



## Appendix F: Test Data for E-UTRA Band 13

**Product Name: SumUp Pro**

**Test Model: SumUp 3G+**

### Environmental Conditions

Temperature:	23.5° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Ling Zhu
Supervised by:	Li Huan





## F.1 Effective (Isotropic) Radiated Power Output Data

### Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	23.72	PASS
Band13	5MHz	QPSK	23205	1RB#12	23.91	PASS
Band13	5MHz	QPSK	23205	1RB#24	23.72	PASS
Band13	5MHz	QPSK	23205	12RB#0	22.81	PASS
Band13	5MHz	QPSK	23205	12RB#6	22.81	PASS
Band13	5MHz	QPSK	23205	12RB#13	22.82	PASS
Band13	5MHz	QPSK	23205	25RB#0	22.78	PASS
Band13	5MHz	QPSK	23230	1RB#0	23.93	PASS
Band13	5MHz	QPSK	23230	1RB#12	24.00	PASS
Band13	5MHz	QPSK	23230	1RB#24	23.90	PASS
Band13	5MHz	QPSK	23230	12RB#0	22.74	PASS
Band13	5MHz	QPSK	23230	12RB#6	22.76	PASS
Band13	5MHz	QPSK	23230	12RB#13	22.97	PASS
Band13	5MHz	QPSK	23230	25RB#0	22.90	PASS
Band13	5MHz	QPSK	23255	1RB#0	23.86	PASS
Band13	5MHz	QPSK	23255	1RB#12	24.03	PASS
Band13	5MHz	QPSK	23255	1RB#24	23.82	PASS
Band13	5MHz	QPSK	23255	12RB#0	22.68	PASS
Band13	5MHz	QPSK	23255	12RB#6	22.67	PASS
Band13	5MHz	QPSK	23255	12RB#13	22.73	PASS
Band13	5MHz	QPSK	23255	25RB#0	22.68	PASS
Band13	5MHz	16QAM	23205	1RB#0	22.60	PASS
Band13	5MHz	16QAM	23205	1RB#12	22.77	PASS
Band13	5MHz	16QAM	23205	1RB#24	22.58	PASS
Band13	5MHz	16QAM	23205	12RB#0	21.85	PASS
Band13	5MHz	16QAM	23205	12RB#6	21.86	PASS
Band13	5MHz	16QAM	23205	12RB#13	21.90	PASS
Band13	5MHz	16QAM	23205	25RB#0	21.86	PASS
Band13	5MHz	16QAM	23230	1RB#0	22.81	PASS
Band13	5MHz	16QAM	23230	1RB#12	22.79	PASS





Band13	5MHz	16QAM	23230	1RB#24	22.63	PASS
Band13	5MHz	16QAM	23230	12RB#0	21.76	PASS
Band13	5MHz	16QAM	23230	12RB#6	21.80	PASS
Band13	5MHz	16QAM	23230	12RB#13	21.99	PASS
Band13	5MHz	16QAM	23230	25RB#0	21.90	PASS
Band13	5MHz	16QAM	23255	1RB#0	22.75	PASS
Band13	5MHz	16QAM	23255	1RB#12	22.85	PASS
Band13	5MHz	16QAM	23255	1RB#24	22.65	PASS
Band13	5MHz	16QAM	23255	12RB#0	21.70	PASS
Band13	5MHz	16QAM	23255	12RB#6	21.68	PASS
Band13	5MHz	16QAM	23255	12RB#13	21.76	PASS
Band13	5MHz	16QAM	23255	25RB#0	21.66	PASS
Band13	10MHz	QPSK	23230	1RB#0	23.88	PASS
Band13	10MHz	QPSK	23230	1RB#24	24.12	PASS
Band13	10MHz	QPSK	23230	1RB#49	23.87	PASS
Band13	10MHz	QPSK	23230	25RB#0	22.85	PASS
Band13	10MHz	QPSK	23230	25RB#12	22.85	PASS
Band13	10MHz	QPSK	23230	25RB#25	22.92	PASS
Band13	10MHz	QPSK	23230	50RB#0	22.88	PASS
Band13	10MHz	16QAM	23230	1RB#0	22.86	PASS
Band13	10MHz	16QAM	23230	1RB#24	23.01	PASS
Band13	10MHz	16QAM	23230	1RB#49	22.69	PASS
Band13	10MHz	16QAM	23230	25RB#0	21.87	PASS
Band13	10MHz	16QAM	23230	25RB#12	21.85	PASS
Band13	10MHz	16QAM	23230	25RB#25	21.85	PASS
Band13	10MHz	16QAM	23230	50RB#0	21.87	PASS





## F.2 Peak-to-Average Ratio (CCDF)

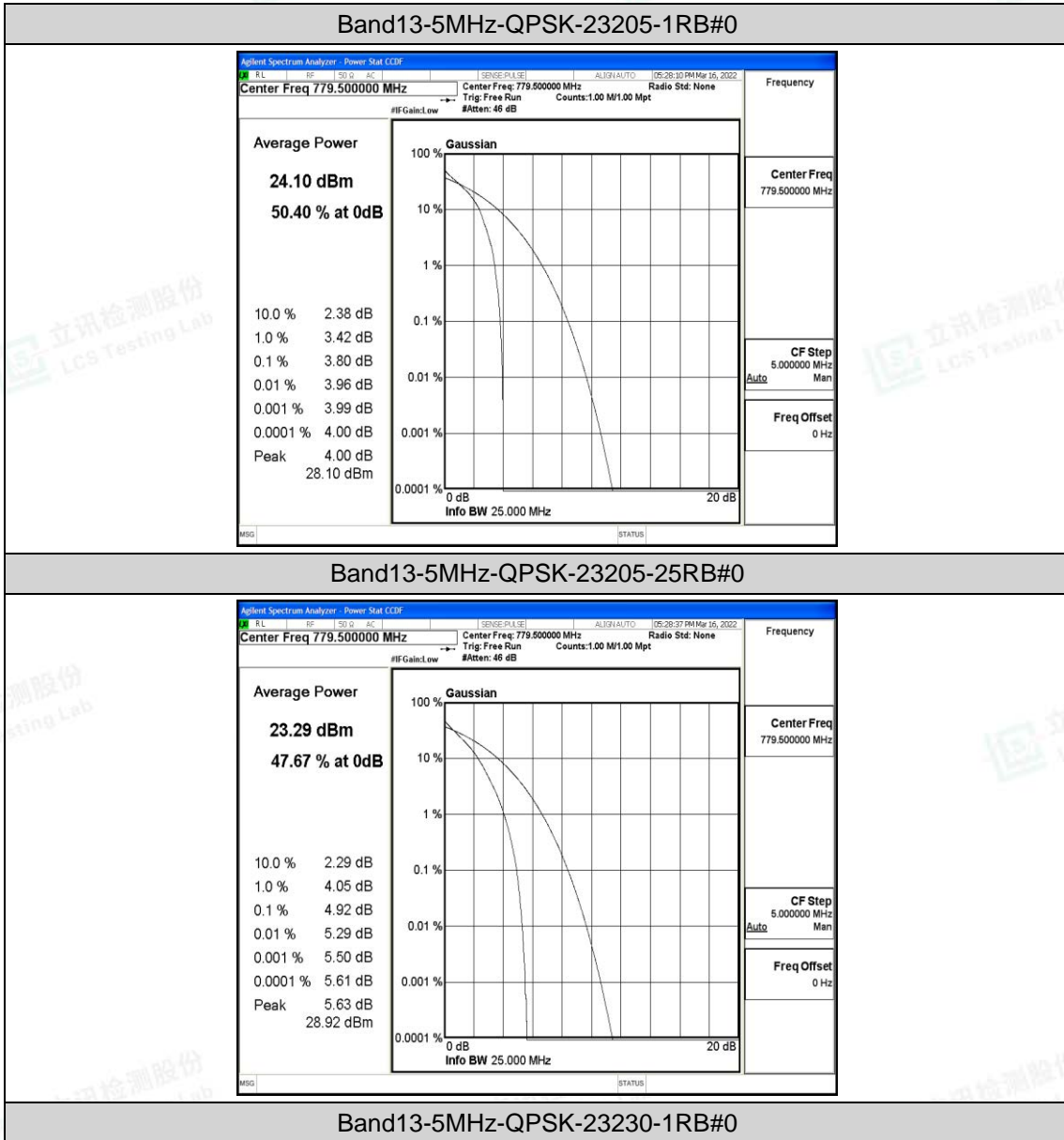
### Test Result

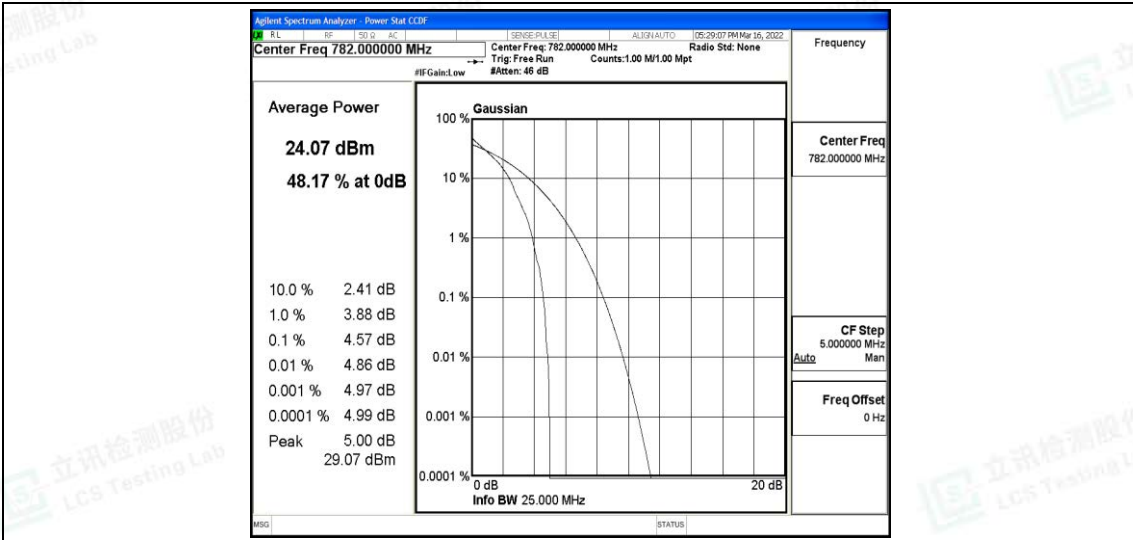
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	3.80	13	PASS
Band13	5MHz	QPSK	23205	25RB#0	4.92	13	PASS
Band13	5MHz	QPSK	23230	1RB#0	4.57	13	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.38	13	PASS
Band13	5MHz	QPSK	23255	1RB#0	3.52	13	PASS
Band13	5MHz	QPSK	23255	25RB#0	3.68	13	PASS
Band13	5MHz	16QAM	23205	1RB#0	4.54	13	PASS
Band13	5MHz	16QAM	23205	25RB#0	5.67	13	PASS
Band13	5MHz	16QAM	23230	1RB#0	5.26	13	PASS
Band13	5MHz	16QAM	23230	25RB#0	5.20	13	PASS
Band13	5MHz	16QAM	23255	1RB#0	4.39	13	PASS
Band13	5MHz	16QAM	23255	25RB#0	4.55	13	PASS
Band13	10MHz	QPSK	23230	1RB#0	3.78	13	PASS
Band13	10MHz	QPSK	23230	50RB#0	4.24	13	PASS
Band13	10MHz	16QAM	23230	1RB#0	4.81	13	PASS
Band13	10MHz	16QAM	23230	50RB#0	5.09	13	PASS



