

Operation Band MHz = [5150, 5250]

Active Port = 3

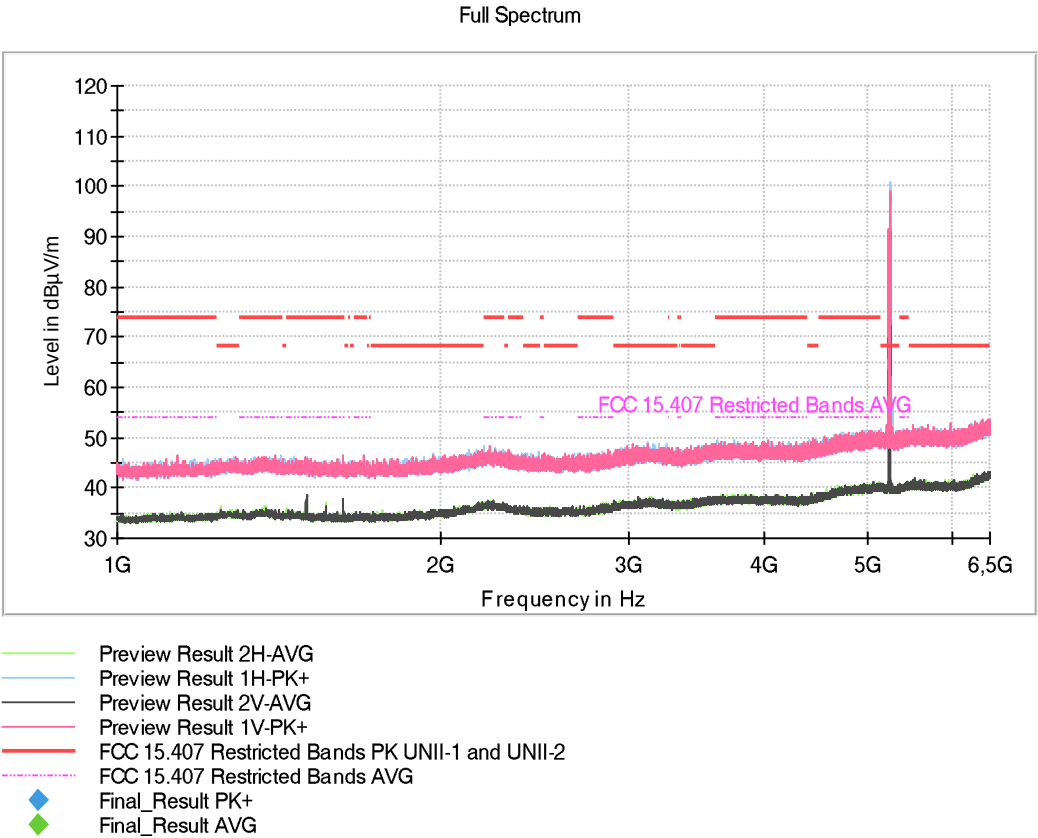
Frequency Range GHz = [1, 6.5]

Frequency MHz = 5240.00000

Modulation = 802.11ax HE20 (OFDMA MCS0) RU26

Antenna Configuration = SISO

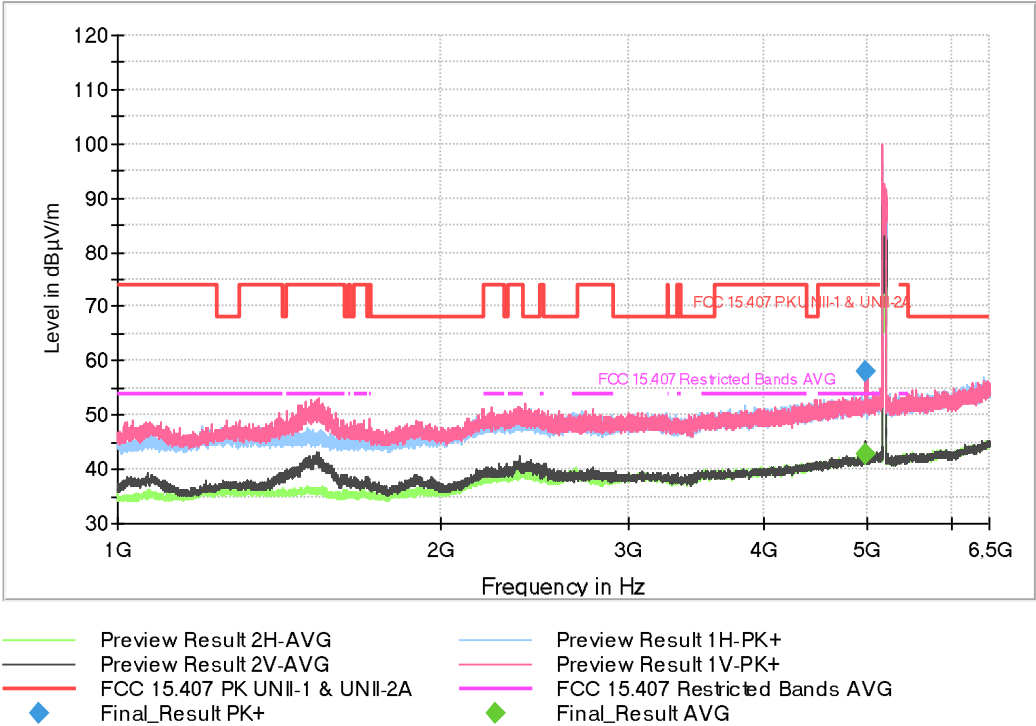
Images:



Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5190.00000
Modulation = 802.11ax HE40 (OFDMA MCS0) RU26 Antenna Configuration = SISO

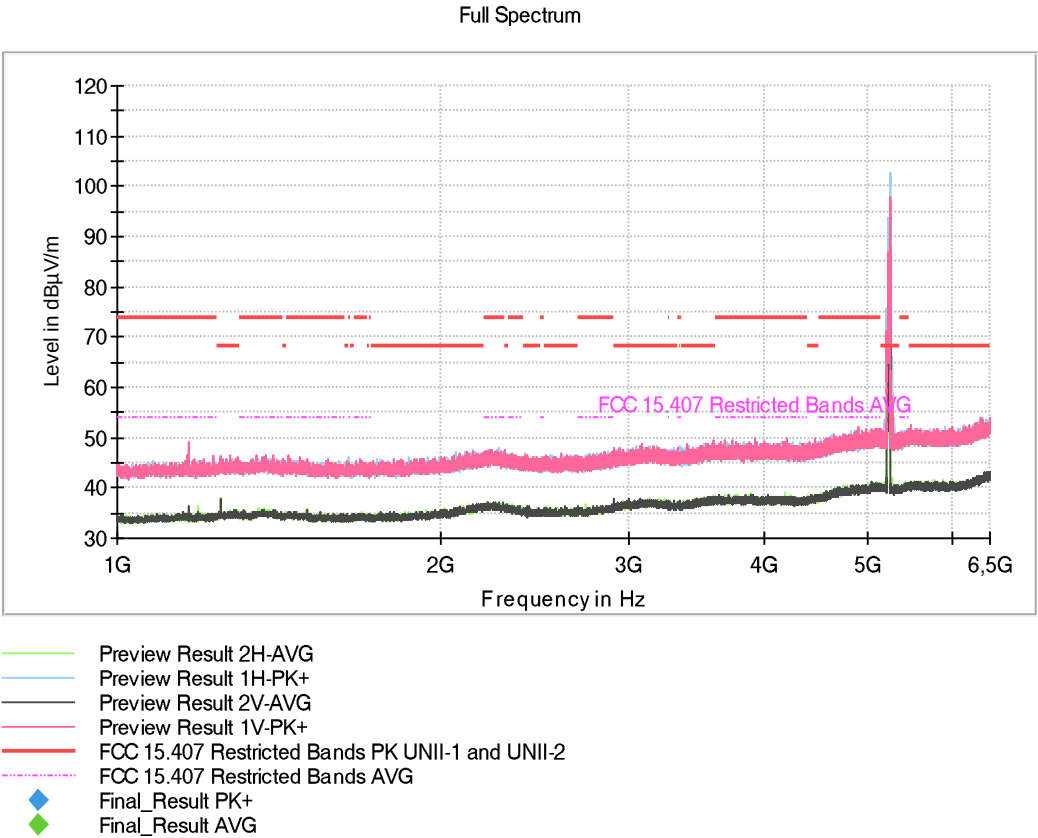
Images:

Full Spectrum



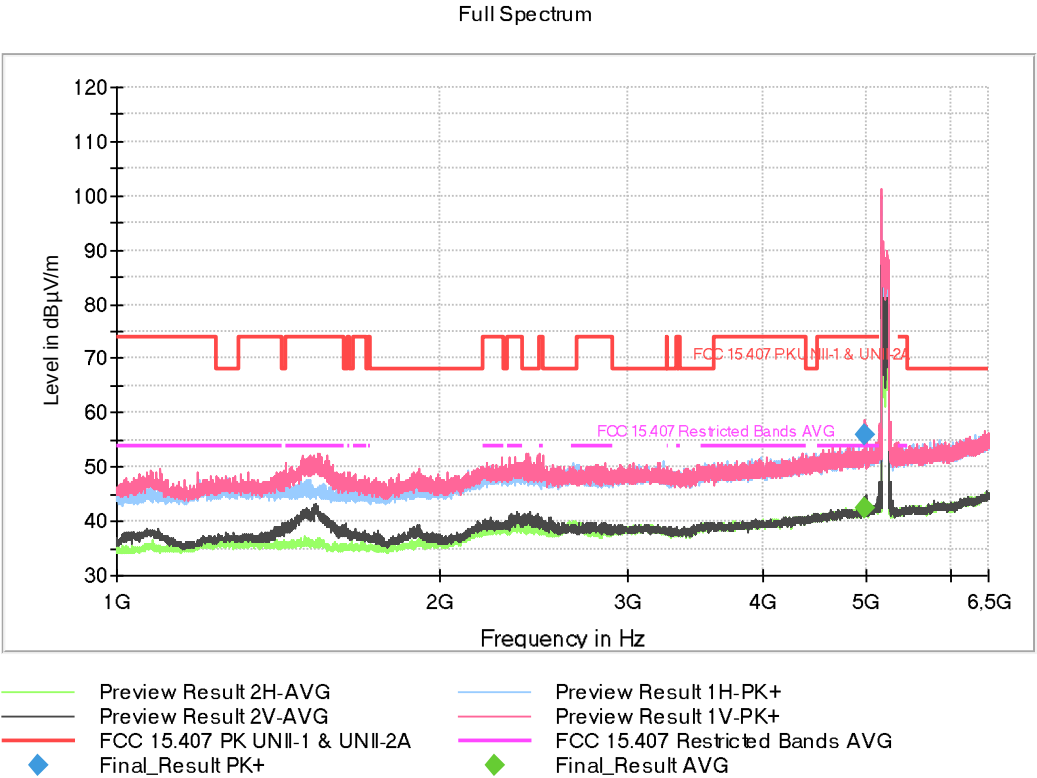
Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ax HE40 (OFDMA MCS0) RU26 Antenna Configuration = SISO

Images:



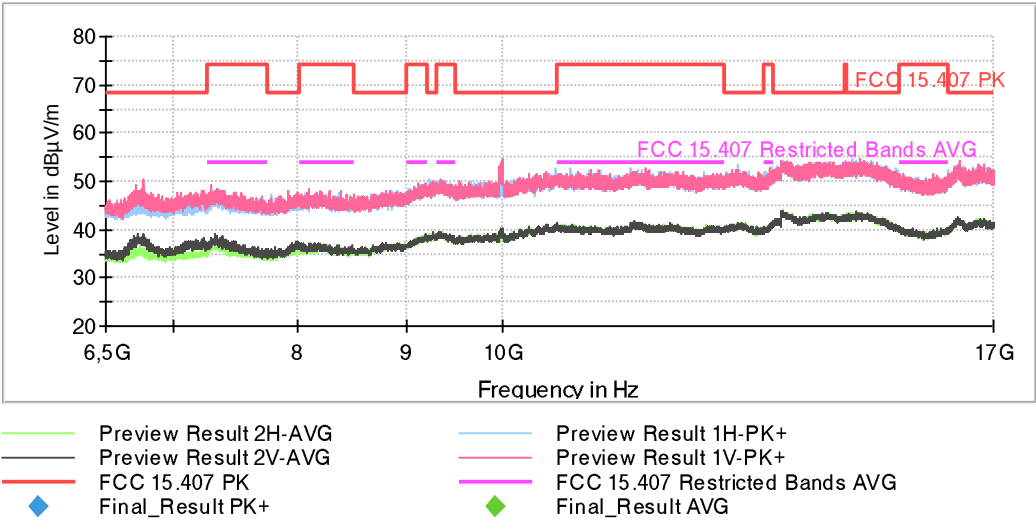
Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5210.00000
Modulation = 802.11ax HE80 (OFDMA MCS0) RU26 Antenna Configuration = SISO

Images:



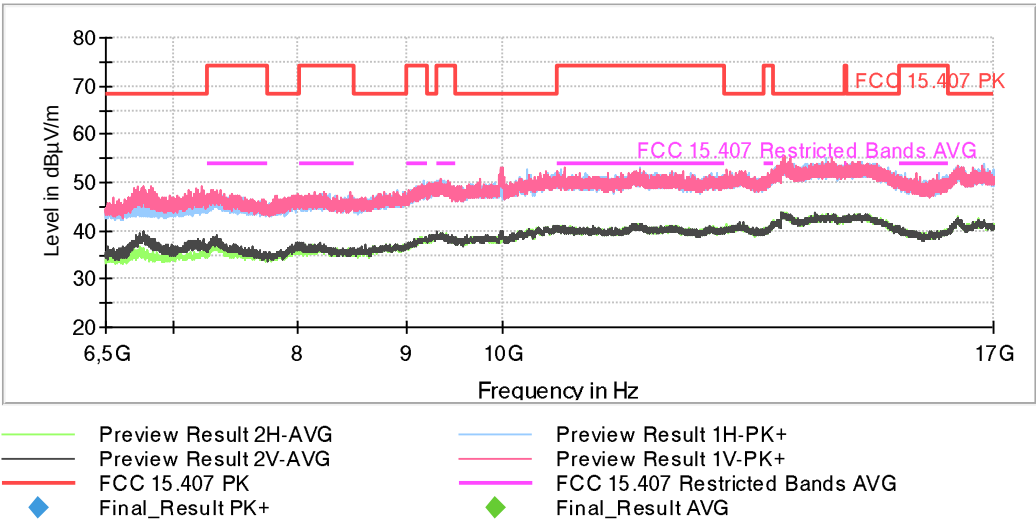
Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [6.5, 17] Frequency MHz = 5180.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) RU26 Antenna Configuration = SISO

Images:



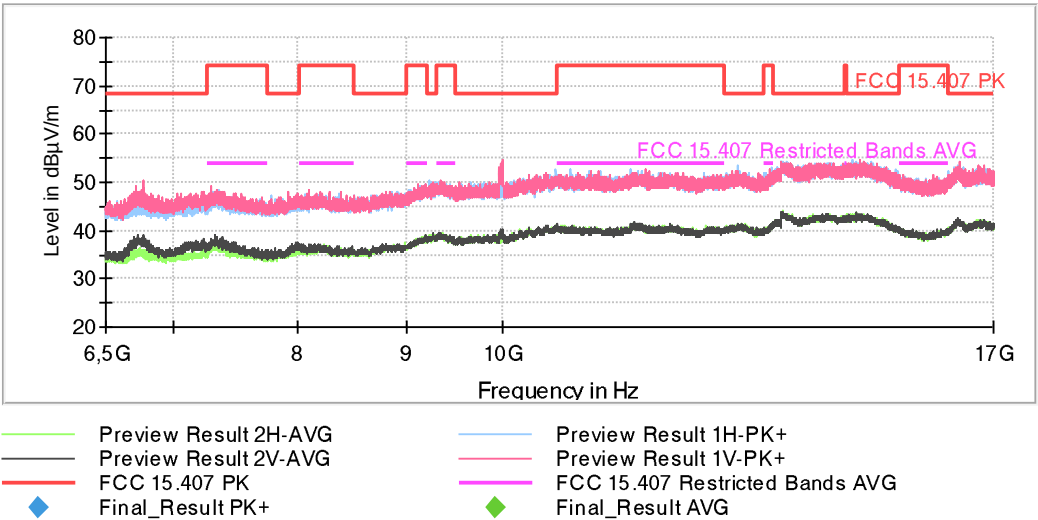
Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [6.5, 17] Frequency MHz = 5220.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) RU26 Antenna Configuration = SISO

Images:



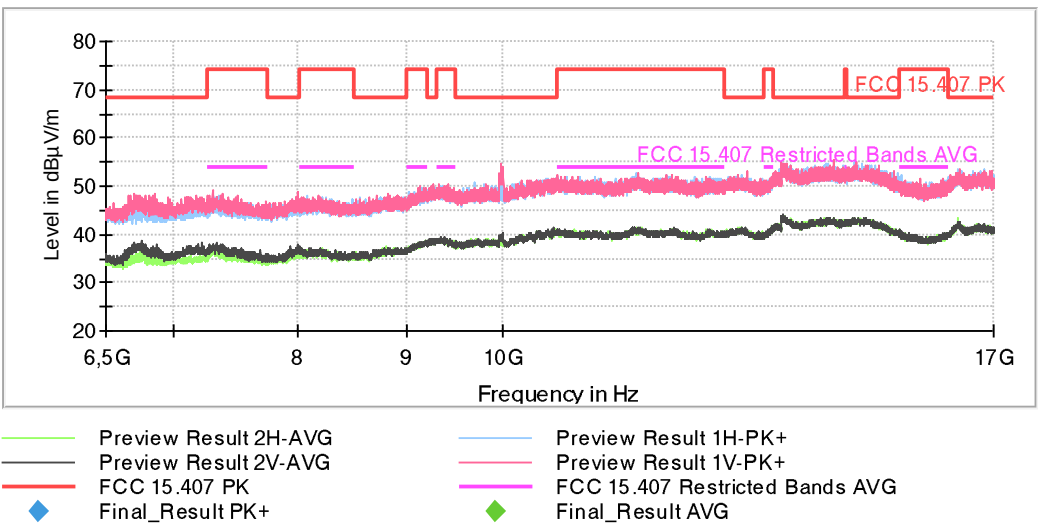
Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [6.5, 17] Frequency MHz = 5240.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) RU26 Antenna Configuration = SISO

Images:



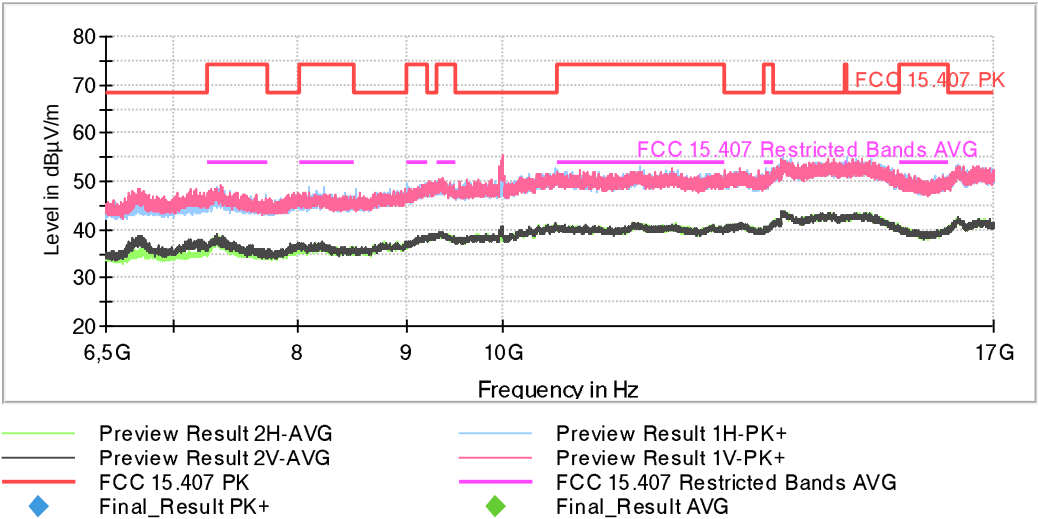
Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [6.5, 17] Frequency MHz = 5190.00000
Modulation = 802.11ax HE40 (OFDMA MCS0) RU26 Antenna Configuration = SISO

Images:



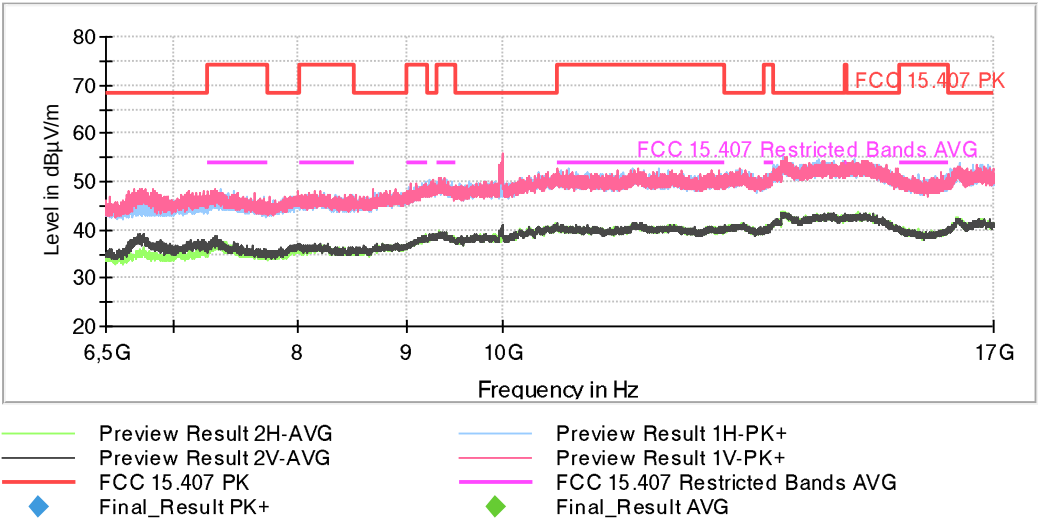
Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [6.5, 17] Frequency MHz = 5230.00000
Modulation = 802.11ax HE40 (OFDMA MCS0) RU26 Antenna Configuration = SISO

Images:



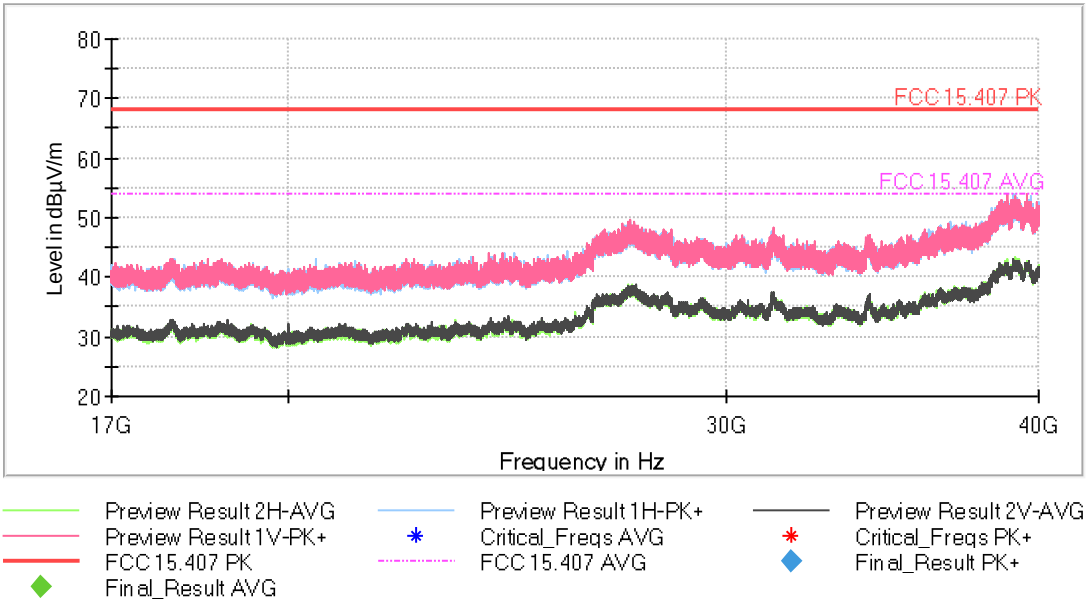
Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [6.5, 17] Frequency MHz = 5210.00000
Modulation = 802.11ax HE80 (OFDMA MCS0) RU26 Antenna Configuration = SISO

Images:



FREQUENCY RANGE 17 - 40 GHz:

This plot is valid for Low, Middle and High Channels.



MIMO (Port 3 + Port 2)

Results

Modulation: 802.11ax HE20 (OFDMA MCS0) RU26

Operation Band (MHz)	Port	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[5150, 5250]	3+2	[1, 6.5]	5180.00000	4993.825	57.79	V	PK
					49.46	V	AVG

Modulation: 802.11ax HE40 (OFDMA MCS0) RU26

Operation Band (MHz)	Port	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[5150, 5250]	3+2	[1, 6.5]	5190.00000	5125.2000	54.79	H	PK
					45.02	H	AVG
				5134.2000	62.60	H	PK
					46.42	H	AVG
				5141.2000	63.92	H	PK
					47.46	H	AVG
				5144.4000	63.22	H	PK
					46.66	H	AVG
				5150.0000	65.79	H	PK
					47.03	H	AVG

Modulation: 802.11ax HE80 (OFDMA MCS0) RU26

Operation Band (MHz)	Port	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[5150, 5250]	3+2	[1, 6.5]	5210.00000	4980.3500	58.52	V	PK
					43.12	V	AVG

Verdict

Pass

Attachments

The measurement settings for each range of frequency is as follows:

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 1 GHz - 6,5 GHz	100 kHz	PK+ ; AVG	1 MHz	1 s	0 dB
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 6,5 GHz - 17 GHz	105 kHz	PK+ ; AVG	1 MHz	1 s	30 dB
Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [ESW 44] 17 GHz - 40 GHz	766,667 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

Operation Band MHz = [5150, 5250]

Active Port = 3+2

Frequency Range GHz = [1, 6.5]

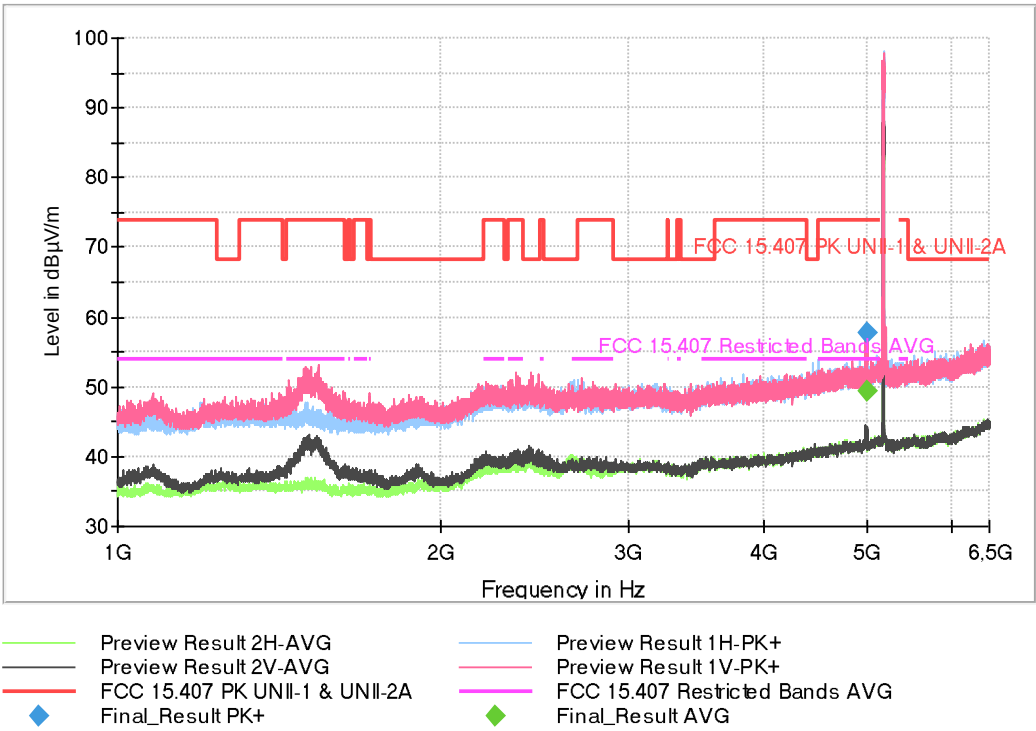
Frequency MHz = 5180.00000

Modulation = 802.11ax HE20 (OFDMA MCS0) RU26

Antenna Configuration = MIMO

Images:

Full Spectrum



Operation Band MHz = [5150, 5250]

Active Port = 3+2

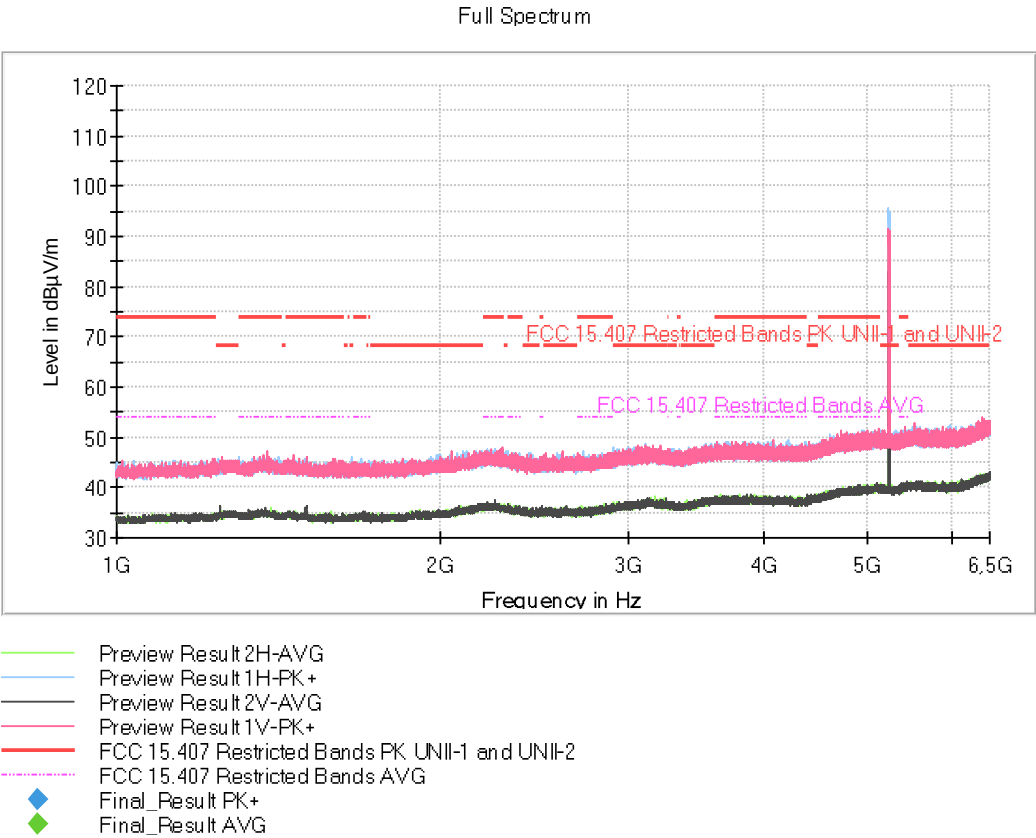
Frequency Range GHz = [1, 6.5]

Frequency MHz = 5220.00000

Modulation = 802.11ax HE20 (OFDMA MCS0) RU26

Antenna Configuration = MIMO

Images:



Operation Band MHz = [5150, 5250]

Active Port = 3+2

Frequency Range GHz = [1, 6.5]

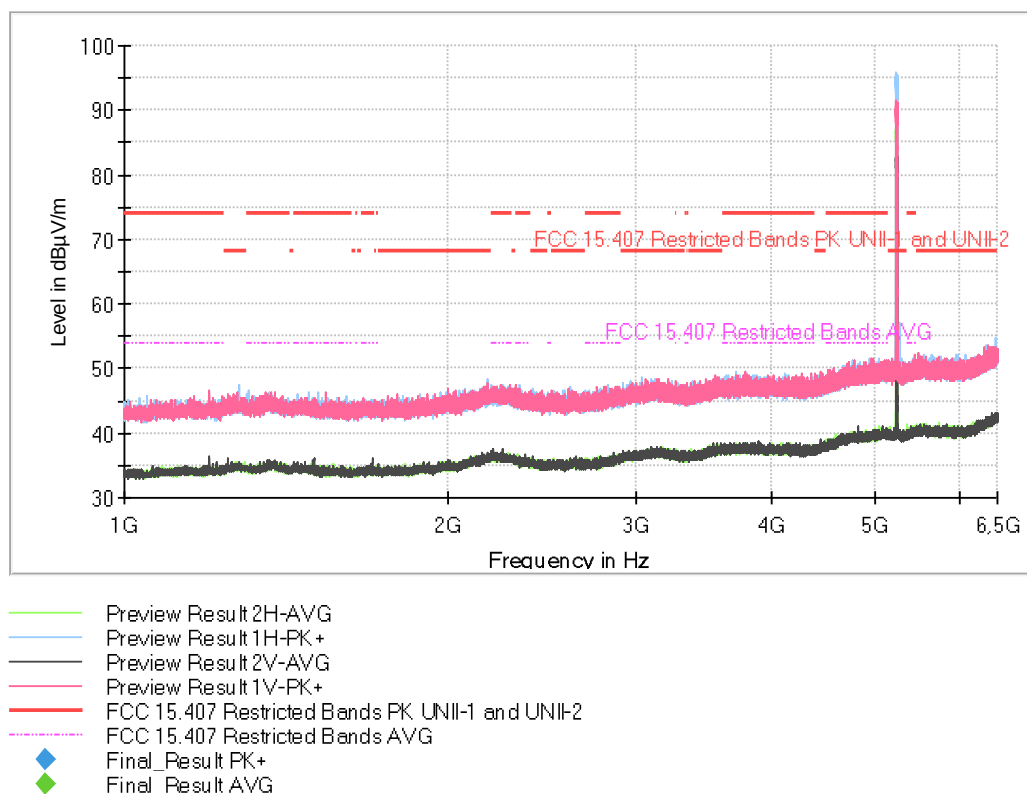
Frequency MHz = 5240.00000

Modulation = 802.11ax HE20 (OFDMA MCS0) RU26

Antenna Configuration = MIMO

Images:

