RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
Product Name:	SMART WATCH
Test Model:	P25
Sample ID:	20211026-01-02
Environmental Conditions	
Temperature:	23.8℃
Relative Humidity:	48%
Test Voltage:	DC 3.7V
Test Engineer:	Huang jian ping
Note: For a more detailed features description, please refer to the report TB-FCC184514	

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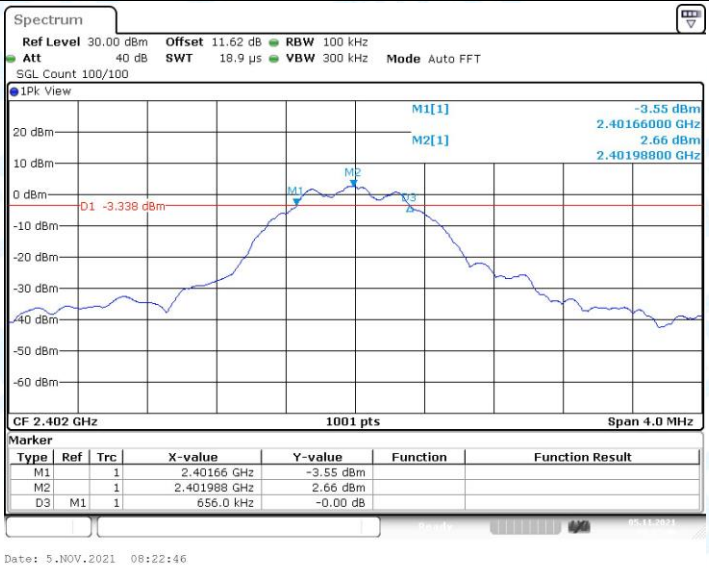
1. DTS Bandwidth

1.1.Test Result

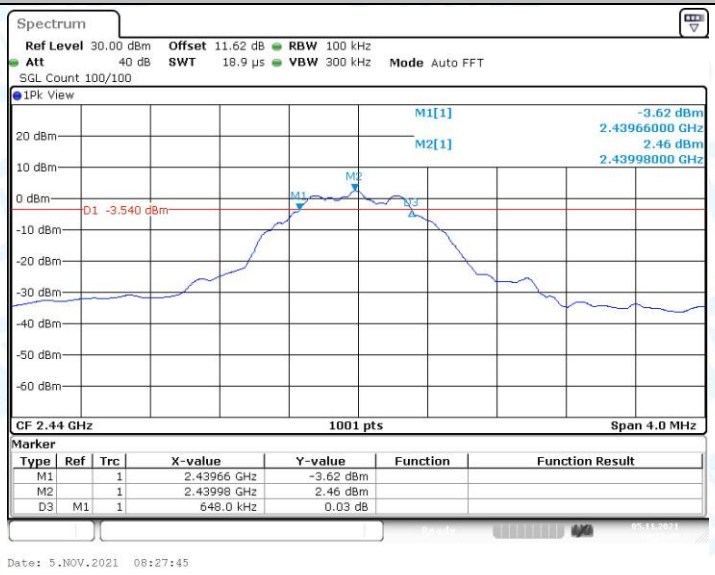
Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.656	2401.660	2402.316	0.5	PASS
		2440	0.648	2439.660	2440.308	0.5	PASS
		2480	0.644	2479.664	2480.308	0.5	PASS
BLE_2M	Ant1	2402	0.980	2401.476	2402.456	0.5	PASS
		2440	0.884	2439.620	2440.504	0.5	PASS
		2480	1.016	2479.476	2480.492	0.5	PASS