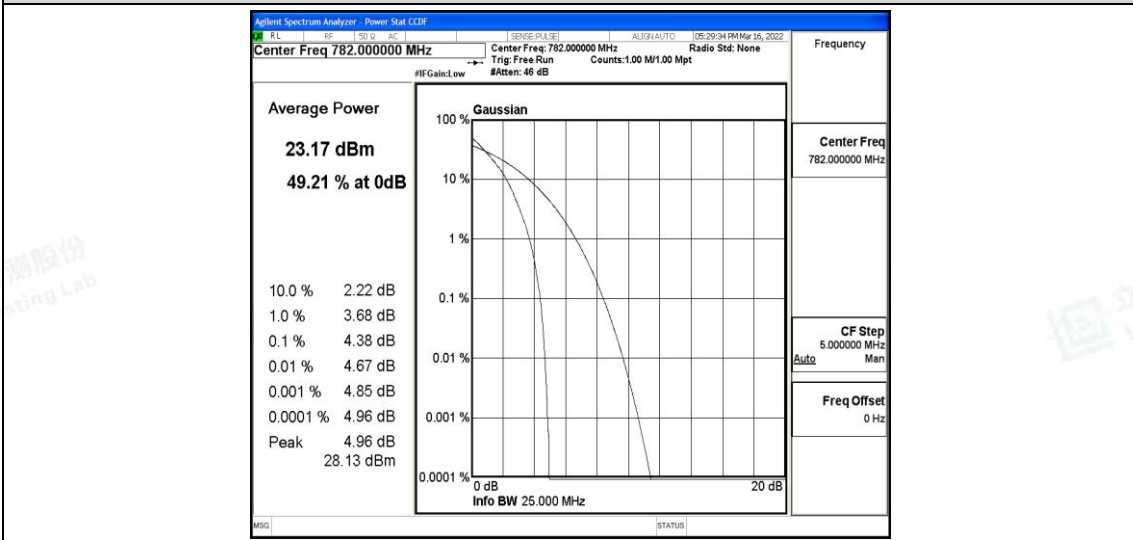


### Test Graphs

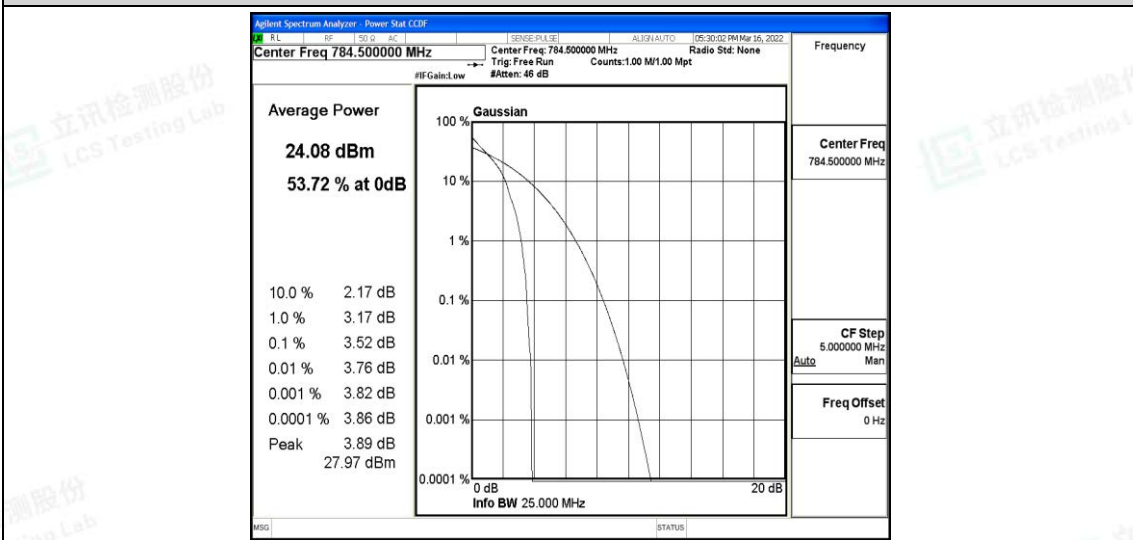




Band13-5MHz-QPSK-23230-25RB#0

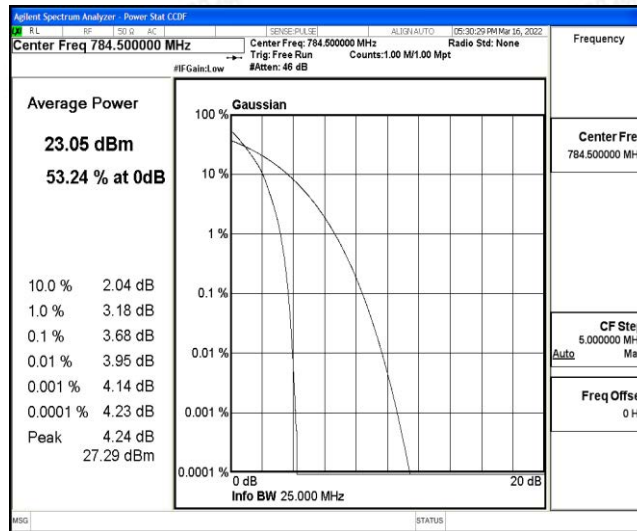


Band13-5MHz-QPSK-23255-1RB#0

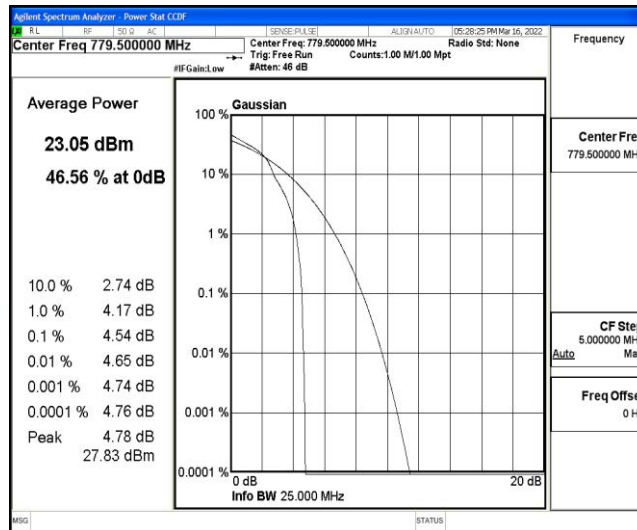


Band13-5MHz-QPSK-23255-25RB#0

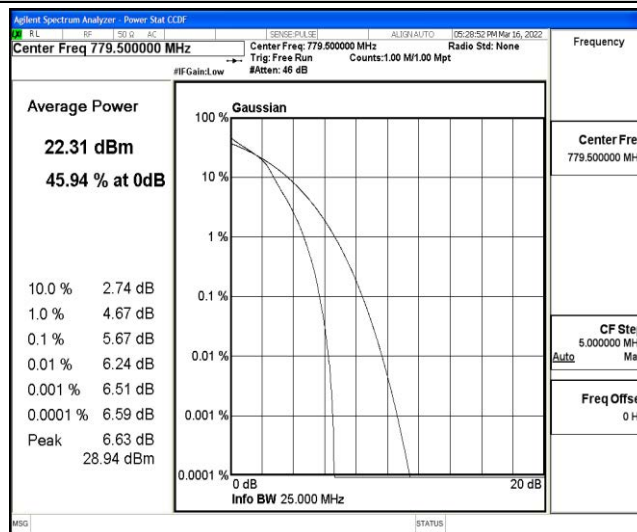




Band13-5MHz-16QAM-23205-1RB#0

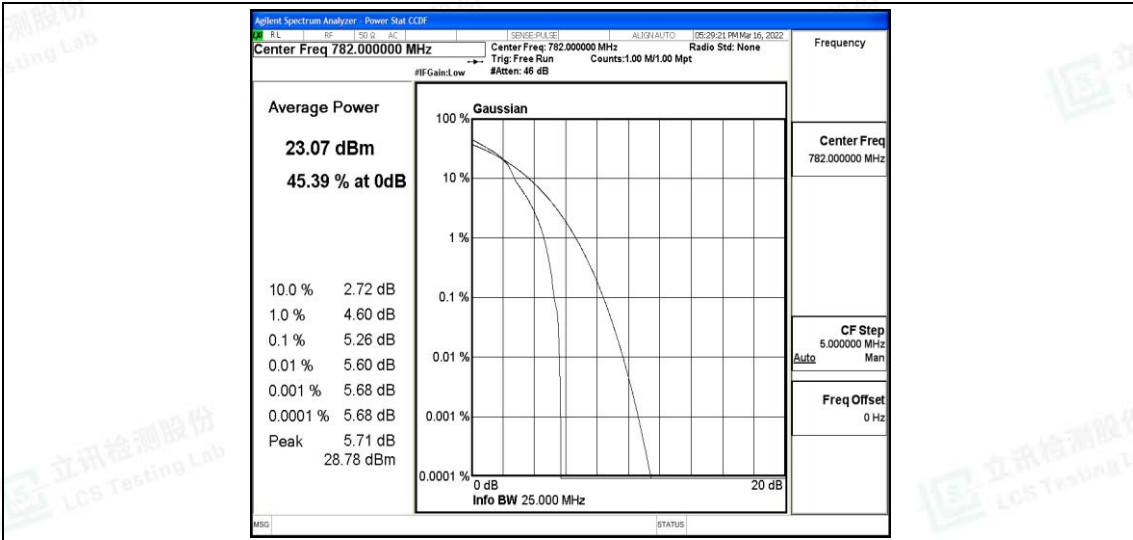


Band13-5MHz-16QAM-23205-25RB#0

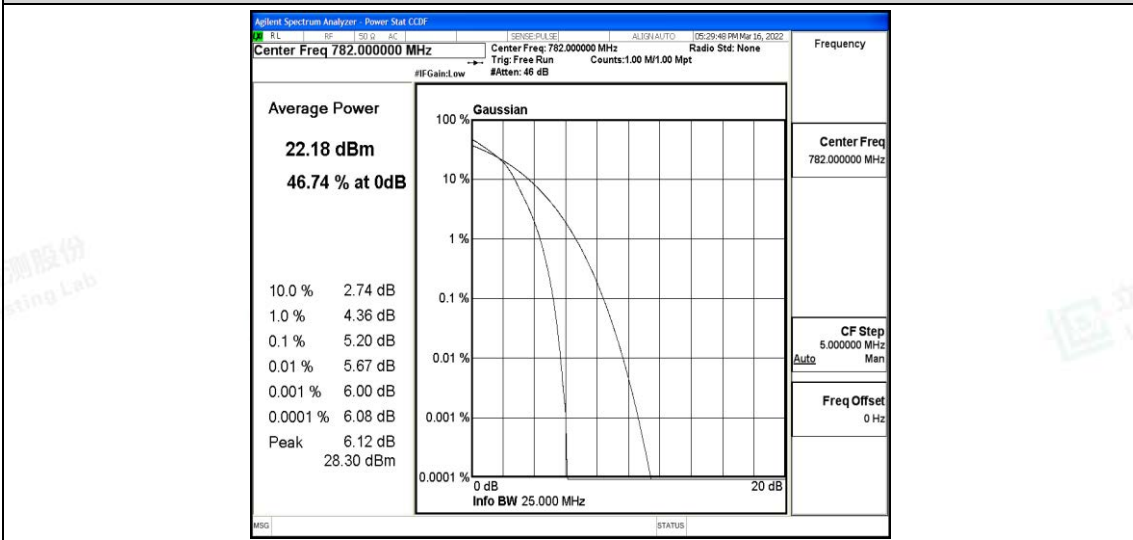


Band13-5MHz-16QAM-23230-1RB#0

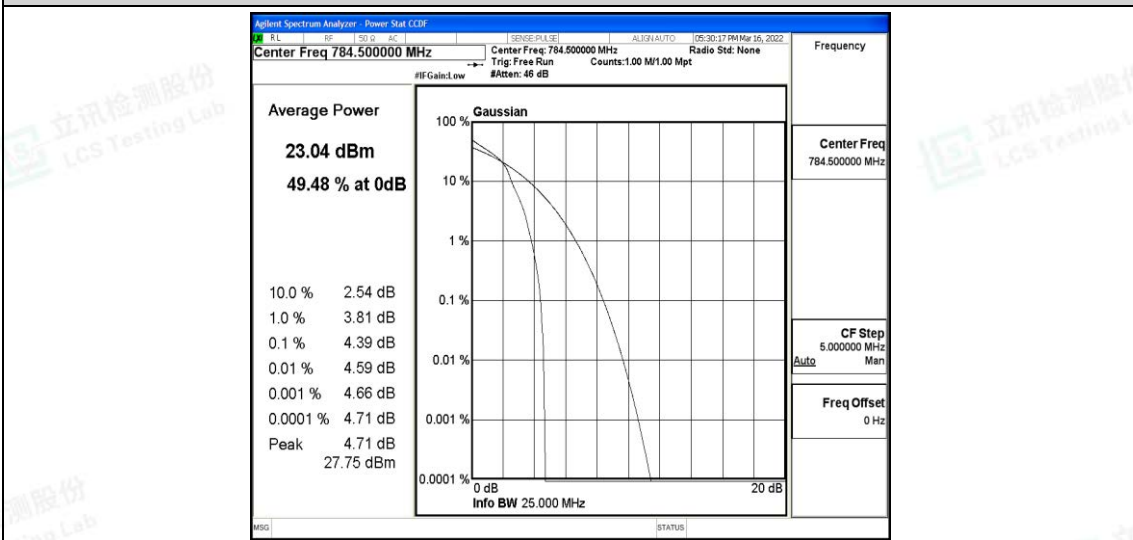




Band13-5MHz-16QAM-23230-25RB#0



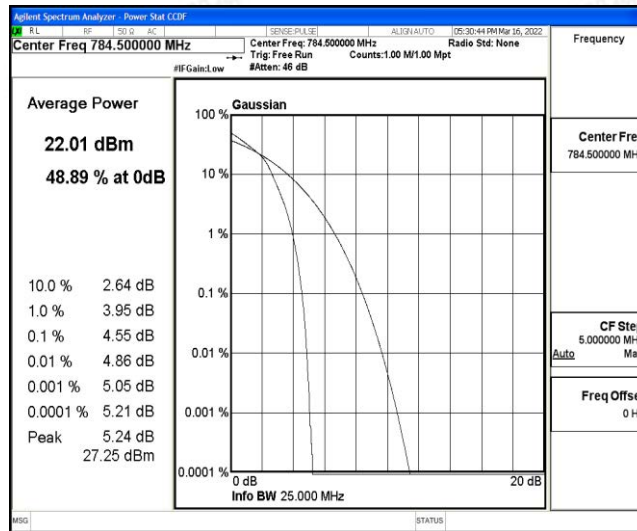
Band13-5MHz-16QAM-23255-1RB#0



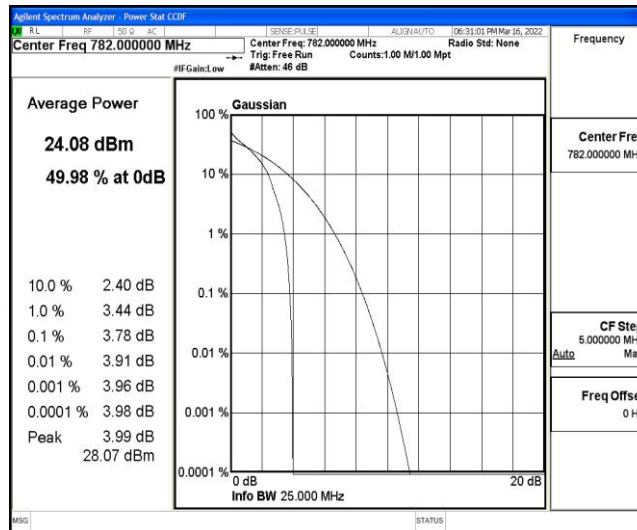
Band13-5MHz-16QAM-23255-25RB#0



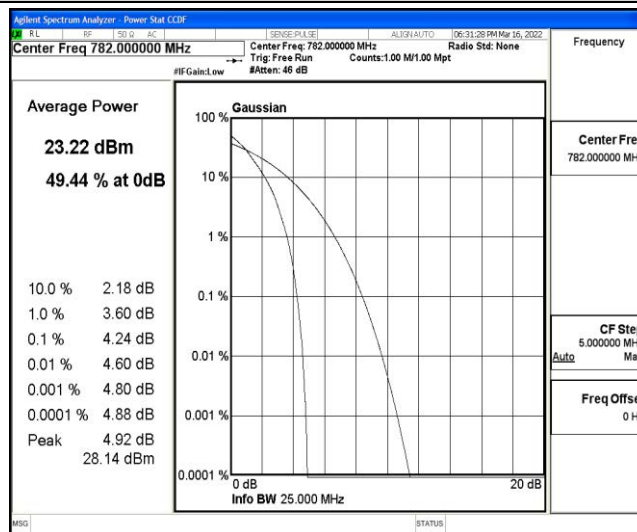




Band13-10MHz-QPSK-23230-1RB#0

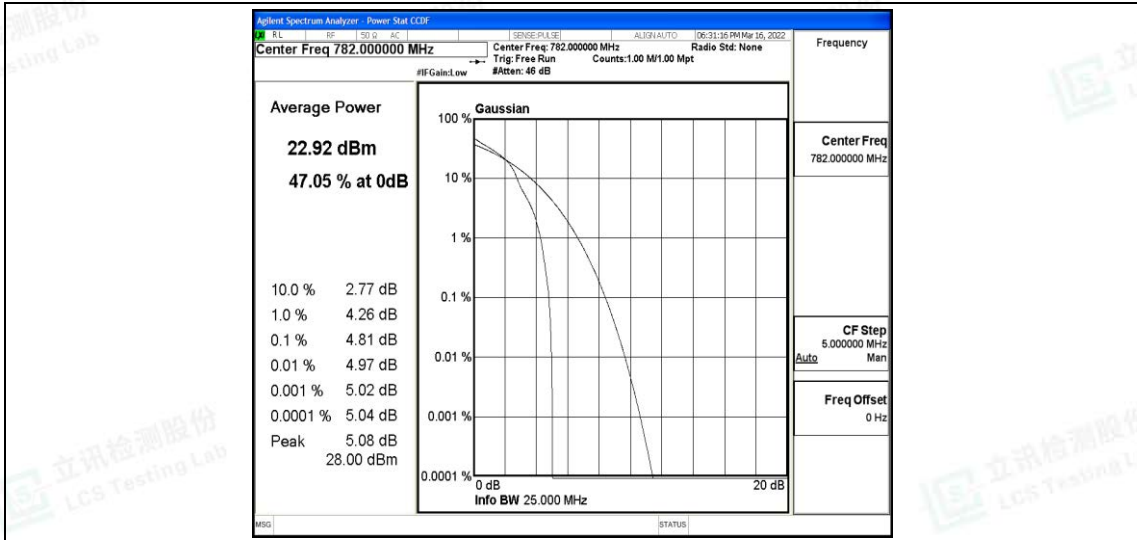


Band13-10MHz-QPSK-23230-50RB#0

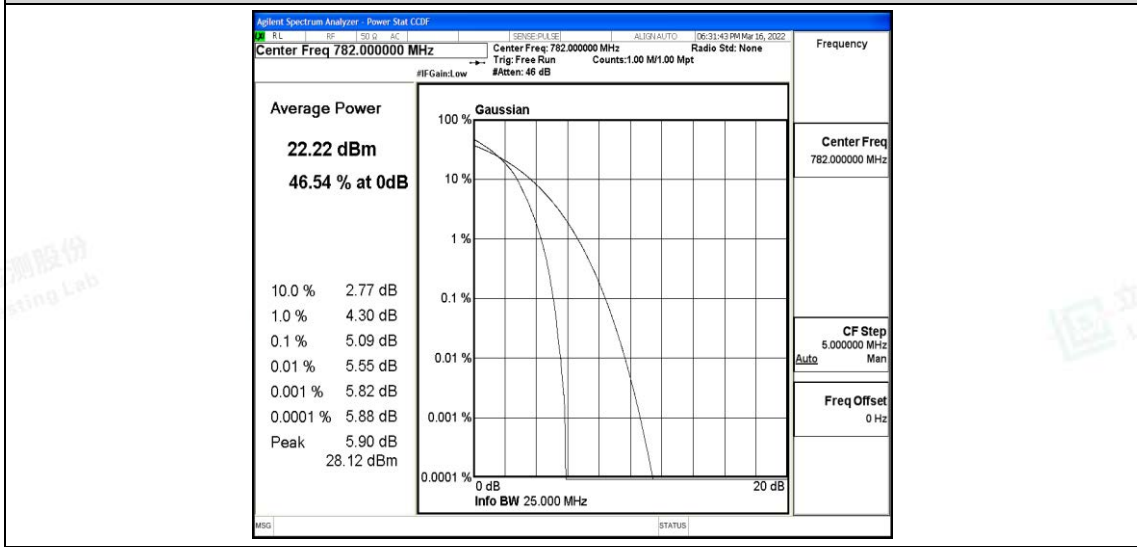


Band13-10MHz-16QAM-23230-1RB#0





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





### F.3 26dB Bandwidth and Occupied Bandwidth

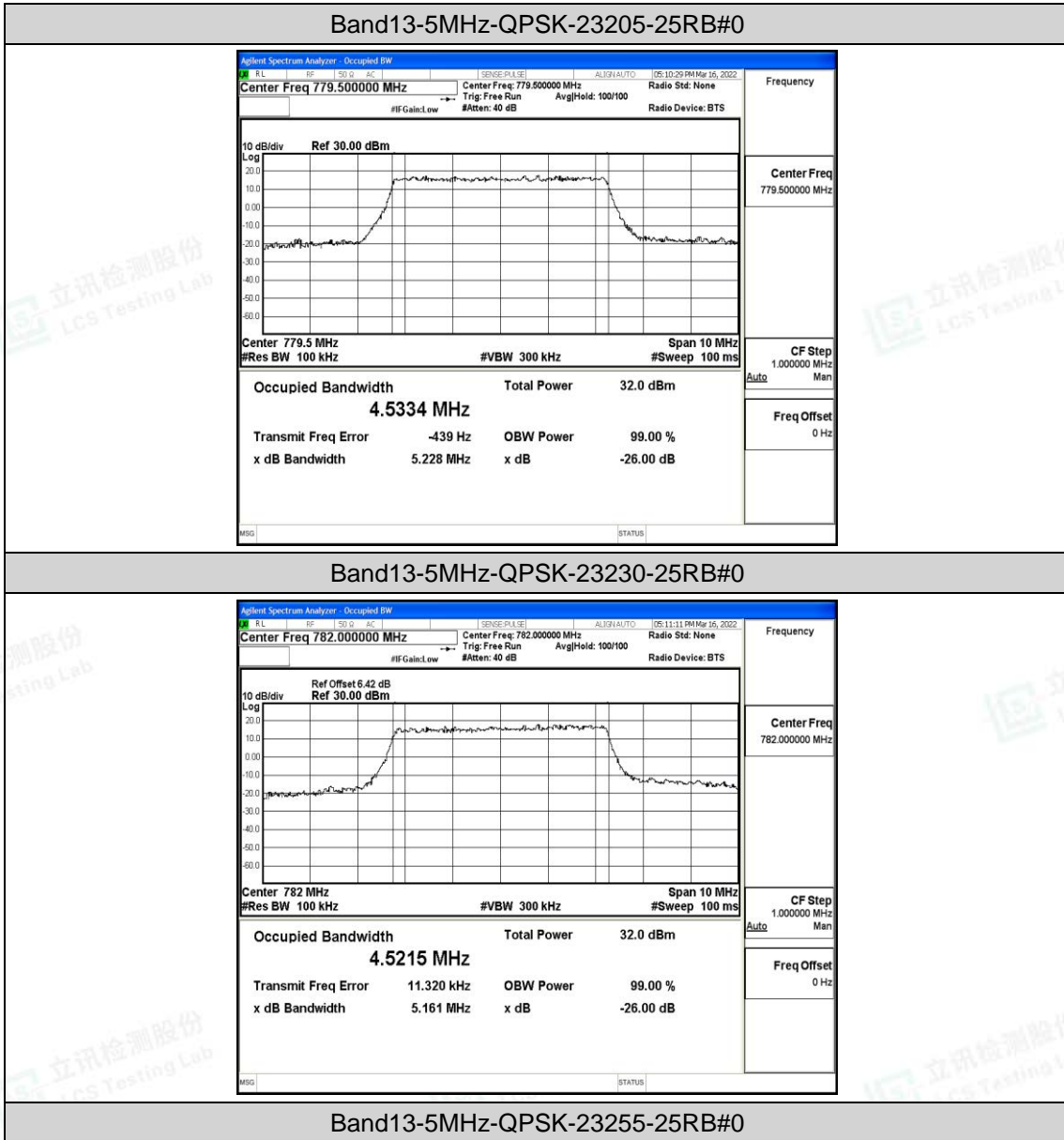
#### Test Result

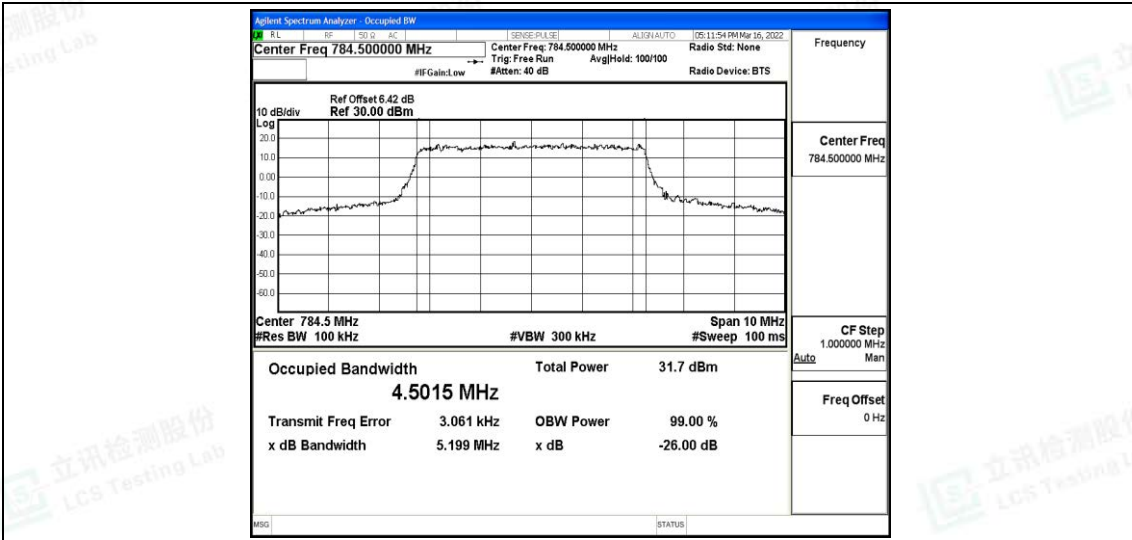
Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	4.5334	5.228	PASS
Band13	5MHz	QPSK	23230	25RB#0	4.5215	5.161	PASS
Band13	5MHz	QPSK	23255	25RB#0	4.5015	5.199	PASS
Band13	5MHz	16QAM	23205	25RB#0	4.5326	5.198	PASS
Band13	5MHz	16QAM	23230	25RB#0	4.5325	5.370	PASS
Band13	5MHz	16QAM	23255	25RB#0	4.5196	5.175	PASS
Band13	10MHz	QPSK	23230	50RB#0	9.0174	10.09	PASS
Band13	10MHz	16QAM	23230	50RB#0	9.0106	10.12	PASS



