

Appendix A

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

Product Name: Mobile Phone

Trade Mark: Uoshou

Test Model: F28A

FCC ID: 2ATE7-F28A

Environmental Conditions

Temperature:	23.7° C
Relative Humidity:	50%
ATM Pressure:	100.0 kPa
Test Engineer:	Gary Qian
Supervised by:	Eden Hu

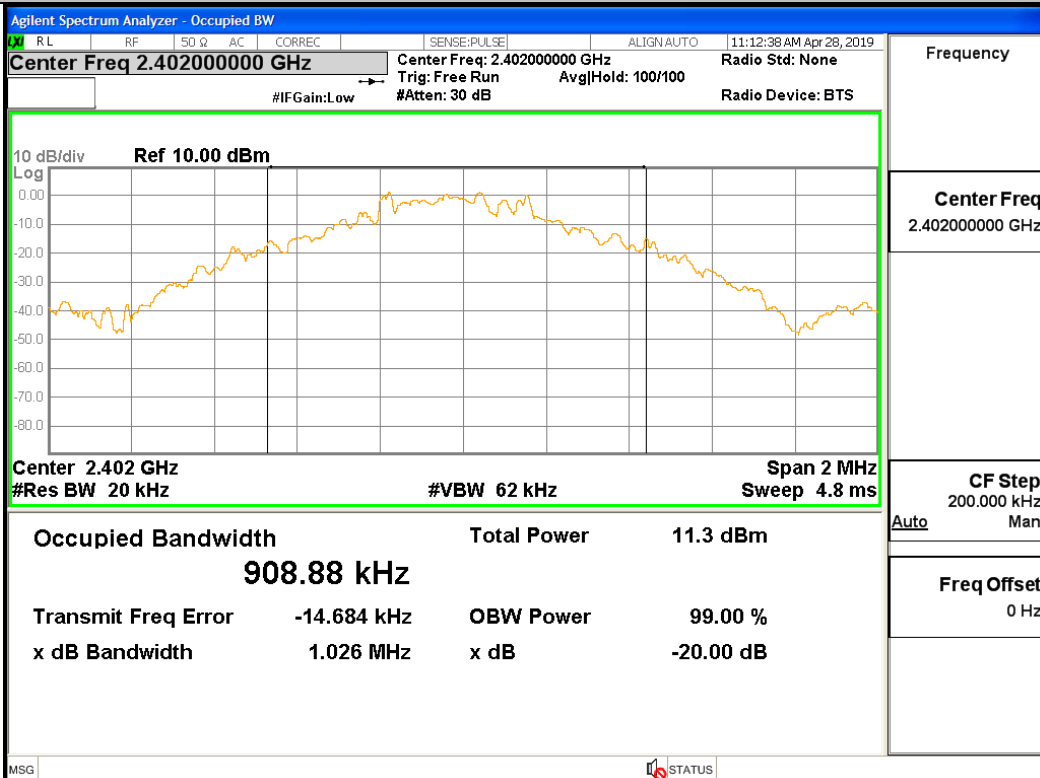
A.1 20 dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit(MHz)	Verdict
GFSK	LCH	1.026	Not Specified	PASS
GFSK	MCH	0.948	Not Specified	PASS
GFSK	HCH	0.947	Not Specified	PASS
$\pi/4$ DQPSK	LCH	1.320	Not Specified	PASS
$\pi/4$ DQPSK	MCH	1.317	Not Specified	PASS
$\pi/4$ DQPSK	HCH	1.317	Not Specified	PASS
8DPSK	LCH	1.311	Not Specified	PASS
8DPSK	MCH	1.312	Not Specified	PASS
8DPSK	HCH	1.277	Not Specified	PASS

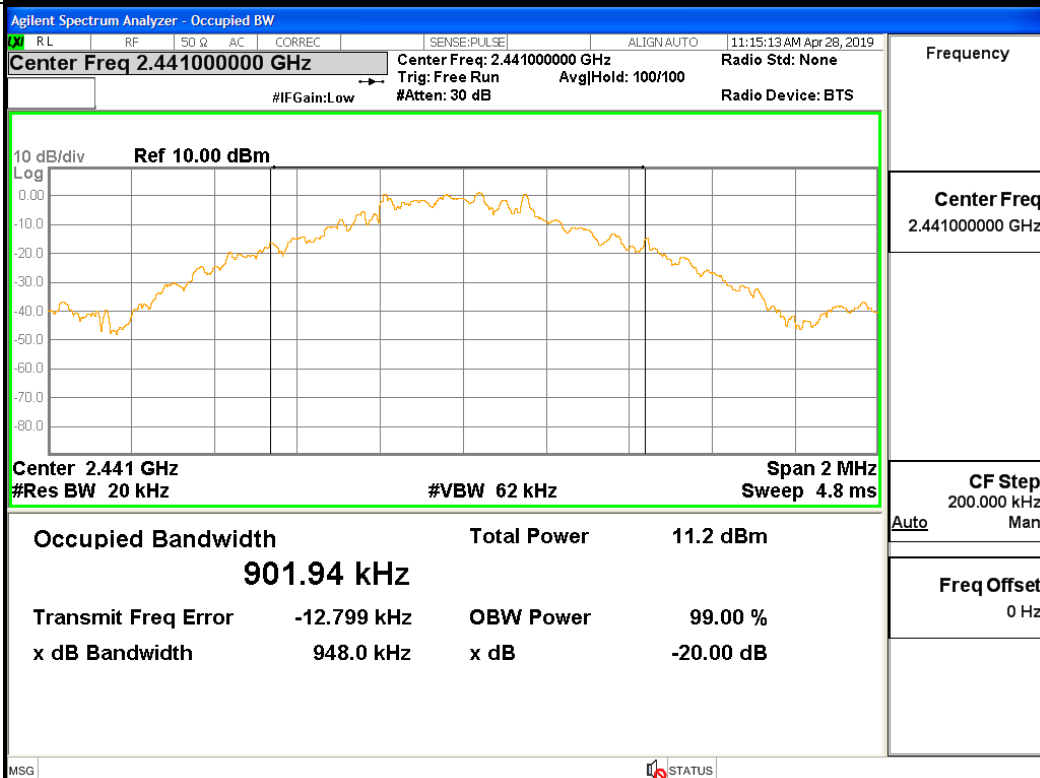
Test Graph

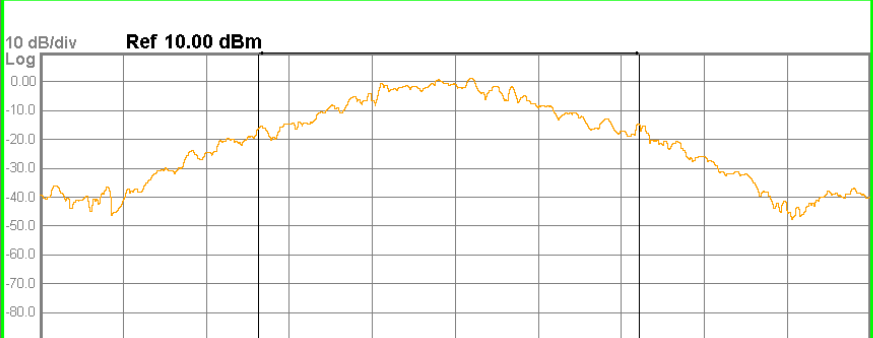
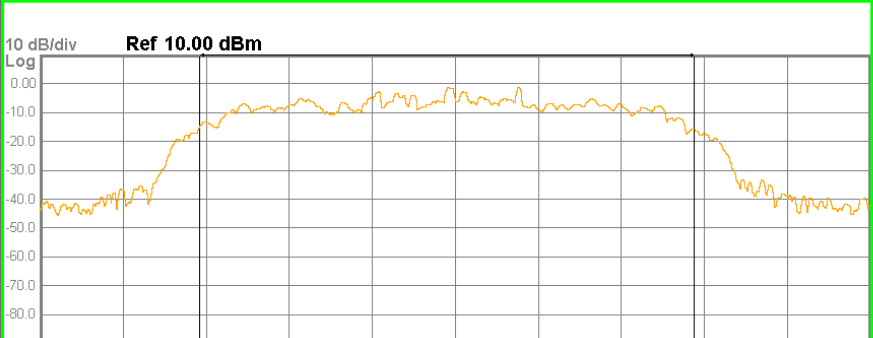
Graphs

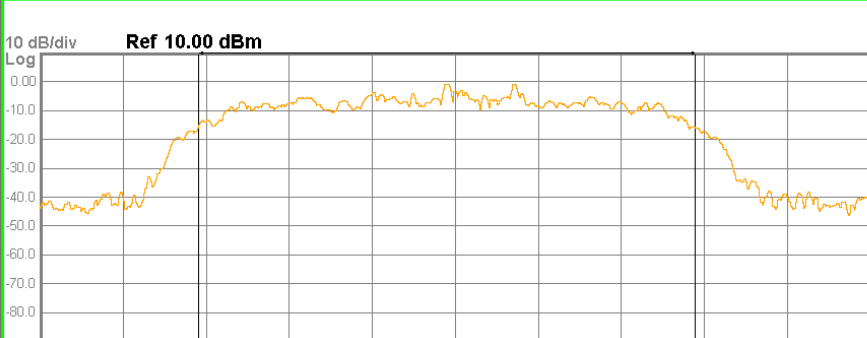
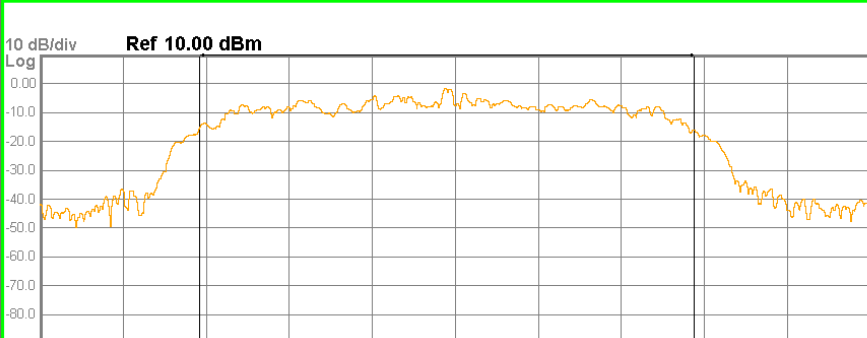
GFSK/LCH

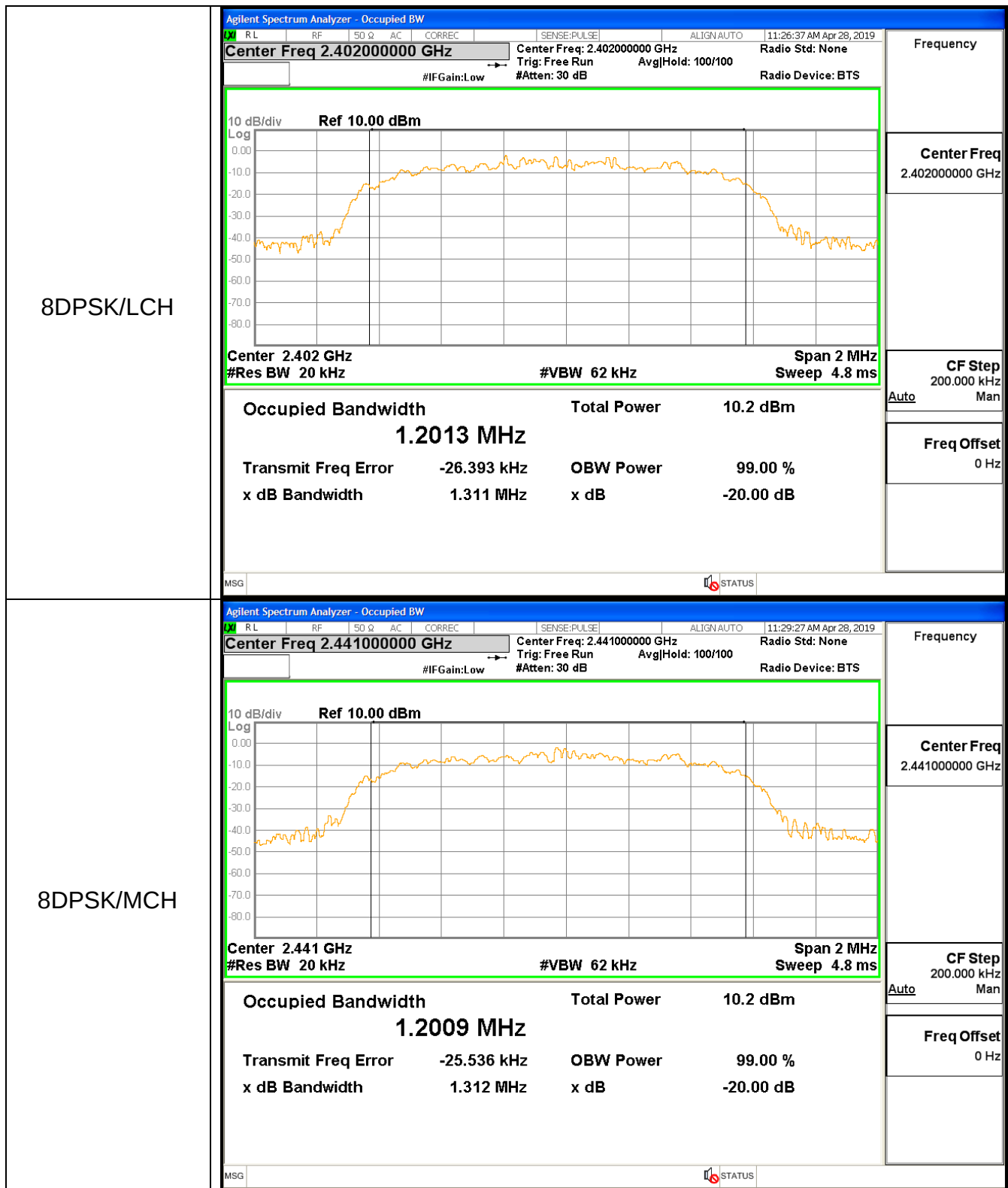


GFSK/MCH

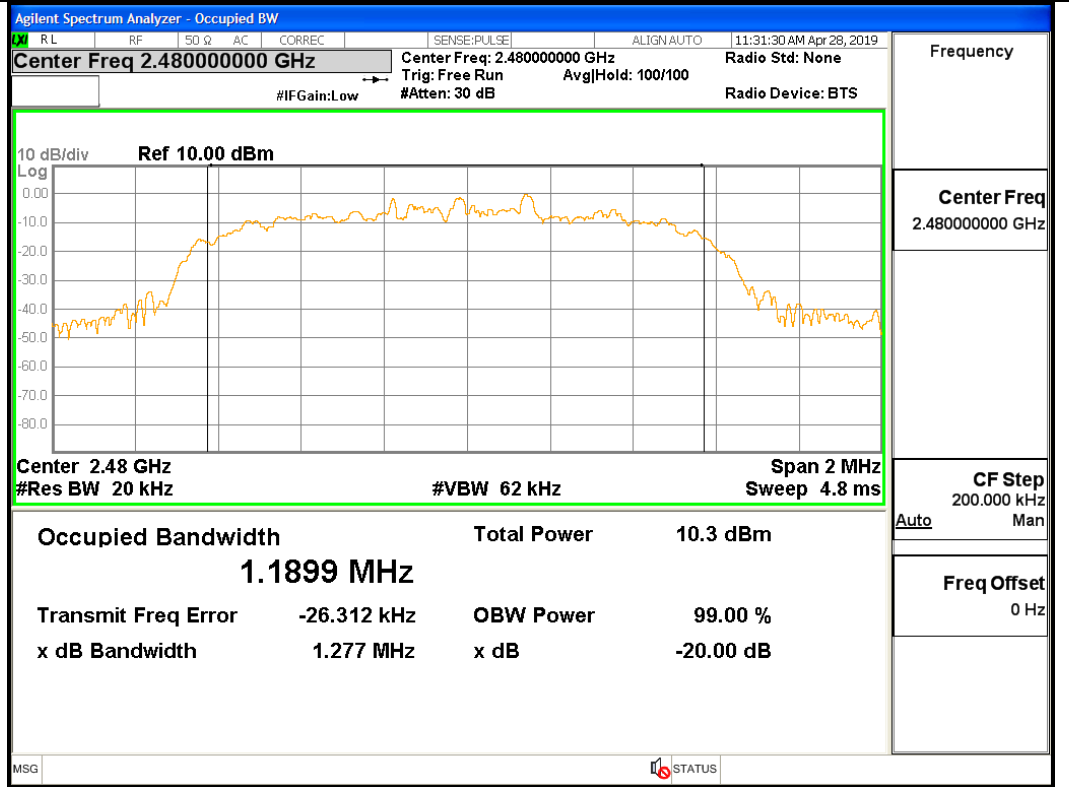


GFSK/HCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC CORREC SENSE:PULSE ALIGN:AUTO 11:16:40 AM Apr 28, 2019 Center Freq 2.480000000 GHz Center Freq: 2.480000000 GHz Trig: Free Run Avg Hold: 100/100 Radio Std: None #IFGain:Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref 10.00 dBm  Center 2.48 GHz #Res BW 20 kHz #VBW 62 kHz Span 2 MHz Sweep 4.8 ms Occupied Bandwidth 914.98 kHz Total Power 11.2 dBm Transmit Freq Error -13.839 kHz OBW Power 99.00 % x dB Bandwidth 947.3 kHz x dB -20.00 dB MSG STATUS
π/4DQPSK/LCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC CORREC SENSE:PULSE ALIGN:AUTO 11:19:26 AM Apr 28, 2019 Center Freq 2.402000000 GHz Center Freq: 2.402000000 GHz Trig: Free Run Avg Hold: 100/100 Radio Std: None #IFGain:Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref 10.00 dBm  Center 2.402 GHz #Res BW 20 kHz #VBW 62 kHz Span 2 MHz Sweep 4.8 ms Occupied Bandwidth 1.1884 MHz Total Power 10.4 dBm Transmit Freq Error -18.919 kHz OBW Power 99.00 % x dB Bandwidth 1.320 MHz x dB -20.00 dB MSG STATUS

π/4DQPSK/MCH	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC CORREC SENSE:PULSE ALIGN: AUTO 11:21:53 AM Apr 28, 2019 Center Freq 2.441000000 GHz Center Freq: 2.441000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None #IFGain: Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref 10.00 dBm  Center 2.441 GHz #Res BW 20 kHz #VBW 62 kHz Span 2 MHz Sweep 4.8 ms Occupied Bandwidth 1.1887 MHz Total Power 10.4 dBm Transmit Freq Error -18.542 kHz OBW Power 99.00 % x dB Bandwidth 1.317 MHz x dB -20.00 dB MSG STATUS	Frequency Center Freq 2.441000000 GHz CF Step 200.000 kHz Auto Freq Offset 0 Hz
	Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC CORREC SENSE:PULSE ALIGN: AUTO 11:24:00 AM Apr 28, 2019 Center Freq 2.480000000 GHz Center Freq: 2.480000000 GHz Trig: Free Run Avg/Hold: 100/100 Radio Std: None #IFGain: Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref 10.00 dBm  Center 2.48 GHz #Res BW 20 kHz #VBW 62 kHz Span 2 MHz Sweep 4.8 ms Occupied Bandwidth 1.1886 MHz Total Power 9.83 dBm Transmit Freq Error -19.453 kHz OBW Power 99.00 % x dB Bandwidth 1.317 MHz x dB -20.00 dB MSG STATUS	Frequency Center Freq 2.480000000 GHz CF Step 200.000 kHz Auto Freq Offset 0 Hz



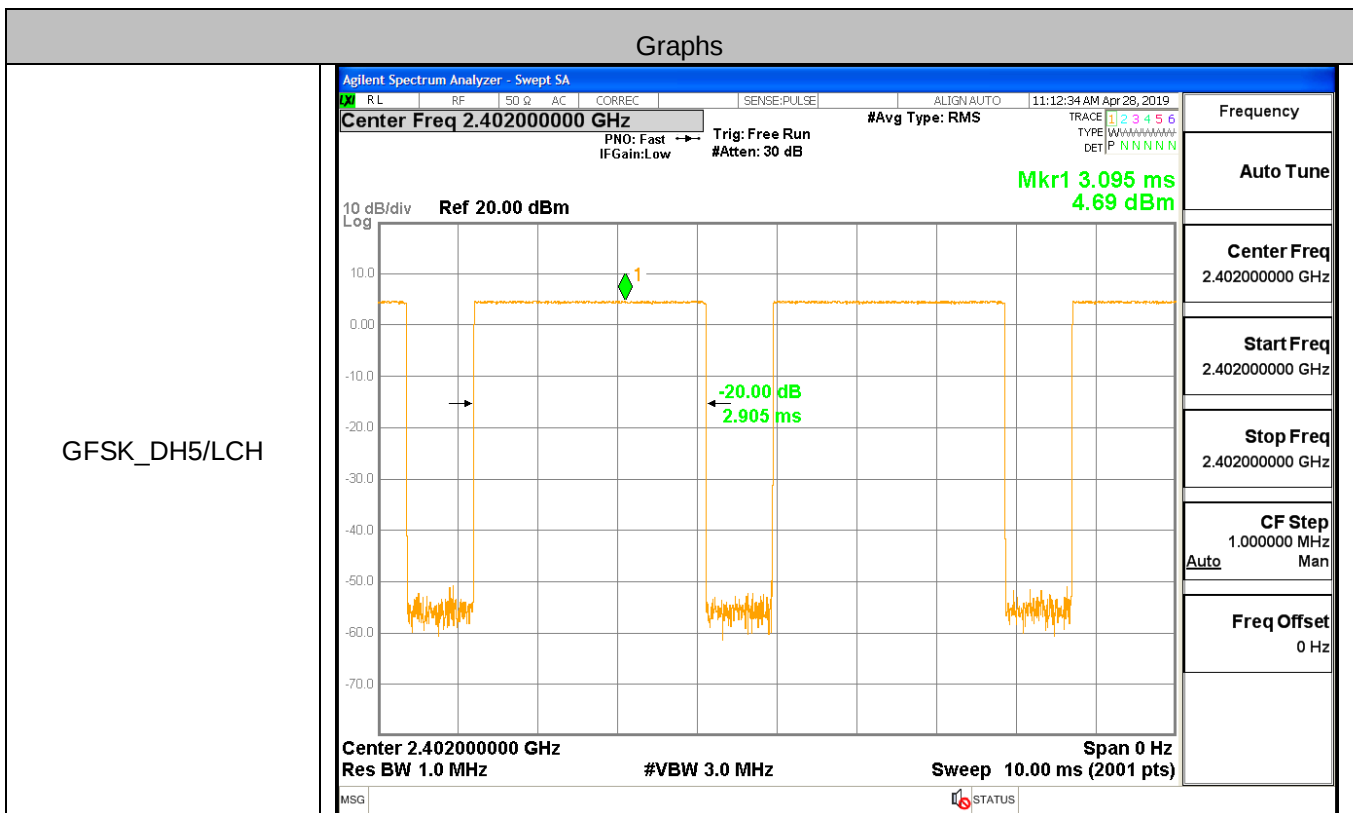
8DPSK/HCH



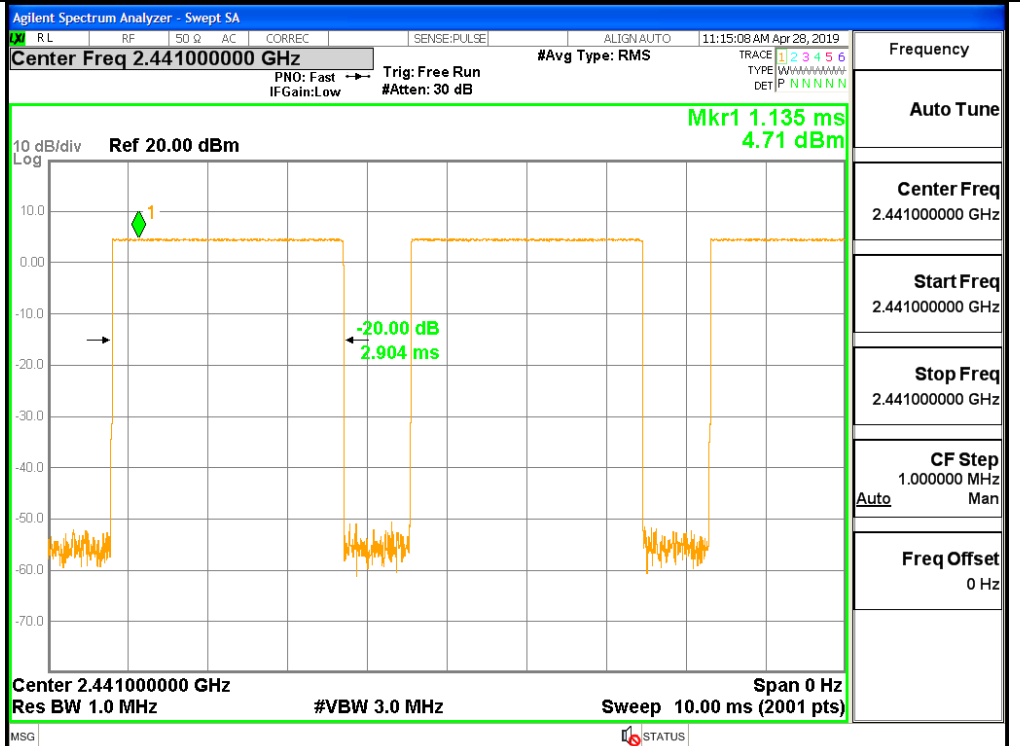
A.2 Dwell Time

Mode	Packet	Channel	Burst Width [s/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	0.002905	106.7	0.309921	0.4	PASS
GFSK	DH5	MCH	0.002904	106.7	0.309871	0.4	PASS
GFSK	DH5	HCH	0.002905	106.7	0.309917	0.4	PASS
$\pi/4$ DQPSK	2DH5	LCH	0.002886	106.7	0.307906	0.4	PASS
$\pi/4$ DQPSK	2DH5	MCH	0.002888	106.7	0.30814	0.4	PASS
$\pi/4$ DQPSK	2DH5	HCH	0.002886	106.7	0.307903	0.4	PASS
8DPSK	3DH5	LCH	0.002885	106.7	0.307836	0.4	PASS
8DPSK	3DH5	MCH	0.002890	106.7	0.308327	0.4	PASS
8DPSK	3DH5	HCH	0.002890	106.7	0.308357	0.4	PASS

