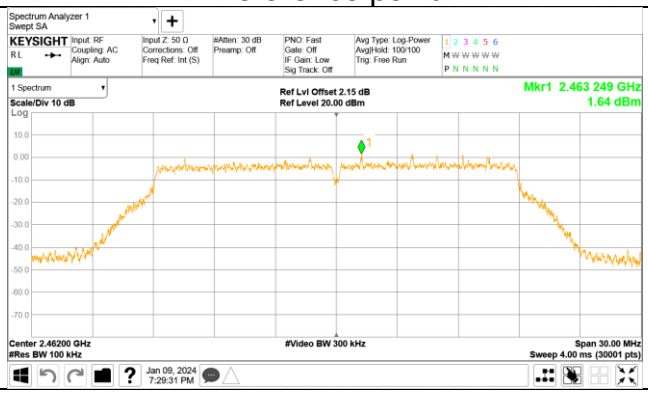
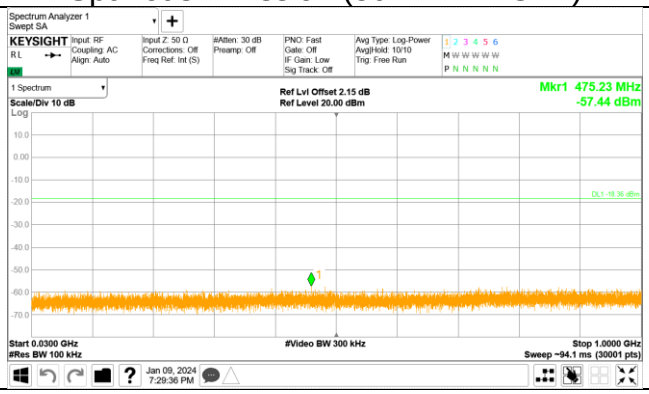
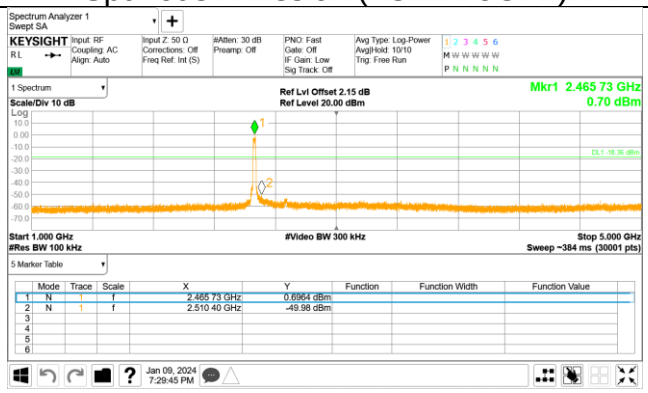
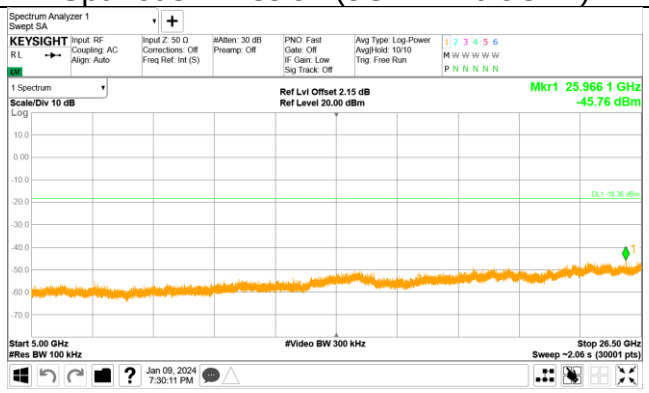
Out-of-Band Emissions	
Channel 11 (2462MHz)	
Reference point	Spurious Emission (30MHz – 1GHz)
	
Spurious Emission (1GHz –5GHz)	Spurious Emission (5GHz –26.5GHz)
	

Note: The emission which exceed the limit is the fundamental.