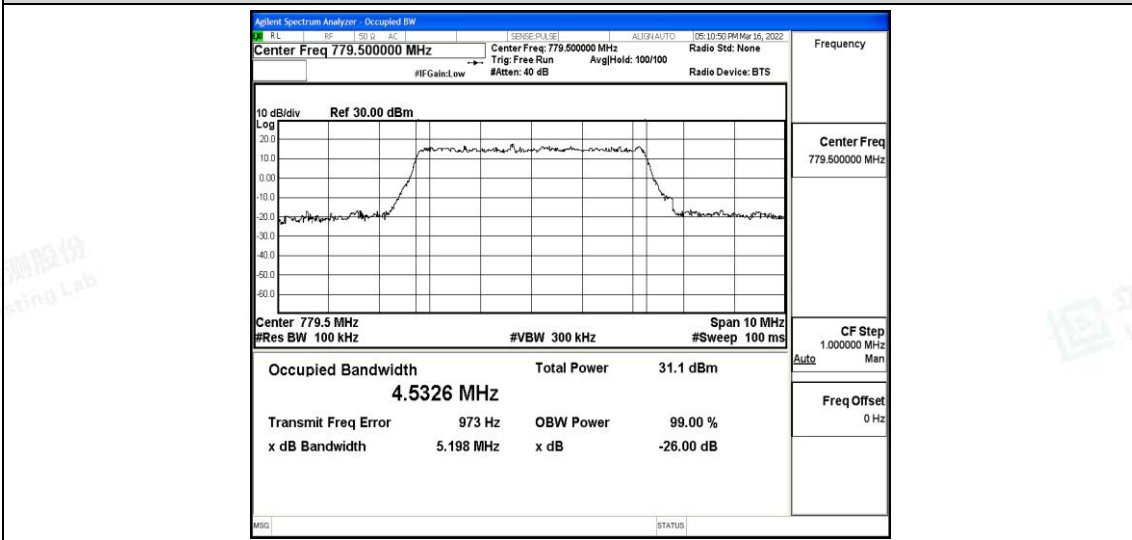


### Test Graphs

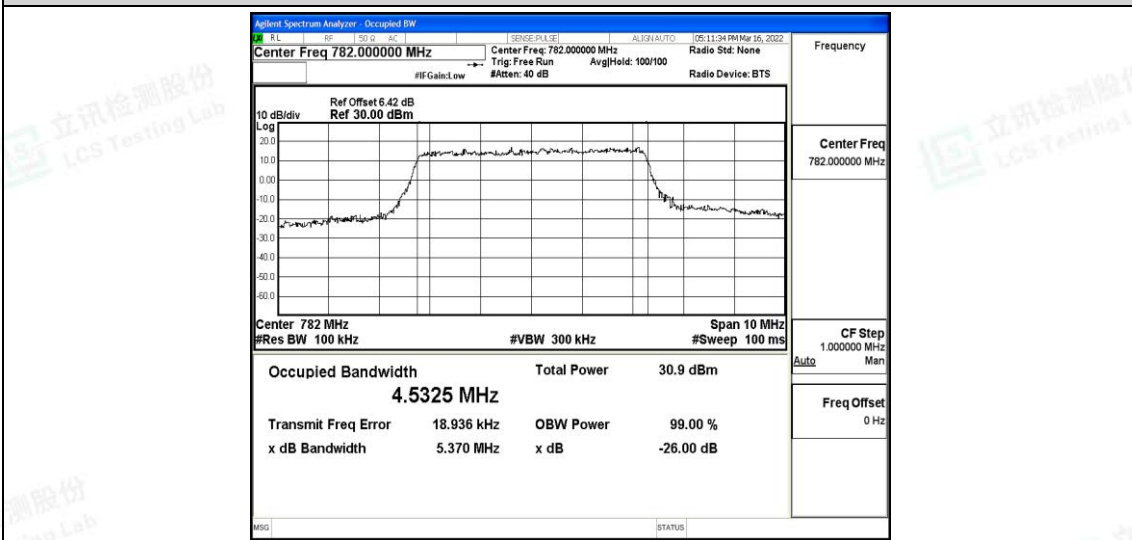




Band13-5MHz-16QAM-23205-25RB#0

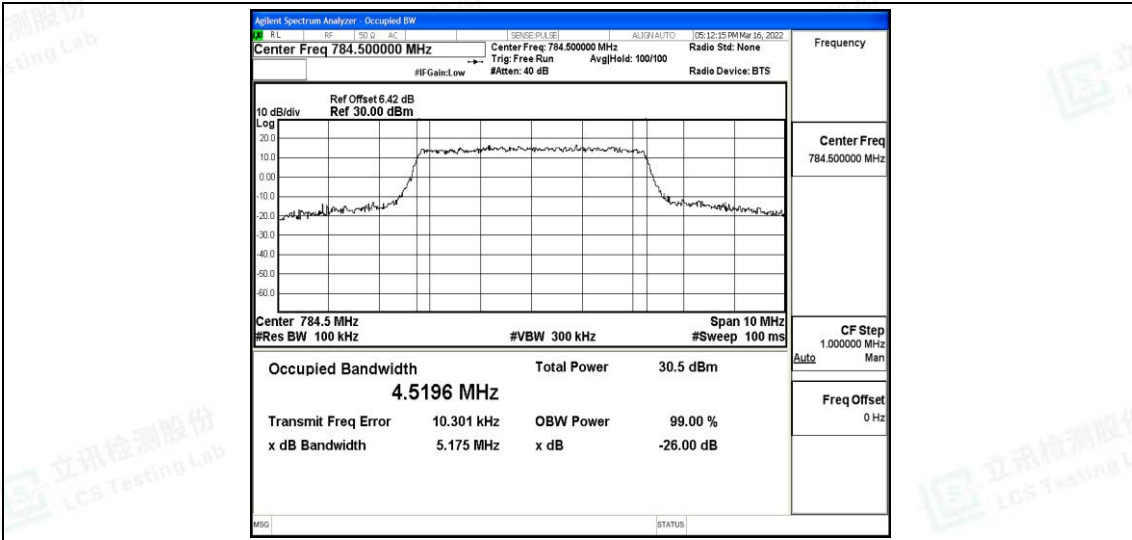


Band13-5MHz-16QAM-23230-25RB#0

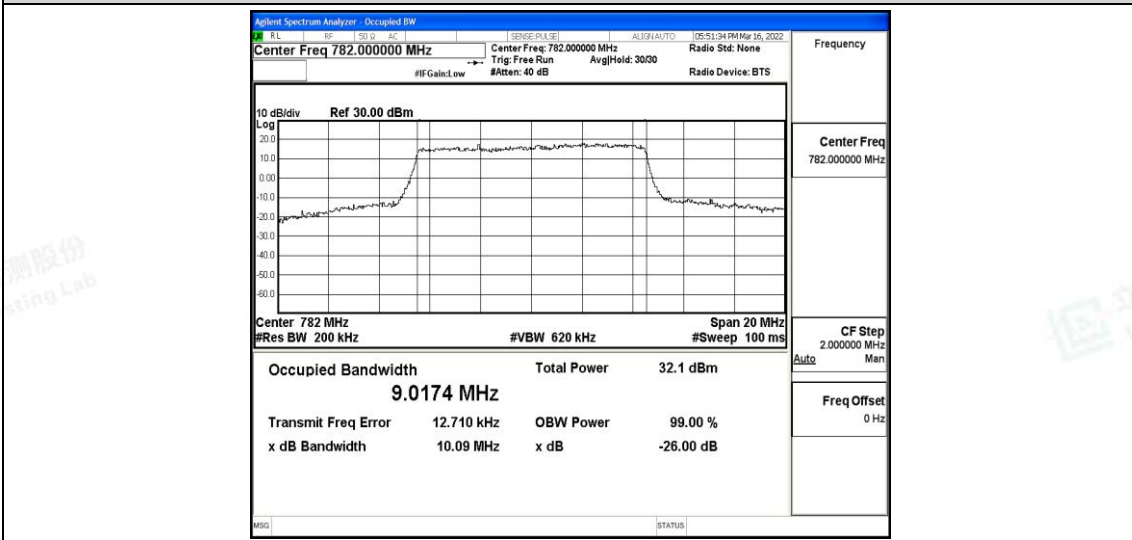


Band13-5MHz-16QAM-23255-25RB#0

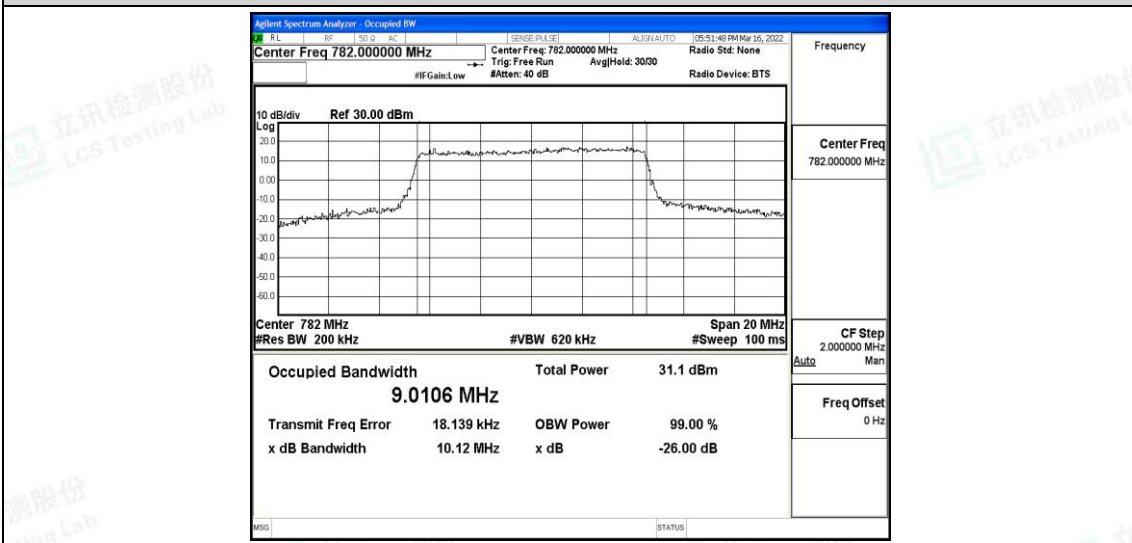




Band13-10MHz-QPSK-23230-50RB#0



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



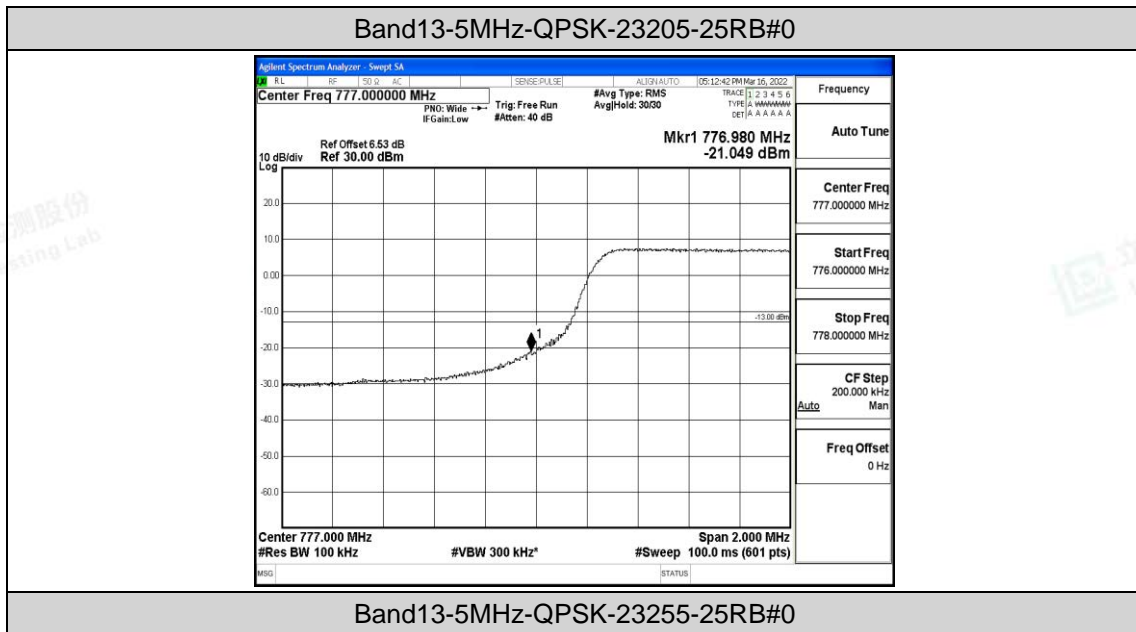


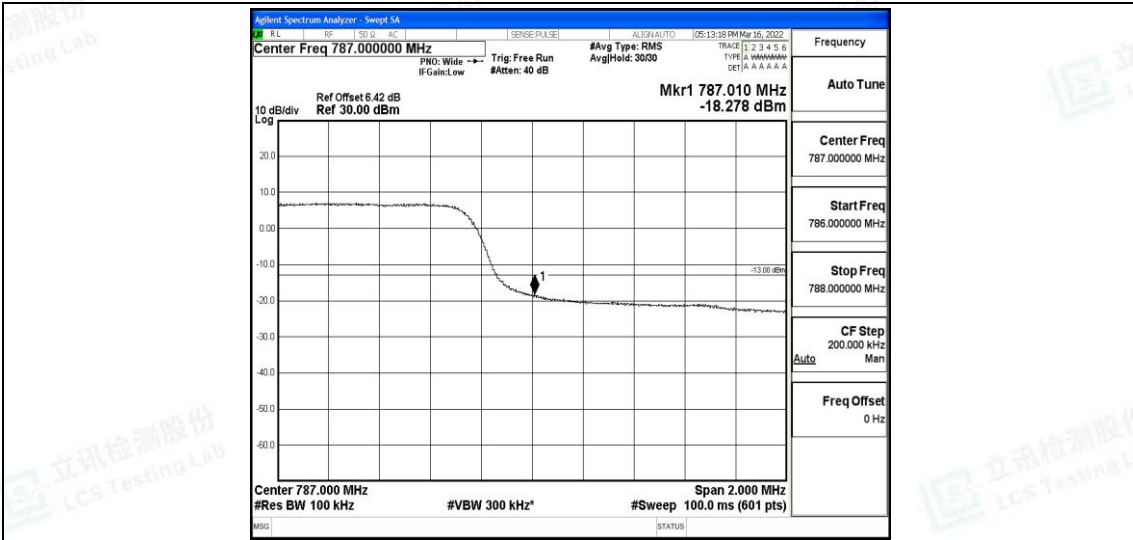
### F.4 Band Edge

#### Test Result

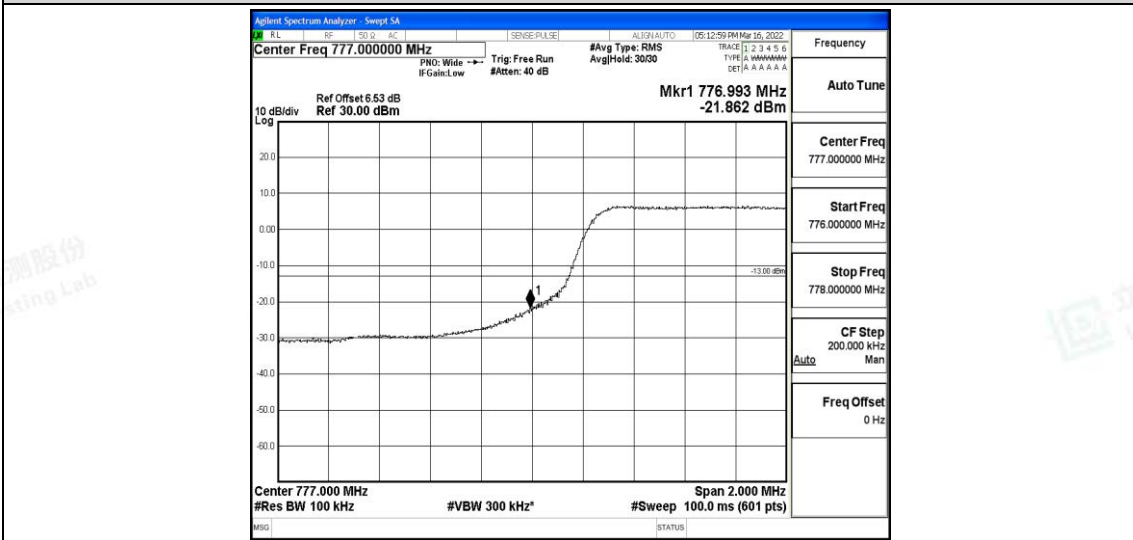
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band13	5MHz	QPSK	23205	25RB#0	-21.05	PASS
Band13	5MHz	QPSK	23255	25RB#0	-18.28	PASS
Band13	5MHz	16QAM	23205	25RB#0	-21.86	PASS
Band13	5MHz	16QAM	23255	25RB#0	-19.93	PASS
Band13	10MHz	QPSK	23230	50RB#0	-22.08,-19.82	PASS
Band13	10MHz	16QAM	23230	50RB#0	-24.90,-21.85	PASS

#### Test Graphs

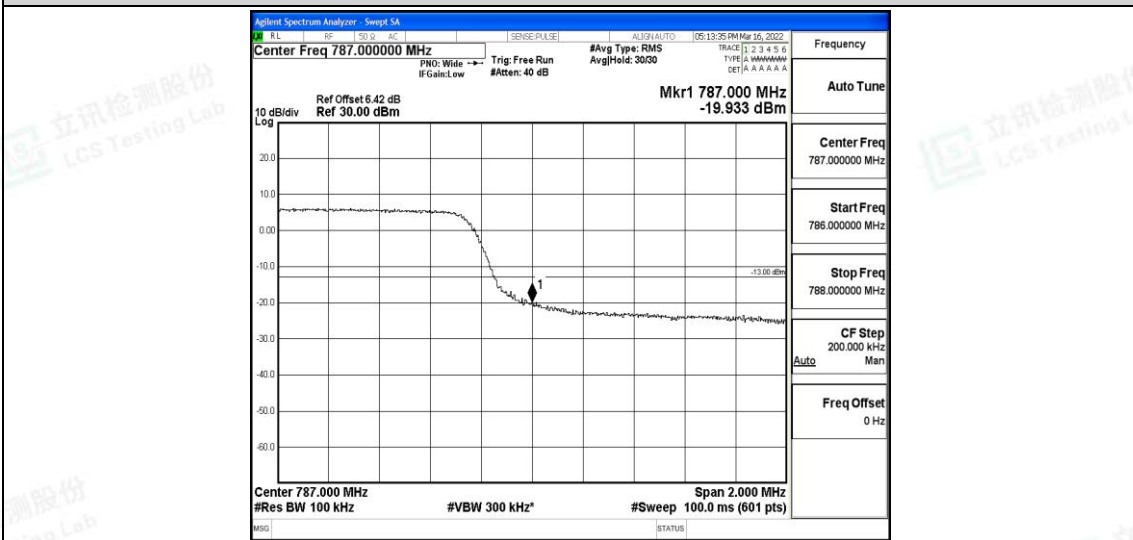




Band13-5MHz-16QAM-23205-25RB#0



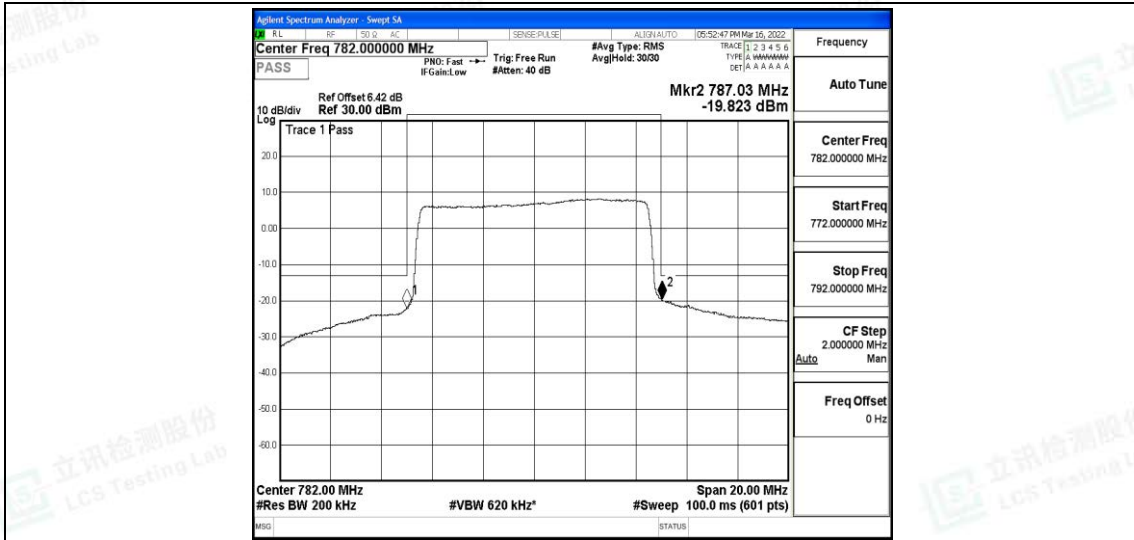
Band13-5MHz-16QAM-23255-25RB#0



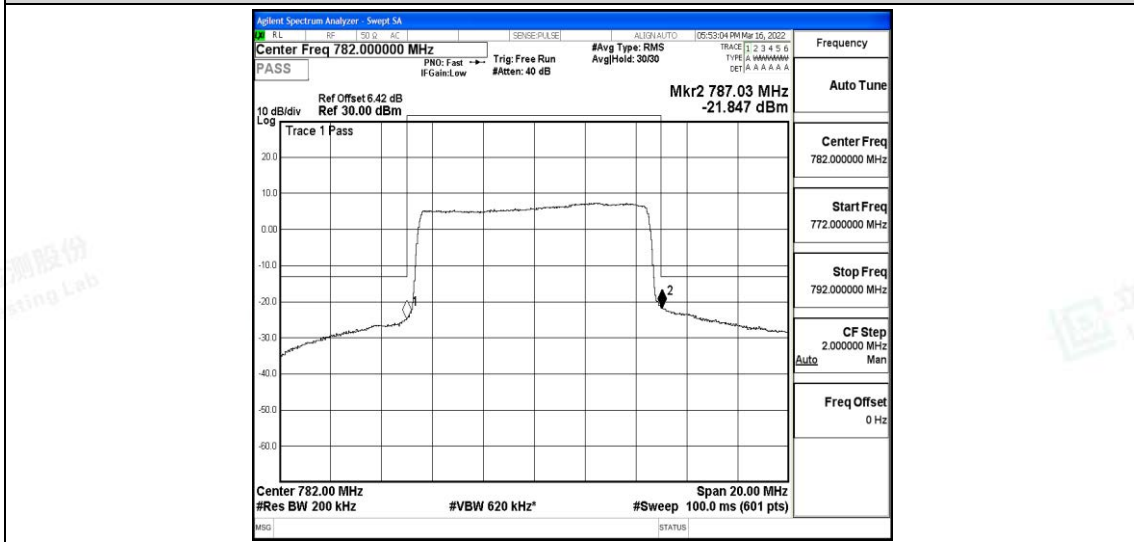
Band13-10MHz-QPSK-23230-50RB#0







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





## F.5 Conducted Spurious Emission

### Test Result

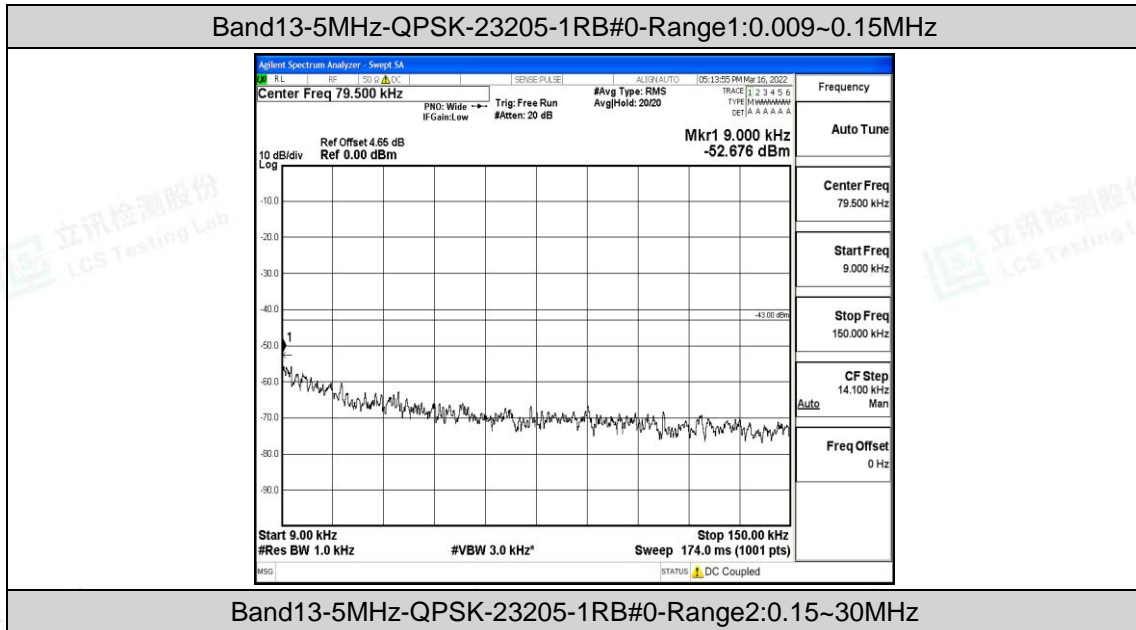
Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band13	5MHz	QPSK	23205	1RB#0	Range1:0.009~0.15MHz	-52.68	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range2:0.15~30MHz	-51.15	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range3:30~1000MHz	-41.12	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range5:763~775MHz	-50.36	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range6:793~805MHz	-60.15	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range4:1000~10000MHz	-44.51	PASS
Band13	5MHz	QPSK	23205	1RB#0	Range7:1559~1610MHz	-61.81	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range1:0.009~0.15MHz	-53.62	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range2:0.15~30MHz	-52.5	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range3:30~1000MHz	-40.64	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range5:763~775MHz	-59.42	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range6:793~805MHz	-59.82	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range4:1000~10000MHz	-44.22	PASS
Band13	5MHz	QPSK	23230	1RB#0	Range7:1559~1610MHz	-63.34	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range1:0.009~0.15MHz	-55.55	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range2:0.15~30MHz	-50.47	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range3:30~1000MHz	-40.61	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range5:763~775MHz	-54.11	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range6:793~805MHz	-58.86	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range4:1000~10000MHz	-44.35	PASS
Band13	5MHz	QPSK	23255	1RB#0	Range7:1559~1610MHz	-63.68	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range1:0.009~0.15MHz	-55.74	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range2:0.15~30MHz	-52.28	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range3:30~1000MHz	-41.17	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range5:763~775MHz	-52.51	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range6:793~805MHz	-60.76	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range4:1000~10000MHz	-44.5	PASS
Band13	5MHz	16QAM	23205	1RB#0	Range7:1559~1610MHz	-62.16	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range1:0.009~0.15MHz	-55.52	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range2:0.15~30MHz	-50.82	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range3:30~1000MHz	-39.39	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range5:763~775MHz	-57.03	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range6:793~805MHz	-59.54	PASS
Band13	5MHz	16QAM	23230	1RB#0	Range4:1000~10000MHz	-44.42	PASS

