

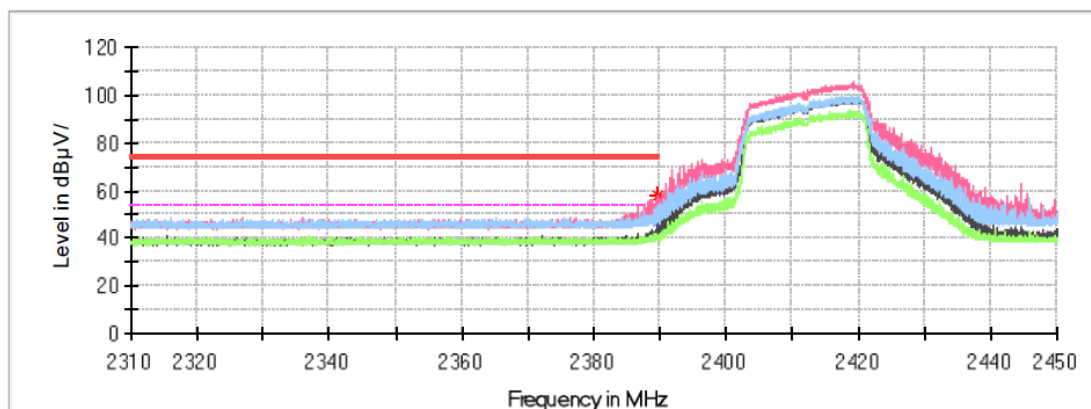
802.11n-HT20 Mode:

Low Channel

Common Information

Project No.: RKSA240328001
Test Mode: 2.4G Wi-Fi 802.11n20 mode of low channel
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer: Hugh Wu

Full Spectrum



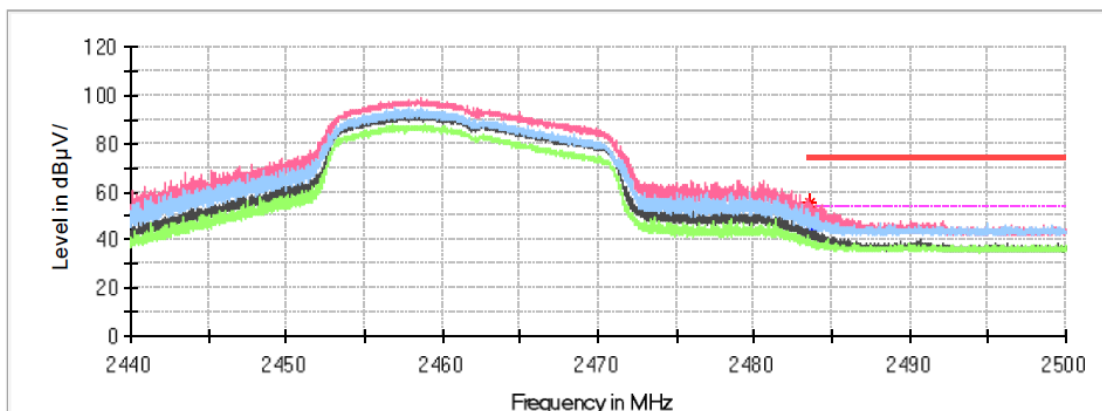
Critical_Freqs

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2389.604000	---	46.84	54.00	7.16	V	0.1
2389.604000	58.19	---	74.00	15.81	V	0.1

High Channel**Common Information**

Project No.: RKSA240328001
Test Mode: 2.4G Wi-Fi 802.11n20 mode of high channel
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer: Hugh Wu

Full Spectrum

**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2483.584000	55.29	---	74.00	18.71	V	0.2
2483.584000	---	42.79	54.00	11.21	V	0.2
2483.668000	52.27	---	74.00	21.73	V	0.2
2483.668000	---	43.87	54.00	10.13	V	0.2

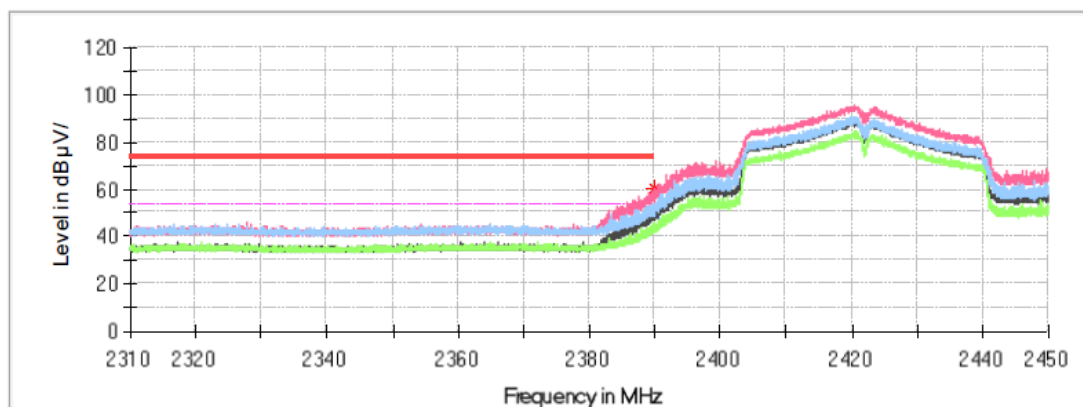
802.11n-HT40 Mode:

Low Channel

Common Information

Project No.: RKSA240328001
Test Mode: 2.4G Wi-Fi 802.11n40 mode of low channel
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer: Hugh Wu

Full Spectrum



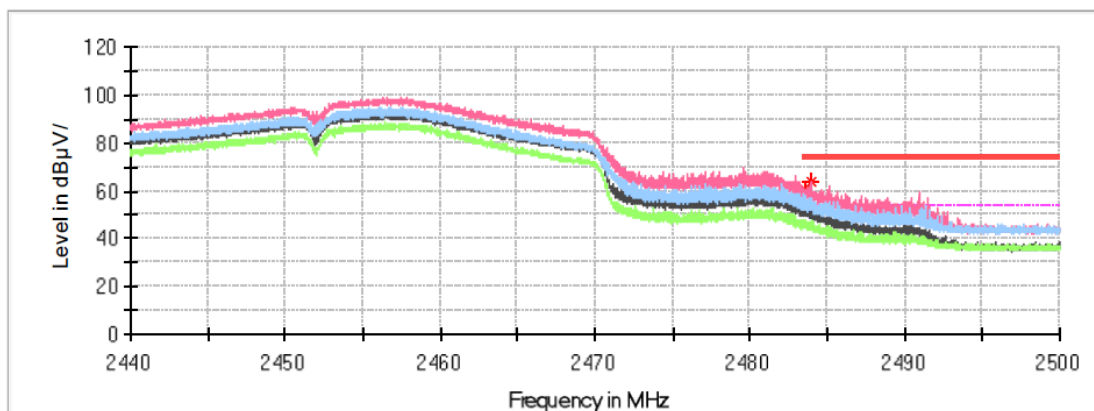
Critical_Freqs

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2389.884000	---	49.84	54.00	4.16	V	0.1
2389.884000	60.30	---	74.00	13.70	V	0.1

High Channel**Common Information**

Project No.: RKSA240328001
Test Mode: 2.4G Wi-Fi 802.11n40 mode of high channel
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer: Hugh Wu

Full Spectrum

**Critical_Freqs**

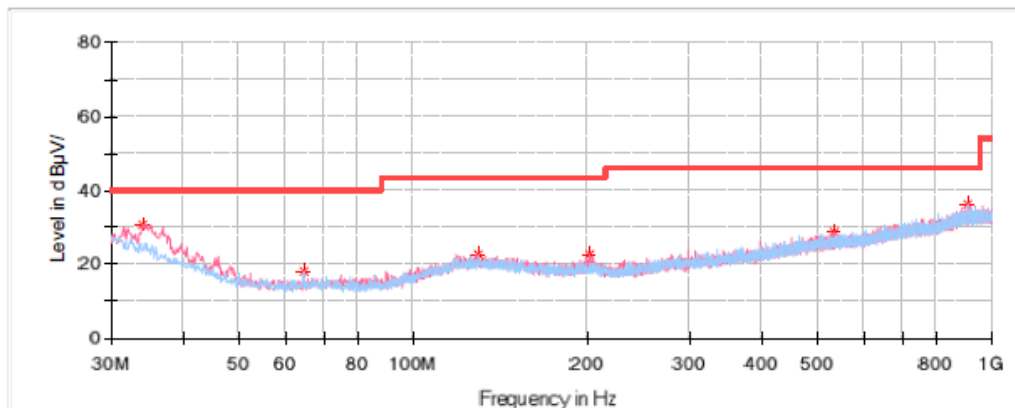
Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2483.596000	60.30	---	74.00	13.70	V	0.2
2483.596000	---	52.62	54.00	1.38	V	0.2
2483.902000	63.96	---	74.00	10.04	V	0.2
2483.902000	---	51.45	54.00	2.55	V	0.2

**For BLE (1 Mbps) Mode:
30MHz-1GHz**

Low Channel: 2402MHz

Common Information

Project No:	RKSA240328001
Test Mode:	BLE 1M
Standard:	FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer:	Leah Li

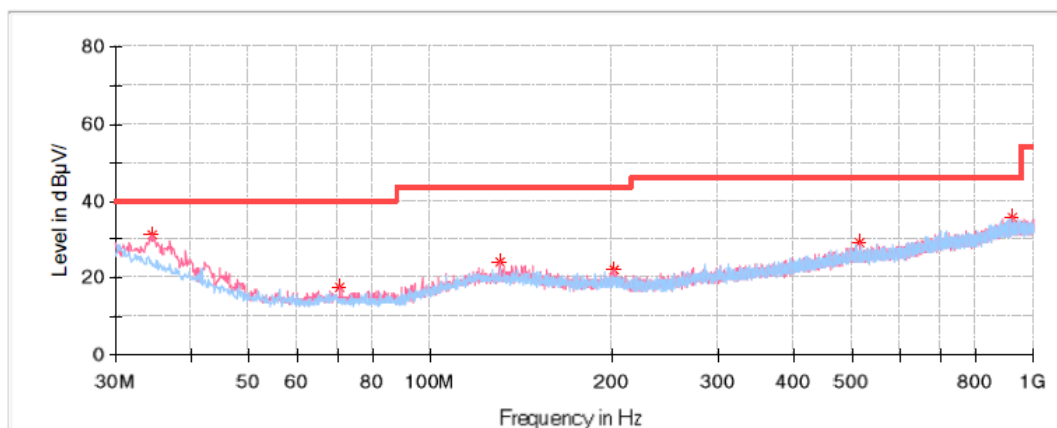


Critical Freqs

Frequency (MHz)	MaxPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Pol	Corr. (dB/m)
34.001250	30.89	40.00	9.11	V	-7.2
64.435000	18.16	40.00	21.84	H	-17.2
129.182500	22.67	43.50	20.83	V	-11.4
201.932500	22.61	43.50	20.89	V	-12.6
532.823750	28.76	46.00	17.24	V	-5.5
909.911250	36.07	46.00	9.93	H	1.4

Middle Channel: 2440MHz**Common Information**

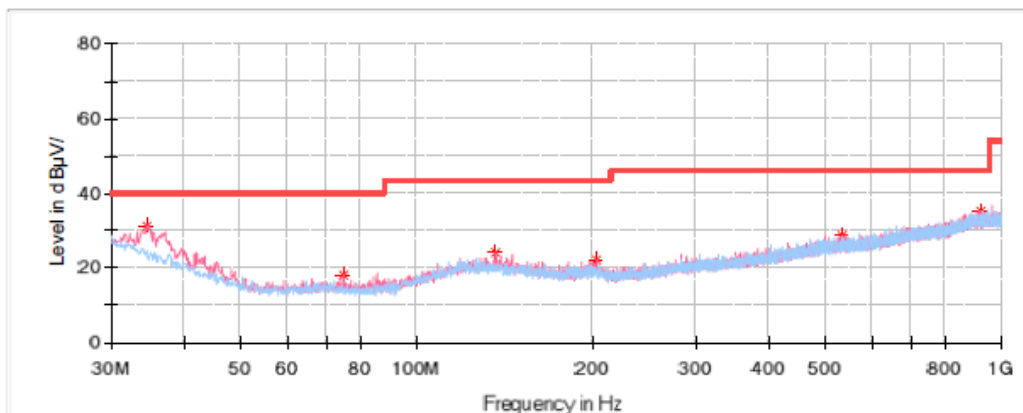
Project No: RKSA240328001
Test Mode: BLE 1M
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer: Leah Li

**Critical_Freqs**

Frequency (MHz)	MaxPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Pol	Corr. (dB/m)
34.486250	31.29	40.00	8.71	V	-7.5
70.497500	17.52	40.00	22.48	V	-16.8
129.910000	24.27	43.50	19.23	V	-11.4
200.841250	21.94	43.50	21.56	V	-12.6
512.938750	29.21	46.00	16.79	V	-5.6
920.581250	35.82	46.00	10.18	V	1.4

High Channel: 2480MHz**Common Information**

Project No: RKSA240328001
Test Mode: BLE 1M
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer: Leah Li

**Critical_Freqs**

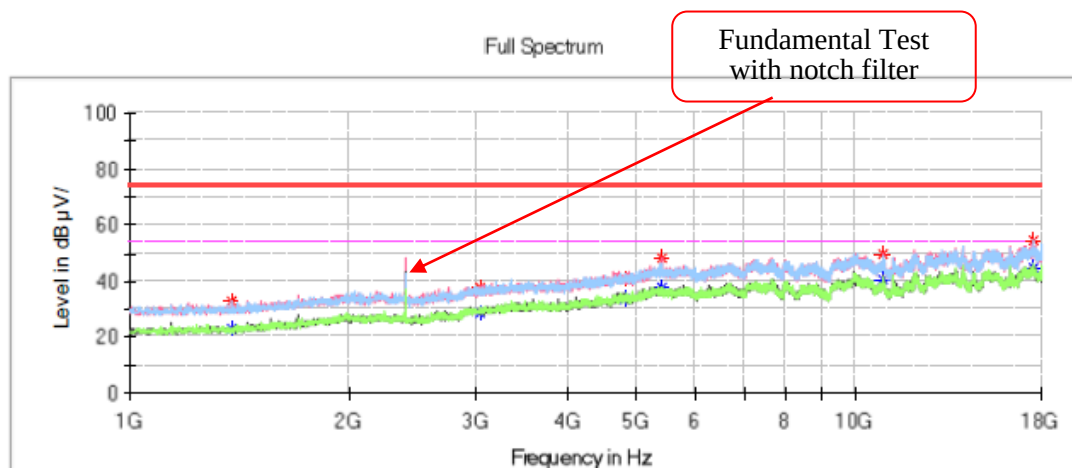
Frequency (MHz)	MaxPeak (dBμ V/m)	Limit (dBμ V/m)	Margin (dB)	Pol	Corr. (dB/m)
34.607500	31.25	40.00	8.75	V	-7.6
74.741250	18.23	40.00	21.77	V	-17.2
136.700000	23.92	43.50	19.58	V	-11.5
202.660000	22.25	43.50	21.25	V	-12.7
533.187500	28.88	46.00	17.12	V	-5.5
919.247500	35.30	46.00	10.70	V	1.4

1GHz-18GHz:

Low Channel: 2402MHz

Common Information

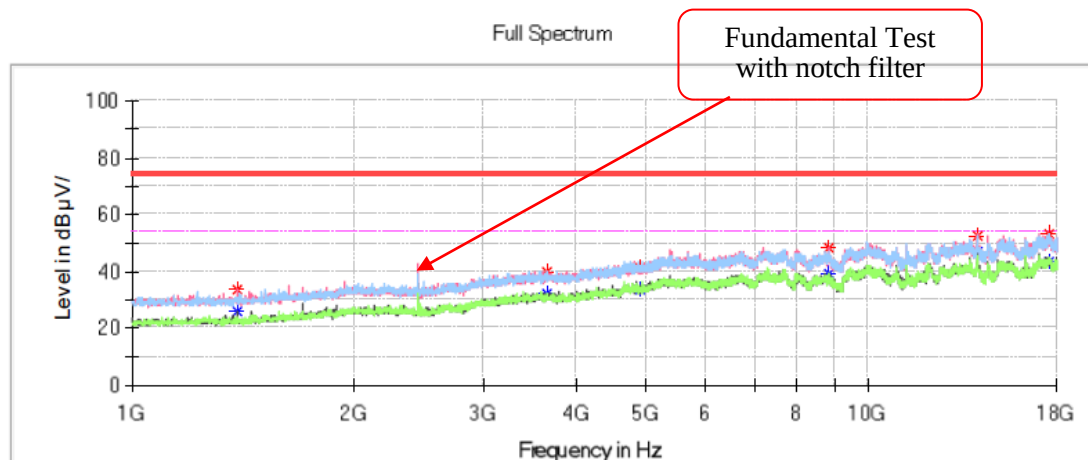
Project No.: RKSA240328001
 Test Mode: BLE 1M mode of low channel
 Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
 Test Engineer: Hugh Wu

