802.11ac-VHT40 Power Spectral Density - Ant 3
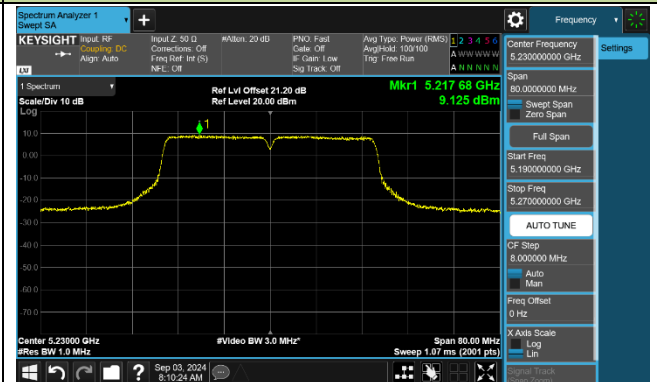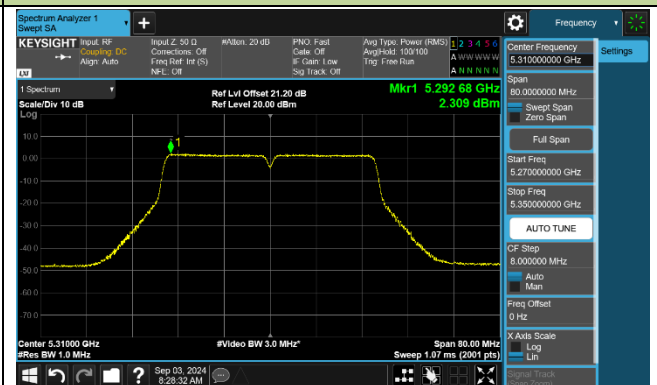
Channel 38 (5190MHz)

Channel 46 (5230MHz)
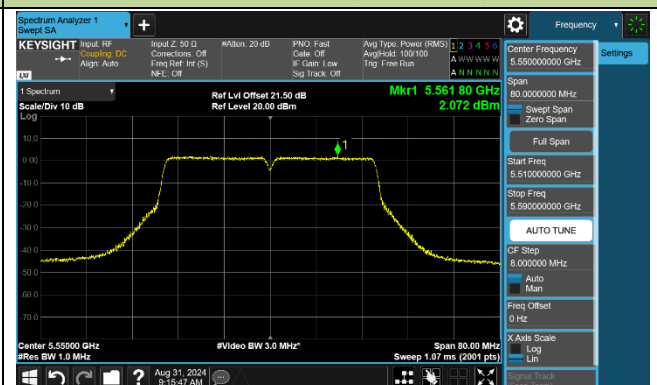

Channel 54 (5270MHz)

Channel 62 (5310MHz)

Channel 102 (5510MHz)

Channel 110 (5550MHz)

Channel 134 (5670MHz)

Channel 142 (5710MHz)

Channel 151 (5755MHz)	Channel 159 (5795MHz)

802.11ac-VHT80 Power Spectral Density - Ant 3

Channel 42 (5210MHz)

Channel 58 (5290MHz)

Channel 106 (5530MHz)

Channel 122 (5610MHz)

Channel 138 (5690MHz)

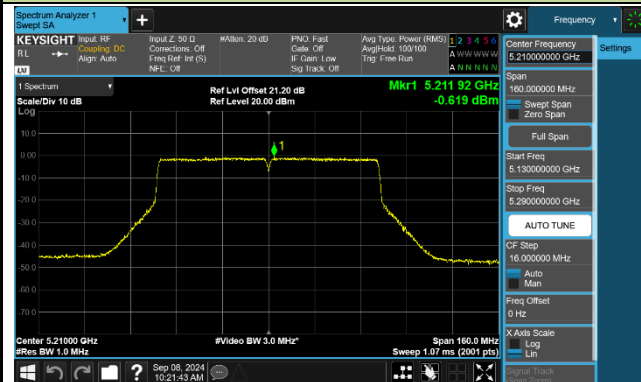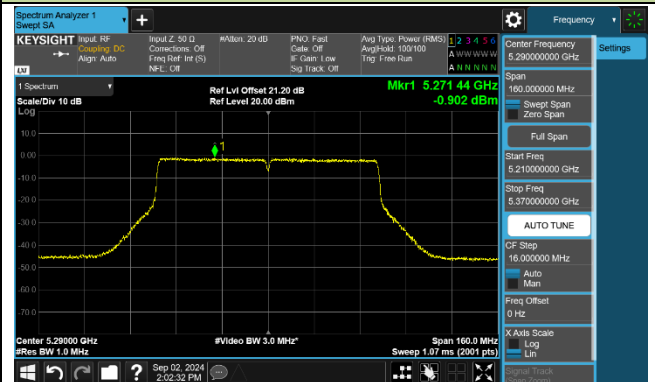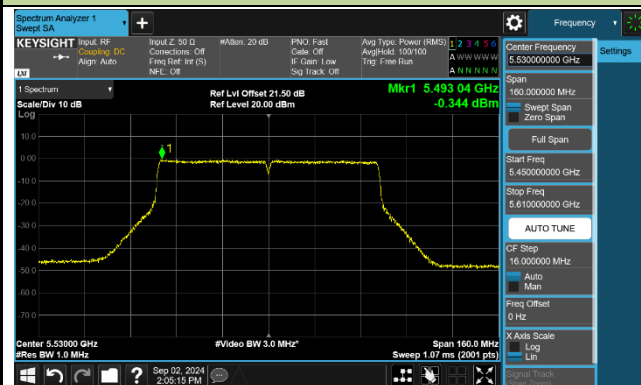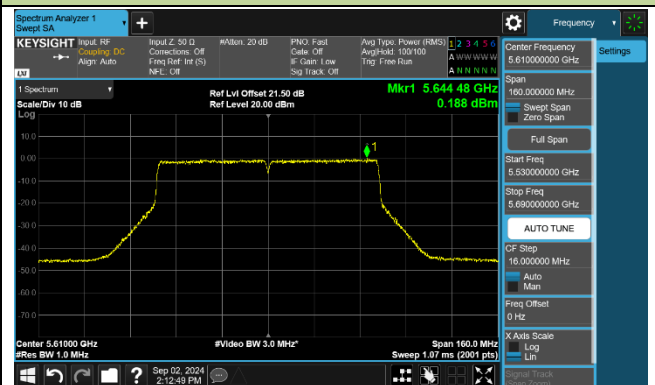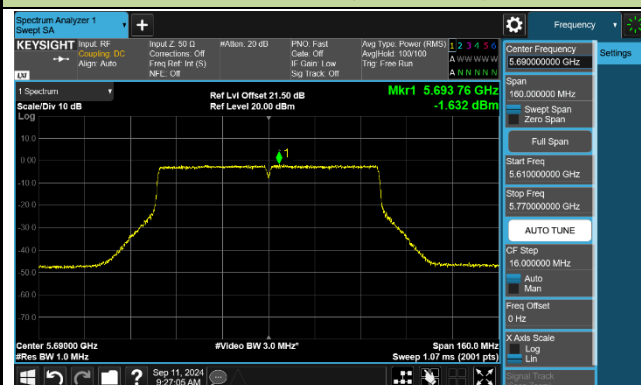### Channel 155 (5775MHz)

802.11ac-VHT160 Power Spectral Density - Ant 3

Channel 50 (5250MHz)

Channel 114 (5570MHz)

802.11ax-HE20 Power Spectral Density - Ant 3

Channel 36 (5180MHz)

Channel 40 (5200MHz)

Channel 48 (5240MHz)

Channel 52 (5260MHz)

Channel 60 (5300MHz)

Channel 64 (5320MHz)

Channel 100 (5500MHz)

Channel 116 (5580MHz)

Channel 140 (5700MHz)	Channel 144 (5720MHz)