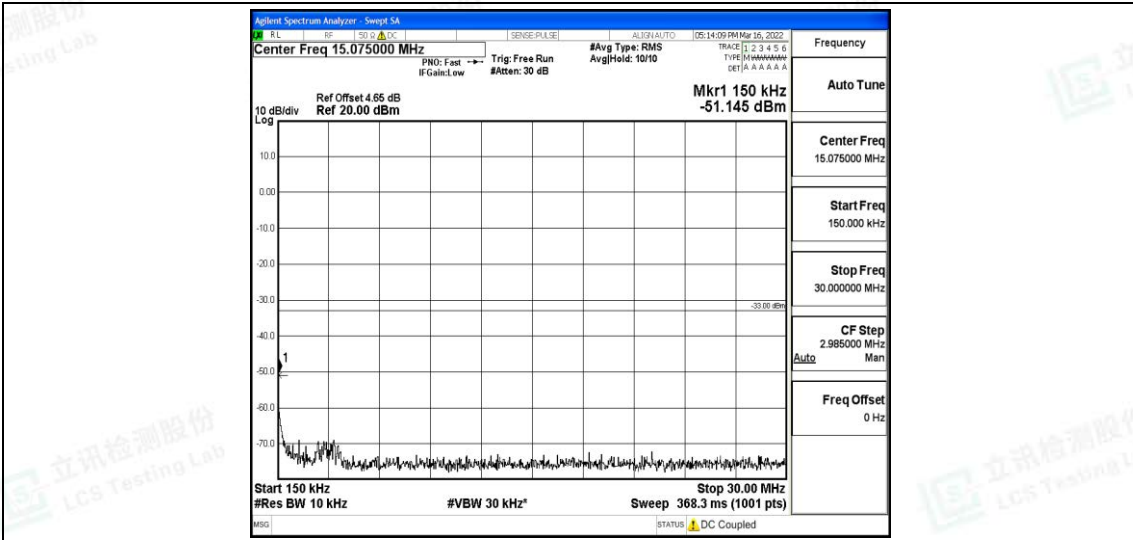




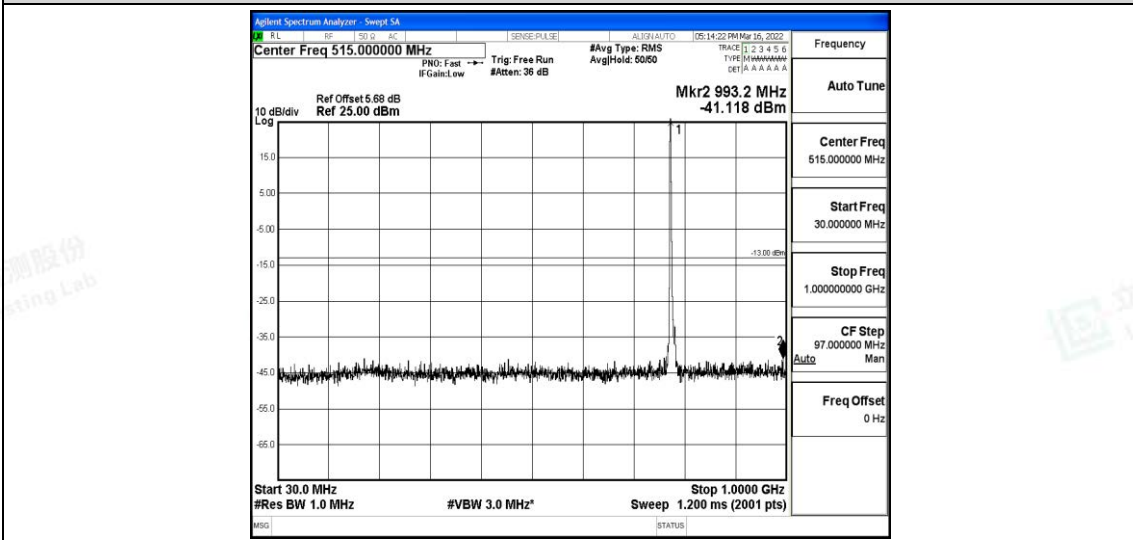
Band13	5MHz	16QAM	23230	1RB#0	Range7:1559~1610MHz	-63.38	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range1:0.009~0.15MHz	-56	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range2:0.15~30MHz	-49.77	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range3:30~1000MHz	-40.03	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range5:763~775MHz	-56.09	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range6:793~805MHz	-59.62	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range4:1000~10000MHz	-44.52	PASS
Band13	5MHz	16QAM	23255	1RB#0	Range7:1559~1610MHz	-63.52	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range1:0.009~0.15MHz	-52.7	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range2:0.15~30MHz	-50.54	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range3:30~1000MHz	-41.66	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range5:763~775MHz	-45.09	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range6:793~805MHz	-53.59	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range4:1000~10000MHz	-44.25	PASS
Band13	10MHz	QPSK	23230	1RB#0	Range7:1559~1610MHz	-60.87	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range1:0.009~0.15MHz	-55.2	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range2:0.15~30MHz	-49.96	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range3:30~1000MHz	-40.45	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range5:763~775MHz	-46.1	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range6:793~805MHz	-53.81	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range4:1000~10000MHz	-44.38	PASS
Band13	10MHz	16QAM	23230	1RB#0	Range7:1559~1610MHz	-60.92	PASS