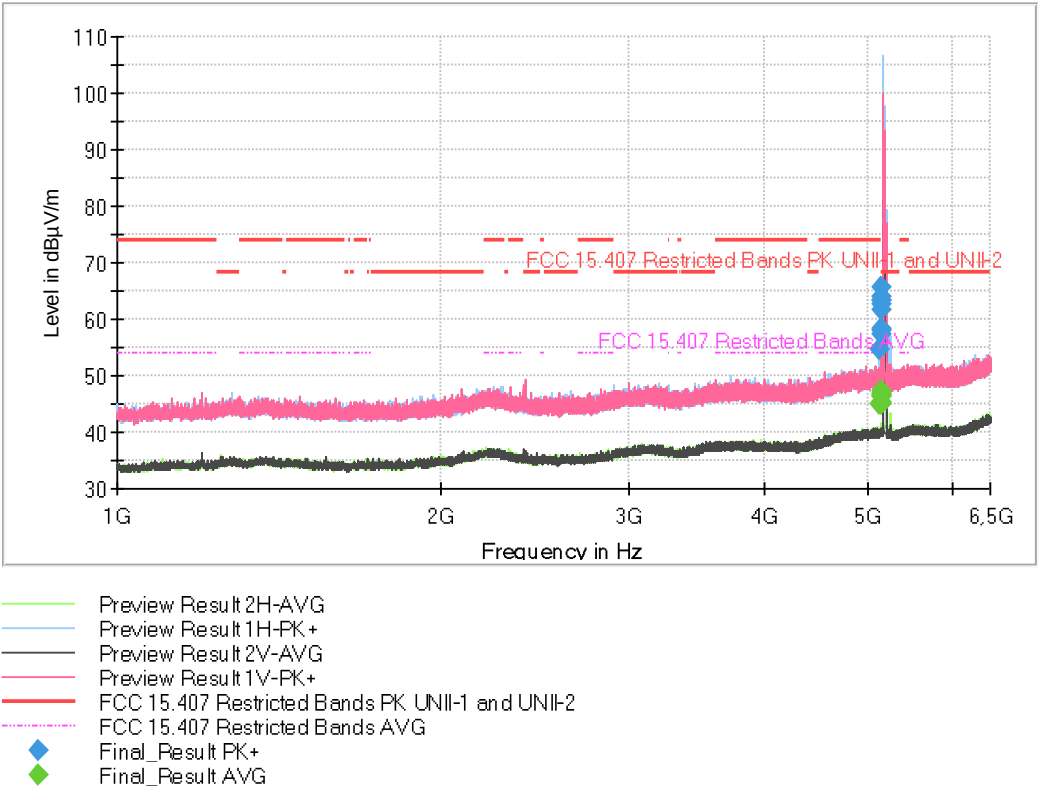
Full Spectrum



Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5190.00000
Modulation = 802.11ax HE40 (OFDMA MCS0) RU26 Antenna Configuration = MIMO

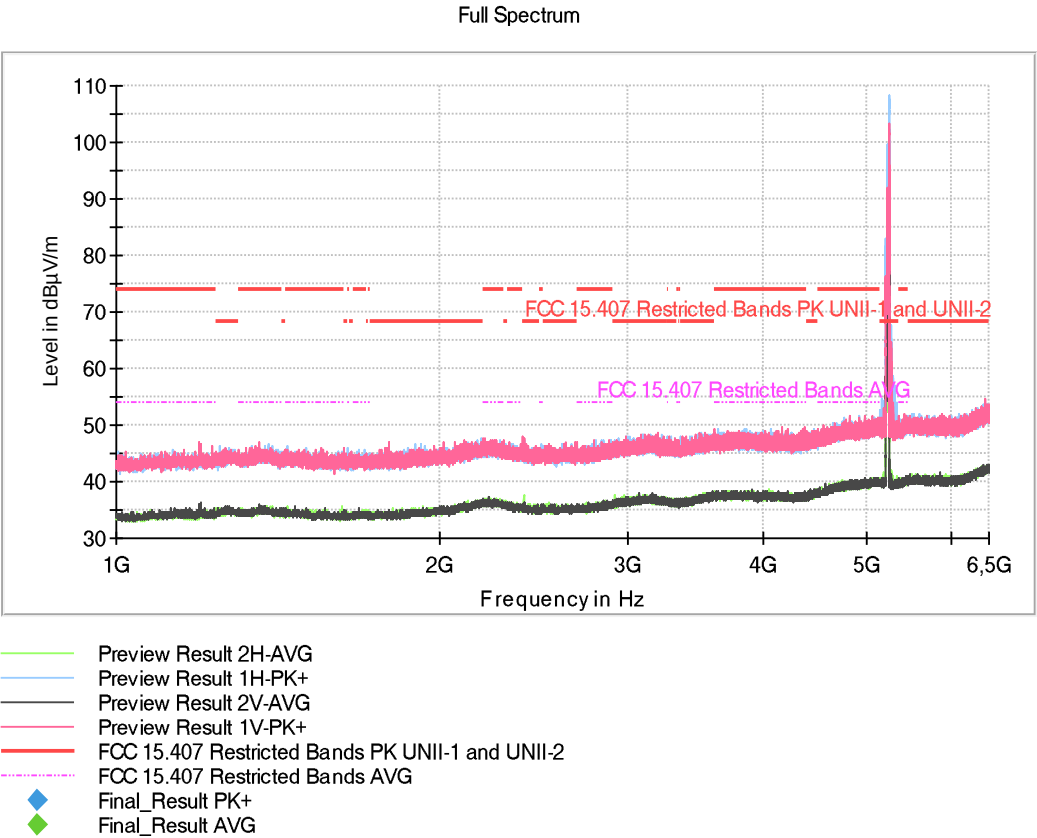
Images:

Full Spectrum



Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ax HE40 (OFDMA MCS0) RU26 Antenna Configuration = MIMO

Images:



Operation Band MHz = [5150, 5250]

Active Port = 3+2

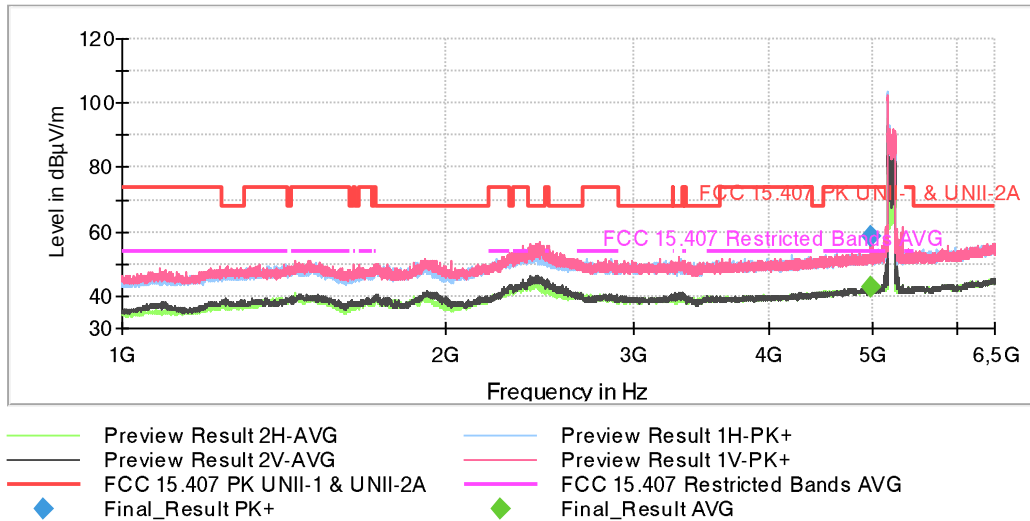
Frequency Range GHz = [1, 6.5]

Frequency MHz = 5210.00000

Modulation = 802.11ax HE80 (OFDMA MCS0) RU26

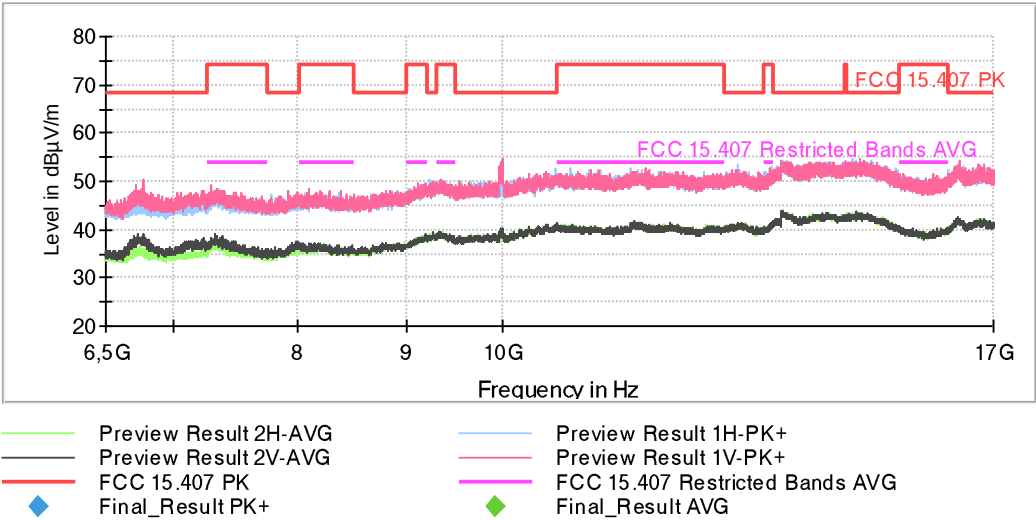
Antenna Configuration = MIMO

Images:



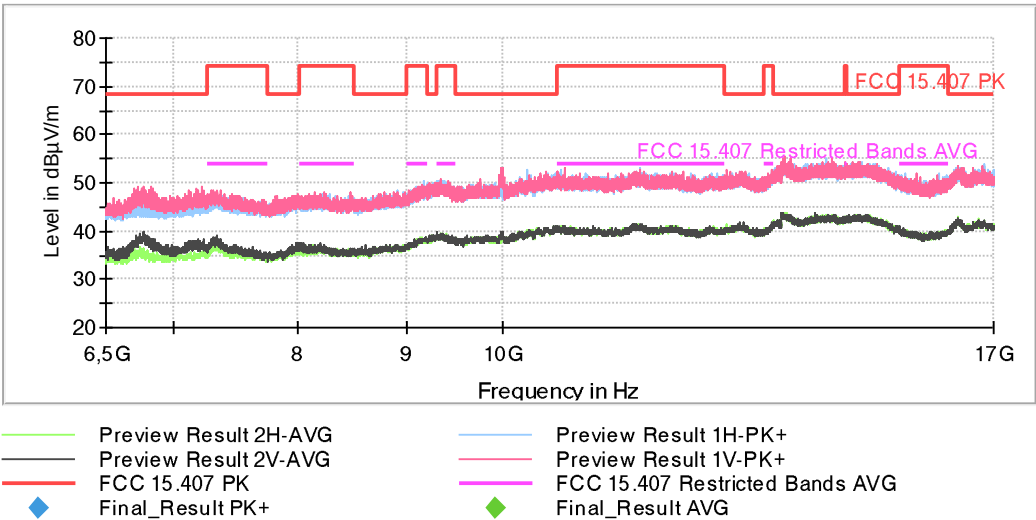
Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [6.5, 17] Frequency MHz = 5180.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) RU26 Antenna Configuration = MIMO

Images:



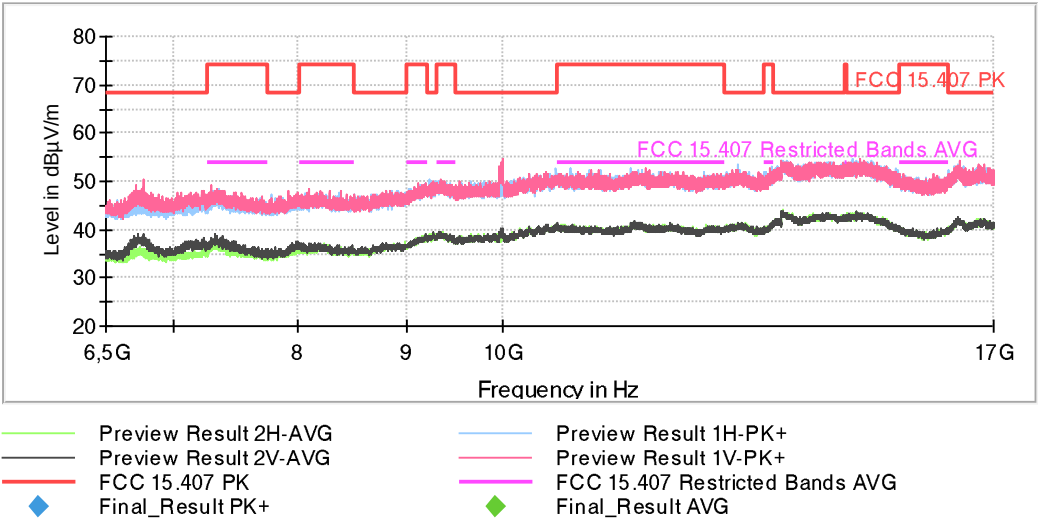
Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [6.5, 17] Frequency MHz = 5220.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) RU26 Antenna Configuration = MIMO

Images:



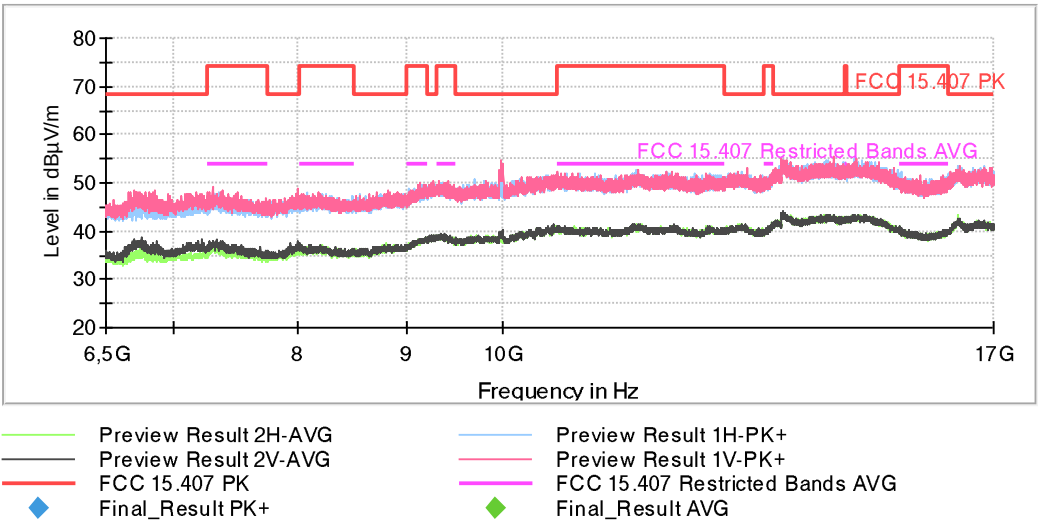
Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [6.5, 17] Frequency MHz = 5240.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) RU26 Antenna Configuration = MIMO

Images:



Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [6.5, 17] Frequency MHz = 5190.00000
Modulation = 802.11ax HE40 (OFDMA MCS0) RU26 Antenna Configuration = MIMO

Images:



Operation Band MHz = [5150, 5250]

Frequency Range GHz = [6.5, 17]

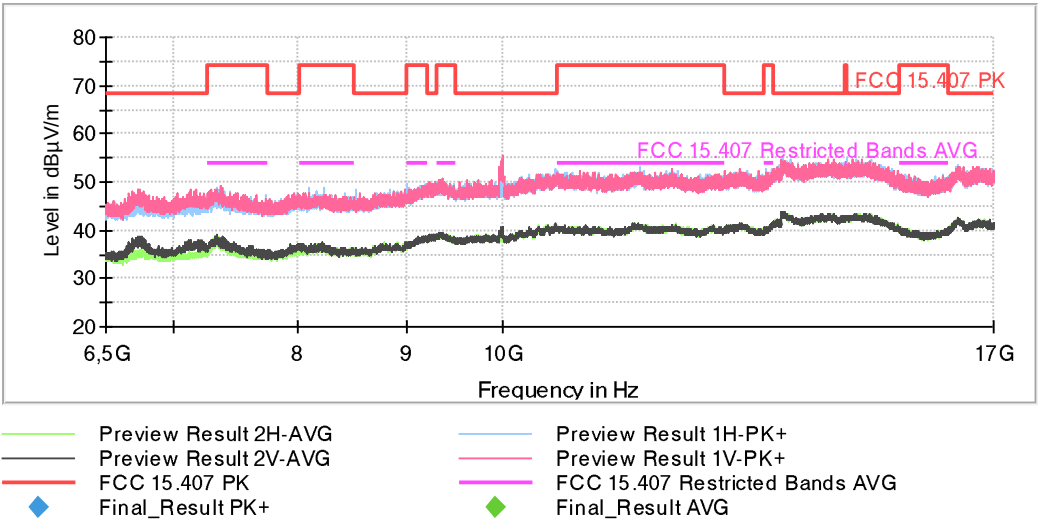
Modulation = 802.11ax HE40 (OFDMA MCS0) RU26

Active Port = 3+2

Frequency MHz = 5230.00000

Antenna Configuration = MIMO

Images:



Operation Band MHz = [5150, 5250]

Frequency Range GHz = [6.5, 17]

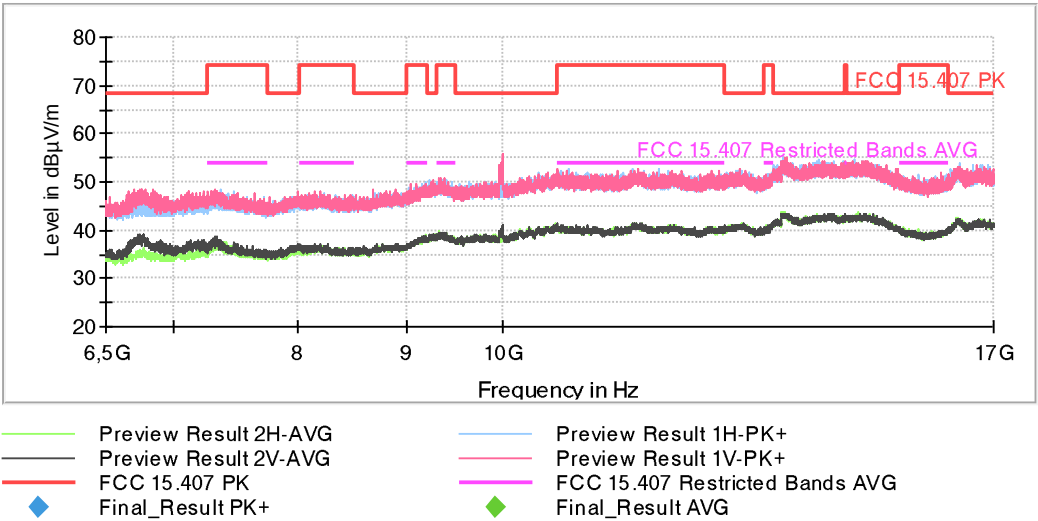
Modulation = 802.11ax HE80 (OFDMA MCS0) RU26

Active Port = 3+2

Frequency MHz = 5210.00000

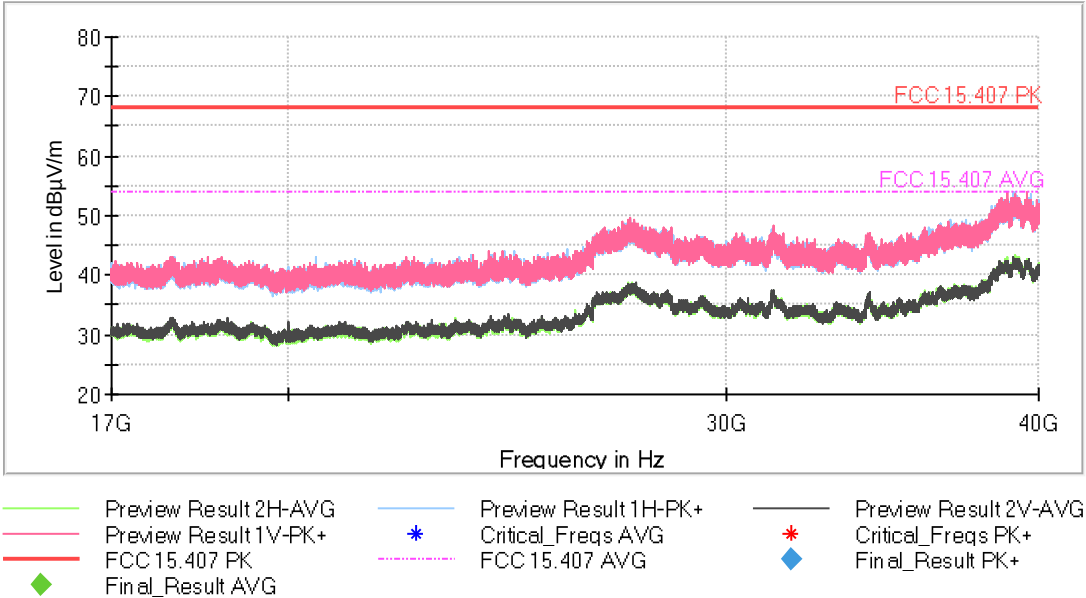
Antenna Configuration = MIMO

Images:



FREQUENCY RANGE 17 - 40 GHz:

This plot is valid for Low, Middle and High Channels.



FCC 15.407 (b)(1) Transmitter Band Edge Radiated Emissions.

Limits

For transmitters operating in the 5.15–5.25 GHz band: all emissions outside of the 5.15–5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.23 dBμV/m at 3 m distance).

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)):

Frequency Range (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705 - 30.0	30	-	30
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
960 - 40000	500	54	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table, specified when measuring with peak detector function.

Results

The field strength is calculated by adding correction factor to the measured level from the spectrum analyzer. This correction factor includes antenna factor, cable loss and pre-amplifiers gain.

Measurements were made in both horizontal and vertical planes of polarization.

All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27dBm/MHz. There are restricted bands of operation below band edge at 4.50-5.15 GHz also above the upper band edge at 5.35-5.46 GHz therefore the provisions of FCC Part 15.205 apply.

Field strength measurements using peak detector performed in the restricted bands below 5.15 GHz and above 5.35 GHz.

Spurious frequencies with peak levels above the average limit (54 dBμV/m at 3 m) are measured with an average detector for checking compliance with the average limit.

Test performed on all the supported modes of the EUT, in the worst data rates after preliminary testing.

BAND EDGE EMISSIONS: For U-NII-1 band edge spurious emissions inside of the Restricted Bands 4.50-5.15 GHz and 5.35-5.46 GHz.

The Lower Band Edge Channel and the Upper Band Edge Channel were tested for all modes.

Spectrum analyser:

Subrange	Step Size	Detectors	Bandwidth	Sweep Time	Preamp
Receiver: [FSW 50] 1 GHz - 6,5 GHz	100 kHz	PK+ ; AVG	1 MHz	1 s	0 dB

SISO (Port 3) (worst-case)

Modulation: 802.11a (OFDM 6 Mbit/s)

No spurious emissions were detected at less than 20 dB from the limit.

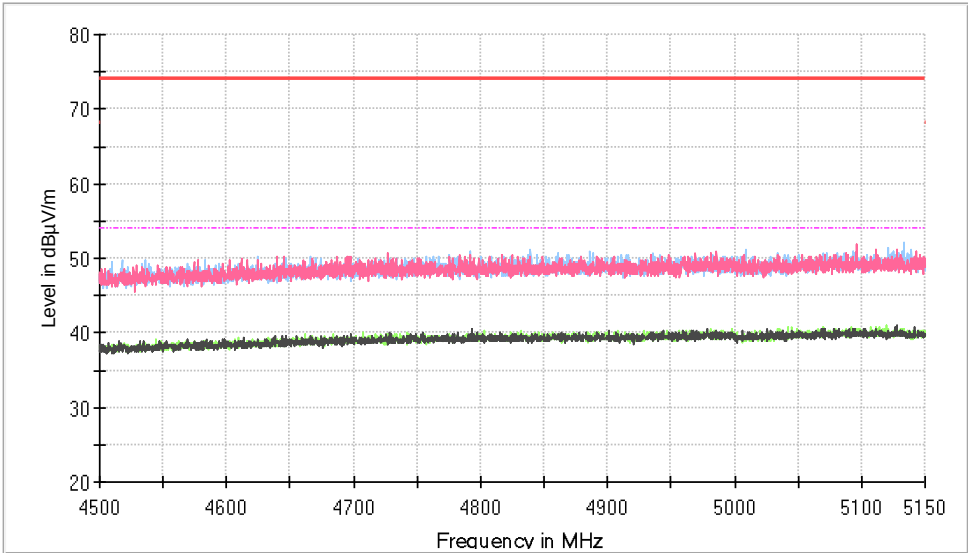
Verdict

Pass

Attachments

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5180.00000
Modulation = 802.11a (OFDM 6 Mbit/s) Antenna Configuration = SISO

Images:



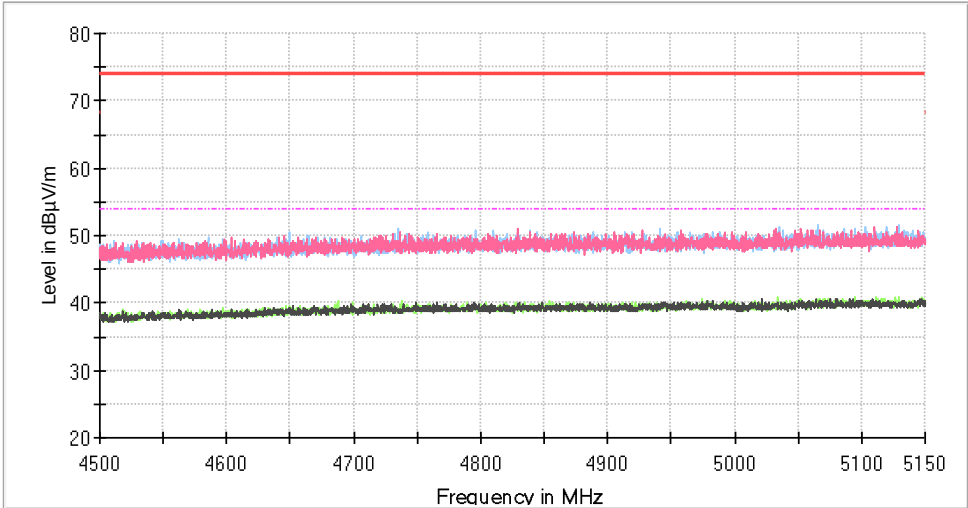
- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



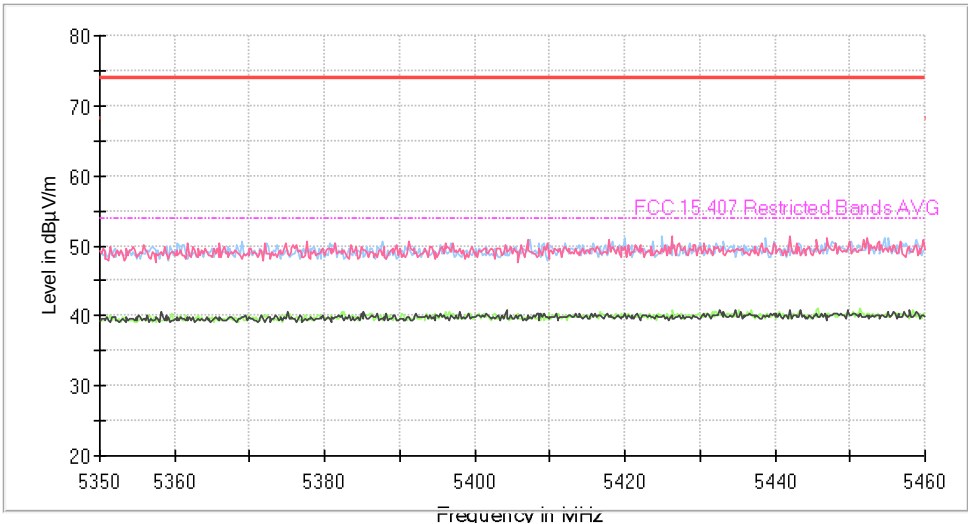
- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11a (OFDM 6 Mbit/s) Antenna Configuration = SISO

Images:



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical Freqs AVG
- Critical Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final Result PK+
- Final Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical Freqs AVG
- Critical Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final Result PK+
- Final Result AVG

Modulation: 802.11n HT20 (OFDM MCS0)

No spurious emissions were detected at less than 20 dB from the limit.

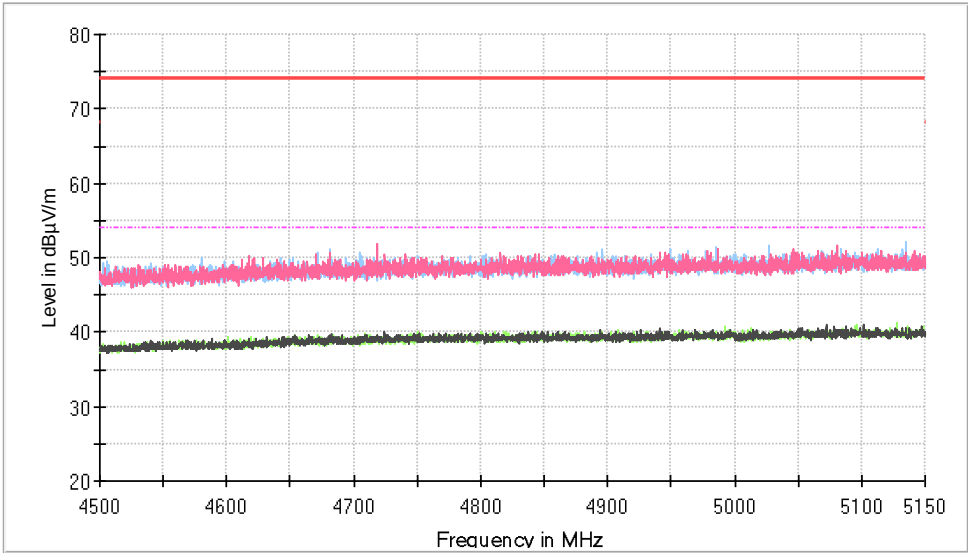
Verdict

Pass

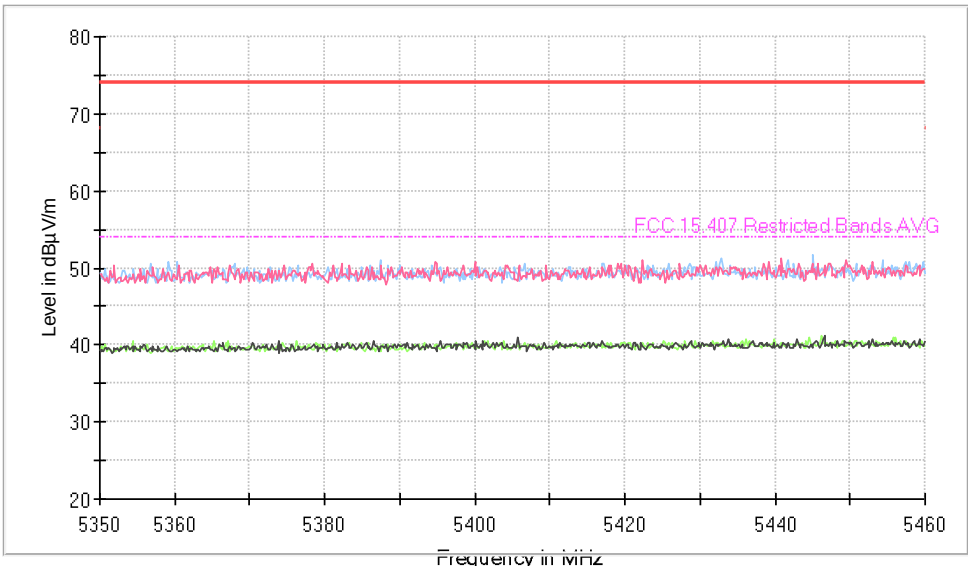
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5180.00000
Modulation = 802.11n HT20 (OFDM MCS0) Antenna Configuration = SISO

Images:



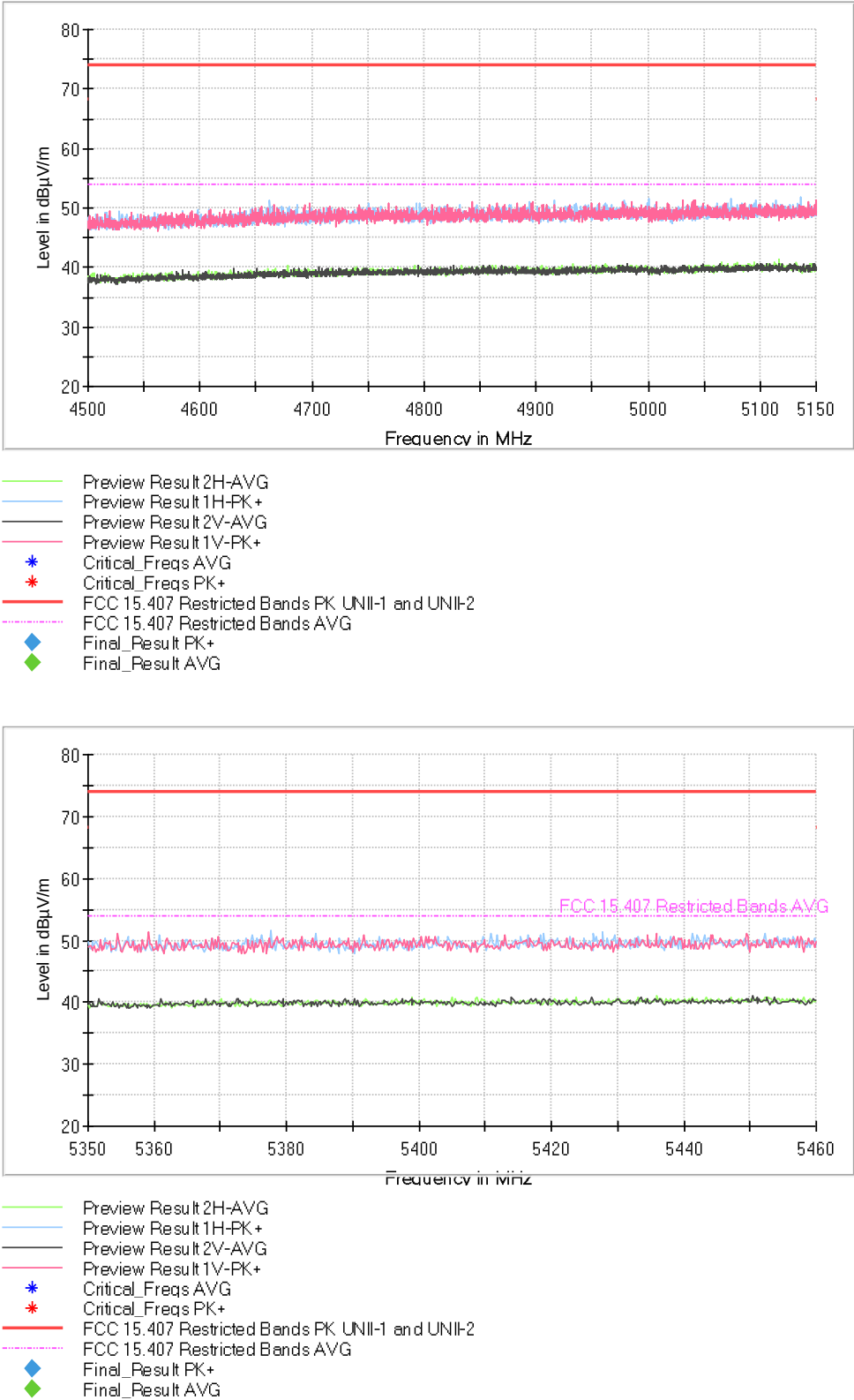
- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final Result PK+
- Final Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final Result PK+
- Final Result AVG

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11n HT20 (OFDM MCS0) Antenna Configuration = SISO

Images:



Modulation: 802.11ac VHT20 (OFDM MCS0)

No spurious emissions were detected at less than 20 dB from the limit.

