



## Appendix A

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

Product Name: ROCKIN ROLLER 360

Test Model: MNRR360

#### Environmental Conditions

Temperature:	23.5° C
Relative Humidity:	53.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Taylor Hu
Supervised by:	Li Huan





### A.1 20dB Emission Bandwidth

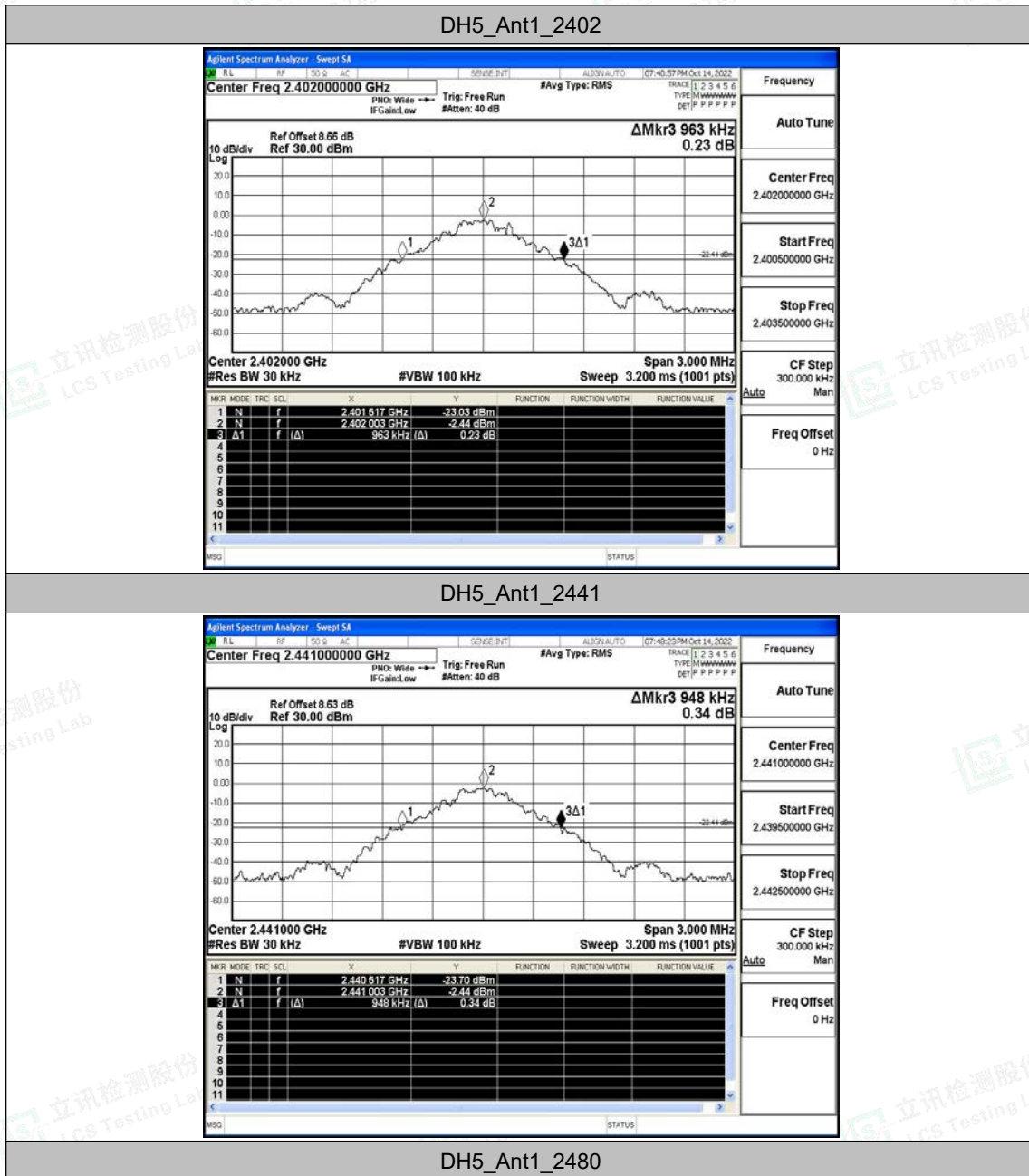
#### Test Result

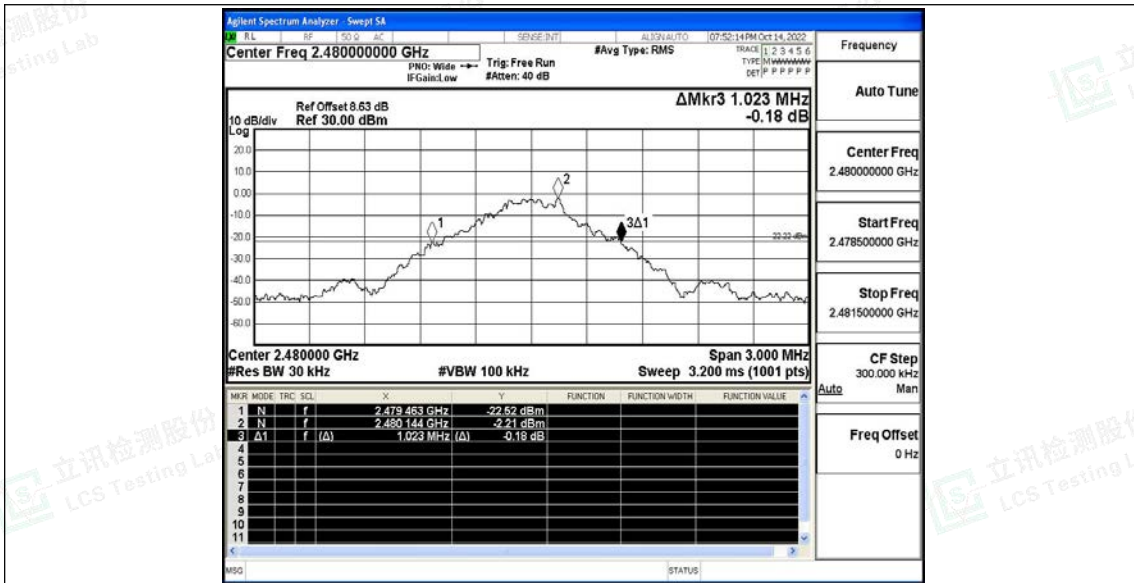
TestMode	Antenna	Channel	20db EBW[MHz]	FL[MHz]	FH[MHz]	Verdict
DH5	Ant1	2402	0.963	2401.517	2402.480	---
		2441	0.948	2440.517	2441.465	---
		2480	1.023	2479.463	2480.486	---
2DH5	Ant1	2402	1.284	2401.349	2402.633	---
		2441	1.350	2440.313	2441.663	---
		2480	1.293	2479.349	2480.642	---



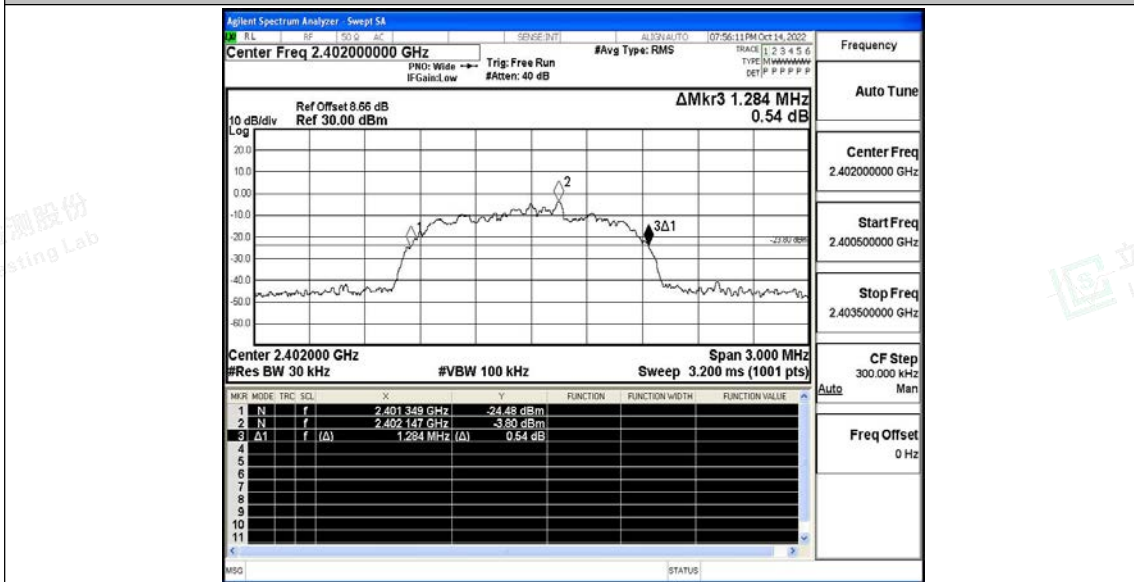


### Test Graphs



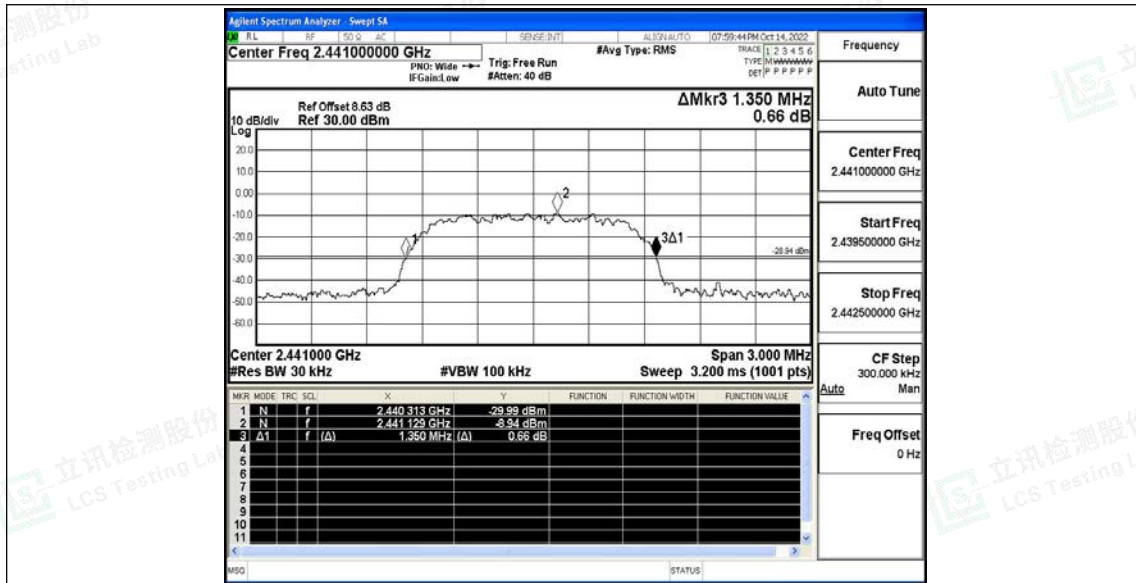


2Dh5\_Ant1\_2402

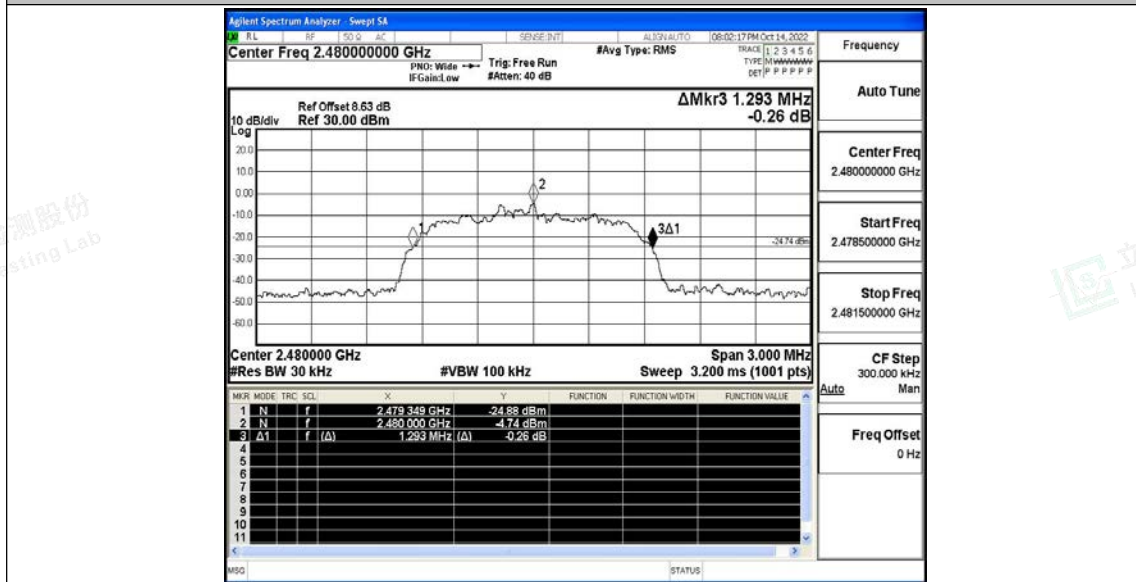


2Dh5\_Ant1\_2441





2DH5\_Ant1\_2480





## A.2 Occupied Channel Bandwidth

### Test Result

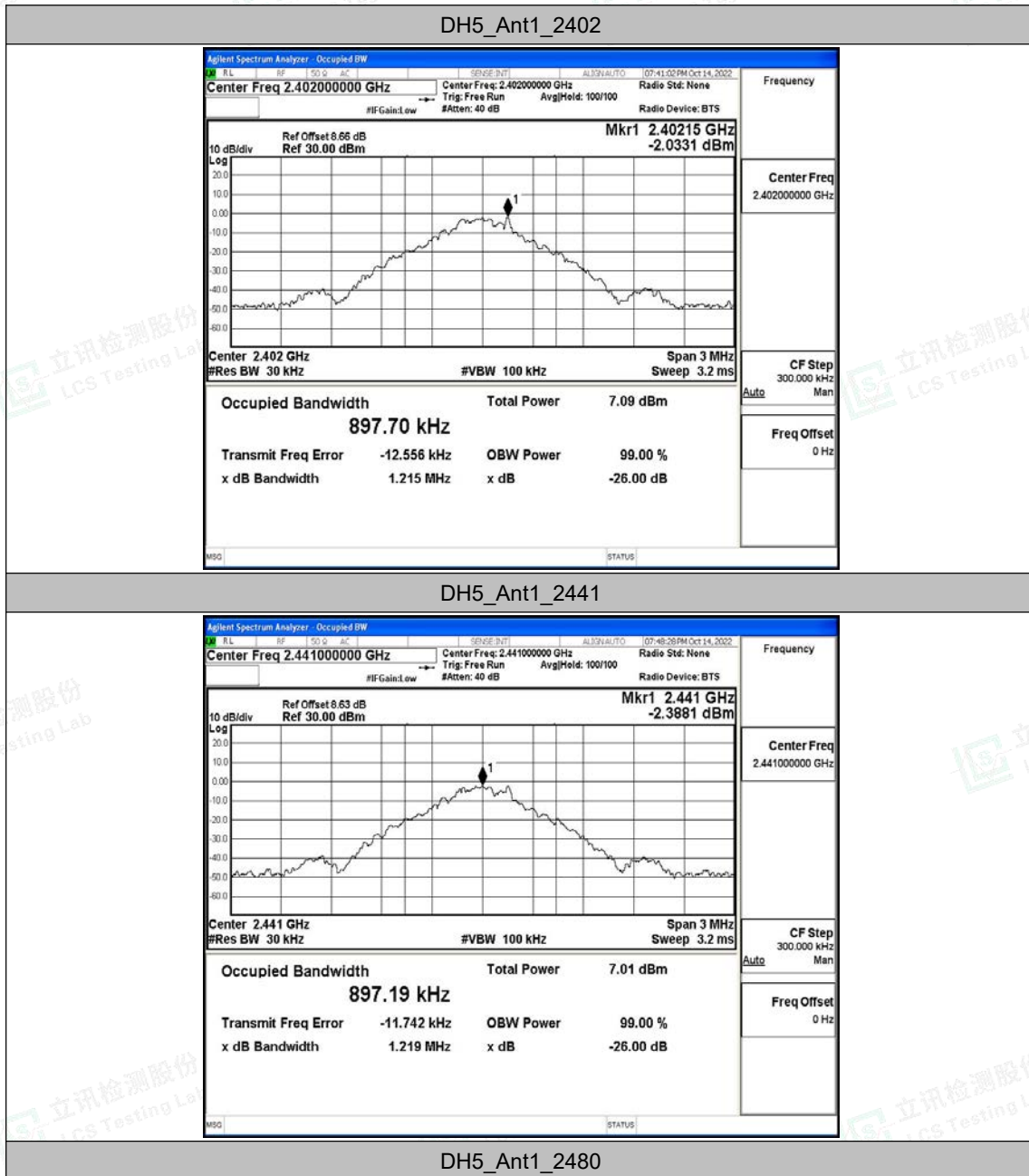
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.89770	2401.5386	2402.4363	---	---
		2441	0.89719	2440.5397	2441.4369	---	---
		2480	0.89823	2479.5345	2480.4328	---	---
2DH5	Ant1	2402	1.1925	2401.3920	2402.5845	---	---
		2441	1.1760	2440.3961	2441.5721	---	---
		2480	1.1827	2479.3934	2480.5761	---	---