Channel 149 (5745MHz)	Channel 157 (5785MHz)
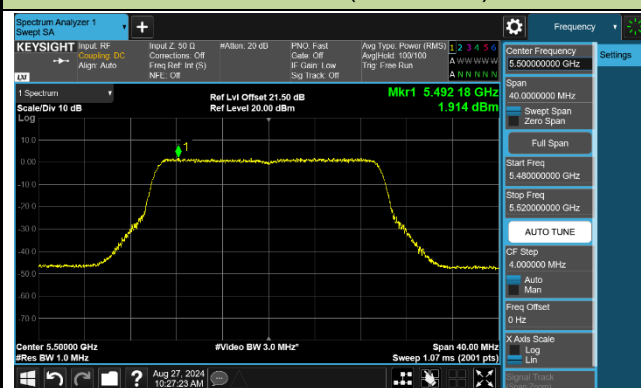
Channel 165 (5825MHz)	
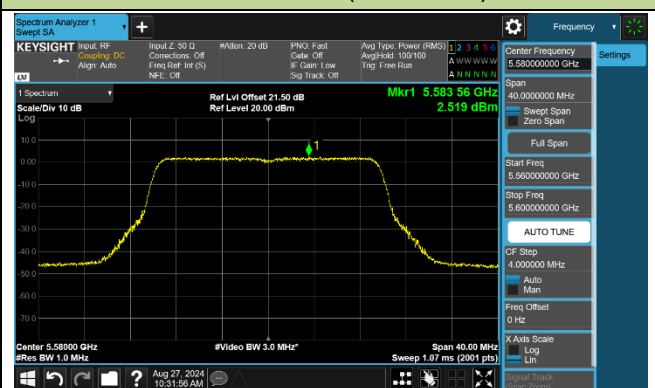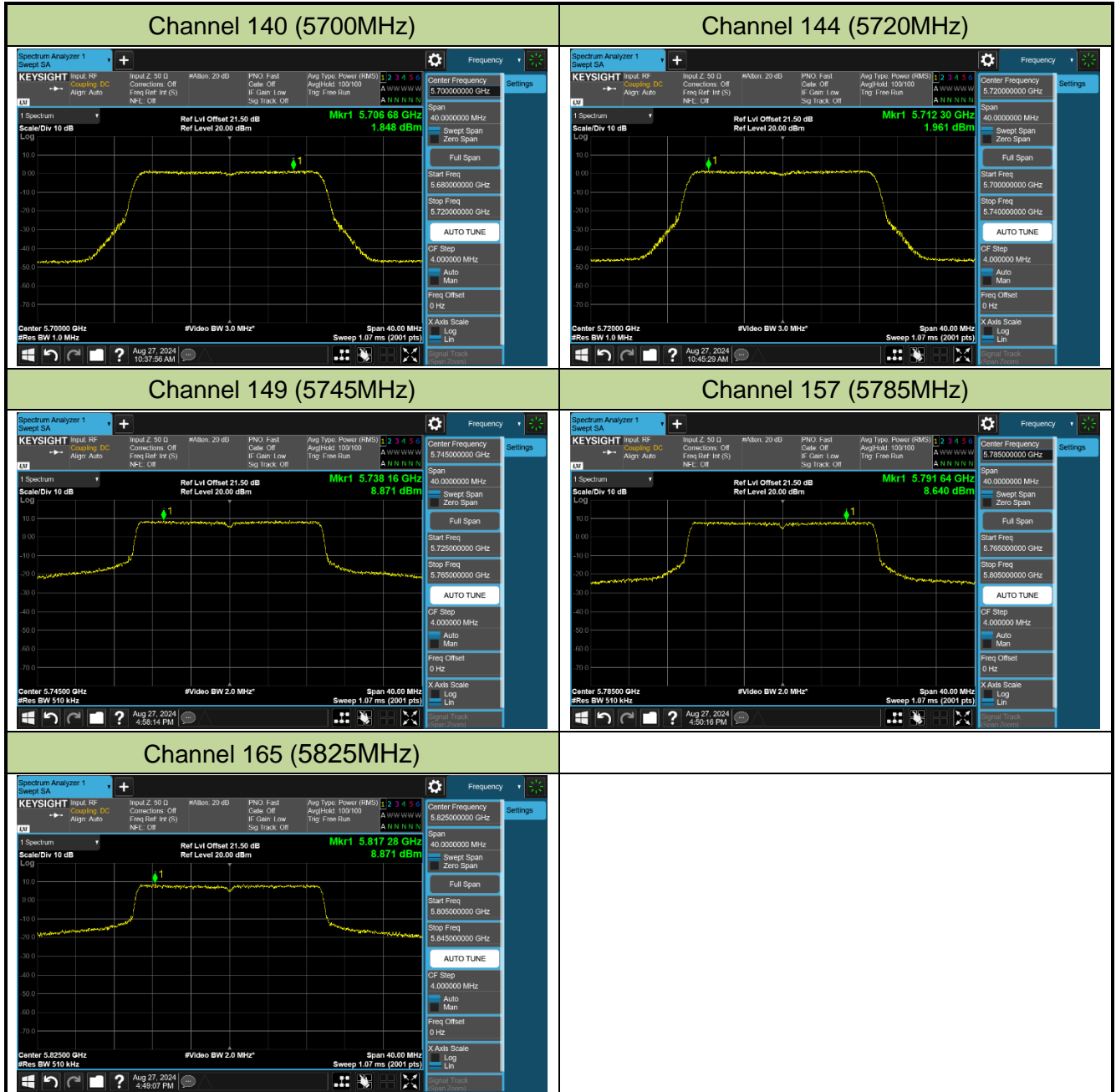
802.11ax-HE40 Power Spectral Density - Ant 3

Channel 38 (5190MHz)

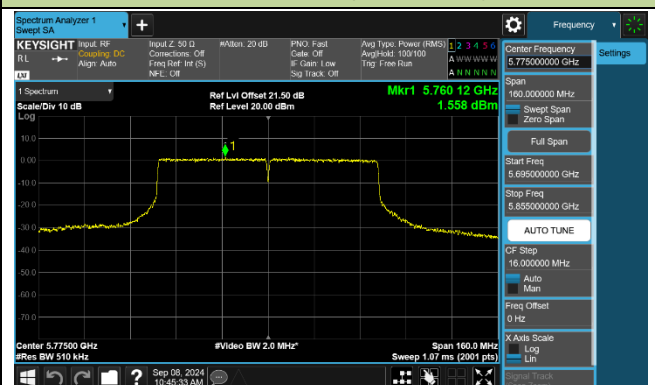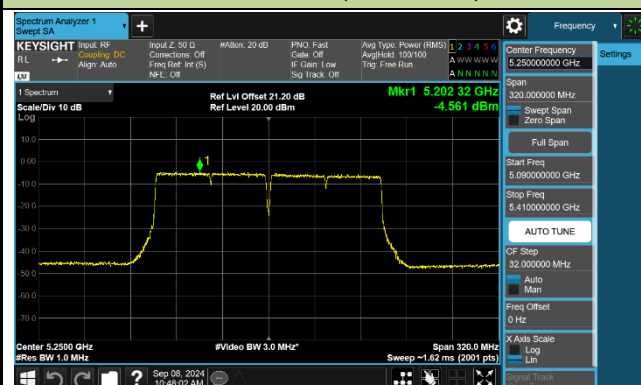### Channel 46 (5230MHz)

Channel 54 (5270MHz)

Channel 62 (5310MHz)

Channel 102 (5510MHz)

Channel 110 (5550MHz)

Channel 134 (5670MHz)

Channel 142 (5710MHz)
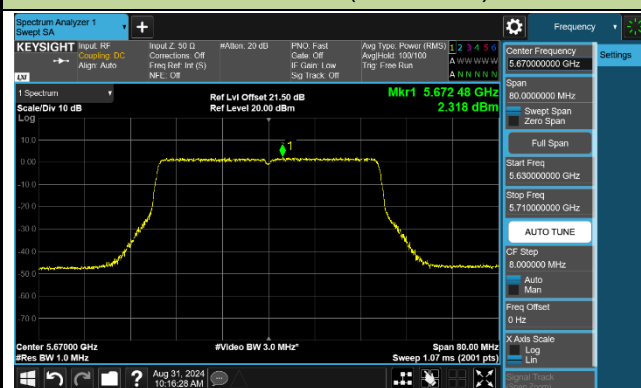
Channel 151 (5755MHz)	Channel 159 (5795MHz)
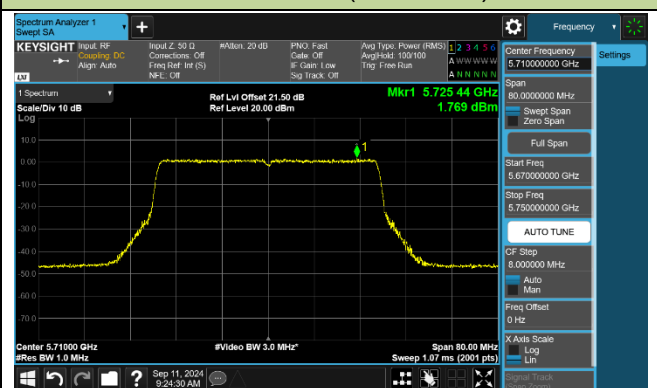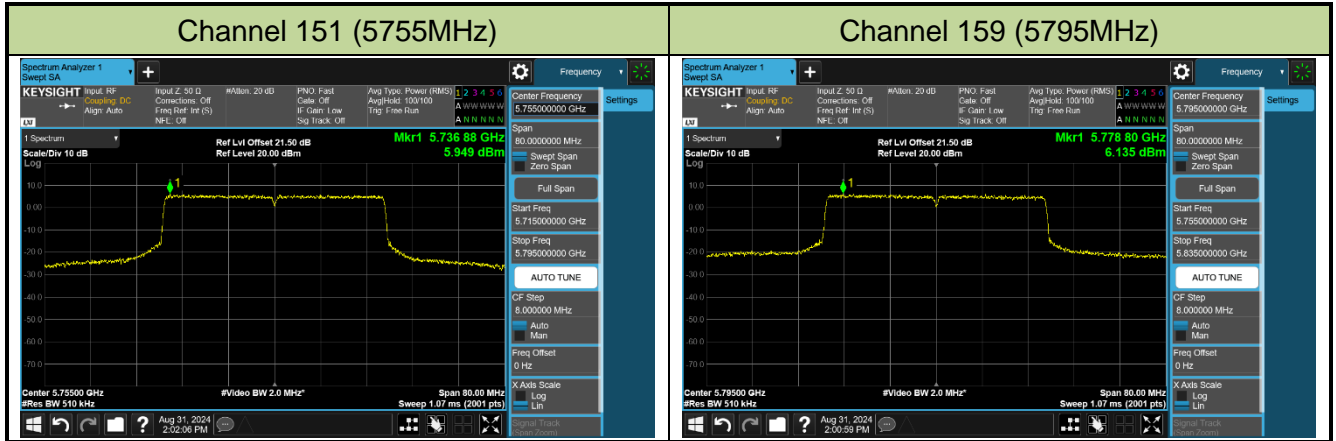
802.11ax-HE80 Power Spectral Density - Ant 3

Channel 42 (5210MHz)

Channel 58 (5290MHz)

Channel 106 (5530MHz)

Channel 122 (5610MHz)

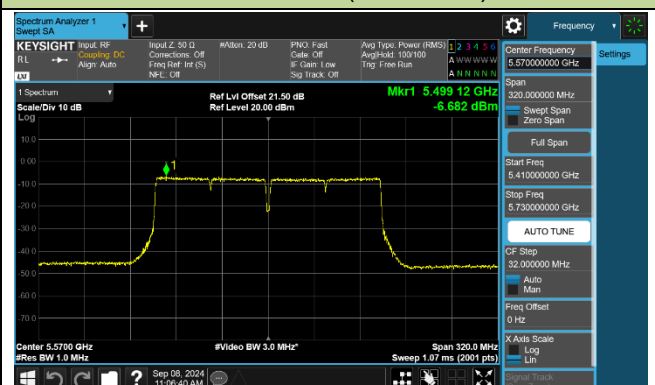### Channel 138 (5690MHz)

Channel 155 (5775MHz)