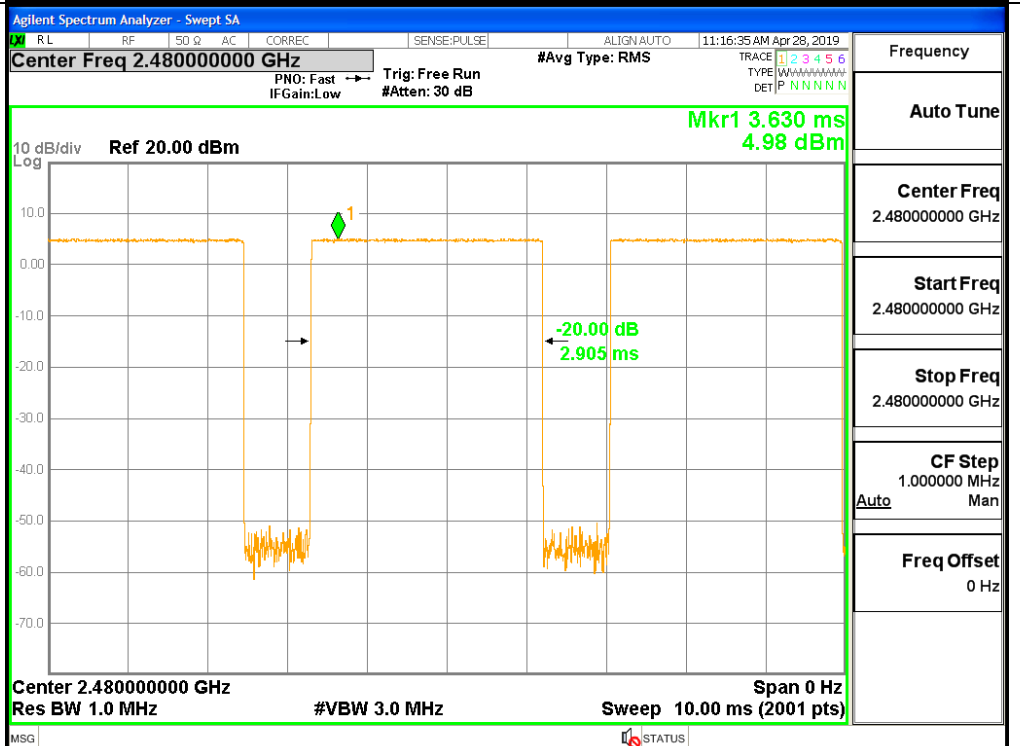
Test Graph



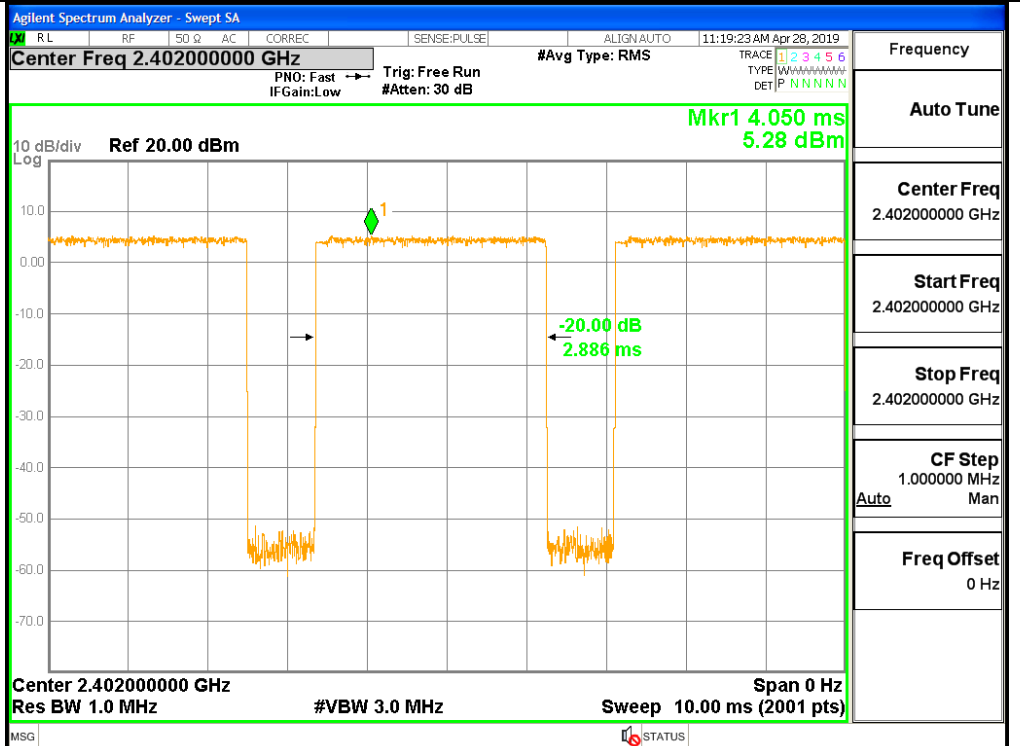
GFSK_DH5/MCH



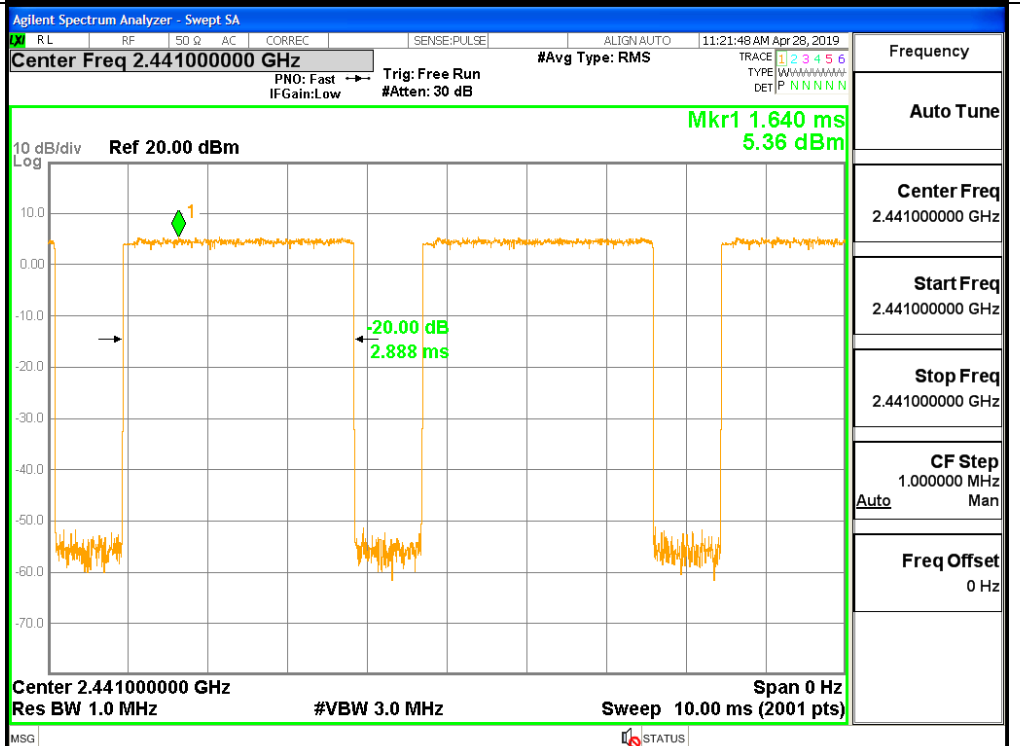
GFSK_DH5/HCH



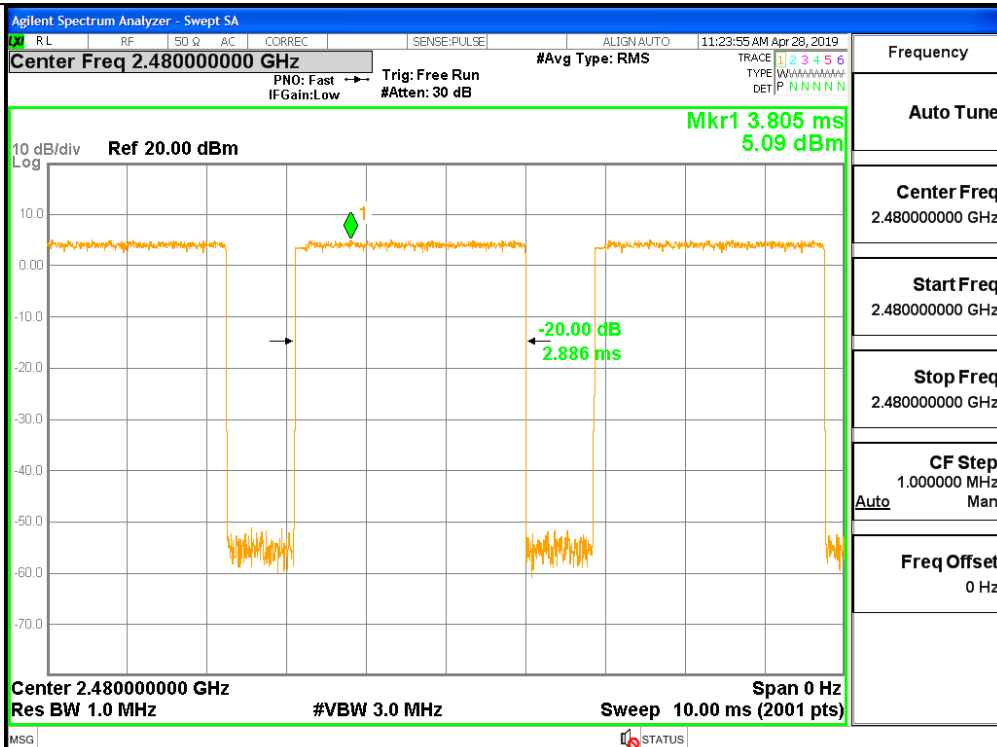
$\pi/4$ DQPSK
_2DH5/LCH



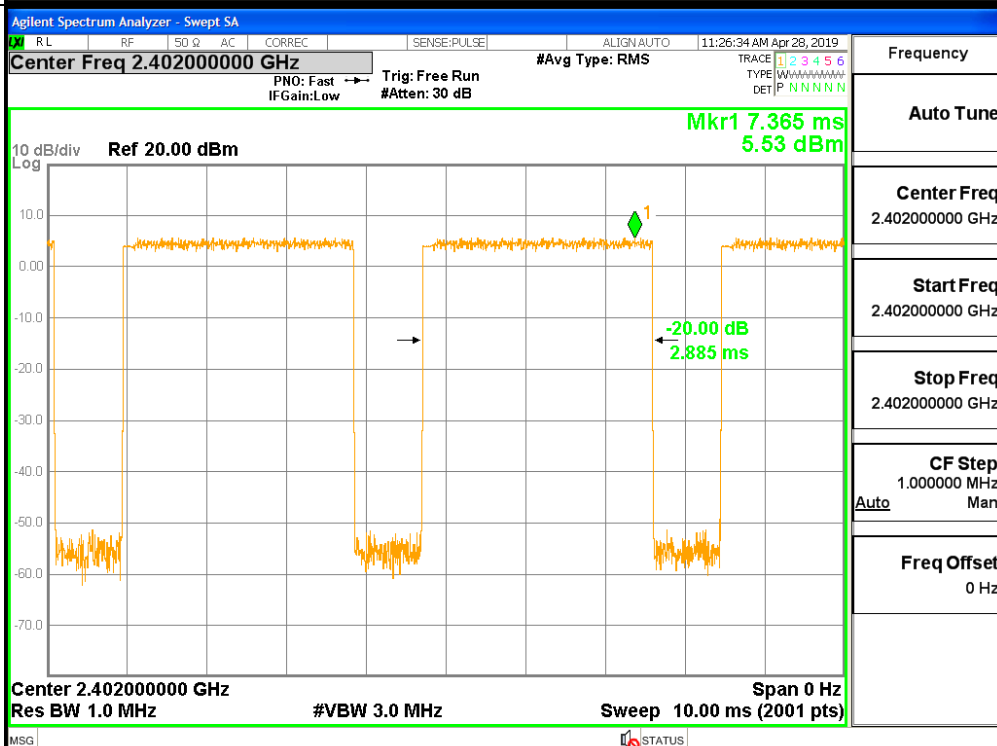
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_2DH5/MCH

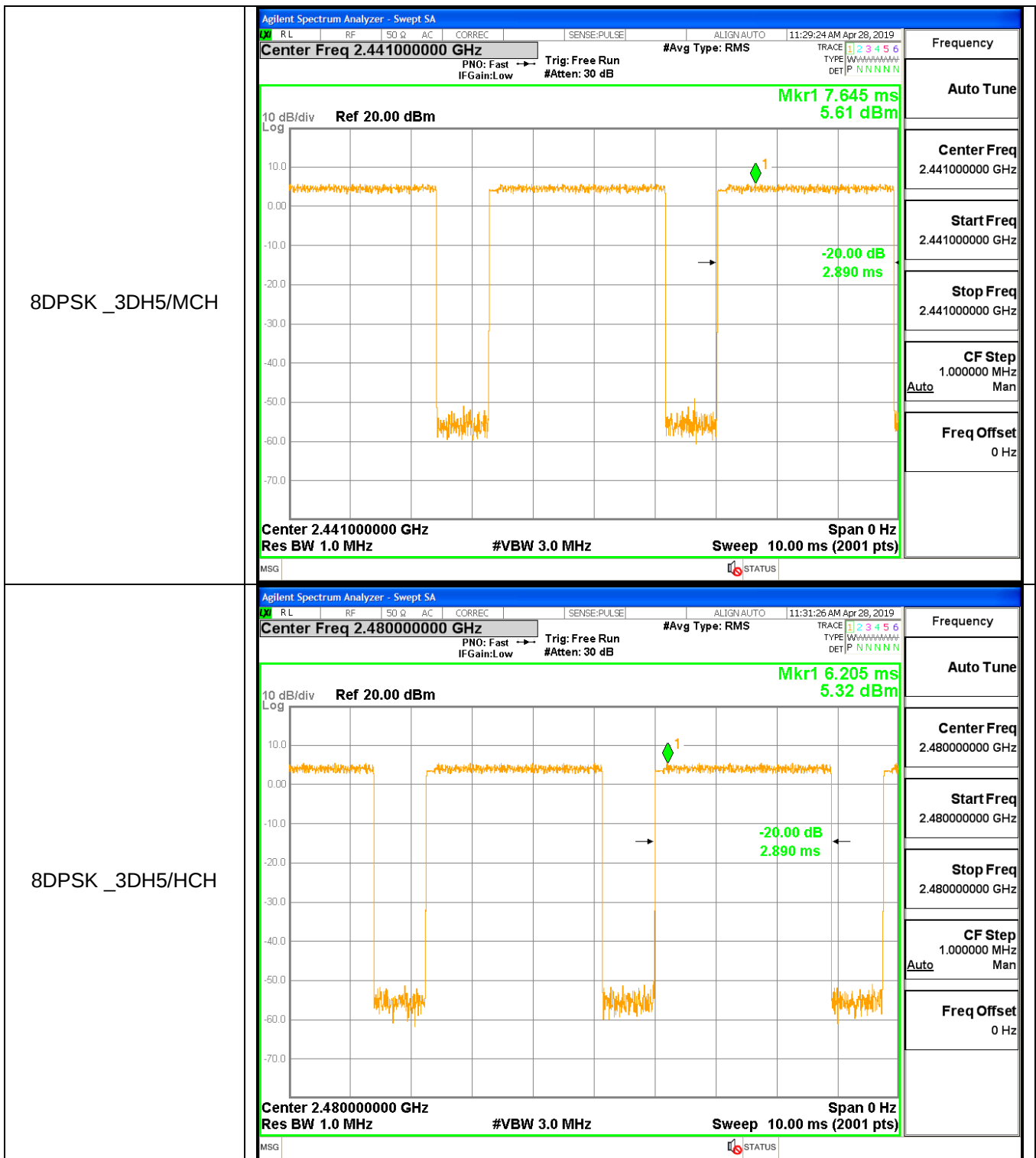


$\pi/4$ DQPSK
_2DH5/HCH



8DPSK_3DH5/LCH

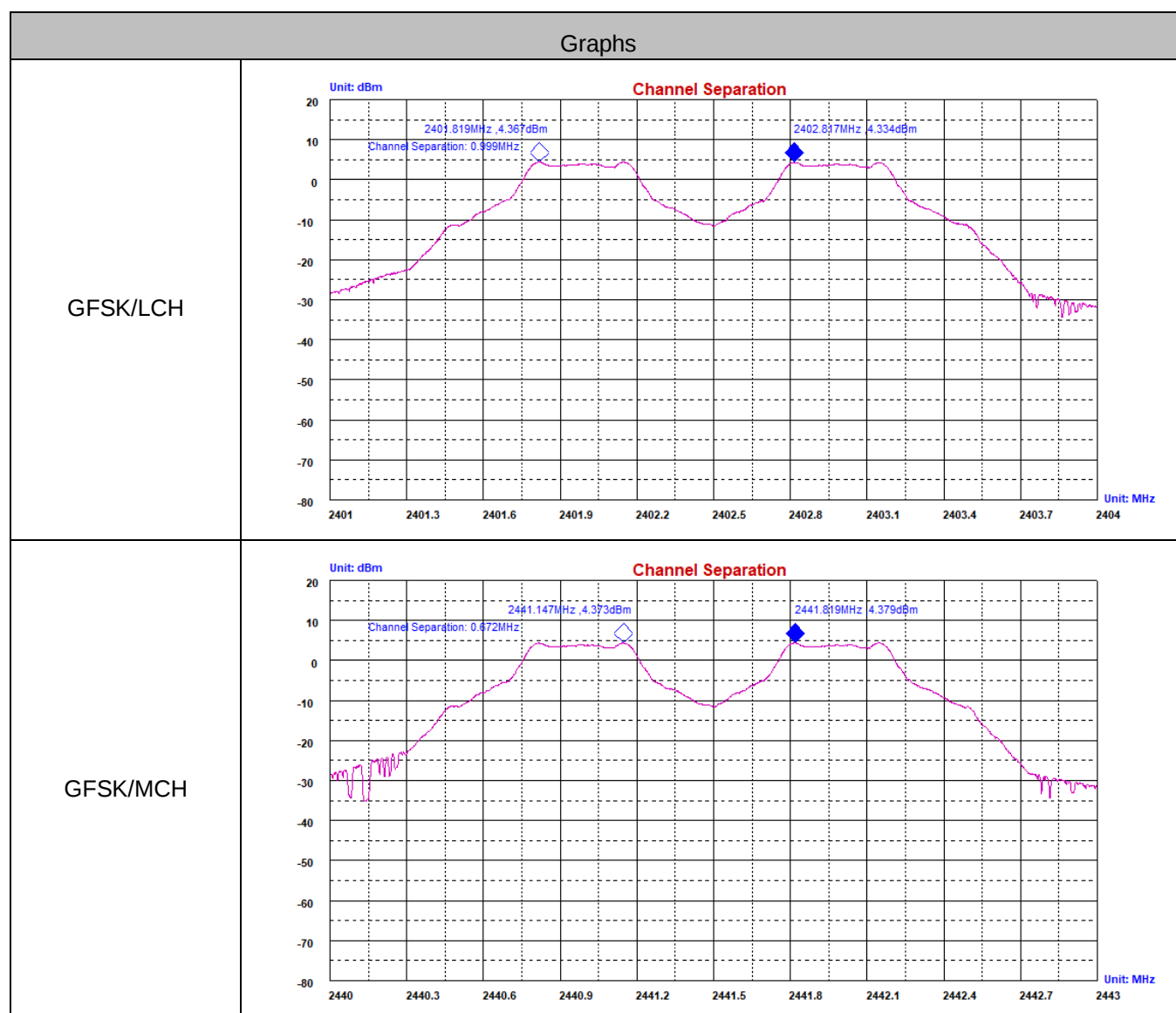




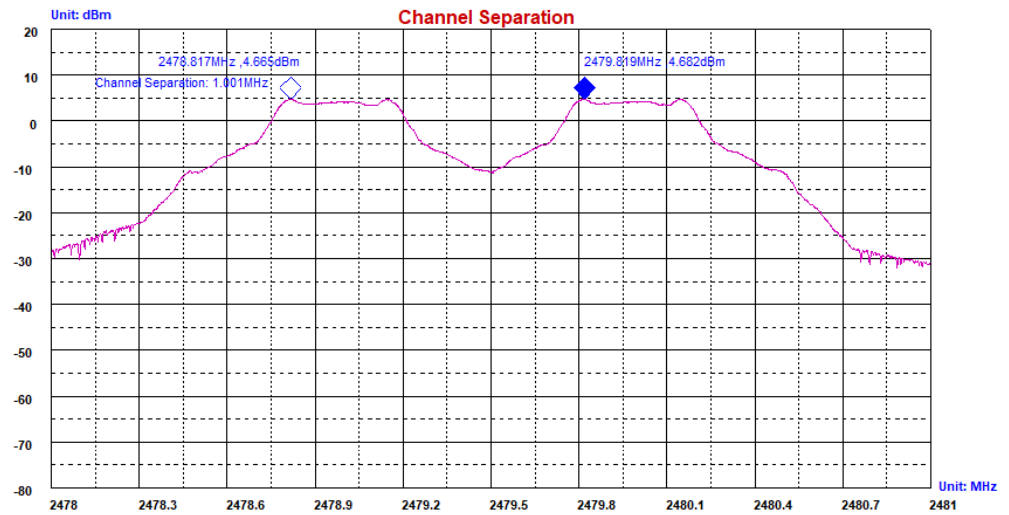
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	0.999	0.684	PASS
GFSK	MCH	0.672	0.632	PASS
GFSK	HCH	1.001	0.631	PASS
$\pi/4$ DQPSK	LCH	1.001	0.880	PASS
$\pi/4$ DQPSK	MCH	1.000	0.878	PASS
$\pi/4$ DQPSK	HCH	1.001	0.878	PASS
8DPSK	LCH	0.999	0.874	PASS
8DPSK	MCH	1.000	0.875	PASS
8DPSK	HCH	1.000	0.851	PASS