### Test Graphs

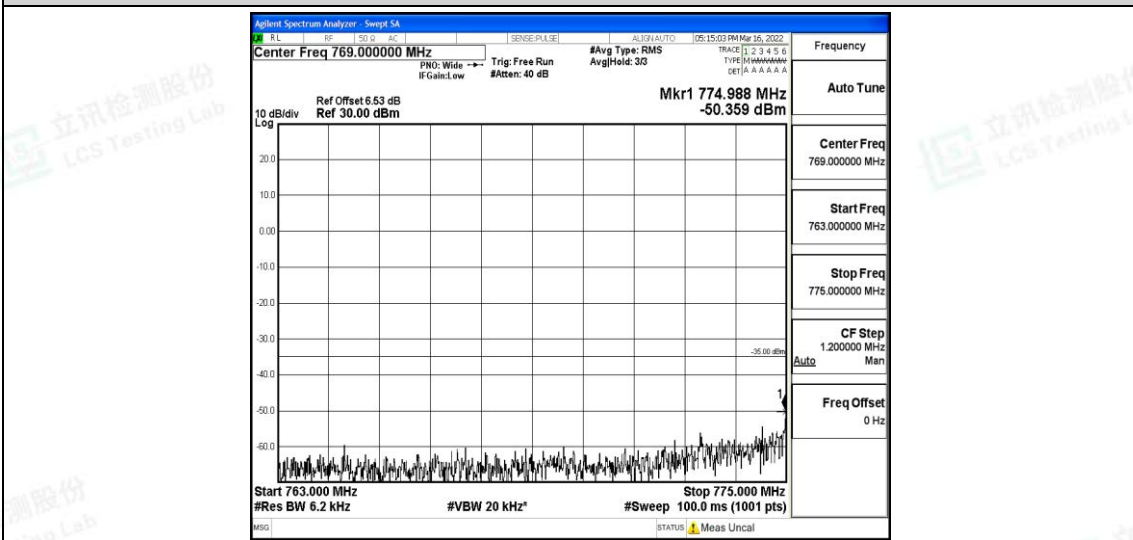




Band13-5MHz-QPSK-23205-1RB#0-Range3:30~1000MHz

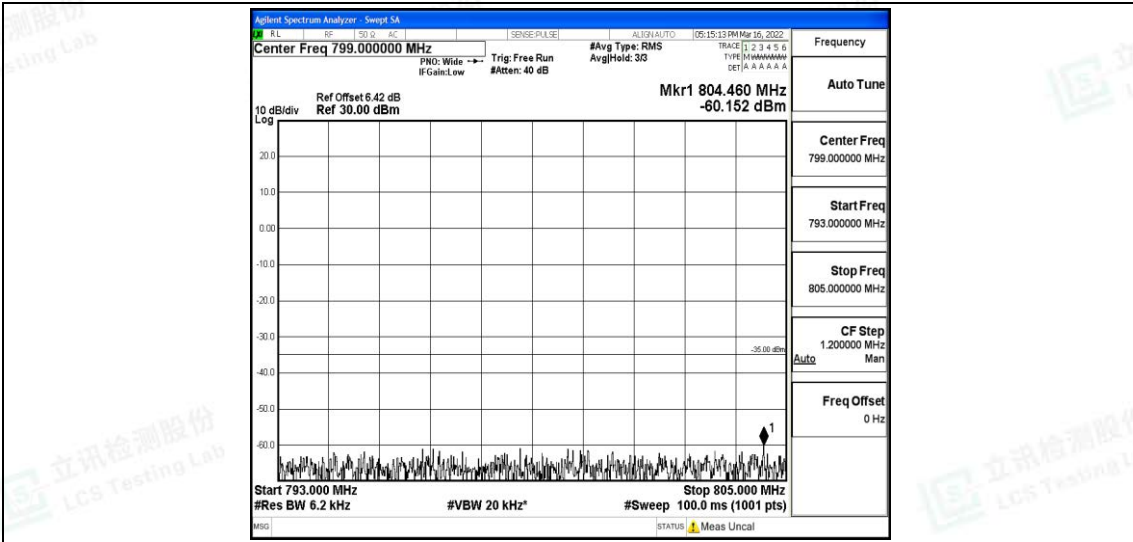


Band13-5MHz-QPSK-23205-1RB#0-Range5:763~775MHz

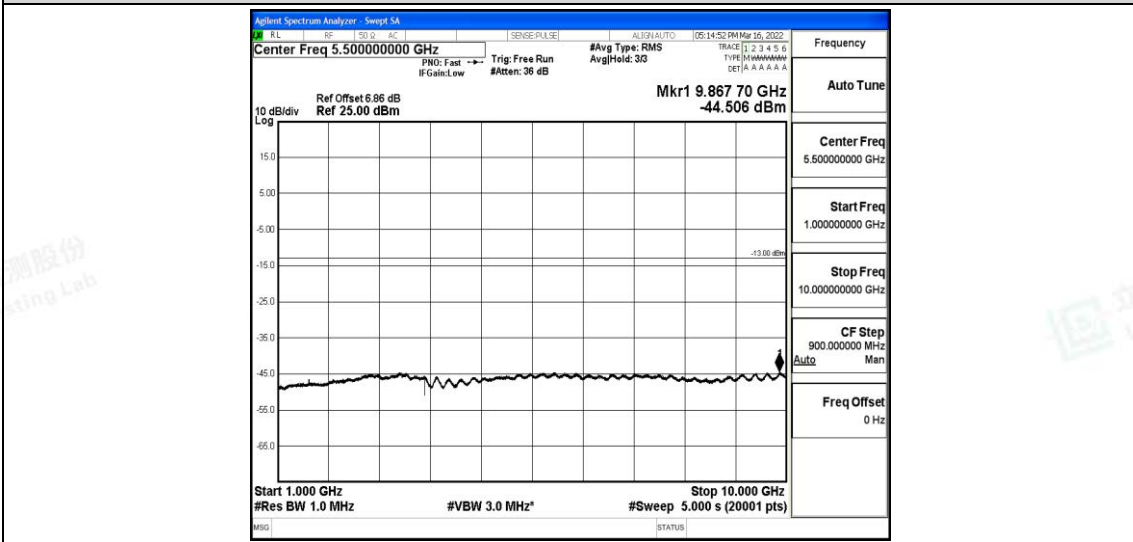


Band13-5MHz-QPSK-23205-1RB#0-Range6:793~805MHz

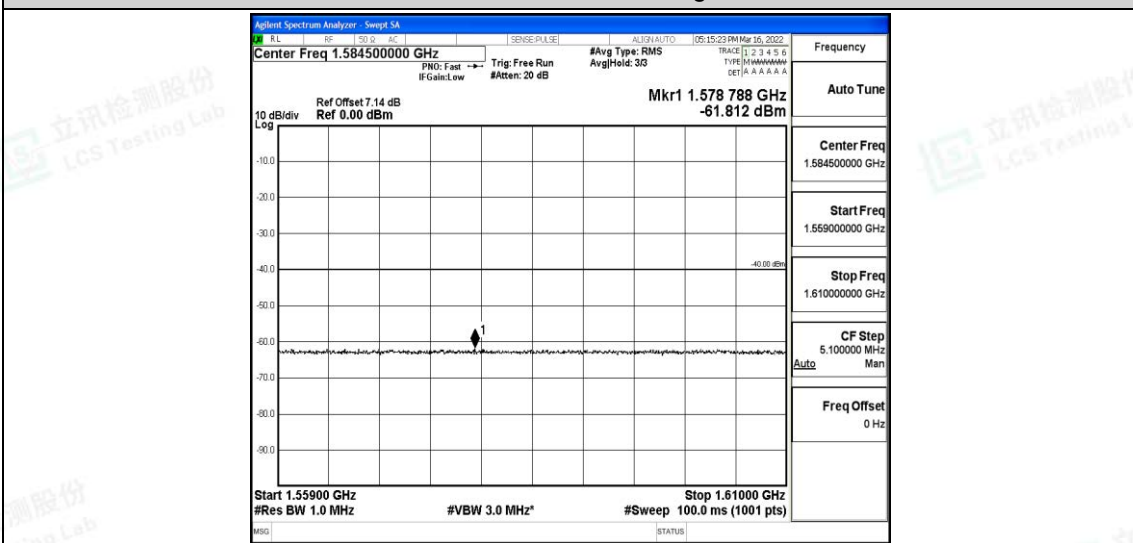




Band13-5MHz-QPSK-23205-1RB#0-Range4:1000~10000MHz

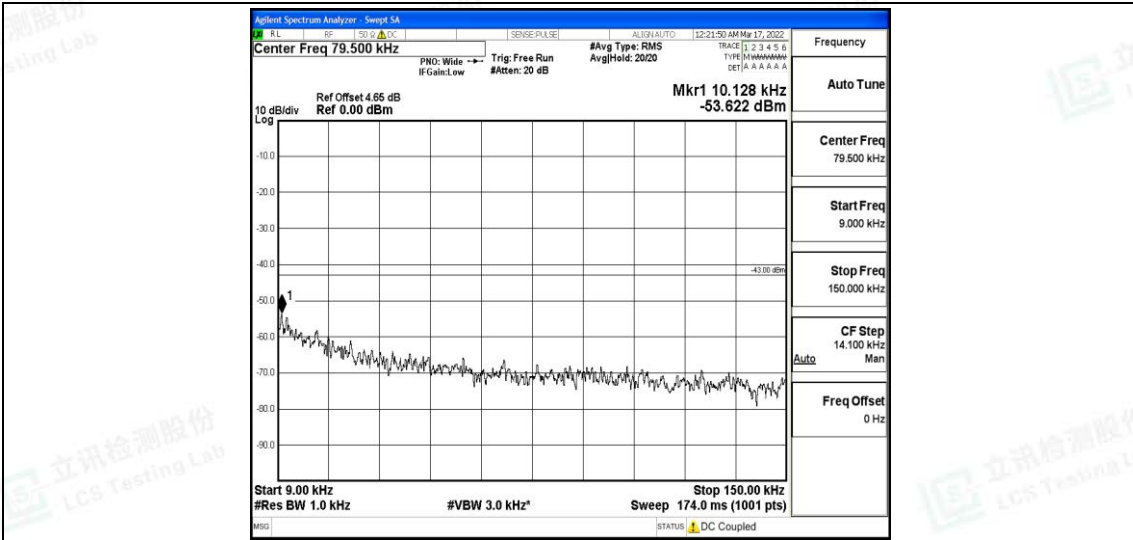


Band13-5MHz-QPSK-23205-1RB#0-Range7:1559~1610MHz

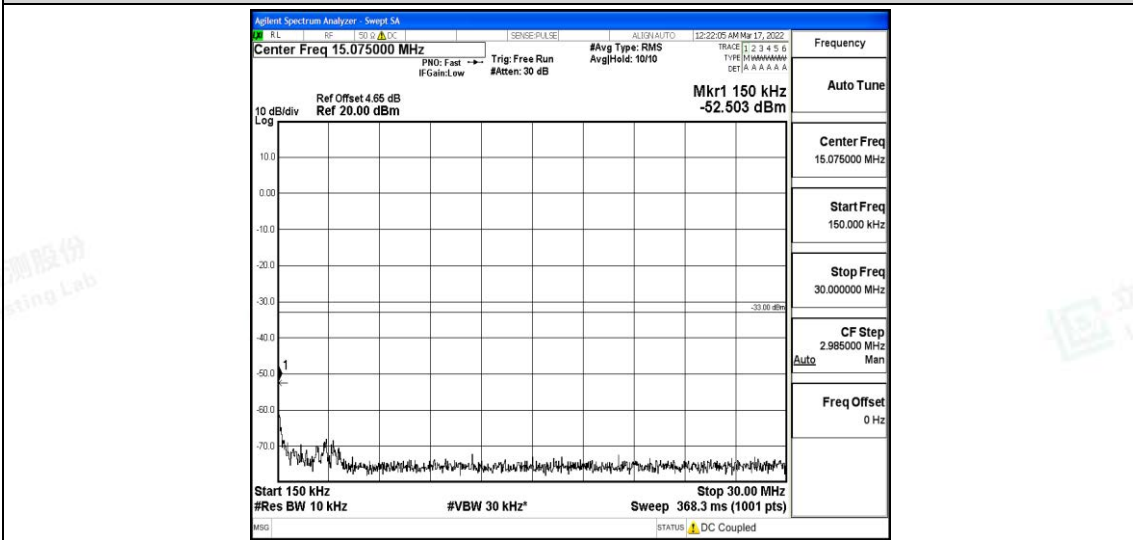


Band13-5MHz-QPSK-23230-1RB#0-Range1:0.009~0.15MHz

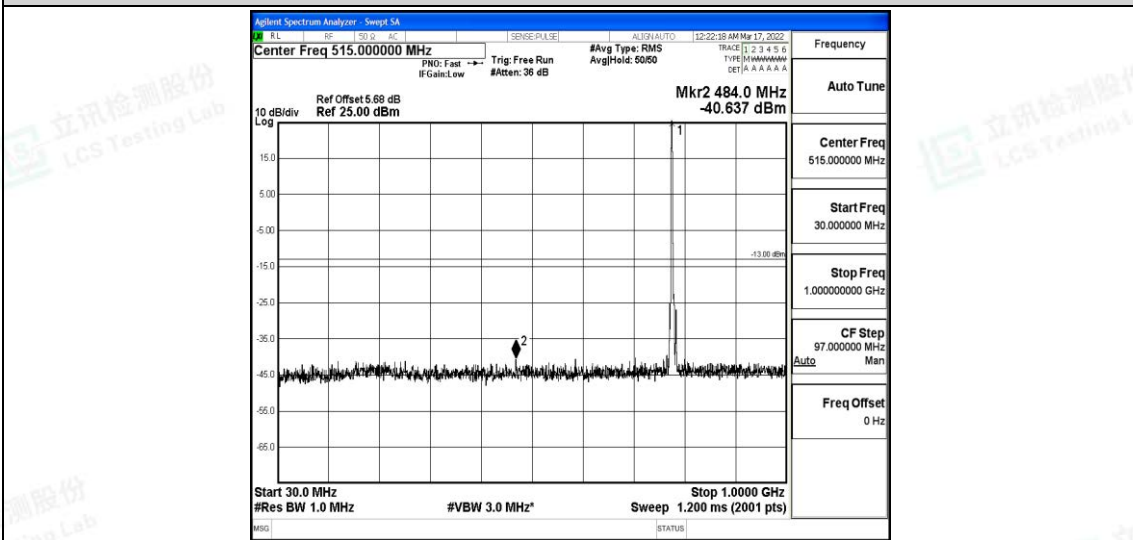




Band13-5MHz-QPSK-23230-1RB#0-Range2:0.15~30MHz

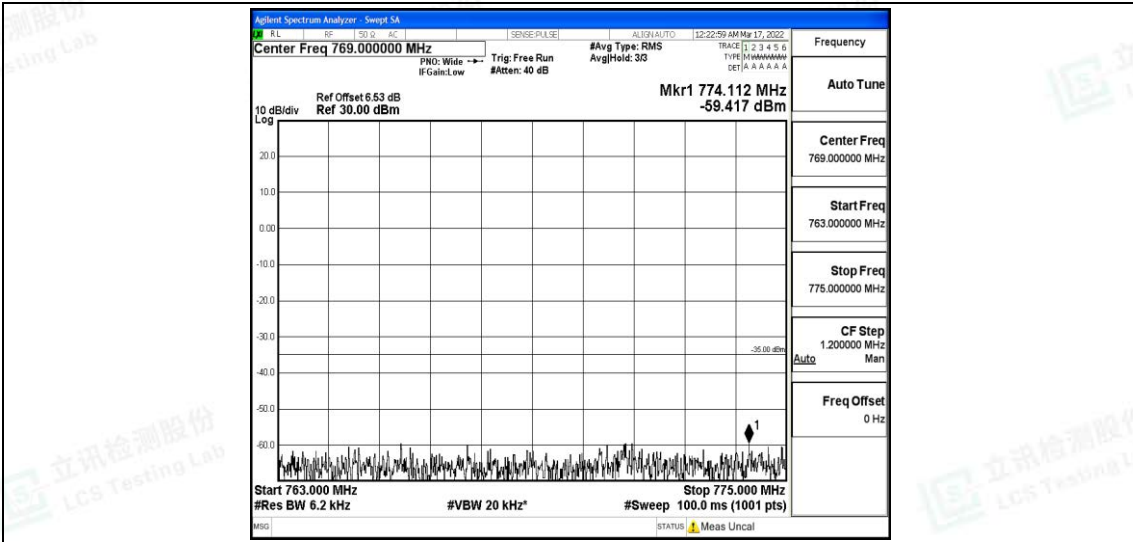


Band13-5MHz-QPSK-23230-1RB#0-Range3:30~1000MHz

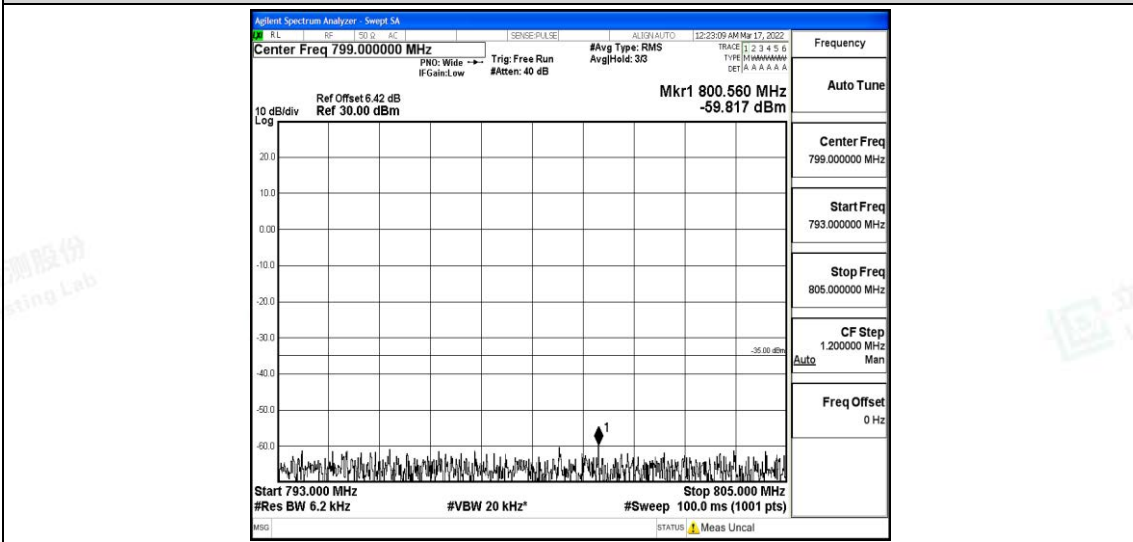


Band13-5MHz-QPSK-23230-1RB#0-Range5:763~775MHz

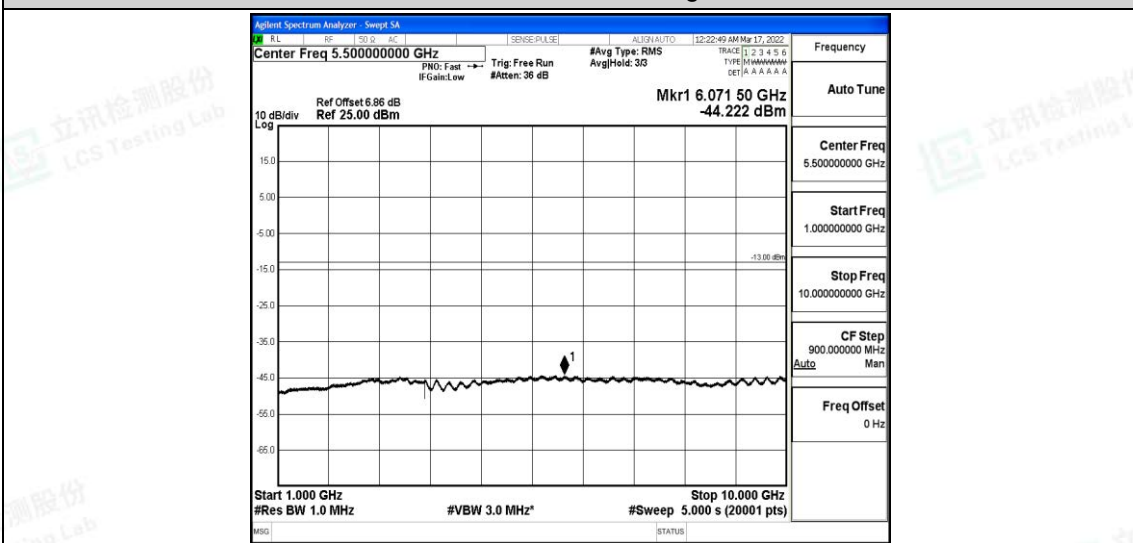




Band13-5MHz-QPSK-23230-1RB#0-Range6:793~805MHz

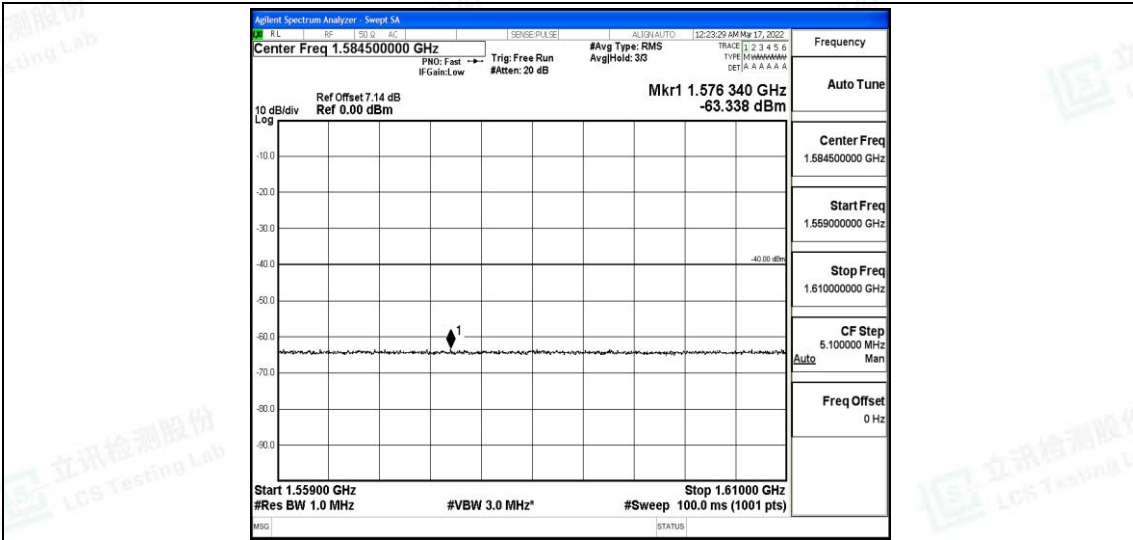


Band13-5MHz-QPSK-23230-1RB#0-Range4:1000~10000MHz

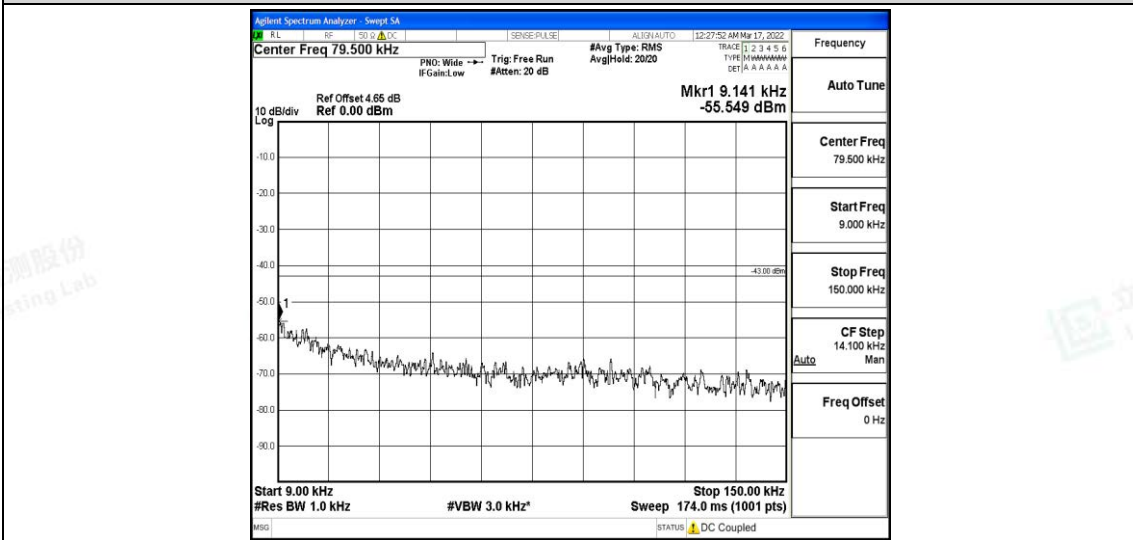


Band13-5MHz-QPSK-23230-1RB#0-Range7:1559~1610MHz

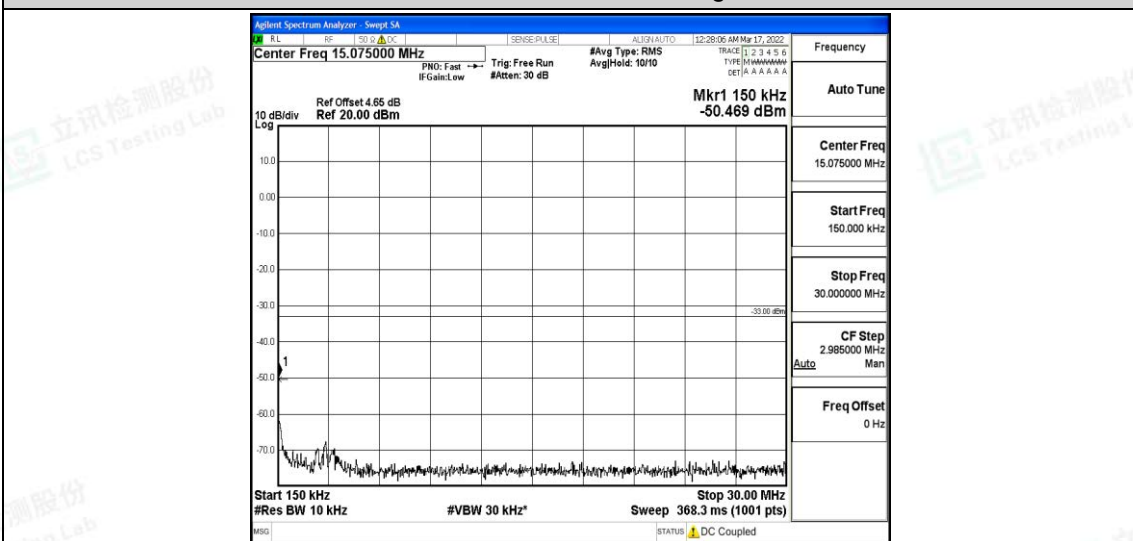




Band13-5MHz-QPSK-23255-1RB#0-Range1:0.009~0.15MHz



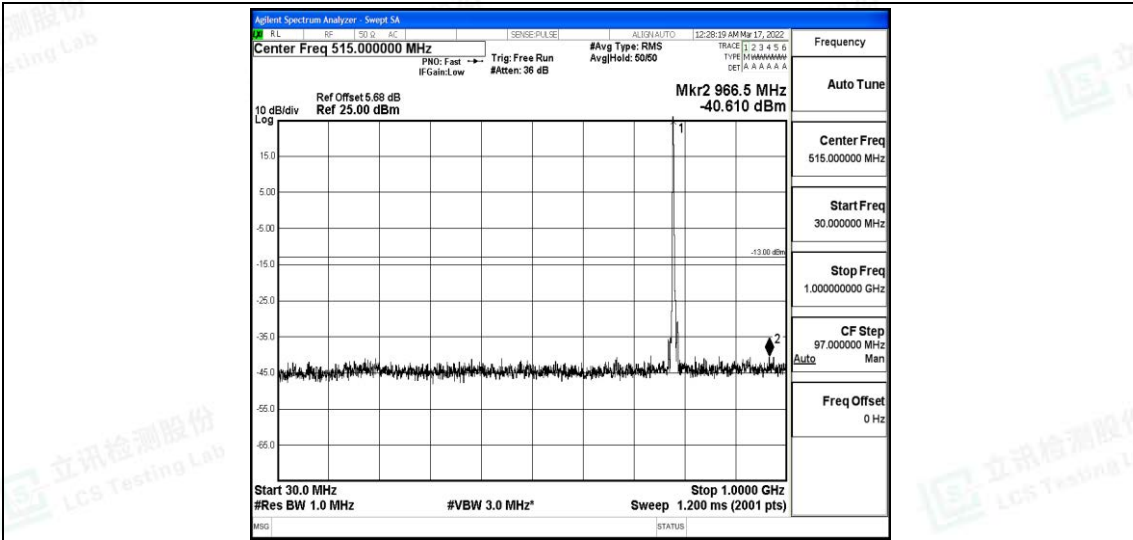
Band13-5MHz-QPSK-23255-1RB#0-Range2:0.15~30MHz



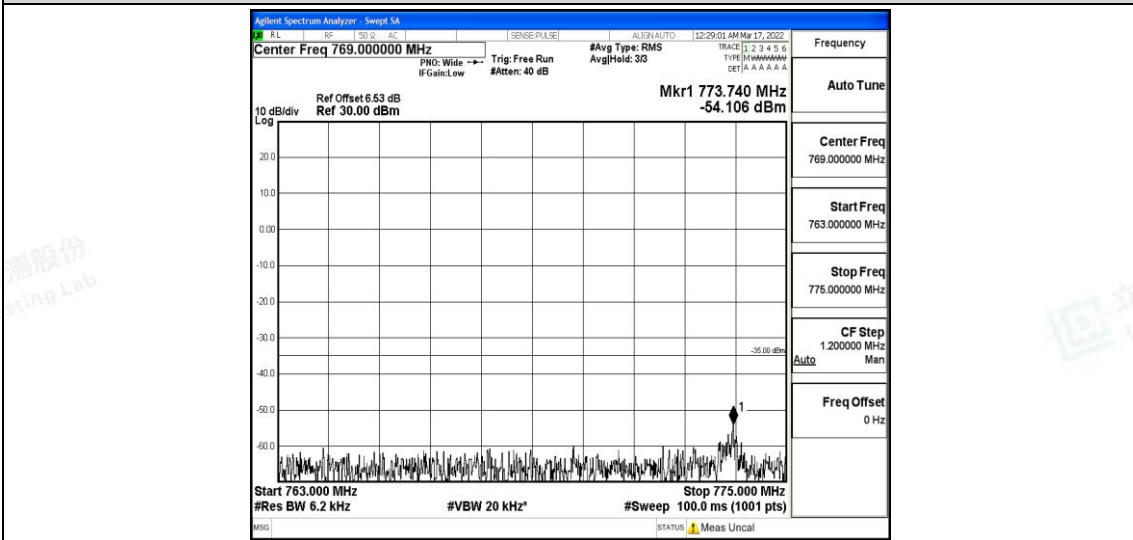
Band13-5MHz-QPSK-23255-1RB#0-Range3:30~1000MHz