**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1379.100000	33.00	---	74.00	41.00	H	-14.3
1379.100000	---	23.42	54.00	30.58	H	-14.3
3029.800000	38.03	---	74.00	35.97	V	-7.9
3029.800000	---	28.83	54.00	25.17	V	-7.9
4799.500000	---	33.31	54.00	20.69	H	-2.2
4799.500000	40.51	---	74.00	33.49	H	-2.2
5391.100000	47.92	---	74.00	26.08	V	0.4
5391.100000	---	37.65	54.00	16.35	V	0.4
10866.800000	49.81	---	74.00	24.19	H	6.6
10866.800000	---	40.23	54.00	13.77	H	6.6
17590.300000	---	44.70	54.00	9.30	H	13.2
17590.300000	54.83	---	74.00	19.17	H	13.2

Middle Channel: 2440MHz**Common Information**

Project No.: RKSA240328001
 Test Mode: BLE 1M mode of middle channel
 Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
 Test Engineer: Hugh Wu

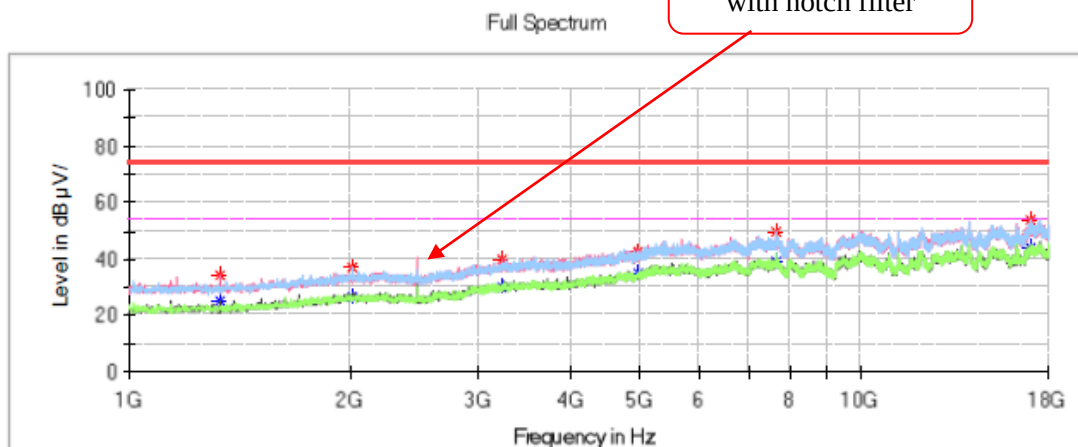
**Critical_Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1391.000000	---	25.96	54.00	28.04	V	-14.3
1391.000000	33.63	---	74.00	40.37	V	-14.3
3655.400000	---	32.18	54.00	21.82	V	-5.8
3655.400000	39.52	---	74.00	34.48	V	-5.8
4879.400000	---	33.90	54.00	20.10	V	-1.8
4879.400000	41.00	---	74.00	33.00	V	-1.8
8803.000000	---	39.42	54.00	14.58	V	3.7
8803.000000	48.33	---	74.00	25.67	V	3.7
14005.000000	52.61	---	74.00	21.39	H	10.5
14005.000000	---	47.18	54.00	6.82	H	10.5
17588.600000	53.14	---	74.00	20.86	H	13.2
17588.600000	---	43.65	54.00	10.35	H	13.2

High Channel: 2480MHz**Common Information**

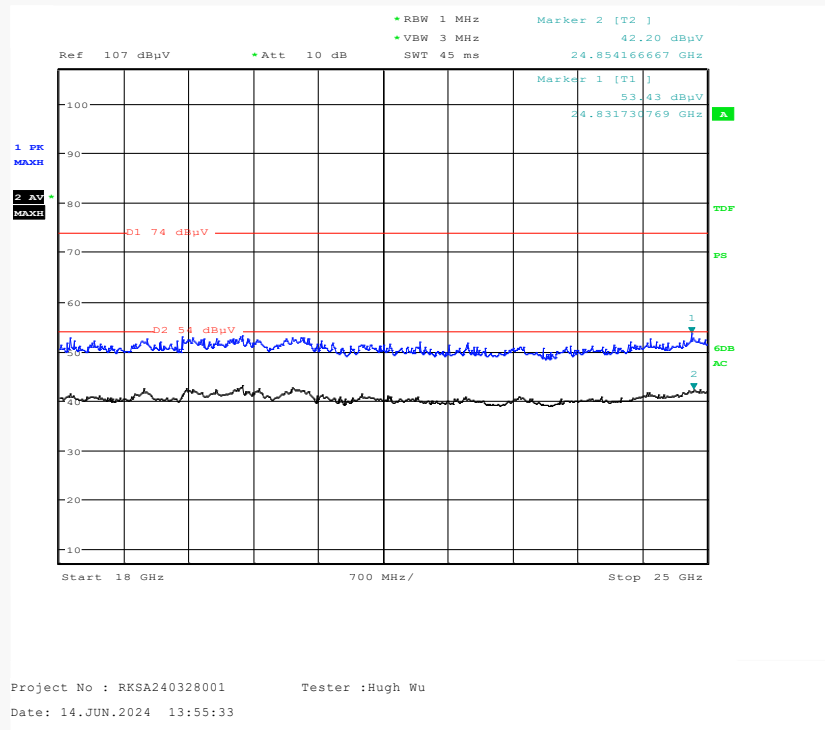
Project No.: RKSA240328001
 Test Mode: BLE 1M mode of high channel
 Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
 Test Engineer: Hugh Wu

Fundamental Test
with notch filter

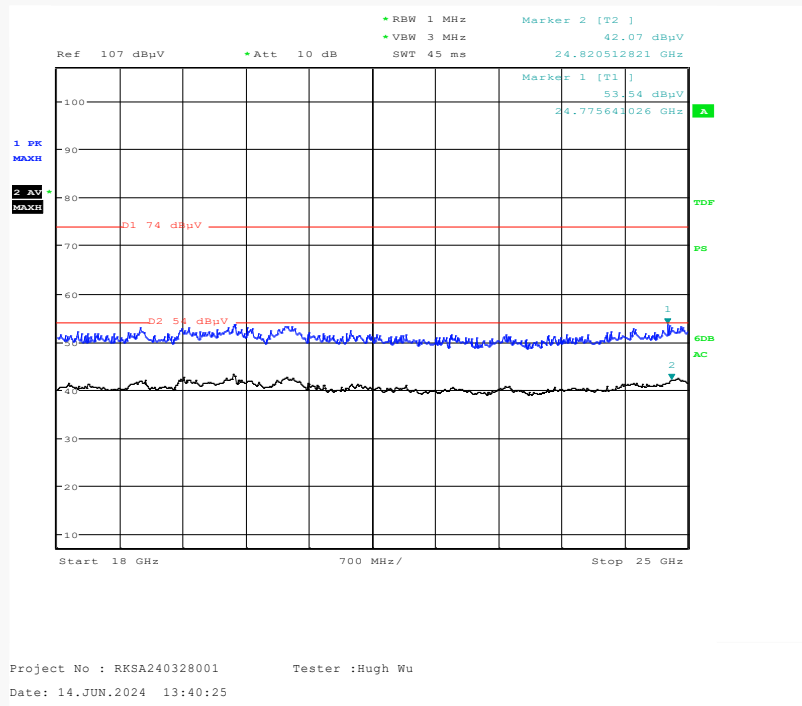
**Critical Freqs**

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
1328.100000	---	25.45	54.00	28.55	V	-14.5
1328.100000	34.24	---	74.00	39.76	V	-14.5
2013.200000	---	26.61	54.00	27.39	V	-10.5
2013.200000	37.08	---	74.00	36.92	V	-10.5
3230.400000	---	30.16	54.00	23.84	V	-7.1
3230.400000	40.15	---	74.00	33.85	V	-7.1
4957.600000	---	34.90	54.00	19.10	H	-1.4
4957.600000	42.47	---	74.00	31.53	H	-1.4
7641.900000	49.73	---	74.00	24.27	H	4.1
7641.900000	---	39.34	54.00	14.66	H	4.1
17063.300000	---	44.05	54.00	9.95	H	12.5
17063.300000	53.67	---	74.00	20.33	H	12.5

18GHz-25GHz:
High channel is worst
Horizontal:



Vertical:

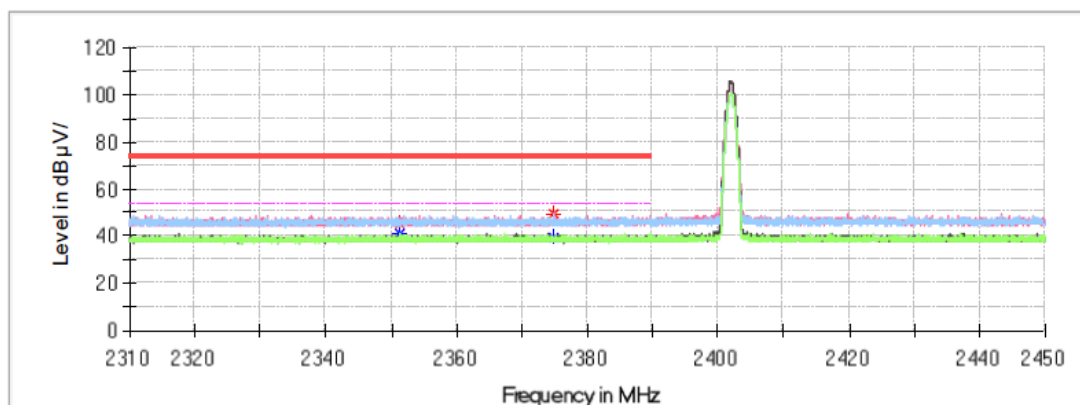


Note: The test distance is 3m. The limit is 74dBμV/m(Peak) and 54dBμV/m(Average).

Band Edge:**Low Channel****Common Information**

Project No.: RKSA240328001
Test Mode: BLE 1M mode of low channel
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer: Hugh Wu

Full Spectrum

**Critical_Freqs**

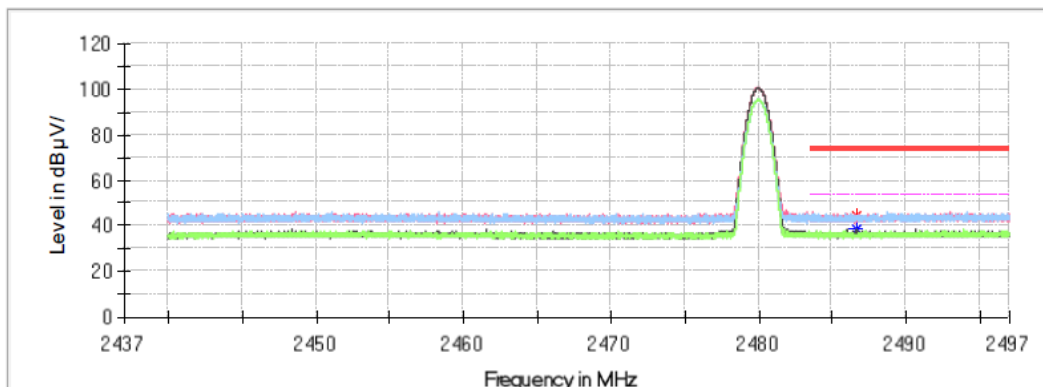
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2351.286000	---	41.16	54.00	12.84	H	0.0
2351.286000	44.96	---	74.00	29.04	H	0.0
2374.834000	---	39.49	54.00	14.51	H	0.0
2374.834000	49.26	---	74.00	24.74	H	0.0

High Channel

Common Information

Project No.: RKSA240328001
Test Mode: BLE 1M mode of high channel
Standard: FCC Part 15.247 & FCC Part 15.205 & FCC Part 15.209
Test Engineer: Hugh Wu

Full Spectrum



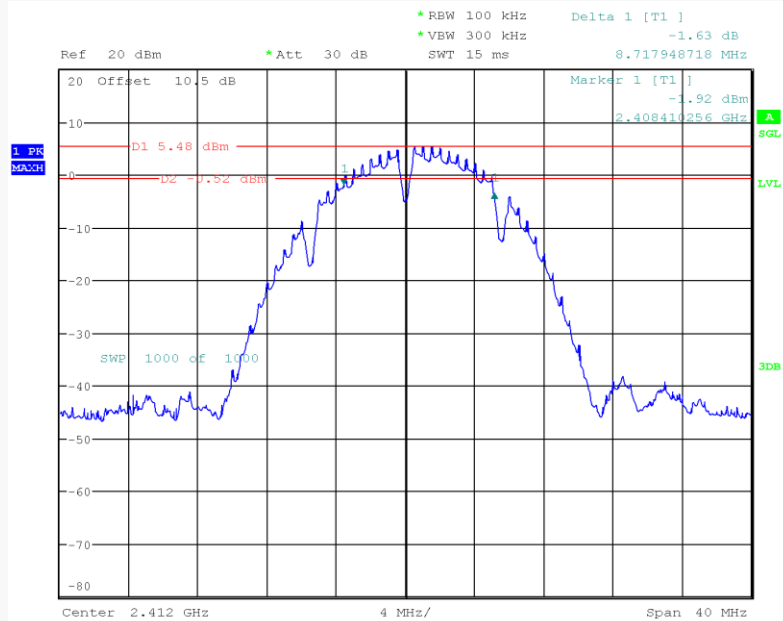
Critical_Freqs

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)
2486.596000	---	38.62	54.00	15.38	V	0.2
2486.596000	44.46	---	74.00	29.54	V	0.2
2498.410000	---	36.51	54.00	17.49	H	0.2
2498.410000	46.75	---	74.00	27.25	H	0.2

6 dB EMISSION BANDWIDTH**Test Result:** Compliant.*EUT operation mode: Transmitting***For Wi-Fi Mode:**

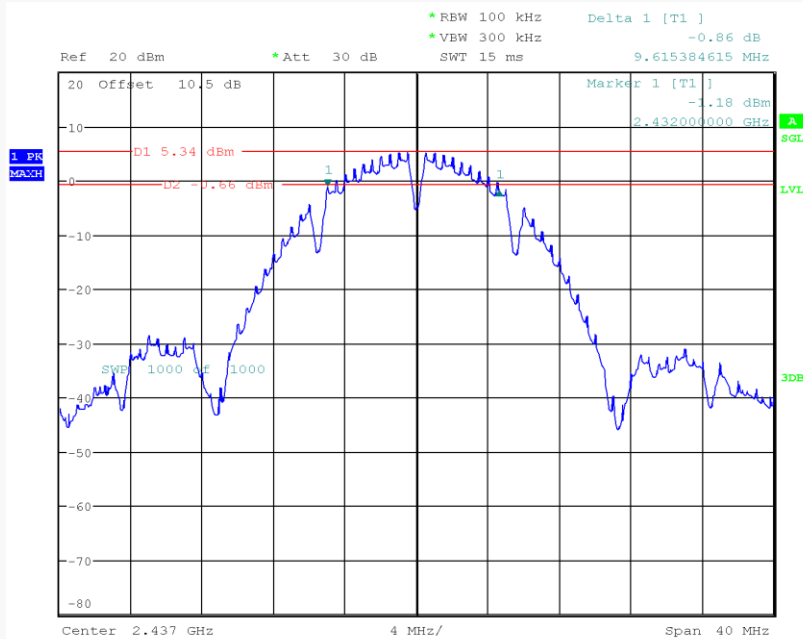
Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
802.11b Mode			
Low	2412	8.72	≥ 0.5
Middle	2437	9.62	≥ 0.5
High	2462	8.72	≥ 0.5
802.11g Mode			
Low	2412	14.55	≥ 0.5
Middle	2437	16.22	≥ 0.5
High	2462	13.27	≥ 0.5
802.11n-HT20 Mode			
Low	2412	15.13	≥ 0.5
Middle	2437	17.63	≥ 0.5
High	2462	13.65	≥ 0.5
802.11n-HT40 Mode			
Low	2422	17.82	≥ 0.5
Middle	2437	36.41	≥ 0.5
High	2452	20.26	≥ 0.5

802.11b Mode Low Channel



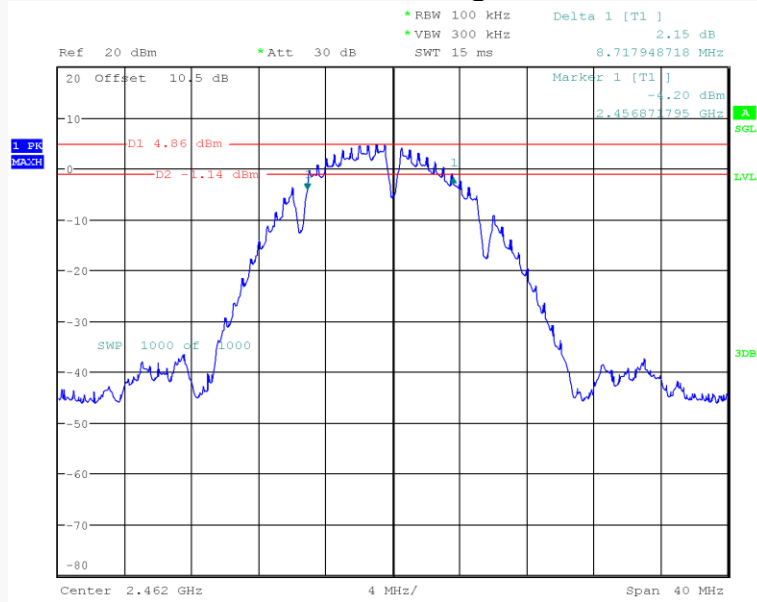
ProjectNo.:RKSA240328001 Tester:Hardy Huang
 Date: 6.JUN.2024 11:35:59