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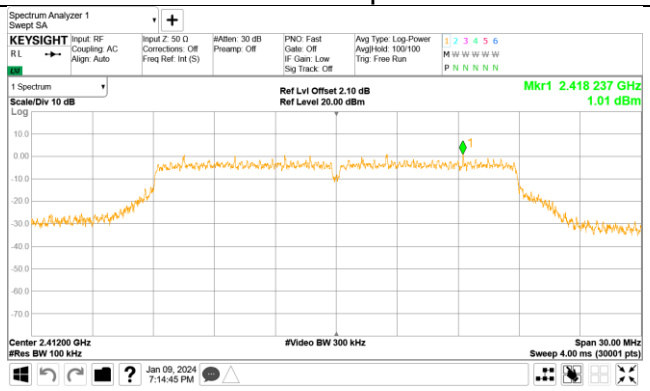
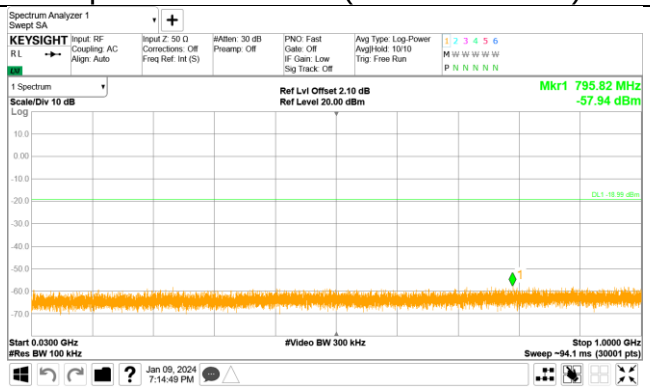
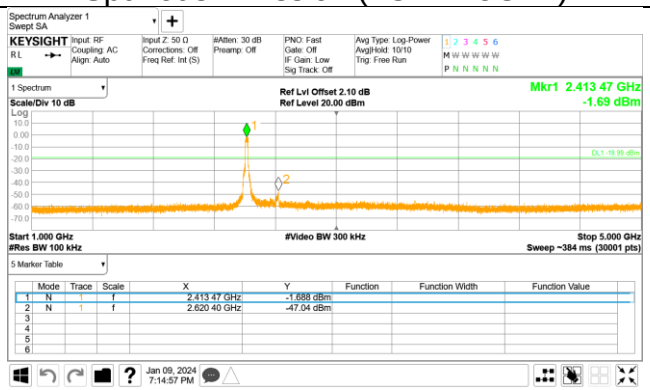
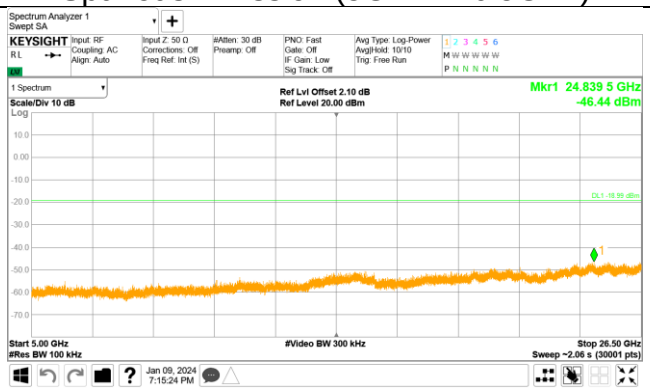
802.11 N20 Ant2

Out-of-Band Emissions	
Channel 1 (2412MHz)	
Reference point	Spurious Emission (30MHz – 1GHz)
	
Spurious Emission (1GHz –5GHz)	Spurious Emission (5GHz –26.5GHz)
	

Note: The emission which exceed the limit is the fundamental.

