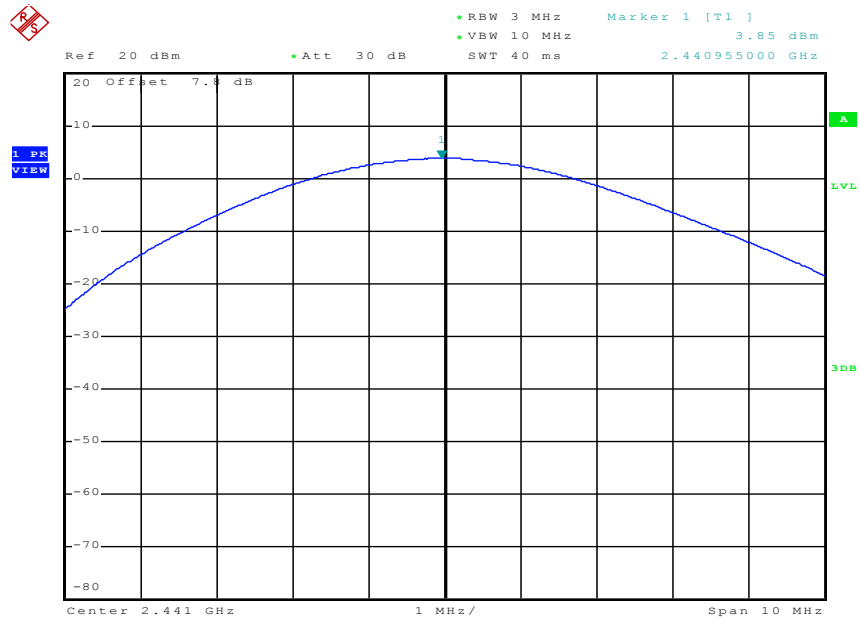
Test Graphs

GFSK/LCH



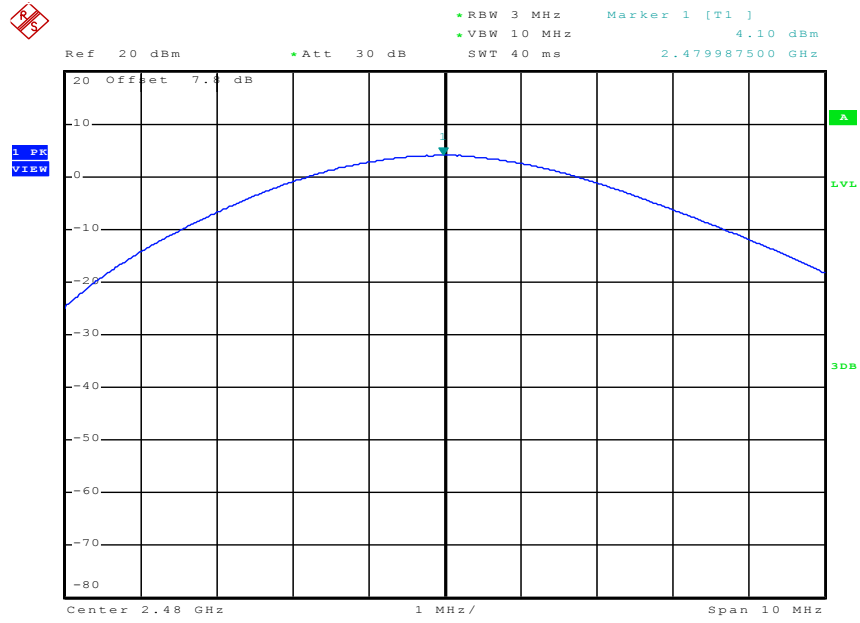
Date: 3 SEP 2019 11:23:16

GFSK/MCH



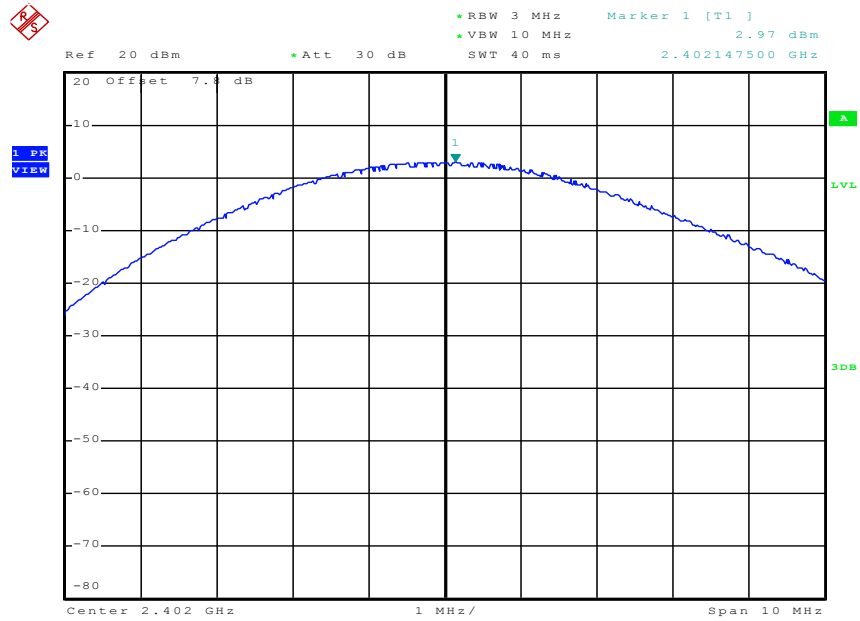
Date: 3 SEP 2019 11:26:02

GFSK/HCH



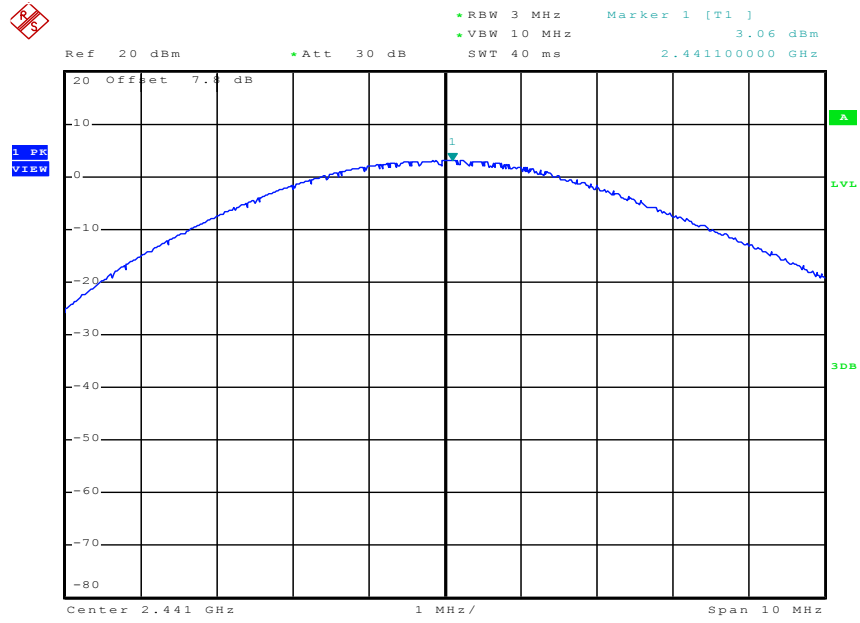
Date: 3.SEP.2019 11:28:18

$\pi/4$ DQPSK/LCH



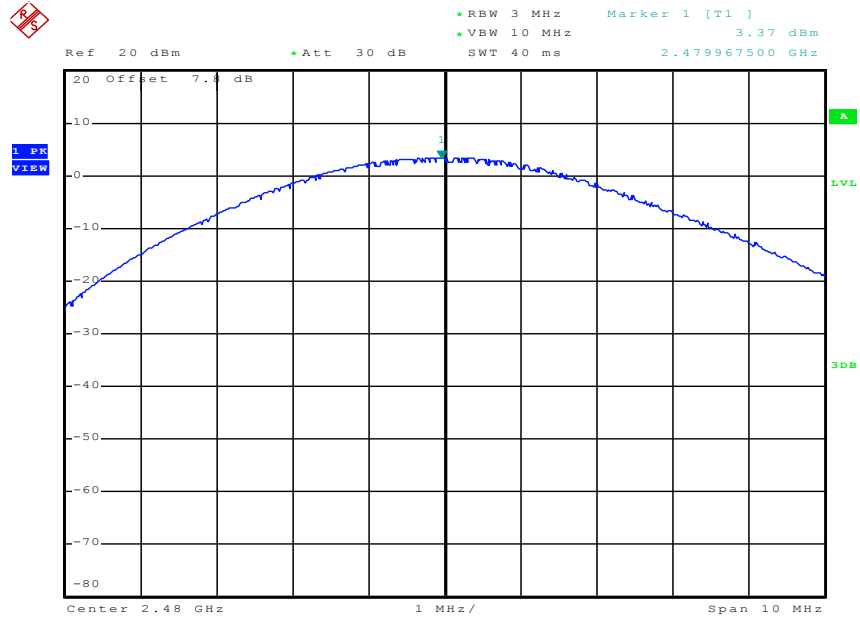
Date: 3.SEP.2019 11:30:54

$\pi/4$ DQPSK/MCH



Date: 3 SEP 2019 11:33:28

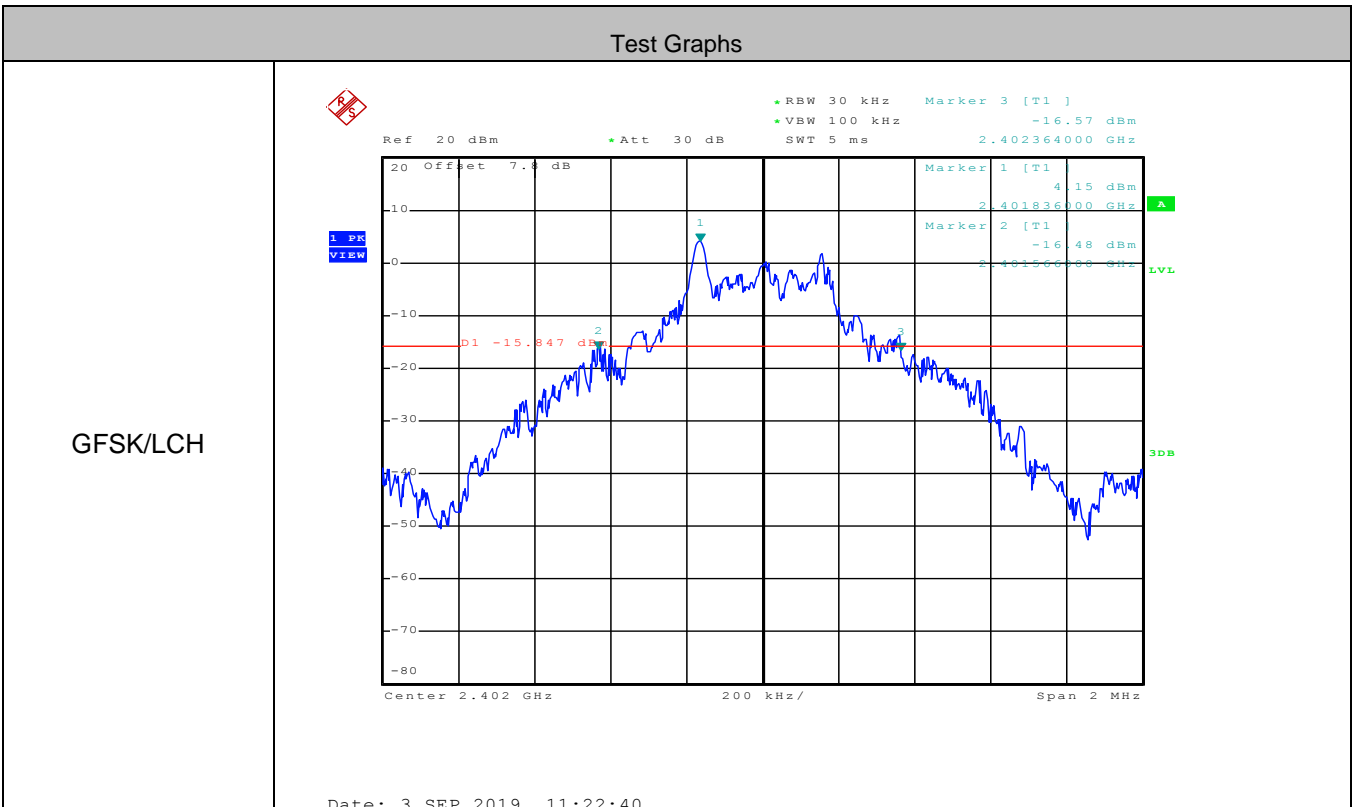
$\pi/4$ DQPSK/HCH



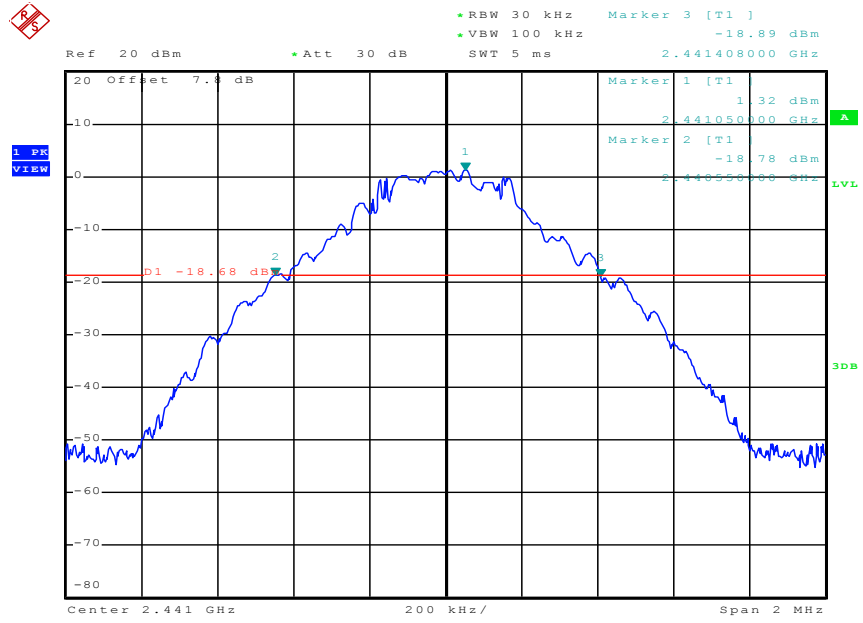
Date: 3 SEP 2019 11:35:09

A.2 20dB Bandwidth

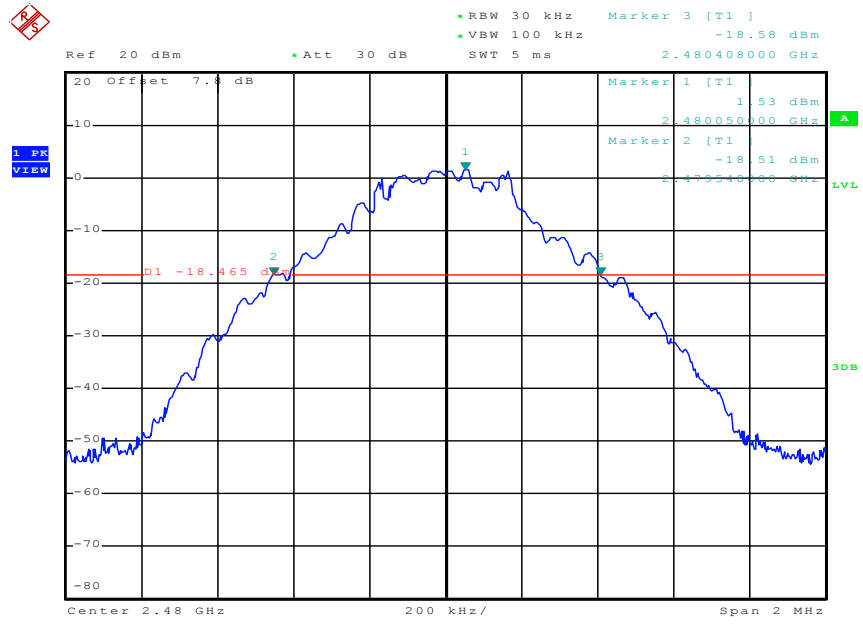
Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.798	Not Specified	PASS
	MCH	0.858	Not Specified	PASS