802.11b Mode Middle Channel



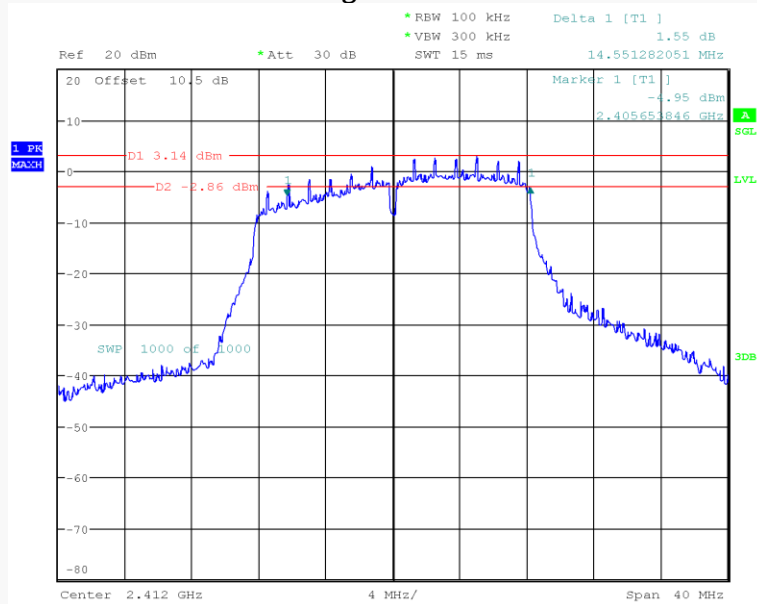
ProjectNo.:RKSA240328001 Tester:Hardy Huang
 Date: 6.JUN.2024 10:37:47

802.11b Mode High Channel



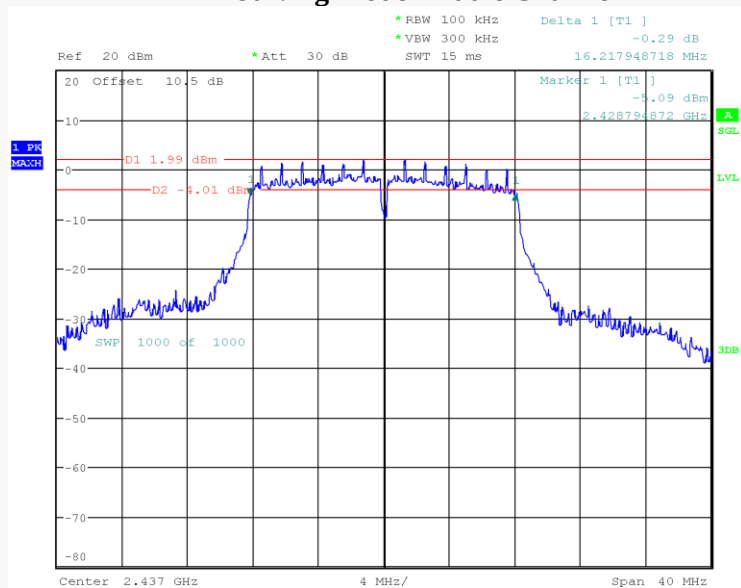
ProjectNo.:RKSA240328001 Tester:Hardy Huang
 Date: 6.JUN.2024 10:44:44

802.11g Mode Low Channel



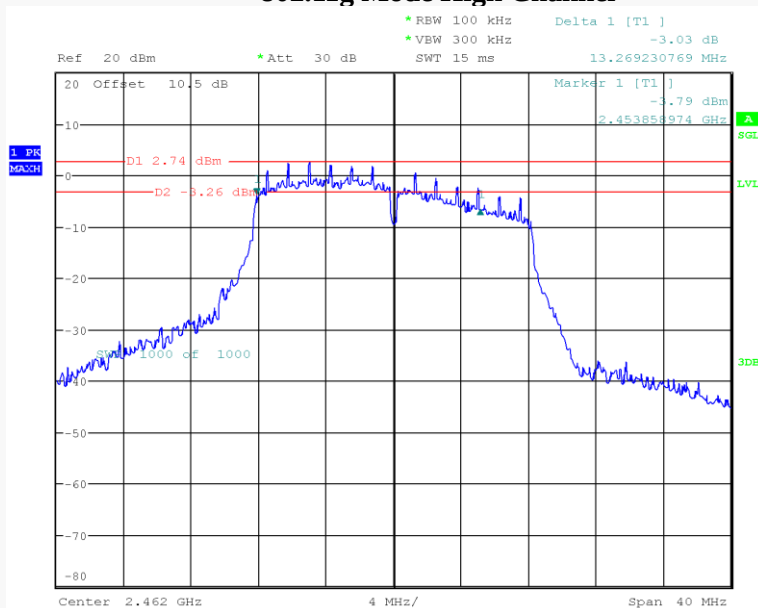
ProjectNo.:RKSA240328001 Tester:Hardy Huang
 Date: 6.JUN.2024 10:49:54

802.11g Mode Middle Channel



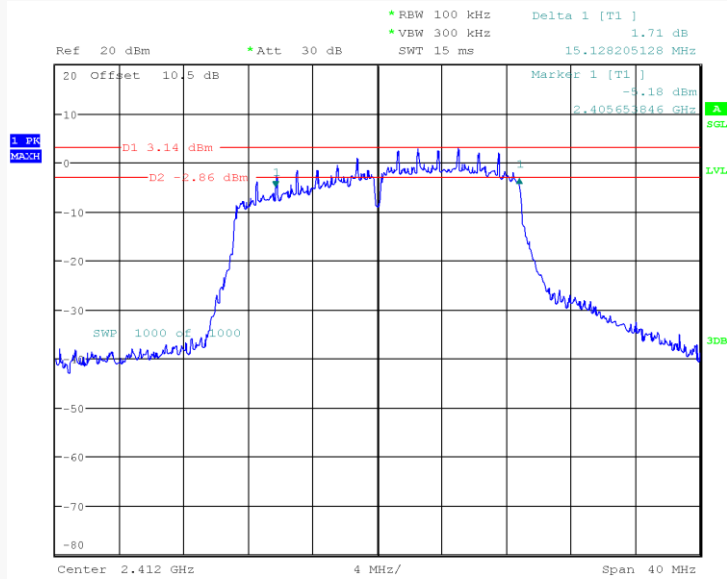
ProjectNo.:RKSA240328001 Tester:Hardy Huang
 Date: 6.JUN.2024 10:59:31

802.11g Mode High Channel



ProjectNo.:RKSA240328001 Tester:Hardy Huang
 Date: 6.JUN.2024 11:02:34

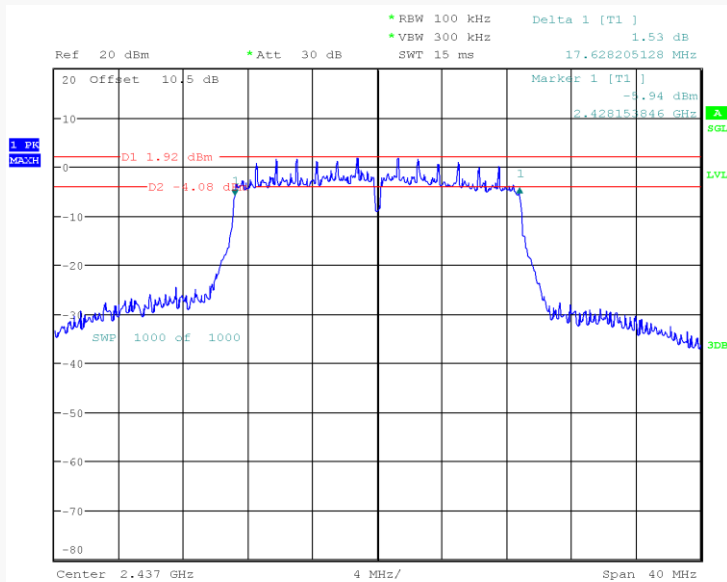
802.11n-HT20 Mode Low Channel



ProjectNo.:RKSA240328001 Tester:Hardy Huang

Date: 6.JUN.2024 10:54:23

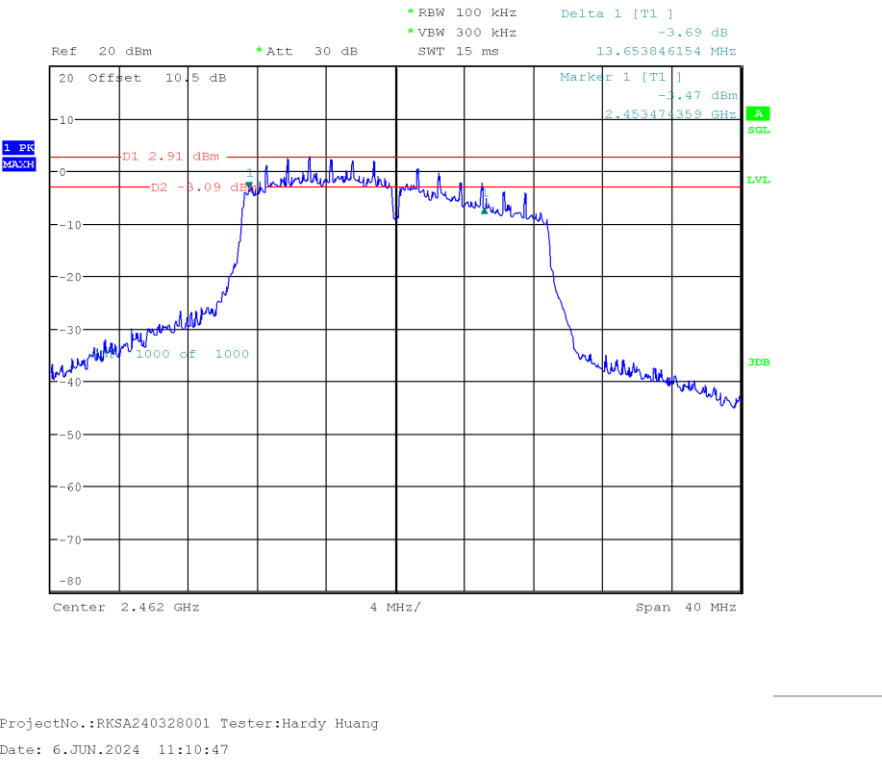
802.11n-HT20 Mode Middle Channel



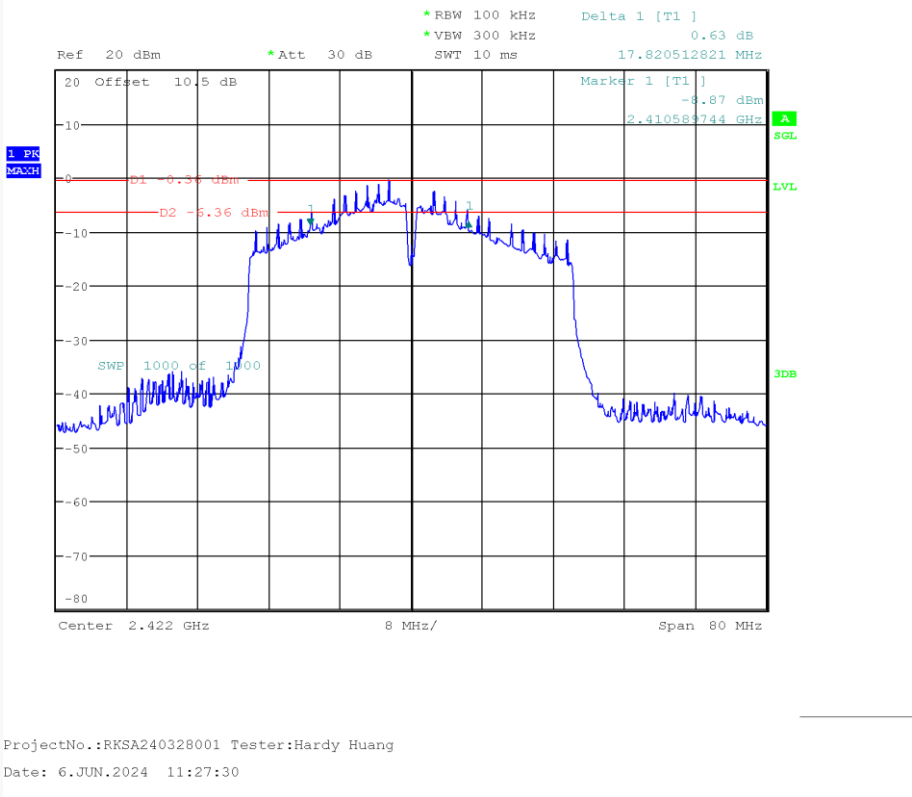
ProjectNo.:RKSA240328001 Tester:Hardy Huang

Date: 6.JUN.2024 11:06:17

802.11n-HT20 Mode High Channel



802.11n-HT40 Mode Low Channel



Ref 20 dBm *Att 30 dB *RBW 100 kHz Delta 1 [T1] 0.73 dB 36.410256410 MHz

20 Offset 10.5 dB Marker 1 [T1] -10.86 dBm 2.418664667 GHz

D1 -2.73 dBm D2 -9.73 dBm

SWP 1000 dB 1000

Center 2.437 GHz 8 MHz/ Span 80 MHz

1 PK MAGN

3dB

8MHz

ProjectNo.:RKSA240328001 Tester:Hardy Huang

Date: 6.JUN.2024 11:30:44

* RBW 100 kHz
 * VBW 300 kHz
 SWT 10 ms

Delta 1 [T1]
 -1.84 dBm
 2.44315846 GHz

Ref 20 dBm
 * Att 30 dB

20 Offset 10.5 dB
 Marker 1 [T1]
 -1.84 dBm
 2.44315846 GHz

D1 -0.8 dBm
 D2 -5.87 dBm

SWP 1000 cF 1000

Center 2.452 GHz
 8 MHz/
 Span 80 MHz

3dB

LVL

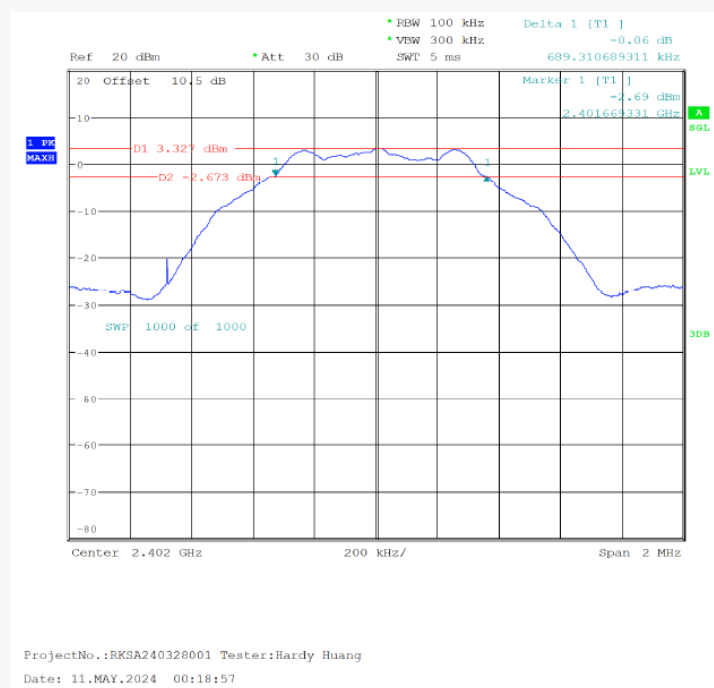
SGL

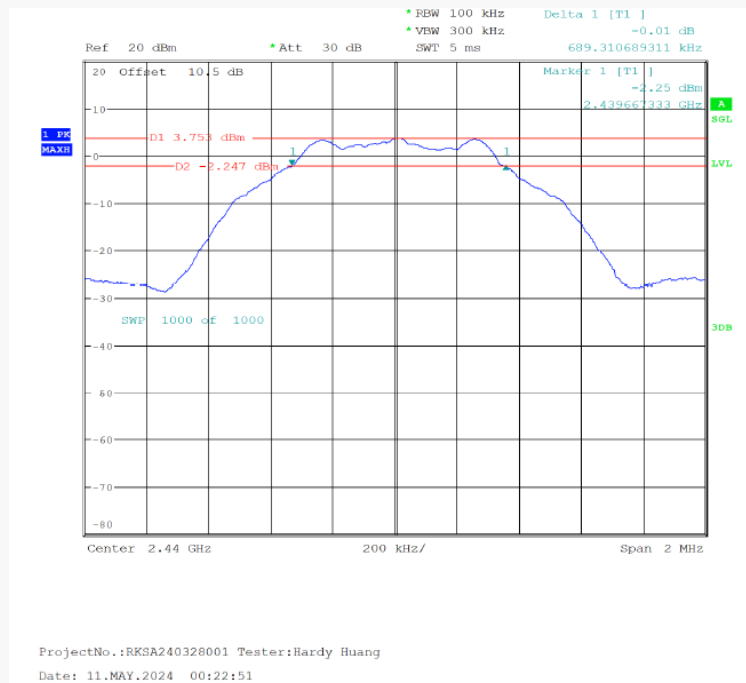
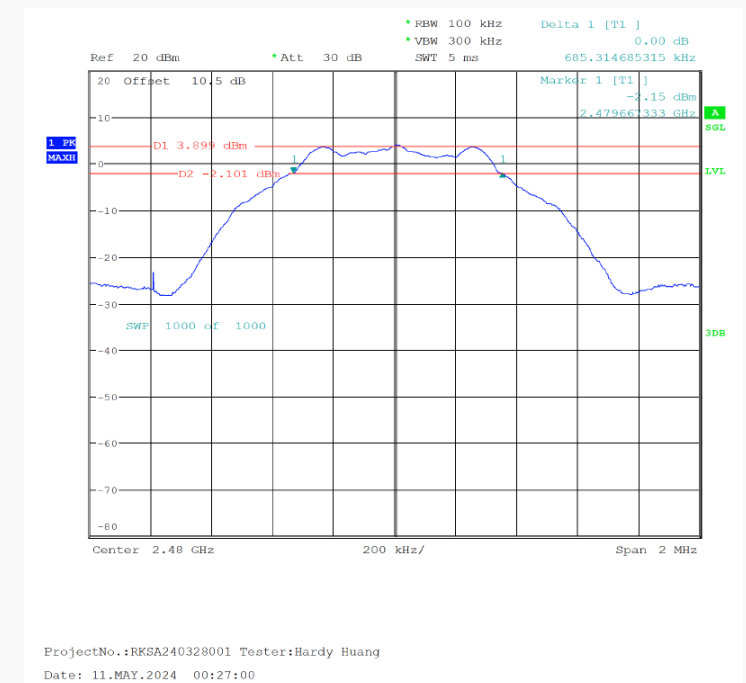
5. dB
 10.0 dB

