Appendix E: Test Data for E-UTRA Band 13

Product Name: Telematics Module

Test Model: 8400-13001-00

Environmental Conditions

Temperature:	23.3° C
Relative Humidity:	52.3%
ATM Pressure:	100.0 kPa
Test Engineer:	Nick Peng
Supervised by:	Ling Zhu

E.1 Effective (Isotropic) Radiated Power Output Data

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	22.43	PASS
Band13	5MHz	QPSK	23205	1RB#12	23.13	PASS
Band13	5MHz	QPSK	23205	1RB#24	23.13	PASS
Band13	5MHz	QPSK	23205	12RB#0	22.46	PASS
Band13	5MHz	QPSK	23205	12RB#6	22.32	PASS
Band13	5MHz	QPSK	23205	12RB#13	22.43	PASS
Band13	5MHz	QPSK	23205	25RB#0	22.51	PASS
Band13	5MHz	QPSK	23230	1RB#0	23.31	PASS
Band13	5MHz	QPSK	23230	1RB#12	23.33	PASS
Band13	5MHz	QPSK	23230	1RB#24	23.26	PASS
Band13	5MHz	QPSK	23230	12RB#0	22.31	PASS
Band13	5MHz	QPSK	23230	12RB#6	22.46	PASS
Band13	5MHz	QPSK	23230	12RB#13	22.35	PASS
Band13	5MHz	QPSK	23230	25RB#0	22.41	PASS
Band13	5MHz	QPSK	23255	1RB#0	23.20	PASS
Band13	5MHz	QPSK	23255	1RB#12	23.07	PASS
Band13	5MHz	QPSK	23255	1RB#24	22.72	PASS
Band13	5MHz	QPSK	23255	12RB#0	22.36	PASS
Band13	5MHz	QPSK	23255	12RB#6	22.36	PASS
Band13	5MHz	QPSK	23255	12RB#13	22.32	PASS
Band13	5MHz	QPSK	23255	25RB#0	22.25	PASS
Band13	5MHz	16QAM	23205	1RB#0	22.88	PASS
Band13	5MHz	16QAM	23205	1RB#12	22.93	PASS
Band13	5MHz	16QAM	23205	1RB#24	22.91	PASS
Band13	5MHz	16QAM	23205	12RB#0	21.88	PASS
Band13	5MHz	16QAM	23205	12RB#6	21.88	PASS
Band13	5MHz	16QAM	23205	12RB#13	21.79	PASS
Band13	5MHz	16QAM	23205	25RB#0	21.78	PASS
Band13	5MHz	16QAM	23230	1RB#0	22.14	PASS
Band13	5MHz	16QAM	23230	1RB#12	22.09	PASS

Band13	5MHz	16QAM	23230	1RB#24	21.93	PASS
Band13	5MHz	16QAM	23230	12RB#0	21.84	PASS
Band13	5MHz	16QAM	23230	12RB#6	21.84	PASS
Band13	5MHz	16QAM	23230	12RB#13	21.76	PASS
Band13	5MHz	16QAM	23230	25RB#0	21.88	PASS
Band13	5MHz	16QAM	23255	1RB#0	22.99	PASS
Band13	5MHz	16QAM	23255	1RB#12	22.85	PASS
Band13	5MHz	16QAM	23255	1RB#24	22.46	PASS
Band13	5MHz	16QAM	23255	12RB#0	21.82	PASS
Band13	5MHz	16QAM	23255	12RB#6	21.81	PASS
Band13	5MHz	16QAM	23255	12RB#13	21.67	PASS
Band13	5MHz	16QAM	23255	25RB#0	21.67	PASS
Band13	10MHz	QPSK	23230	1RB#0	23.24	PASS
Band13	10MHz	QPSK	23230	1RB#24	23.22	PASS
Band13	10MHz	QPSK	23230	1RB#49	22.86	PASS
Band13	10MHz	QPSK	23230	25RB#0	22.48	PASS
Band13	10MHz	QPSK	23230	25RB#12	22.48	PASS
Band13	10MHz	QPSK	23230	25RB#25	22.37	PASS
Band13	10MHz	QPSK	23230	50RB#0	22.19	PASS
Band13	10MHz	16QAM	23230	1RB#0	22.72	PASS
Band13	10MHz	16QAM	23230	1RB#24	22.74	PASS
Band13	10MHz	16QAM	23230	1RB#49	22.34	PASS
Band13	10MHz	16QAM	23230	25RB#0	21.77	PASS
Band13	10MHz	16QAM	23230	25RB#12	21.77	PASS
Band13	10MHz	16QAM	23230	25RB#25	21.60	PASS
Band13	10MHz	16QAM	23230	50RB#0	21.81	PASS

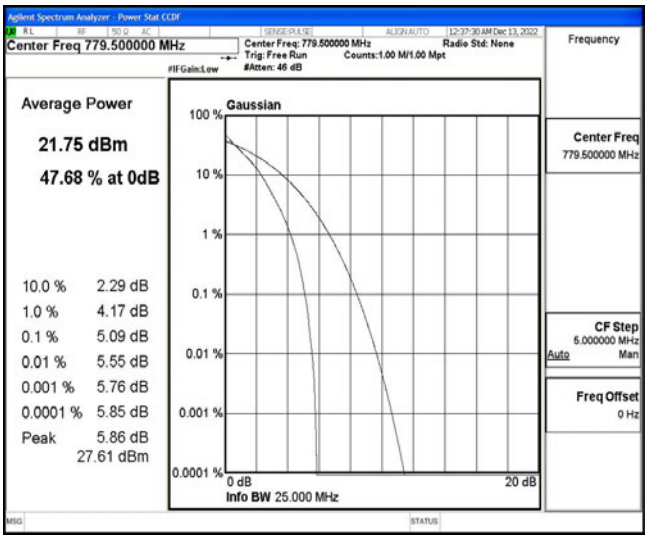
E.2 Peak-to-Average Ratio(CCDF)

Test Result

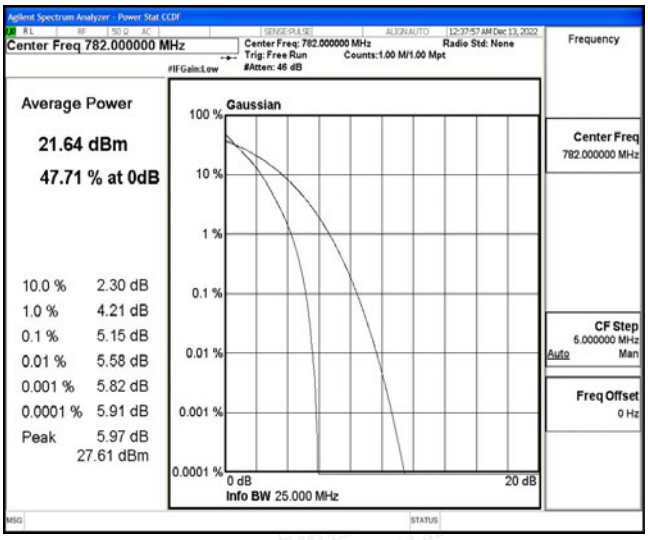
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	5.09	13	PASS
Band13	5MHz	QPSK	23230	25RB#0	5.15	13	PASS
Band13	5MHz	QPSK	23255	25RB#0	5.05	13	PASS
Band13	5MHz	16QAM	23205	25RB#0	5.67	13	PASS
Band13	5MHz	16QAM	23230	25RB#0	5.75	13	PASS
Band13	5MHz	16QAM	23255	25RB#0	5.68	13	PASS
Band13	10MHz	QPSK	23230	50RB#0	4.97	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	5.57	13	PASS

