



Appendix A

RF Test Data for BT V5.0(Conducted Measurement)

Product Name: Bluetooth Remote Control

Test Model: T4HS2107/16k

Environmental Conditions

Temperature:	21.1 ° C
Relative Humidity:	52.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Jay Li
Supervised by:	Huan Li



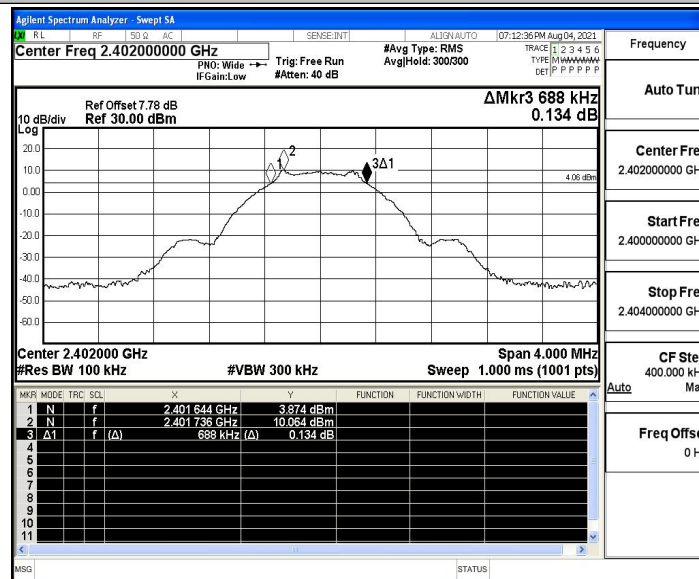
A.1 DTS Bandwidth

Test Result

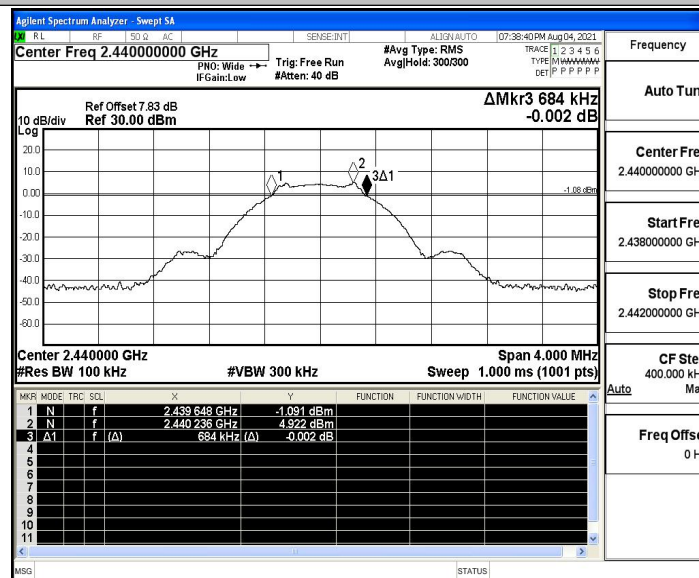
TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
BLE_1M	Ant1	2402	0.688	2401.644	2402.332	≥0.5	PASS
		2440	0.684	2439.648	2440.332	≥0.5	PASS
		2480	0.696	2479.640	2480.336	≥0.5	PASS