1.2.Test Graphs

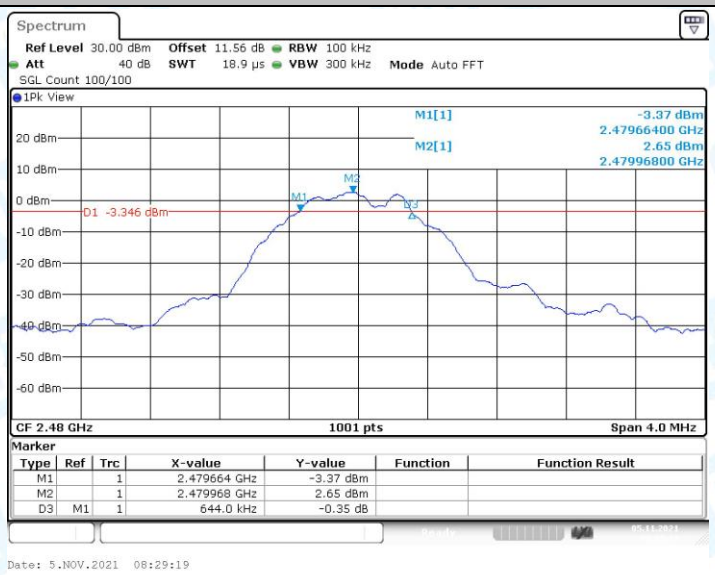
BLE_1M_Ant1_2402



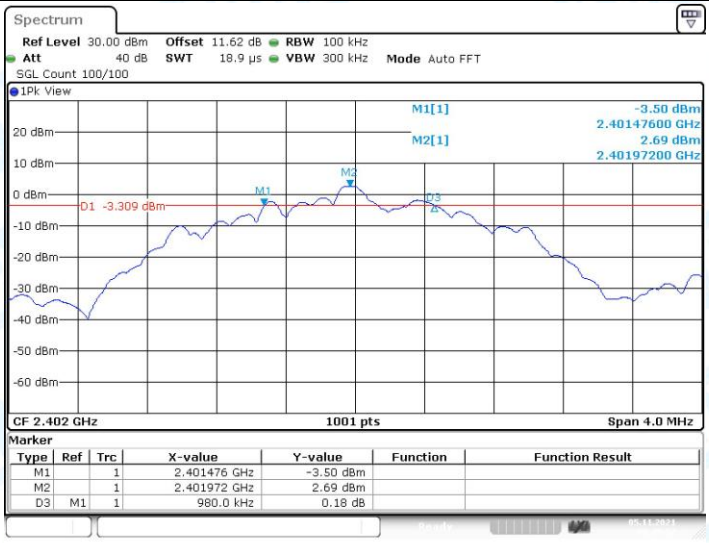
BLE_1M_Ant1_2440



BLE_1M_Ant1_2480

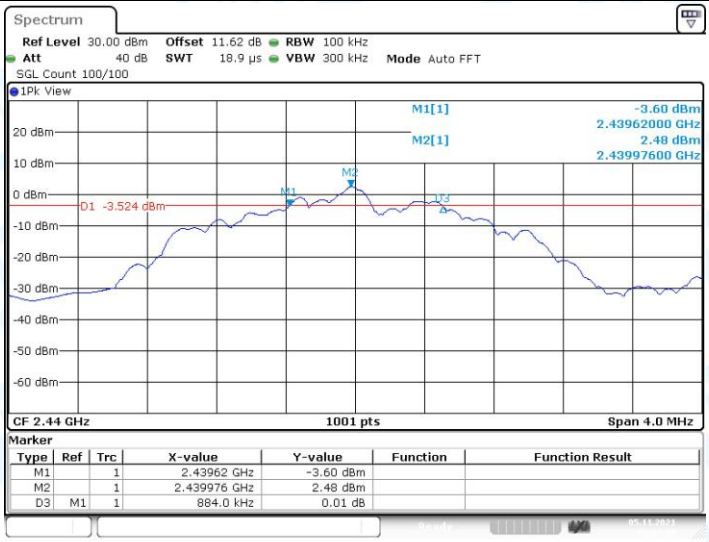


BLE_2M_Ant1_2402



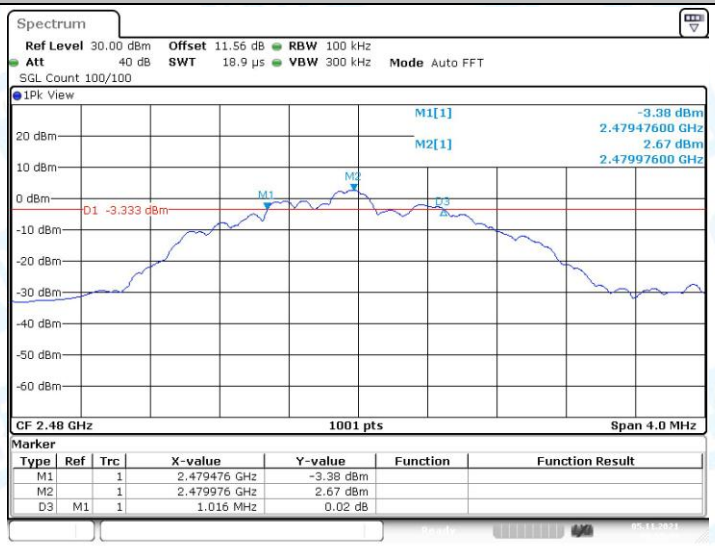
Date: 5.NOV.2021 08:47:56

BLE_2M_Ant1_2440



Date: 5.NOV.2021 08:52:55

BLE_2M_Ant1_2480



Date: 5.NOV.2021 08:53:49

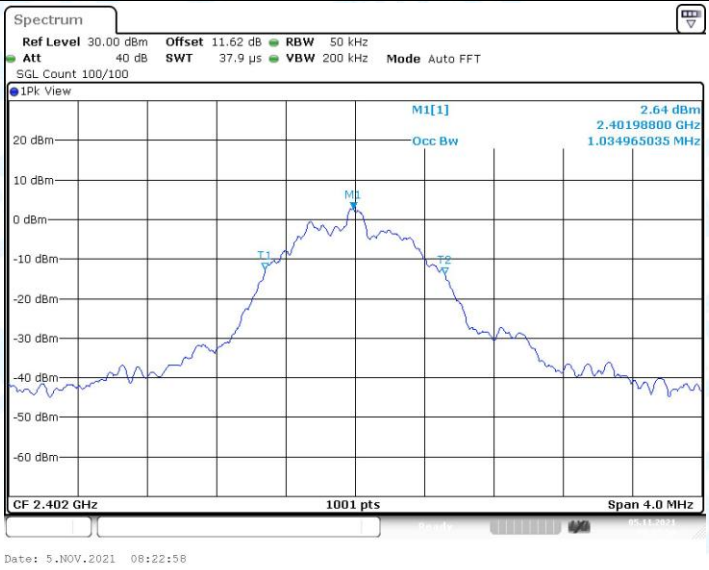
2. Occupied Channel Bandwidth

2.1.Test Result

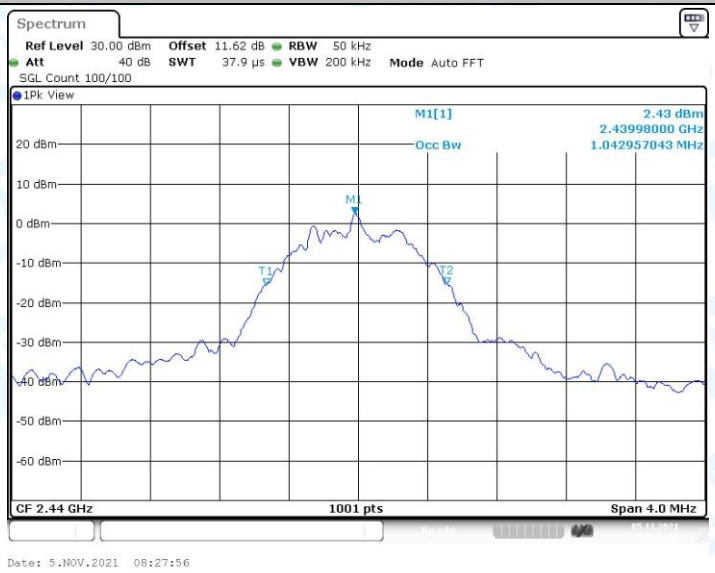
Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.035	2401.481	2402.515	---	PASS
		2440	1.043	2439.469	2440.511	---	PASS
		2480	1.031	2479.481	2480.511	---	PASS
BLE_2M	Ant1	2402	2.046	2400.981	2403.027	---	PASS
		2440	2.066	2438.977	2441.043	---	PASS
		2480	2.042	2478.985	2481.027	---	PASS

2.2.Test Graphs

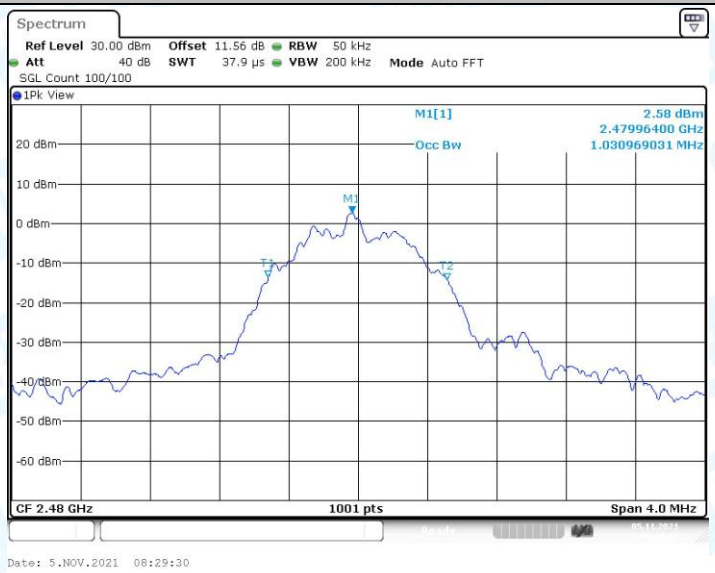
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

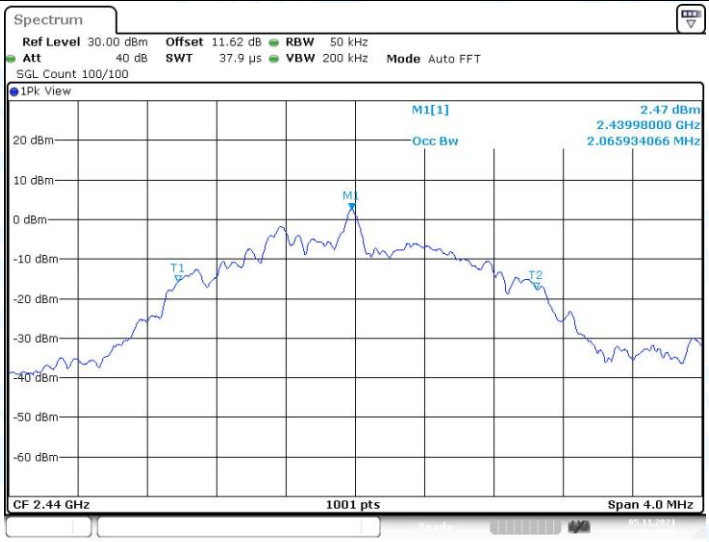


BLE_1M_Ant1_2480



BLE_2M_Ant1_2402

BLE_2M_Ant1_2440



BLE_2M_Ant1_2480

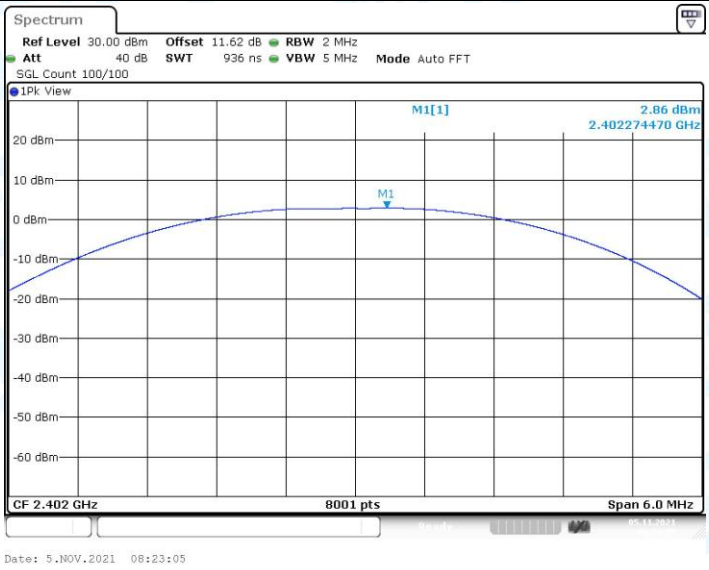
3. Maximum conducted output power

3.1.Test Result

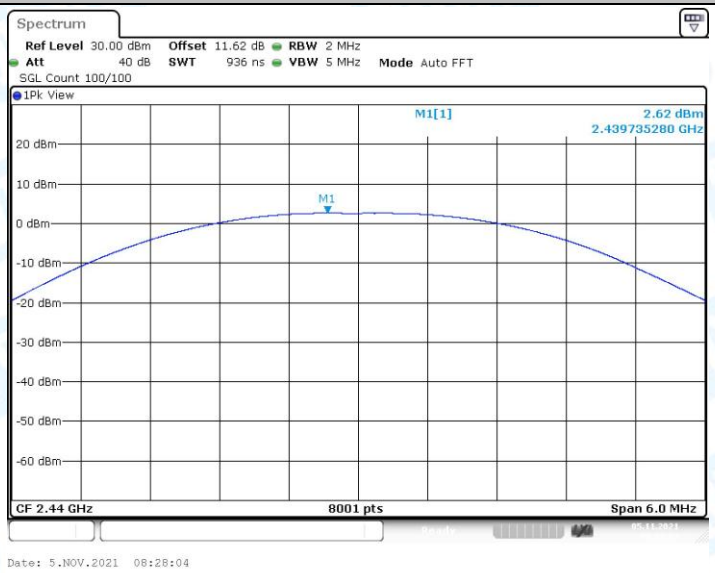
Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	2.86	≤30	PASS
		2440	2.62	≤30	PASS
		2480	2.81	≤30	PASS
BLE_2M	Ant1	2402	2.86	≤30	PASS
		2440	2.68	≤30	PASS
		2480	2.8	≤30	PASS

3.2.Test Graphs

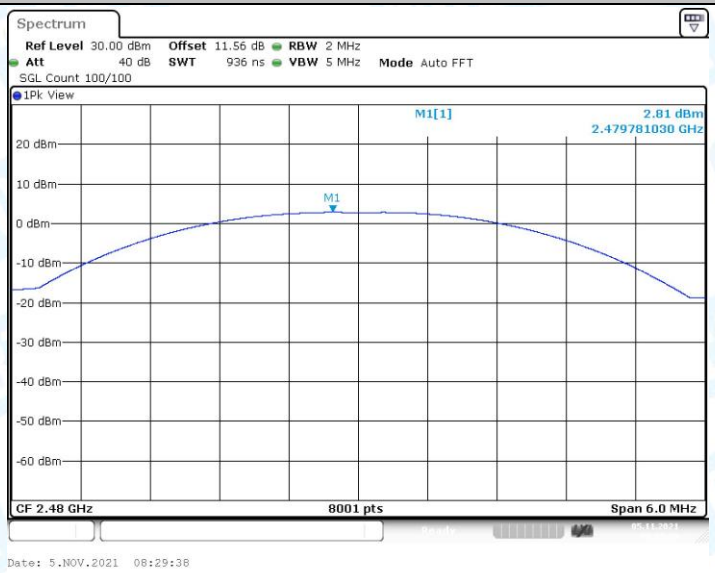
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

