RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	**SMART WATCH**
Test Model:	**KL2**
Sample ID:	**20211124-13_01-02**
Environmental Conditions	
Temperature:	**25℃**
Relative Humidity:	**55%**
Test Voltage:	**DC 3.7V**
Test Engineer:	**Huangjianping**
Note: For a more detailed features description, please refer to the report TB-FCC185577	

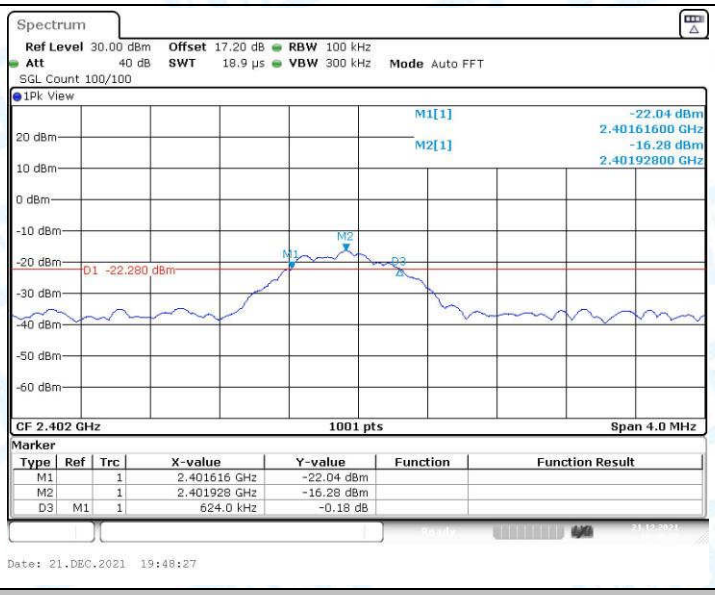
Contents

1. DTS Bandwidth

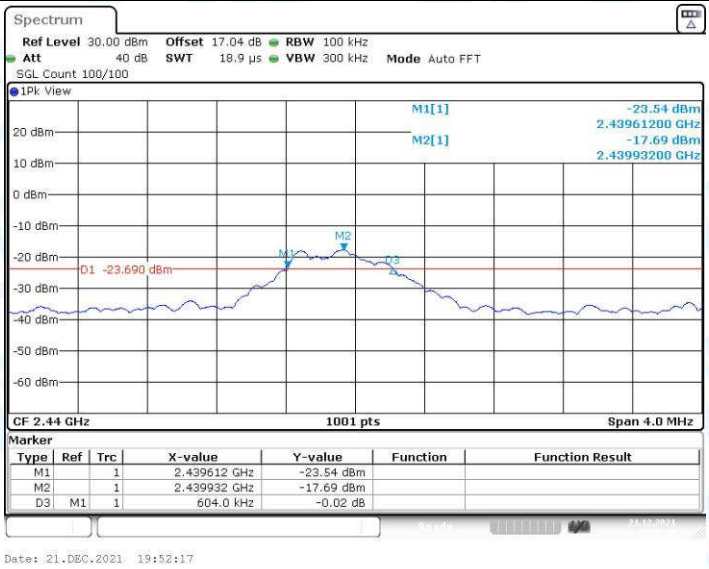
1.1.Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.62	2401.62	2402.24	0.5	PASS
		2440	0.60	2439.61	2440.22	0.5	PASS
		2480	0.64	2479.60	2480.24	0.5	PASS
BLE_2M	Ant1	2402	1.08	2401.35	2402.43	0.5	PASS
		2440	0.72	2439.55	2440.26	0.5	PASS
		2480	0.97	2479.36	2480.32	0.5	PASS

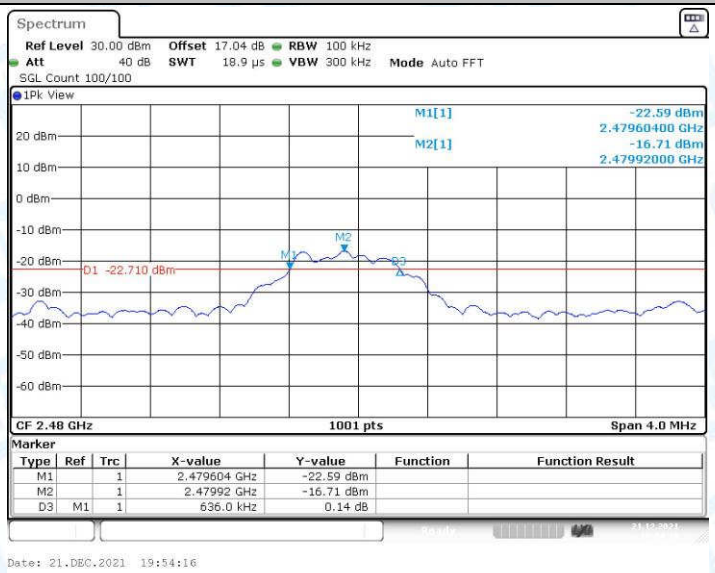
1.2.Test Graphs



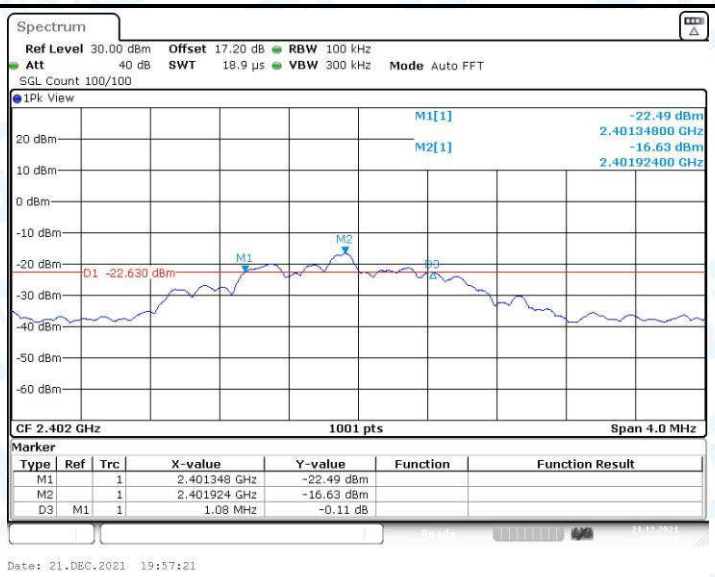
BLE_1M_Ant1_2402



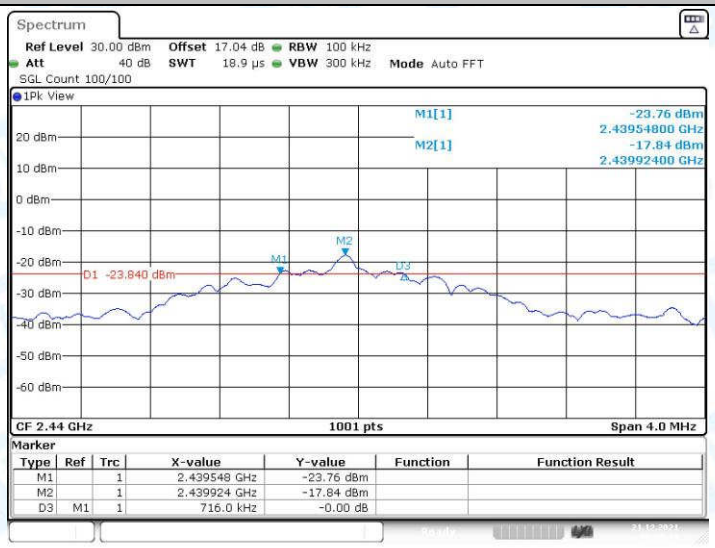
BLE_1M_Ant1_2440



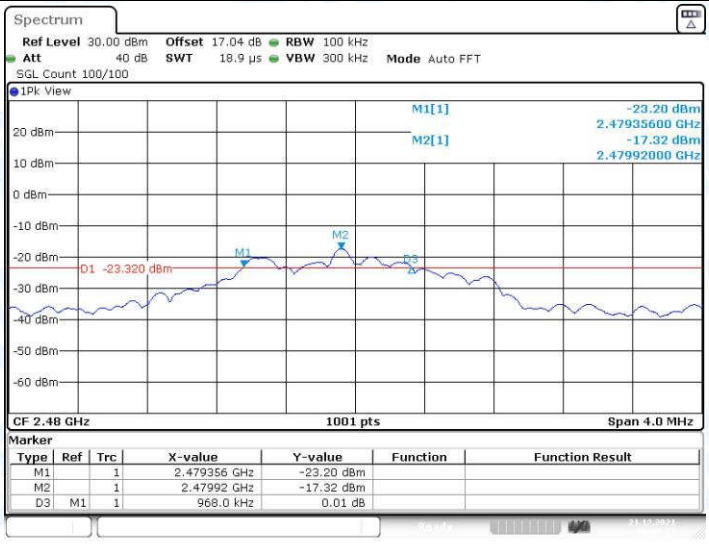
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



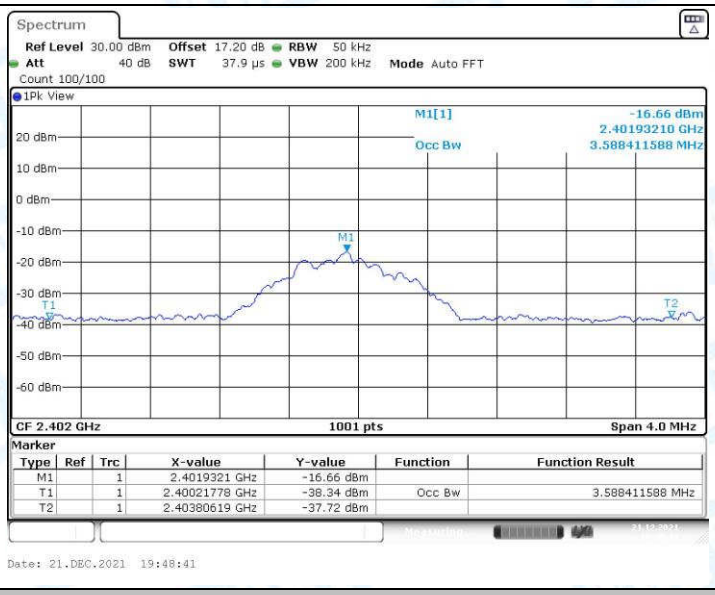
BLE_2M_Ant1_2480

2. Occupied Channel Bandwidth

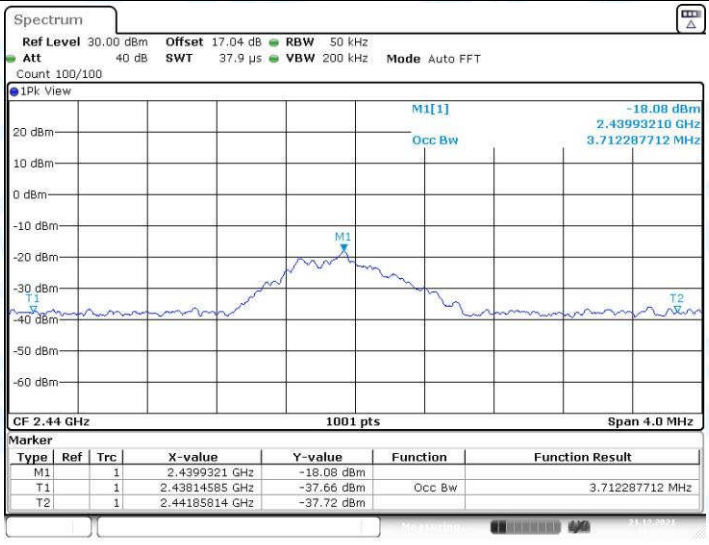
2.1.Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	3.588	2400.218	2403.806	---	PASS
		2440	3.712	2438.146	2441.858	---	PASS
		2480	3.632	2478.178	2481.810	---	PASS
BLE_2M	Ant1	2402	3.584	2400.206	2403.790	---	PASS
		2440	3.704	2438.154	2441.858	---	PASS
		2480	3.632	2478.178	2481.810	---	PASS