802.11ax-HE160 Power Spectral Density - Ant 3
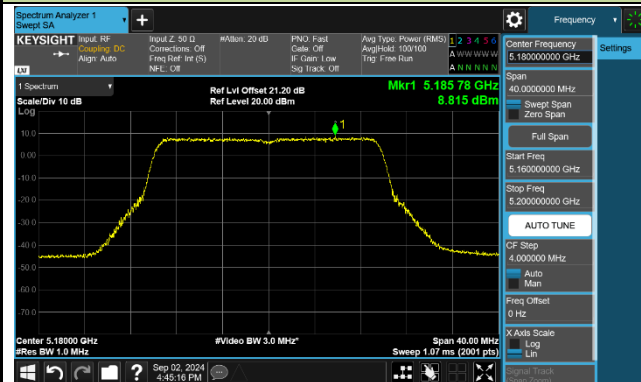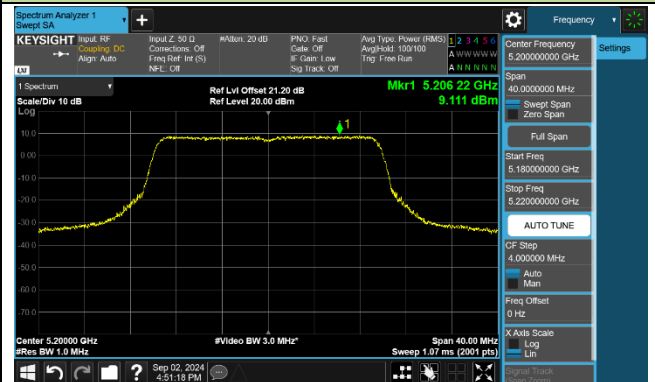
Channel 50 (5250MHz)
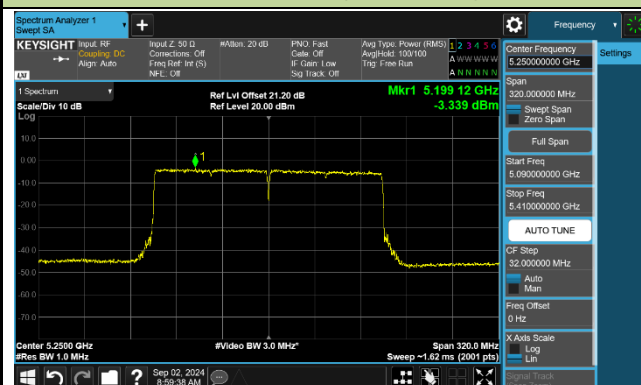
Channel 114 (5570MHz)
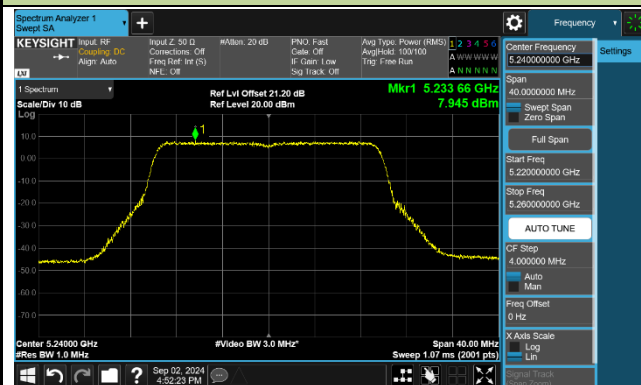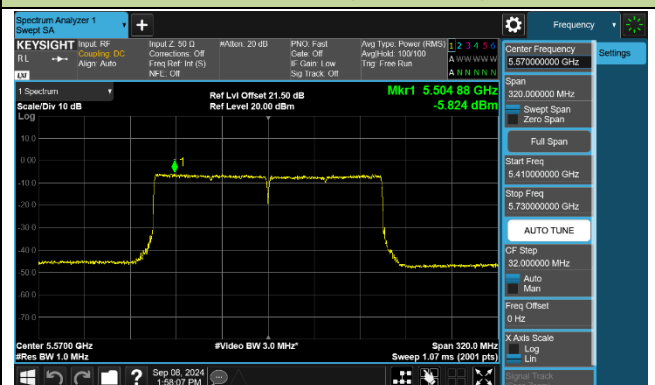
802.11be-EHT20 Power Spectral Density - Ant 3
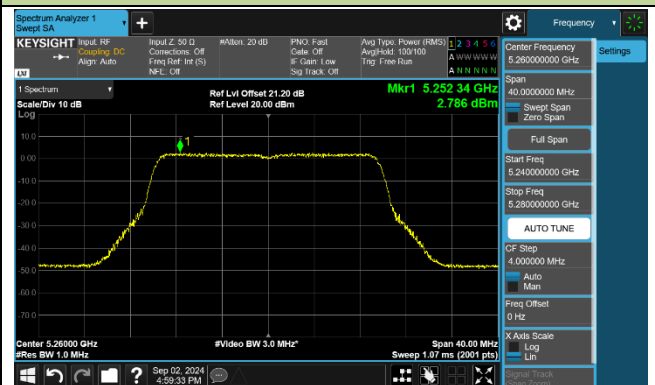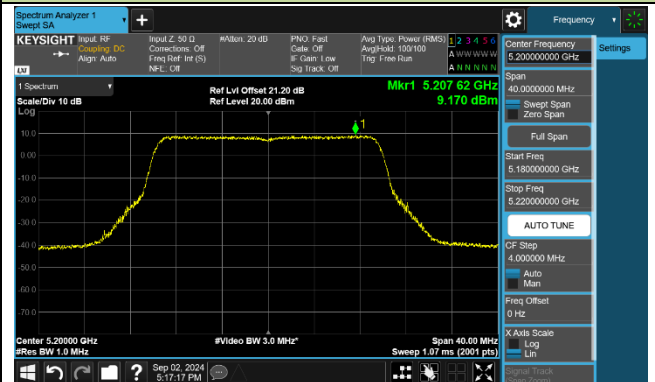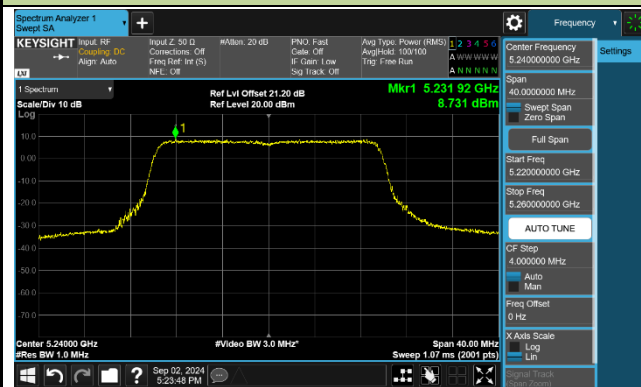
Channel 36 (5180MHz)

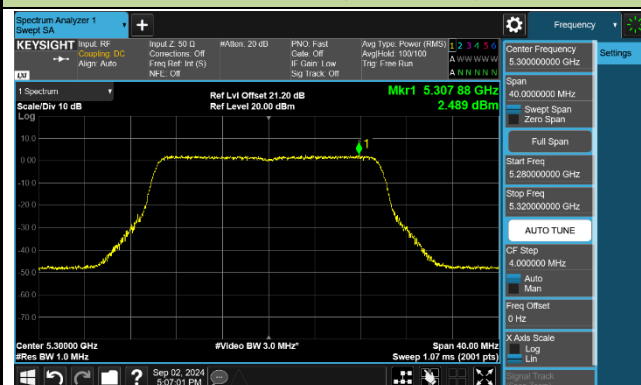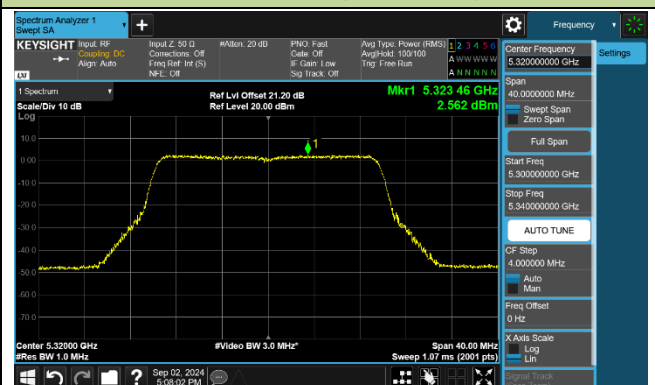### Channel 40 (5200MHz)

Channel 48 (5240MHz)

### Channel 52 (5260MHz)

Channel 60 (5300MHz)


Channel 64 (5320MHz)

Channel 100 (5500MHz)

Channel 116 (5580MHz)

Channel 140 (5700MHz)

Channel 144 (5720MHz)

