

Appendix C: Maximum conducted output power

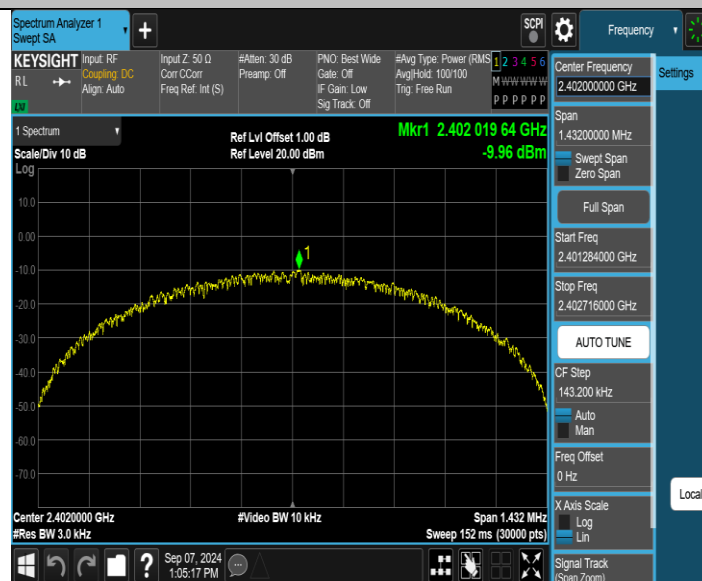
Test Mode	Frequency (MHz)	Measured Power (dBm)	EIRP (dBm)	Conducted Limit[dBm]	EIRP Limit (dBm)
Mode1	2402	5.41	8.41	≤ 30	≤ 36
	2440	4.42	7.42	≤ 30	≤ 36
	2480	3.55	6.55	≤ 30	≤ 36
Note 1: EIRP=Measured power+Antenna gain					
Note 2: The antenna gain please refer to clause 1.2					

Appendix D: Maximum power spectral density

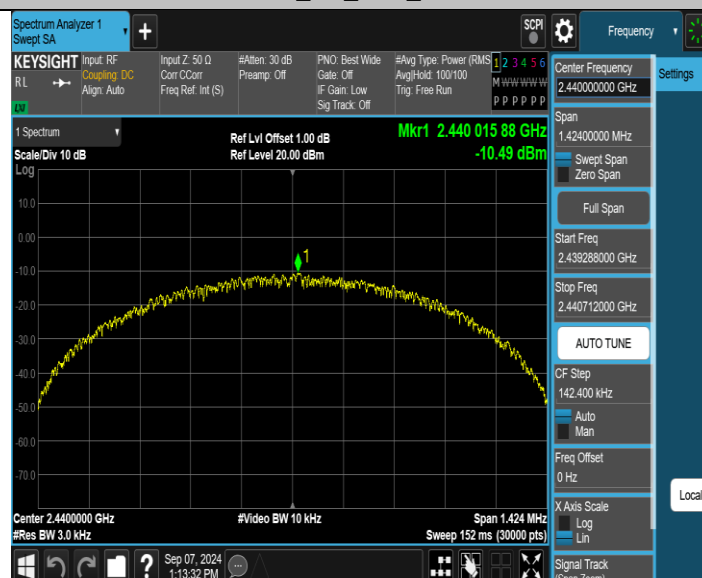
TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-9.96	≤8.00	PASS
		2440	-10.49	≤8.00	PASS
		2480	-11.40	≤8.00	PASS

Test Graphs

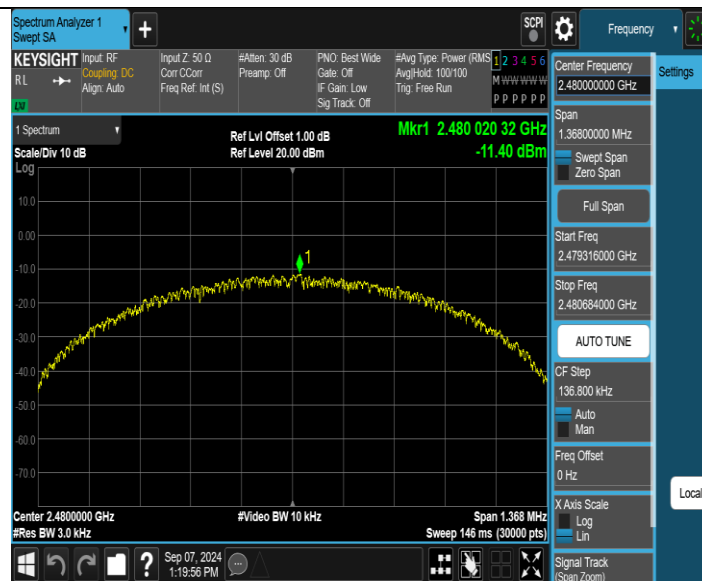
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

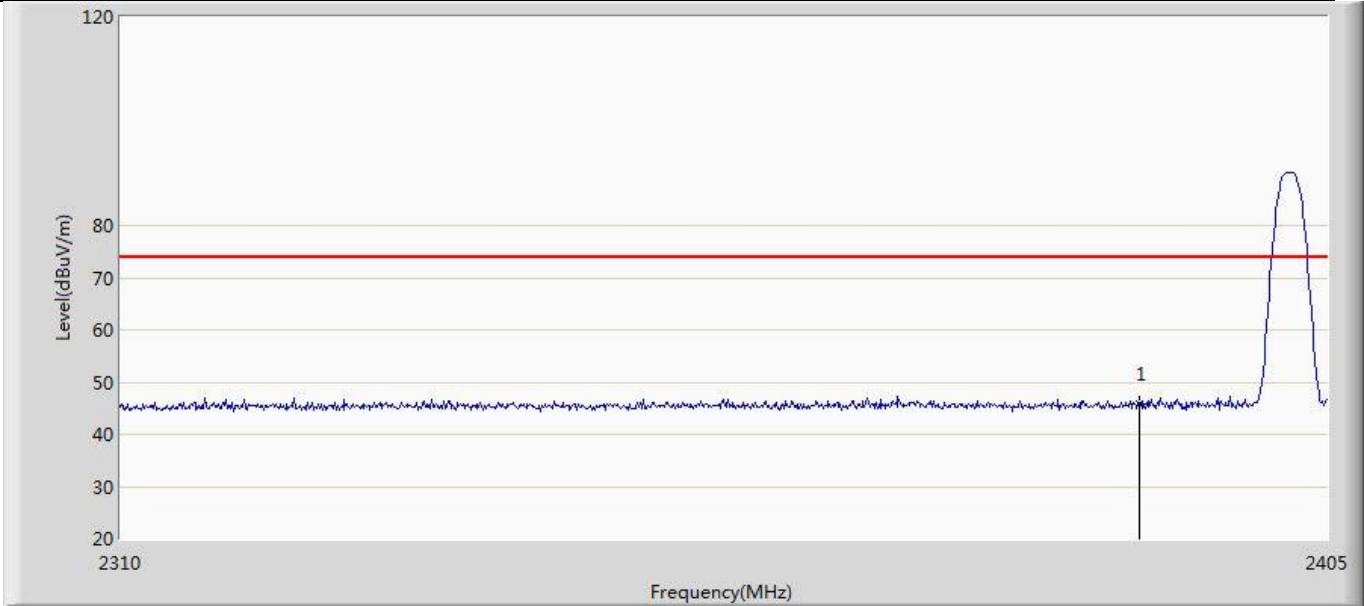


BLE_1M_Ant1_2480



Appendix E: Band edge measurements

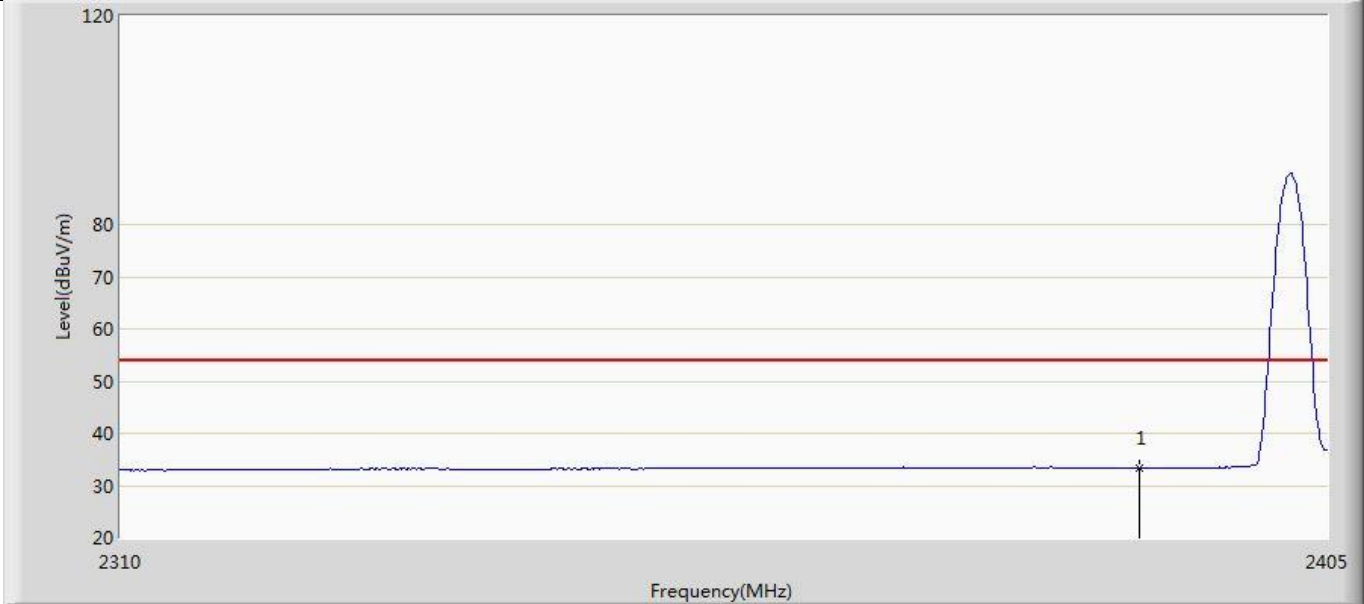
Profile: 2480841R	Page No.: 25
Engineer: Yuliu	
Site: AC5	Time: 2024/09/10 - 22:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2402MHz by LE_1Mbps	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	45.932	11.831	-28.068	74.000	34.102	PK

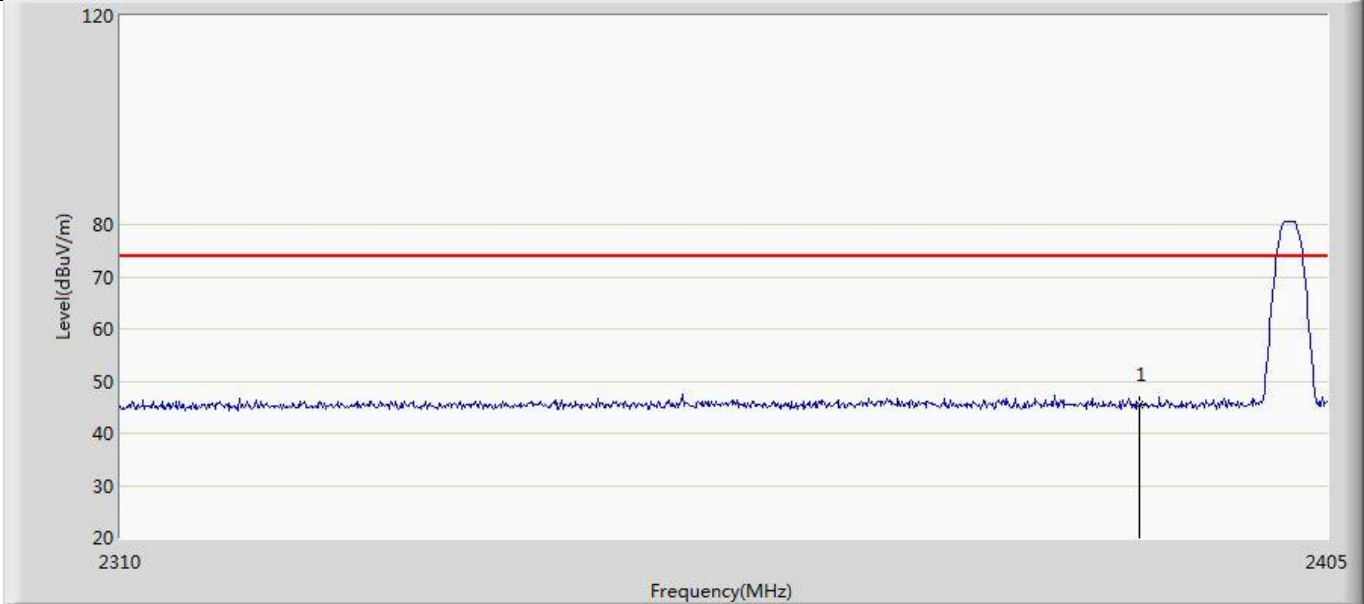


Profile: 2480841R	Page No.: 26
Engineer: Yuliu	
Site: AC5	Time: 2024/09/10 - 22:06
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2402MHz by LE_1Mbps	



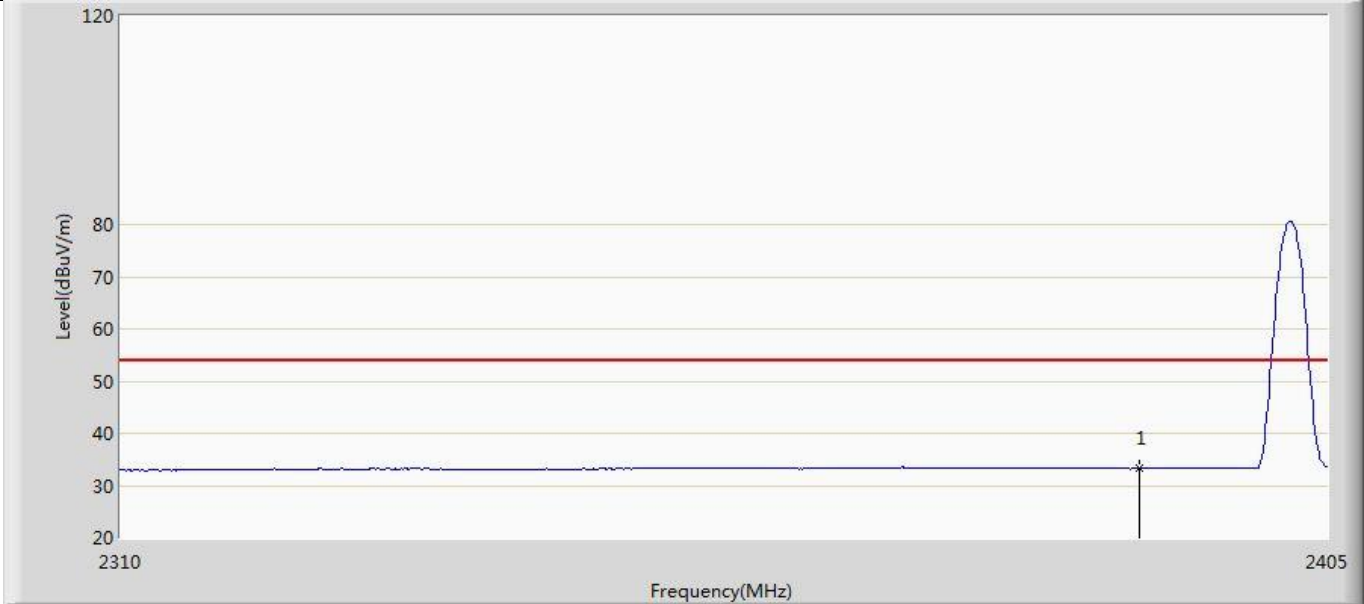
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	33.266	-0.835	-20.734	54.000	34.102	AV

