

RF Test Data for BLE

(Conducted Measurements)

General Description of EUT	
EUT Name:	smart battery camera
Model:	CM-BC5U
Sample ID:	HC-C-202512-0209-01-01
Environmental Conditions	
Ambient Temperature:	25.6℃
Ambient Humidity:	45.6%RH
Test Power Supply:	DC 3.6V
Test Engineer:	Kael Li
Note: For a more detailed features description, please refer to the report TBR-C-202512-0209-2	

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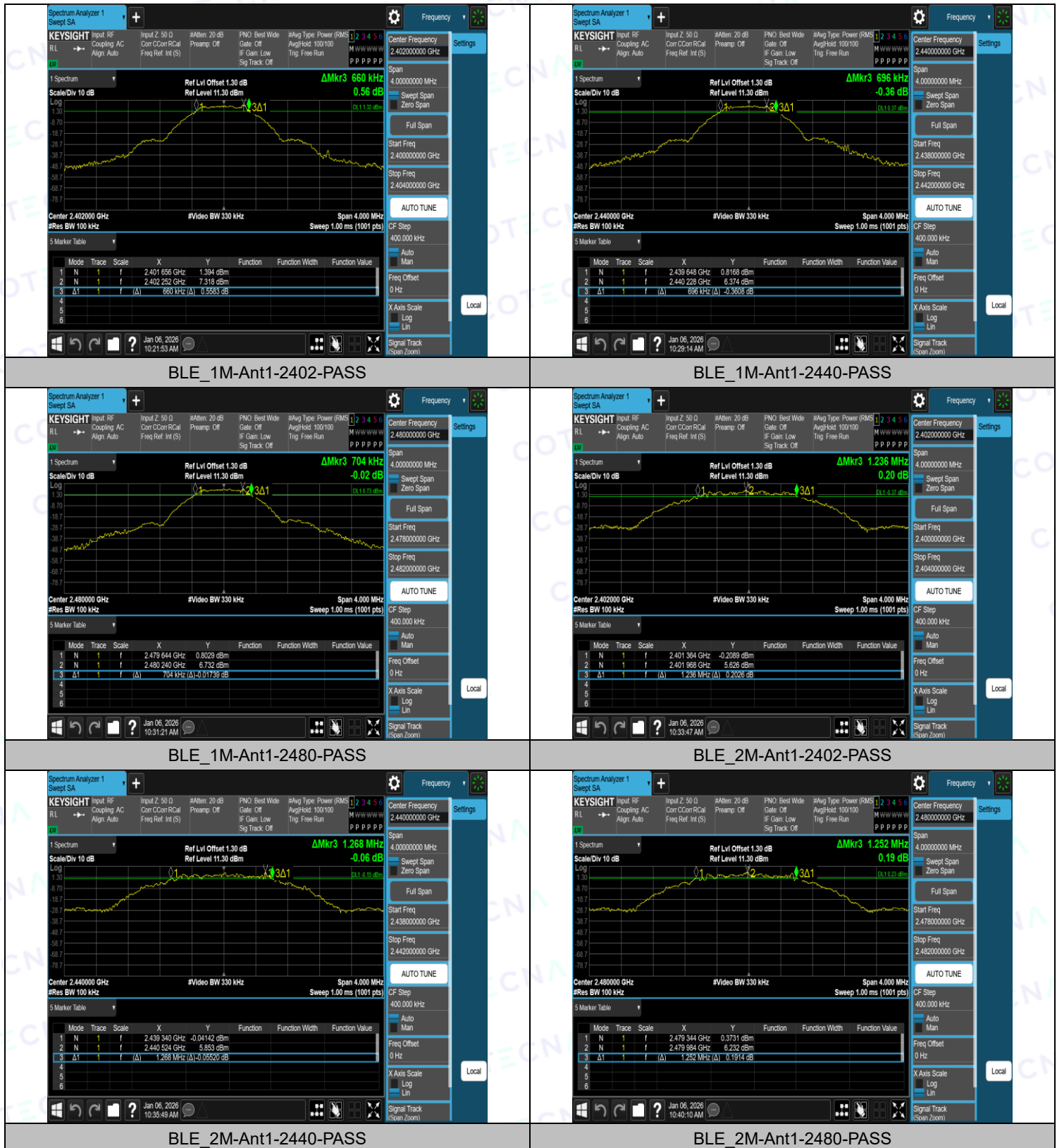
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1: DTS Bandwidth

1.1 Test Result

Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.660	2401.656	2402.316	0.5	PASS
BLE_1M	Ant1	2440	0.696	2439.648	2440.344	0.5	PASS
BLE_1M	Ant1	2480	0.704	2479.644	2480.348	0.5	PASS
BLE_2M	Ant1	2402	1.236	2401.364	2402.600	0.5	PASS
BLE_2M	Ant1	2440	1.268	2439.340	2440.608	0.5	PASS
BLE_2M	Ant1	2480	1.252	2479.344	2480.596	0.5	PASS