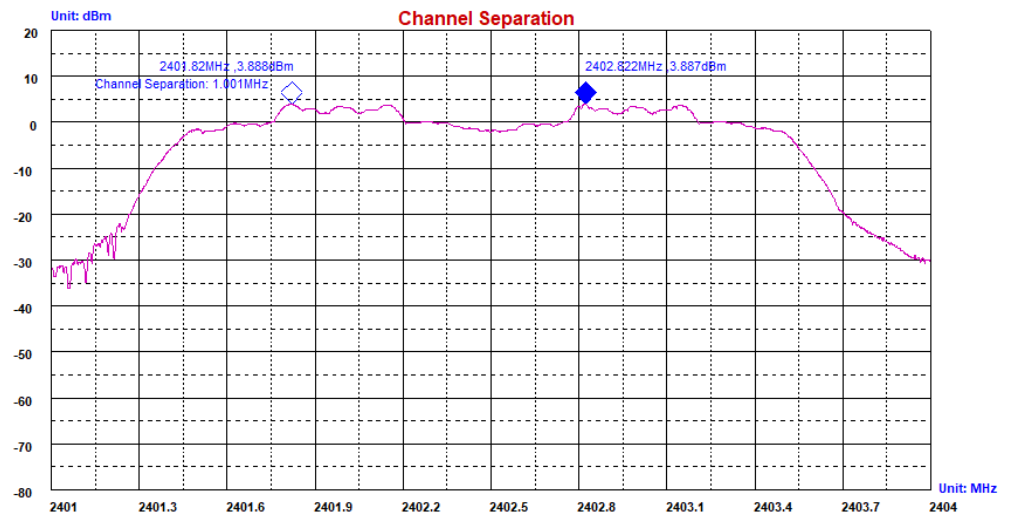
Test Graph



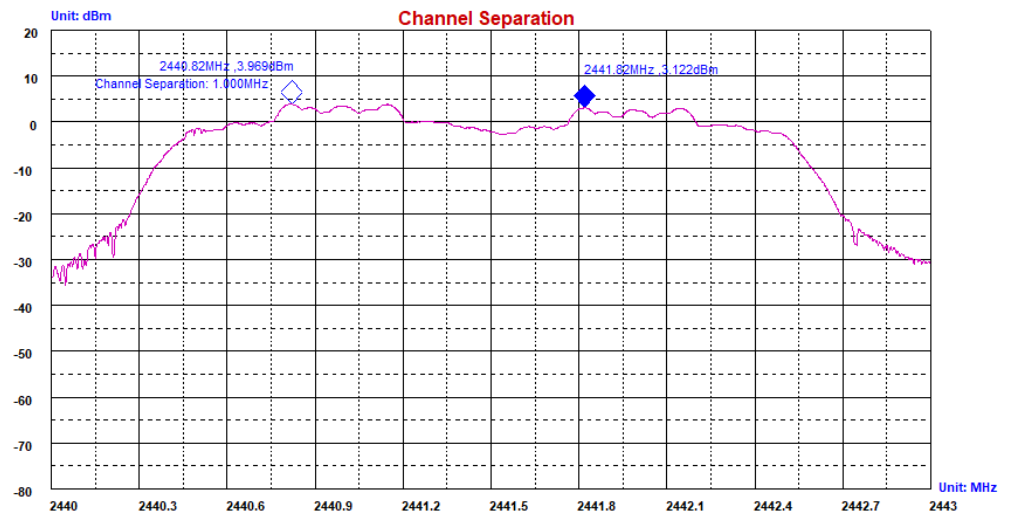
GFSK/HCH

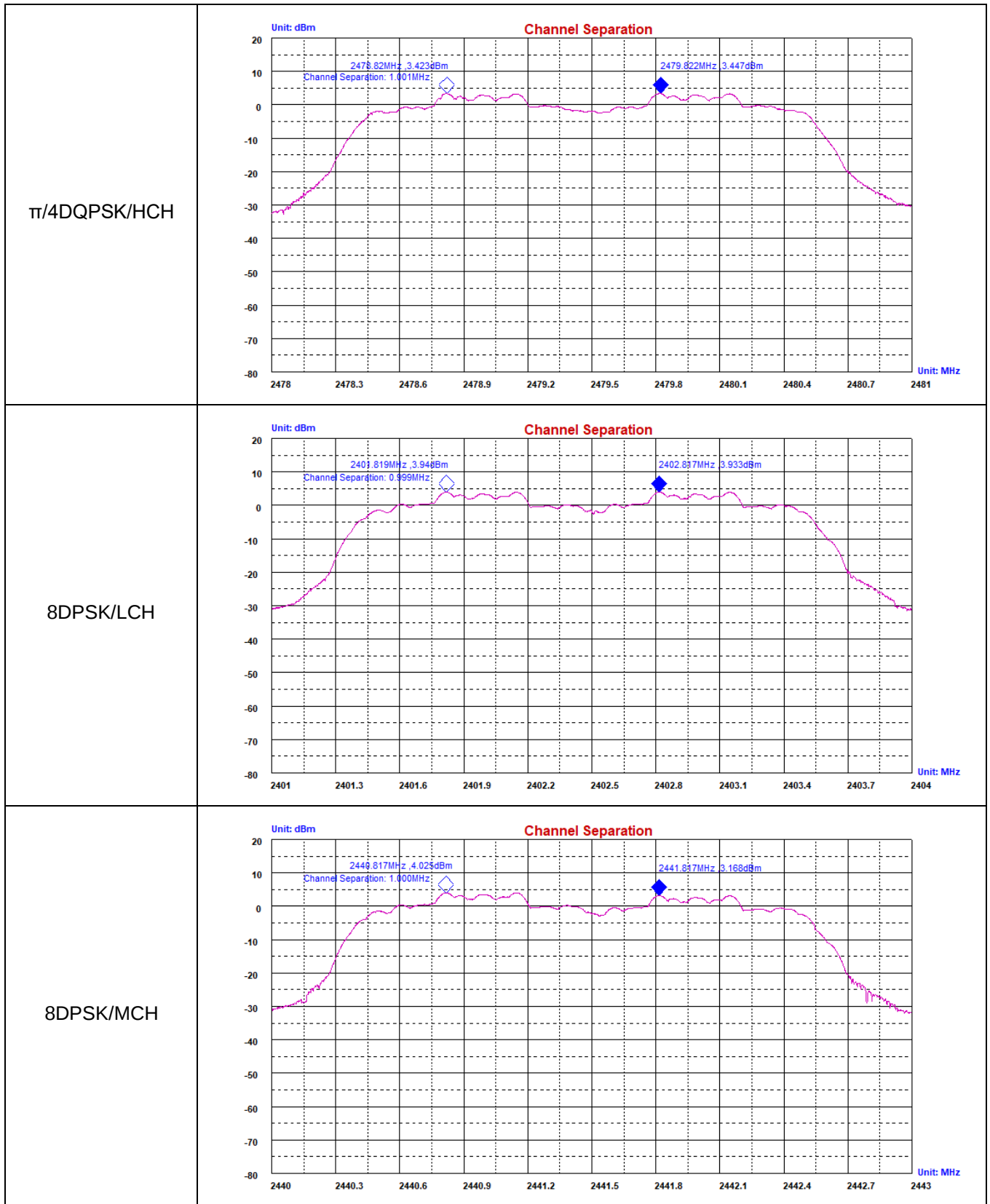


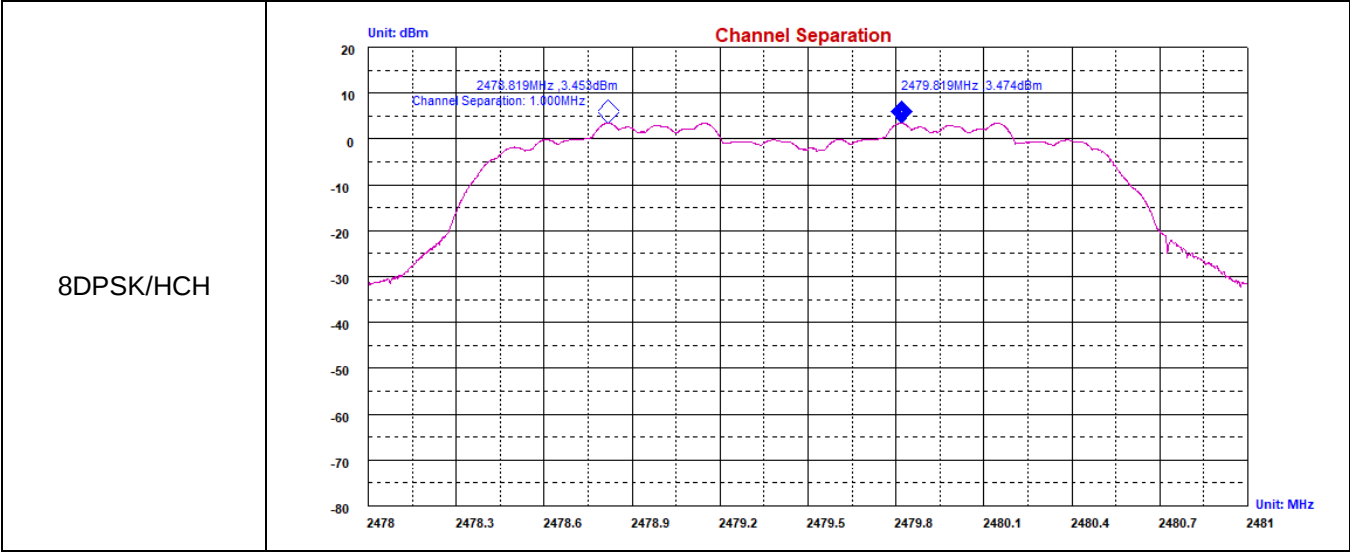
π /4DQPSK/LCH



π /4DQPSK/MCH



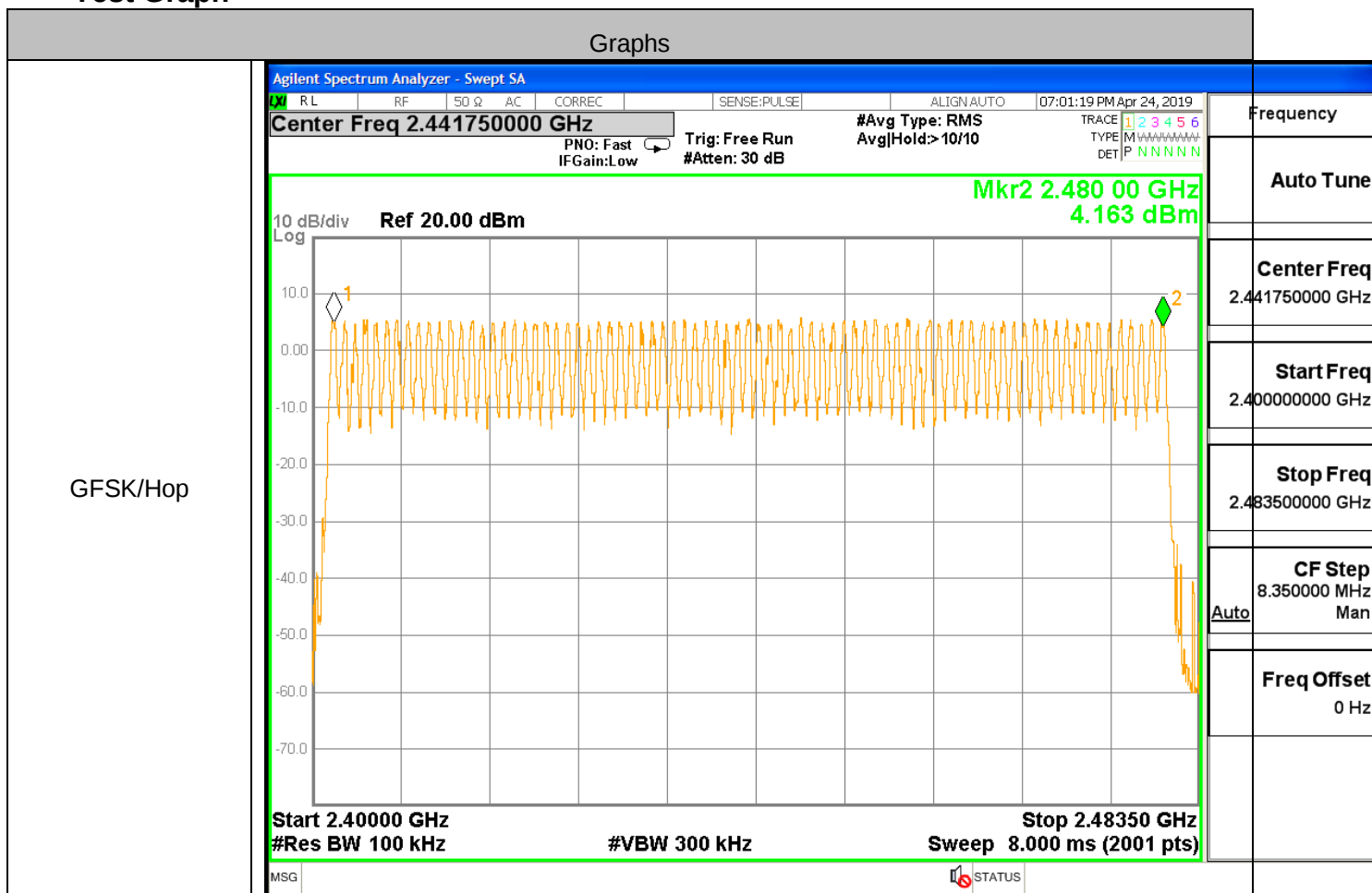


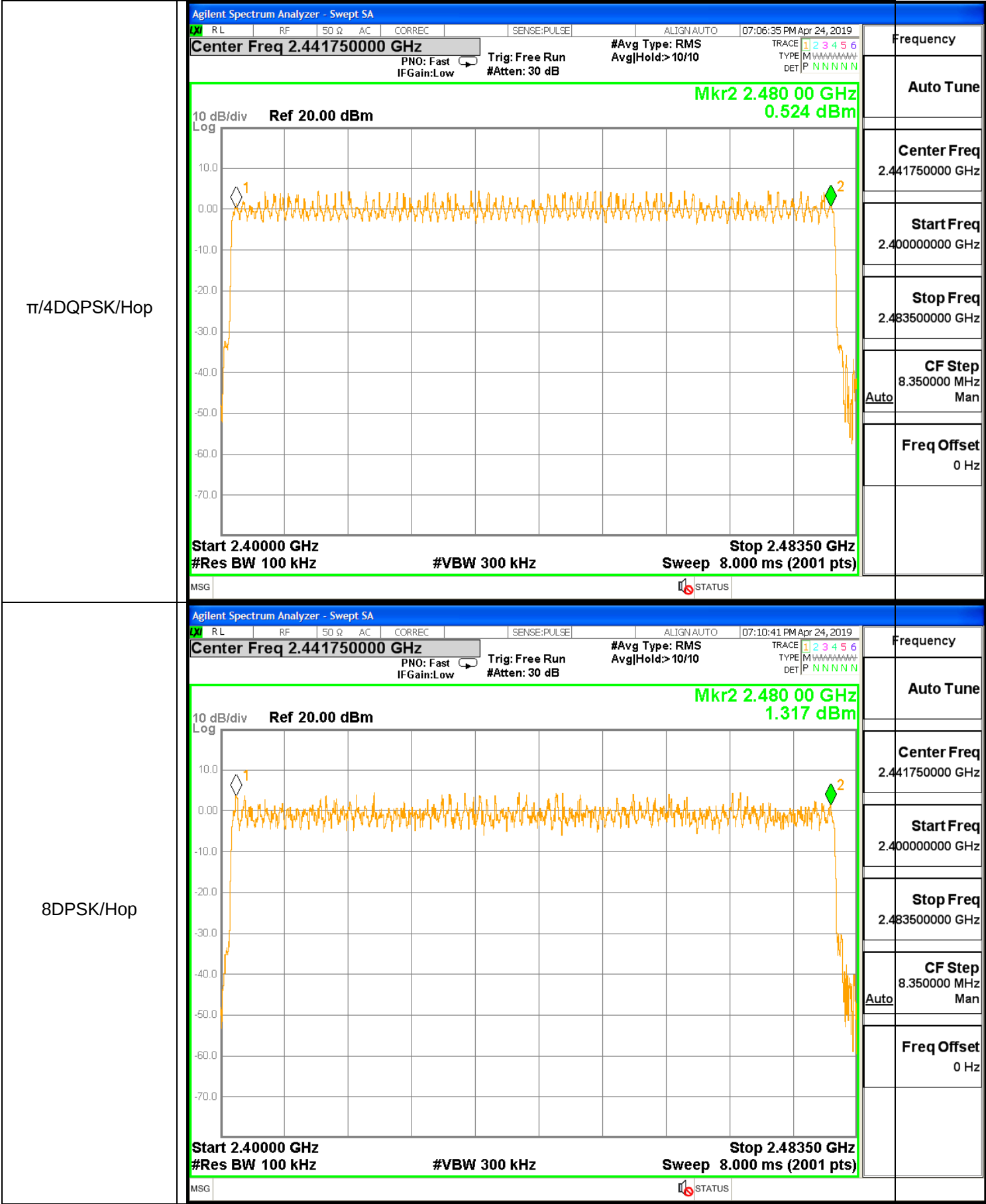


A.4 Hopping Channel Number

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 Graph

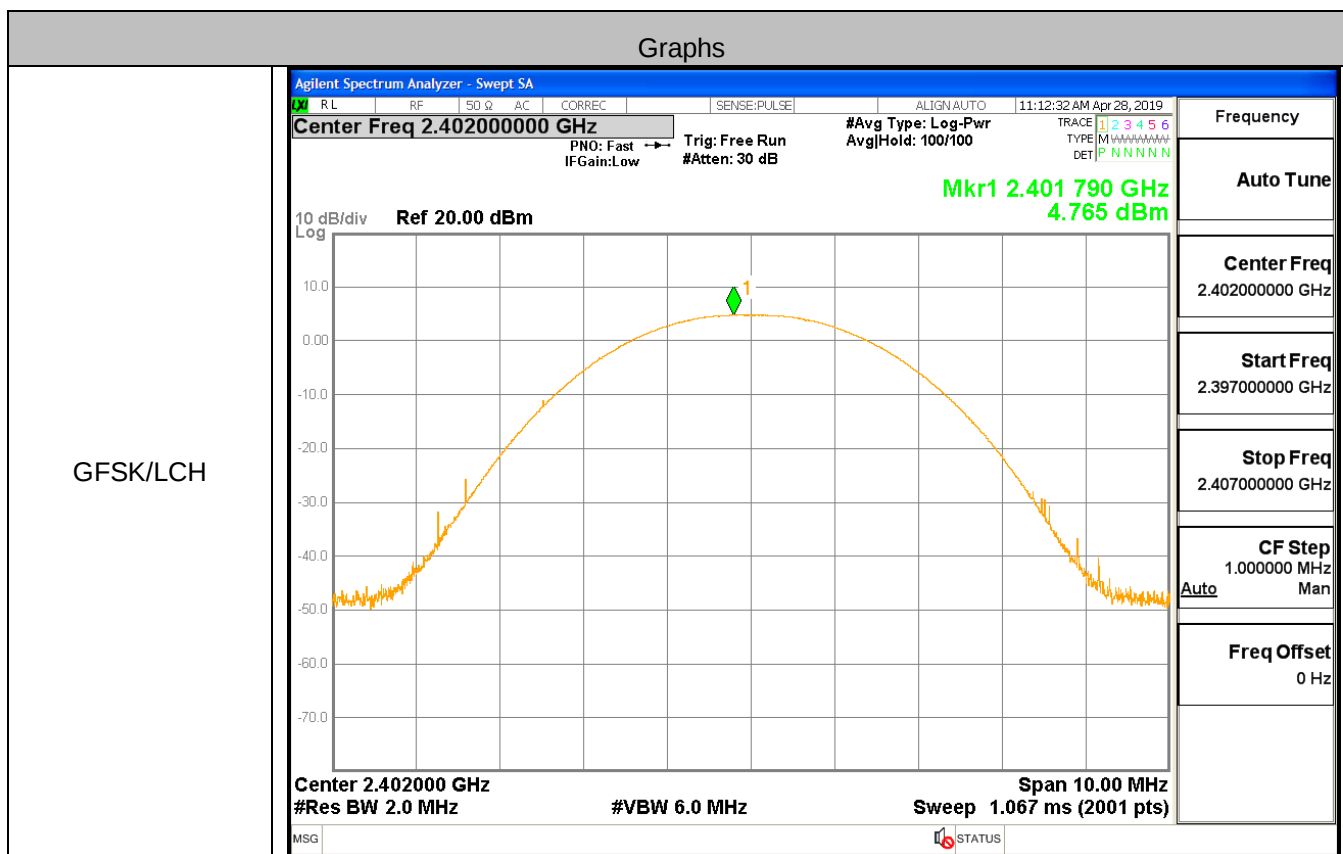


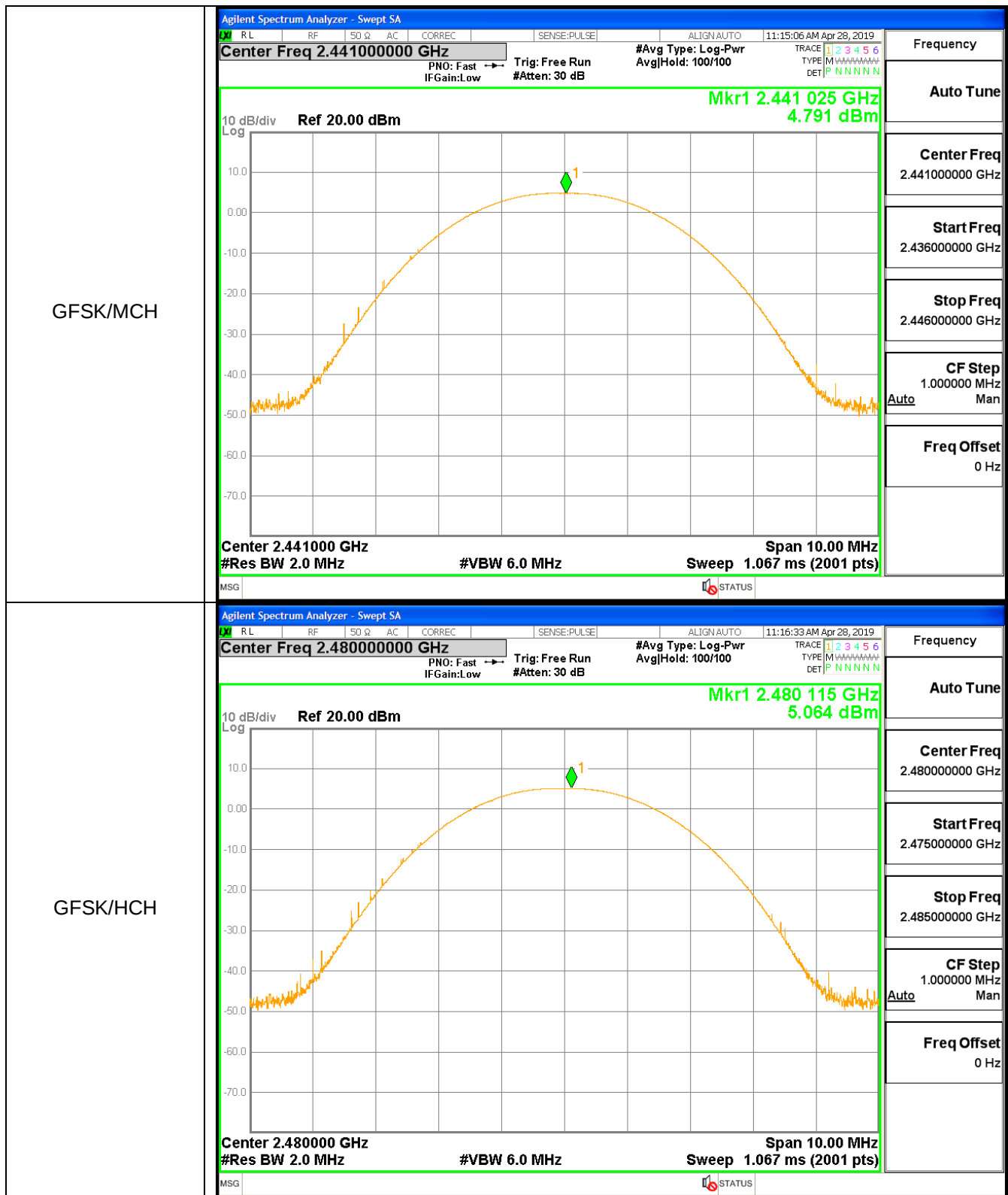


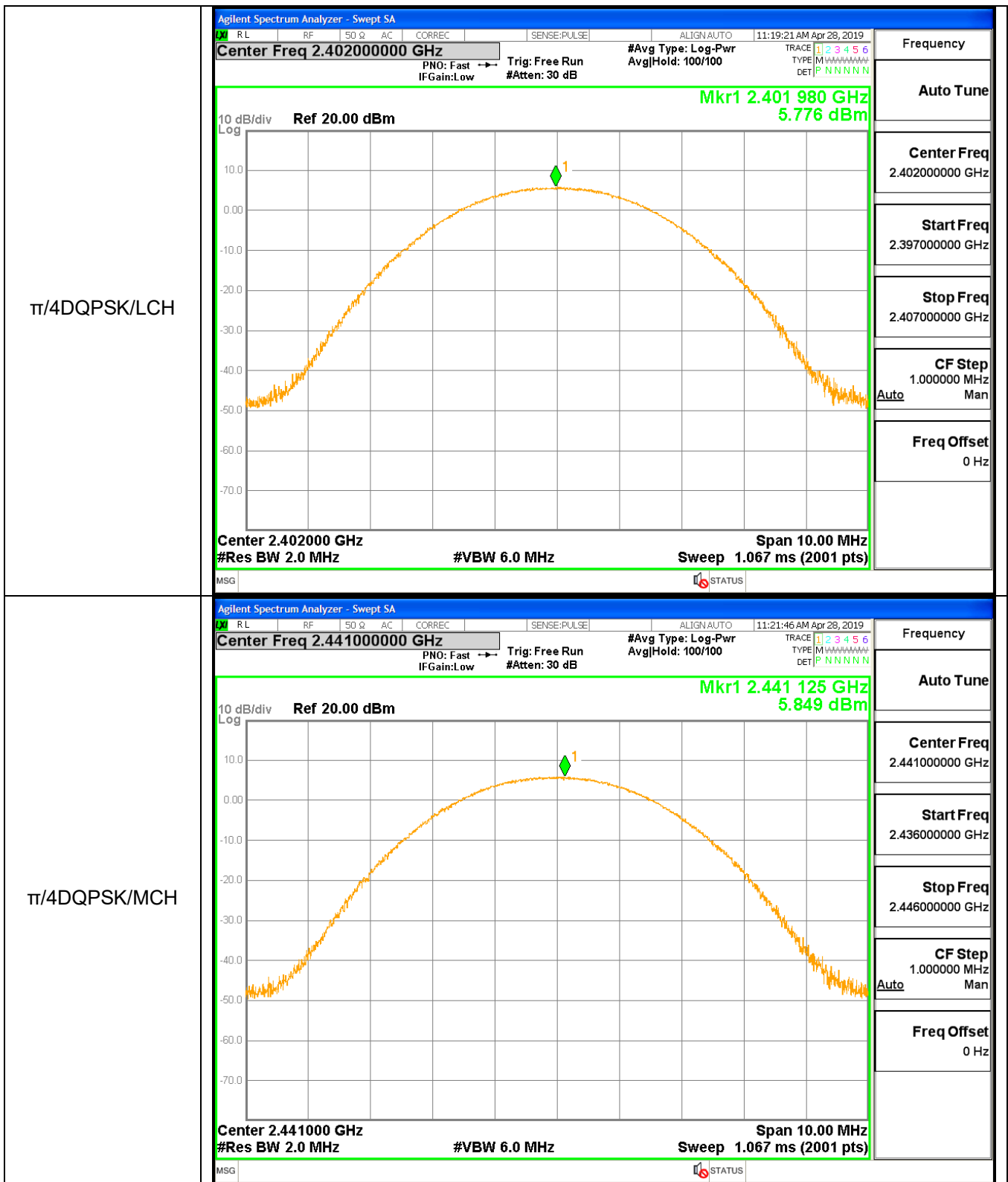
A.5 Conducted Peak Output Power

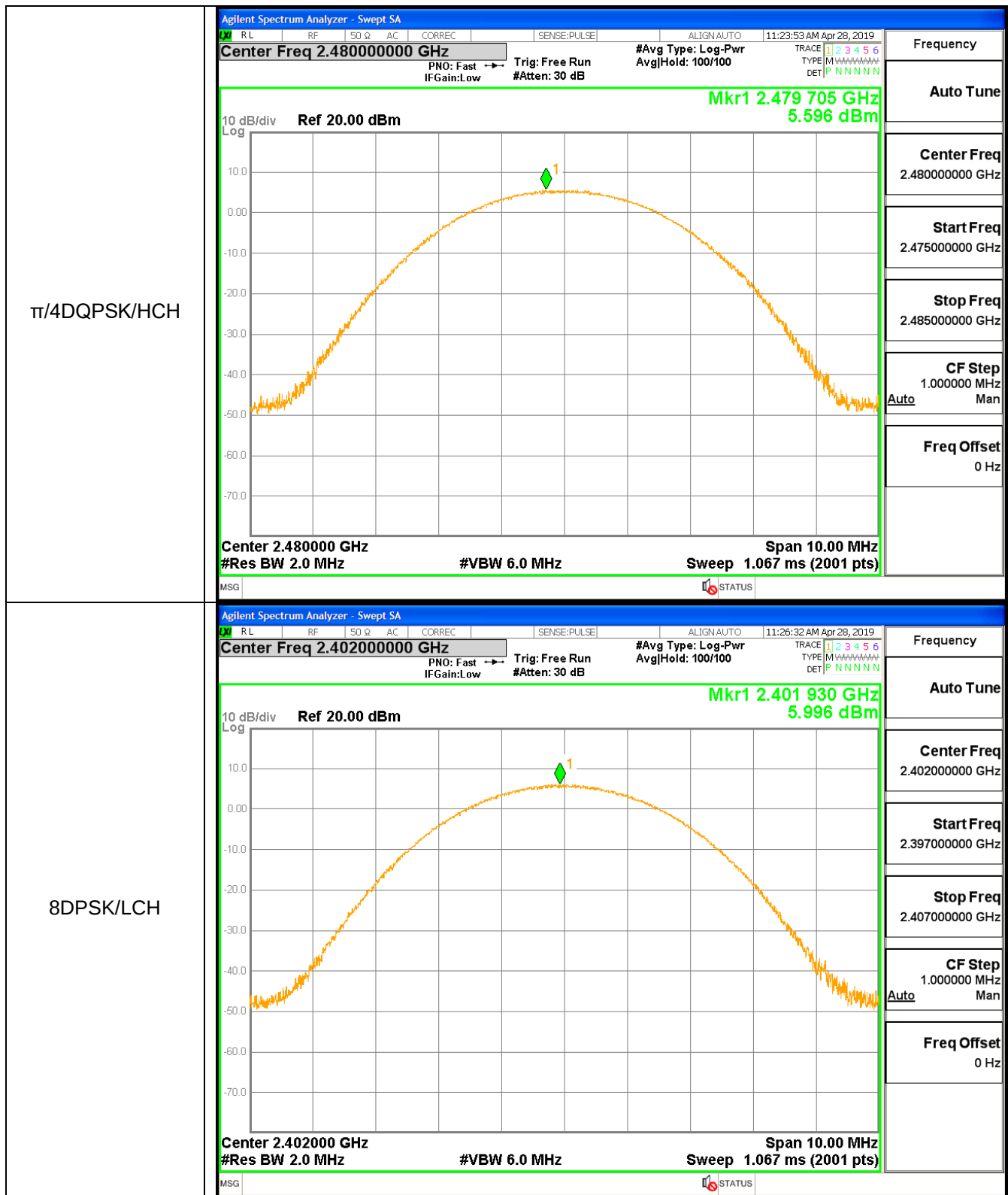
Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	4.765	21	PASS
GFSK	MCH	4.791	21	PASS
GFSK	HCH	5.064	21	PASS
$\pi/4$ DQPSK	LCH	5.776	21	PASS
$\pi/4$ DQPSK	MCH	5.849	21	PASS
$\pi/4$ DQPSK	HCH	5.596	21	PASS
8DPSK	LCH	5.996	21	PASS
8DPSK	MCH	6.051	21	PASS
8DPSK	HCH	5.773	21	PASS

