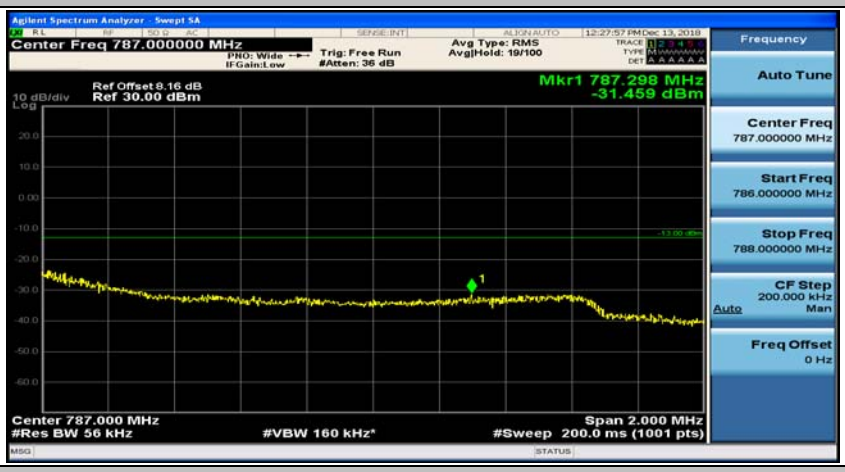
(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#0

(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#6

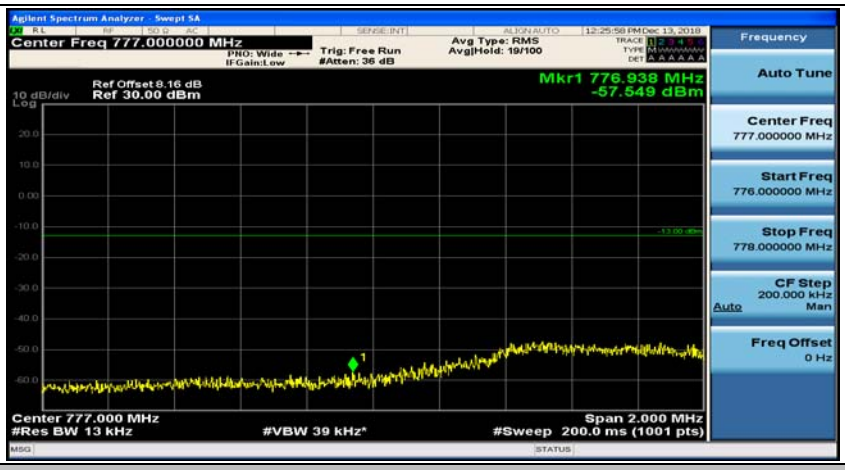


(Channel Bandwidth: 5 MHz)_HCH_QPSK_12RB#13

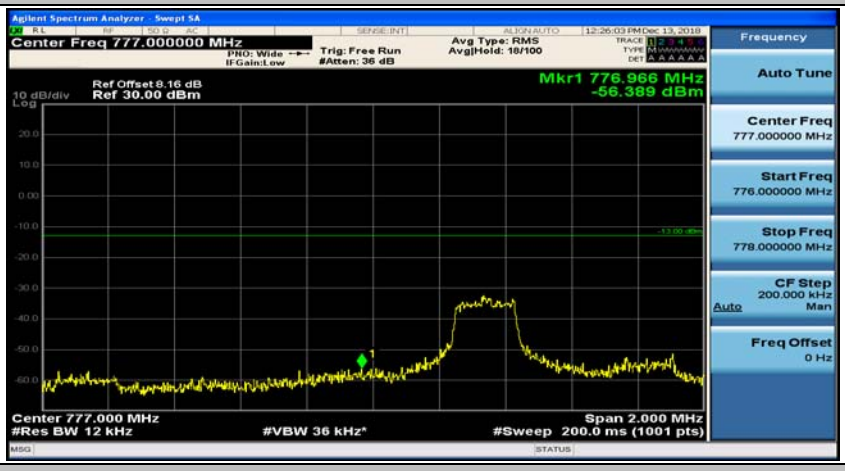
(Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0

(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#0

(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#12



(Channel Bandwidth: 5 MHz)_LCH_16QAM_1RB#24

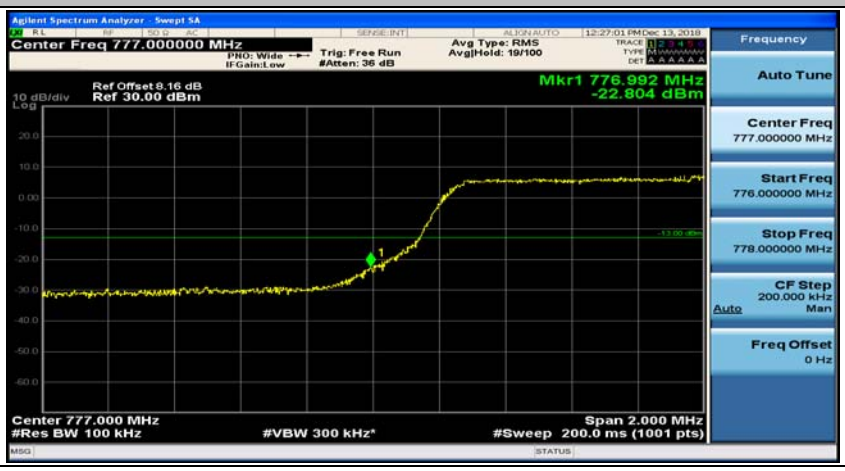


(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#0

(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#6

(Channel Bandwidth: 5 MHz)_LCH_16QAM_12RB#13

(Channel Bandwidth: 5 MHz)_LCH_25RB#0



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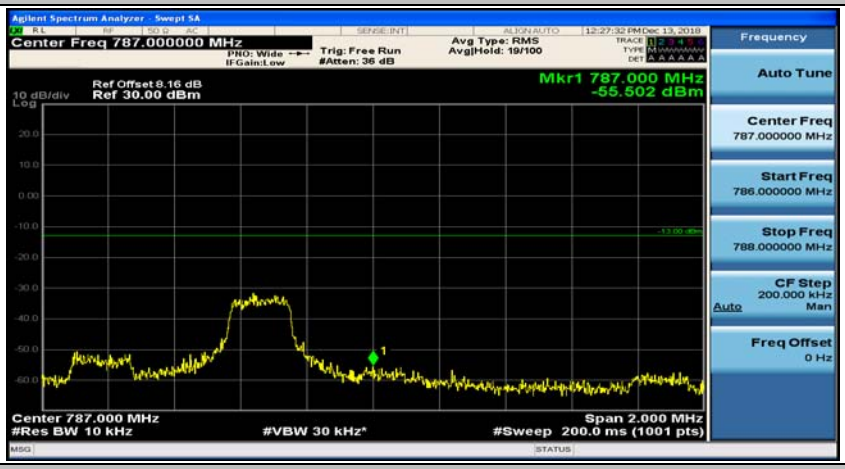
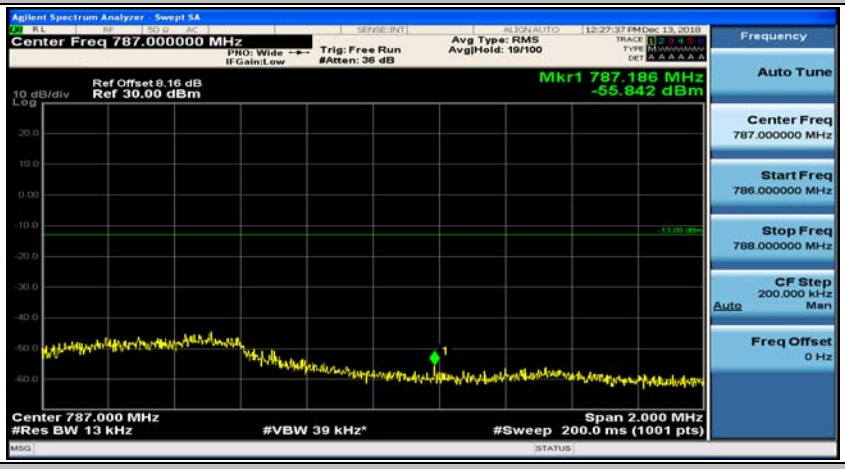