Test Graphs

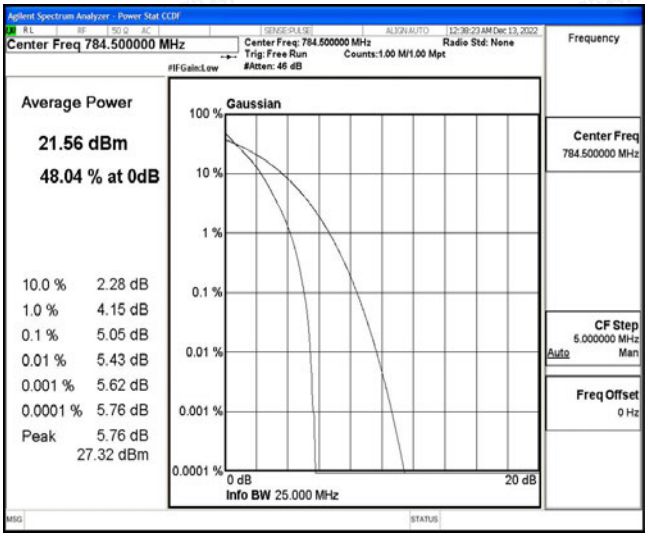
Band13-5MHz-QPSK-23205-25RB#0



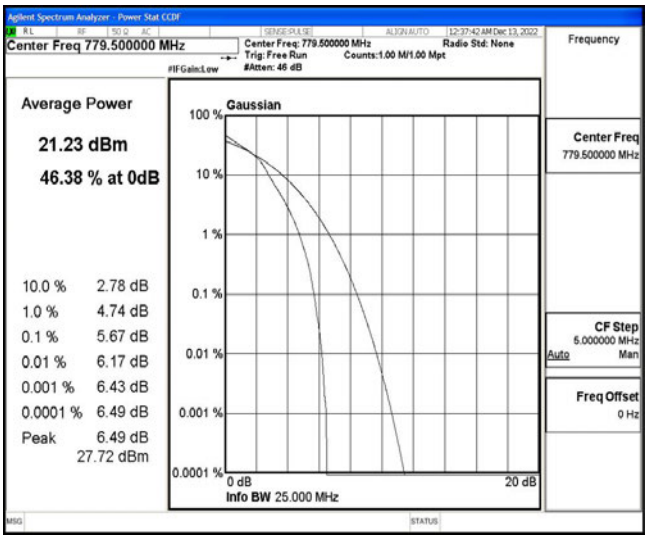
Band13-5MHz-QPSK-23230-25RB#0



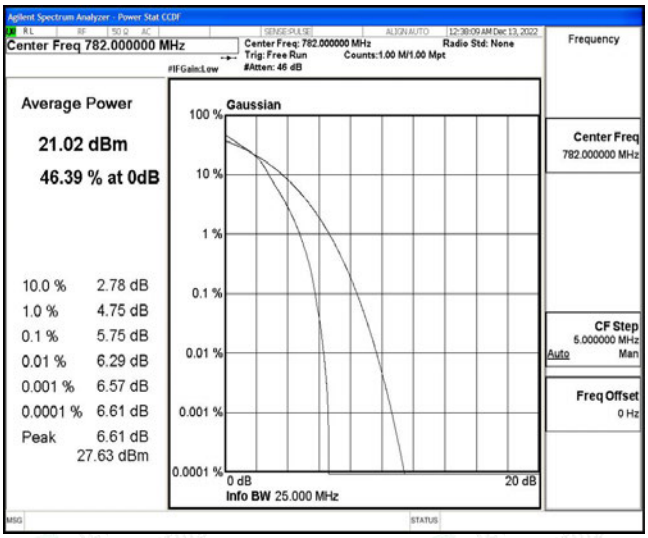
Band13-5MHz-QPSK-23255-25RB#0



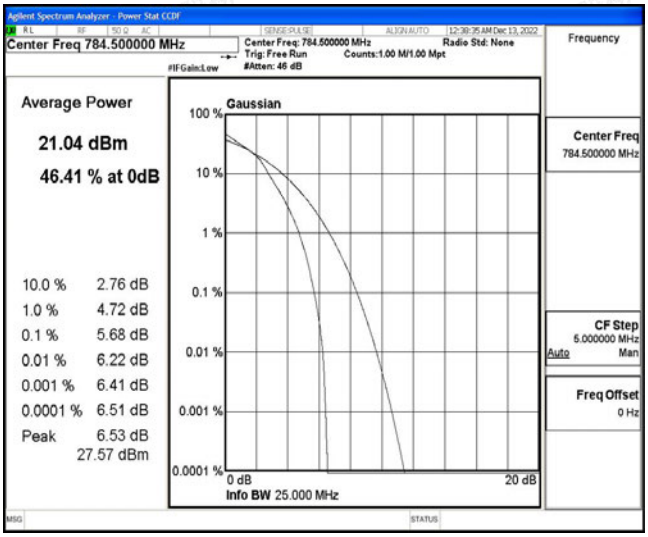
Band13-5MHz-16QAM-23205-25RB#0



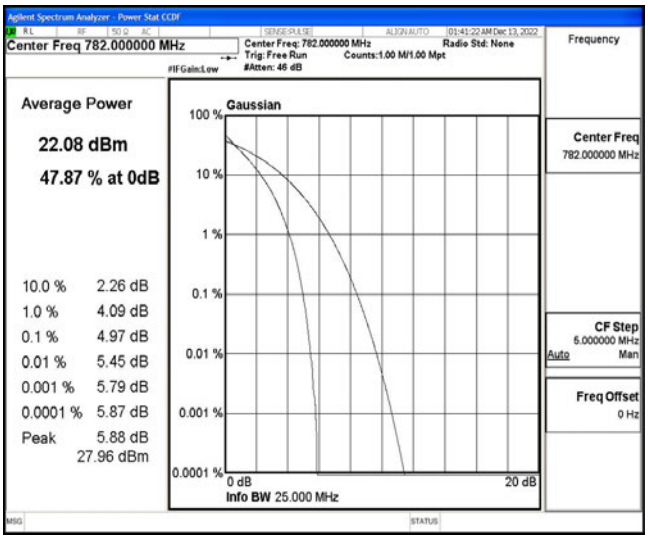
Band13-5MHz-16QAM-23230-25RB#0



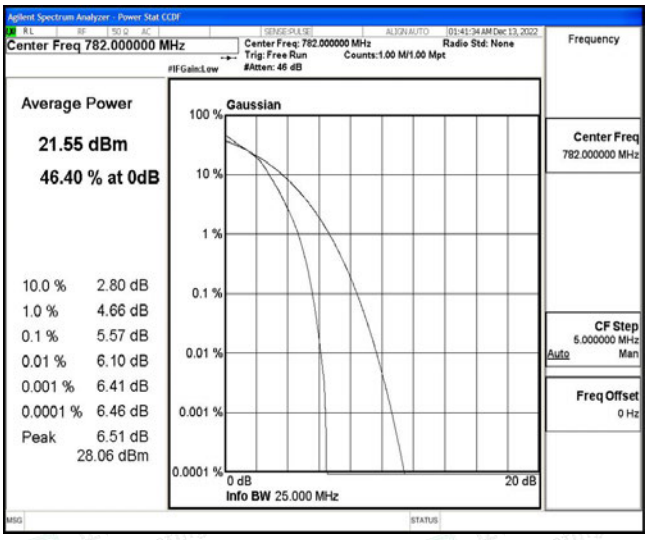
Band13-5MHz-16QAM-23255-25RB#0



Band13-10MHz-QPSK-23230-50RB#0



Band13-10MHz-16QAM-23230-50RB#0



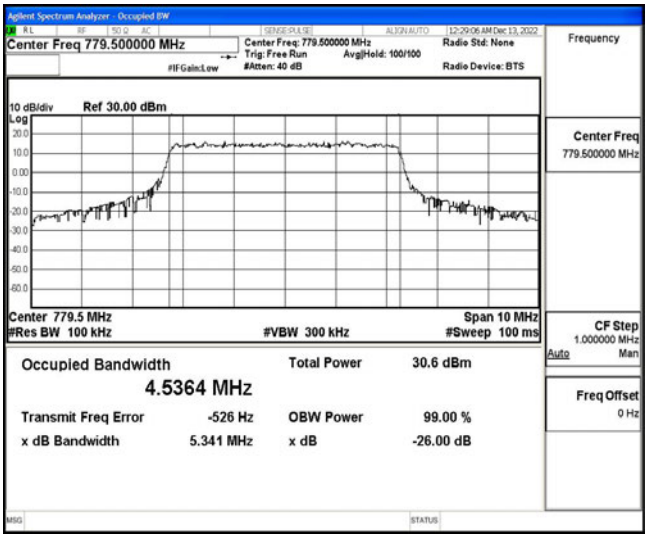
E.3 26dB Bandwidth and Occupied Bandwidth

Test Result

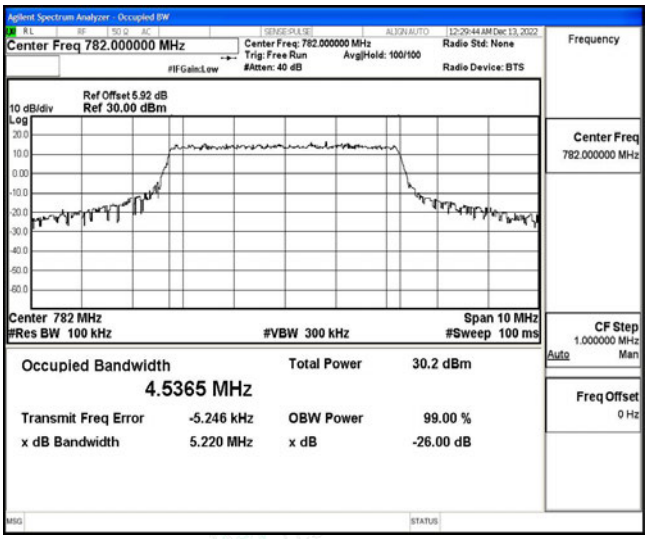
Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.5364	5.341	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.5365	5.220	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.5087	5.431	PASS
Band13	5MHz	16QAM	23205	25RB#0	4.5200	5.296	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.5246	5.206	PASS
Band13	5MHz	16QAM	23255	25RB#0	4.5343	5.362	PASS
Band13	10MHz	QPSK	23230	50RB#0	8.9880	9.964	PASS
Band13	10MHz	16QAM	23230	50RB#0	8.9888	9.936	PASS

Test Graphs

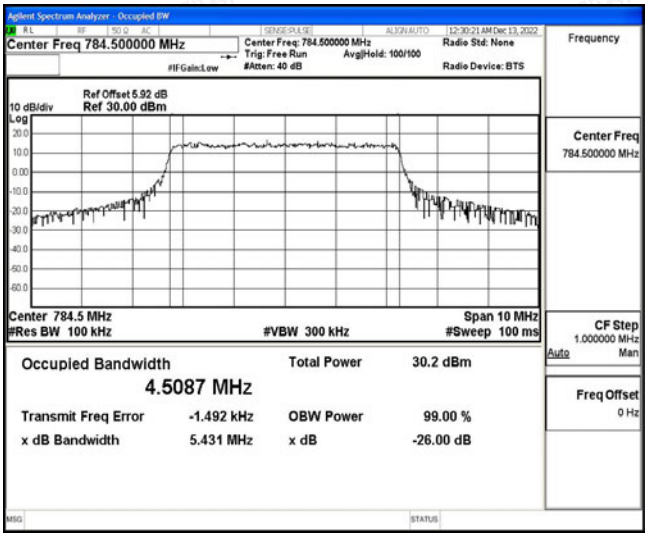
Band13-5MHz-QPSK-23205-25RB#0



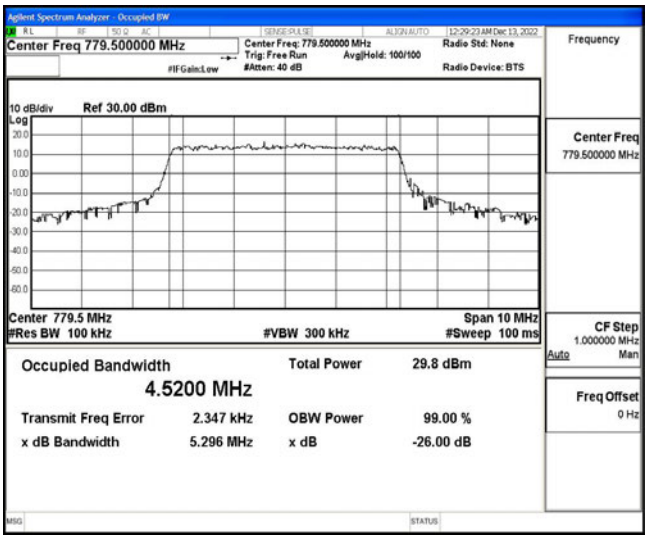
Band13-5MHz-QPSK-23230-25RB#0



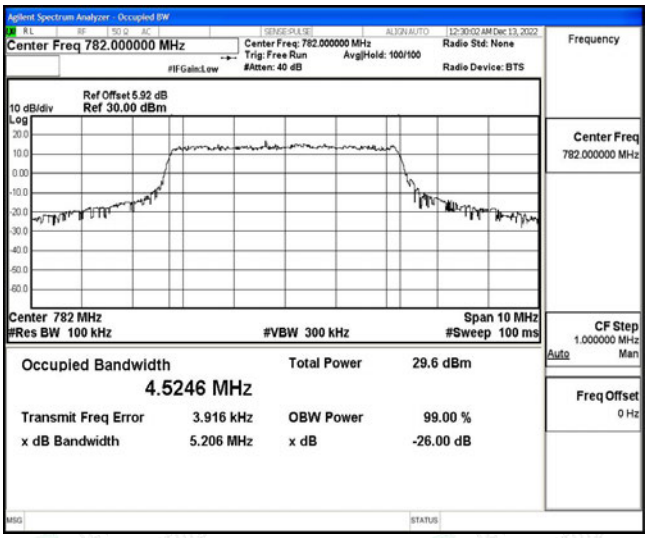
Band13-5MHz-QPSK-23255-25RB#0



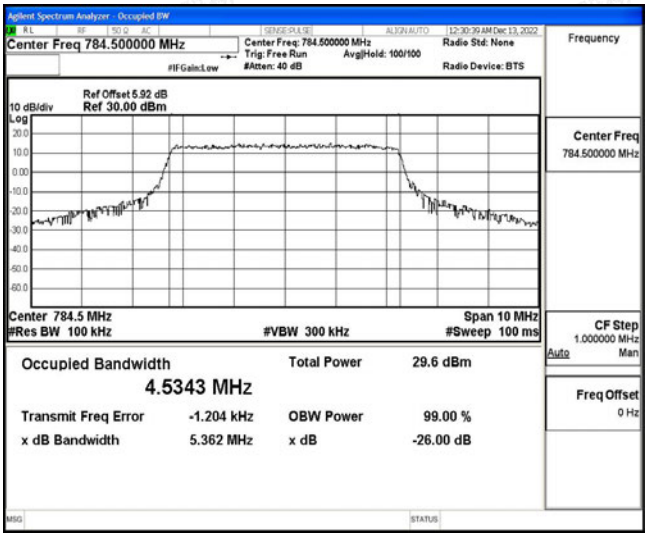
Band13-5MHz-16QAM-23205-25RB#0



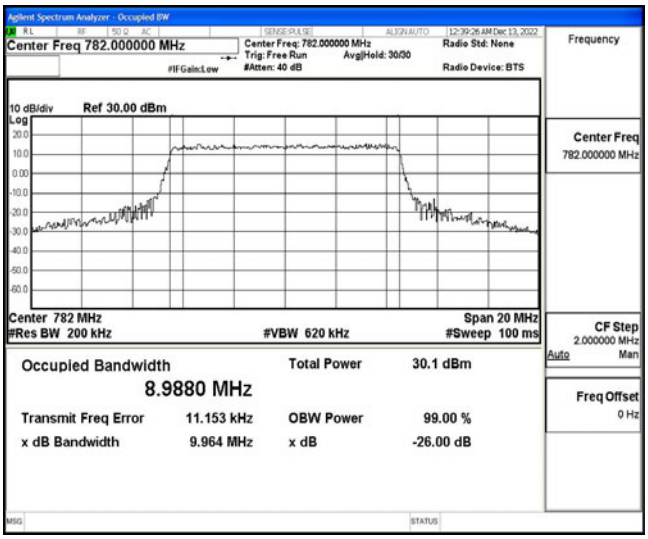
Band13-5MHz-16QAM-23230-25RB#0



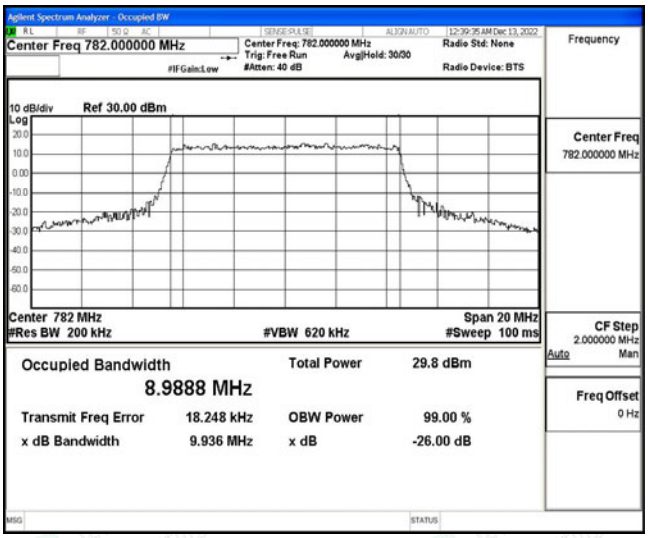
Band13-5MHz-16QAM-23255-25RB#0



Band13-10MHz-QPSK-23230-50RB#0



Band13-10MHz-16QAM-23230-50RB#0



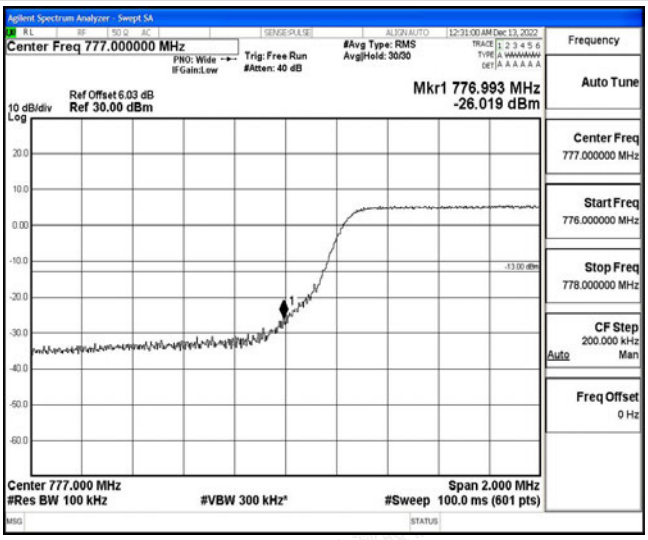
E.4 Band Edge

Test Result

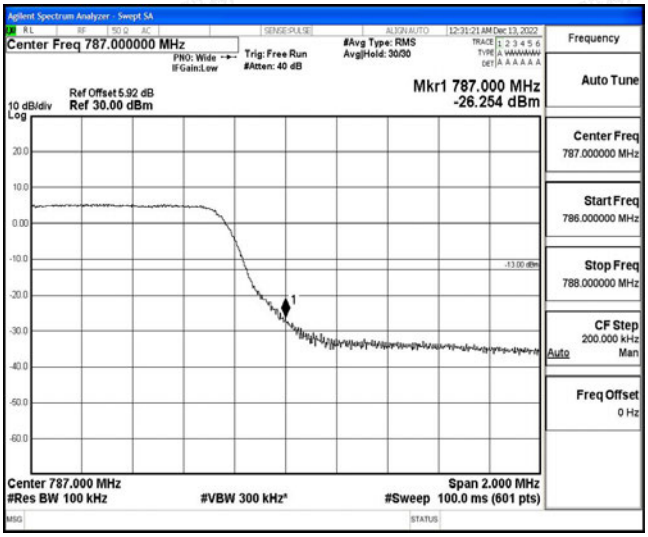
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	-26.02	PASS
Band13	5MHz	QPSK	23255	25RB#0	-26.25	PASS
Band13	5MHz	16QAM	23205	25RB#0	-26.65	PASS
Band13	5MHz	16QAM	23255	25RB#0	-26.83	PASS
Band13	10MHz	QPSK	23230	50RB#0	-28.22,-28.86	PASS
Band13	10MHz	16QAM	23230	50RB#0	-29.17,-29.66	PASS