Test Graphs

BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



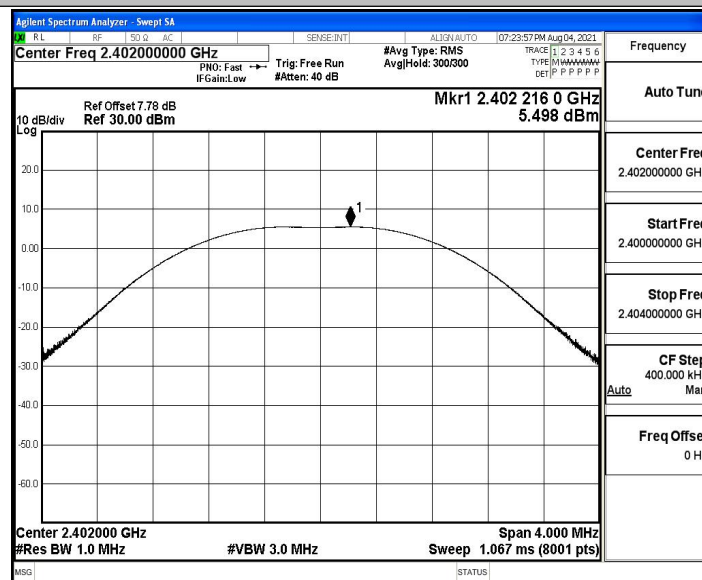
A.2 Maximum Peak conducted output power

Test Result

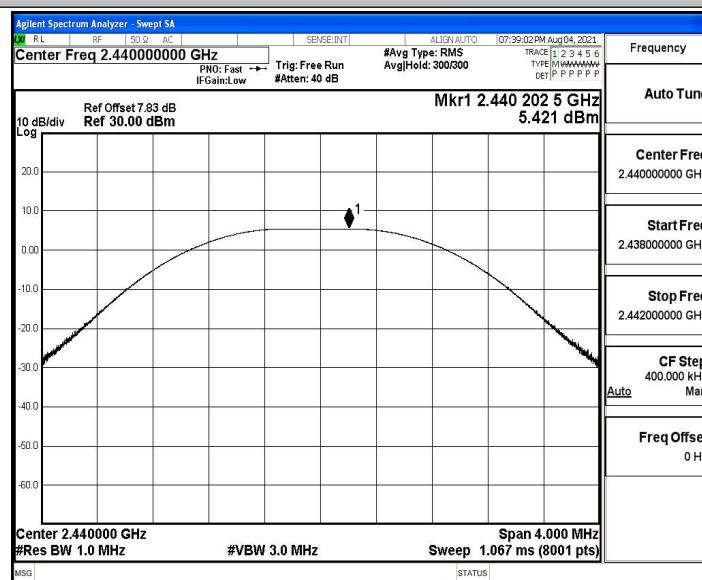
TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	5.5	≤30	PASS
		2440	5.42	≤30	PASS
		2480	5.43	≤30	PASS

Test Graphs

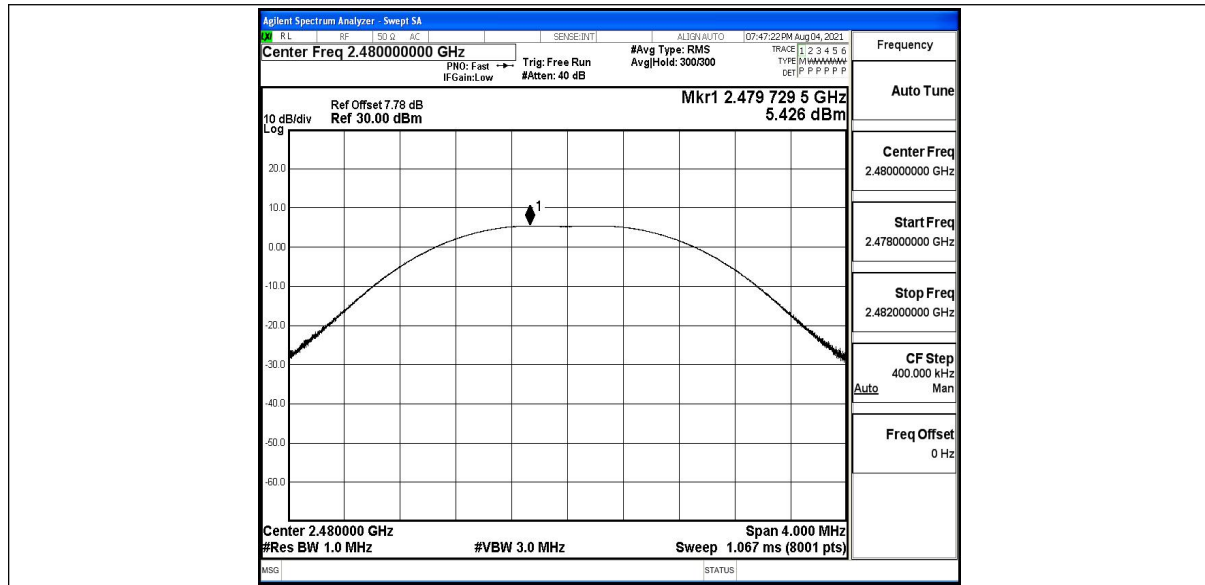
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