	HCH	0.860	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.258	Not Specified	PASS
	MCH	1.262	Not Specified	PASS
	HCH	1.272	Not Specified	PASS



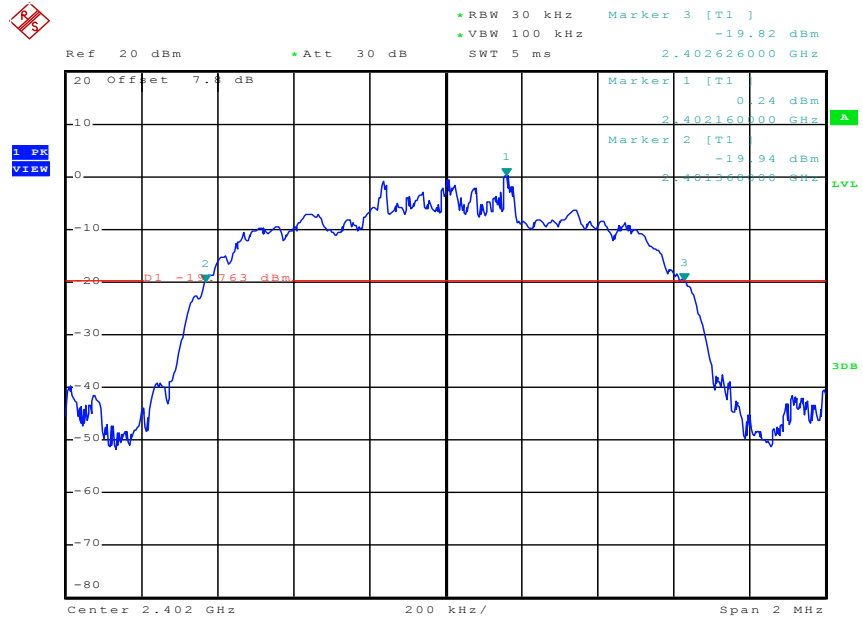
GFSK/MCH



GFSK/HCH

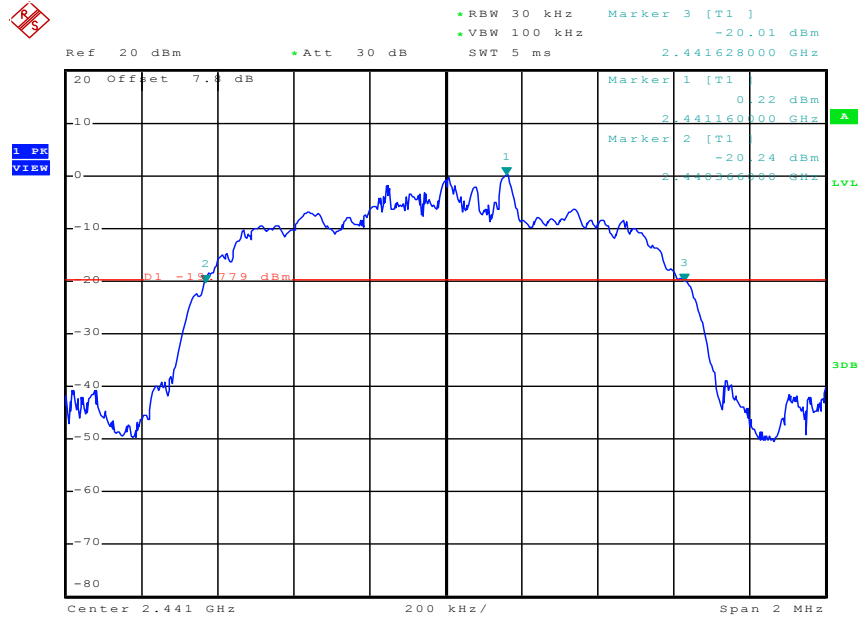


$\pi/4$ DQPSK/LCH



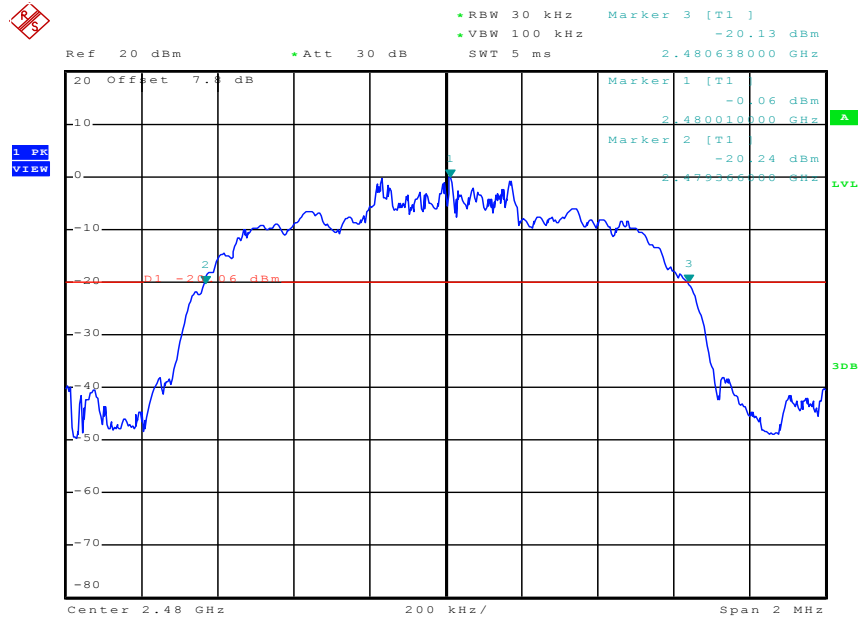
Date: 3_SEP_2019 11:30:17

$\pi/4$ DQPSK/MCH



Date: 3_SEP_2019 11:32:51

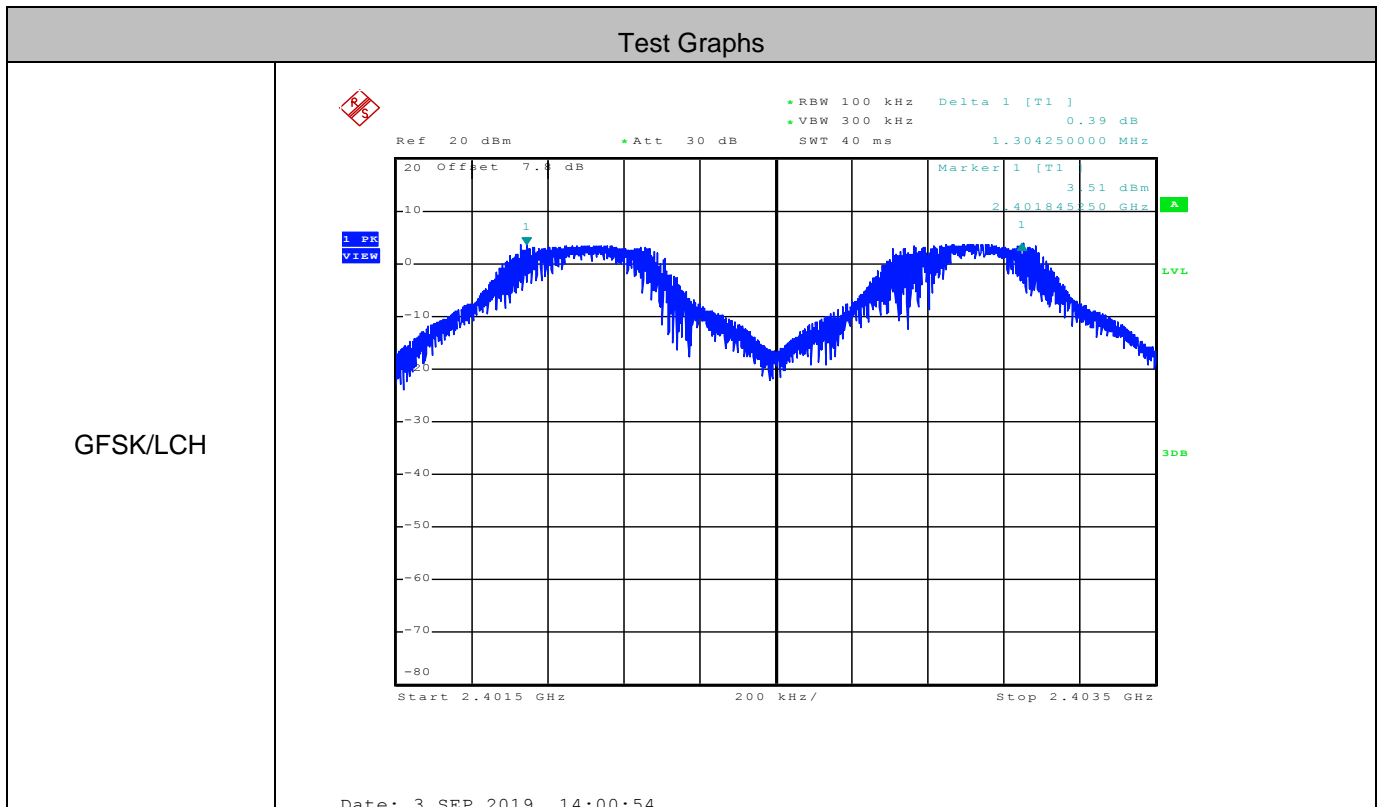
$\pi/4$ DQPSK/HCH



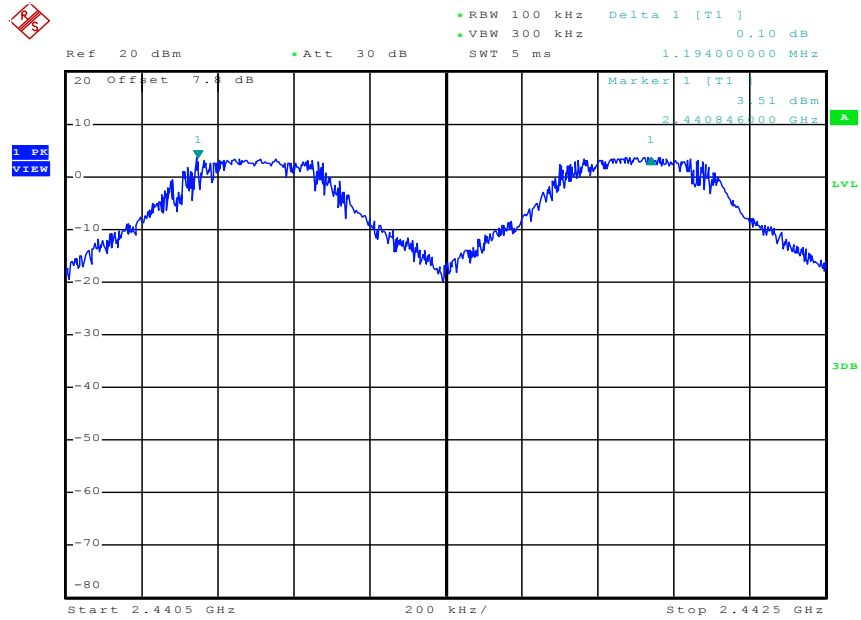
Date: 3 SEP 2019 11:34:33

A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.304	0.573	PASS
	MCH	1.194	0.573	PASS
	HCH	0.938	0.573	PASS
$\pi/4$ DQPSK	LCH	0.858	0.848	PASS
	MCH	1.008	0.848	PASS
	HCH	1.328	0.848	PASS