ProjectNo.:RKSA240328001 Tester:Hardy Huang
 Date: 6.JUN.2024 11:32:55

For BLE Mode:

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
Low	2402	0.689	≥ 0.5
Middle	2440	0.689	≥ 0.5
High	2480	0.685	≥ 0.5

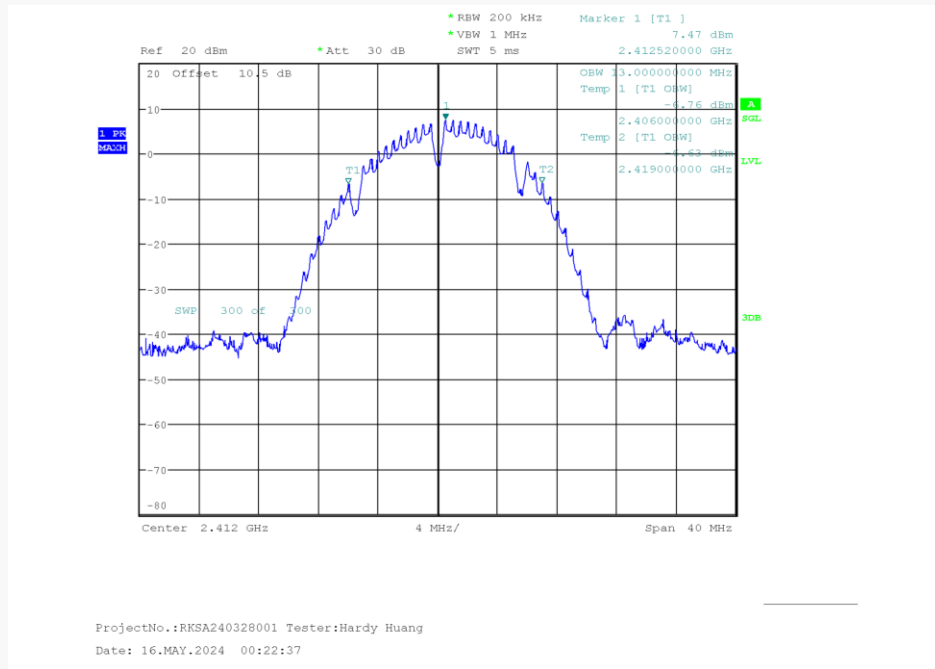
Low Channel

Middle Channel**High Channel**

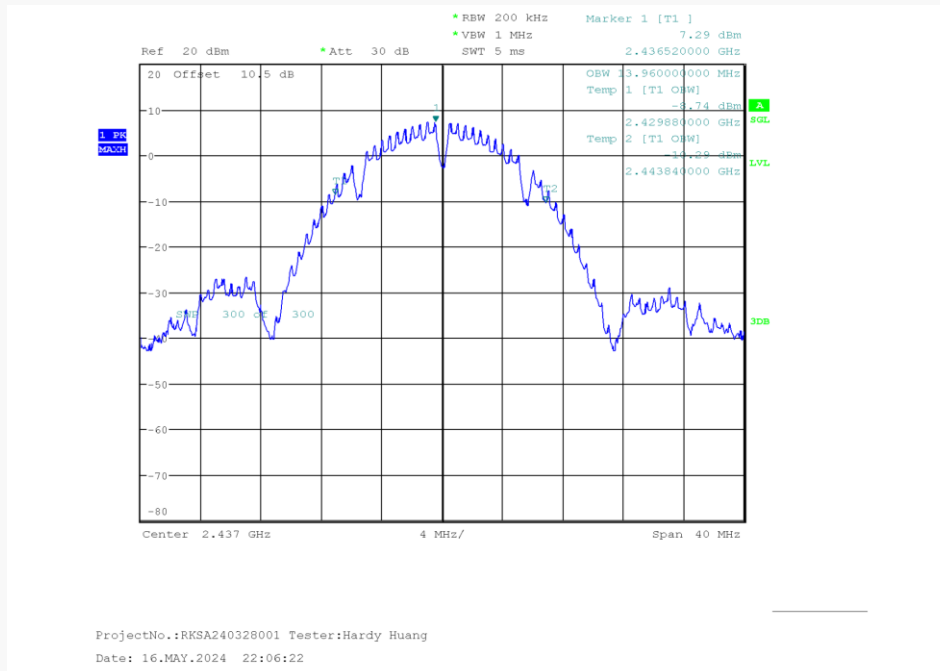
OCCUPIED BANDWIDTH*EUT operation mode: Transmitting***For Wi-Fi Mode:**

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
802.11b Mode		
Low	2412	13.000
Middle	2437	13.960
High	2462	13.080
802.11g Mode		
Low	2412	16.640
Middle	2437	16.960
High	2462	16.480
802.11n-HT20 mode		
Low	2412	17.600
Middle	2437	17.880
High	2462	17.480
802.11n-HT40 mode		
Low	2422	35.280
Middle	2437	37.120
High	2452	35.520