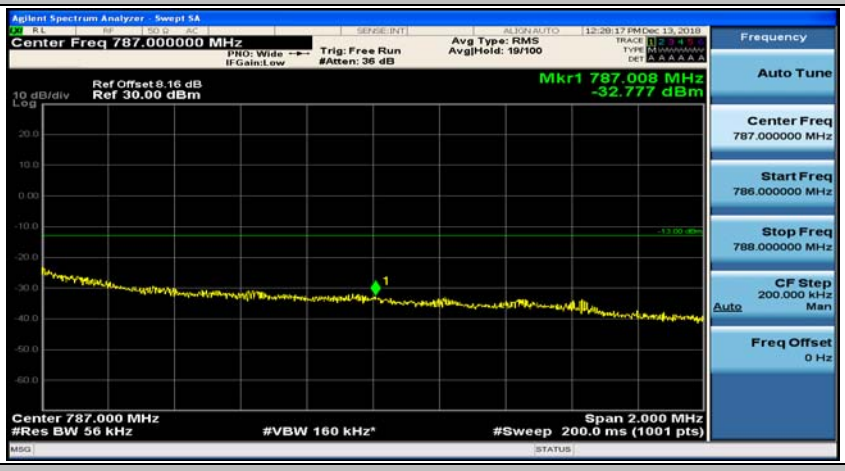
(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#12



(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#24

(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#0

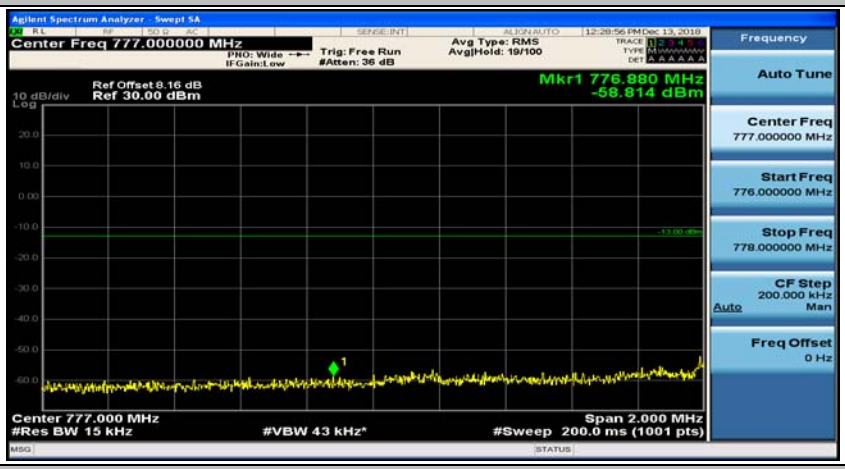
(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#6

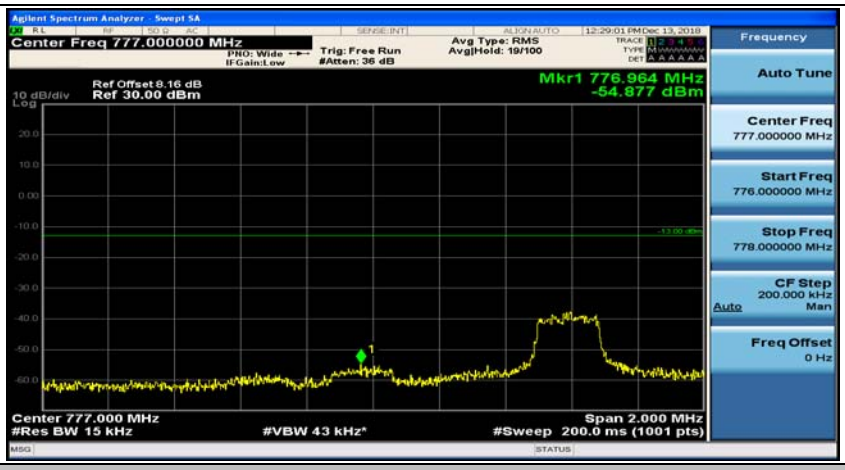


(Channel Bandwidth: 5 MHz)_HCH_16QAM_12RB#13

(Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0

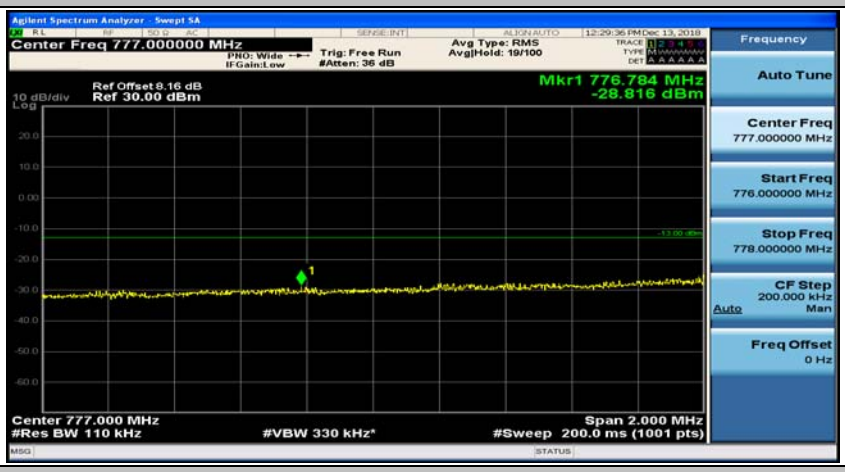
Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#24

Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#49



Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#0

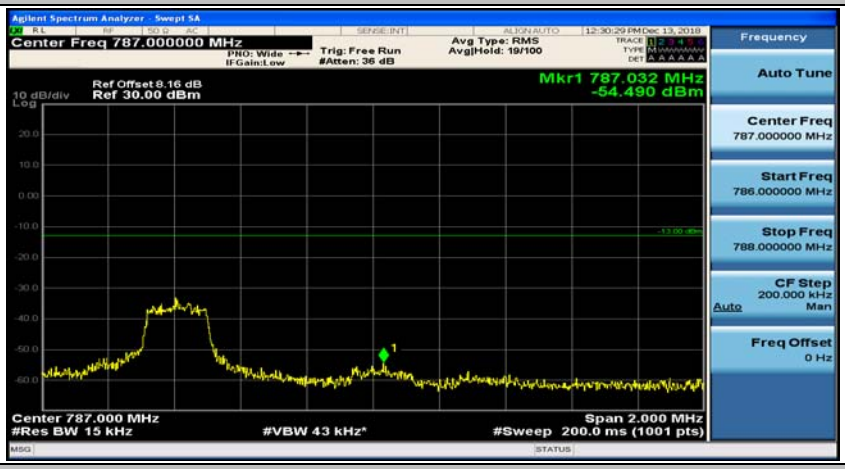
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#12



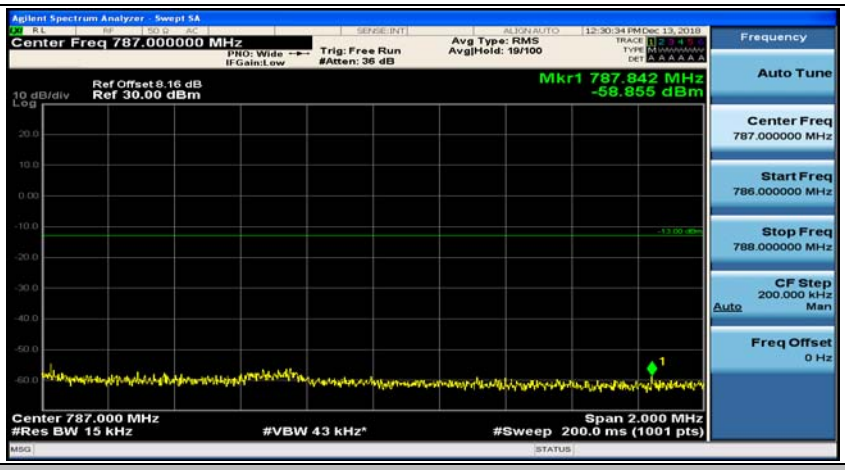
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#25