1.2 Test Graphs

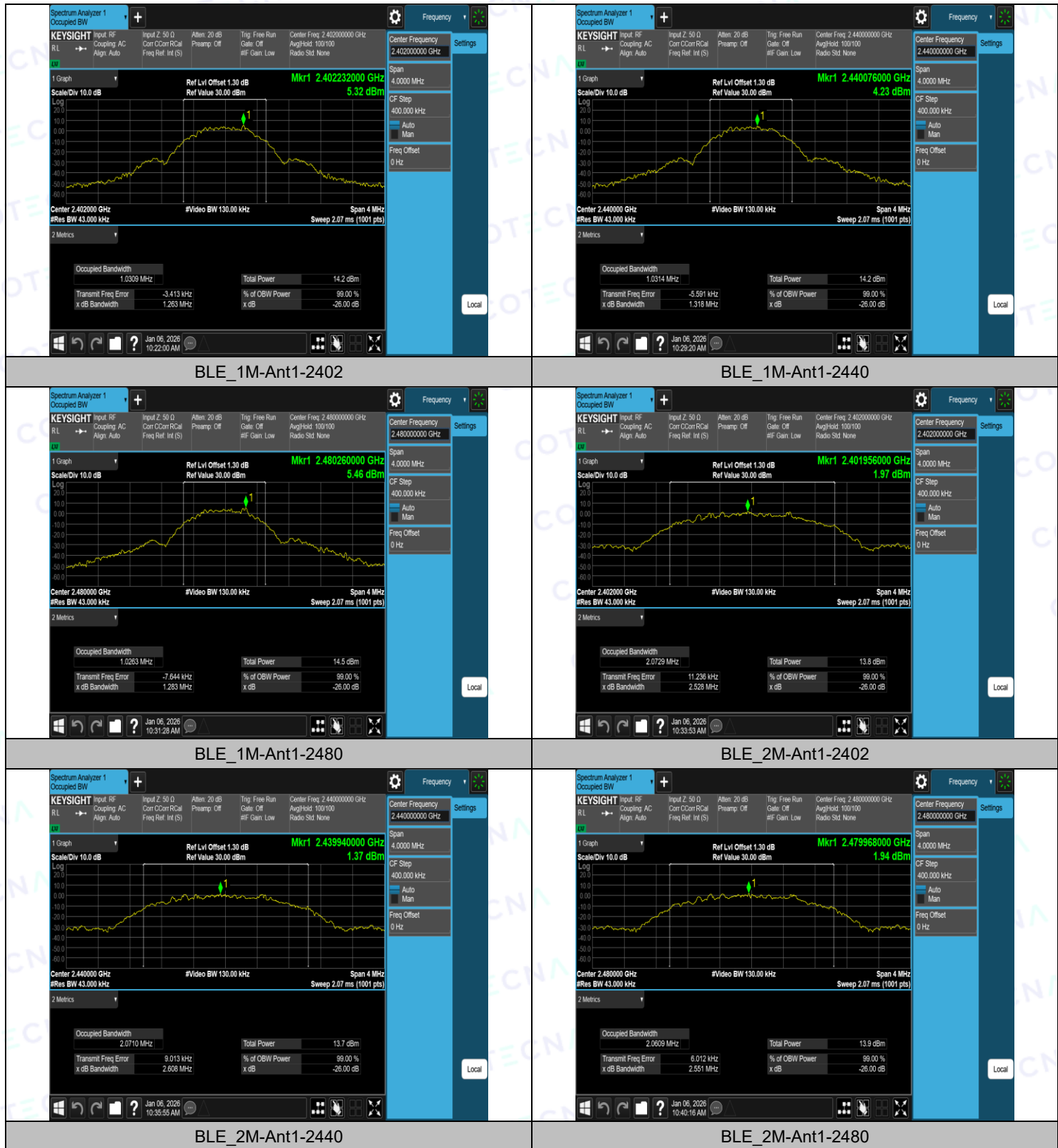


2: Occupied Channel Bandwidth

2.1 Test Result

Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	1.0309	2401.4811	2402.5120	---	---
BLE_1M	Ant1	2440	1.0314	2439.4787	2440.5101	---	---
BLE_1M	Ant1	2480	1.0263	2479.4792	2480.5055	---	---
BLE_2M	Ant1	2402	2.0729	2400.9748	2403.0477	---	---
BLE_2M	Ant1	2440	2.0710	2438.9735	2441.0445	---	---
BLE_2M	Ant1	2480	2.0609	2478.9756	2481.0365	---	---