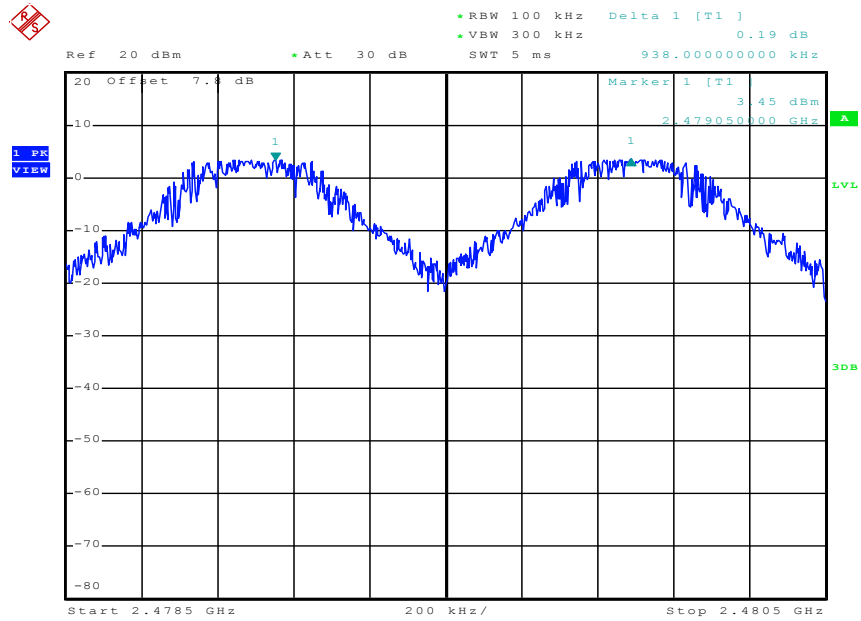


GFSK/MCH



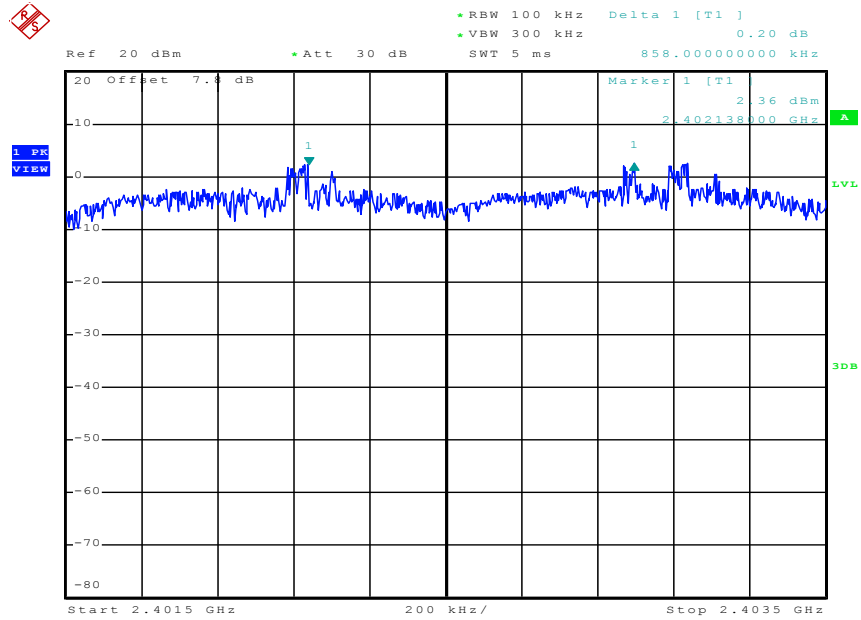
Date: 3.SEP.2019 14:04:55

GFSK/HCH



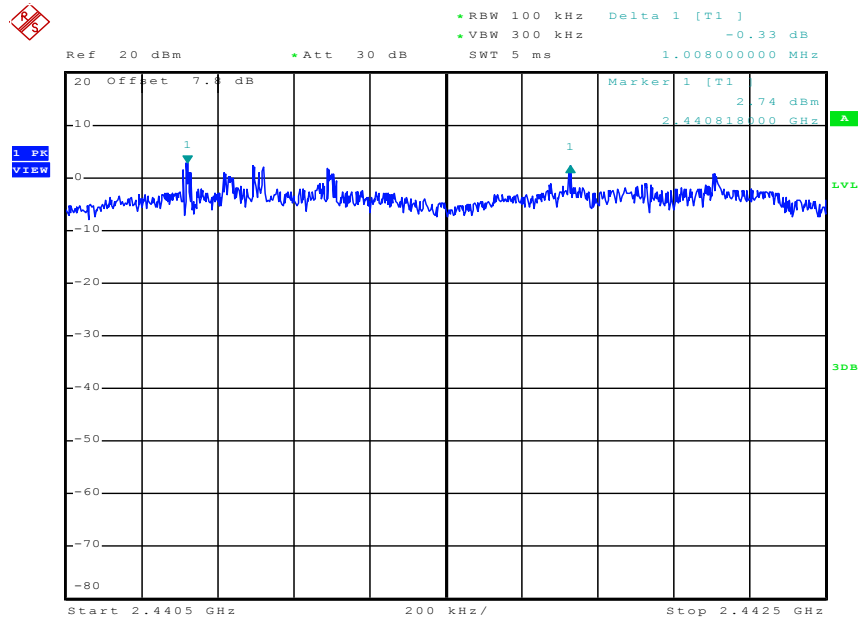
Date: 3.SEP.2019 14:05:15

π /4DQPSK/LCH



Date: 3.SEP.2019 13:51:31

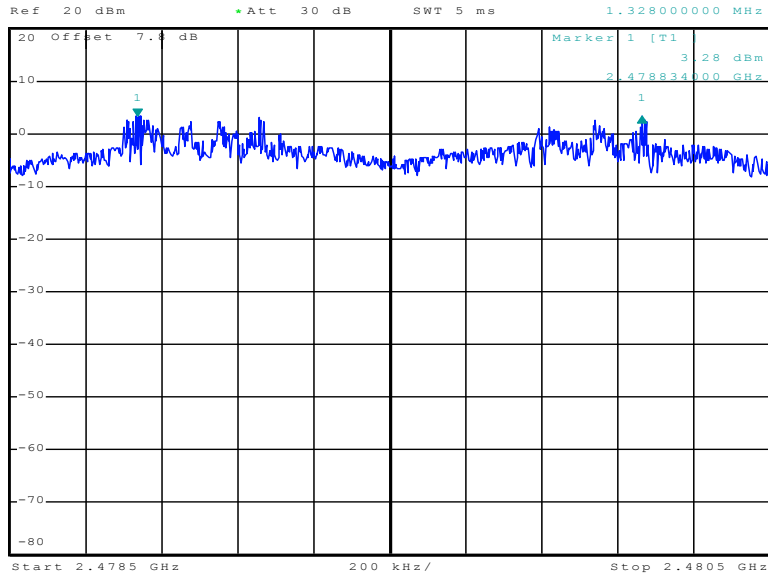
π /4DQPSK/MCH



Date: 3.SEP.2019 13:54:35



RBW 100 kHz Delta 1 [T1]
VBW 300 kHz 0.03 dB
SWT 5 ms 1.328000000 MHz



$\pi/4$ DQPSK/HCH

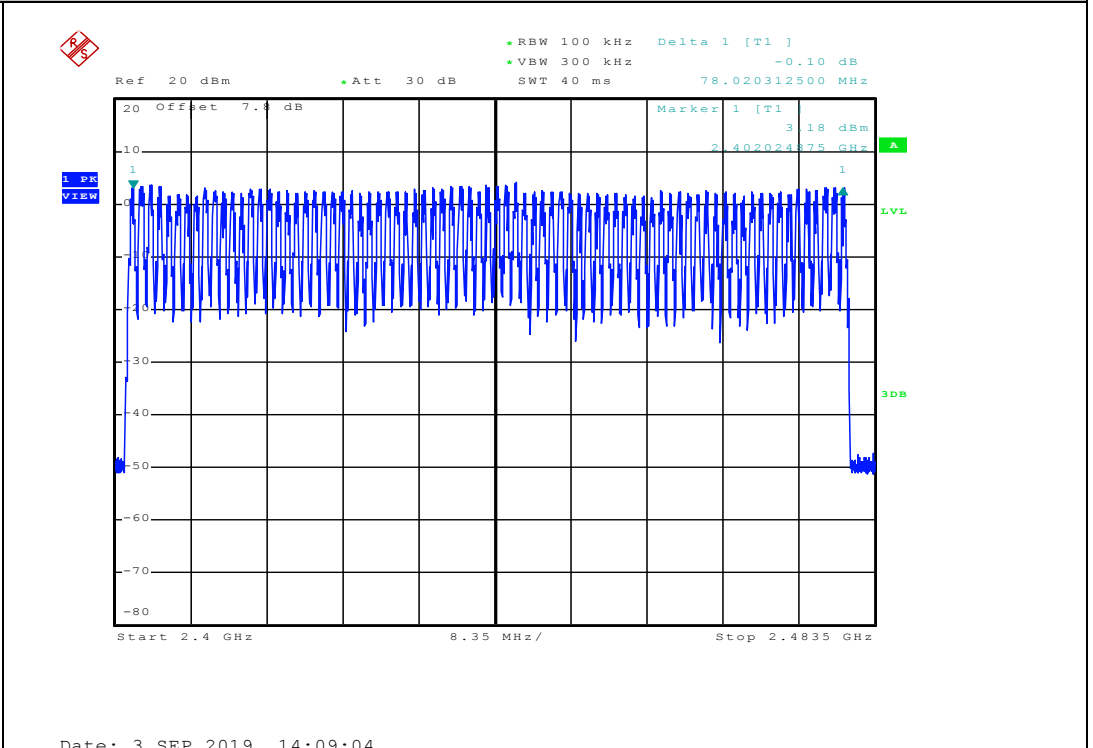
Date: 3 SEP 2019 13:55:30

A.4 Hopping Channel Number

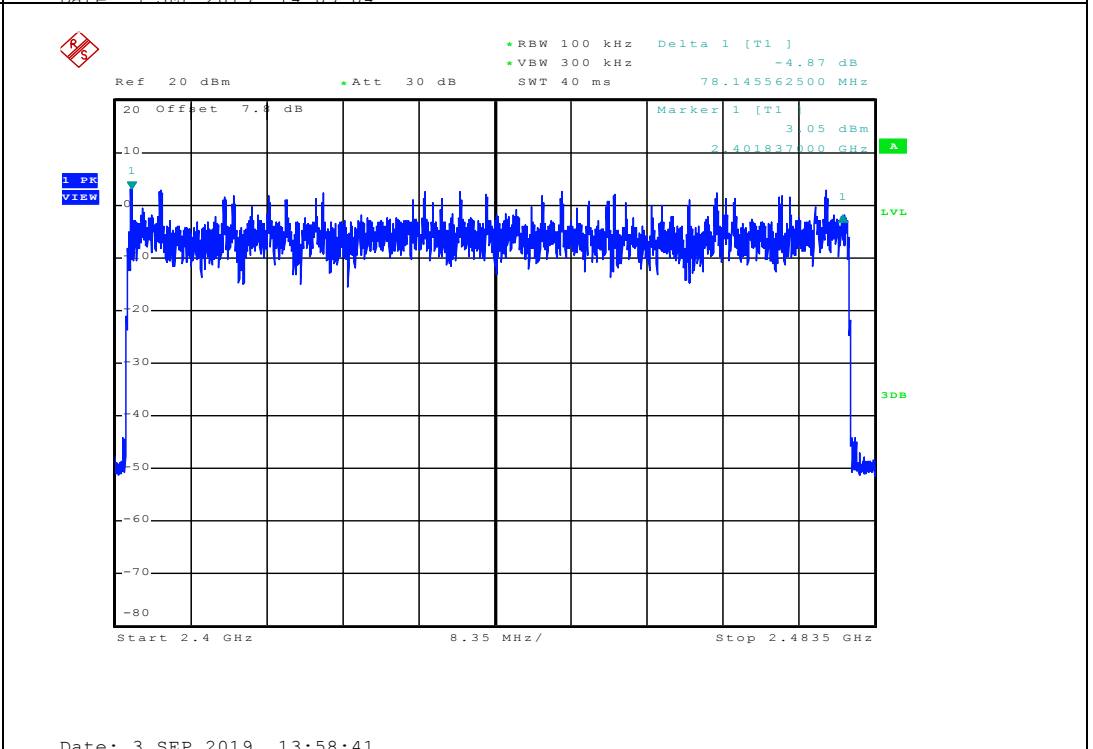
Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
$\pi/4$ DQPSK	Hop	79	>=15	PASS