Test Graph

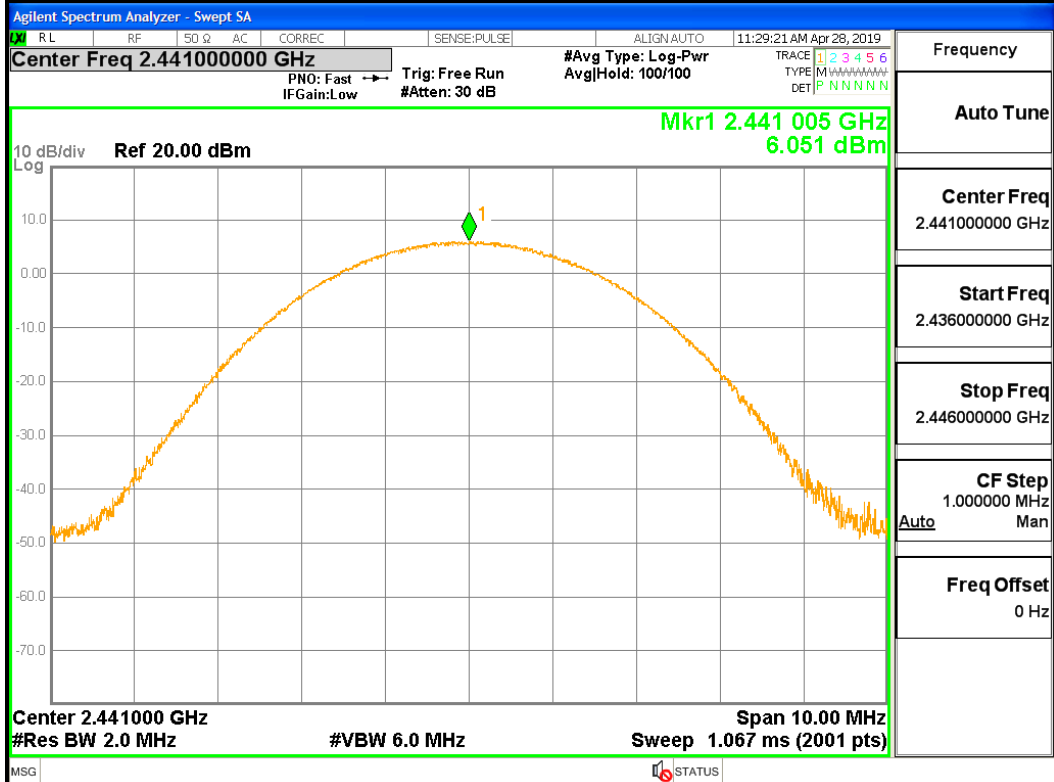




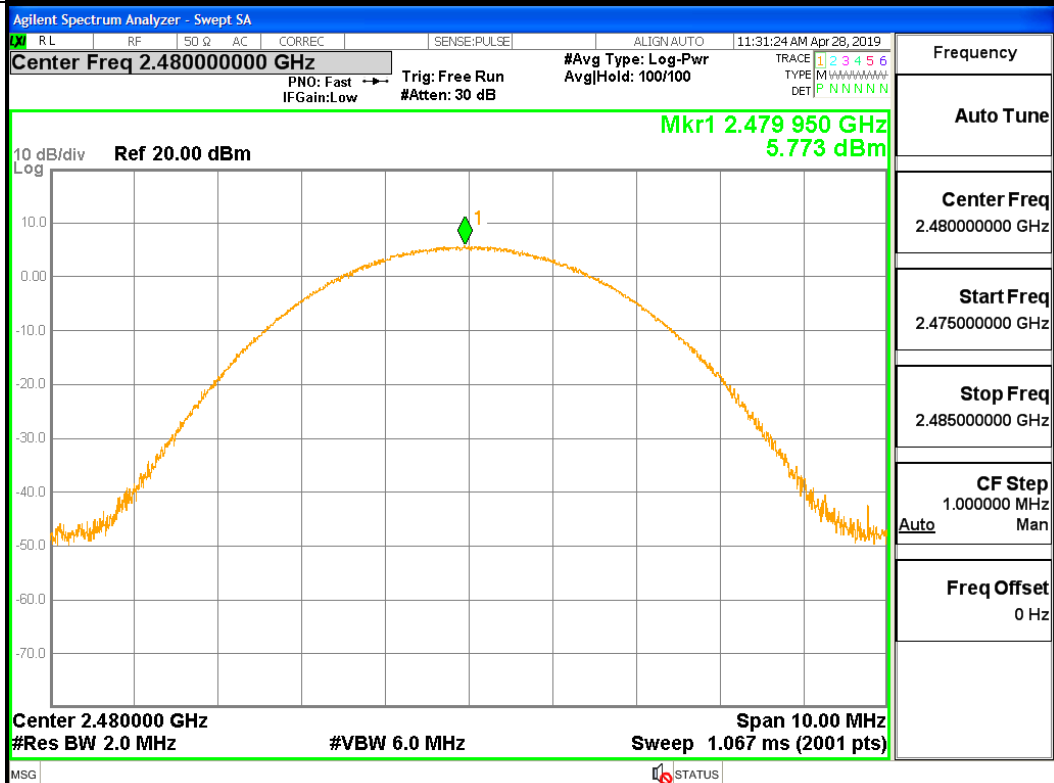




8DPSK/MCH



8DPSK/HCH



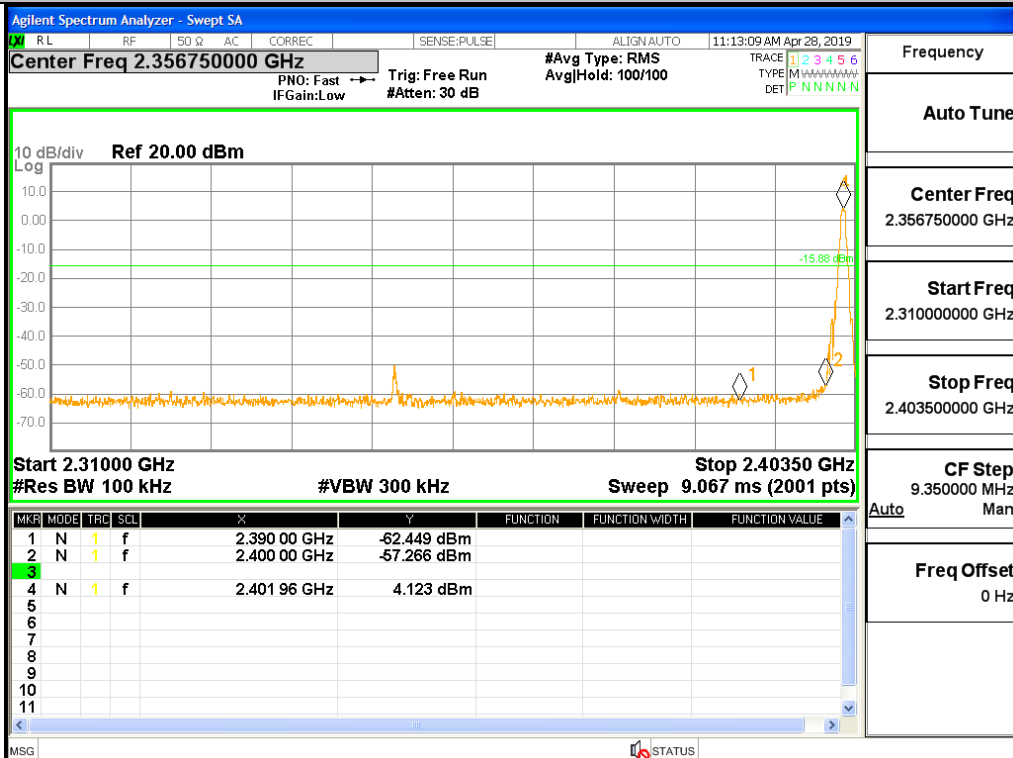
A.6 Band-edge for RF Conducted Emissions

Type	Carrier Frequency(MHz)	Frequency(MHz)	Carrier Frequency Power [dBm]	Bandedge Peak(dBm)	Upper limit(dBm)	Conclusion
1DH5	2402	2400	4.123	-57.27	-15.877	Pass
1DH5	2480	2483.5	4.294	-58.41	-15.706	Pass
2DH5	2402	2400	2.078	-48.57	-17.922	Pass
2DH5	2480	2500	3.001	-60.28	-16.999	Pass
3DH5	2402	2400	3.052	-49.64	-16.948	Pass
3DH5	2480	2483.5	3.38	-59.37	-16.62	Pass
1DH5-Hopping	2402	2400	7.94	-58.83	-12.06	Pass
1DH5-Hopping	2480	2483.5	8.718	-59.1	-11.282	Pass
2DH5-Hopping	2402	2400	4.943	-58.23	-15.057	Pass
2DH5-Hopping	2480	2483.5	5.819	-58.11	-14.181	Pass
3DH5-Hopping	2402	2400	4.118	-57.82	-15.882	Pass
3DH5-Hopping	2480	2483.5	5.731	-58.1	-14.269	Pass