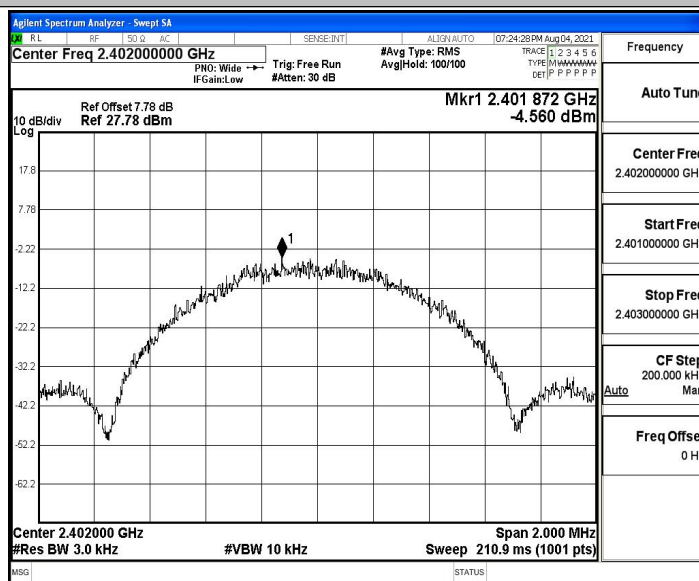
A.3 Maximum power spectral density

Test Result

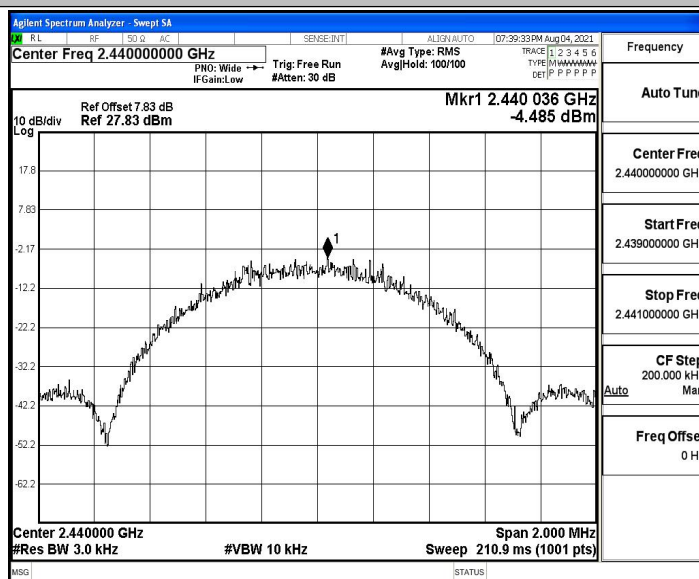
TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
BLE_1M	Ant1	2402	-4.56	≤8	PASS
		2440	-4.49	≤8	PASS
		2480	-5.09	≤8	PASS

Test Graphs

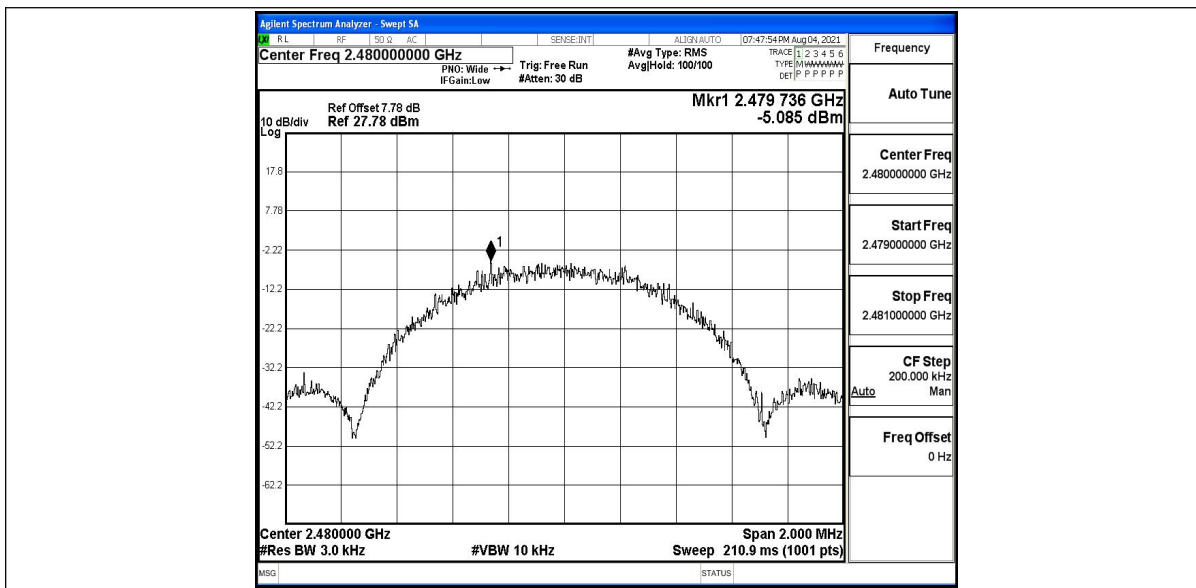
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