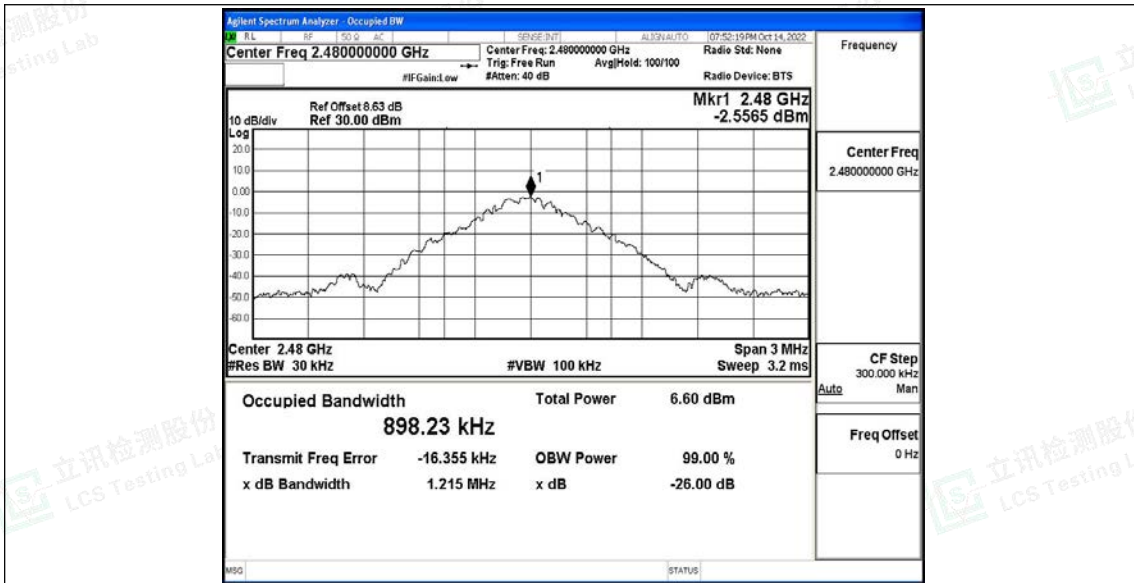




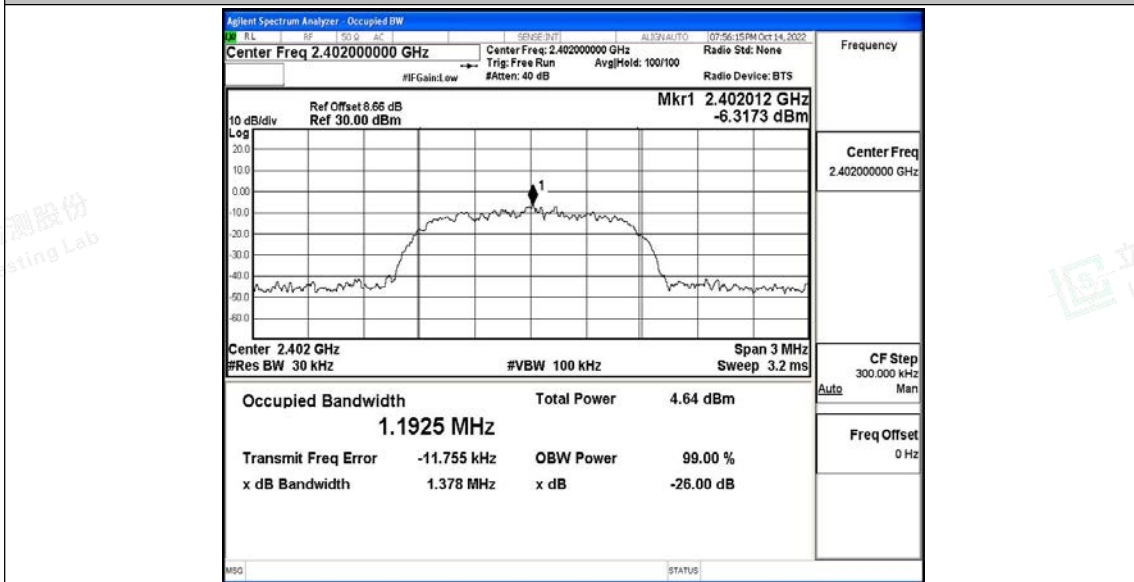


### Test Graphs





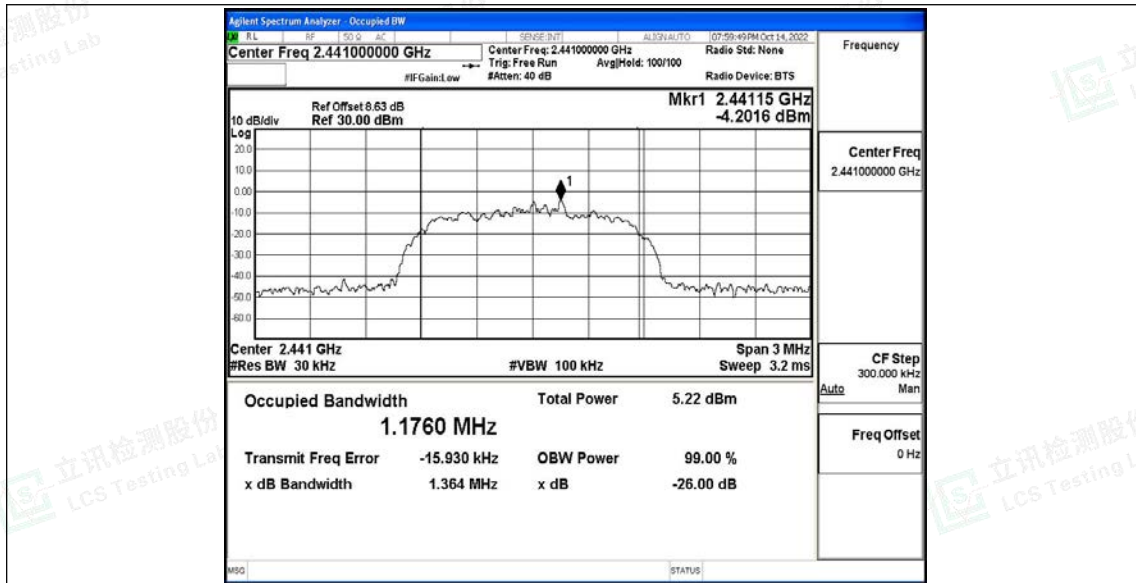
2DH5\_Ant1\_2402



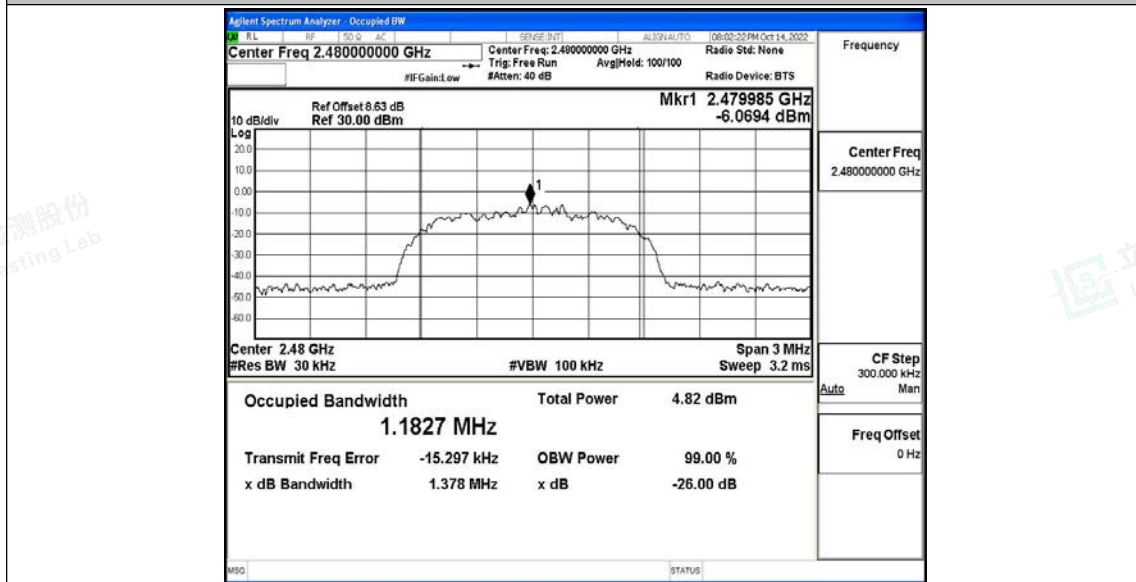
2DH5\_Ant1\_2441







2DH5\_Ant1\_2480





### A.3 Maximum conducted output power

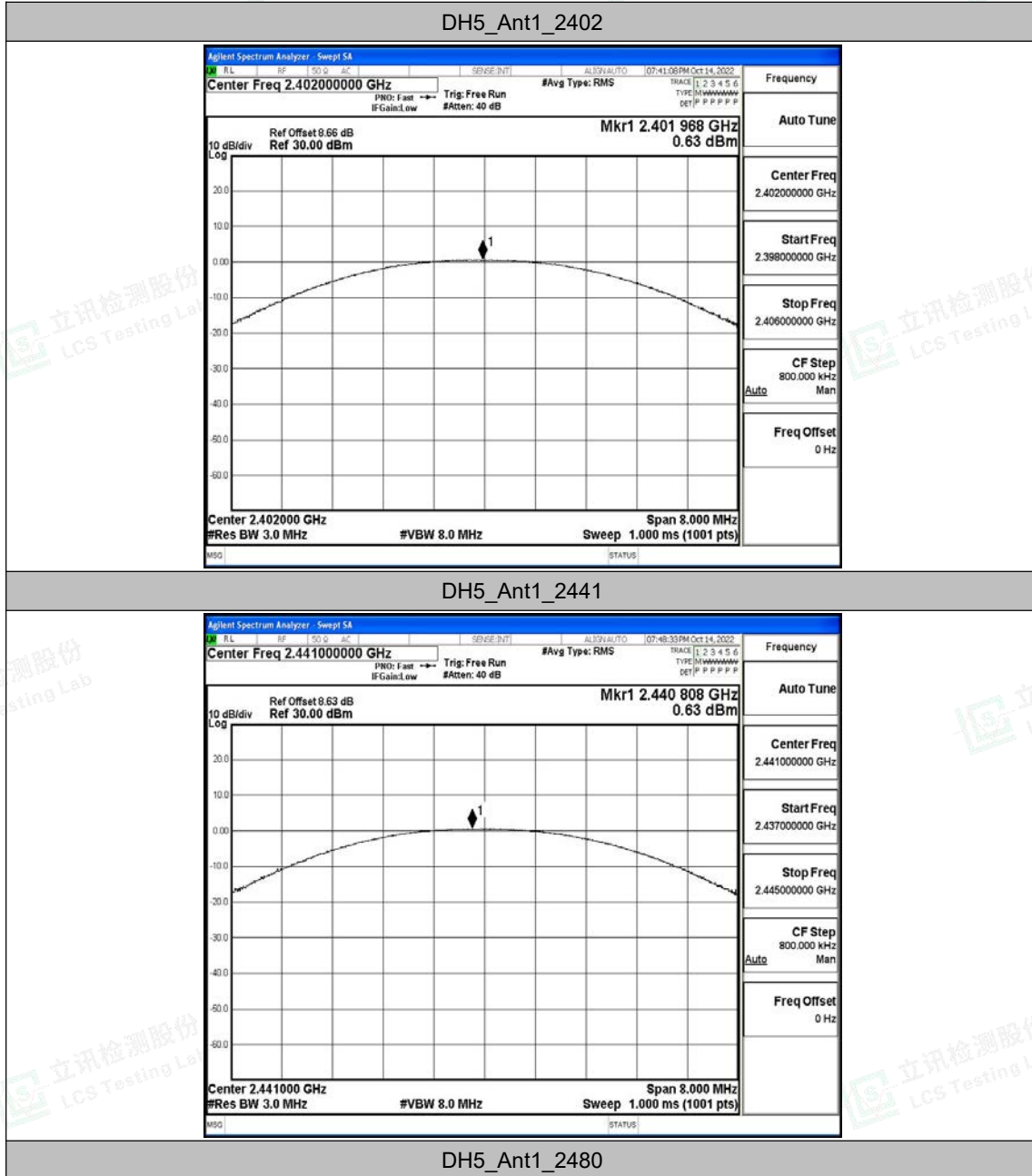
#### Test Result

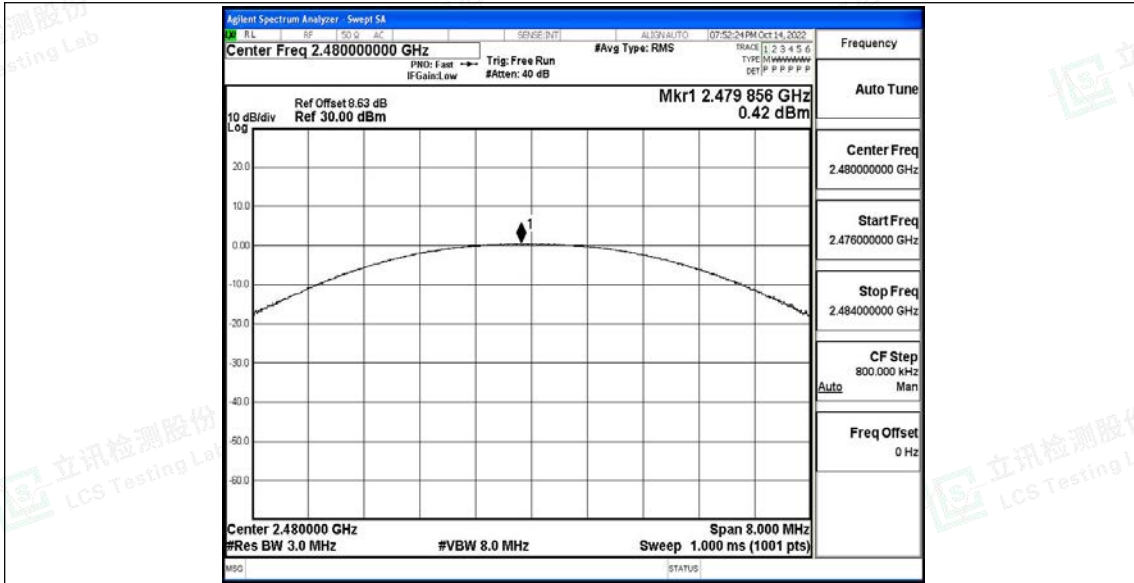
TestMode	Antenna	Channel	Result[dBm]	Limit [dBm]	Antenna Gain (dBi)	EIRP [dBm]	EIRP Limit [dBm]	Verdict
DH5	Ant1	2402	0.63	≤30	-0.58	0.05	≤36	PASS
		2441	0.63	≤30	-0.58	0.05	≤36	PASS
		2480	0.42	≤30	-0.58	-0.16	≤36	PASS
2DH5	Ant1	2402	0.28	≤30	-0.58	-0.3	≤36	PASS
		2441	0.26	≤30	-0.58	-0.32	≤36	PASS
		2480	0.18	≤30	-0.58	-0.40	≤36	PASS