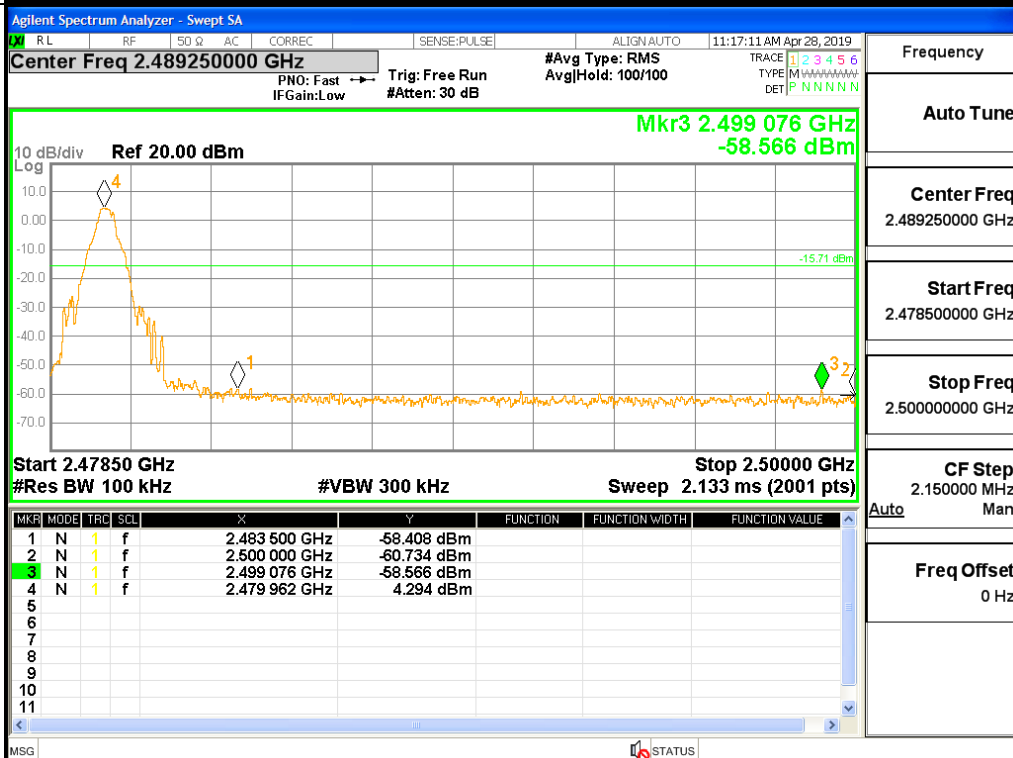
Test Graph

Graphs

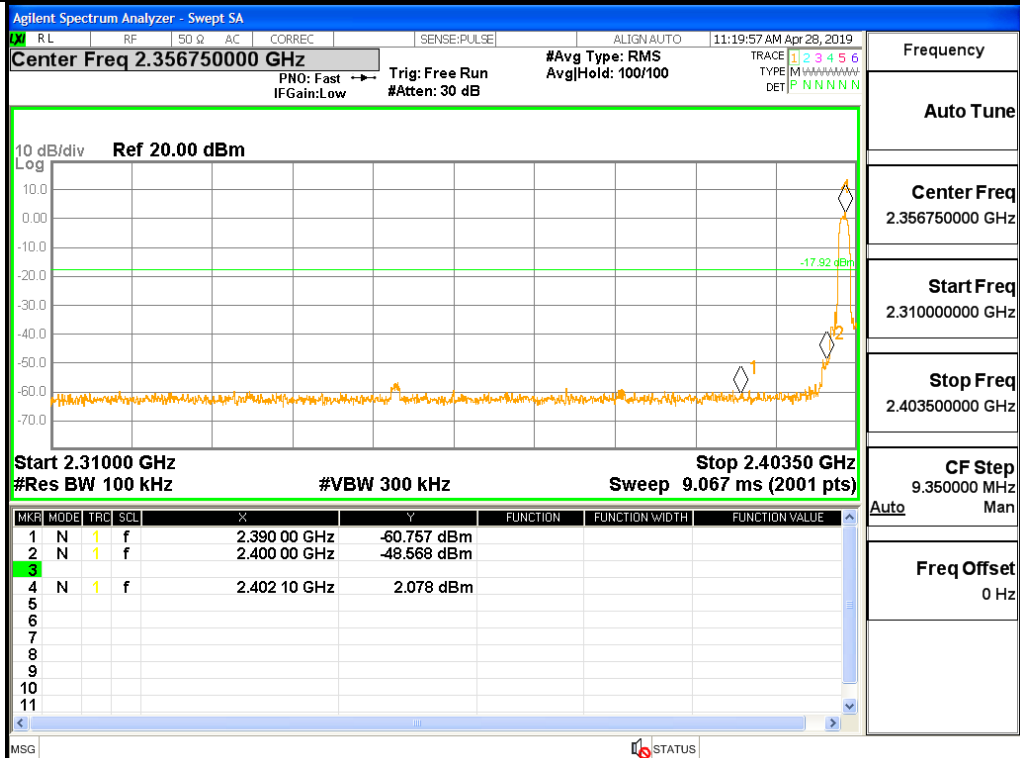
GFSK/LCH/No Hop



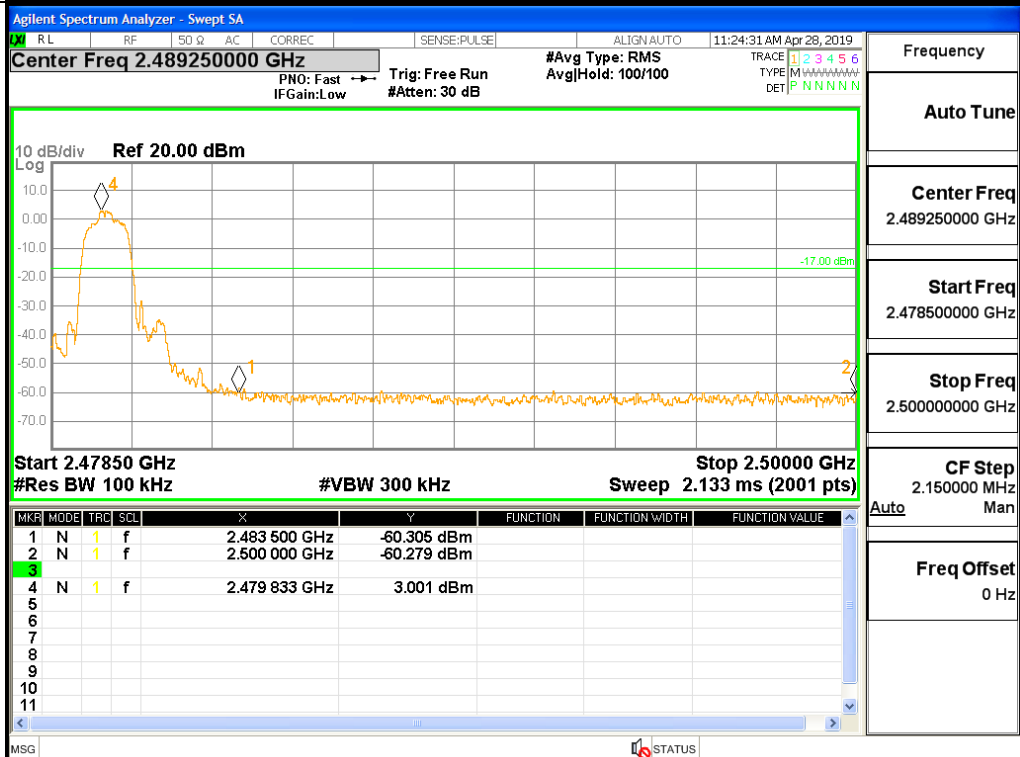
GFSK/HCH/No Hop



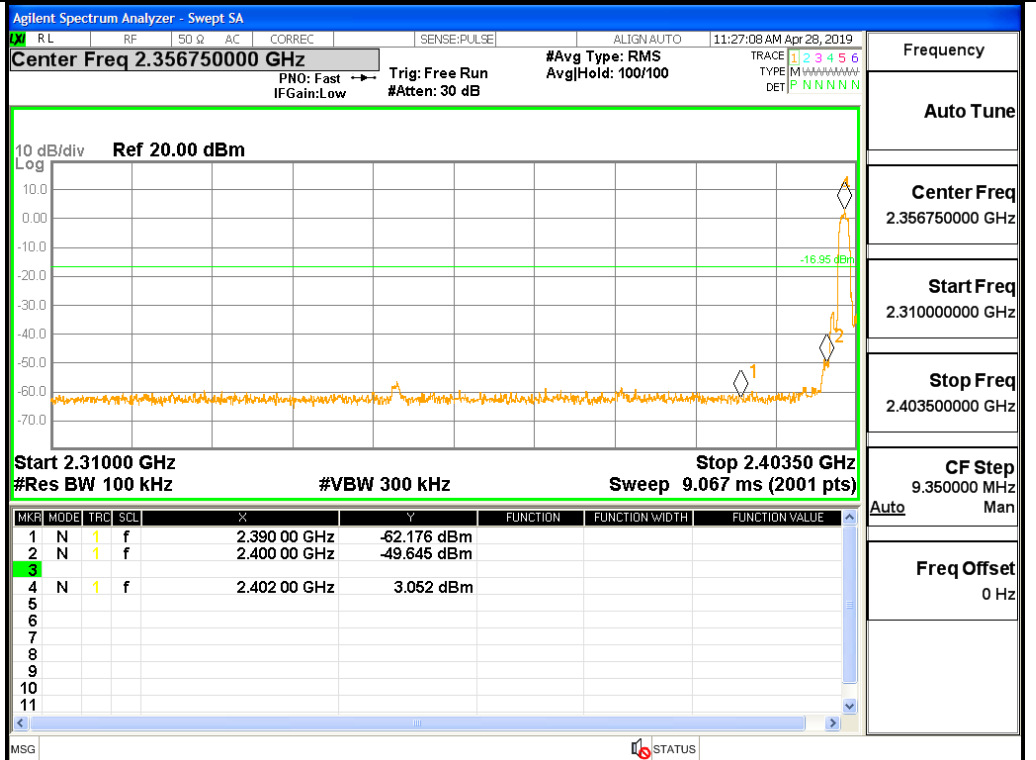
$\pi/4$ DQPSK/LCH/No
Hop



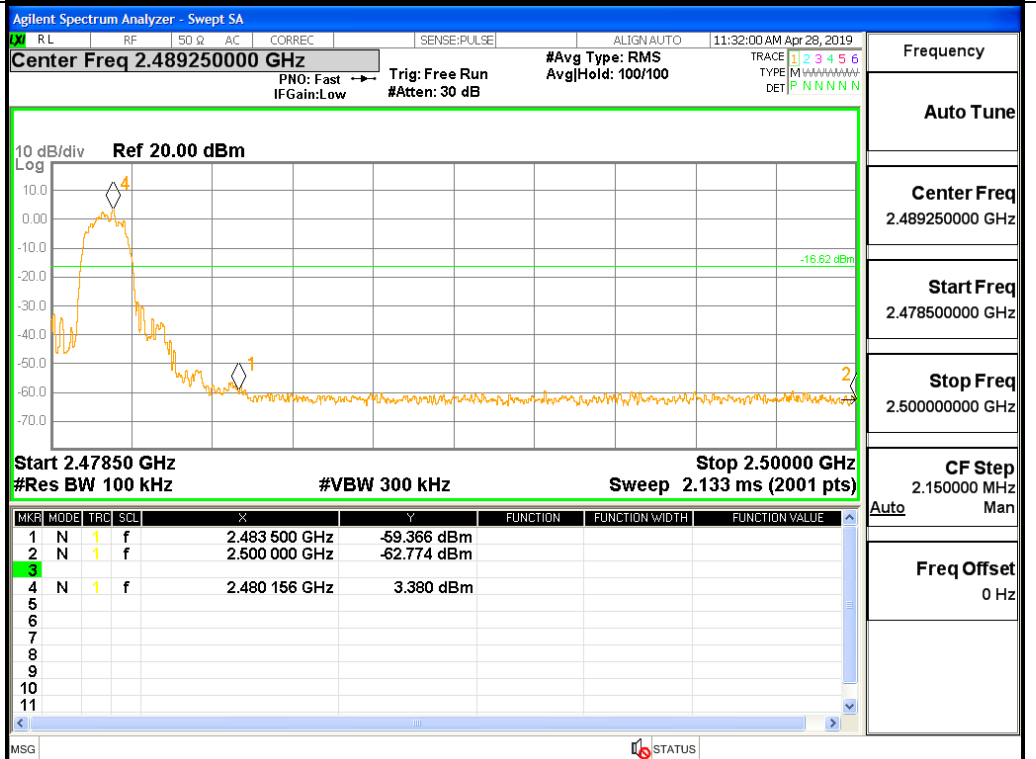
$\pi/4$ DQPSK/HCH/No
Hop



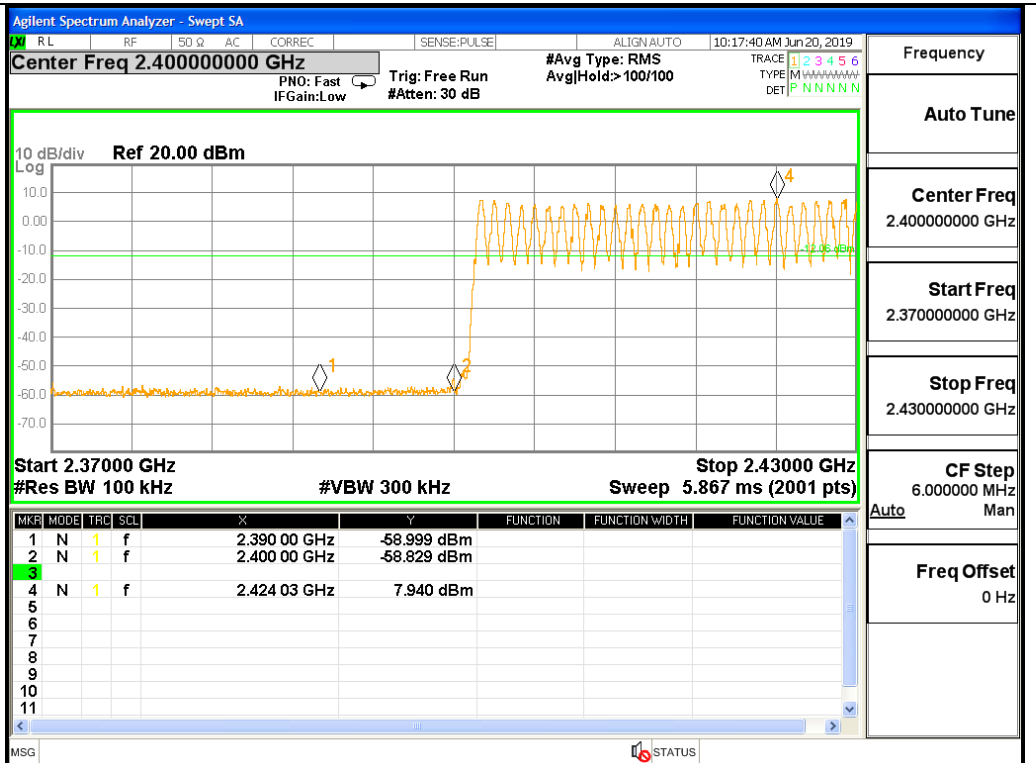
8DPSK/LCH/No Hop



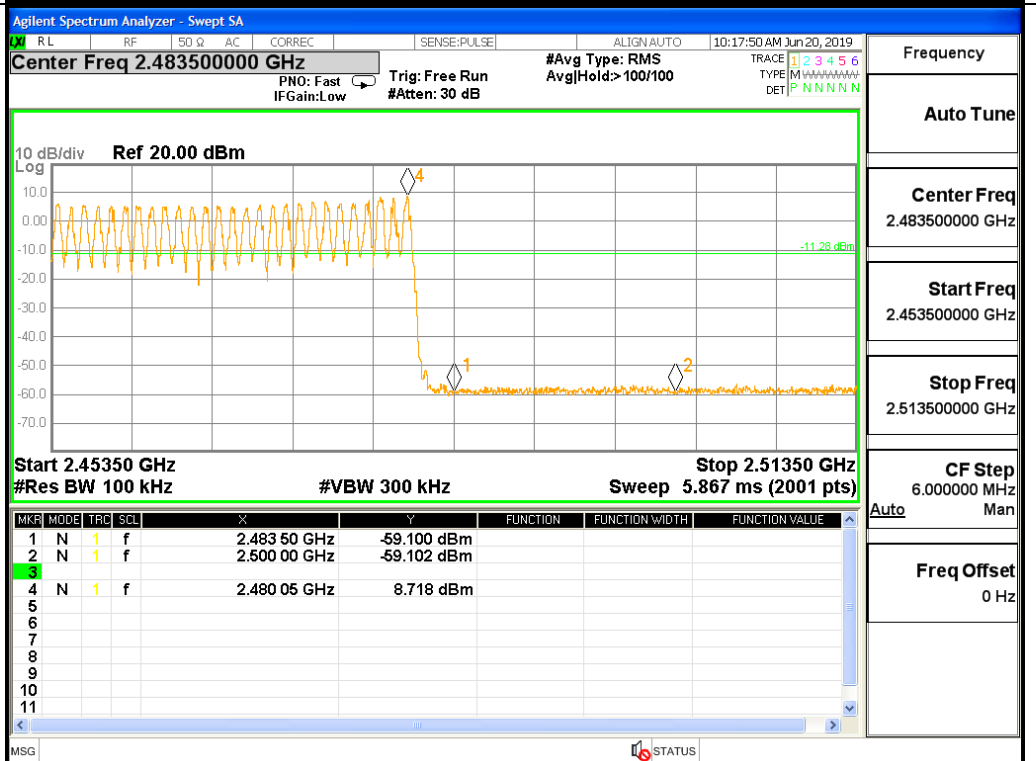
8DPSK/HCH/No Hop

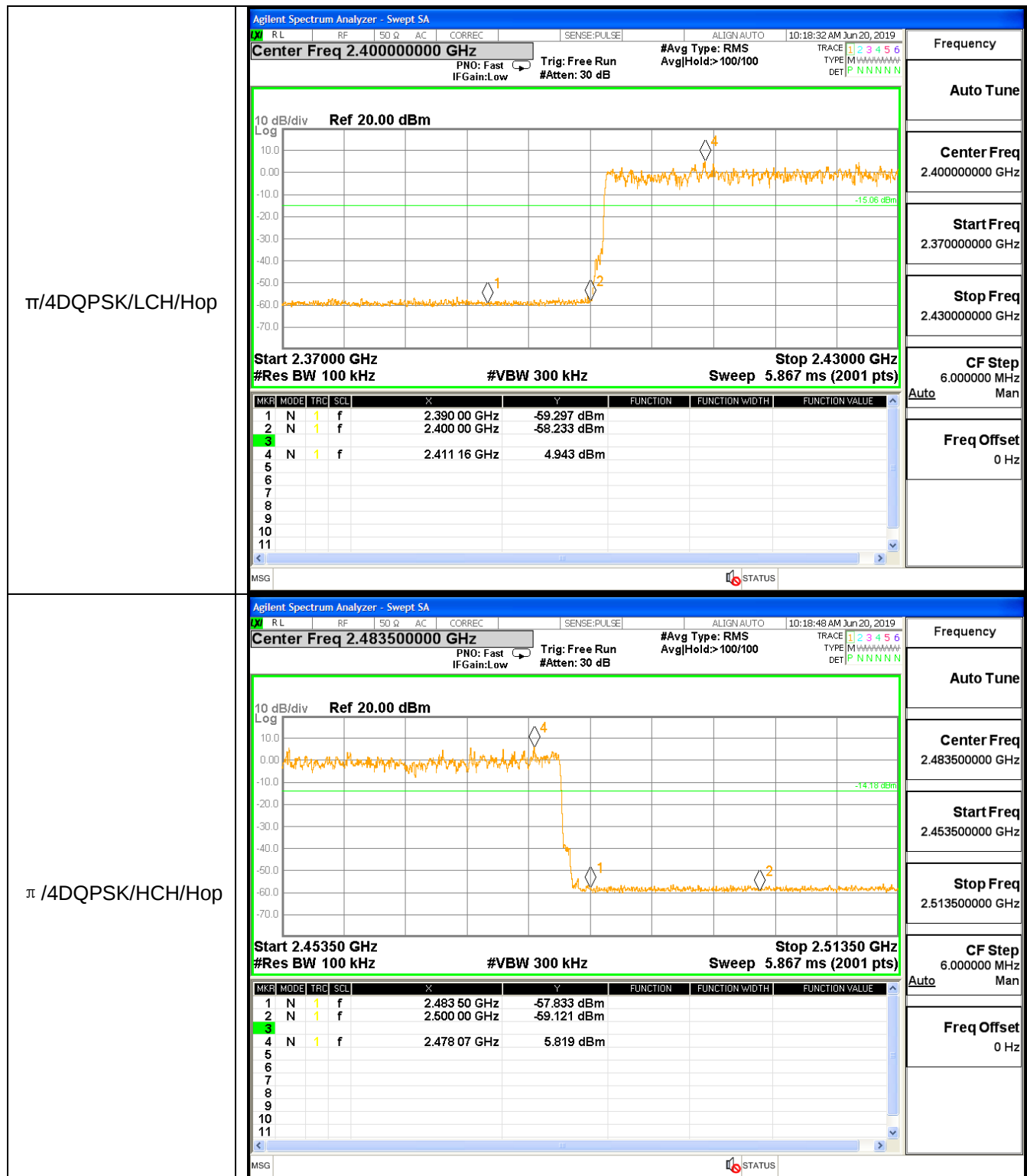


GFSK/LCH/Hop

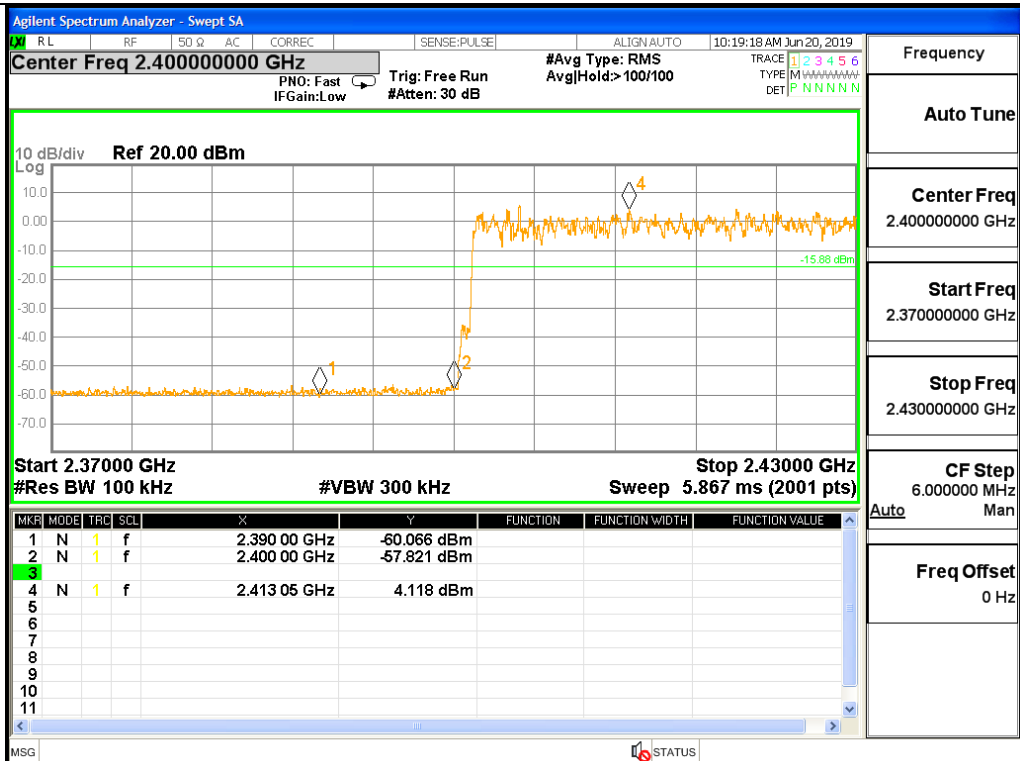


GFSK/HCH/Hop

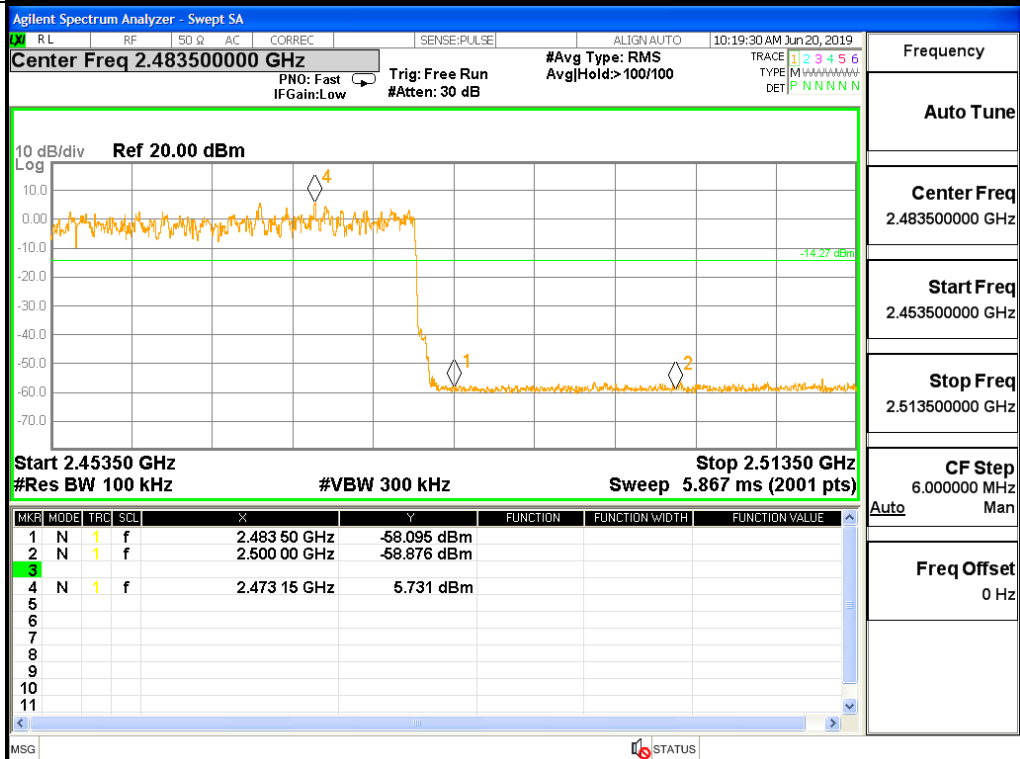




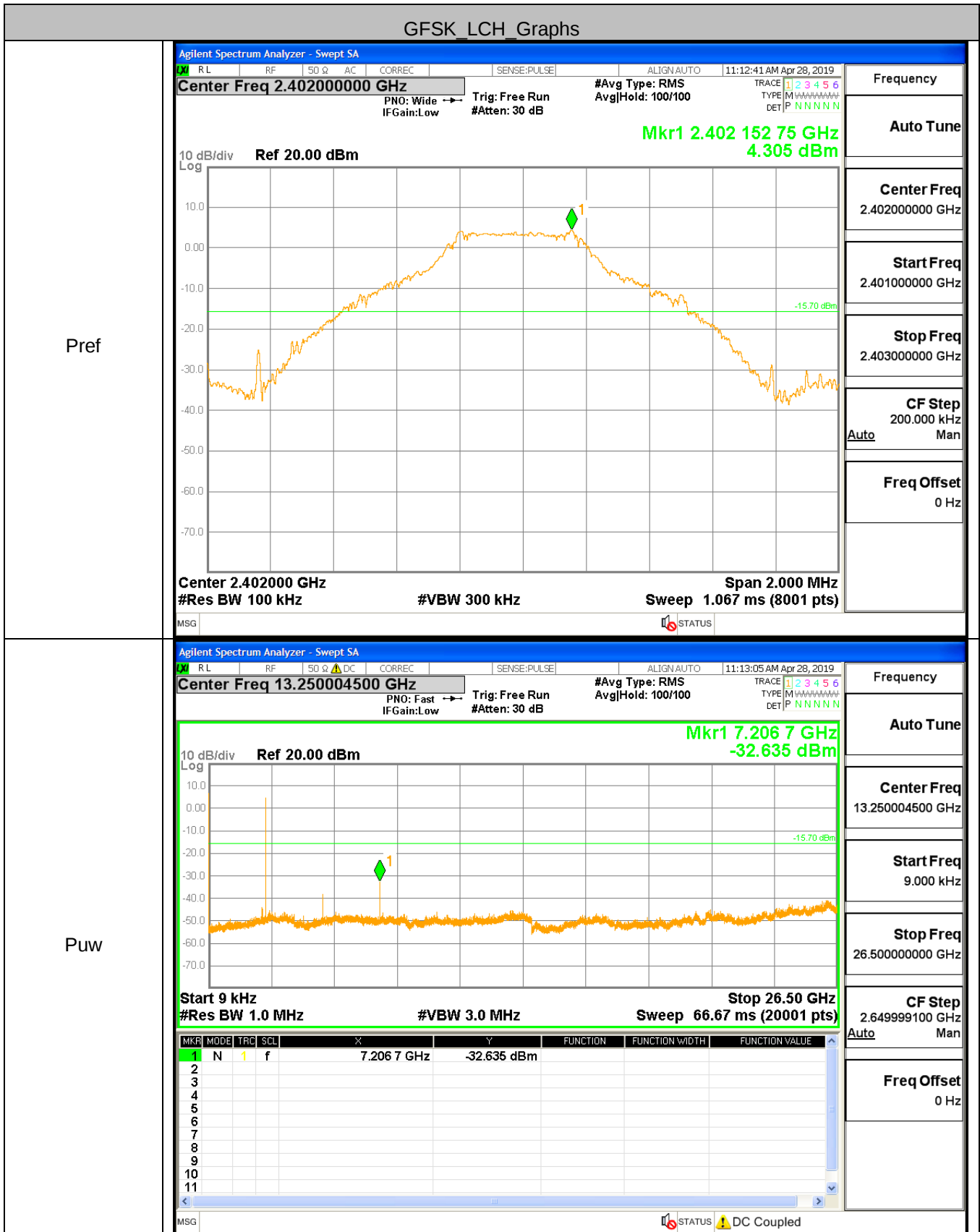
8DPSK/LCH/Hop



8DPSK/HCH/Hop

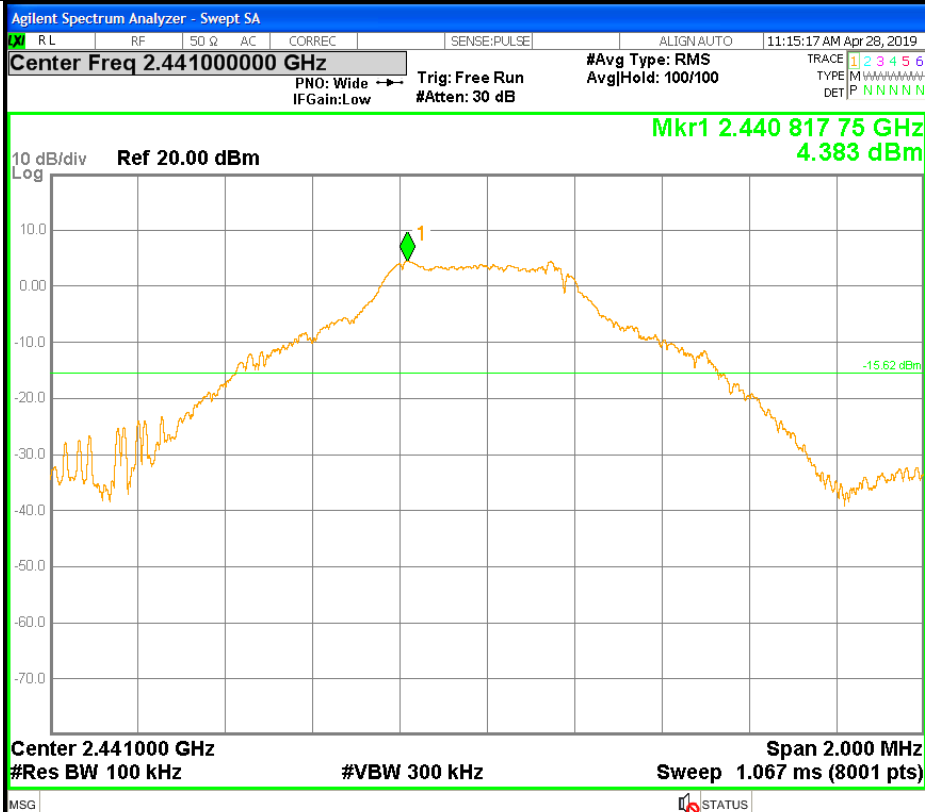


A.7 RF Conducted Spurious Emissions Test Graph



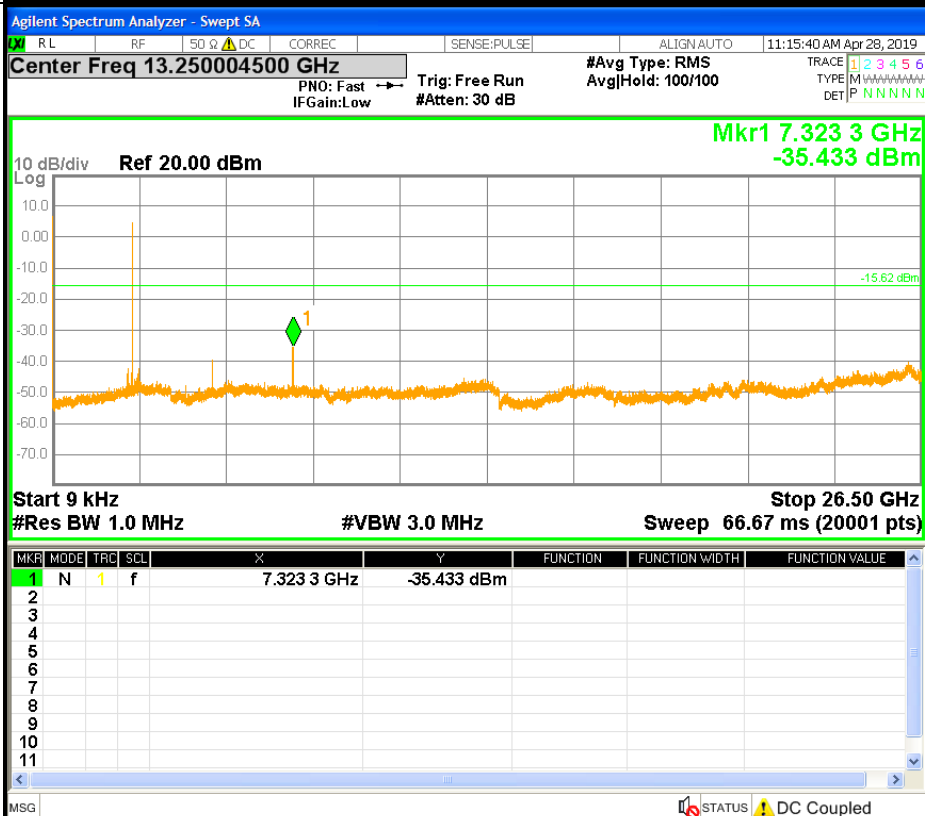
GFSK MCH Graphs

Pref



Frequency
Auto Tune
Center Freq 2.441000000 GHz
Start Freq 2.440000000 GHz
Stop Freq 2.442000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