Channel Bandwidth: 10 MHz_MCH_QPSK_50RB#0

Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0



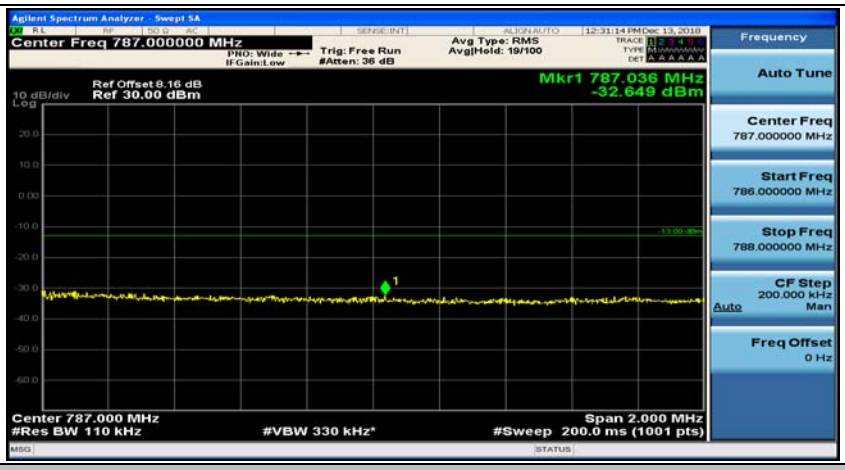
Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#24



Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#49

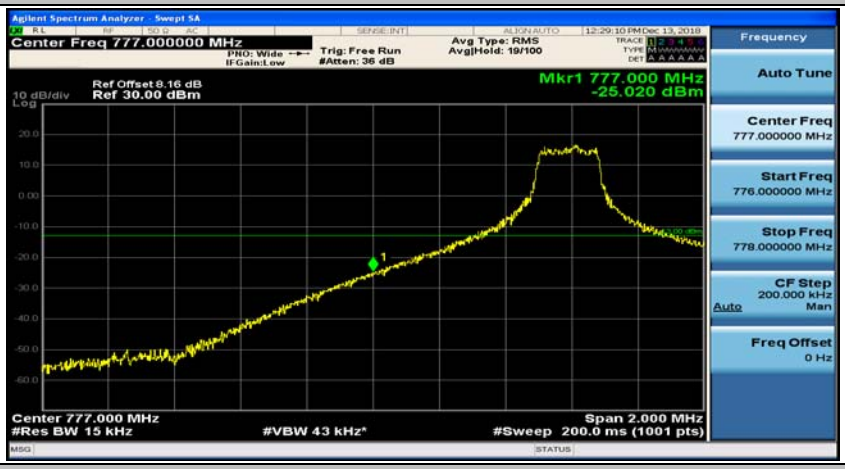
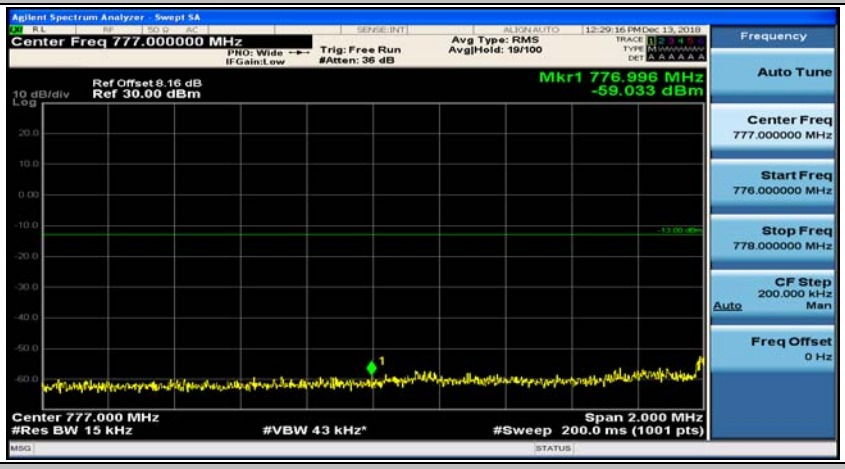
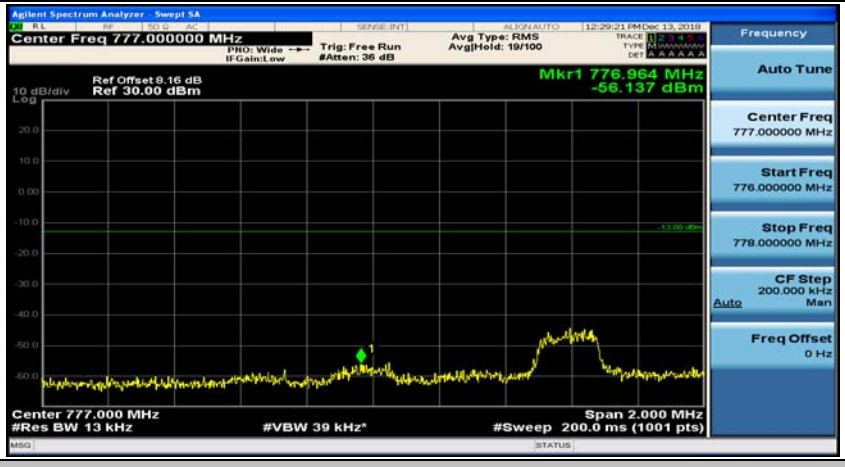
Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#0

Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#12

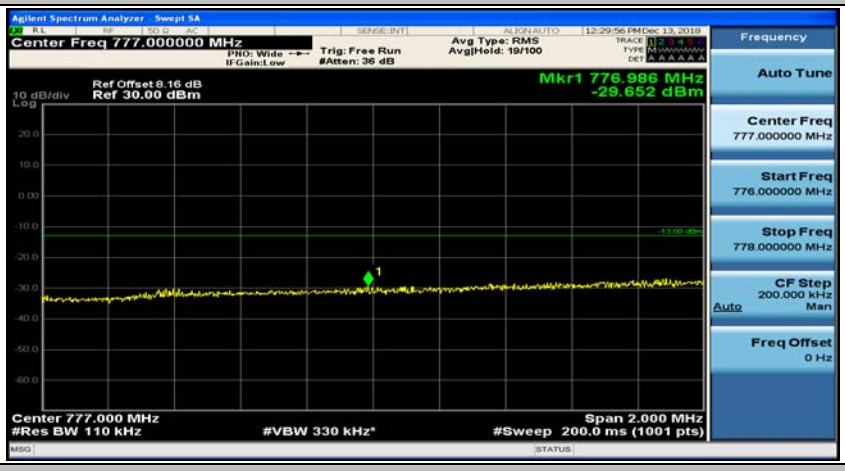


Channel Bandwidth: 10 MHz_MCH_QPSK_25RB#25

Channel Bandwidth: 10 MHz_MCH_QPSK_50RB#0

Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0

Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#24

Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#49

Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#0

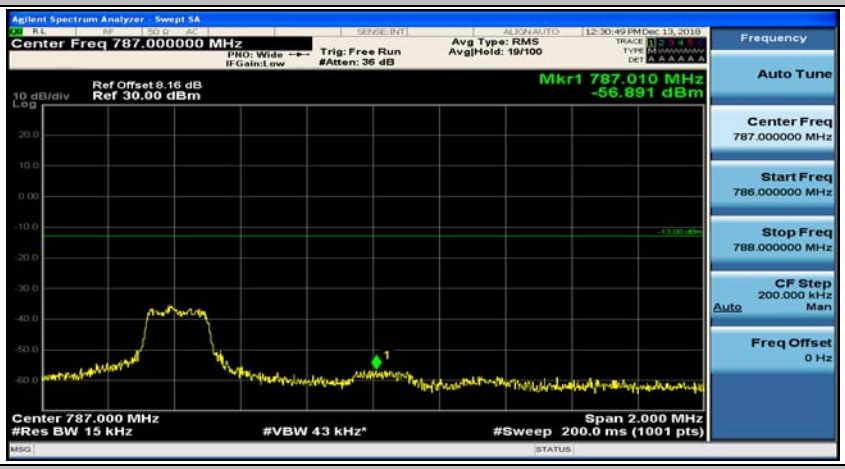
Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#12