Test Graphs

GFSK/Hop

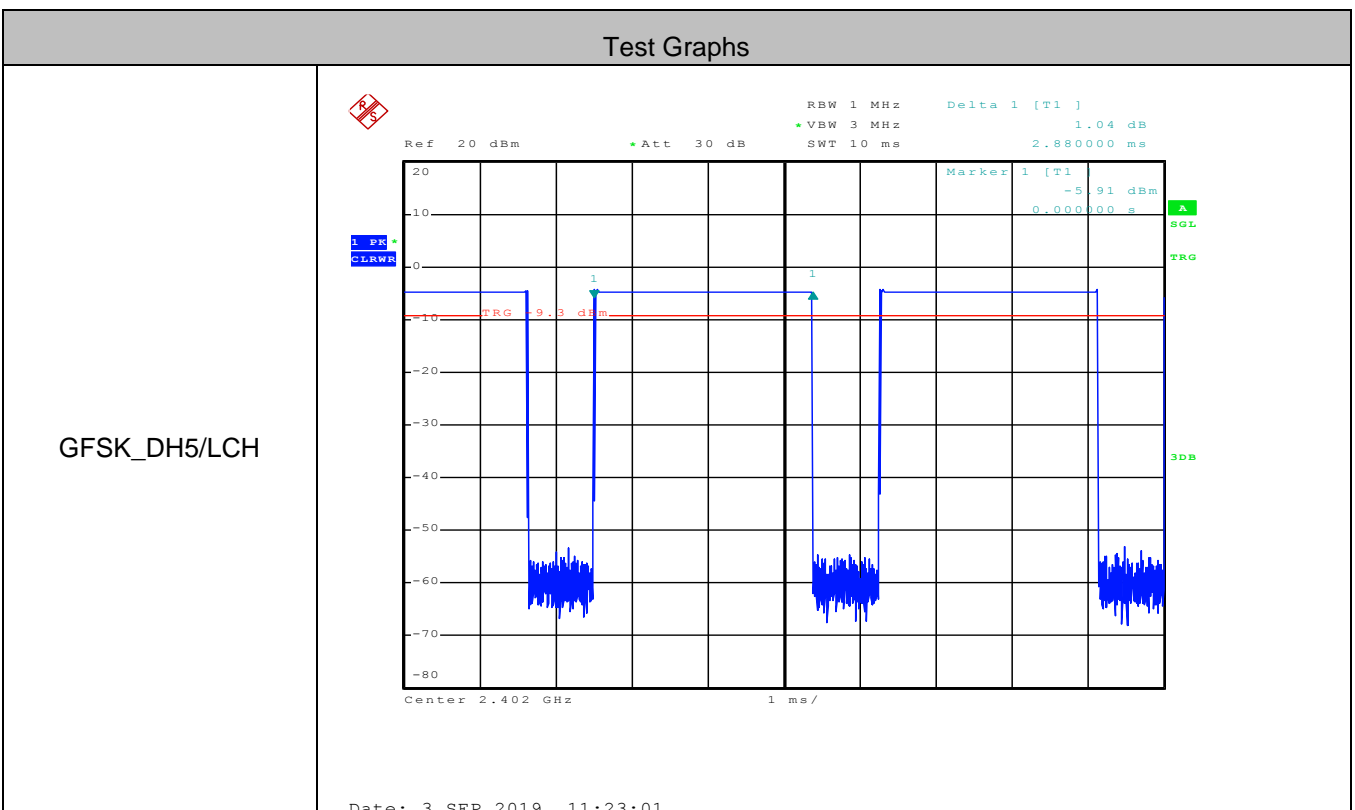


$\pi/4$ DQPSK/Hop

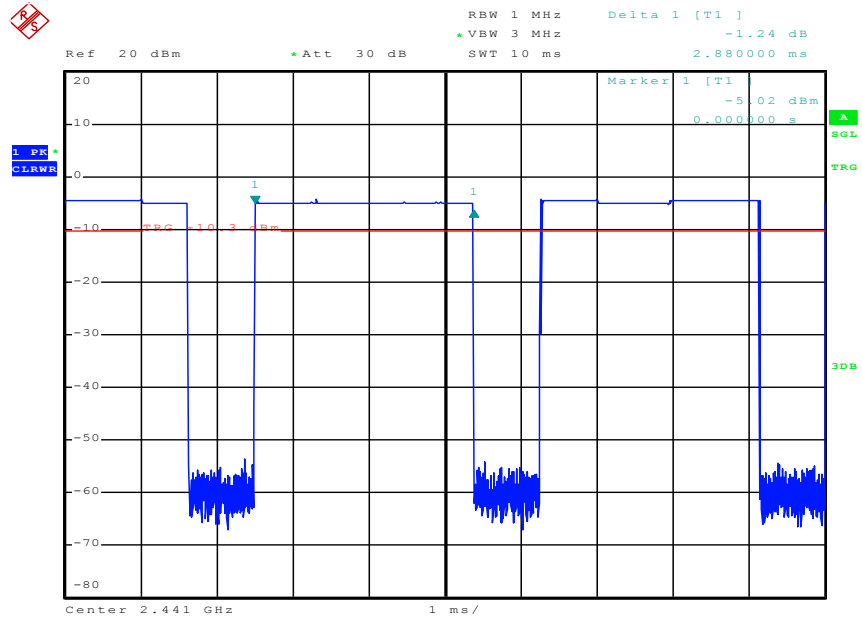


A.5 Dwell Time

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

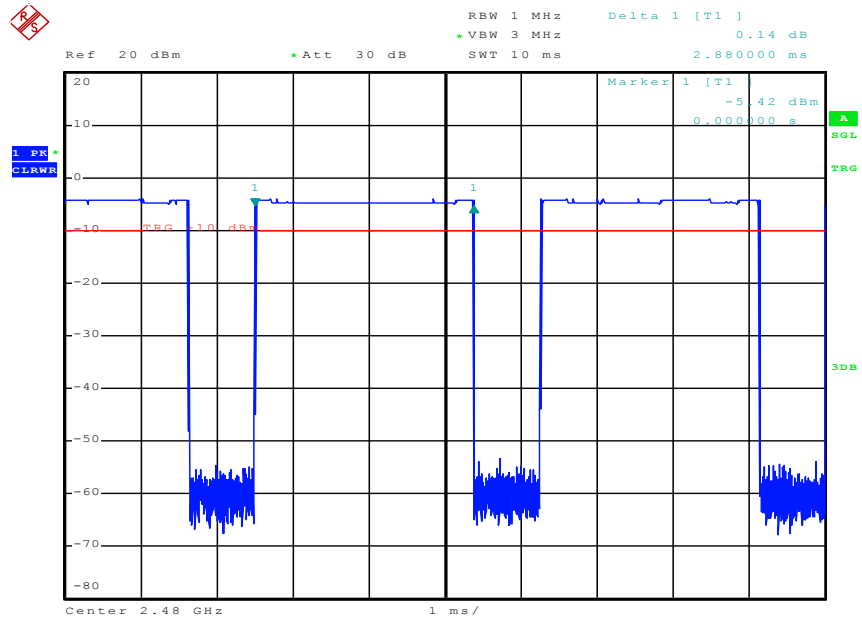


GFSK_DH5/MCH



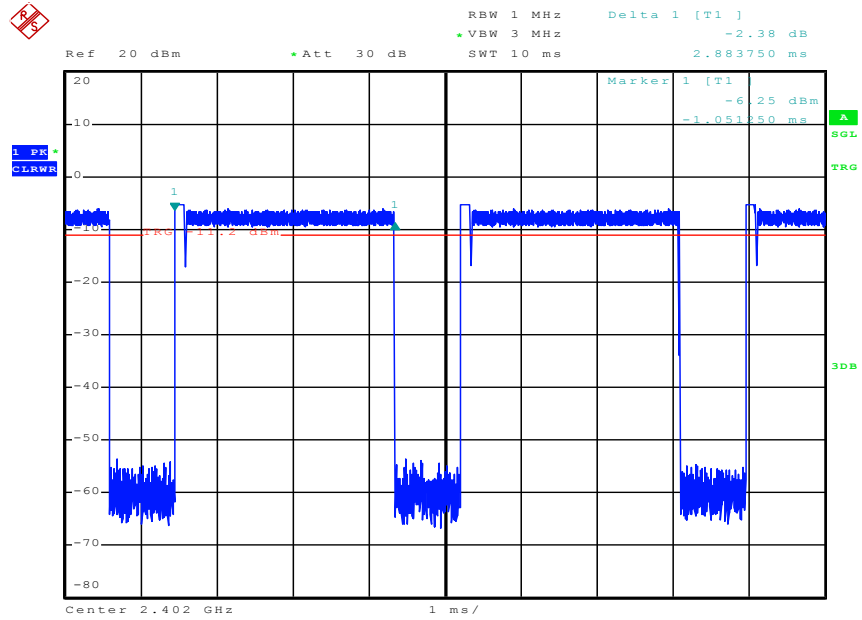
Date: 3.SEP.2019 11:25:48

GFSK_DH5/HCH



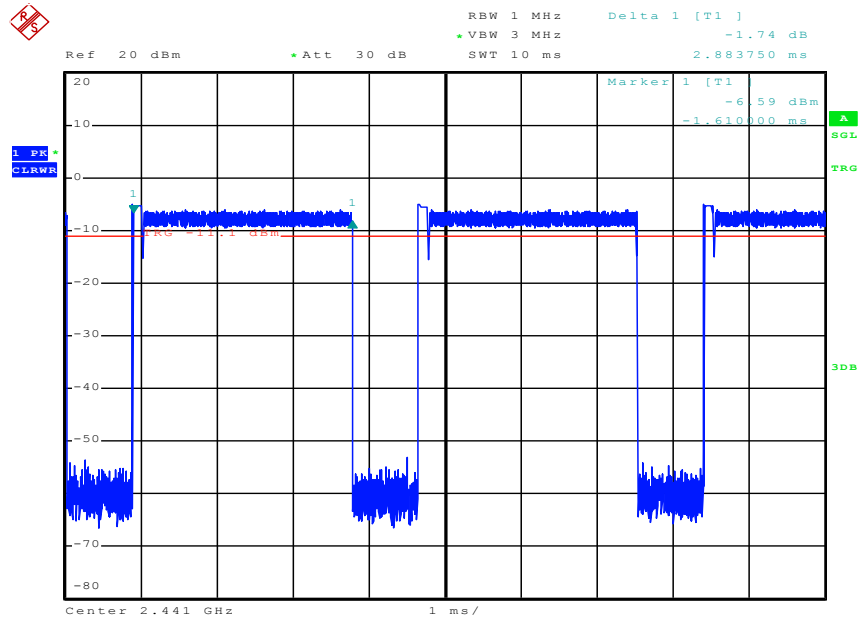
Date: 3.SEP.2019 11:28:03

$\pi/4$ DQPSK
_2DH5/LCH



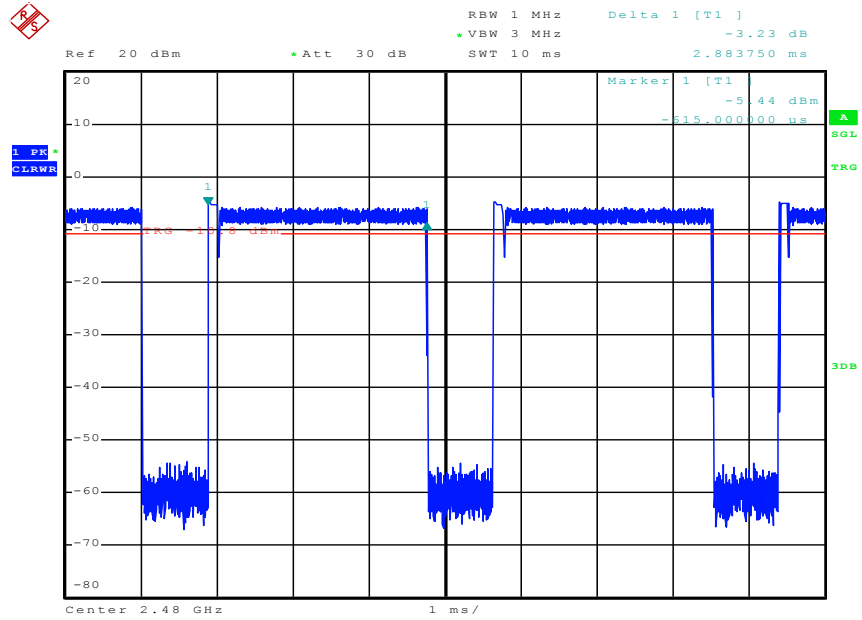
Date: 3_SEP_2019 11:30:39

$\pi/4$ DQPSK
_2DH5/MCH



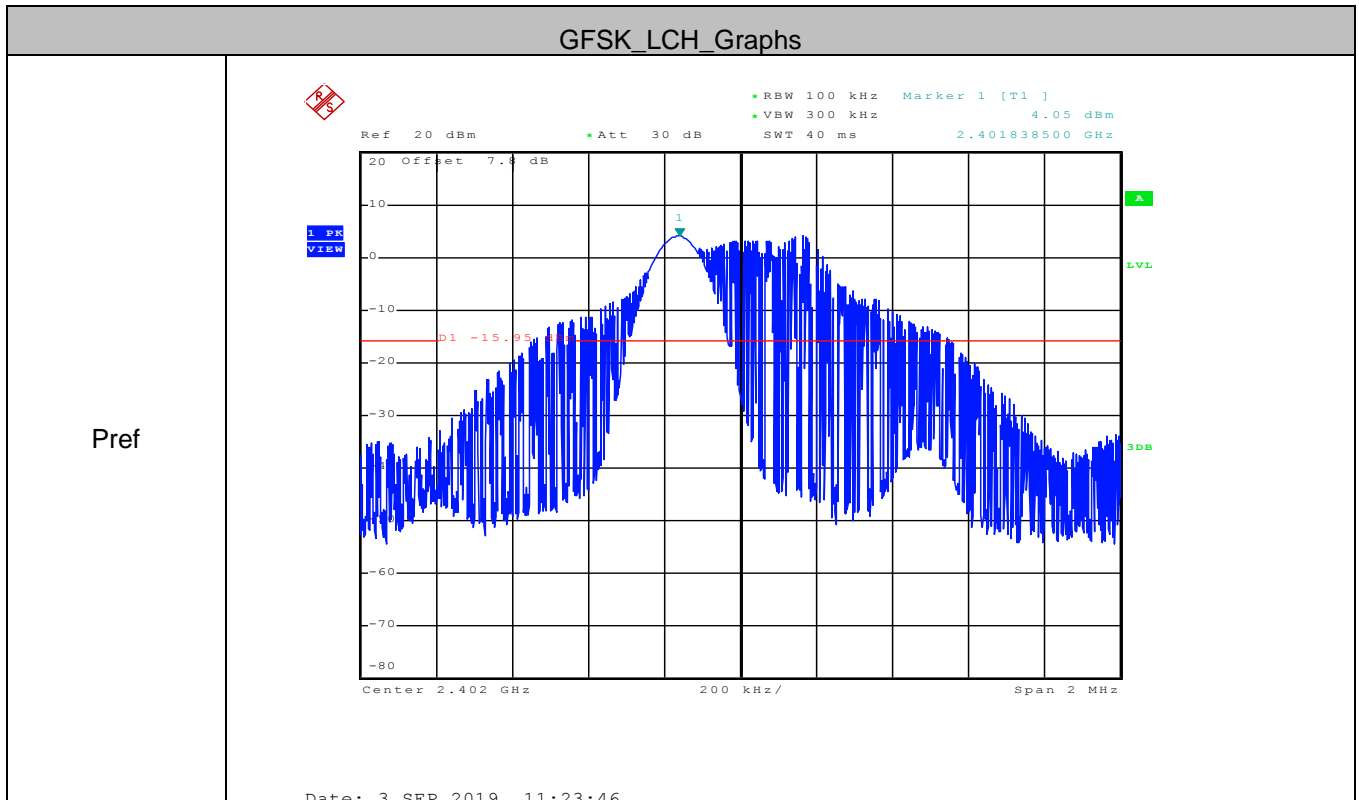
Date: 3_SEP_2019 11:33:13

$\pi/4$ DQPSK
_2DH5/HCH

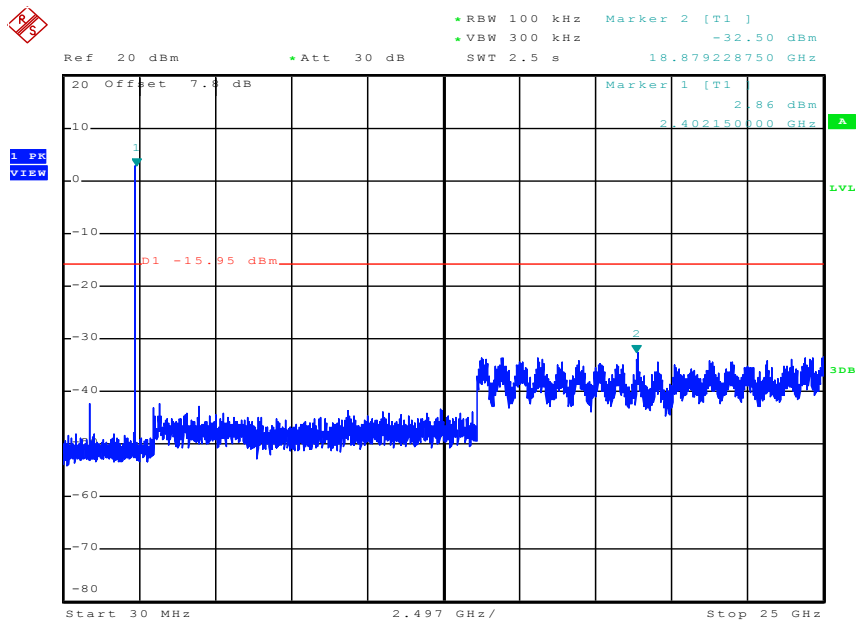


A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.05	-32.500	-15.950	PASS
	MCH	3.76	-32.240	-16.240	PASS
	HCH	3.98	-31.170	-16.020	PASS
π /4DQPSK	LCH	3.05	-32.980	-16.950	PASS
	MCH	3.16	-32.200	-16.840	PASS
	HCH	3.45	-33.020	-16.550	PASS