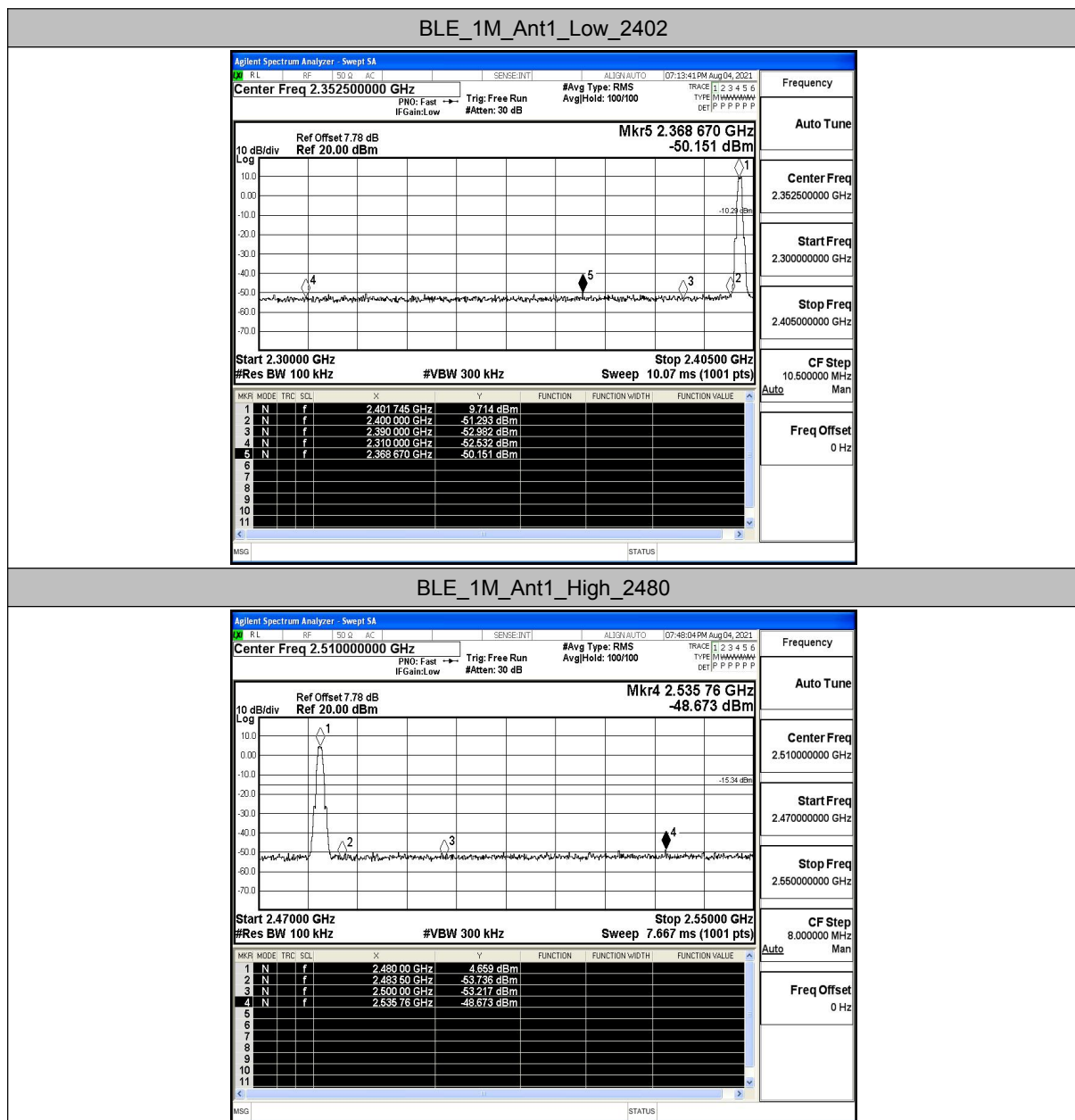


A.4 Band edge measurements

Test Result

TestMode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	Low	2402	9.71	-50.15	≤-10.29	PASS
		High	2480	4.66	-48.67	≤-15.34	PASS