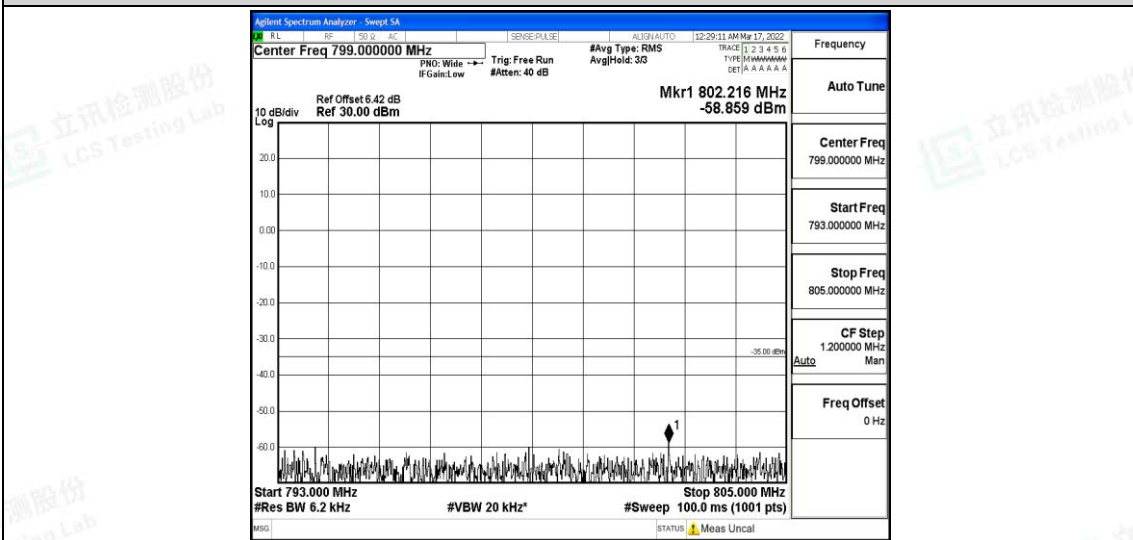




Band13-5MHz-QPSK-23255-1RB#0-Range5:763~775MHz

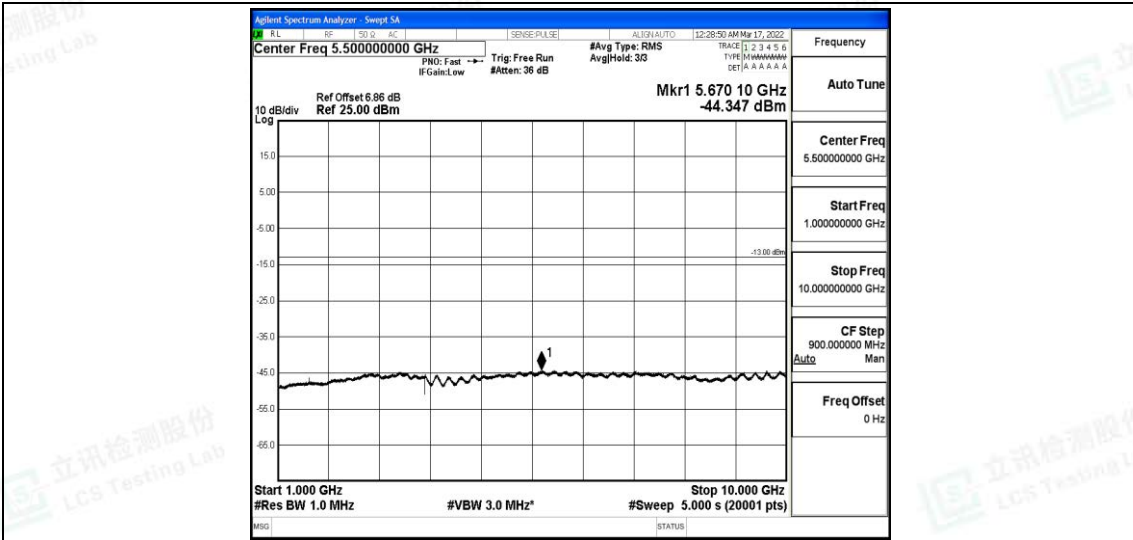


Band13-5MHz-QPSK-23255-1RB#0-Range6:793~805MHz

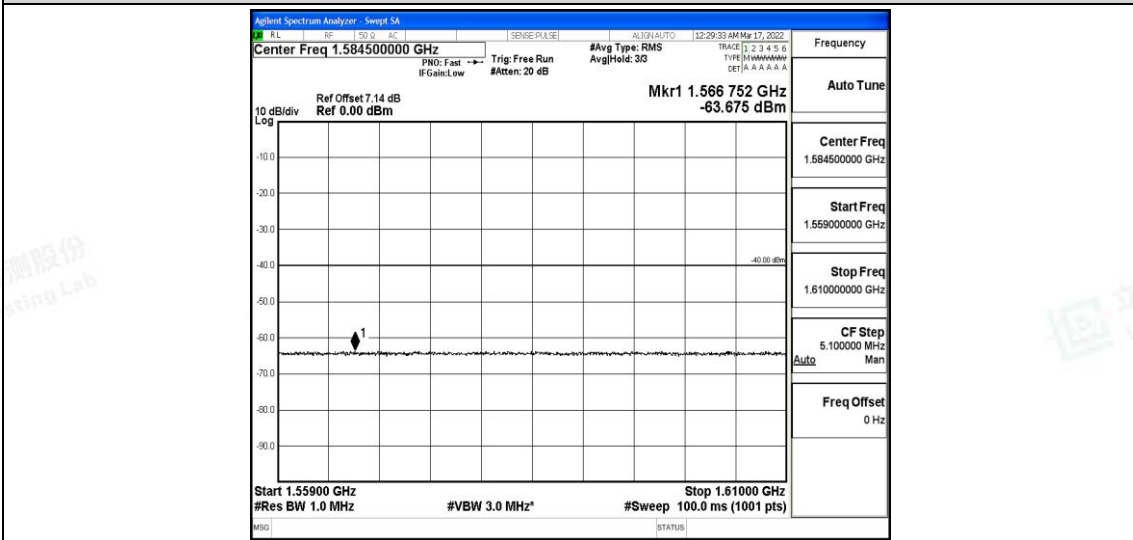


Band13-5MHz-QPSK-23255-1RB#0-Range4:1000~10000MHz

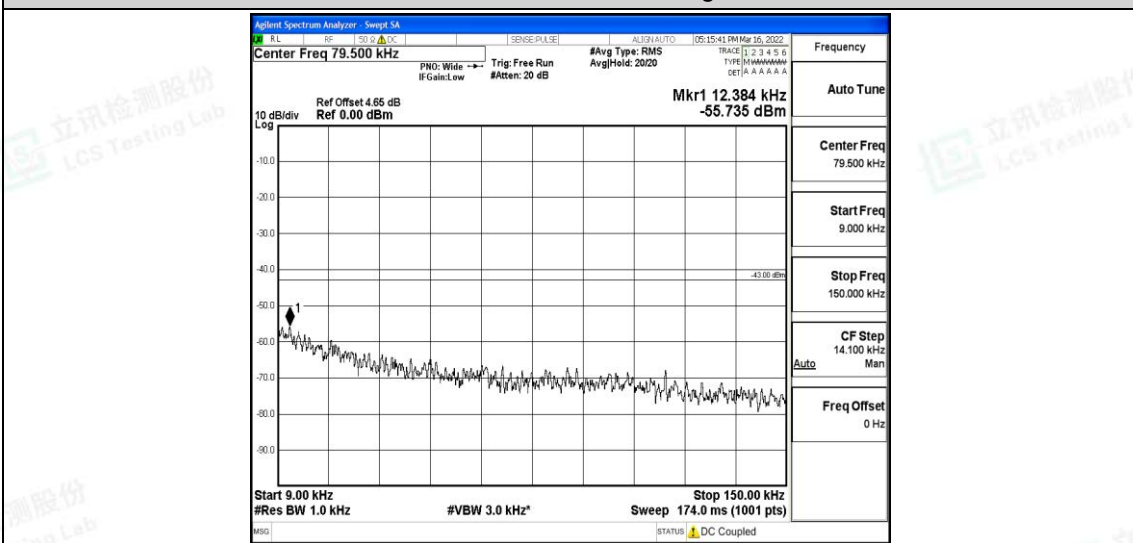




Band13-5MHz-QPSK-23255-1RB#0-Range7:1559~1610MHz

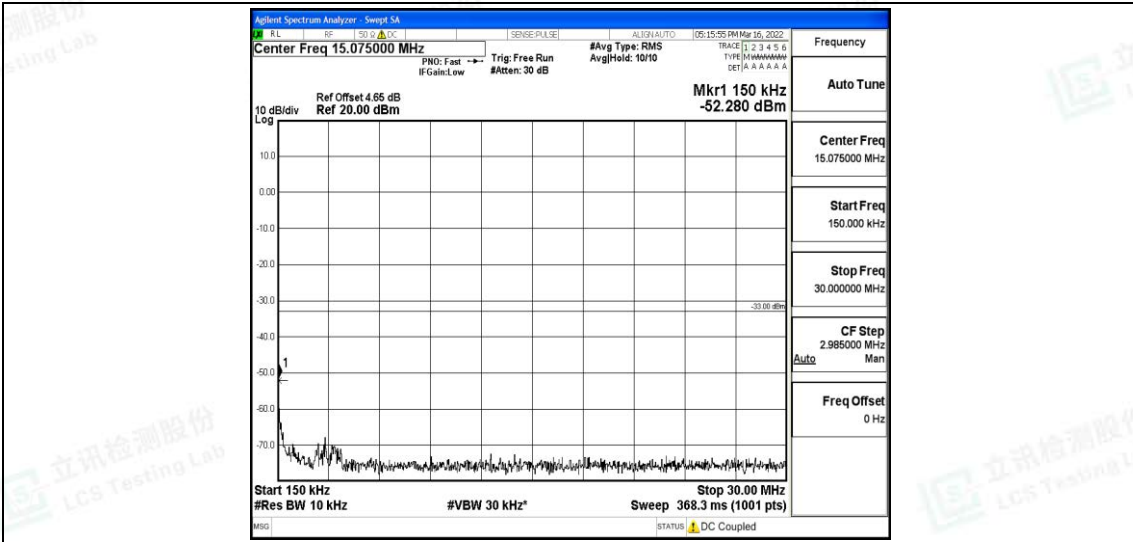


Band13-5MHz-16QAM-23205-1RB#0-Range1:0.009~0.15MHz

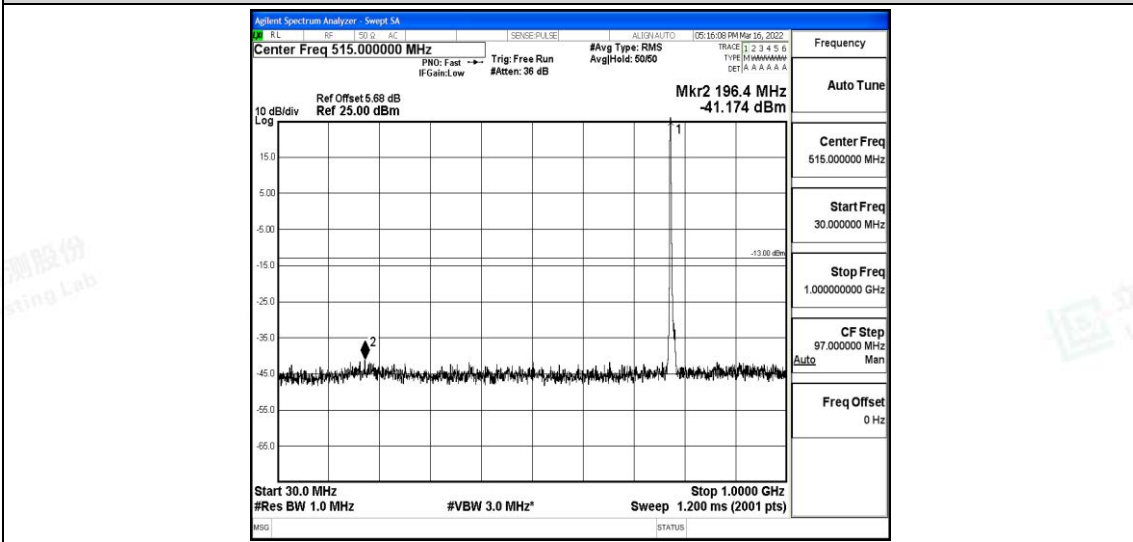


Band13-5MHz-16QAM-23205-1RB#0-Range2:0.15~30MHz

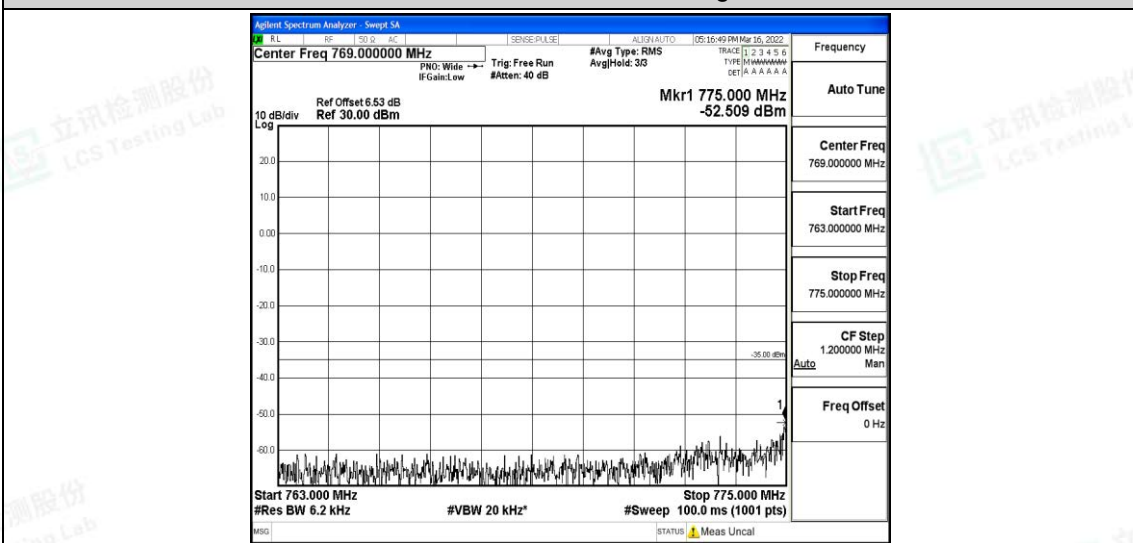




Band13-5MHz-16QAM-23205-1RB#0-Range3:30~1000MHz

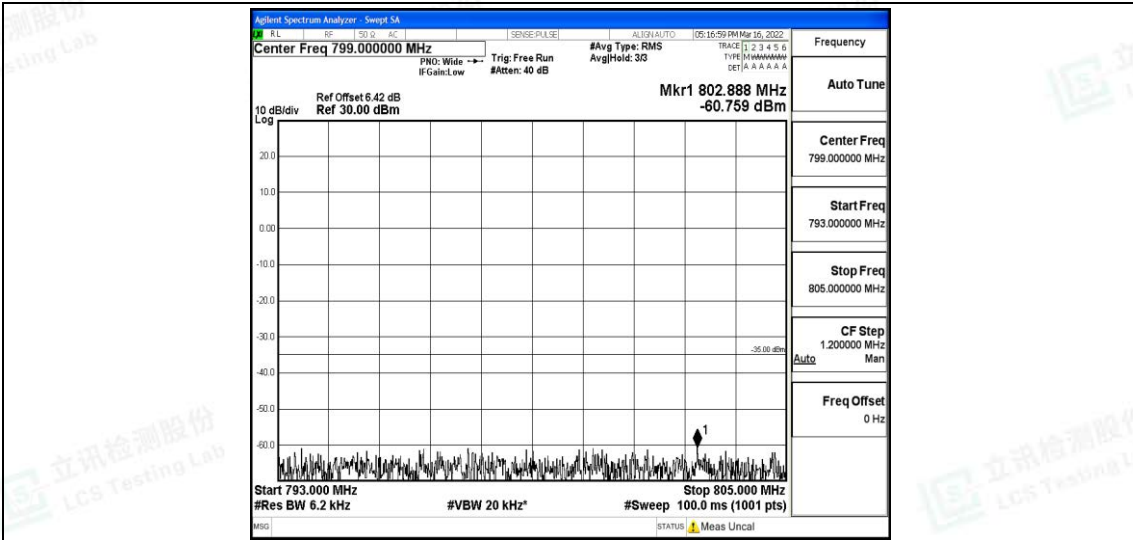


Band13-5MHz-16QAM-23205-1RB#0-Range5:763~775MHz

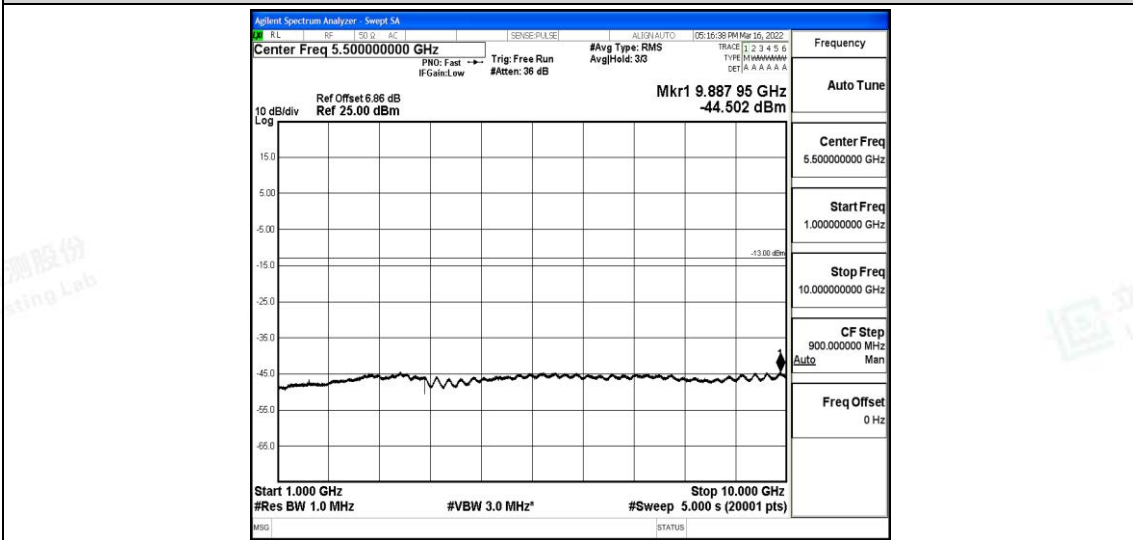


Band13-5MHz-16QAM-23205-1RB#0-Range6:793~805MHz

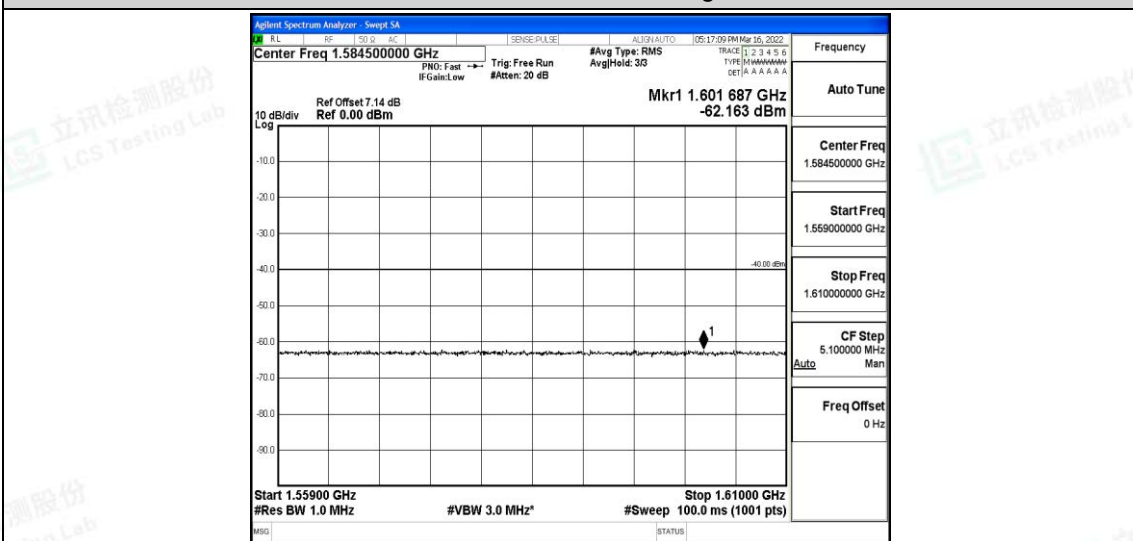




Band13-5MHz-16QAM-23205-1RB#0-Range4:1000~10000MHz

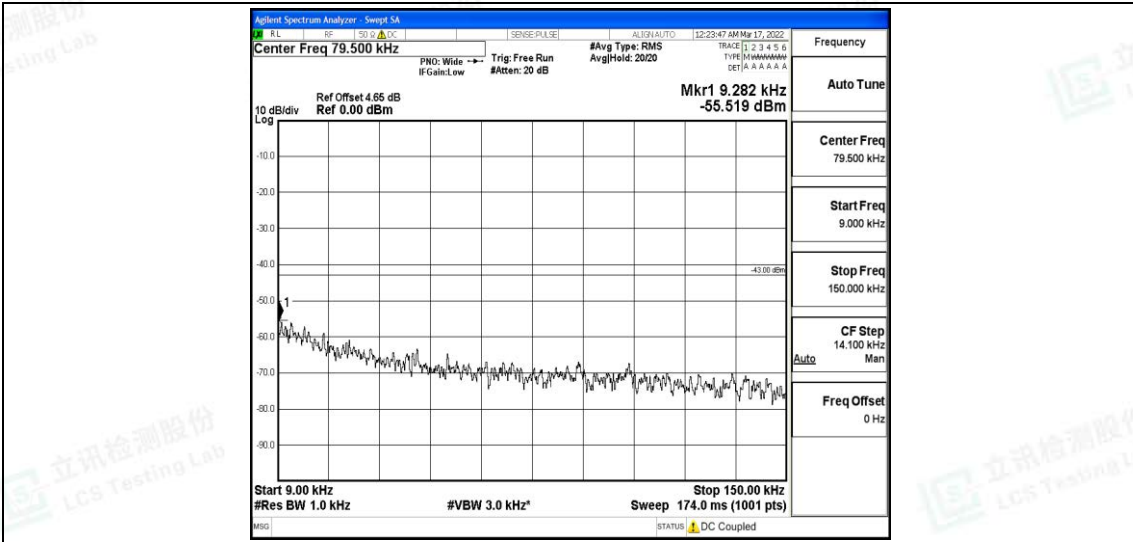


Band13-5MHz-16QAM-23205-1RB#0-Range7:1559~1610MHz

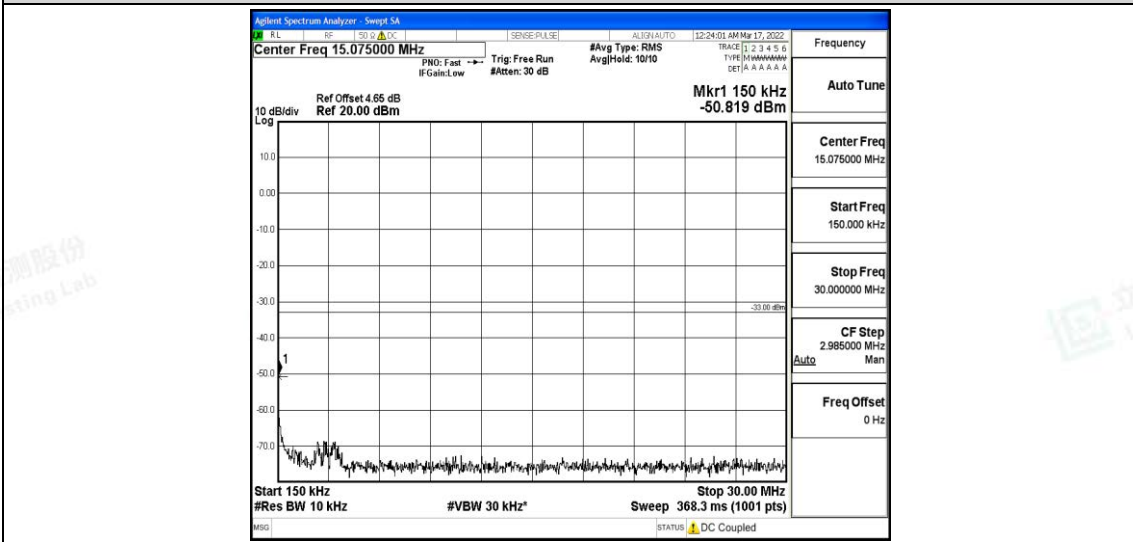


Band13-5MHz-16QAM-23230-1RB#0-Range1:0.009~0.15MHz