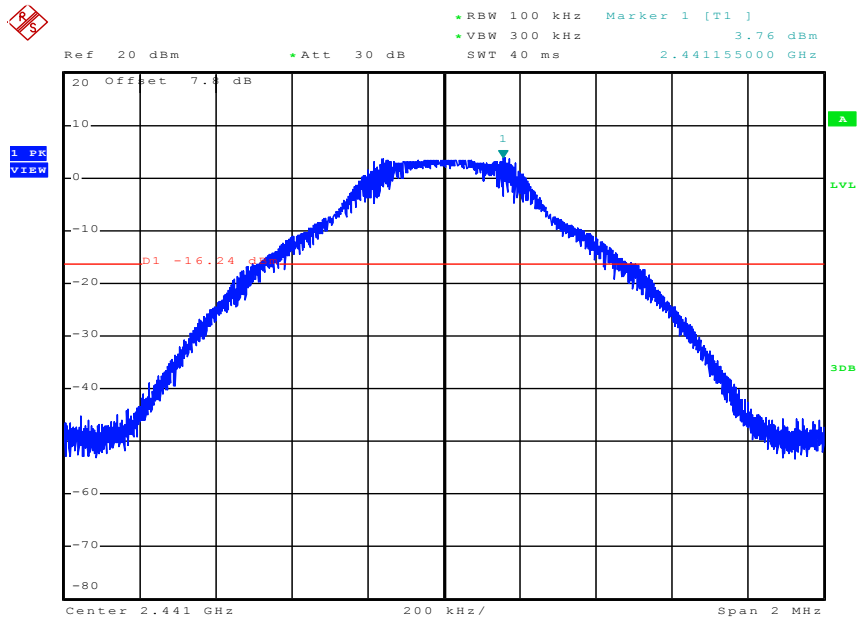
P_{uw}



Date: 3_SEP_2019 11:24:15

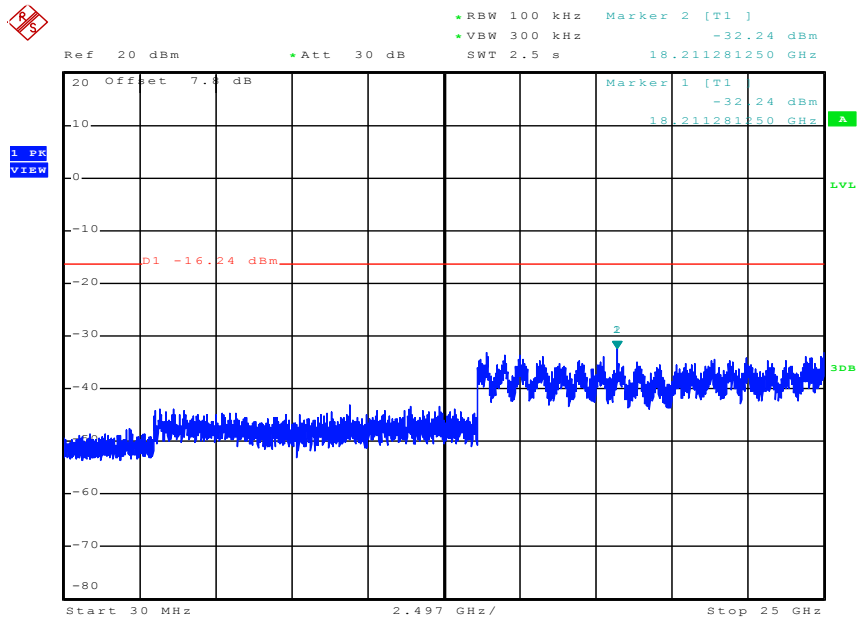
GFSK_MCH_Graphs

Pref



Date: 3 SEP 2019 11:26:15

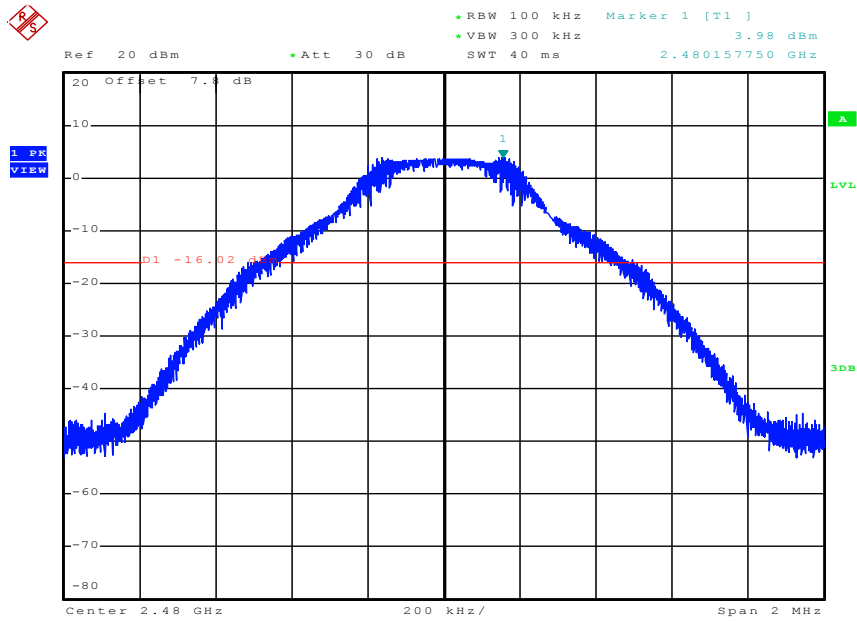
Puw



Date: 3 SEP 2019 11:26:30

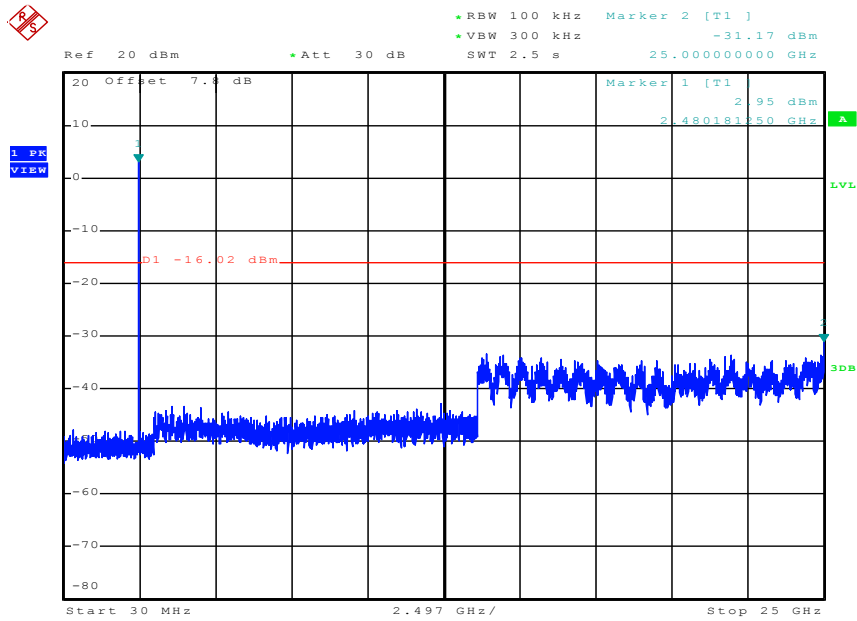
GFSK_HCH_Graphs

Pref



Date: 3 SEP 2019 11:28:47

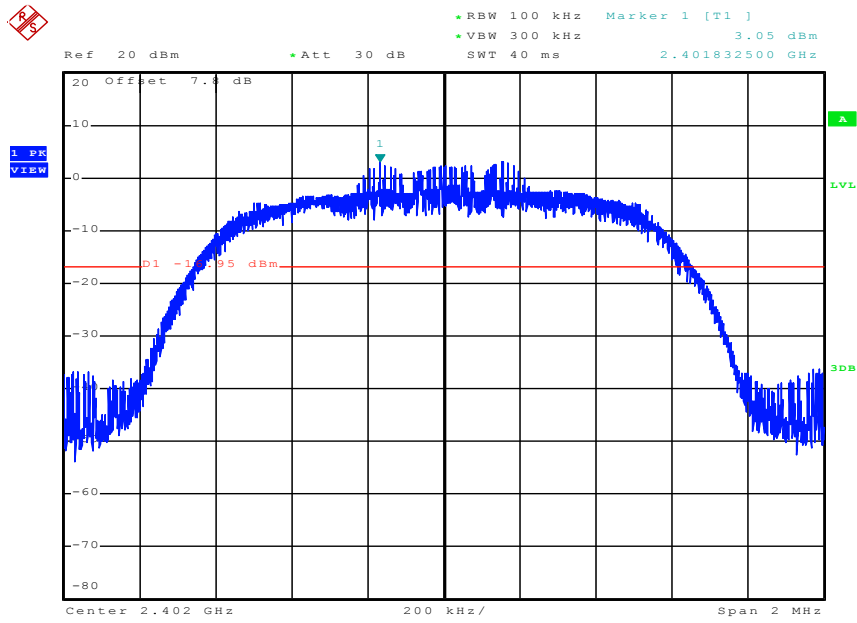
Puw



Date: 3 SEP 2019 11:29:02

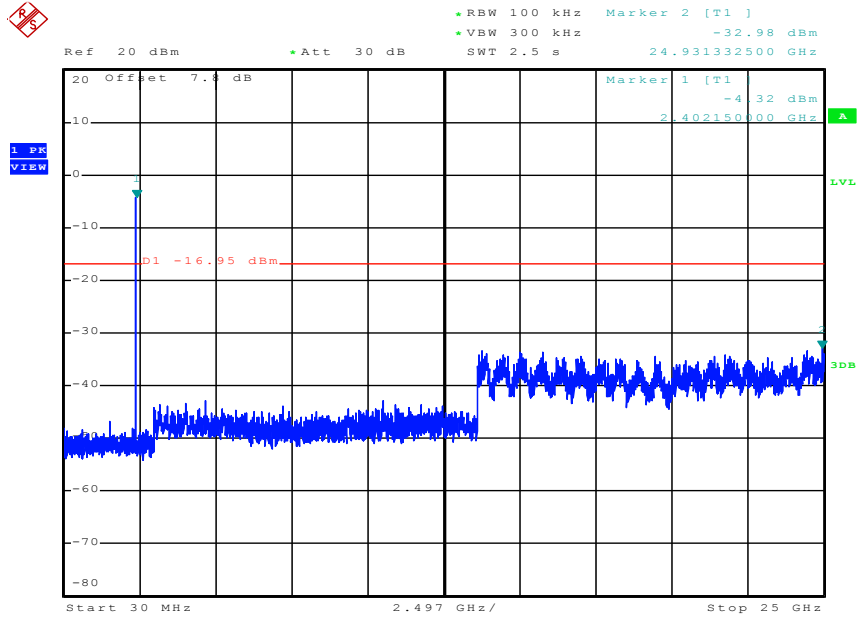
$\pi/4$ DQPSK_LCH_Graphs

Pref



Date: 3 SEP 2019 11:31:23

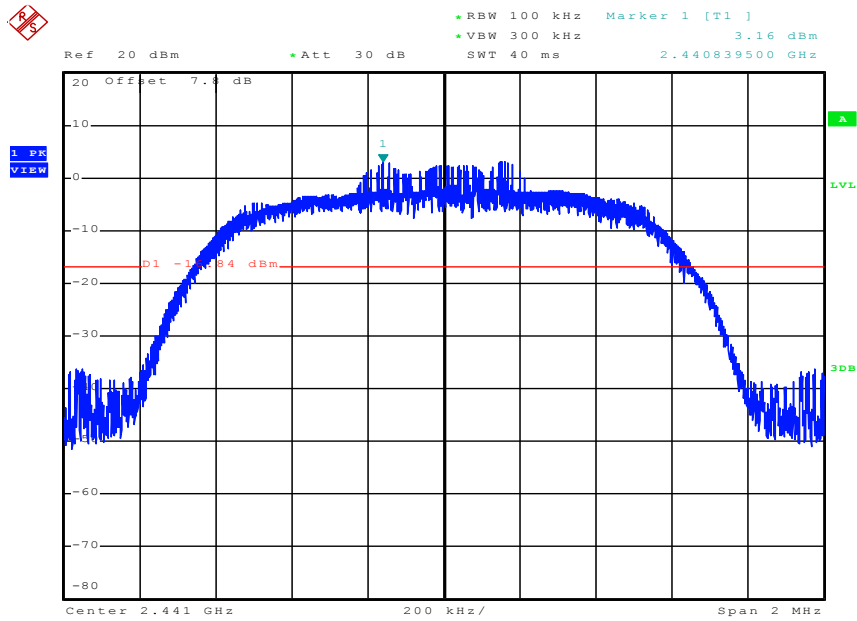
Puw



Date: 3 SEP 2019 11:31:38

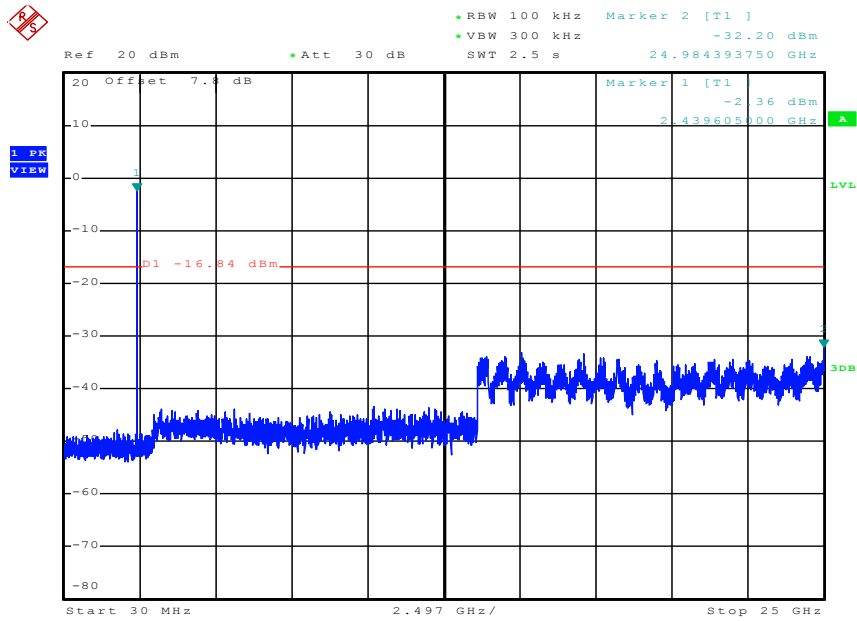