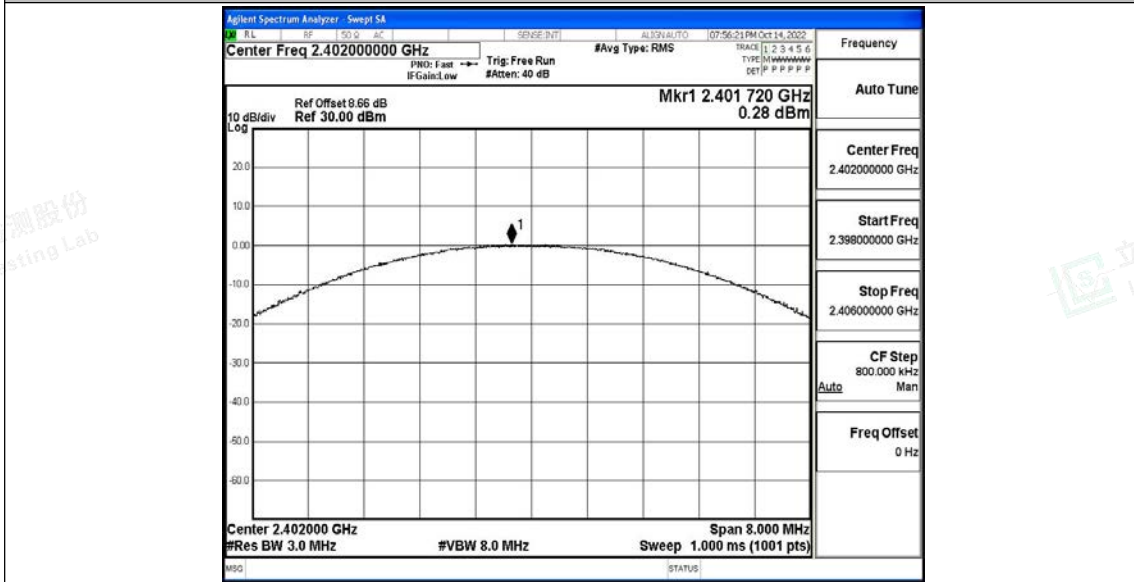


### Test Graphs



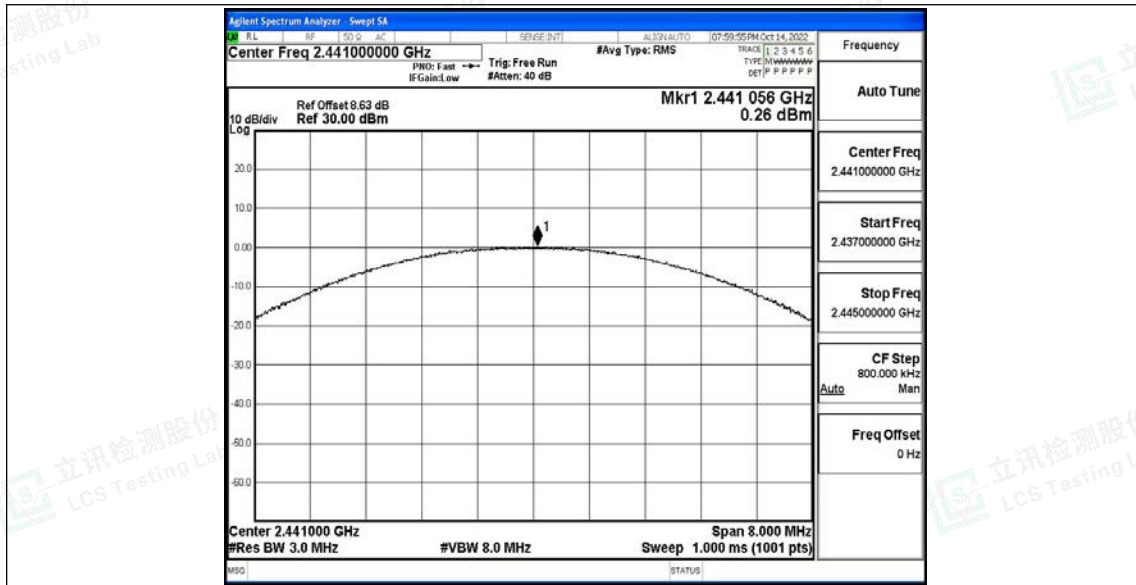


2DH5\_Ant1\_2402

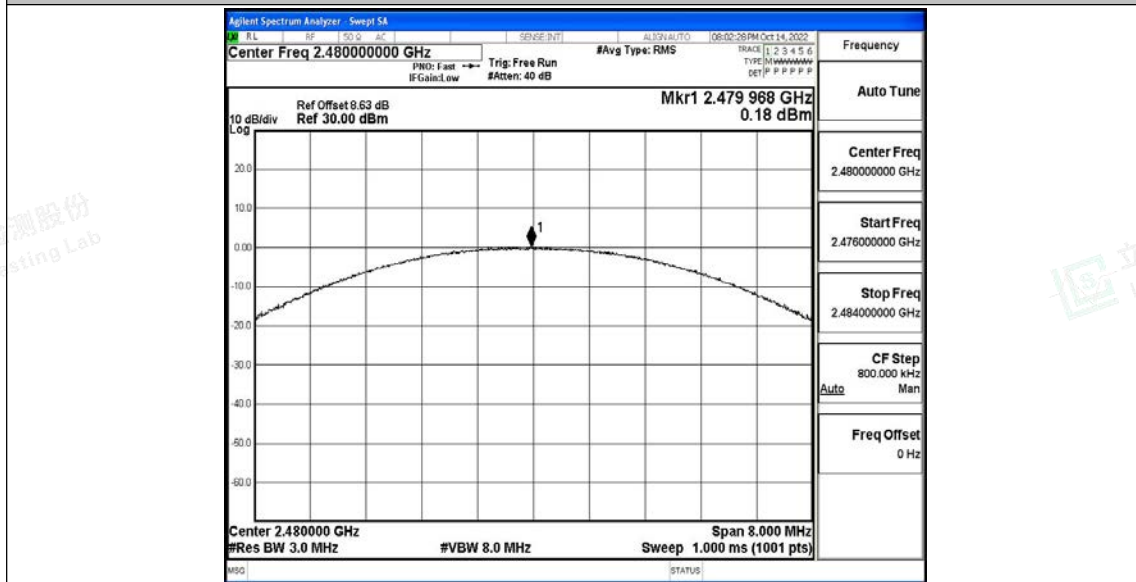


2DH5\_Ant1\_2441





2DH5\_Ant1\_2480





## A.4 Carrier frequency separation

### Test Result

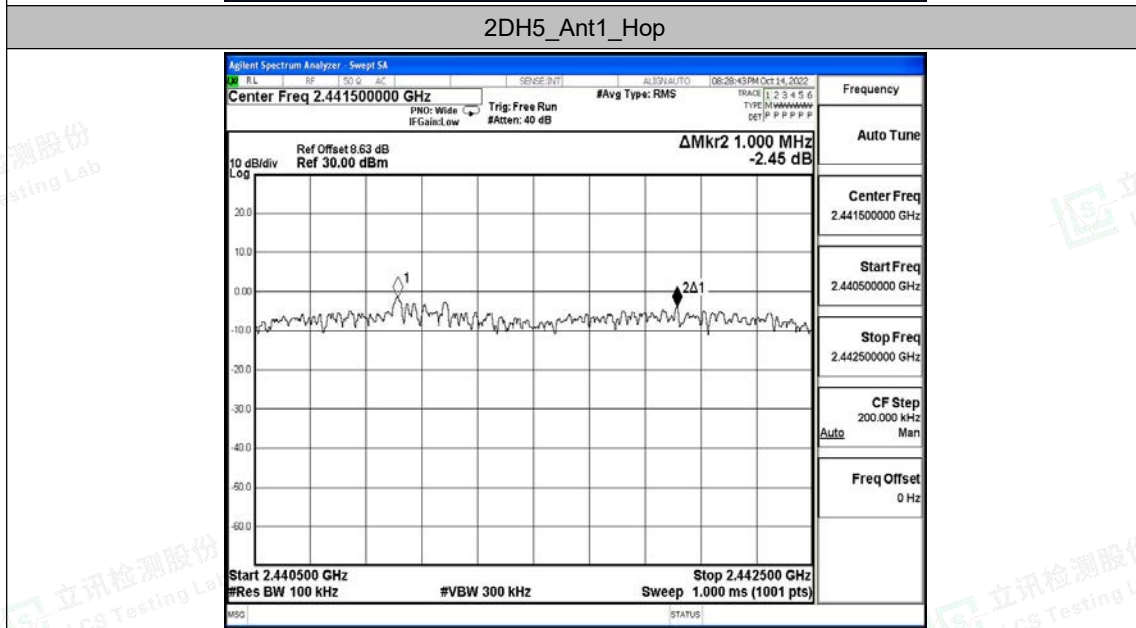
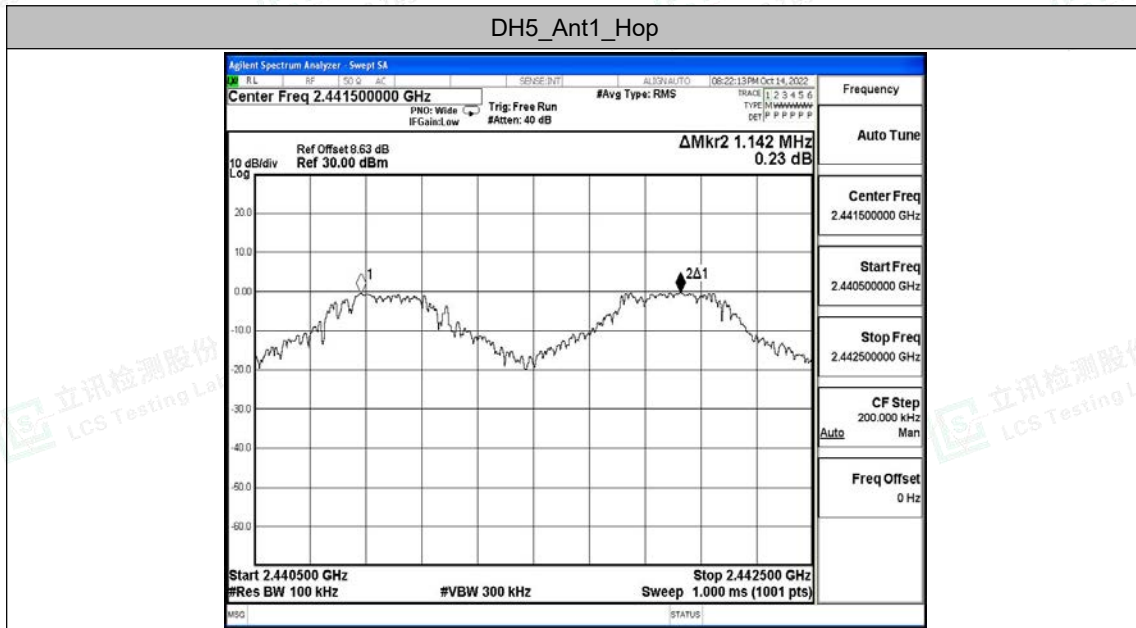
TestMode	Antenna	Channel	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.142	≥0.682	PASS
2DH5	Ant1	Hop	1.000	≥0.900	PASS







### Test Graphs





## A.5 Time of occupancy

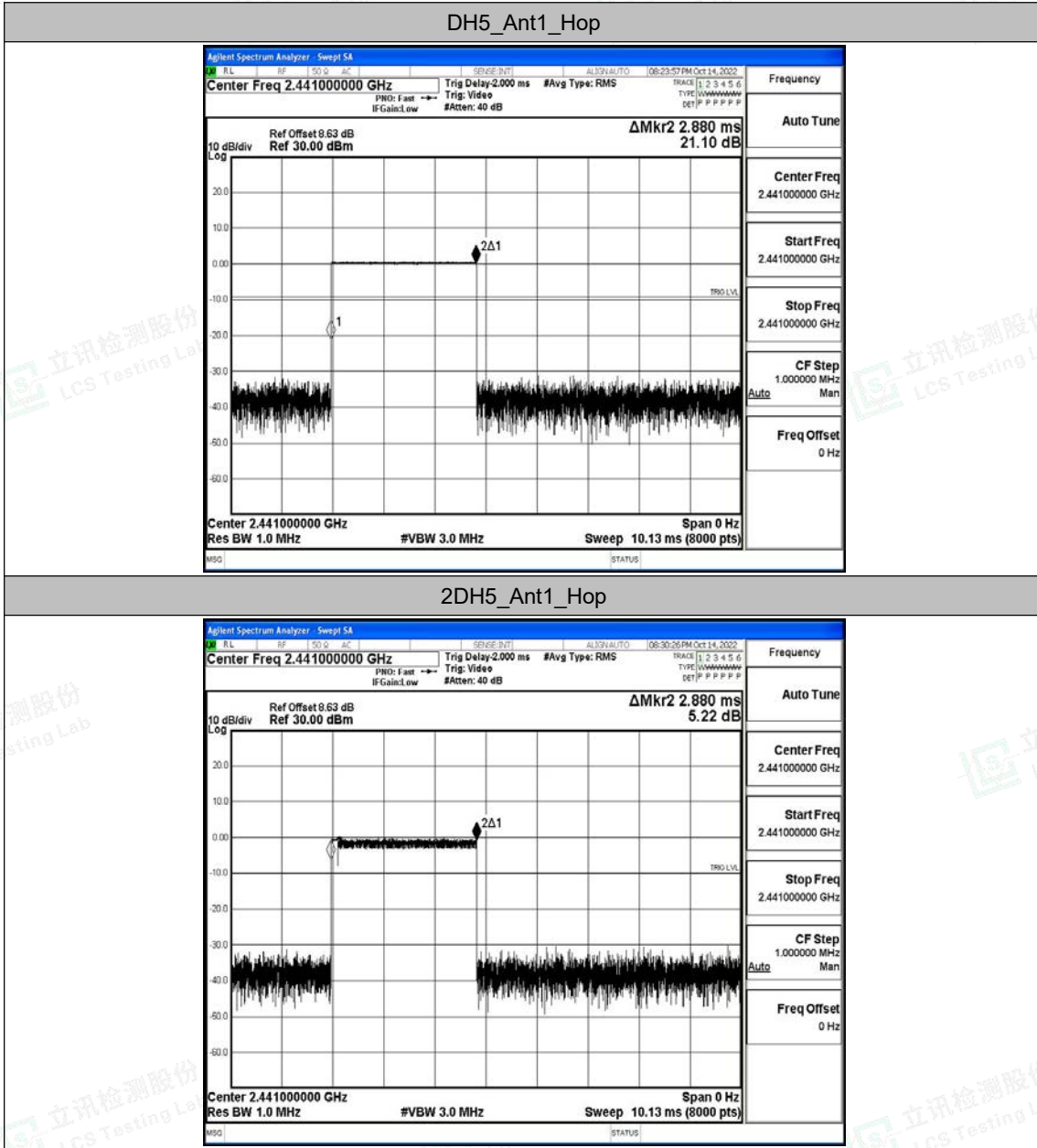
### Test Result

TestMode	Antenna	Channel	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.88	106.67	0.307	≤0.4	PASS
2DH5	Ant1	Hop	2.88	106.67	0.307	≤0.4	PASS





### Test Graphs





## A.6 Number of hopping channels

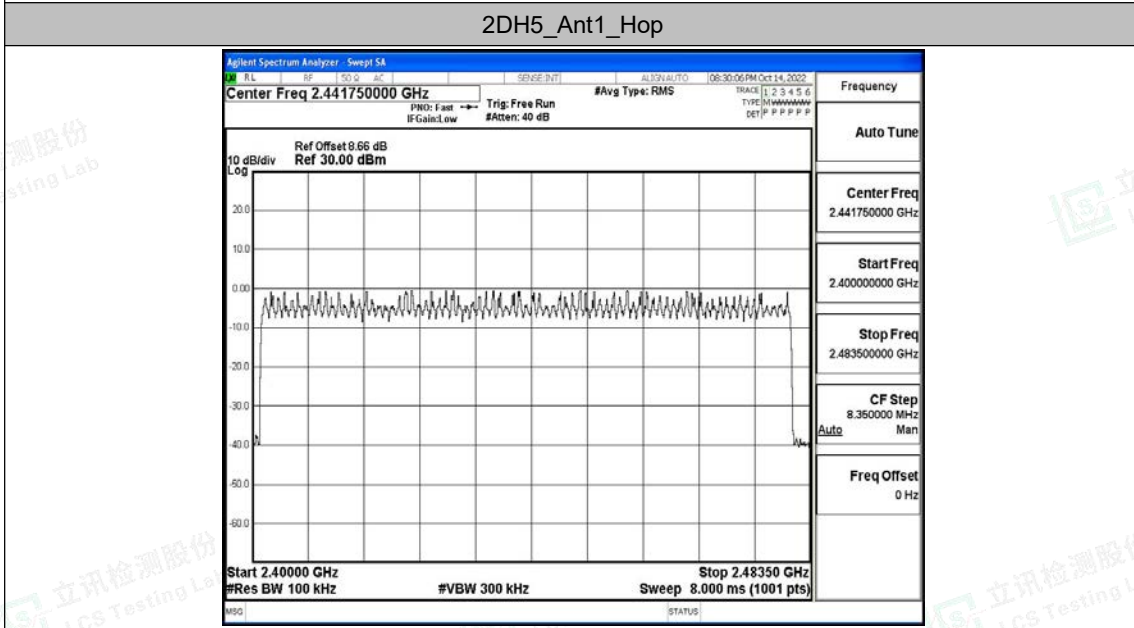
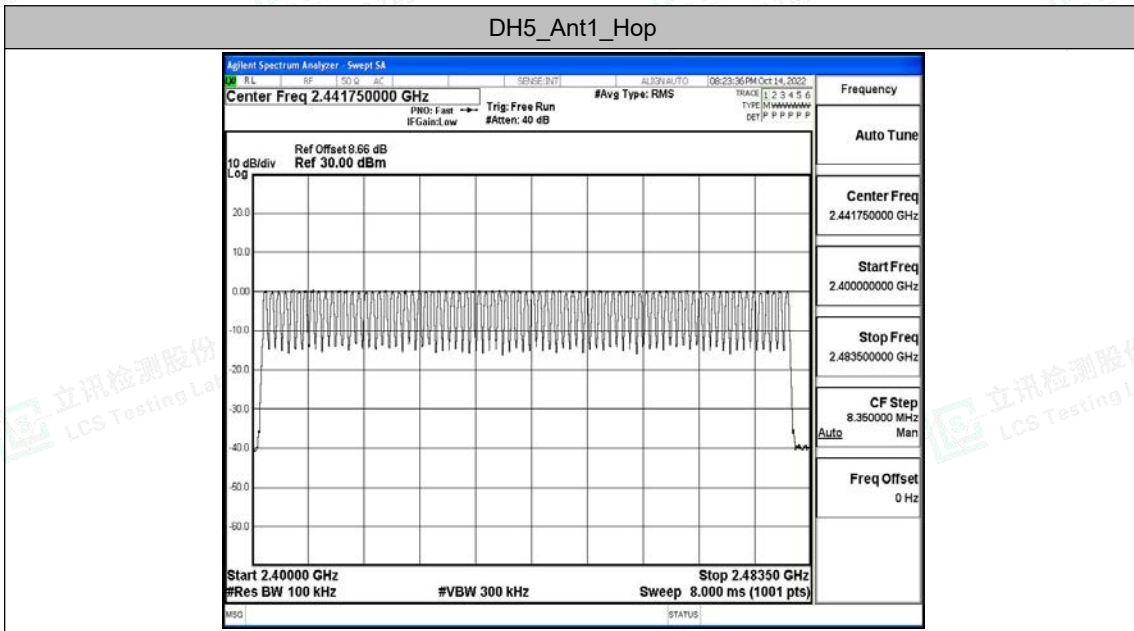
### Test Result