Channel 149 (5745MHz)
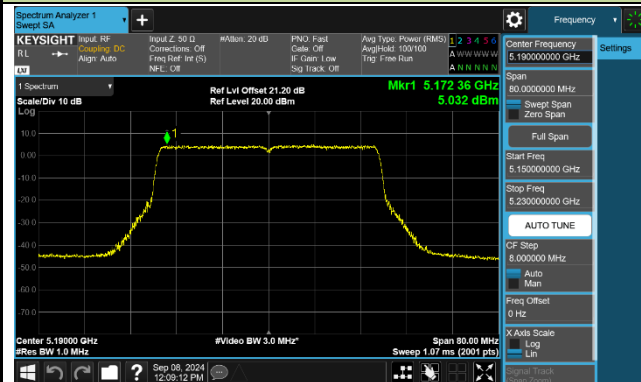

Channel 157 (5785MHz)
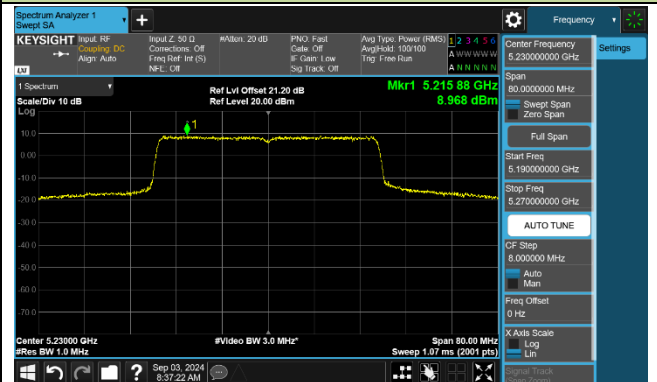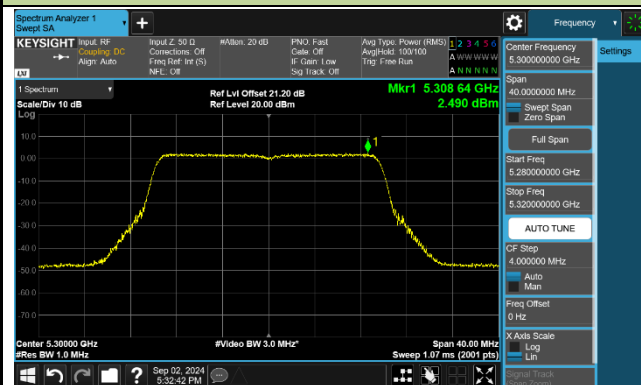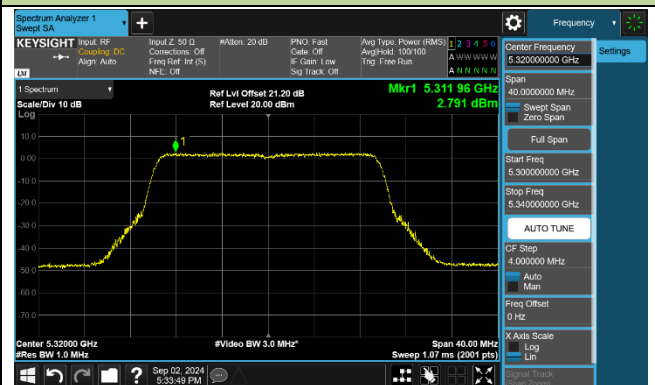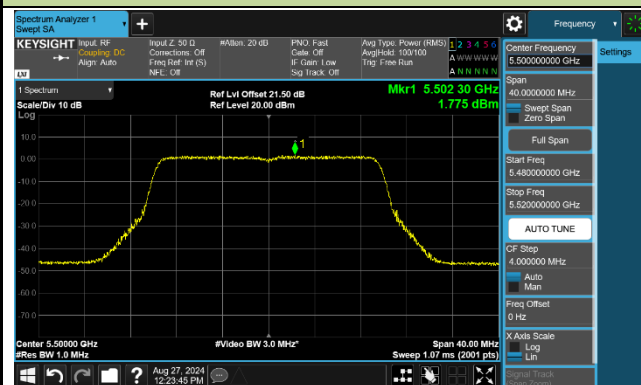

Channel 165 (5825MHz)
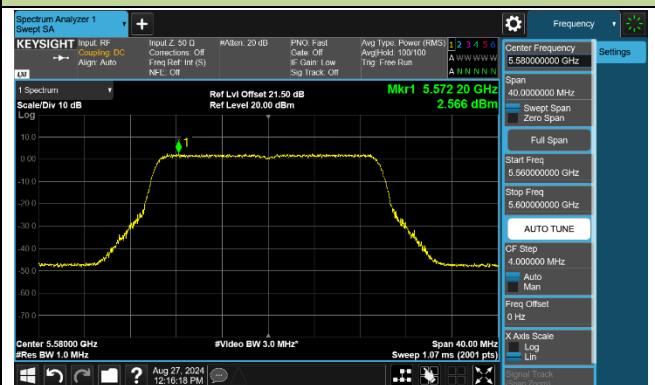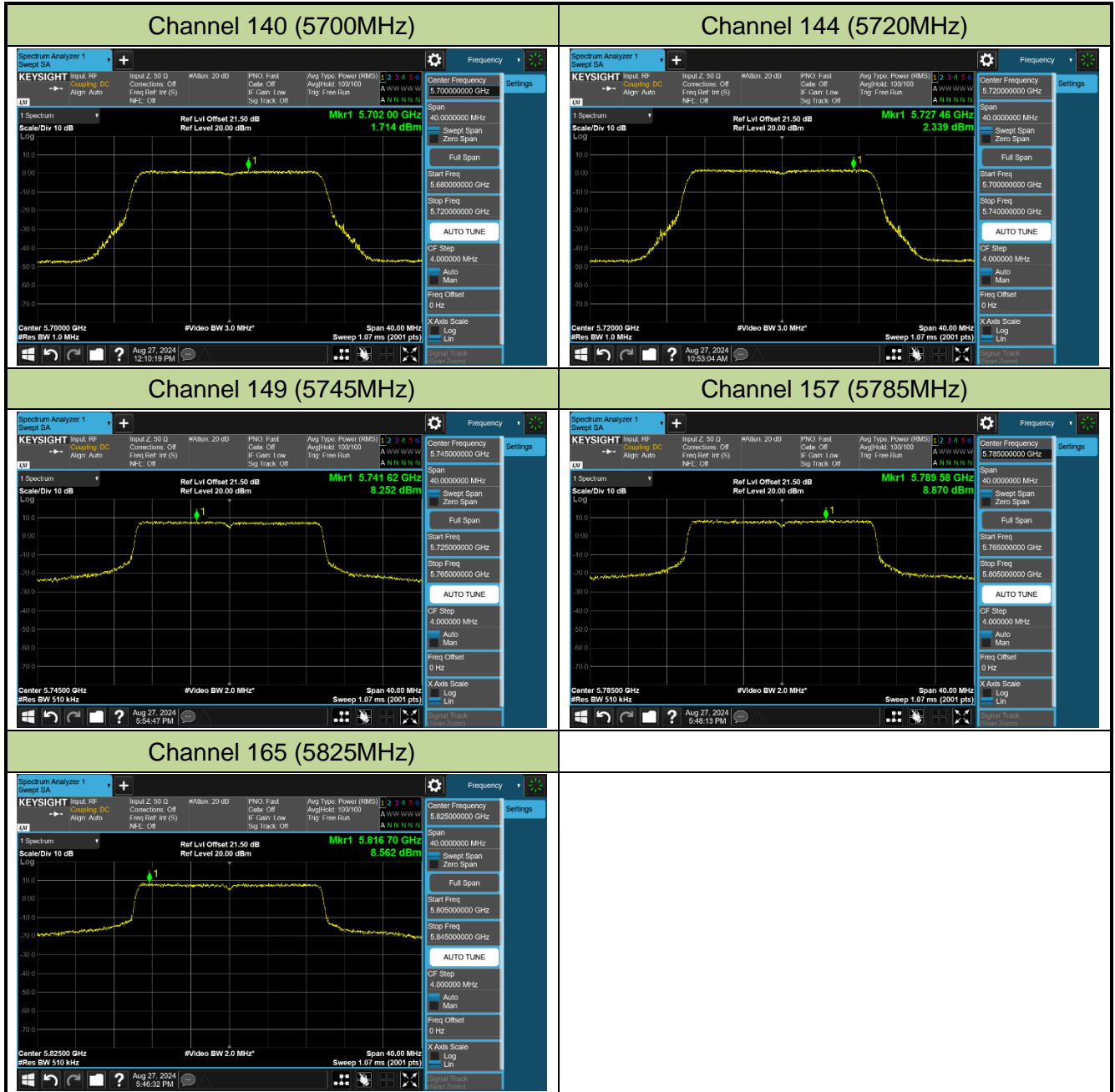
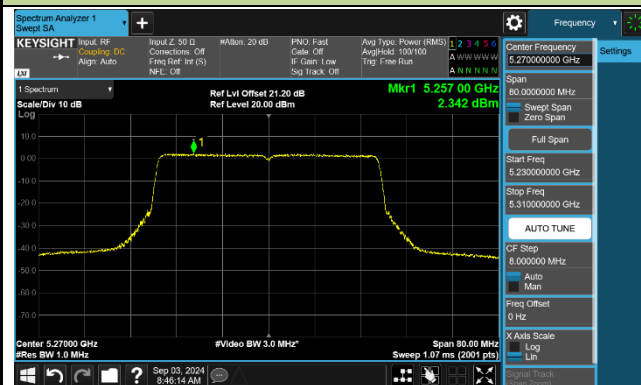## 802.11be-EHT40 Power Spectral Density - Ant 3
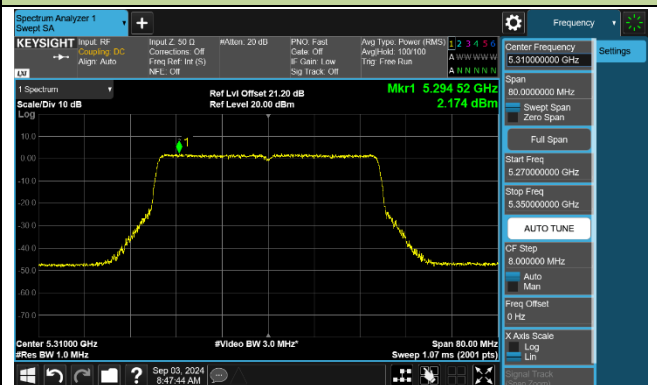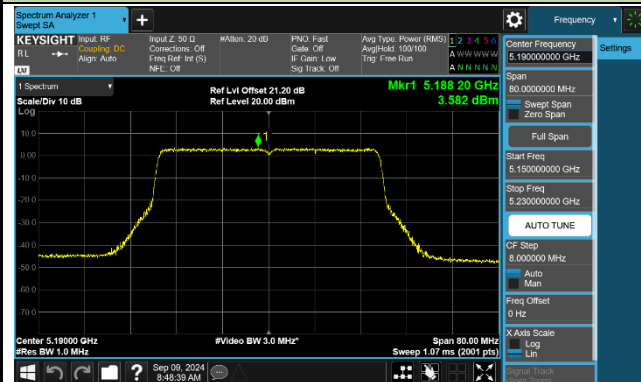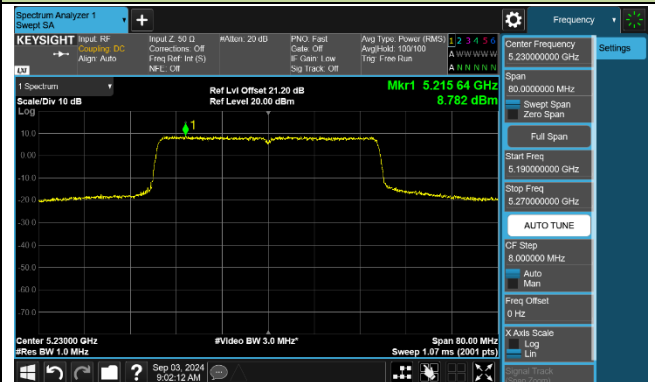
Channel 38 (5190MHz)