$\pi/4$ DQPSK_MCH_Graphs

Pref



Date: 3 SEP 2019 11:33:41

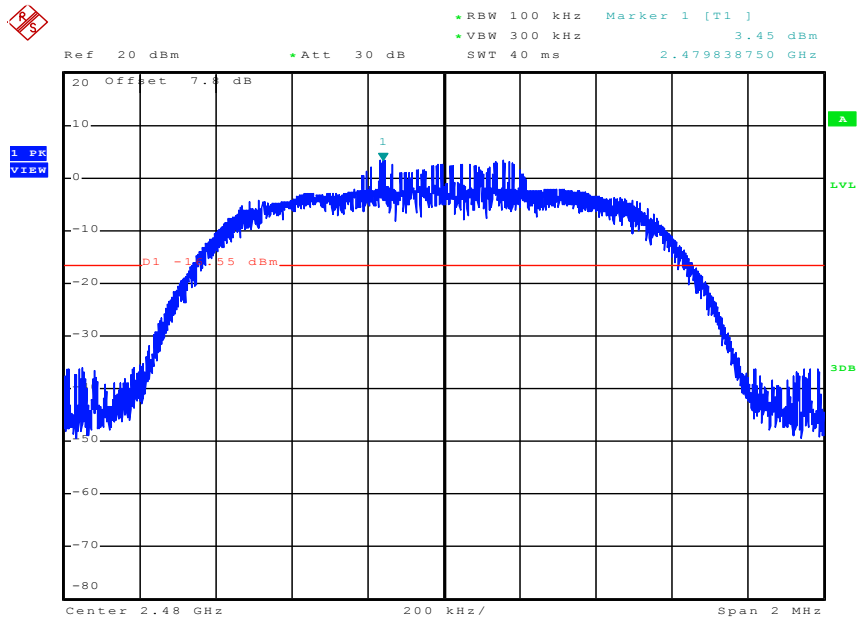
Puw



Date: 3 SEP 2019 11:33:55

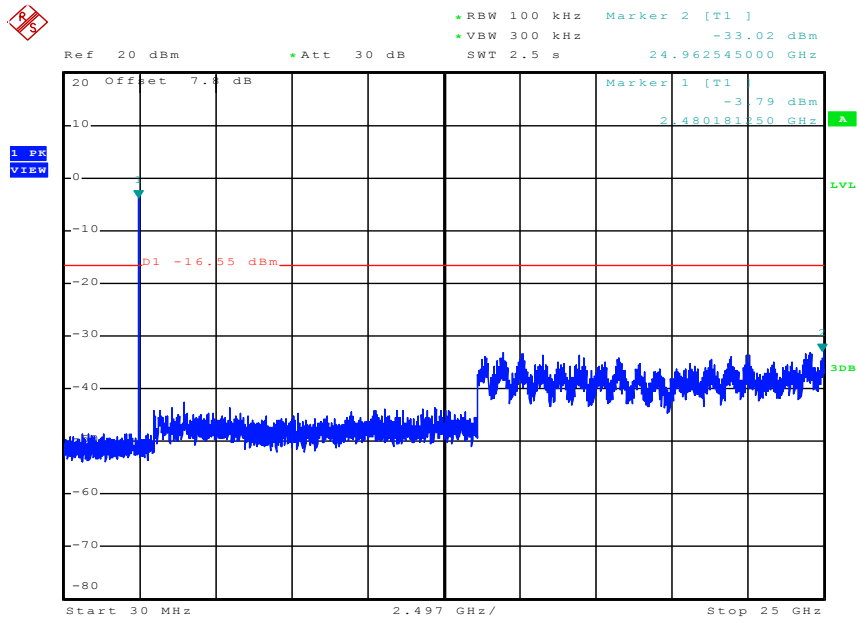
$\pi/4$ DQPSK_HCH_Graphs

Pref



Date: 3 SEP 2019 11:35:38

Puw



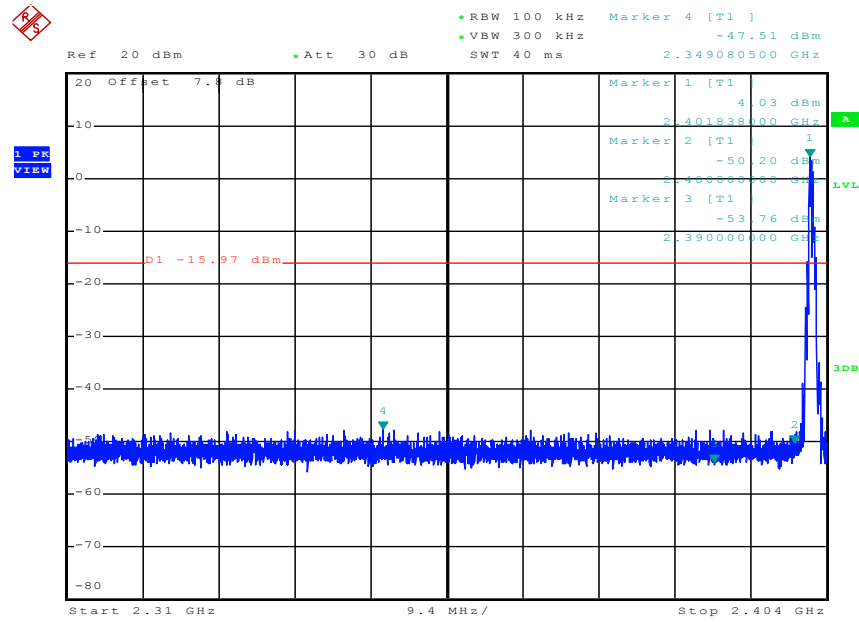
Date: 3 SEP 2019 11:35:53

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	4.030	Off	-47.507	-15.97	PASS
			3.810	On	-46.825	-16.19	PASS
	HCH	2480	3.700	Off	-47.824	-16.3	PASS
			3.570	On	-46.561	-16.43	PASS
π /4DQPSK	LCH	2402	2.380	Off	-47.738	-17.62	PASS
			2.620	On	-46.692	-17.38	PASS
	HCH	2480	2.670	Off	-47.569	-17.33	PASS
			2.990	On	-46.724	-17.01	PASS