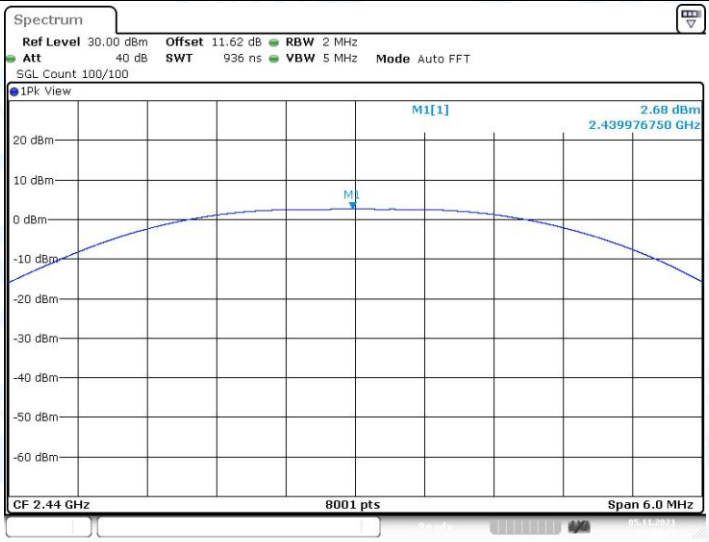


BLE_1M_Ant1_2480

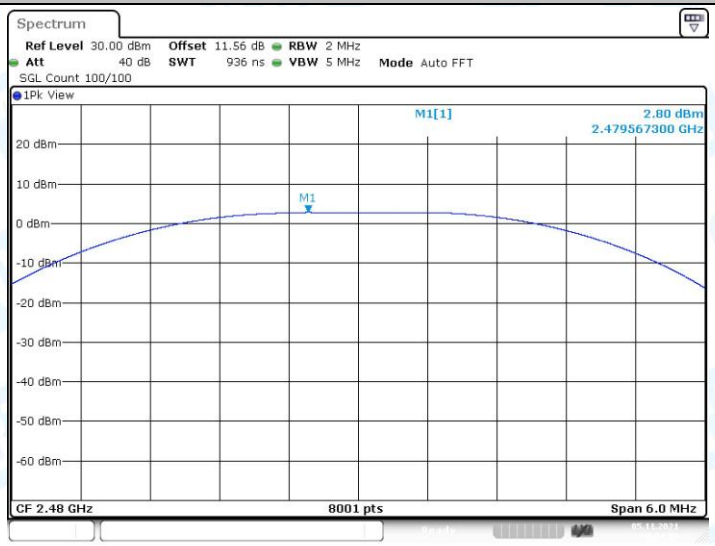


BLE_2M_Ant1_2402

BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



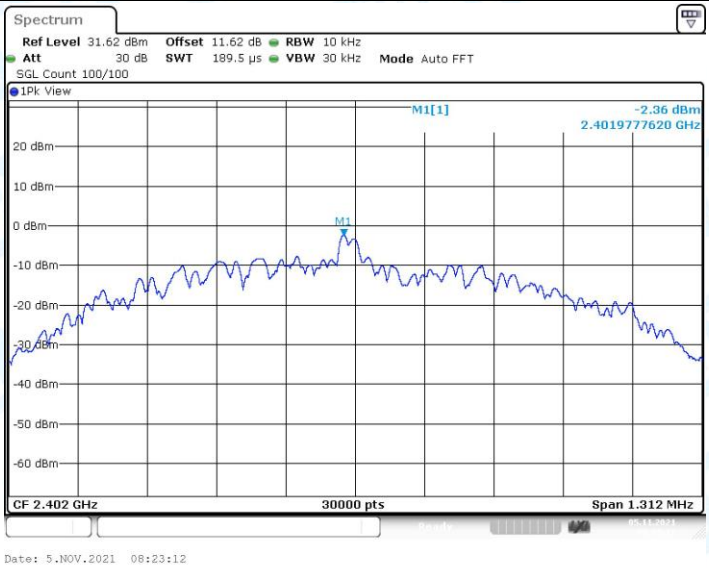
4. Maximum power spectral density

4.1.Test Result

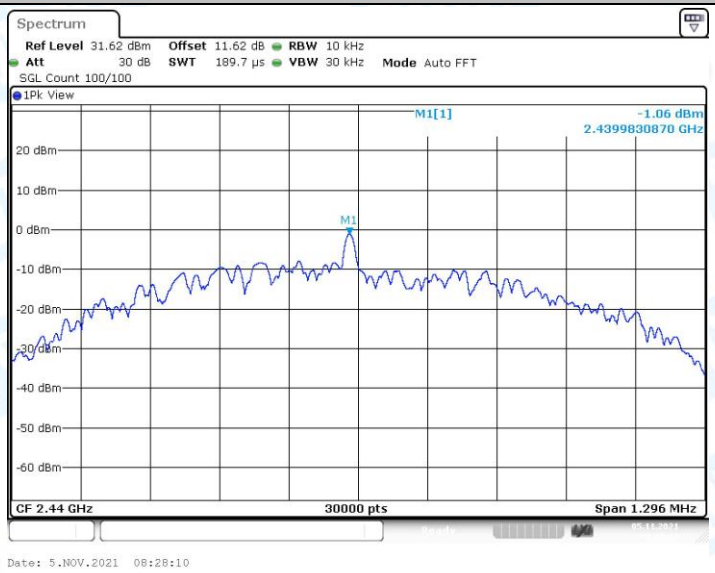
Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-2.36	≤8	PASS
		2440	-1.06	≤8	PASS
		2480	-4.17	≤8	PASS
BLE_2M	Ant1	2402	-1.7	≤8	PASS
		2440	-1.65	≤8	PASS
		2480	-4.72	≤8	PASS

4.2.Test Graphs

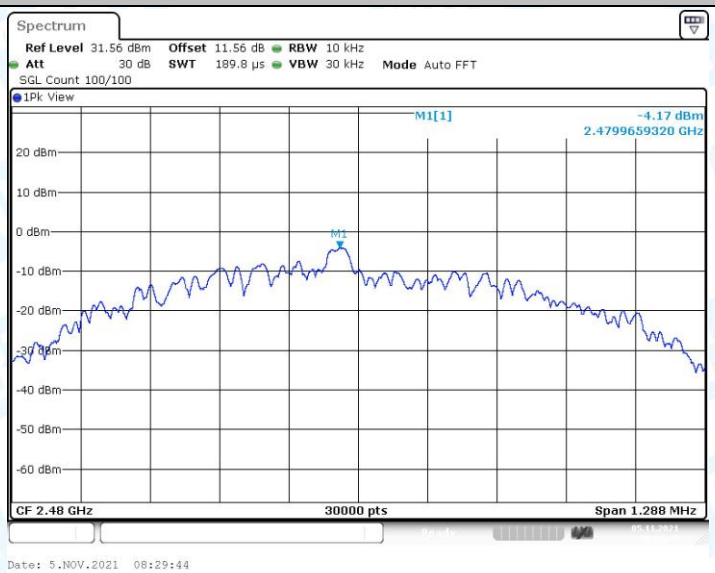
BLE_1M_Ant1_2402



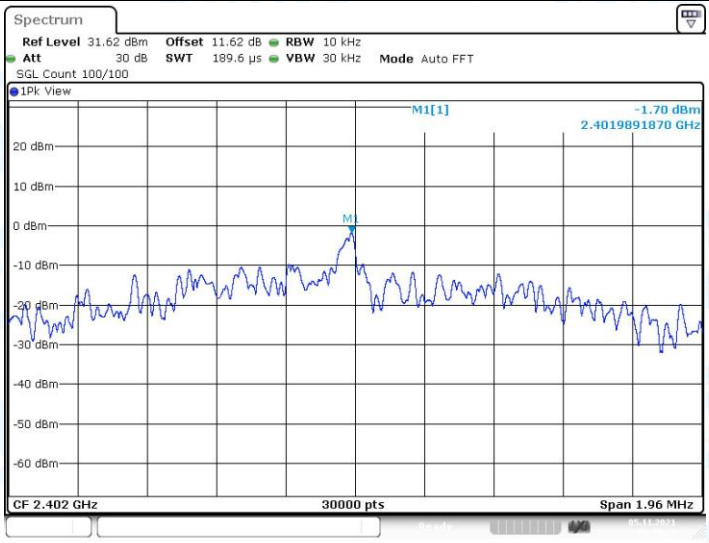
BLE_1M_Ant1_2440



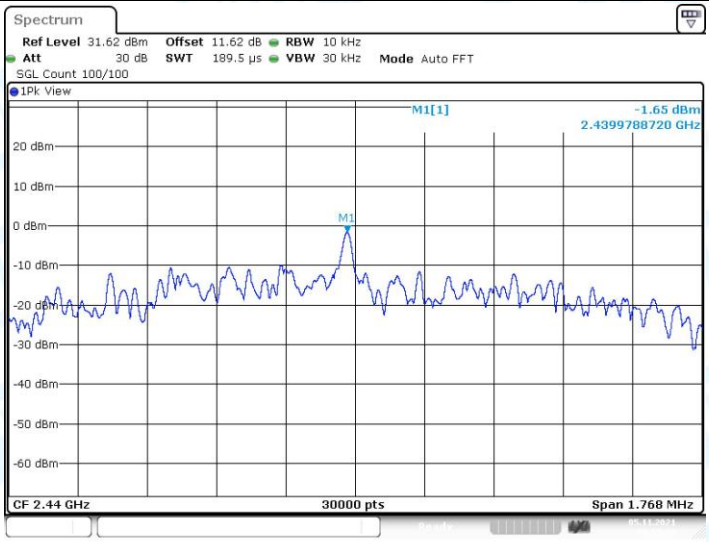
BLE_1M_Ant1_2480



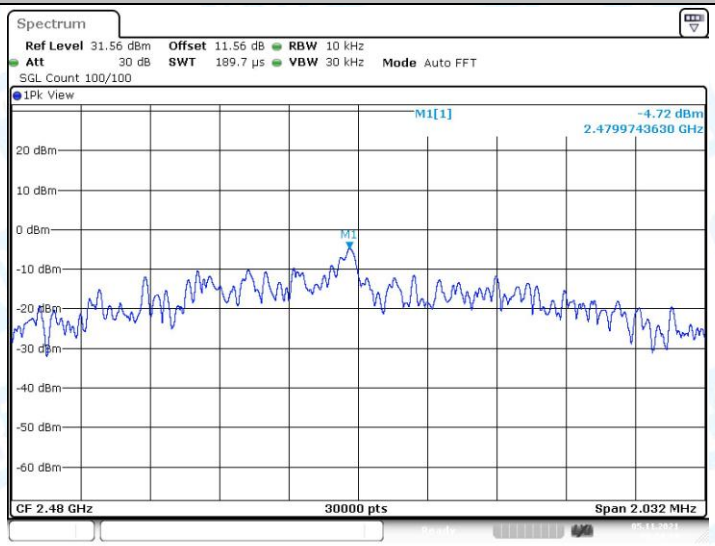
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