Test Graphs

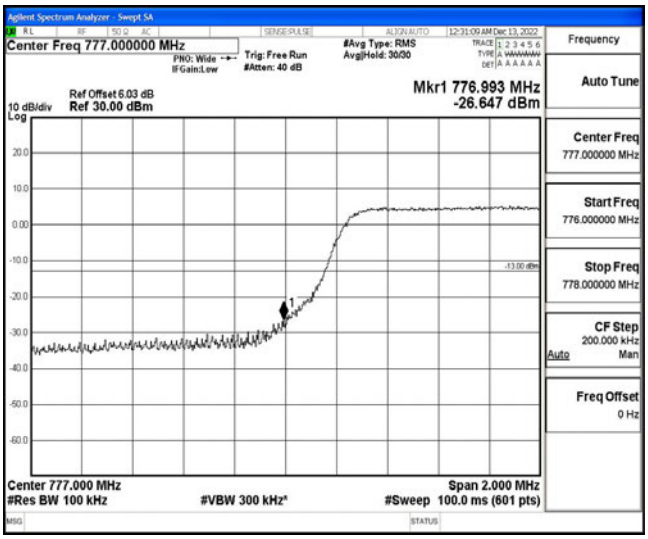
Band13-5MHz-QPSK-23205-25RB#0



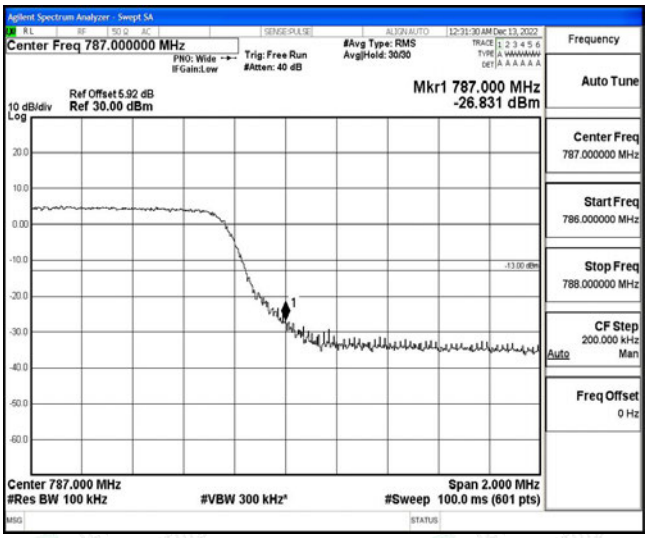
Band13-5MHz-QPSK-23255-25RB#0



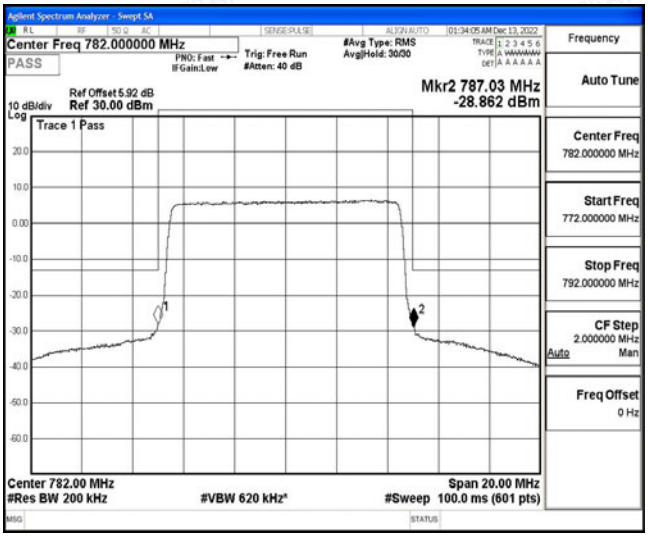
Band13-5MHz-16QAM-23205-25RB#0



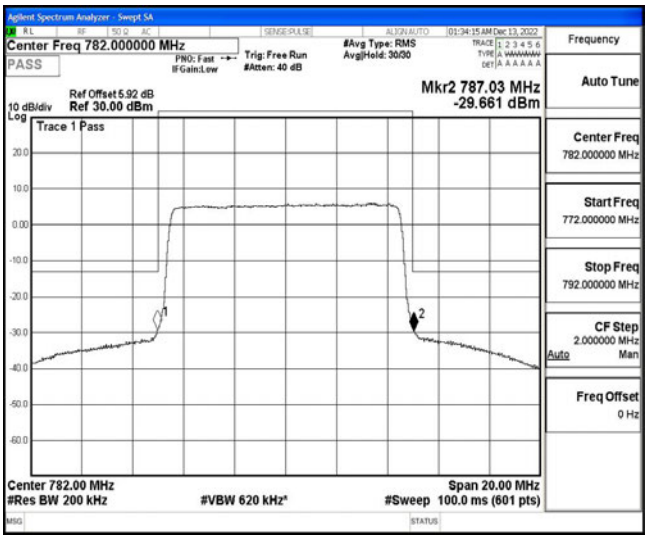
Band13-5MHz-16QAM-23255-25RB#0



Band13-10MHz-QPSK-23230-50RB#0



Band13-10MHz-16QAM-23230-50RB#0



E.5 Conducted Spurious Emission

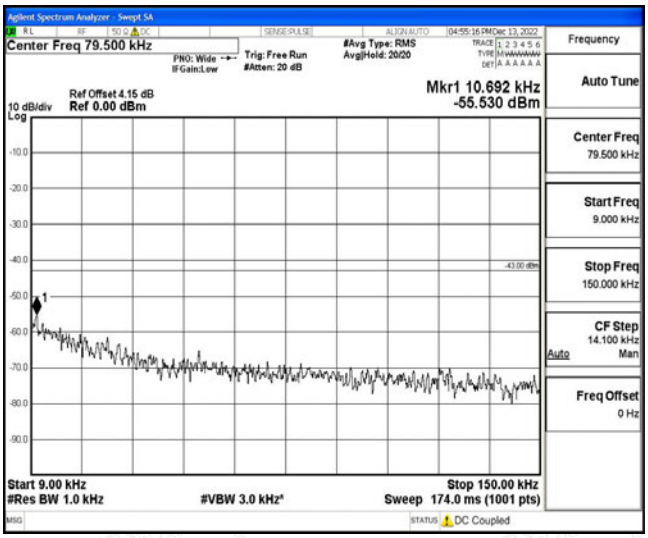
Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	Range1:0.009~0.15MHz	-55.53	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range2:0.15~30MHz	-50.89	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range3:30~1000MHz	-41.29	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range5:763~775MHz	-60.24	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range6:793~805MHz	-61.06	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range4:1000~10000MHz	-44.87	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range7:1559~1610MHz	-64.39	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range1:0.009~0.15MHz	-56.23	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range2:0.15~30MHz	-50.57	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range3:30~1000MHz	-40.78	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range5:763~775MHz	-55.12	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range6:793~805MHz	-61.15	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range4:1000~10000MHz	-44.79	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range7:1559~1610MHz	-64.27	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range1:0.009~0.15MHz	-54.42	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range2:0.15~30MHz	-53.37	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range3:30~1000MHz	-41.23	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range5:763~775MHz	-60.34	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range6:793~805MHz	-60.49	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range4:1000~10000MHz	-44.48	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range7:1559~1610MHz	-64.42	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range1:0.009~0.15MHz	-53.17	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range2:0.15~30MHz	-51.87	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range3:30~1000MHz	-40.28	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range5:763~775MHz	-60.68	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range6:793~805MHz	-61.05	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range4:1000~10000MHz	-44.75	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range7:1559~1610MHz	-64.32	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range1:0.009~0.15MHz	-50.46	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range2:0.15~30MHz	-52.1	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range3:30~1000MHz	-39.99	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range5:763~775MHz	-54.29	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range6:793~805MHz	-60.54	PASS

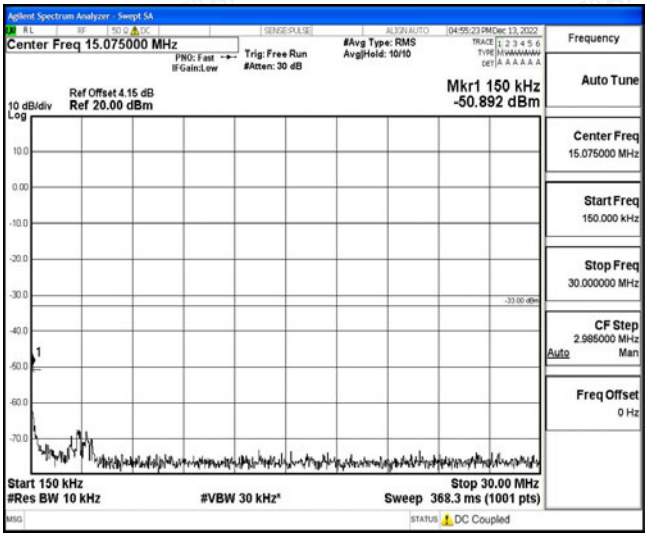
Band13	5MHz	16QAM	23230	1RB#0	Range4:1000~10000MHz	-44.73	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range7:1559~1610MHz	-64.42	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range1:0.009~0.15MHz	-53.39	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range2:0.15~30MHz	-52.21	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range3:30~1000MHz	-40.12	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range5:763~775MHz	-61.12	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range6:793~805MHz	-60.93	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range4:1000~10000MHz	-44.86	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range7:1559~1610MHz	-64.32	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range1:0.009~0.15MHz	-54.53	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range2:0.15~30MHz	-52.32	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range3:30~1000MHz	-40.21	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range5:763~775MHz	-46.02	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range6:793~805MHz	-55.78	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range4:1000~10000MHz	-44.7	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range7:1559~1610MHz	-62.03	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range1:0.009~0.15MHz	-55.45	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range2:0.15~30MHz	-50.61	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range3:30~1000MHz	-41.16	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range5:763~775MHz	-46.53	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range6:793~805MHz	-55.9	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range4:1000~10000MHz	-44.58	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range7:1559~1610MHz	-62.07	PASS

Test Graphs

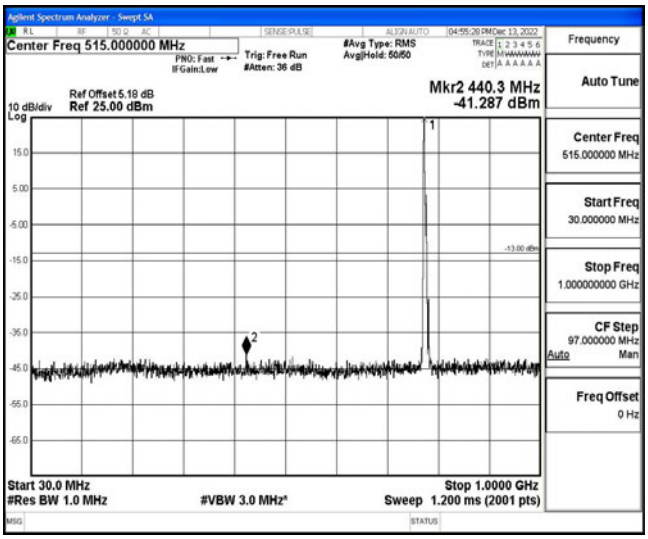
Band13-5MHz-QPSK-23205-1RB#0-Range1:0.009~0.15MHz



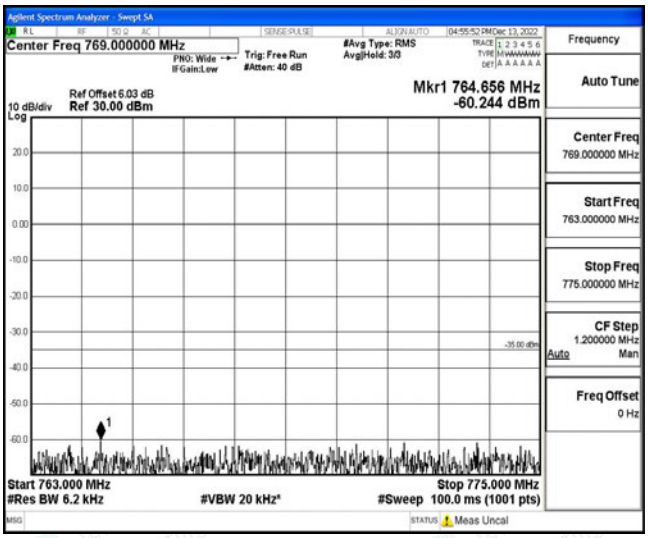
Band13-5MHz-QPSK-23205-1RB#0-Range2:0.15~30MHz