Profile: 2480841R	Page No.: 27
Engineer: Yuliu	
Site: AC5	Time: 2024/09/10 - 22:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2402MHz by LE_1Mbps	



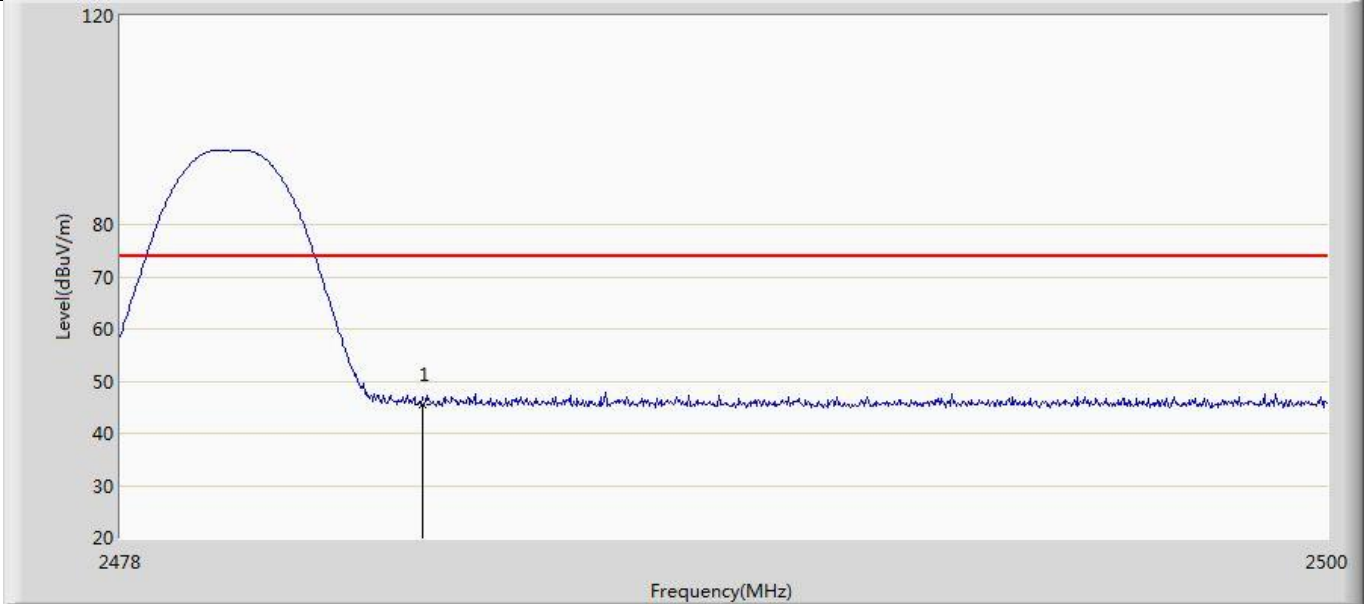
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	45.529	11.428	-28.471	74.000	34.102	PK

Profile: 2480841R	Page No.: 28
Engineer: Yuliu	
Site: AC5	Time: 2024/09/10 - 22:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2402MHz by LE_1Mbps	



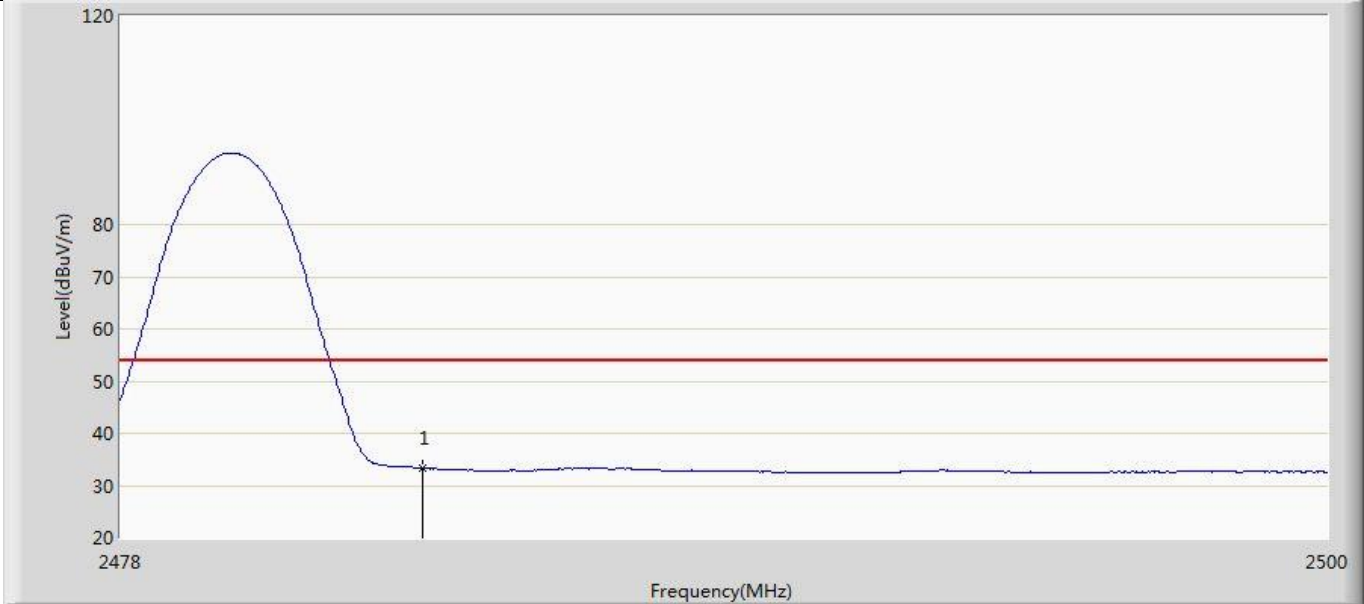
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2390.000	33.242	-0.859	-20.758	54.000	34.102	AV

Profile: 2480841R	Page No.: 29
Engineer: Yuliu	
Site: AC5	Time: 2024/09/10 - 22:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2480MHz by LE_1Mbps	



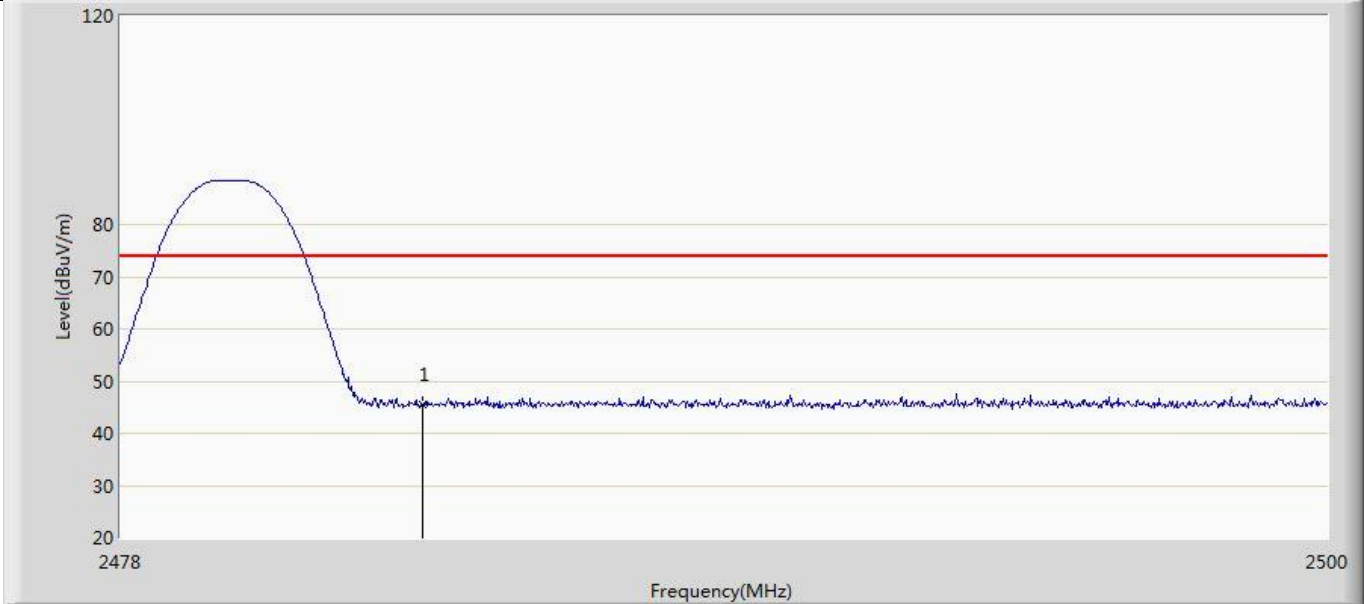
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	45.397	11.284	-28.603	74.000	34.114	PK

Profile: 2480841R	Page No.: 30
Engineer: Yuliu	
Site: AC5	Time: 2024/09/10 - 22:11
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2480MHz by LE_1Mbps	



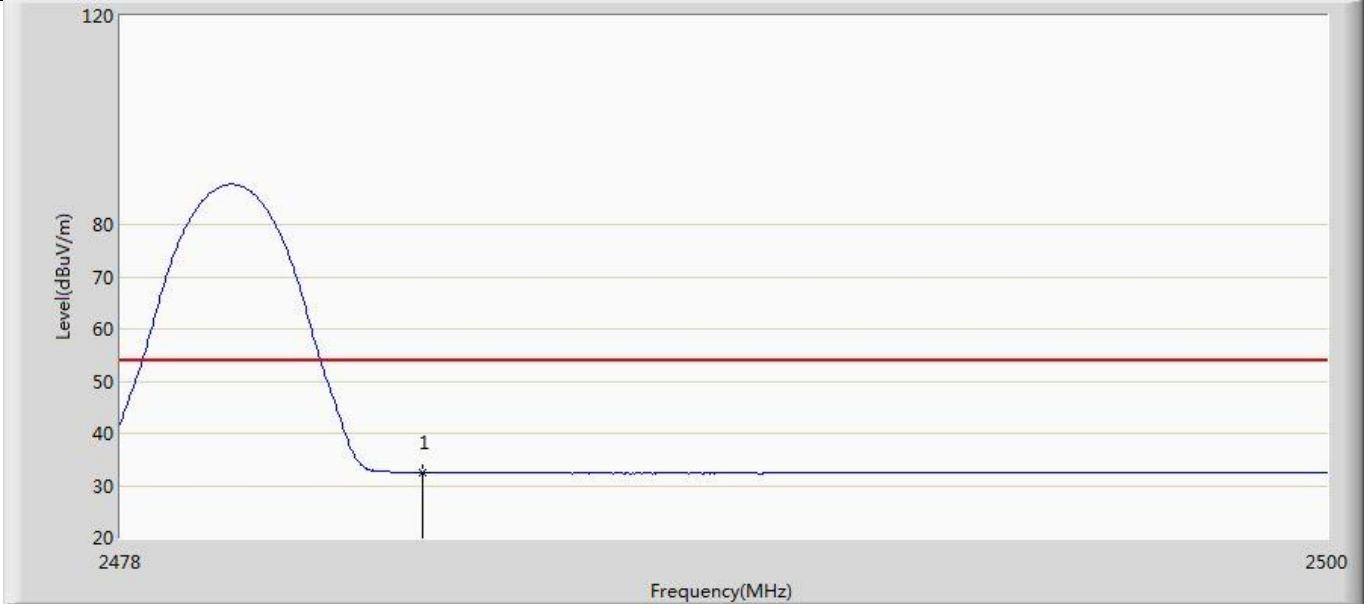
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	33.262	-0.851	-20.738	54.000	34.114	AV

Profile: 2480841R	Page No.: 31
Engineer: Yuliu	
Site: AC5	Time: 2024/09/10 - 22:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2480MHz by LE_1Mbps	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	45.511	11.398	-28.489	74.000	34.114	PK

Profile: 2480841R	Page No.: 32
Engineer: Yuliu	
Site: AC5	Time: 2024/09/10 - 22:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2480MHz by LE_1Mbps	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	2483.500	32.449	-1.664	-21.551	54.000	34.114	AV

- Note:
- 1. " * ", means this data is the worst emission level.
 - 2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp)

Appendix F: Conducted Spurious Emission

Test Result for Reference level

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
BLE_1M	Ant1	2402	2402.25	5.46
		2440	2440.24	4.91
		2480	2480.24	4.07

Test Result for Band edge

TestMode	Antenna	ChName	Frequency [MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	5.46	-55.35	≤-14.54	PASS
		High	2480	4.07	-56.86	≤-15.93	PASS