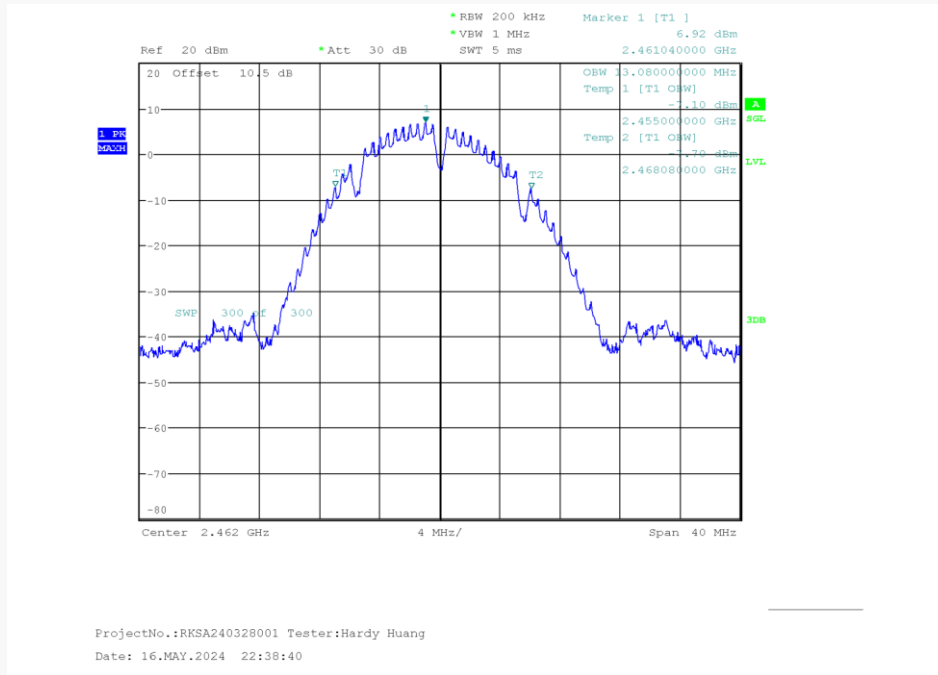
802.11b Mode Low Channel



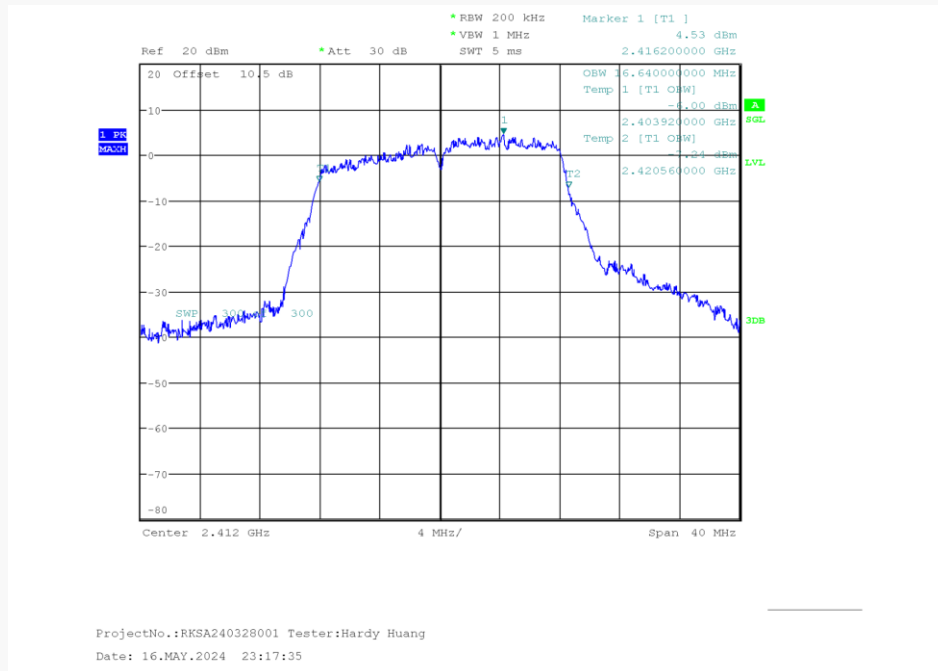
802.11b Mode Middle Channel



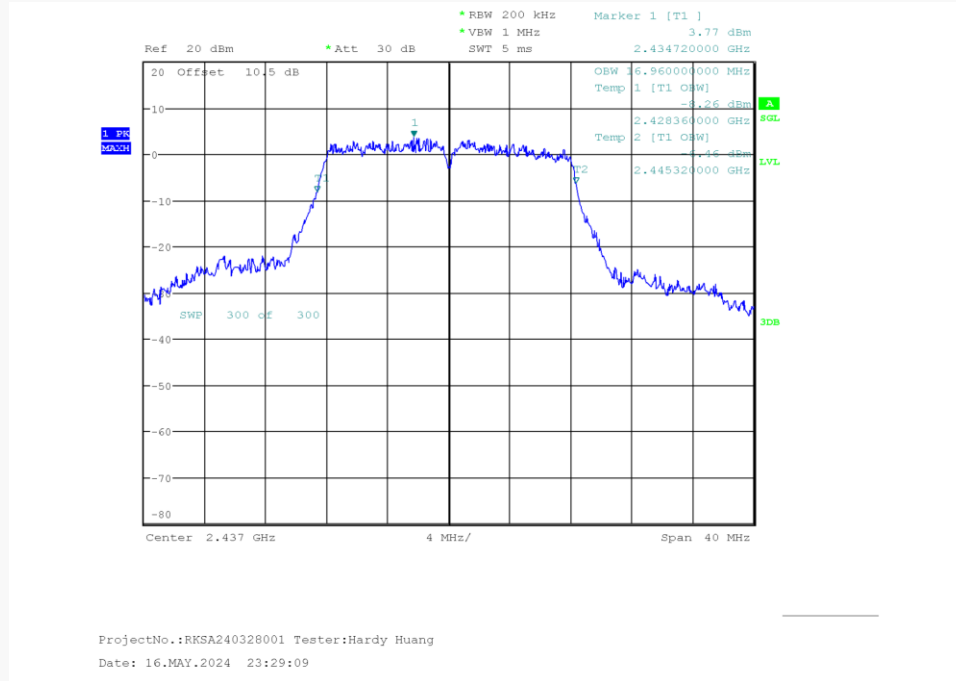
802.11b Mode High Channel



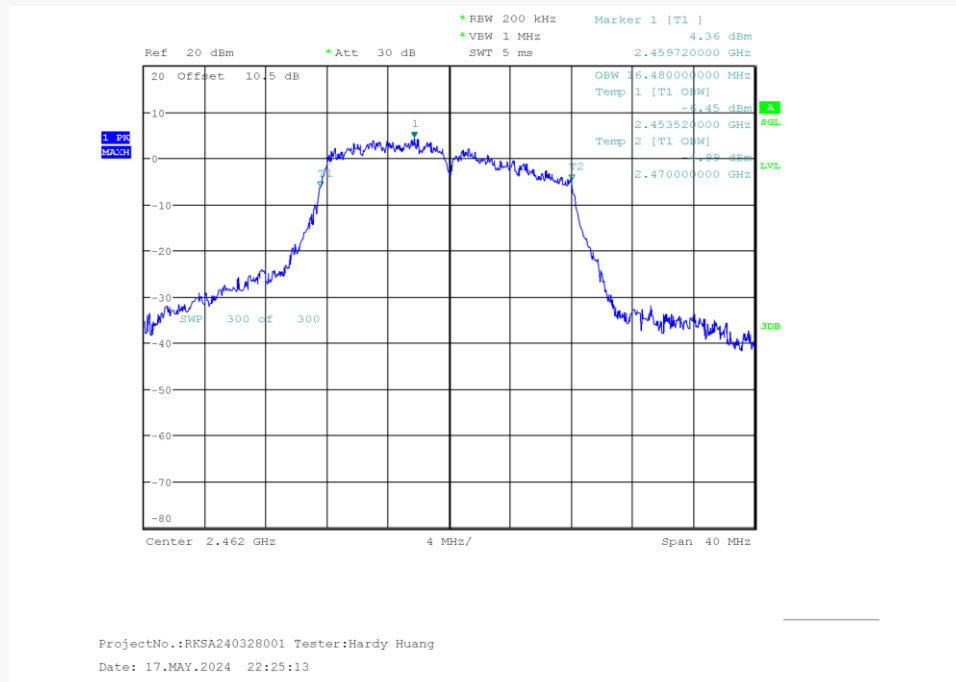
802.11g Mode Low Channel



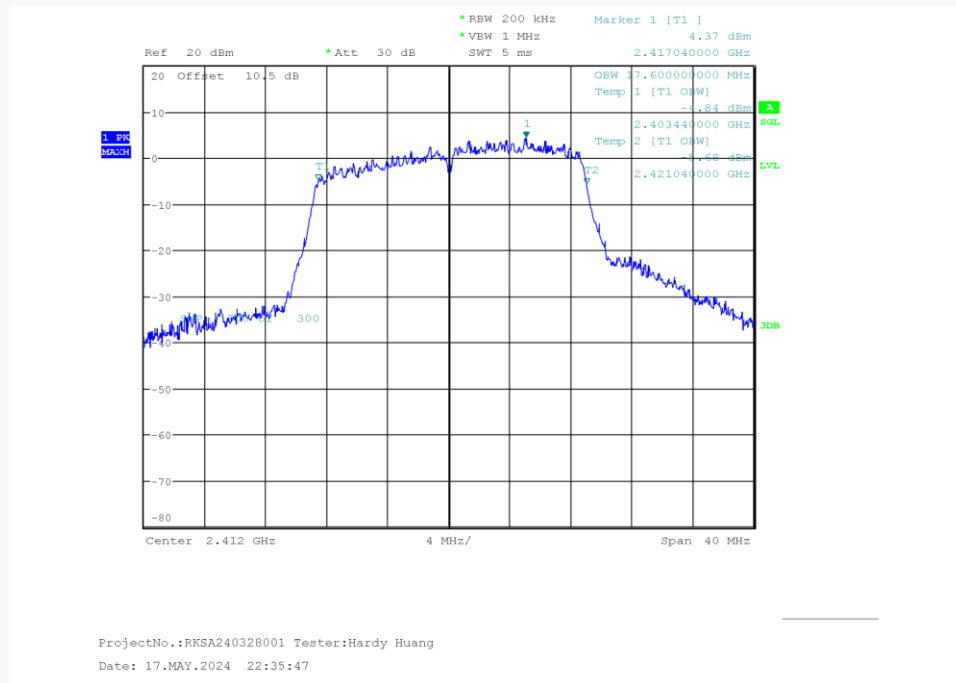
802.11g Mode Middle Channel



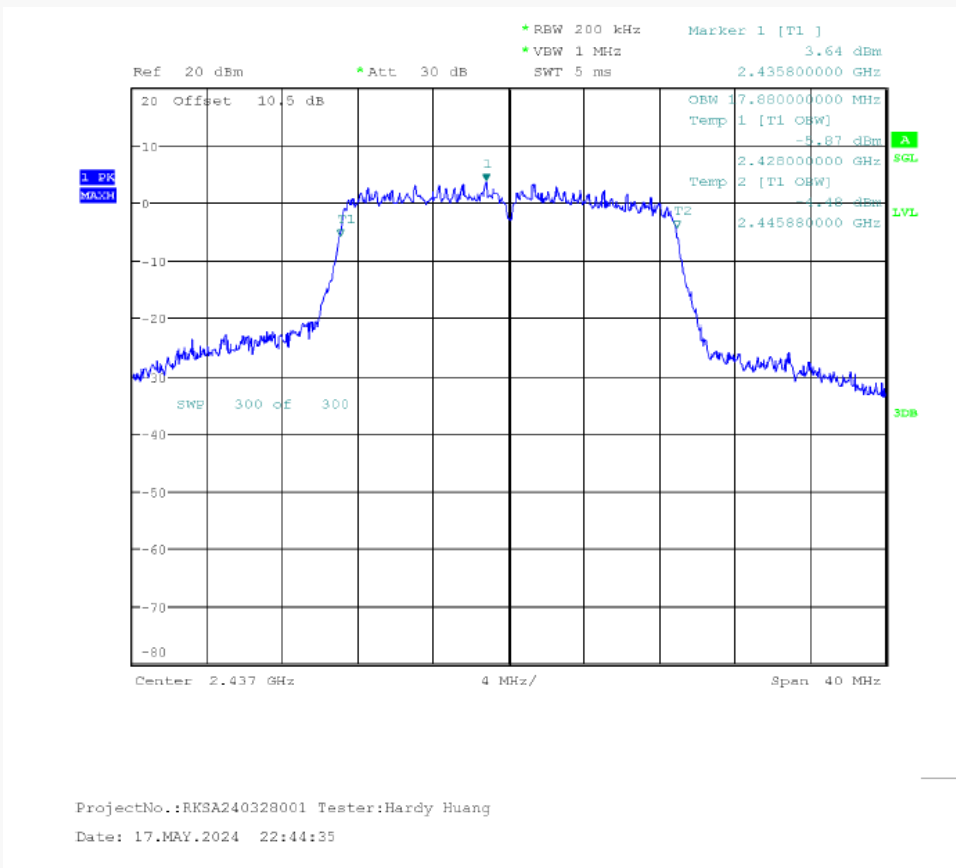
802.11g Mode High Channel



802.11n-HT20 Mode Low Channel



802.11n-HT20 Mode Middle Channel



1 PR
MASH

Ref 20 dBm Att 30 dB

RBW 200 kHz
VBW 1 MHz
SWT 5 ms

Marker 1 [T1]
2.458280000 GHz
17.480000000 MHz
Temp 1 [T1 C&W]
-5.31 dBm

2.453080000 GHz
Temp 2 [T1 C&W]
-5.06 dBm

2.470560000 GHz

SWP 300 cF 300

Center 2.462 GHz 4 MHz/ Span 40 MHz

3dB

1. PR
MASS

20 Offset 10.5 dB

* RBW 500 kHz
* VBW 2 MHz
SWT 5 ms

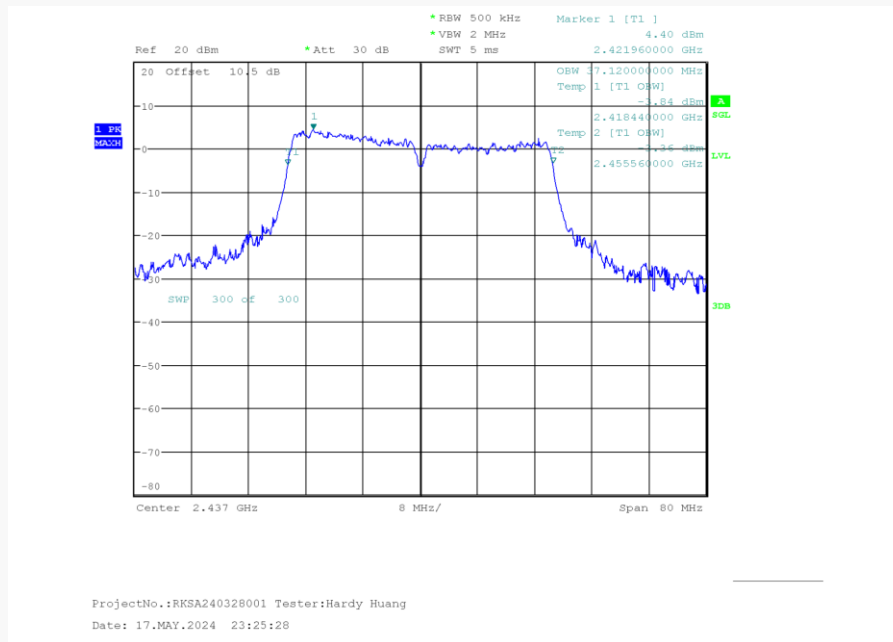
Marker 1 [T1]
3.98 dBm
2.420480000 GHz

OSW 15.280004000 MHz
Temp 1 [T1 OSW]
-4.14 dBm
2.404244000 GHz
Temp 2 [T1 OSW]
-4.14 dBm
2.439524000 GHz

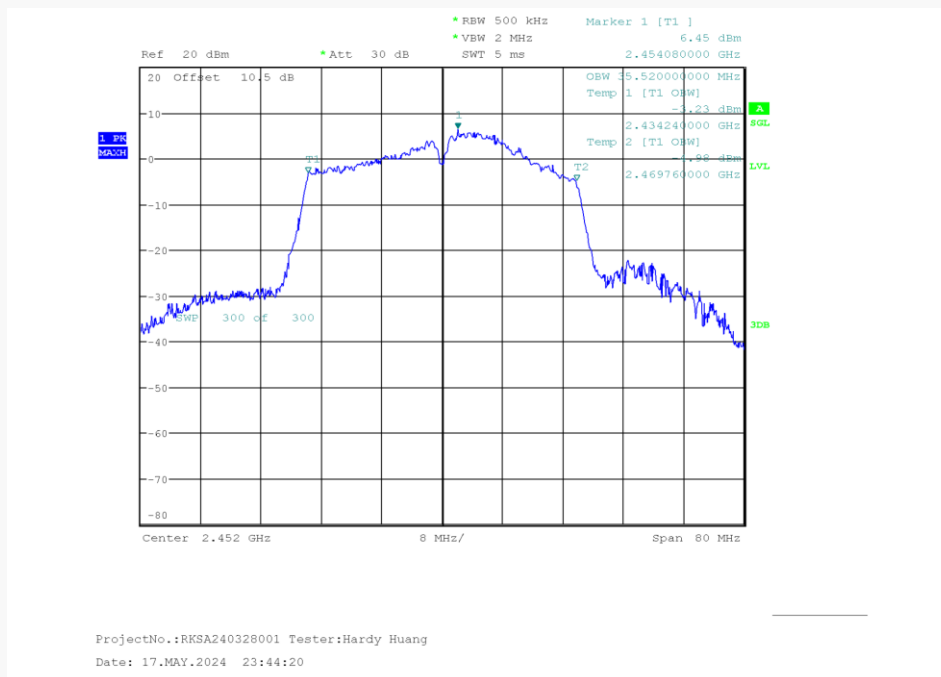
3dB

Center 2.422 GHz
8 MHz/
Span 80 MHz

802.11n-HT40 Mode Middle Channel



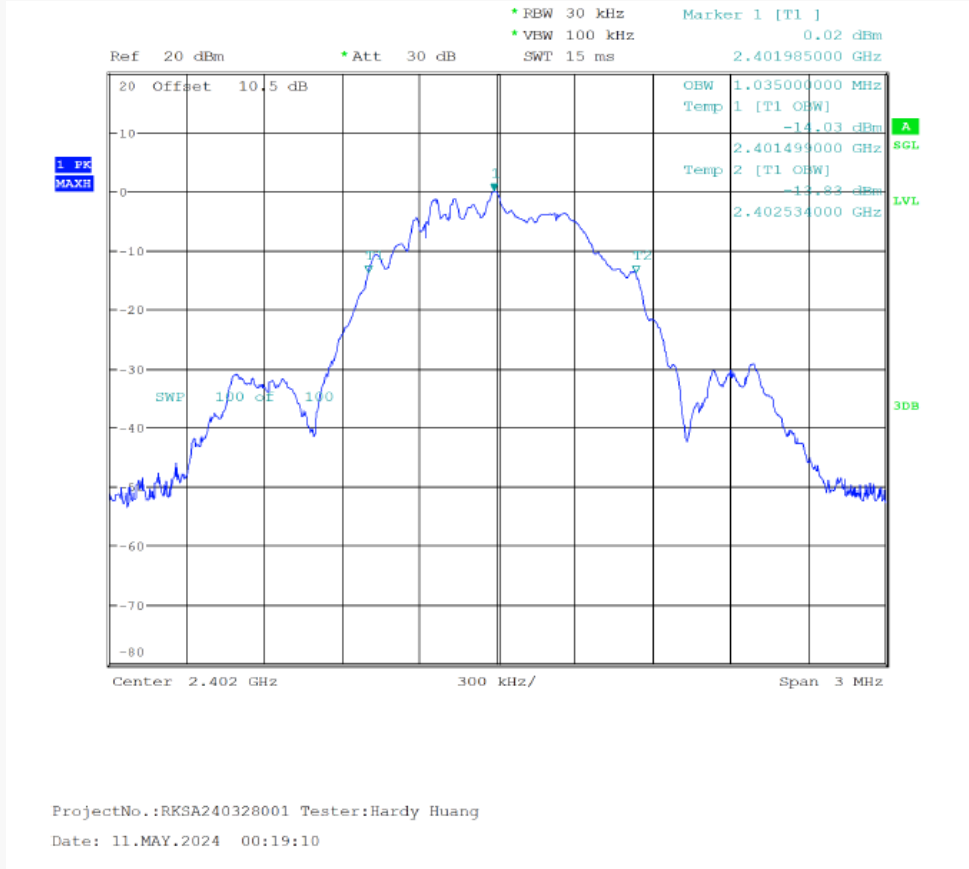
802.11n-HT40 Mode High Channel



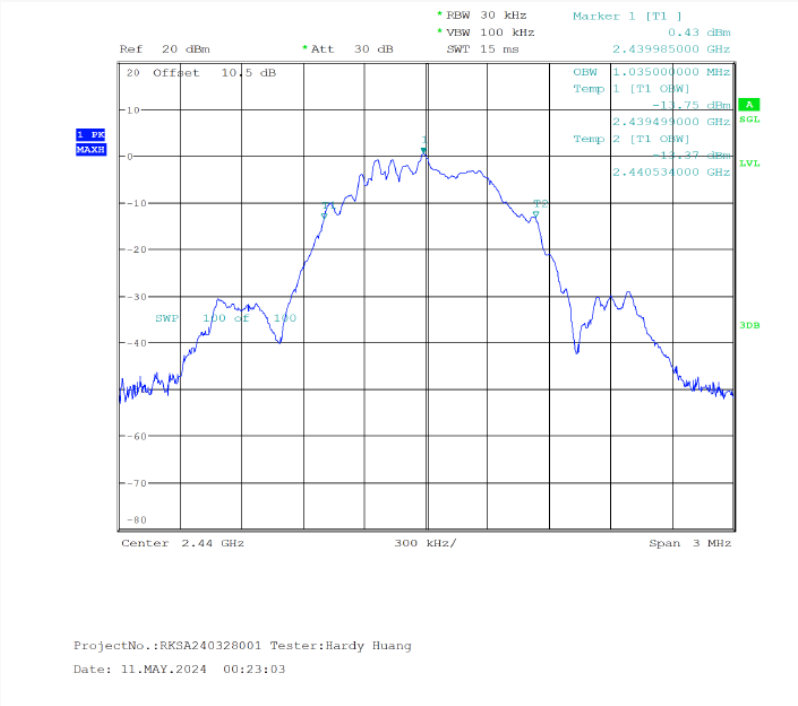
For BLE Mode:

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
Low	2402	1.035
Middle	2440	1.035
High	2480	1.032

Low Channel



Middle Channel



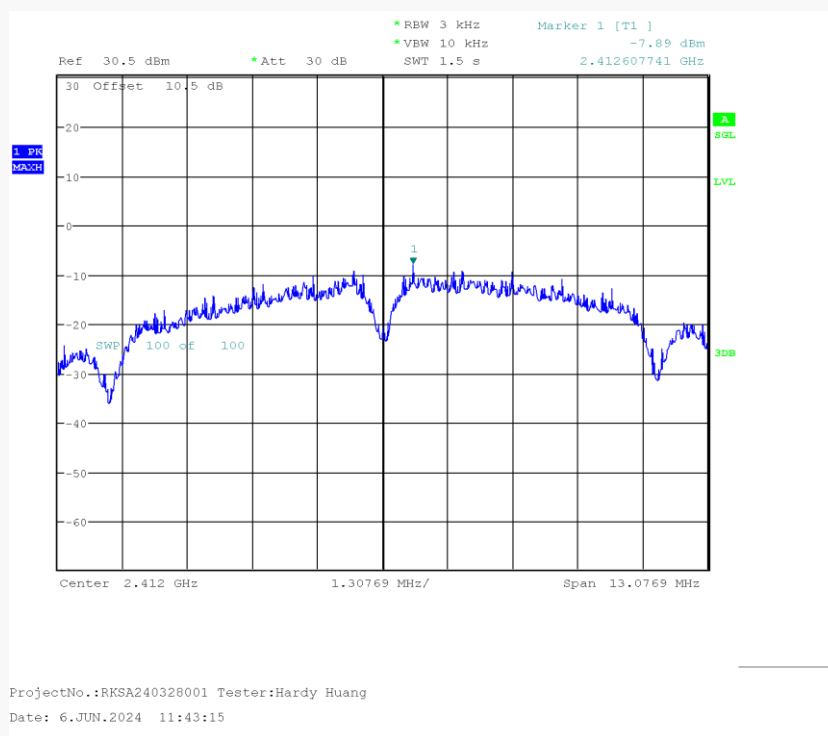
High Channel



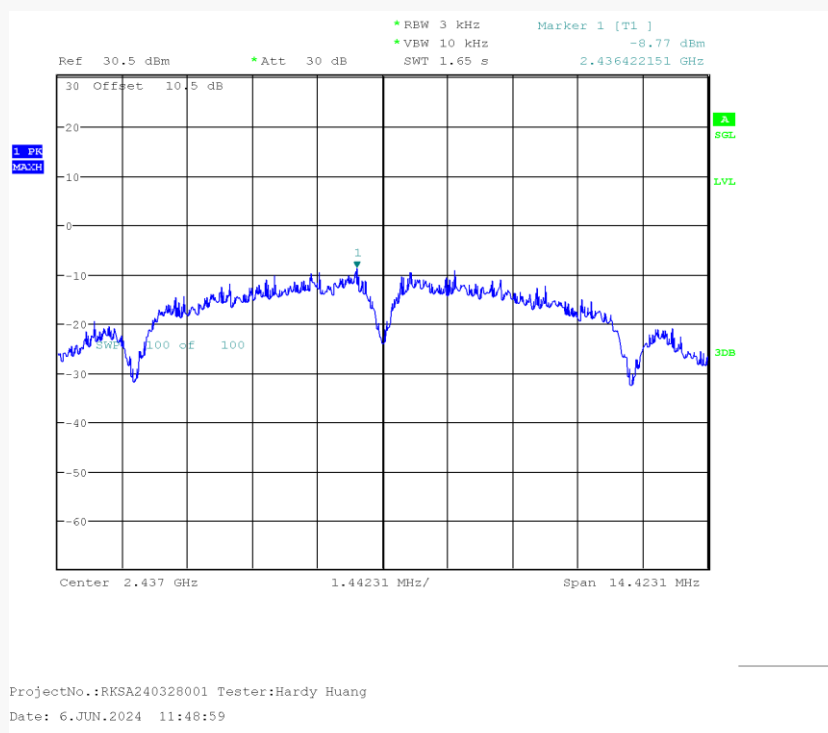
POWER SPECTRAL DENSITY**Test Result:** Compliant.*EUT operation mode: Transmitting***For Wi-Fi Mode:**

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
802.11b Mode			
Low	2412	-7.89	≤ 8
Middle	2437	-8.77	≤ 8
High	2462	-9.03	≤ 8
802.11g Mode			
Low	2412	-12.04	≤ 8
Middle	2437	-12.14	≤ 8
High	2462	-11.79	≤ 8
802.11n-HT20 mode			
Low	2412	-11.13	≤ 8
Middle	2437	-11.21	≤ 8
High	2462	-11.11	≤ 8
802.11n-HT40 mode			
Low	2422	-14.49	≤ 8
Middle	2437	-16.79	≤ 8
High	2452	-15.30	≤ 8