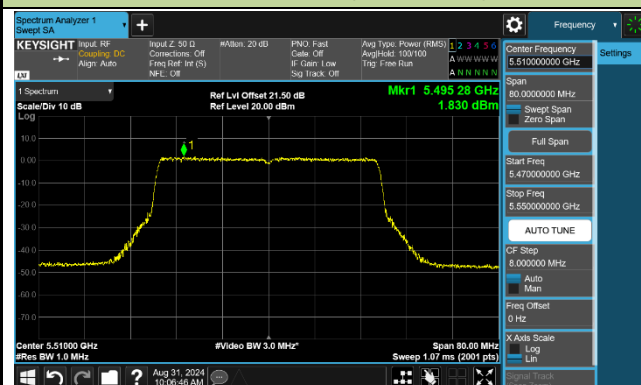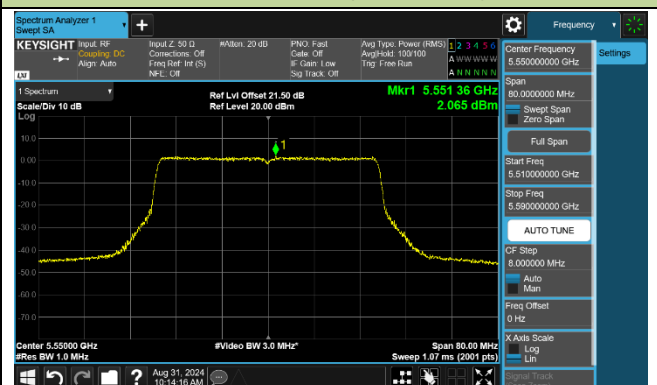### Channel 46 (5230MHz)

Channel 54 (5270MHz)


Channel 62 (5310MHz)

Channel 102 (5510MHz)
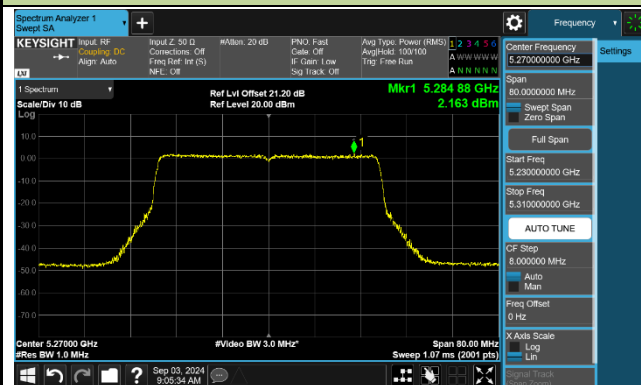
Channel 110 (5550MHz)
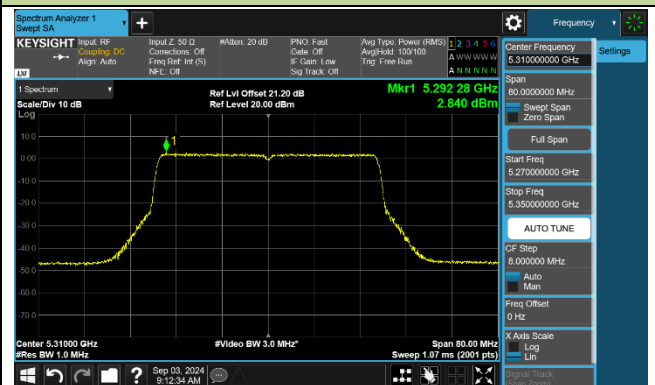
Channel 134 (5670MHz)
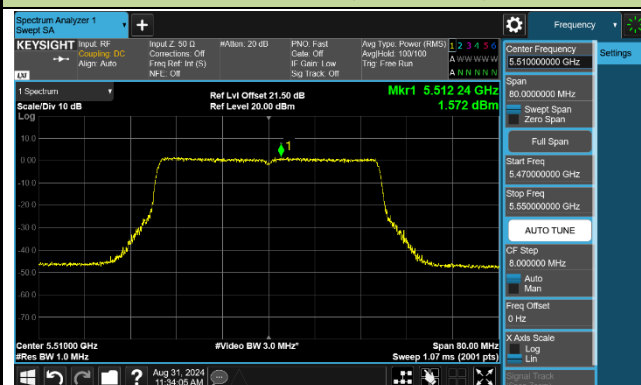
Channel 142 (5710MHz)
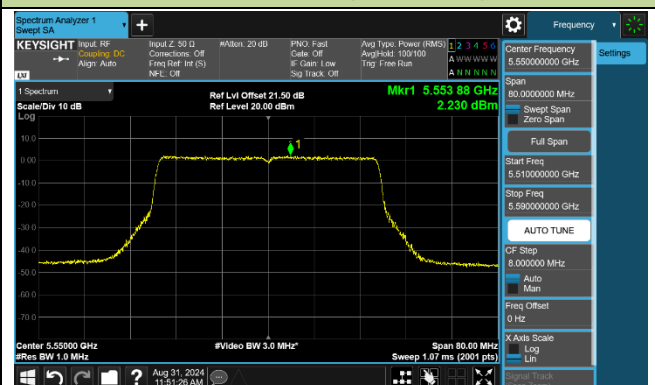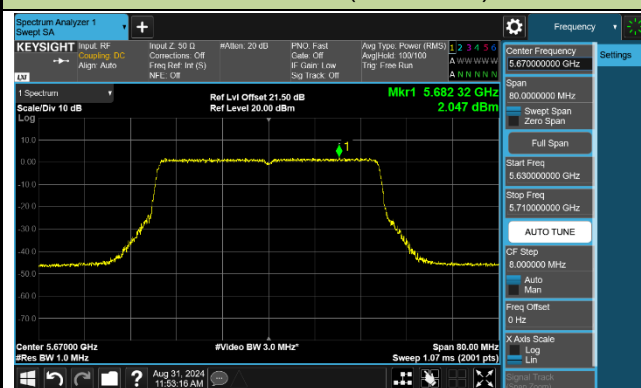
Channel 151 (5755MHz)	Channel 159 (5795MHz)
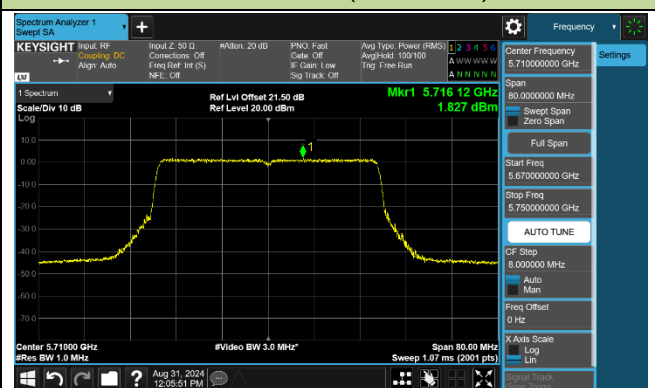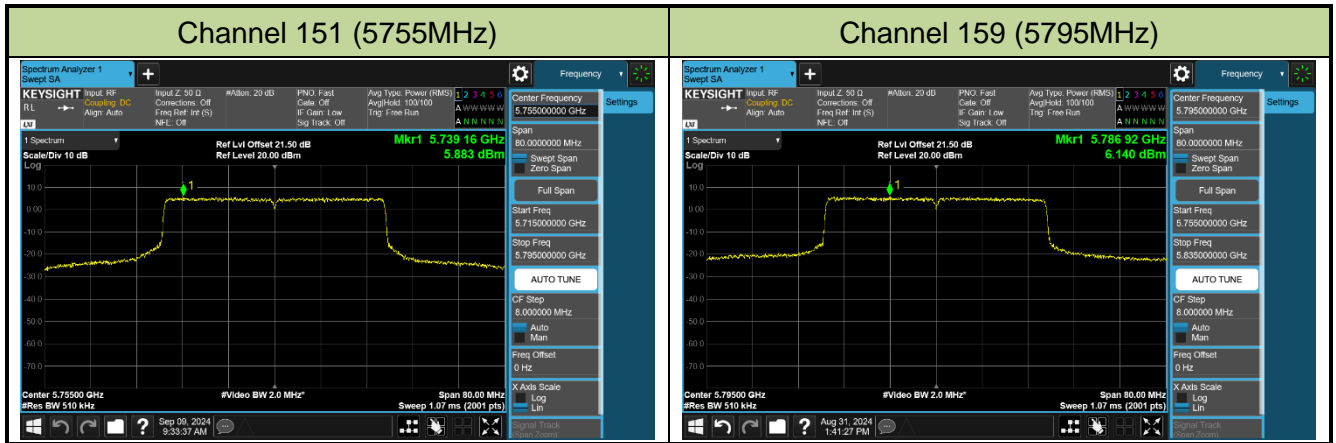
802.11be-EHT80 Power Spectral Density - Ant 3
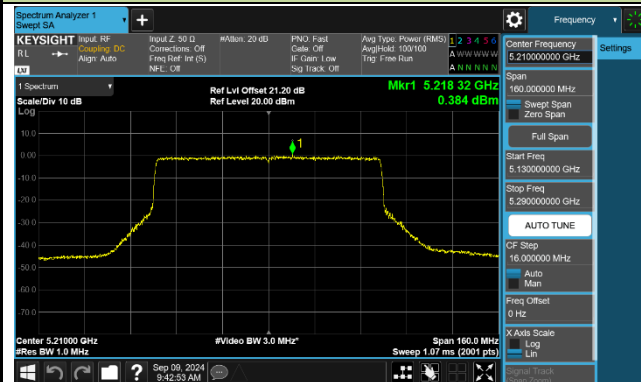
Channel 42 (5210MHz)