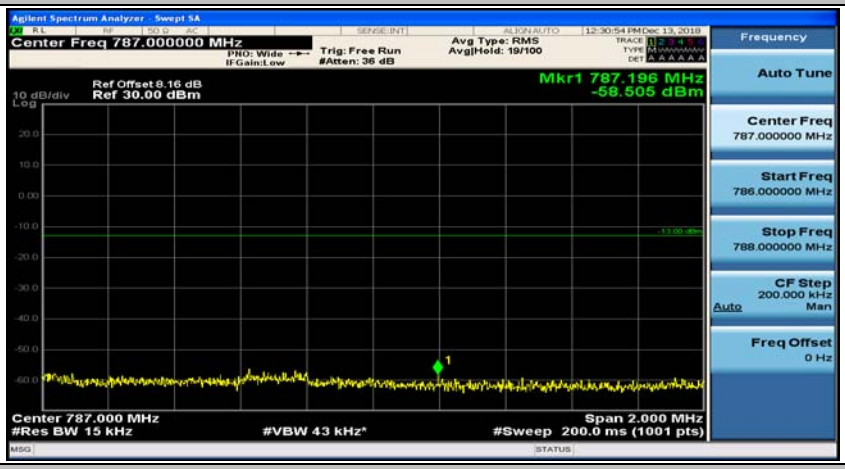
Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#25

Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0

Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#0



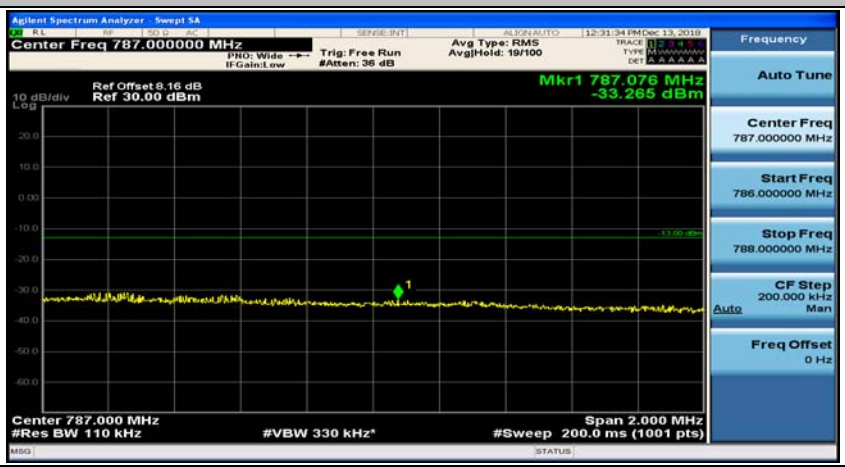
Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#24



Channel Bandwidth: 10 MHz_MCH_16QAM_1RB#49

Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#0

Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#12



Channel Bandwidth: 10 MHz_MCH_16QAM_25RB#25

Channel Bandwidth: 10 MHz_MCH_16QAM_50RB#0

Appendix E: Conducted Spurious Emission

Test Result

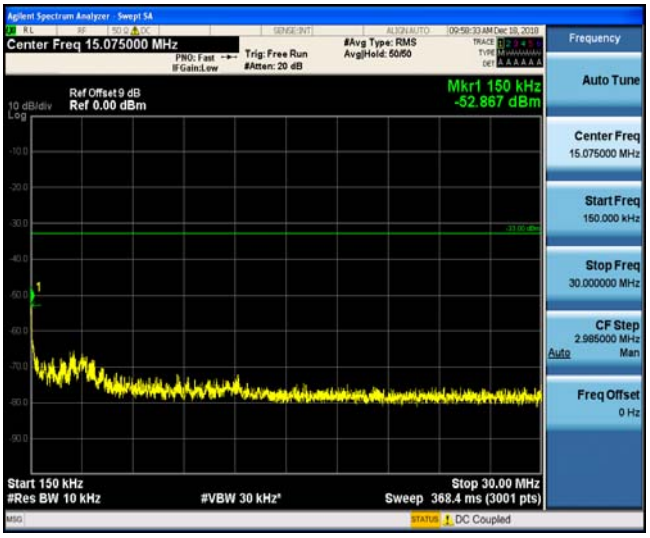
Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	Range1:0.009~0.15MHz	-48.55	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range2:0.15~30MHz	-52.87	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range3:30~1000MHz	-50.81	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range4:1000~5000MHz	-42.61	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range5:5000~12000MHz	-53.2	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range6:12000~18000MHz	-40.8	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range1:0.009~0.15MHz	-50.69	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range2:0.15~30MHz	-53.86	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range3:30~1000MHz	-50.54	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range4:1000~5000MHz	-42.6	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range5:5000~12000MHz	-53.63	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range6:12000~18000MHz	-40.64	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range1:0.009~0.15MHz	-50.98	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range2:0.15~30MHz	-55.05	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range3:30~1000MHz	-50.7	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range4:1000~5000MHz	-42.41	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range5:5000~12000MHz	-53.46	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range6:12000~18000MHz	-40.99	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range1:0.009~0.15MHz	-50.66	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range2:0.15~30MHz	-55.2	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range3:30~1000MHz	-50.72	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range4:1000~5000MHz	-42.57	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range5:5000~12000MHz	-53.46	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range6:12000~18000MHz	-40.61	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range1:0.009~0.15MHz	-50.61	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range2:0.15~30MHz	-54.79	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range3:30~1000MHz	-50.52	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range4:1000~5000MHz	-42.58	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range5:5000~12000MHz	-53.26	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range6:12000~18000MHz	-40.74	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range1:0.009~0.15MHz	-50.7	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range2:0.15~30MHz	-53.99	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range3:30~1000MHz	-49.92	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range4:1000~5000MHz	-42.66	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range5:5000~12000MHz	-53.51	PASS

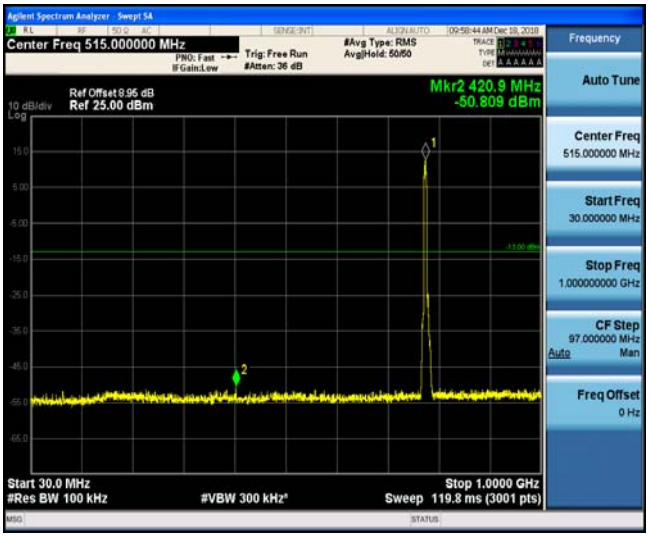
Band13	5MHz	16QAM	23255	1RB#0	Range6:12000~18000MHz	-40.46	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range1:0.009~0.15MHz	-49.35	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range2:0.15~30MHz	-53.62	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range3:30~1000MHz	-50.89	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range4:1000~5000MHz	-42.7	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range5:5000~12000MHz	-53.18	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range6:12000~18000MHz	-40.63	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range1:0.009~0.15MHz	-49.64	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range2:0.15~30MHz	-54.27	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range3:30~1000MHz	-50.49	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range4:1000~5000MHz	-42.39	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range5:5000~12000MHz	-53.09	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range6:12000~18000MHz	-40.72	PASS

