

# RF Test Data for Bluetooth LE (Conducted Measurements)

General Description of EUT	
<b>Product Name:</b>	IPTV Receiver
<b>Test Model:</b>	Amigo 7X V2
<b>Sample ID:</b>	20210821-21-2#
Environmental Conditions	
<b>Temperature:</b>	24°C
<b>Relative Humidity:</b>	52%
<b>Test Voltage:</b>	DC12V
<b>Test Engineer:</b>	Hejingchang
Note: For a more detailed features description, please refer to the report TB-FCC183403.	

## Contents

1. DTS Bandwidth.....	3
1.1. Test Result.....	3
1.2. Test Graphs .....	4
2. Occupied Channel Bandwidth.....	6
2.1. Test Result.....	6
2.2. Test Graphs .....	7
3. Maximum conducted output power.....	9
3.1. Test Result.....	9
3.2. Test Graphs .....	10
4. Maximum power spectral density .....	12
4.1. Test Result.....	12
4.2. Test Graphs .....	13
5. Band edge measurements .....	15
5.1. Test Result.....	15
5.2. Test Graphs .....	16
6. Conducted Spurious Emission.....	18
6.1. Test Result.....	18
6.2. Test Graphs .....	19
7. Duty Cycle .....	25
7.1. Test Result.....	25
7.2. Test Graphs .....	26
8. Emissions in Restricted Bands.....	28
8.1. Test Result.....	28
8.2. Test Graphs .....	29

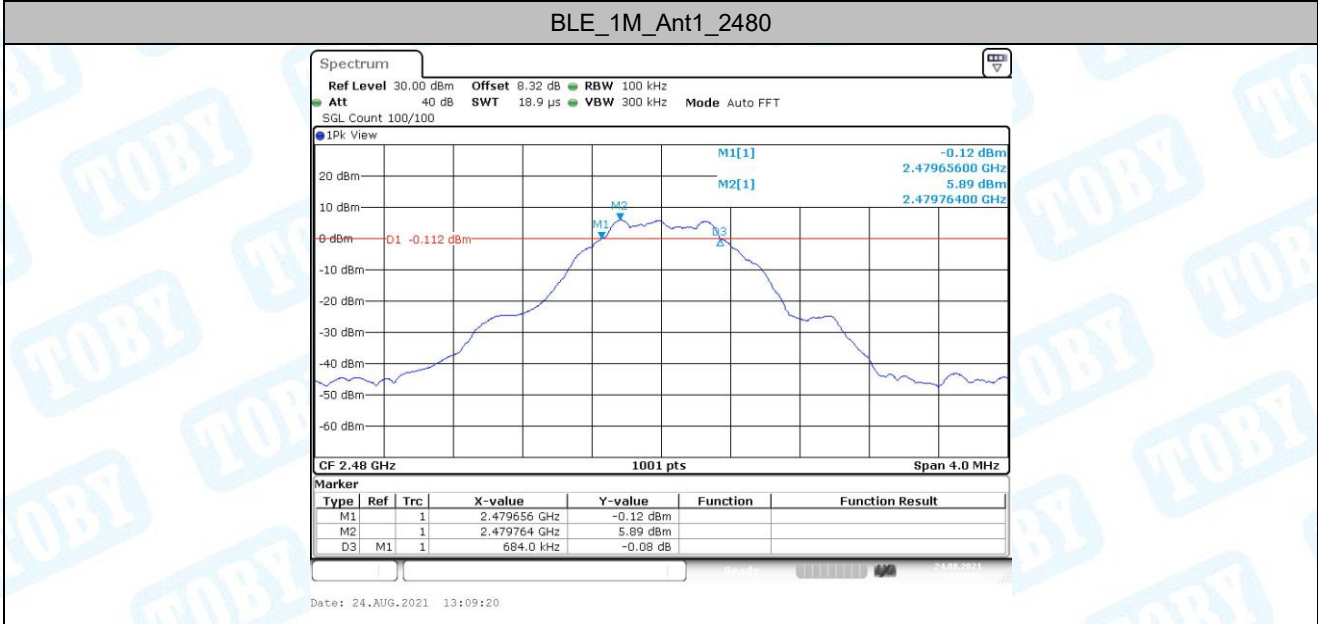
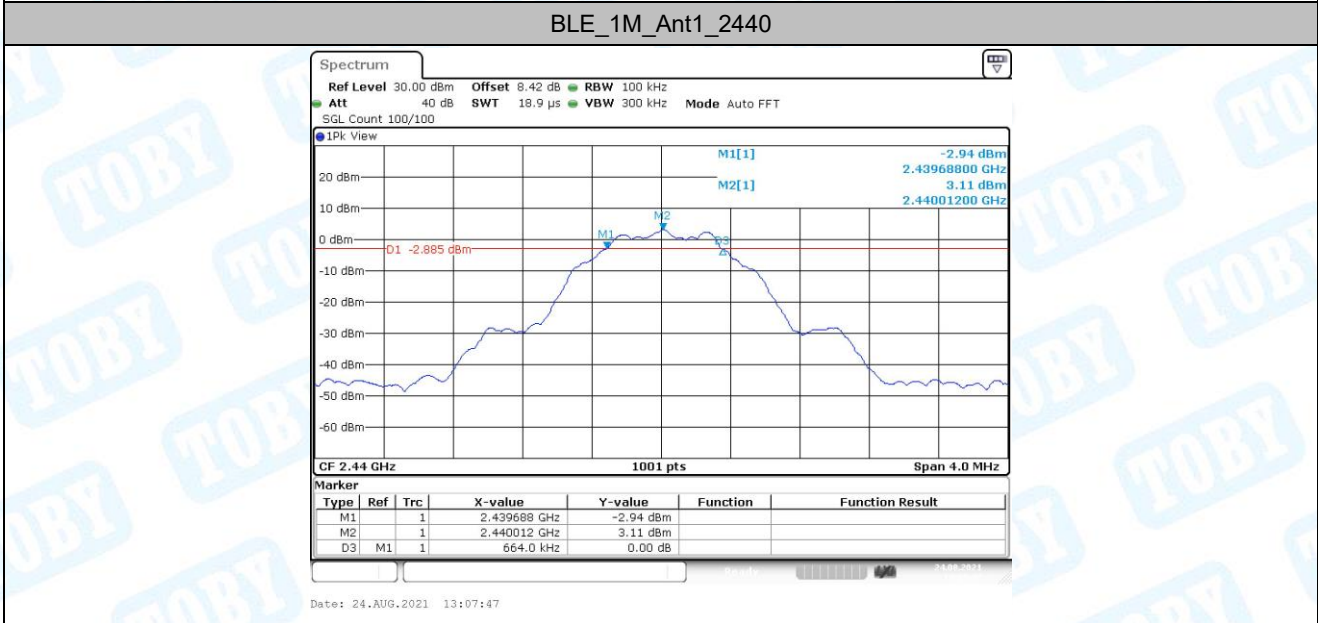
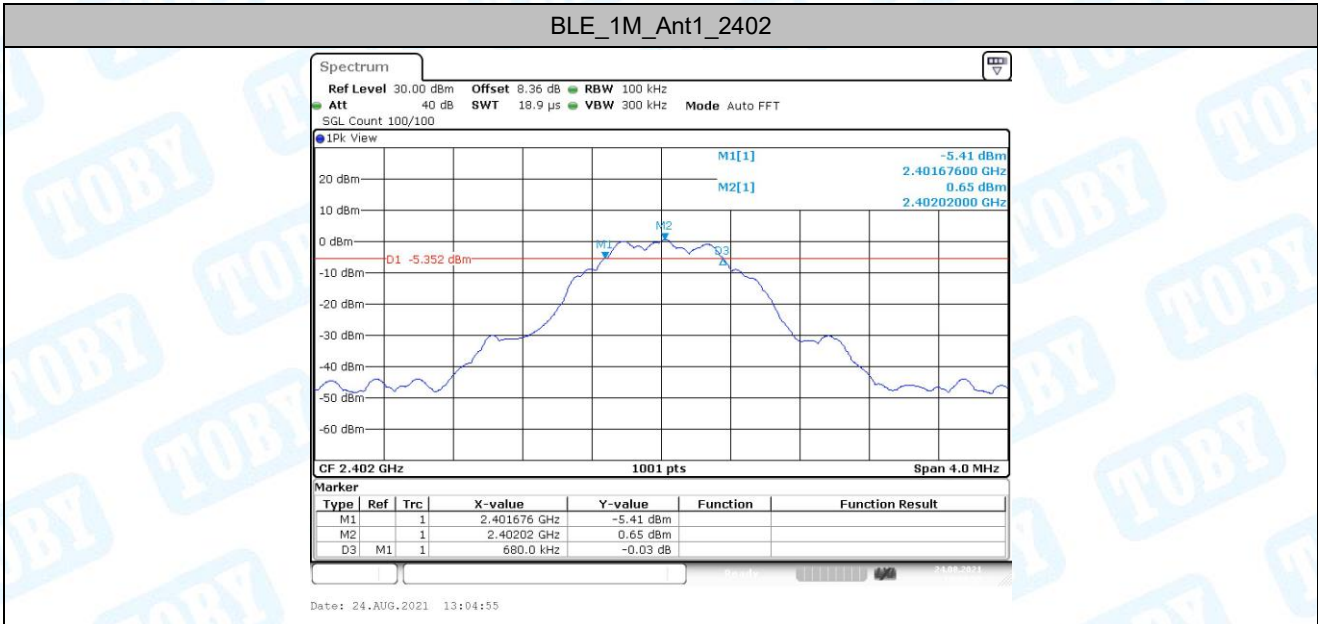


## 1. DTS Bandwidth

### 1.1. Test Result

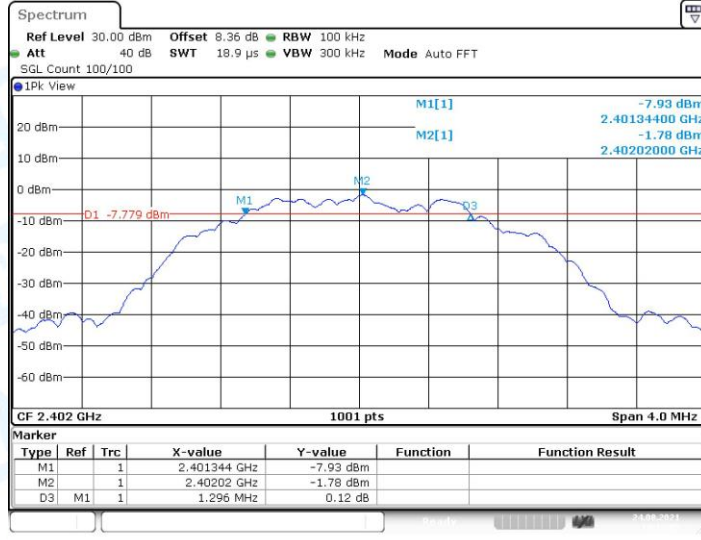
Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.680	2401.676	2402.356	0.5	PASS
		2440	0.664	2439.688	2440.352	0.5	PASS
		2480	0.684	2479.656	2480.340	0.5	PASS
BLE_2M	Ant1	2402	1.296	2401.344	2402.640	0.5	PASS
		2440	1.008	2439.608	2440.616	0.5	PASS
		2480	1.368	2479.328	2480.696	0.5	PASS