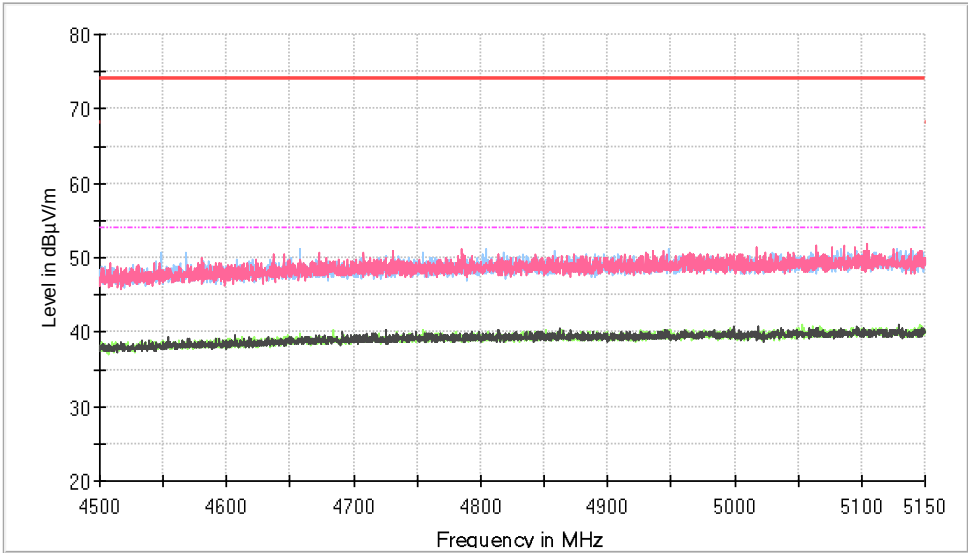
Verdict

Pass

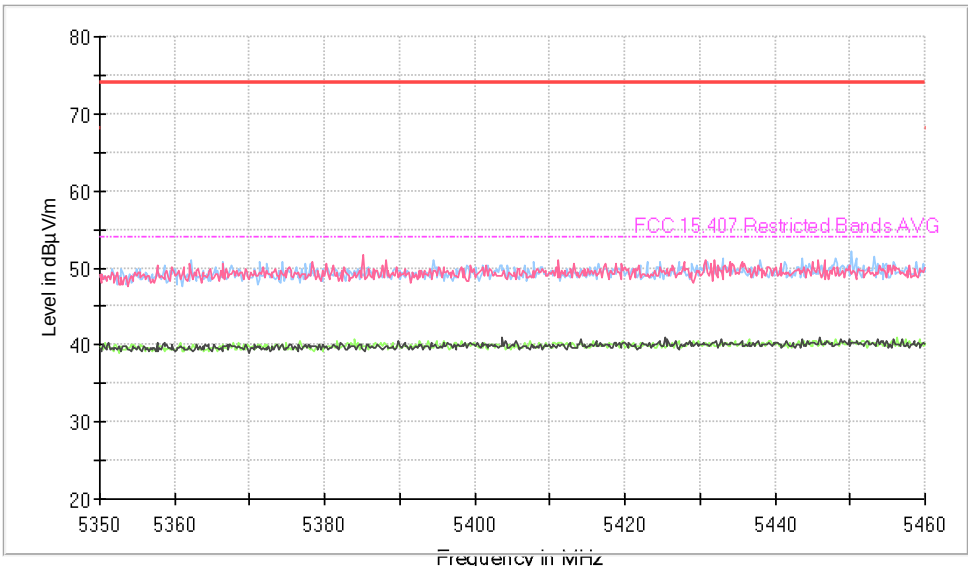
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5180.00000
Modulation = 802.11ac VHT20 (OFDM MCS0) Antenna Configuration = SISO

Images:



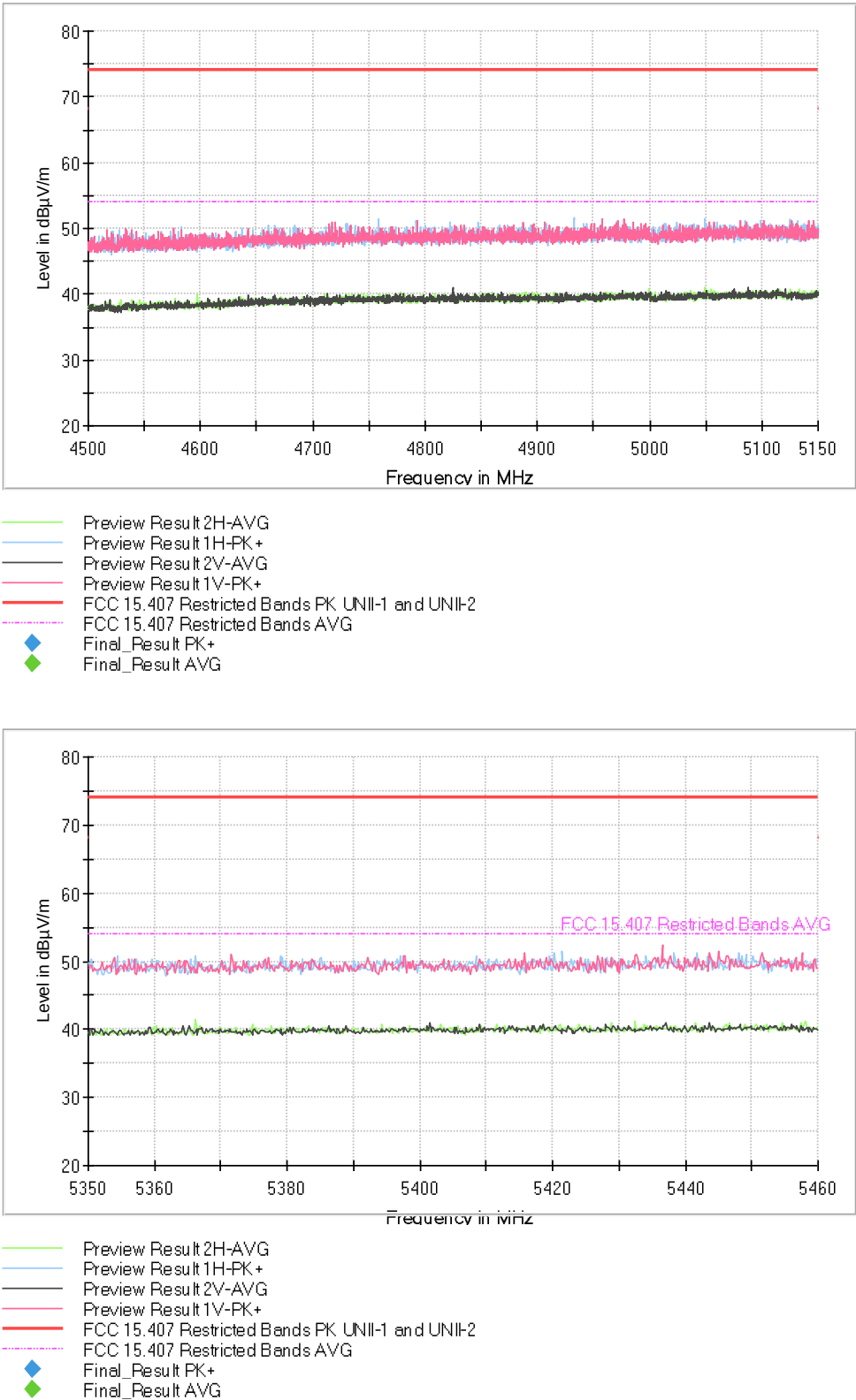
Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final Result PK+
Final Result AVG



Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final Result PK+
Final Result AVG

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ac VHT20 (OFDM MCS0) Antenna Configuration = SISO

Images:



Modulation: 802.11n HT40 (OFDM MCS0)

No spurious emissions were detected at less than 20 dB from the limit.

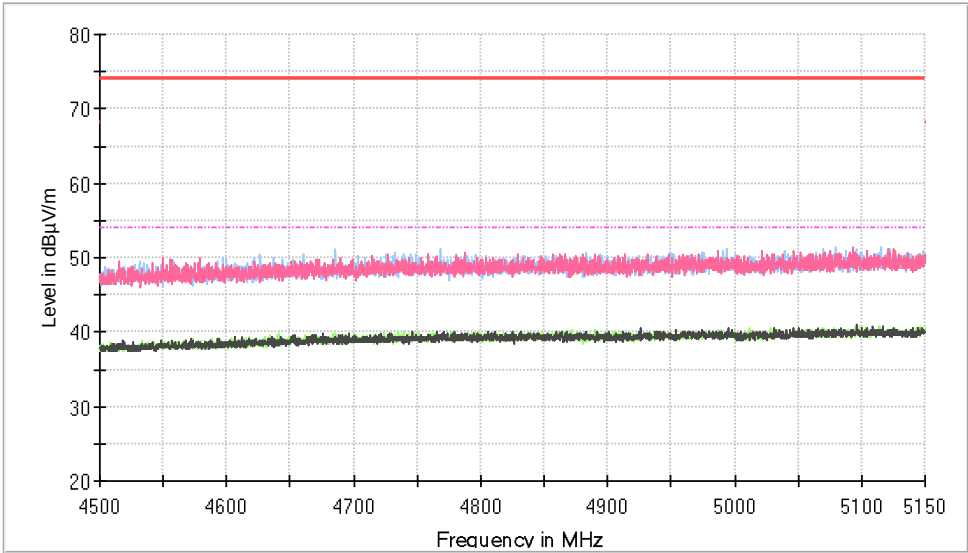
Verdict

Pass

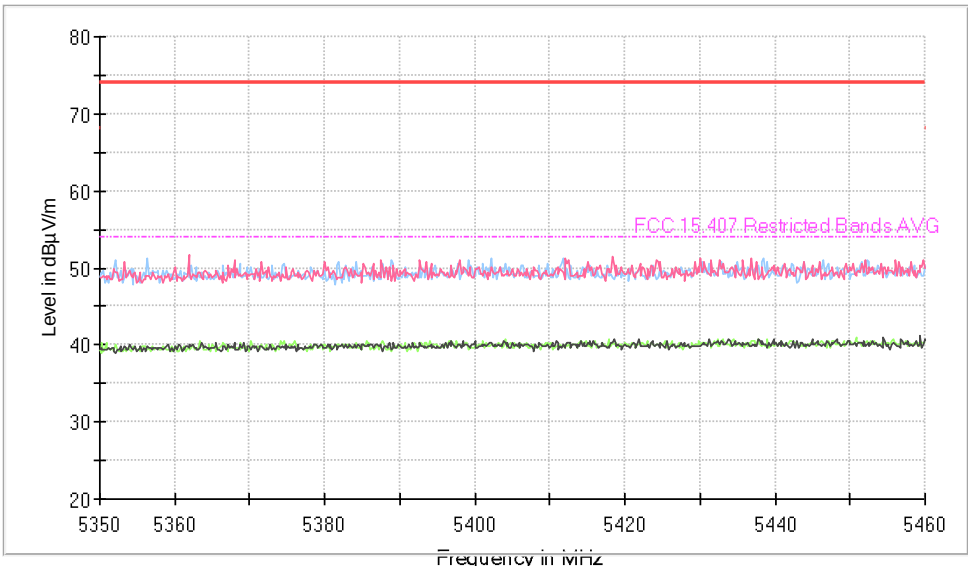
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5190.00000
Modulation = 802.11n HT40 (OFDM MCS0) Antenna Configuration = SISO

Images:



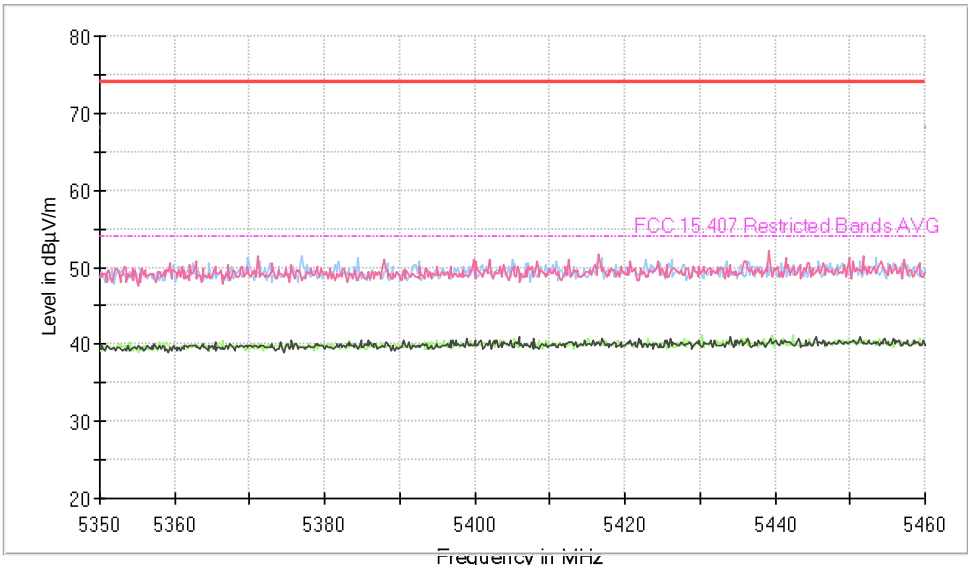
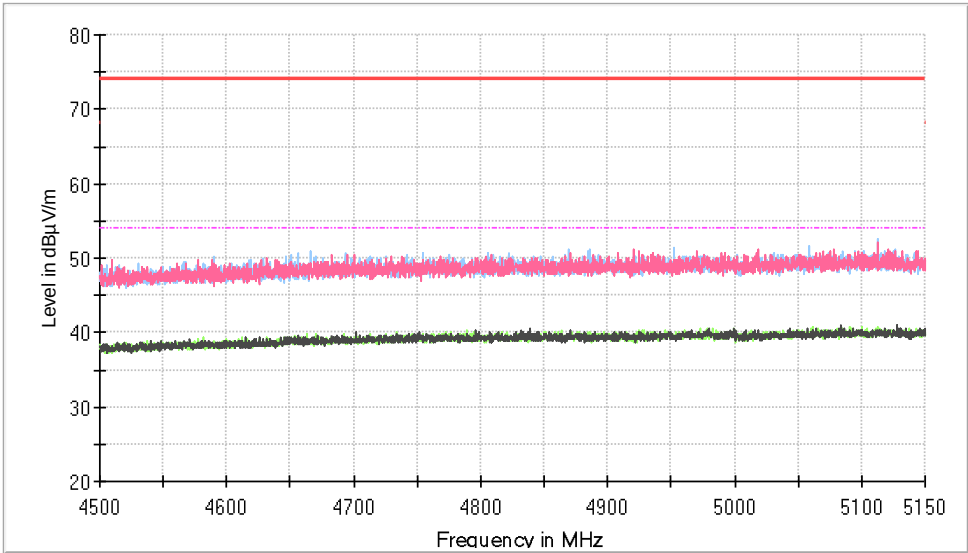
- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11n HT40 (OFDM MCS0) Antenna Configuration = SISO

Images:



Modulation: 802.11ac VHT40 (OFDM MCS0)

No spurious emissions were detected at less than 20 dB from the limit.

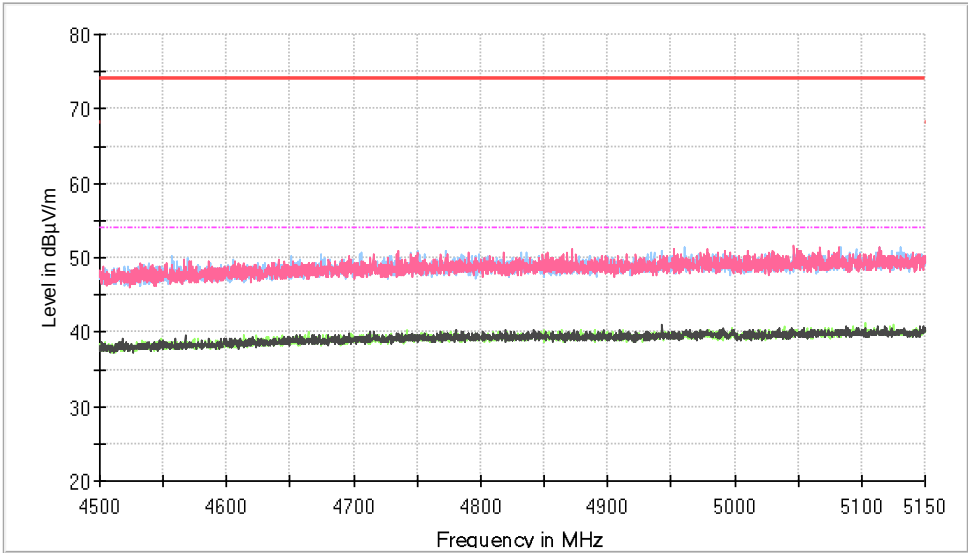
Verdict

Pass

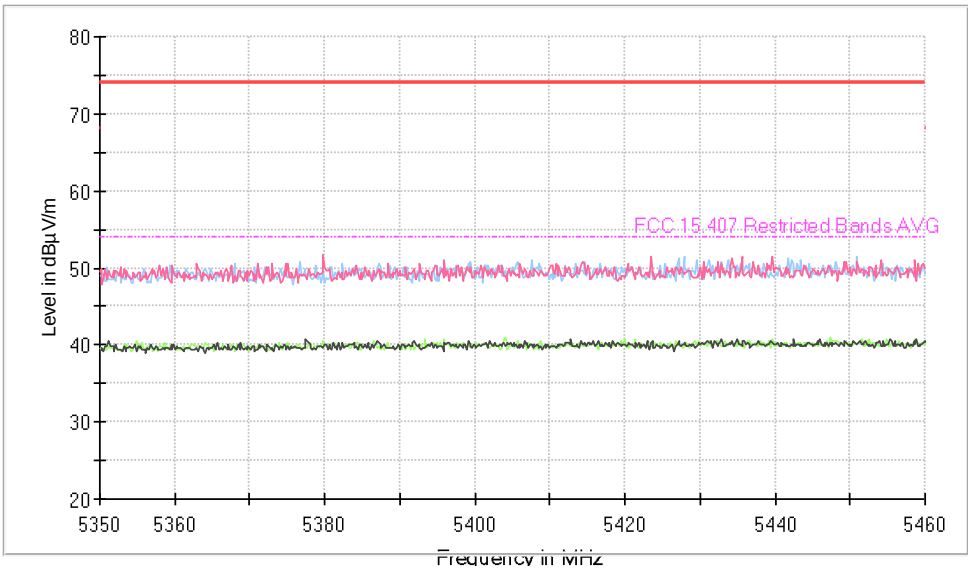
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5190.00000
Modulation = 802.11ac VHT40 (OFDM MCS0) Antenna Configuration = SISO

Images:



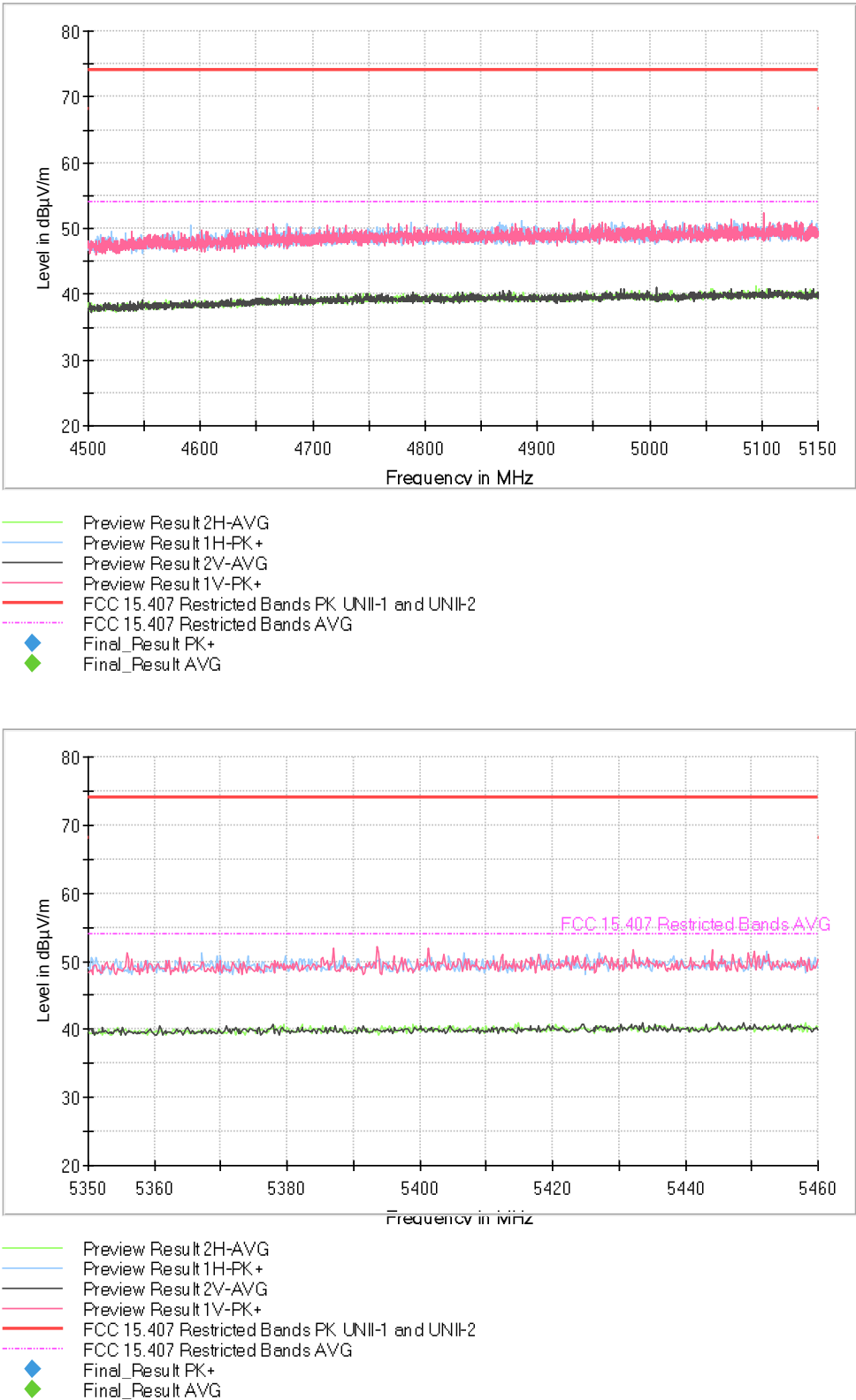
- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final Result PK+
- Final Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final Result PK+
- Final Result AVG

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ac VHT40 (OFDM MCS0) Antenna Configuration = SISO

Images:



Modulation: 802.11ac VHT80 (OFDM MCS0)

No spurious emissions were detected at less than 20 dB from the limit.

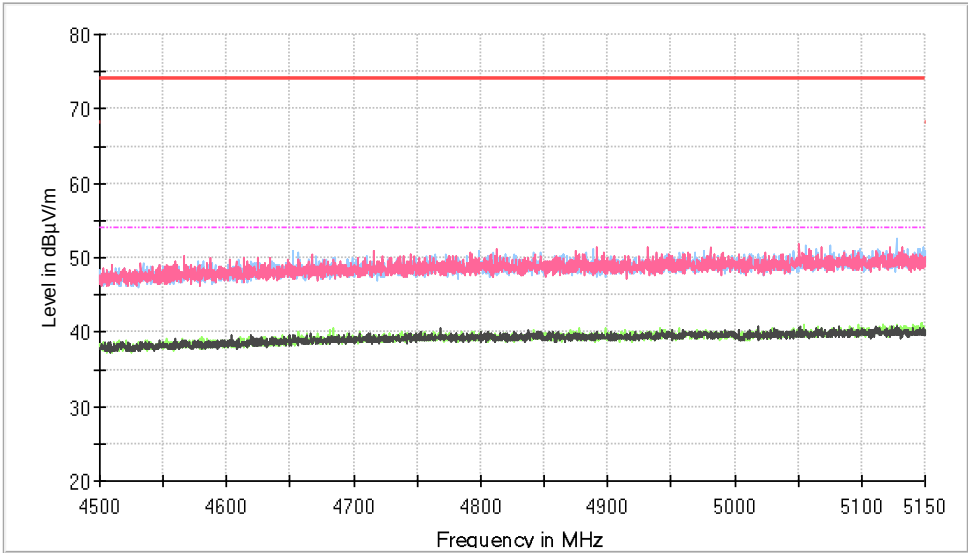
Verdict

Pass

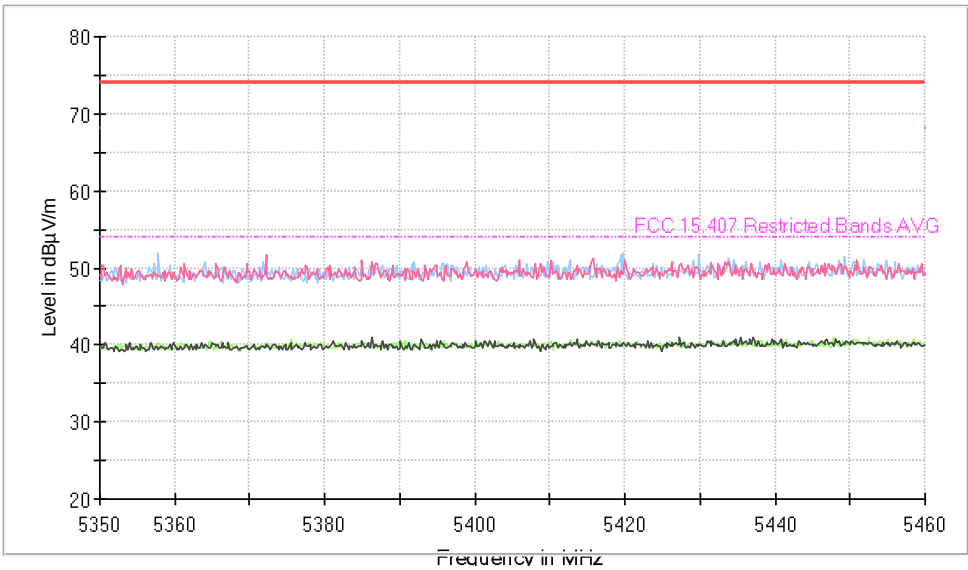
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5210.00000
Modulation = 802.11ac VHT80 (OFDM MCS0) Antenna Configuration = SISO

Images:



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final Result PK+
- Final Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final Result PK+
- Final Result AVG

Modulation: 802.11ax HE20 (OFDMA MCS0) SU

Operation Band (MHz)	Port	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[5150, 5250]	3	[1, 6.5]	5180.00000	4985.8500	57.82	V	PK
					50.03	V	AVG

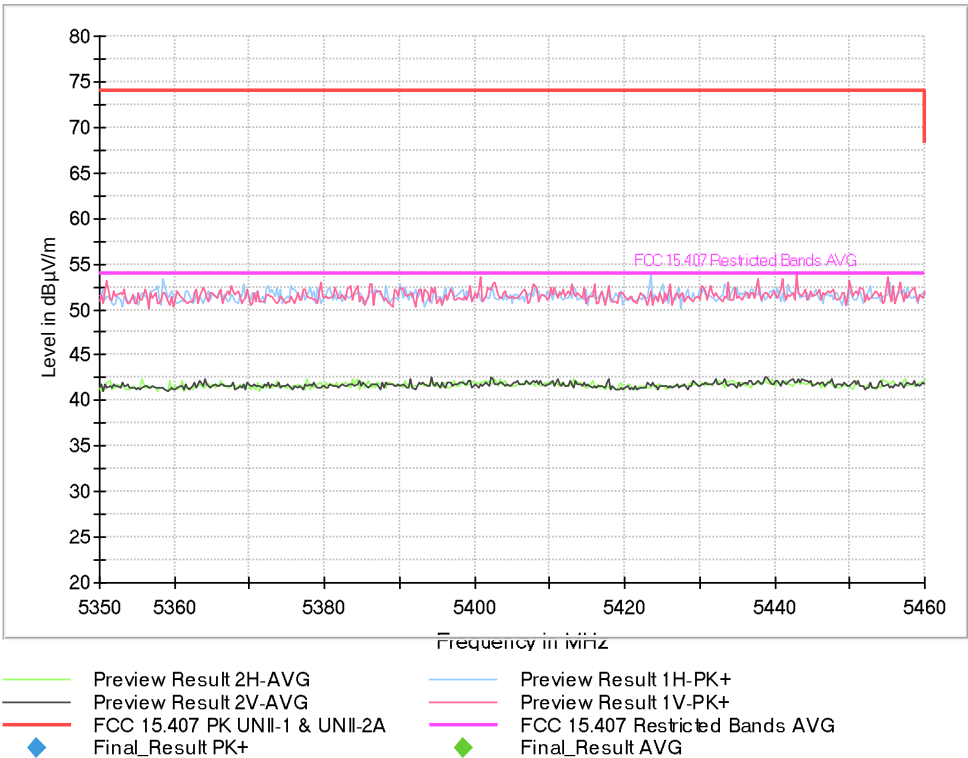
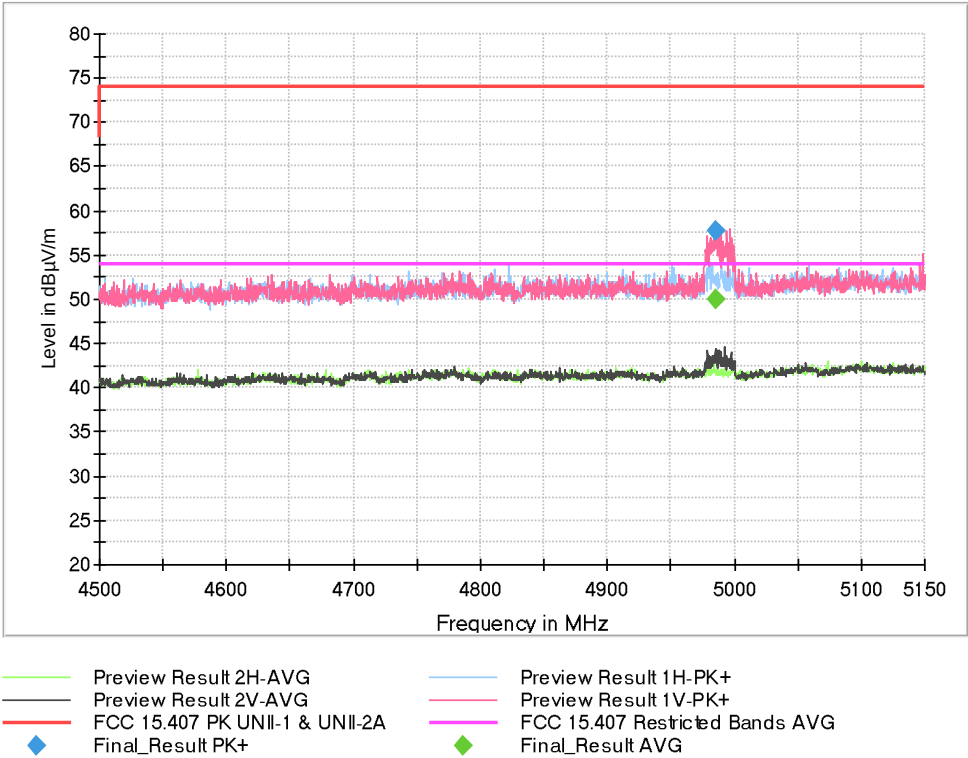
Verdict