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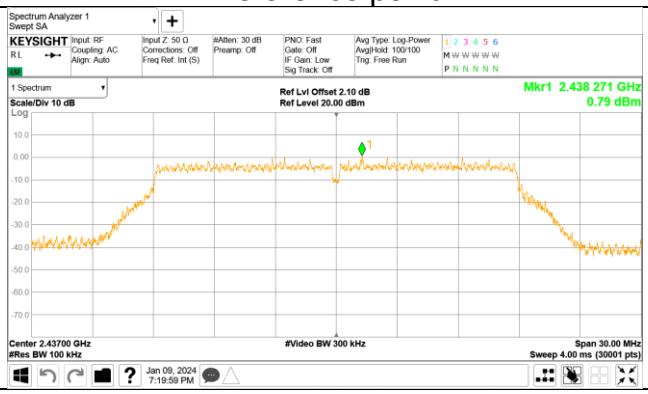
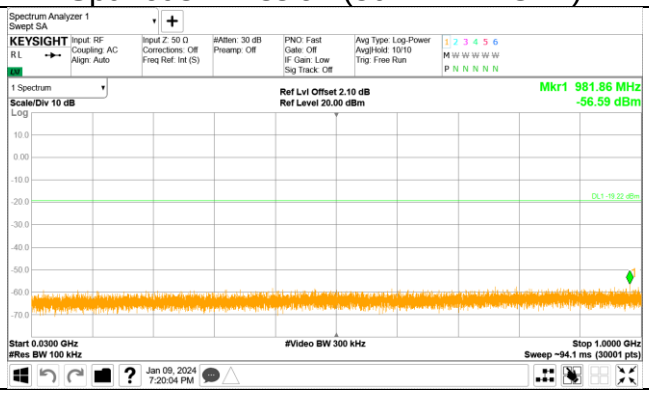
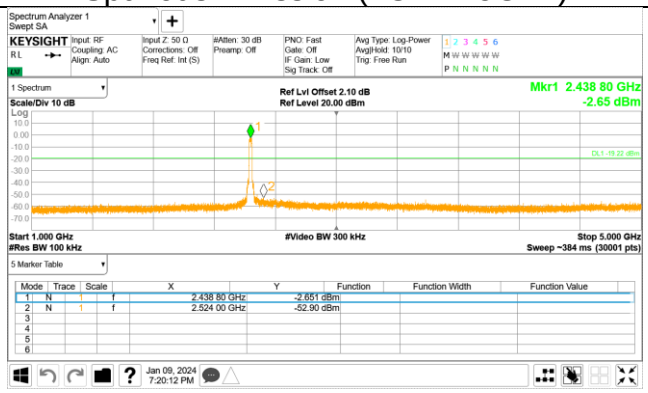
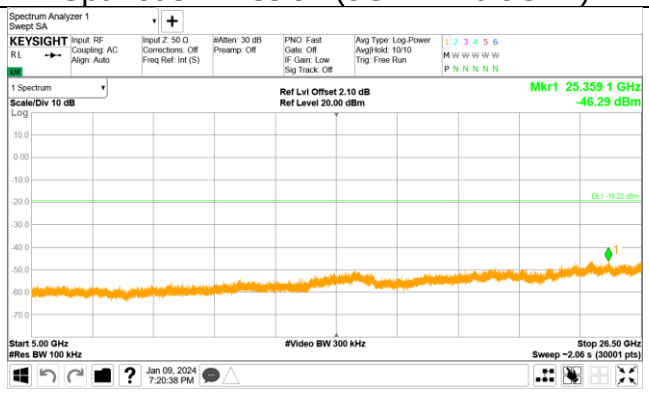
Out-of-Band Emissions	
Channel 6 (2437MHz)	
Reference point	Spurious Emission (30MHz – 1GHz)
	
Spurious Emission (1GHz –5GHz)	Spurious Emission (5GHz –26.5GHz)
	