TestMode	Antenna	Channel	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS





### Test Graphs





### A.7 Band edge measurements

#### Test Result

TestMode	Antenna	ChName	Channel	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	Low	2402	-0.06	-59.85	≤-20.06	PASS
		High	2480	-0.27	-59.06	≤-20.27	PASS
		Low	Hop_2402	-0.37	-59	≤-20.37	PASS
		High	Hop_2480	0.15	-57.23	≤-19.85	PASS
2DH5	Ant1	Low	2402	-5.95	-58.09	≤-25.95	PASS
		High	2480	-3.05	-59.07	≤-23.05	PASS
		Low	Hop_2402	-3.48	-58.7	≤-23.48	PASS
		High	Hop_2480	-1.81	-56.95	≤-21.81	PASS

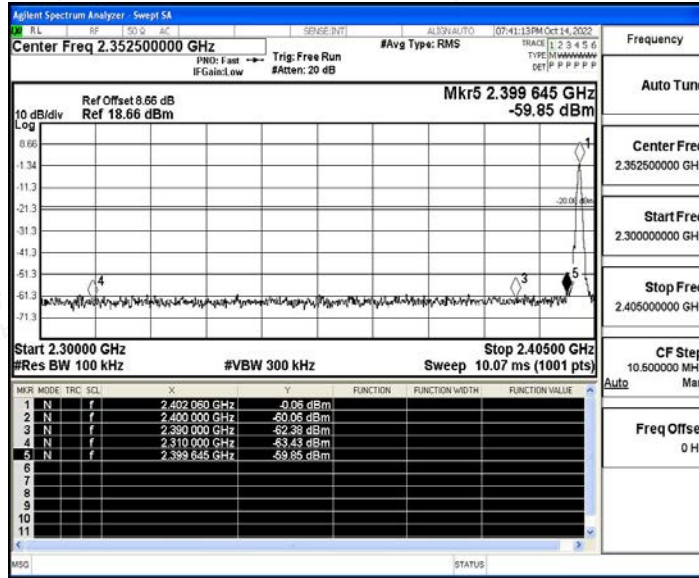




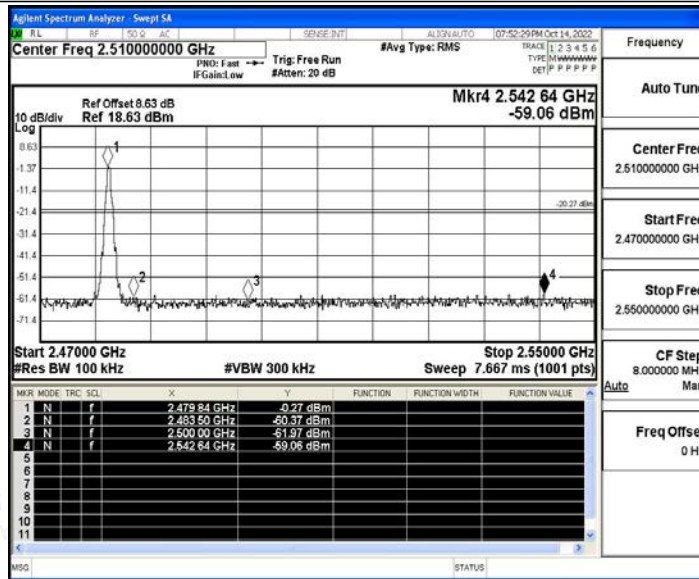


### Test Graphs

#### DH5\_Ant1\_Low\_2402

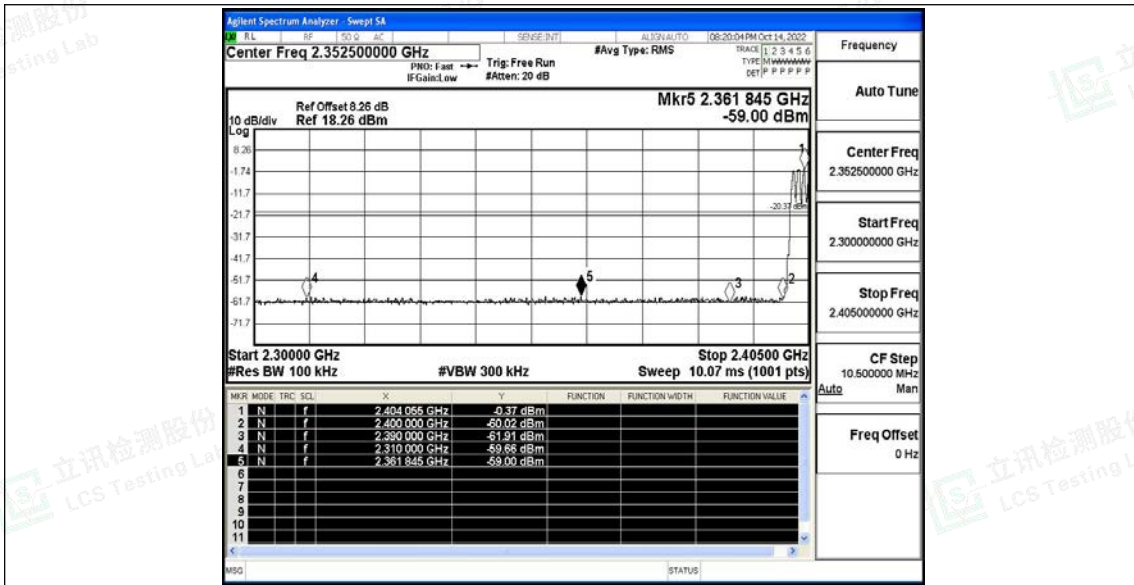


#### DH5\_Ant1\_High\_2480

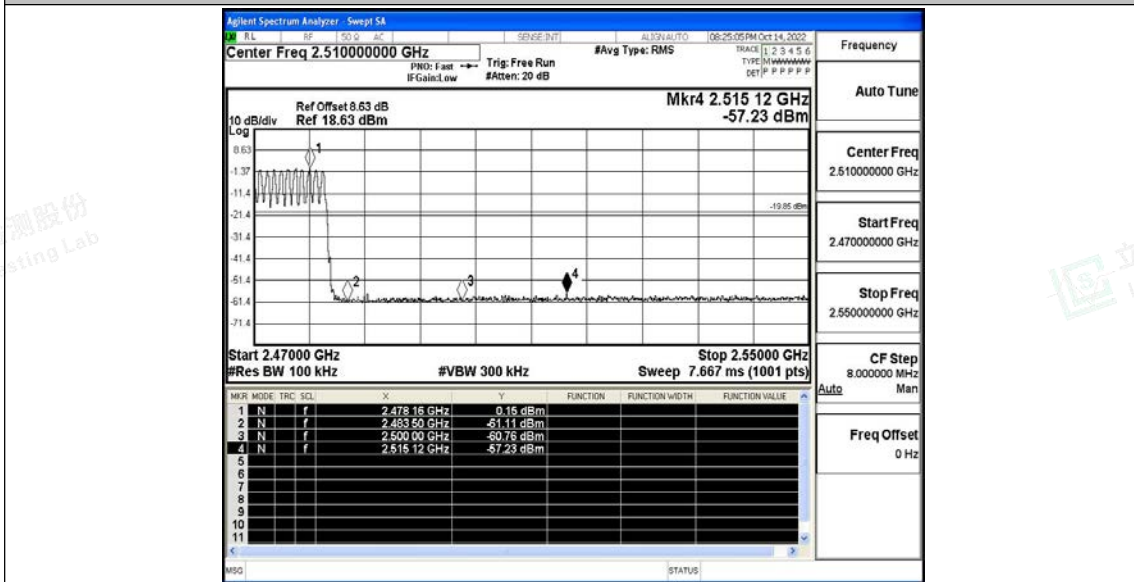


#### DH5\_Ant1\_Low\_Hop\_2402



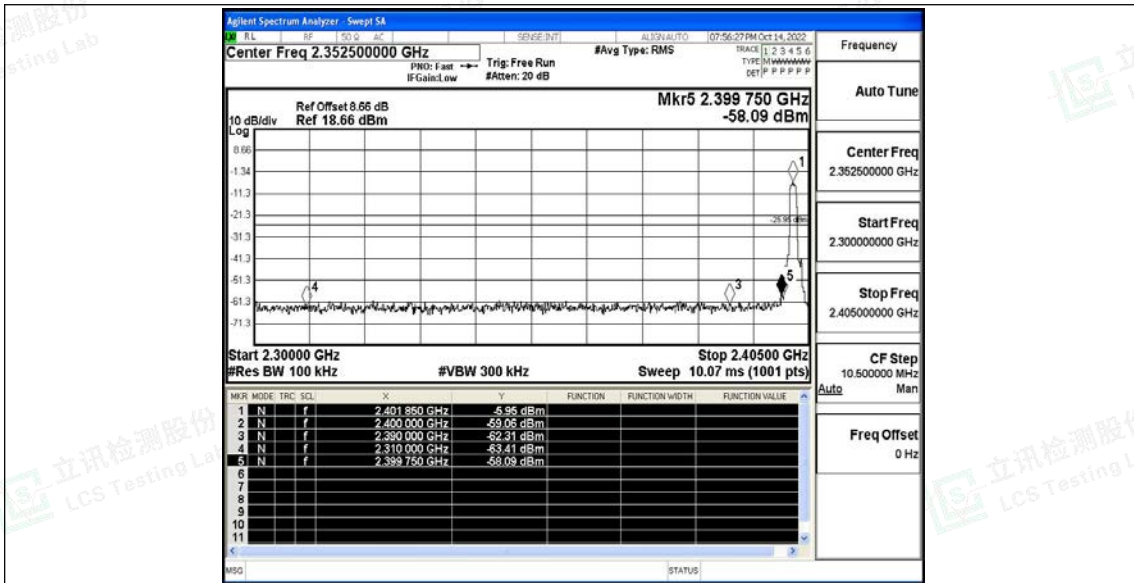


DH5\_Ant1\_High\_Hop\_2480

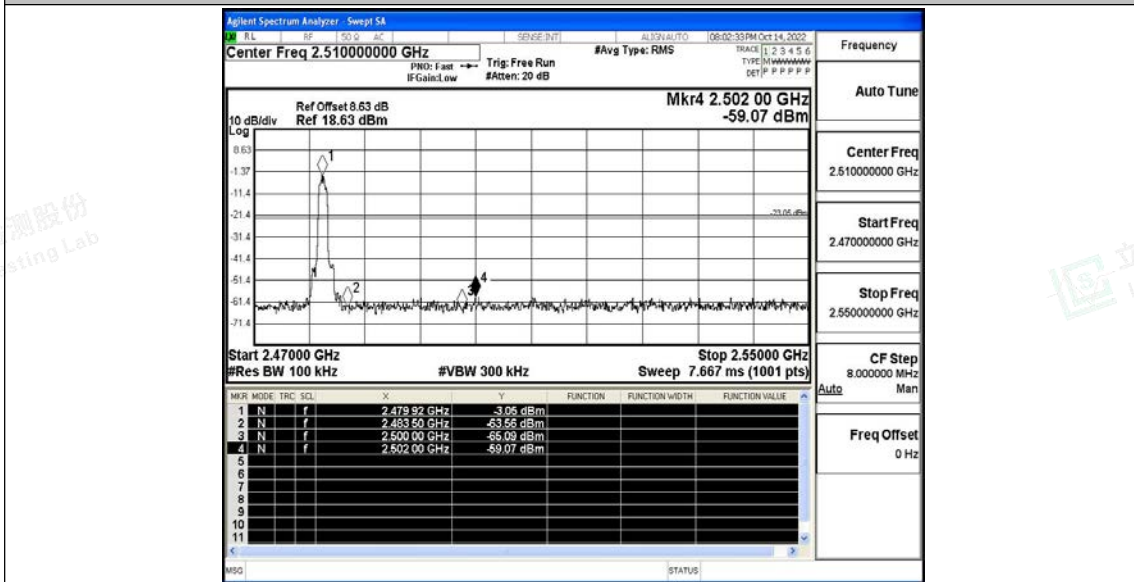


2DH5\_Ant1\_Low\_2402



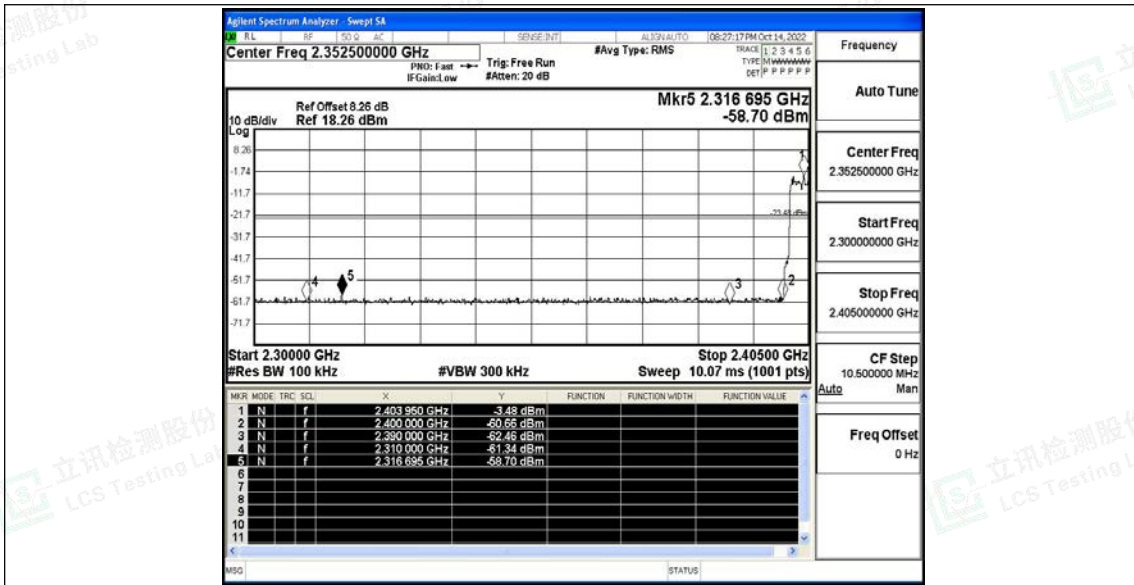


2DH5\_Ant1\_High\_2480

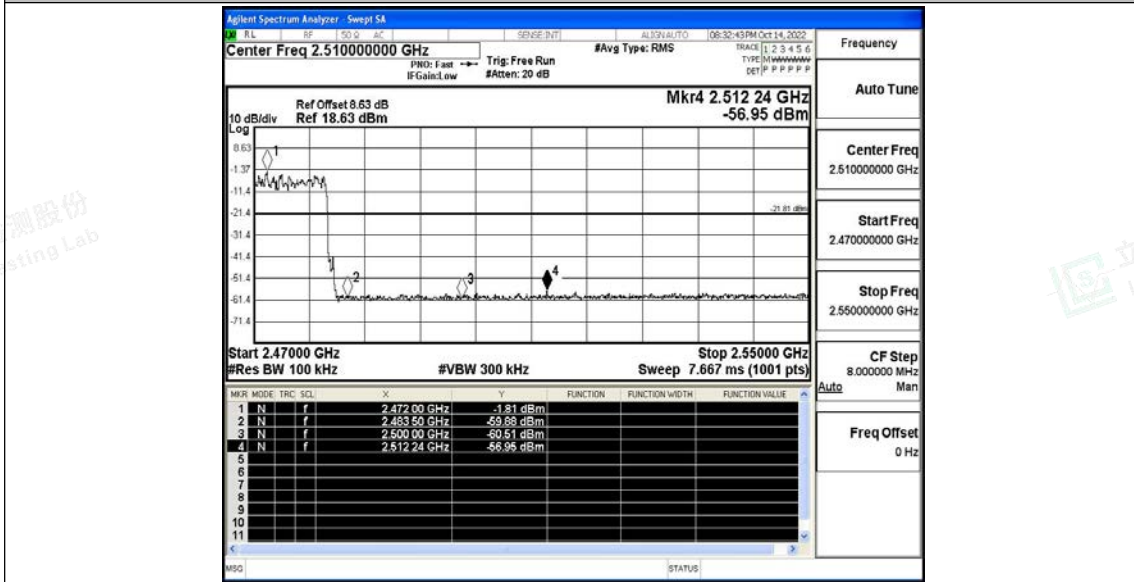


2DH5\_Ant1\_Low\_Hop\_2402





2DH5\_Ant1\_High\_Hop\_2480





### A.8 Conducted Spurious Emission

#### Test Result

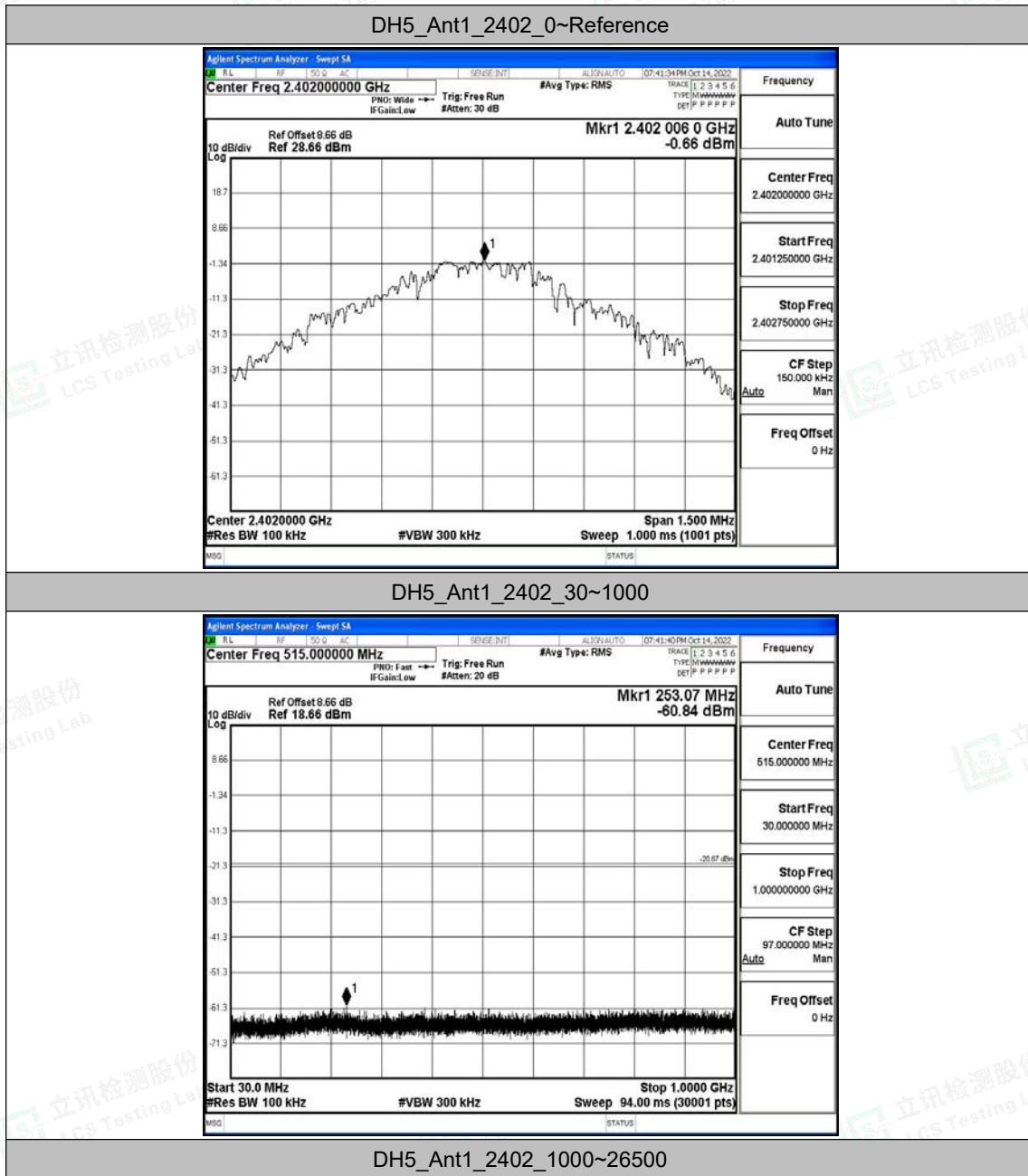
TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
DH5	Ant1	2402	Reference	-0.67	-0.67	---	PASS
			30~1000	-0.67	-60.84	≤-20.67	PASS
			1000~26500	-0.67	-46.03	≤-20.67	PASS
		2441	Reference	-0.03	-0.03	---	PASS
			30~1000	-0.03	-61.21	≤-20.03	PASS
			1000~26500	-0.03	-46.03	≤-20.03	PASS
		2480	Reference	-0.75	-0.75	---	PASS
			30~1000	-0.75	-52.59	≤-20.75	PASS
			1000~26500	-0.75	-46.03	≤-20.75	PASS
2DH5	Ant1	2402	Reference	-4.50	-4.50	---	PASS
			30~1000	-4.50	-60.66	≤-24.5	PASS
			1000~26500	-4.50	-45.39	≤-24.5	PASS
		2441	Reference	-1.21	-1.21	---	PASS
			30~1000	-1.21	-60.44	≤-21.21	PASS
			1000~26500	-1.21	-46.01	≤-21.21	PASS
		2480	Reference	-5.76	-5.76	---	PASS
			30~1000	-5.76	-61.05	≤-25.76	PASS
			1000~26500	-5.76	-45.82	≤-25.76	PASS