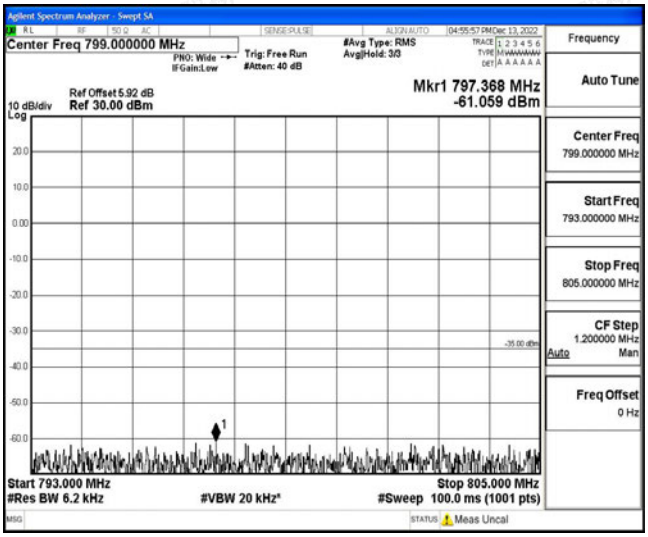
Band13-5MHz-QPSK-23205-1RB#0-Range3:30~1000MHz



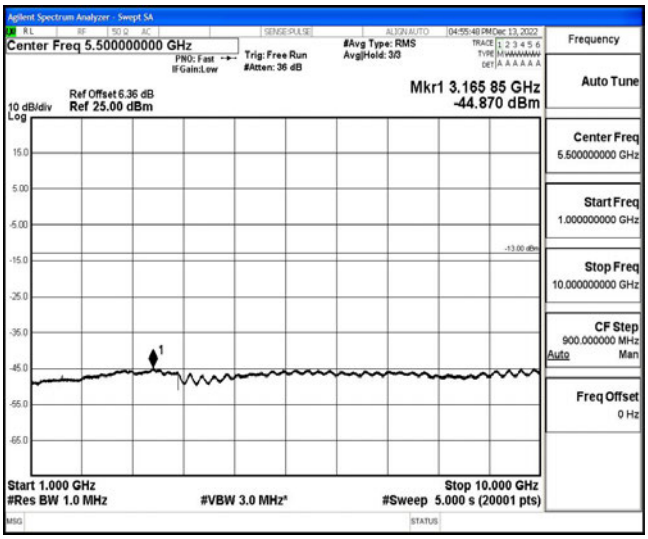
Band13-5MHz-QPSK-23205-1RB#0-Range5:763~775MHz



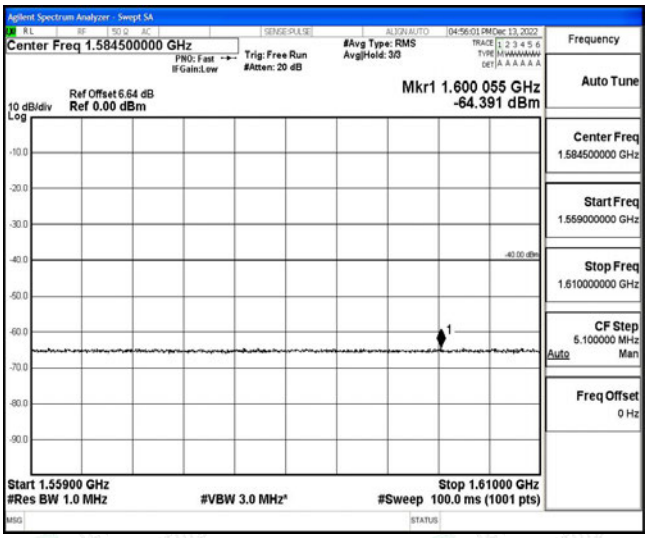
Band13-5MHz-QPSK-23205-1RB#0-Range6:793~805MHz



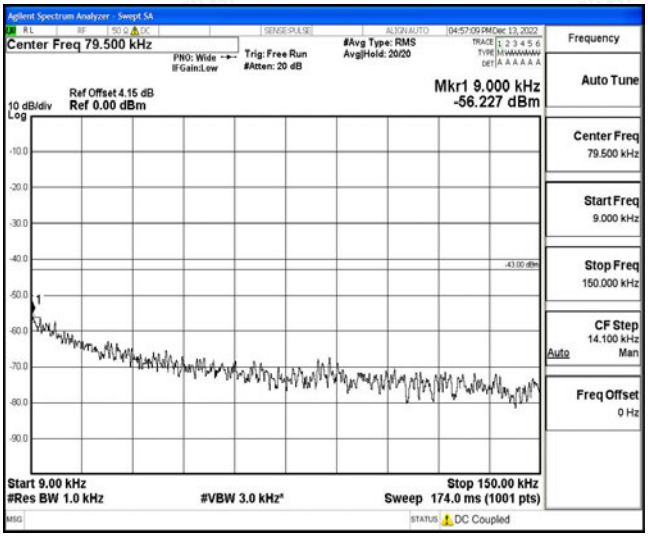
Band13-5MHz-QPSK-23205-1RB#0-Range4:1000~10000MHz



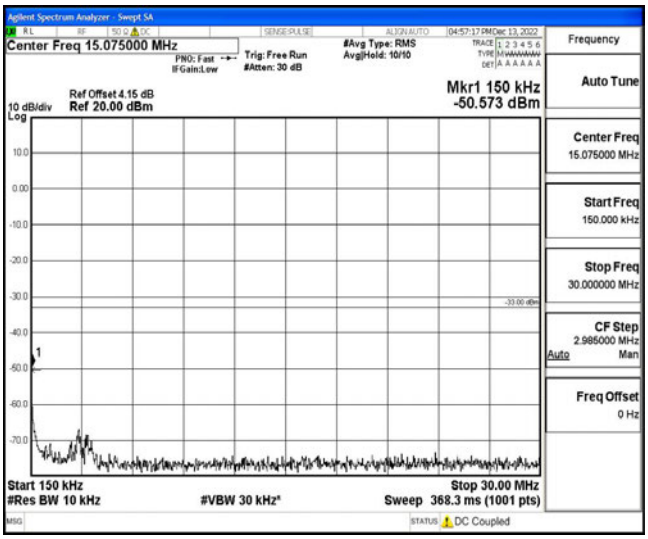
Band13-5MHz-QPSK-23205-1RB#0-Range7:1559~1610MHz



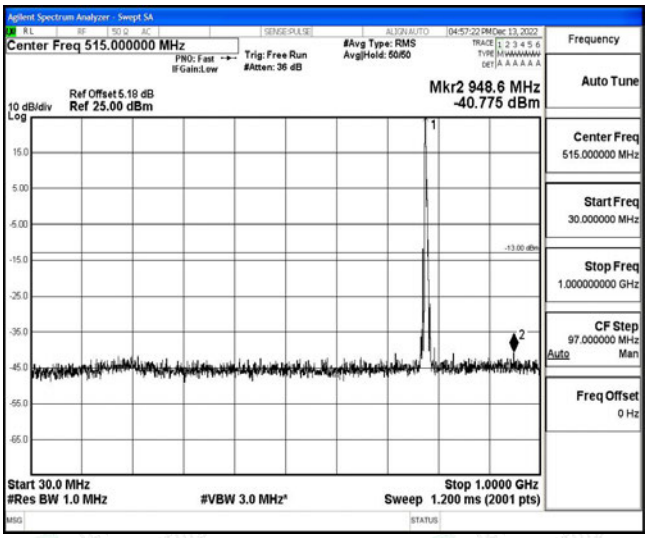
Band13-5MHz-QPSK-23230-1RB#0-Range1:0.009~0.15MHz



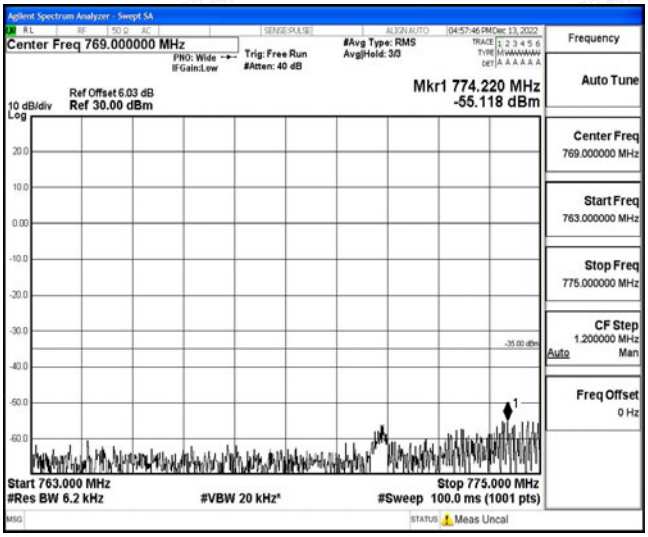
Band13-5MHz-QPSK-23230-1RB#0-Range2:0.15~30MHz



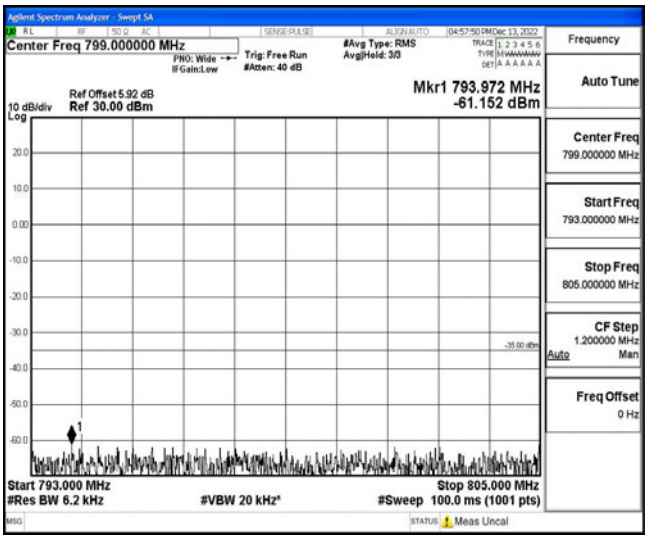
Band13-5MHz-QPSK-23230-1RB#0-Range3:30~1000MHz



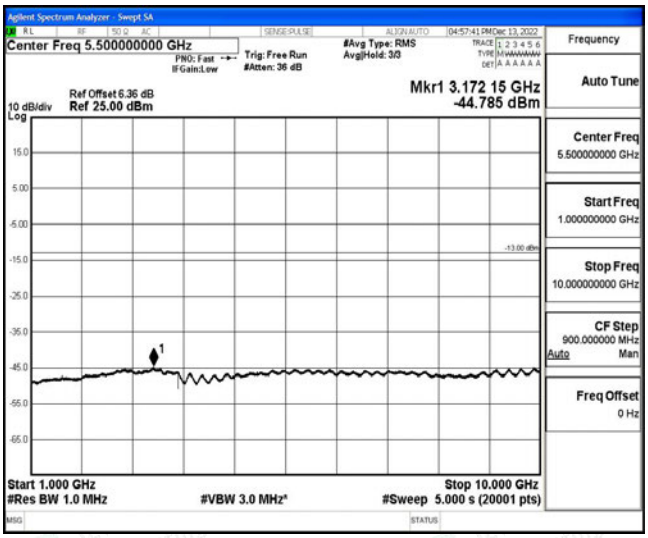
Band13-5MHz-QPSK-23230-1RB#0-Range5:763~775MHz



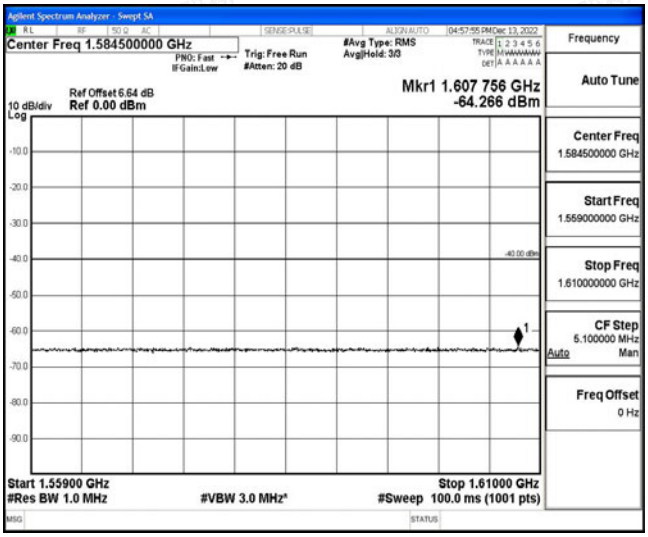
Band13-5MHz-QPSK-23230-1RB#0-Range6:793~805MHz