## 1.2. Test Graphs

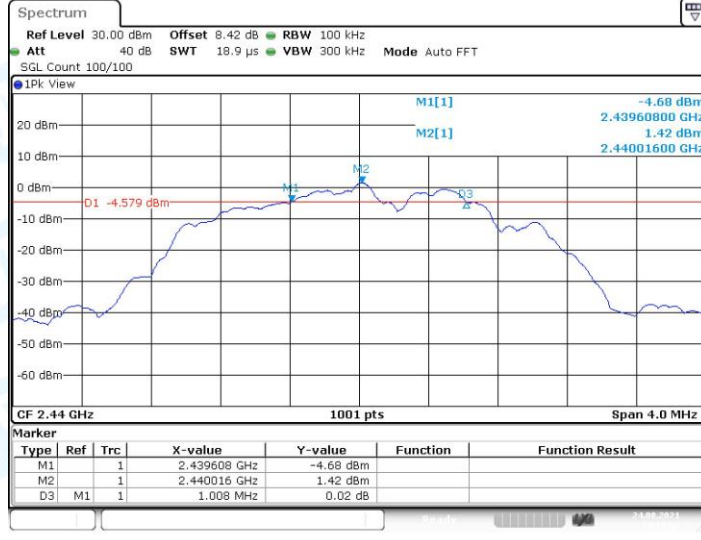




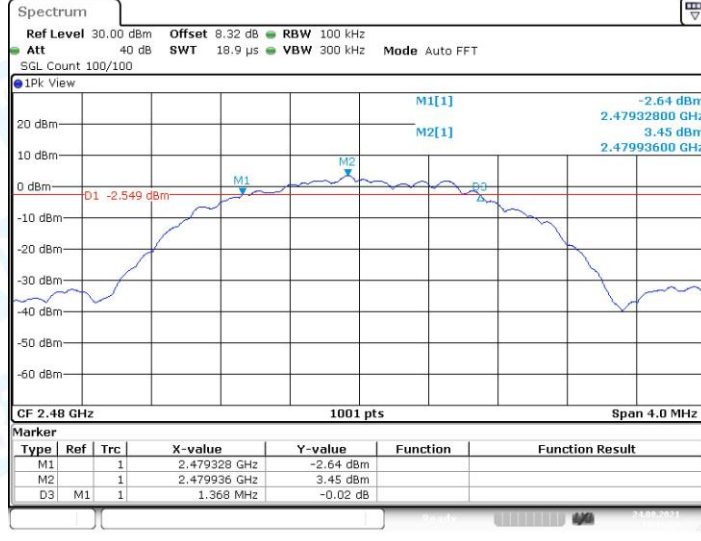
### BLE\_2M\_Ant1\_2402



### BLE\_2M\_Ant1\_2440



### BLE\_2M\_Ant1\_2480



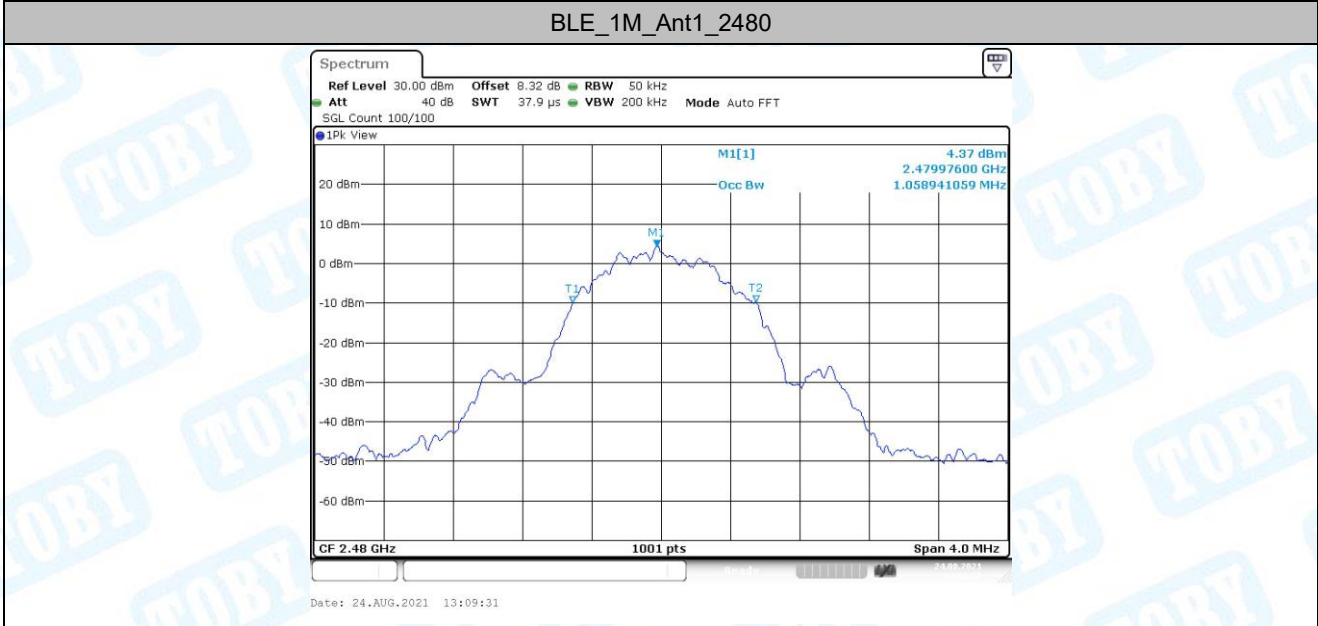
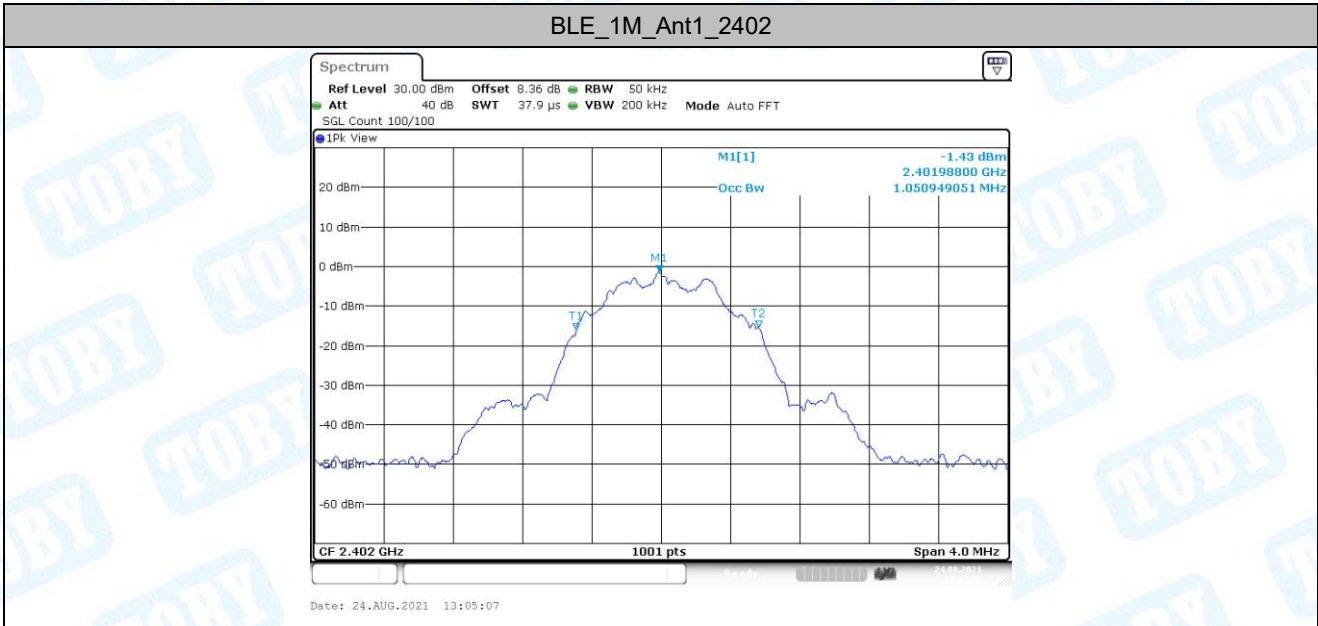
## 2. Occupied Channel Bandwidth

### 2.1. Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.051	2401.508	2402.559	---	PASS
		2440	1.047	2439.500	2440.547	---	PASS
		2480	1.059	2479.489	2480.547	---	PASS
BLE_2M	Ant1	2402	2.042	2401.021	2403.063	---	PASS
		2440	2.05	2439.005	2441.055	---	PASS
		2480	2.034	2479.005	2481.039	---	PASS



## 2.2. Test Graphs



### BLE\_2M\_Ant1\_2402



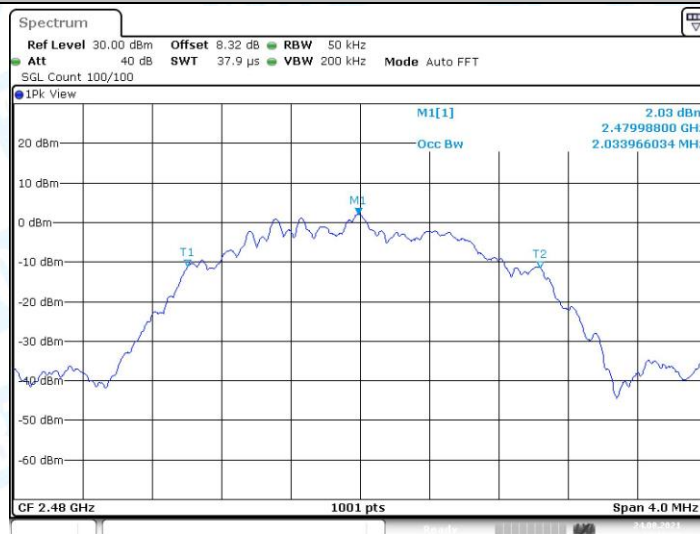
Date: 24.AUG.2021 13:12:16

### BLE\_2M\_Ant1\_2440



Date: 24.AUG.2021 13:15:03

### BLE\_2M\_Ant1\_2480



Date: 24.AUG.2021 13:16:39

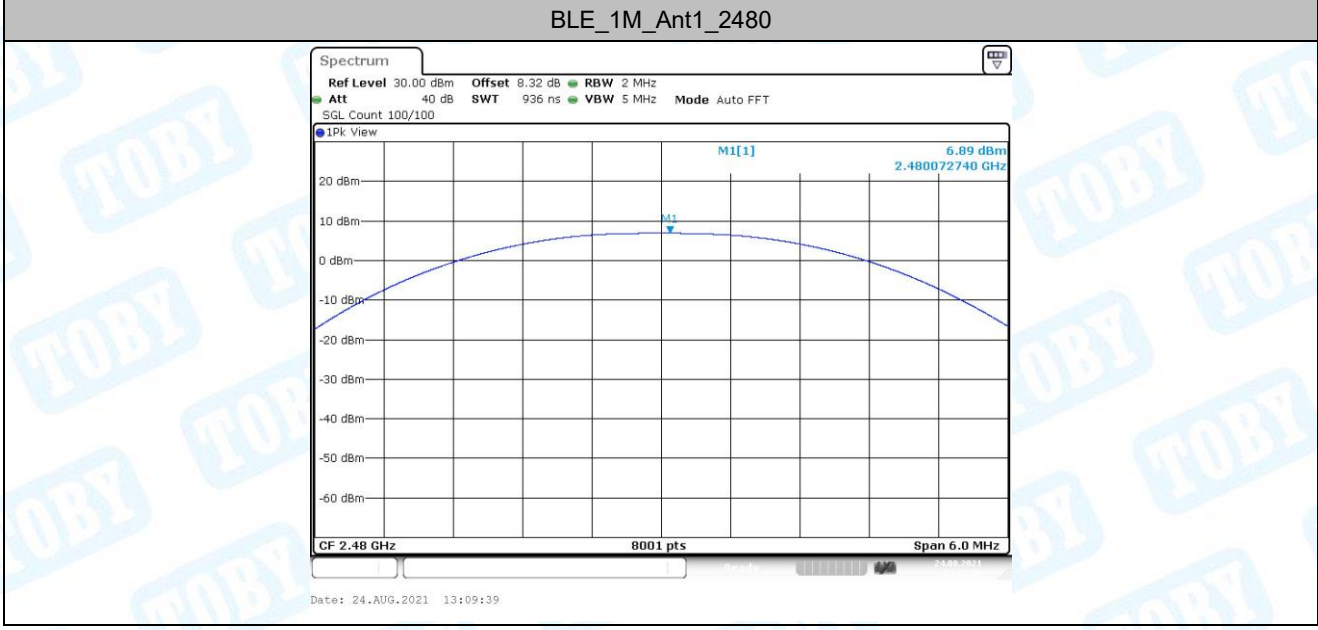
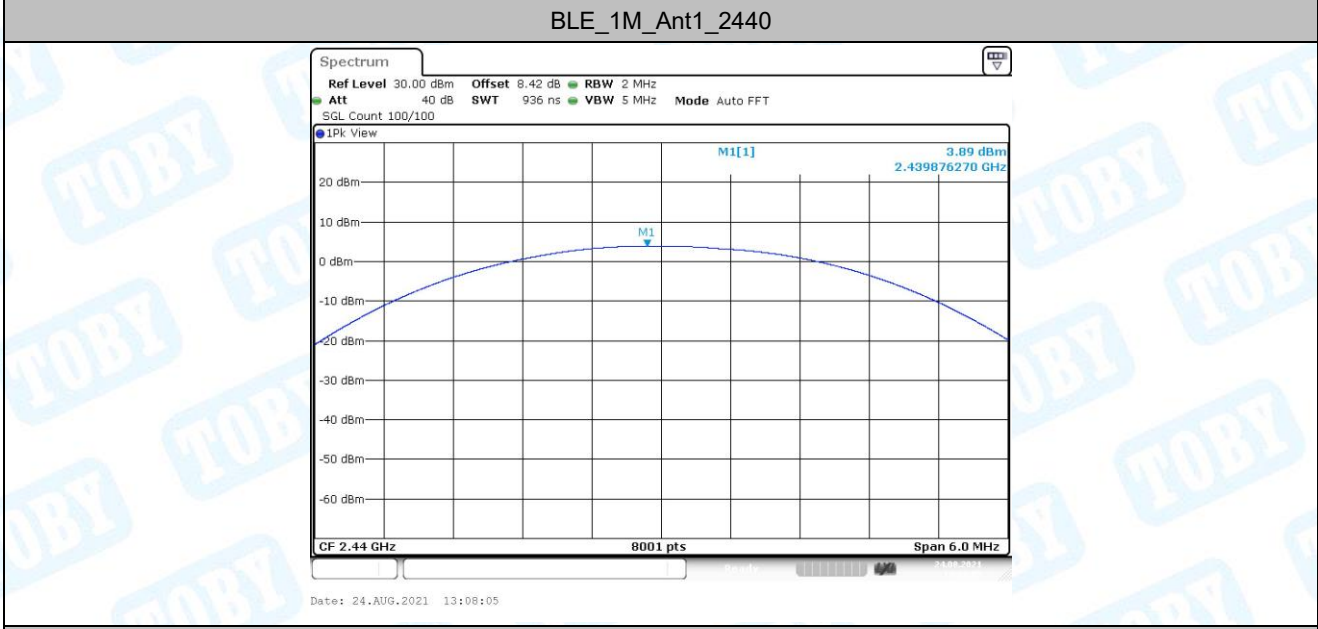
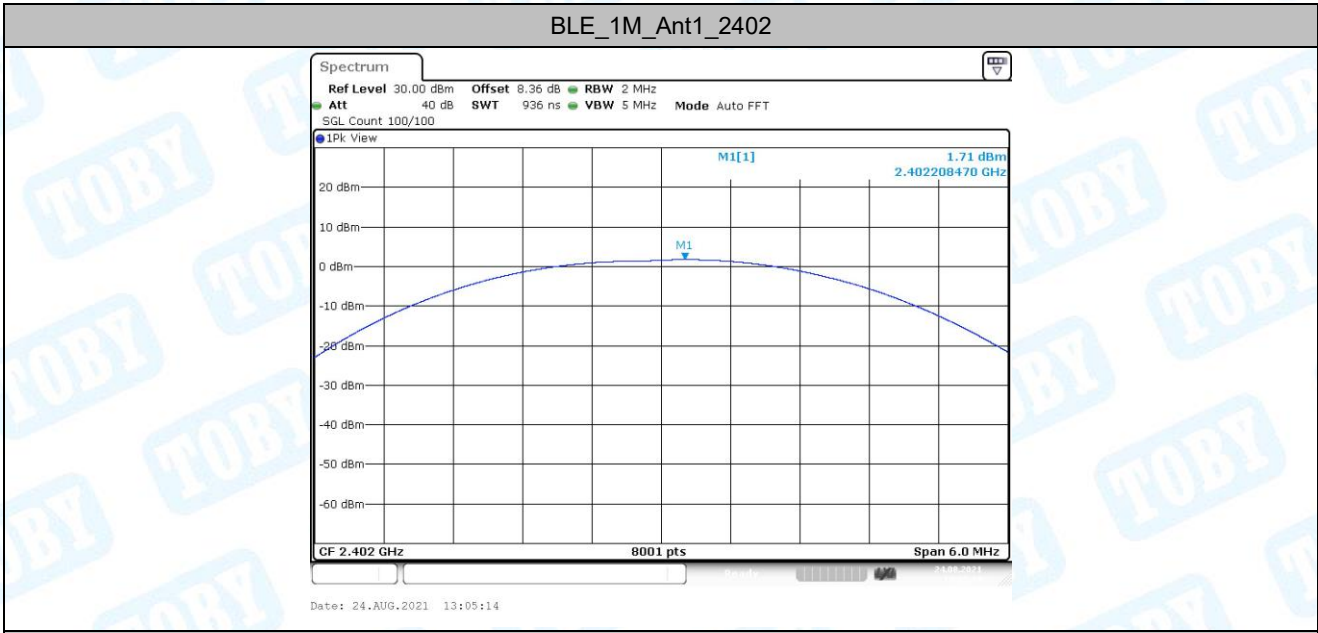