Pass

Attachments

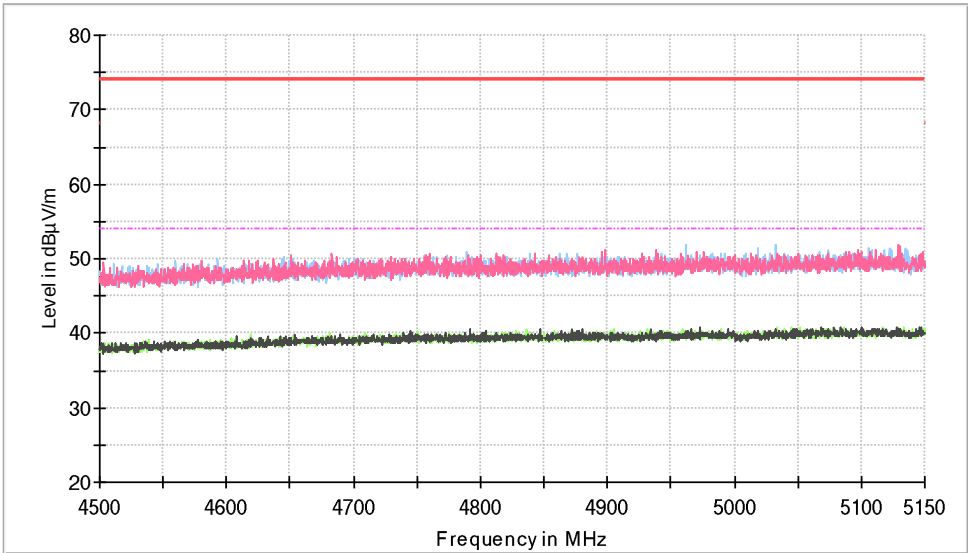
Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5180.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) SU Antenna Configuration = SISO

Images:

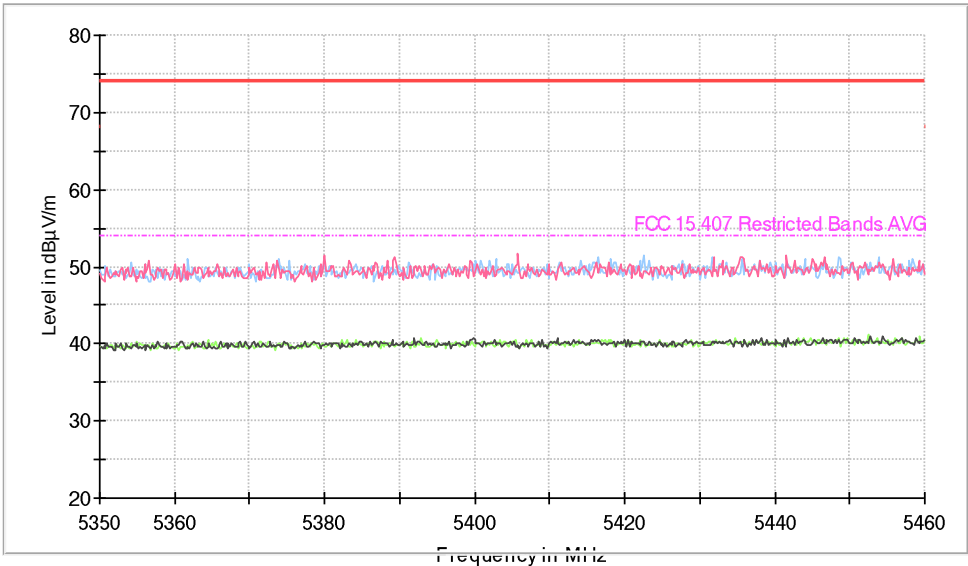


Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) SU Antenna Configuration = SISO

Images:



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Modulation: 802.11ax HE20 (OFDMA MCS0) RU26

Operation Band (MHz)	Port	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[5150, 5250]	3	[1, 6.5]	5180.00000	4994.100	59.34	V	PK
					47.33	V	AVG

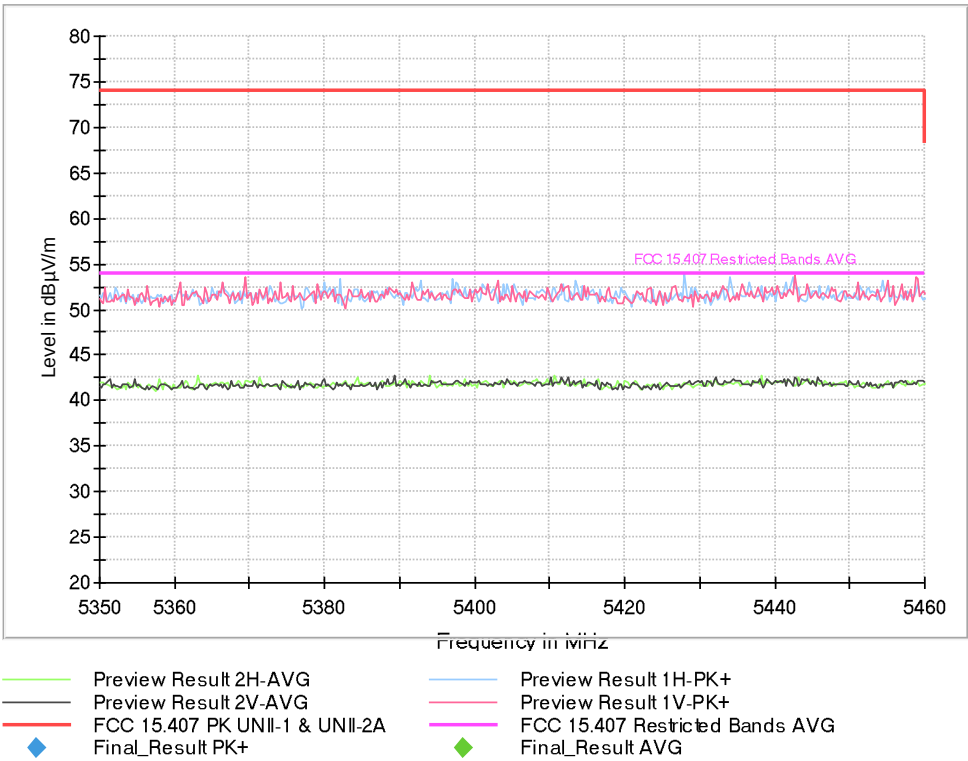
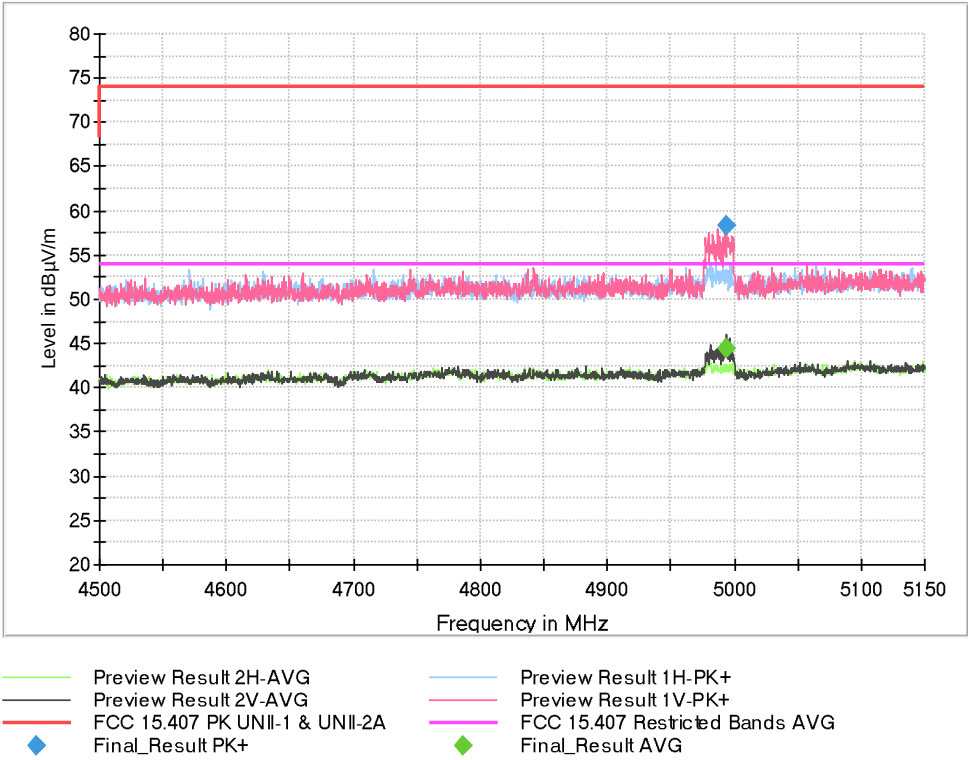
Verdict

Pass

Attachments

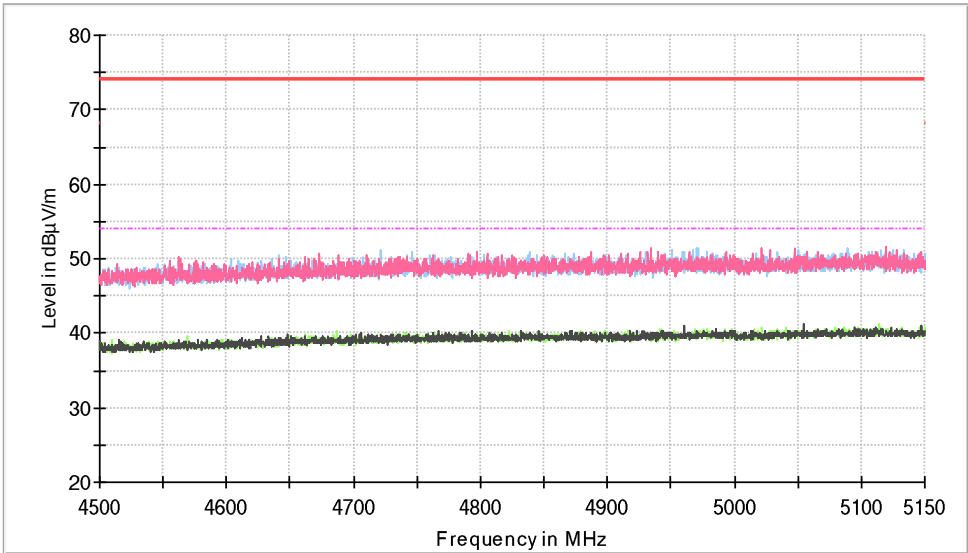
Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5180.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) RU Antenna Configuration = SISO

Images:

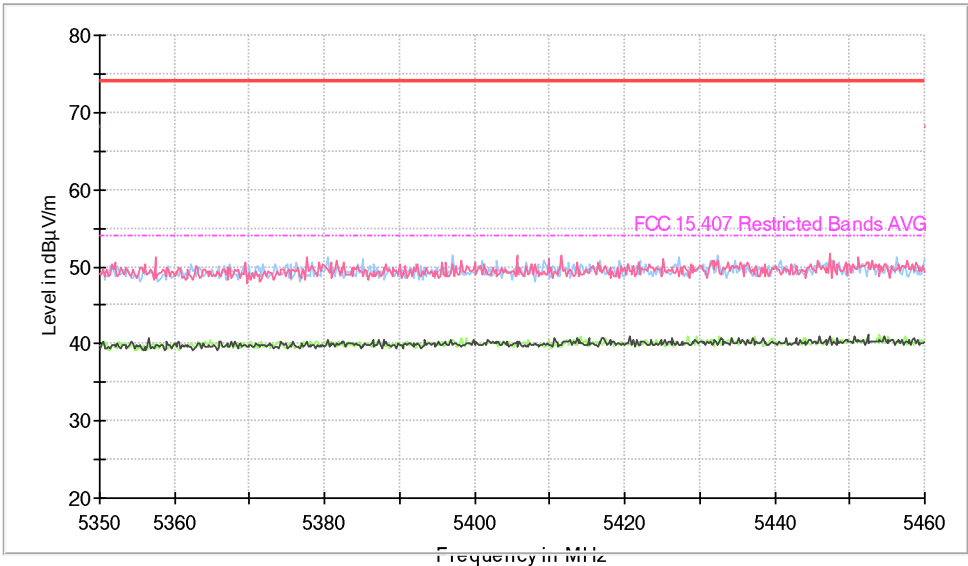


Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) RU Antenna Configuration = SISO

Images:



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Modulation: 802.11ax HE40 (OFDMA MCS0) SU

Operation Band (MHz)	Port	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[5150, 5250]	3	[1, 6.5]	5190.00000	4983.375	58.06	V	PK
					51.13	V	AVG

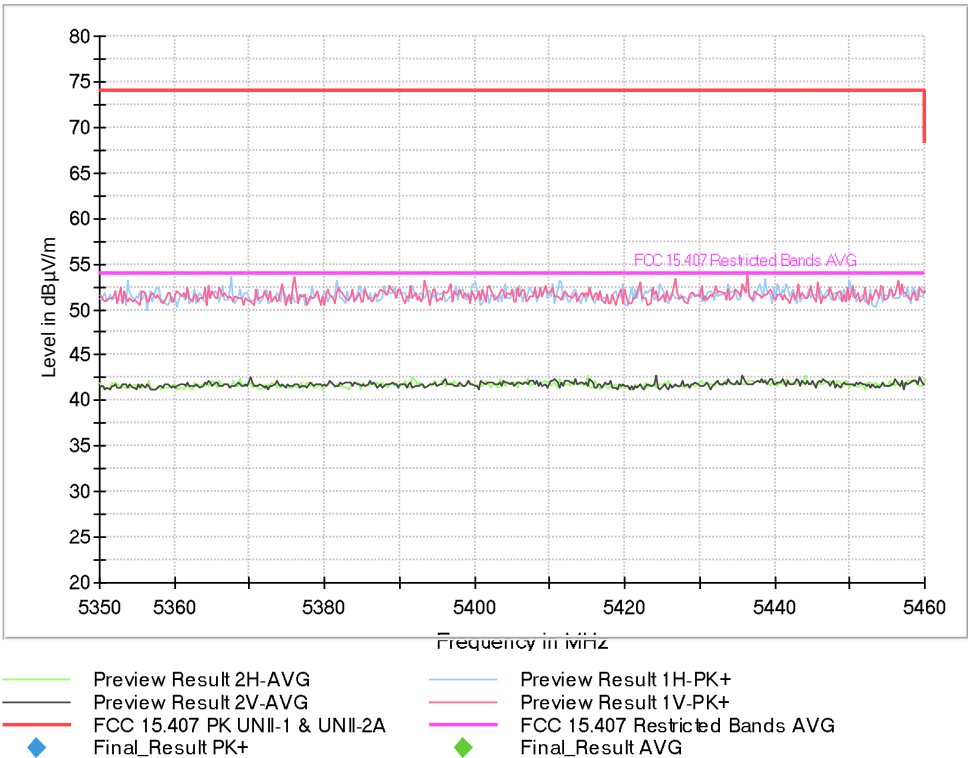
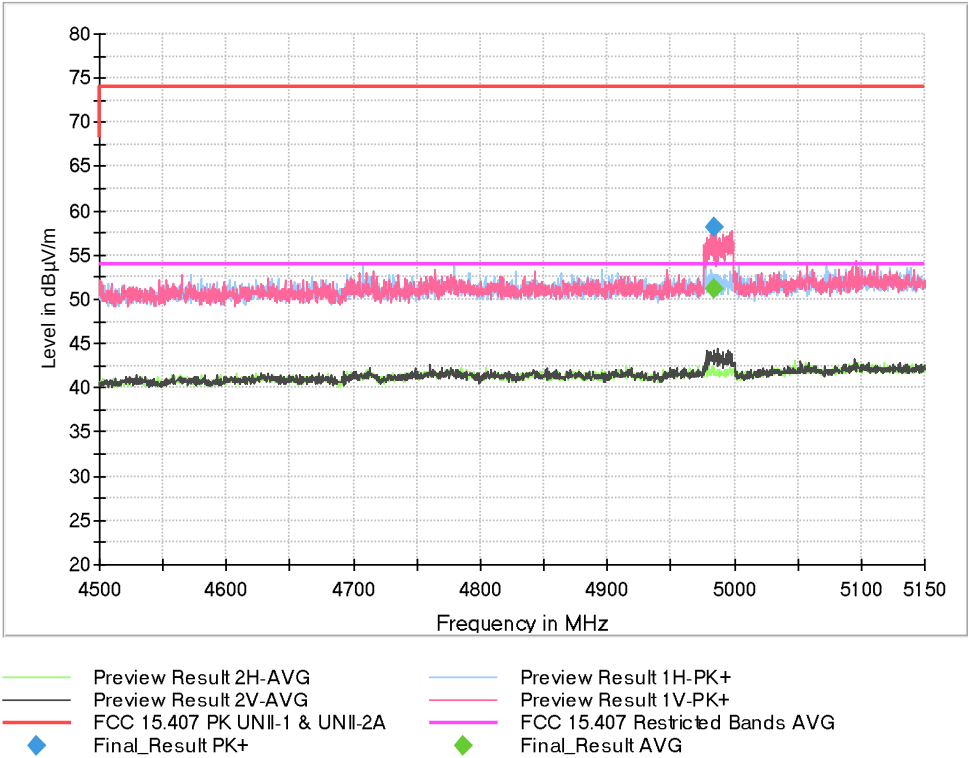
Verdict

Pass

Attachments

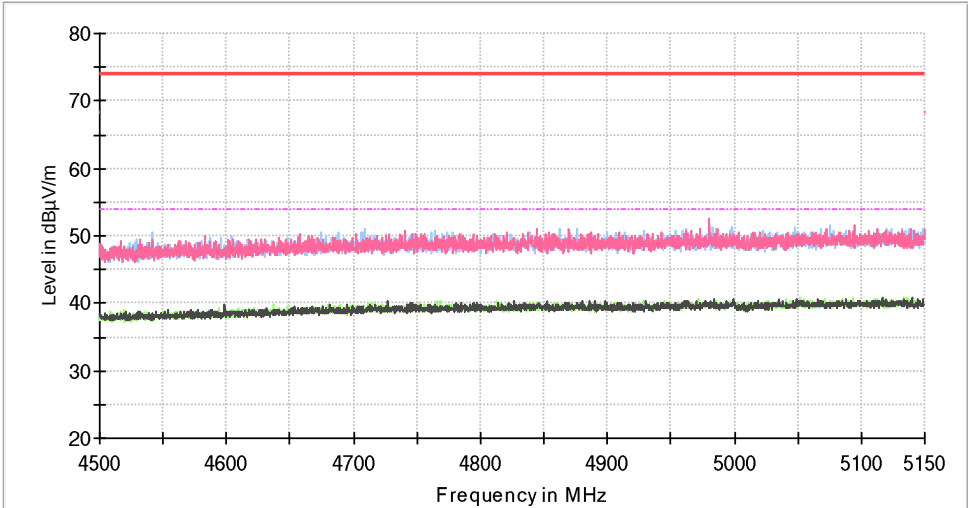
Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5190.00000
Modulation = 802.11ax HE40 (OFDMA MCS0) SU Antenna Configuration = SISO

Images:

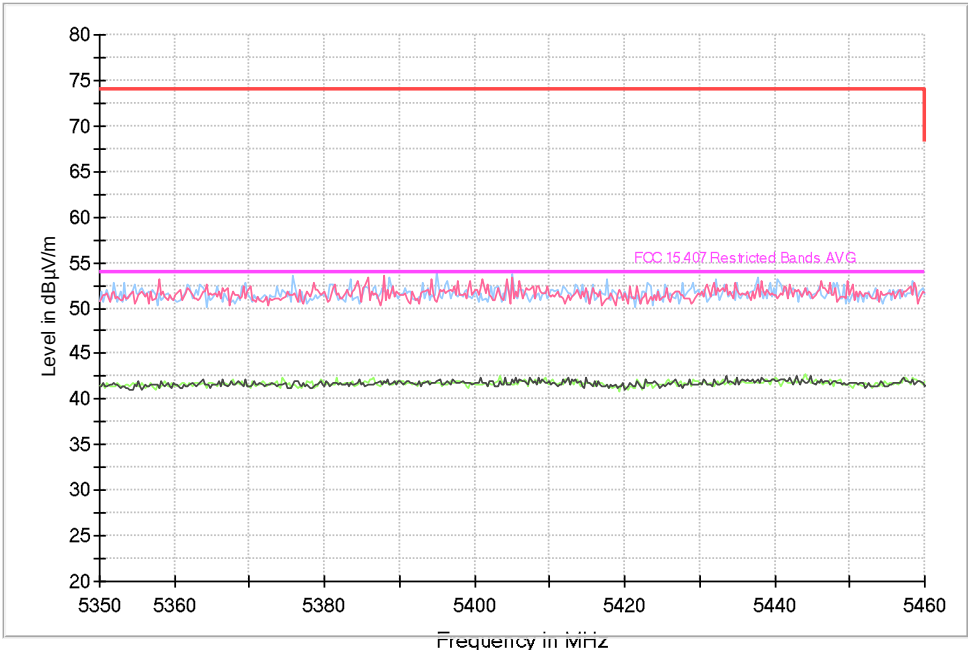


Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) SU Antenna Configuration = SISO

Images:



Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
Critical_Freqs AVG
Critical_Freqs PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG



Preview Result 2H-AVG Preview Result 1H-PK+
Preview Result 2V-AVG Preview Result 1V-PK+
FCC 15.407 PK UNII-1 & UNII-2A FCC 15.407 Restricted Bands AVG
Final_Result PK+ Final_Result AVG

Modulation: 802.11ax HE40 (OFDMA MCS0) RU26

Operation Band (MHz)	Port	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[5150, 5250]	3	[1, 6.5]	5190.00000	4980.900	58.17	V	PK
					42.86	V	AVG

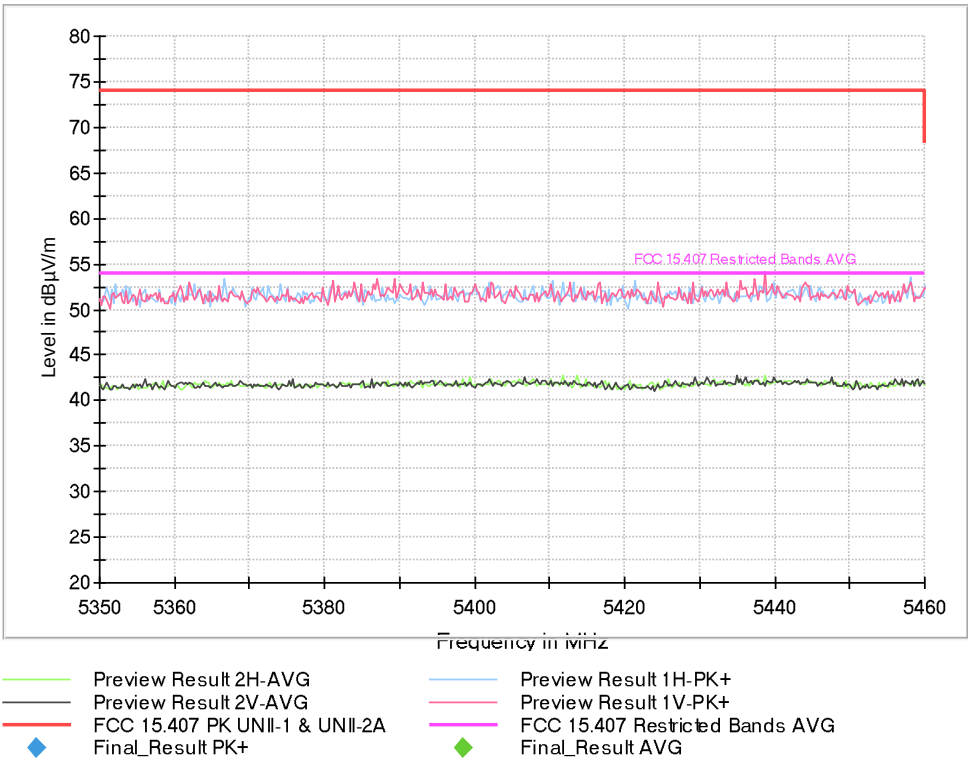
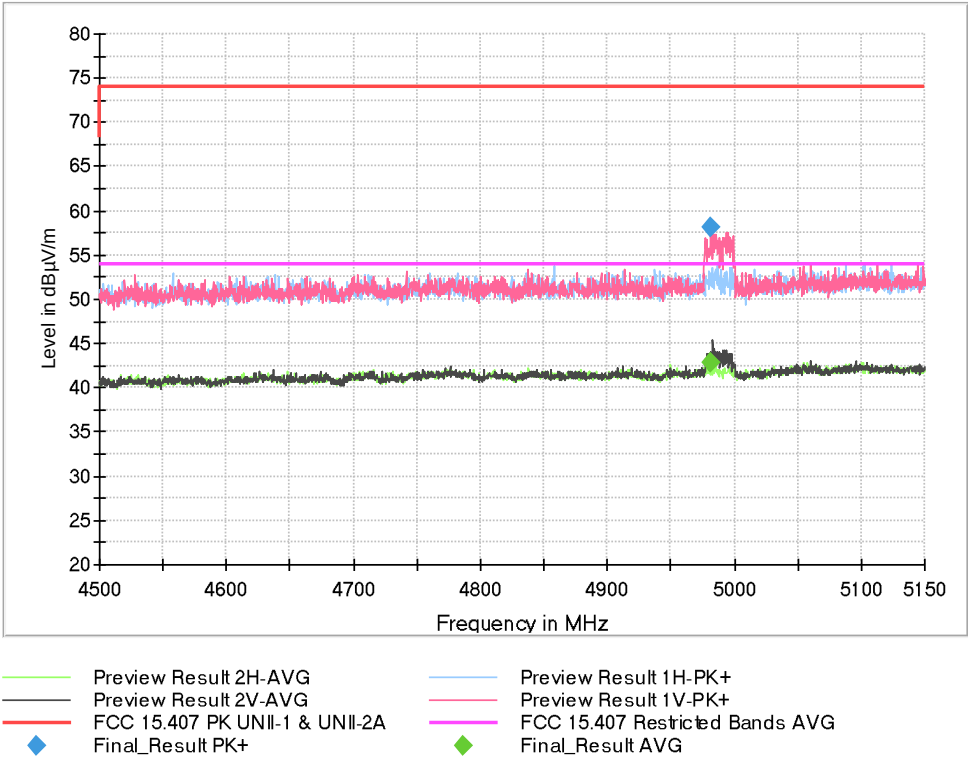
Verdict

Pass

Attachments

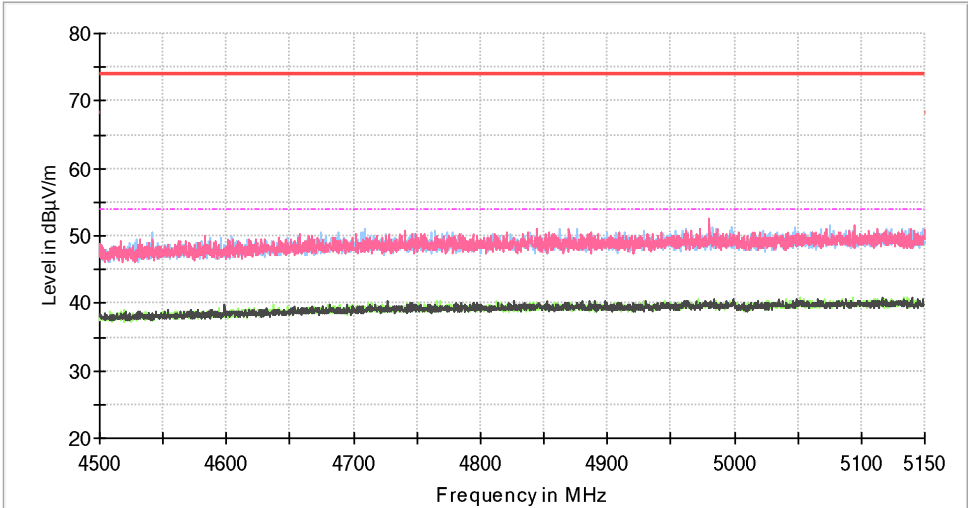
Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5190.00000
Modulation = 802.11ax HE40 (OFDMA MCS0) RU26 Antenna Configuration = SISO

Images:

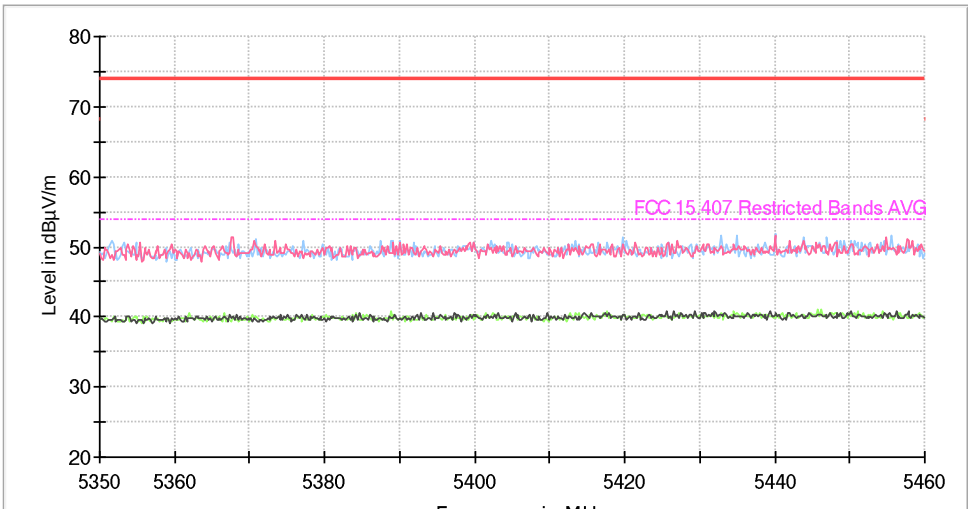


Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) RU26 Antenna Configuration = SISO

Images:



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Modulation: 802.11ax HE80 (OFDMA MCS0) SU

Operation Band (MHz)	Port	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[5150, 5250]	3	[1, 6.5]	5180.00000	4987.225	56.13	V	PK
					42.52	V	AVG
				5140.250	62.28	V	PK
					45.95	V	AVG

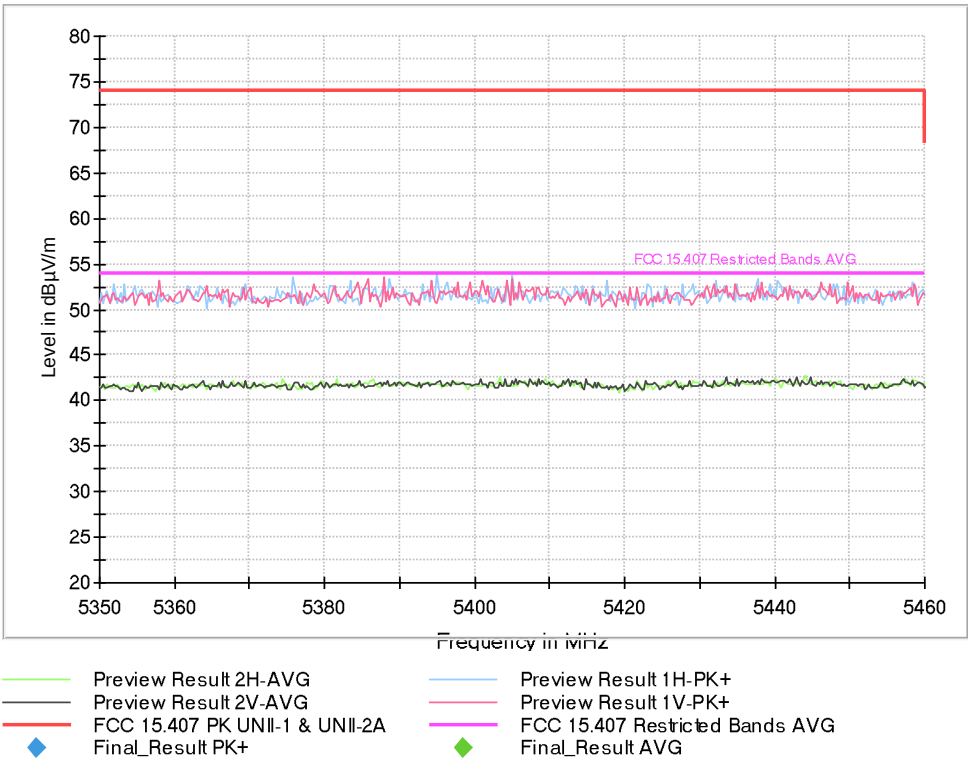
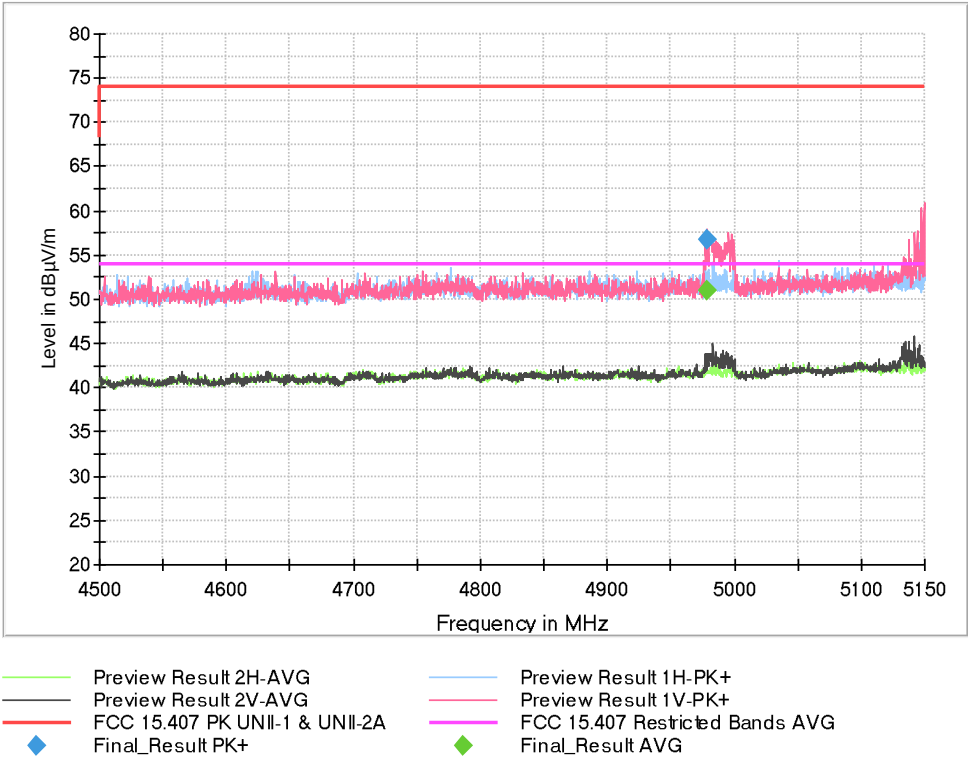
Verdict