Channel 58 (5290MHz)
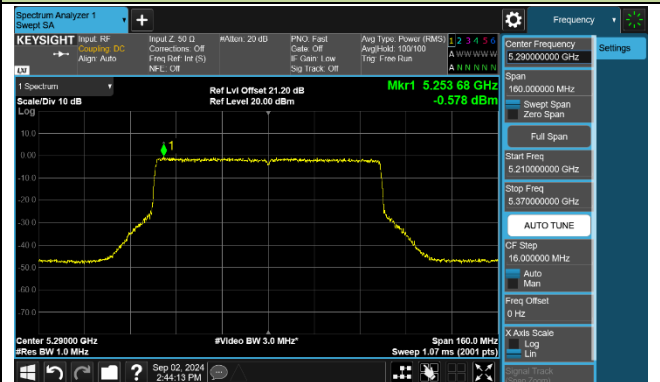
Channel 106 (5530MHz)
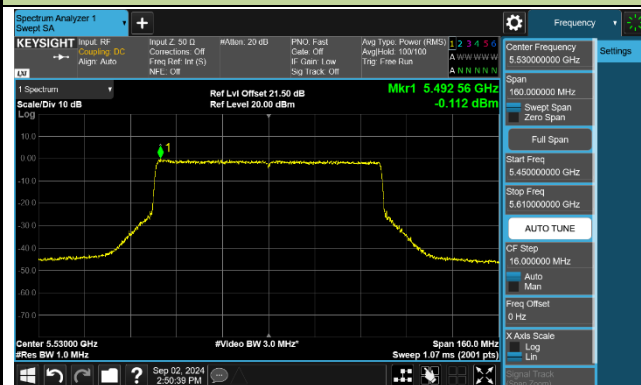
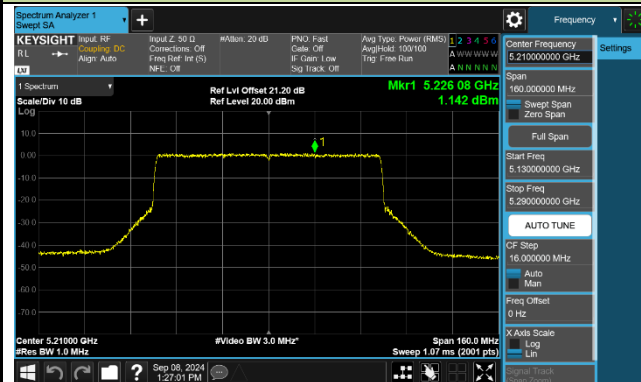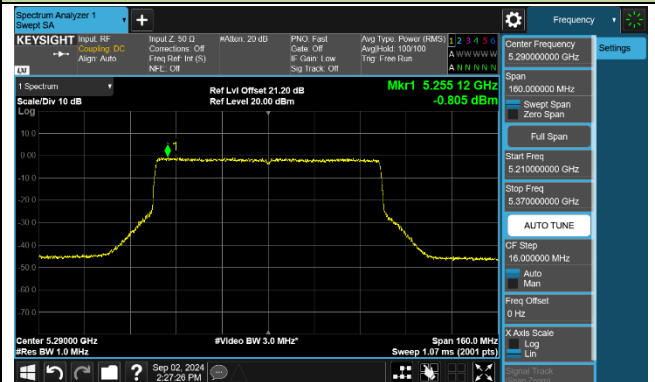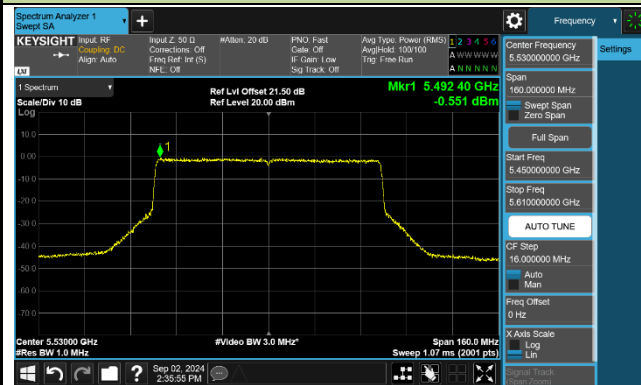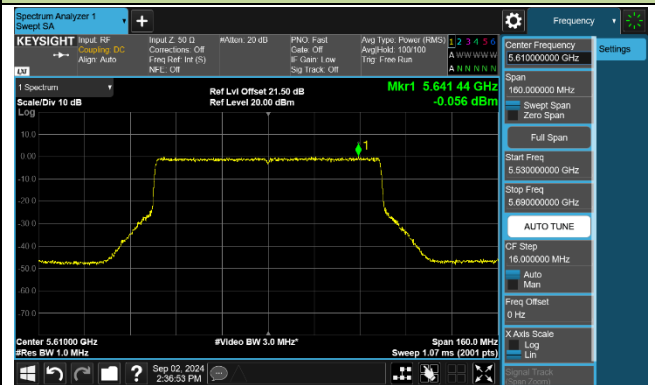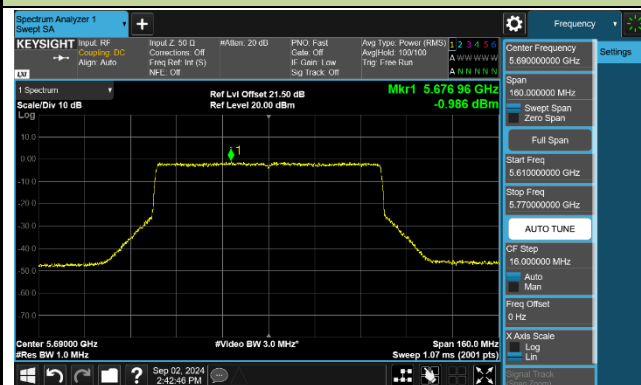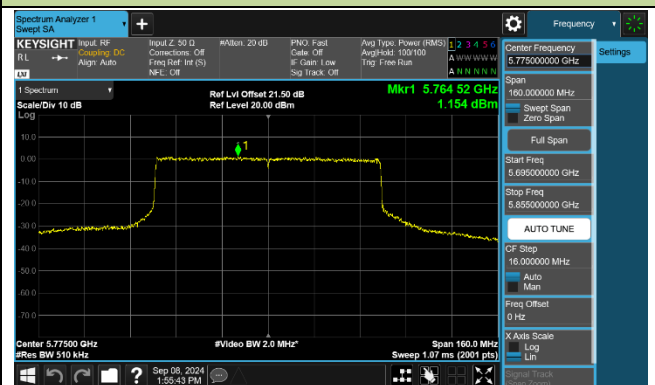### Channel 122 (5610MHz)
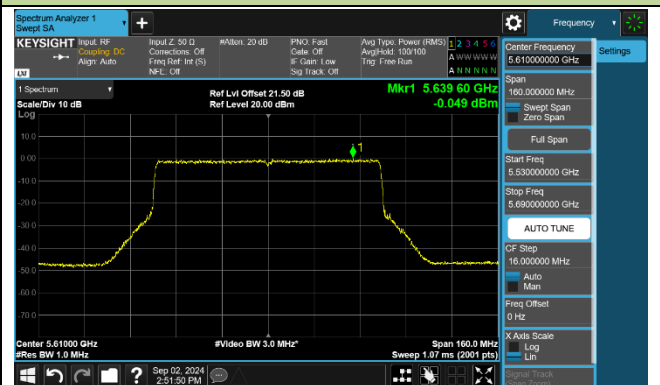
### Channel 138 (5690MHz)
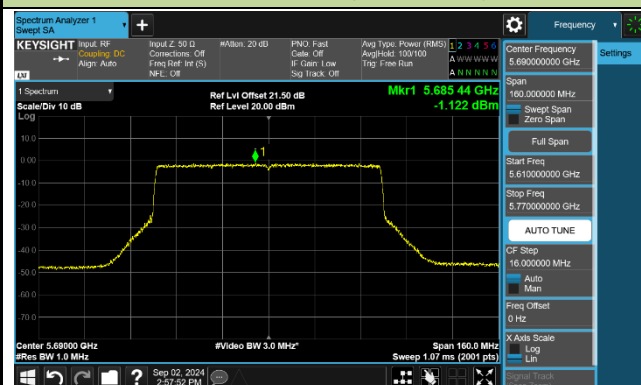
Channel 155 (5775MHz)
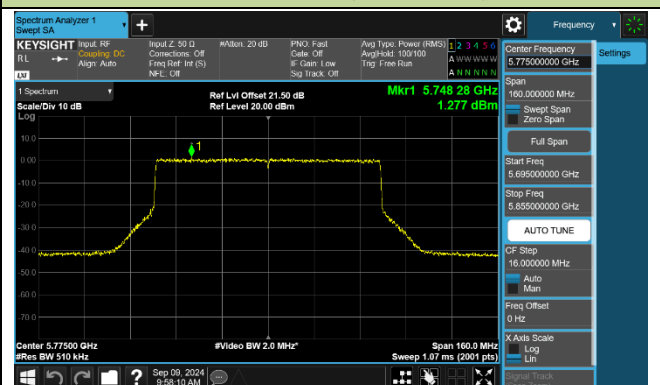
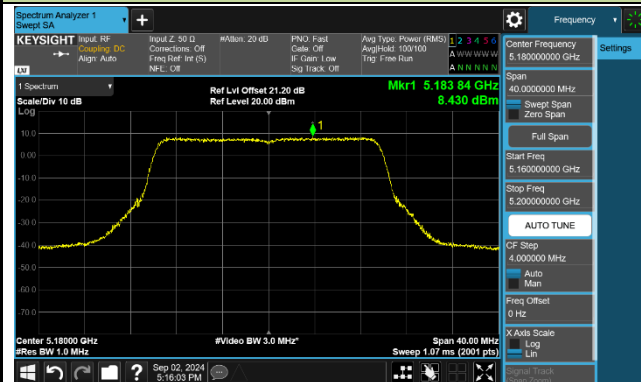## 802.11be-EHT160 Power Spectral Density - Ant 3