2.2 Test Graphs

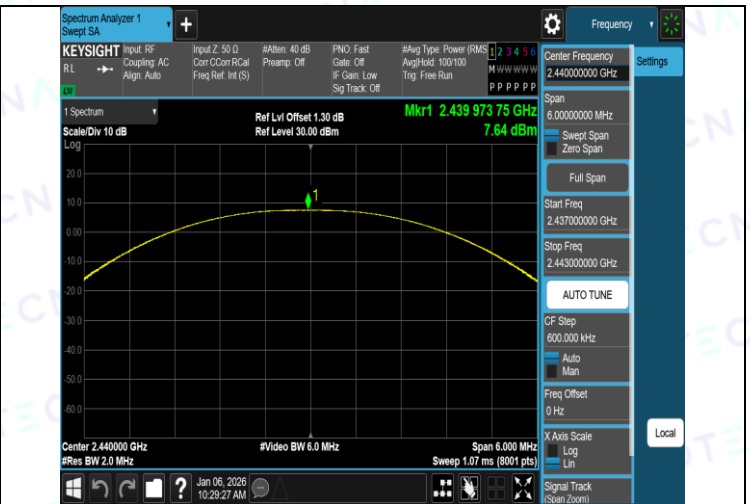
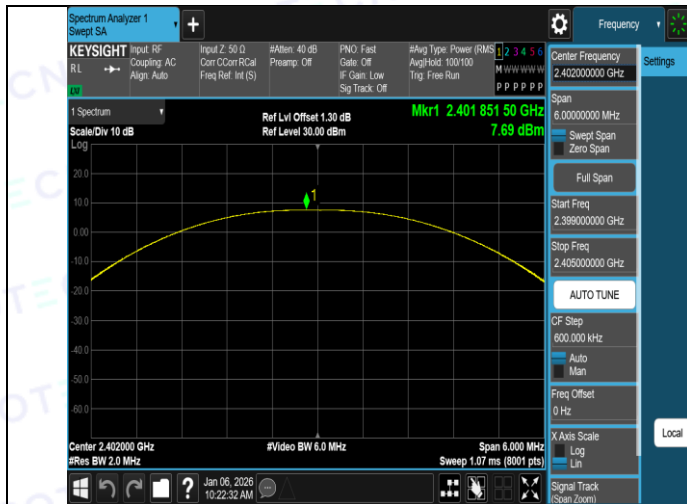


3: Maximum conducted output power

3.1 Test Result Peak

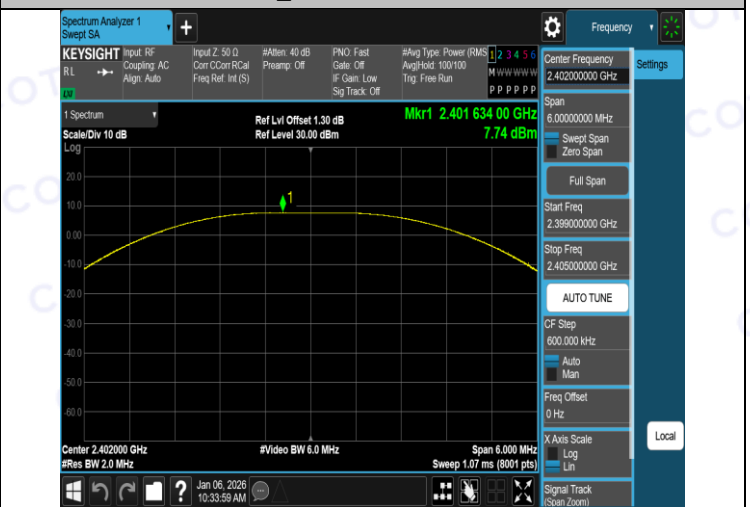
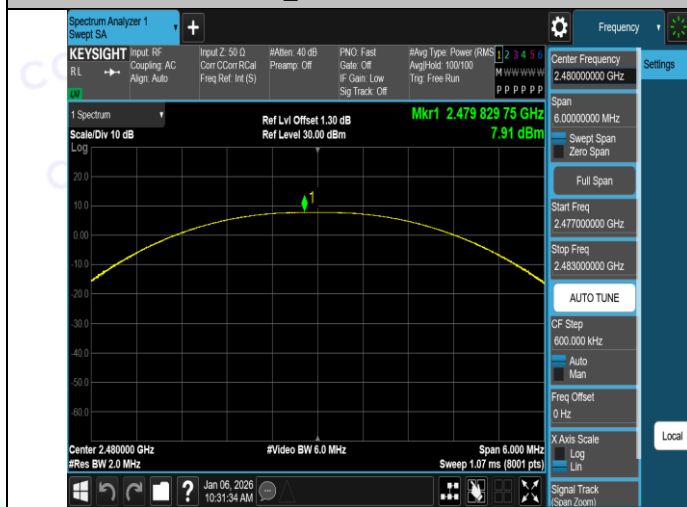
Test Mode	Antenna	Frequency[MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	Verdict
BLE_1M	Ant1	2402	7.69	≤30	PASS
BLE_1M	Ant1	2440	7.64	≤30	PASS
BLE_1M	Ant1	2480	7.91	≤30	PASS
BLE_2M	Ant1	2402	7.74	≤30	PASS
BLE_2M	Ant1	2440	7.64	≤30	PASS
BLE_2M	Ant1	2480	7.91	≤30	PASS