Pass

Attachments

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5210.00000
Modulation = 802.11ax HE80 (OFDMA MCS0) SU Antenna Configuration = SISO

Images:



Modulation: 802.11ax HE80 (OFDMA MCS0) RU26

Operation Band (MHz)	Port	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[5150, 5250]	3	[1, 6.5]	5180.00000	4987.225	5717	V	PK
					45.18	V	AVG
				5140.250	57.45	V	PK
					46.11	V	AVG

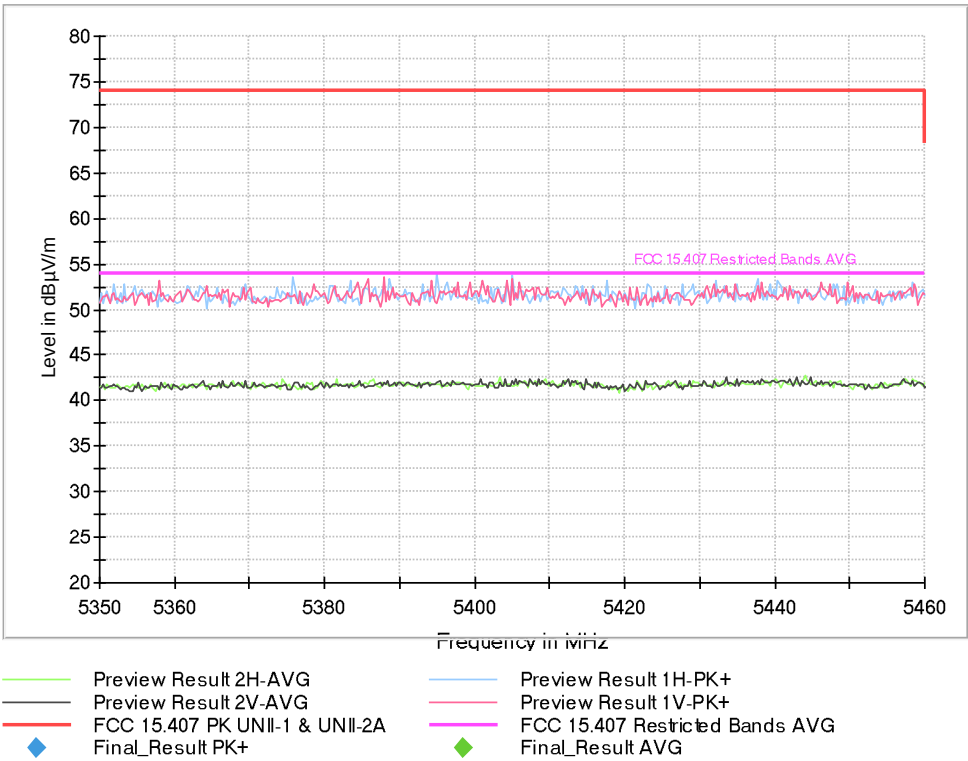
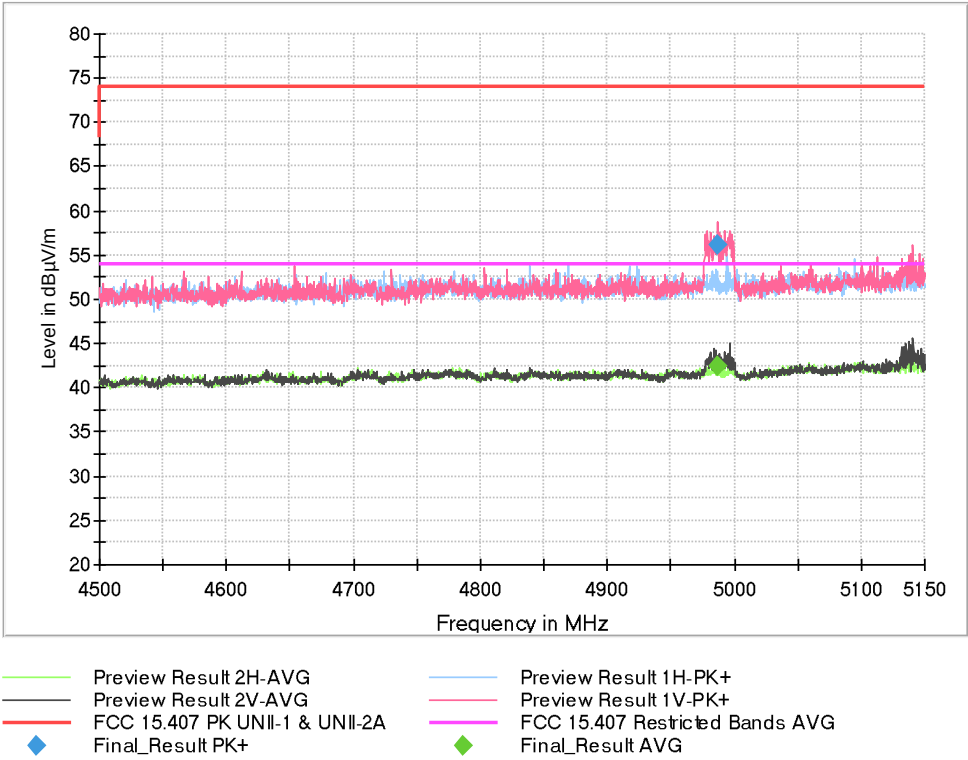
Verdict

Pass

Attachments

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5210.00000
Modulation = 802.11ax HE80 (OFDMA MCS0) RU26 Antenna Configuration = SISO

Images:



MIMO (Port 3 + Port 2)

Modulation: 802.11a (OFDM 6 Mbit/s)

No spurious emissions were detected at less than 20 dB from the limit.

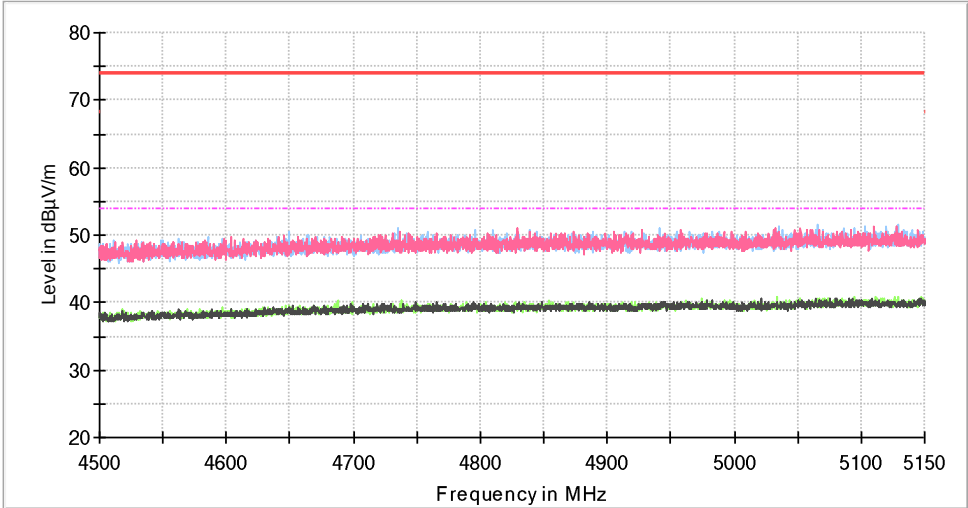
Verdict

Pass

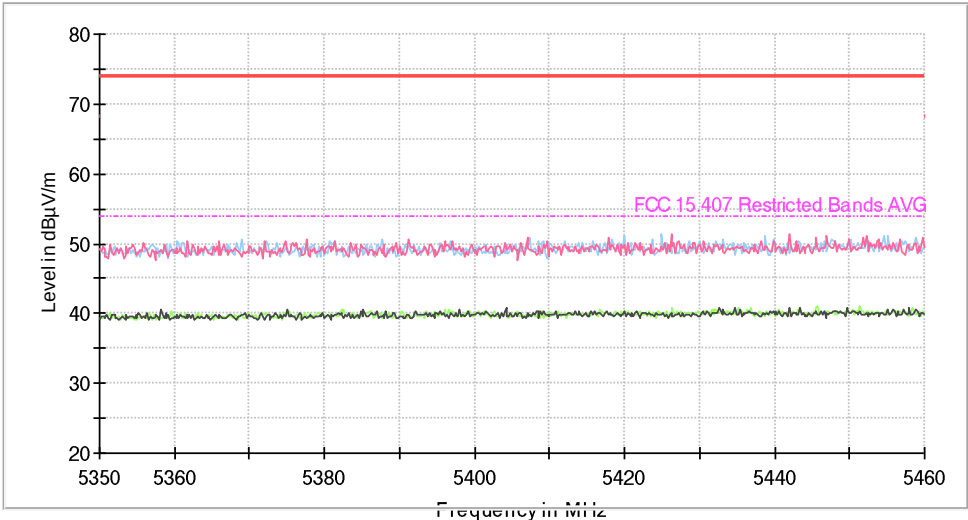
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5180.00000
Modulation = 802.11a (OFDM 6 Mbit/s) Antenna Configuration = MIMO

Images:



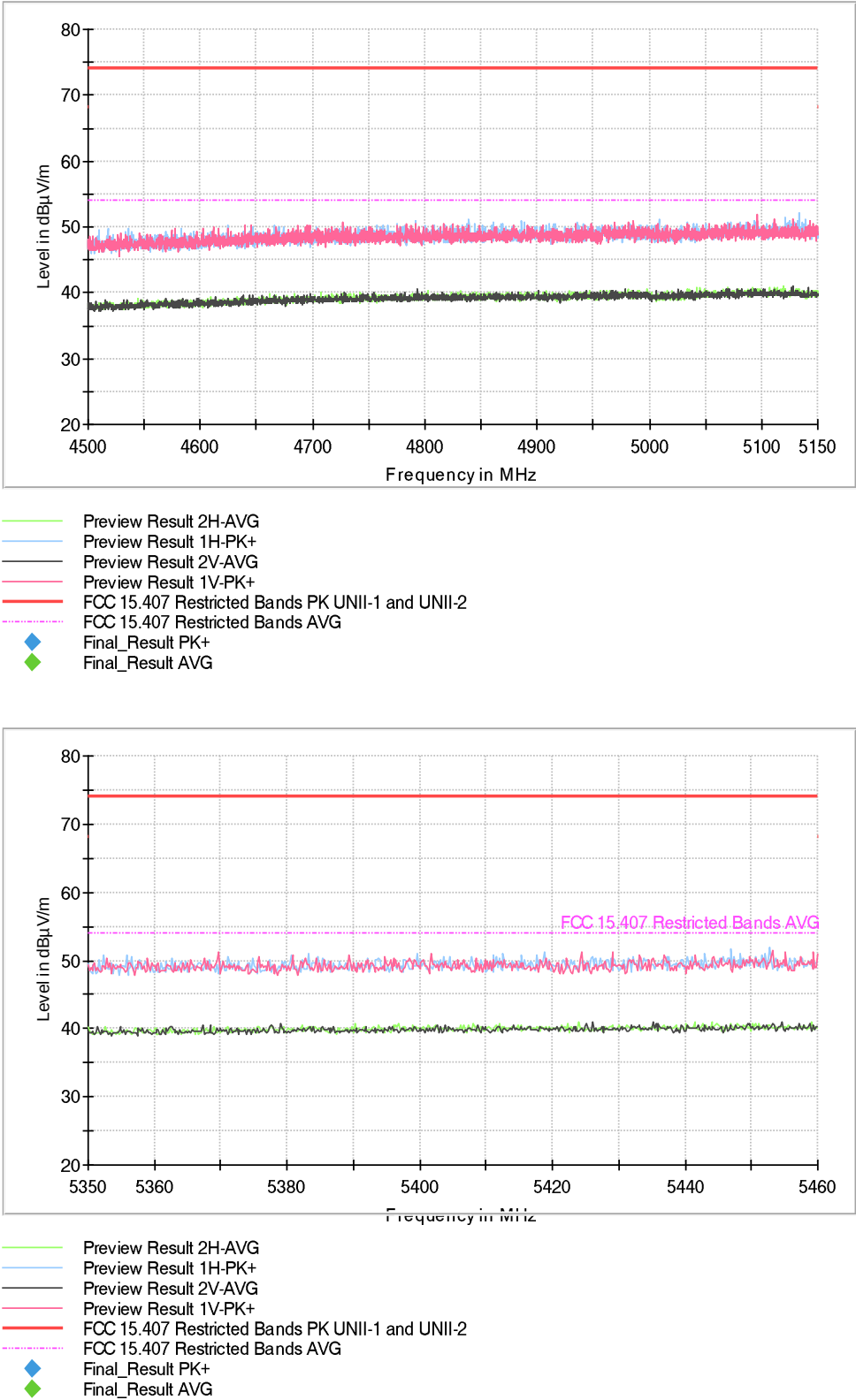
- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11a (OFDM 6 Mbit/s) Antenna Configuration = MIMO

Images:



Modulation: 802.11n HT20 (OFDM MCS0)

No spurious emissions were detected at less than 20 dB from the limit.

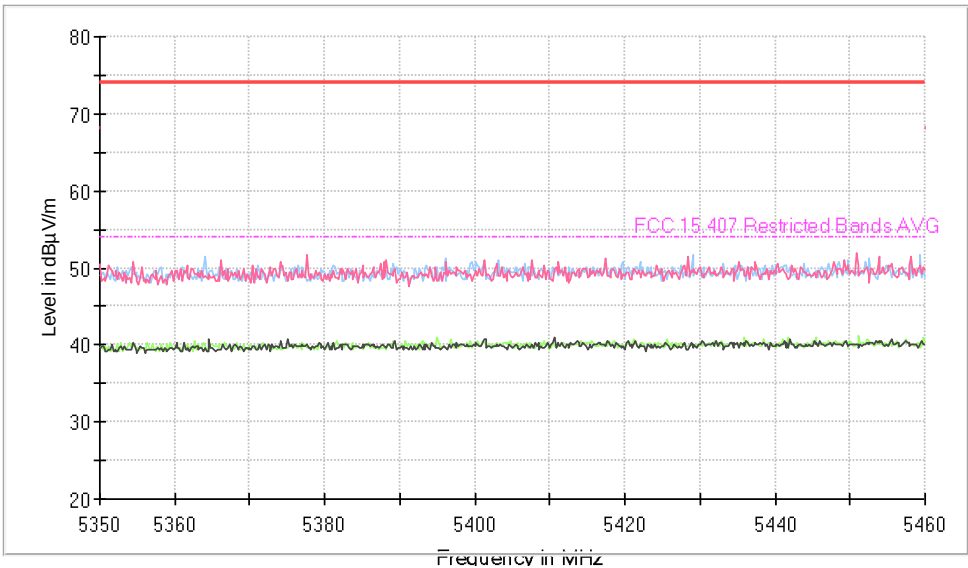
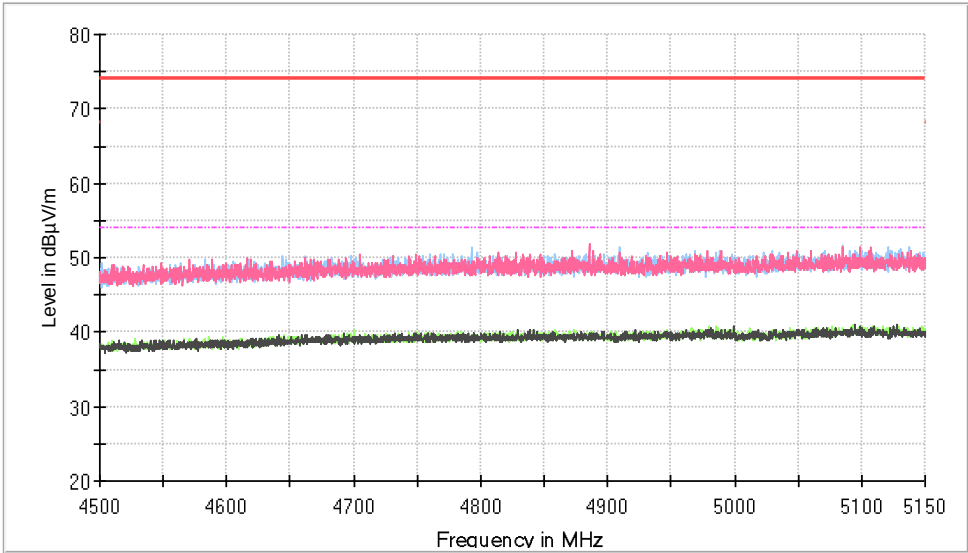
Verdict

Pass

Attachments

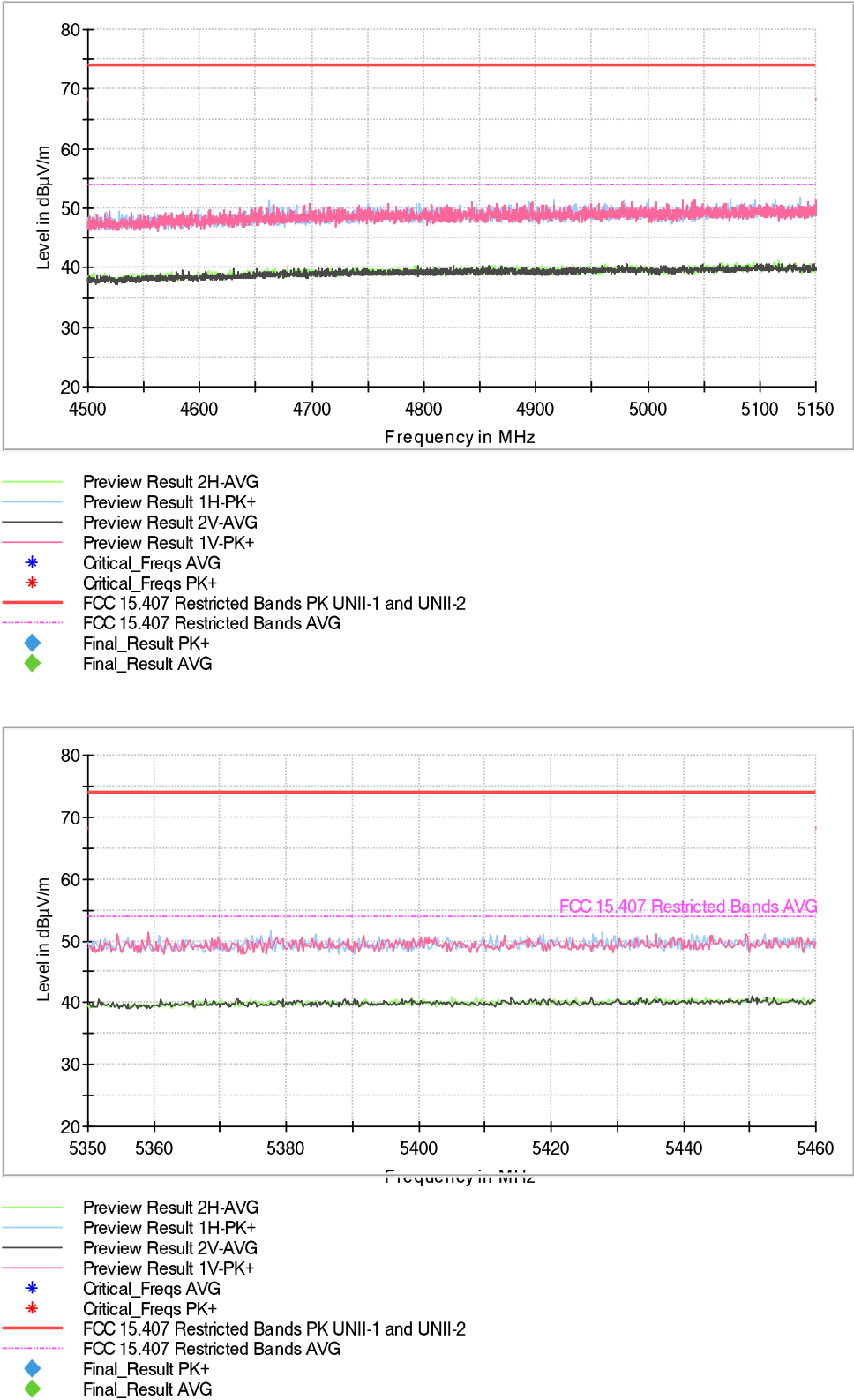
Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5180.00000
Modulation = 802.11n HT20 (OFDM MCS0) Antenna Configuration = MIMO

Images:



Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11n HT20 (OFDM MCS0) Antenna Configuration = MIMO

Images:



Modulation: 802.11ac VHT20 (OFDM MCS0)

No spurious emissions were detected at less than 20 dB from the limit.

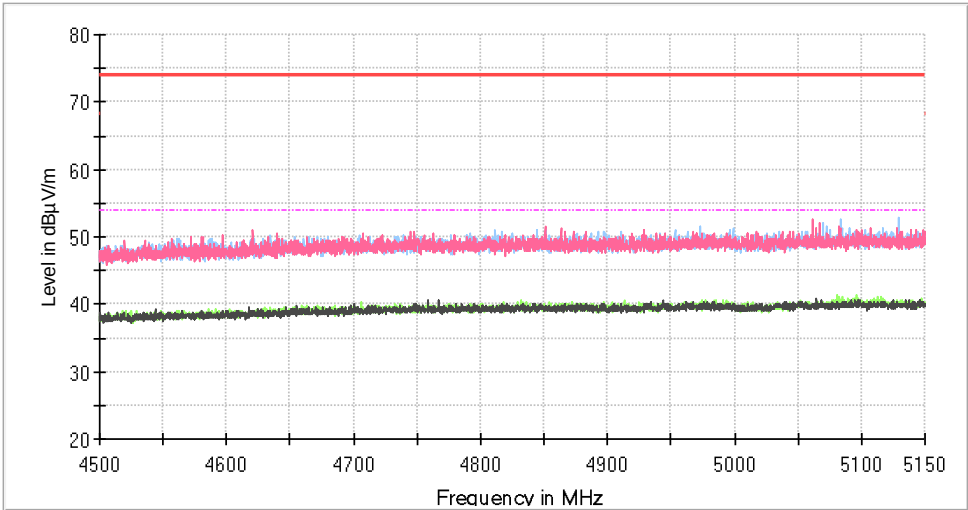
Verdict

Pass

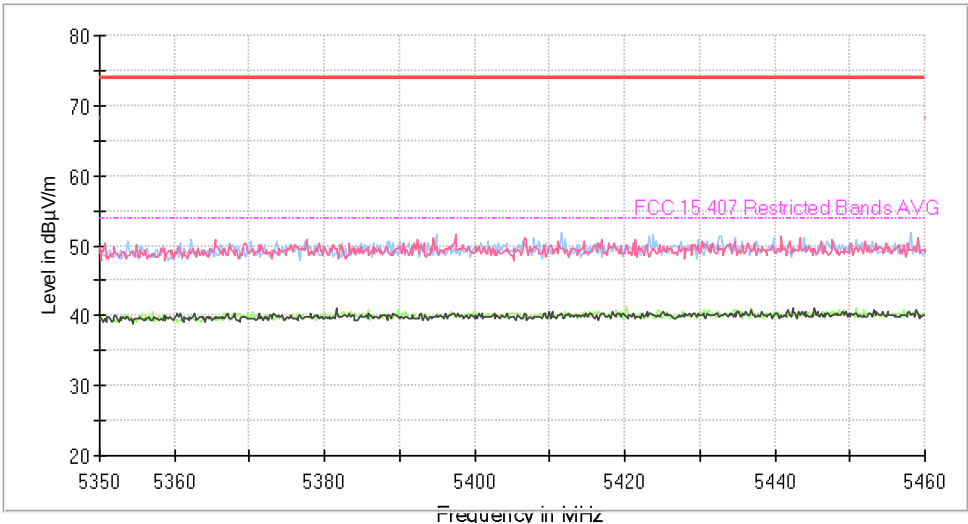
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5180.00000
Modulation = 802.11ac VHT20 (OFDM MCS0) Antenna Configuration = MIMO

Images:



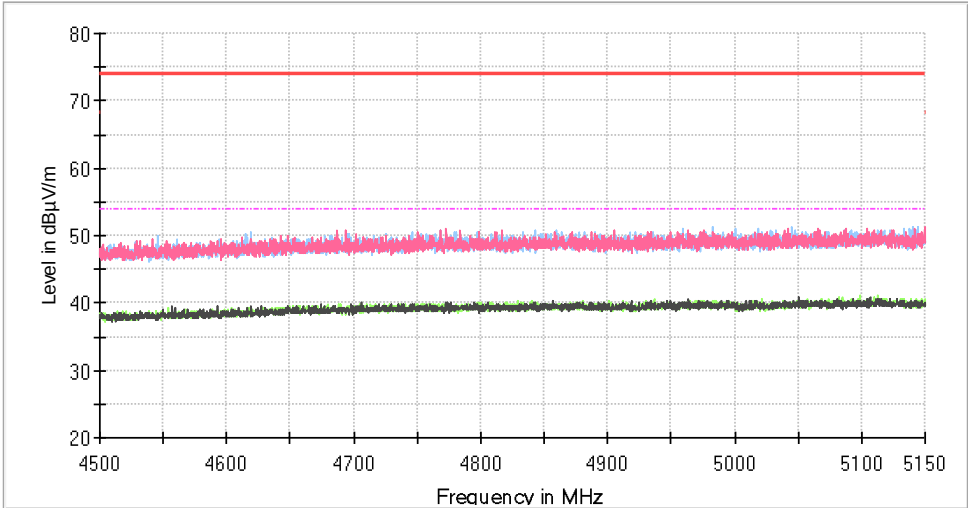
- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



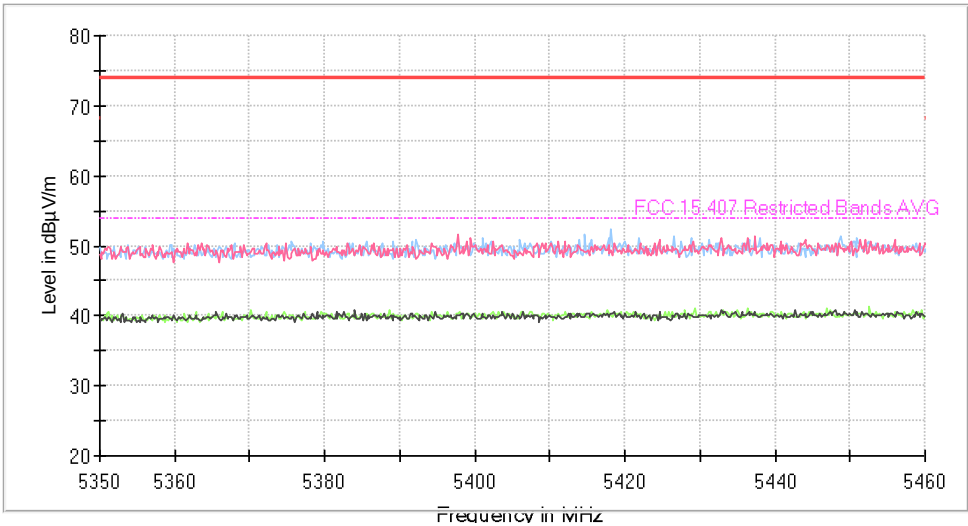
- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ac VHT20 (OFDM MCS0) Antenna Configuration = MIMO

Images:



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Modulation: 802.11n HT40 (OFDM MCS0)

No spurious emissions were detected at less than 20 dB from the limit.

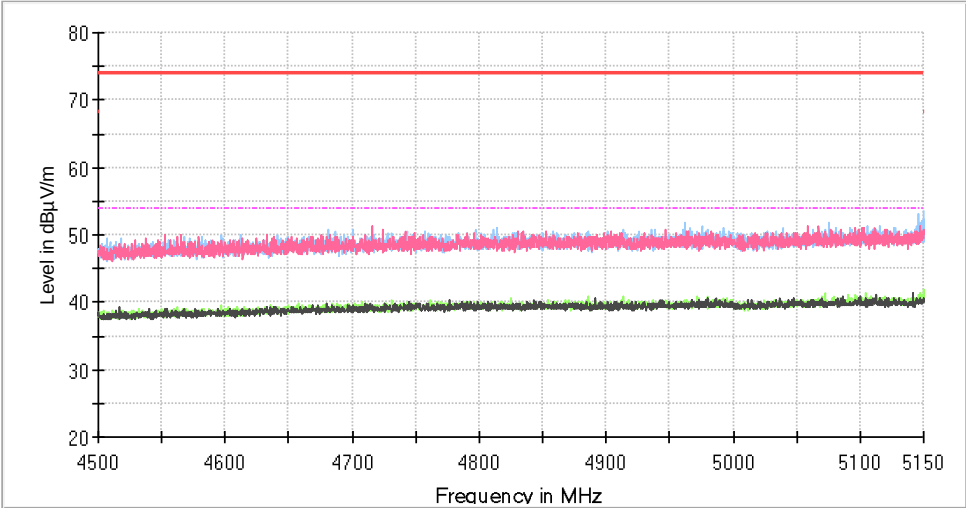
Verdict

Pass

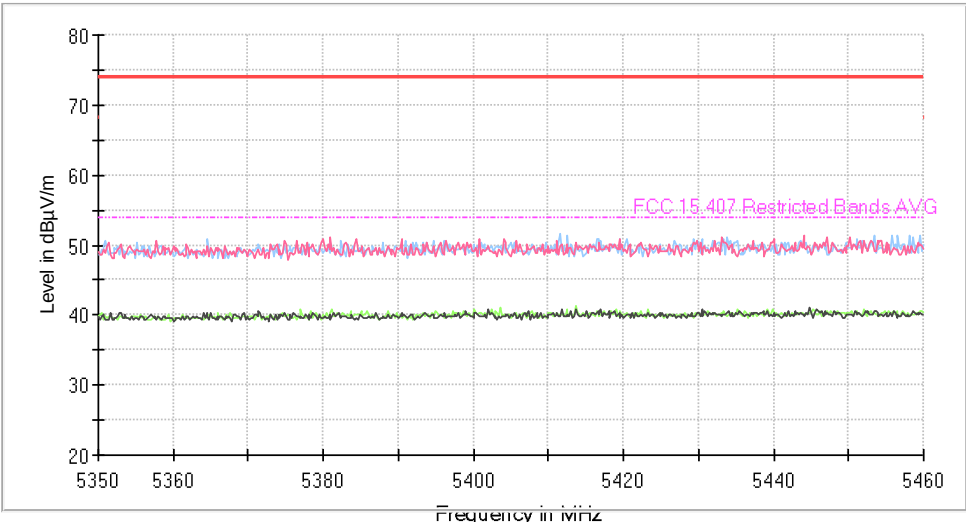
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5190.00000
Modulation = 802.11n HT40 (OFDM MCS0) Antenna Configuration = MIMO

Images:



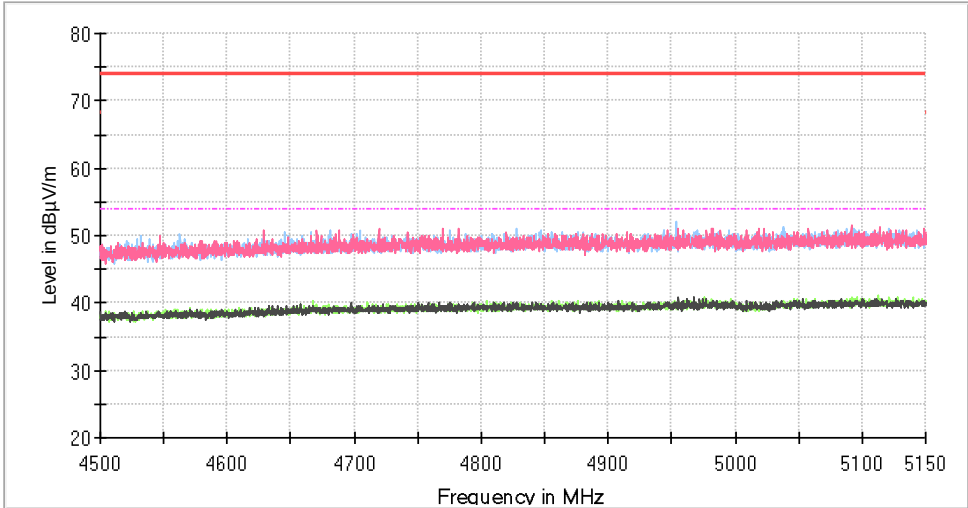
- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



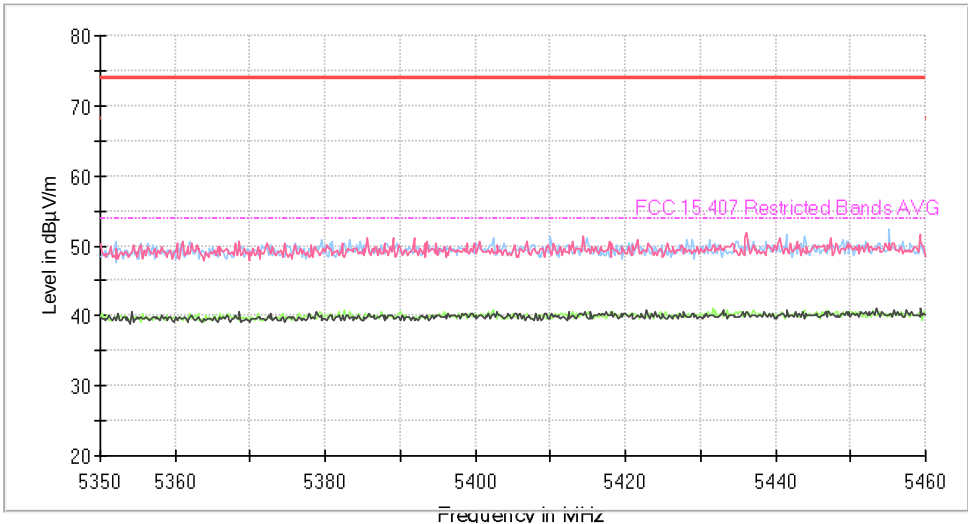
- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11n HT40 (OFDM MCS0) Antenna Configuration = MIMO

Images:



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Modulation: 802.11ac VHT40 (OFDM MCS0)

No spurious emissions were detected at less than 20 dB from the limit.