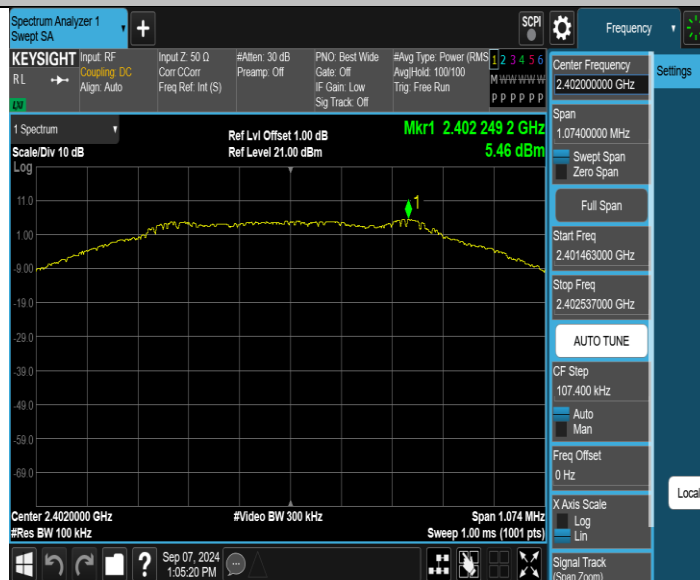
Test Result for Spurious Emission

TestMode	Antenna	Frequency [MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	30~1000	5.46	-64.65	≤-14.54	PASS
			1000~3000	5.46	-64.72	≤-14.54	PASS
			3000~5000	5.46	-49.04	≤-14.54	PASS
			5000~7000	5.46	-65.17	≤-14.54	PASS
			7000~9000	5.46	-49.99	≤-14.54	PASS
			9000~11000	5.46	-64.34	≤-14.54	PASS
			11000~13000	5.46	-54.86	≤-14.54	PASS
			13000~15000	5.46	-63.14	≤-14.54	PASS
			15000~17000	5.46	-61.06	≤-14.54	PASS
			17000~19000	5.46	-63.77	≤-14.54	PASS
			19000~21000	5.46	-48.31	≤-14.54	PASS
			21000~23000	5.46	-52.58	≤-14.54	PASS
			23000~25000	5.46	-60.4	≤-14.54	PASS
		2440	30~1000	4.91	-64.4	≤-15.09	PASS
			1000~3000	4.91	-65.33	≤-15.09	PASS
			3000~5000	4.91	-51.27	≤-15.09	PASS
			5000~7000	4.91	-63.64	≤-15.09	PASS
			7000~9000	4.91	-50.27	≤-15.09	PASS
			9000~11000	4.91	-64.21	≤-15.09	PASS
			11000~13000	4.91	-58.81	≤-15.09	PASS
			13000~15000	4.91	-64.02	≤-15.09	PASS
			15000~17000	4.91	-64.85	≤-15.09	PASS
			17000~19000	4.91	-62.16	≤-15.09	PASS
			19000~21000	4.91	-53.86	≤-15.09	PASS
			21000~23000	4.91	-52.77	≤-15.09	PASS
			23000~25000	4.91	-61.54	≤-15.09	PASS
		2480	30~1000	4.07	-63.89	≤-15.93	PASS
			1000~3000	4.07	-59.44	≤-15.93	PASS

			3000~5000	4.07	-50.88	≤ -15.93	PASS
			5000~7000	4.07	-65.52	≤ -15.93	PASS
			7000~9000	4.07	-49.28	≤ -15.93	PASS
			9000~11000	4.07	-65.29	≤ -15.93	PASS
			11000~13000	4.07	-61.73	≤ -15.93	PASS
			13000~15000	4.07	-63.45	≤ -15.93	PASS
			15000~17000	4.07	-64.14	≤ -15.93	PASS
			17000~19000	4.07	-62.64	≤ -15.93	PASS
			19000~21000	4.07	-51.68	≤ -15.93	PASS
			21000~23000	4.07	-54.51	≤ -15.93	PASS
			23000~25000	4.07	-61.31	≤ -15.93	PASS