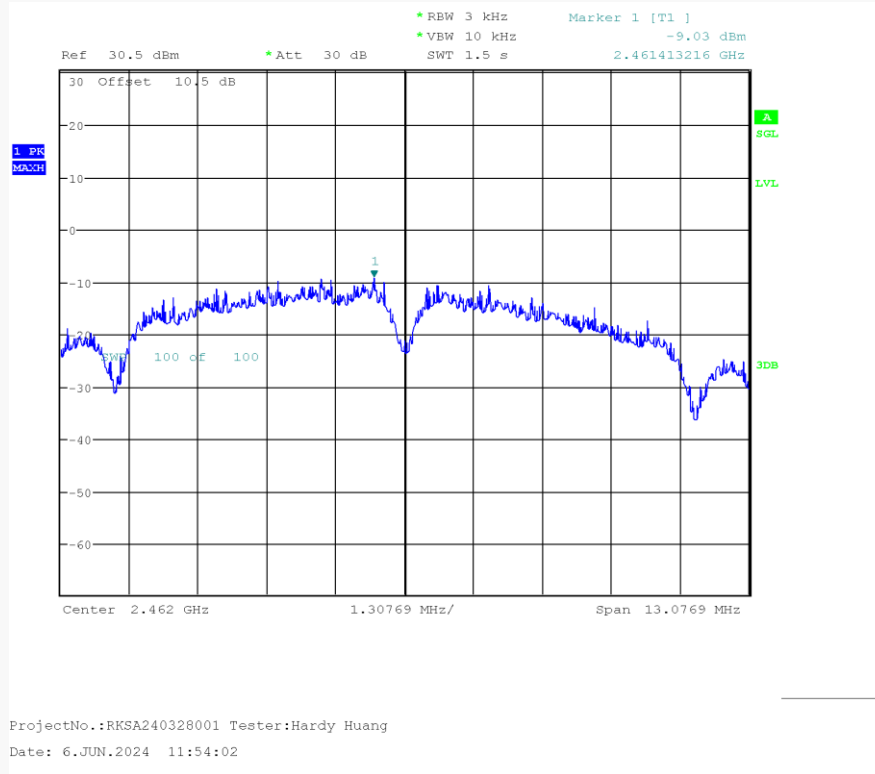
802.11b Low Channel



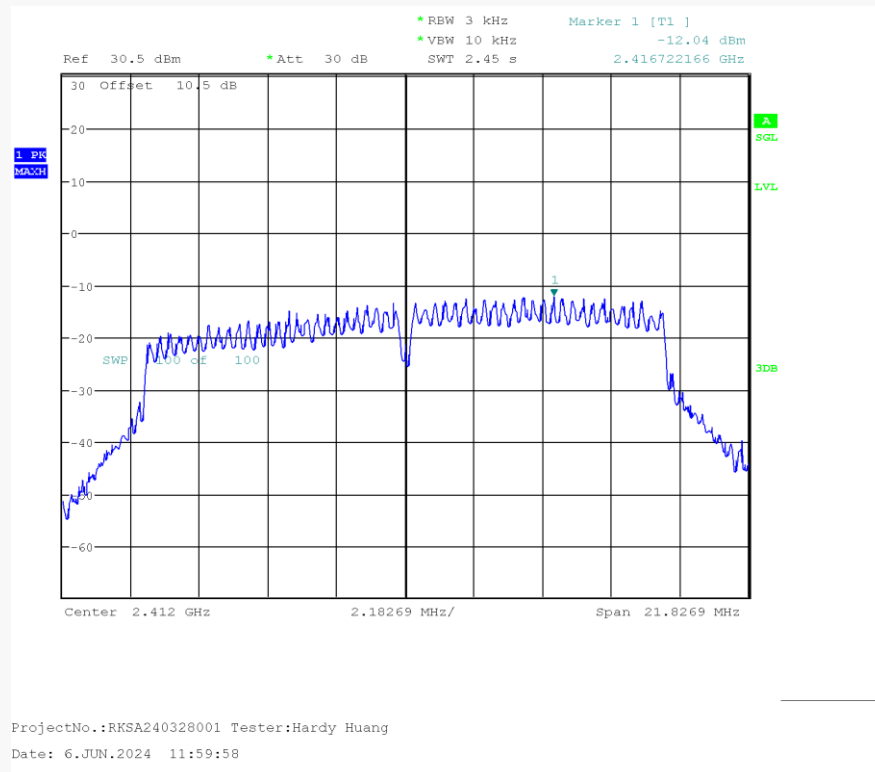
802.11b Middle Channel



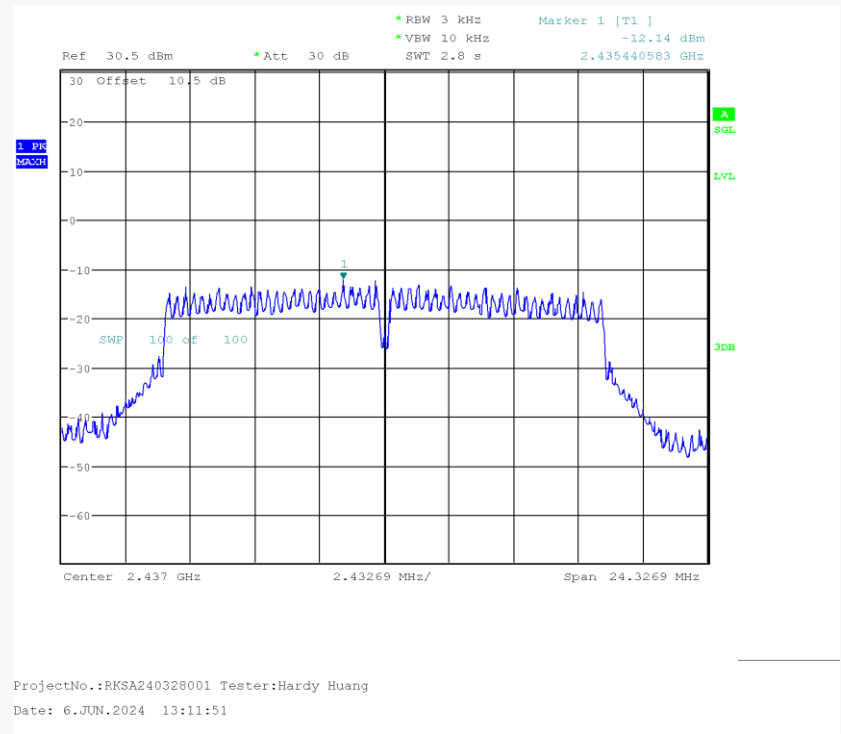
802.11b High Channel



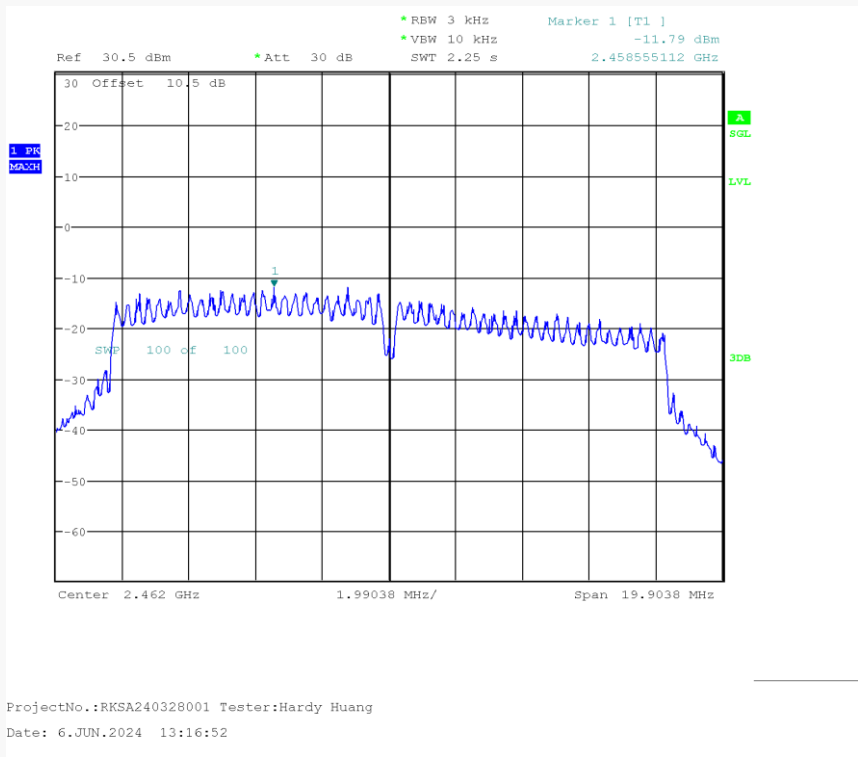
802.11g Low Channel



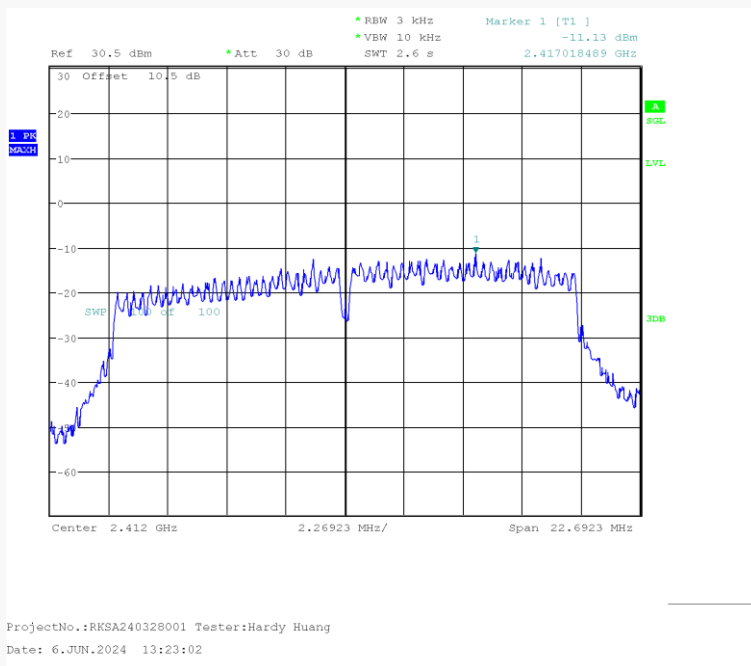
802.11g Middle Channel



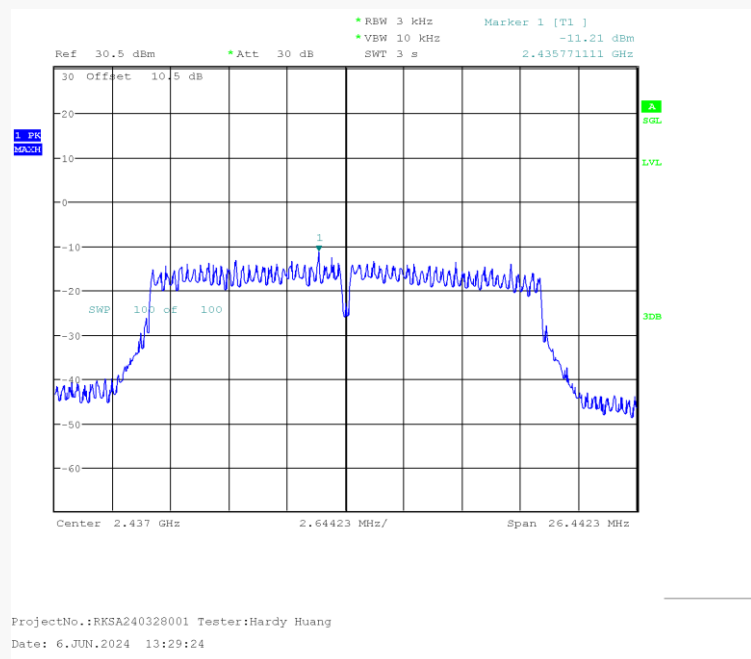
802.11g High Channel



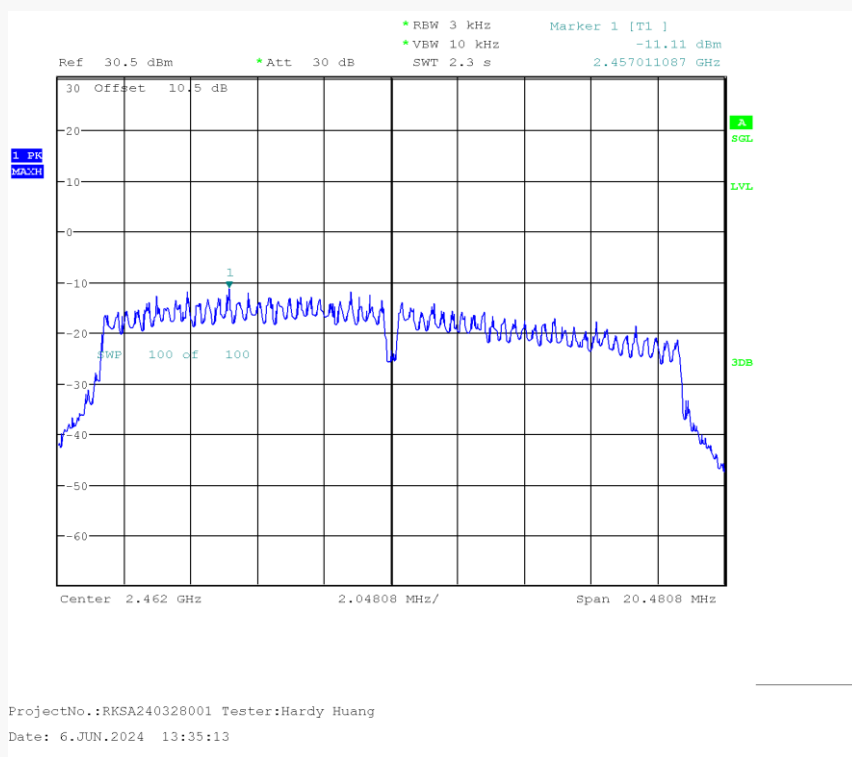
802.11n-HT20 Low Channel



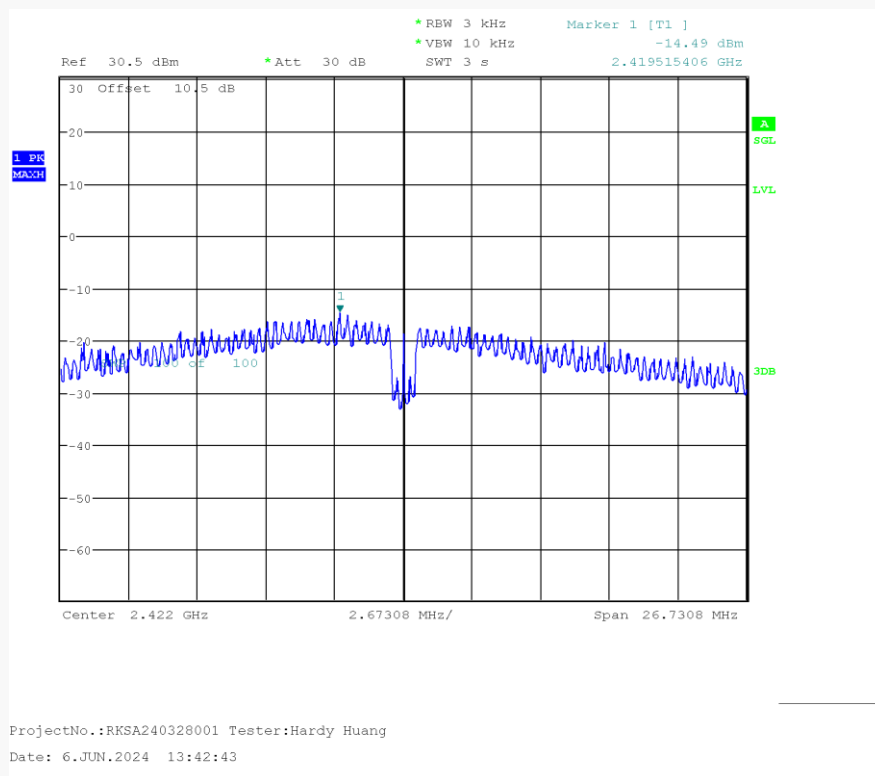
802.11n-HT20 Middle Channel



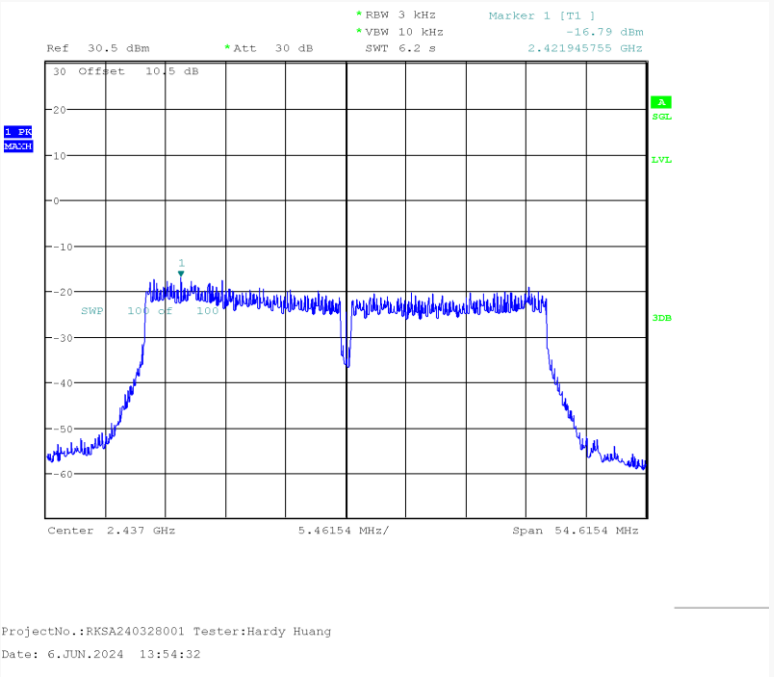
802.11n-HT20 High Channel



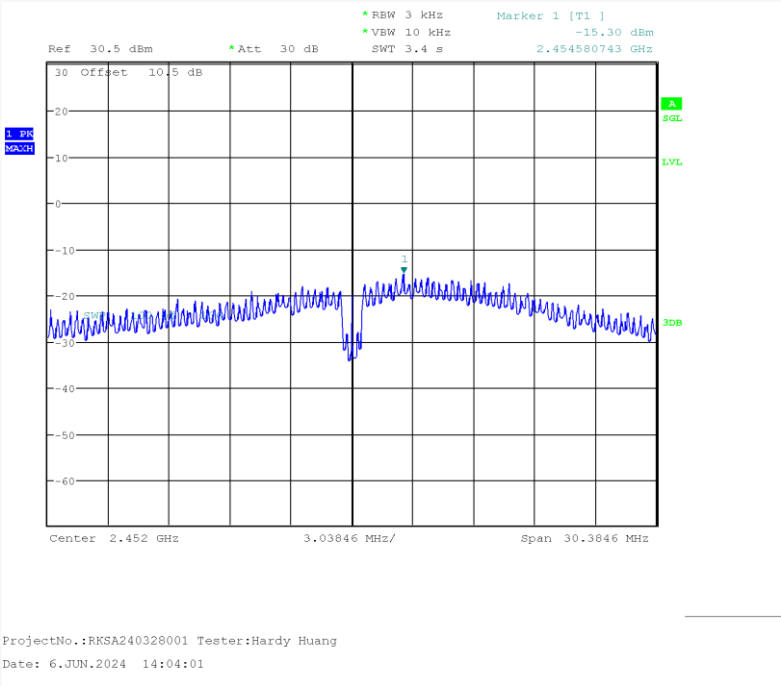
802.11n-HT40 Low Channel



802.11n-HT40 Middle Channel



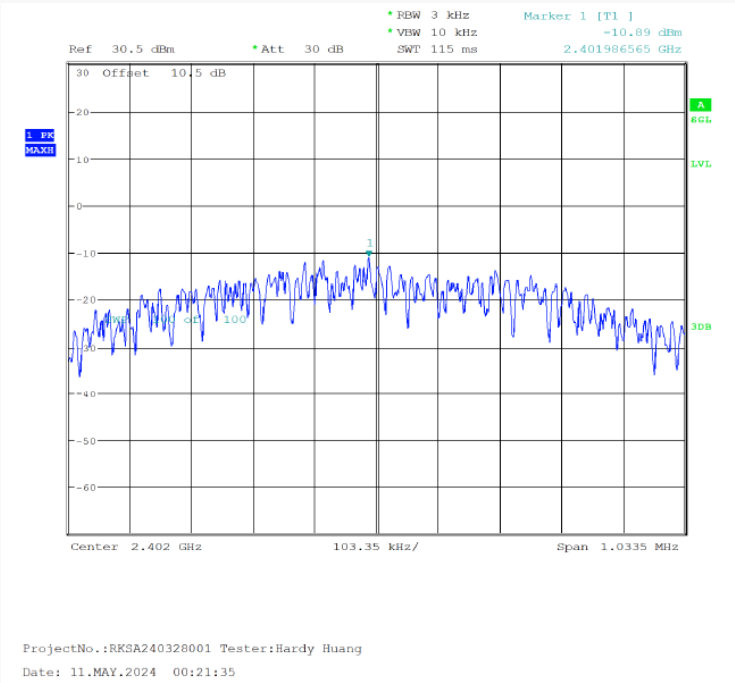
802.11n-HT40 High Channel



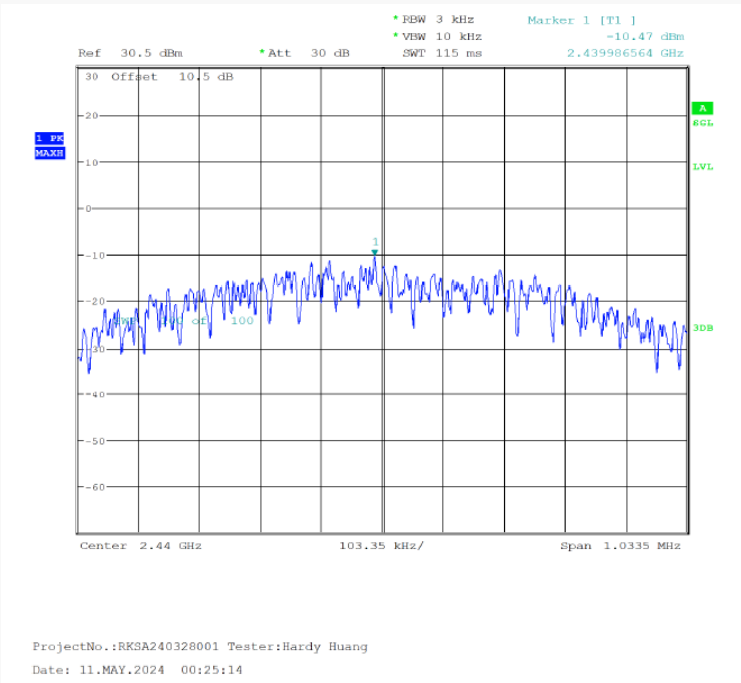
For BLE Mode:

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
Low	2402	-10.89	≤8
Middle	2440	-10.47	≤8
High	2480	-10.32	≤8

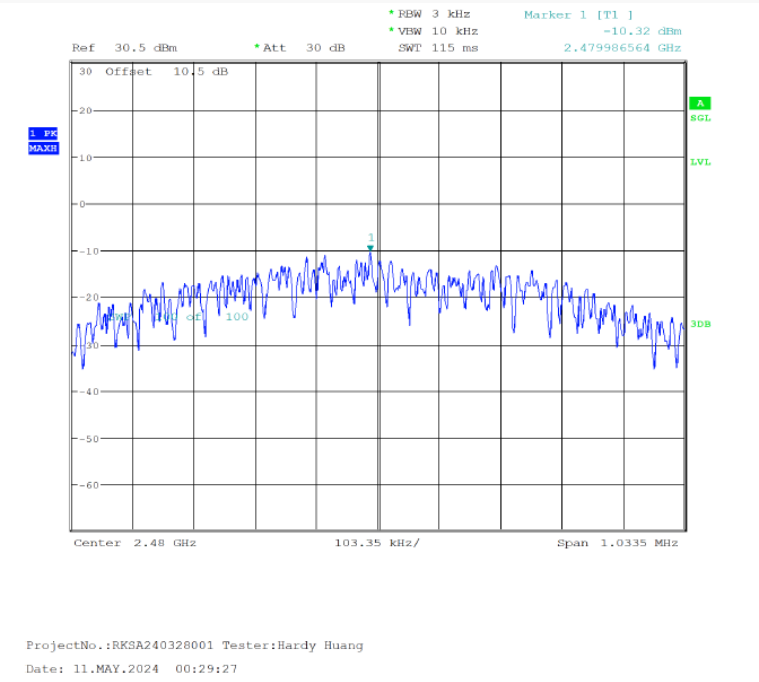
Low Channel



Middle Channel



High Channel



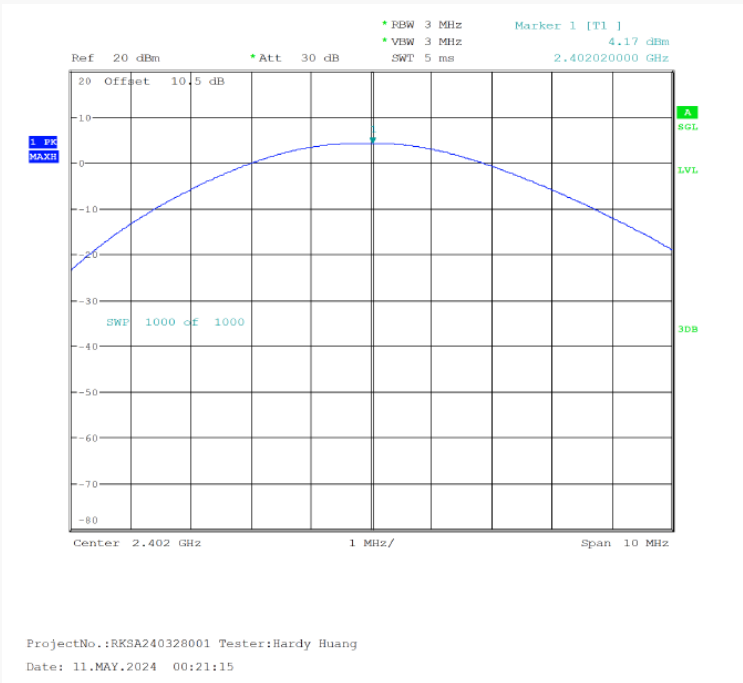
TRANSMITTER OUTPUT POWER MEASUREMENT

Mode	Peak Output Power (dBm)	Limit (dBm)	Result