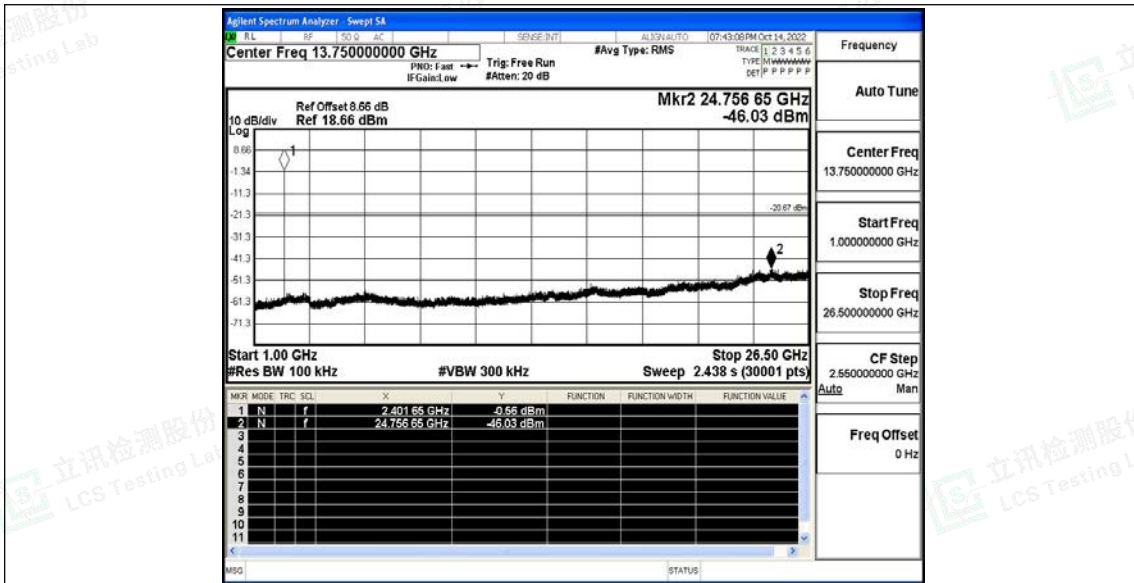




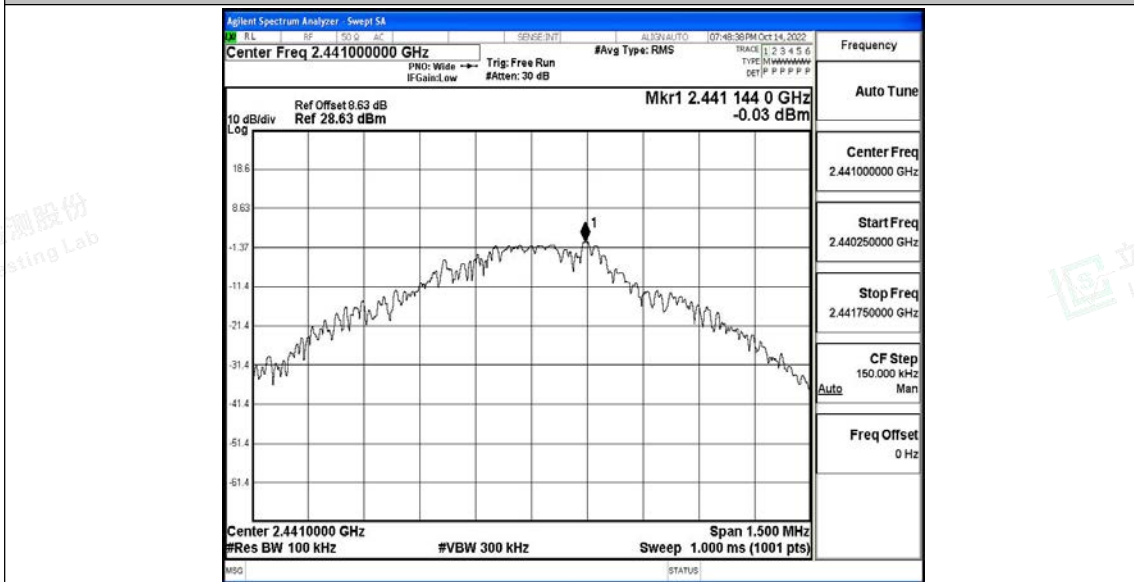
### Test Graphs





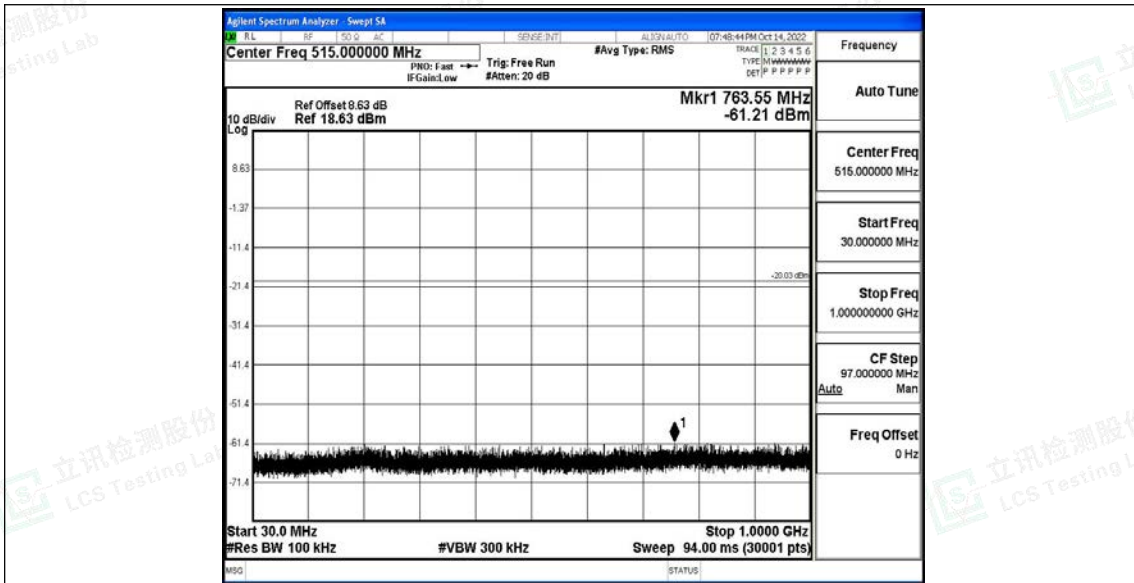


DH5\_Ant1\_2441\_0~Reference

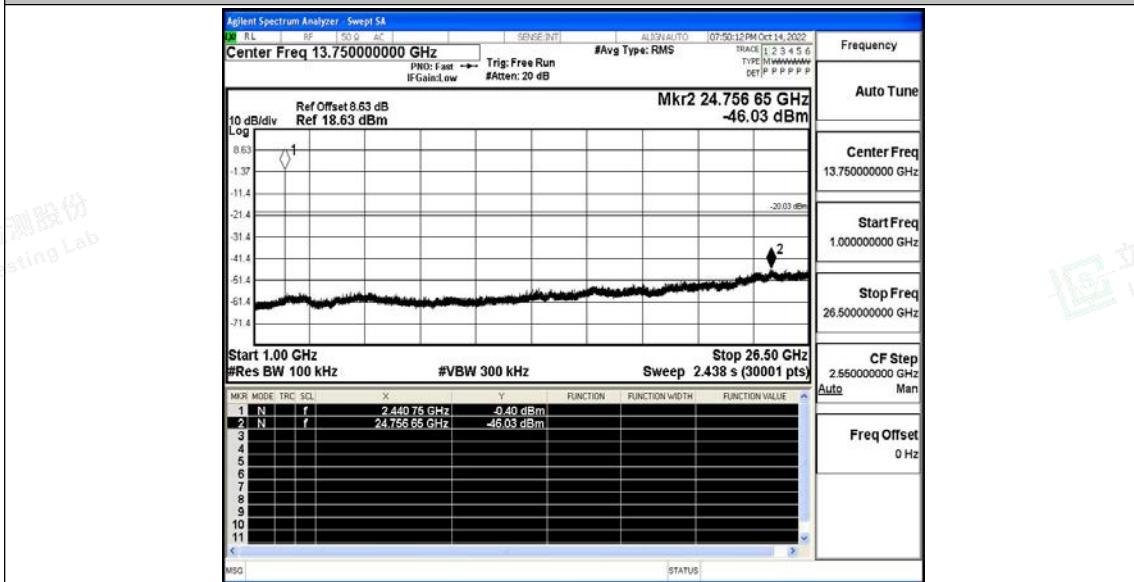


DH5\_Ant1\_2441\_30~1000



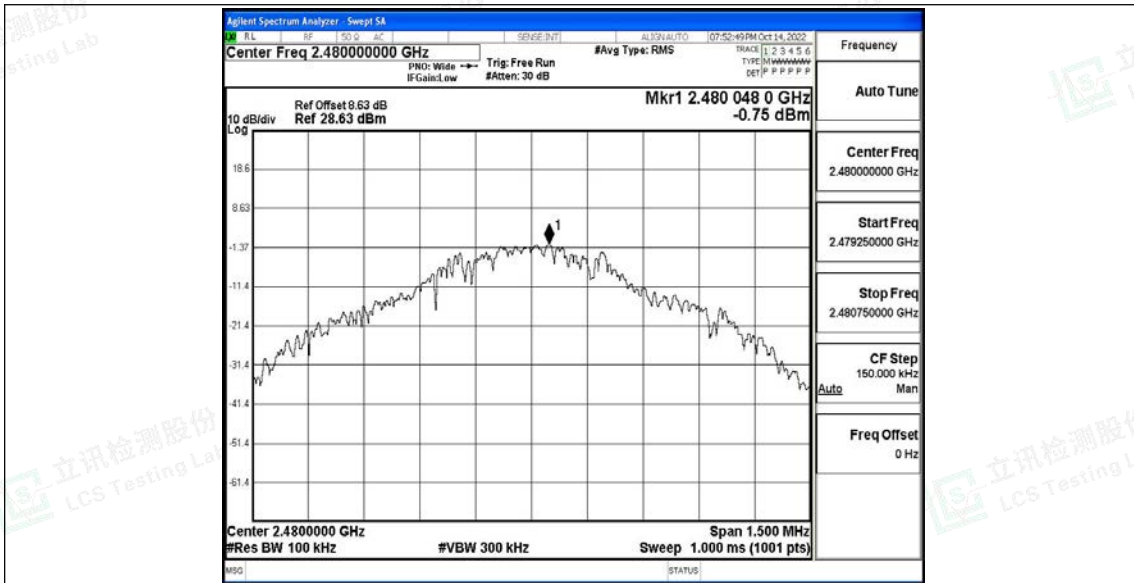


DH5\_Ant1\_2441\_1000~26500

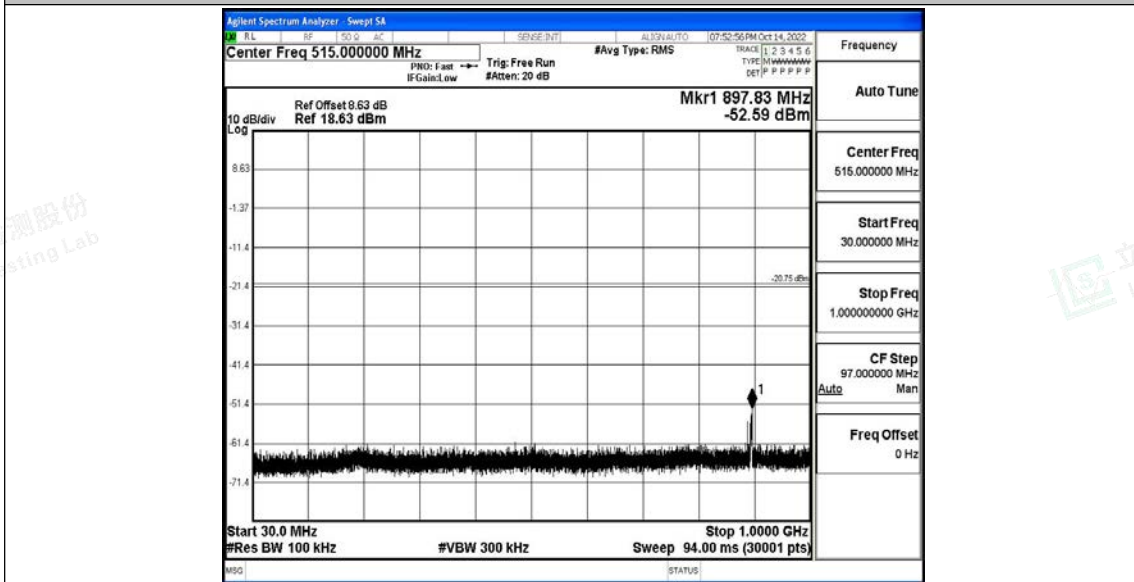


DH5\_Ant1\_2480\_0~Reference



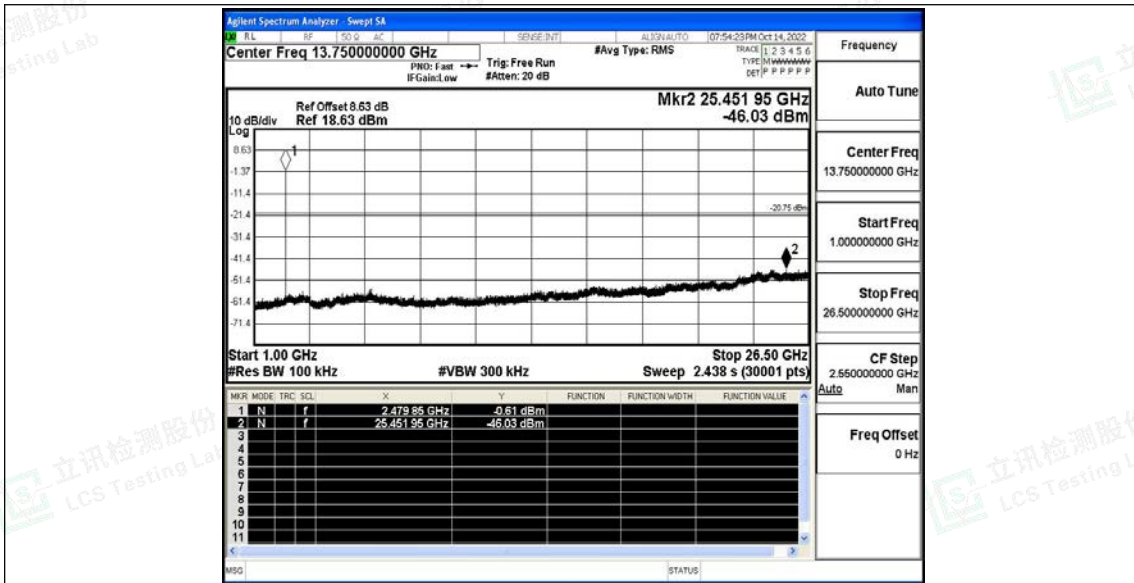


DH5\_Ant1\_2480\_30~1000

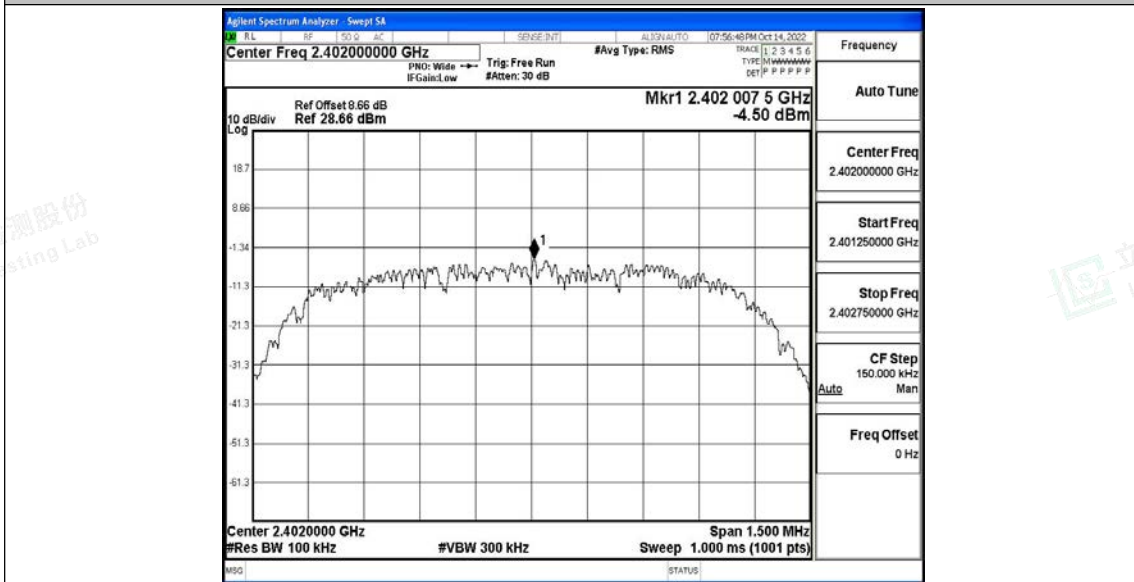


DH5\_Ant1\_2480\_1000~26500



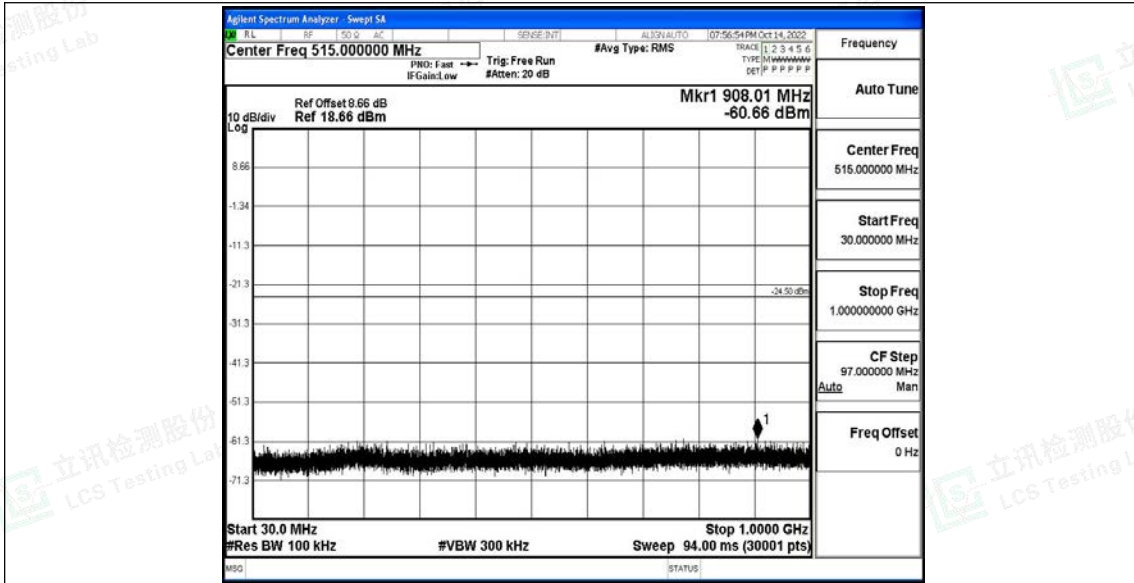


2DH5\_Ant1\_2402\_0~Reference

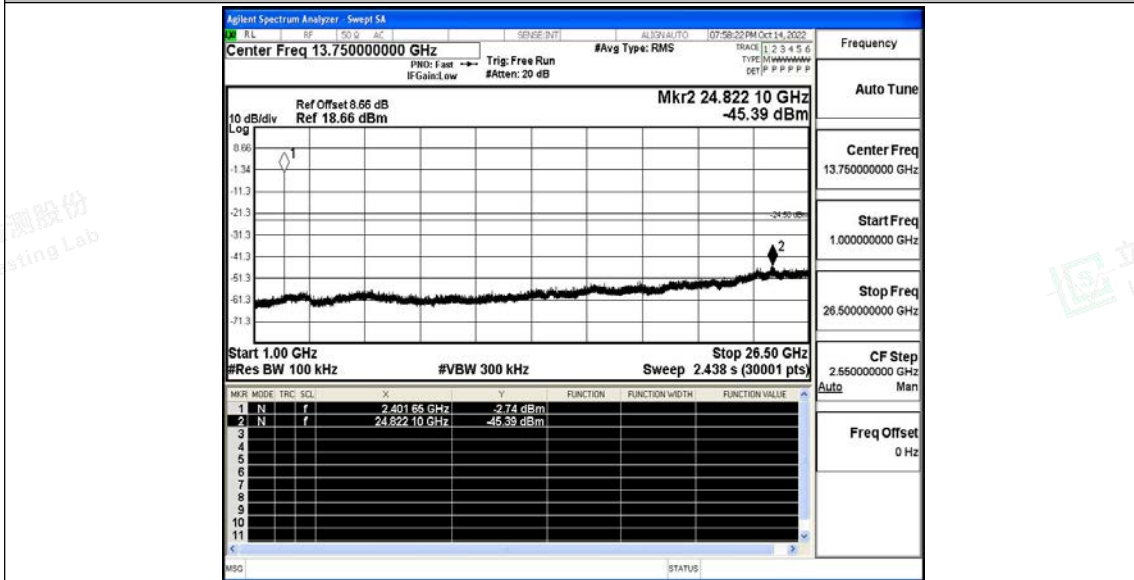


2DH5\_Ant1\_2402\_30~1000





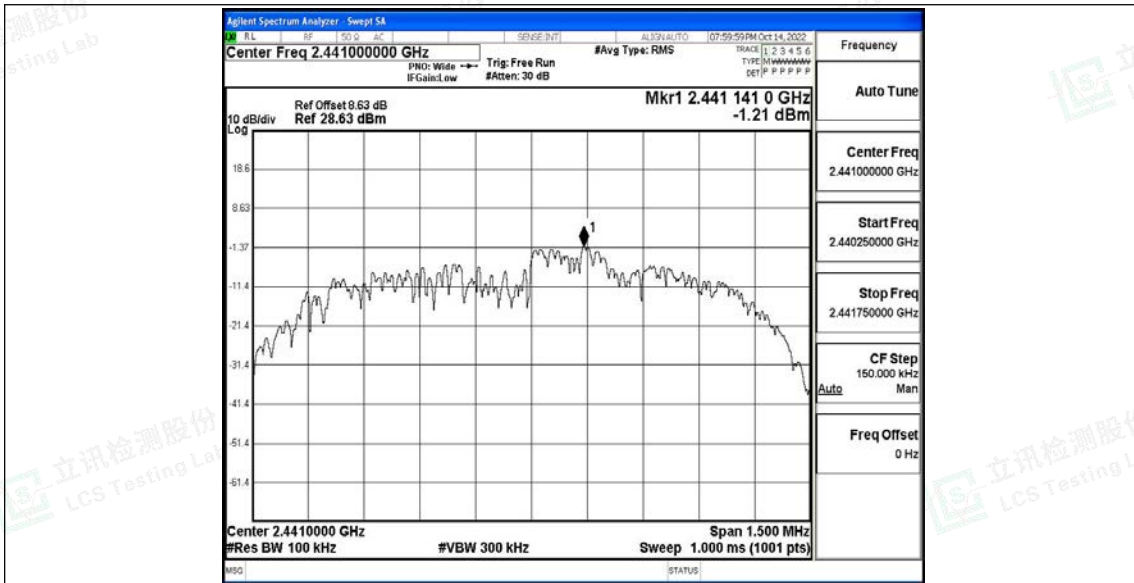
2DH5\_Ant1\_2402\_1000~26500



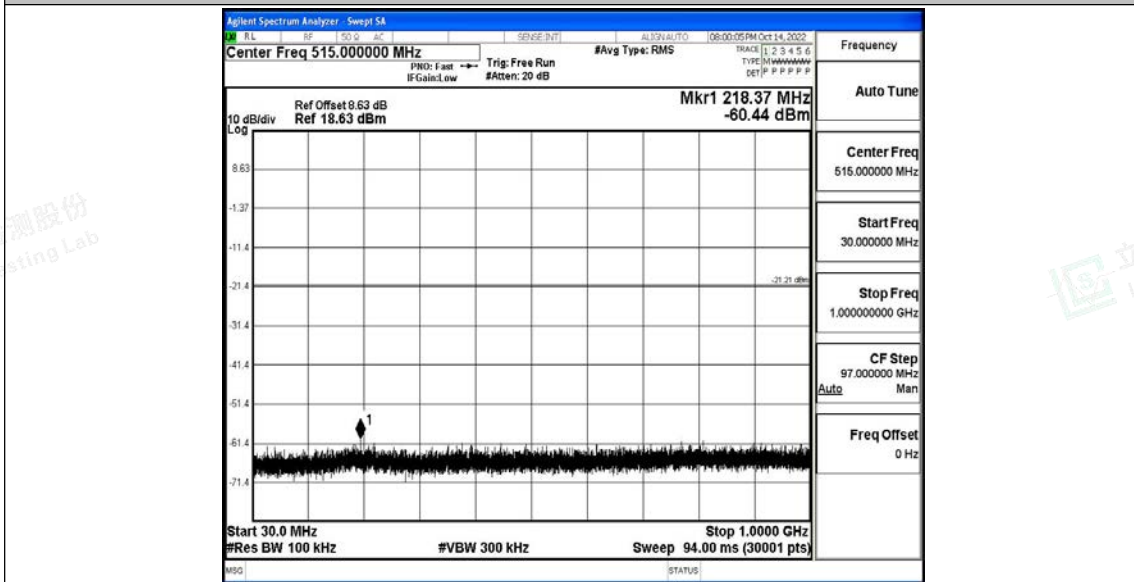
2DH5\_Ant1\_2441\_0~Reference







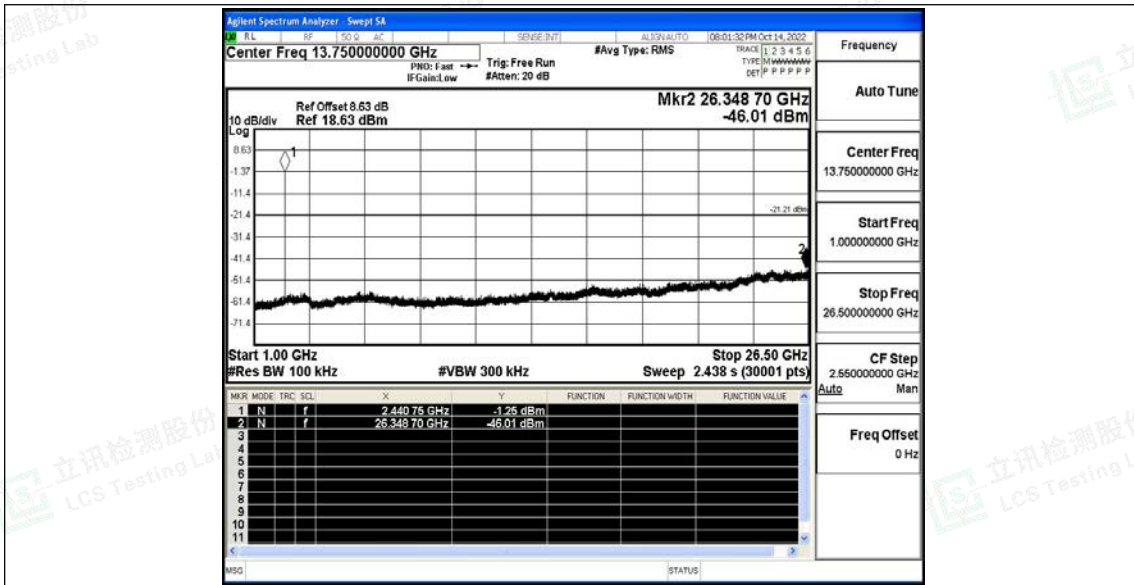
2DH5\_Ant1\_2441\_30~1000



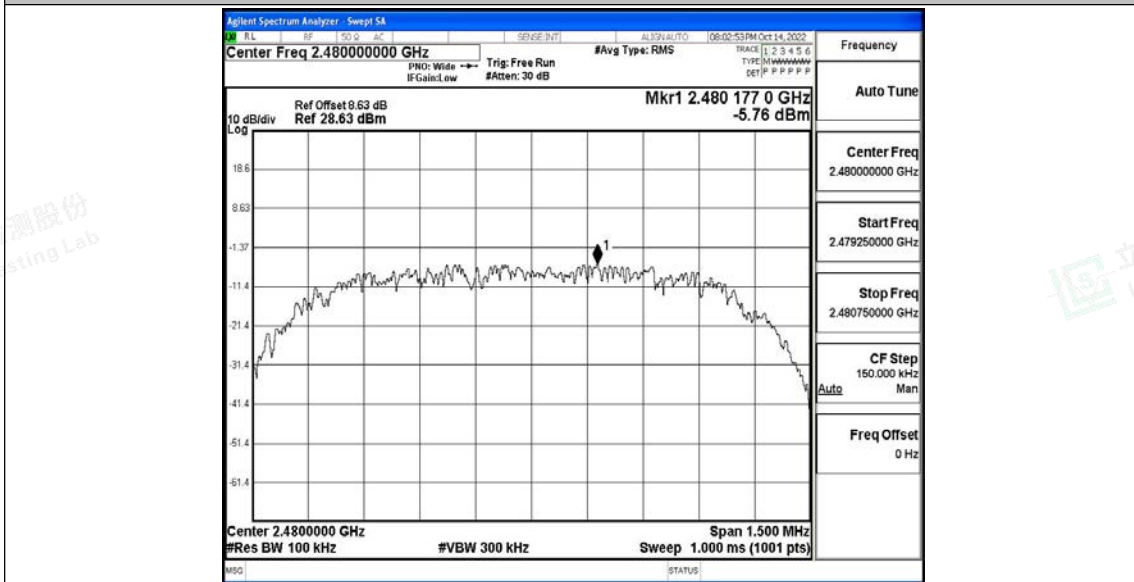
2DH5\_Ant1\_2441\_1000~26500





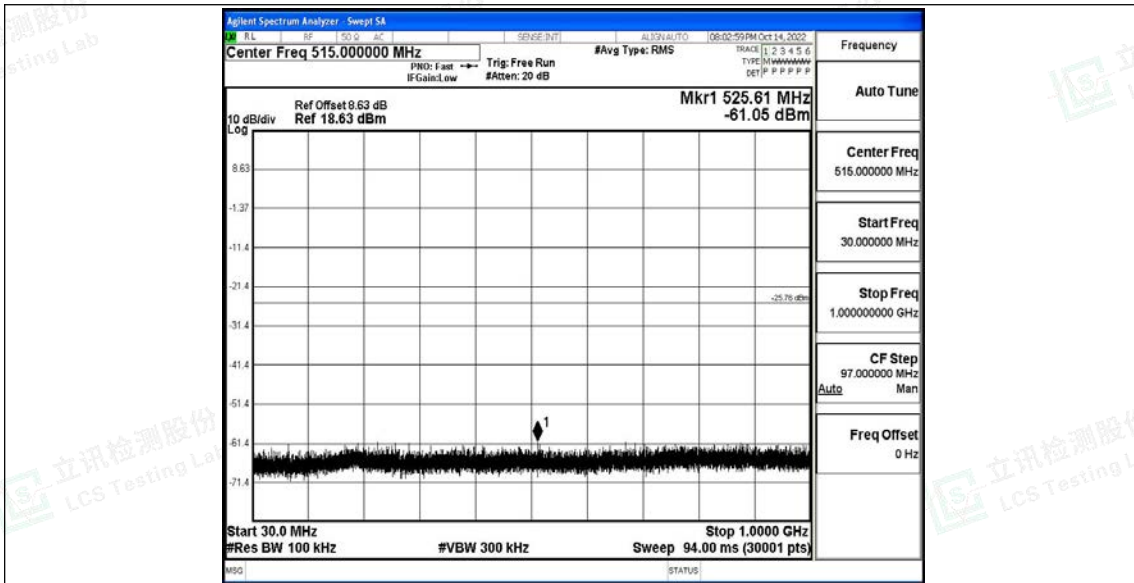


2DH5\_Ant1\_2480\_0~Reference

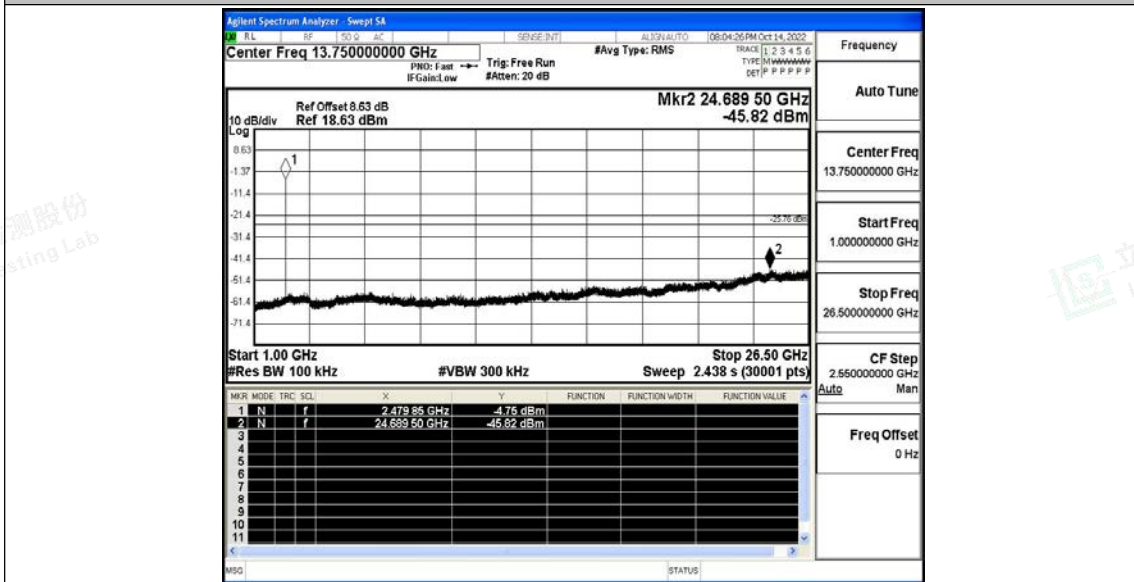


2DH5\_Ant1\_2480\_30~1000