Test Graphs





A.5 Conducted Spurious Emission

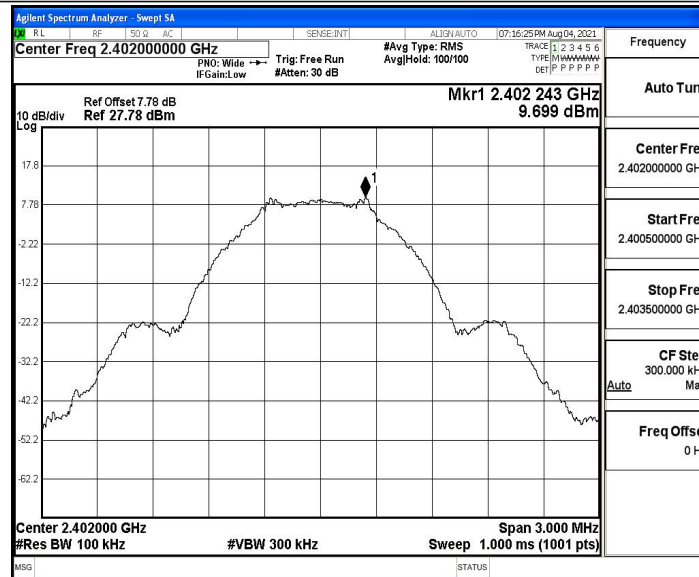
Test Result

TestMode	Antenna	Channel	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	Reference	9.70	9.70	---	PASS
			30~1000	9.70	-61.82	≤ -10.3	PASS
			1000~26500	9.70	-47.4	≤ -10.3	PASS
		2440	Reference	4.88	4.88	---	PASS
			30~1000	4.88	-61.79	≤ -15.12	PASS
			1000~26500	4.88	-47.59	≤ -15.12	PASS
		2480	Reference	4.59	4.59	---	PASS
			30~1000	4.59	-61.45	≤ -15.41	PASS
			1000~26500	4.59	-37.94	≤ -15.41	PASS