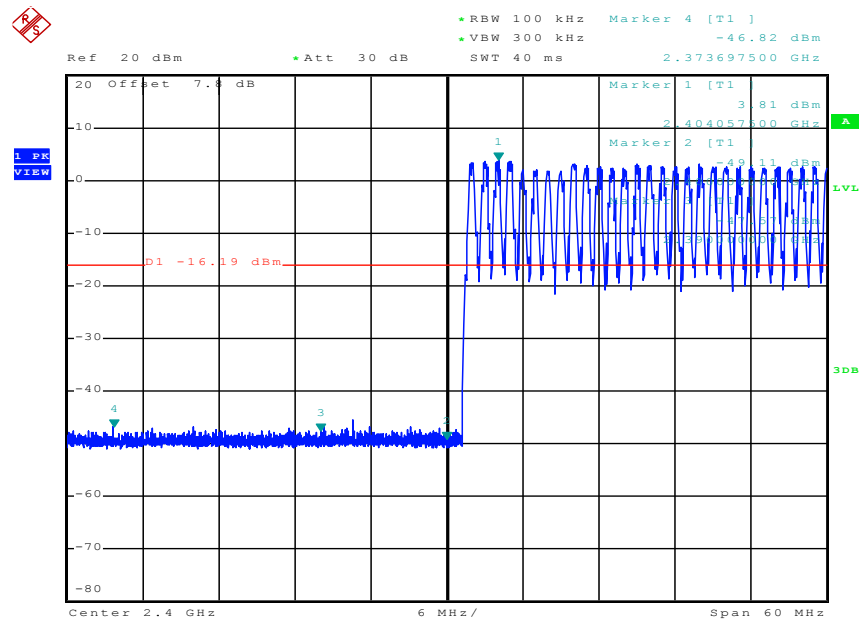
Test Graphs

GFSK/LCH/No Hop



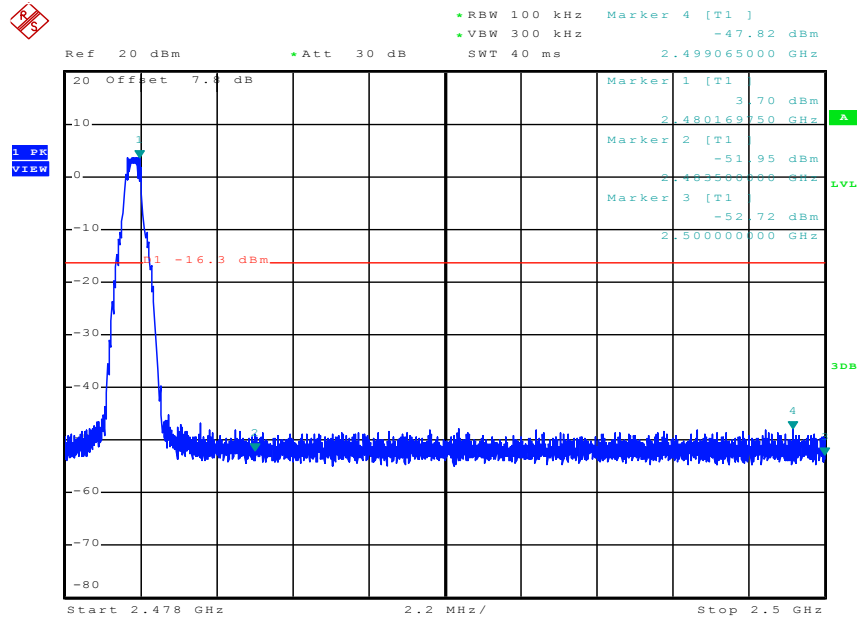
Date: 3 SEP 2019 11:23:33

GFSK/LCH/Hop

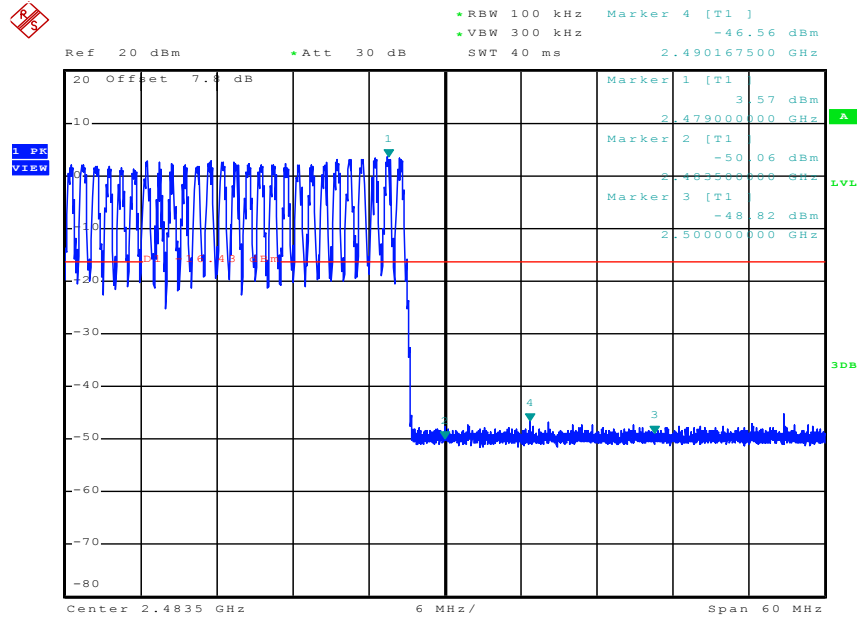


Date: 3 SEP 2019 14:04:12

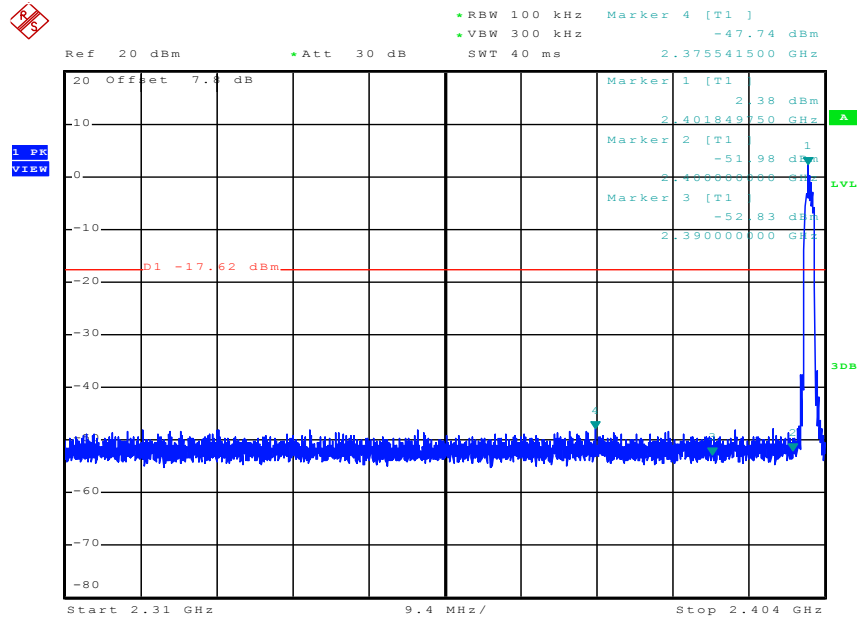
GFSK/HCH/No Hop



GFSK/HCH/Hop

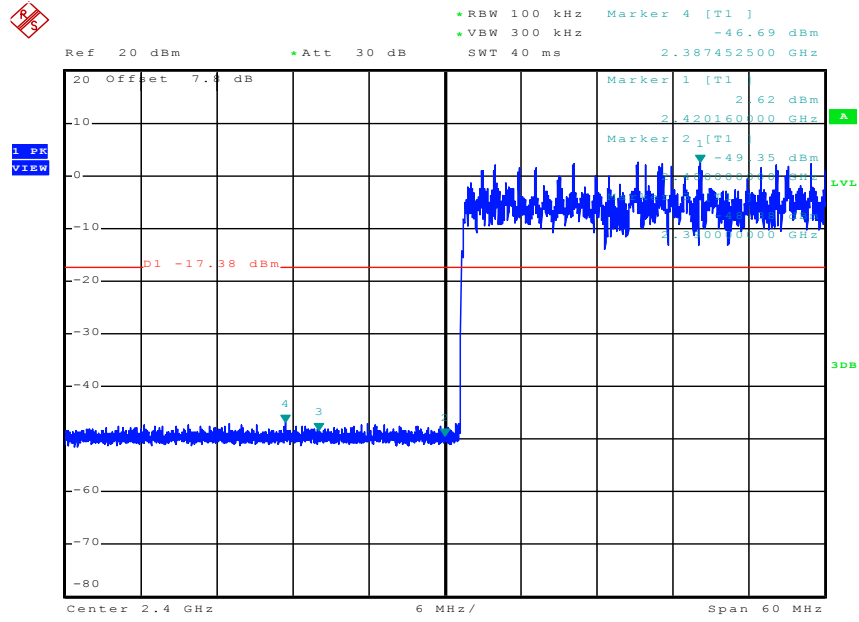


$\pi/4$ DQPSK/LCH/No Hop



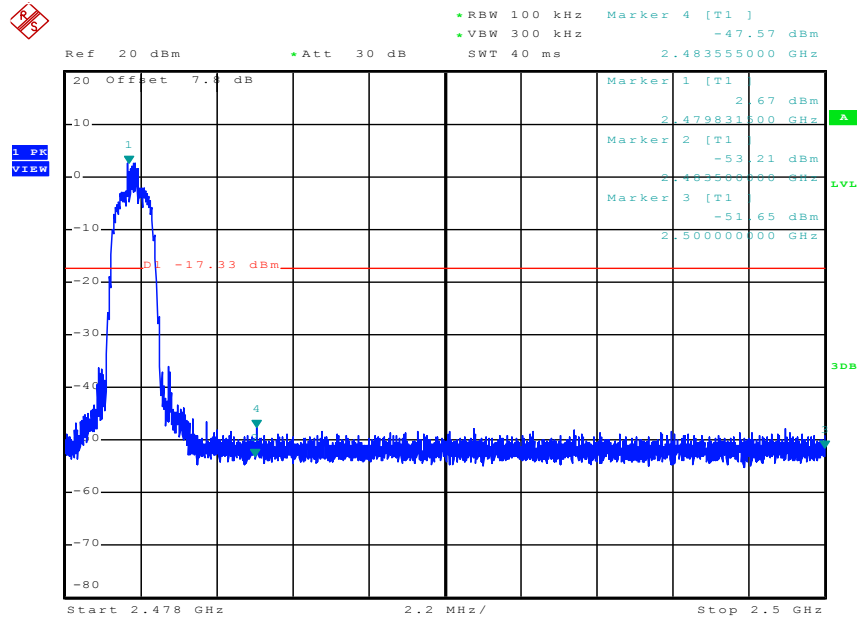
Date: 3.SEP.2019 11:31:10

$\pi/4$ DQPSK/LCH/Hop



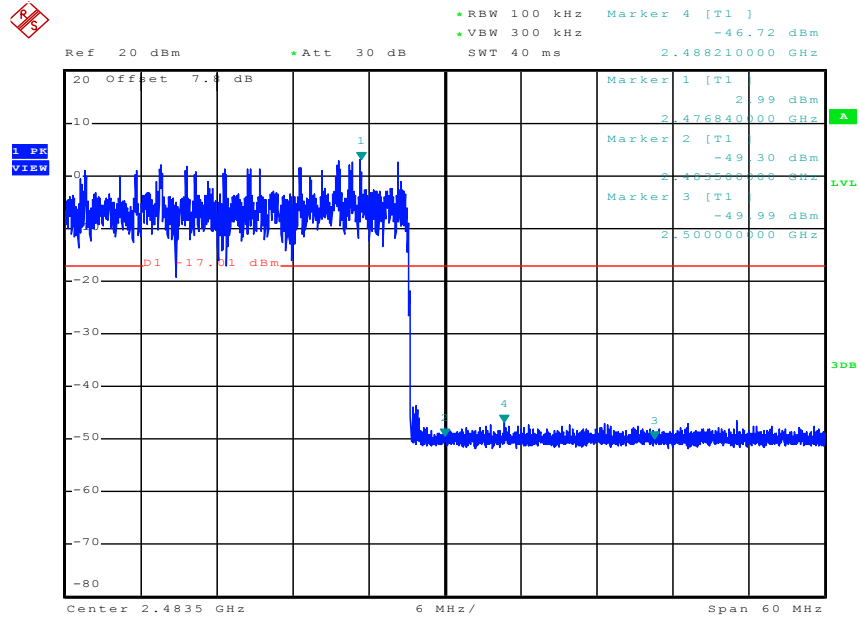
Date: 3.SEP.2019 13:53:43

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



Date: 3 SEP 2019 11:35:26

$\pi/4$ DQPSK/HCH/Hop

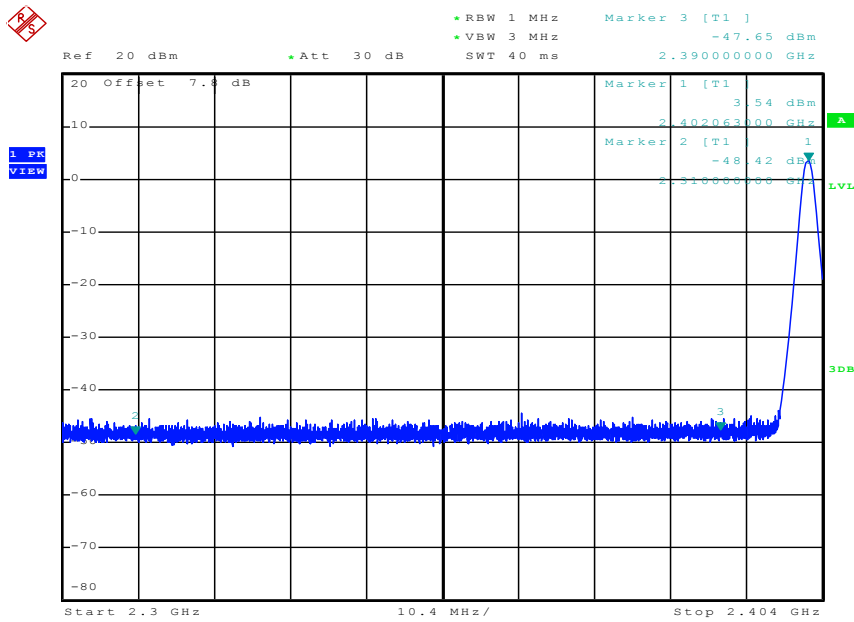


Date: 3 SEP 2019 13:57:01

A.8 Restrict-band band-edge measurements

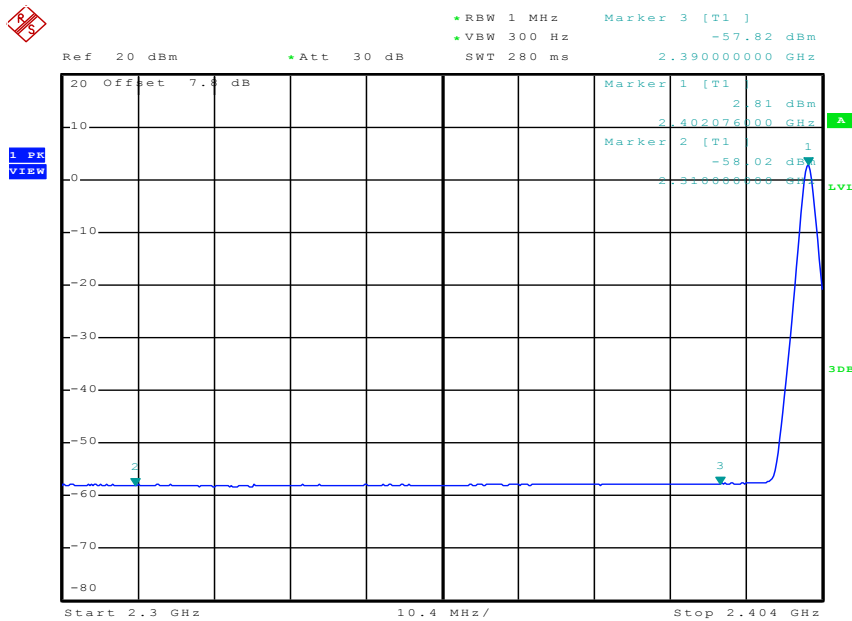
Test Mode	Hopping	Freq.	Power [dBm]	Gain	Ground Factor	E [dBuV/m]	Detector	Limit [dBuV/m]	Verdict
GFSK	Off	2310.0	-48.42	2.0	0	48.84	PEAK	74	PASS
	Off	2310.0	-58.02	2.0	0	39.24	AV	54	PASS
	Off	2390.0	-47.65	2.0	0	49.61	PEAK	74	PASS
	Off	2390.0	-57.82	2.0	0	39.44	AV	54	PASS
	Off	2483.5	-42.27	2.0	0	54.99	PEAK	74	PASS
	Off	2483.5	-44.73	2.0	0	52.53	AV	54	PASS
	Off	2500.0	-48.38	2.0	0	48.88	PEAK	74	PASS
	Off	2500.0	-58.43	2.0	0	38.83	AV	54	PASS
$\pi/4$ DQPSK	Off	2310.0	-49.41	2.0	0	47.85	PEAK	74	PASS