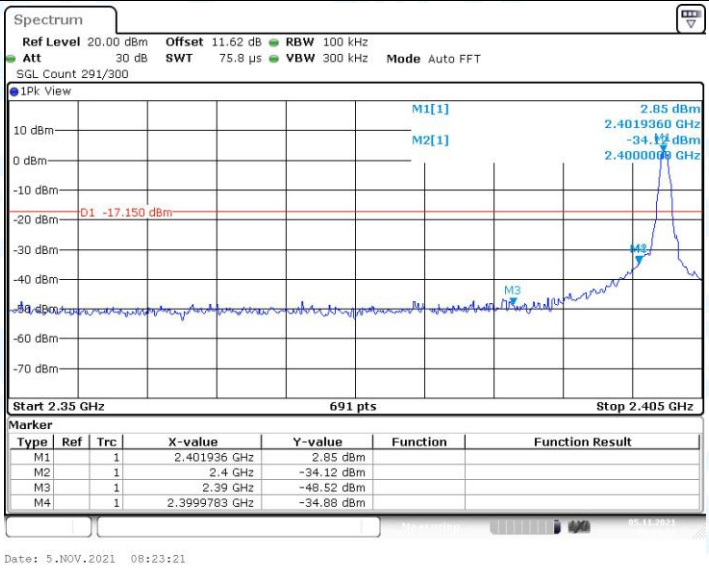
5. Band edge measurements

5.1.Test Result

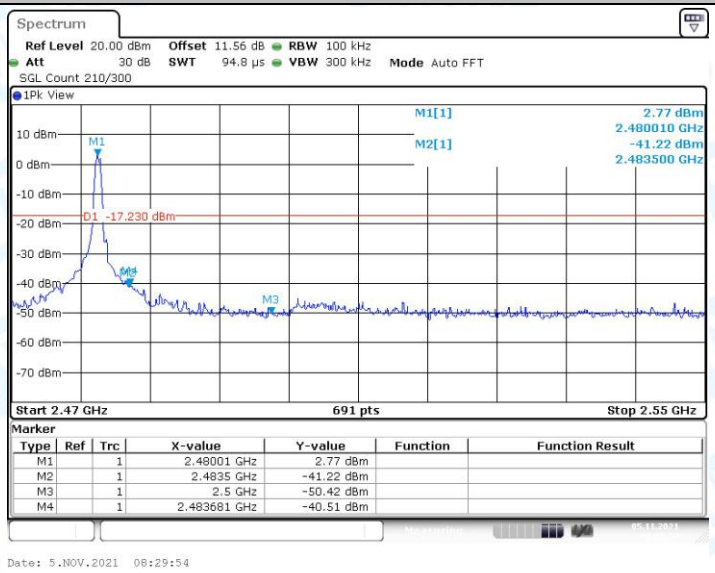
Test Mode	Antenna	ChName	Channel	Ref.Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	2.85	-34.88	≤-17.15	PASS
		High	2480	2.77	-40.51	≤-17.23	PASS
BLE_2M	Ant1	Low	2402	2.87	-32.78	≤-17.13	PASS
		High	2480	2.79	-40.56	≤-17.21	PASS

5.2.Test Graphs

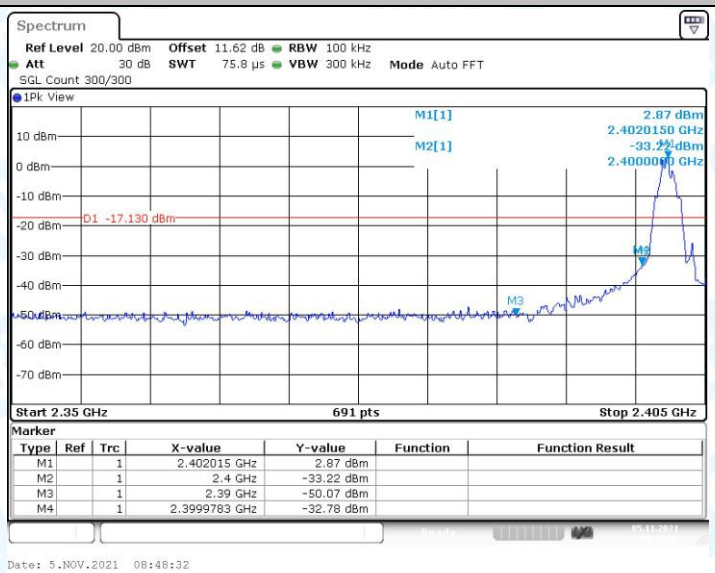
BLE_1M_Ant1_Low_2402



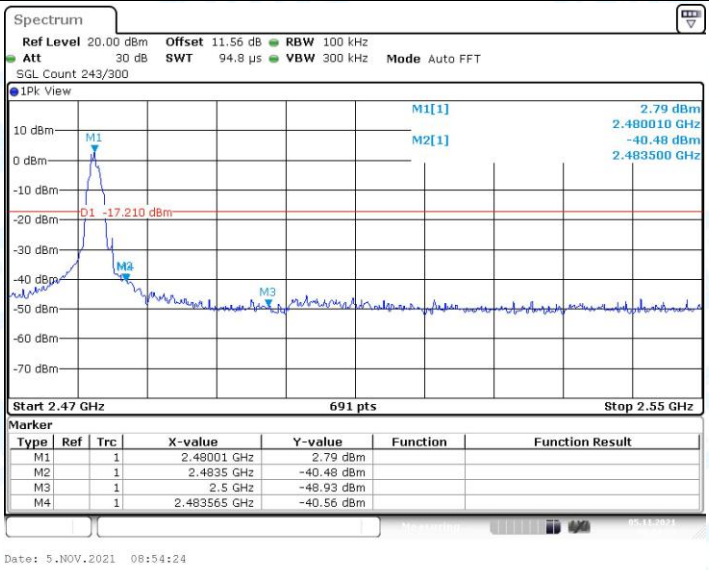
BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



BLE_2M_Ant1_High_2480



6. Conducted Spurious Emission

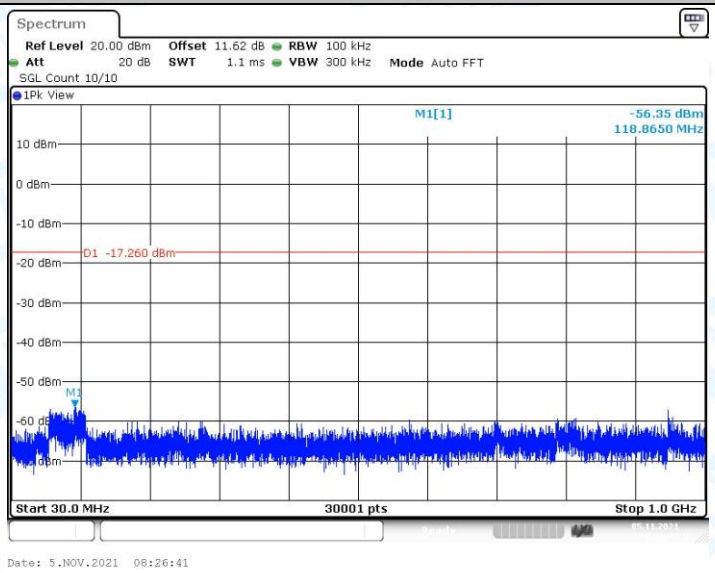
6.1.Test Result

Test Mode	Antenna	Channel	Freq. Range [MHz]	Ref. Level [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	2.74	2.74	---	PASS
			30~1000	2.74	-56.35	≤-17.26	PASS
			1000~26500	2.74	-20.1	≤-17.26	PASS
		2440	Reference	2.49	2.49	---	PASS
			30~1000	2.49	-48.71	≤-17.51	PASS
			1000~26500	2.49	-20.43	≤-17.51	PASS
		2480	Reference	-2.08	-2.08	---	PASS
			30~1000	-2.08	-58.08	≤-22.08	PASS
			1000~26500	-2.08	-22.79	≤-22.08	PASS
BLE_2M	Ant1	2402	Reference	-0.44	-0.44	---	PASS
			30~1000	-0.44	-58.3	≤-20.44	PASS
			1000~26500	-0.44	-22.94	≤-20.44	PASS
		2440	Reference	-5.61	-5.61	---	PASS
			30~1000	-5.61	-58.69	≤-25.61	PASS
			1000~26500	-5.61	-26.01	≤-25.61	PASS
		2480	Reference	-0.68	-0.68	---	PASS
			30~1000	-0.68	-55.95	≤-20.68	PASS
			1000~26500	-0.68	-21.08	≤-20.68	PASS