Test Graphs

Band13_5MHz_QPSK_23205_1RB#0

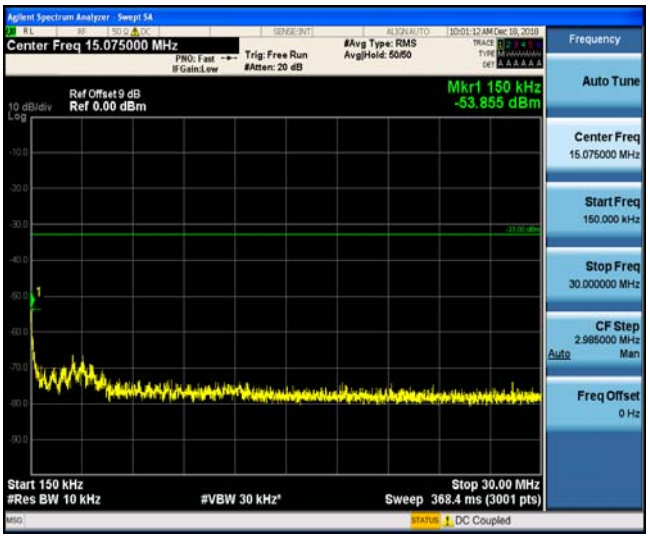
Band13_5MHz_QPSK_23205_1RB#0



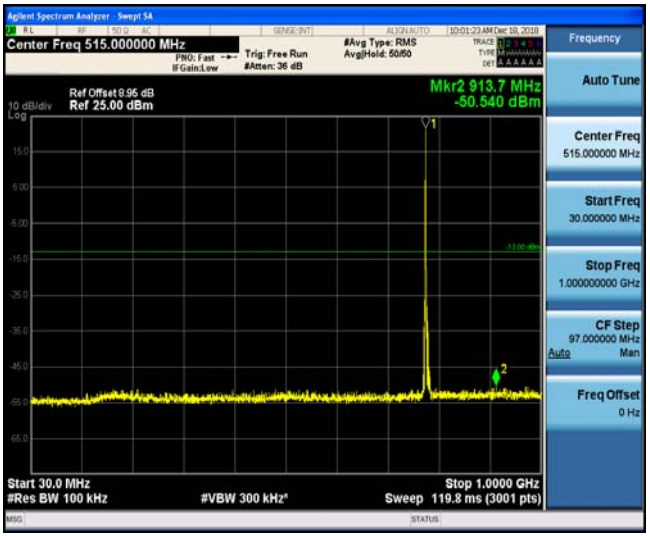
Band13_5MHz_QPSK_23205_1RB#0

Band13_5MHz_QPSK_23205_1RB#0
Band13_5MHz_QPSK_23205_1RB#0
Band13_5MHz_QPSK_23205_1RB#0