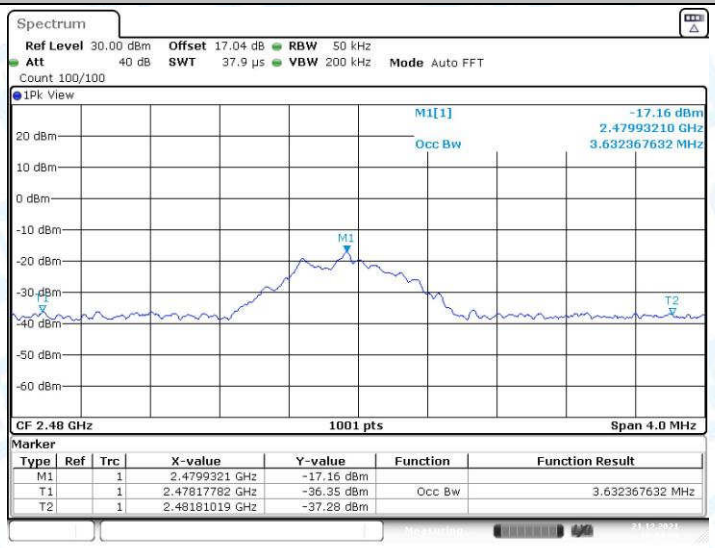
2.2.Test Graphs



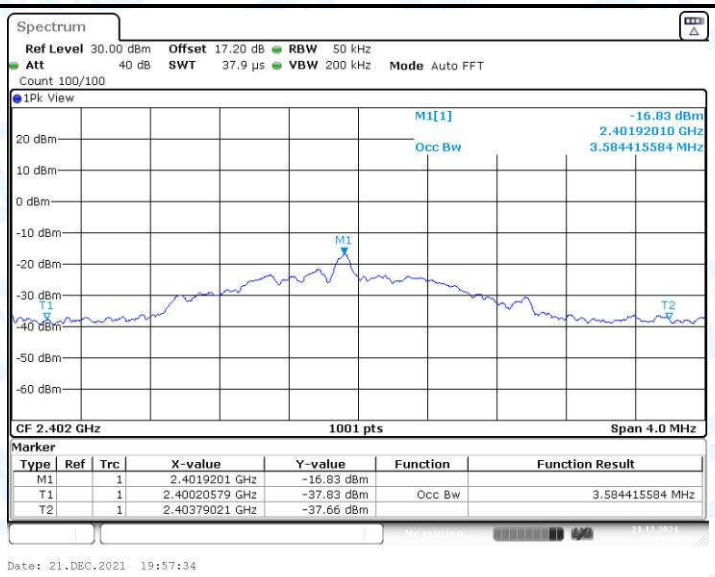
BLE_1M_Ant1_2402



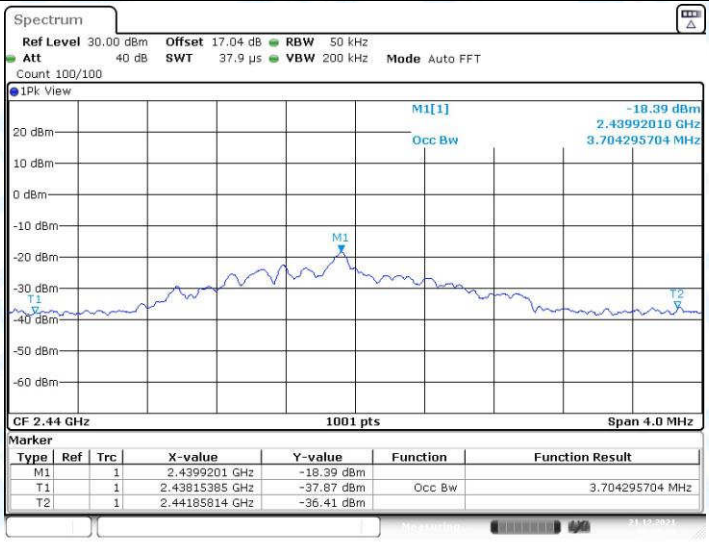
BLE_1M_Ant1_2440



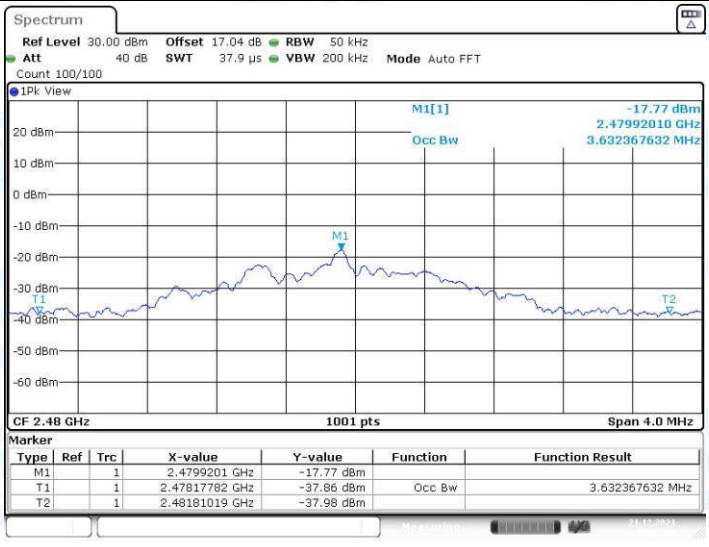
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



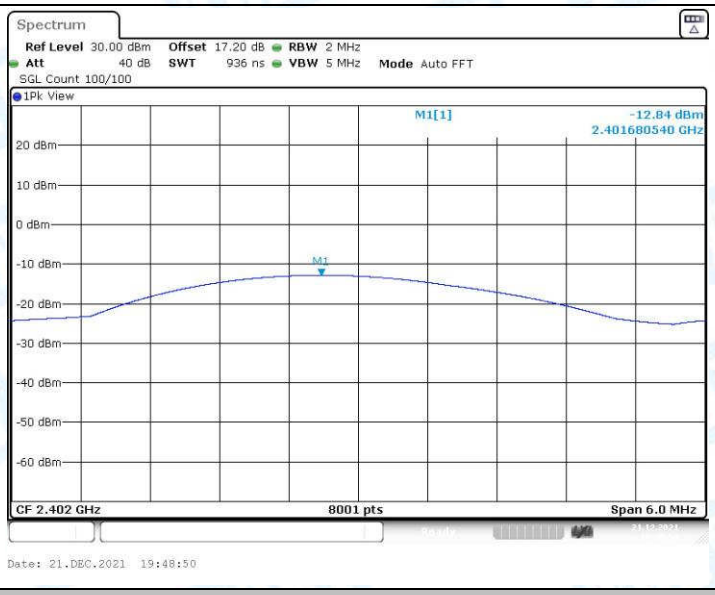
BLE_2M_Ant1_2480

3. Maximum conducted output power

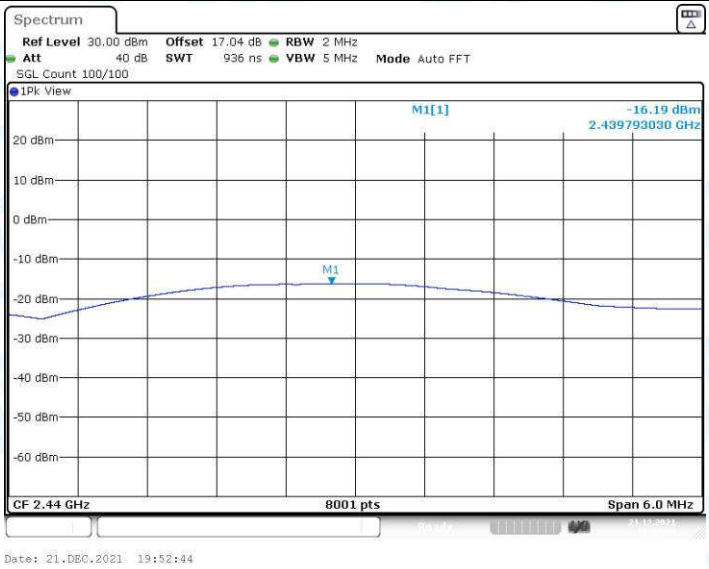
3.1.Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	-12.84	≤30	PASS
		2440	-16.19	≤30	PASS
		2480	-14.62	≤30	PASS
BLE_2M	Ant1	2402	-14.96	≤30	PASS
		2440	-15.87	≤30	PASS
		2480	-15.25	≤30	PASS