Test Graphs for Reference level

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

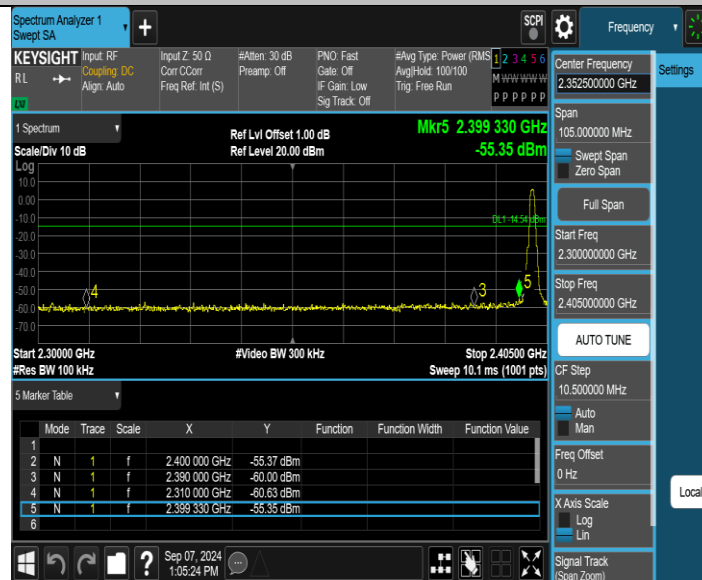


BLE_1M_Ant1_2480

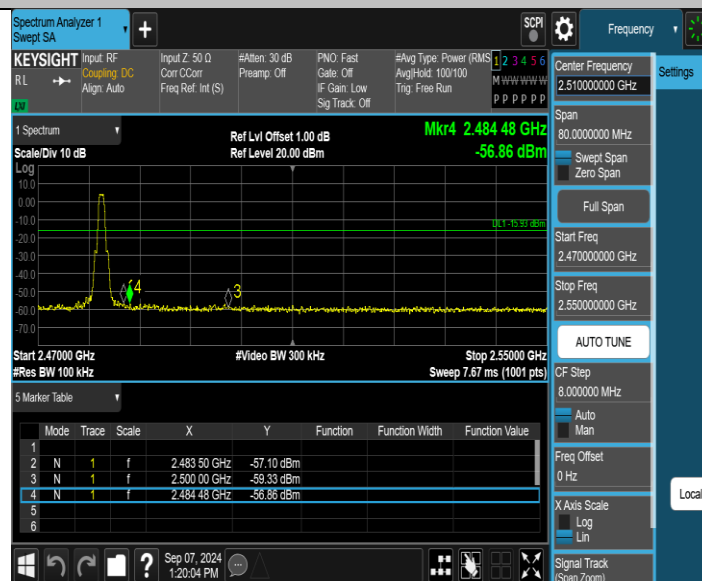


Test Graphs for Band edge

BLE_1M_Ant1_Low_2402

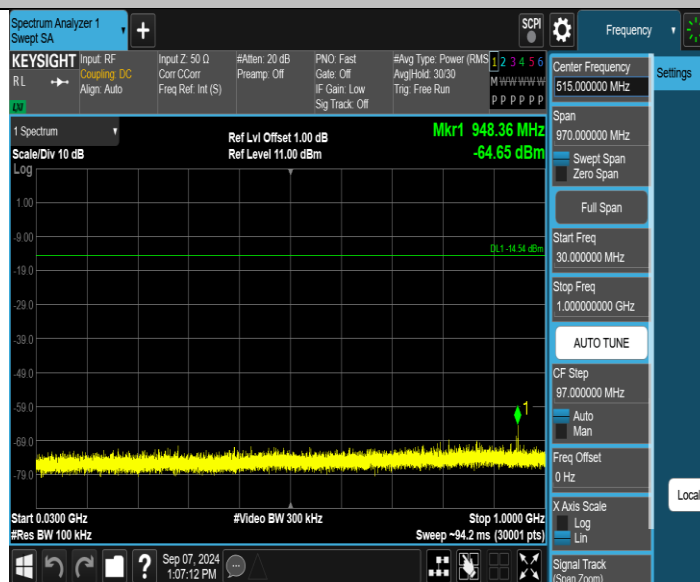


BLE_1M_Ant1_High_2480

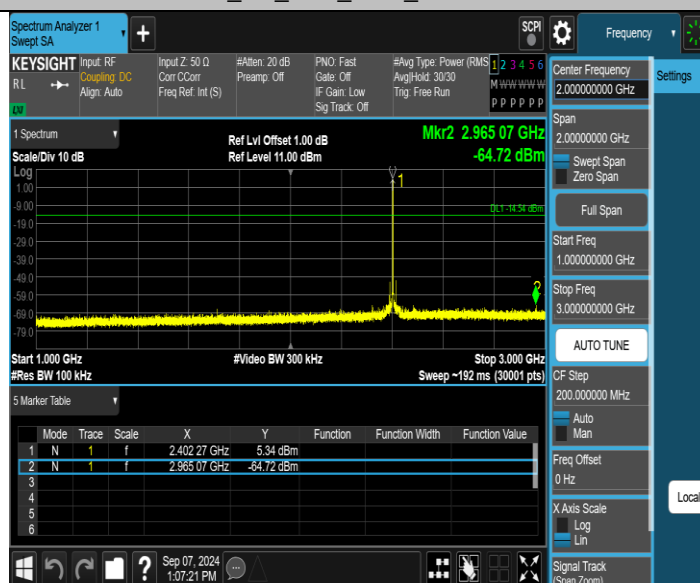


Test Graphs for Spurious Emission

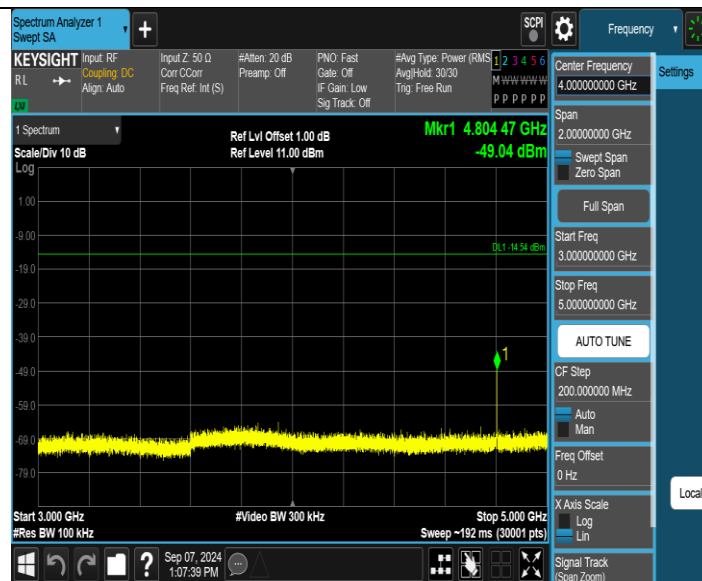
BLE_1M_Ant1_2402_30~1000



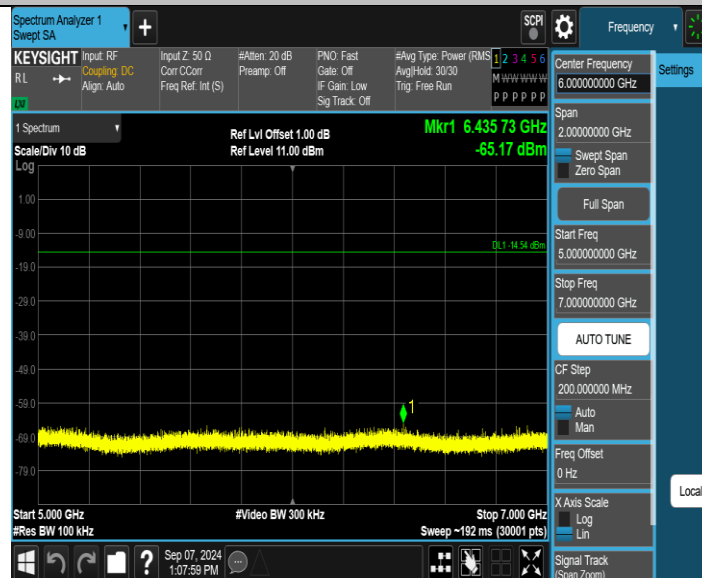
BLE_1M_Ant1_2402_1000~3000



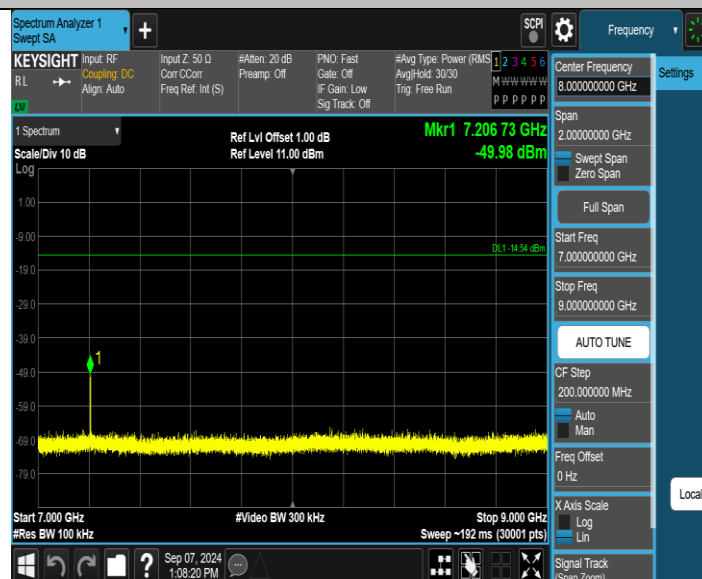
BLE_1M_Ant1_2402_3000~5000



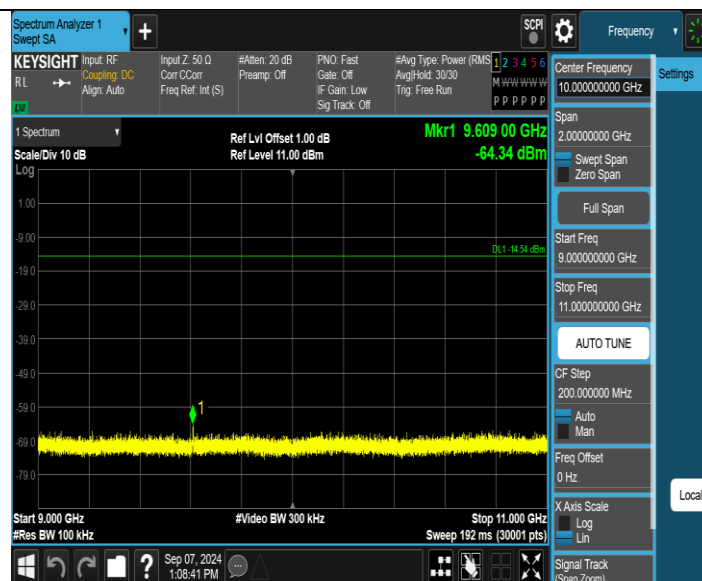
BLE_1M_Ant1_2402_5000~7000



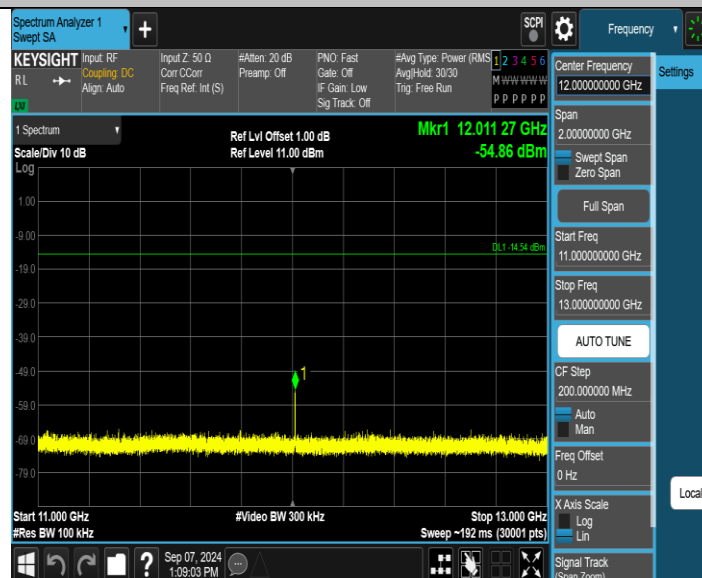
BLE_1M_Ant1_2402_7000~9000



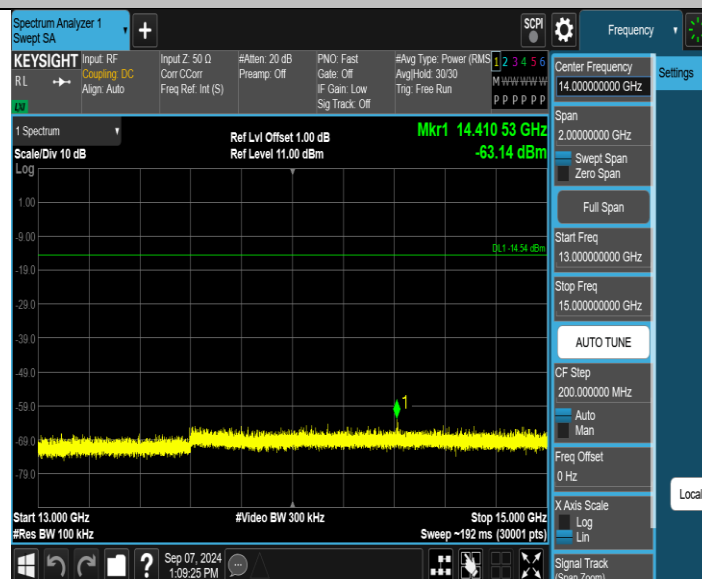
BLE_1M_Ant1_2402_9000~11000



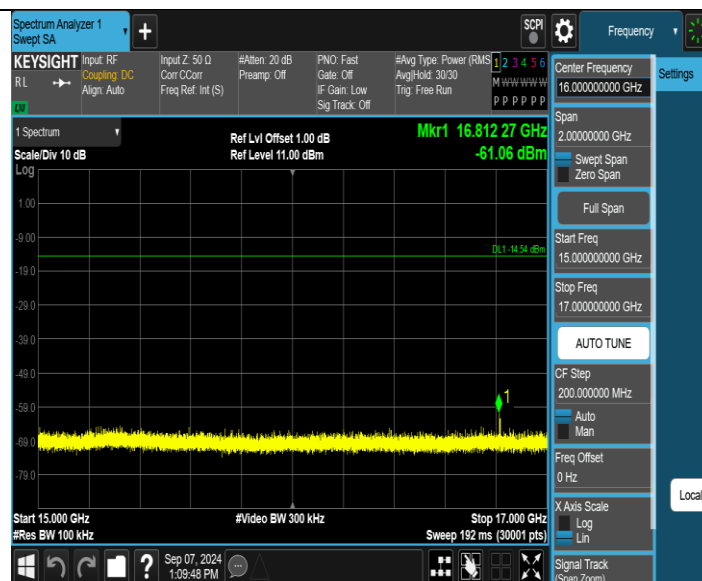
BLE_1M_Ant1_2402_11000~13000



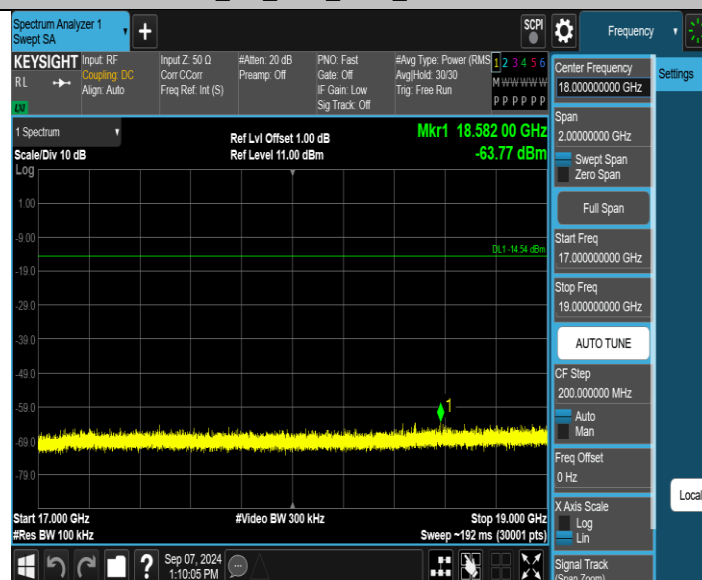
BLE_1M_Ant1_2402_13000~15000



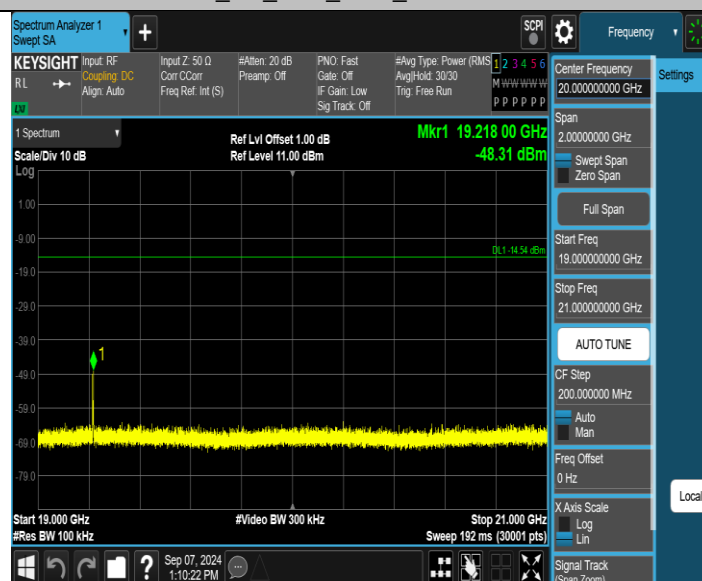
BLE_1M_Ant1_2402_15000~17000



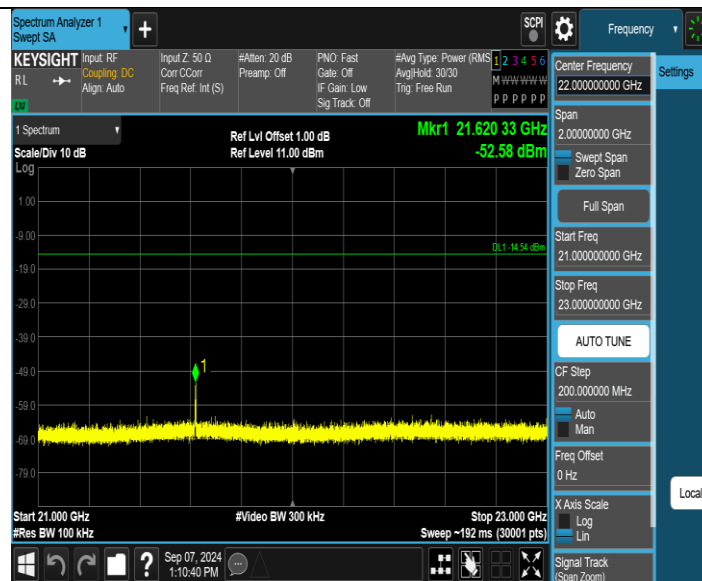
BLE_1M_Ant1_2402_17000~19000