Note: The emission which exceed the limit is the fundamental.

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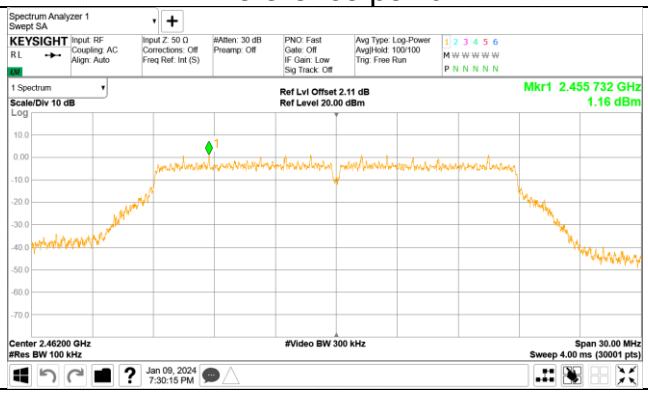
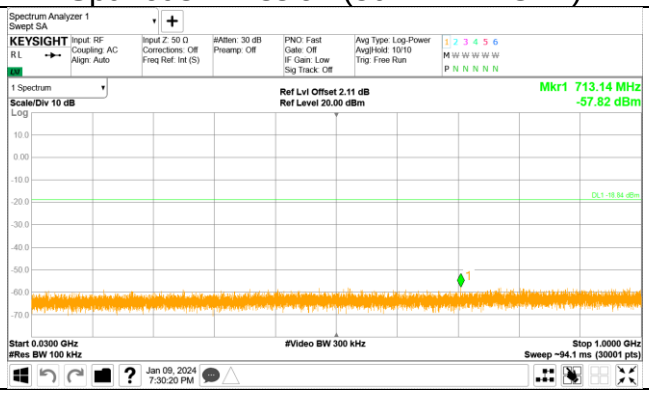
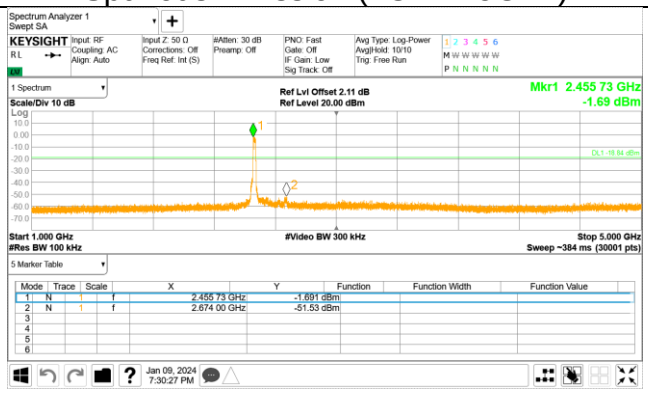
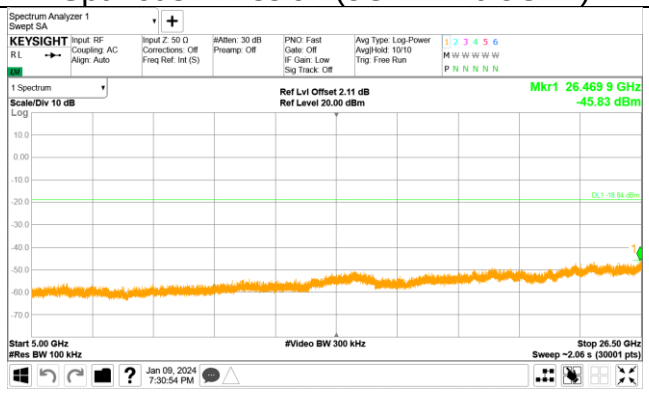
Out-of-Band Emissions	
Channel 11 (2462MHz)	
Reference point	Spurious Emission (30MHz – 1GHz)
	