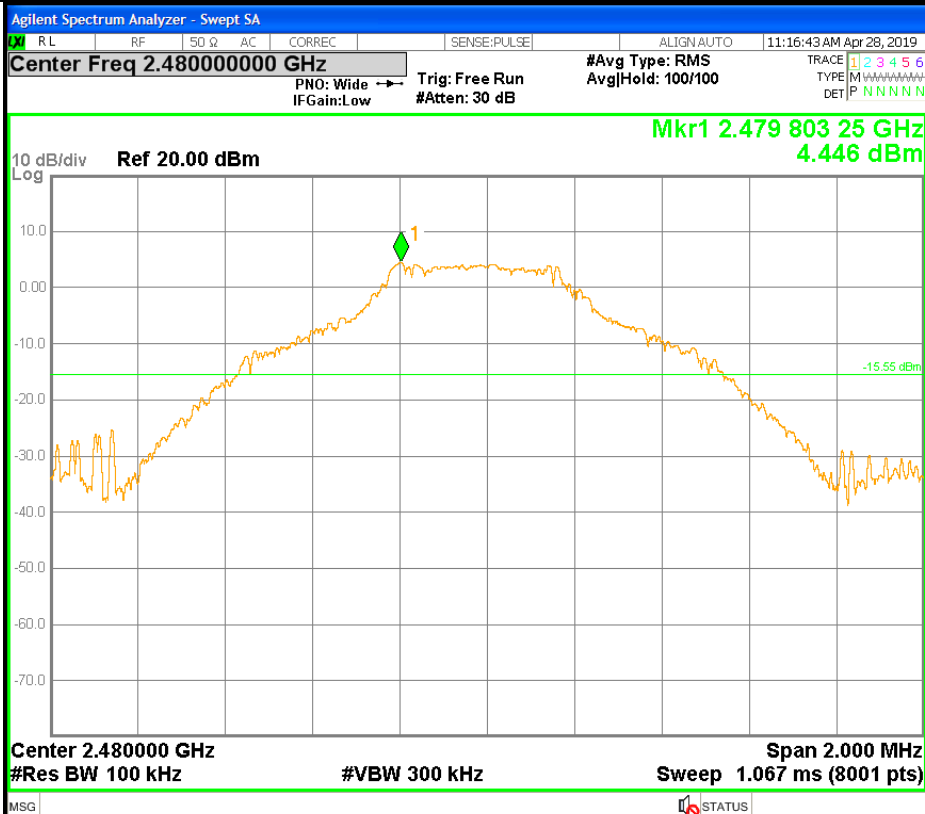
Puw



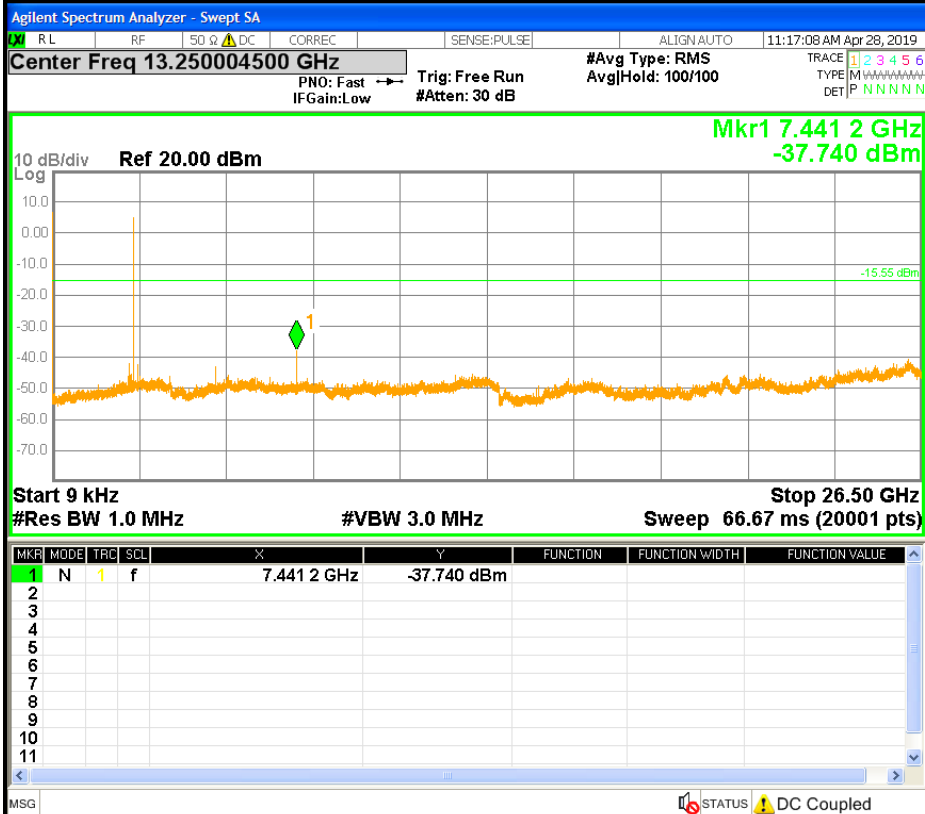
Frequency
Auto Tune
Center Freq 13.250004500 GHz
Start Freq 9.000 kHz
Stop Freq 26.500000000 GHz
CF Step 2.649999100 GHz Auto Man
Freq Offset 0 Hz

GFSK HCH Graphs

Pref

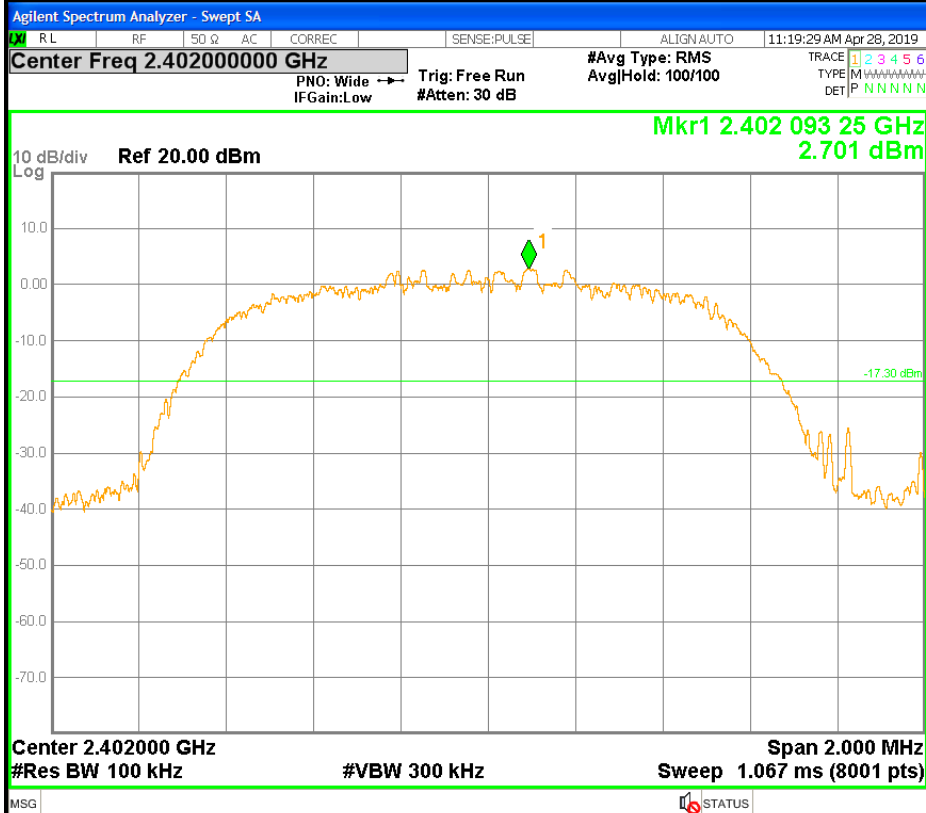


Puw



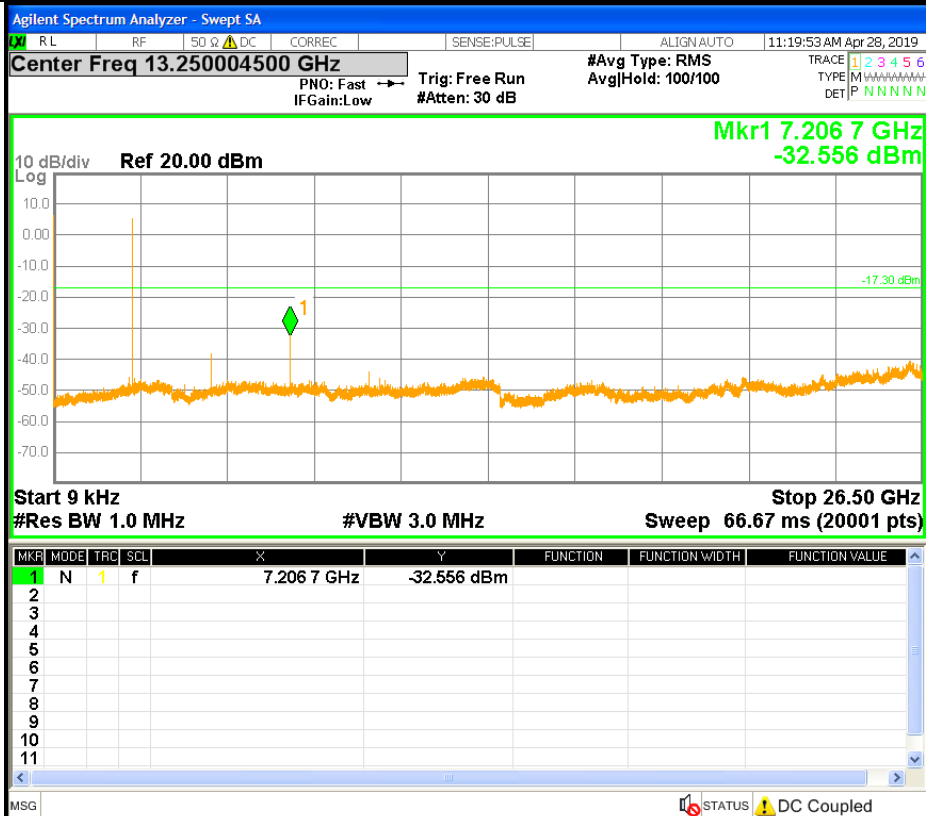
$\pi/4$ DQPSK LCH_Graphs

Pref



Frequency
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Center Freq 2.402000000 GHz
Start Freq 2.401000000 GHz
Stop Freq 2.403000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

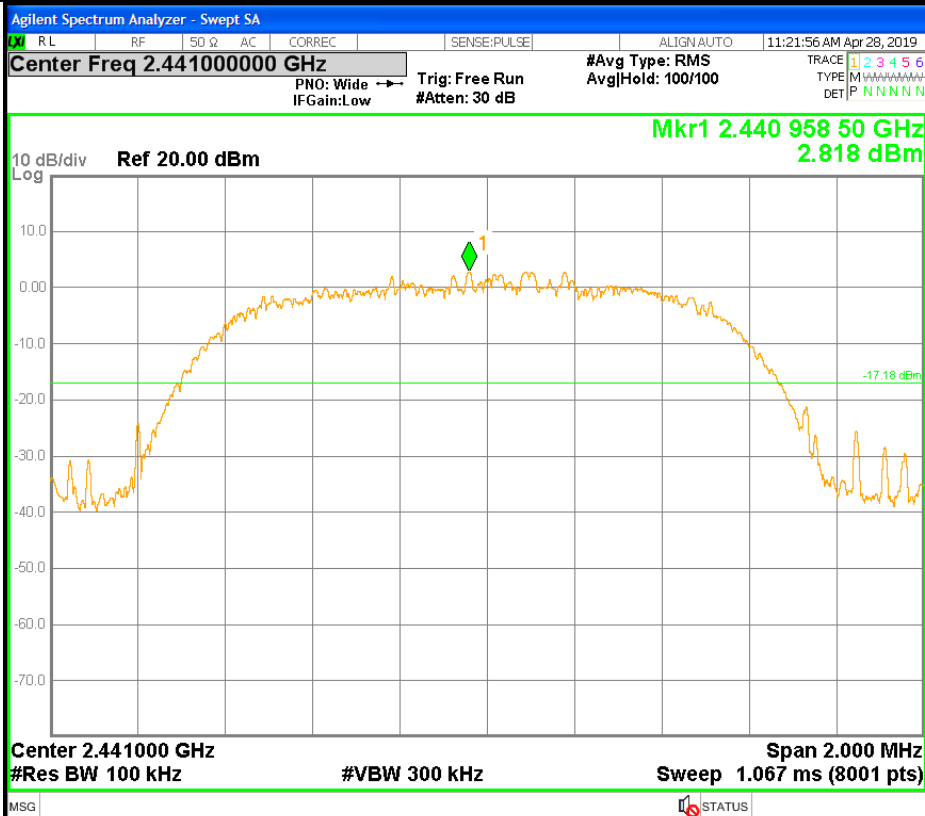
Puw



Frequency
Auto Tune
Center Freq 13.250004500 GHz
Start Freq 9.000 kHz
Stop Freq 26.500000000 GHz
CF Step 2.649999100 GHz Auto Man
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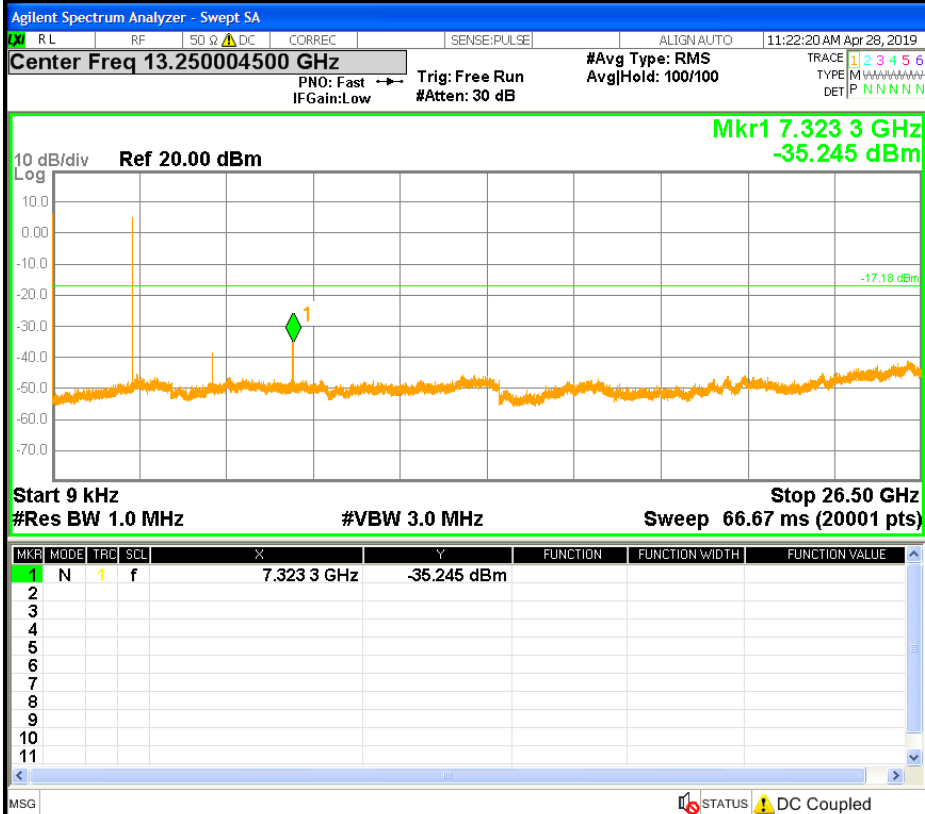
$\pi/4$ DQPSK MCH Graphs

Pref



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Start Freq 2.440000000 GHz
Stop Freq 2.442000000 GHz
CF Step 200.000 kHz Auto Man
Freq Offset 0 Hz

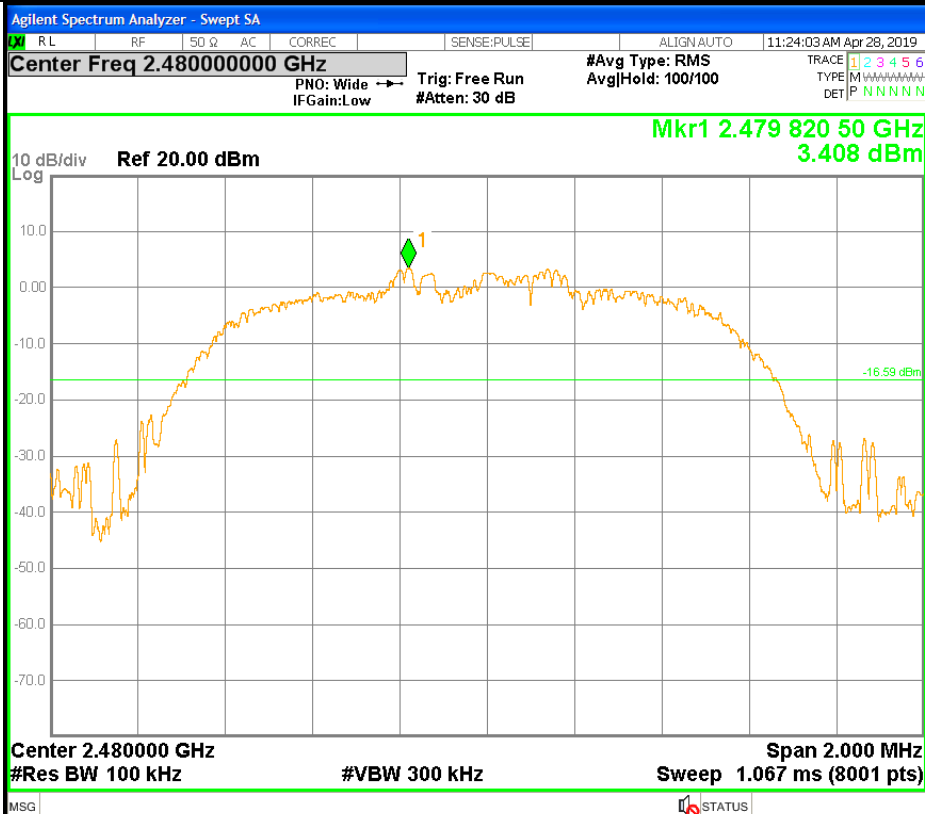
Puw



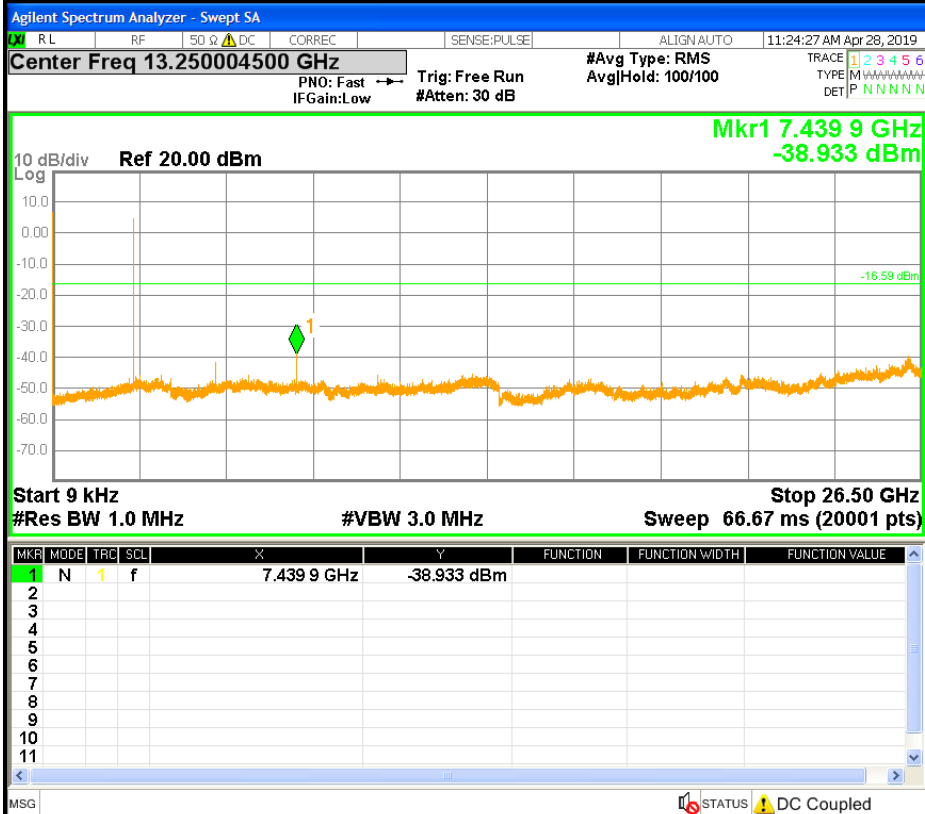
Frequency
Auto Tune
Center Freq 13.250004500 GHz
Start Freq 9.000 kHz
Stop Freq 26.500000000 GHz
CF Step 2.649999100 GHz Auto Man
Freq Offset 0 Hz