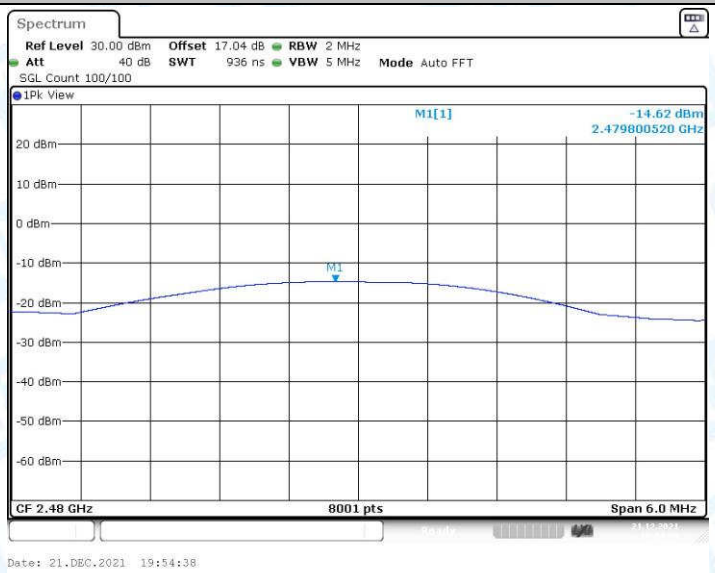
3.2.Test Graphs



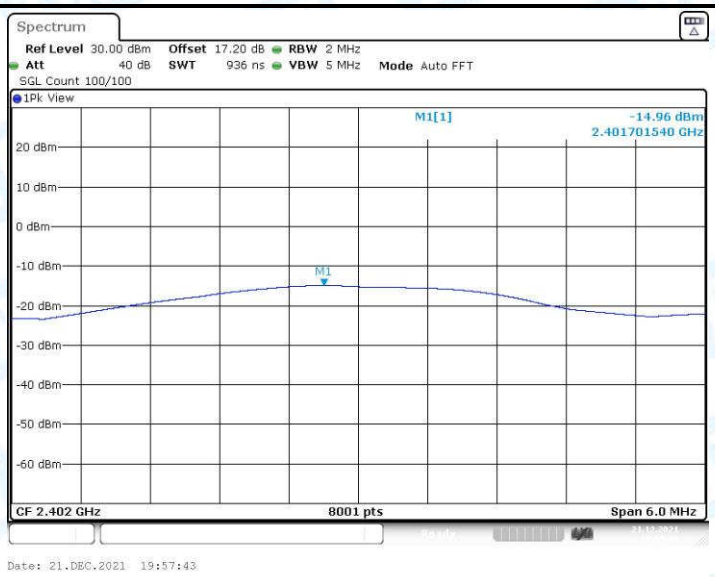
BLE_1M_Ant1_2402



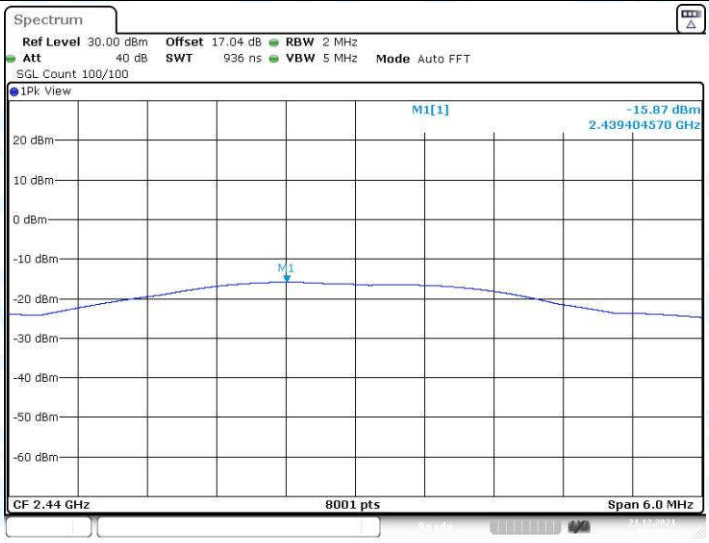
BLE_1M_Ant1_2440



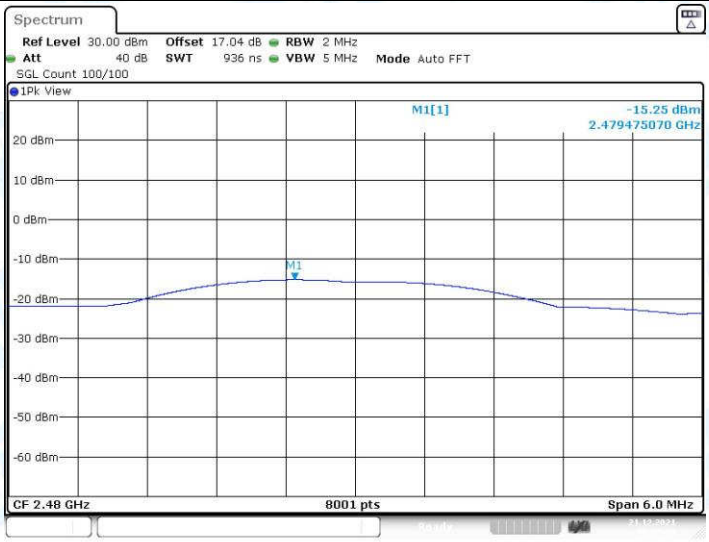
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



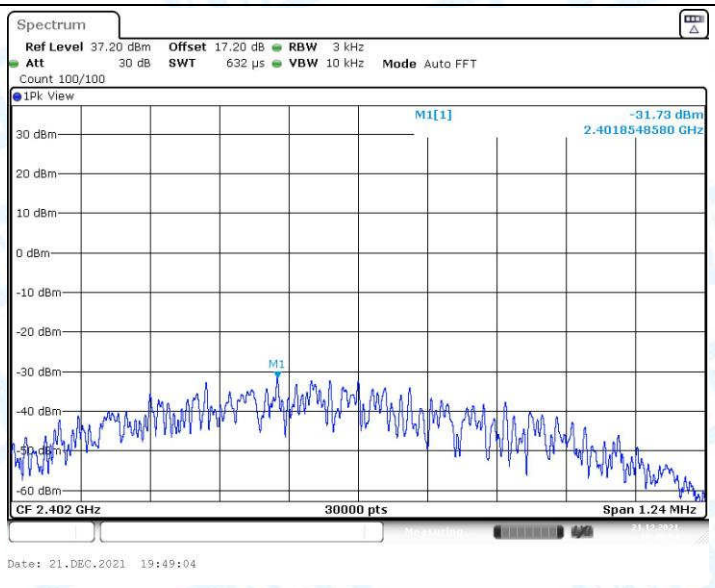
BLE_2M_Ant1_2480

4. Maximum power spectral density

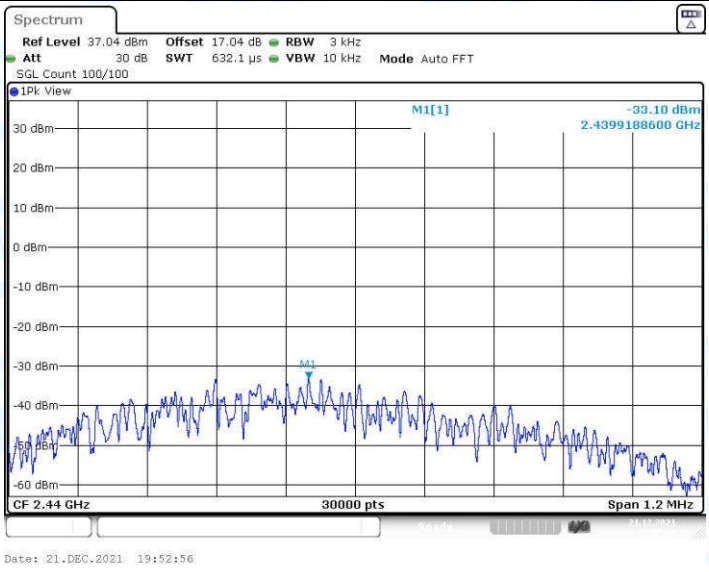
4.1.Test Result

Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-31.73	≤8	PASS
		2440	-33.1	≤8	PASS
		2480	-32.08	≤8	PASS
BLE_2M	Ant1	2402	-32.89	≤8	PASS
		2440	-35.72	≤8	PASS
		2480	-33.65	≤8	PASS