Spurious Emission (1GHz –5GHz)	Spurious Emission (5GHz –26.5GHz)
	

Note: The emission which exceed the limit is the fundamental.

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9.6 Band edge

Test Method

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting, the instrument center frequency is set to the nominal EUT channel center frequency enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings:
   Span = wide enough to capture the peak level of the in-band emission and all spurious
   RBW = 100 kHz, VBW≥3RBW, Sweep = auto, Detector function = peak, Trace = max hold
4. Allow the trace to stabilize, use the peak and delta measurement to record the result.
5. The level displayed must comply with the limit specified in this Section.
6. Repeat above procedures until all frequencies measured were complete and submit all the plots.

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under § 15.247(b)(3), the attenuation required shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a) and RSS-Gen8.10, must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)) and RSS-Gen.

Frequency Range MHz	Limit (dBc)
30-25000	-20

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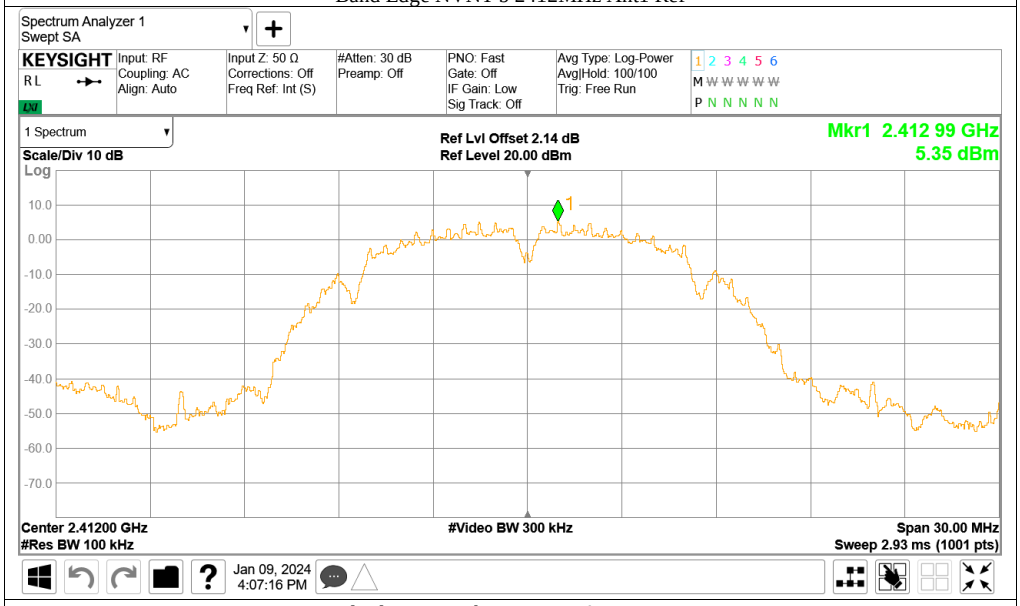
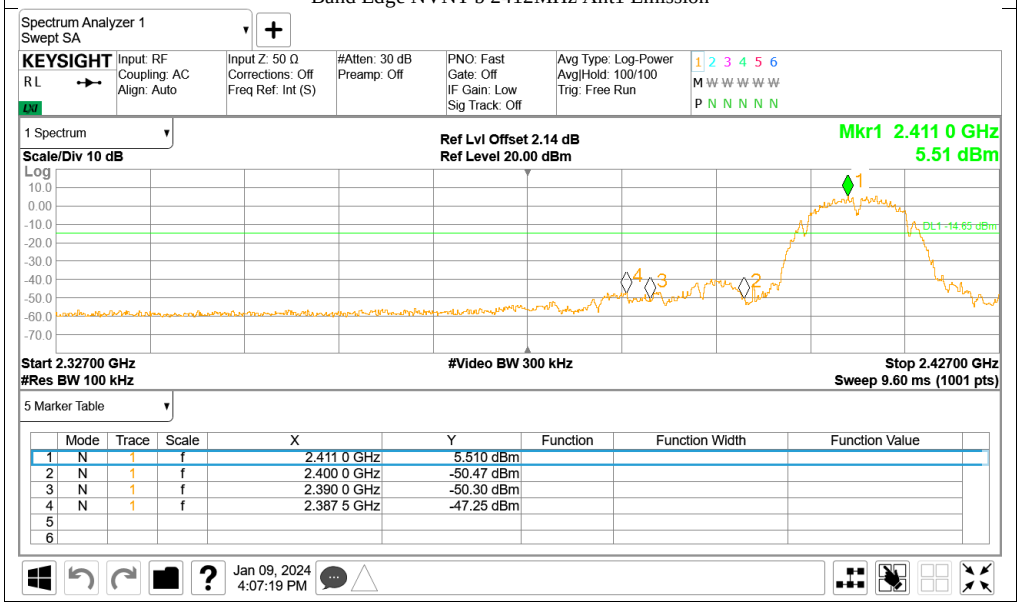
Test result