	Off	2310.0	-58.01	2.0	0	39.25	AV	54	PASS
	Off	2390.0	-49.21	2.0	0	48.05	PEAK	74	PASS
	Off	2390.0	-57.75	2.0	0	39.51	AV	54	PASS
	Off	2483.5	-41.03	2.0	0	56.23	PEAK	74	PASS
	Off	2483.5	-43.54	2.0	0	53.72	AV	54	PASS
	Off	2500.0	-48.80	2.0	0	48.46	PEAK	74	PASS
	Off	2500.0	-58.42	2.0	0	38.84	AV	54	PASS

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



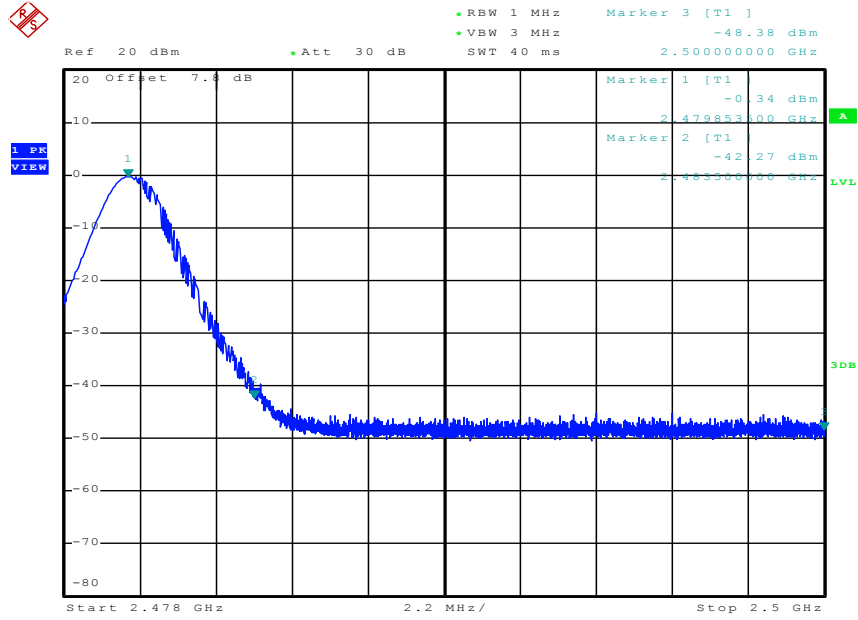
Date: 3.SEP.2019 11:24:34

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



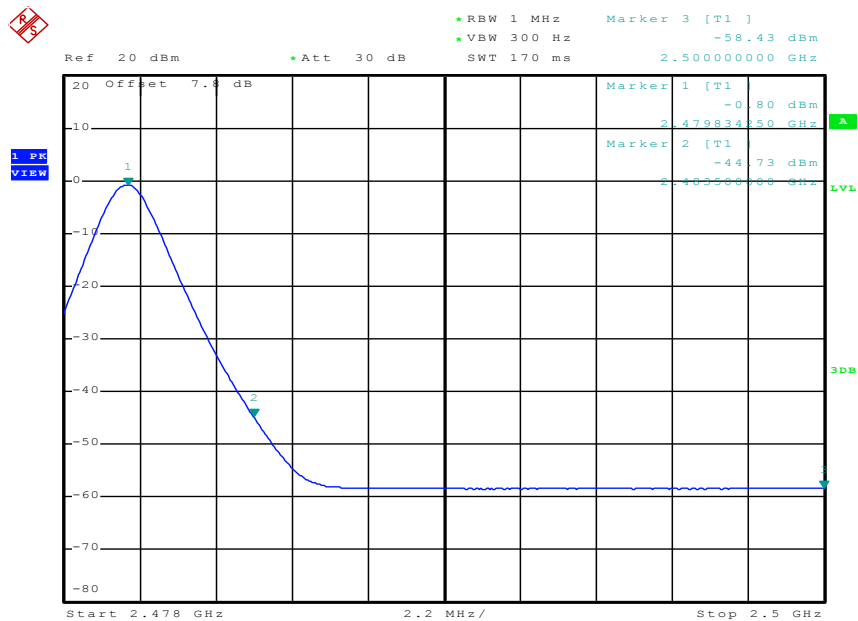
Date: 3.SEP.2019 11:24:47

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



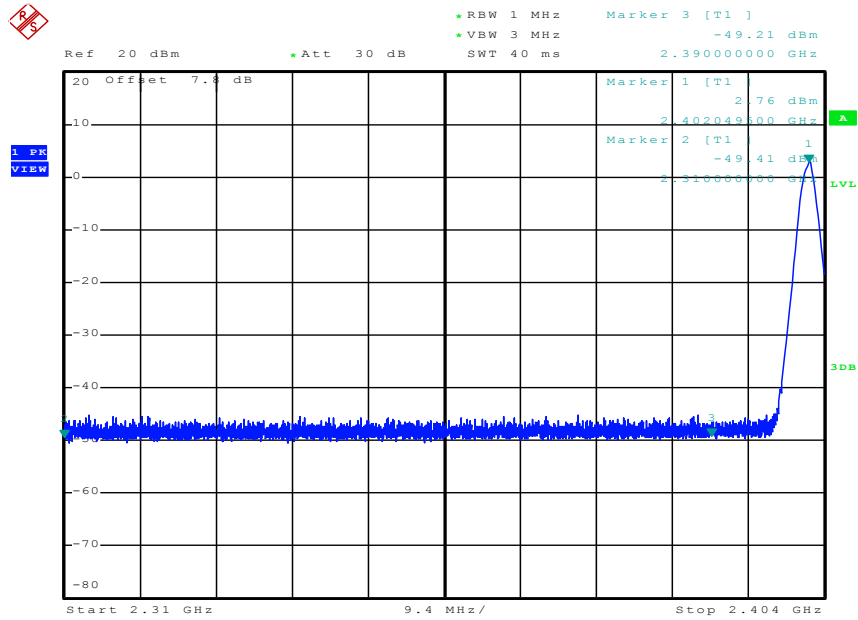
Date: 3.SEP.2019 14:59:20

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



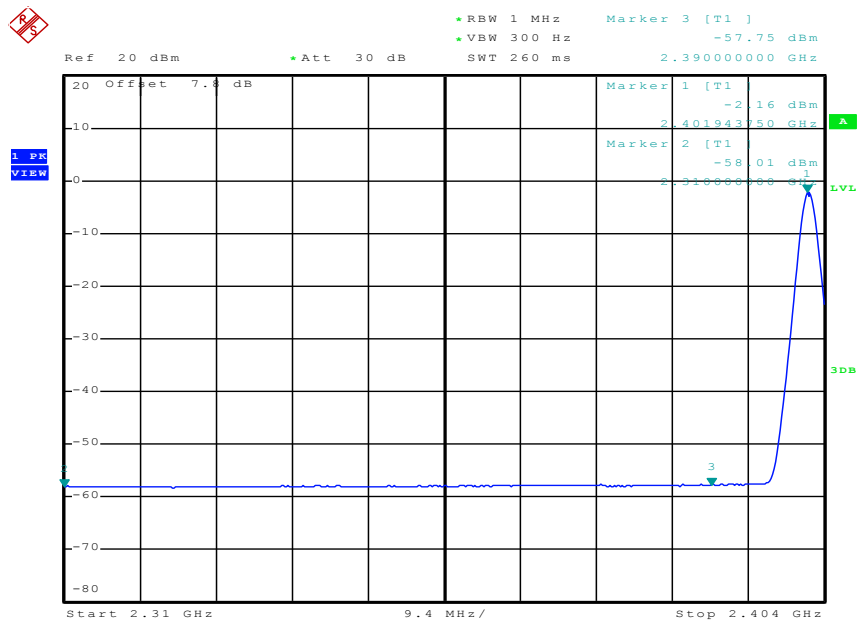
Date: 3.SEP.2019 14:59:33

Restrict-band band-edge measurements_Hopping Off_pi/4-DQPSK_PEAK (Low Channel)



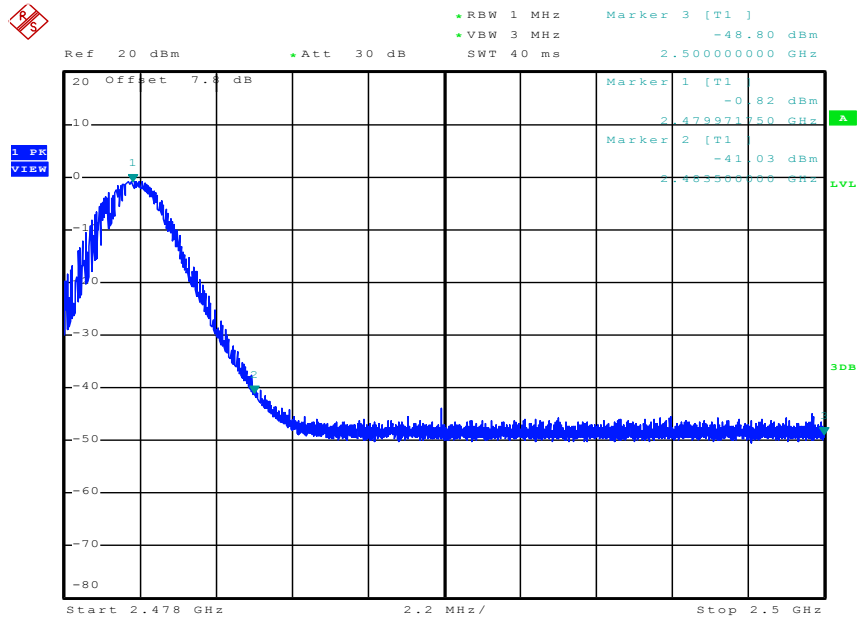
Date: 3.SEP.2019 11:31:57

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



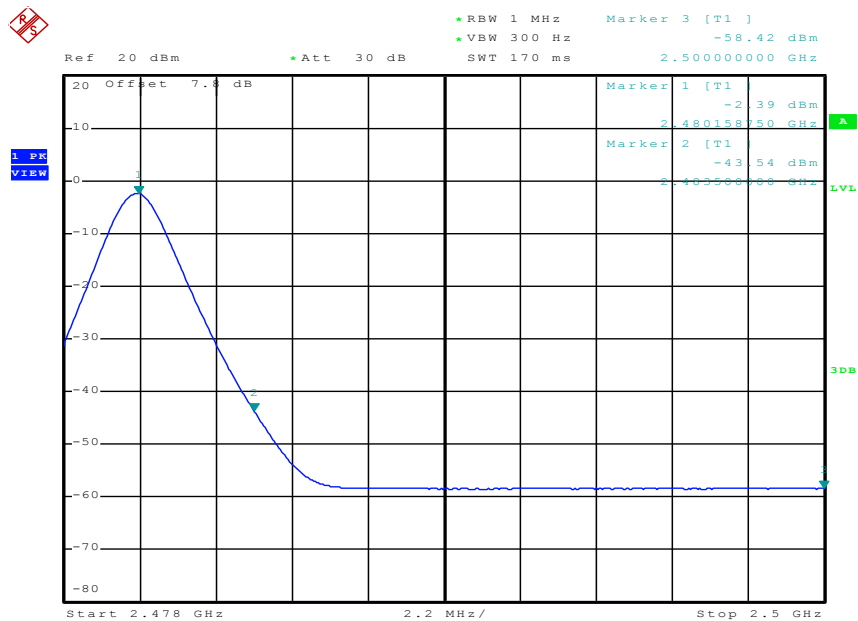
Date: 3.SEP.2019 11:32:10

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



Date: 3.SEP.2019 15:00:19

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



Date: 3.SEP.2019 15:00:32