2DH5\_Ant1\_2480\_1000~26500





## A.9 Emissions in Restricted Bands

### Test Result

TestMode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict		
DH5	Ant1	Low	2402	AV	2310.000	-58.12	≤-41.20	37.08	≤54	PASS		
				AV	2386.835	-57.52	≤-41.20	37.68	≤54	PASS		
				AV	2390.000	-57.66	≤-41.20	37.54	≤54	PASS		
				Peak	2310.000	-49.46	≤-21.20	45.74	≤74	PASS		
				Peak	2380.115	-47.2	≤-21.20	48.00	≤74	PASS		
				Peak	2390.000	-51.79	≤-21.20	43.41	≤74	PASS		
		High	2480	AV	2483.500	-55.5	≤-41.20	39.70	≤54	PASS		
				AV	2483.520	-55.5	≤-41.20	39.70	≤54	PASS		
				AV	2500.000	-57.29	≤-41.20	37.91	≤54	PASS		
				Peak	2483.500	-50.24	≤-21.20	44.96	≤74	PASS		
				Peak	2492.800	-48.33	≤-21.20	46.87	≤74	PASS		
				Peak	2500.000	-51.45	≤-21.20	43.75	≤74	PASS		
		Low	Hop_24 02	Peak	2310.000	-50.86	≤-21.20	44.34	≤74	PASS		
				Peak	2357.540	-47.39	≤-21.20	47.81	≤74	PASS		
				Peak	2390.000	-50.05	≤-21.20	45.15	≤74	PASS		
		High	Hop_24 80	Peak	2483.500	-48.66	≤-21.20	46.54	≤74	PASS		
				Peak	2487.440	-46.57	≤-21.20	48.63	≤74	PASS		
				Peak	2500.000	-49.04	≤-21.20	46.16	≤74	PASS		