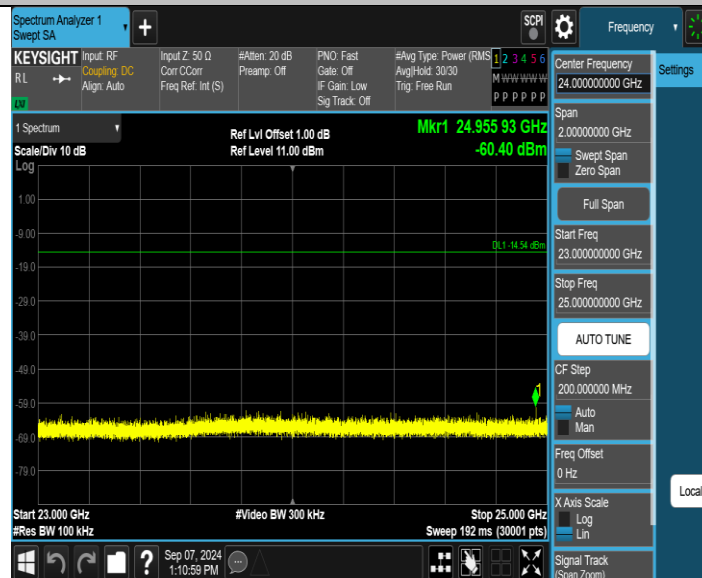
BLE_1M_Ant1_2402_19000~21000



BLE_1M_Ant1_2402_21000~23000



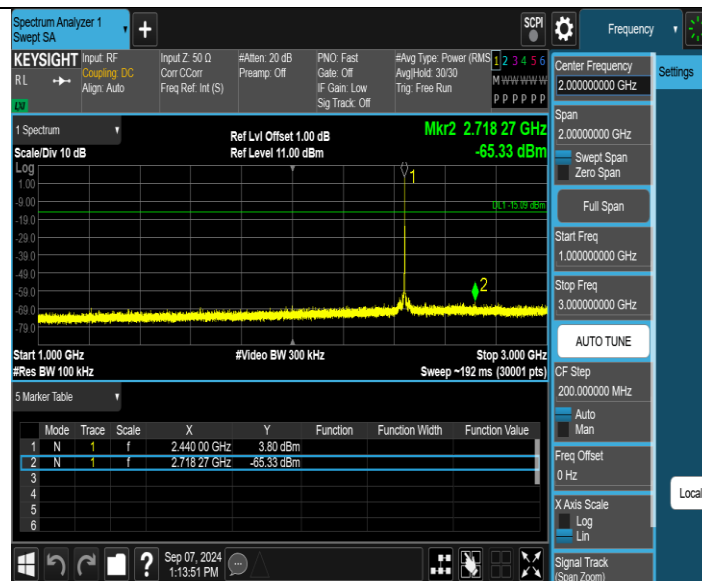
BLE_1M_Ant1_2402_23000~25000



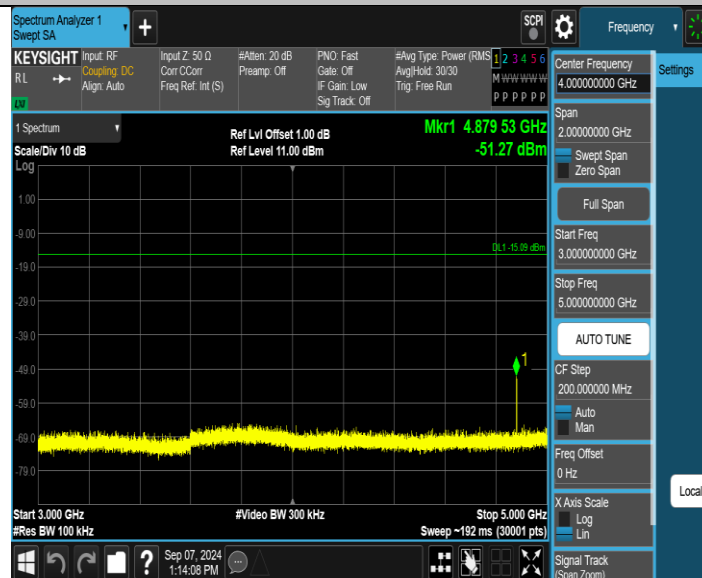
BLE_1M_Ant1_2440_30~1000



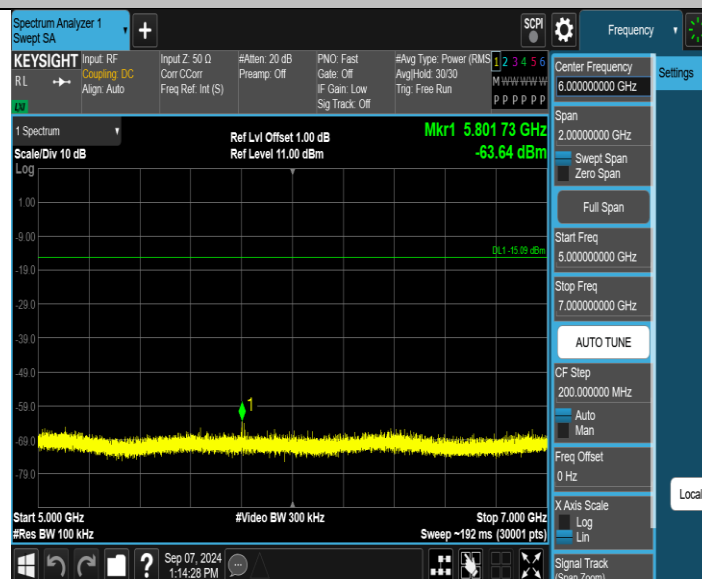
BLE_1M_Ant1_2440_1000~3000



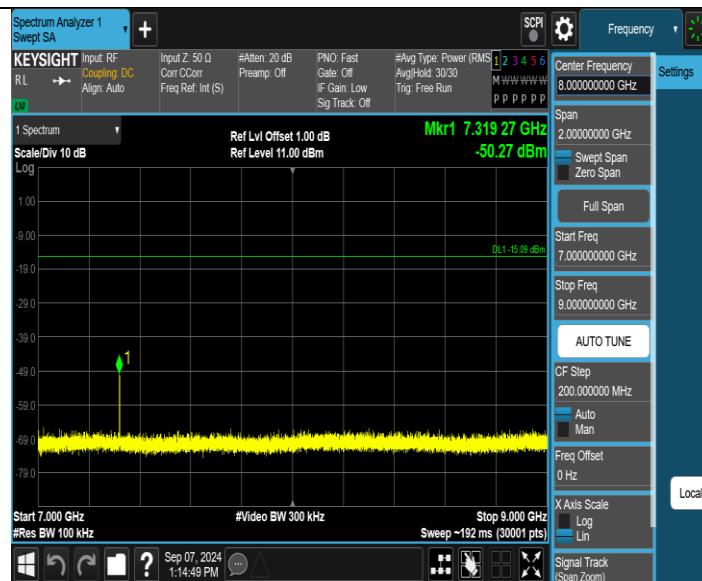
BLE_1M_Ant1_2440_3000~5000



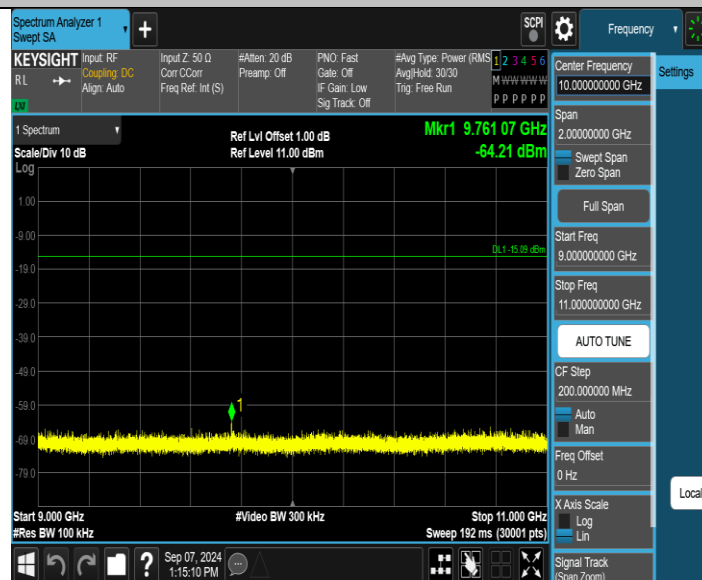
BLE_1M_Ant1_2440_5000~7000



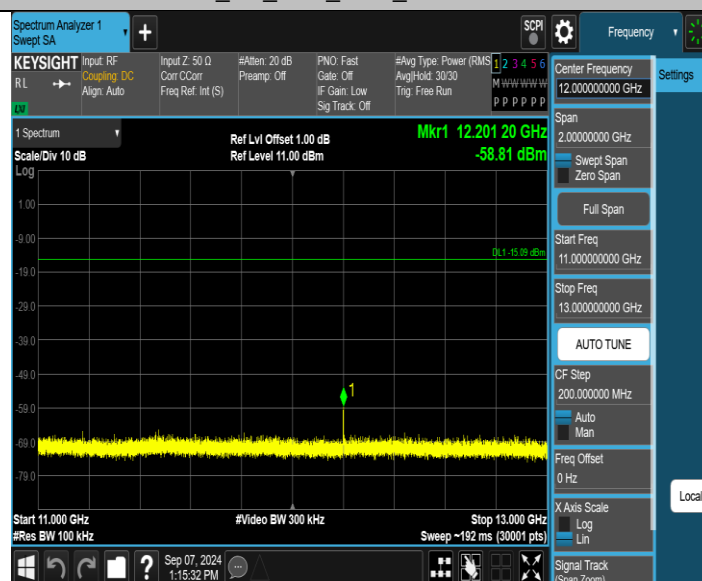
BLE_1M_Ant1_2440_7000~9000



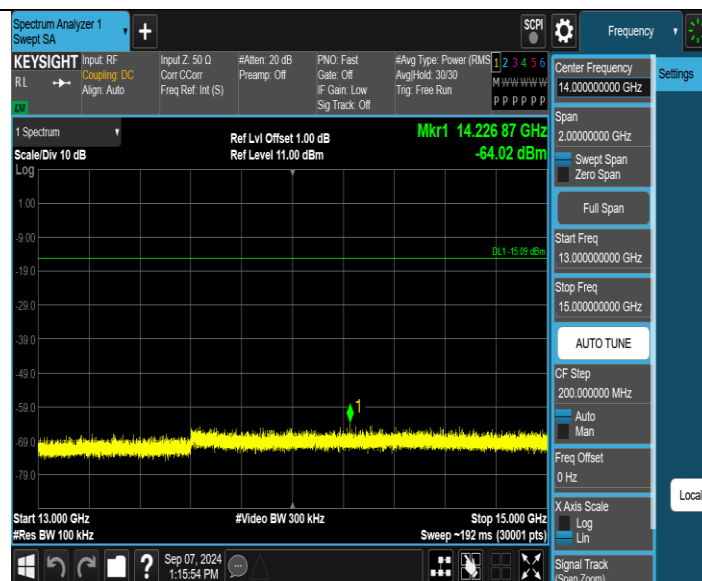
BLE_1M_Ant1_2440_9000~11000



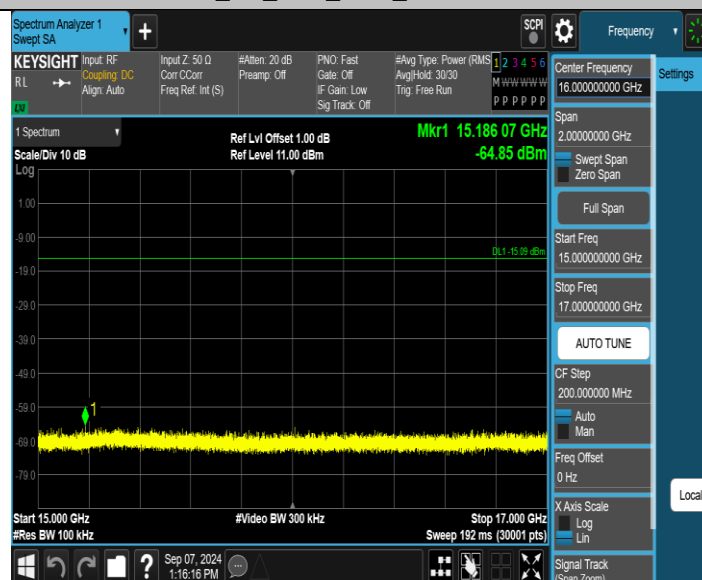
BLE_1M_Ant1_2440_11000~13000



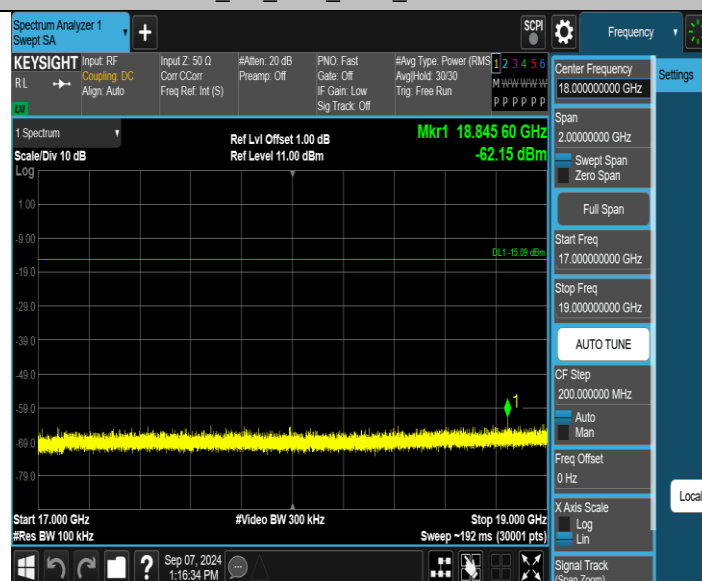
BLE_1M_Ant1_2440_13000~15000



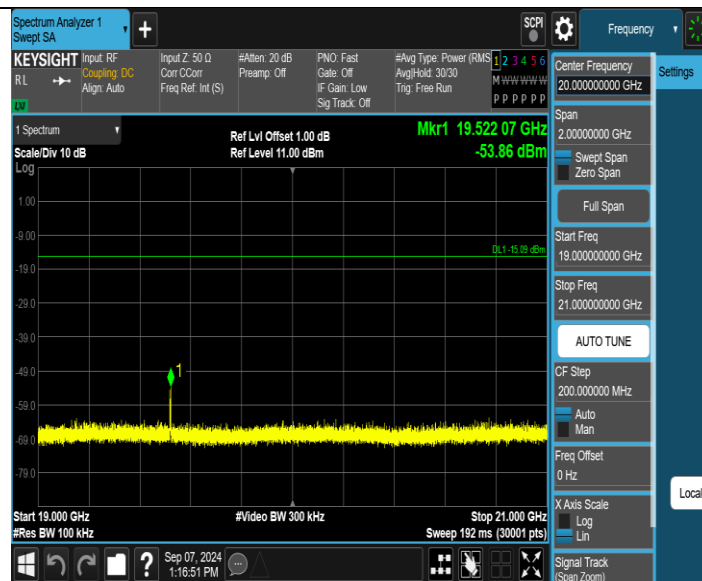
BLE_1M_Ant1_2440_15000~17000



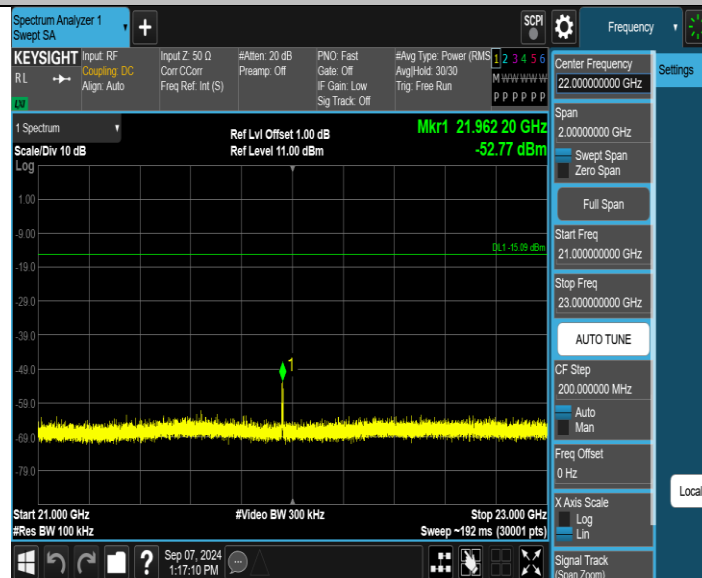
BLE_1M_Ant1_2440_17000~19000



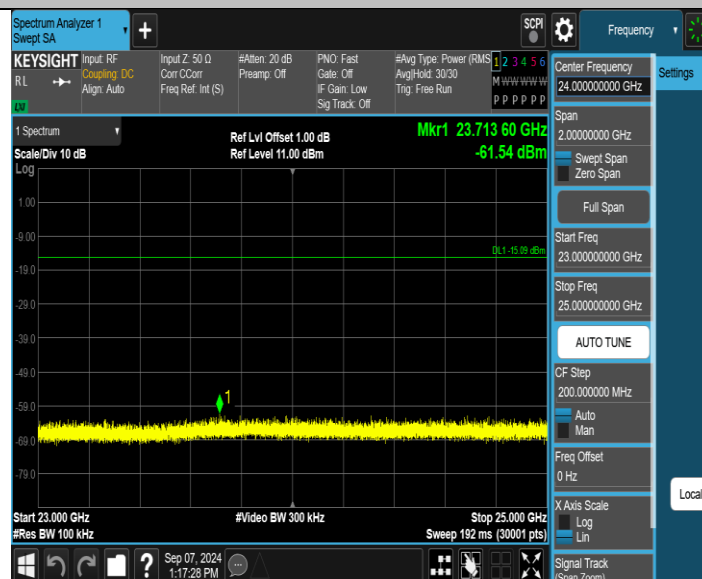
BLE_1M_Ant1_2440_19000~21000



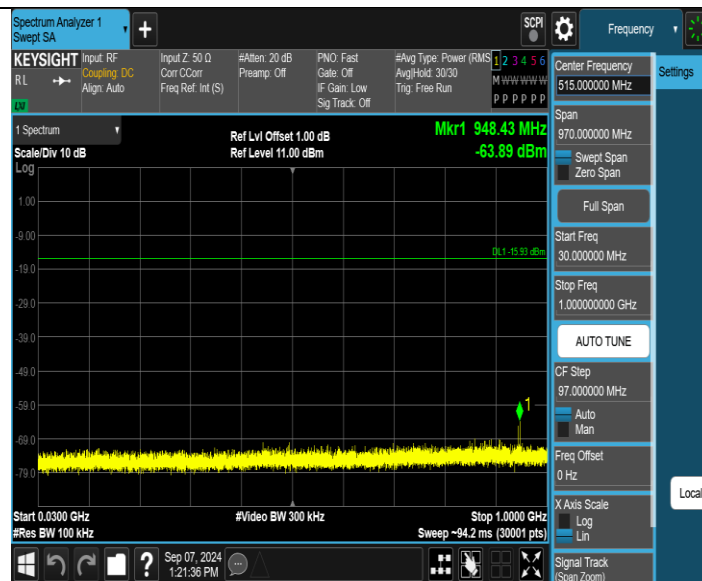
BLE_1M_Ant1_2440_21000~23000



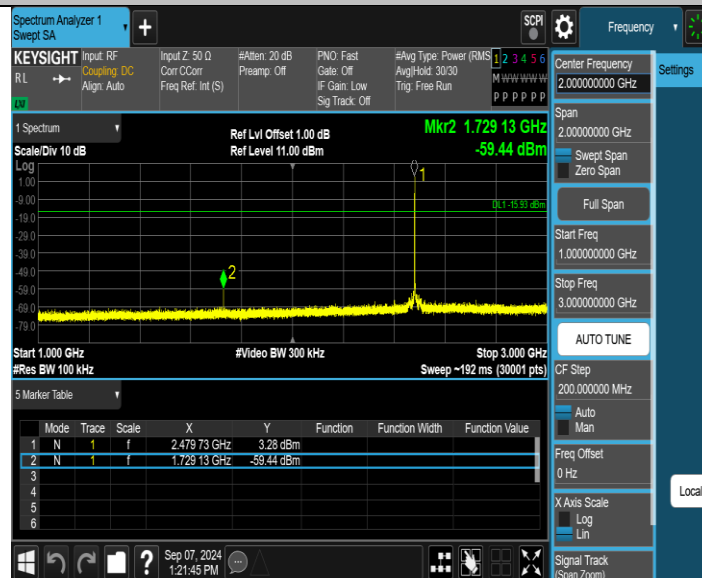