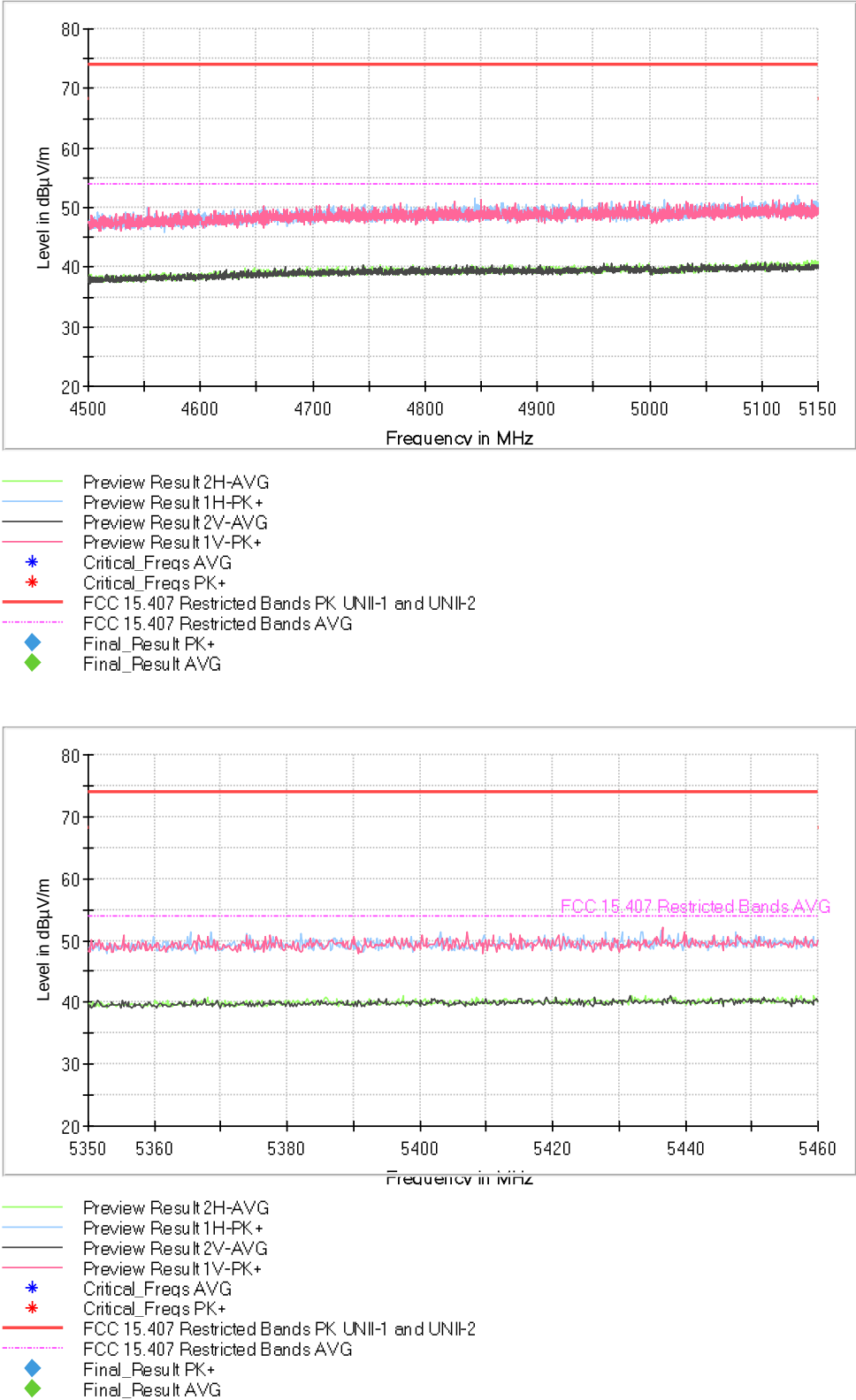
Verdict

Pass

Attachments

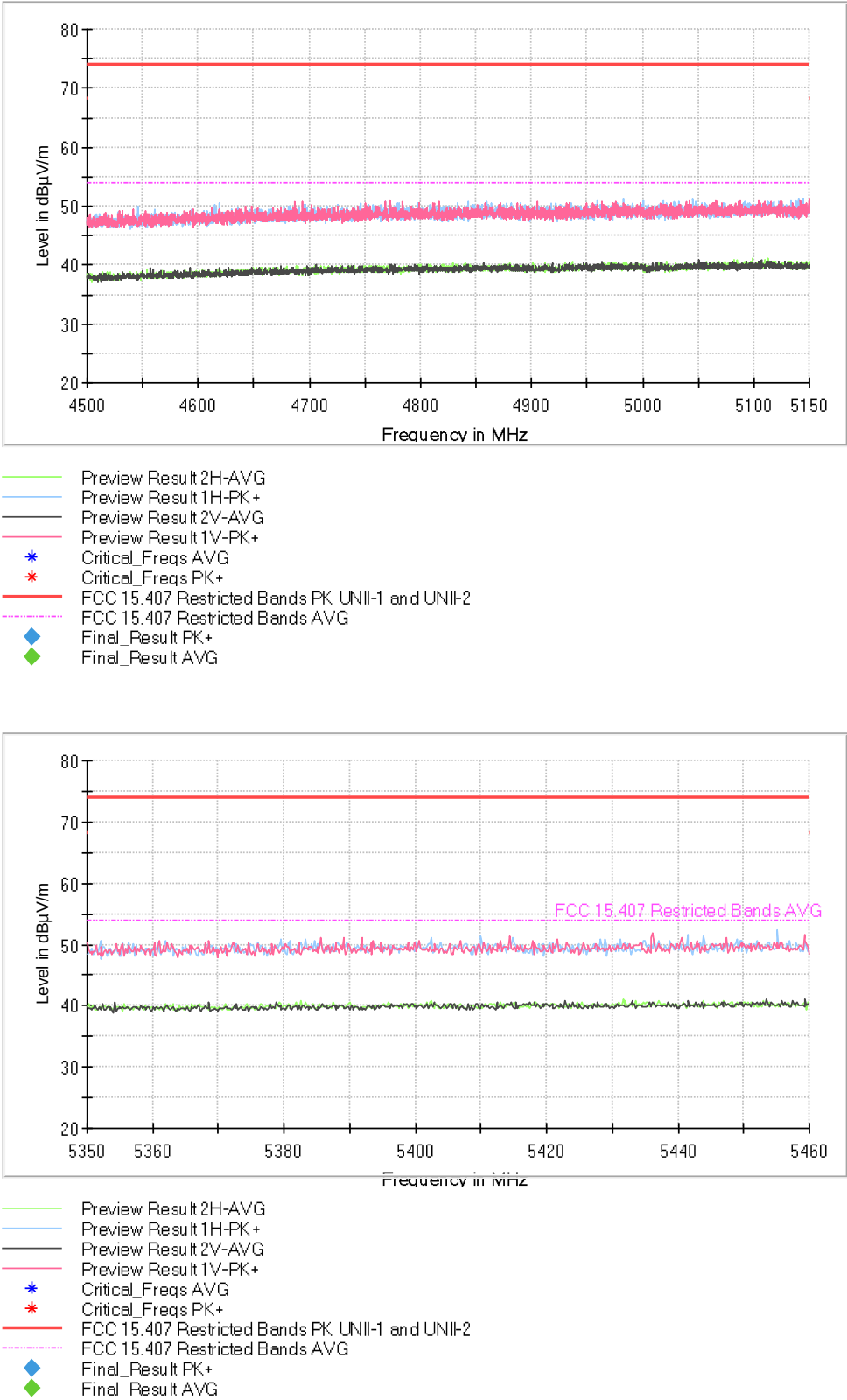
Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5190.00000
Modulation = 802.11ac VHT40 (OFDM MCS0) Antenna Configuration = MIMO

Images:



Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ac VHT40 (OFDM MCS0) Antenna Configuration = MIMO

Images:



Modulation: 802.11ac VHT80 (OFDM MCS0)

No spurious emissions were detected at less than 20 dB from the limit.

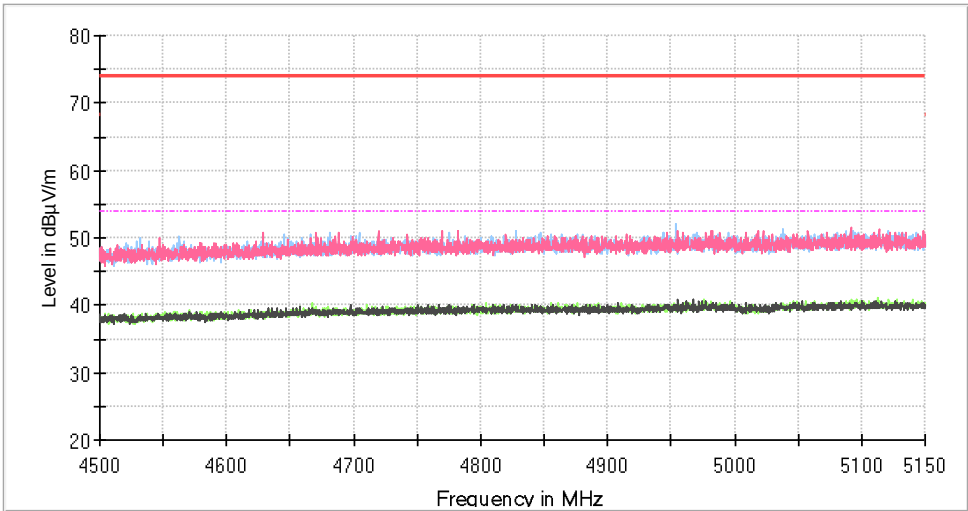
Verdict

Pass

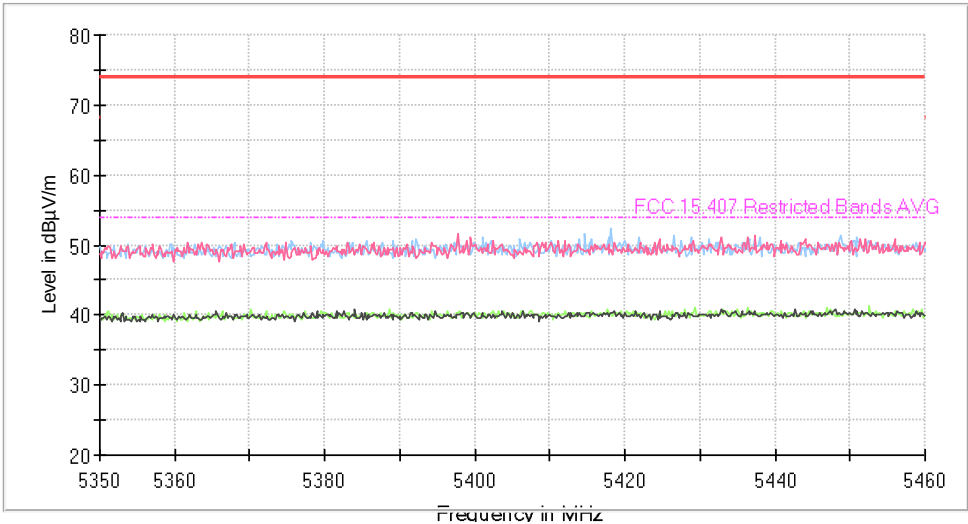
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5210.00000
Modulation = 802.11ac VHT80 (OFDM MCS0) Antenna Configuration = MIMO

Images:



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- Critical_Freqs AVG
- Critical_Freqs PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Modulation: 802.11ax HE20 (OFDMA MCS0) SU

No spurious emissions were detected at less than 20 dB from the limit.

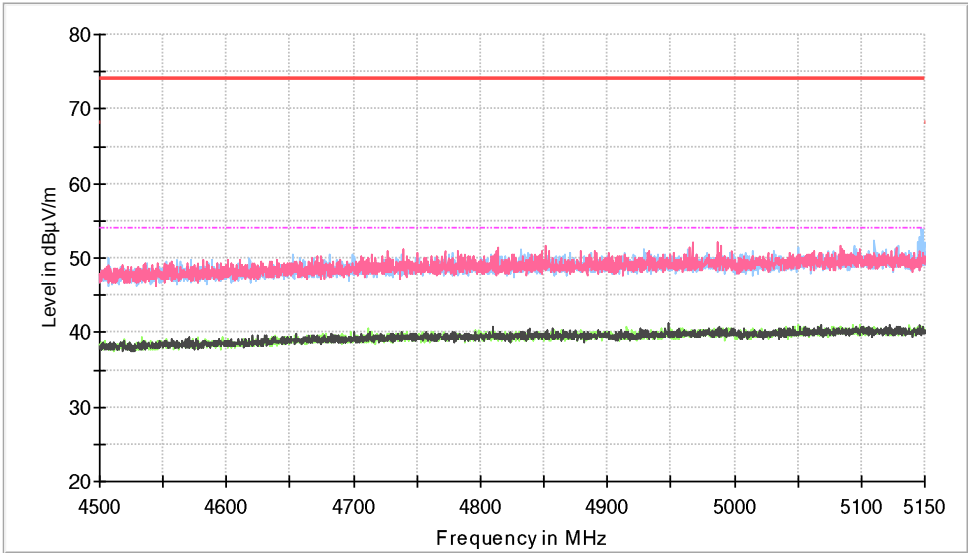
Verdict

Pass

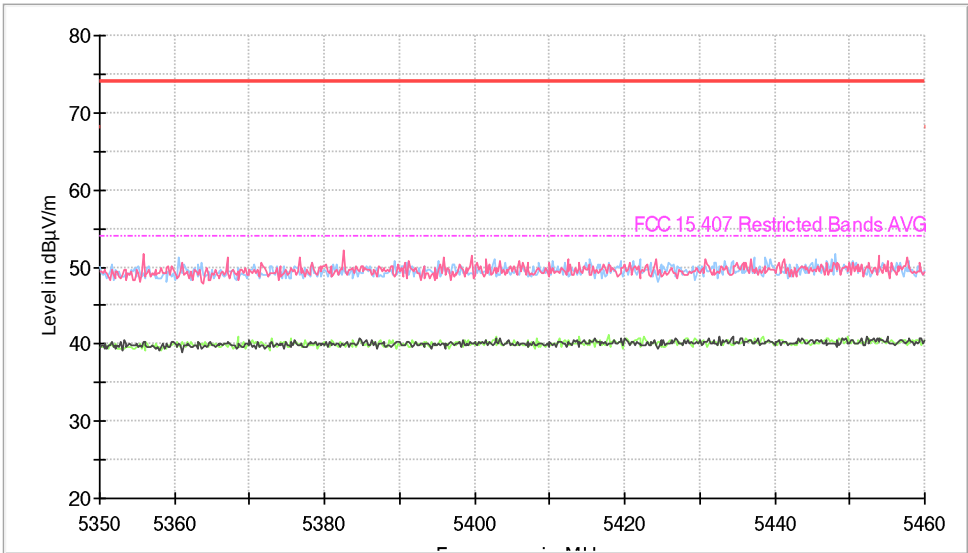
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5180.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) SU Antenna Configuration = MIMO

Images:



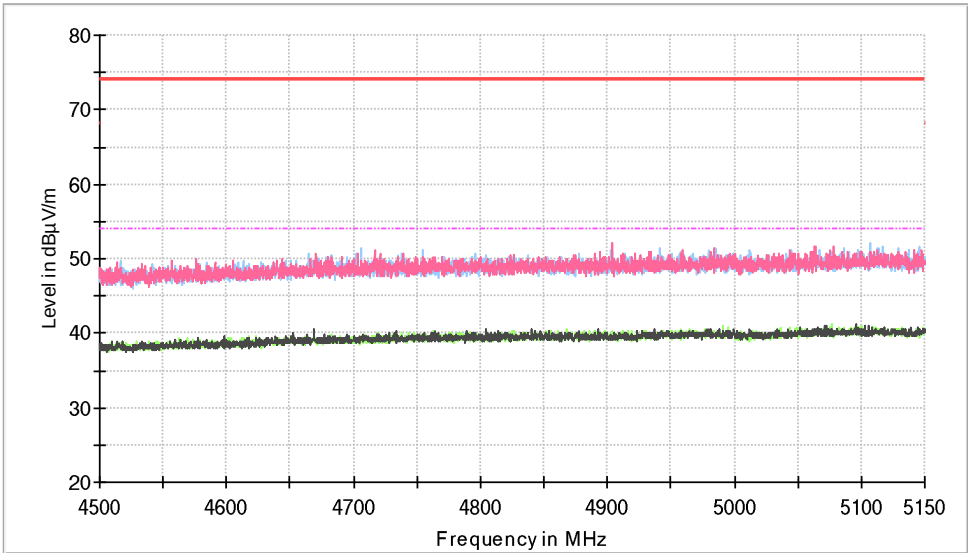
Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final Result PK+
Final Result AVG



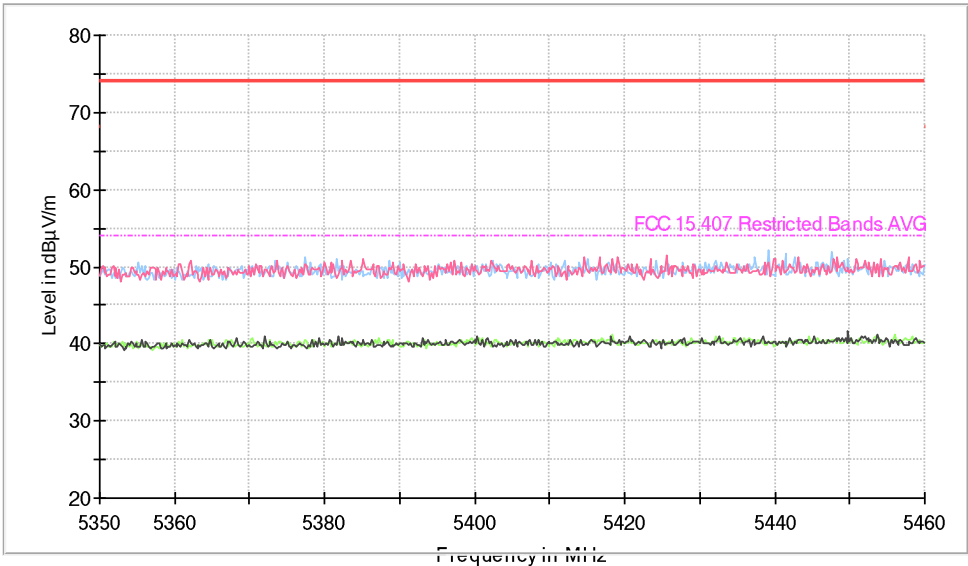
Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final Result PK+
Final Result AVG

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) SU Antenna Configuration = MIMO

Images:



Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG



Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG

Modulation: 802.11ax HE20 (OFDMA MCS0) RU26

Operation Band (MHz)	Port	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[5150, 5250]	3+2	[1, 6.5]	5180.00000	5143.80000	55.81	H	PK
					44.06	H	AVG
				5145.40000	56.08	H	PK
					44.26	H	AVG

Verdict

Pass

Attachments

Operation Band MHz = [5150, 5250]

Active Port = 3+2

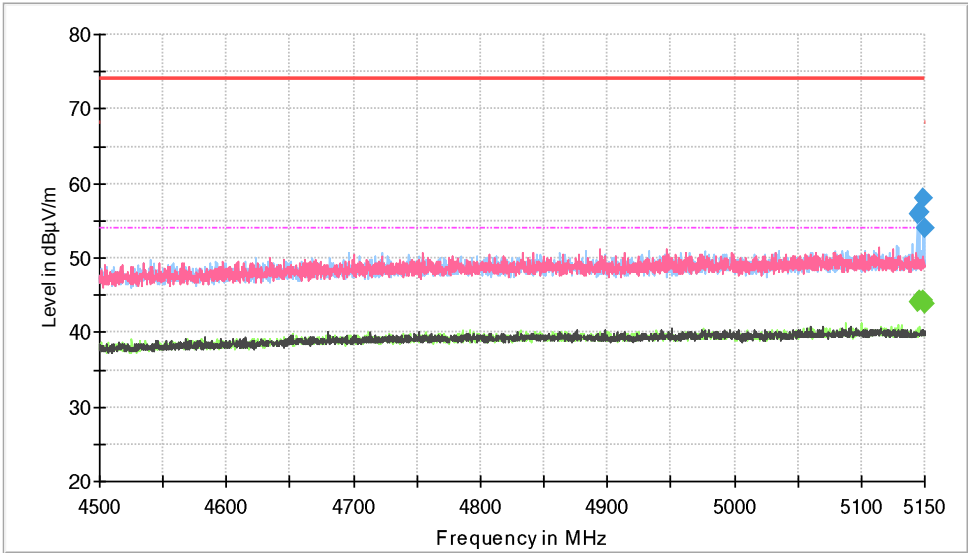
Frequency Range GHz = [1, 6.5]

Frequency MHz = 5180.00000

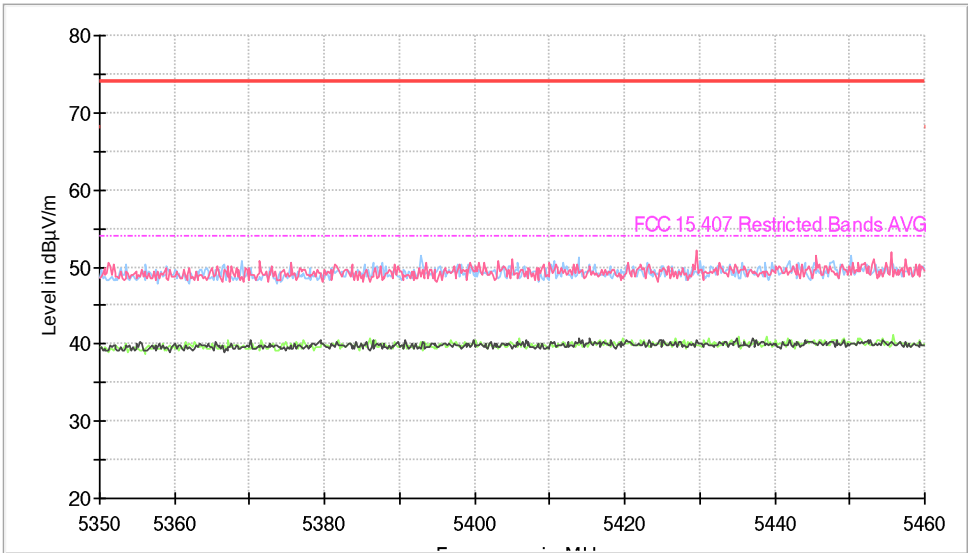
Modulation = 802.11ax HE20 (OFDMA MCS0) RU

Antenna Configuration = MIMO

Images:



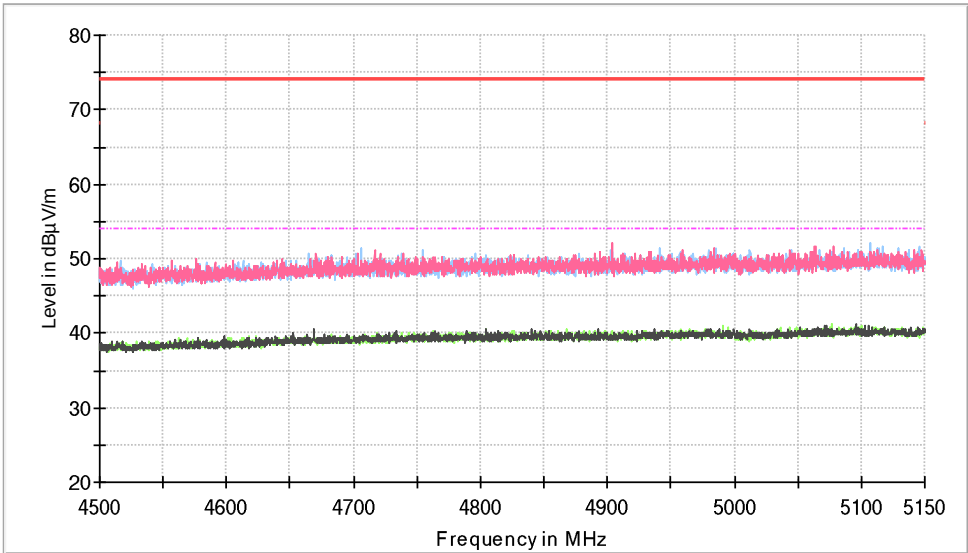
- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



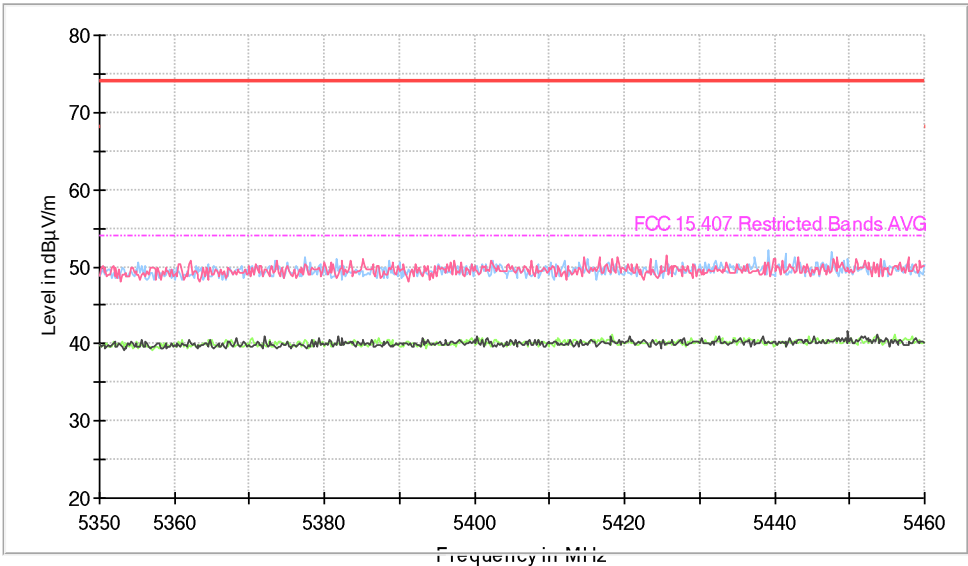
- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) RU Antenna Configuration = MIMO

Images:



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Modulation: 802.11ax HE40 (OFDMA MCS0) SU

Operation Band (MHz)	Port	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[5150, 5250]	3+2	[1, 6.5]	5190.00000	5137.4000	54.62	H	PK
					45.06	H	AVG
				5146.2000	58.79	H	PK
					46.87	H	AVG

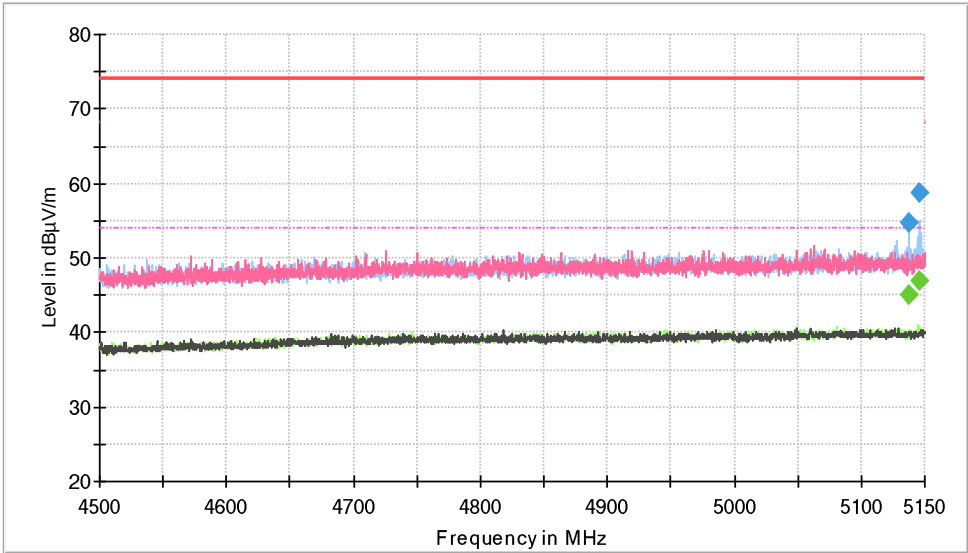
Verdict

Pass

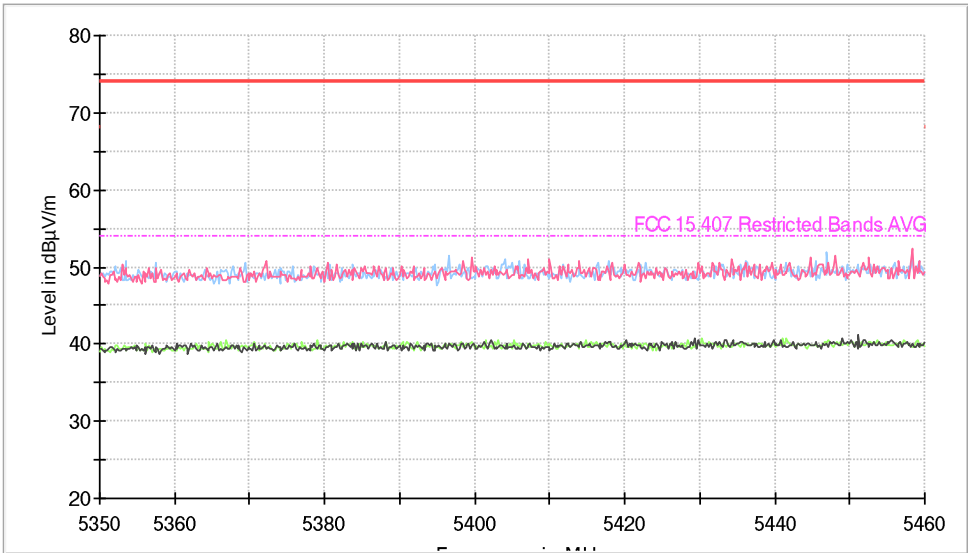
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5190.00000
Modulation = 802.11ax HE40 (OFDMA MCS0) SU Antenna Configuration = MIMO

Images:



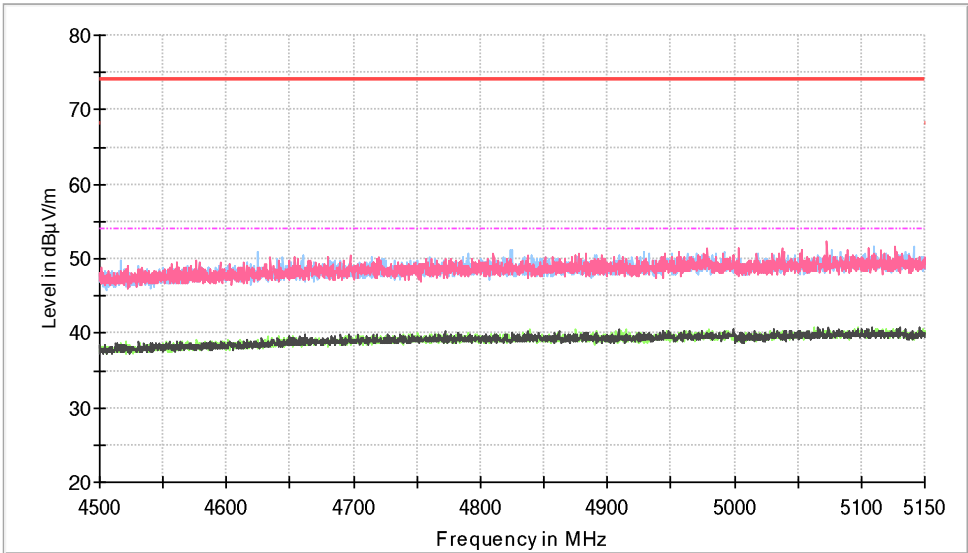
Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG



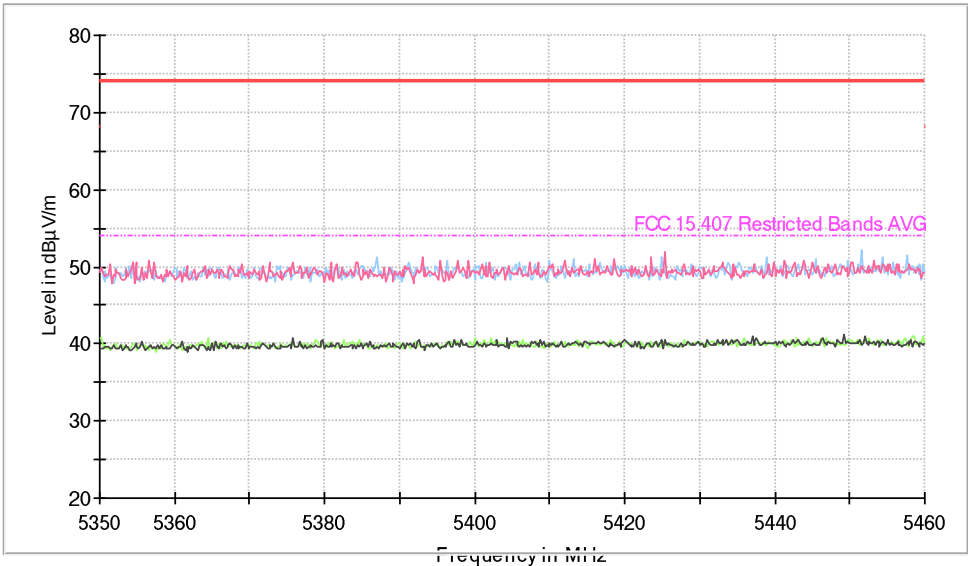
Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ax HE20 (OFDMA MCS0) SU Antenna Configuration = MIMO