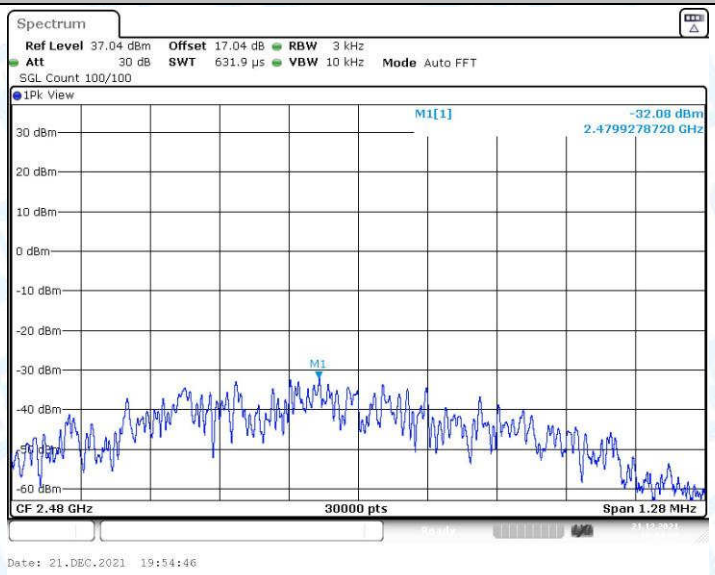
4.2.Test Graphs



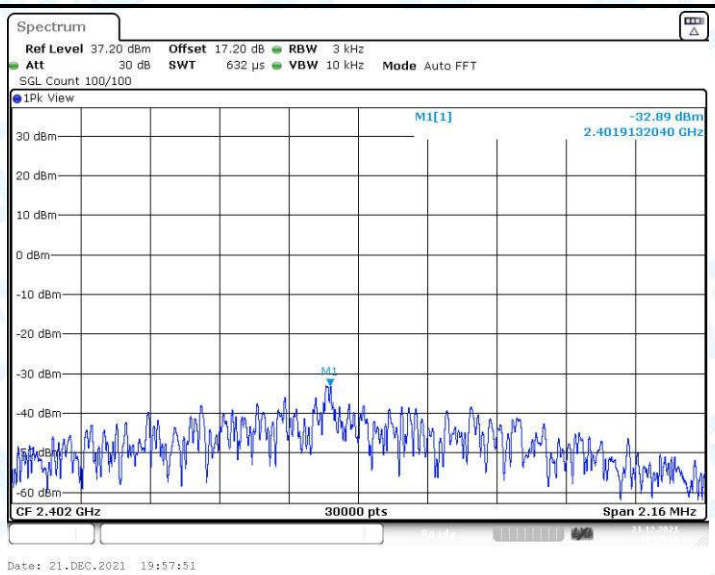
BLE_1M_Ant1_2402



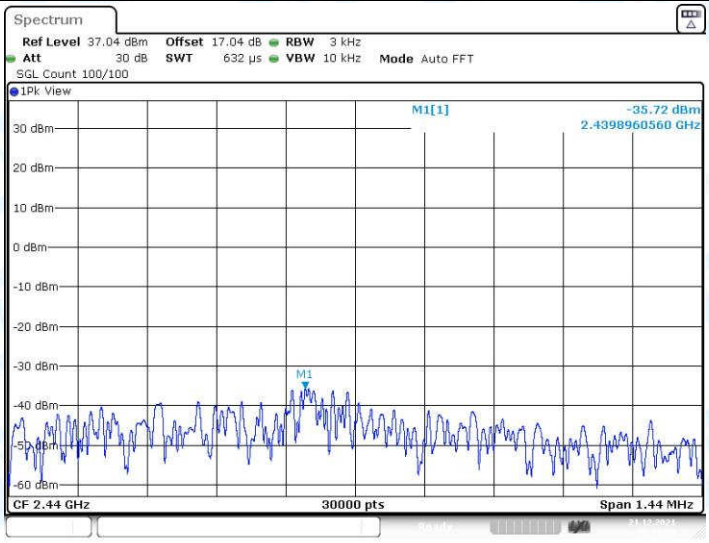
BLE_1M_Ant1_2440



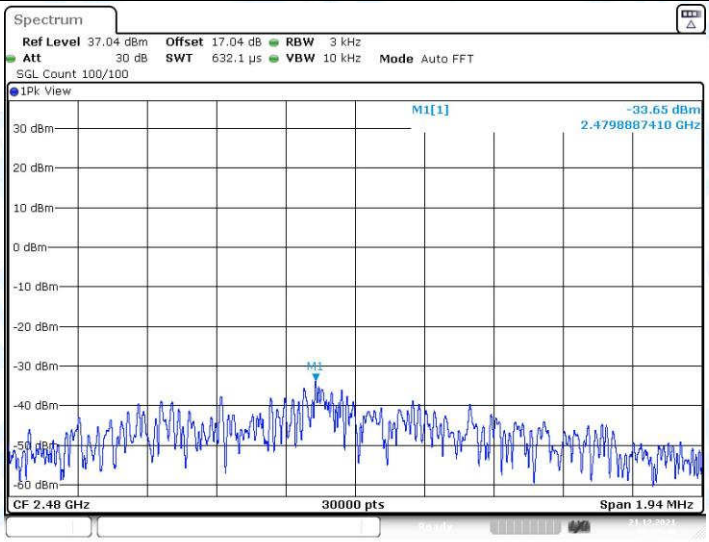
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



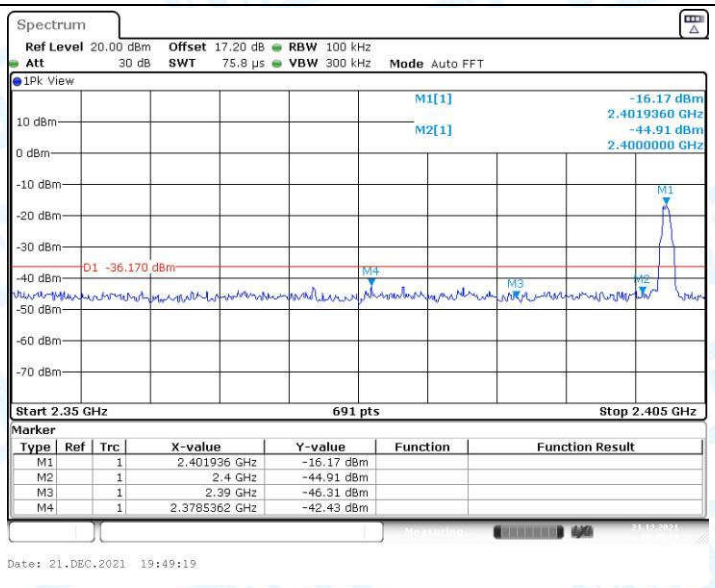
BLE_2M_Ant1_2480

5. Band edge measurements

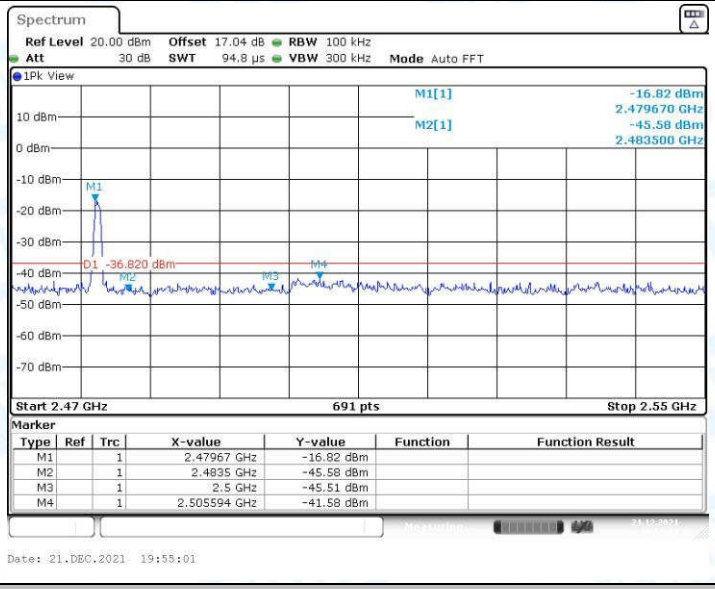
5.1.Test Result

Test Mode	Antenna	ChName	Channel	Ref.Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	-16.17	-42.43	≤-36.17	PASS
		High	2480	-16.82	-41.58	≤-36.82	PASS
BLE_2M	Ant1	Low	2402	-16.08	-42.47	≤-36.08	PASS
		High	2480	-16.76	-41.9	≤-36.76	PASS

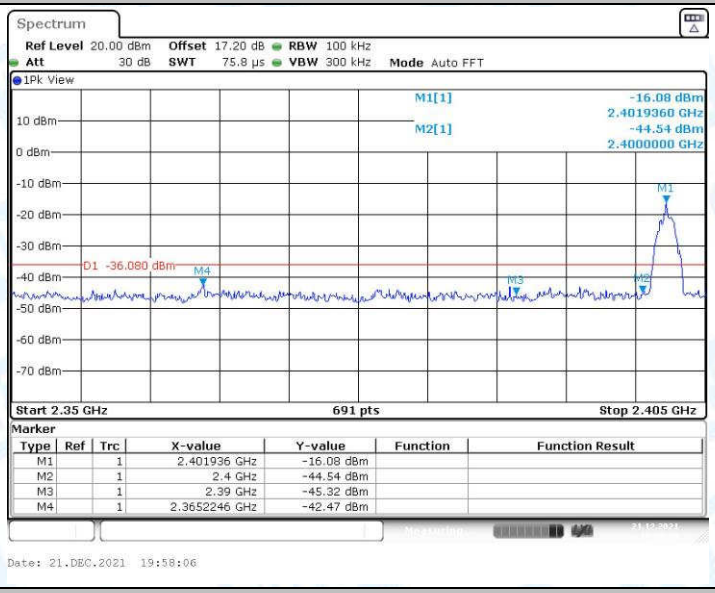
5.2.Test Graphs



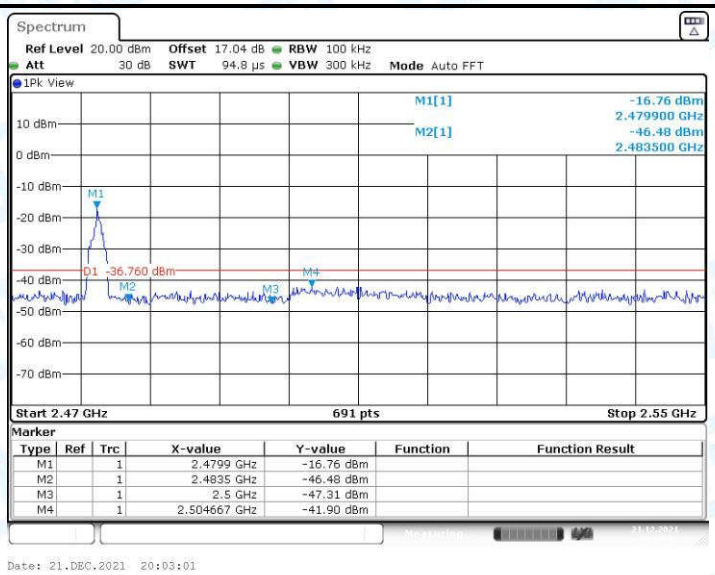
BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480