3.2 Test Graphs Peak



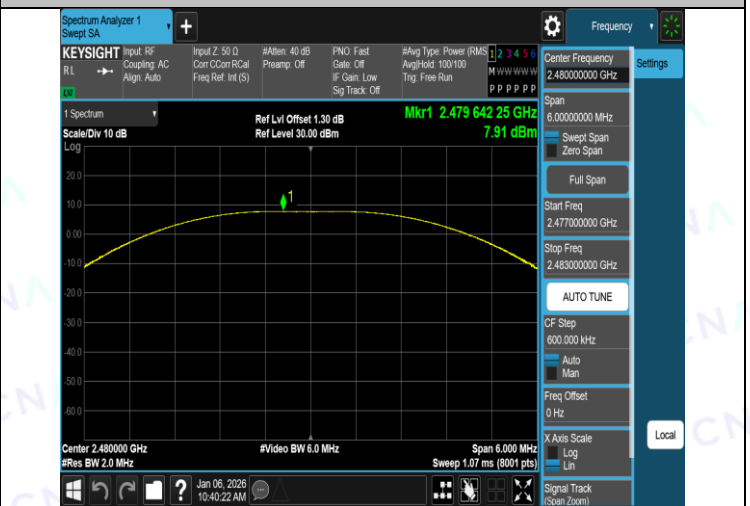
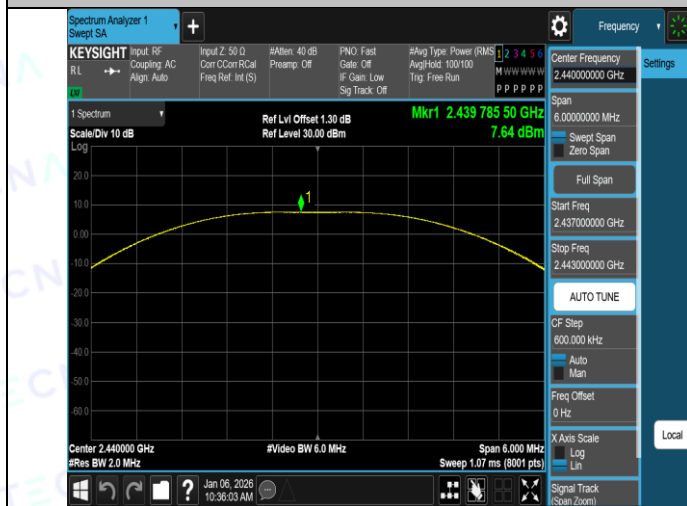
BLE_1M-Ant1-2402-PASS

BLE_1M-Ant1-2440-PASS



BLE_1M-Ant1-2475-PASS

BLE_1M-Ant1-2400-PASS



BLE_2M-Ant1-2439-PASS

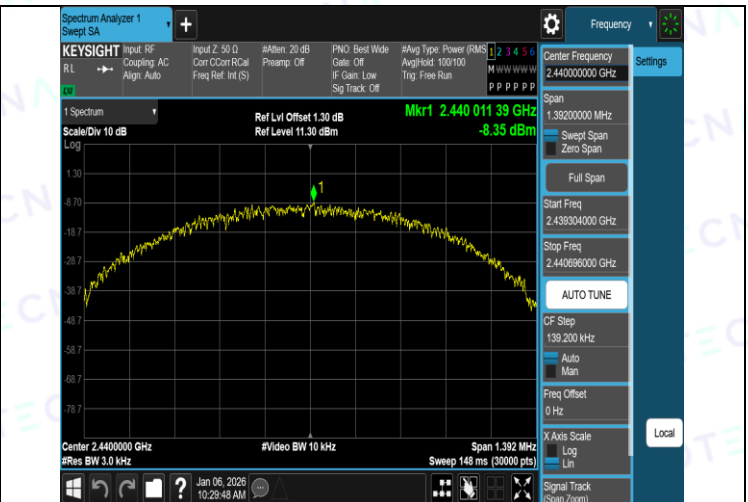
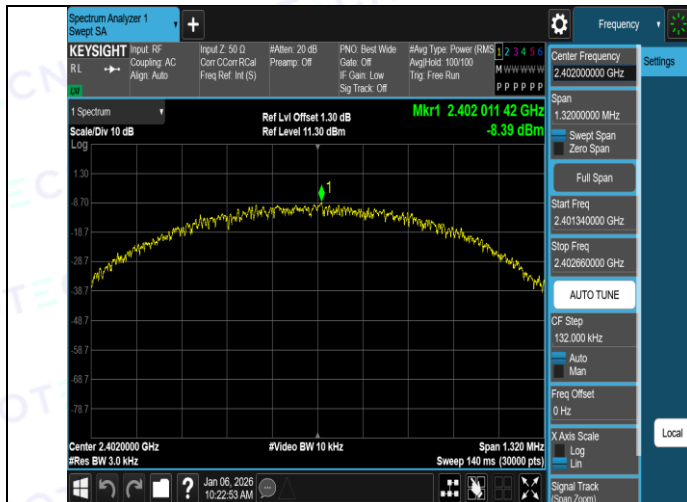
BLE_2M-Ant1-2475-PASS