Images:



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG



- Preview Result 2H-AVG
- Preview Result 1H-PK+
- Preview Result 2V-AVG
- Preview Result 1V-PK+
- FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
- FCC 15.407 Restricted Bands AVG
- Final_Result PK+
- Final_Result AVG

Modulation: 802.11ax HE40 (OFDMA MCS0) RU26

Operation Band (MHz)	Port	Freq Rng (GHz)	Freq (MHz)	Unwanted Freq (MHz)	Unwanted Lvl (dBµV/m)	Pol	Detector
[5150, 5250]	3+2	[1, 6.5]	5190.00000	5125.2000	54.79	H	PK
					45.02	H	AVG
				5134.2000	62.60	H	PK
					46.42	H	AVG
				5141.2000	63.92	H	PK
					47.46	H	AVG
				5144.4000	63.22	H	PK
					46.66	H	AVG
				5150.0000	65.79	H	PK
					47.03	H	AVG

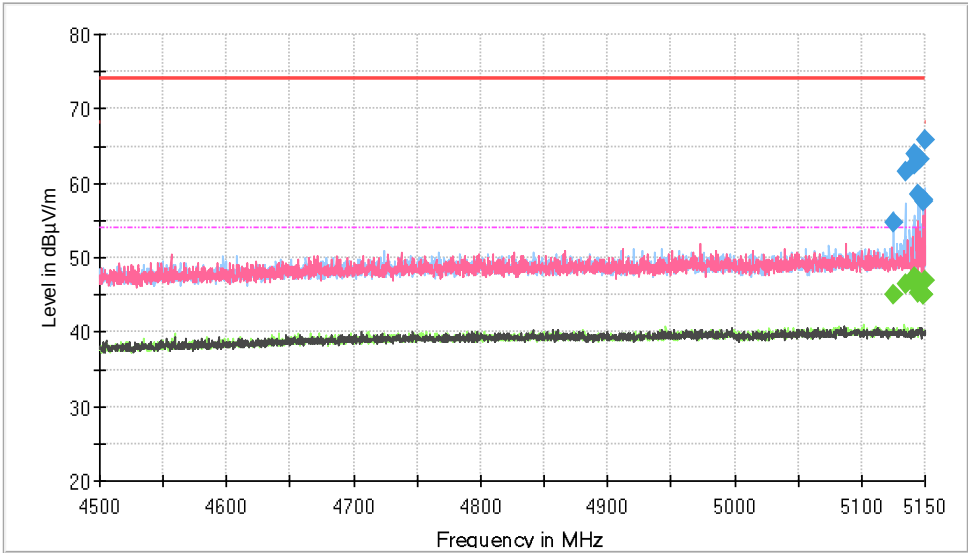
Verdict

Pass

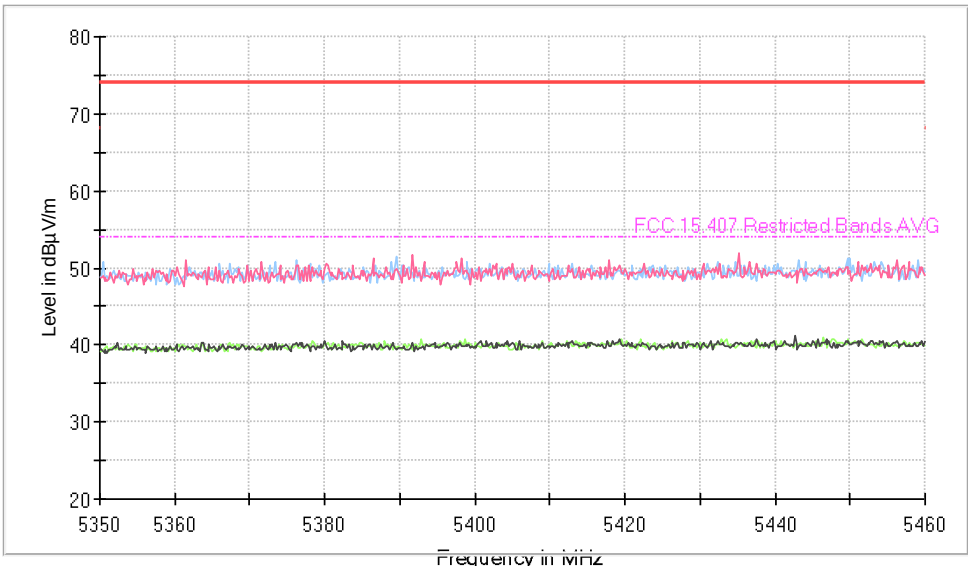
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5190.00000
Modulation = 802.11ax HE40 (OFDMA MCS0) RU26 Antenna Configuration = MIMO

Images:



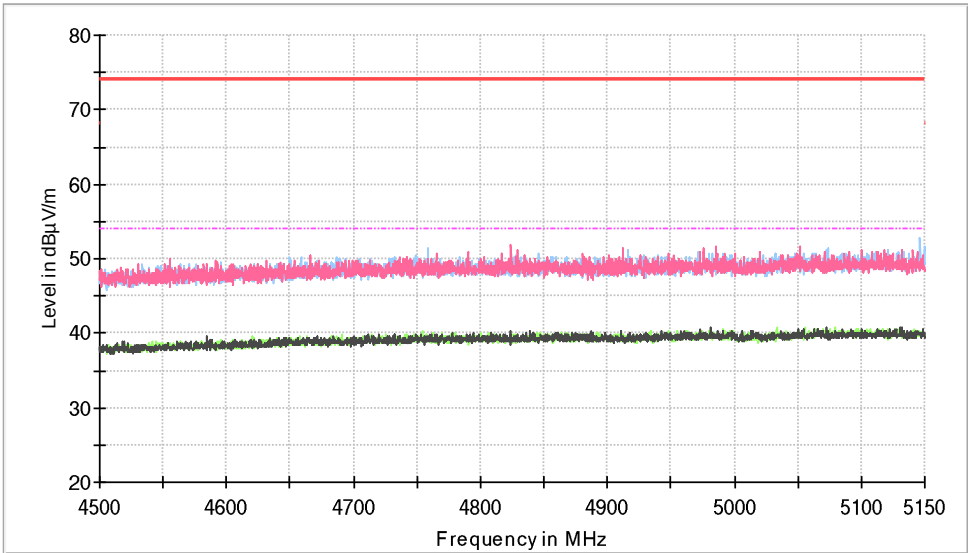
Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG



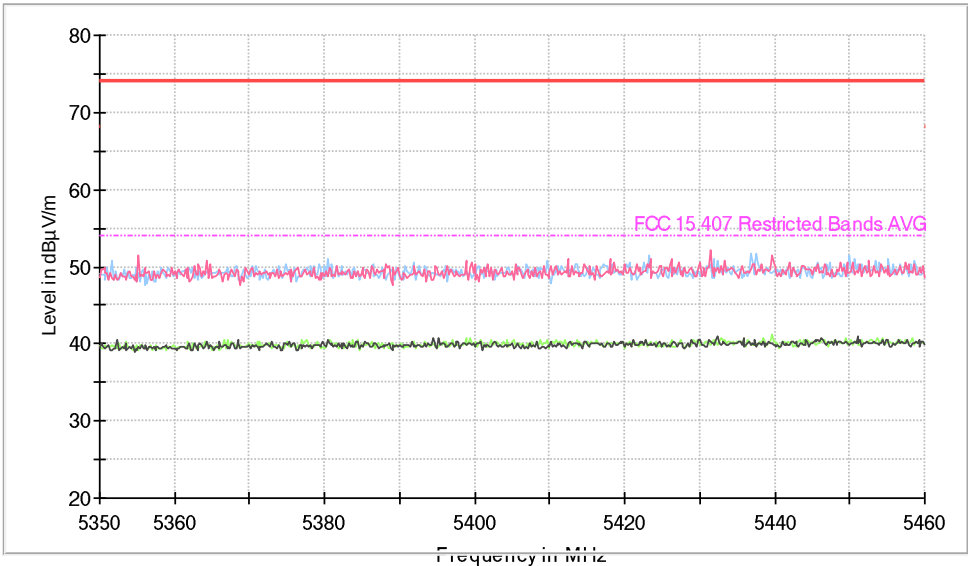
Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5230.00000
Modulation = 802.11ax HE40 (OFDMA MCS0) RU26 Antenna Configuration = MIMO

Images:



Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG



Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG

Modulation: 802.11ax HE80 (OFDMA MCS0) SU

No spurious emissions were detected at less than 20 dB from the limit.

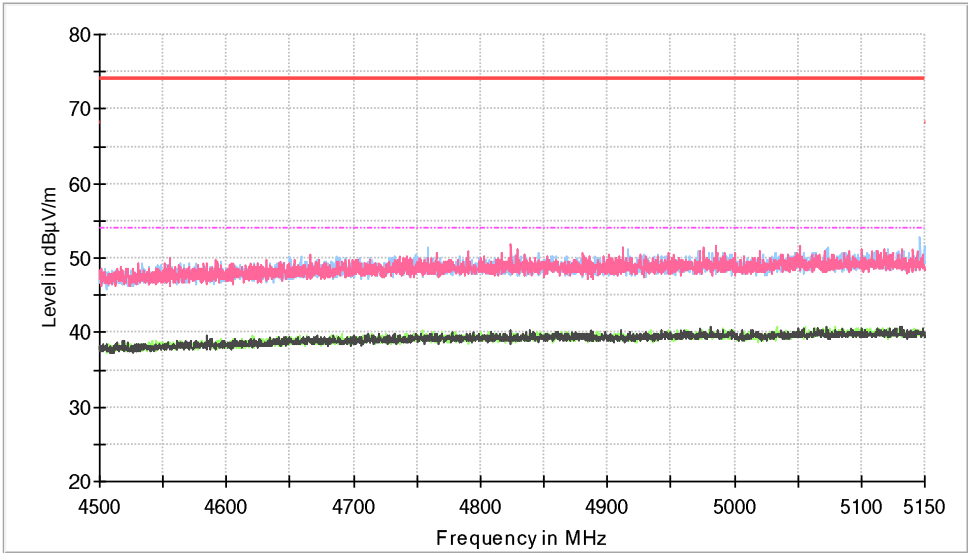
Verdict

Pass

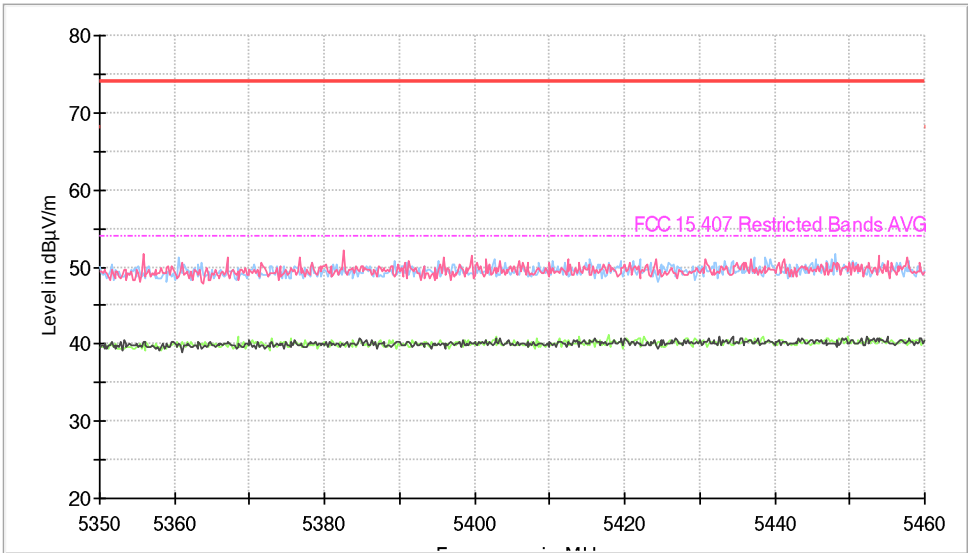
Attachments

Operation Band MHz = [5150, 5250] Active Port = 3
Frequency Range GHz = [1, 6.5] Frequency MHz = 5210.00000
Modulation = 802.11ax HE80 (OFDMA MCS0) SU Antenna Configuration = MIMO

Images:



Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG



Preview Result 2H-AVG
Preview Result 1H-PK+
Preview Result 2V-AVG
Preview Result 1V-PK+
FCC 15.407 Restricted Bands PK UNII-1 and UNII-2
FCC 15.407 Restricted Bands AVG
Final_Result PK+
Final_Result AVG

Modulation: 802.11ax HE80 (OFDMA MCS0) RU26

No spurious emissions were detected at less than 20 dB from the limit.

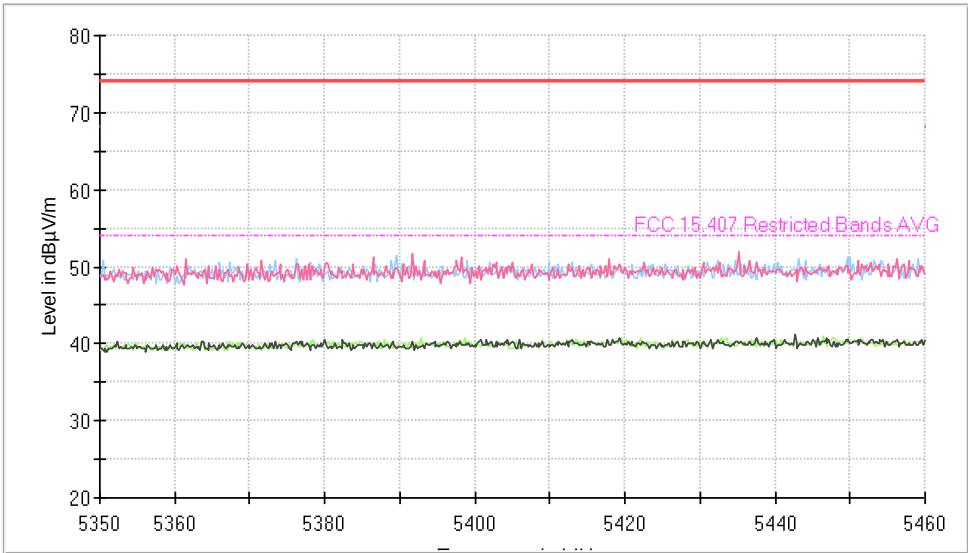
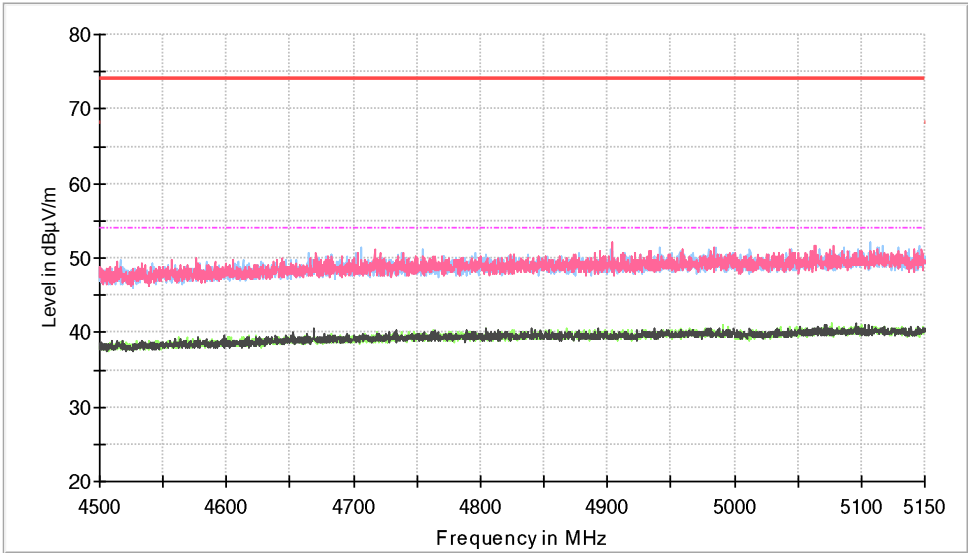
Verdict

Pass

Attachments

Operation Band MHz = [5150, 5250] Active Port = 3+2
Frequency Range GHz = [1, 6.5] Frequency MHz = 5210.00000
Modulation = 802.11ax HE80 (OFDMA MCS0) RU26 Antenna Configuration = MIMO

Images:



Appendix C: Tests results for the U-NII-3: 5.725 GHz – 5.85 GHz Band

INDEX

TEST CONDITIONS 421

FCC 15.407 (e) 6 dB Emission Bandwidth 426

FCC 15.407 (a) (3) Maximum Conducted output power UNII-3 500

FCC 15.407 (a) (3) Transmitter Maximum Power Spectral Density UNII-3 506

FCC 15.407 (b) (4) (6) Transmitter Out of Band Radiated Emissions For transmitters operating
solely in the 5.725-5.850 GHz band 582

TEST CONDITIONS

(*) Declared by the Client.

POWER SUPPLY (*):

Vnominal: 12 Vdc
Type of Power Supply: External power supply (Vehicle Battery)

ANTENNA (*):

Type of Antennas: External

		Effective Antenna Gain
UNII-1	RF Output Port (Chain 0): Port 3	+7.70 dBi
	RF Output Port (Chain 1): Port 2	+2.38 dBi
UNII-3	RF Output Port (Chain 0): Port 3	+7.70 dBi
	RF Output Port (Chain 1): Port 2	+2.38 dBi

Directional Antenna Gain Calculations for CDD MIMO In-Band Measurements:

For 2Tx CDD MIMO modes, in accordance with KDB 662911 D01 v02r01 Section F)2)f)(ii) y F)2)e)ii), directional gain, directional gain was calculated as follows:

$$\begin{aligned}
 N_{SS} &= 1, N_{ANT} = 2, G_{ANT0} = 7.70, G_{ANT1} = 2.38 \\
 \text{Directional Gain} &= 10 \log \left[\frac{\sum_{j=1}^{N_{SS}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right] = 10 \log \left[\frac{\sum_{j=1}^1 \left(\sum_{k=1}^2 g_{j,k} \right)^2}{2} \right] \\
 &= 10 \log \left[\frac{(g_{1,1} + g_{1,2})^2}{2} \right] = 10 \log \left[\frac{(10^{\frac{7.70}{20}} + 10^{\frac{2.38}{20}})^2}{2} \right] = 10 \log \left[\frac{(10^{\frac{7.70}{20}} + 10^{\frac{2.38}{20}})^2}{2} \right] = 8.45 \text{ dBi}
 \end{aligned}$$

For the SISO and MIMO techniques, the antenna gain are higher than 6 dBi.

POWER ADJUSTMENT (*):

Modes:	Power Adjustment SISO Port 3:	Power Adjustment MIMO (Port 3 + Port 2):
A20	15	15
N20	15	15
N40	15	15
AC20	15	15
AC40	15	15
AC80	15	15
AX20 SU	15	15
AX20 RU26	15	15
AX40 SU	15	15
AX40 RU26	15	15
AX80 SU	15	15
AX80 RU26	15	15

TEST FREQUENCIES (*):

Technology Tested:	WLAN (IEEE 802.11 a20 / n2040 / ac204080 / ax204080 1x1 & 2x2)
Modes:	802.11a: 6, 9, 12, 18, 24, 36, 48 & 54 Mbps (1 or 2 spatial stream with either SISO or 2 chains MIMO CDD).
	802.11n HT20: MCS0 to MCS23 (1 or 2 spatial stream with either SISO or 2 chains MIMO CDD).
	802.11n HT40: MCS0 to MCS23 (1 or 2 spatial stream with either SISO or 2 chains MIMO CDD).
	802.11ac VHT20: MCS0 to MCS9 (1 or 2 spatial stream) (SISO, or MIMO with CDD without TxBF).
	802.11ac VHT40: MCS0 to MCS9 (1 or 2 spatial stream) (SISO, or MIMO with CDD without TxBF).
	802.11ac VHT80: MCS0 to MCS9 (1 or 2 spatial stream) (SISO, or MIMO with CDD without TxBF).
	802.11ax HE20: MCS0 to MCS9 (1 or 2 spatial stream) (SISO, or MIMO with CDD without TxBF).
	802.11ax HE40: MCS0 to MCS9 (1 or 2 spatial stream) (SISO, or MIMO with CDD without TxBF).
	802.11ax HE80: MCS0 to MCS9 (1 or 2 spatial stream) (SISO, or MIMO with CDD without TxBF).
Setting of cores / ports:	Chain 0, Chain 1, Chain 0 & 1
Beamforming:	No.

Band U-NII-3:

Frequency Range:	5725 - 5850 MHz	
Operating Channel Bandwidth:	20 MHz	
Transmission Channels:	Channels	Channel Frequency (MHz)
	Low (149)	5745
	Middle (157)	5785
	High (165)	5825
Operating Channel Bandwidth:	40 MHz	
Transmission Channels:	Channels	Channel Frequency (MHz)
	Low (151)	5755
	High (159)	5795
Operating Channel Bandwidth:	80 MHz	
Transmission Channels:	Channels	Channel Frequency (MHz)
	Single (155)	5775

These tests were performed on all the supported modes of the EUT, in the worst data rates after preliminary testing.
SISO tests were performed on determined SISO Chain 0 (Port 3) as it is the worst-case after preliminary testing.

The test set-up was made in accordance to the general provisions of FCC Unlicensed National Information Infrastructure (U-NII) Devices 789033 D02 General U-NII Test Procedures New Rules v02r01 dated Dec 14, 2017.

The EUT was tested in the following operating mode:

- Continuously transmitting with a modulated carrier at maximum power in all required channels using the supported data rates/modulations types.

The field strength at the band edges was evaluated for each mode on the lowest and highest channels at the rated power for the channel under test.

CONDUCTED MEASUREMENTS:

The equipment under test was set up in a shielded room and connected to the TS8997 using a low-loss RF cable. The reading in the spectrum analyzer is corrected taking into account the internal and external RF cable loss.

For all modes:



RADIATED MEASUREMENTS:

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna (Bilog antenna for the range between 30 MHz to 1000 MHz) and 1 GHz-18 GHz Double ridge horn antenna is situated at a distance of 3 m and a distance of 1.5 m for the frequency range 17 GHz-40 GHz (18 GHz-40 GHz horn antenna).

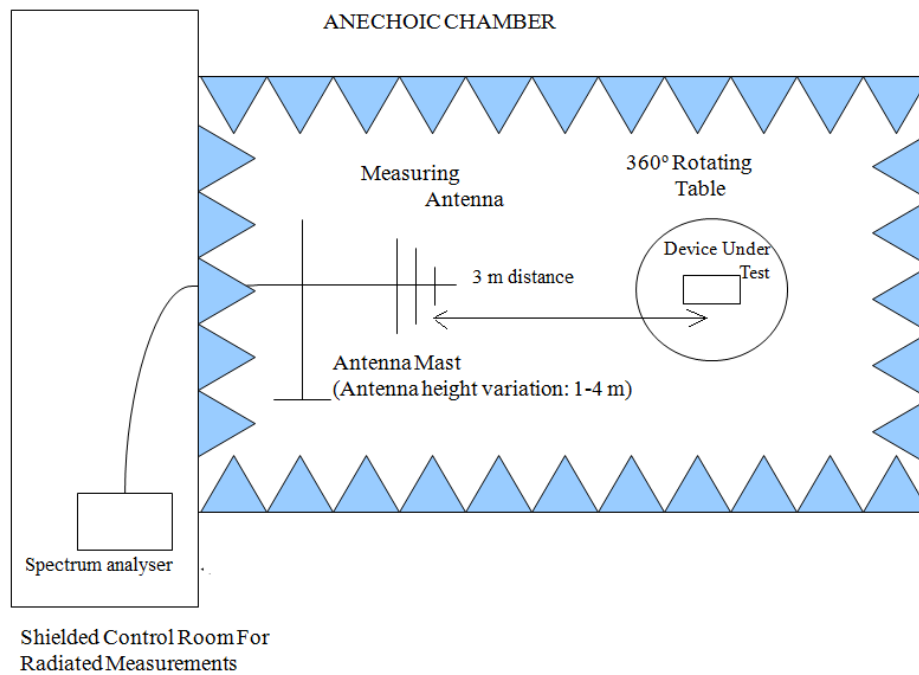
For radiated emissions in the range 17 GHz-40 GHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission. It was also rotated 360° and the antenna height (Bilog antenna and Double ridge horn antenna) was varied from 1 to 4 meters to find the maximum radiated emission.

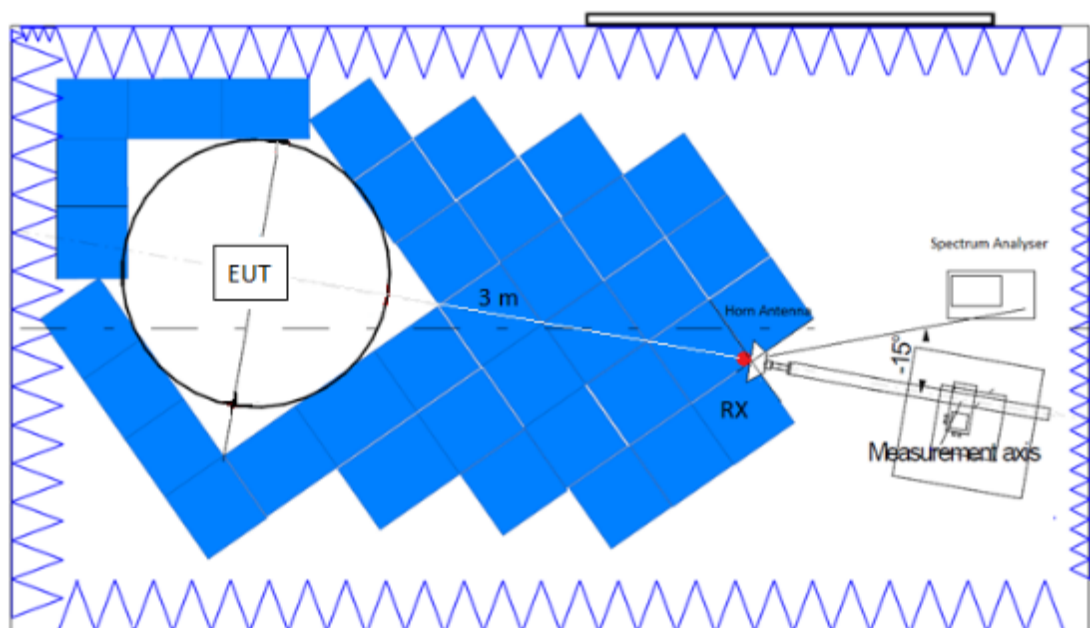
Measurements were made in both horizontal and vertical planes of polarization.

The final measured value, for the given emission, in the tables below incorporates the calibrated antenna factor and cable loss.

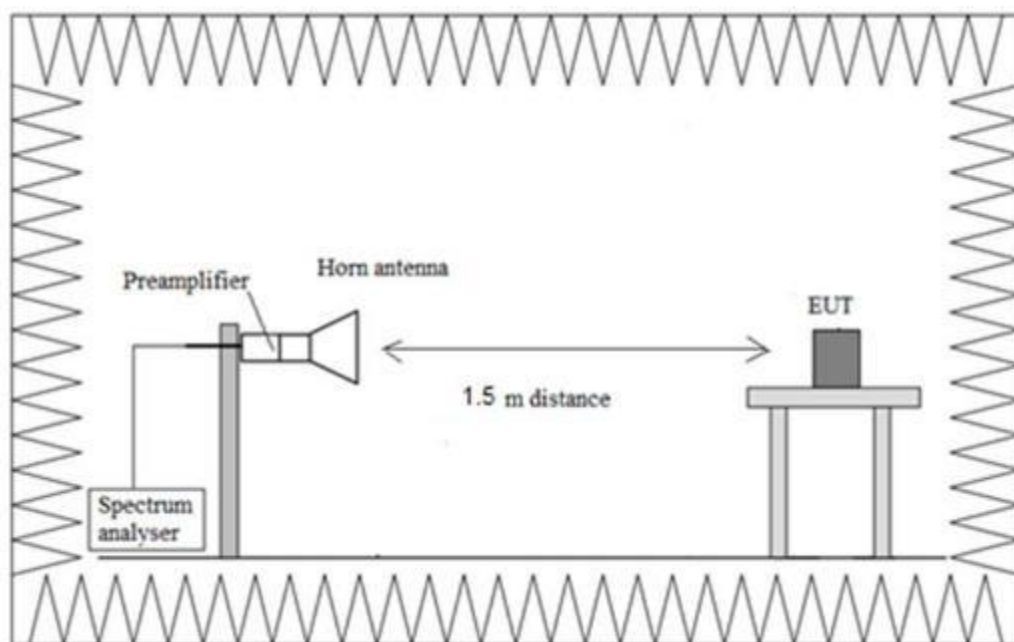
Radiated measurements setup $f < 1$ GHz:



Radiated measurements setup from 1 GHz to 17 GHz:



Radiated measurements setup $f > 17$ GHz:



FCC 15.407 (e) 6 dB Emission Bandwidth

Limits

For equipment operating in the band 5725-5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

Results

SISO (Port 3) (worst-case)

Modulation: 802.11a (OFDM 6 Mbit/s)

Operation Band (MHz)	Port	Freq (MHz)	6dB Ebw (MHz)
[5725, 5850]	3	5745.00000	16.450
		5785.00000	16.450
		5825.00000	16.450

Verdict

Pass

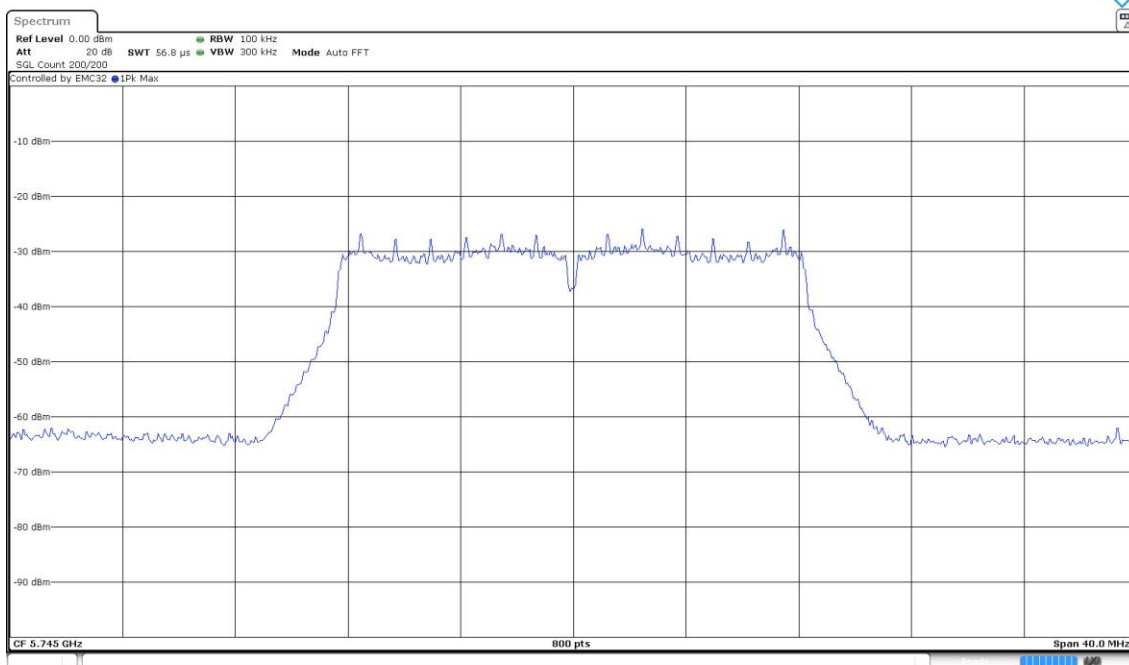
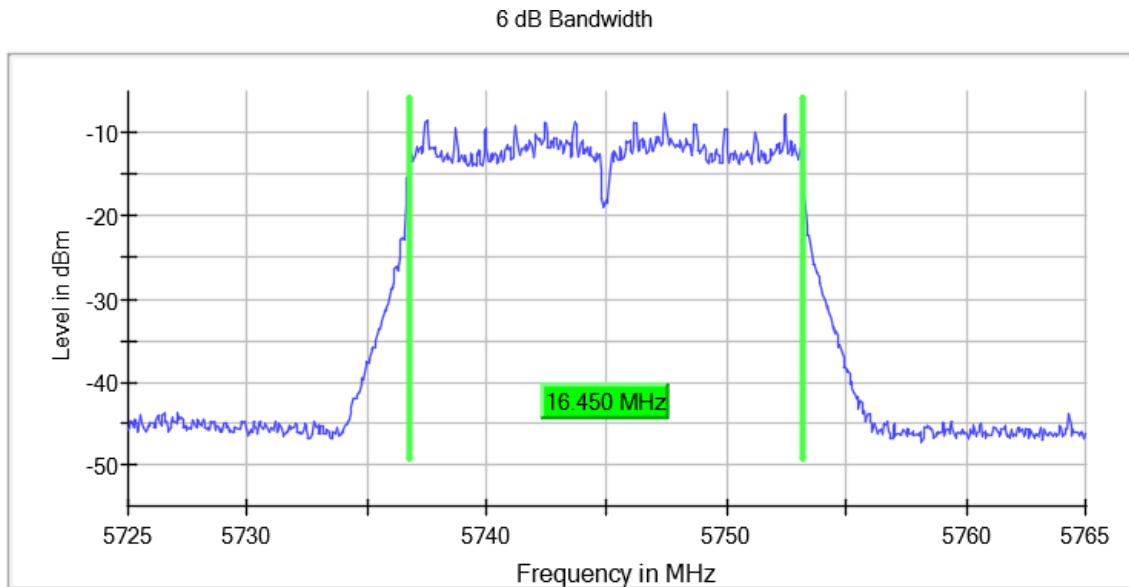
Attachments