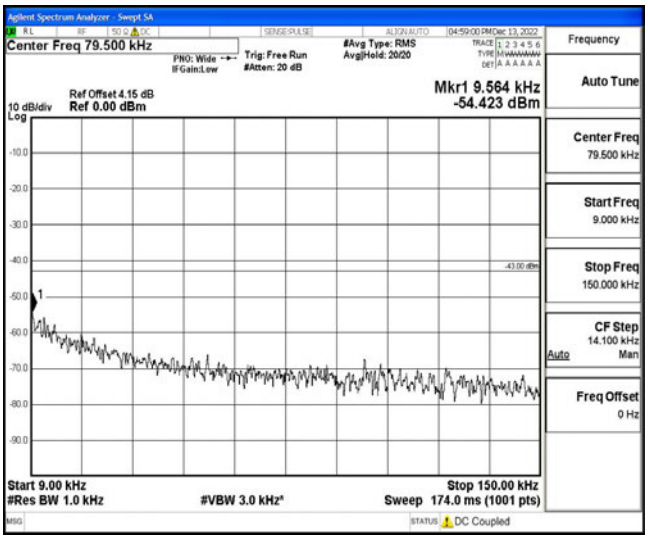
Band13-5MHz-QPSK-23230-1RB#0-Range4:1000~10000MHz



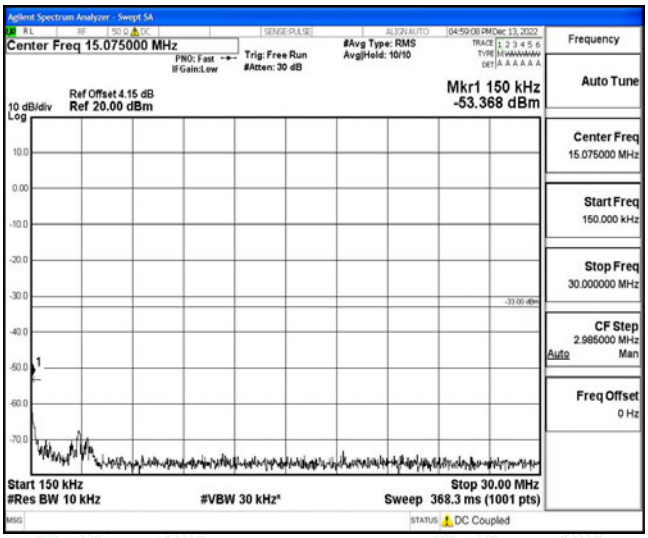
Band13-5MHz-QPSK-23230-1RB#0-Range7:1559~1610MHz



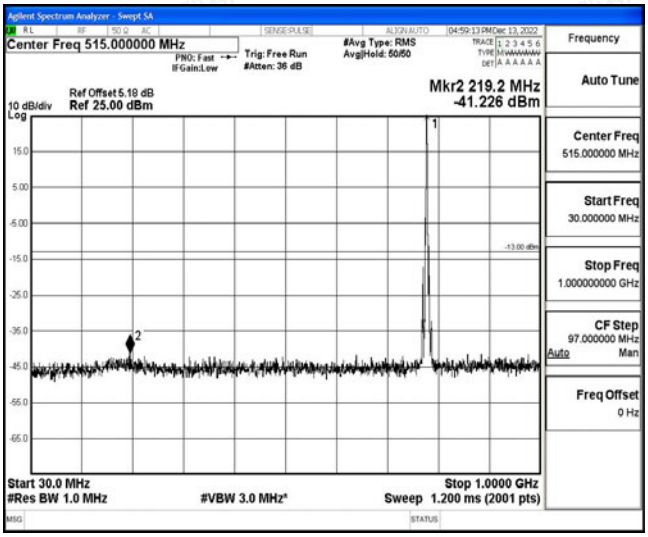
Band13-5MHz-QPSK-23255-1RB#0-Range1:0.009~0.15MHz



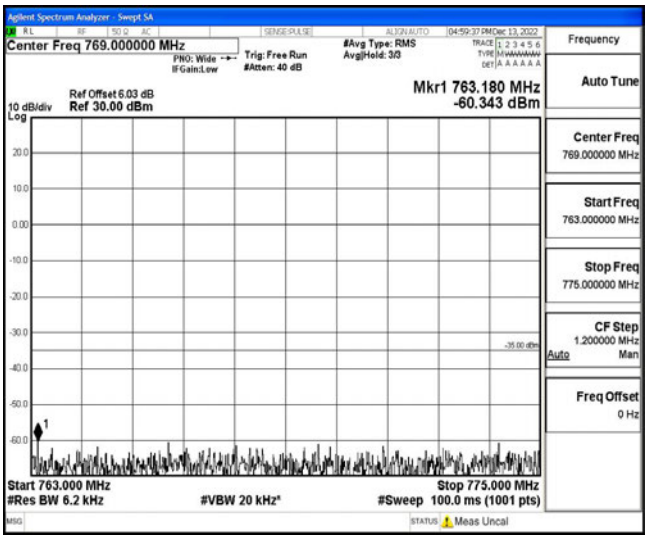
Band13-5MHz-QPSK-23255-1RB#0-Range2:0.15~30MHz



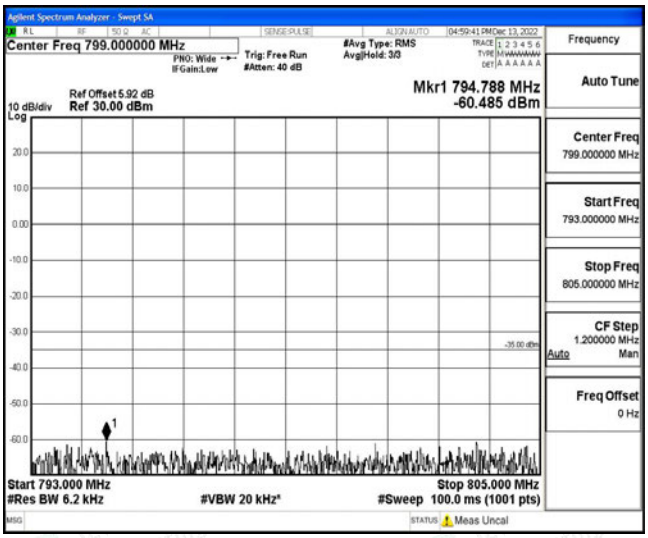
Band13-5MHz-QPSK-23255-1RB#0-Range3:30~1000MHz



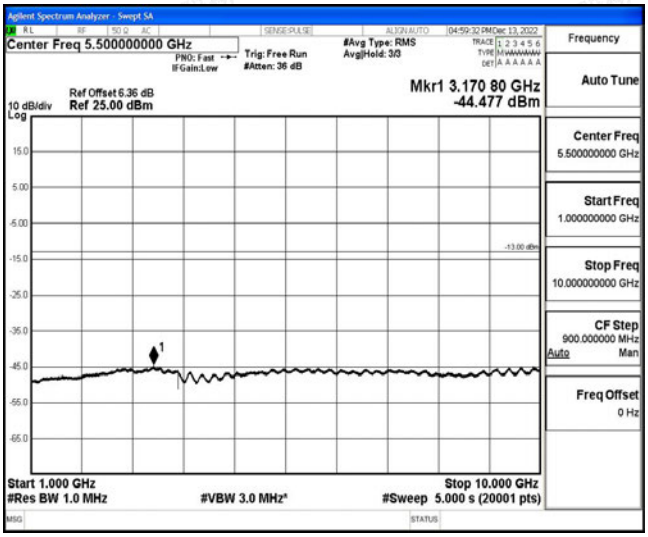
Band13-5MHz-QPSK-23255-1RB#0-Range5:763~775MHz



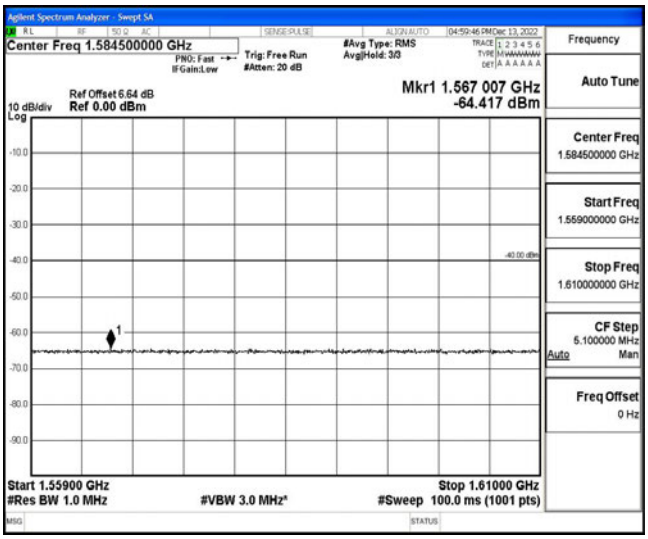
Band13-5MHz-QPSK-23255-1RB#0-Range6:793~805MHz



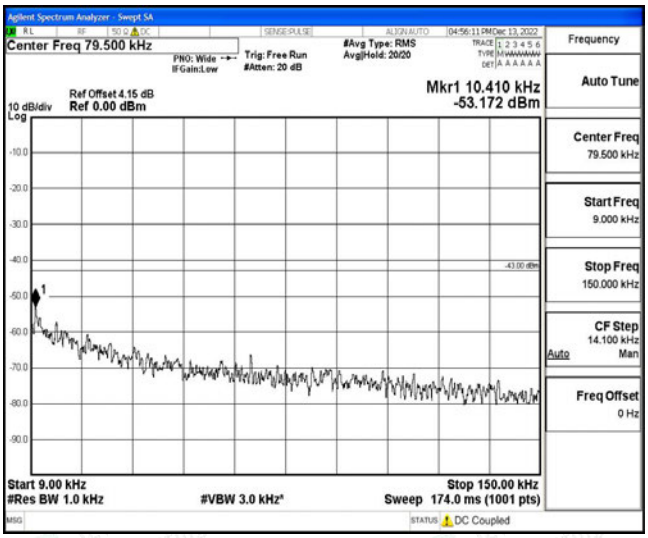
Band13-5MHz-QPSK-23255-1RB#0-Range4:1000~10000MHz



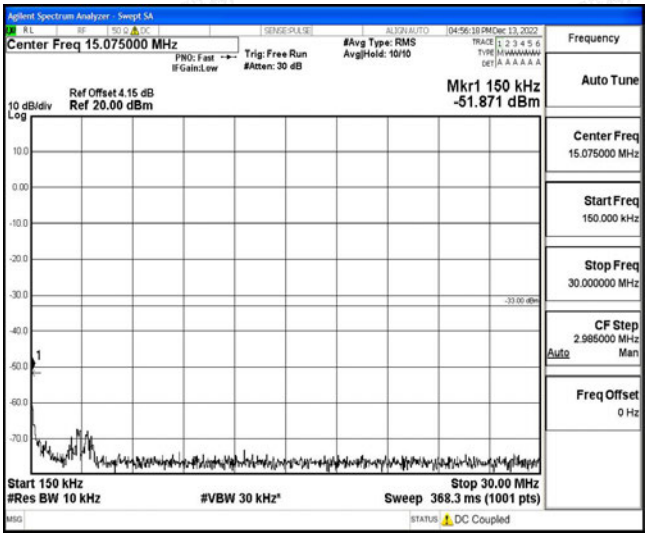
Band13-5MHz-QPSK-23255-1RB#0-Range7:1559~1610MHz



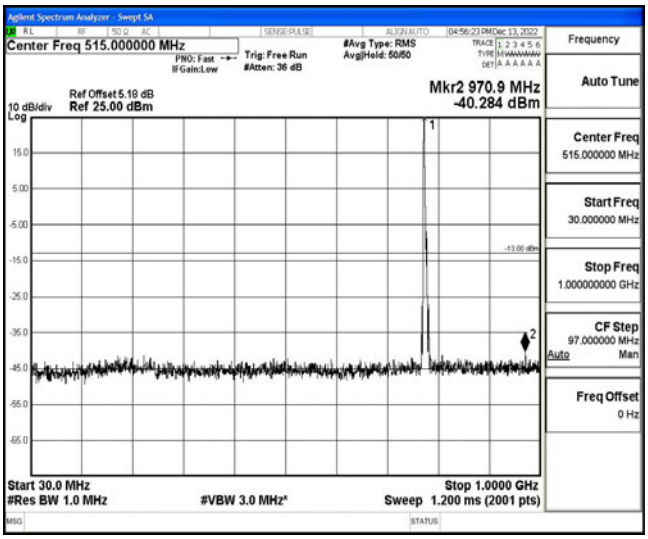
Band13-5MHz-16QAM-23205-1RB#0-Range1:0.009~0.15MHz



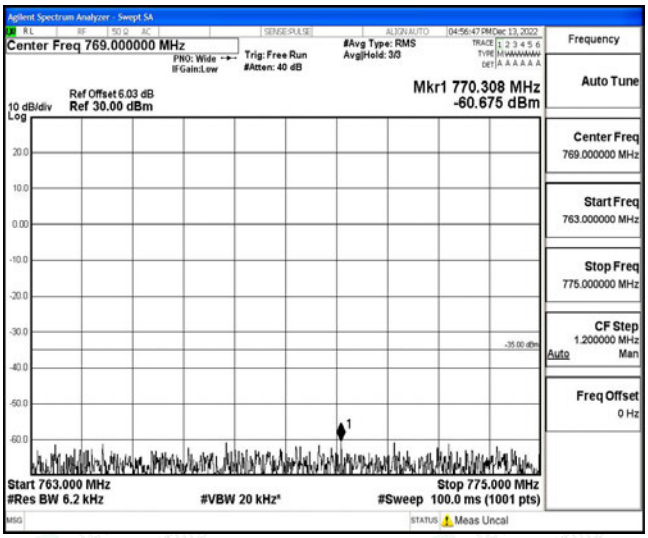
Band13-5MHz-16QAM-23205-1RB#0-Range2:0.15~30MHz