Test Graphs

Band Edge NVNT b 2412MHz Ant1 Ref



Band Edge NVNT b 2412MHz Ant1 Emission



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.411 0 GHz	5.510 dBm			
2	N	1	f	2.400 0 GHz	-50.47 dBm			
3	N	1	f	2.390 0 GHz	-50.30 dBm			
4	N	1	f	2.387 5 GHz	-47.25 dBm			
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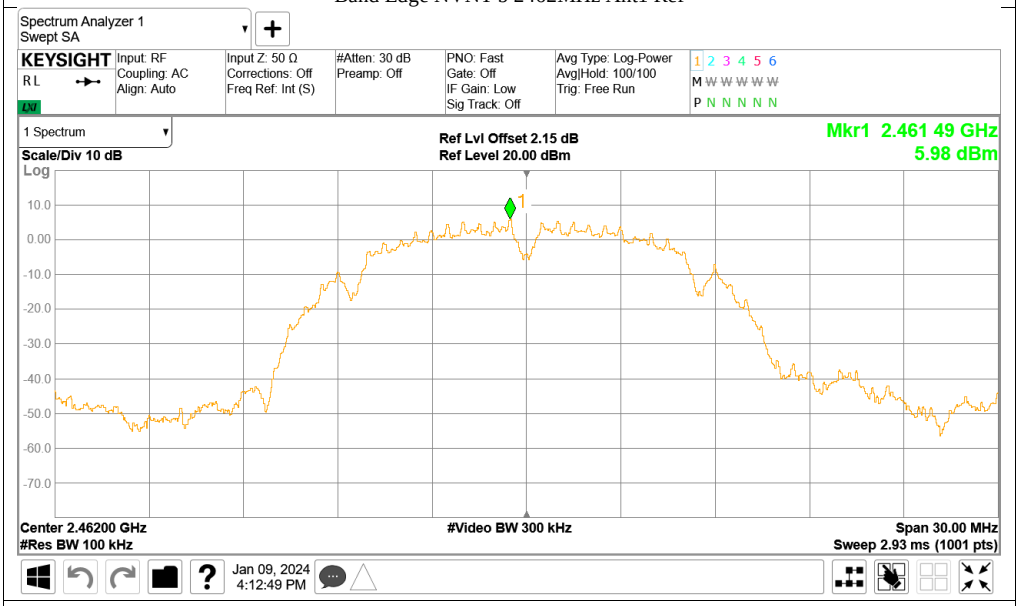
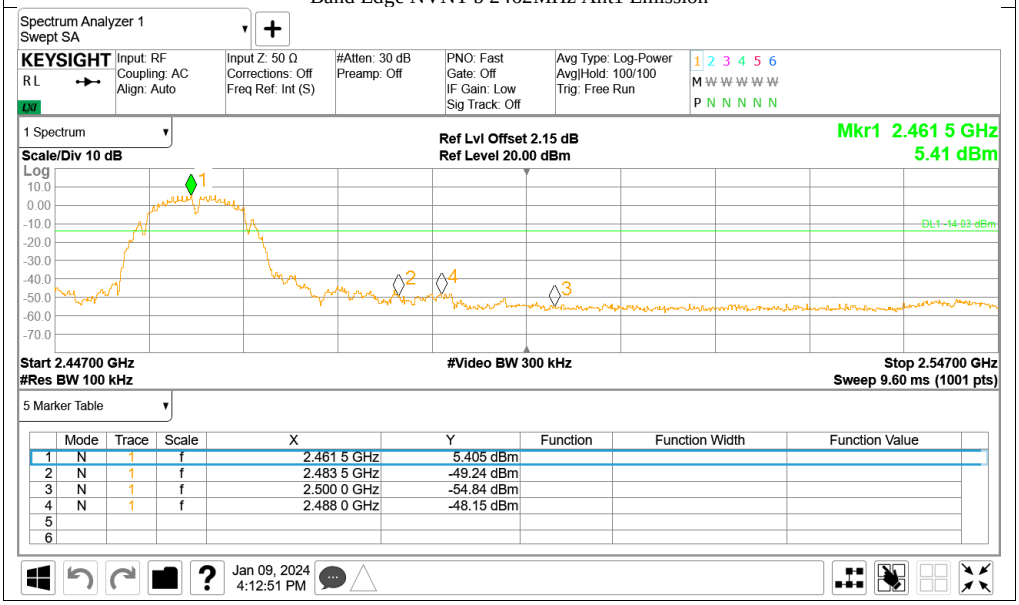
Band Edge NVNT b 2462MHz Ant1 Ref



Band Edge NVNT b 2462MHz Ant1 Emission



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.461 5 GHz	5.405 dBm			
2	N	1	f	2.483 5 GHz	-49.24 dBm			
3	N	1	f	2.500 0 GHz	-54.84 dBm			
4	N	1	f	2.488 0 GHz	-48.15 dBm			
5								
6								