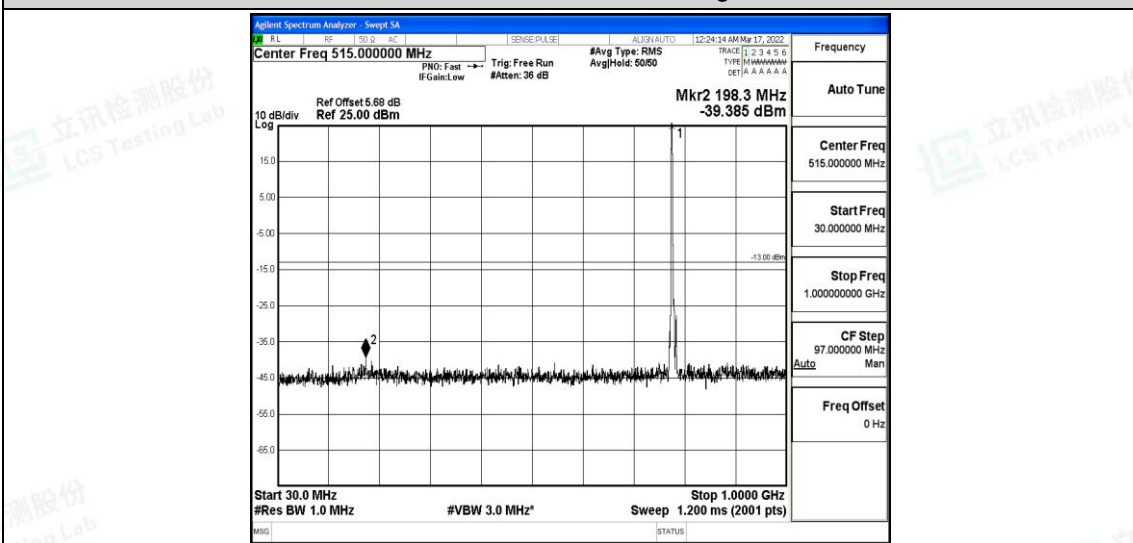




Band13-5MHz-16QAM-23230-1RB#0-Range2:0.15~30MHz

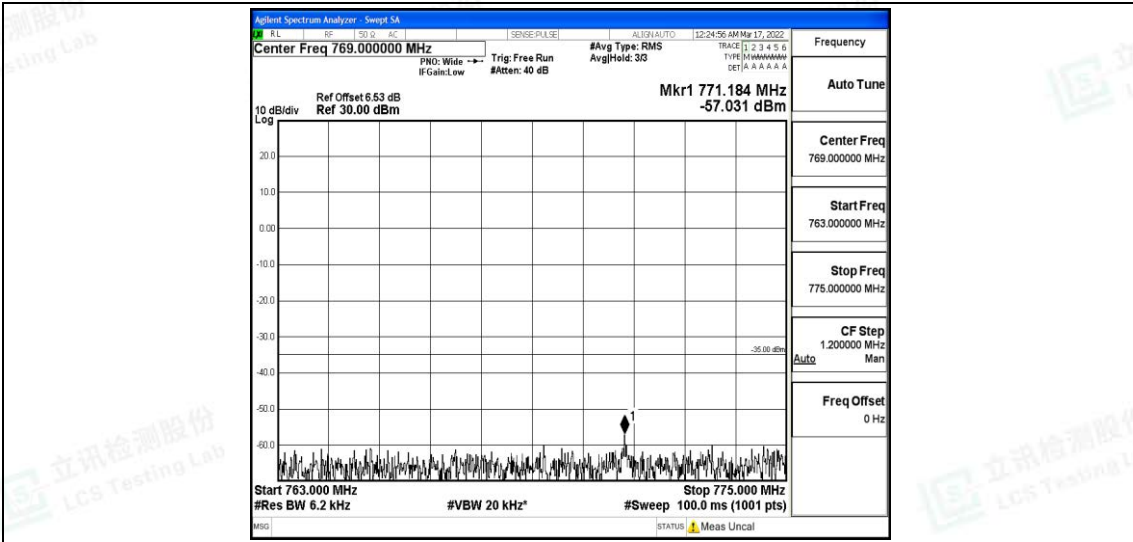


Band13-5MHz-16QAM-23230-1RB#0-Range3:30~1000MHz

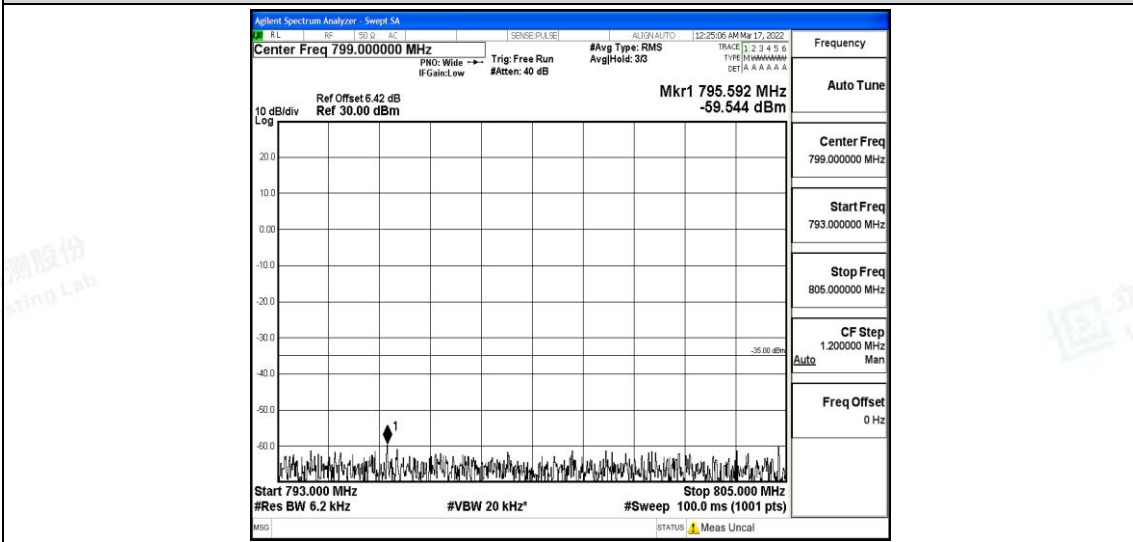


Band13-5MHz-16QAM-23230-1RB#0-Range5:763~775MHz

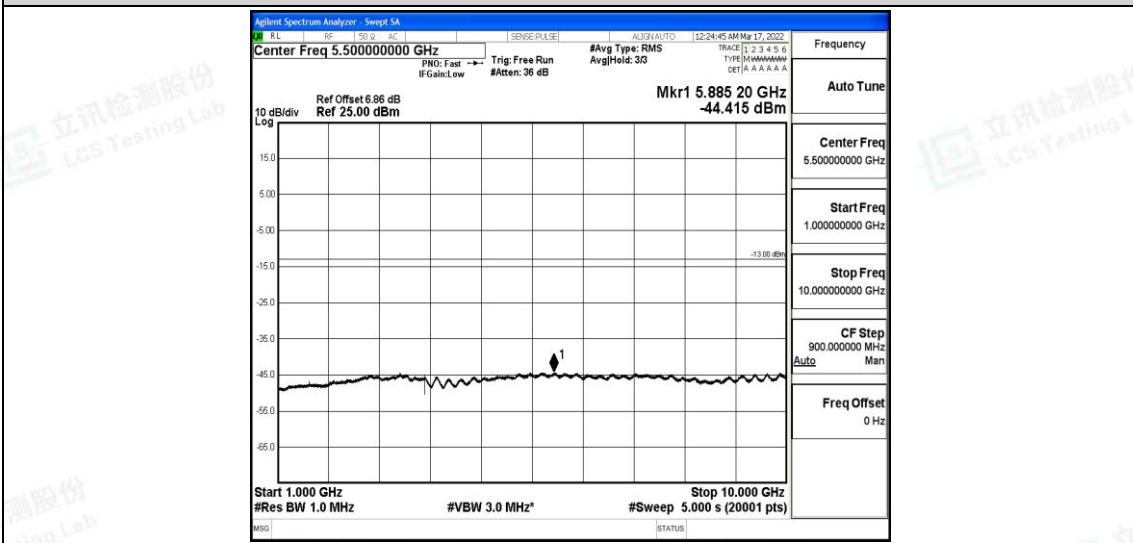




Band13-5MHz-16QAM-23230-1RB#0-Range6:793~805MHz

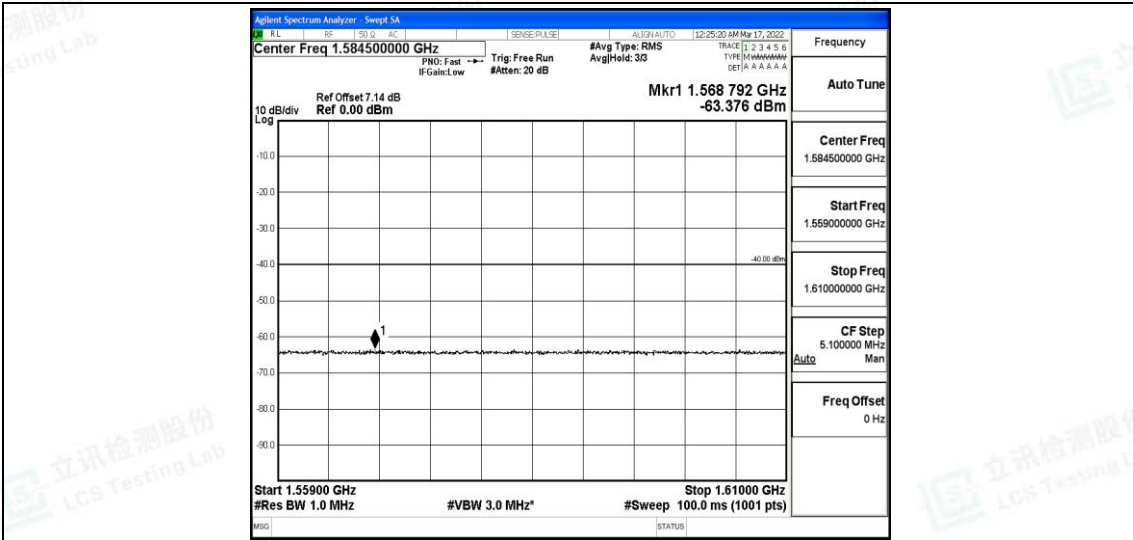


Band13-5MHz-16QAM-23230-1RB#0-Range4:1000~10000MHz

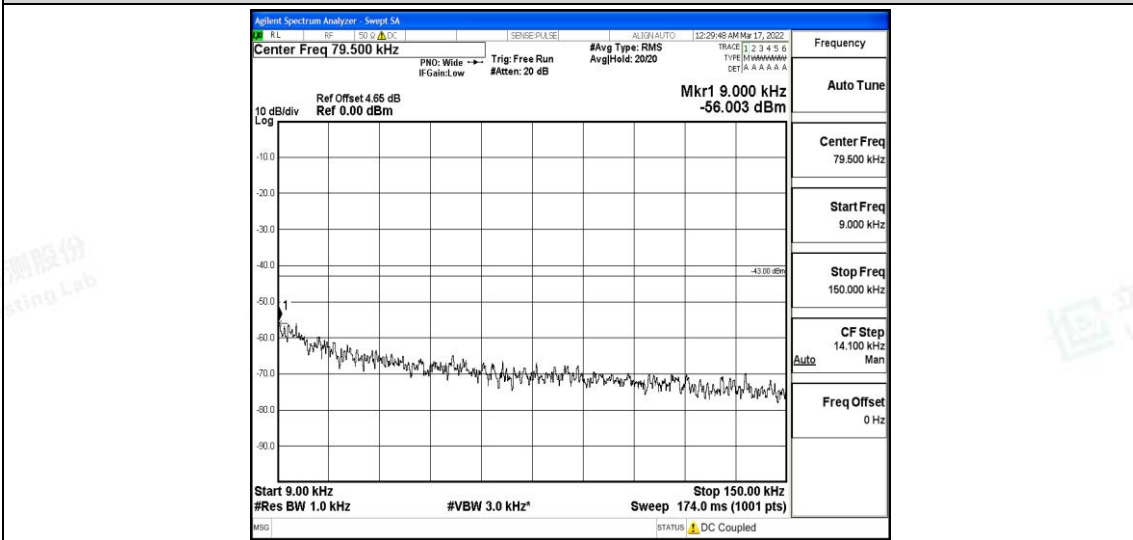


Band13-5MHz-16QAM-23230-1RB#0-Range7:1559~1610MHz

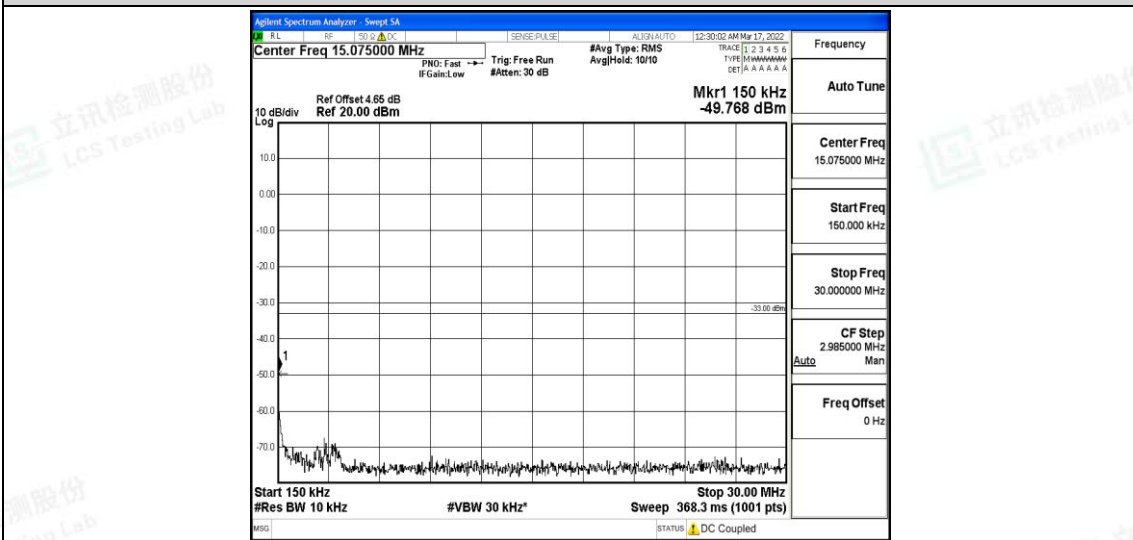




Band13-5MHz-16QAM-23255-1RB#0-Range1:0.009~0.15MHz

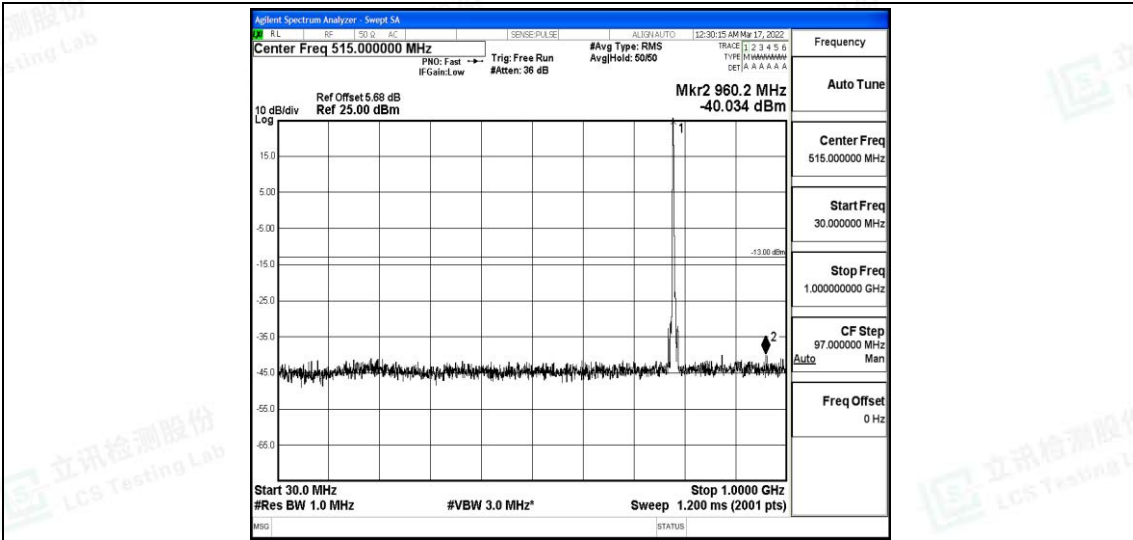


Band13-5MHz-16QAM-23255-1RB#0-Range2:0.15~30MHz

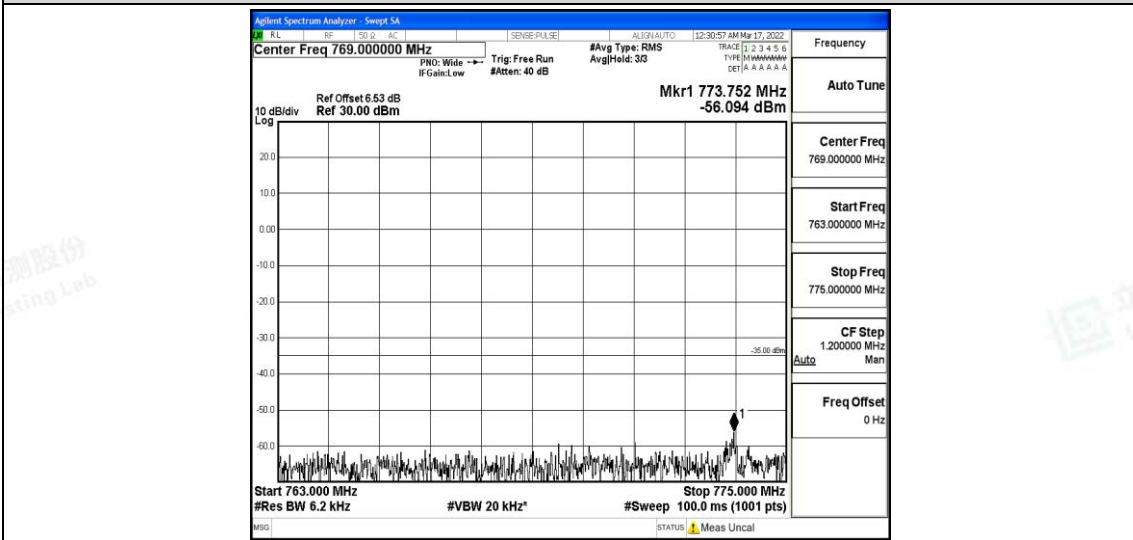


Band13-5MHz-16QAM-23255-1RB#0-Range3:30~1000MHz

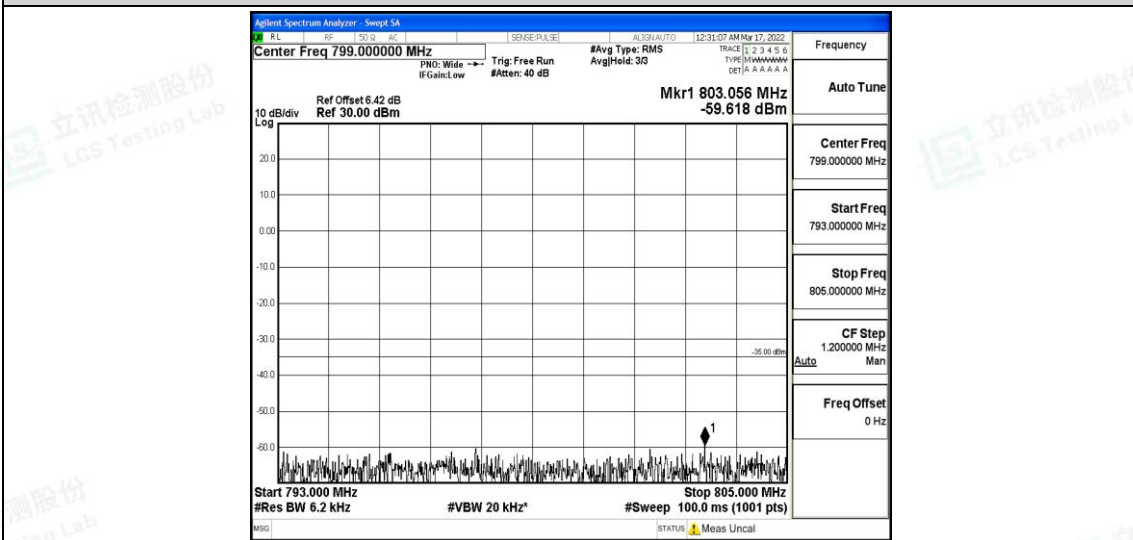




Band13-5MHz-16QAM-23255-1RB#0-Range5:763~775MHz



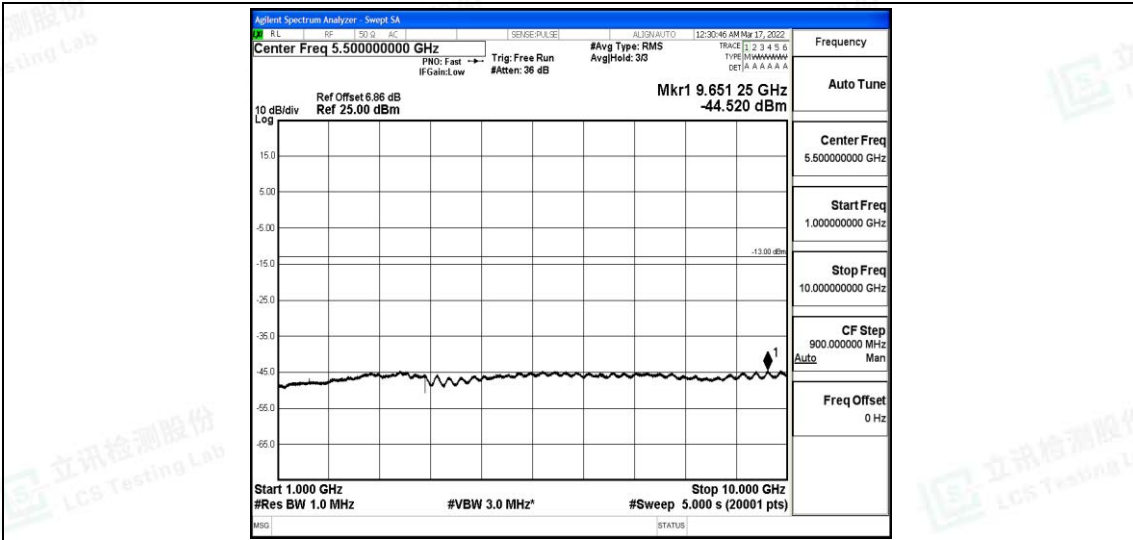
Band13-5MHz-16QAM-23255-1RB#0-Range6:793~805MHz



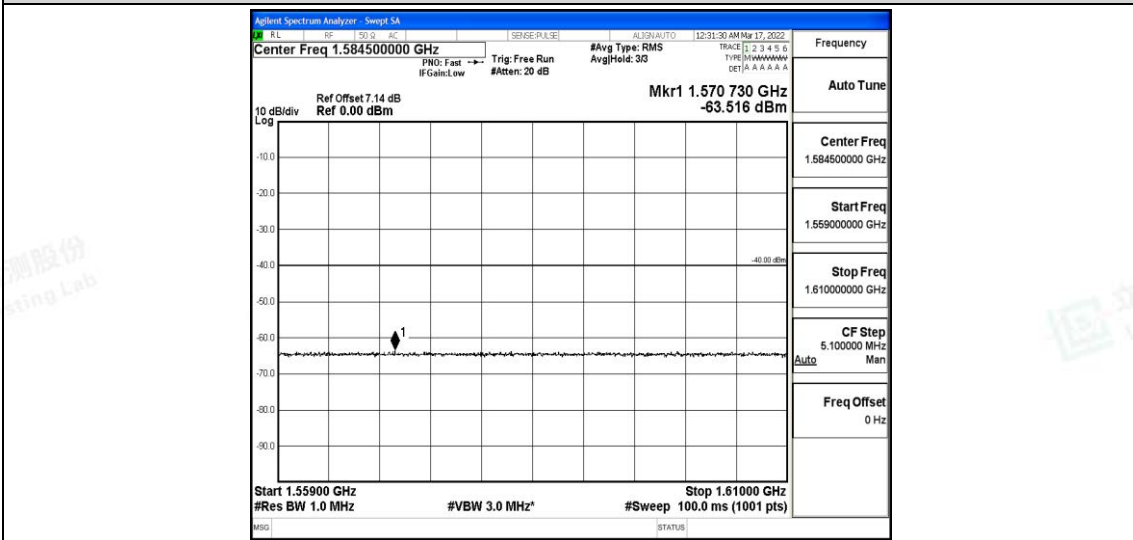
Band13-5MHz-16QAM-23255-1RB#0-Range4:1000~10000MHz