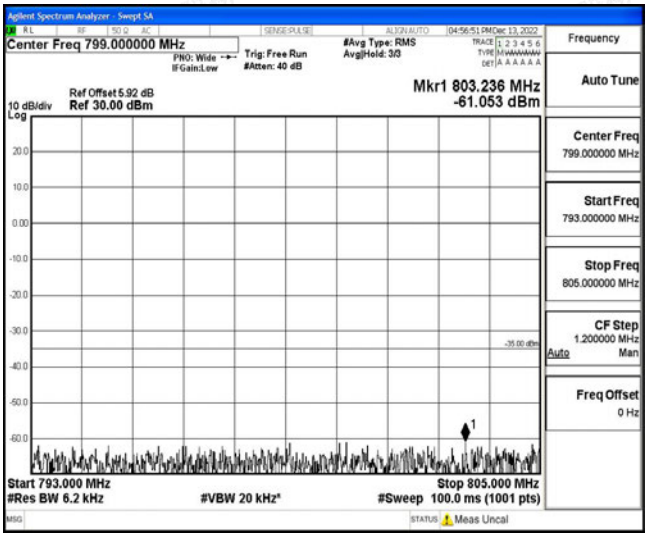
Band13-5MHz-16QAM-23205-1RB#0-Range3:30~1000MHz



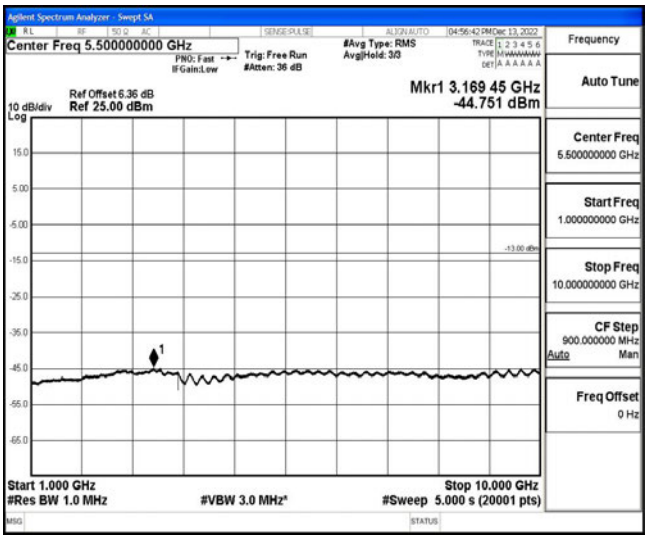
Band13-5MHz-16QAM-23205-1RB#0-Range5:763~775MHz



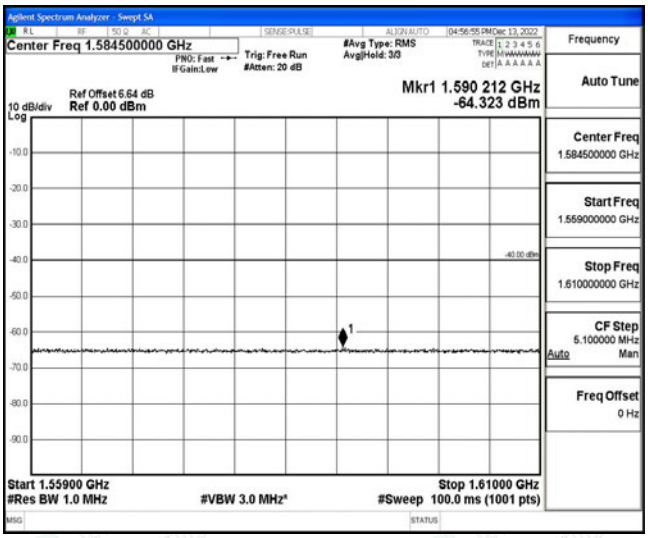
Band13-5MHz-16QAM-23205-1RB#0-Range6:793~805MHz



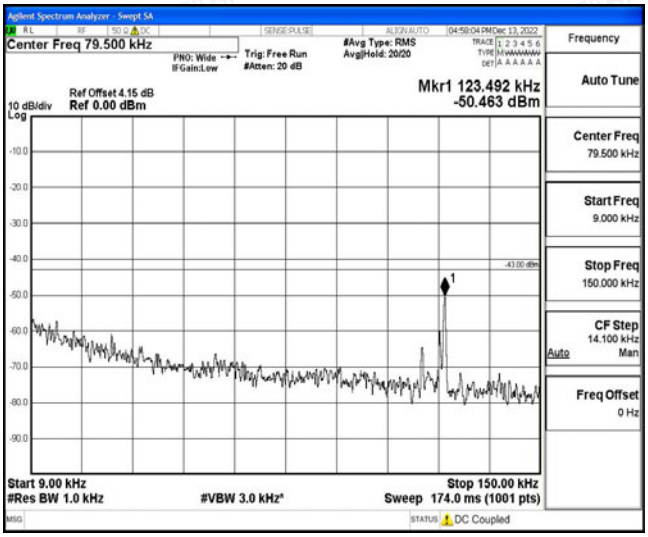
Band13-5MHz-16QAM-23205-1RB#0-Range4:1000~10000MHz



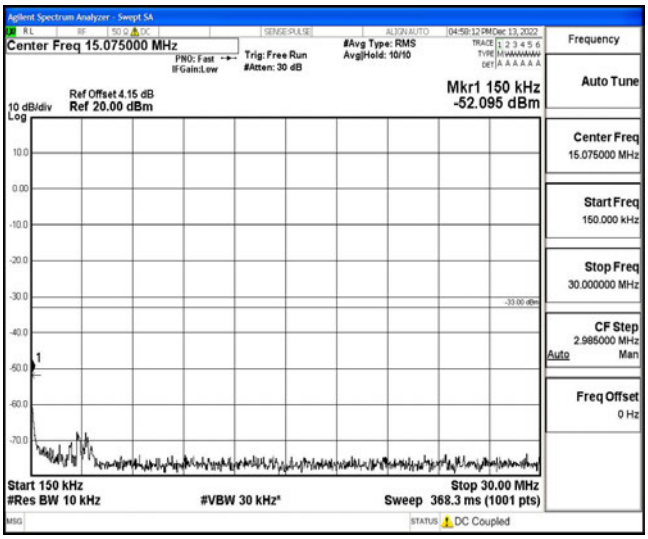
Band13-5MHz-16QAM-23205-1RB#0-Range7:1559~1610MHz



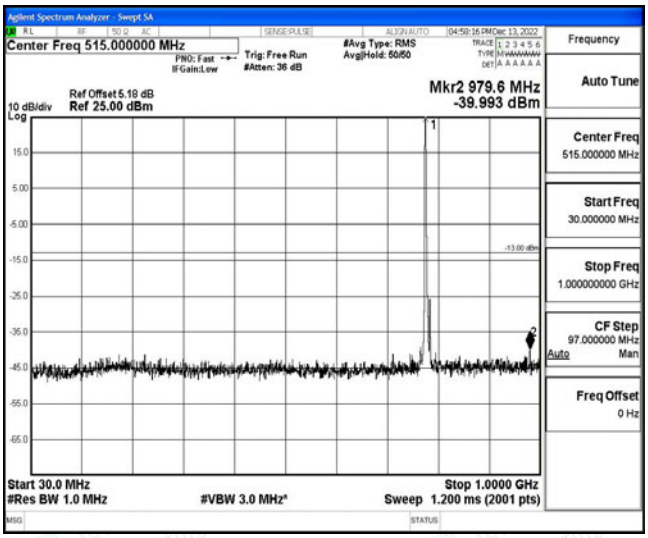
Band13-5MHz-16QAM-23230-1RB#0-Range1:0.009~0.15MHz



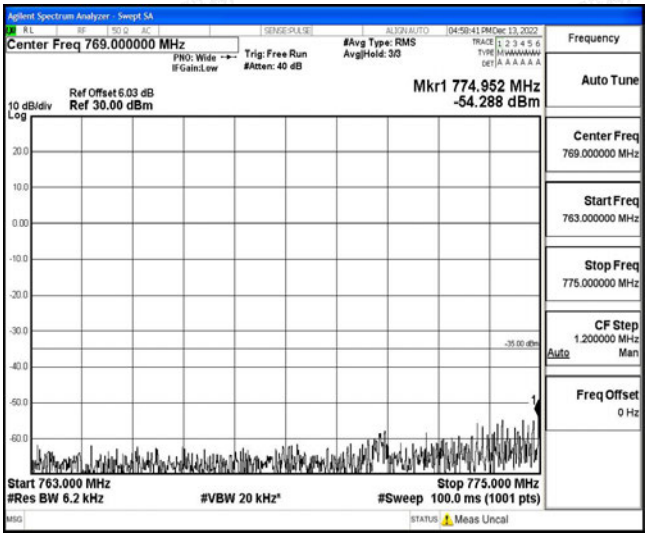
Band13-5MHz-16QAM-23230-1RB#0-Range2:0.15~30MHz



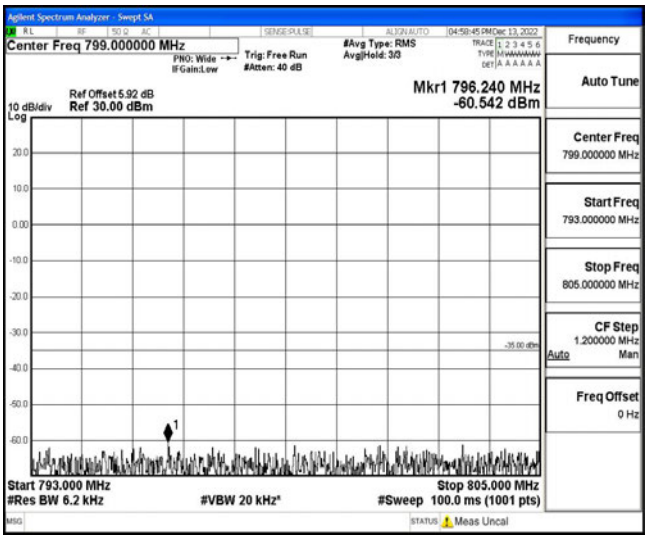
Band13-5MHz-16QAM-23230-1RB#0-Range3:30~1000MHz



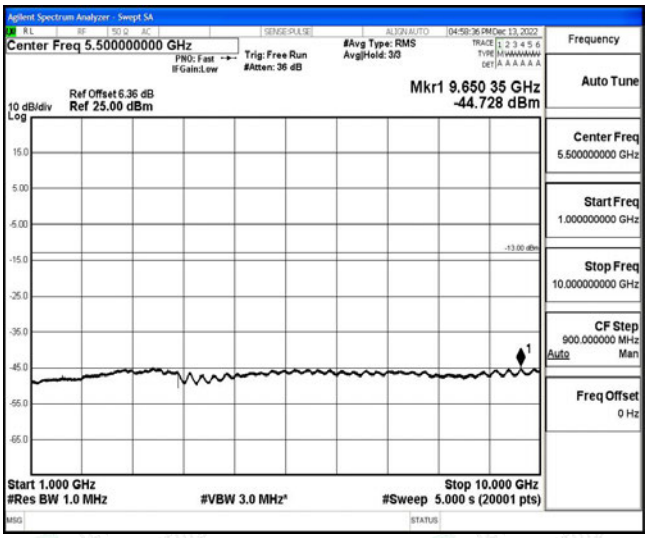
Band13-5MHz-16QAM-23230-1RB#0-Range5:763~775MHz



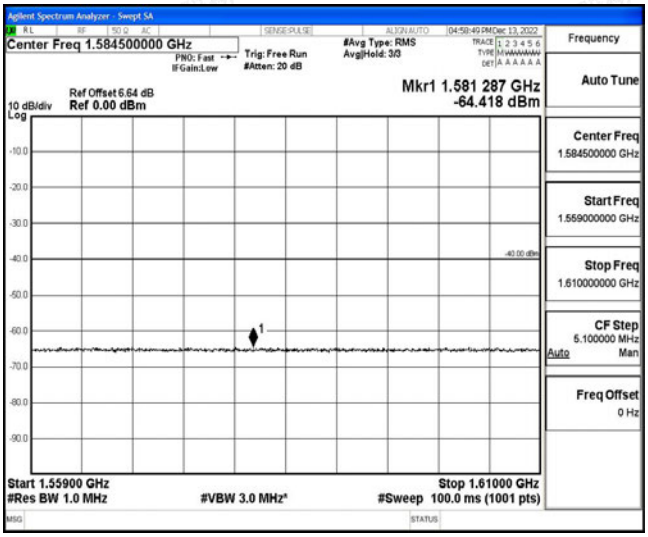
Band13-5MHz-16QAM-23230-1RB#0-Range6:793~805MHz