Band13_5MHz_QPSK_23230_1RB#0

Band13_5MHz_QPSK_23230_1RB#0

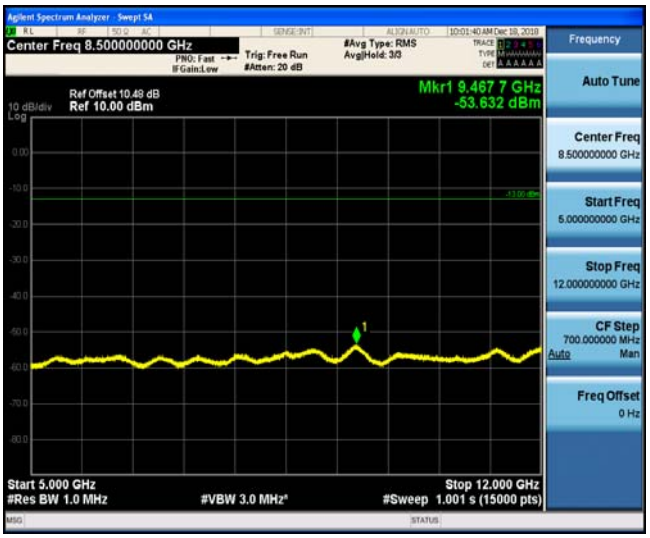


Band13_5MHz_QPSK_23230_1RB#0



Band13_5MHz_QPSK_23230_1RB#0

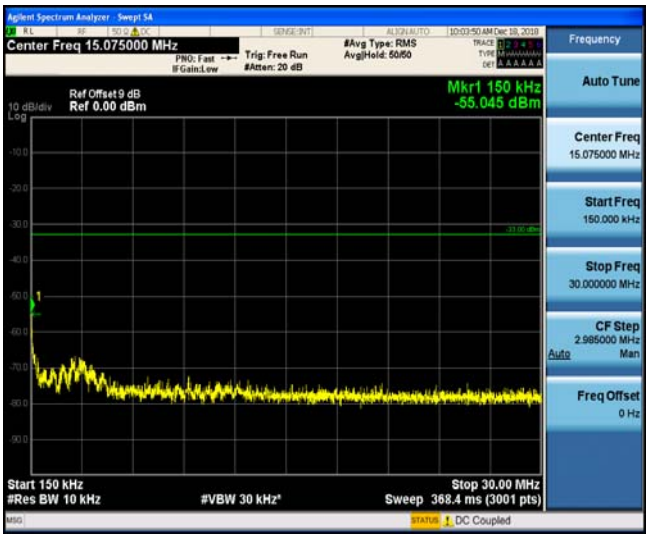
Band13_5MHz_QPSK_23230_1RB#0



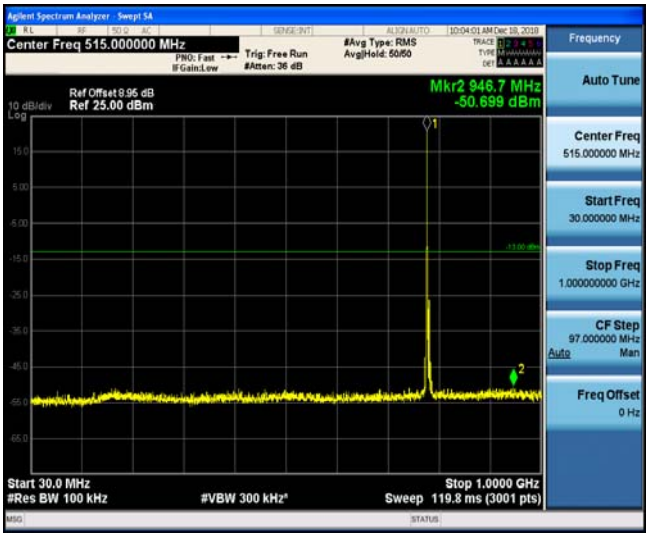
Band13_5MHz_QPSK_23230_1RB#0

Band13_5MHz_QPSK_23255_1RB#0

Band13_5MHz_QPSK_23255_1RB#0



Band13_5MHz_QPSK_23255_1RB#0

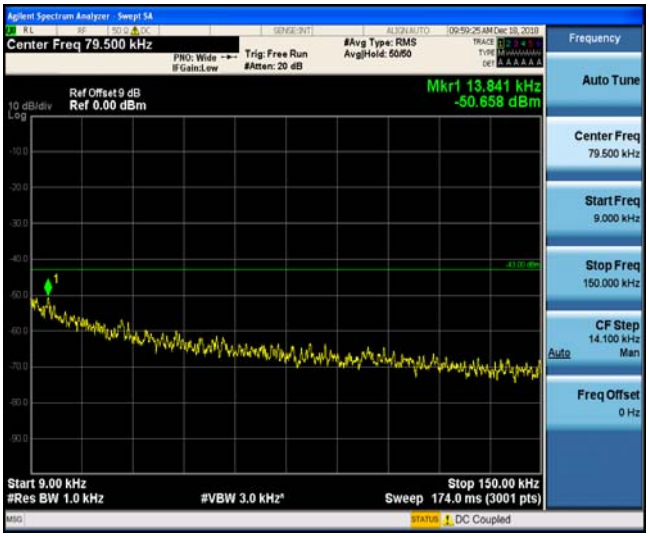


Band13_5MHz_QPSK_23255_1RB#0

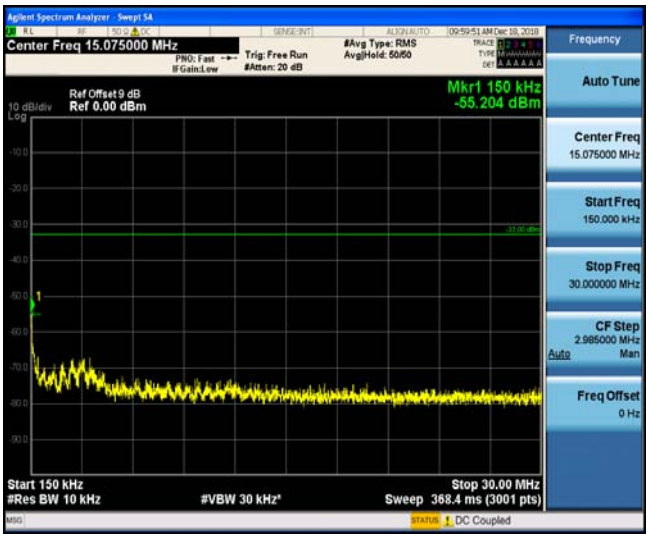
Band13_5MHz_QPSK_23255_1RB#0

Band13_5MHz_QPSK_23255_1RB#0

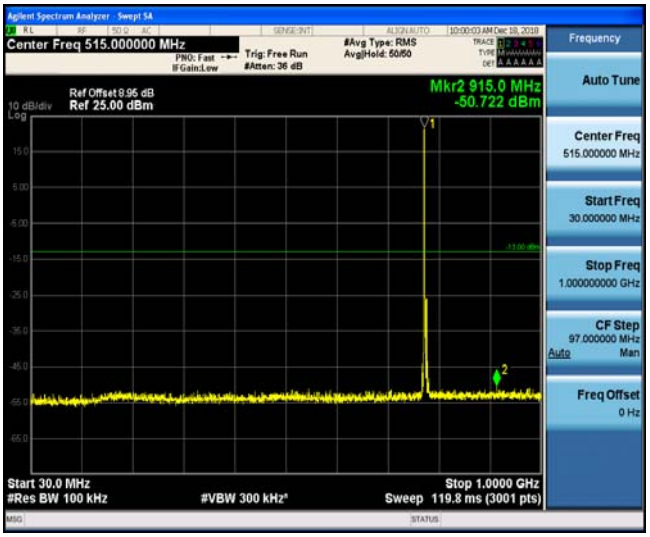
Band13_5MHz_16QAM_23205_1RB#0



Band13_5MHz_16QAM_23205_1RB#0



Band13_5MHz_16QAM_23205_1RB#0

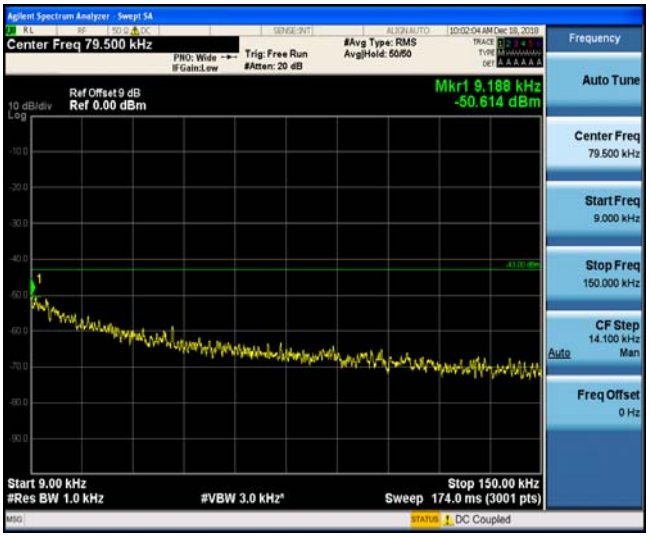


Band13_5MHz_16QAM_23205_1RB#0

Band13_5MHz_16QAM_23205_1RB#0

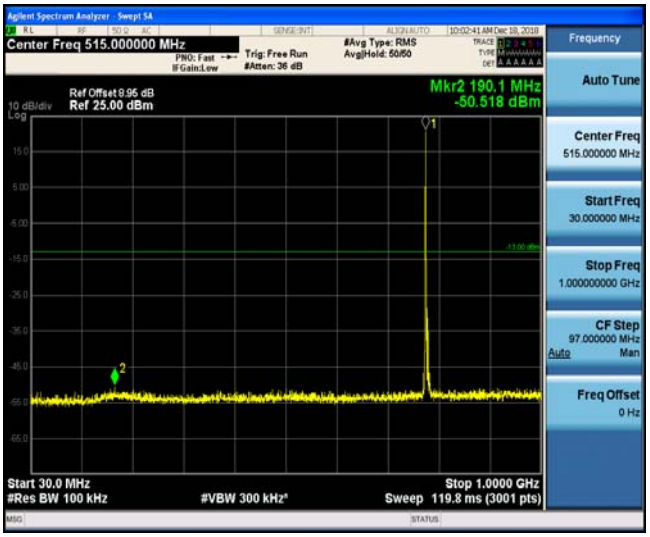
Band13_5MHz_16QAM_23205_1RB#0

Band13_5MHz_16QAM_23230_1RB#0



Band13_5MHz_16QAM_23230_1RB#0