		2DH5	Ant1	Low	2402	AV	2310.000	-58.16	≤-41.20	37.04	≤54	PASS
						AV	2387.360	-57.59	≤-41.20	37.61	≤54	PASS
						AV	2390.000	-57.69	≤-41.20	37.51	≤54	PASS
Peak	2310.000					-54.5	≤-21.20	40.70	≤74	PASS		
Peak	2378.435					-47.07	≤-21.20	48.13	≤74	PASS		
Peak	2390.000					-52.9	≤-21.20	42.30	≤74	PASS		
High	2480			AV	2483.500	-55.16	≤-41.20	40.04	≤54	PASS		
				AV	2483.520	-55.16	≤-41.20	40.04	≤54	PASS		
				AV	2500.000	-57.25	≤-41.20	37.95	≤54	PASS		
				Peak	2483.500	-51.36	≤-21.20	43.84	≤74	PASS		
				Peak	2484.560	-48.76	≤-21.20	46.44	≤74	PASS		
				Peak	2500.000	-52.58	≤-21.20	42.62	≤74	PASS		
Low	Hop_24 02			Peak	2310.000	-49.67	≤-21.20	45.53	≤74	PASS		
				Peak	2315.015	-47.26	≤-21.20	47.94	≤74	PASS		
				Peak	2390.000	-49.13	≤-21.20	46.07	≤74	PASS		
High	Hop_24 80			Peak	2483.500	-48.46	≤-21.20	46.74	≤74	PASS		
				Peak	2487.280	-45.98	≤-21.20	49.22	≤74	PASS		



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			Peak	2500.000	-49.44	≤-21.20	45.76	≤74	PASS
			AV	2388.725	-57.51	≤-41.20	37.69	≤54	PASS

Note:

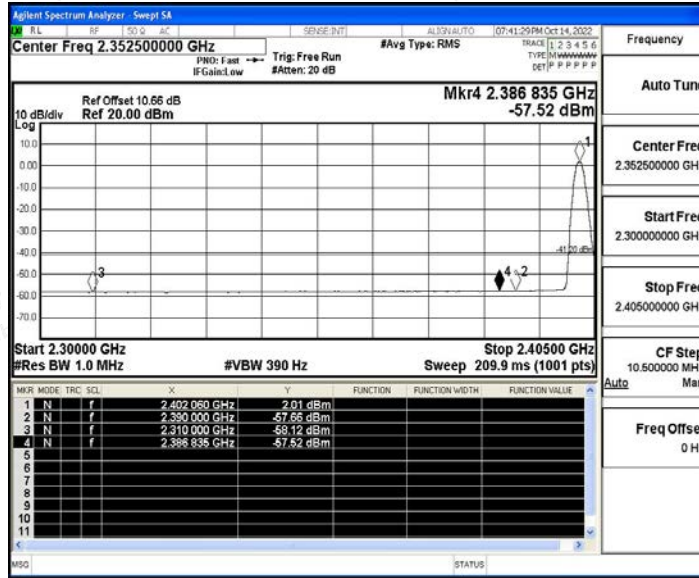
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