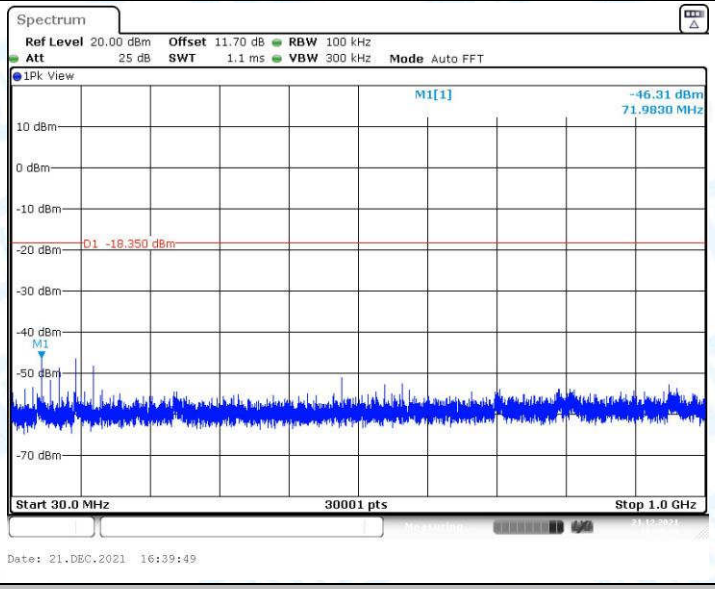
6. Conducted Spurious Emission

6.1.Test Result

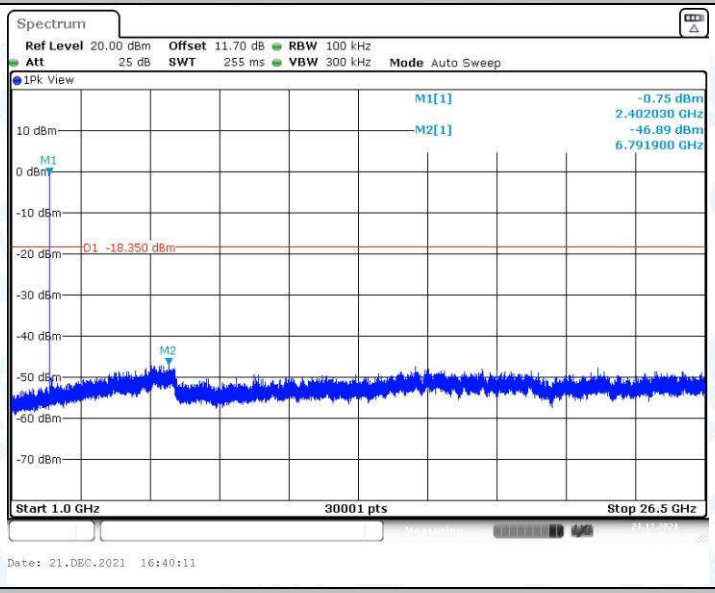
Test Mode	Antenna	Channel	Freq. Range [MHz]	Ref. Level [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	1.65	1.65	---	PASS
			30~1000	1.65	-46.31	≤-18.35	PASS
			1000~26500	1.65	-46.89	≤-18.35	PASS
		2440	Reference	1.58	1.58	---	PASS
			30~1000	1.58	-45.94	≤-18.42	PASS
			1000~26500	1.58	-47.06	≤-18.42	PASS
		2480	Reference	1.36	1.36	---	PASS
			30~1000	1.36	-46.26	≤-18.64	PASS
			1000~26500	1.36	-47.34	≤-18.64	PASS
BLE_2M	Ant1	2402	Reference	1.69	1.69	---	PASS
			30~1000	1.69	-46.43	≤-18.31	PASS
			1000~26500	1.69	-46.53	≤-18.31	PASS
		2440	Reference	1.57	1.57	---	PASS
			30~1000	1.57	-45.47	≤-18.43	PASS
			1000~26500	1.57	-46.45	≤-18.43	PASS
		2480	Reference	1.37	1.37	---	PASS
			30~1000	1.37	-46.58	≤-18.63	PASS
			1000~26500	1.37	-46.84	≤-18.63	PASS