Band13_5MHz_16QAM_23230_1RB#0

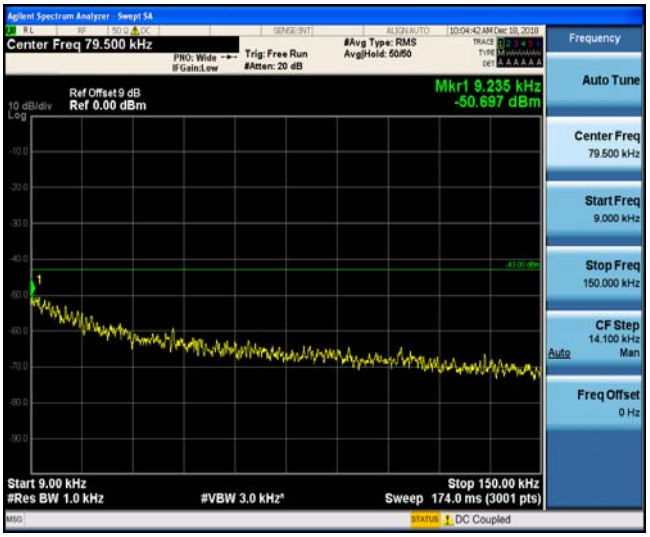


Band13_5MHz_16QAM_23230_1RB#0

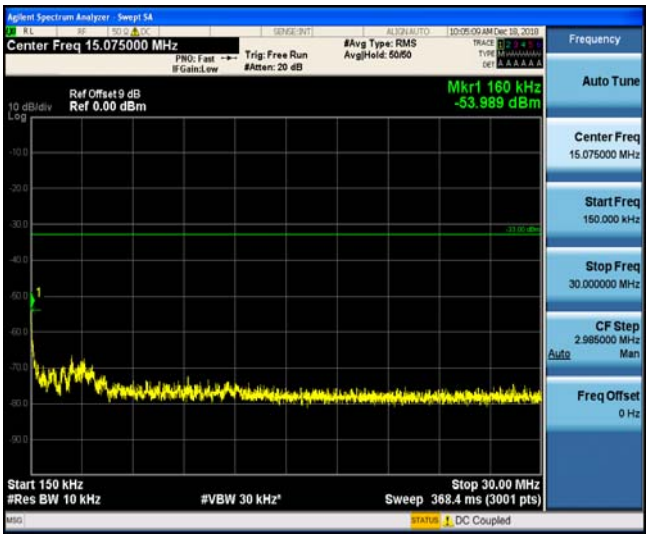
Band13_5MHz_16QAM_23230_1RB#0

Band13_5MHz_16QAM_23230_1RB#0

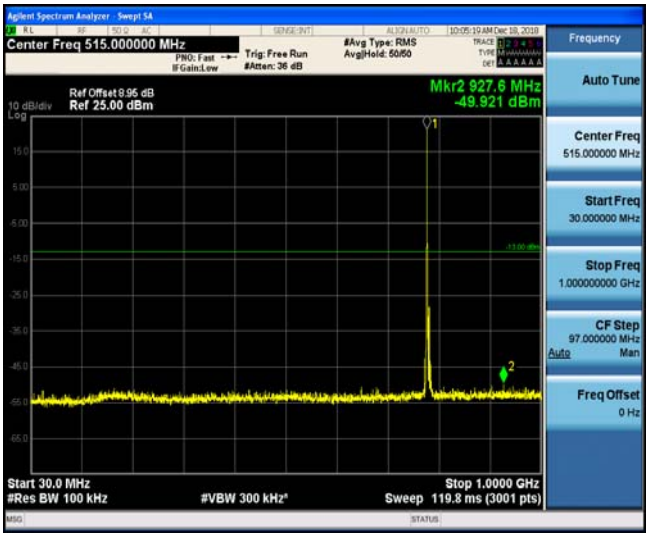
Band13_5MHz_16QAM_23255_1RB#0



Band13_5MHz_16QAM_23255_1RB#0



Band13_5MHz_16QAM_23255_1RB#0



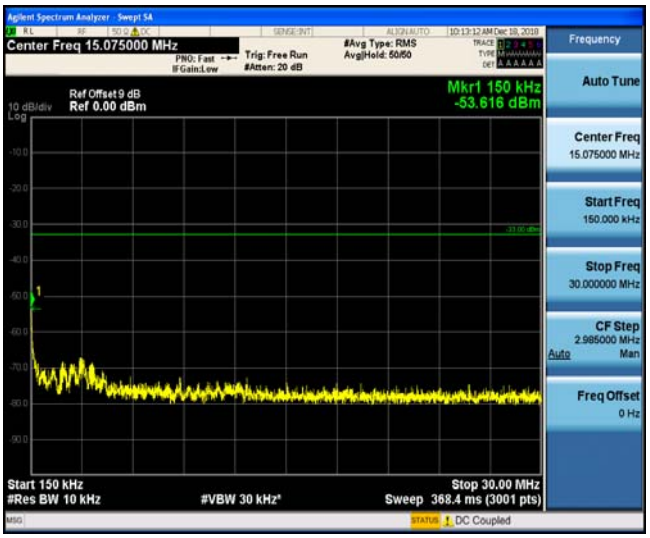
Band13_5MHz_16QAM_23255_1RB#0

Band13_5MHz_16QAM_23255_1RB#0

Band13_5MHz_16QAM_23255_1RB#0

Band13_10MHz_QPSK_23230_1RB#0

Band13_10MHz_QPSK_23230_1RB#0



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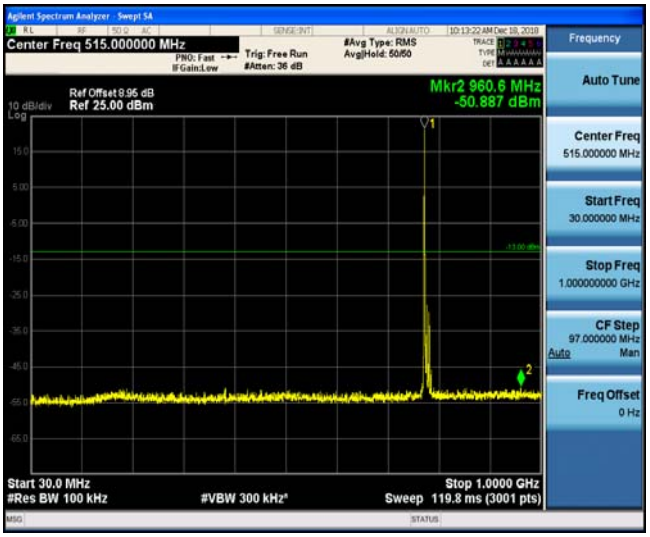

Band13_10MHz_QPSK_23230_1RB#0

Band13_10MHz_QPSK_23230_1RB#0

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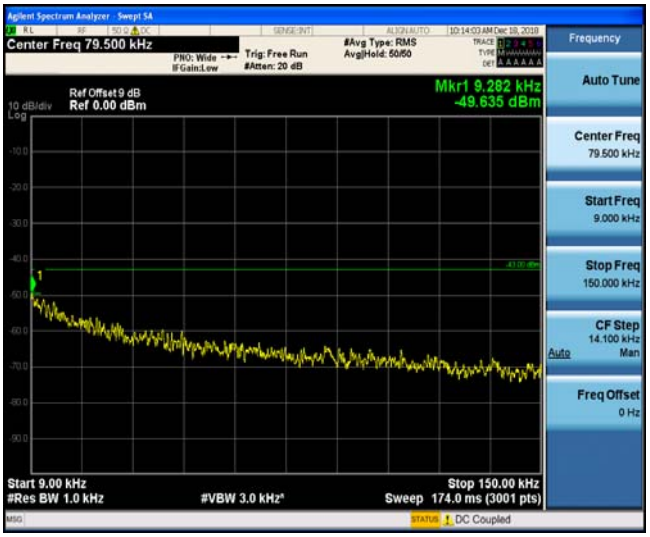
Band13_10MHz_16QAM_23230_1RB#0



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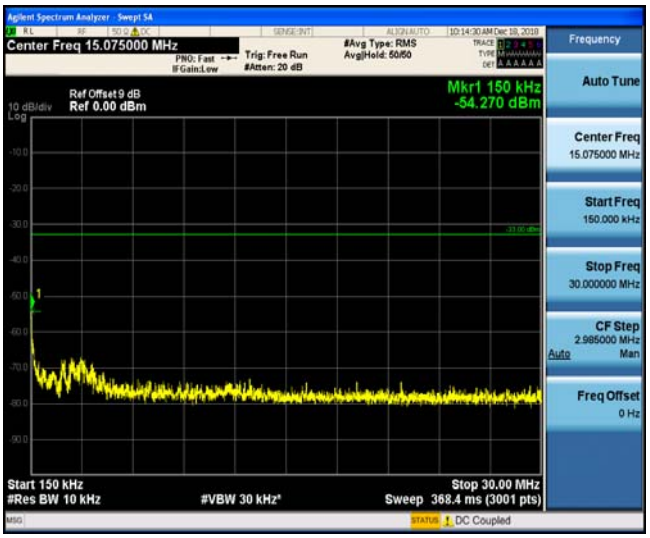
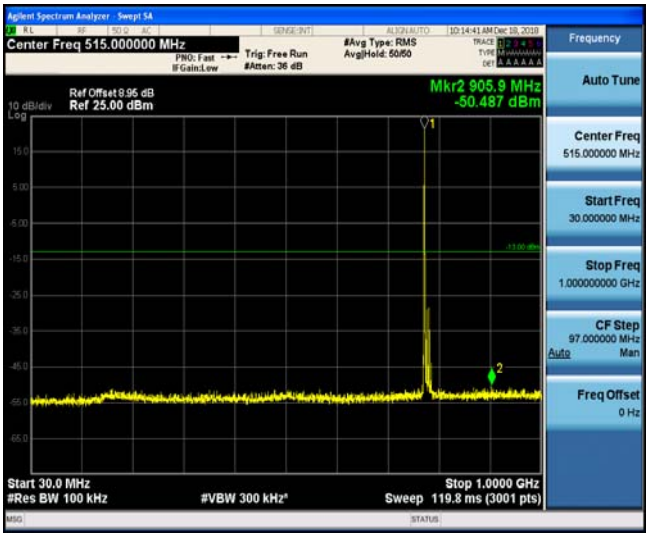