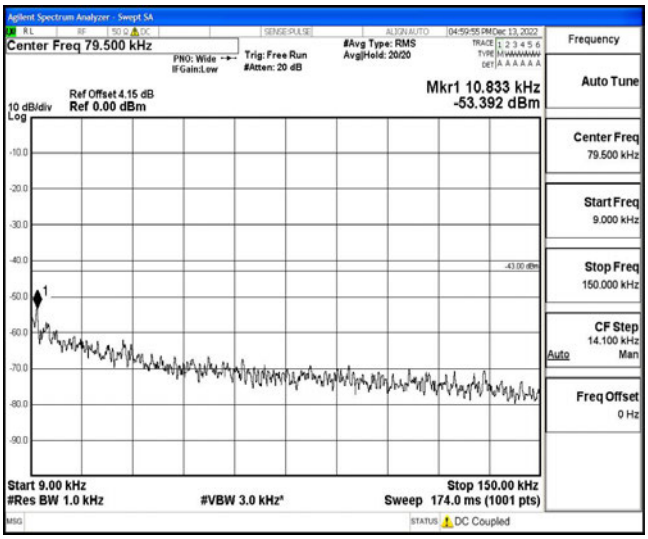
Band13-5MHz-16QAM-23230-1RB#0-Range4:1000~10000MHz



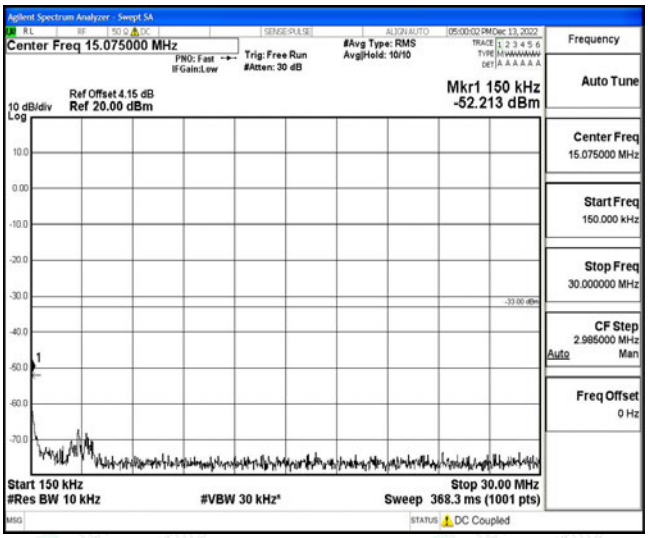
Band13-5MHz-16QAM-23230-1RB#0-Range7:1559~1610MHz



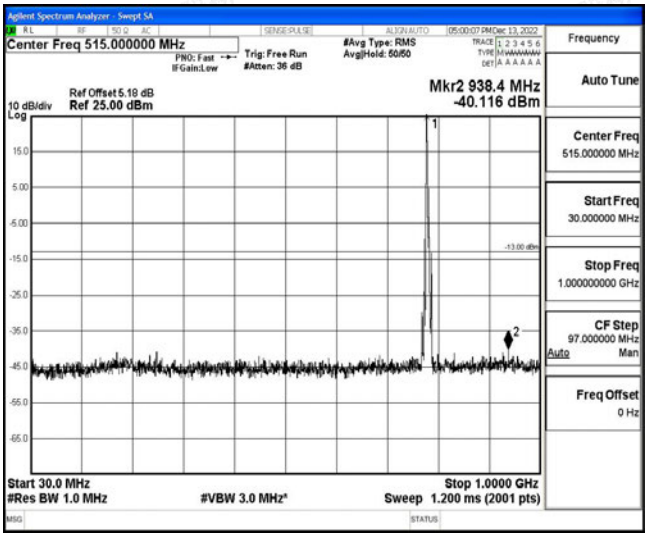
Band13-5MHz-16QAM-23255-1RB#0-Range1:0.009~0.15MHz



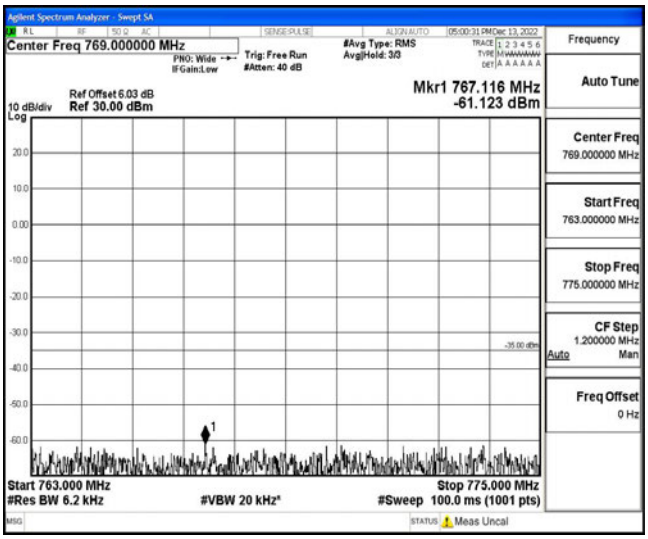
Band13-5MHz-16QAM-23255-1RB#0-Range2:0.15~30MHz



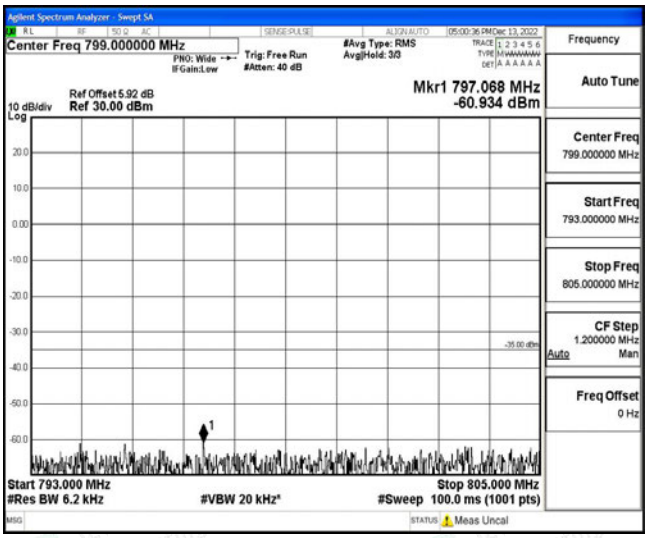
Band13-5MHz-16QAM-23255-1RB#0-Range3:30~1000MHz



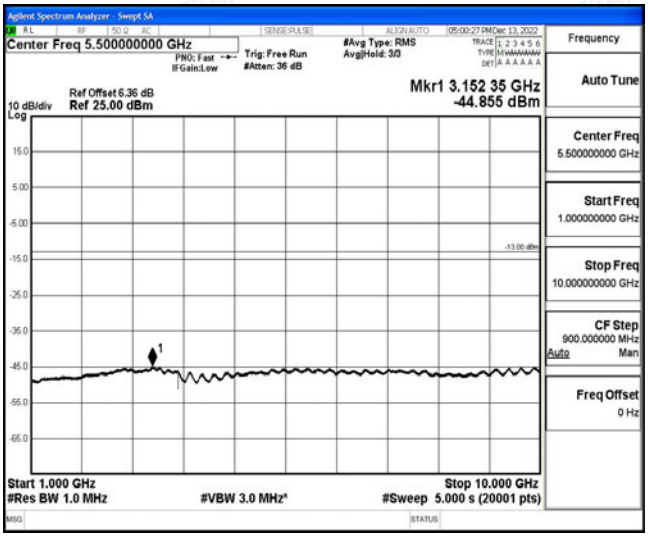
Band13-5MHz-16QAM-23255-1RB#0-Range5:763~775MHz



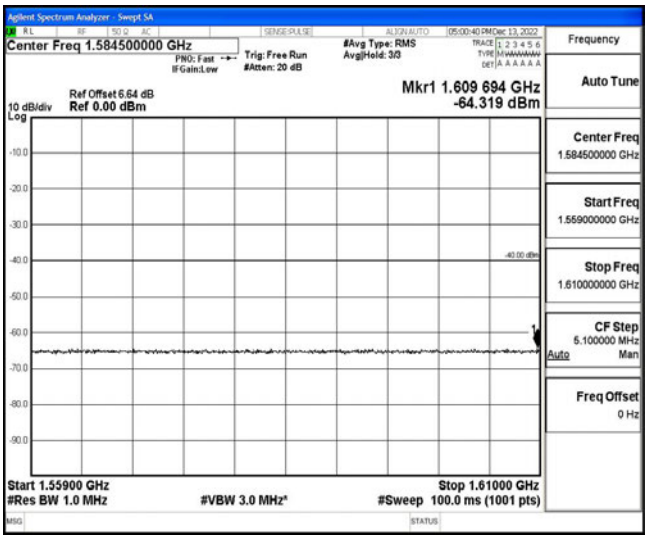
Band13-5MHz-16QAM-23255-1RB#0-Range6:793~805MHz



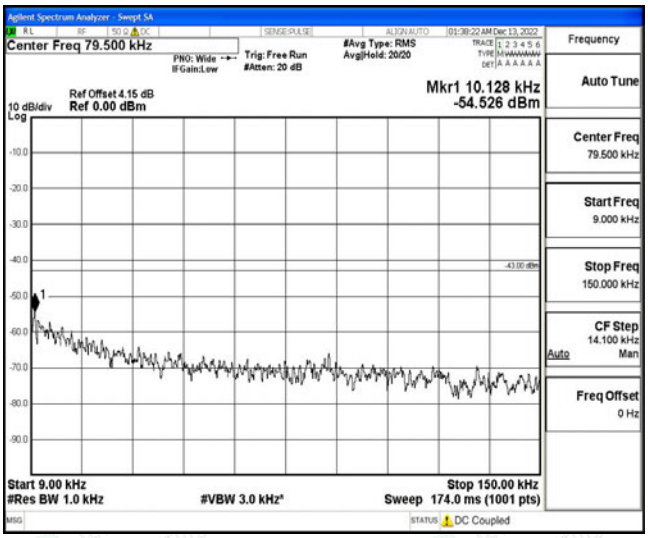
Band13-5MHz-16QAM-23255-1RB#0-Range4:1000~10000MHz



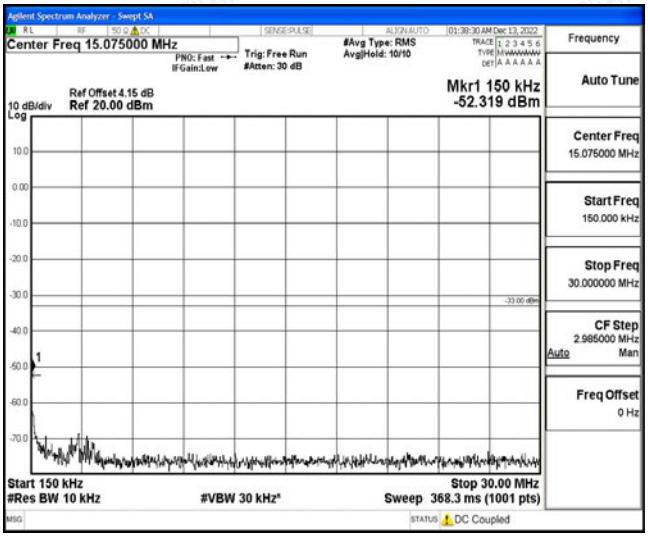
Band13-5MHz-16QAM-23255-1RB#0-Range7:1559~1610MHz



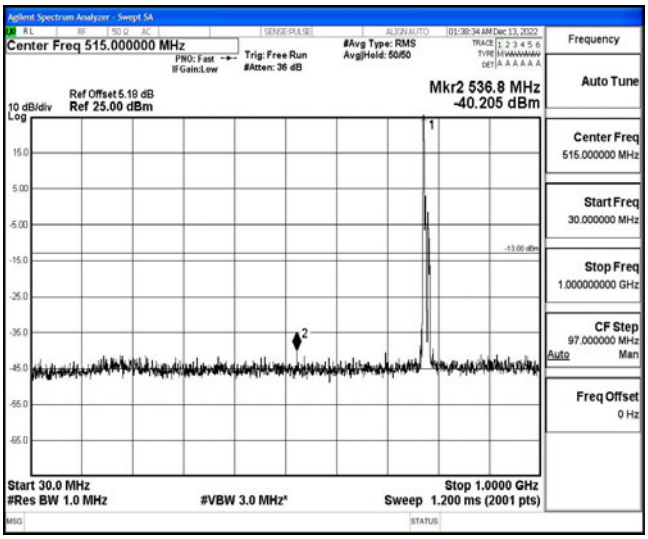
Band13-10MHz-QPSK-23230-1RB#0-Range1:0.009~0.15MHz



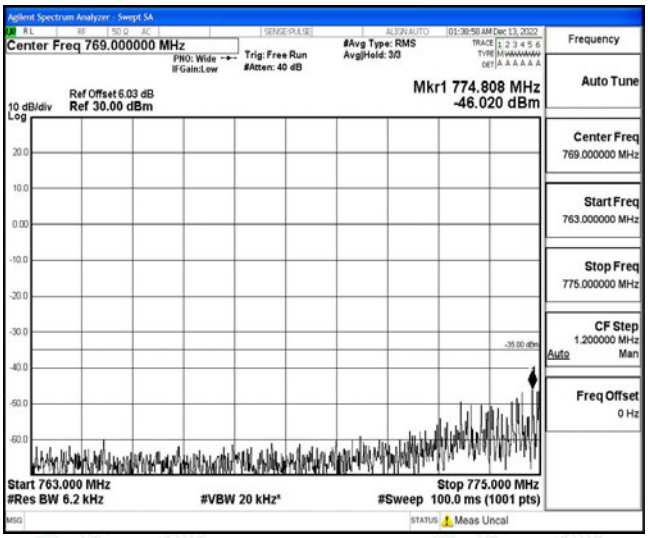
Band13-10MHz-QPSK-23230-1RB#0-Range2:0.15~30MHz