### 3. Maximum conducted output power

#### 3.1. Test Result

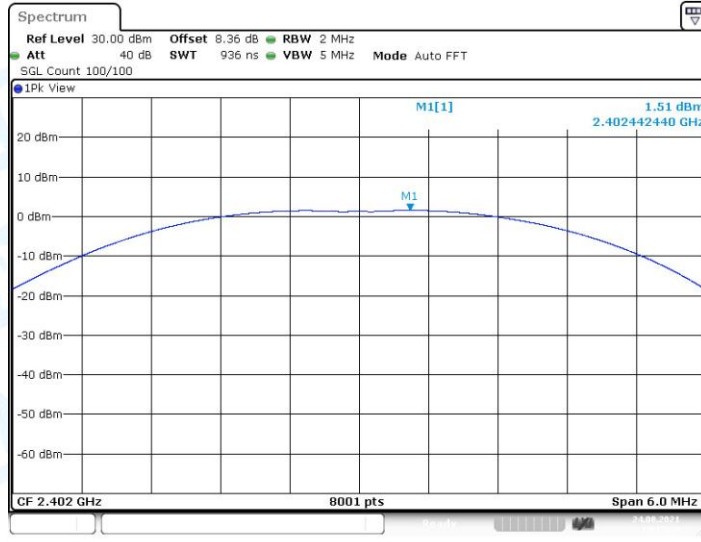
Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	1.71	≤30	PASS
		2440	3.89	≤30	PASS
		2480	6.89	≤30	PASS
BLE_2M	Ant1	2402	1.51	≤30	PASS
		2440	3.63	≤30	PASS
		2480	6.95	≤30	PASS

## 3.2. Test Graphs



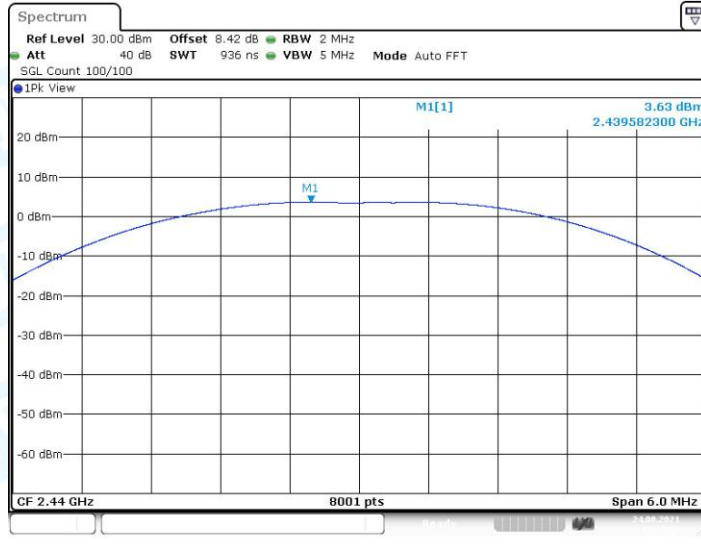


### BLE\_2M\_Ant1\_2402



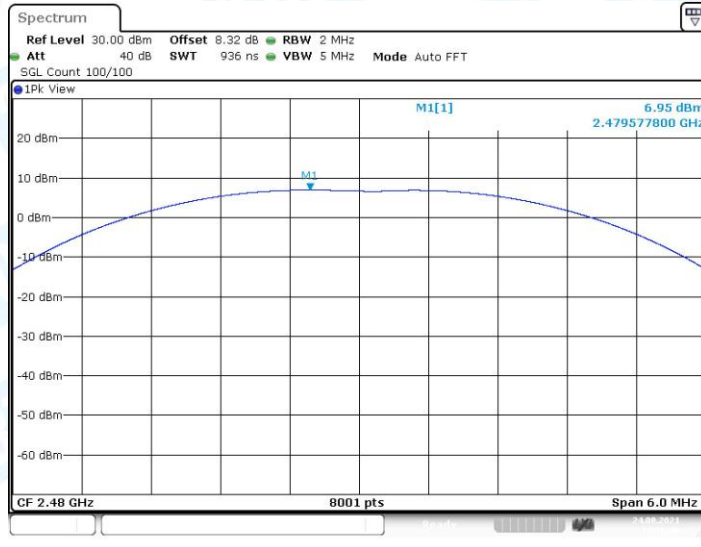
Date: 24.AUG.2021 13:12:24

### BLE\_2M\_Ant1\_2440



Date: 24.AUG.2021 13:15:10

### BLE\_2M\_Ant1\_2480



Date: 24.AUG.2021 13:16:46

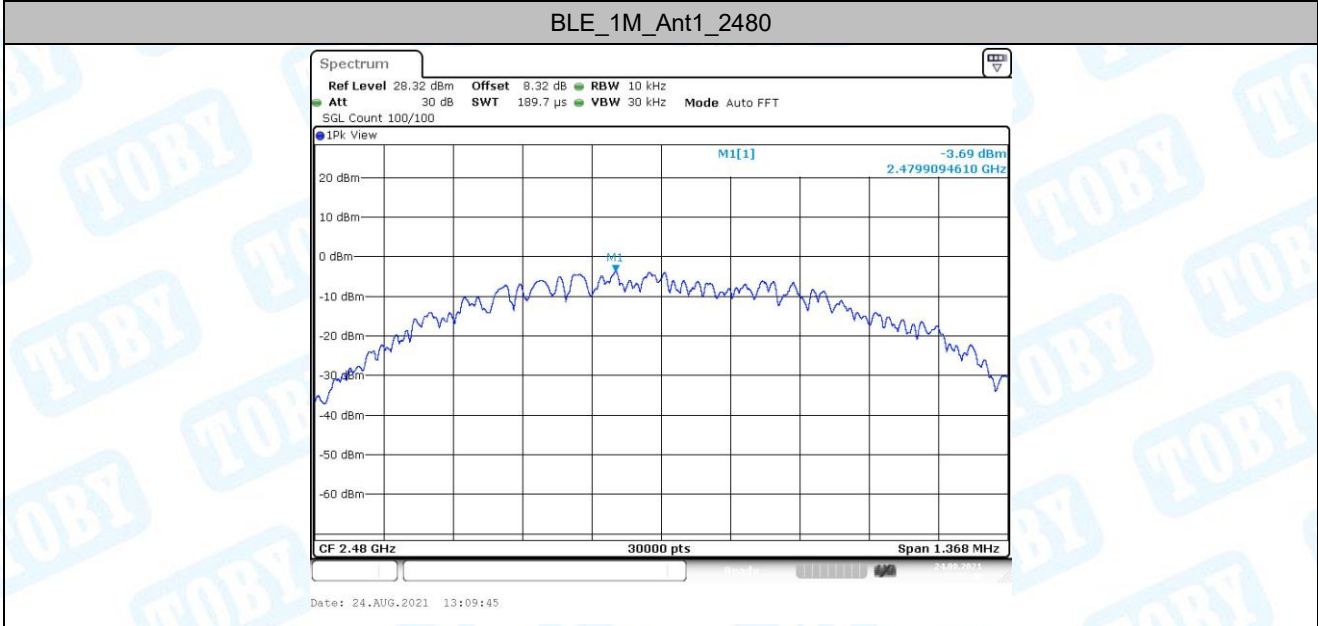
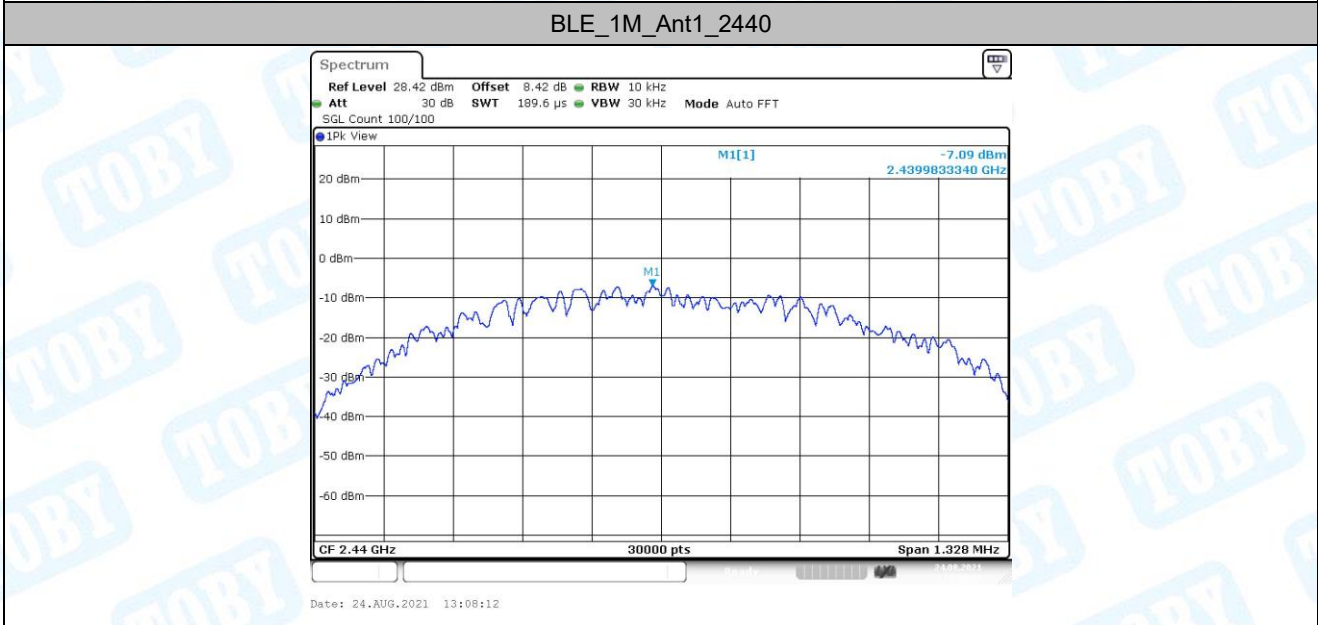
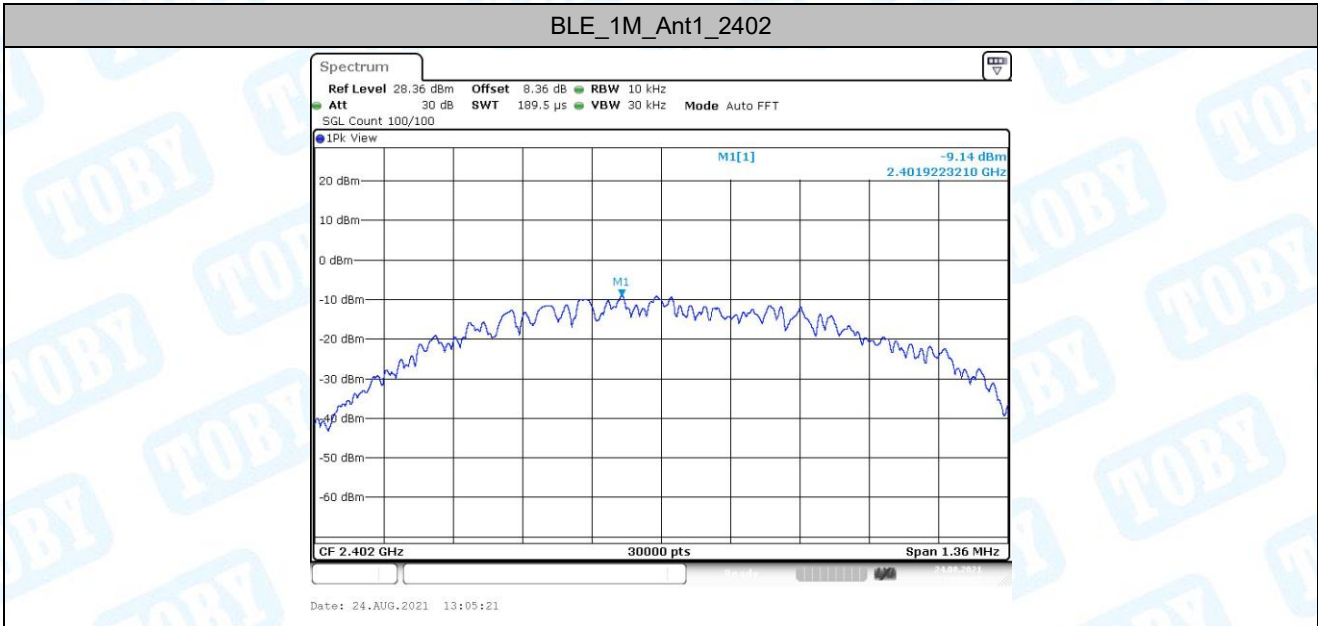
## 4. Maximum power spectral density