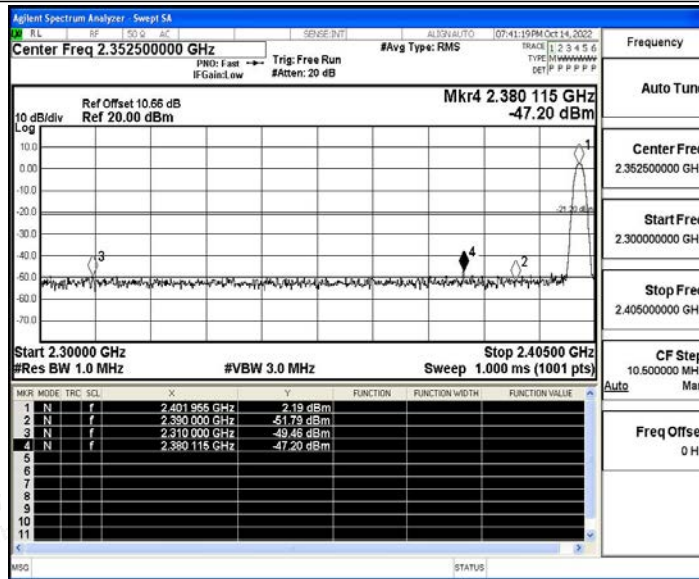


### Test Graphs

#### DH5\_Ant1\_Low\_2402\_AV



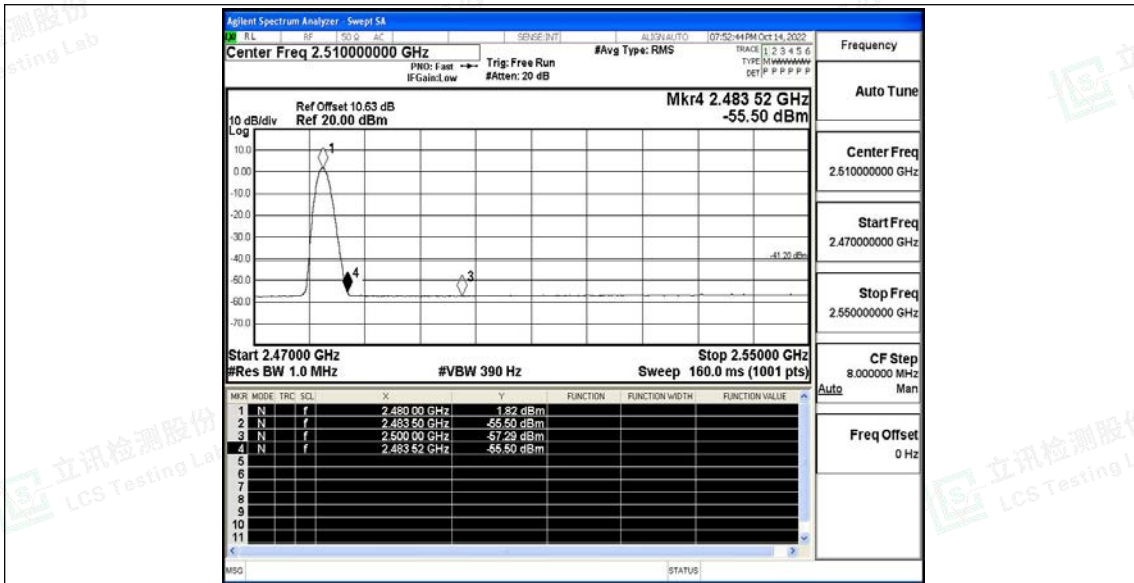
#### DH5\_Ant1\_Low\_2402\_Peak



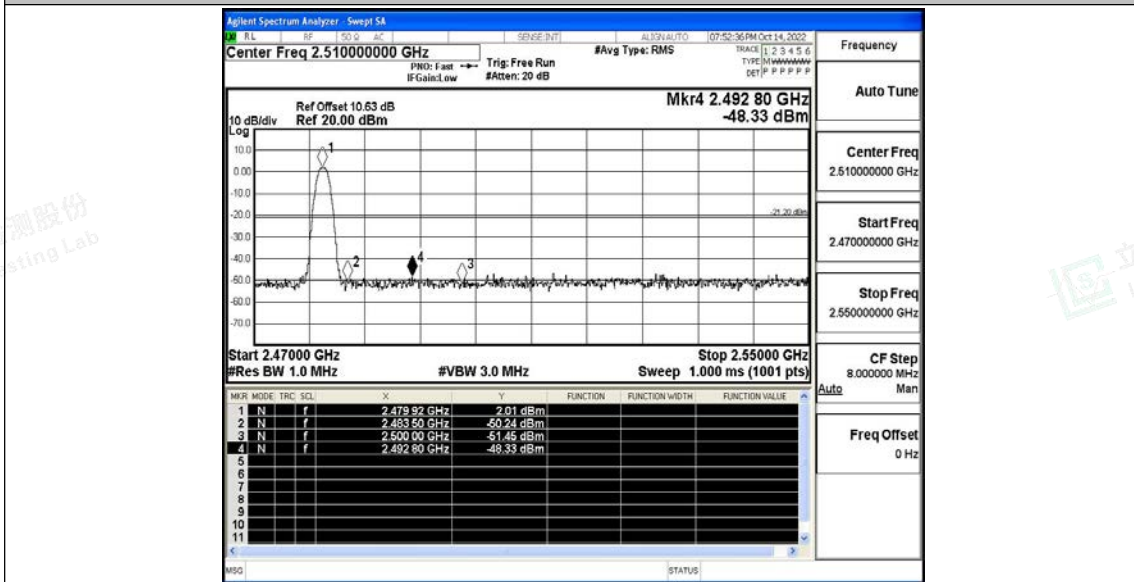
#### DH5\_Ant1\_High\_2480\_AV







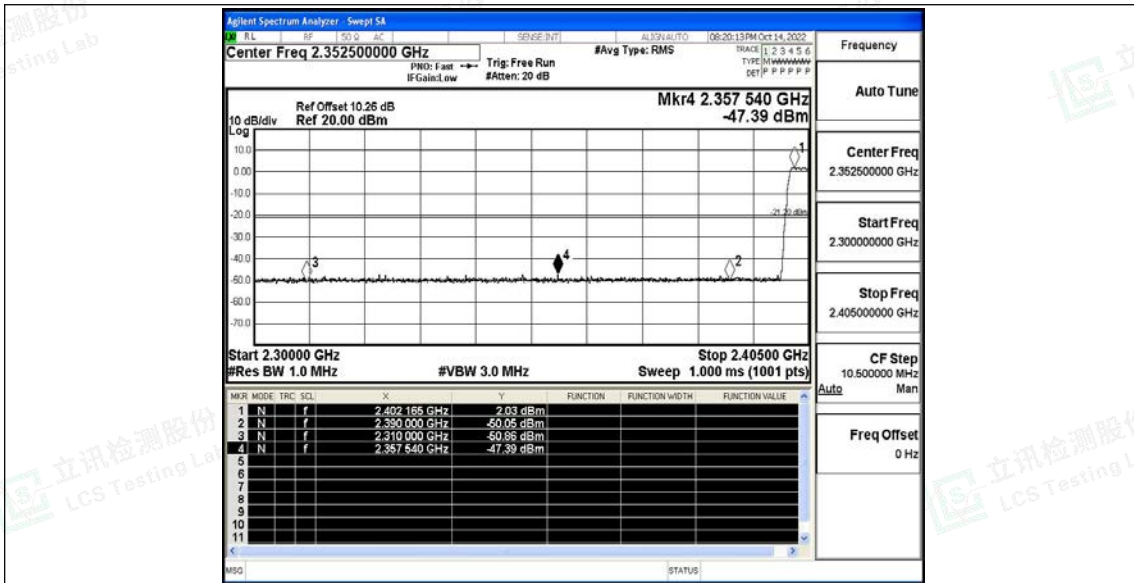
DH5\_Ant1\_High\_2480\_Peak



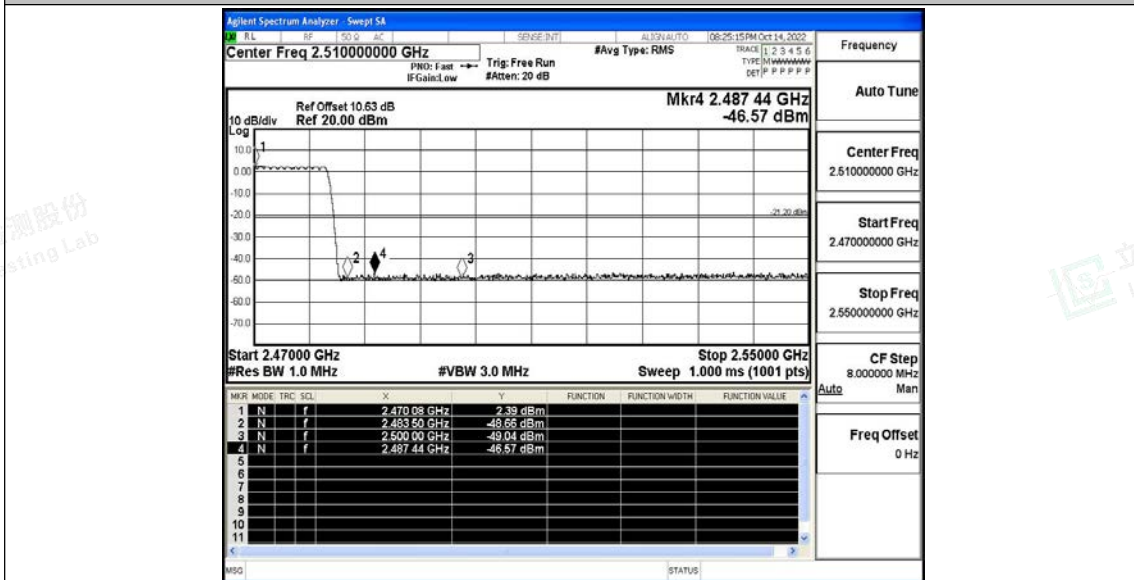
DH5\_Ant1\_Low\_Hop\_2402\_Peak





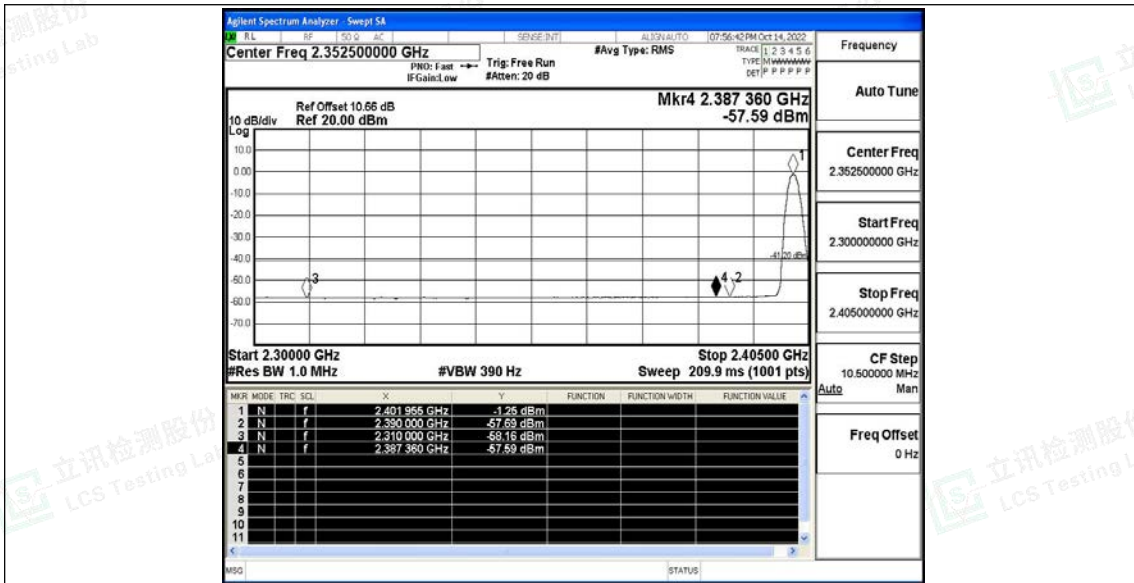


DH5\_Ant1\_High\_Hop\_2480\_Peak

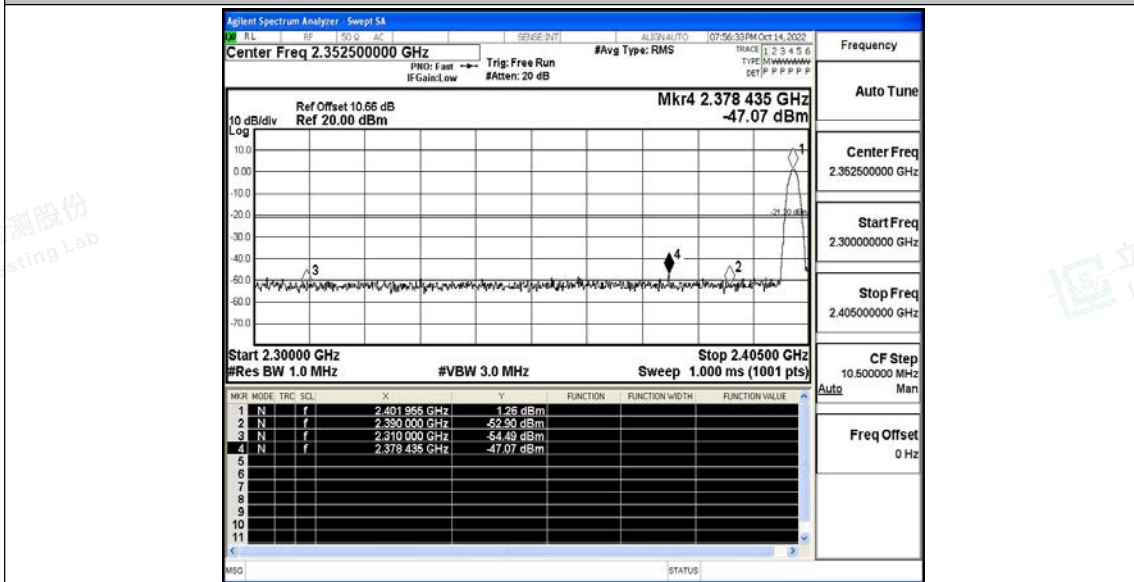


2DH5\_Ant1\_Low\_2402\_AV



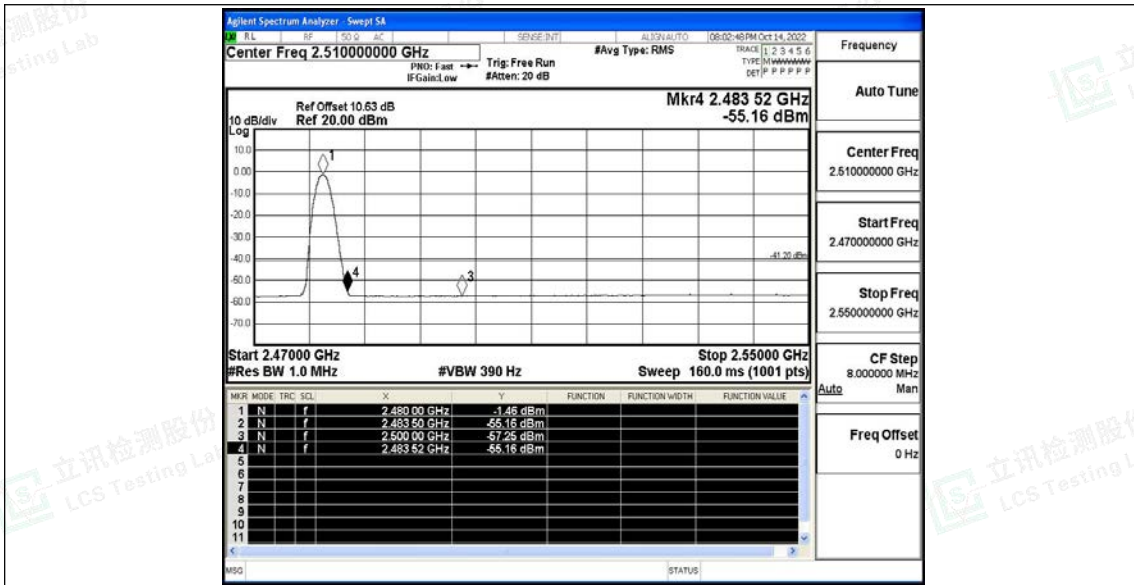


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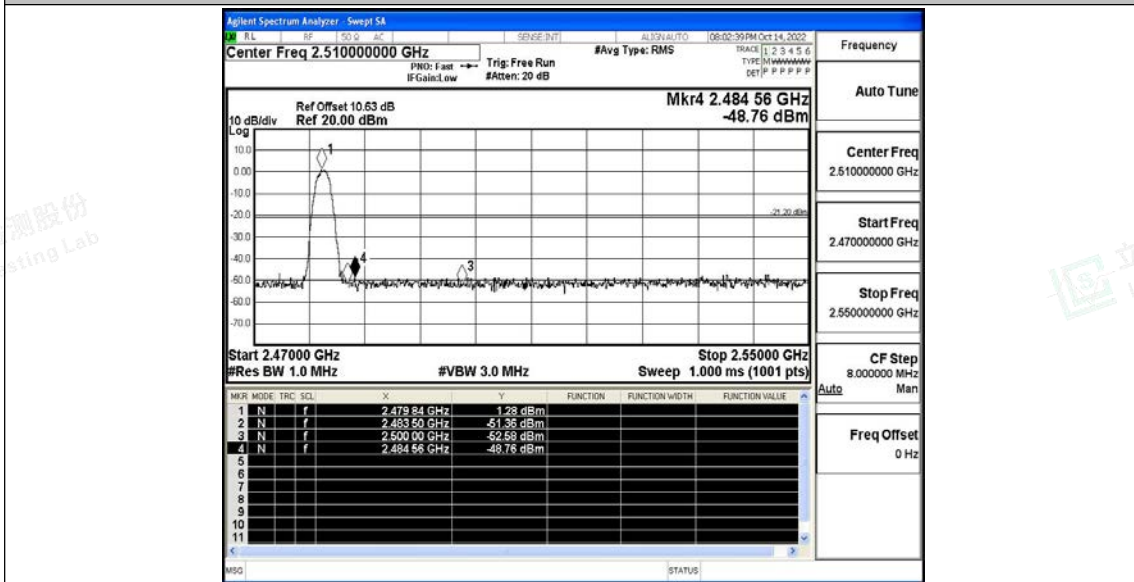


2DH5\_Ant1\_High\_2480\_AV



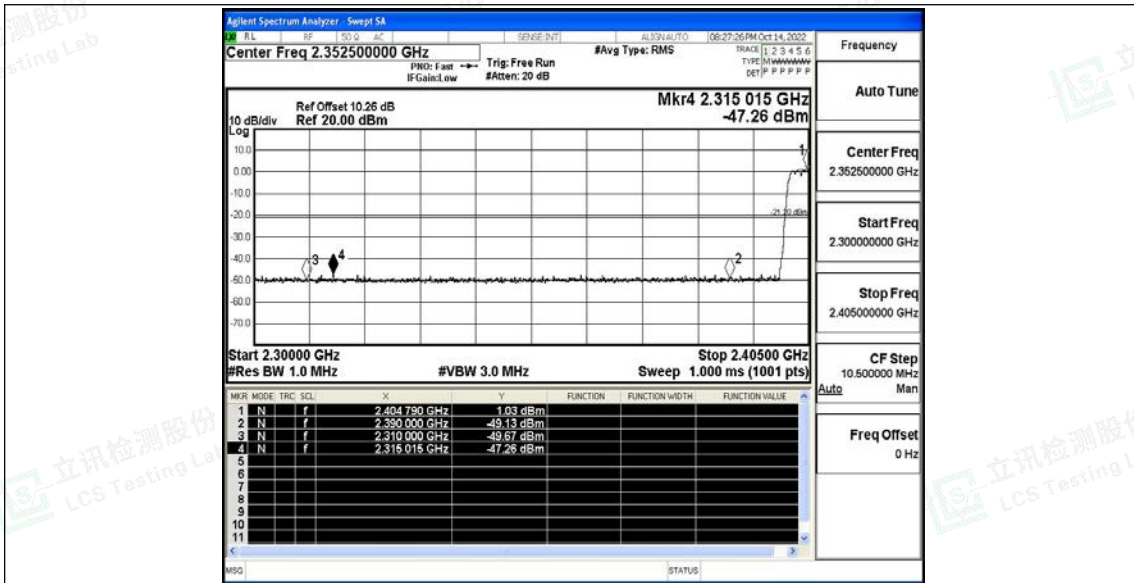


2DH5\_Ant1\_High\_2480\_Peak



2DH5\_Ant1\_Low\_Hop\_2402\_Peak





2DH5\_Ant1\_High\_Hop\_2480\_Peak