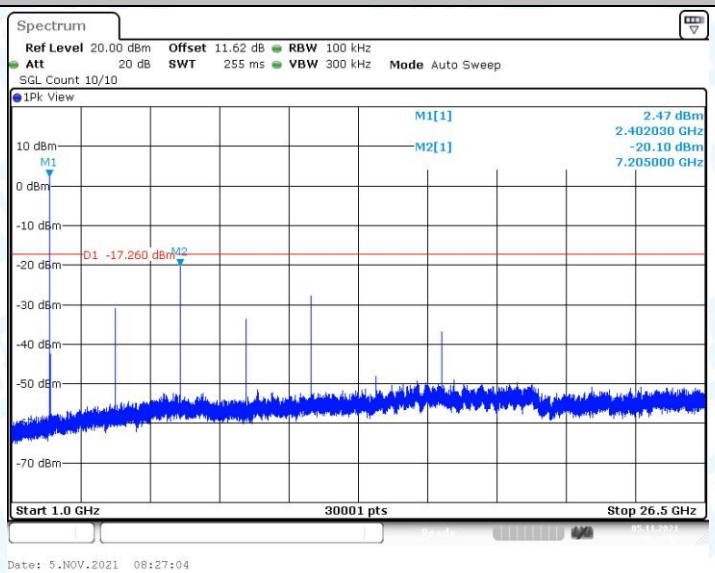
6.2.Test Graphs

BLE_1M_Ant1_2402_0~Reference

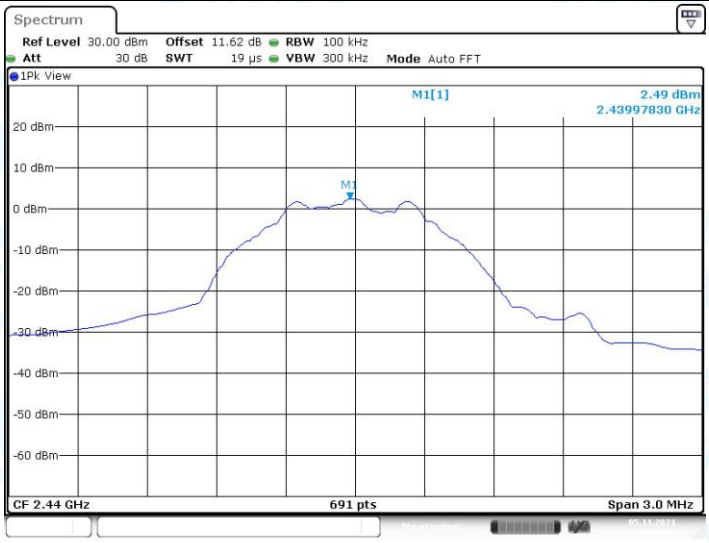
BLE_1M_Ant1_2402_30~1000



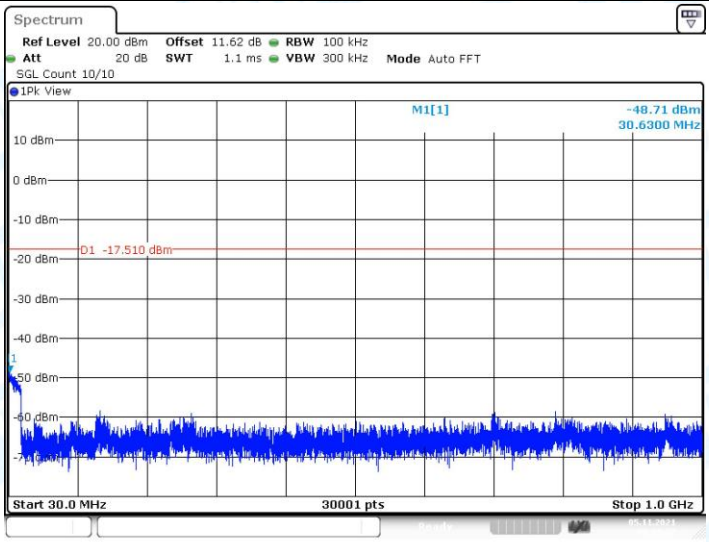
BLE_1M_Ant1_2402_1000~26500



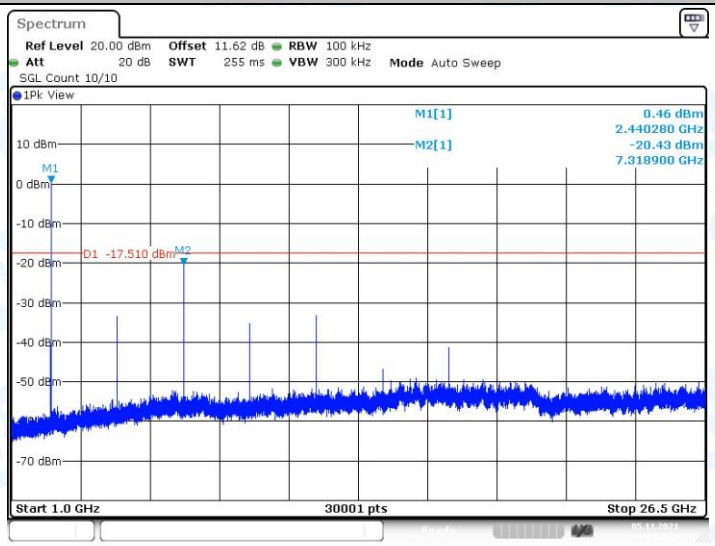
BLE_1M_Ant1_2440_0~Reference



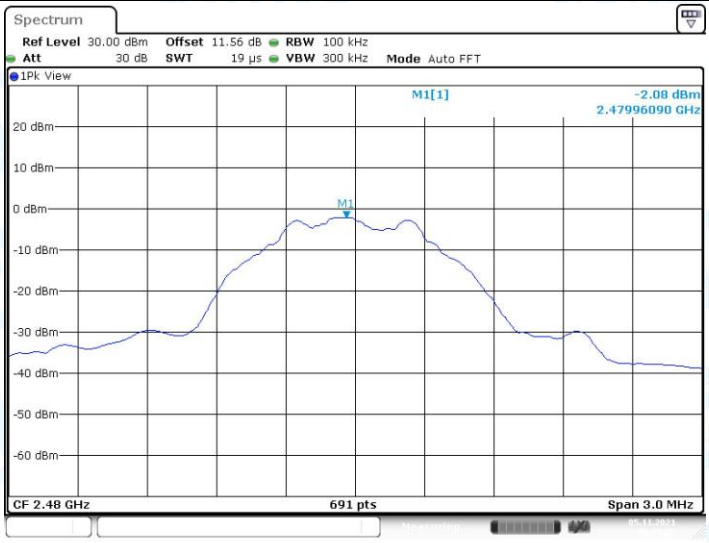
BLE_1M_Ant1_2440_30~1000



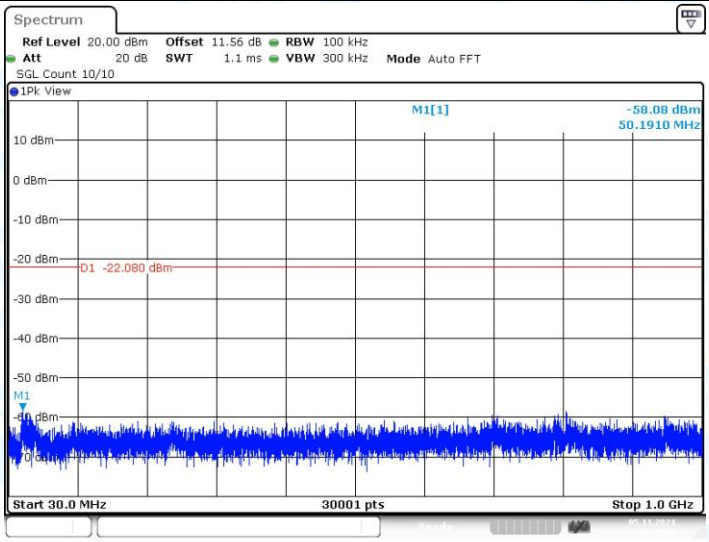
BLE_1M_Ant1_2440_1000~26500



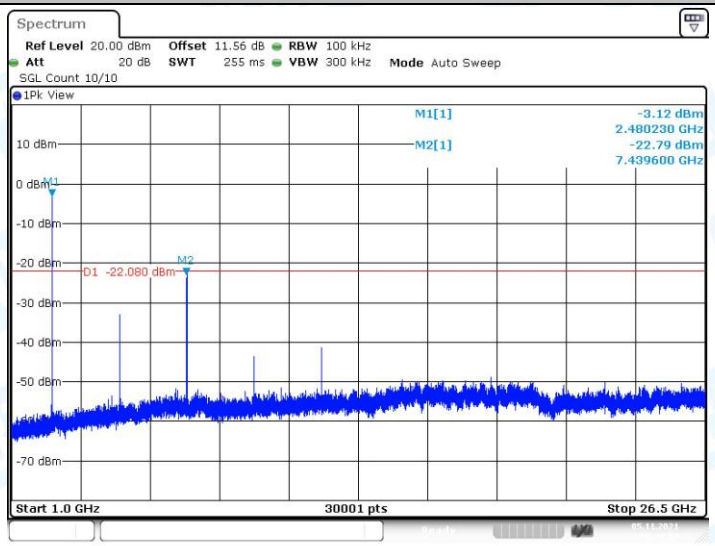
BLE_1M_Ant1_2480_0~Reference



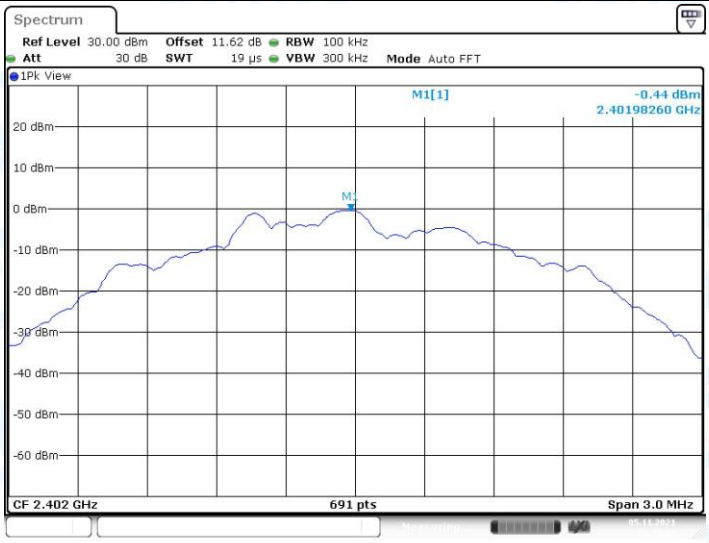
BLE_1M_Ant1_2480_30~1000



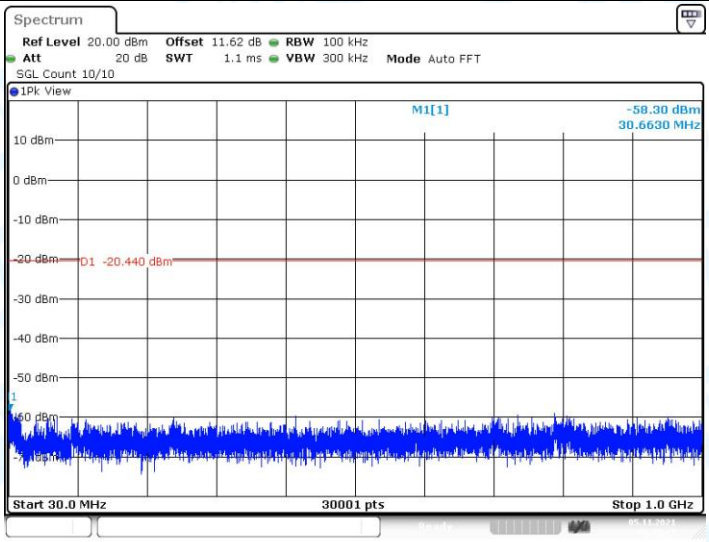
BLE_1M_Ant1_2480_1000~26500



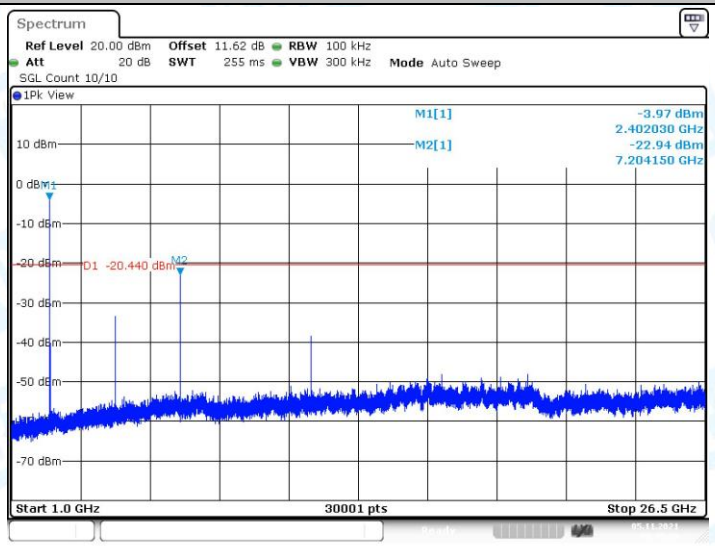
BLE_2M_Ant1_2402_0~Reference



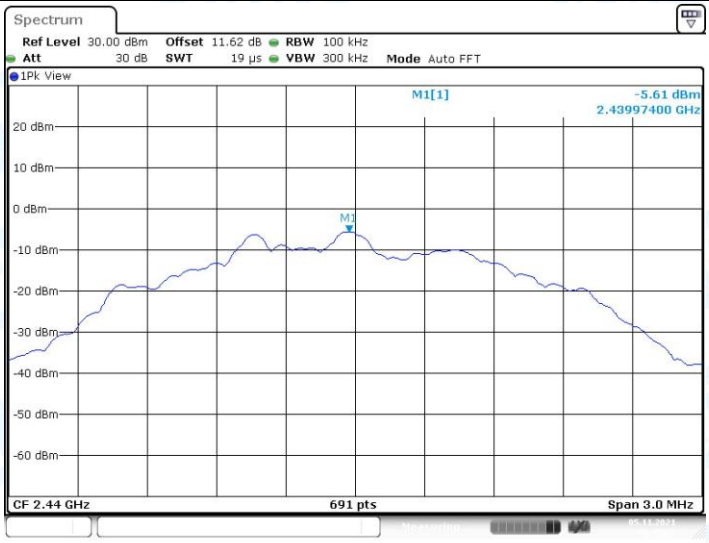
BLE_2M_Ant1_2402_30~1000



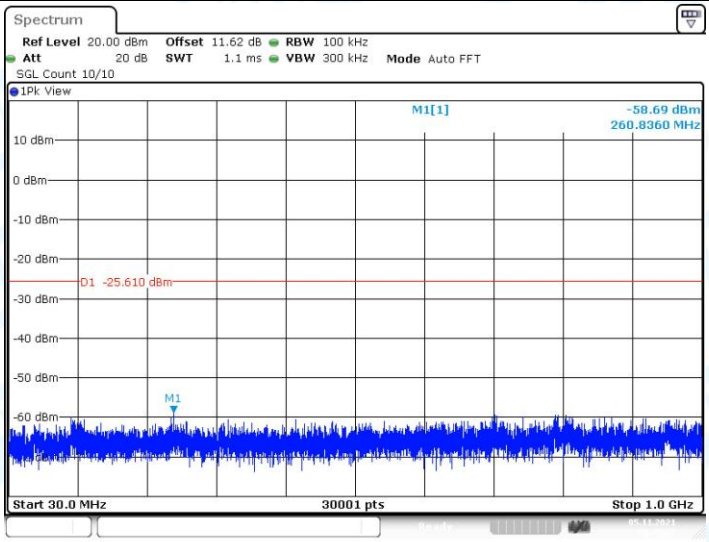
BLE_2M_Ant1_2402_1000~26500



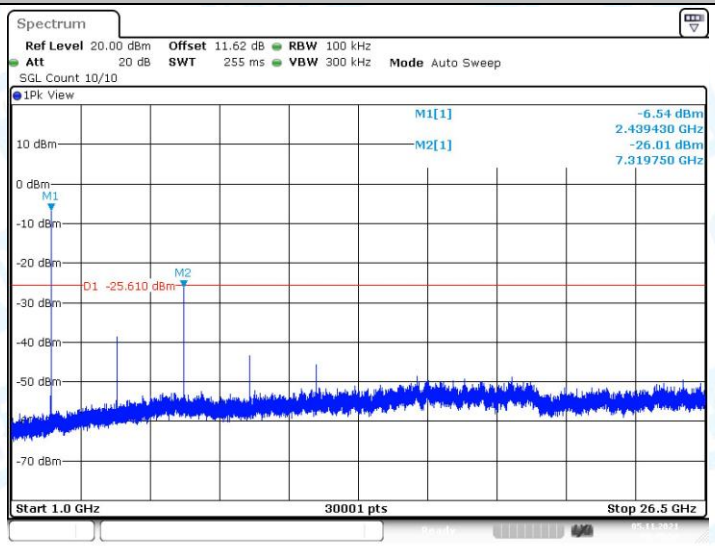
BLE_2M_Ant1_2440_0~Reference



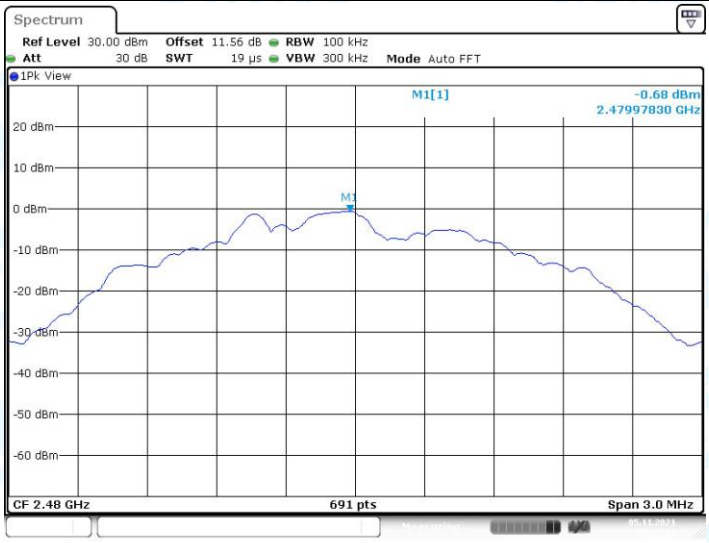
BLE_2M_Ant1_2440_30~1000