### 4.1. Test Result

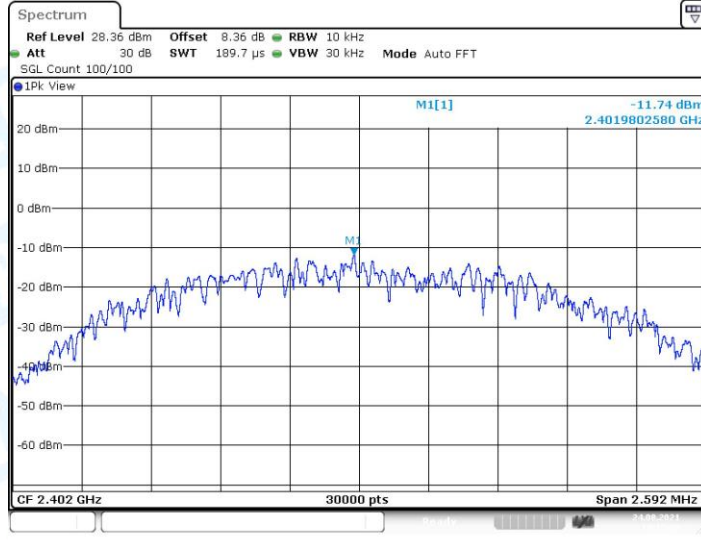
Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-9.14	≤8	PASS
		2440	-7.09	≤8	PASS
		2480	-3.69	≤8	PASS
BLE_2M	Ant1	2402	-11.74	≤8	PASS
		2440	-9.58	≤8	PASS
		2480	-6.12	≤8	PASS



## 4.2. Test Graphs

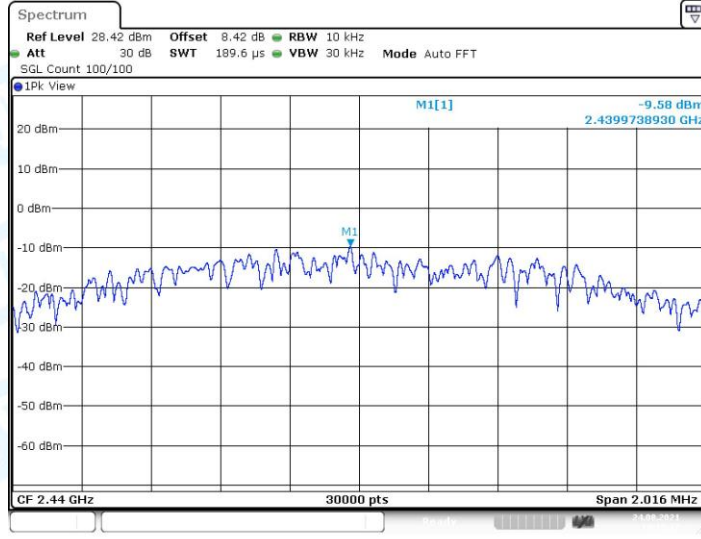


### BLE\_2M\_Ant1\_2402



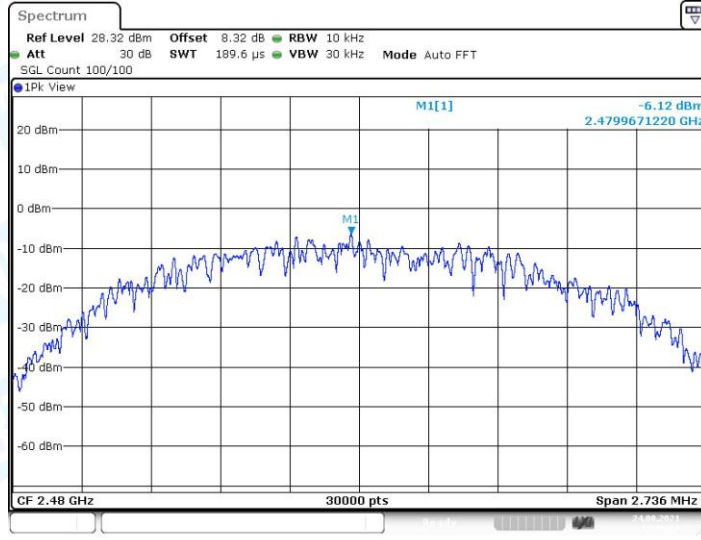
Date: 24.AUG.2021 13:12:30

### BLE\_2M\_Ant1\_2440



Date: 24.AUG.2021 13:15:17

### BLE\_2M\_Ant1\_2480



Date: 24.AUG.2021 13:16:53

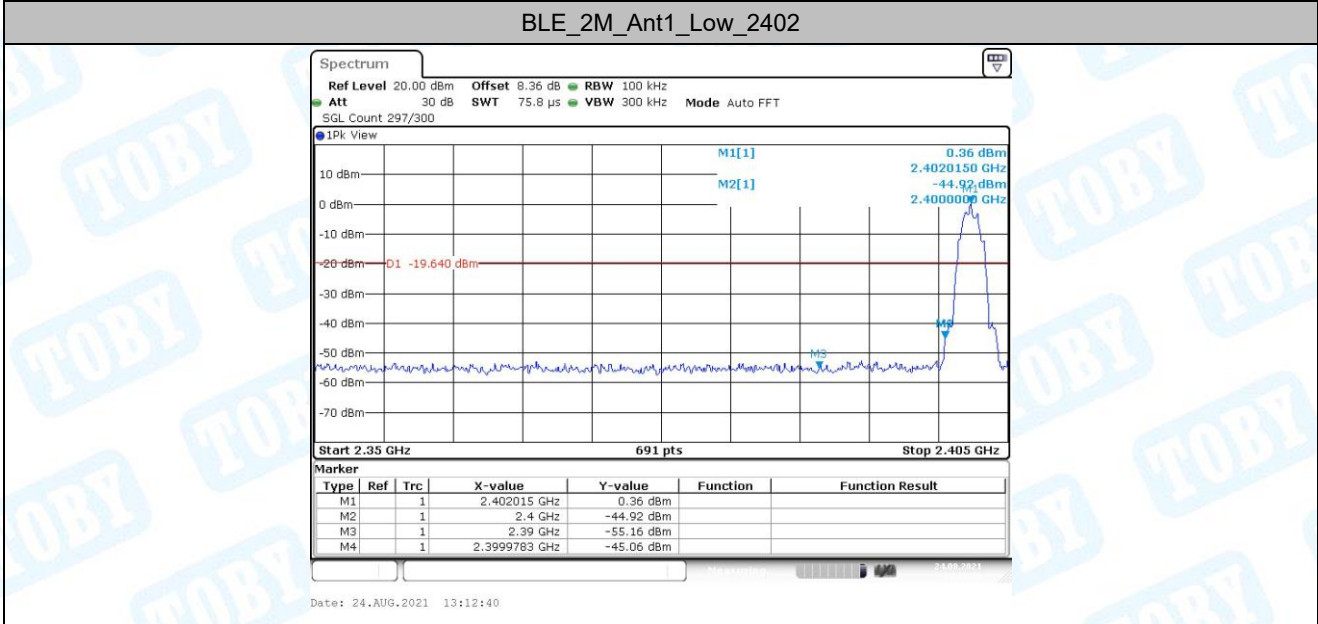
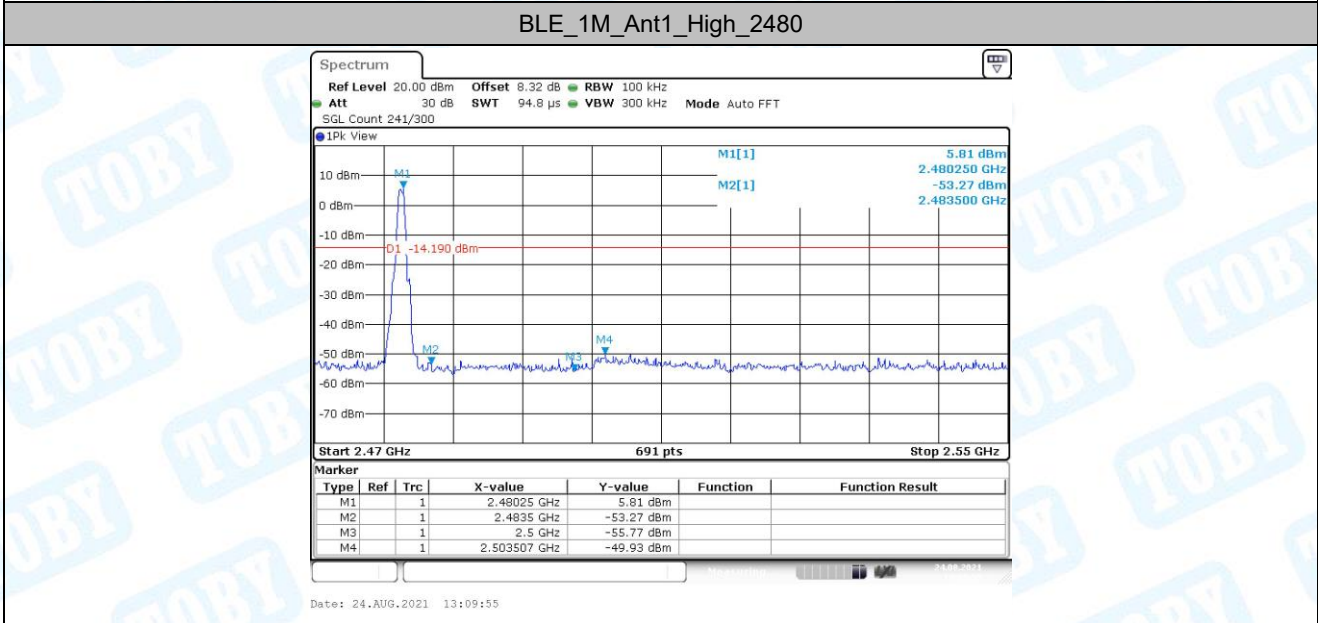
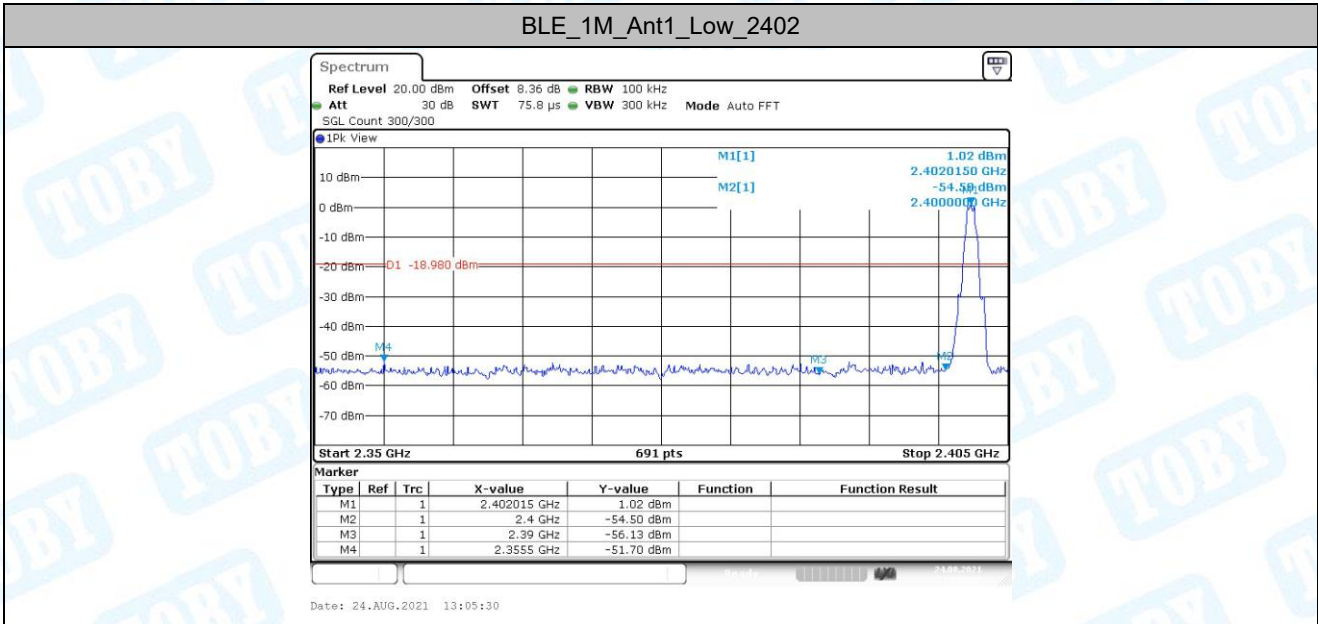


## 5. Band edge measurements

### 5.1. Test Result

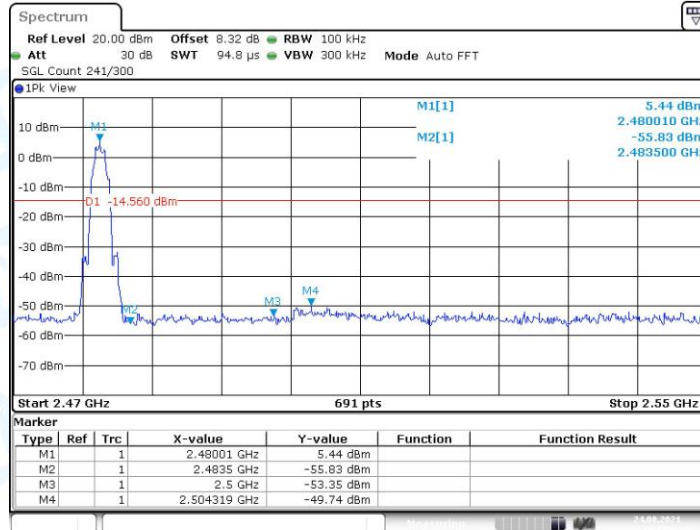
Test Mode	Antenna	ChName	Channel	Ref.Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	1.02	-51.7	≤-18.98	PASS
		High	2480	5.81	-49.93	≤-14.19	PASS
BLE_2M	Ant1	Low	2402	0.36	-45.06	≤-19.64	PASS
		High	2480	5.44	-49.74	≤-14.56	PASS