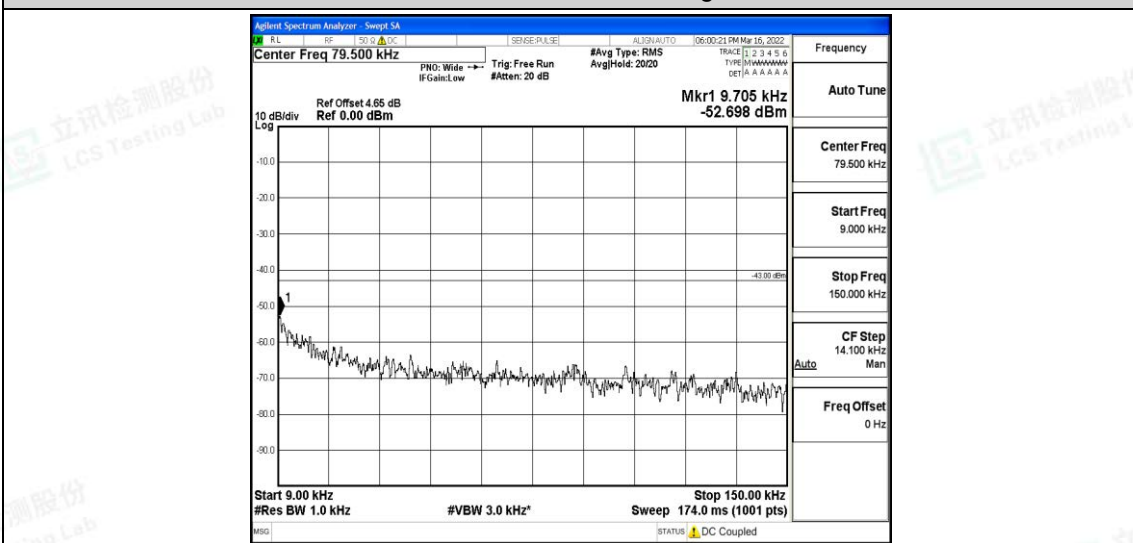




Band13-5MHz-16QAM-23255-1RB#0-Range7:1559~1610MHz

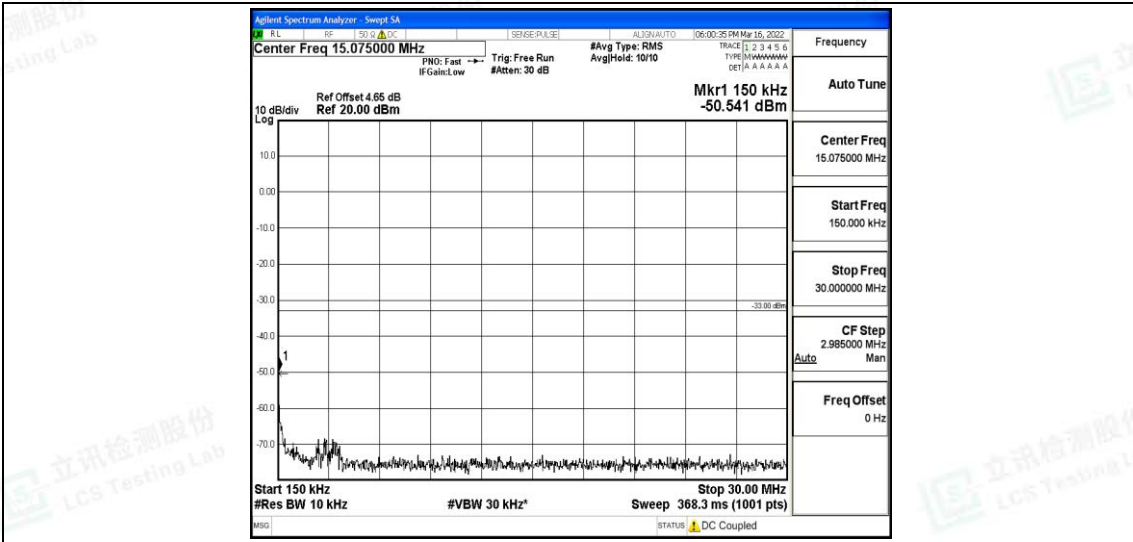


Band13-10MHz-QPSK-23230-1RB#0-Range1:0.009~0.15MHz

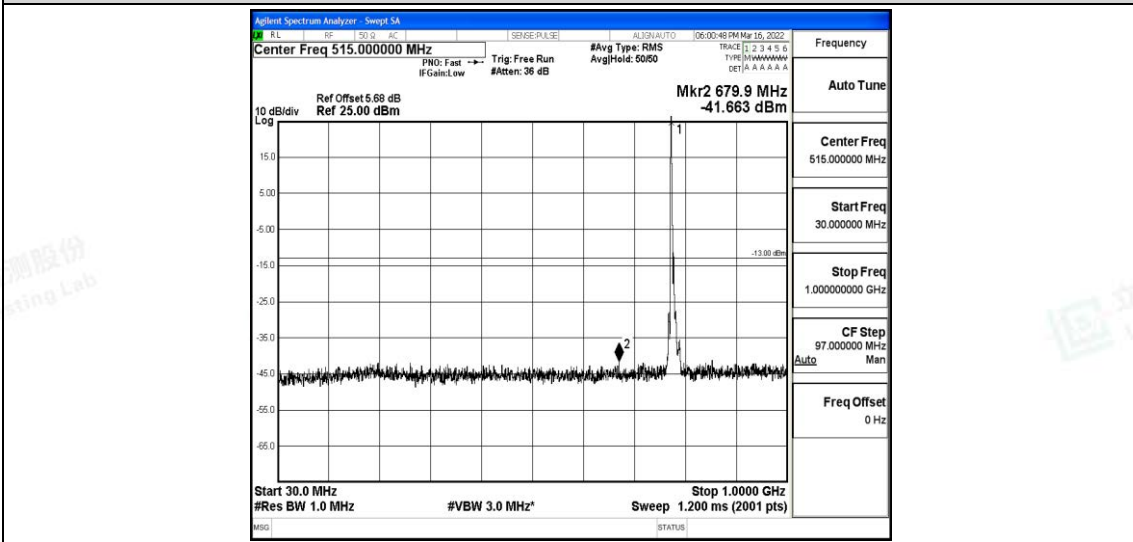


Band13-10MHz-QPSK-23230-1RB#0-Range2:0.15~30MHz

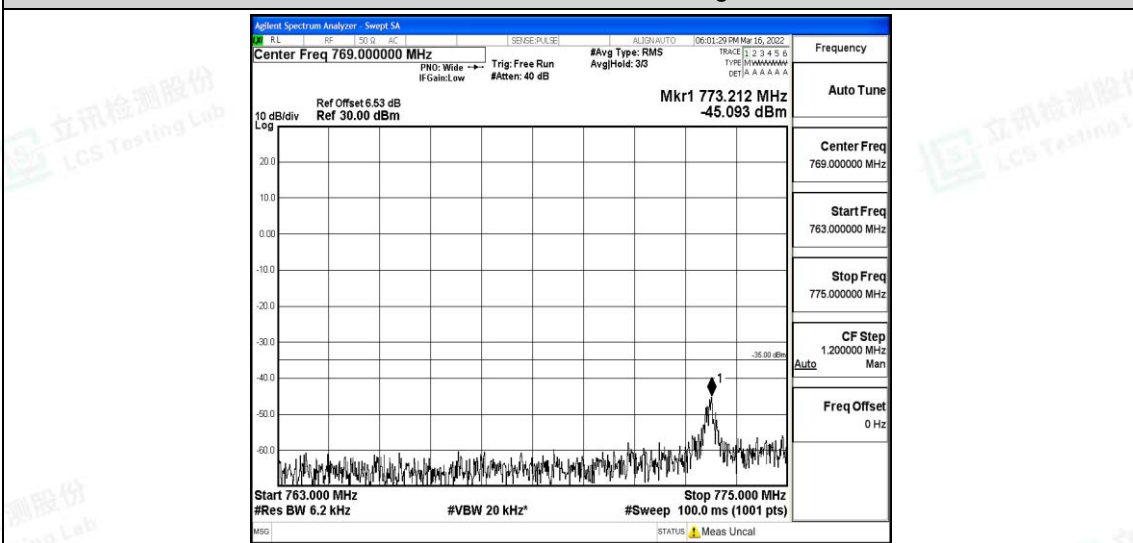




Band13-10MHz-QPSK-23230-1RB#0-Range3:30~1000MHz

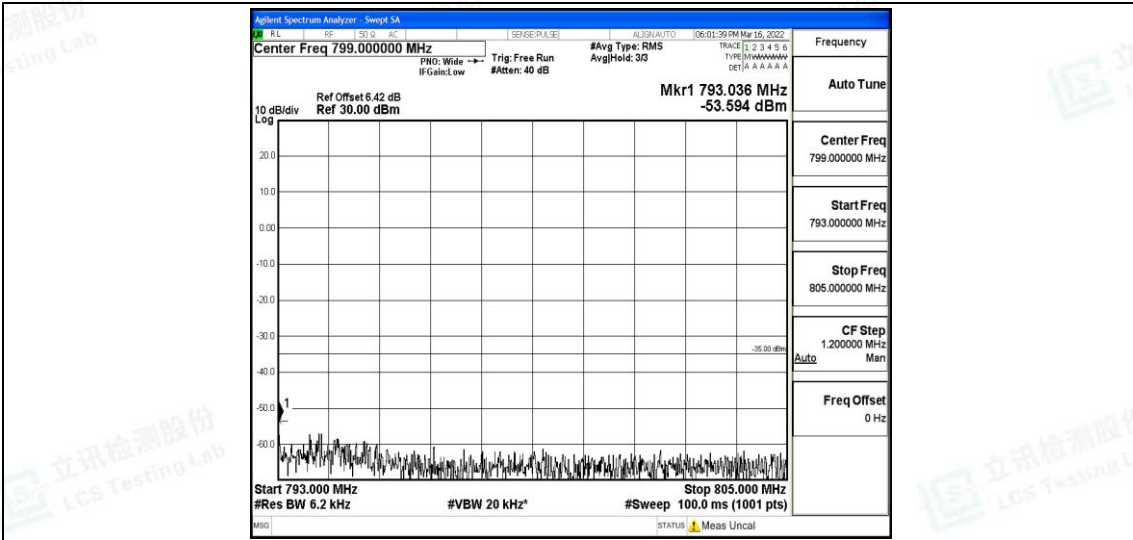


Band13-10MHz-QPSK-23230-1RB#0-Range5:763~775MHz

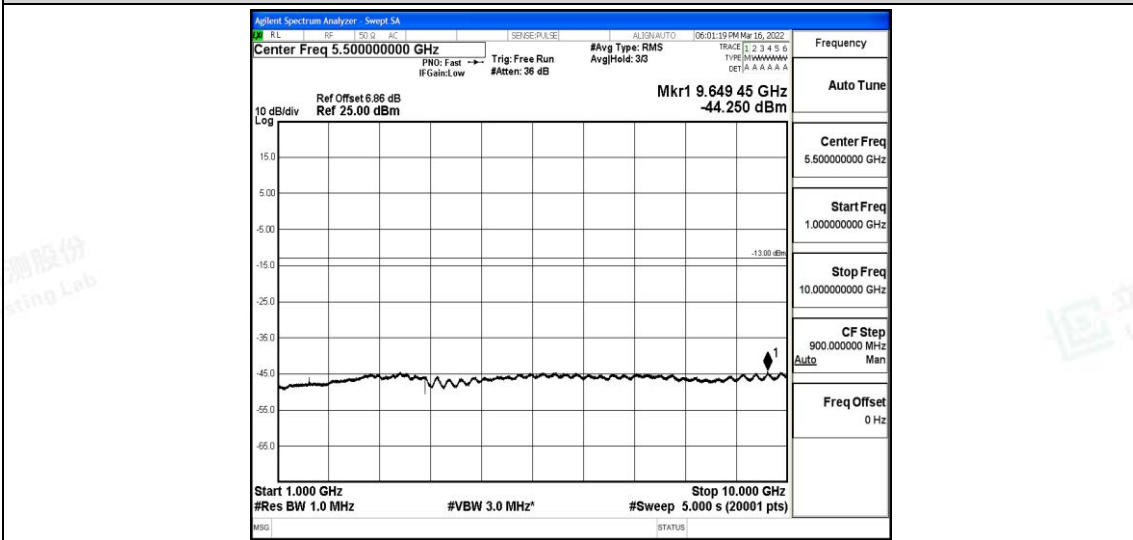


Band13-10MHz-QPSK-23230-1RB#0-Range6:793~805MHz

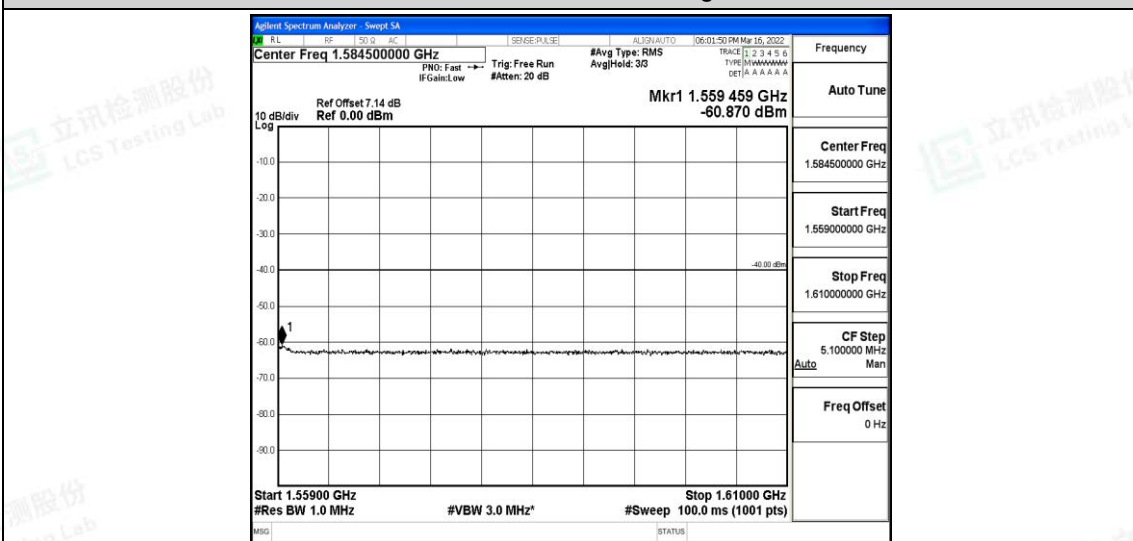




Band13-10MHz-QPSK-23230-1RB#0-Range4:1000~10000MHz

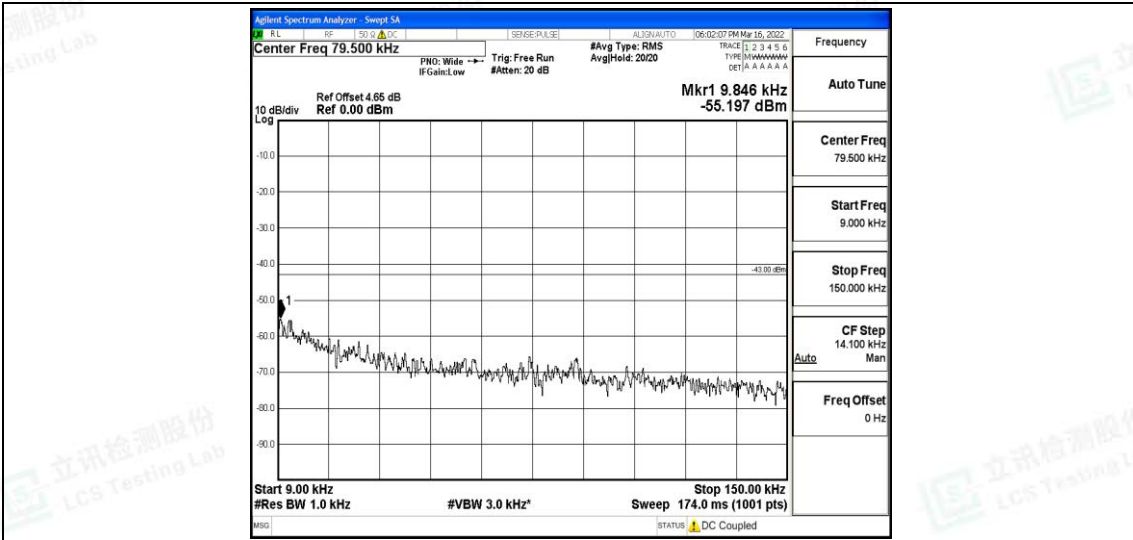


Band13-10MHz-QPSK-23230-1RB#0-Range7:1559~1610MHz

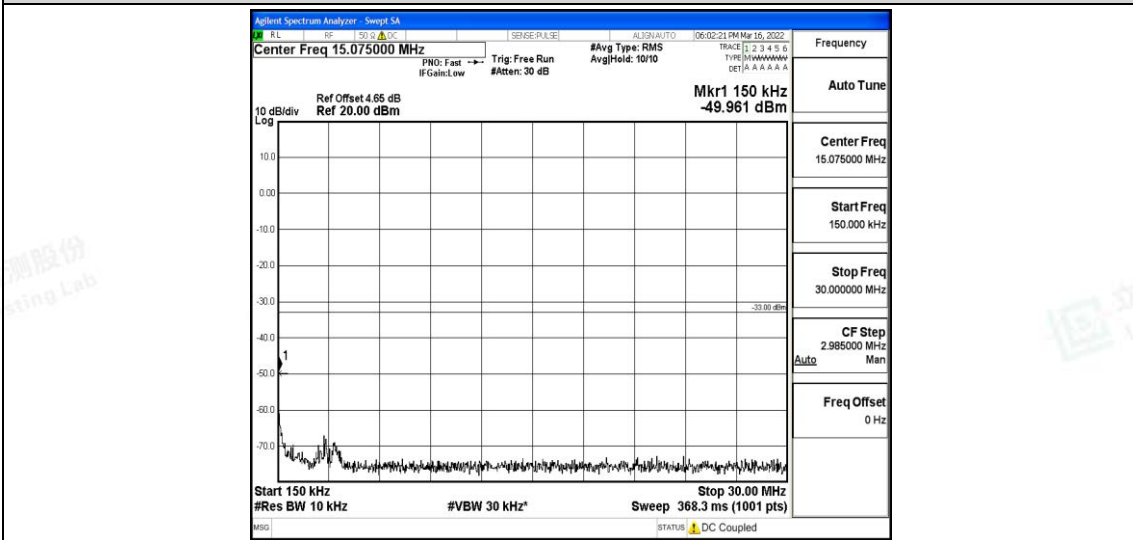


Band13-10MHz-16QAM-23230-1RB#0-Range1:0.009~0.15MHz

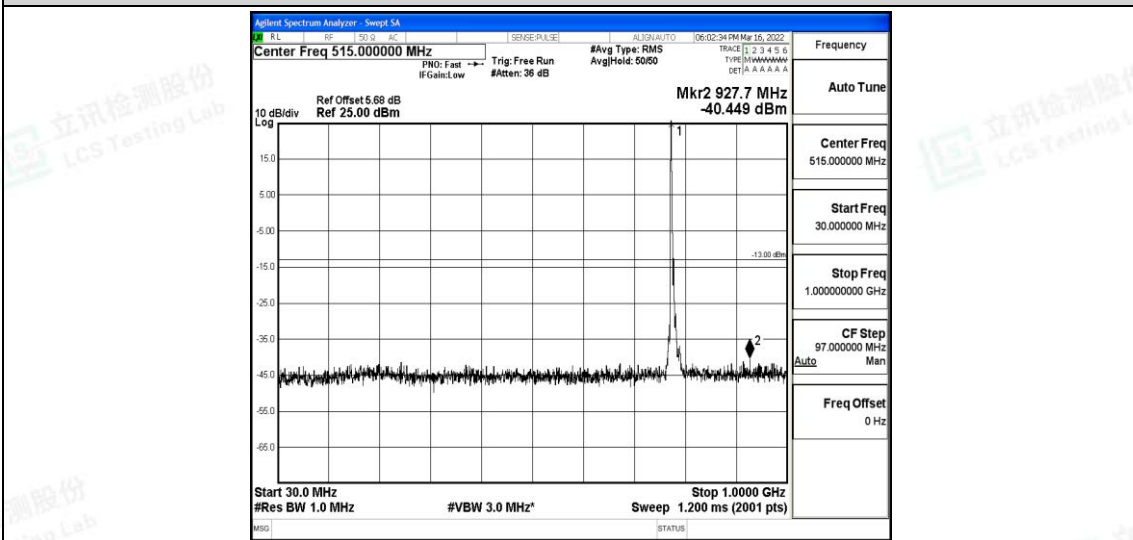




Band13-10MHz-16QAM-23230-1RB#0-Range2:0.15~30MHz

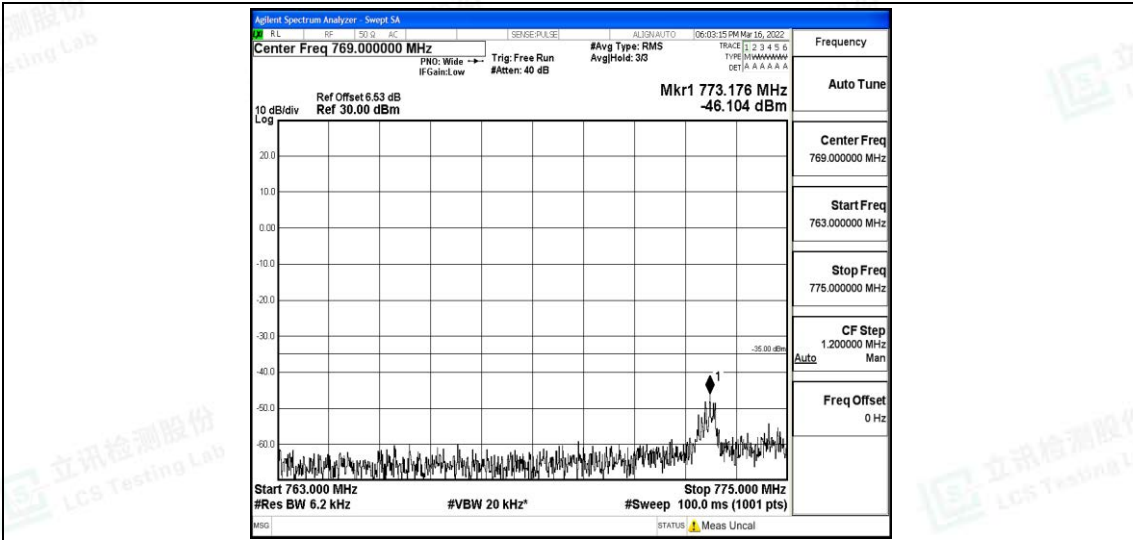


Band13-10MHz-16QAM-23230-1RB#0-Range3:30~1000MHz

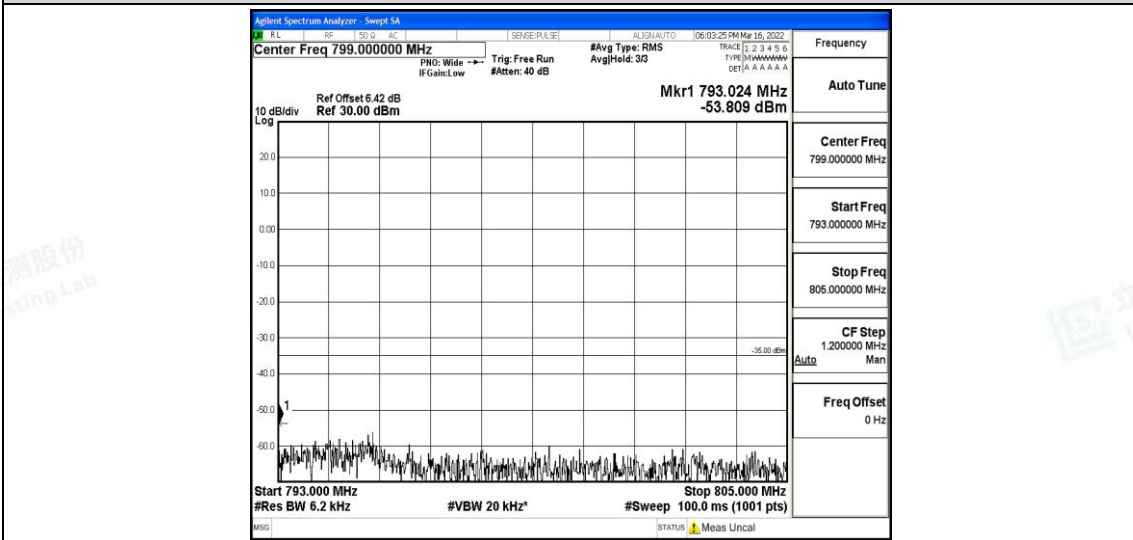


Band13-10MHz-16QAM-23230-1RB#0-Range5:763~775MHz

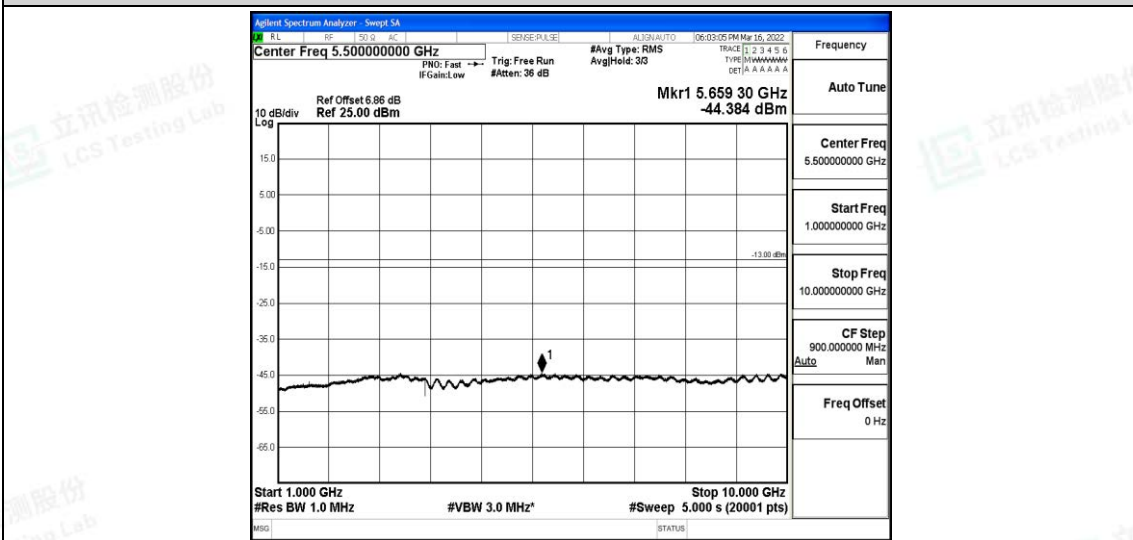




Band13-10MHz-16QAM-23230-1RB#0-Range6:793~805MHz



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



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