BLE_1M_Ant1_2440_23000~25000



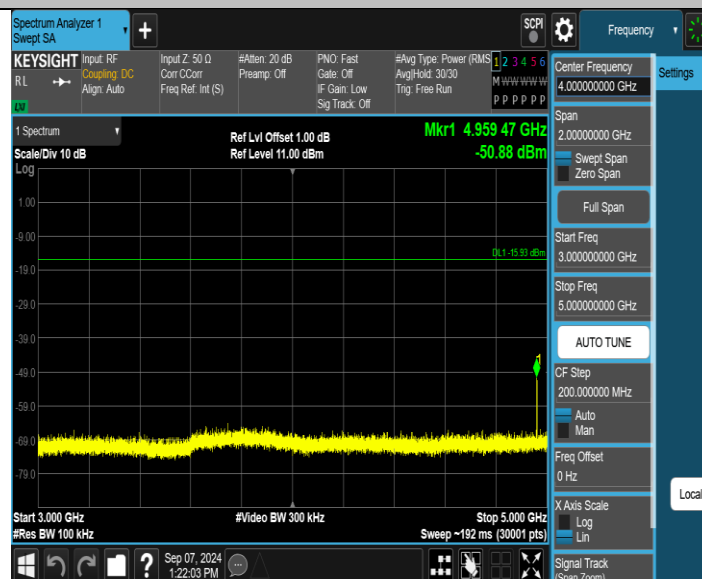
BLE_1M_Ant1_2480_30~1000



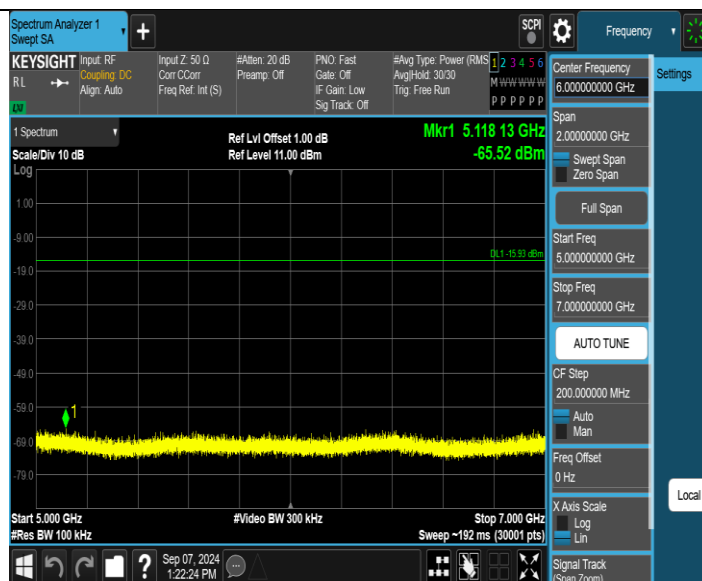
BLE_1M_Ant1_2480_1000~3000



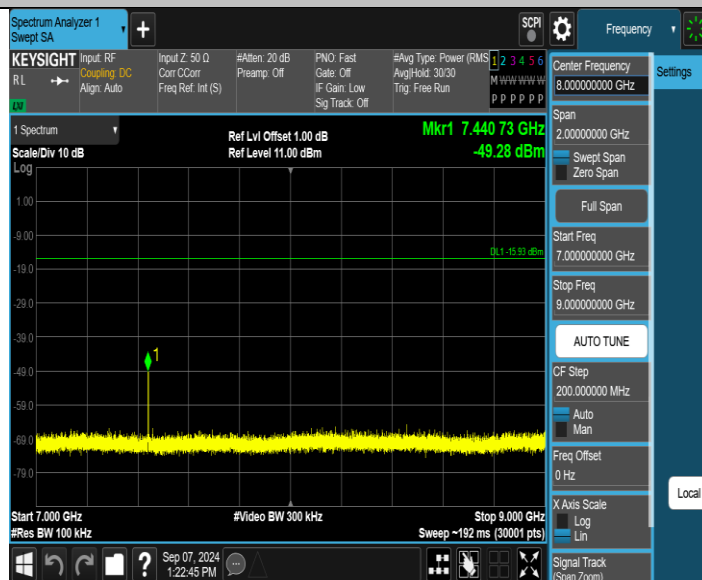
BLE_1M_Ant1_2480_3000~5000



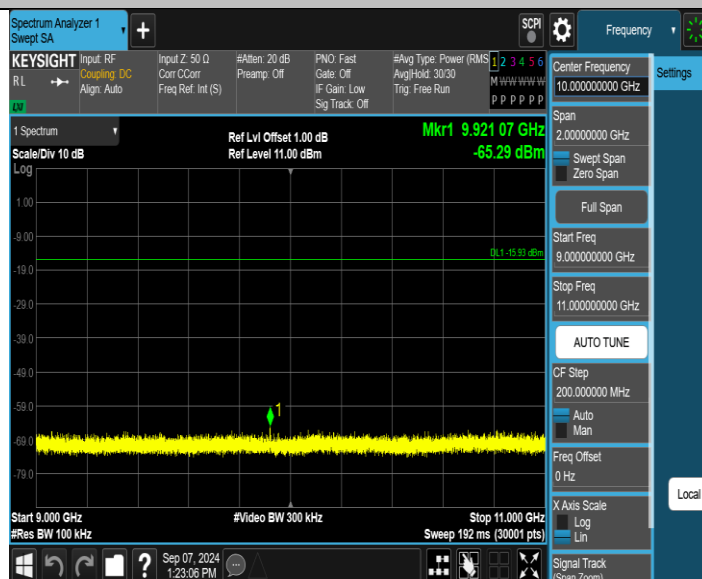
BLE_1M_Ant1_2480_5000~7000



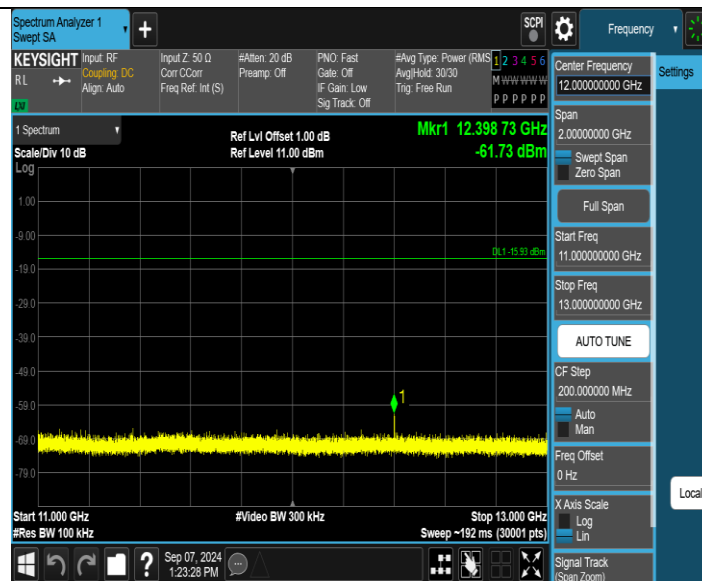
BLE_1M_Ant1_2480_7000~9000



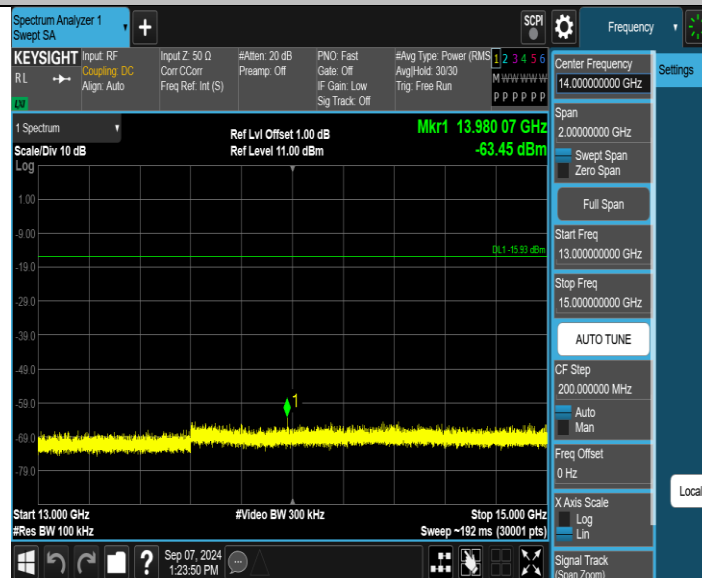
BLE_1M_Ant1_2480_9000~11000



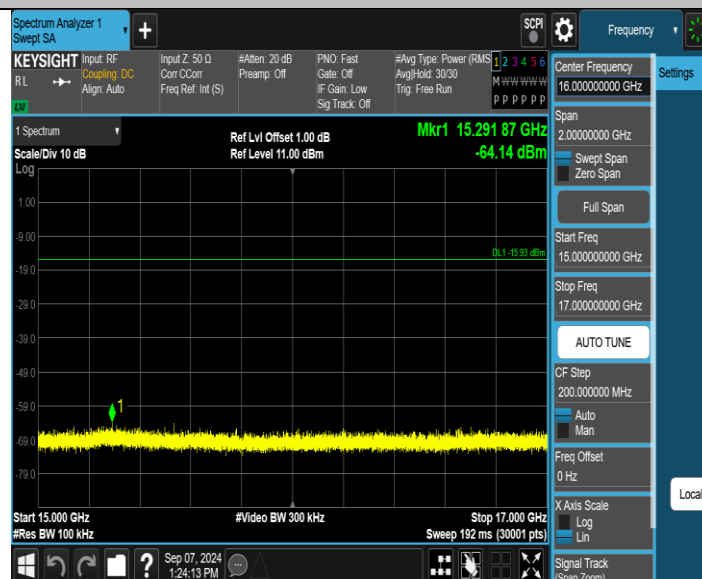
BLE_1M_Ant1_2480_11000~13000



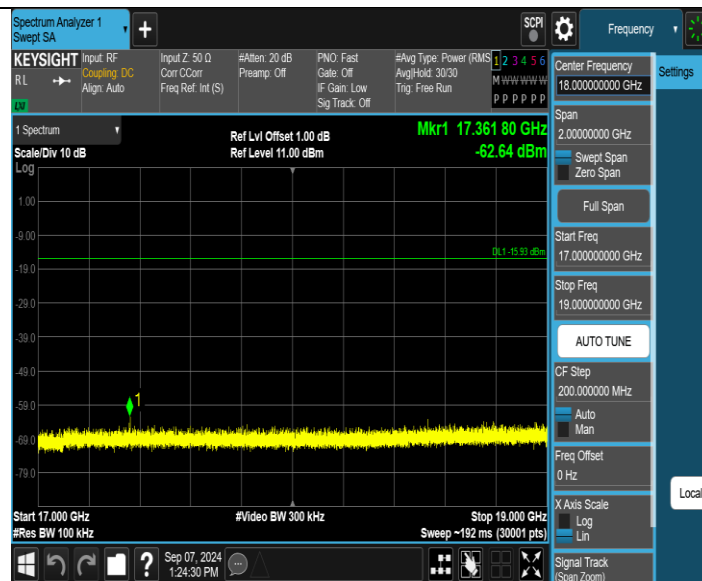
BLE_1M_Ant1_2480_13000~15000



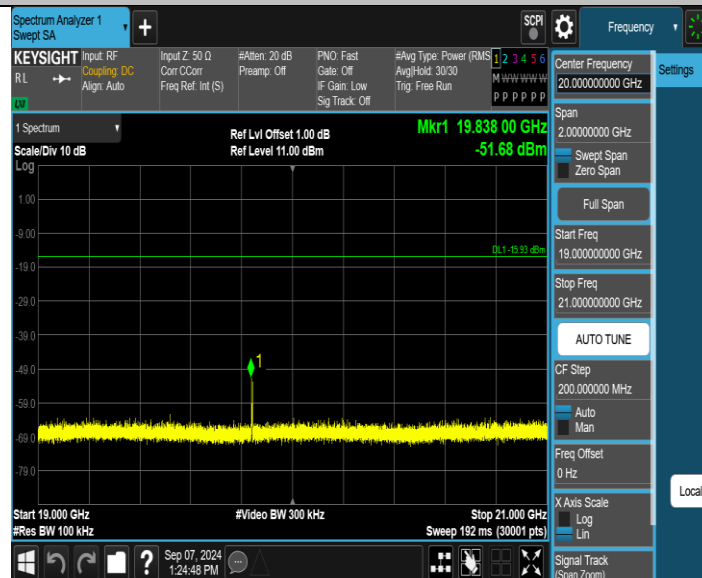
BLE_1M_Ant1_2480_15000~17000



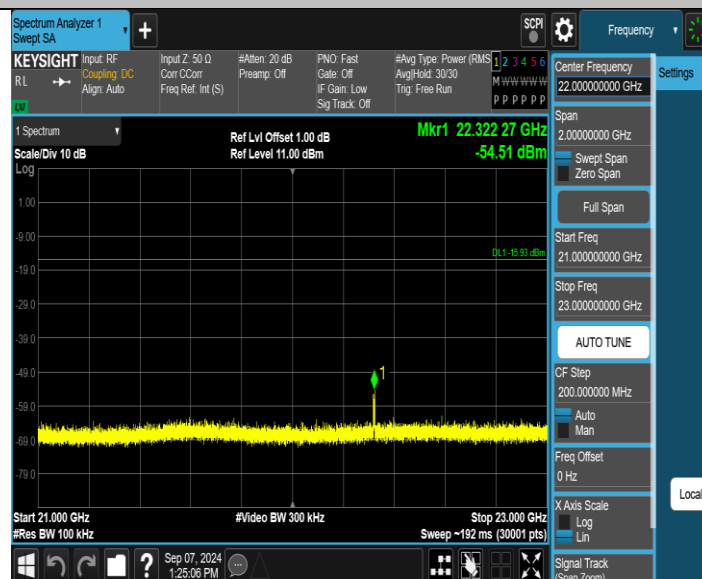
BLE_1M_Ant1_2480_17000~19000



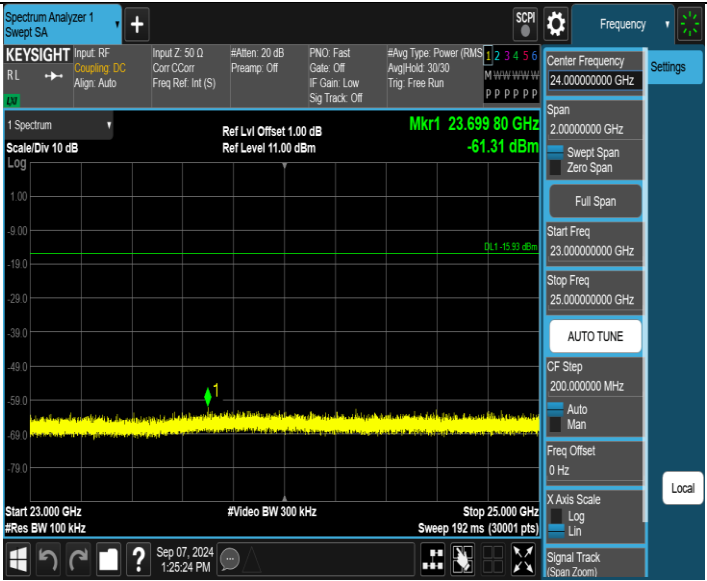
BLE_1M_Ant1_2480_19000~21000



BLE_1M_Ant1_2480_21000~23000



BLE_1M_Ant1_2480_23000~25000



Appendix G: Duty Cycle

TestMode	Antenna	Frequency[MHz]	ON Time [ms]	Period [ms]	Duty Cycle [%]	Duty Cycle Factor[dB]
BLE_1M	Ant1	2402	0.00	0.00	100	NaN
		2440	0.00	0.00	100	NaN
		2480	0.00	0.00	100	NaN