Channel 50 (5250MHz)
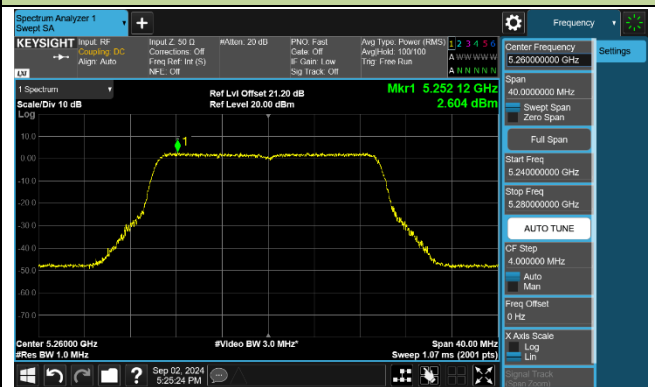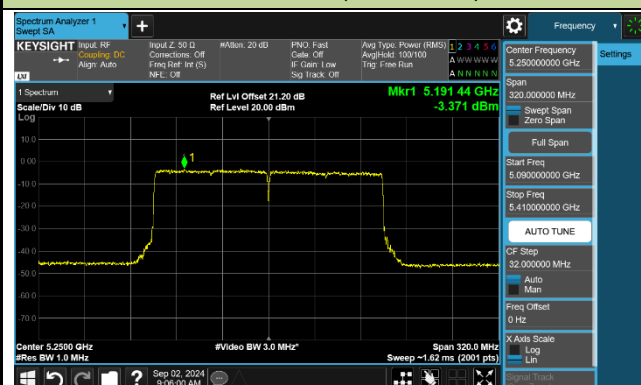

Channel 114 (5570MHz)
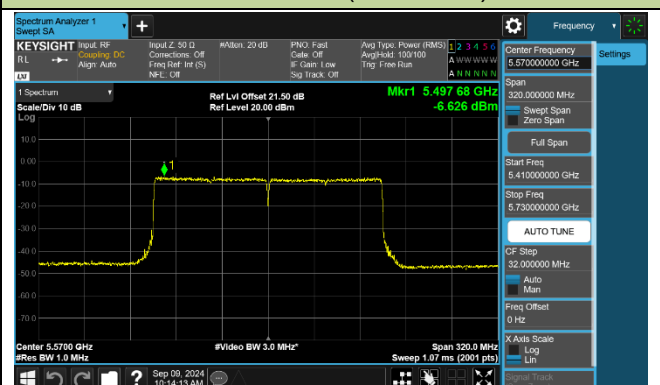
7.7. Frequency Stability Measurement

7.7.1.Test Limit

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

7.7.2.Test Limit

Frequency Stability Under Temperature Variations:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to highest. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, recordthe maximum frequency change.

7.7.3.Test Setup
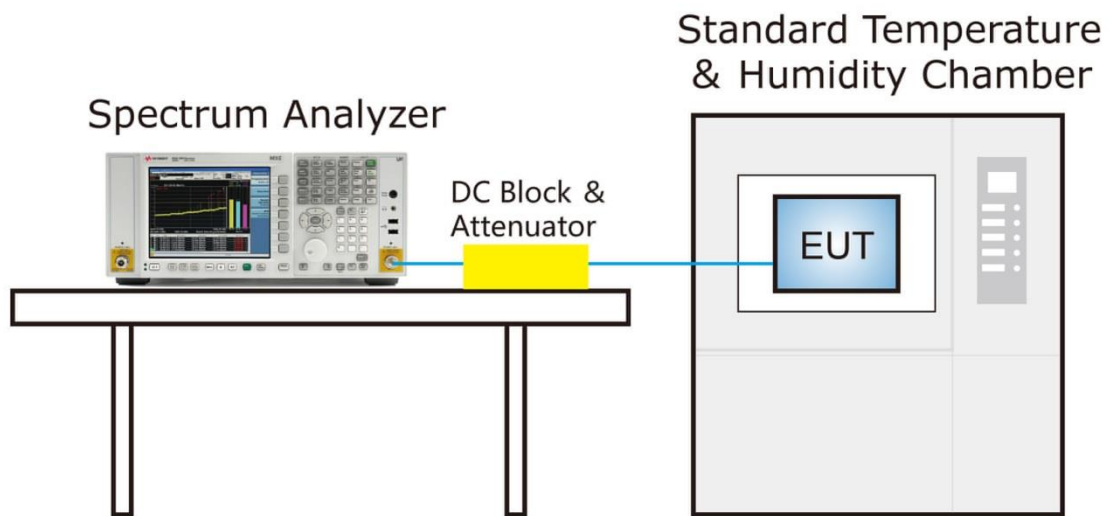
7.7.4.Test Result

Grantee ensure that the product meets e-CFR Title 47 section 15.407(g) and KDB 789033 D02v02r01 frequency stability such that the emissions are maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

7.8. Radiated Spurious Emission Measurement

7.8.1.Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title

47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

7.8.2.Test Procedure Used

KDB 789033 D02v02r01- Section G

7.8.3.Test Setting

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
>1000 MHz	1 MHz

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. Span was set greater than 1MHz

3. RBW = as specified in Table 1

4. Detector = CISPR quasi-peak

5. Sweep time = auto couple

6. Trace was allowed to stabilize

Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. RBW = 1MHz

3. VBW = 3MHz

4. Detector = peak

5. Sweep time = auto couple

6. Trace mode = max hold

7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. RBW = 1MHz

3. VBW;If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10 Hz.

If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration.

4. Detector = Peak

5. Sweep time = auto

6. Trace mode = max hold

7. Trace was allowed to stabilize

7.8.4. Test Setup

Below 1GHz Test Setup:
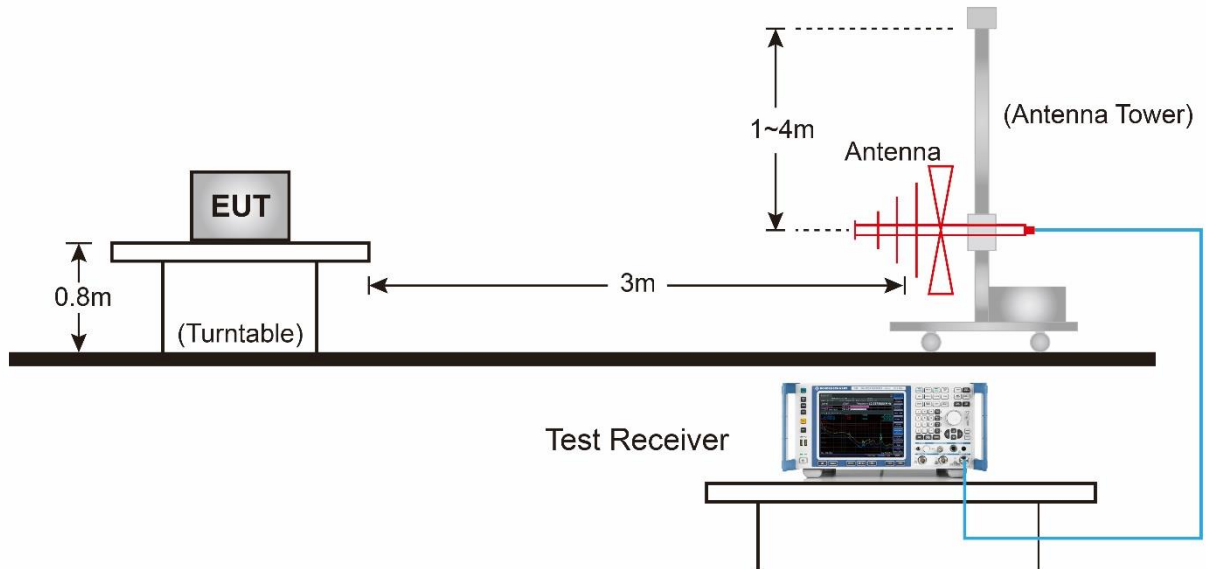
Above 1GHz Test Setup:
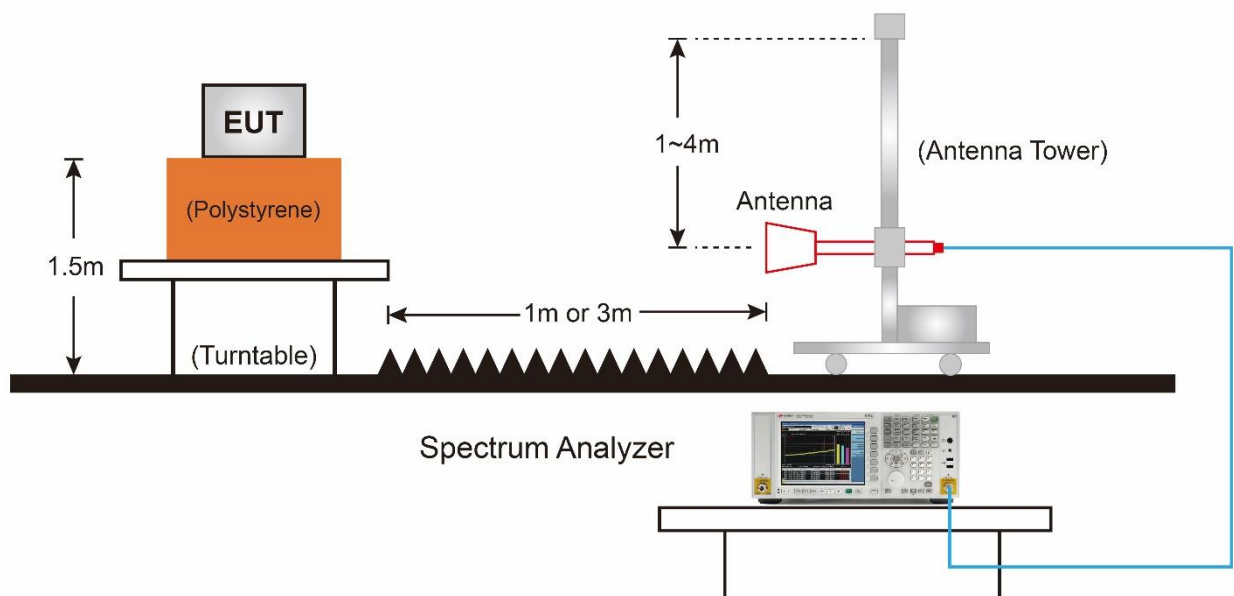
7.8.5.Test Result