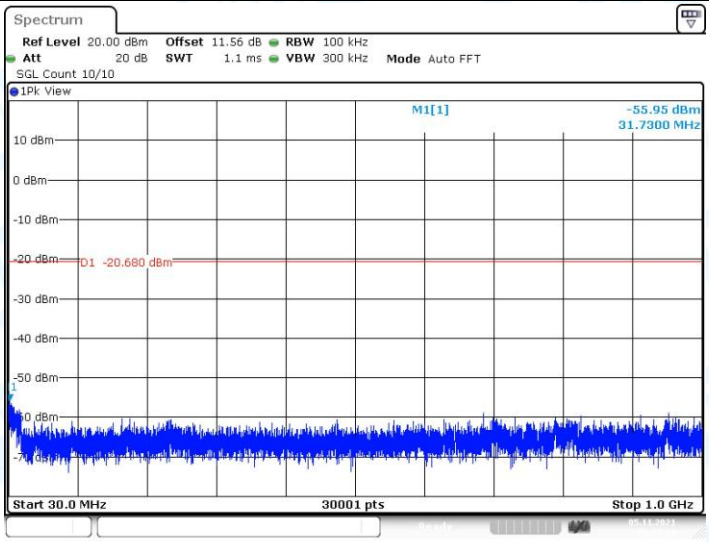
BLE_2M_Ant1_2440_1000~26500



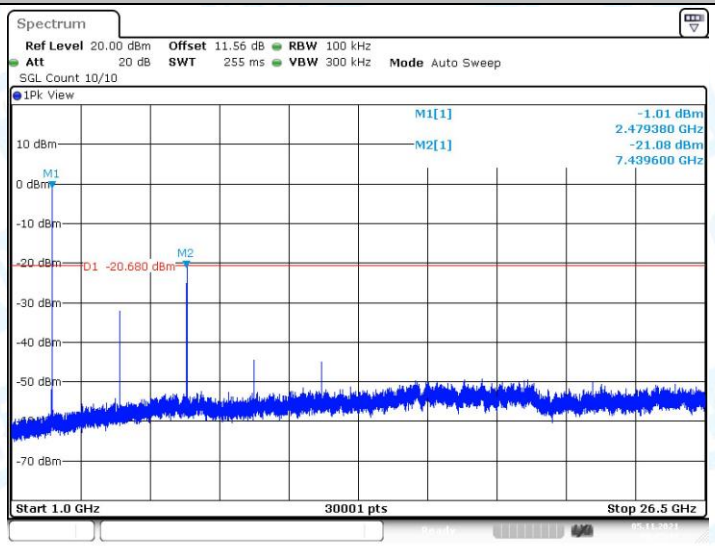
BLE_2M_Ant1_2480_0~Reference



BLE_2M_Ant1_2480_30~1000



BLE_2M_Ant1_2480_1000~26500



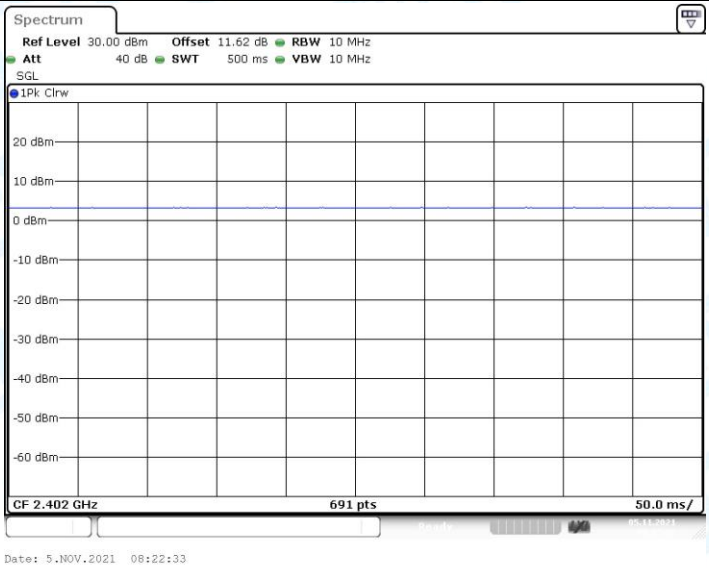
7. Duty Cycle

7.1.Test Result

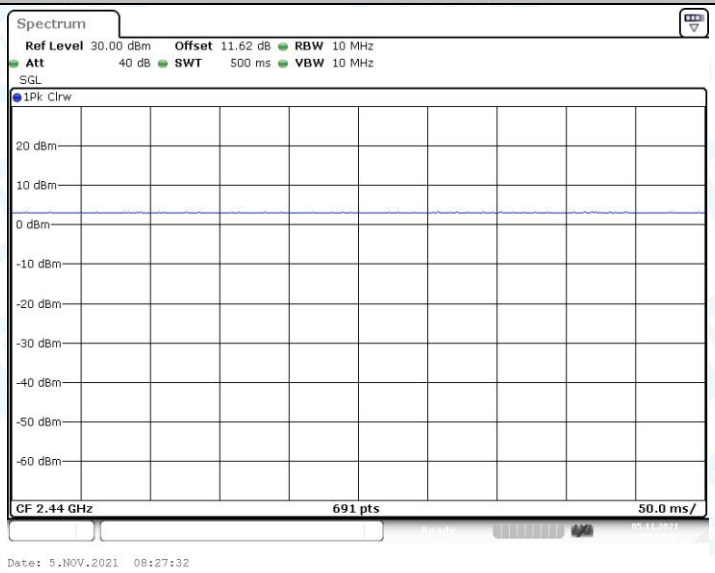
Test Mode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Limit	Verdict
BLE_1M	Ant1	2402	0.00	0.00	100	---	PASS
		2440	0.00	0.00	100	---	PASS
		2480	0.00	0.00	100	---	PASS
BLE_2M	Ant1	2402	0.00	0.00	100	---	PASS
		2440	0.00	0.00	100	---	PASS
		2480	0.00	0.00	100	---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

7.2.Test Graphs

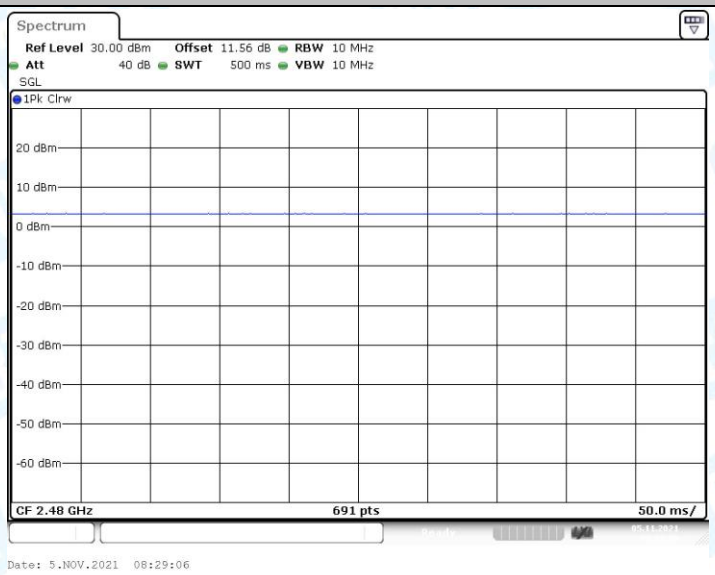
BLE_1M_Ant1_2402



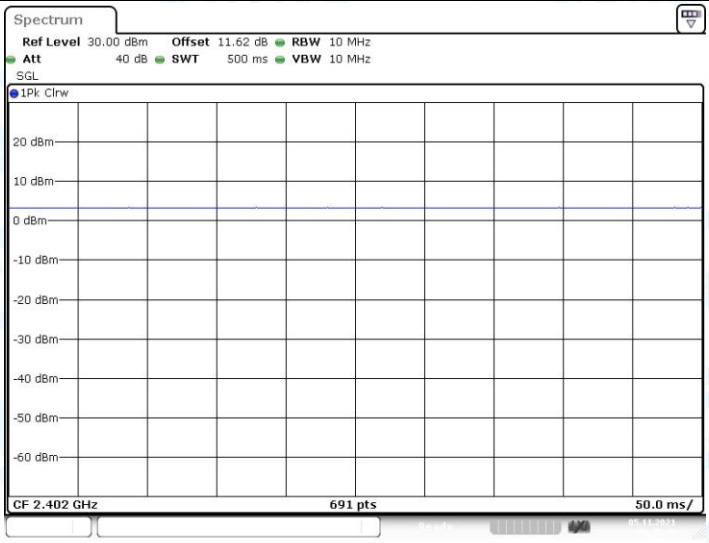
BLE_1M_Ant1_2440



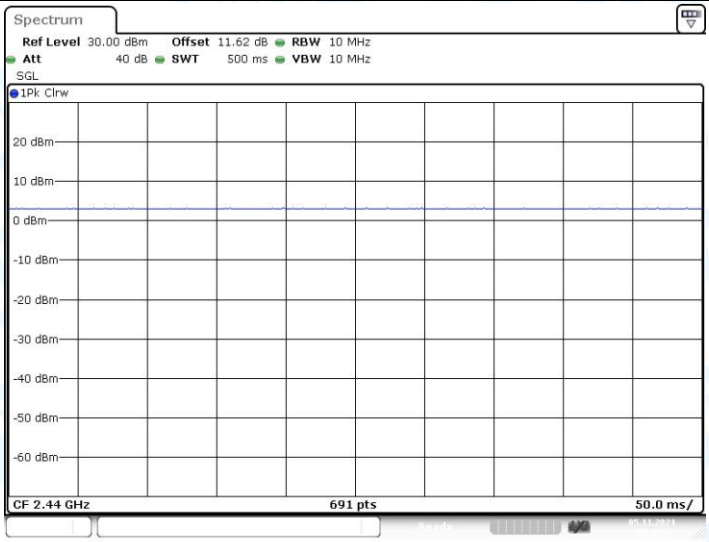
BLE_1M_Ant1_2480



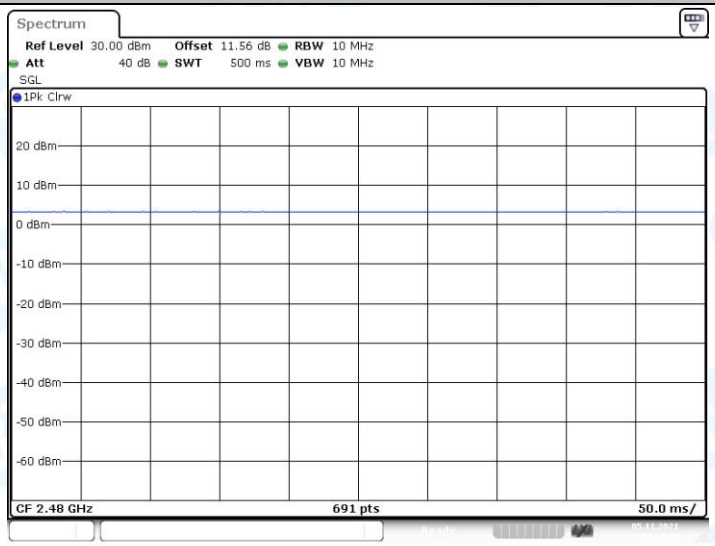
BLE_2M_Ant1_2402



BLE_2M_Ant1_2440



BLE_2M_Ant1_2480



8. Emissions in Restricted Bands

8.1.Test Result