$\pi/4$ DQPSK HCH Graphs

Pref

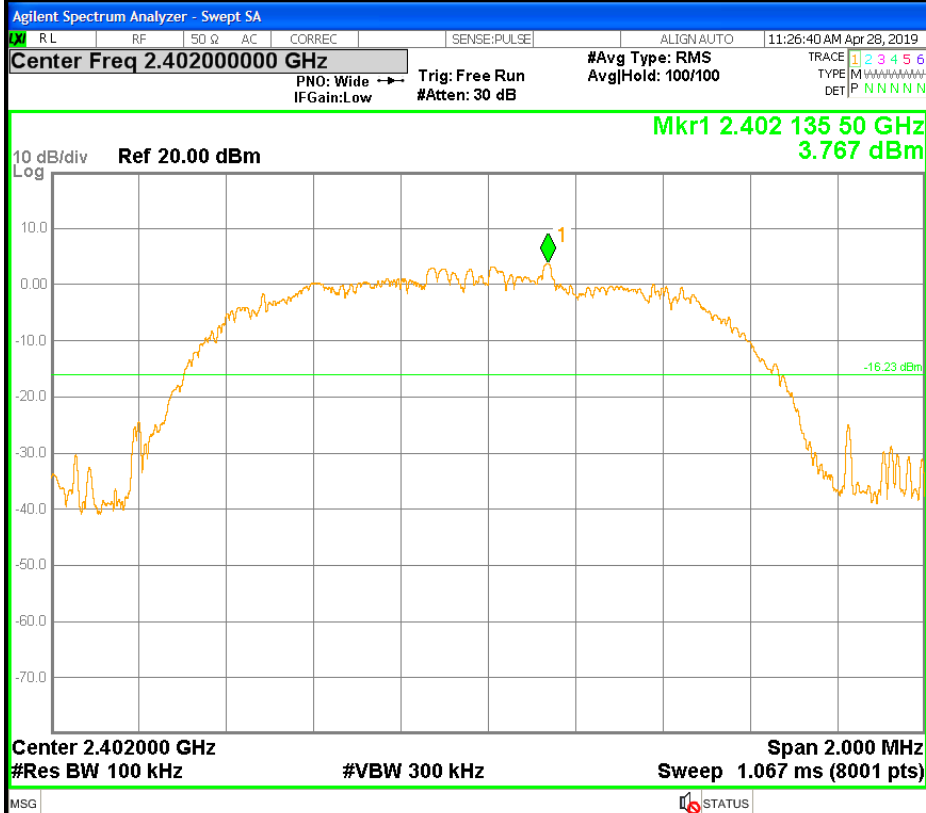


Puw

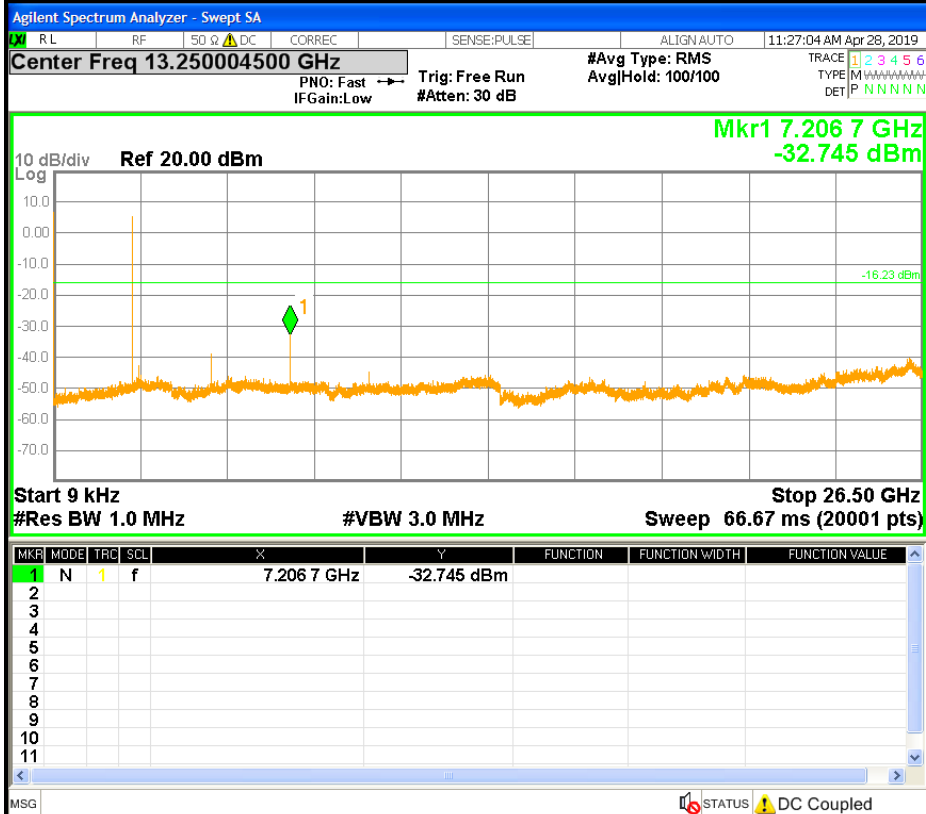


8DPSK LCH_Graphs

Pref

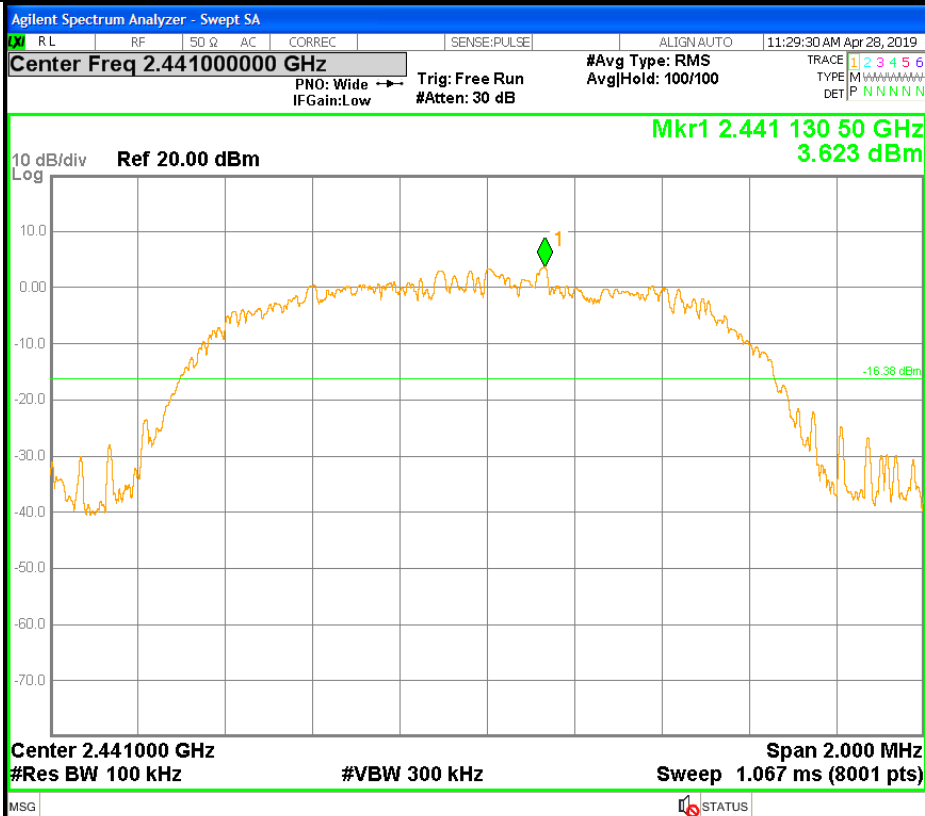


Puw

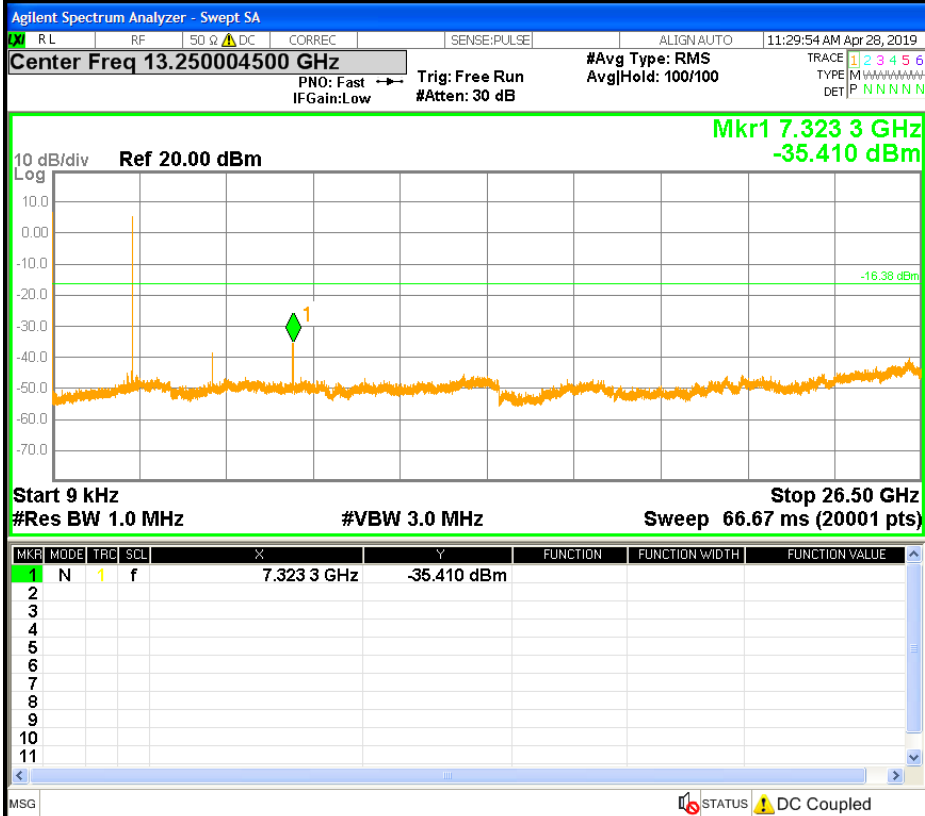


8DPSK_MCH_Graphs

Pref

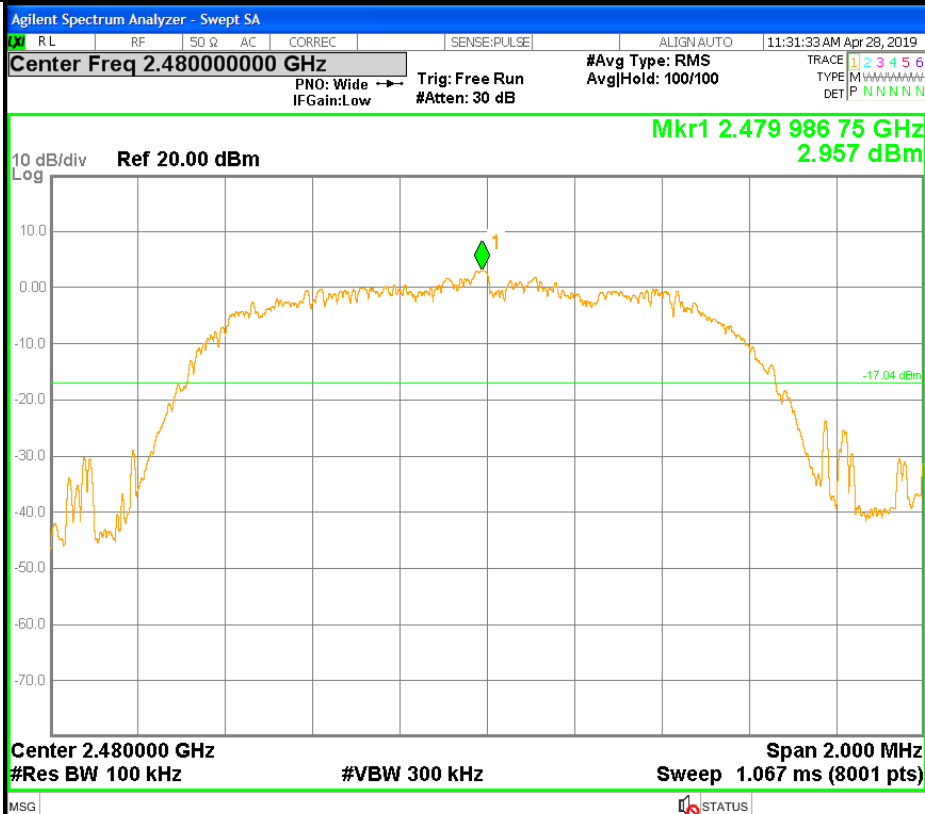


Puw

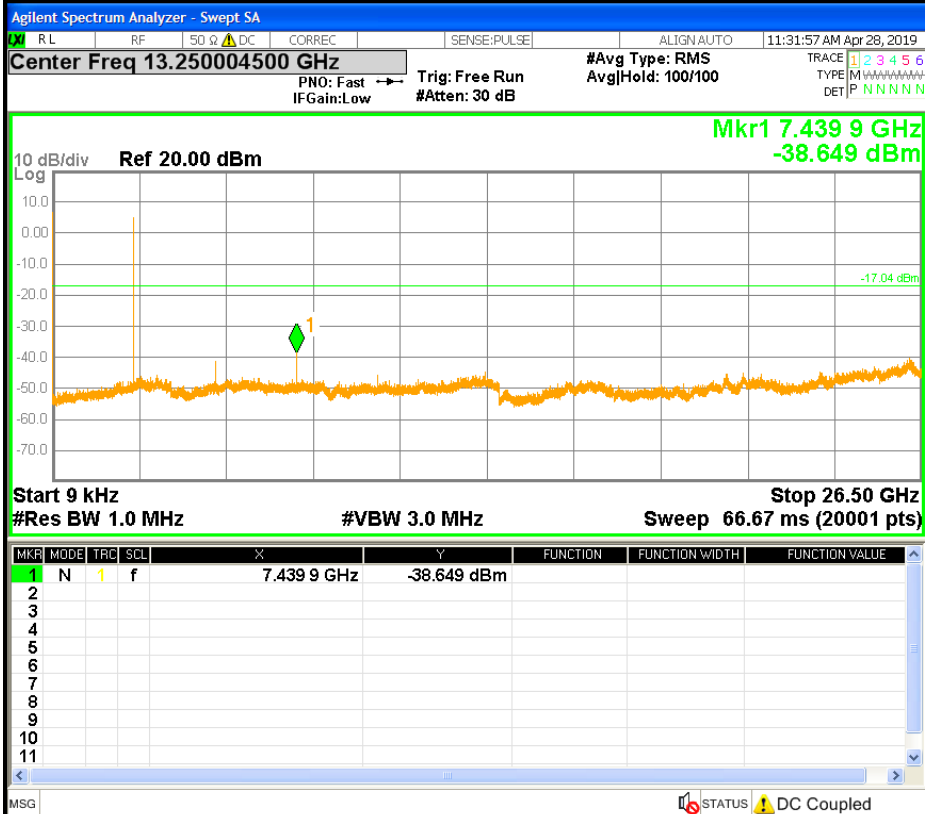


8DPSK HCH_Graphs

Pref



Puw

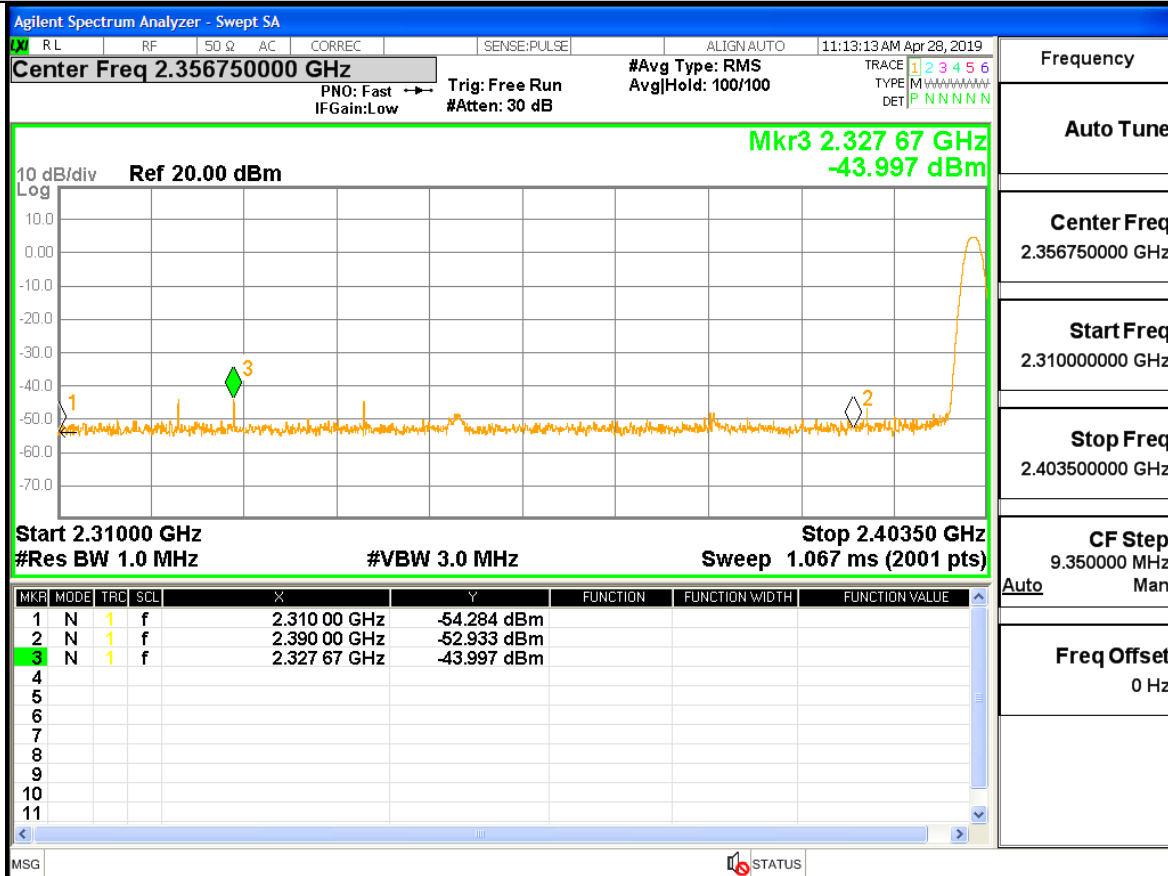


A.8 Restrict-band band-edge measurements

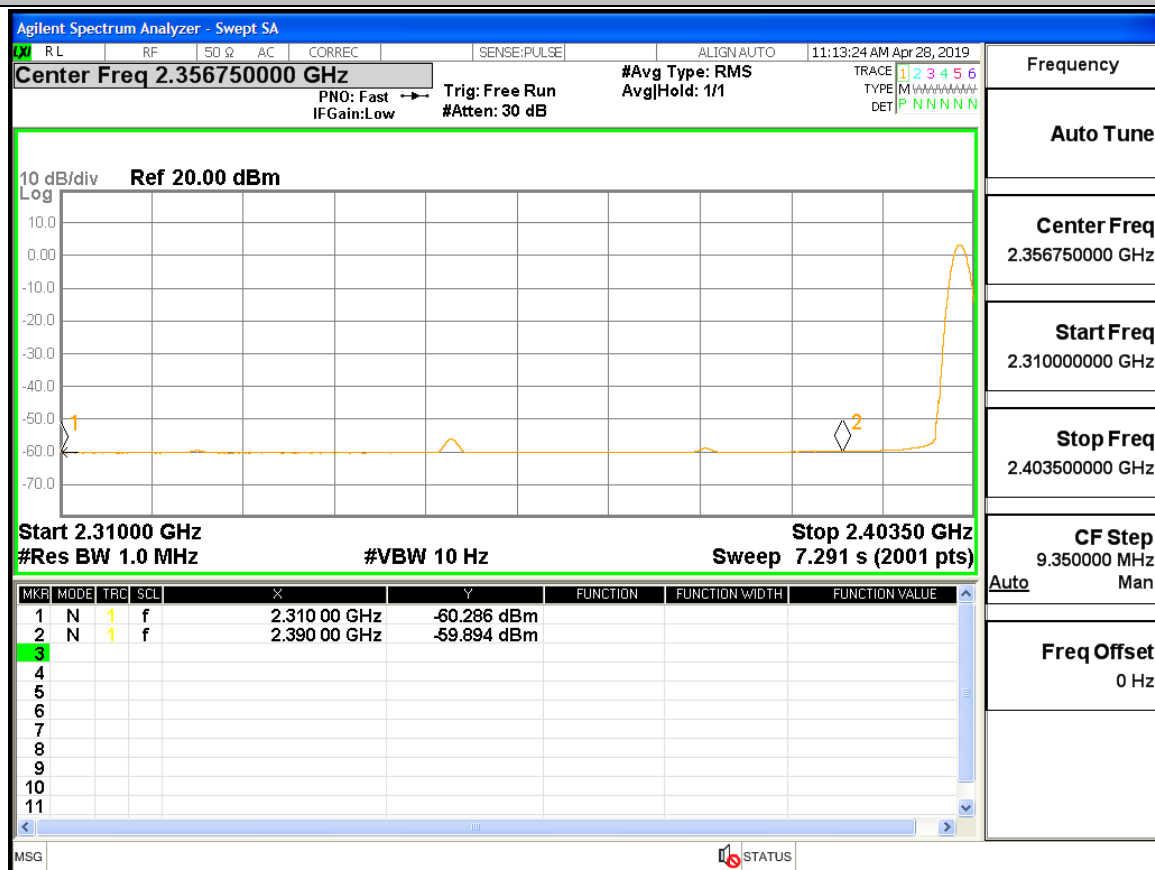
Type	Carrier Frequency (MHz)	Frequency(MHz)	Gain	Ground Factor	Peak Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2327.67	2.00	0.00	-44.00	53.20	74	Pass
1DH5	2480	2494.97	2.00	0.00	-42.52	54.68	74	Pass
2DH5	2402	2349.92	2.00	0.00	-48.58	48.62	74	Pass
2DH5	2480	2495.21	2.00	0.00	-44.36	52.84	74	Pass
3DH5	2402	2361.99	2.00	0.00	-45.86	51.34	74	Pass
3DH5	2480	2494.30	2.00	0.00	-45.89	51.31	74	Pass

Type	Carrier Frequency (MHz)	Frequency(MHz)	Gain	Ground Factor	Average Value(dBm)	E [dBuV/m]	Limit [dBuV/m]	Conclusion
1DH5	2402	2390.00	2.00	0.00	-59.89	37.31	54	Pass
1DH5	2480	2483.50	2.00	0.00	-55.10	42.10	54	Pass
2DH5	2402	2390.00	2.00	0.00	-59.87	37.33	54	Pass
2DH5	2480	2483.50	2.00	0.00	-54.38	42.82	54	Pass
3DH5	2402	2390.00	2.00	0.00	-59.88	37.32	54	Pass
3DH5	2480	2483.50	2.00	0.00	-54.40	42.80	54	Pass

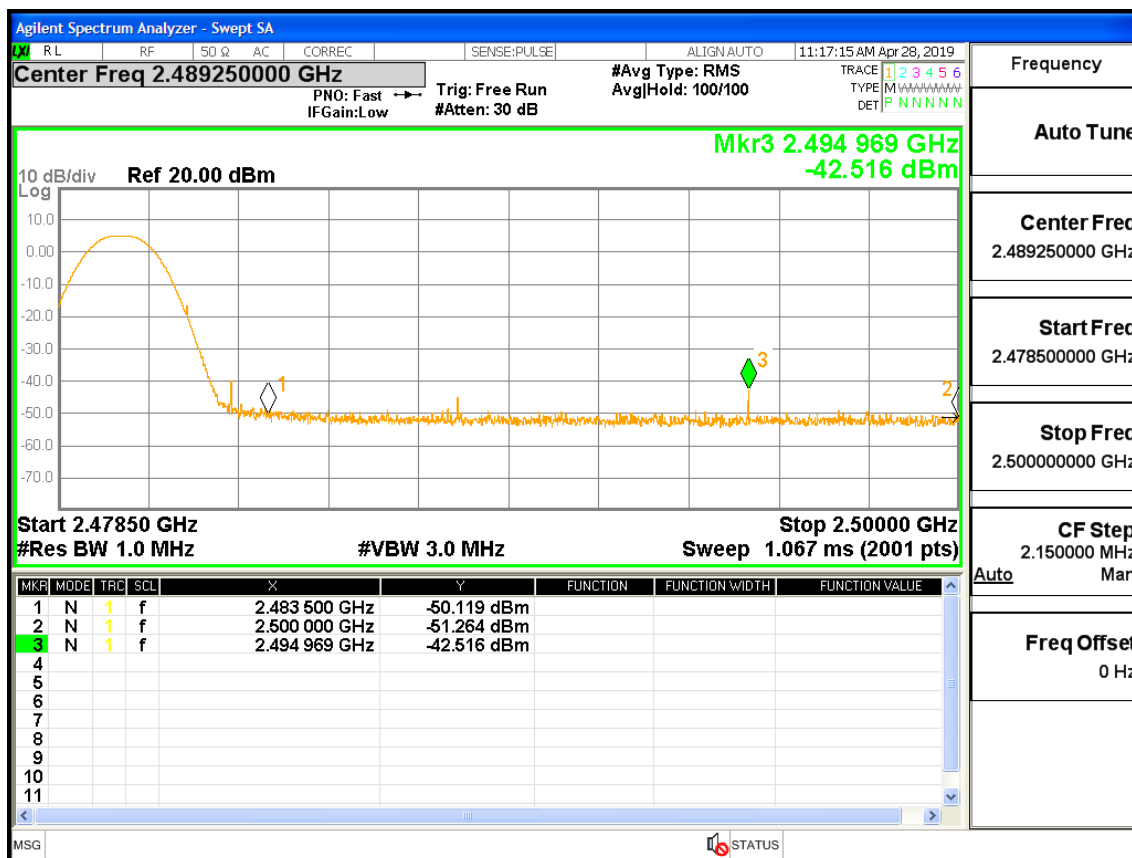
Restrict-band band-edge measurements 2402 PEAK DH5