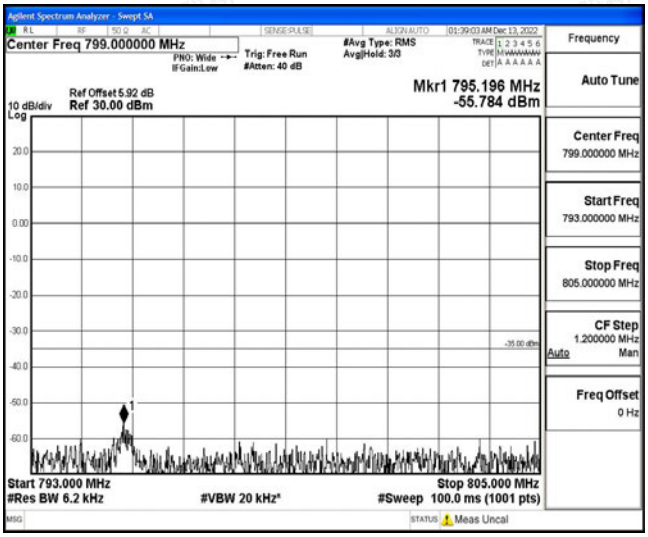
Band13-10MHz-QPSK-23230-1RB#0-Range3:30~1000MHz



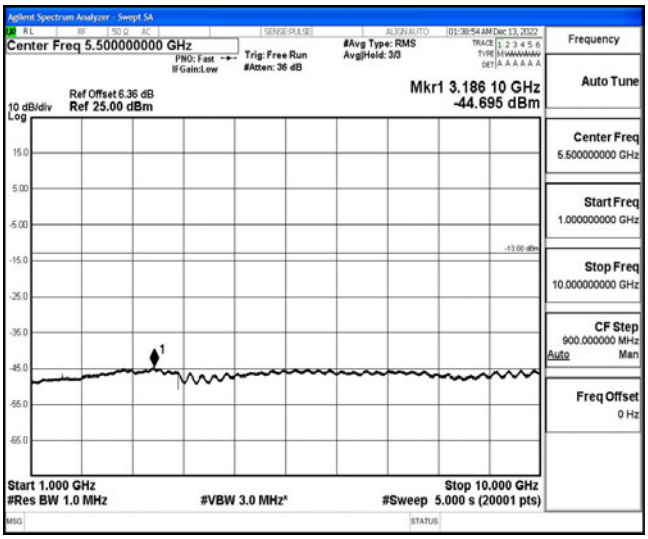
Band13-10MHz-QPSK-23230-1RB#0-Range5:763~775MHz



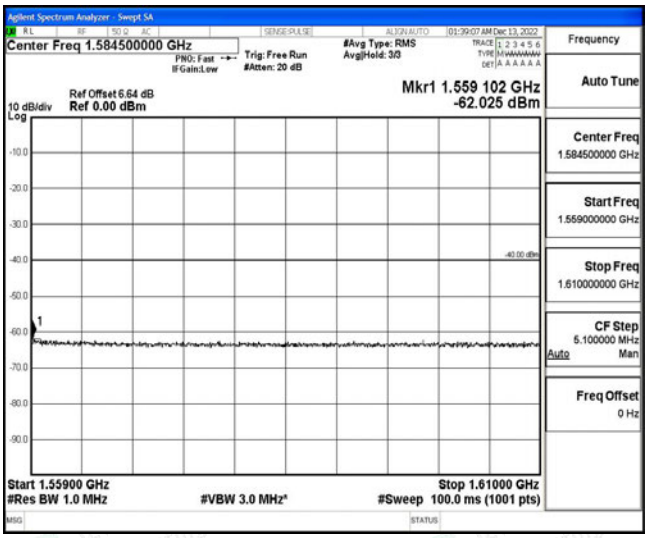
Band13-10MHz-QPSK-23230-1RB#0-Range6:793~805MHz



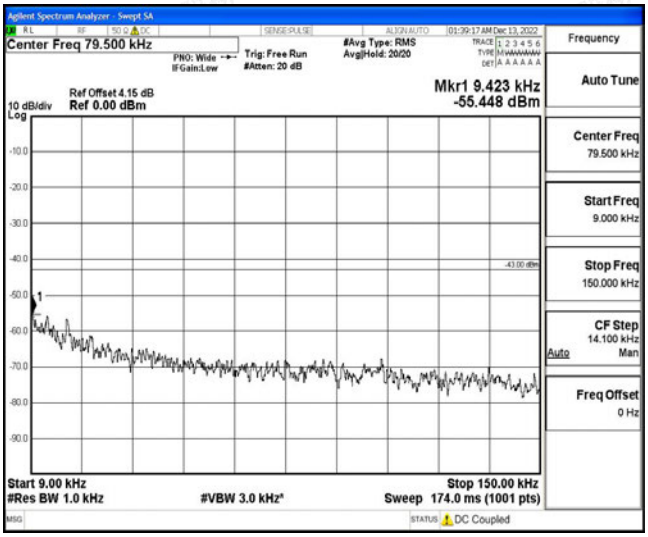
Band13-10MHz-QPSK-23230-1RB#0-Range4:1000~10000MHz



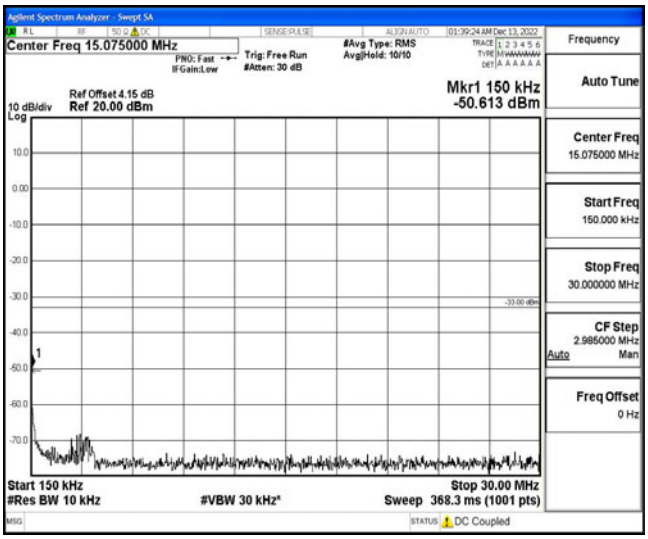
Band13-10MHz-QPSK-23230-1RB#0-Range7:1559~1610MHz



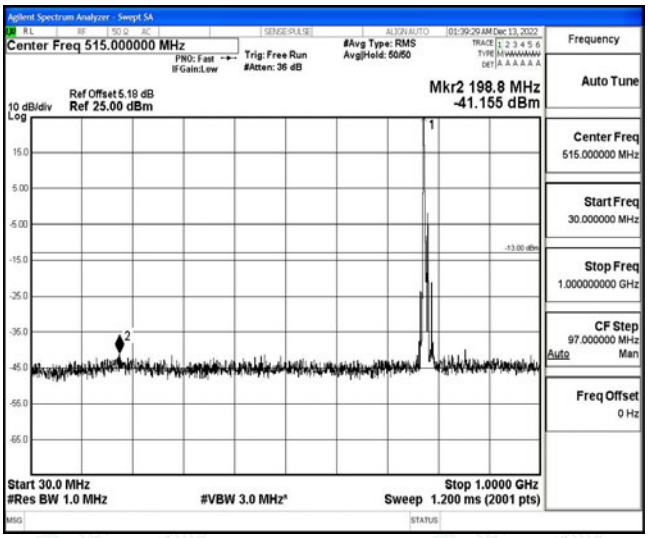
Band13-10MHz-16QAM-23230-1RB#0-Range1:0.009~0.15MHz



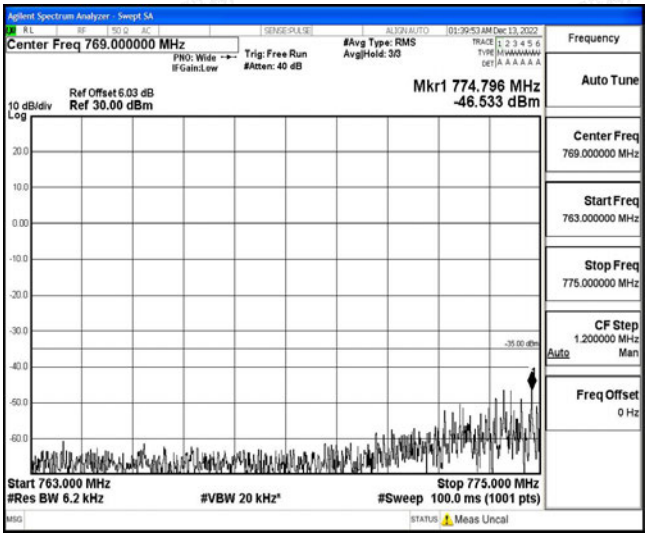
Band13-10MHz-16QAM-23230-1RB#0-Range2:0.15~30MHz



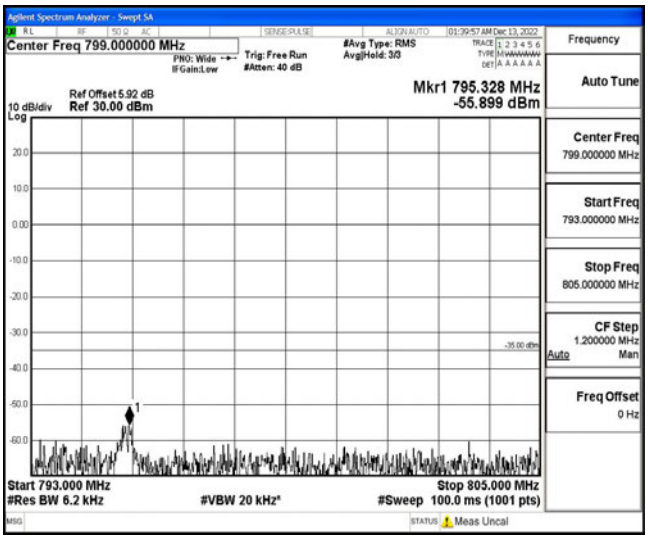
Band13-10MHz-16QAM-23230-1RB#0-Range3:30~1000MHz



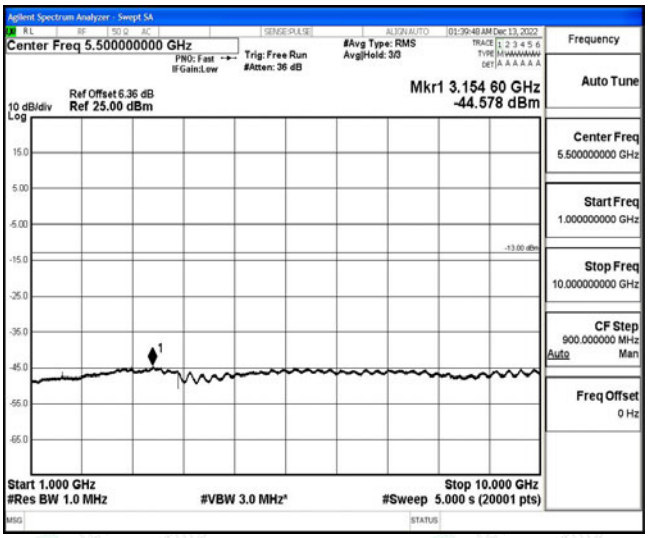
Band13-10MHz-16QAM-23230-1RB#0-Range5:763~775MHz



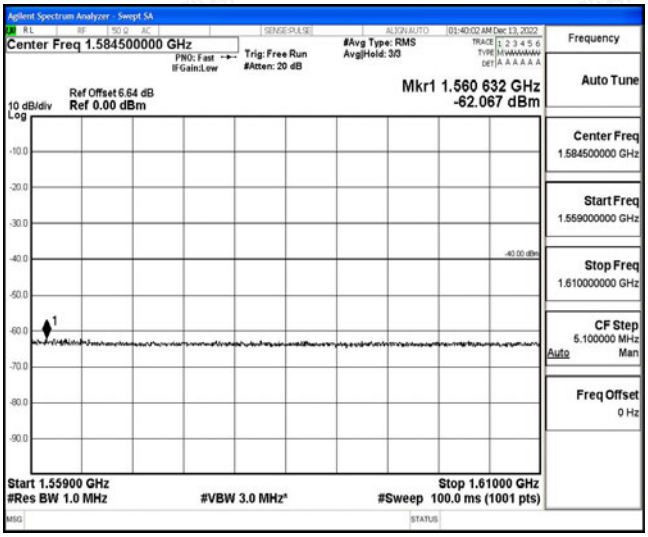
Band13-10MHz-16QAM-23230-1RB#0-Range6:793~805MHz



Band13-10MHz-16QAM-23230-1RB#0-Range4:1000~10000MHz



Band13-10MHz-16QAM-23230-1RB#0-Range7:1559~1610MHz


Agilent Spectrum Analyzer - Swept SA
Center Freq 1.584500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
#Avg Type: RMS
Avg|Hold: 3/3
01:40:02 AM Dec 13, 2022
Frequency
Auto Tune
Ref Offset 6.64 dB
10 dB/div Ref 0.00 dBm
Log
Mkr1 1.560 632 GHz
-62.067 dBm
Center Freq
1.584500000 GHz
Start Freq
1.559000000 GHz
Stop Freq
1.610000000 GHz
CF Step
5.100000 MHz
Auto Man
Freq Offset
0 Hz
Start 1.55900 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 1.61000 GHz
#Sweep 100.0 ms (1001 pts)