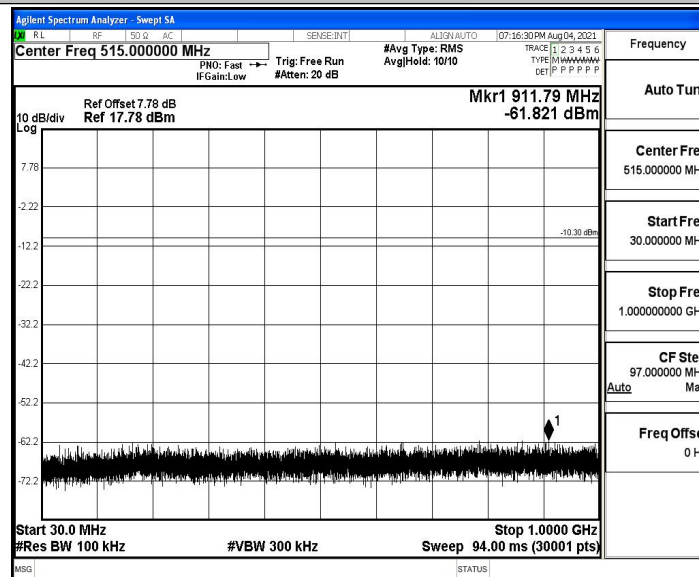


Test Graphs

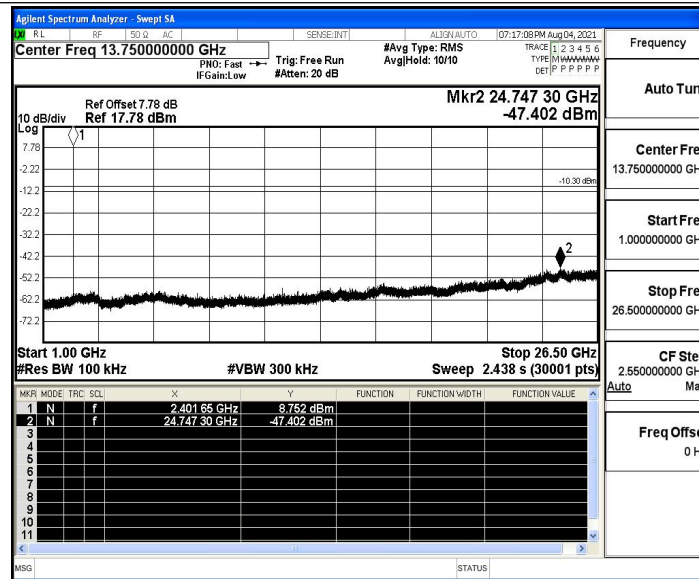
BLE_1M_Ant1_2402_0~Reference



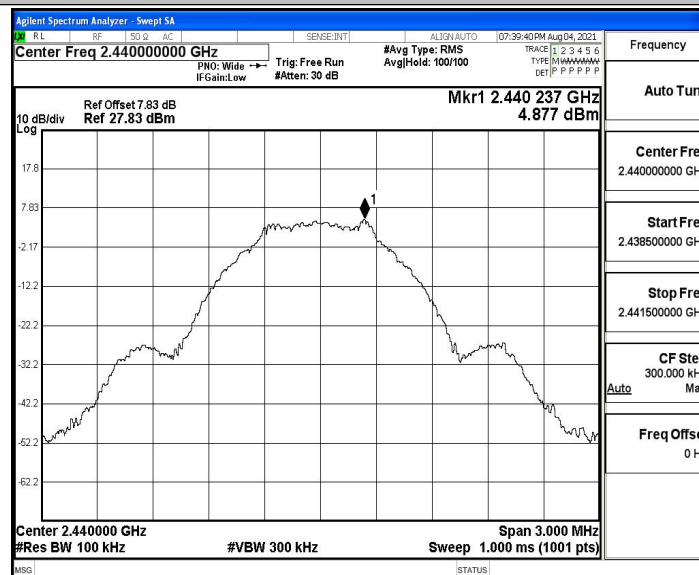
BLE_1M_Ant1_2402_30~1000



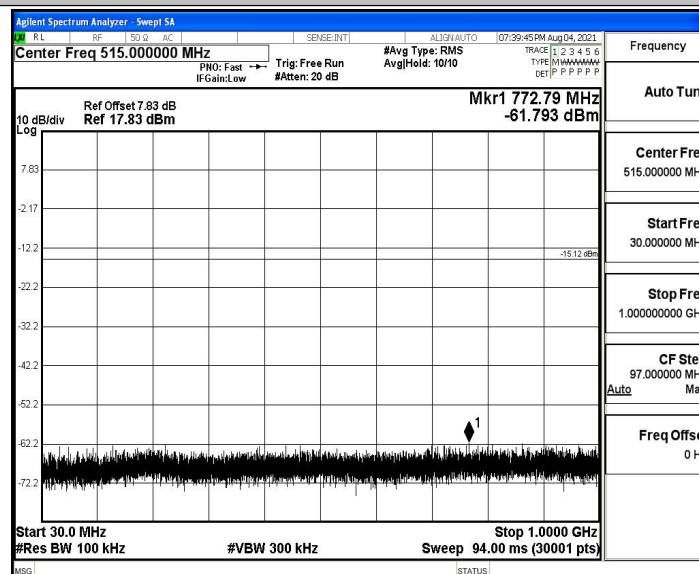
BLE_1M_Ant1_2402_1000~26500



BLE_1M_Ant1_2440_0~Reference

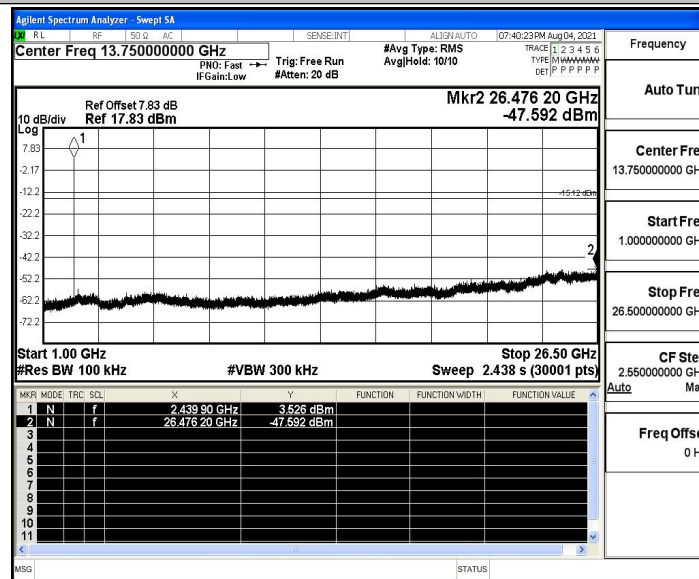


BLE_1M_Ant1_2440_30~1000

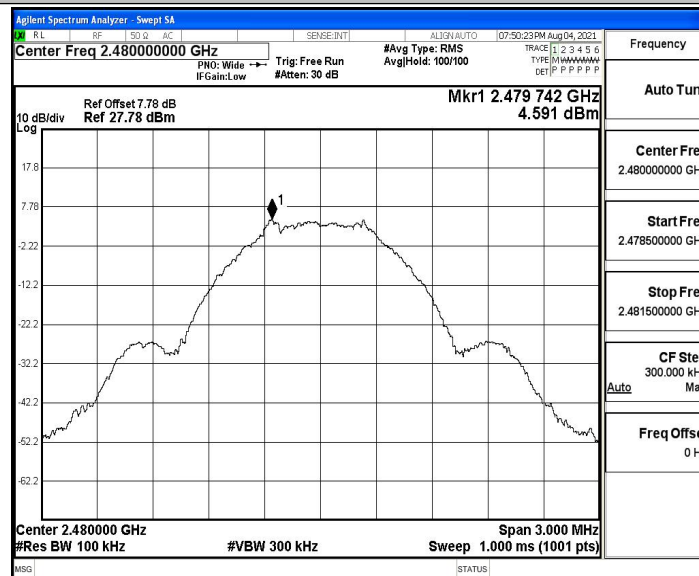




BLE_1M_Ant1_2440_1000~26500



BLE_1M_Ant1_2480_0~Reference



BLE_1M_Ant1_2480_30~1000

Agilent Spectrum Analyzer - Sweep SA

RL RF SO G AC SENSE:INT ALIGN: AUTO 07:51:06 PM Aug 04, 2021

Center Freq 13.75000000 GHz

PRF: Fast IF Gain: Low Trig: Free Run #Att: 20 dB

#Avg Type: RMS Avg/Hold: 10/0

TRACE 1 2 3 4 5 6
TYPE: BWANAWAW
DET: P P P P P P

Frequency

Auto Tune

Center Freq 13.75000000 GHz

Start Freq 1.00000000 GHz

Stop Freq 26.50000000 GHz

CF Stop 2.55000000 GHz

Auto Man

Freq Offset 0 Hz

10 dB/div Ref Offset 7.78 dB
Ref 17.78 dBm

Mkr2 1.74715 GHz
-37.937 dBm

Log

Start 1.00 GHz
#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.348 s (30001 pts)