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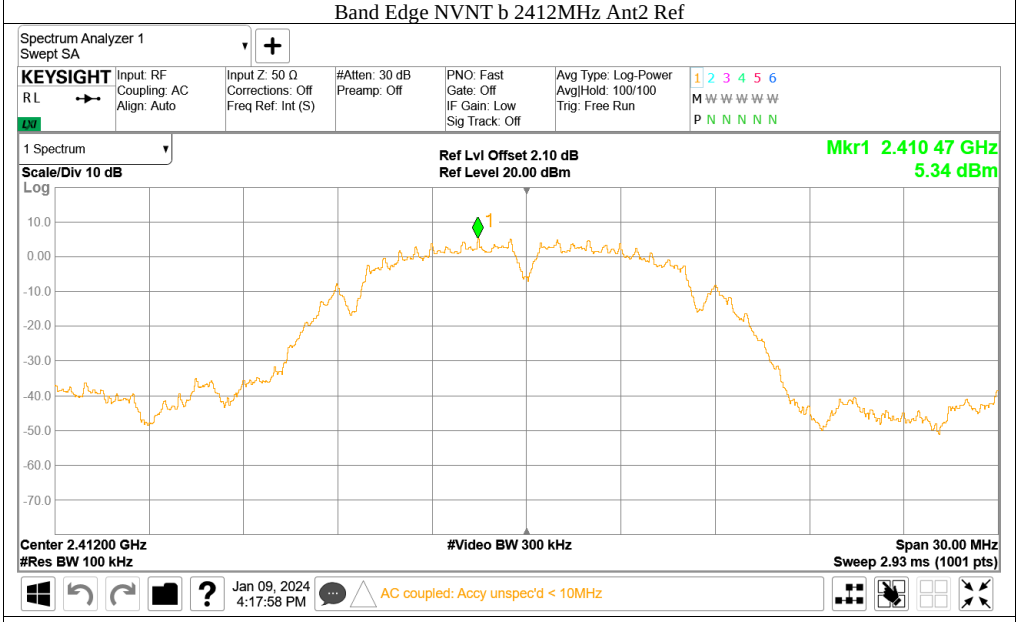
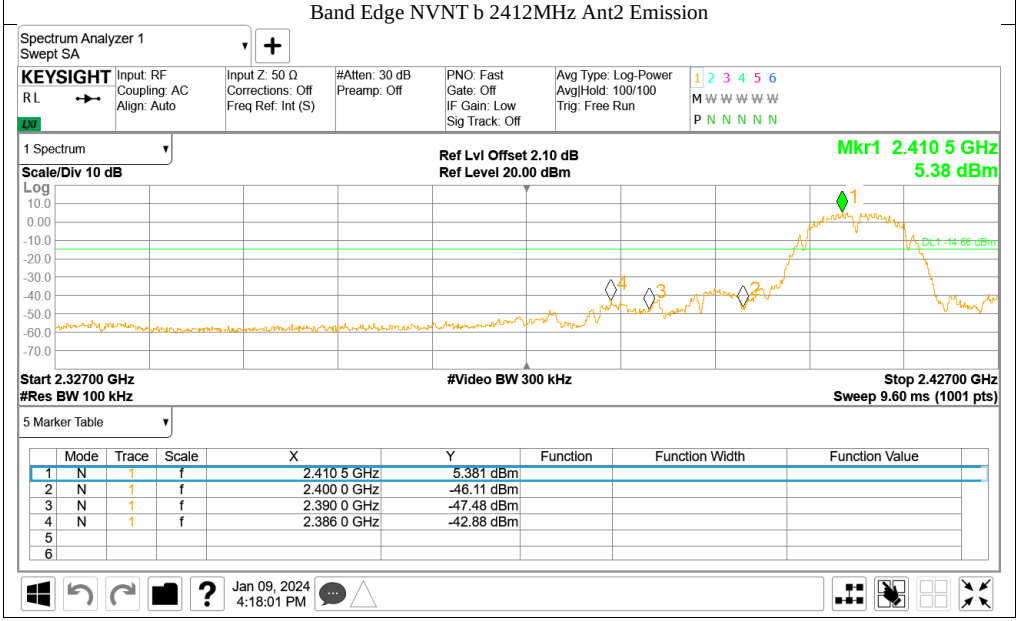
Band Edge NVNT b 2412MHz Ant2 Ref