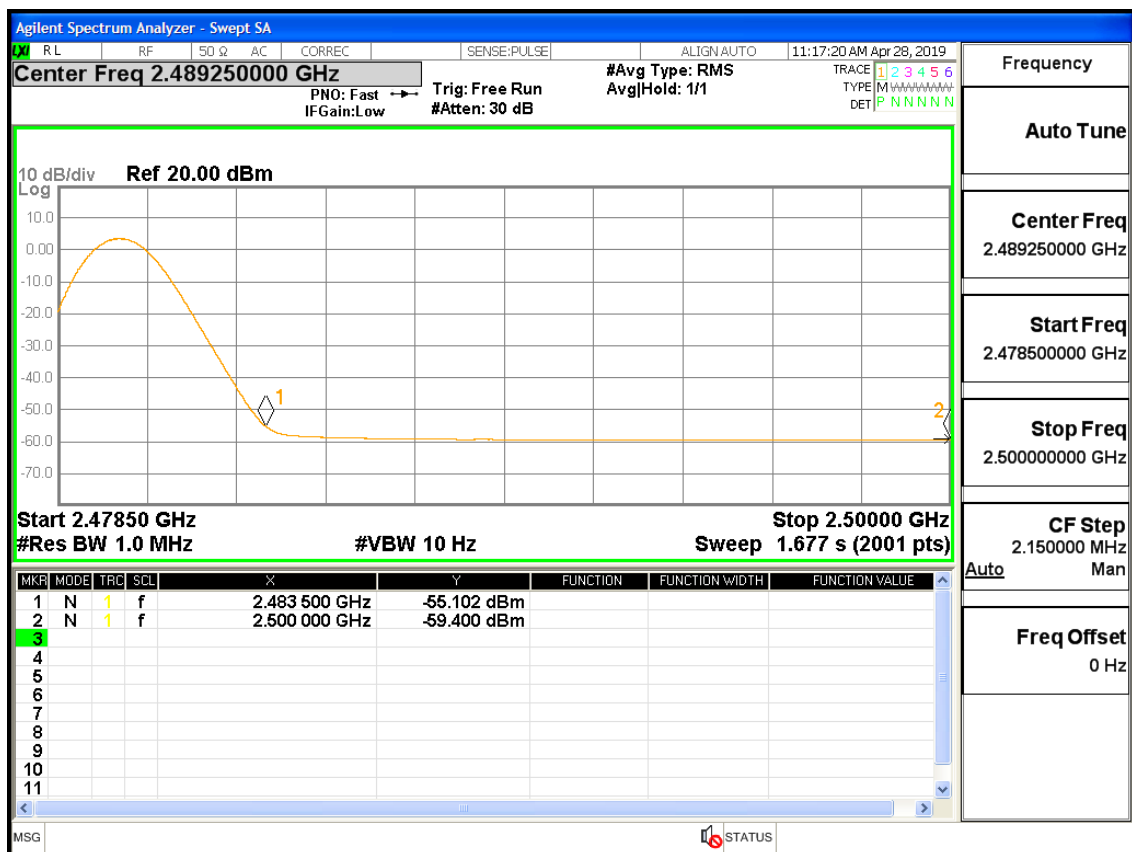
Restrict-band band-edge measurements 2402 AV DH5



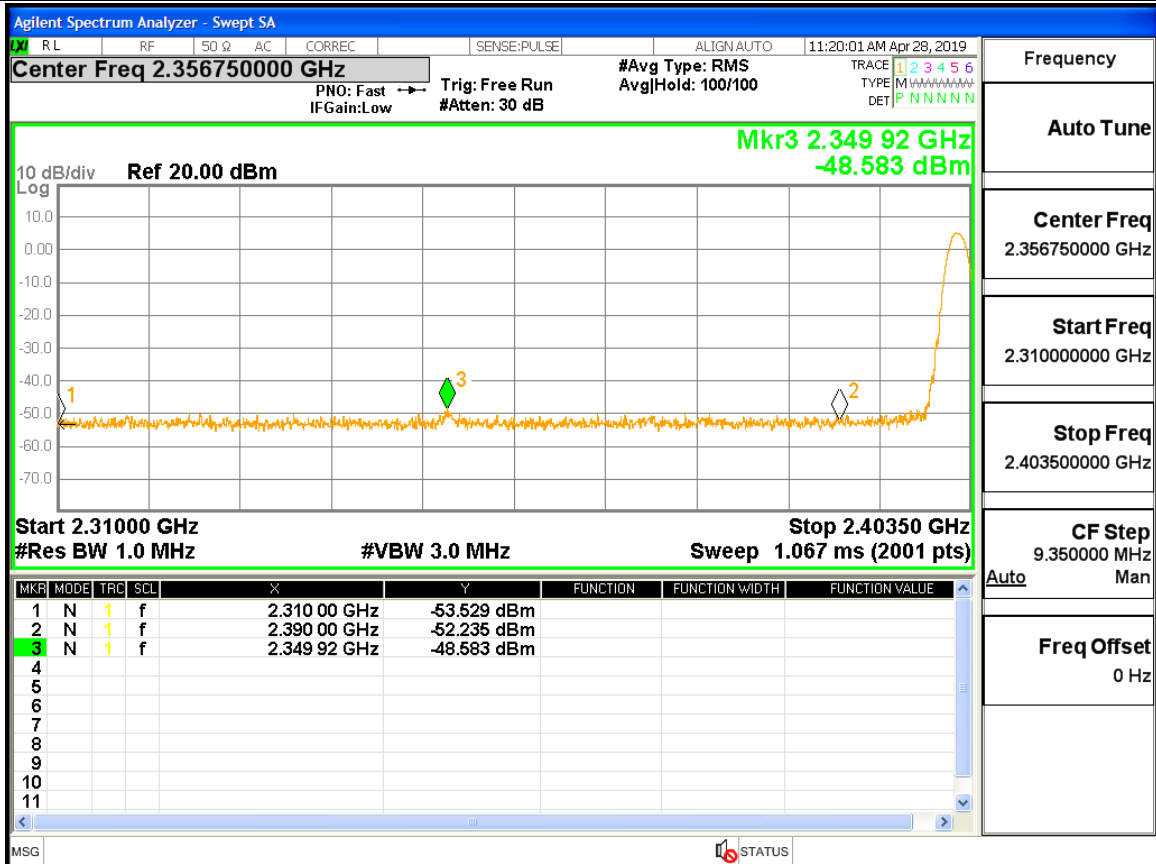
Restrict-band band-edge measurements 2480 PEAK DH5



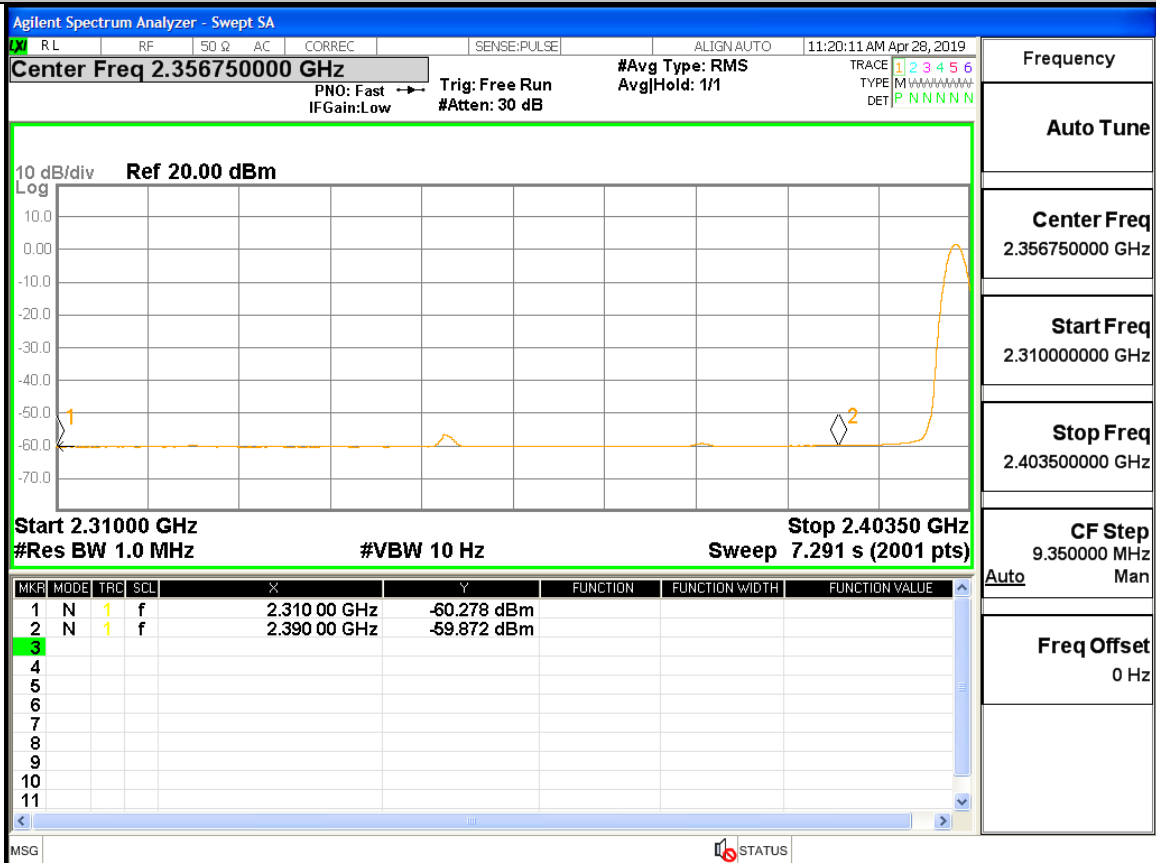
Restrict-band band-edge measurements 2480 AV DH5



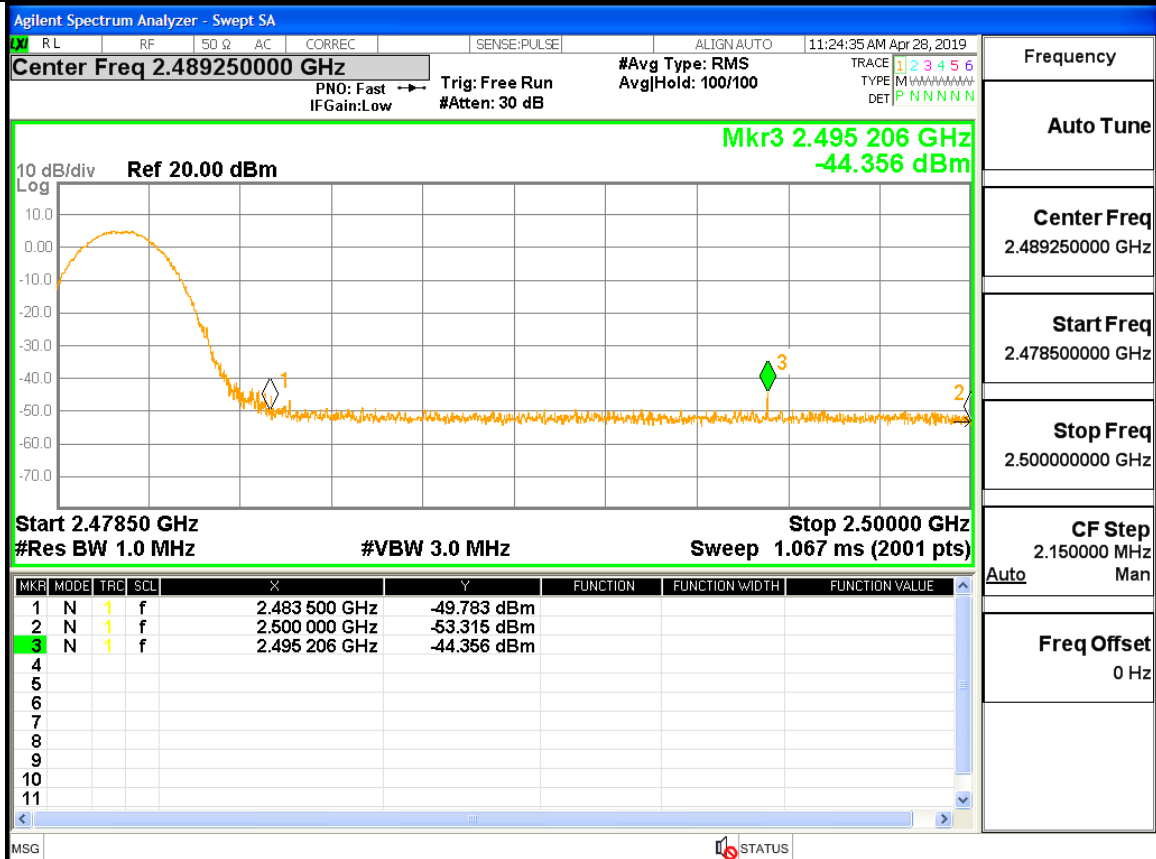
Restrict-band band-edge measurements_2402_PEAK_2DH5



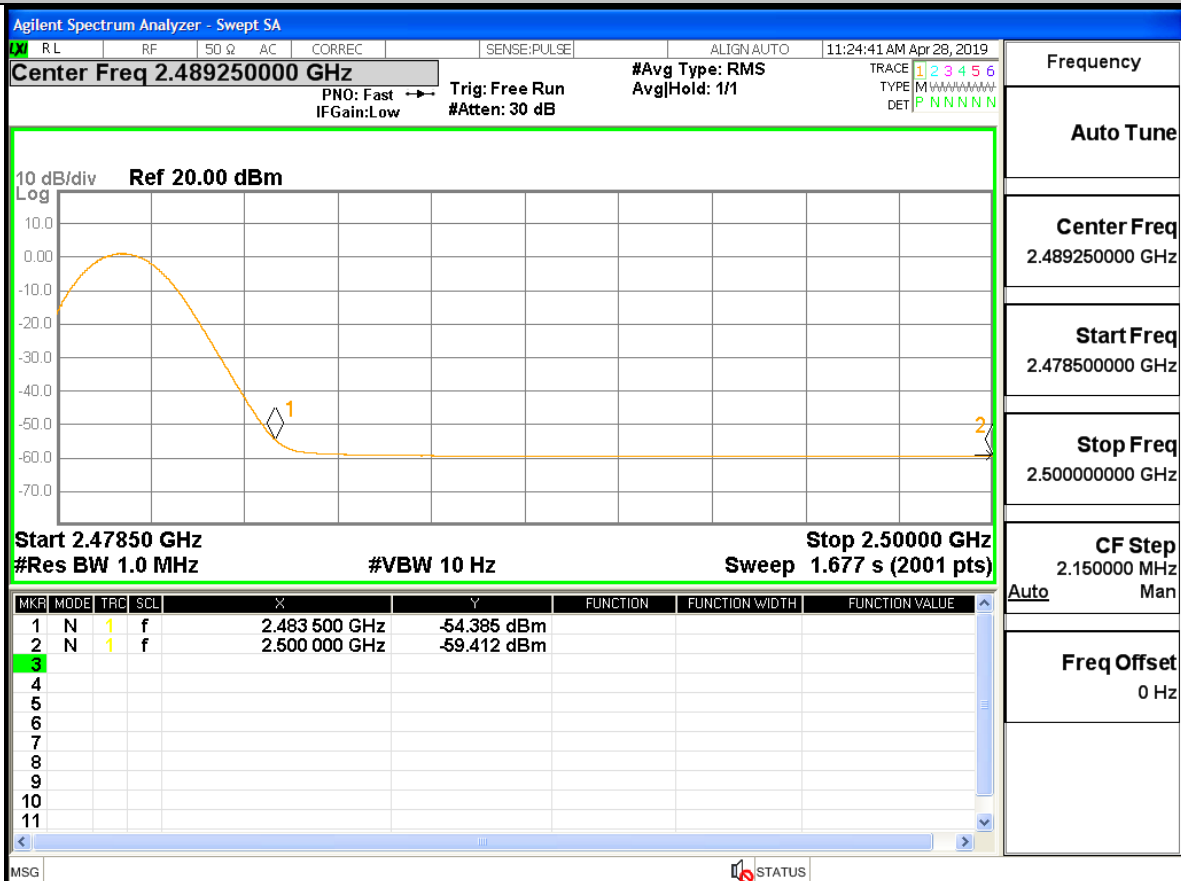
Restrict-band band-edge measurements_2402_AV_2DH5



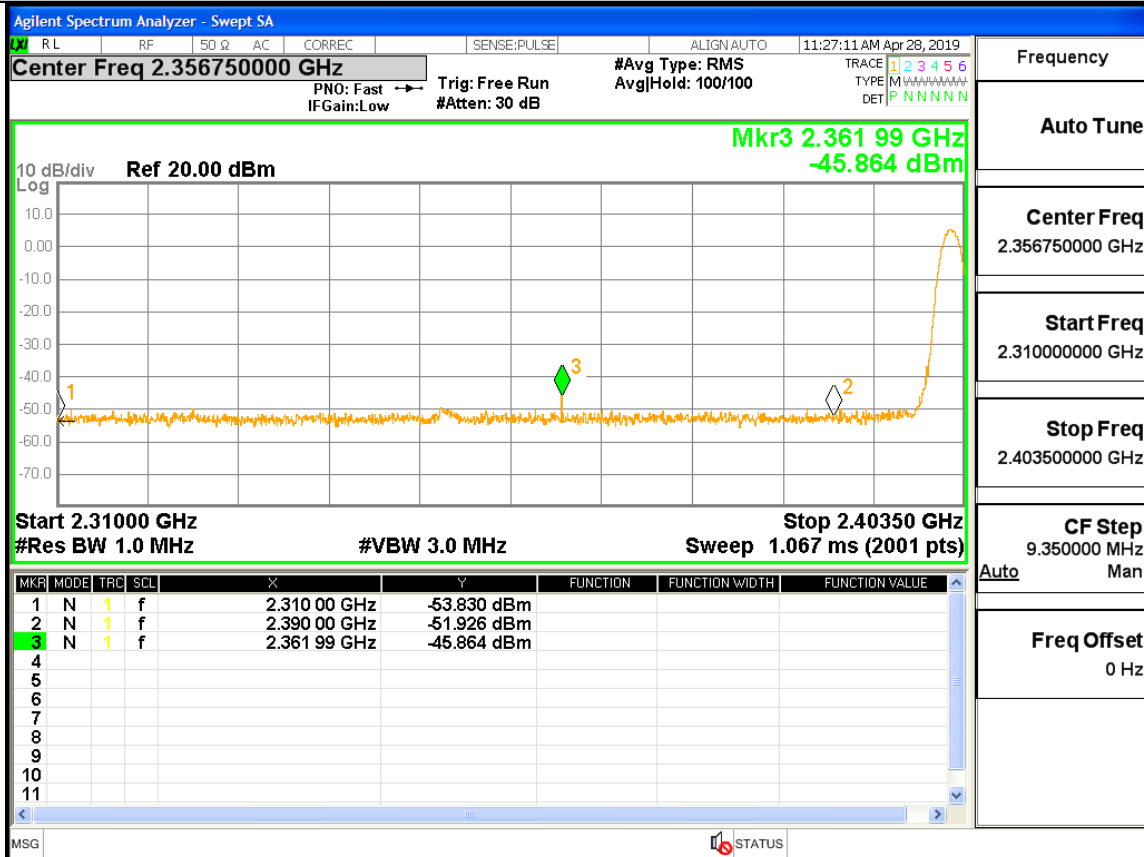
Restrict-band band-edge measurements_2480_PEAK_2DH5



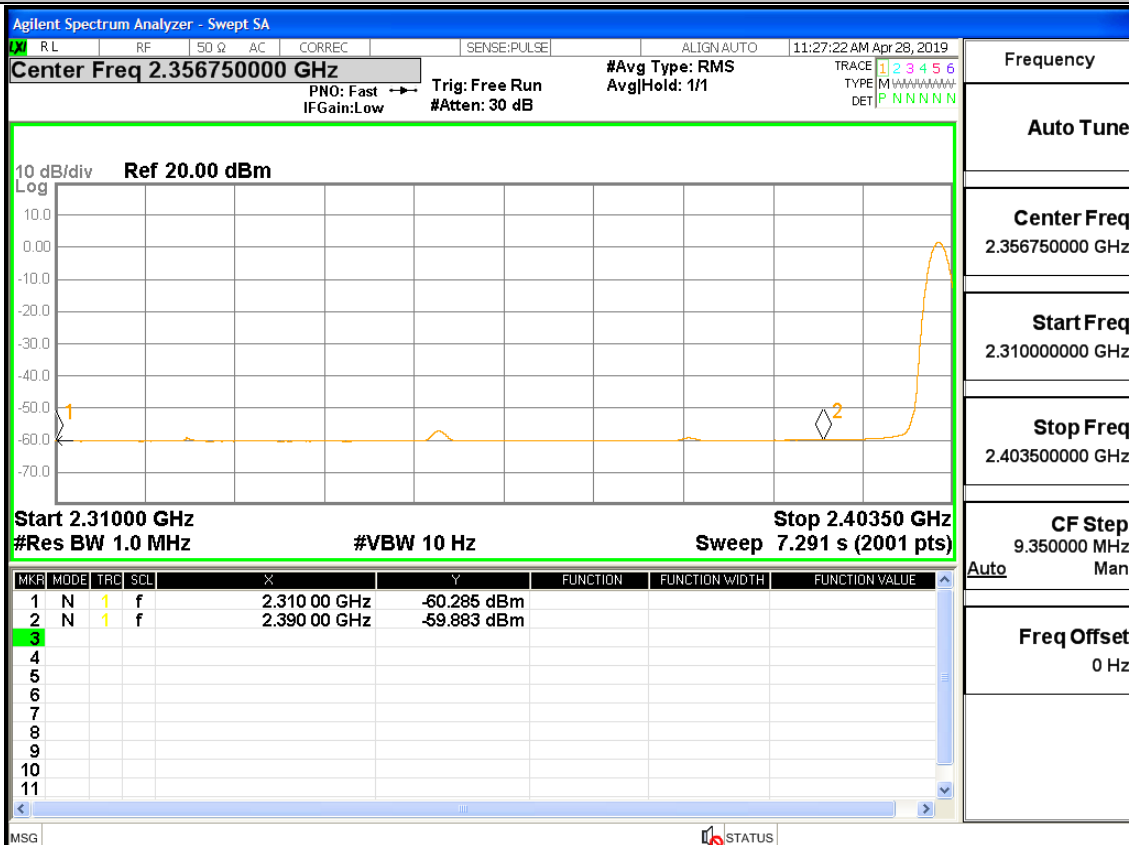
Restrict-band band-edge measurements_2480_AV_2DH5



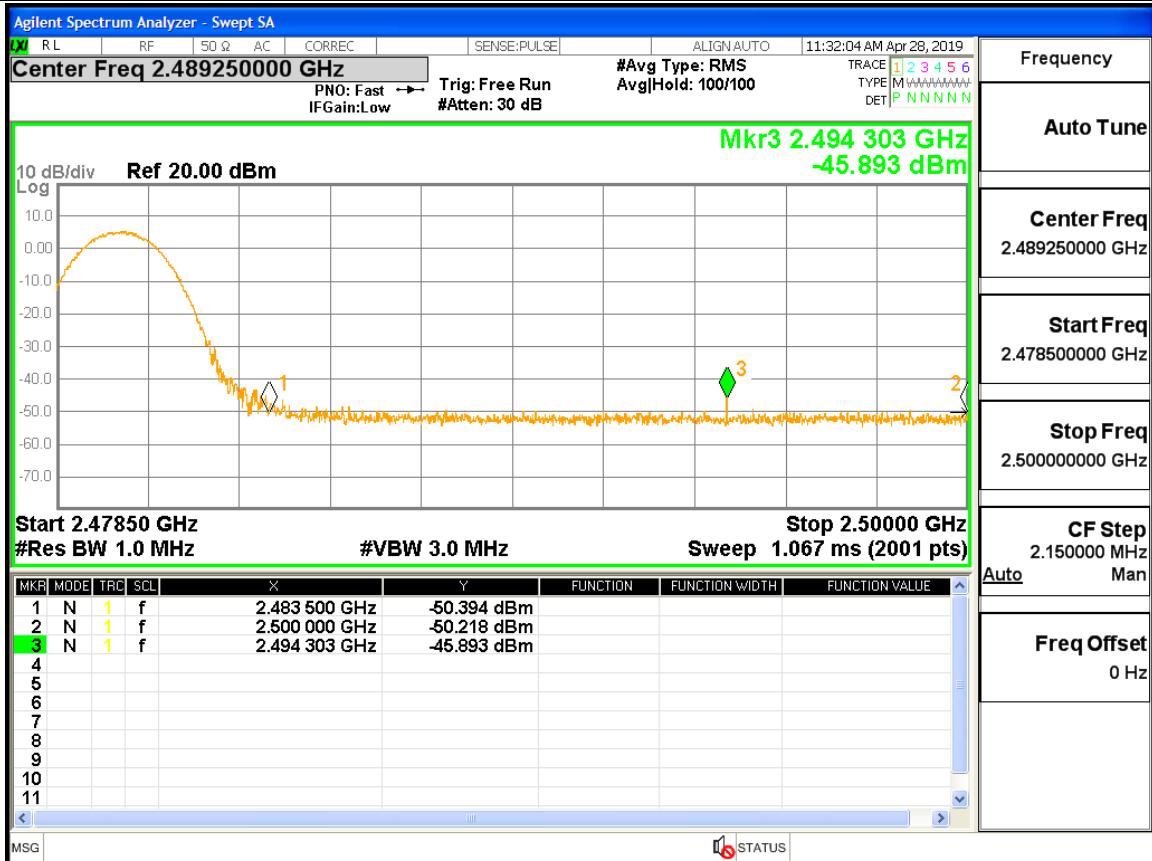
Restrict-band band-edge measurements_2402_PEAK_3DH5



Restrict-band band-edge measurements_2402_AV_3DH5



Restrict-band band-edge measurements_2480_PEAK_3DH5



Restrict-band band-edge measurements_2480_AV_3DH5