6.2.Test Graphs

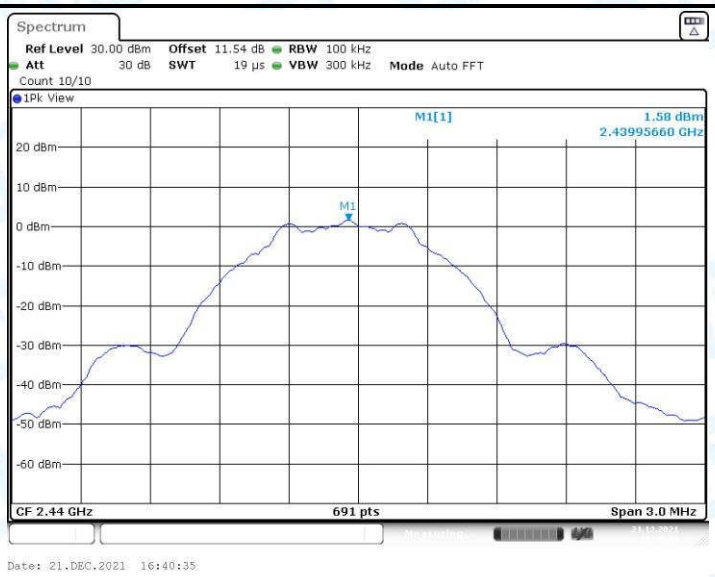
BLE_1M_Ant1_2402_0~Reference



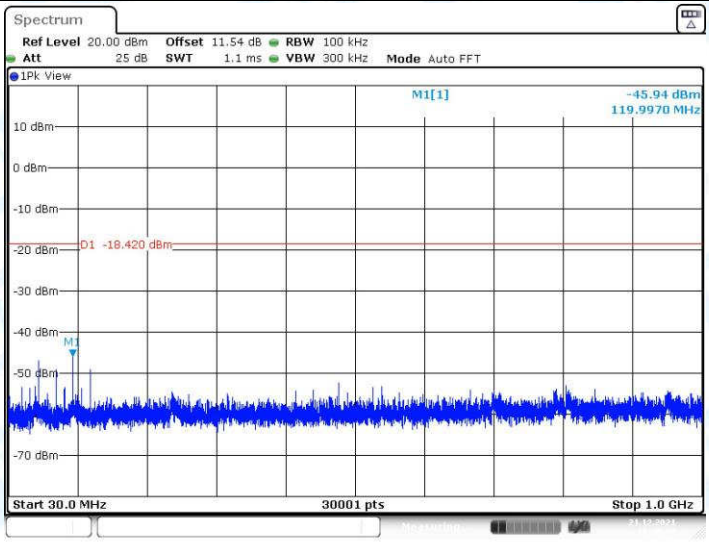
BLE_1M_Ant1_2402_30~1000



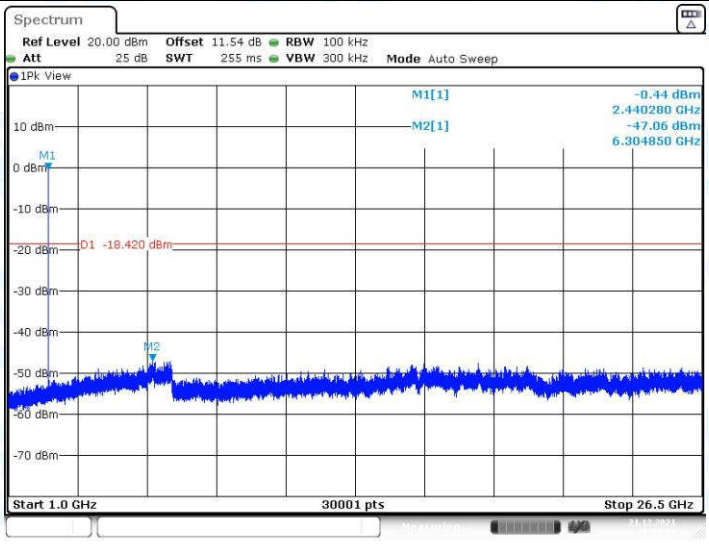
BLE_1M_Ant1_2402_1000~26500



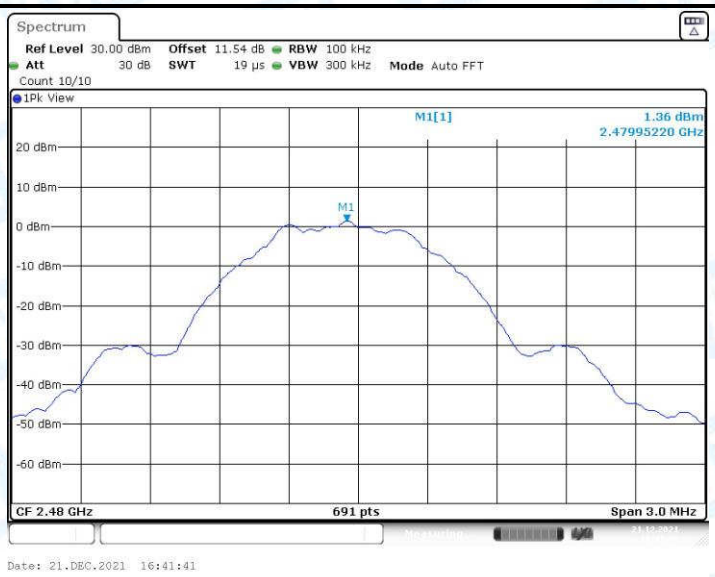
BLE_1M_Ant1_2440_0~Reference



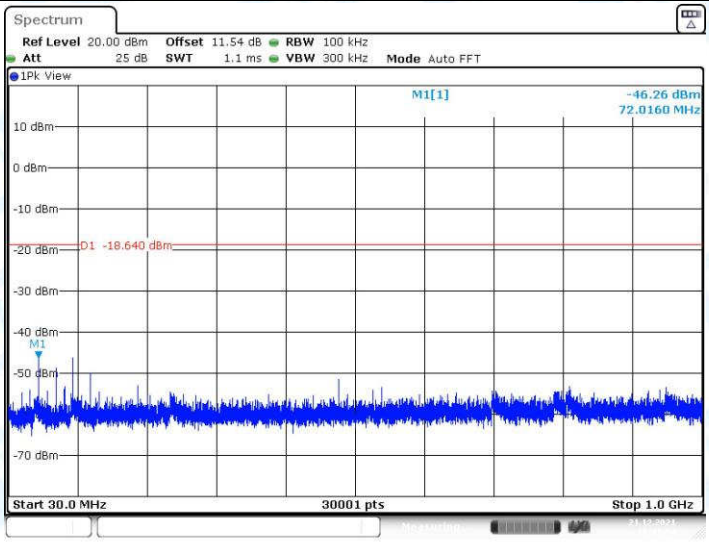
BLE_1M_Ant1_2440_30~1000



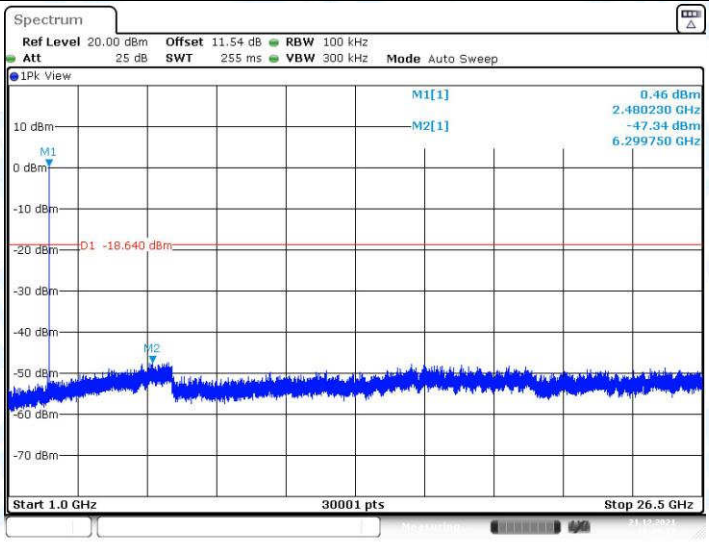
BLE_1M_Ant1_2440_1000~26500



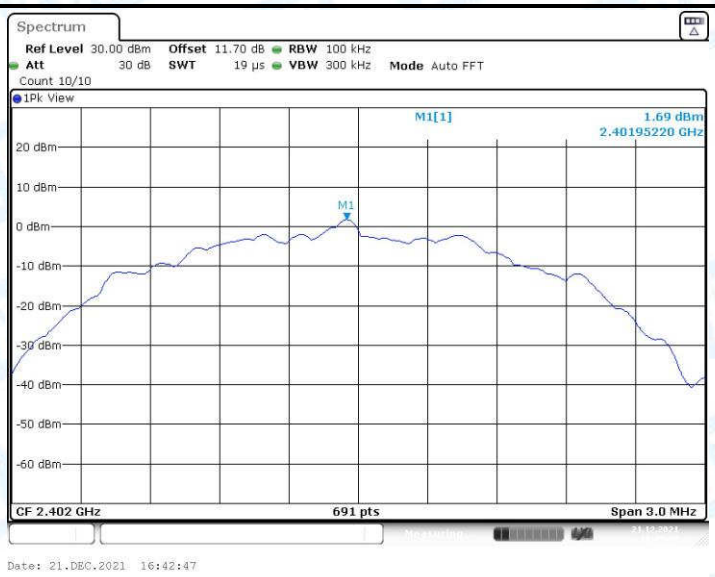
BLE_1M_Ant1_2480_0~Reference



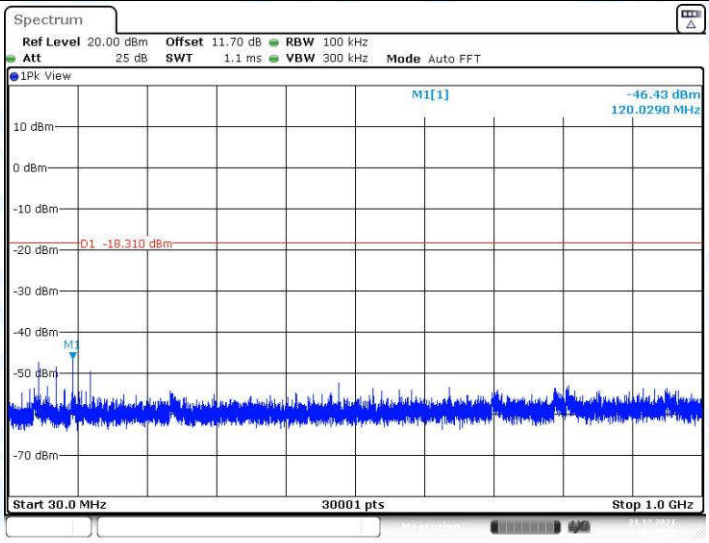
BLE_1M_Ant1_2480_30~1000



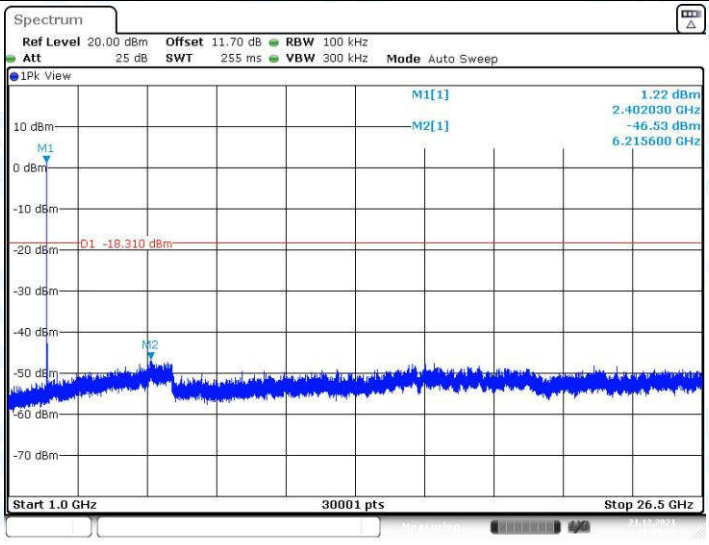
BLE_1M_Ant1_2480_1000~26500



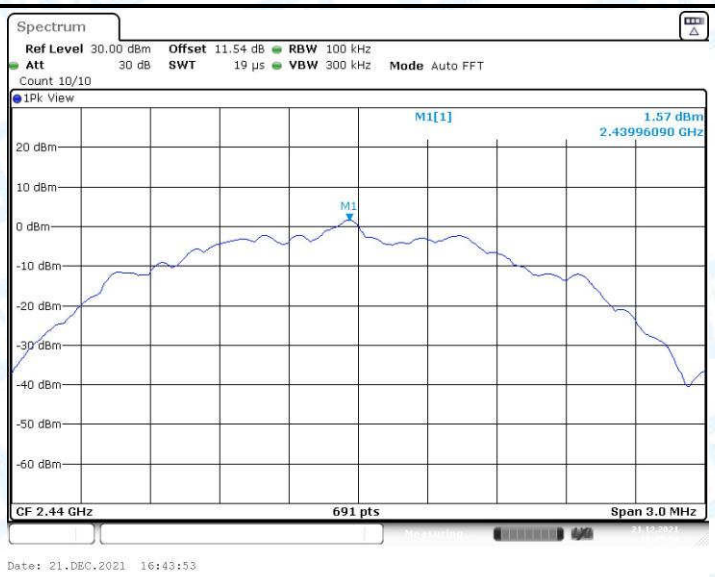
BLE_2M_Ant1_2402_0~Reference



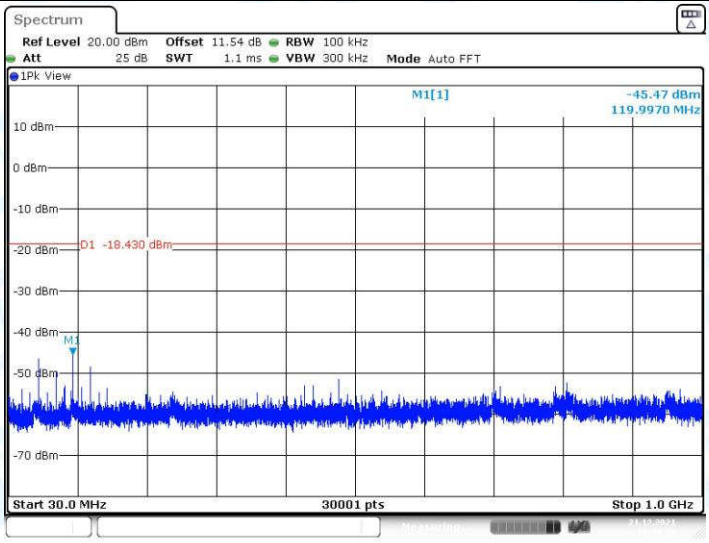
BLE_2M_Ant1_2402_30~1000



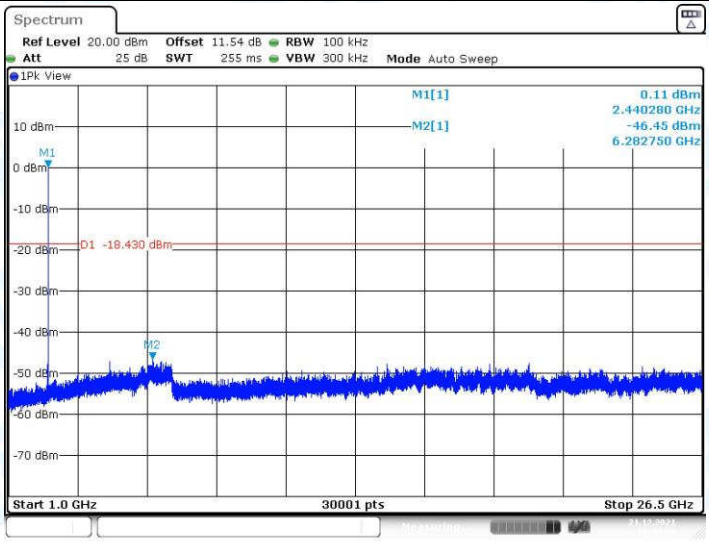
BLE_2M_Ant1_2402_1000~26500



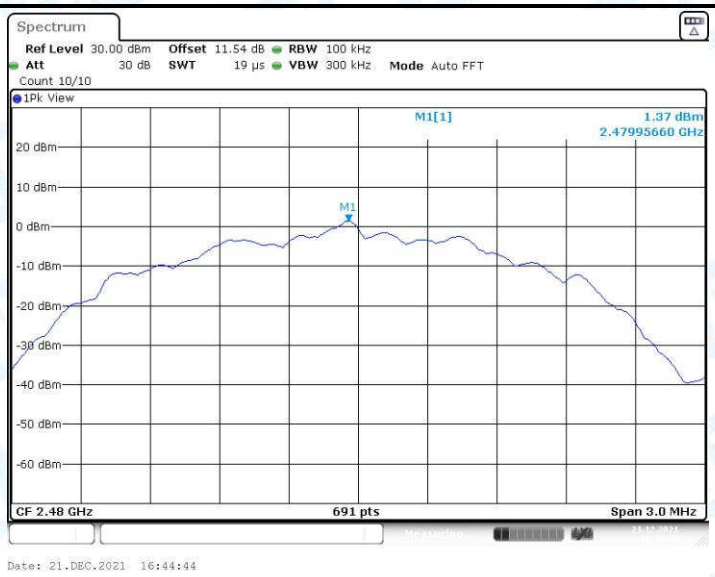
BLE_2M_Ant1_2440_0~Reference



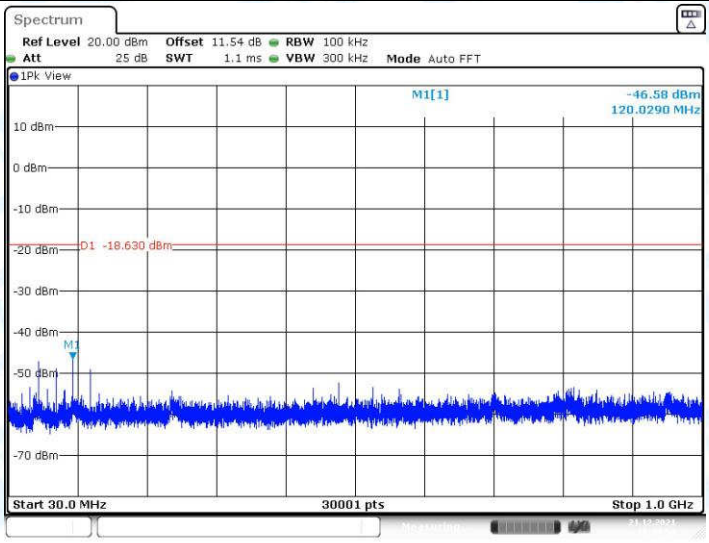
BLE_2M_Ant1_2440_30~1000



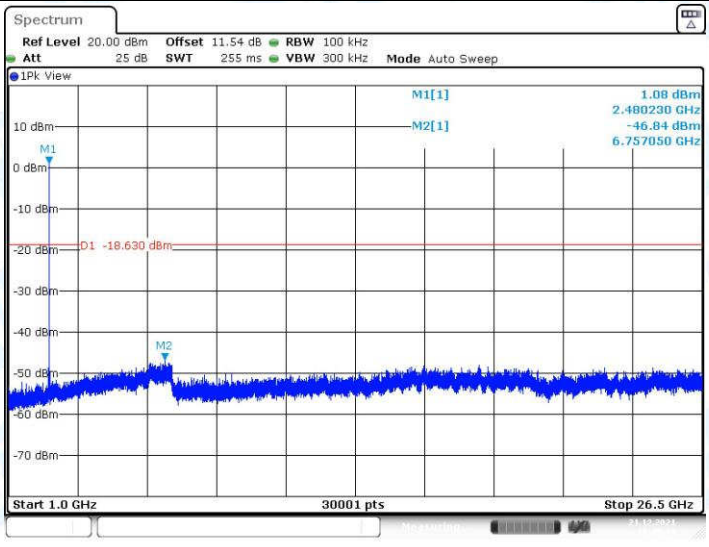
BLE_2M_Ant1_2440_1000~26500



BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



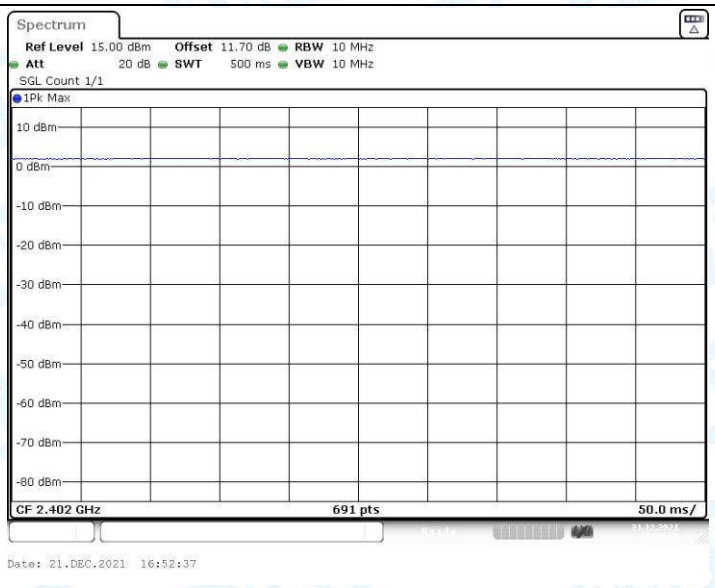
BLE_2M_Ant1_2480_1000~26500

7. Duty Cycle

7.1.Test Result

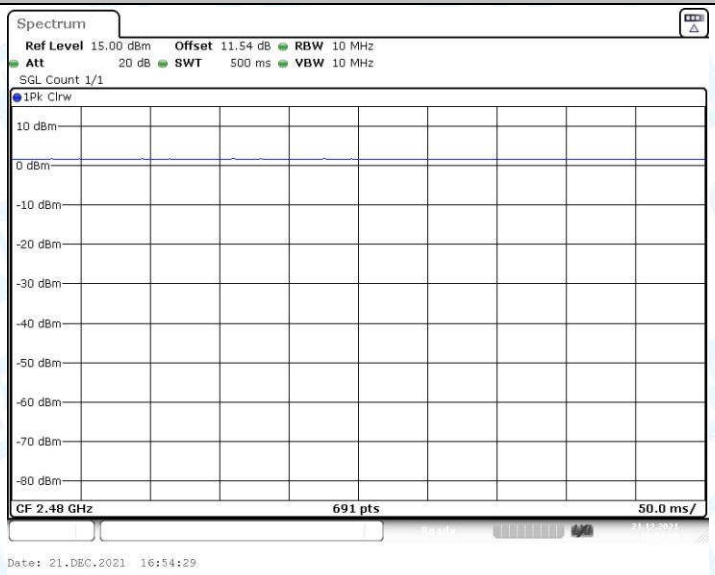
Test Mode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
BLE_1M	Ant1	2402	0.00	0.00	100	---	PASS
		2440	0.00	0.00	100	---	PASS
		2480	0.01	0.00	100	---	PASS