## 5.2. Test Graphs





## BLE\_2M\_Ant1\_High\_2480



Date: 24.AUG.2021 13:17:02

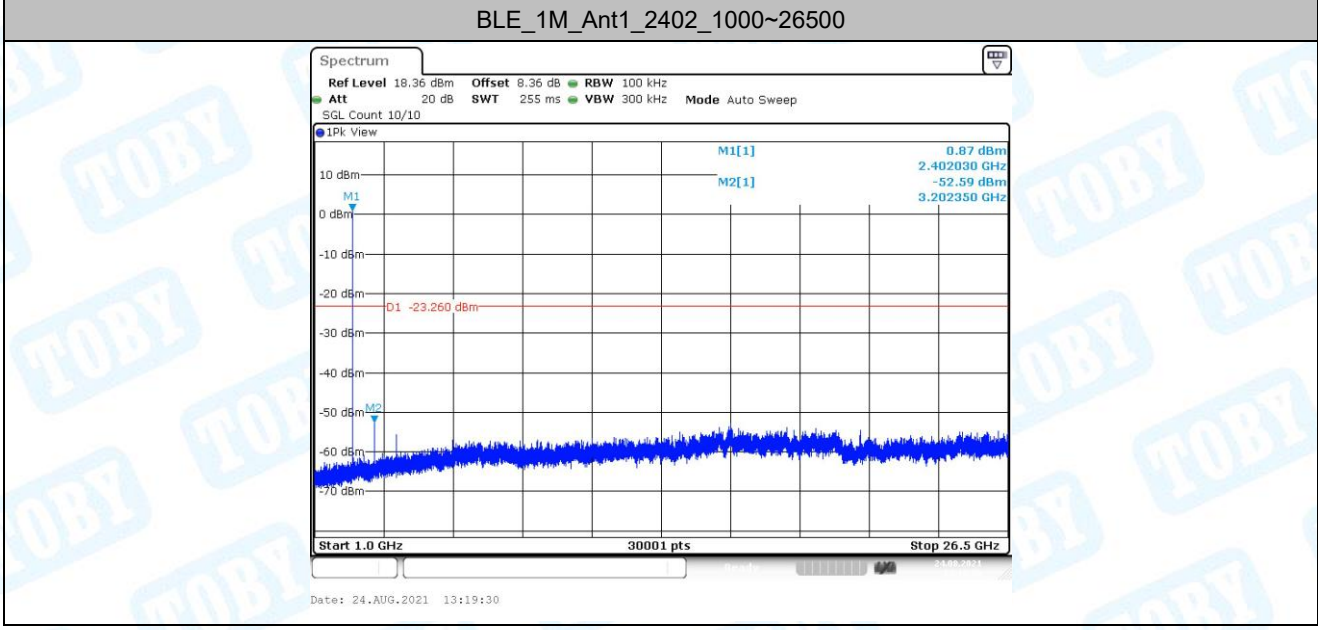
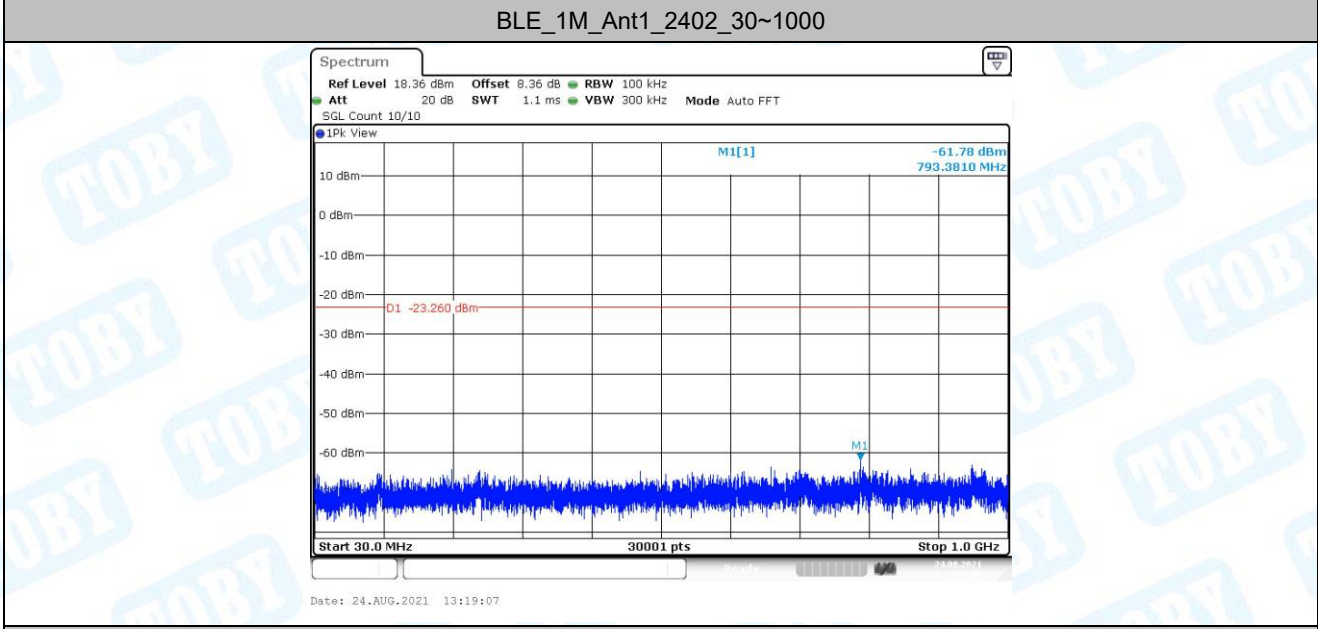
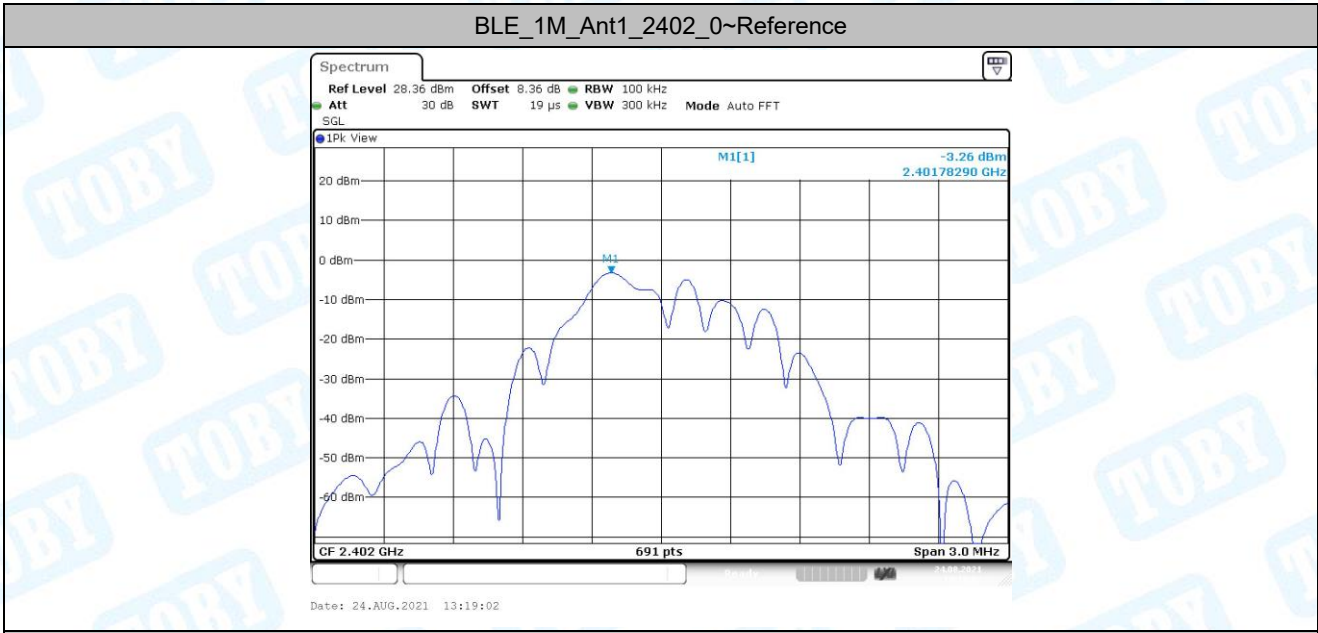
## 6. Conducted Spurious Emission

### 6.1. Test Result

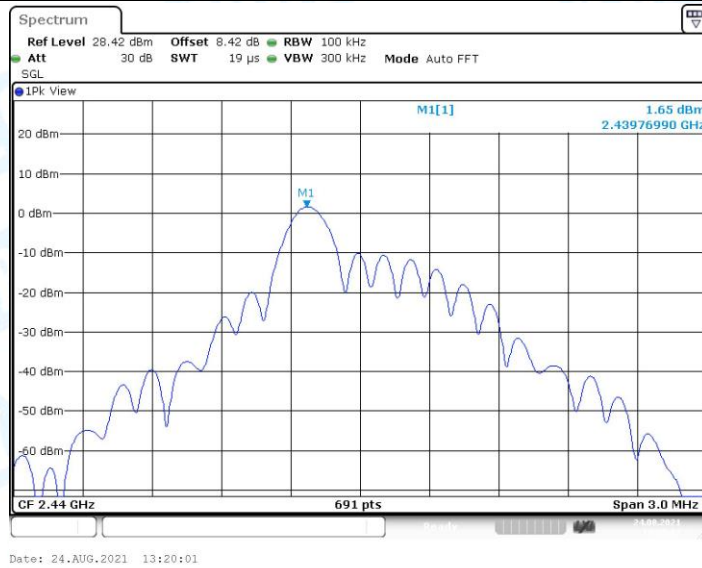
Test Mode	Antenna	Channel	Freq. Range [MHz]	Ref. Level [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	-3.26	-3.26	---	PASS
			30~1000	-3.26	-61.78	≤-23.26	PASS
			1000~26500	-3.26	-52.59	≤-23.26	PASS
		2440	Reference	1.65	1.65	---	PASS
			30~1000	1.65	-62.16	≤-18.35	PASS
			1000~26500	1.65	-53.62	≤-18.35	PASS
		2480	Reference	2.05	2.05	---	PASS
			30~1000	2.05	-63.61	≤-17.95	PASS
			1000~26500	2.05	-52.89	≤-17.95	PASS
BLE_2M	Ant1	2402	Reference	-2.95	-2.95	---	PASS
			30~1000	-2.95	-62.91	≤-22.95	PASS
			1000~26500	-2.95	-52.16	≤-22.95	PASS
		2440	Reference	-1.98	-1.98	---	PASS
			30~1000	-1.98	-61.56	≤-21.98	PASS
			1000~26500	-1.98	-53.05	≤-21.98	PASS
		2480	Reference	0.71	0.71	---	PASS
			30~1000	0.71	-62.83	≤-19.29	PASS
			1000~26500	0.71	-53.01	≤-19.29	PASS