MKR	MODE	TRC	SQL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f		2.479 86 GHz	4.926 dBm			
2	N	f		1.747 15 GHz	-37.937 dBm			
3								
4								
5								
6								
7								
8								
9								
10								
11								

MSC

[STATUS]



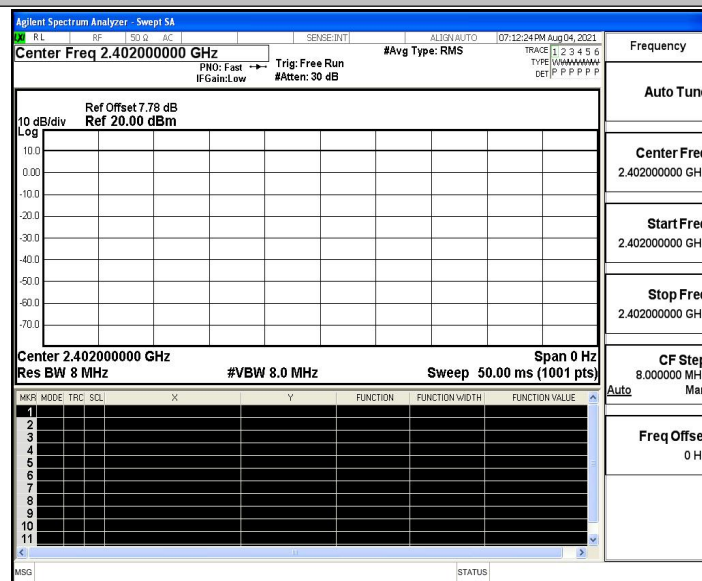
A.6 Duty Cycle

Test Result

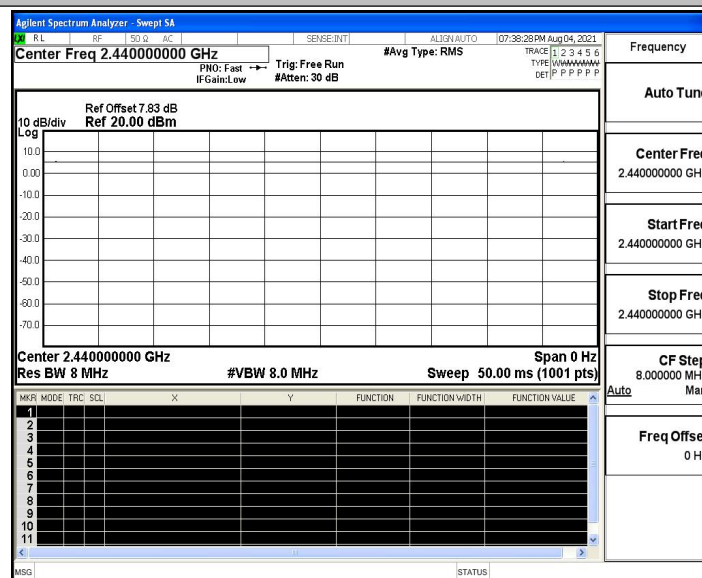
TestMode	Antenna	Channel	ON Time [ms]	Period [ms]	X	DC [%]	xFactor	Limit	Verdict
BLE_1M	Ant1	2402	50.00	50.00	1.0000	100.00	0.00	---	PASS
		2440	50.00	50.00	1.0000	100.00	0.00	---	PASS
		2480	50.00	50.00	1.0000	100.00	0.00	---	PASS

Test Graphs

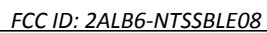
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480





A.7 Emissions in Restricted Bands

Test Result

Test Mode	Antenna	ChName	Channel	Detector	Freq. [MHz]	Result [dBm]	Limit [dBm]	Result [dBuV/m]	Limit [dBuV/m]	Verdict
BLE_1M	Ant1	Low	2402	AV	2310.000	-49.42	≤-41.20	45.78	≤54	PASS
				AV	2353.970	-48.82	≤-41.20	46.38	≤54	PASS
				AV	2390.000	-49.07	≤-41.20	46.13	≤54	PASS
				Peak	2310.000	-44.82	≤-21.20	50.38	≤74	PASS
				Peak	2347.355	-38.83	≤-21.20	56.37	≤74	PASS
				Peak	2390.000	-42.52	≤-21.20	52.68	≤74	PASS
		High	2480	AV	2483.500	-47.21	≤-41.20	47.99	≤54	PASS
				AV	2483.520	-47.21	≤-41.20	47.99	≤54	PASS
				AV	2500.000	-48.51	≤-41.20	46.69	≤54	PASS
				Peak	2483.500	-44.3	≤-21.20	50.90	≤74	PASS
				Peak	2499.760	-40.1	≤-21.20	55.10	≤74	PASS
				Peak	2500.000	-44.72	≤-21.20	50.48	≤74	PASS