BLE_2M	Ant1	2402	0.00	0.00	100	---	PASS
		2440	0.00	0.00	100	---	PASS
		2480	0.00	0.00	100	---	PASS

7.2.Test Graphs

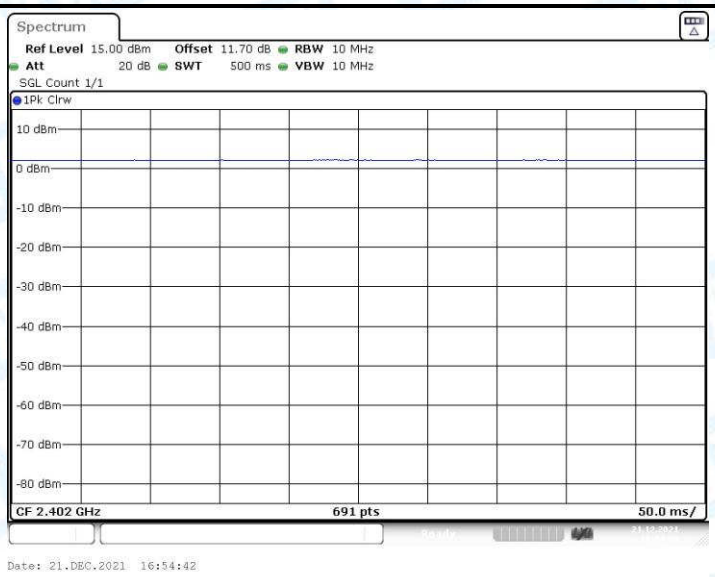


BLE_1M_Ant1_2402

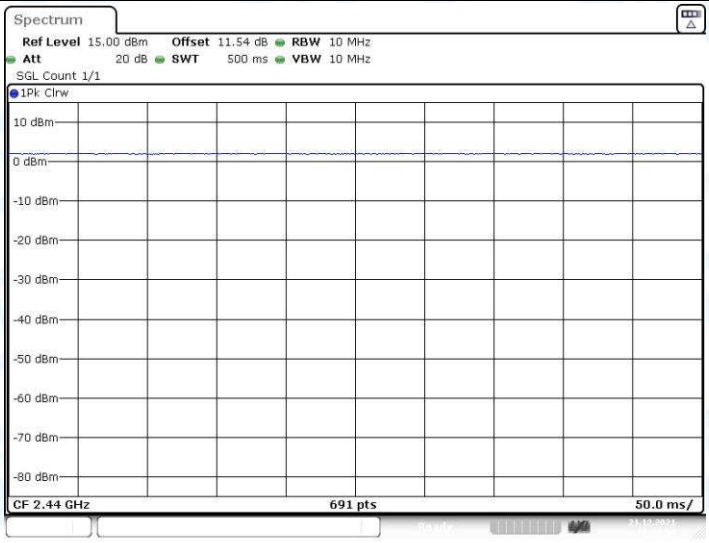
BLE_1M_Ant1_2440



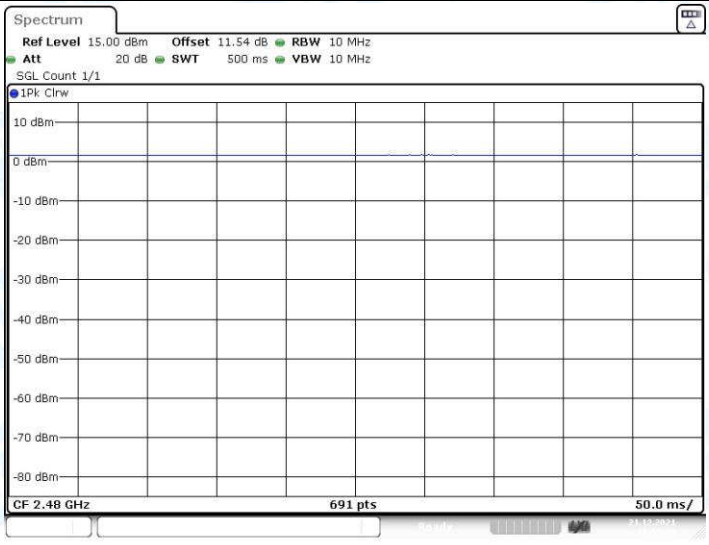
BLE_1M_Ant1_2480



BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

8. Emissions in Restricted Bands

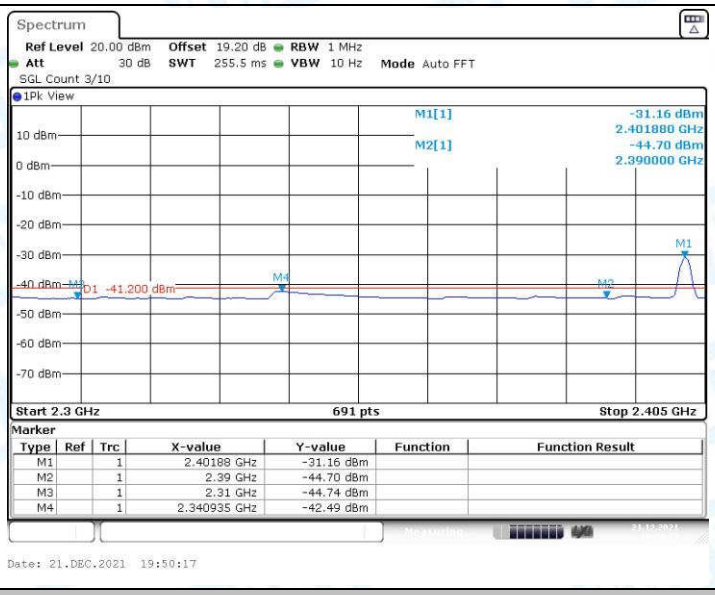
8.1.Test Result

Test Mode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-44.74	≤-41.20	PASS
				AV	2340.935	-42.49	≤-41.20	PASS
				AV	2390.000	-44.7	≤-41.20	PASS
				Peak	2310.000	-32.92	≤-21.20	PASS
				Peak	2342.457	-30.05	≤-21.20	PASS
				Peak	2390.000	-32.5	≤-21.20	PASS
		High	2480	AV	2483.500	-43.88	≤-41.20	PASS
				AV	2497.246	-43.66	≤-41.20	PASS
				AV	2500.000	-43.89	≤-41.20	PASS
				Peak	2483.500	-34.45	≤-21.20	PASS
				Peak	2497.826	-30.83	≤-21.20	PASS
				Peak	2500.000	-32.61	≤-21.20	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-44.75	≤-41.20	PASS
				AV	2340.935	-42.46	≤-41.20	PASS
				AV	2390.000	-44.7	≤-41.20	PASS
				Peak	2310.000	-35.31	≤-21.20	PASS
				Peak	2346.717	-32.09	≤-21.20	PASS
				Peak	2390.000	-36.06	≤-21.20	PASS
		High	2480	AV	2483.500	-43.89	≤-41.20	PASS
				AV	2497.246	-43.64	≤-41.20	PASS
				AV	2500.000	-43.94	≤-41.20	PASS
				Peak	2483.500	-39.37	≤-21.20	PASS
				Peak	2493.420	-35.29	≤-21.20	PASS
				Peak	2500.000	-37.07	≤-21.20	PASS