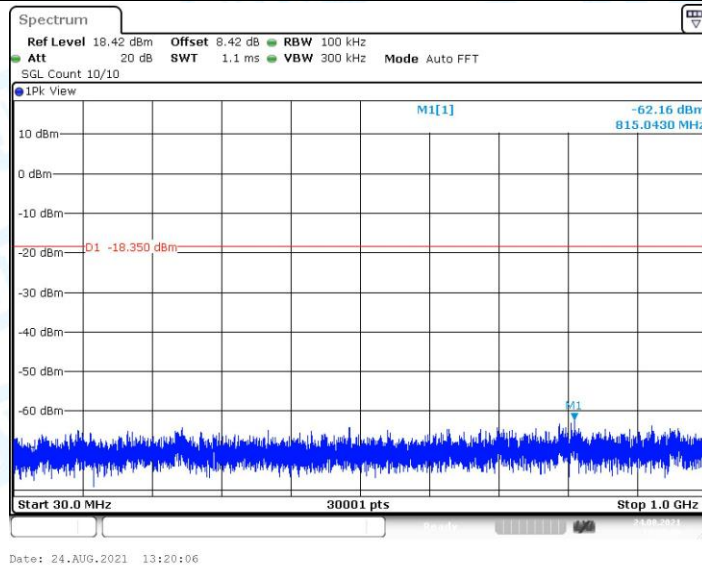
## 6.2. Test Graphs



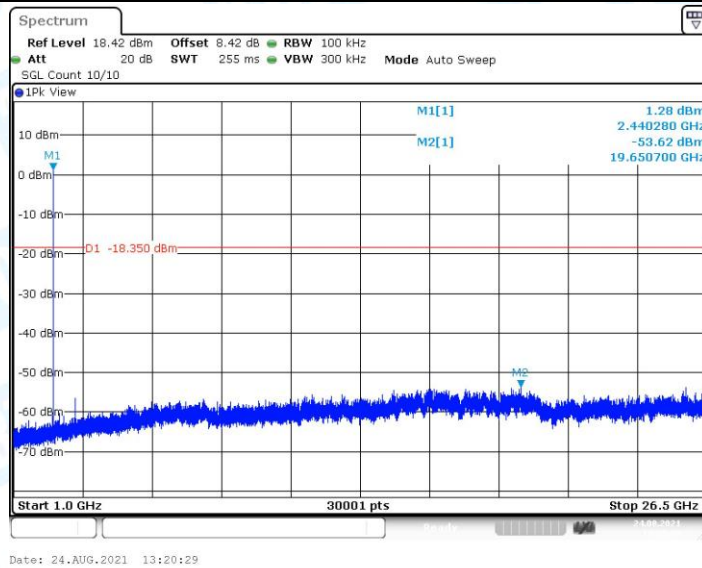
### BLE\_1M\_Ant1\_2440\_0~Reference



### BLE\_1M\_Ant1\_2440\_30~1000



### BLE\_1M\_Ant1\_2440\_1000~26500



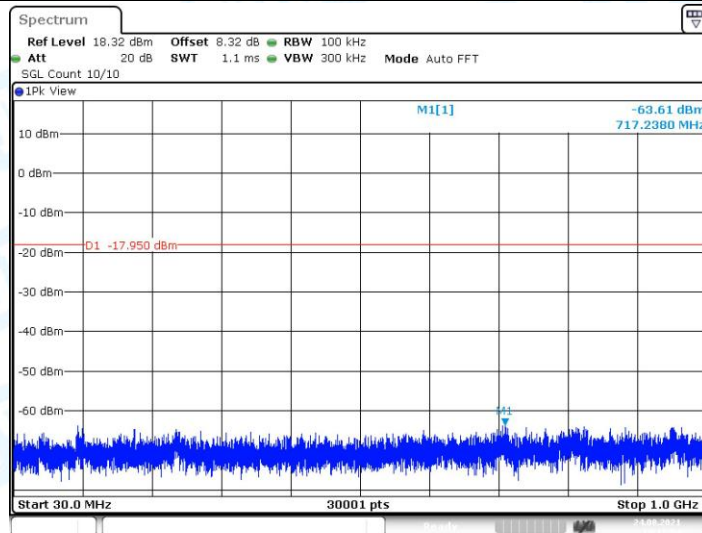


### BLE\_1M\_Ant1\_2480\_0~Reference



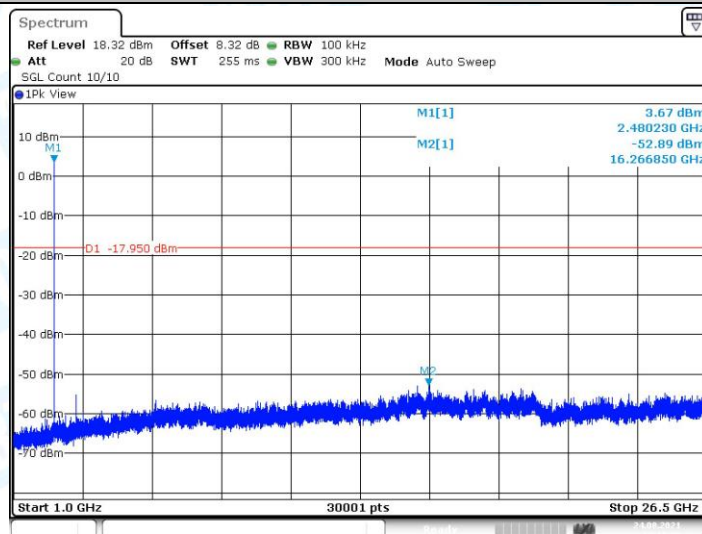
Date: 24.AUG.2021 13:10:58

### BLE\_1M\_Ant1\_2480\_30~1000



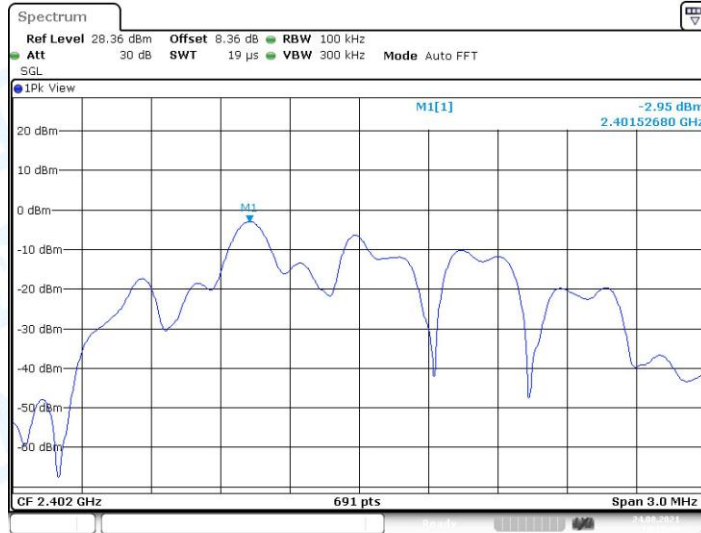
Date: 24.AUG.2021 13:11:03

### BLE\_1M\_Ant1\_2480\_1000~26500



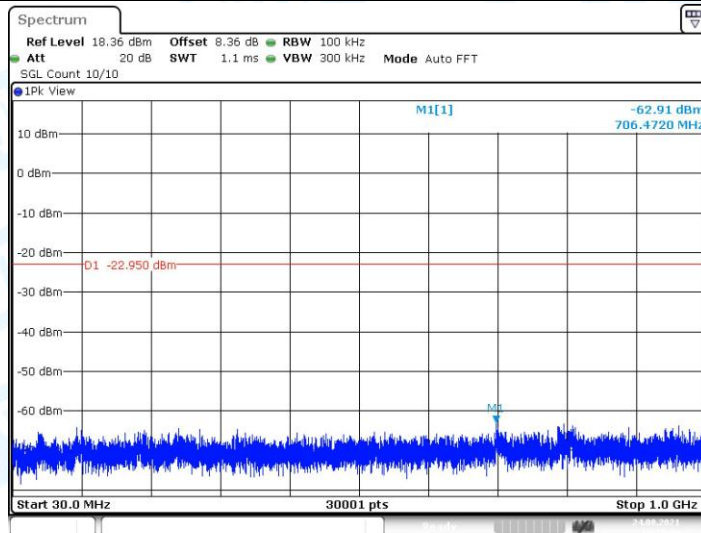
Date: 24.AUG.2021 13:11:26

### BLE\_2M\_Ant1\_2402\_0~Reference



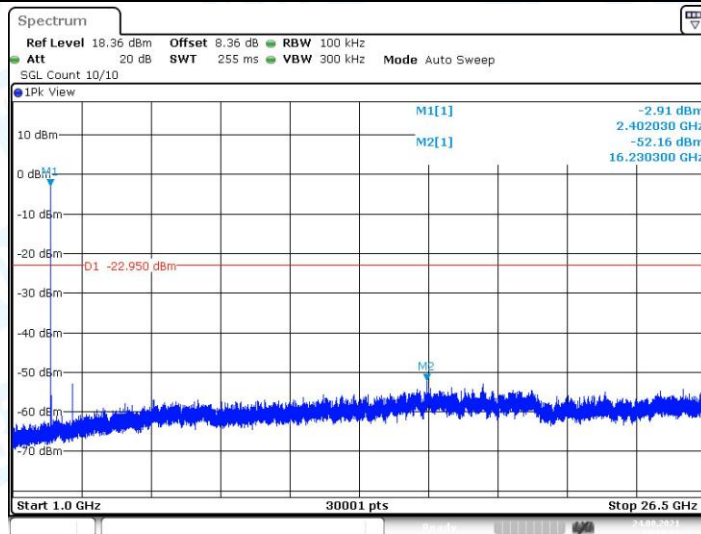
Date: 24.AUG.2021 13:13:43

### BLE\_2M\_Ant1\_2402\_30~1000



Date: 24.AUG.2021 13:13:48

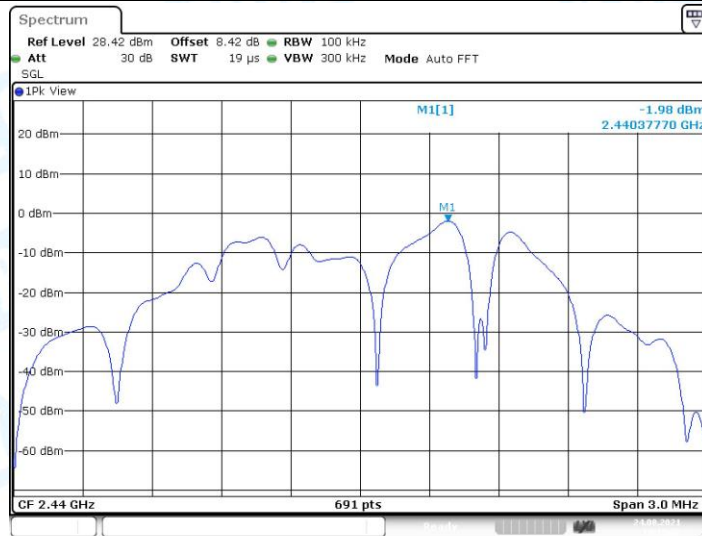
### BLE\_2M\_Ant1\_2402\_1000~26500



Date: 24.AUG.2021 13:14:11

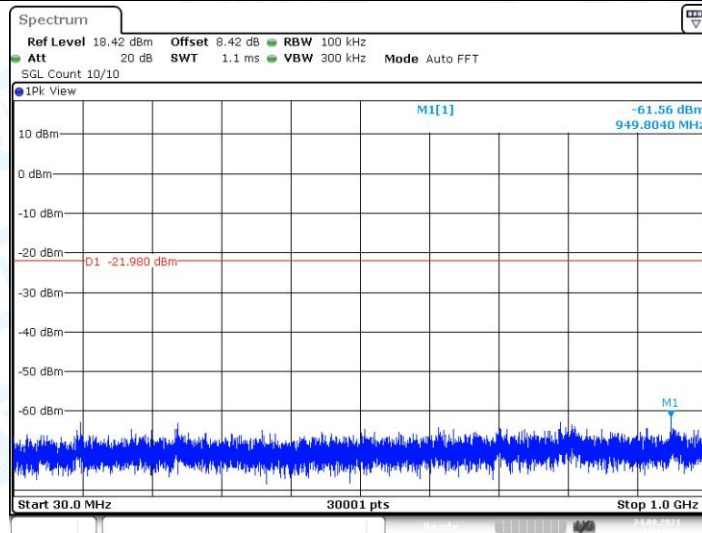


### BLE\_2M\_Ant1\_2440\_0~Reference



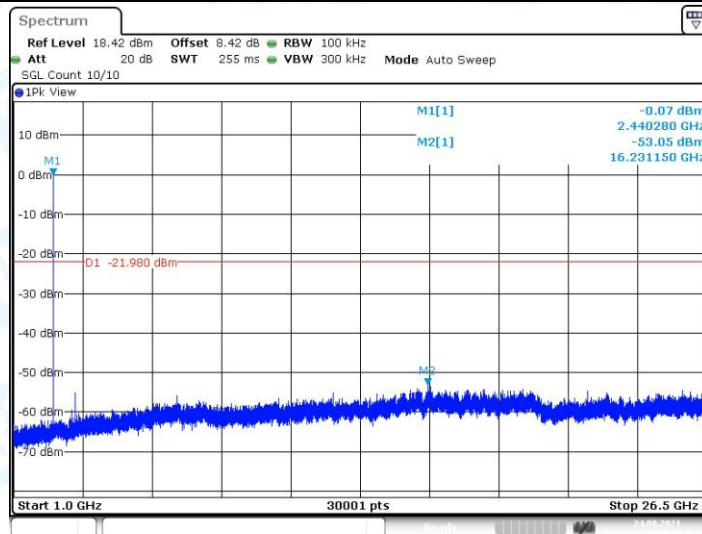