802.11b_2412MHz	20.35	30.00	Pass
802.11b_2437MHz	20.74	30.00	Pass
802.11b_2462MHz	20.32	30.00	Pass
802.11g_2412MHz	20.81	30.00	Pass
802.11g_2437MHz	20.52	30.00	Pass
802.11g_2462MHz	19.52	30.00	Pass
802.11n20_2412MHz	20.11	30.00	Pass
802.11n20_2437MHz	20.86	30.00	Pass
802.11n20_2462MHz	19.97	30.00	Pass
802.11n40_2422MHz	19.92	30.00	Pass
802.11n40_2437MHz	18.91	30.00	Pass
802.11n40_2452MHz	19.16	30.00	Pass

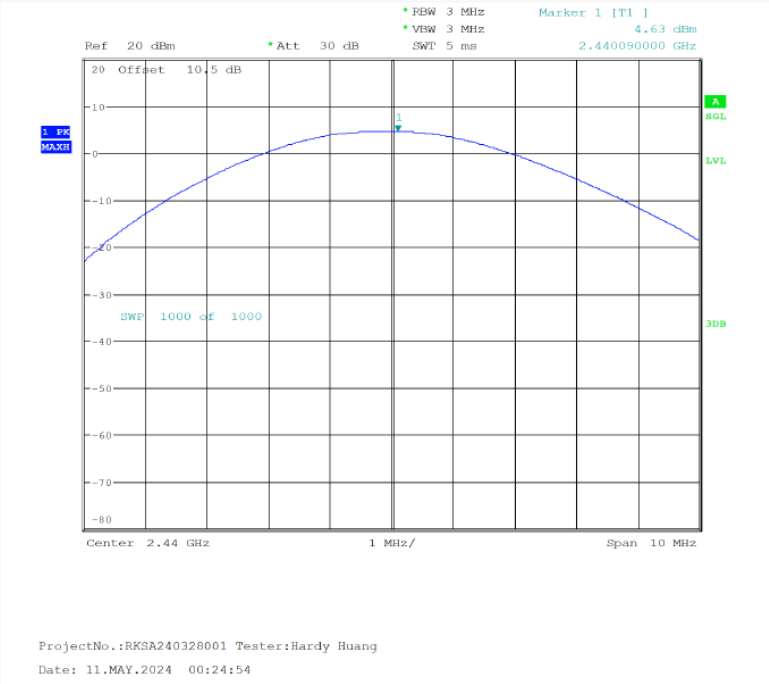
BLE Mode:

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Peak Output Power Limit (dBm)
Low	2402	4.17	≤30
Middle	2440	4.63	≤30
High	2480	4.85	≤30

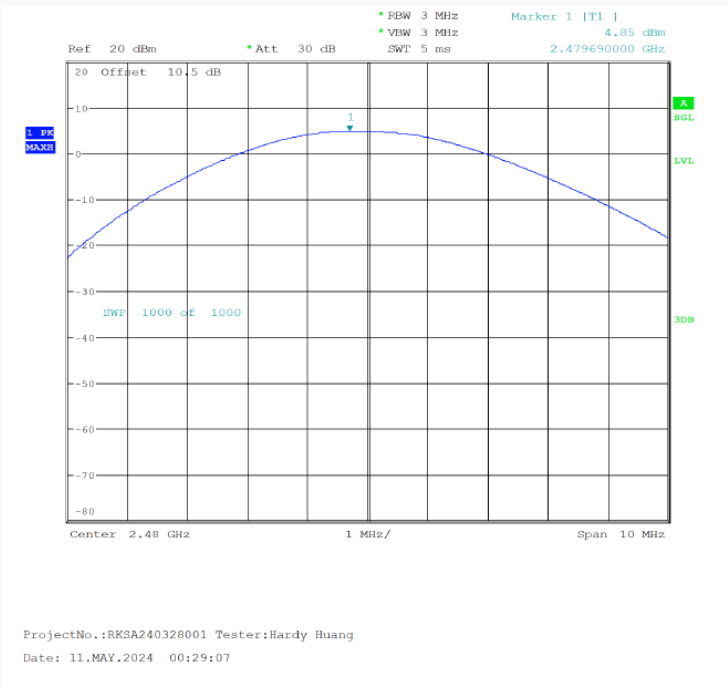
Low Channel



Middle Channel

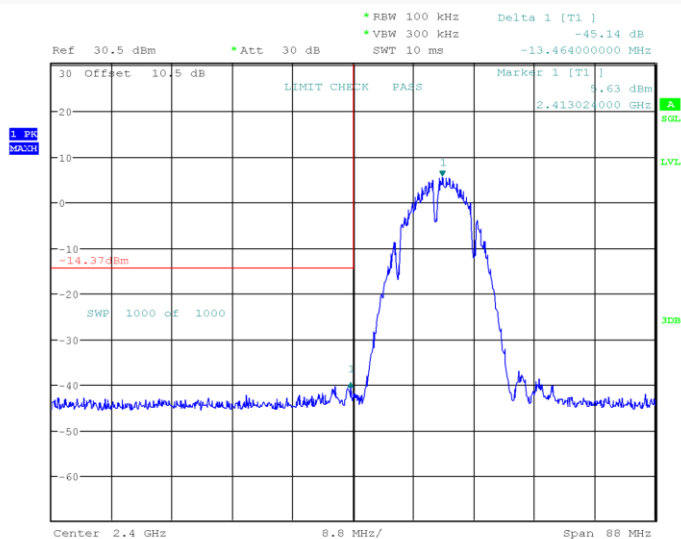


High Channel

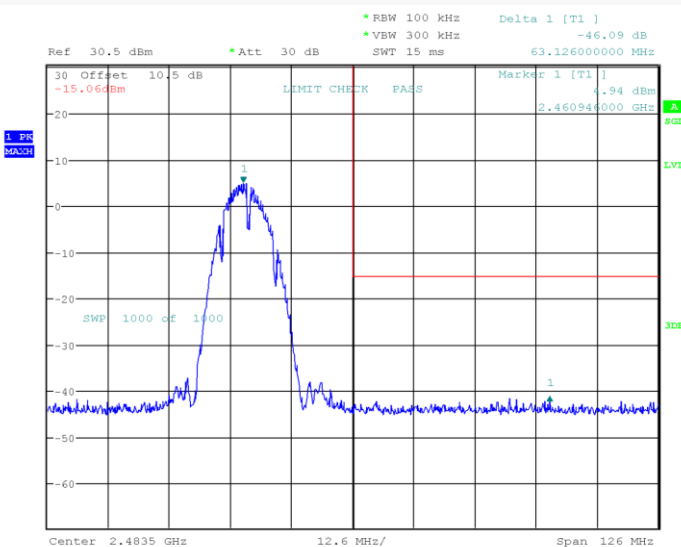


OUT OF BAND EMISSIONS*EUT operation mode: Transmitting***For Wi-Fi Mode:**

Mode	Value (dB)	Limit (dB)	Result
802.11b_2412MHz	45.14	20.00	Pass
802.11b_2462MHz	46.09	20.00	Pass
802.11g_2412MHz	39.76	20.00	Pass
802.11g_2462MHz	44.19	20.00	Pass
802.11n20_2412MHz	36.76	20.00	Pass
802.11n20_2462MHz	44.60	20.00	Pass
802.11n40_2422MHz	34.64	20.00	Pass
802.11n40_2452MHz	38.06	20.00	Pass