4: Maximum power spectral density

4.1 Test Result

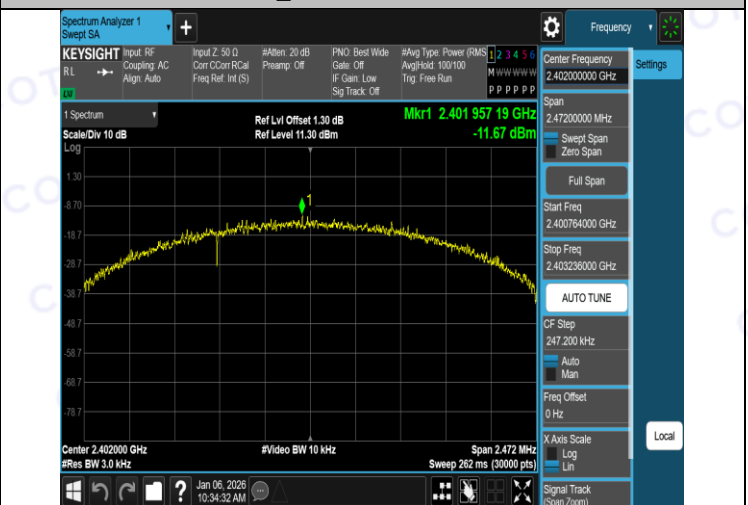
Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-8.40	≤8.00	PASS
BLE_1M	Ant1	2440	-8.35	≤8.00	PASS
BLE_1M	Ant1	2480	-8.20	≤8.00	PASS
BLE_2M	Ant1	2402	-11.67	≤8.00	PASS
BLE_2M	Ant1	2440	-11.73	≤8.00	PASS
BLE_2M	Ant1	2480	-11.47	≤8.00	PASS

4.2 Test Graphs



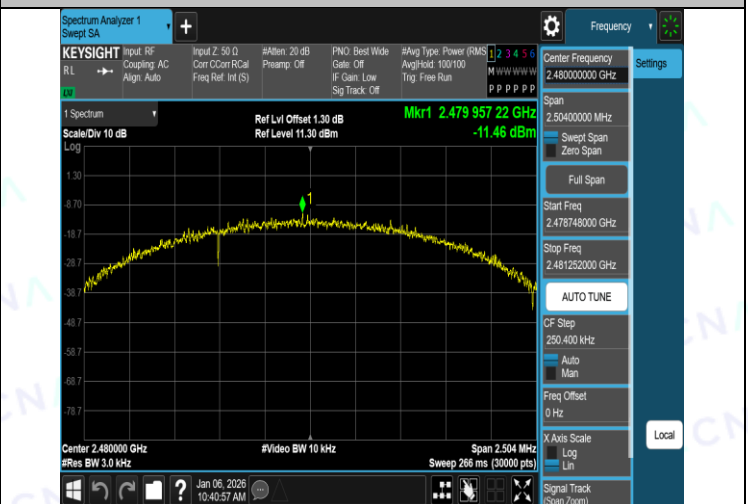
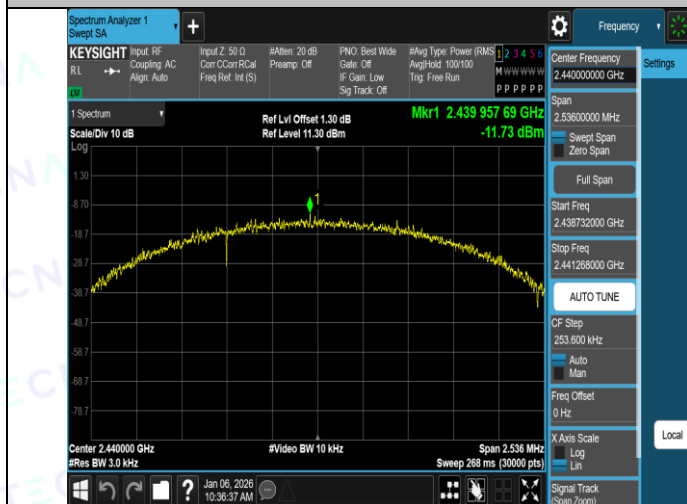
BLE_1M-Ant1-2402-PASS