Date: 24.AUG.2021 13:15:23

### BLE\_2M\_Ant1\_2440\_30~1000



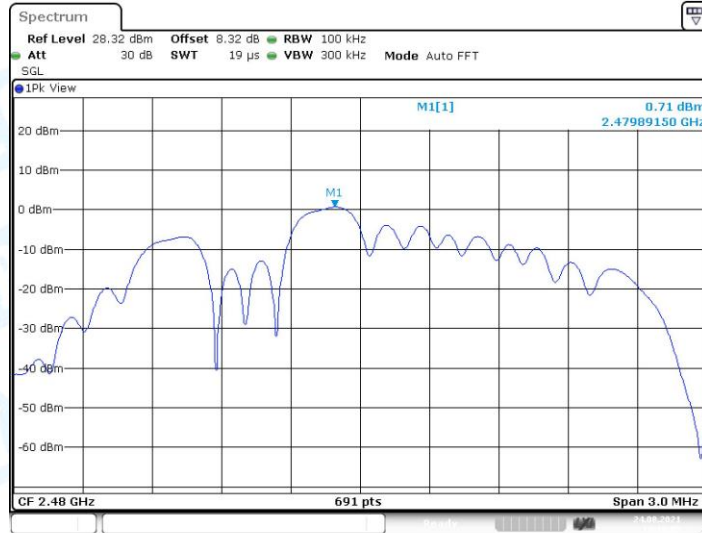
Date: 24.AUG.2021 13:15:28

### BLE\_2M\_Ant1\_2440\_1000~26500



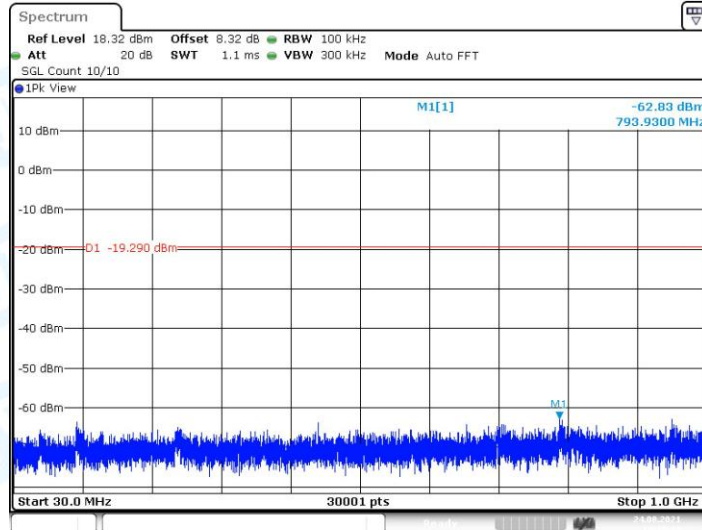
Date: 24.AUG.2021 13:15:50

### BLE\_2M\_Ant1\_2480\_0~Reference



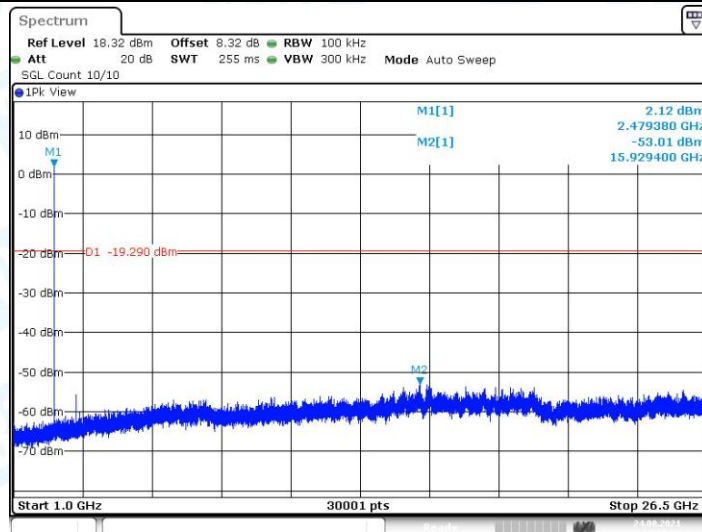
Date: 24.AUG.2021 13:18:06

### BLE\_2M\_Ant1\_2480\_30~1000



Date: 24.AUG.2021 13:18:11

### BLE\_2M\_Ant1\_2480\_1000~26500



Date: 24.AUG.2021 13:18:33

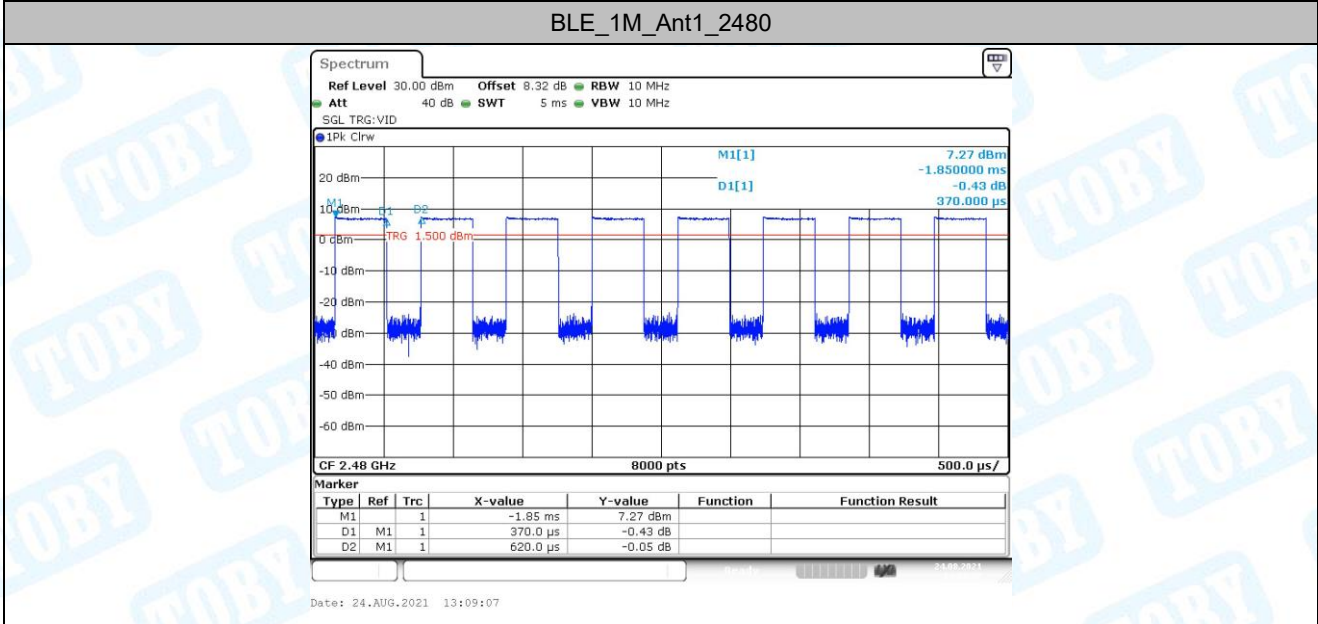
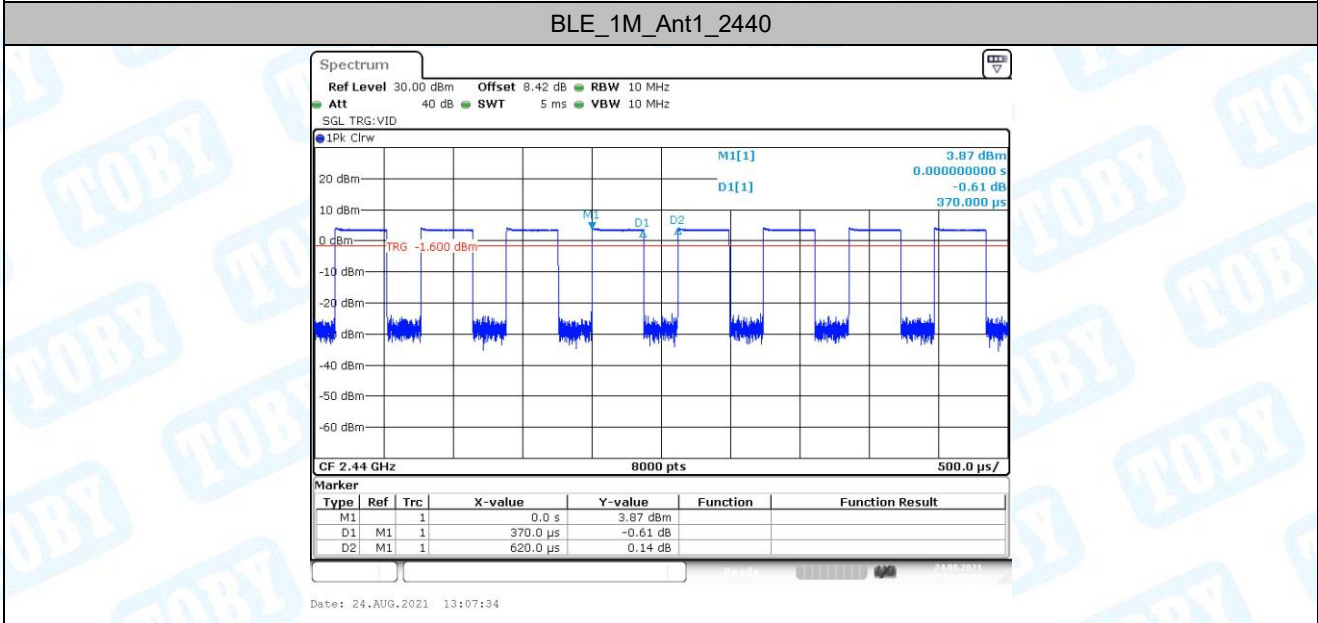
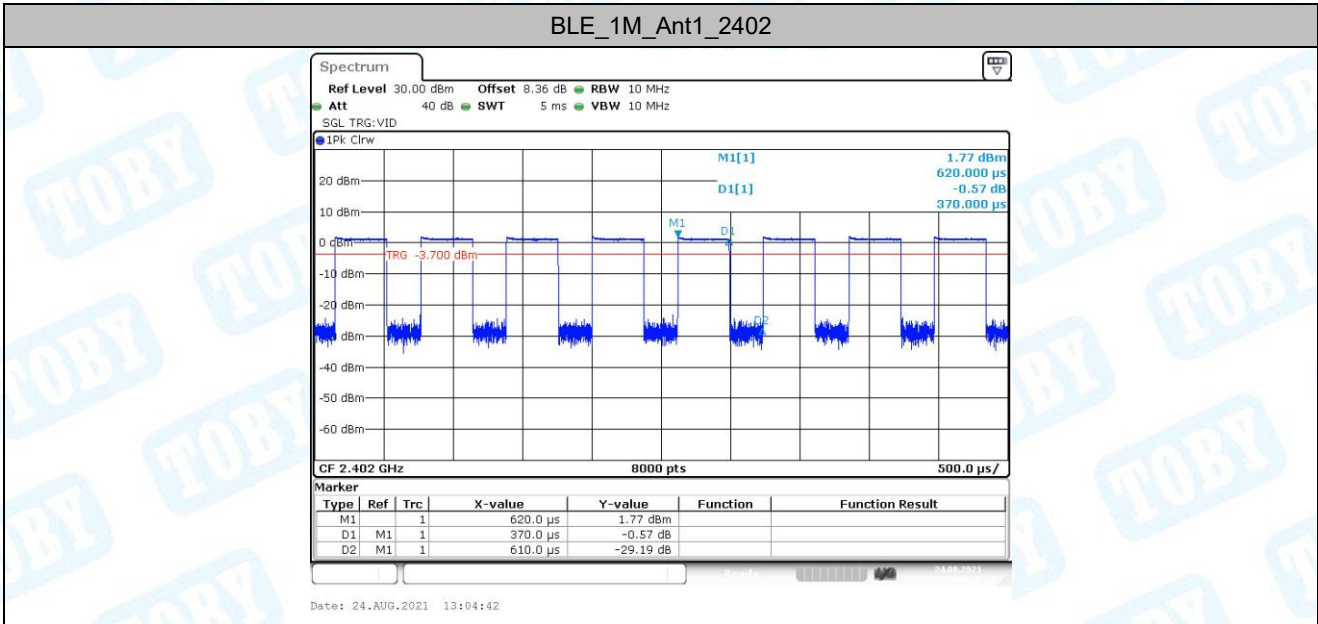


## 7. Duty Cycle

### 7.1. Test Result

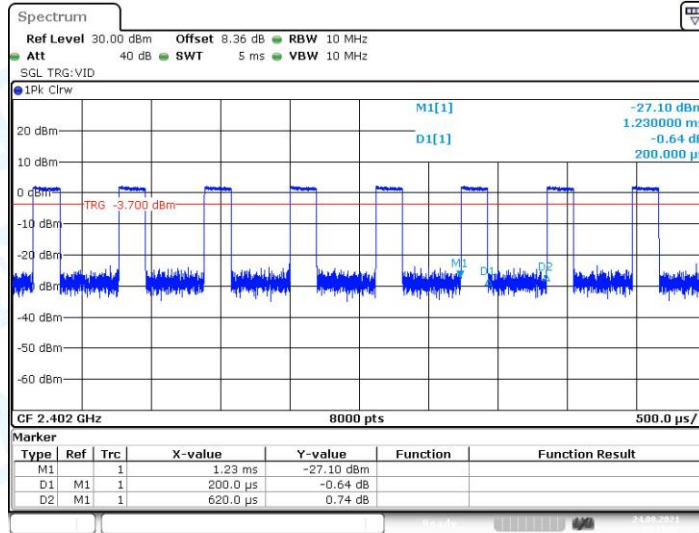
Test Mode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T KHz	Limit	Verdict
BLE_1M	Ant1	2402	0.37	0.61	60.66	2.70	---	PASS
		2440	0.37	0.62	59.68	2.70	---	PASS
		2480	0.37	0.62	59.68	2.70	---	PASS
BLE_2M	Ant1	2402	0.20	0.62	32.26	5.00	---	PASS
		2440	0.19	0.62	30.65	5.26	---	PASS
		2480	0.19	0.62	30.65	5.26	---	PASS