Test Graphs

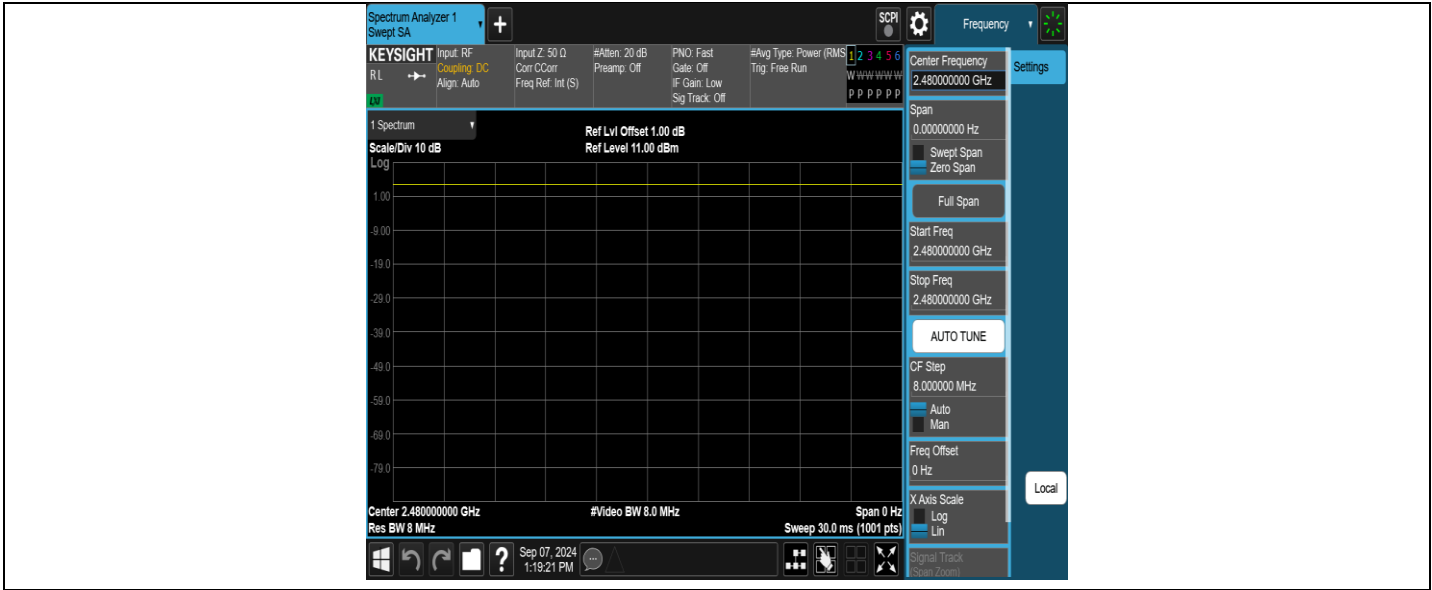
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440

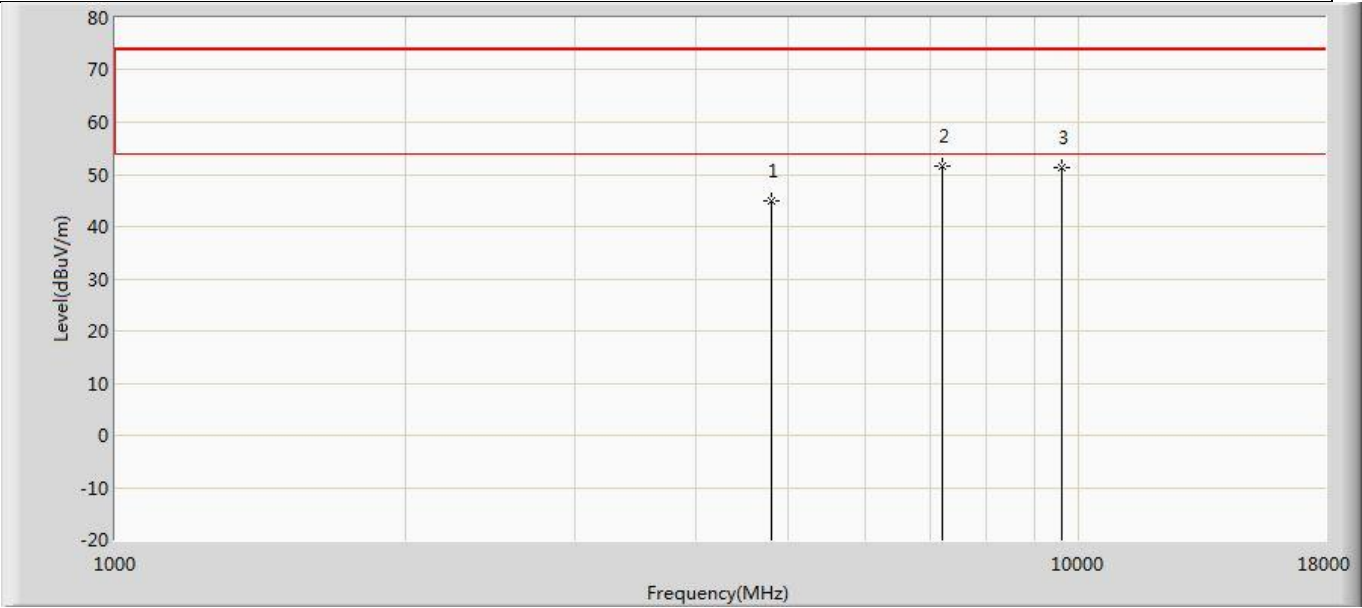


BLE_1M_Ant1_2480



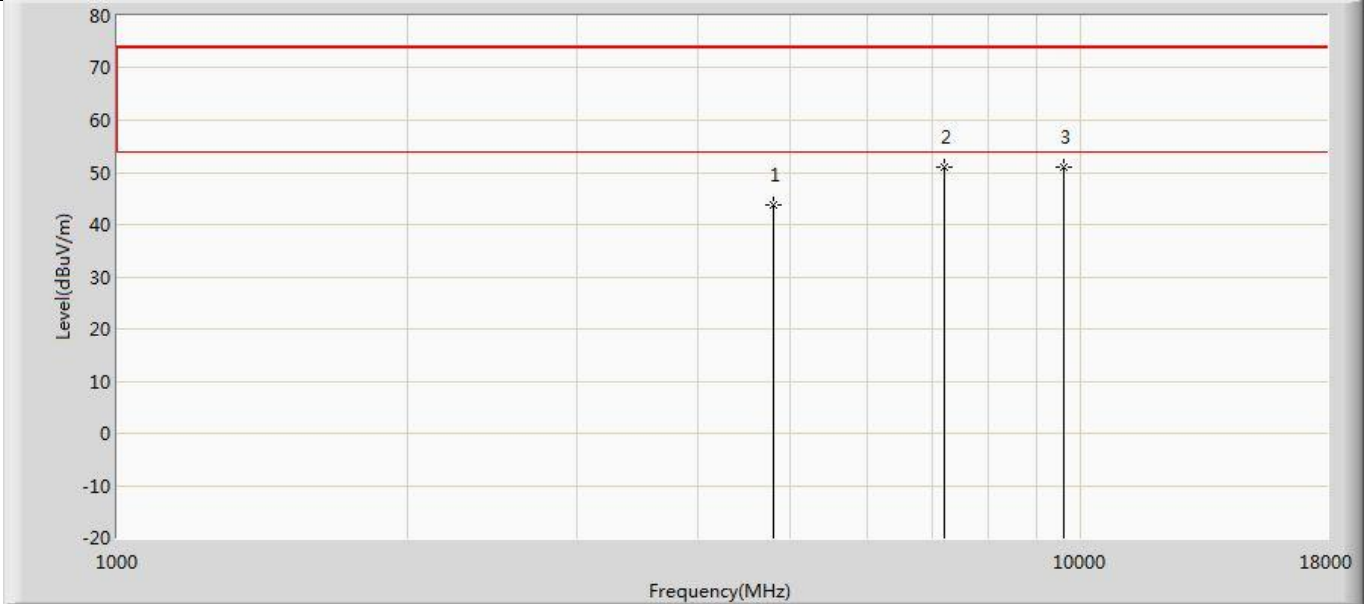
Appendix H: Emissions in Restricted Bands

Profile: 2480841R	Page No.: 43
Engineer: Yu Liu	
Site: AC5	Time: 2024/09/10 - 21:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2402MHz by LE_1Mbps	



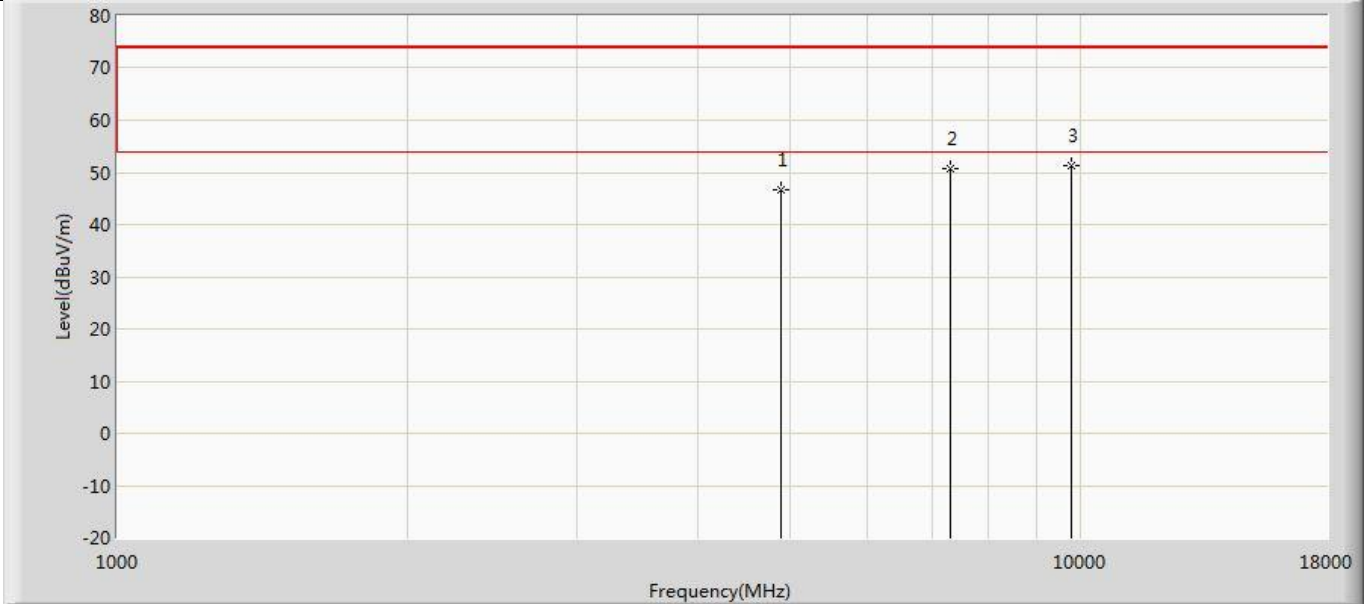
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	44.837	56.892	-29.163	74.000	-12.055	PK
2	*	7205.000	51.642	58.186	-22.358	74.000	-6.544	PK
3		9608.000	51.388	54.556	-22.612	74.000	-3.167	PK

Profile: 2480841R	Page No.: 44
Engineer: Yu Liu	
Site: AC5	Time: 2024/09/10 - 21:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2402MHz by LE_1Mbps	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4804.000	43.767	55.822	-30.233	74.000	-12.055	PK
2	*	7205.000	50.912	57.456	-23.088	74.000	-6.544	PK
3		9608.000	50.909	54.077	-23.091	74.000	-3.167	PK

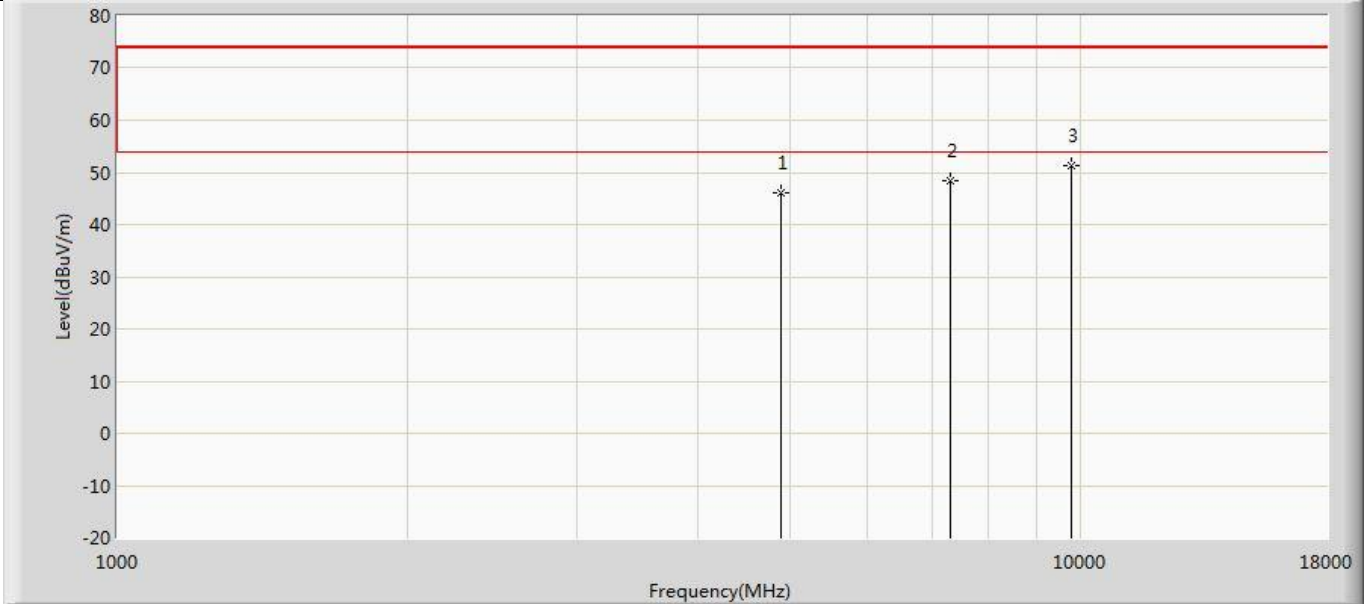
Profile: 2480841R	Page No.: 45
Engineer: Yu Liu	
Site: AC5	Time: 2024/09/10 - 21:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2440MHz by LE_1Mbps	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	46.678	57.455	-27.322	74.000	-10.777	PK
2		7324.000	50.646	57.844	-23.354	74.000	-7.198	PK
3	*	9760.000	51.361	54.228	-22.639	74.000	-2.867	PK