BLE_1M-Ant1-2440-PASS



BLE_1M-Ant1-2480-PASS

BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2440-PASS

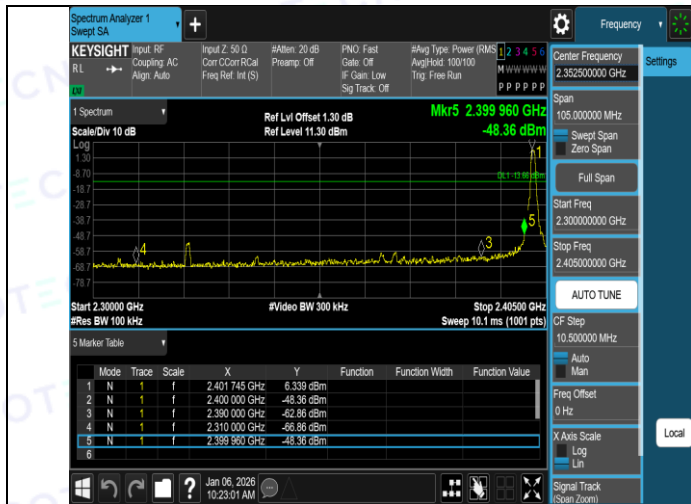
BLE_2M-Ant1-2480-PASS

5: Band edge measurements

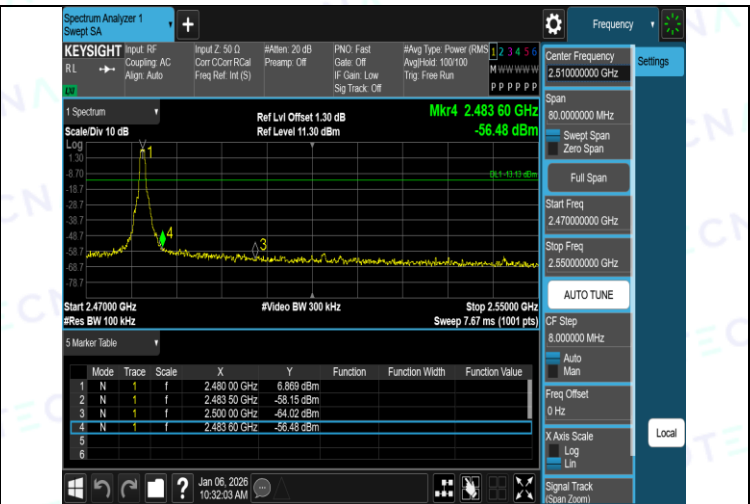
5.1 Test Result

Test Mode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	6.34	-48.36	≤ -13.66	PASS
BLE_1M	Ant1	High	2480	6.87	-56.48	≤ -13.13	PASS
BLE_2M	Ant1	Low	2402	5.59	-28.26	≤ -14.41	PASS
BLE_2M	Ant1	High	2480	5.50	-52.01	≤ -14.5	PASS