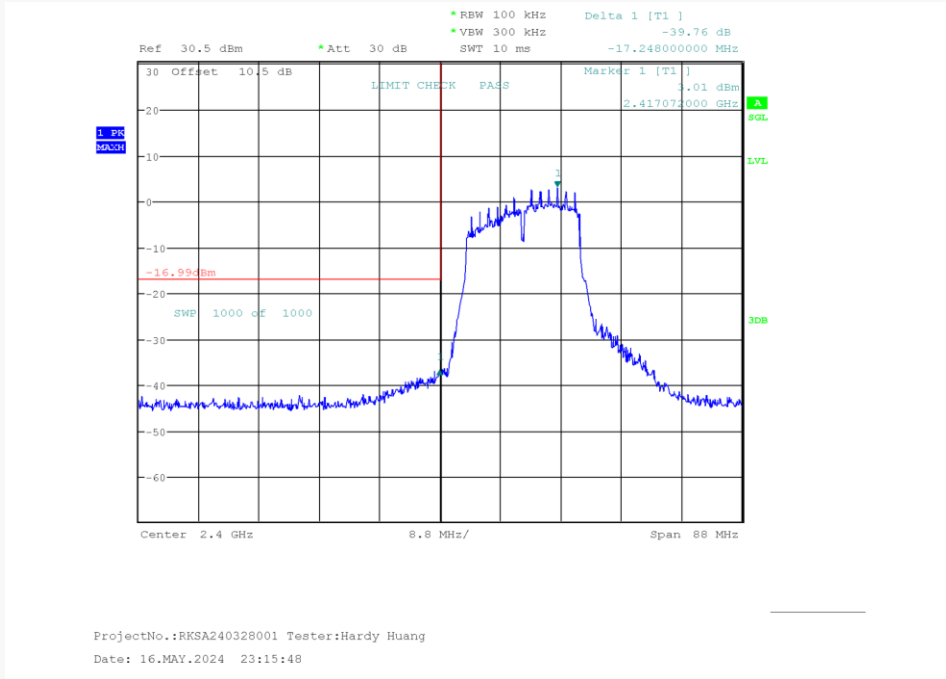
802.11b Mode Left Side

ProjectNo.:RKSA240328001 Tester:Hardy Huang
Date: 16.MAY.2024 00:20:51

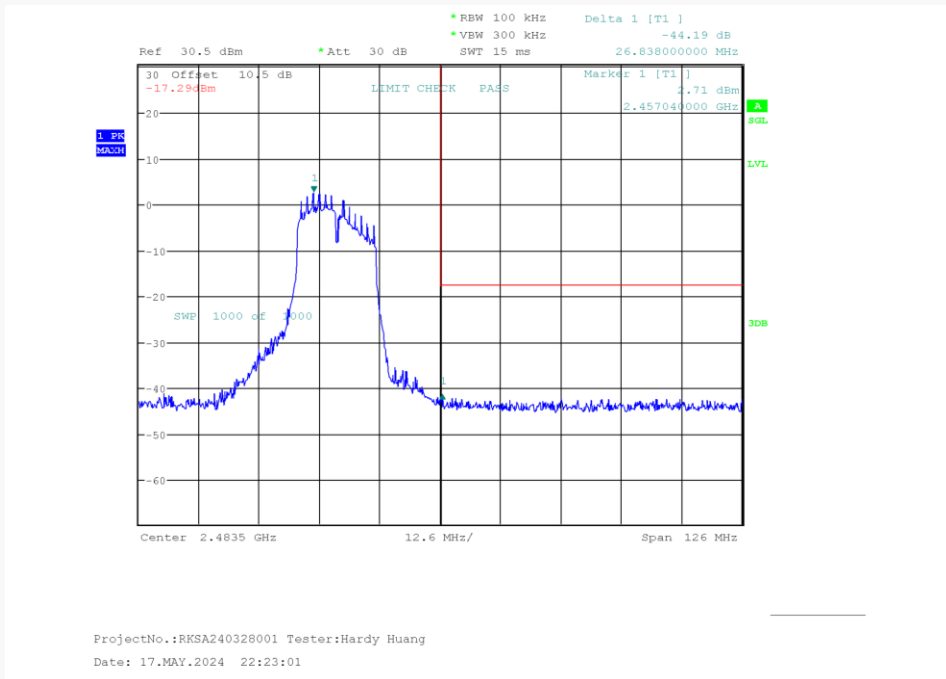
802.11b Mode Right Side

ProjectNo.:RKSA240328001 Tester:Hardy Huang
Date: 16.MAY.2024 22:36:28

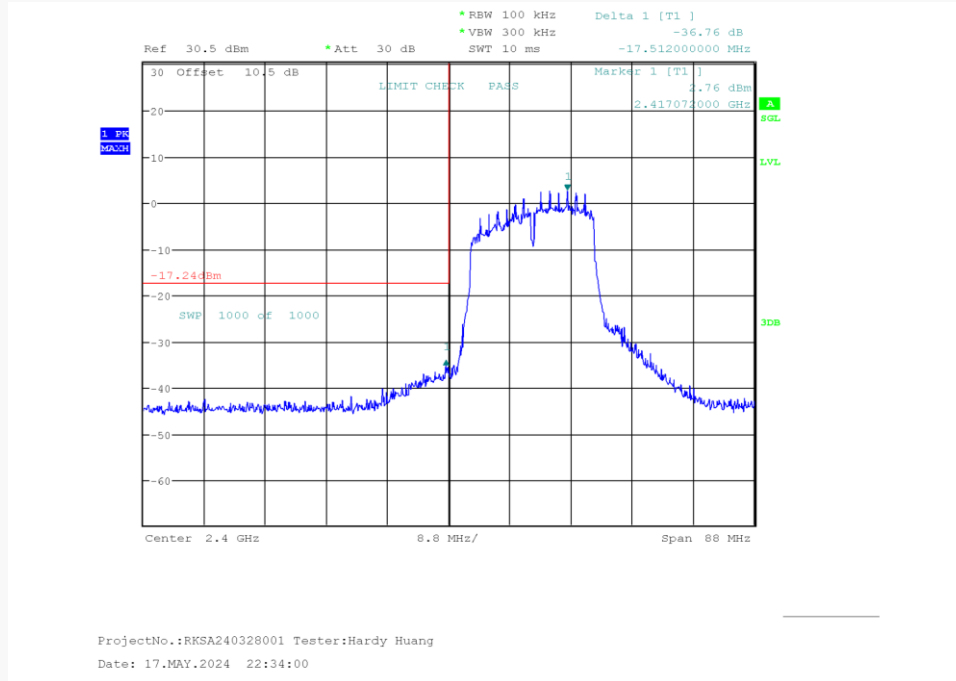
802.11g Mode Left Side



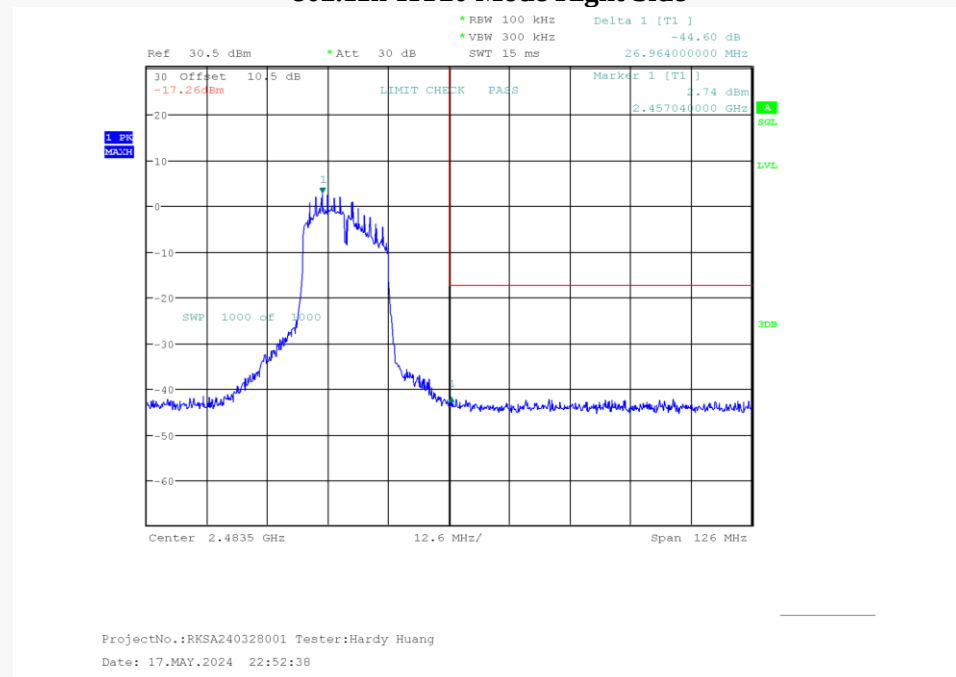
802.11g Mode Right Side



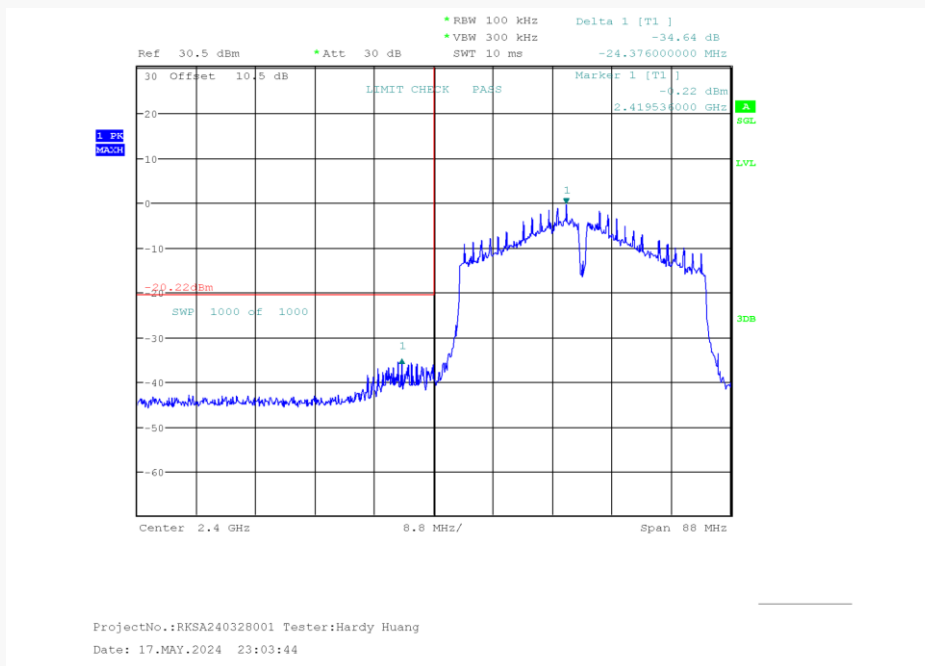
802.11n-HT20 Mode Left Side



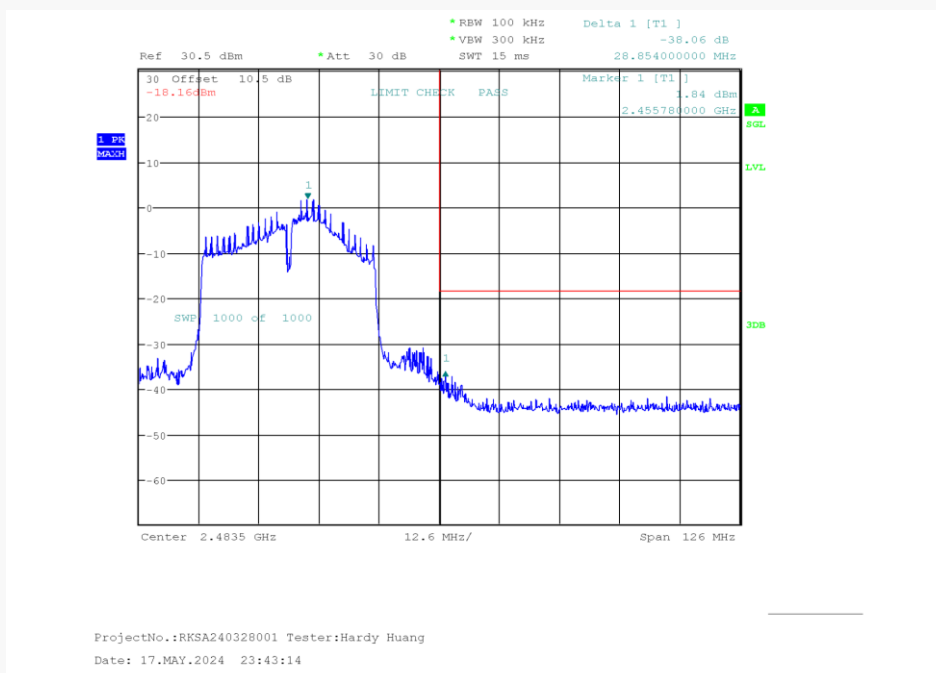
802.11n-HT20 Mode Right Side



802.11n-HT40 Mode Right Side



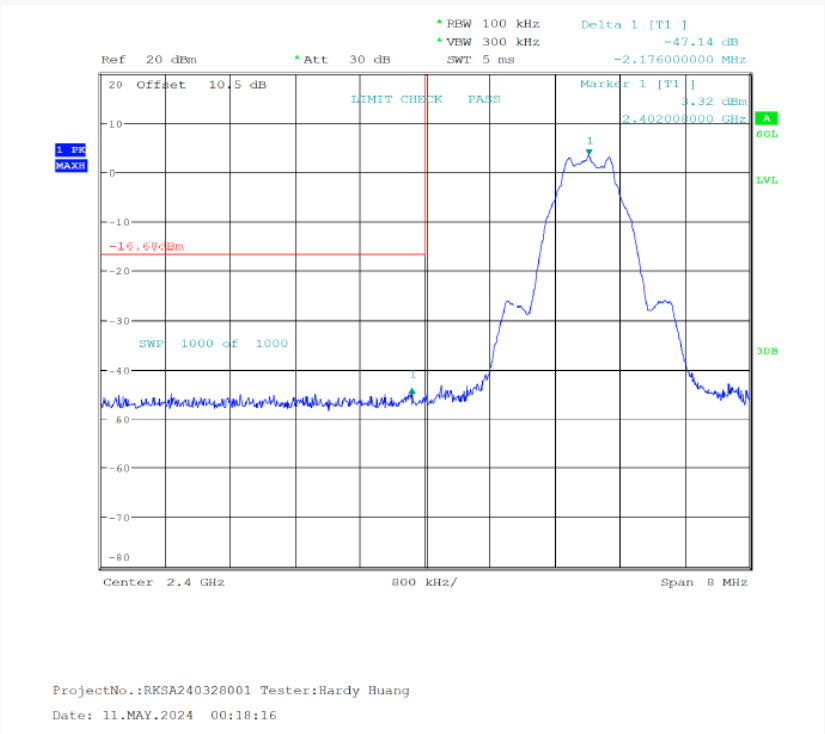
802.11n-HT40 Mode Right Side



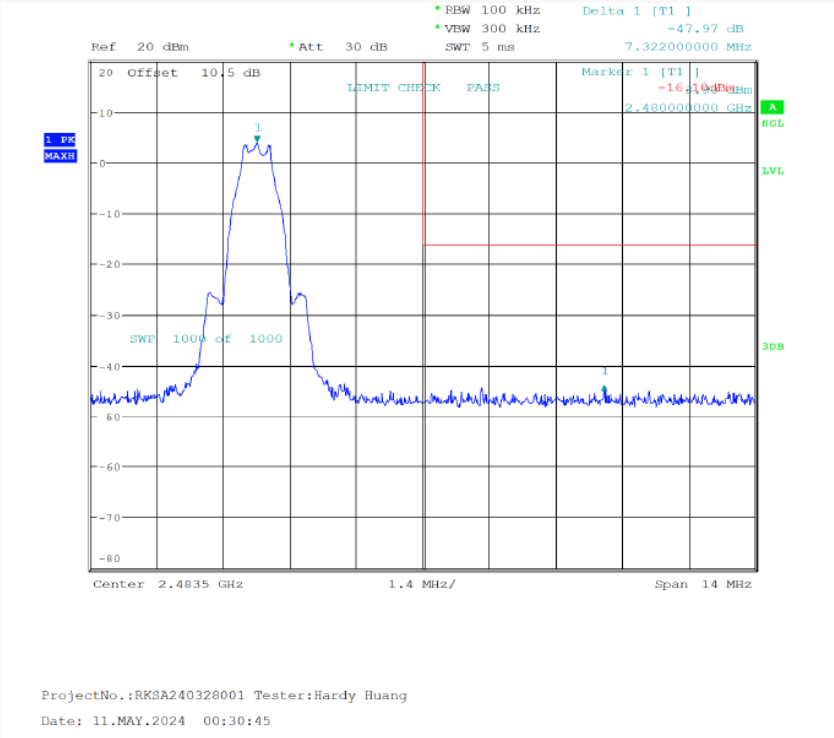
BLE 1Mbps:

Mode	Value (dB)	Limit (dB)	Result
Low	47.14	20.00	Pass
High	47.97	20.00	Pass

Left Side



Right Side



EUT PHOTOGRAPHS

Please refer to the attachment EXHIBIT A-EUT EXTERNAL PHOTOGRAPHS and EXHIBIT B-EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment EXHIBIT C-TEST SETUP PHOTOGRAPHS.

Declarations

1. The laboratory is not responsible for the authenticity of any information provided by the applicant. Information from the applicant that may affect test results is marked with “★”.
2. The test data was only valid for the test sample(s).
3. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.
4. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
5. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor $k=2$ with the 95.45% confidence interval.

******* END OF REPORT *******