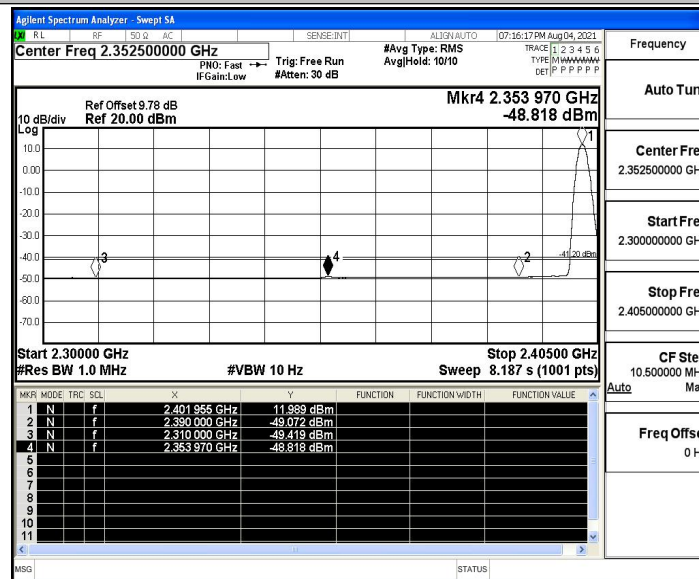
Note:

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.

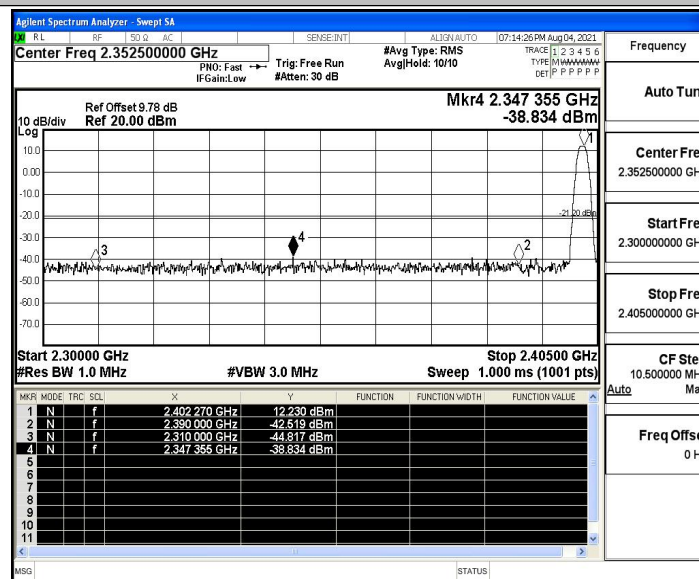


Test Graphs

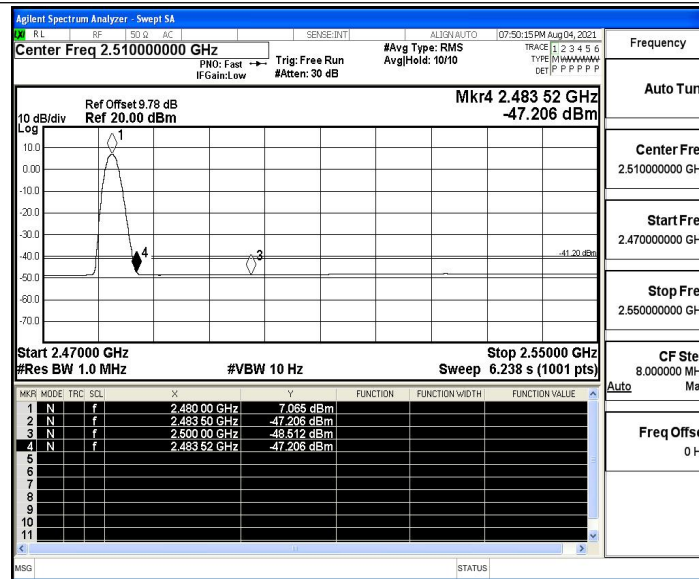
BLE_1M_Ant1_Low_2402_AV



BLE_1M_Ant1_Low_2402_Peak



BLE_1M_Ant1_High_2480_AV



BLE_1M_Ant1_High_2480_Peak