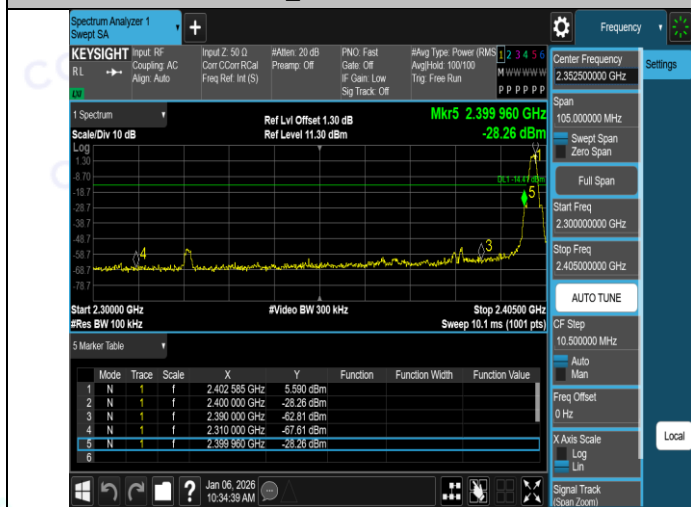
5.2 Test Graphs



BLE_1M-Ant1-2402-PASS



BLE_1M-Ant1-2480-PASS



BLE_2M-Ant1-2402-PASS



BLE_2M-Ant1-2480-PASS

6: Conducted Spurious Emission

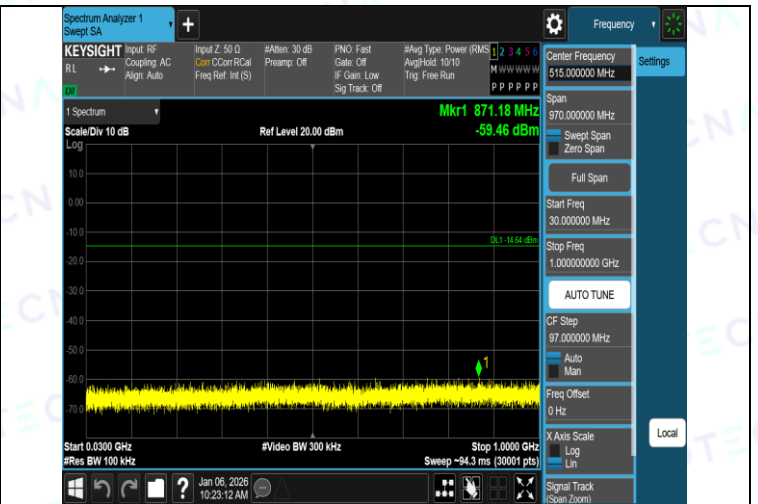
6.1 Test Result

Test Mode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	0~Reference	5.36	5.36	---	PASS
BLE_1M	Ant1	2402	30~1000	5.36	-59.46	≤-14.64	PASS
BLE_1M	Ant1	2402	1000~26500	5.36	-43.94	≤-14.64	PASS
BLE_1M	Ant1	2440	0~Reference	6.02	6.02	---	PASS
BLE_1M	Ant1	2440	30~1000	6.02	-59.96	≤-13.98	PASS
BLE_1M	Ant1	2440	1000~26500	6.02	-43.26	≤-13.98	PASS
BLE_1M	Ant1	2480	0~Reference	7.36	7.36	---	PASS
BLE_1M	Ant1	2480	30~1000	7.36	-58.89	≤-12.64	PASS
BLE_1M	Ant1	2480	1000~26500	7.36	-44.14	≤-12.64	PASS
BLE_2M	Ant1	2402	0~Reference	4.72	4.72	---	PASS
BLE_2M	Ant1	2402	30~1000	4.72	-59.59	≤-15.28	PASS
BLE_2M	Ant1	2402	1000~26500	4.72	-43.29	≤-15.28	PASS
BLE_2M	Ant1	2440	0~Reference	4.38	4.38	---	PASS
BLE_2M	Ant1	2440	30~1000	4.38	-59.69	≤-15.62	PASS
BLE_2M	Ant1	2440	1000~26500	4.38	-43.71	≤-15.62	PASS
BLE_2M	Ant1	2480	0~Reference	4.36	4.36	---	PASS
BLE_2M	Ant1	2480	30~1000	4.36	-59.81	≤-15.64	PASS
BLE_2M	Ant1	2480	1000~26500	4.36	-43.5	≤-15.64	PASS