Band13_10MHz_16QAM_23230_1RB#0



Band13_10MHz_16QAM_23230_1RB#0

Band13_10MHz_16QAM_23230_1RB#0

Band13_10MHz_16QAM_23230_1RB#0

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 3/3
Frequency
Auto Tune
Mkr1 17.009 5 GHz
-40.723 dBm
Ref Offset 18.76 dB
10 dB/div
Ref 10.00 dBm
Log
Center Freq
15.000000000 GHz
Start Freq
12.000000000 GHz
Stop Freq
18.000000000 GHz
CF Step
600.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 12.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 18.000 GHz
#Sweep 1.001 s (15000 pts)

Appendix F: Frequency Stability

Test Result

Channel Bandwidth: 5 MHz

Channel Bandwidth: 5 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VL	TN	0.002001	0.002001	± 2.5	PASS
		VN	TN	0.005516	0.005516	± 2.5	PASS
		VH	TN	0.002540	0.002540	± 2.5	PASS
	MCH	VL	TN	0.003210	0.003210	± 2.5	PASS
		VN	TN	0.004540	0.004540	± 2.5	PASS
		VH	TN	0.004105	0.004105	± 2.5	PASS
	HCH	VL	TN	0.004487	0.004487	± 2.5	PASS
		VN	TN	0.001134	0.001134	± 2.5	PASS
		VH	TN	0.005685	0.005685	± 2.5	PASS
16QAM	LCH	VL	TN	0.004490	0.004490	± 2.5	PASS
		VN	TN	-0.000718	-0.000718	± 2.5	PASS
		VH	TN	0.001232	0.001232	± 2.5	PASS
	MCH	VL	TN	0.000026	0.000026	± 2.5	PASS
		VN	TN	0.001611	0.001611	± 2.5	PASS
		VH	TN	0.004744	0.004744	± 2.5	PASS
	HCH	VL	TN	0.005596	0.005596	± 2.5	PASS
		VN	TN	0.004755	0.004755	± 2.5	PASS
		VH	TN	-0.002358	-0.002358	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	LCH	VN	-30	-0.001539	-0.001539	± 2.5	PASS
		VN	-20	-0.001296	-0.001296	± 2.5	PASS
		VN	-10	0.003258	0.003258	± 2.5	PASS
		VN	0	0.006299	0.006299	± 2.5	PASS
		VN	10	-0.001988	-0.001988	± 2.5	PASS
		VN	20	0.000346	0.000346	± 2.5	PASS
		VN	30	-0.002065	-0.002065	± 2.5	PASS
		VN	40	0.005722	0.005722	± 2.5	PASS
		VN	50	0.000334	0.000334	± 2.5	PASS
	MCH	VN	-30	0.004795	0.004795	± 2.5	PASS

		VN	-20	0.000742	0.000742	± 2.5	PASS
		VN	-10	0.000307	0.000307	± 2.5	PASS
		VN	0	0.004783	0.004783	± 2.5	PASS
		VN	10	0.002813	0.002813	± 2.5	PASS
		VN	20	-0.002238	-0.002238	± 2.5	PASS
		VN	30	0.004616	0.004616	± 2.5	PASS
		VN	40	0.002340	0.002340	± 2.5	PASS
		VN	50	0.001483	0.001483	± 2.5	PASS
	HCH	VN	-30	0.002894	0.002894	± 2.5	PASS
		VN	-20	0.005239	0.005239	± 2.5	PASS
		VN	-10	0.001772	0.001772	± 2.5	PASS
		VN	0	-0.001632	-0.001632	± 2.5	PASS
		VN	10	-0.001517	-0.001517	± 2.5	PASS
		VN	20	-0.000854	-0.000854	± 2.5	PASS
		VN	30	0.000625	0.000625	± 2.5	PASS
		VN	40	-0.002396	-0.002396	± 2.5	PASS
		VN	50	-0.002473	-0.002473	± 2.5	PASS
16QAM	LCH	VN	-30	0.001835	0.001835	± 2.5	PASS
		VN	-20	0.003040	0.003040	± 2.5	PASS
		VN	-10	0.001616	0.001616	± 2.5	PASS
		VN	0	0.005978	0.005978	± 2.5	PASS
		VN	10	-0.000321	-0.000321	± 2.5	PASS
		VN	20	0.001937	0.001937	± 2.5	PASS
		VN	30	0.003207	0.003207	± 2.5	PASS
		VN	40	-0.002194	-0.002194	± 2.5	PASS
		VN	50	-0.000616	-0.000616	± 2.5	PASS
	MCH	VN	-30	0.005013	0.005013	± 2.5	PASS
		VN	-20	0.001113	0.001113	± 2.5	PASS
		VN	-10	0.005563	0.005563	± 2.5	PASS
		VN	0	-0.000166	-0.000166	± 2.5	PASS
		VN	10	-0.000844	-0.000844	± 2.5	PASS
		VN	20	-0.002455	-0.002455	± 2.5	PASS
		VN	30	0.003120	0.003120	± 2.5	PASS
		VN	40	-0.001752	-0.001752	± 2.5	PASS
		VN	50	0.001394	0.001394	± 2.5	PASS
	HCH	VN	-30	-0.002180	-0.002180	± 2.5	PASS
		VN	-20	0.000714	0.000714	± 2.5	PASS
		VN	-10	0.002167	0.002167	± 2.5	PASS
		VN	0	0.003365	0.003365	± 2.5	PASS
		VN	10	0.001581	0.001581	± 2.5	PASS
		VN	20	0.003059	0.003059	± 2.5	PASS

		VN	30	0.001861	0.001861	± 2.5	PASS
		VN	40	0.005851	0.005851	± 2.5	PASS
		VN	50	0.001147	0.001147	± 2.5	PASS

Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz							
Voltage							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	MCH	VL	TN	2.97	0.003798	± 2.5	PASS
		VN	TN	3.54	0.004527	± 2.5	PASS
		VH	TN	-0.64	-0.000818	± 2.5	PASS
16QAM	MCH	VL	TN	-1.44	-0.001841	± 2.5	PASS
		VN	TN	-0.7	-0.000895	± 2.5	PASS
		VH	TN	3.29	0.004207	± 2.5	PASS
Temperature							
Modulation	Channel	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
QPSK	MCH	VN	-30	3.43	0.004386	± 2.5	PASS
		VN	-20	0.38	0.000486	± 2.5	PASS
		VN	-10	0.03	0.000038	± 2.5	PASS
		VN	0	1.73	0.002212	± 2.5	PASS
		VN	10	1.78	0.002276	± 2.5	PASS
		VN	20	2.63	0.003363	± 2.5	PASS
		VN	30	0.84	0.001074	± 2.5	PASS
		VN	40	3.14	0.004015	± 2.5	PASS
		VN	50	-1.59	-0.002033	± 2.5	PASS
16QAM	MCH	VN	-30	-1.73	-0.002212	± 2.5	PASS
		VN	-20	1.84	0.002353	± 2.5	PASS
		VN	-10	0.43	0.000550	± 2.5	PASS
		VN	0	4.22	0.005396	± 2.5	PASS
		VN	10	1.75	0.002238	± 2.5	PASS
		VN	20	2.13	0.002724	± 2.5	PASS
		VN	30	4.89	0.006253	± 2.5	PASS
		VN	40	-0.33	-0.000422	± 2.5	PASS
		VN	50	1.33	0.001701	± 2.5	PASS