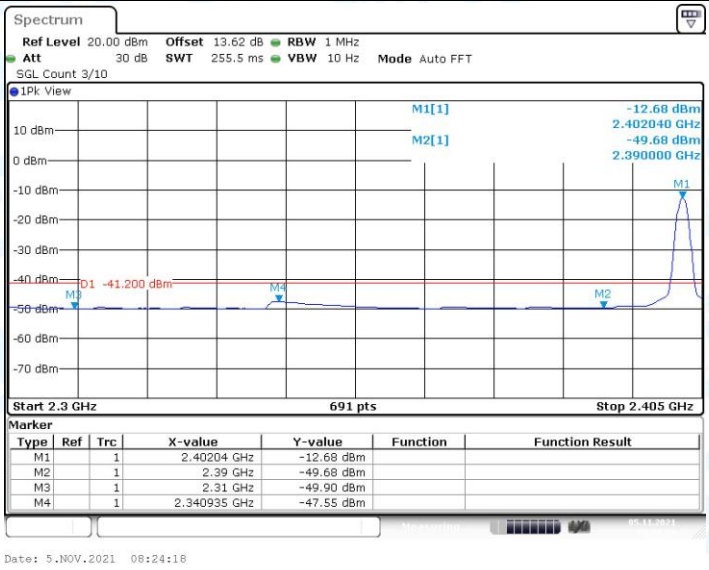
Test Mode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-49.9	≤-41.20	PASS
				AV	2340.935	-47.55	≤-41.20	PASS
				AV	2390.000	-49.68	≤-41.20	PASS
				Peak	2310.000	-45.91	≤-21.20	PASS
				Peak	2345.957	-37.07	≤-21.20	PASS
				Peak	2390.000	-43.25	≤-21.20	PASS
		High	2480	AV	2483.500	-46.75	≤-41.20	PASS
				AV	2483.565	-46.9	≤-41.20	PASS
				AV	2500.000	-48.89	≤-41.20	PASS
				Peak	2483.500	-22.6	≤-21.20	PASS
				Peak	2483.913	-21.27	≤-21.20	PASS
				Peak	2500.000	-32.71	≤-21.20	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-49.85	≤-41.20	PASS
				AV	2340.630	-47.55	≤-41.20	PASS
				AV	2390.000	-49.71	≤-41.20	PASS
				Peak	2310.000	-43.44	≤-21.20	PASS
				Peak	2314.000	-37.67	≤-21.20	PASS
				Peak	2390.000	-43.17	≤-21.20	PASS
		High	2480	AV	2483.500	-47.11	≤-41.20	PASS
				AV	2483.565	-47.28	≤-41.20	PASS
				AV	2500.000	-48.9	≤-41.20	PASS
				Peak	2483.500	-40.09	≤-21.20	PASS
				Peak	2495.043	-38.28	≤-21.20	PASS
				Peak	2500.000	-42.39	≤-21.20	PASS