**7.2. Test Graphs**

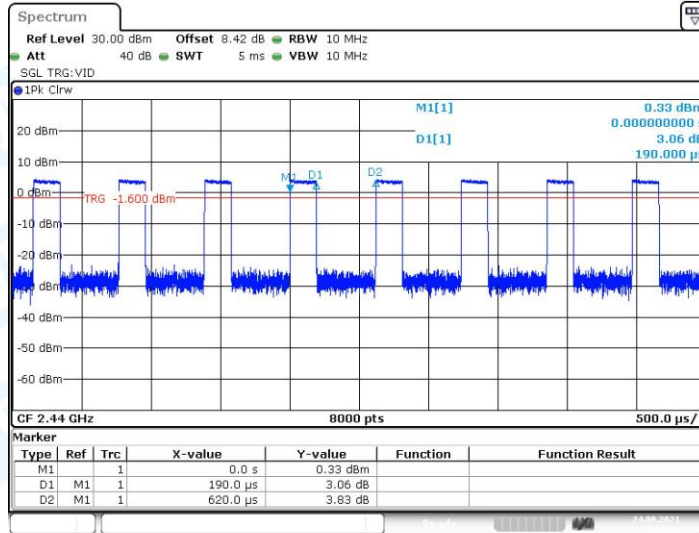




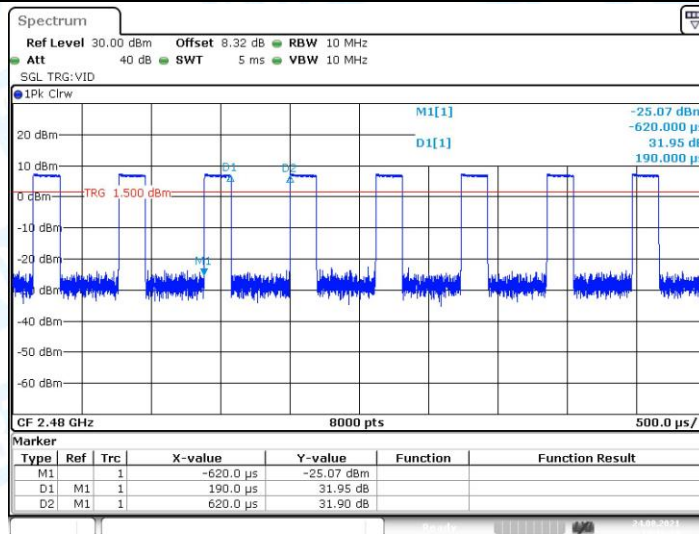
## BLE\_2M\_Ant1\_2402



## BLE\_2M\_Ant1\_2440



## BLE\_2M\_Ant1\_2480



## 8. Emissions in Restricted Bands

### 8.1. Test Result

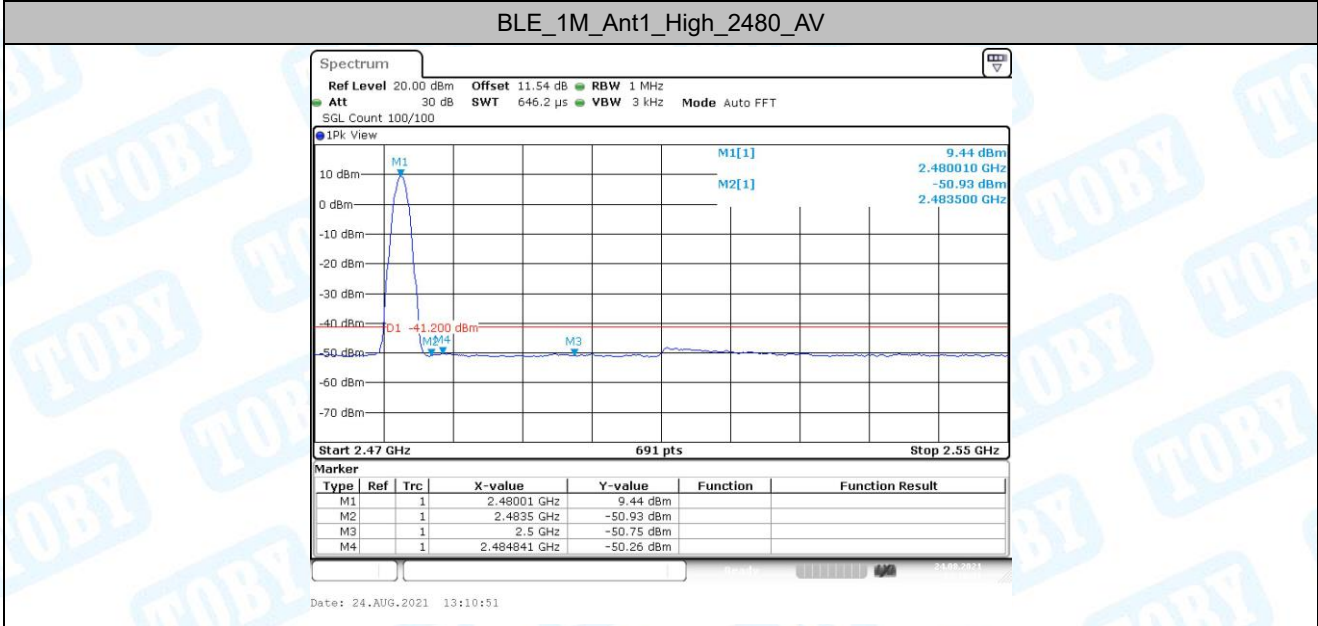
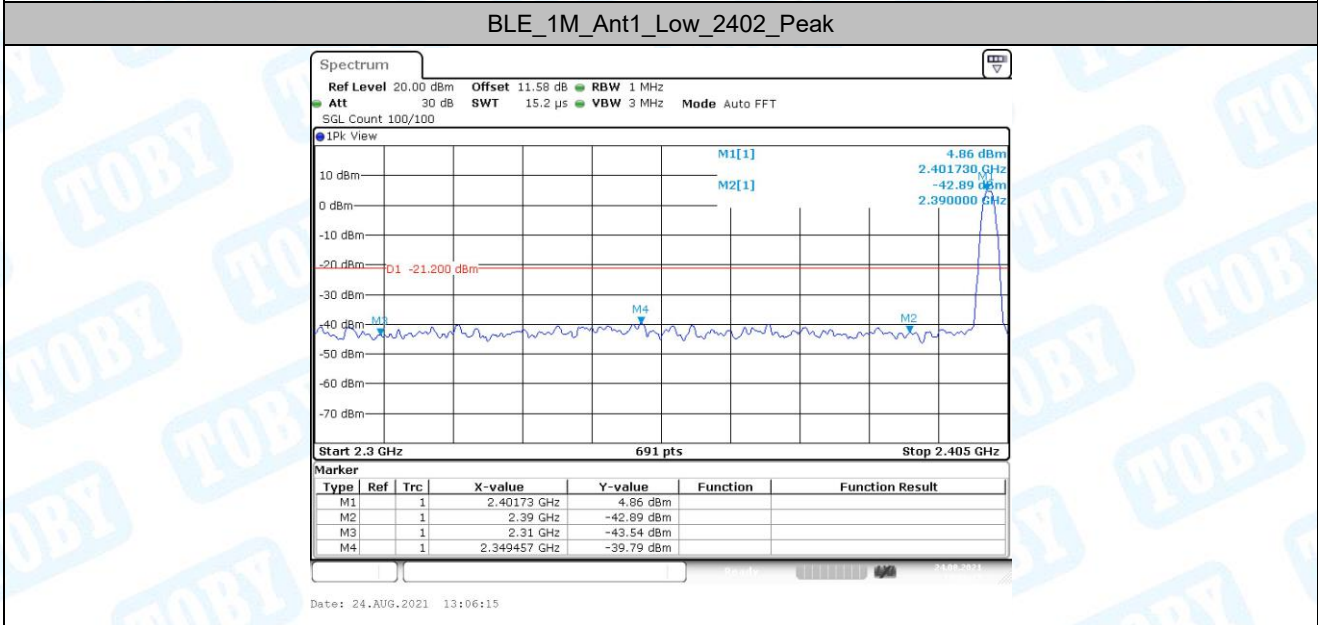
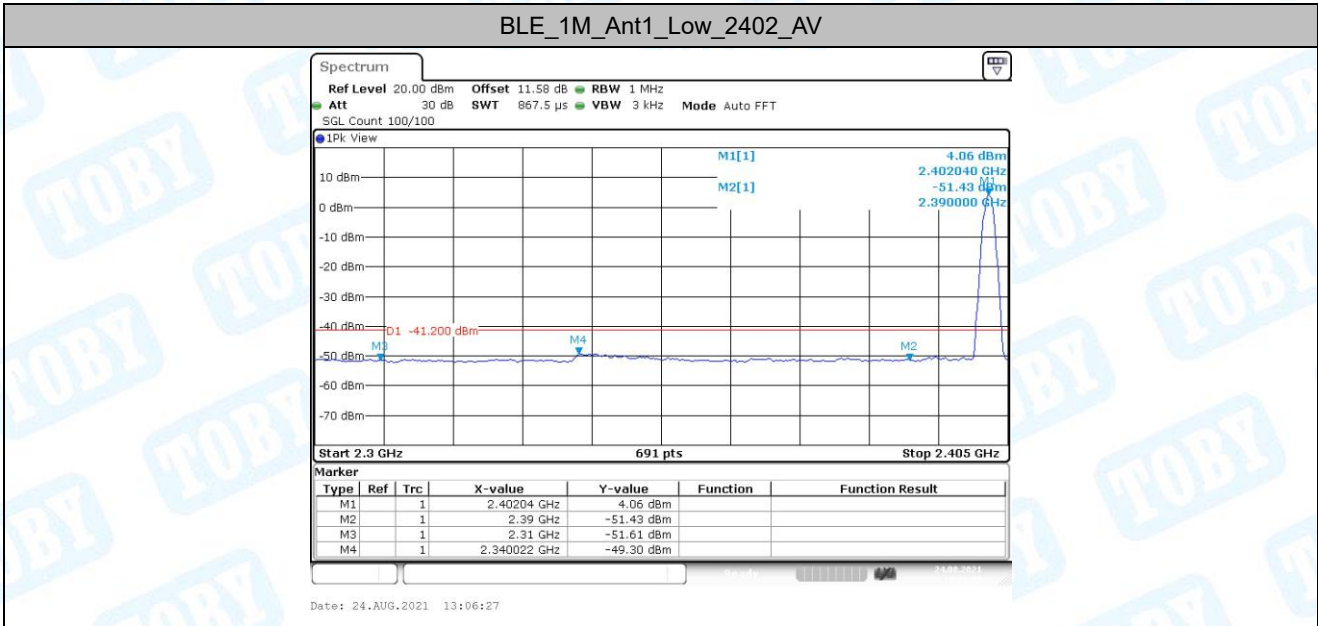
Test Mode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-51.61	≤-41.20	PASS
				AV	2340.022	-49.3	≤-41.20	PASS
				AV	2390.000	-51.43	≤-41.20	PASS
				Peak	2310.000	-43.54	≤-21.20	PASS
				Peak	2349.457	-39.79	≤-21.20	PASS
				Peak	2390.000	-42.89	≤-21.20	PASS
		High	2480	AV	2483.500	-50.93	≤-41.20	PASS
				AV	2484.841	-50.26	≤-41.20	PASS
				AV	2500.000	-50.75	≤-41.20	PASS
				Peak	2483.500	-41.62	≤-21.20	PASS
				Peak	2491.565	-40.54	≤-21.20	PASS
				Peak	2500.000	-43.32	≤-21.20	PASS
BLE_2M	Ant1	Low	2402	AV	2310.000	-51.51	≤-41.20	PASS
				AV	2341.087	-48.65	≤-41.20	PASS
				AV	2390.000	-50.98	≤-41.20	PASS
				Peak	2310.000	-42.37	≤-21.20	PASS
				Peak	2340.326	-38.25	≤-21.20	PASS
				Peak	2390.000	-42.94	≤-21.20	PASS
		High	2480	AV	2483.500	-49.56	≤-41.20	PASS
				AV	2483.797	-48.68	≤-41.20	PASS
				AV	2500.000	-49.67	≤-41.20	PASS
				Peak	2483.500	-43.35	≤-21.20	PASS
				Peak	2499.101	-40.01	≤-21.20	PASS
				Peak	2500.000	-42.17	≤-21.20	PASS

Note:

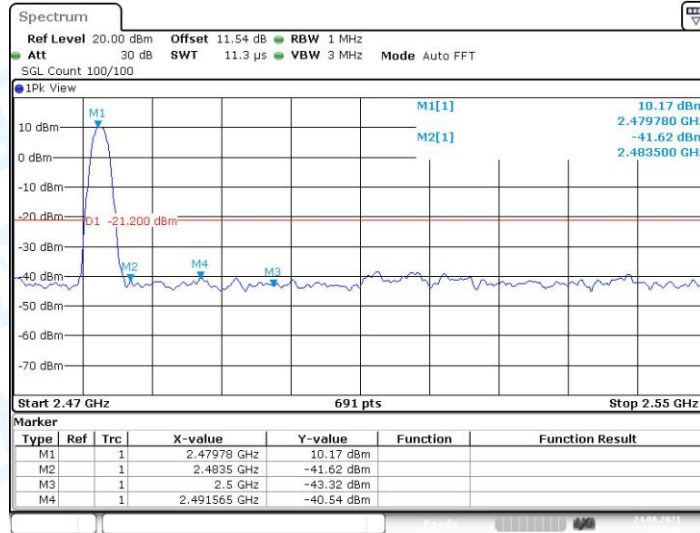
1. The Antenna Gain is compensated in the graph.
2. The limit in dBm for average detector is conversion from 54dBuV/m, according to 15.209(a). The limit in dBm for peak detector is 20dB above the limit of average detector in dBm.



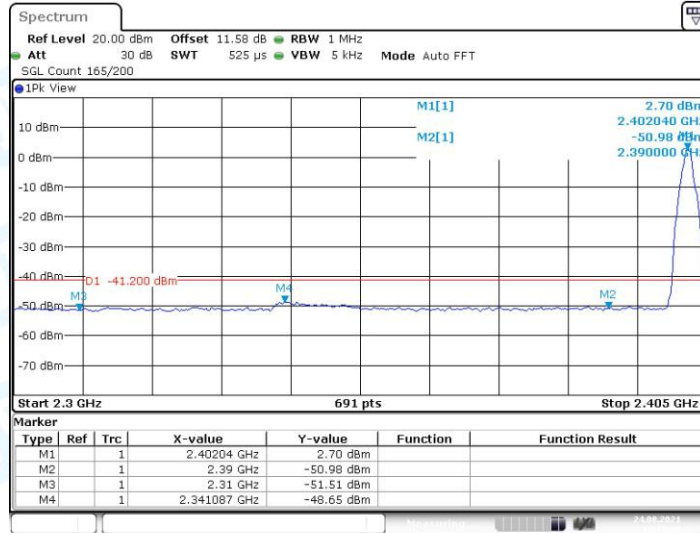
## 8.2. Test Graphs



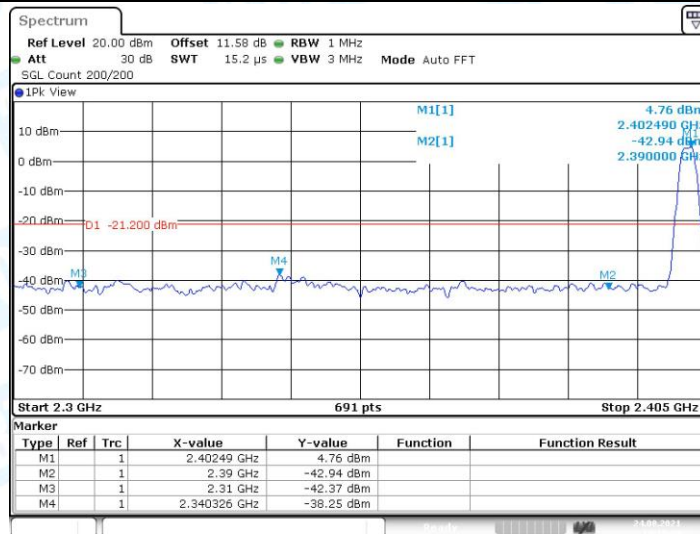
### BLE\_1M\_Ant1\_High\_2480\_Peak



### BLE\_2M\_Ant1\_Low\_2402\_AV

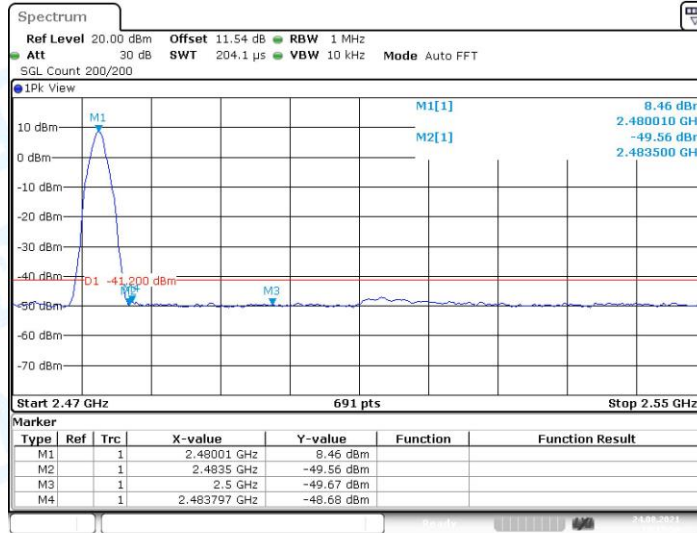


### BLE\_2M\_Ant1\_Low\_2402\_Peak



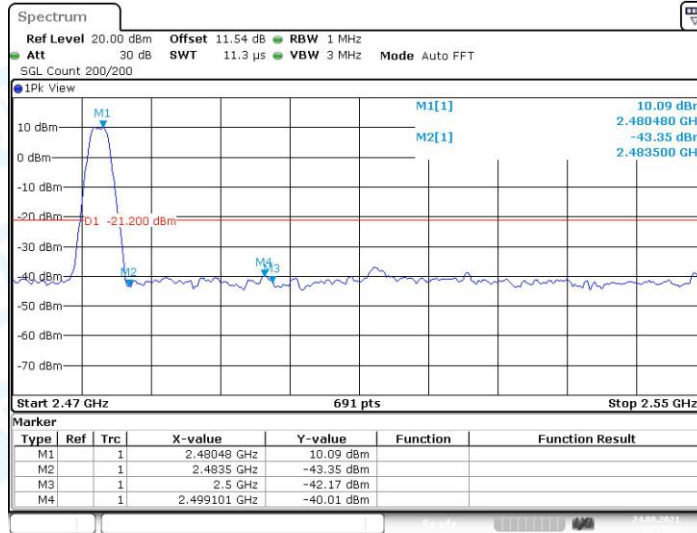


BLE\_2M\_Ant1\_High\_2480\_AV



Date: 24.AUG.2021 13:17:58

BLE\_2M\_Ant1\_High\_2480\_Peak



Date: 24.AUG.2021 13:17:47

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