Operation Band MHz = [5725, 5850] Active Port = 1

Frequency MHz = 5745.00000 Modulation = 802.11a (OFDM 6 Mbit/s)

Antenna Configuration = SISO

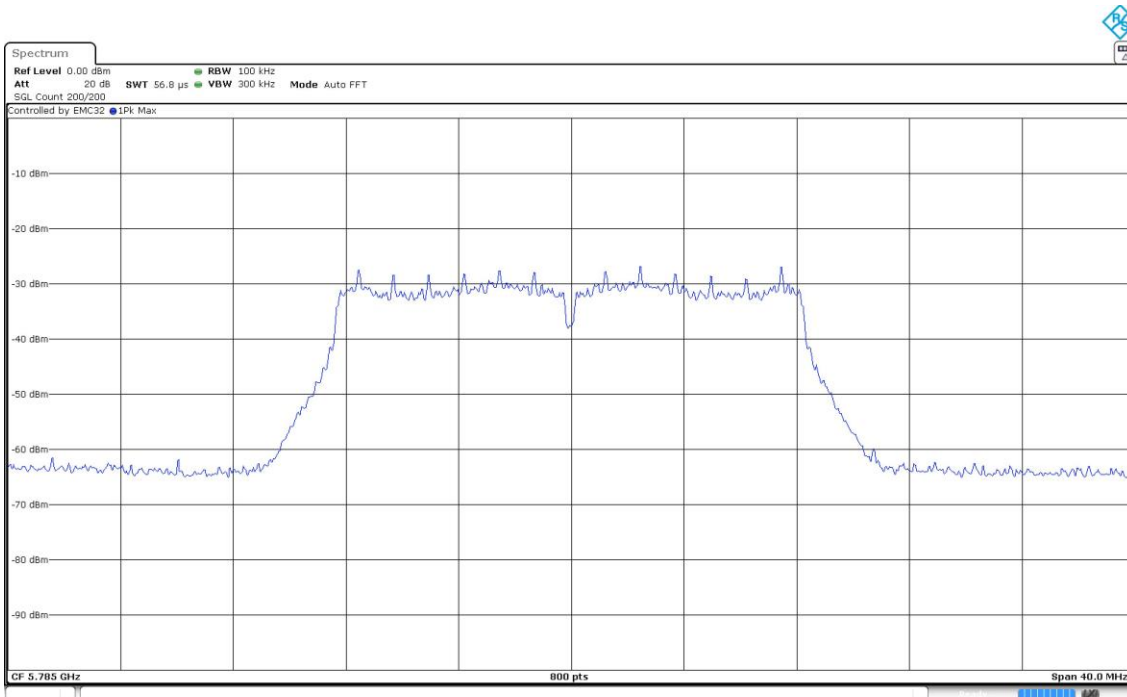
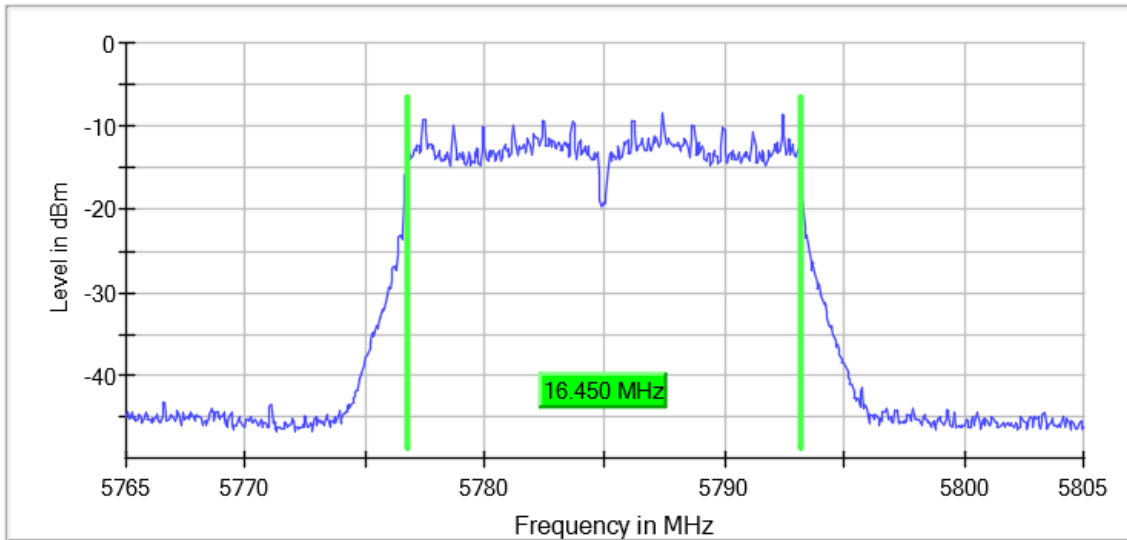
Images:



Operation Band MHz = [5725, 5850] Active Port = 1
 Frequency MHz = 5785.00000 Modulation = 802.11a (OFDM 6 Mbit/s)
 Antenna Configuration = SISO

Images:

6 dB Bandwidth



Operation Band MHz = [5725, 5850] Active Port = 1

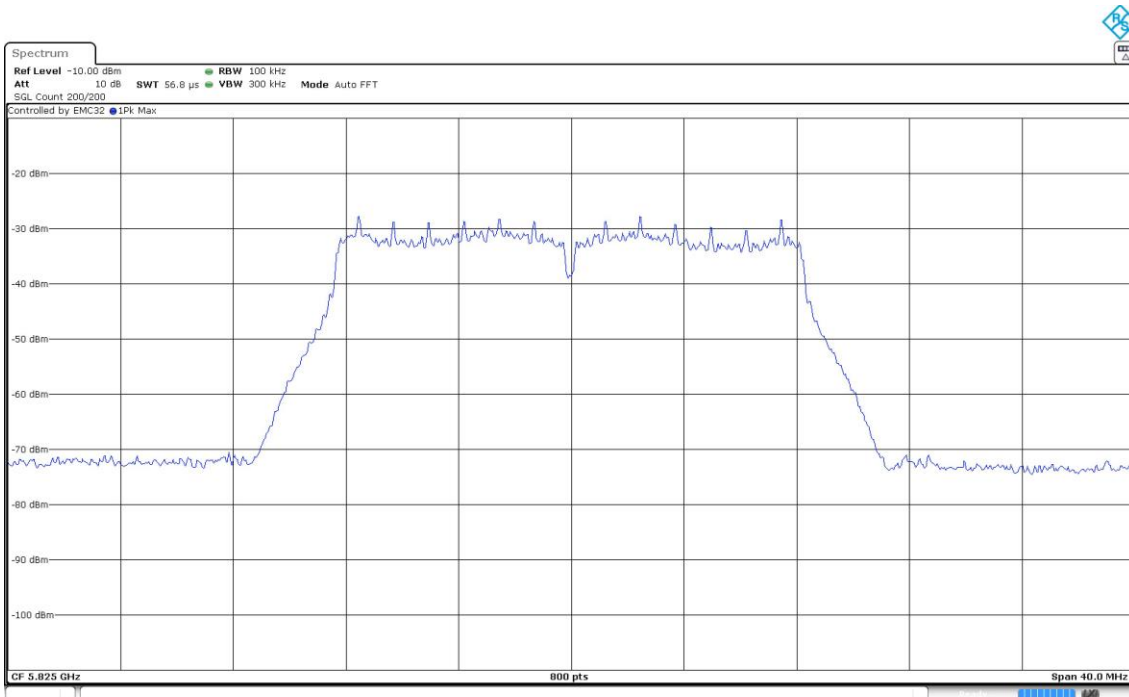
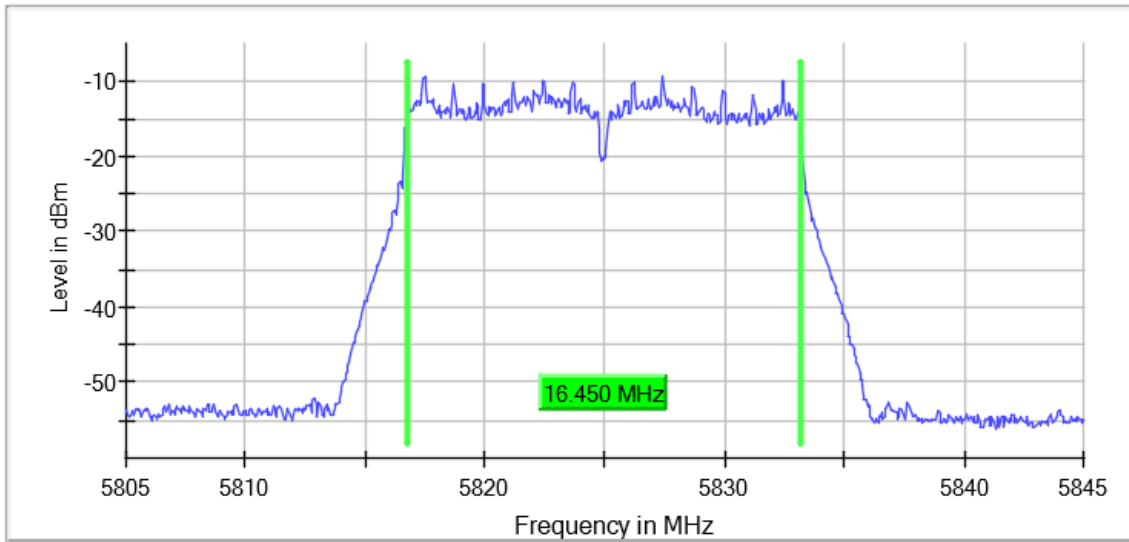
Frequency MHz = 5825.00000

Modulation = 802.11a (OFDM 6 Mbit/s)

Antenna Configuration = SISO

Images:

6 dB Bandwidth



Modulation: 802.11n HT20 (OFDM MCS0 6.5 Mbit/s)

Operation Band (MHz)	Port	Freq (MHz)	6dB Ebw (MHz)
[5725, 5850]	3	5745.00000	17.650
		5785.00000	17.650
		5825.00000	17.400

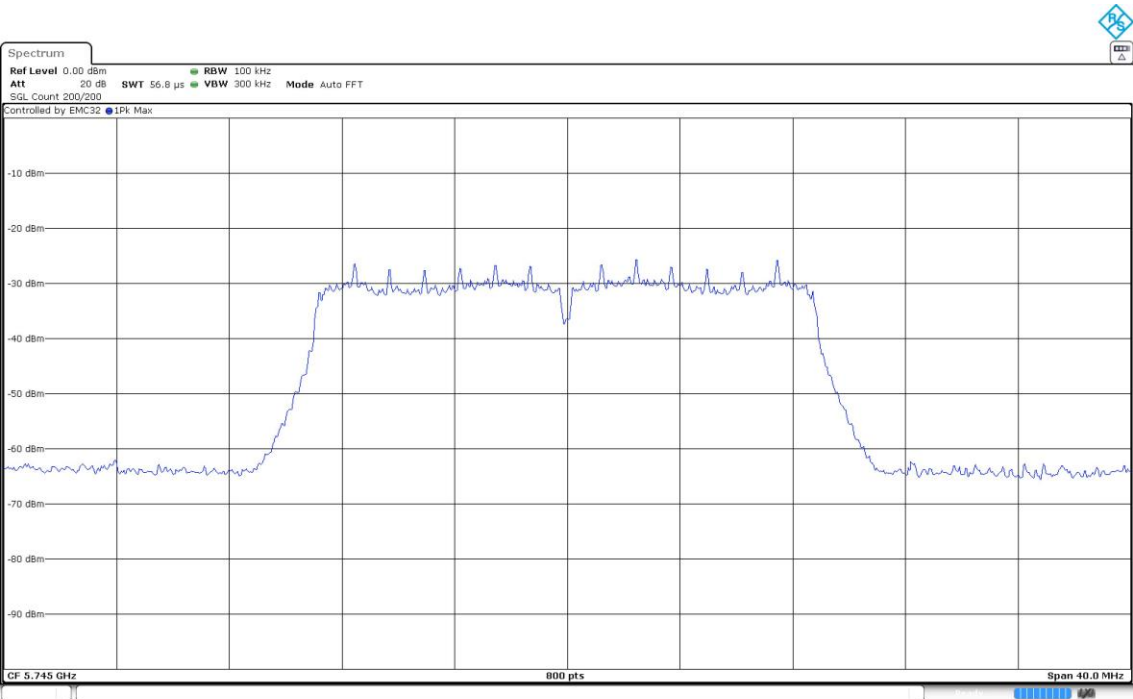
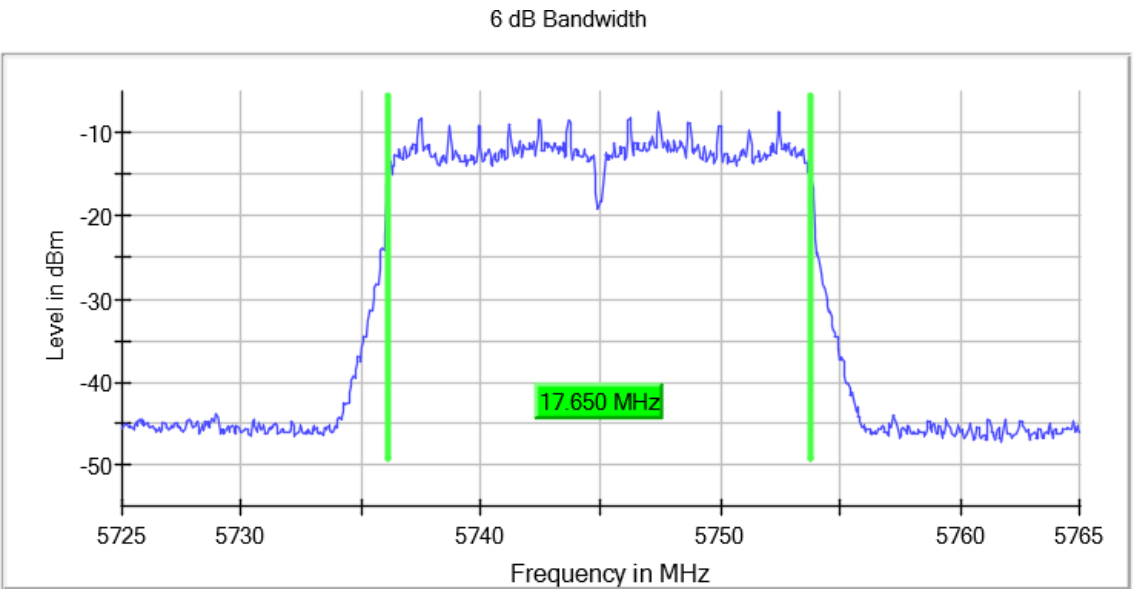
Verdict

Pass

Attachments

Operation Band MHz = [5725, 5850] Active Port = 1
Frequency MHz = 5745.00000 Modulation = 802.11n HT20 (OFDM MCS0)
Antenna Configuration = SISO

Images:



Operation Band MHz = [5725, 5850] Active Port = 1

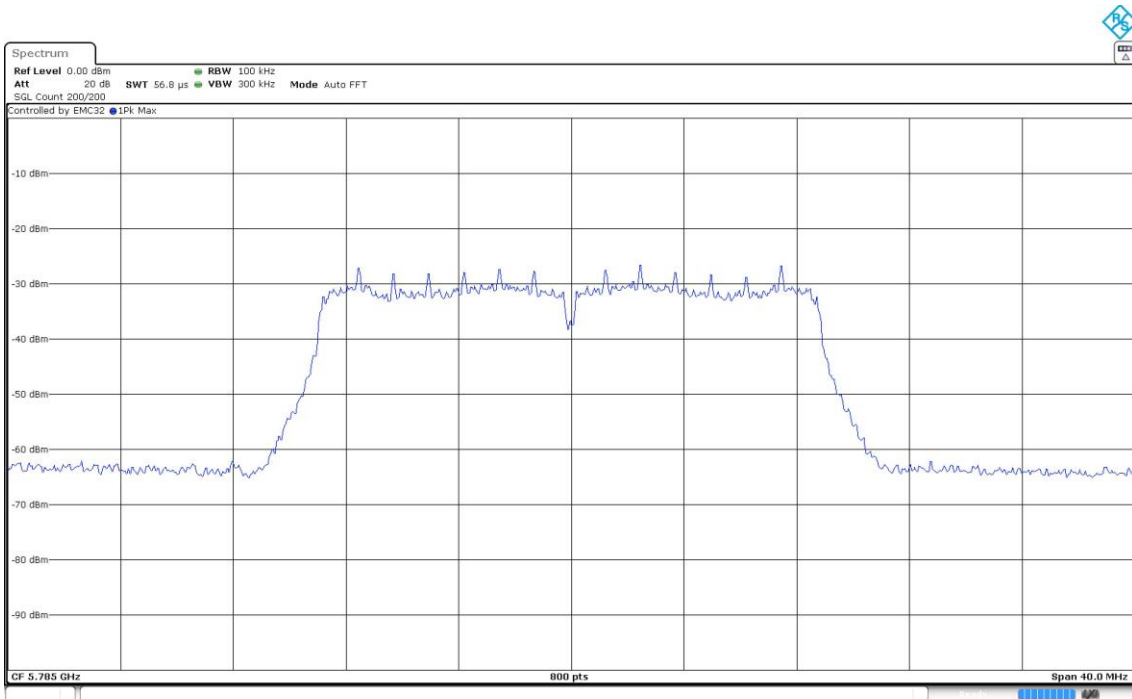
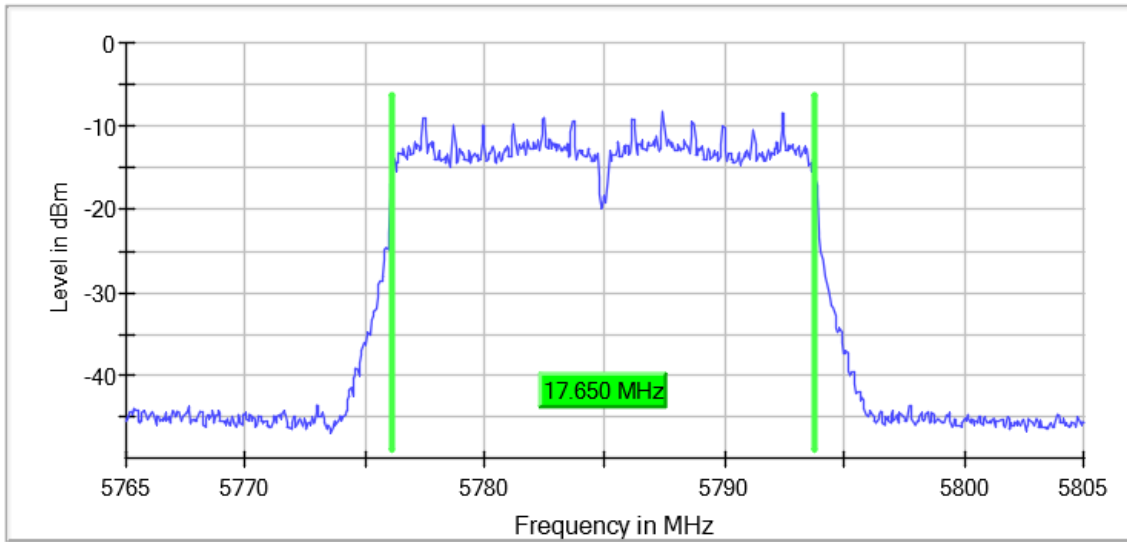
Frequency MHz = 5785.00000

Modulation = 802.11n HT20 (OFDM MCS0)

Antenna Configuration = SISO

Images:

6 dB Bandwidth



Operation Band MHz = [5725, 5850] Active Port = 1

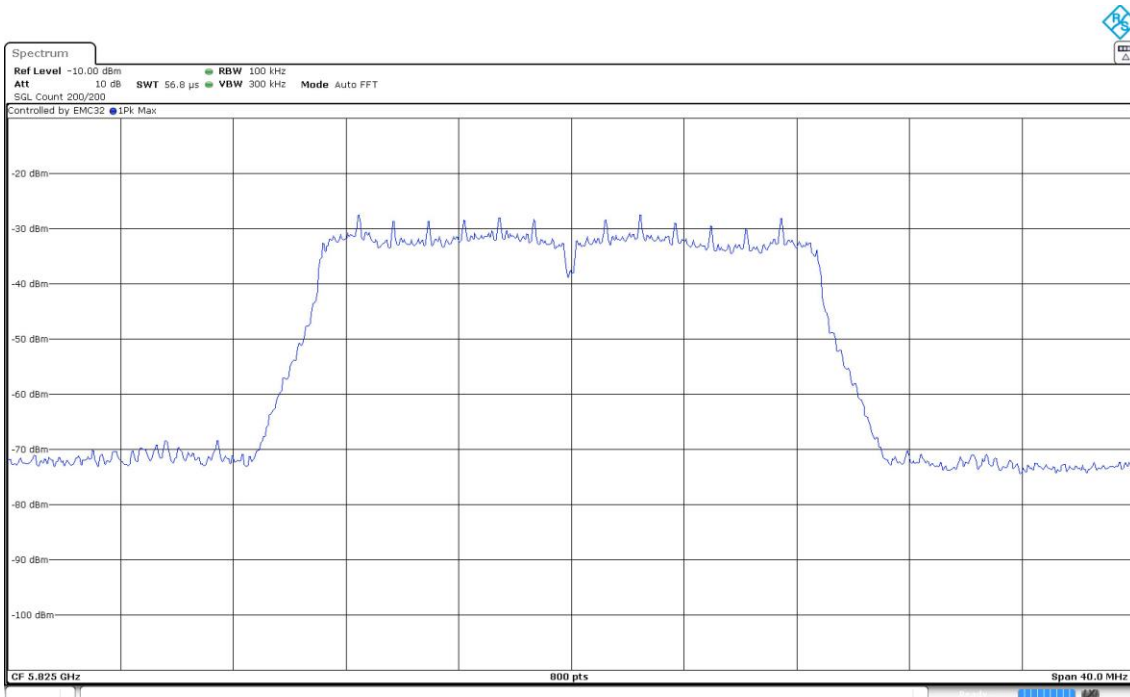
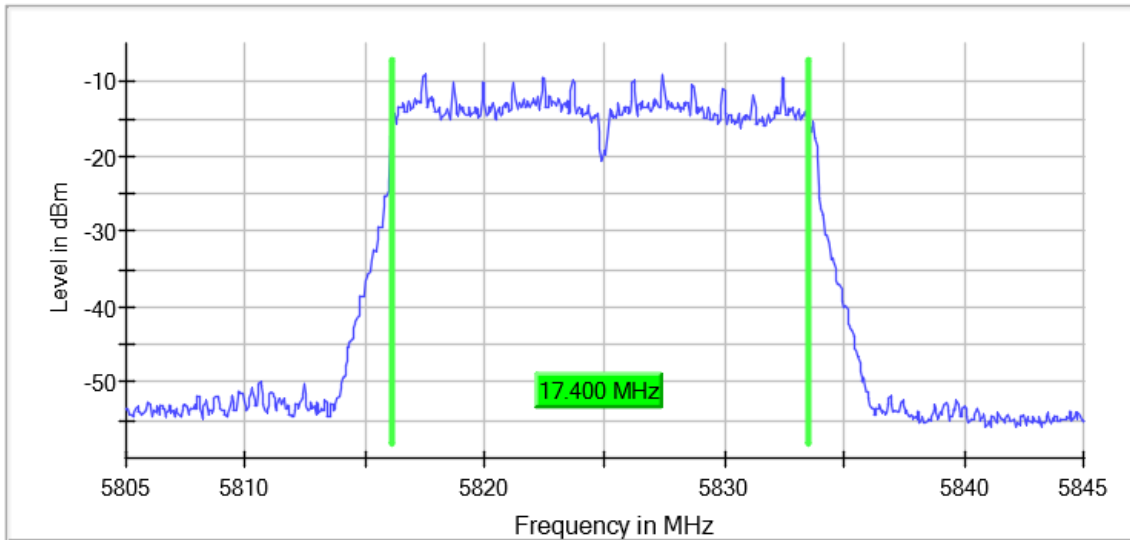
Frequency MHz = 5825.00000

Modulation = 802.11n HT20 (OFDM MCS0)

Antenna Configuration = SISO

Images:

6 dB Bandwidth



Modulation: 802.11n HT40 (OFDM MCS0 13.5 Mbit/s)

Operation Band (MHz)	Port	Freq (MHz)	6dB Ebw (MHz)
[5725, 5850]	3	5755.00000	35.750
		5795.00000	35.900

Verdict

Pass

Attachments

Operation Band MHz = [5725, 5850] Active Port = 1

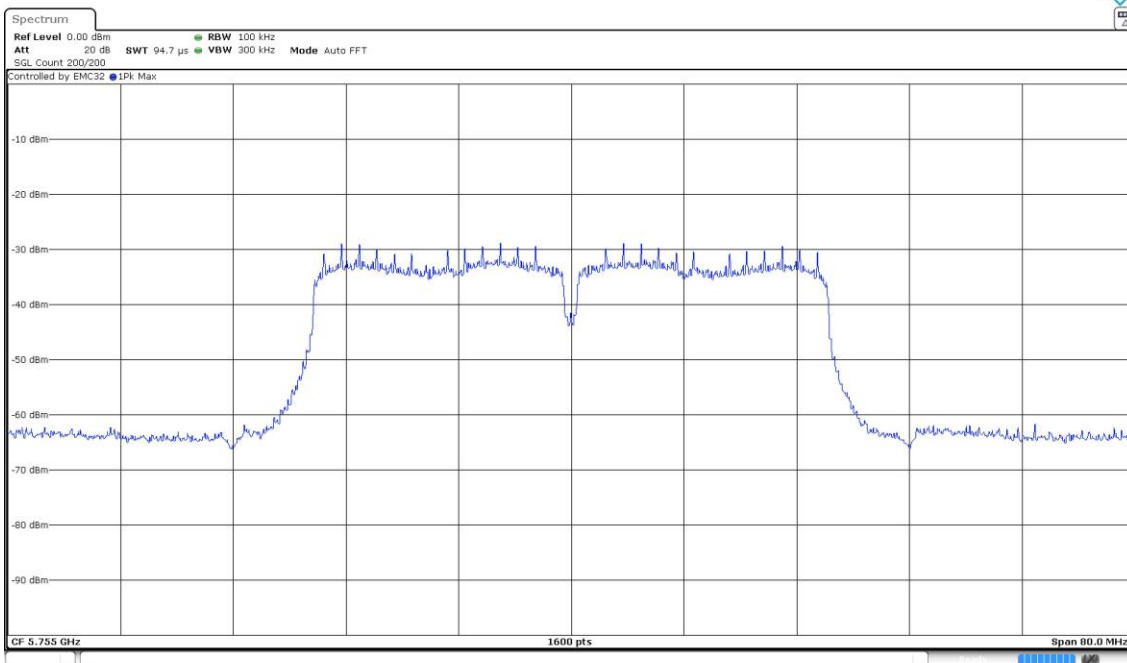
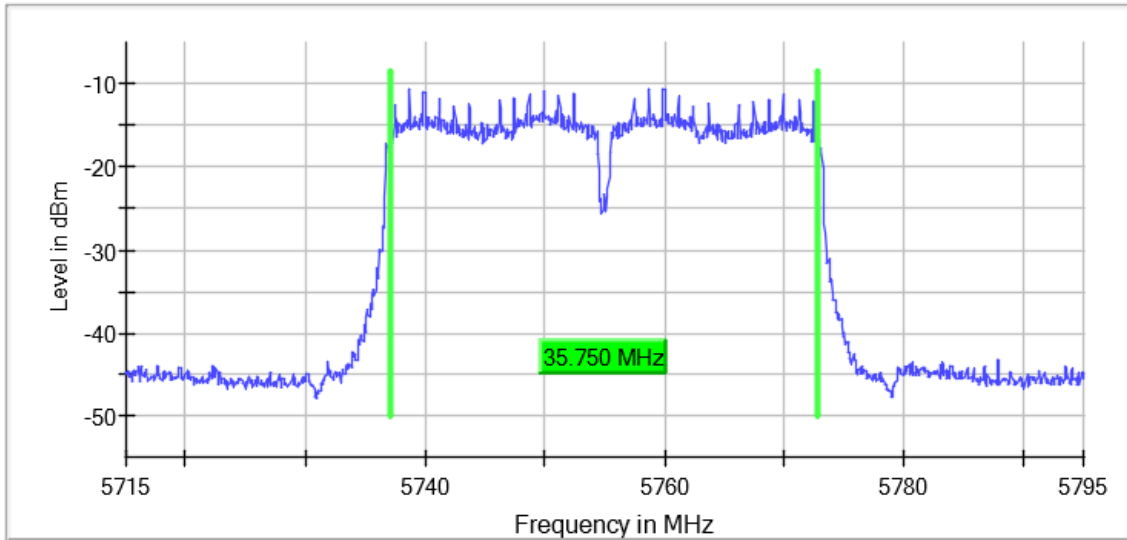
Frequency MHz = 5755.00000

Modulation = 802.11n HT40 (OFDM MCS0)

Antenna Configuration = SISO

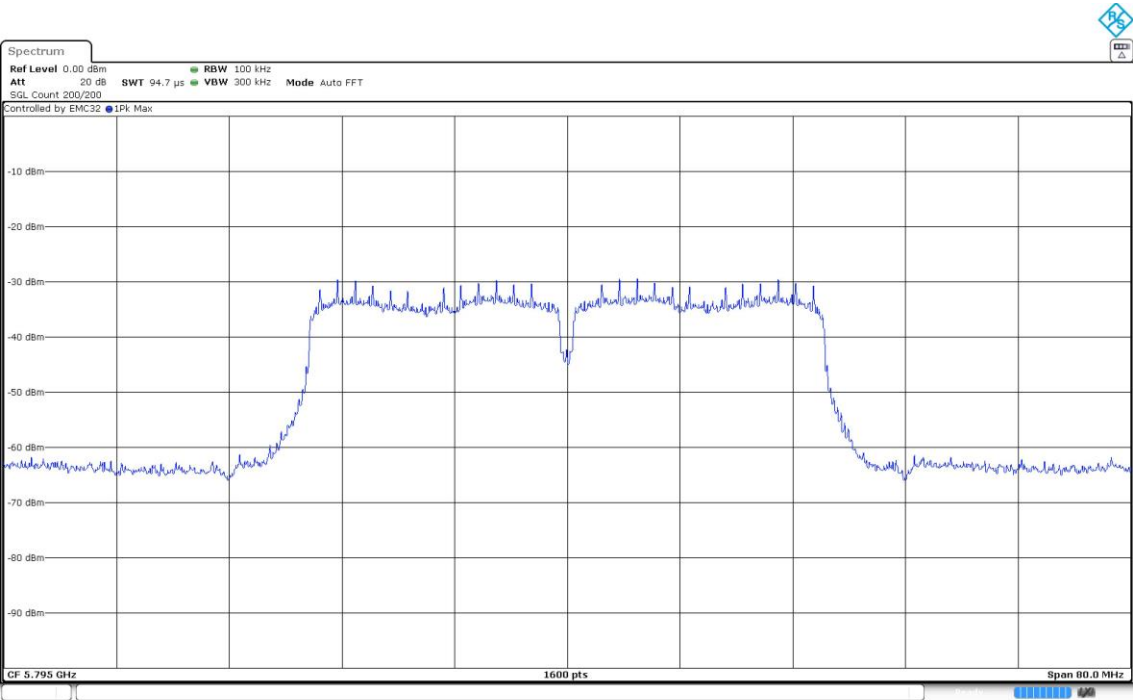
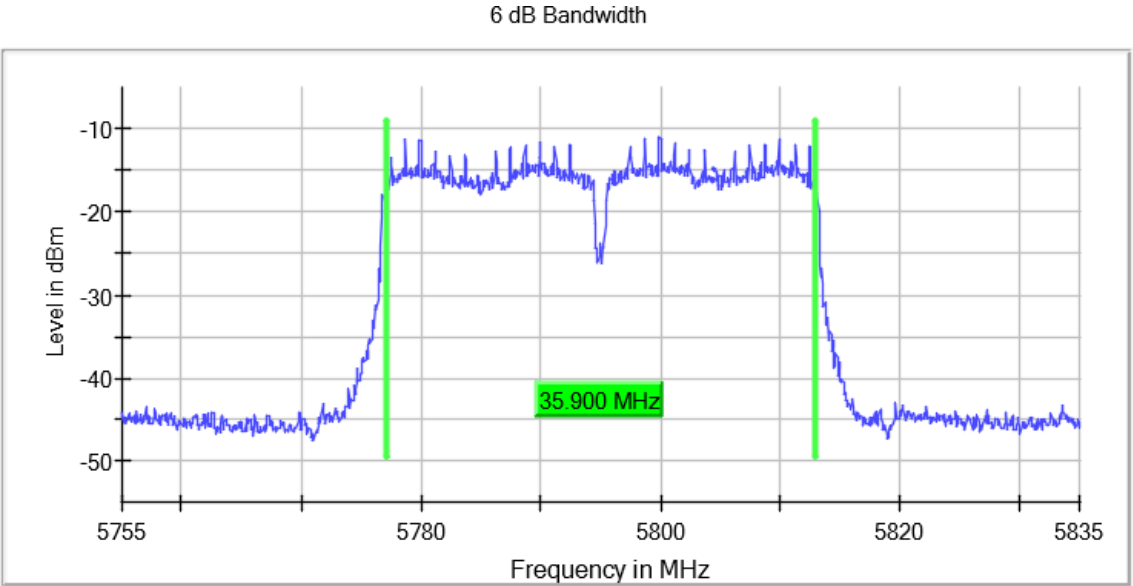
Images:

6 dB Bandwidth



Operation Band MHz = [5725, 5850] Active Port = 1
Frequency MHz = 5795.00000 Modulation = 802.11n HT40 (OFDM MCS0)
Antenna Configuration = SISO

Images:



Modulation: 802.11ac VHT20 (OFDM MCS0)

Operation Band (MHz)	Port	Freq (MHz)	6dB Ebw (MHz)
[5725, 5850]	3	5745.00000	17.650
		5785.00000	17.650
		5825.00000	17.400

Verdict

Pass