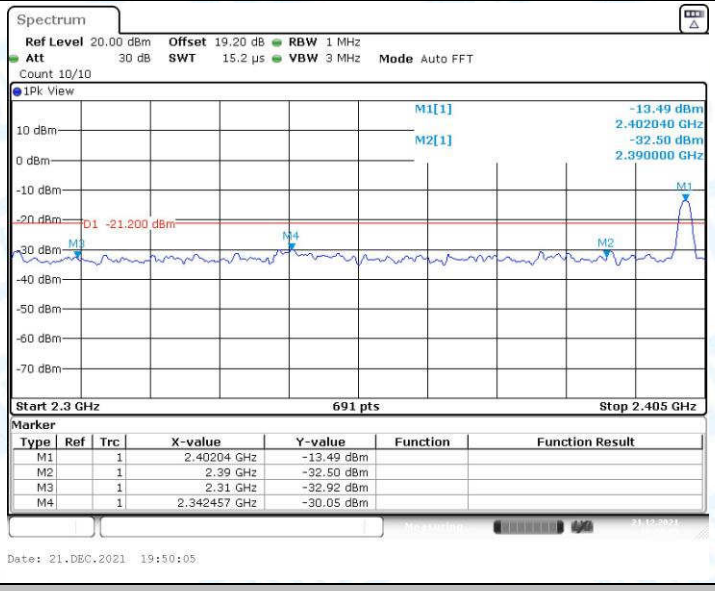
Note：

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.

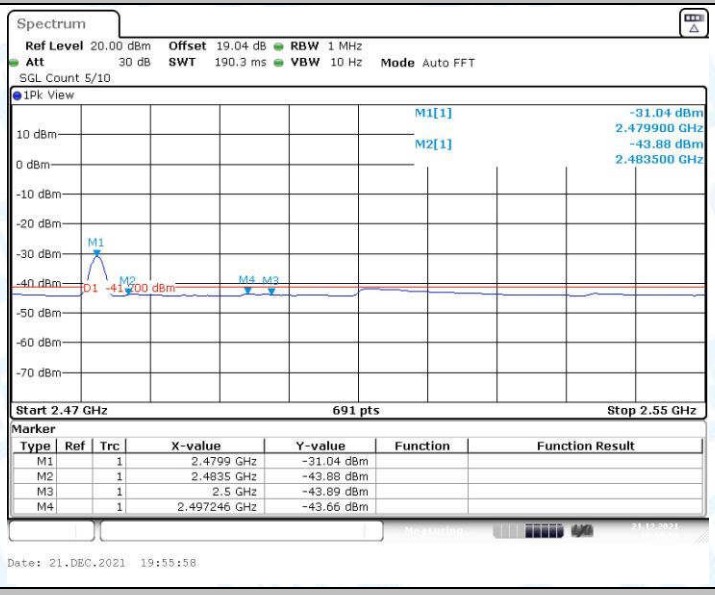
8.2.Test Graphs



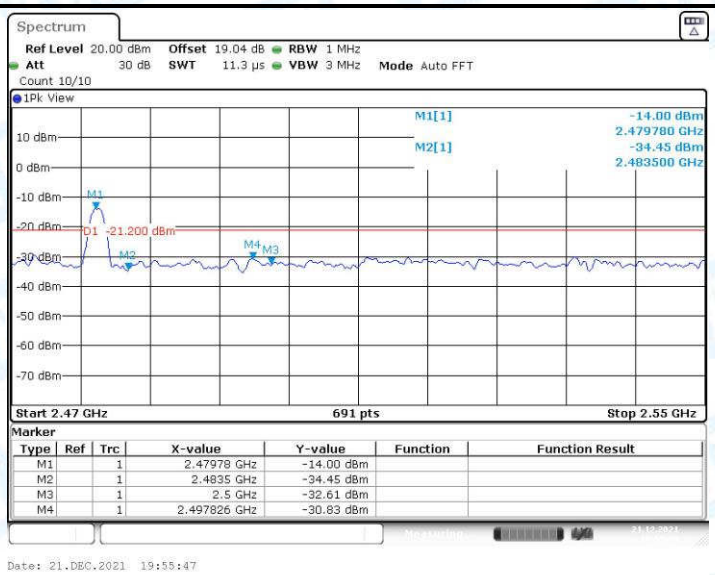
BLE_1M_Ant1_Low_2402_AV



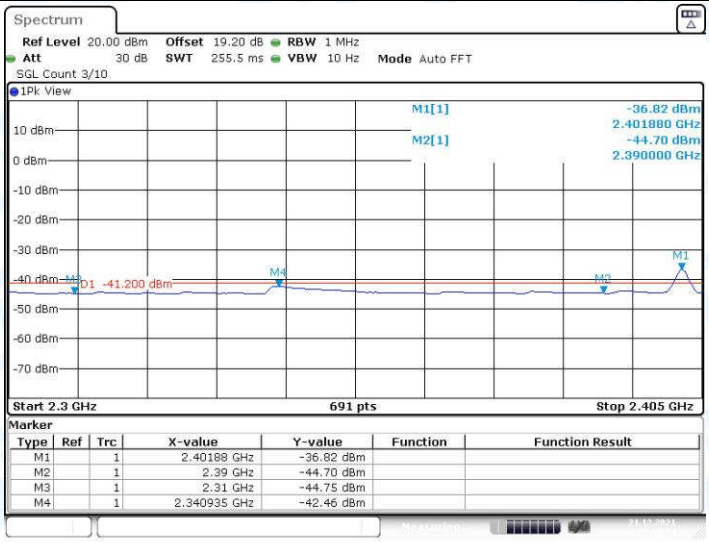
BLE_1M_Ant1_Low_2402_Peak



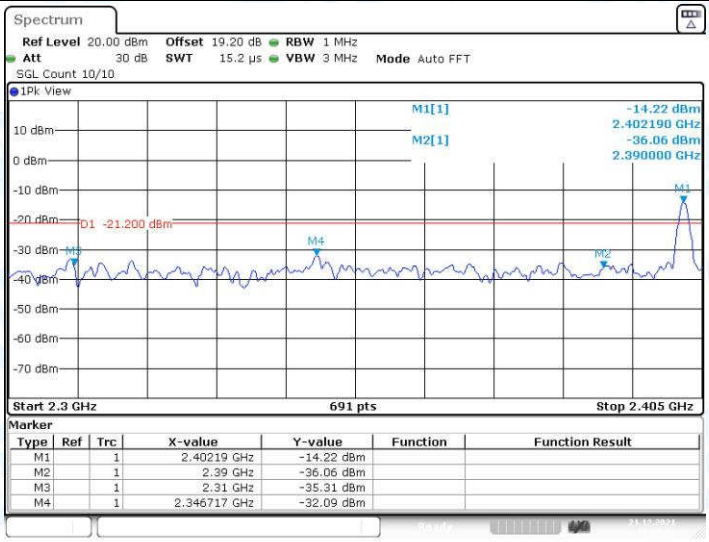
BLE_1M_Ant1_High_2480_AV



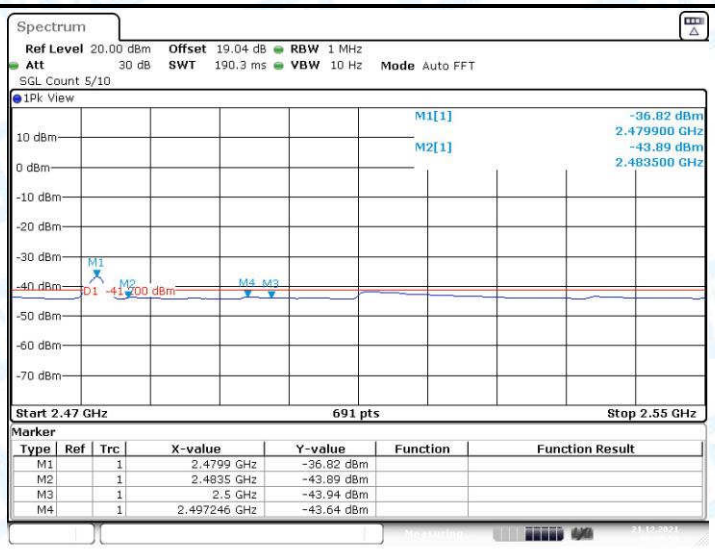
BLE_1M_Ant1_High_2480_Peak



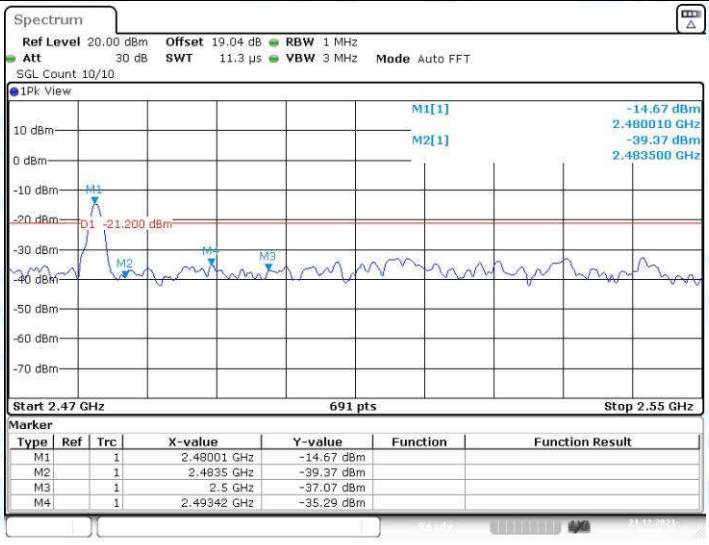
BLE_2M_Ant1_Low_2402_AV



BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak

-----End of the report-----