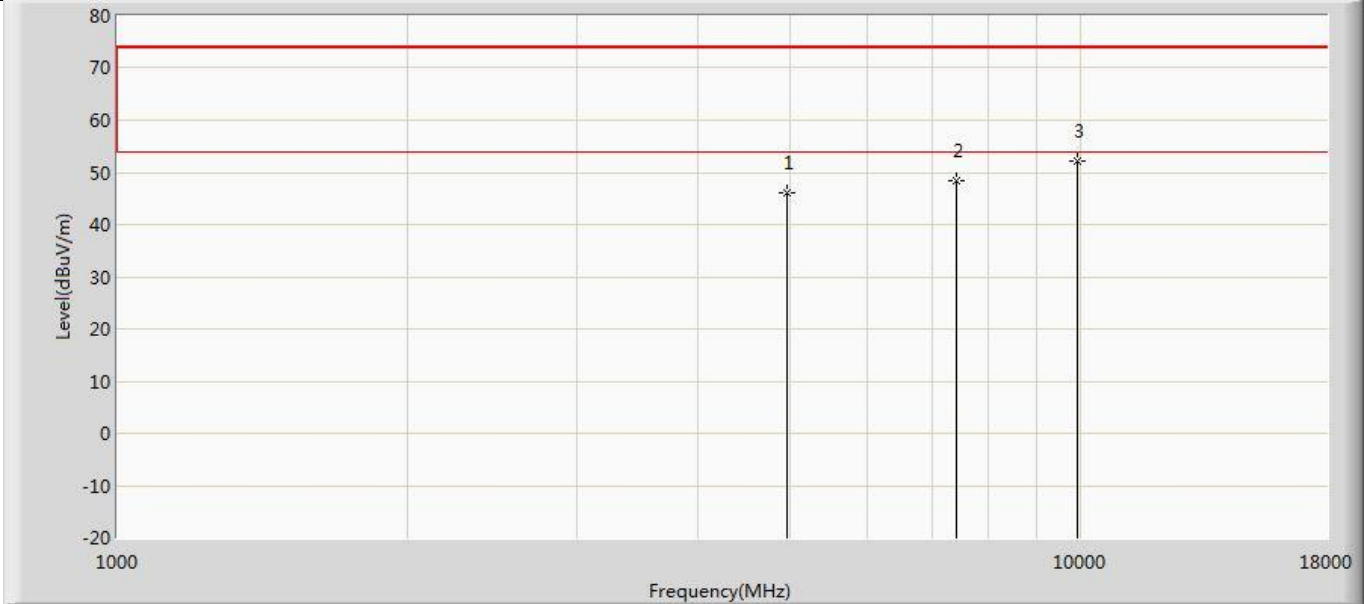
Profile: 2480841R	Page No.: 46
Engineer: Yu Liu	
Site: AC5	Time: 2024/09/10 - 21:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2440MHz by LE_1Mbps	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4880.000	46.007	56.784	-27.993	74.000	-10.777	PK
2		7320.000	48.521	55.812	-25.479	74.000	-7.291	PK
3	*	9760.000	51.371	54.238	-22.629	74.000	-2.867	PK

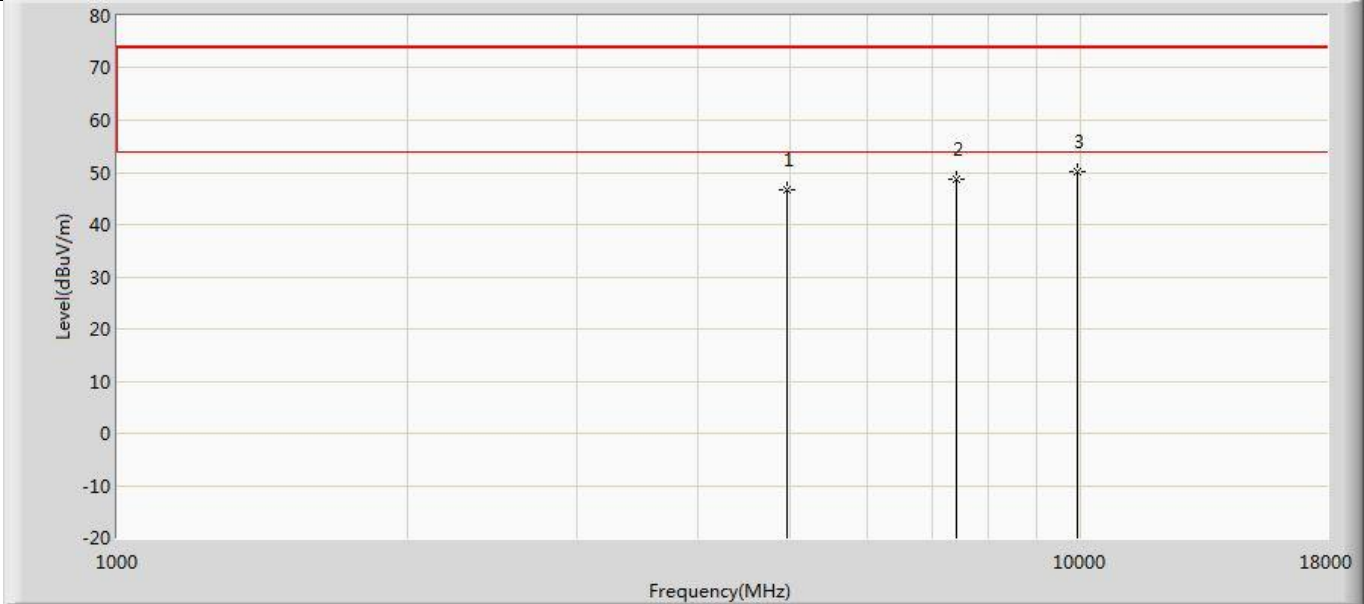


Profile: 2480841R	Page No.: 47
Engineer: Yu Liu	
Site: AC5	Time: 2024/09/10 - 21:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2480MHz by LE_1Mbps	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	46.182	57.069	-27.818	74.000	-10.888	PK
2		7440.000	48.379	55.489	-25.621	74.000	-7.110	PK
3	*	9920.000	52.114	53.979	-21.886	74.000	-1.865	PK

Profile: 2480841R	Page No.: 48
Engineer: Yu Liu	
Site: AC5	Time: 2024/09/10 - 21:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: Horn_3117_00167055_(1-18GHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit at 2480MHz by LE_1Mbps	



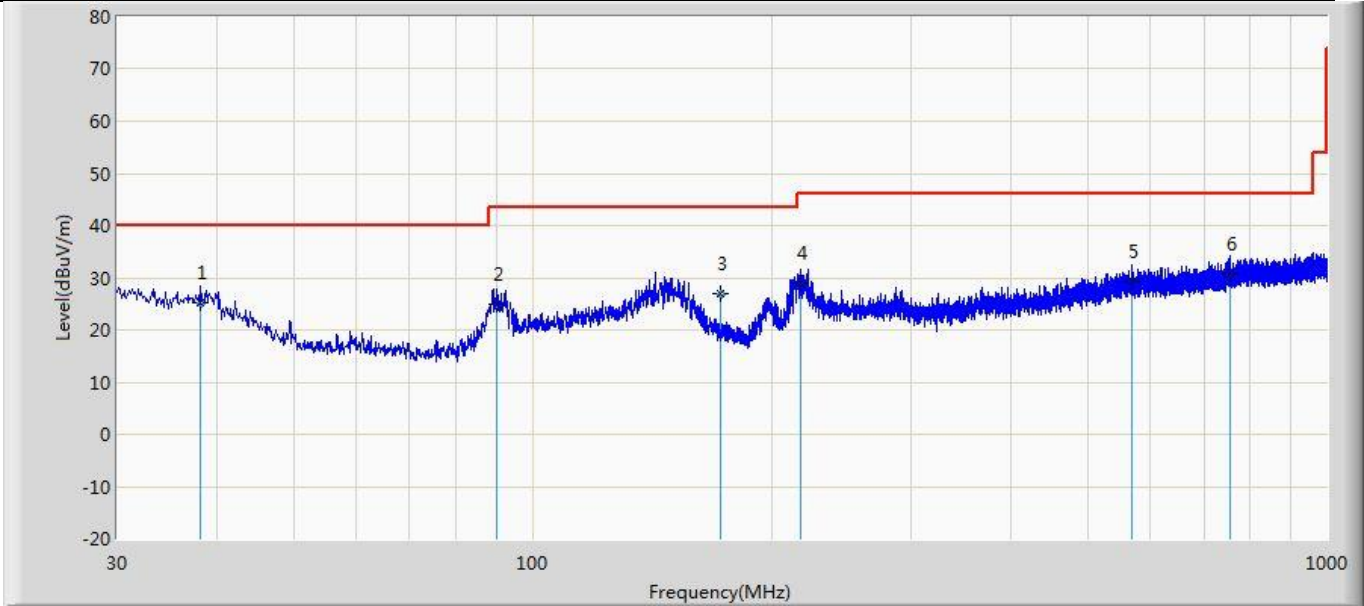
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		4960.000	46.639	57.526	-27.361	74.000	-10.888	PK
2		7440.000	48.552	55.662	-25.448	74.000	-7.110	PK
3	*	9920.000	50.110	51.975	-23.890	74.000	-1.865	PK

Note:

1. Measured Level = Reading Level + Factor.
2. The test frequency range, 9kHz~30MHz, worst case are at least 20dB below the limits, therefore no data appear in the report.
3. The test frequency range, 18GHz~26GHz test result on peak is lower than average limit, all is the noise base, therefore no data appear in the report.
4. If the test result on peak is lower than average limit, then average measurement needn't be performed.

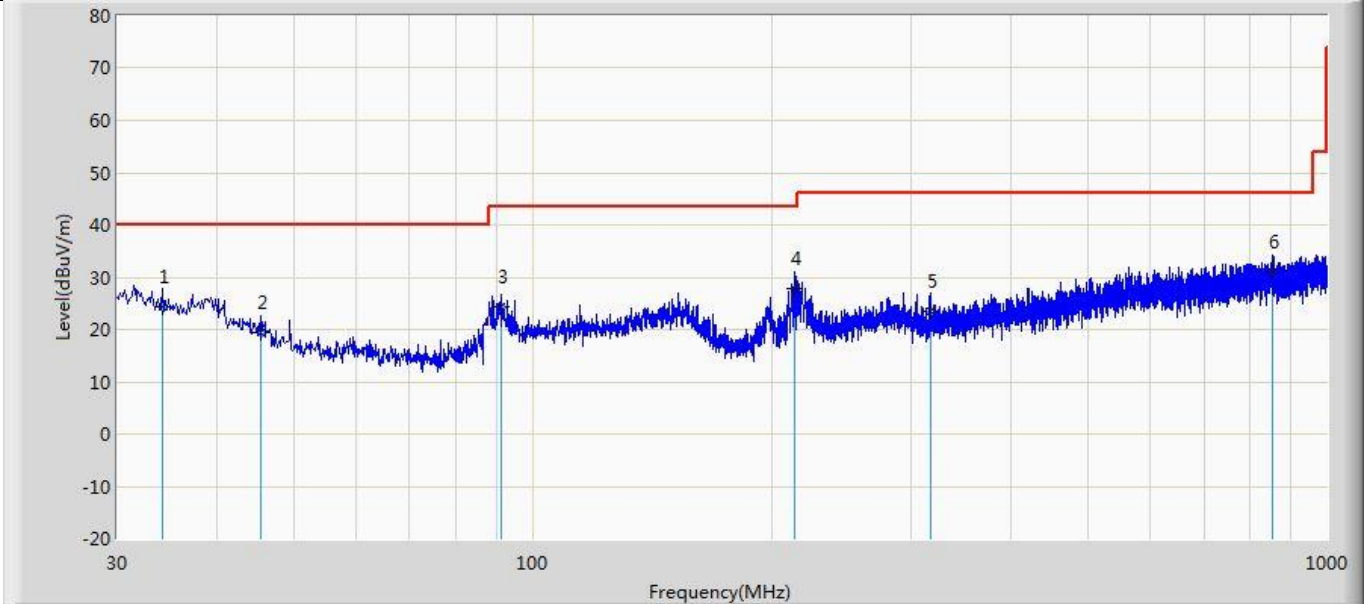
The worst case of Radiated Emission below 1GHz :

Profile: 2480841R	Page No.: 3
Engineer: Yu Liu	
Site: AC2	Time: 2024/09/09 - 21:04
Limit: FCC_Part 15.109_RE (3m)_Class B	Margin: 0
Probe: CBL6112D_27613(30-1000MHz)	Polarity: Vertical
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	38.245	25.166	4.636	-14.834	40.000	20.530	QP
2		90.261	24.961	9.012	-18.539	43.500	15.950	QP
3		172.762	27.006	10.337	-16.494	43.500	16.669	QP
4		217.574	29.054	12.564	-16.946	46.000	16.490	QP
5		568.835	29.139	1.998	-16.861	46.000	27.141	QP
6		753.862	30.648	2.114	-15.352	46.000	28.534	QP

Profile: 2480841R	Page No.: 4
Engineer: Yu Liu	
Site: AC2	Time: 2024/09/09 - 21:17
Limit: FCC_Part 15.109_RE (3m)_Class B	Margin: 0
Probe: CBL6112D_27613(30-1000MHz)	Polarity: Horizontal
EUT: Barcode Scanner	Power: Battery Powered
Note: Mode 1 : Transmit	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		34.244	24.451	1.649	-15.549	40.000	22.802	QP
2		45.520	19.414	2.664	-20.586	40.000	16.750	QP
3		91.231	24.230	8.061	-19.270	43.500	16.169	QP
4		213.815	27.802	11.359	-15.698	43.500	16.444	QP
5		316.514	23.588	2.361	-22.412	46.000	21.226	QP
6	*	852.681	31.014	1.699	-14.986	46.000	29.314	QP

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp)

The End