EUT	BE19000 Tri-Band Wi-Fi 7 Router	Date of Test	2024-09-02
Factor	VULB 9162	Temp. / Humidity	23°C /62%
Polarity	Horizontal	Site / Test Engineer	AC2 / Marvin
Test Mode	802.11ac-20MHz_TX_Band1_CH 40_ANT 0+1+2+3	Test Voltage	AC 120V/60Hz
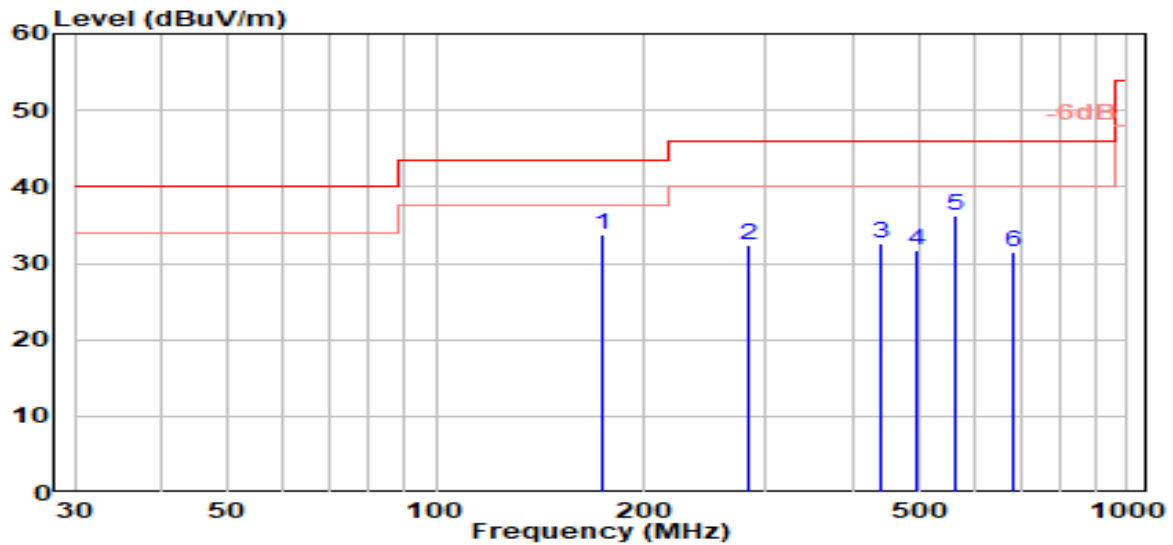
No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	174.640	17.68	16.07	33.74	-9.76	43.50	200	291	QP
2		282.080	12.27	20.19	32.46	-13.54	46.00	100	326	QP
3		441.960	8.91	23.74	32.65	-13.35	46.00	200	308	QP
4		497.510	6.70	24.95	31.65	-14.35	46.00	200	158	QP
5		565.980	10.03	26.16	36.19	-9.81	46.00	200	182	QP
6		685.650	3.58	27.83	31.41	-14.59	46.00	100	122	QP

Note:

1. " *", means this data is the worst emission level.

2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB).

3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).

4. The emission levels of other frequencies are very lower than the limit and not show in test report.

5. The amplitude of radiated emissions (frequency range from 9kHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20dB below the permissible value. Therefore, the data is not presented in the report.

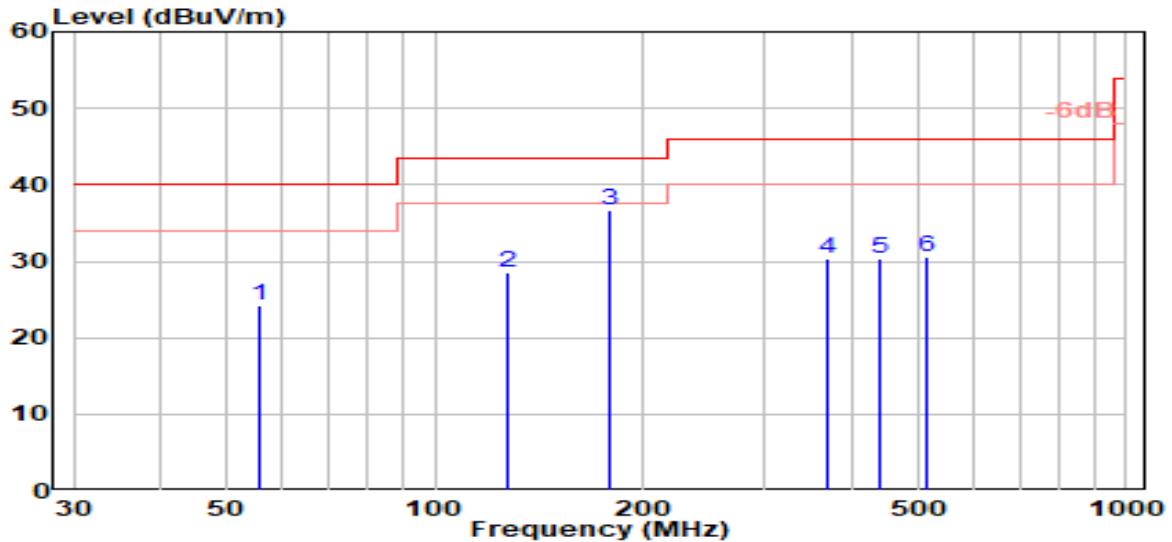| EUT	BE19000 Tri-Band Wi-Fi 7 Router	Date of Test	2024-09-02
Factor	VULB 9162	Temp. / Humidity	23°C /62%
Polarity	Vertical	Site / Test Engineer	AC2 / Marvin
Test Mode	802.11ac-20MHz_TX_Band1_CH 40_ANT 0+1+2+3	Test Voltage	AC 120V/60Hz

No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1		55.690	4.58	19.76	24.33	-15.67	40.00	100	198	QP
2		126.840	12.78	15.79	28.57	-14.93	43.50	100	275	QP
3	*	179.640	20.35	16.34	36.69	-6.81	43.50	100	144	QP
4		368.490	7.60	22.78	30.38	-15.62	46.00	100	13	QP
5		442.000	6.57	23.74	30.31	-15.69	46.00	100	262	QP
6		513.290	5.41	25.21	30.62	-15.38	46.00	100	130	QP

Note:

1. " *", means this data is the worst emission level.

2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB).

3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).

4. The emission levels of other frequencies are very lower than the limit and not show in test report.

5. The amplitude of radiated emissions (frequency range from 9kHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20dB below the permissible value. Therefore, the data is not presented in the report.

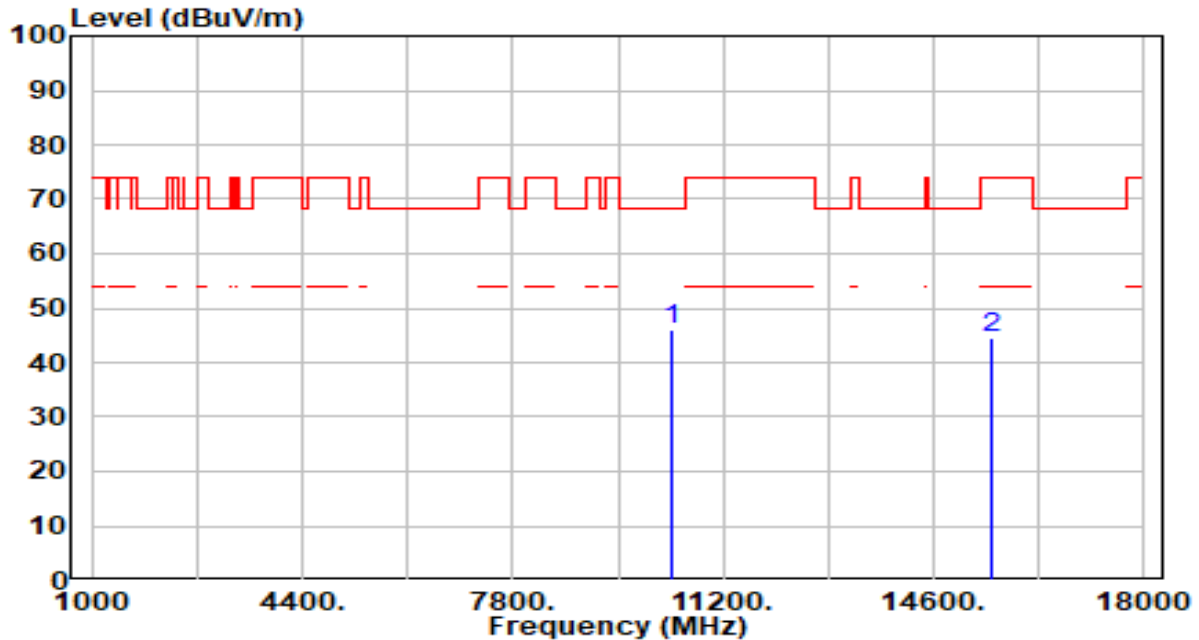| EUT	BE19000 Tri-Band Wi-Fi 7 Router	Date of Test	2024-09-05
Factor	DRH18-E	Temp. / Humidity	23°C /62%
Polarity	Horizontal	Site / Test Engineer	AC2 / Stanley
Test Mode	802.11a_TX_Band1_CH 36_ANT 0+1+2+3	Test Voltage	AC 120V/60Hz

No		Frequency (MHz)	Reading (dBuV)	C.F (dB/m)	Measurement (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Height (cm)	Angle (deg)	Remark (QP/PK/AV)
1	*	10360.000	41.19	4.81	46.00	-22.20	68.20	100	135	Peak
2		15540.000	38.41	6.28	44.70	-29.30	74.00	300	238	Peak

Note:

1. " *", means this data is the worst emission level.

2. C.F (Correction Factor) = Antenna Factor (dB/m)+ Cable Loss (dB) – Preamplifier(dB).

3. Measurement (dBuV/m) = Reading(dBuV) + C.F (Correction Factor).

4. The emission levels of other frequencies are very lower than the limit and not show in test report.