6.2 Test Graphs



BLE_1M-Ant1-2402-0~Reference-PASS



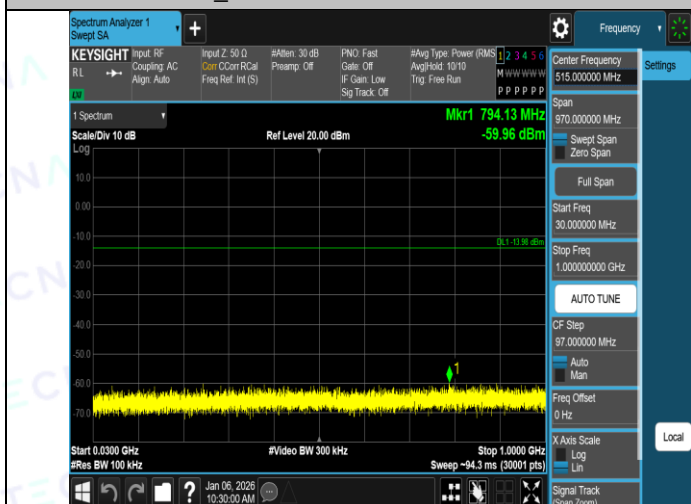
BLE_1M-Ant1-2402-30~1000-PASS



BLE_1M-Ant1-2402-1000~26500-PASS



BLE_1M-Ant1-2440-0~Reference-PASS



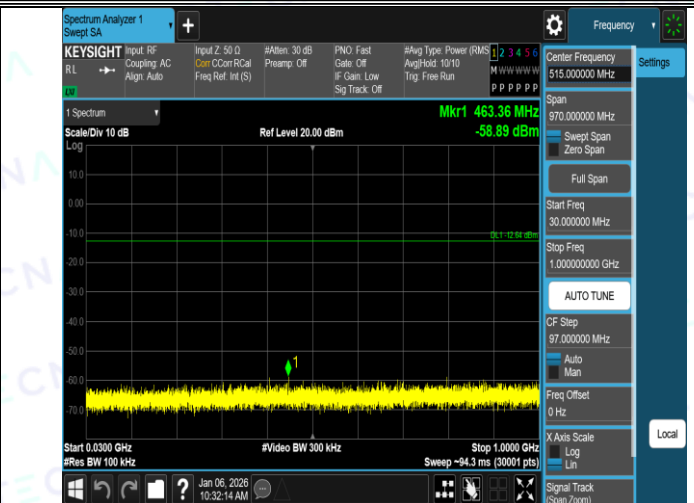
BLE_1M-Ant1-2440-30~1000-PASS



BLE_1M-Ant1-2440-1000~26500-PASS



BLE_1M-Ant1-2480-0~Reference-PASS



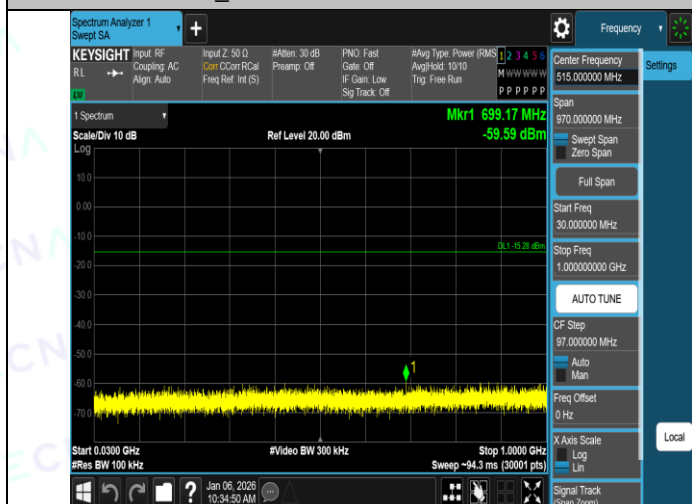
BLE_1M-Ant1-2480-30~1000-PASS



BLE_1M-Ant1-2480-1000~26500-PASS



BLE_2M-Ant1-2402-0~Reference-PASS



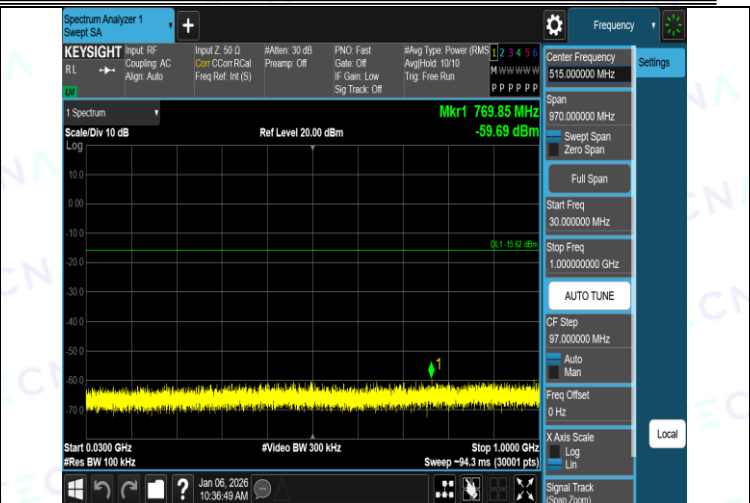
BLE_2M-Ant1-2402-30~1000-PASS



BLE_2M-Ant1-2402-1000~26500-PASS



BLE_2M-Ant1-2440-0~Reference-PASS



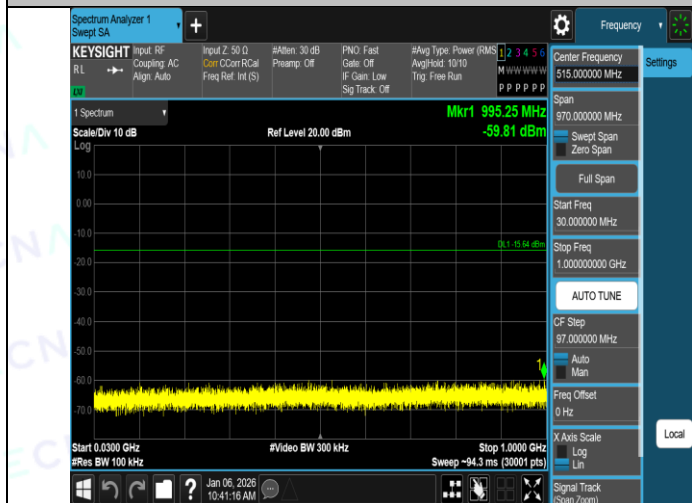
BLE_2M-Ant1-2440-30~1000-PASS



BLE_2M-Ant1-2440-1000~26500-PASS



BLE_2M-Ant1-2480-0~Reference-PASS



BLE_2M-Ant1-2480-30~1000-PASS



BLE_2M-Ant1-2480-1000~26500-PASS

7: Duty Cycle

7.1 Test Result

TestMode	Antenna	Frequency [MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	DC Factor	1/T [kHz]
BLE_1M	Ant1	2402	2.12	2.50	84.80	0.72	0.47
BLE_1M	Ant1	2440	2.12	2.50	84.80	0.72	0.47
BLE_1M	Ant1	2480	2.12	2.50	84.80	0.72	0.47
BLE_2M	Ant1	2402	1.07	1.88	56.91	2.45	0.93
BLE_2M	Ant1	2440	1.07	1.88	56.91	2.45	0.93
BLE_2M	Ant1	2480	1.07	1.88	56.91	2.45	0.93

Note: 1, Duty Cycle= Transmission Duration/ Transmission Period

2, DC Factor= $10 \cdot \log_{10}(1/\text{Duty Cycle})$

3, $1/T = 1/\text{Transmission Duration}$