Note：

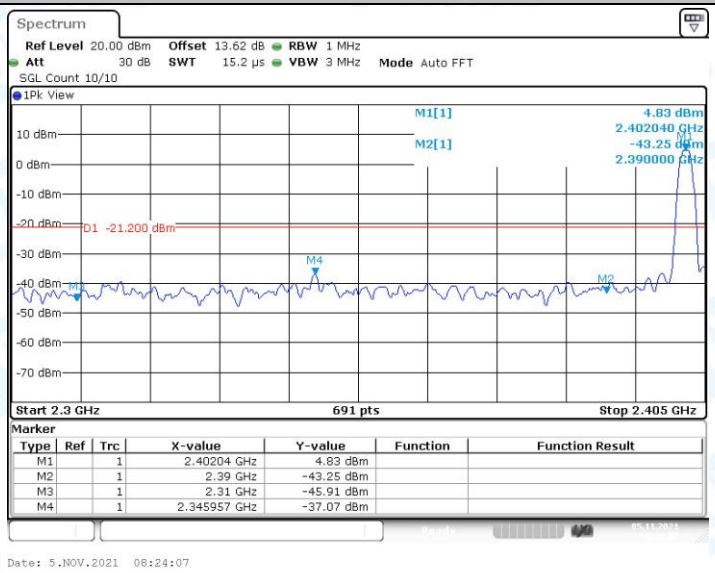
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.

8.2.Test Graphs

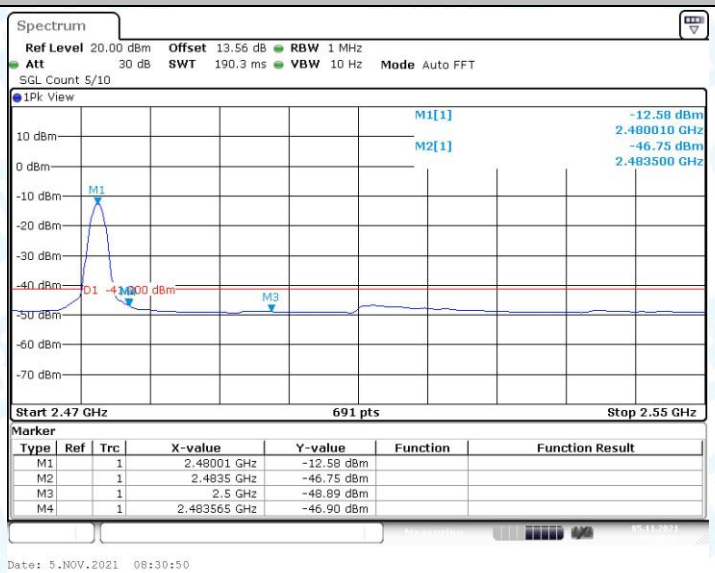
BLE_1M_Ant1_Low_2402_AV



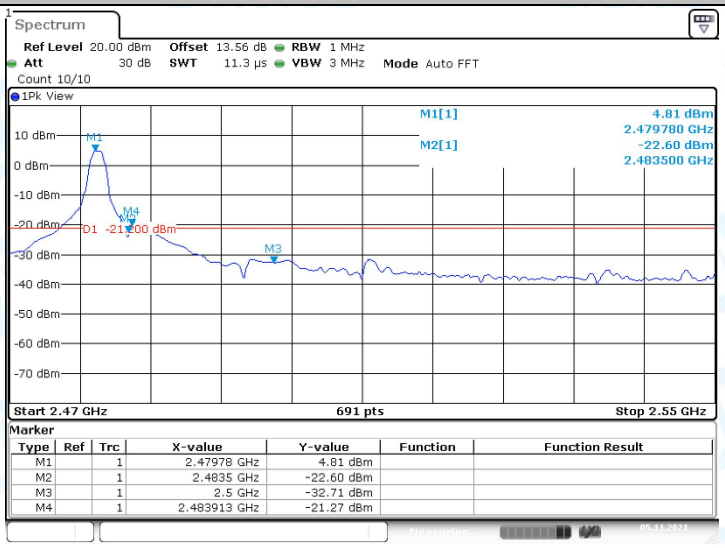
BLE_1M_Ant1_Low_2402_Peak



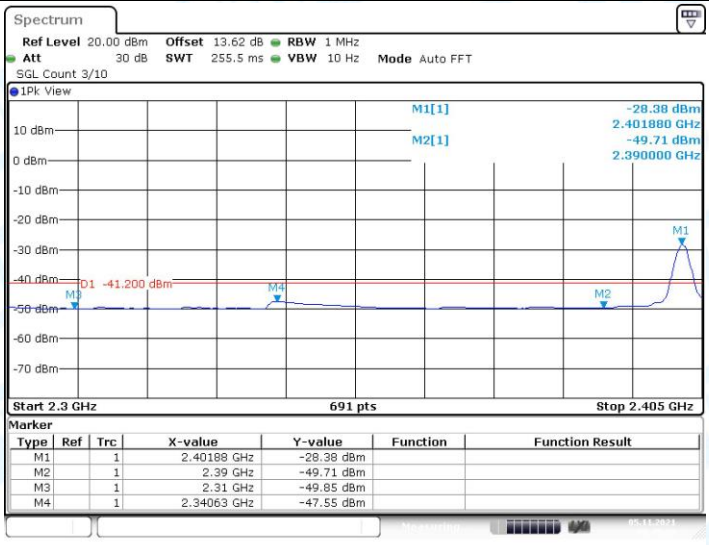
BLE_1M_Ant1_High_2480_AV



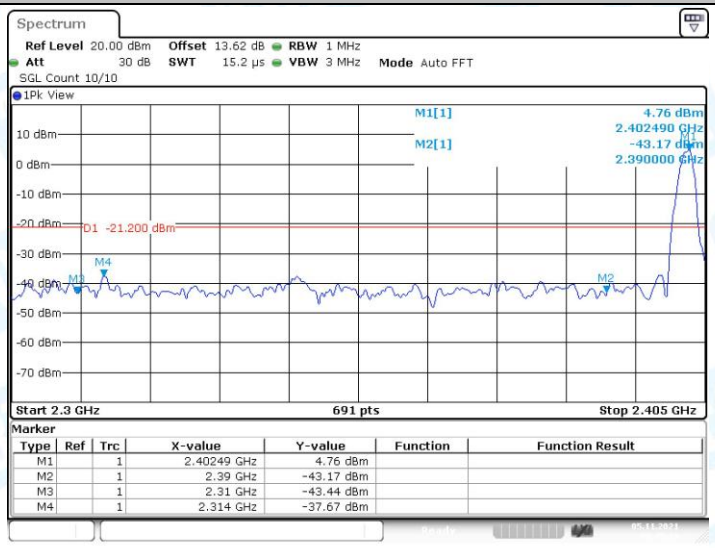
BLE_1M_Ant1_High_2480_Peak



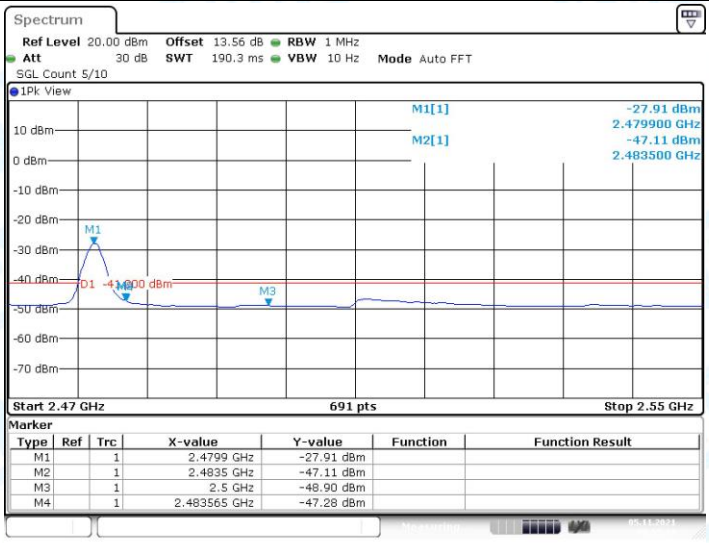
BLE_2M_Ant1_Low_2402_AV



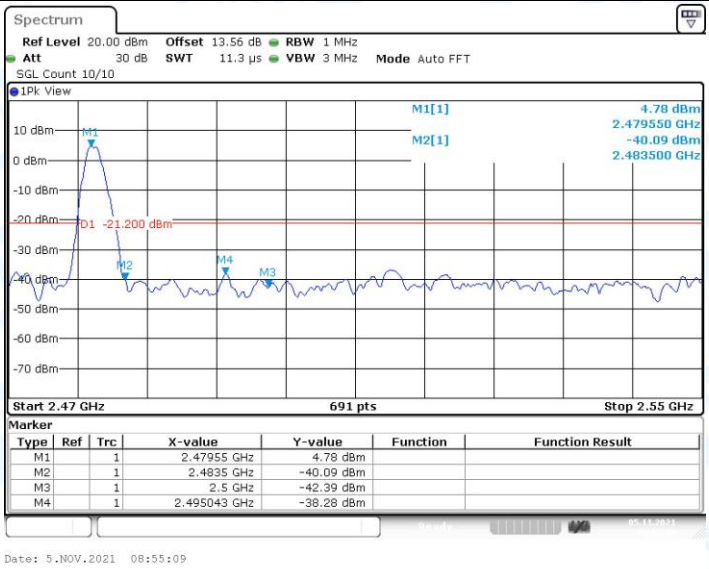
BLE_2M_Ant1_Low_2402_Peak



BLE_2M_Ant1_High_2480_AV



BLE_2M_Ant1_High_2480_Peak



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