Band Edge NVNT b 2412MHz Ant2 Emission



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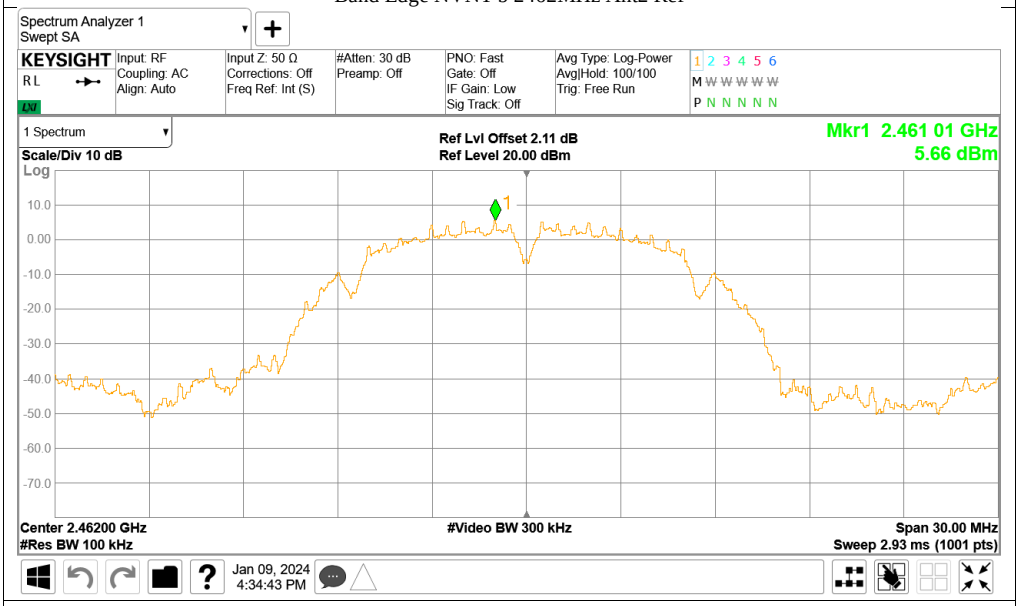
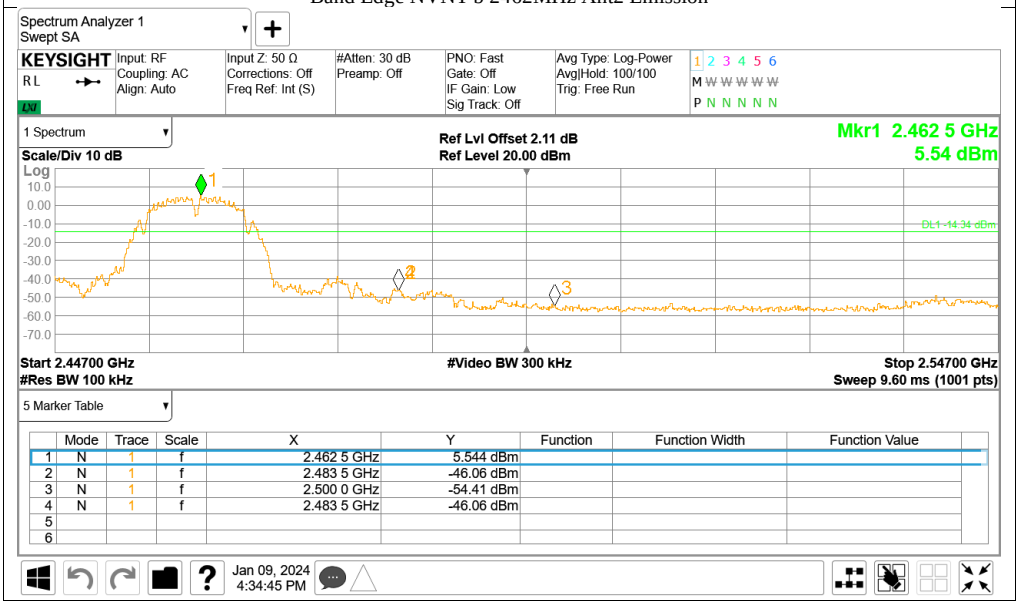
Band Edge NVNT b 2462MHz Ant2 Ref



Band Edge NVNT b 2462MHz Ant2 Emission



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.462 5 GHz	5.544 dBm			
2	N	1	f	2.483 5 GHz	-46.06 dBm			
3	N	1	f	2.500 0 GHz	-54.41 dBm			
4	N	1	f	2.483 5 GHz	-46.06 dBm			
5								
6								

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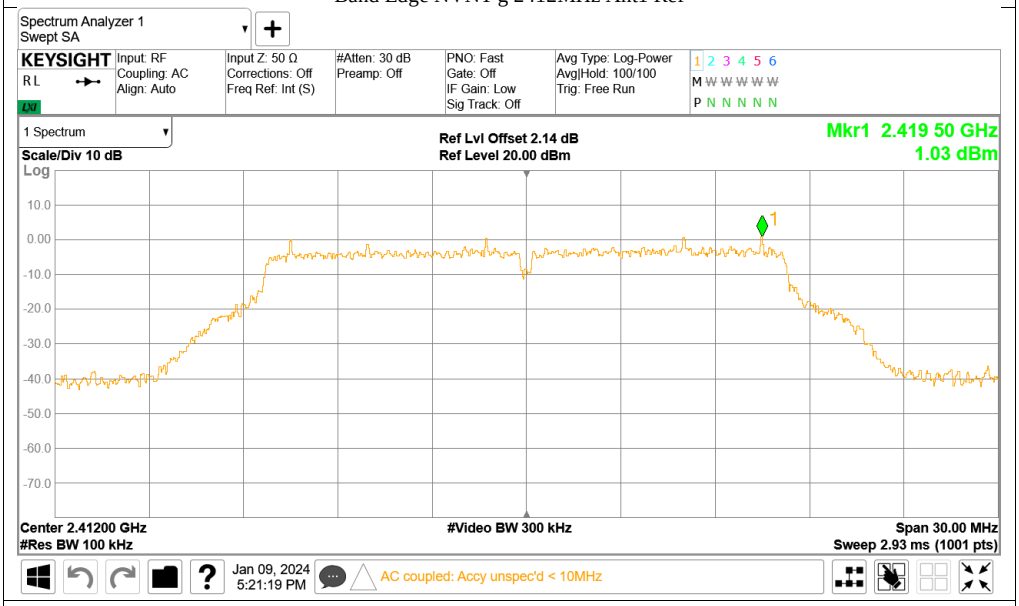
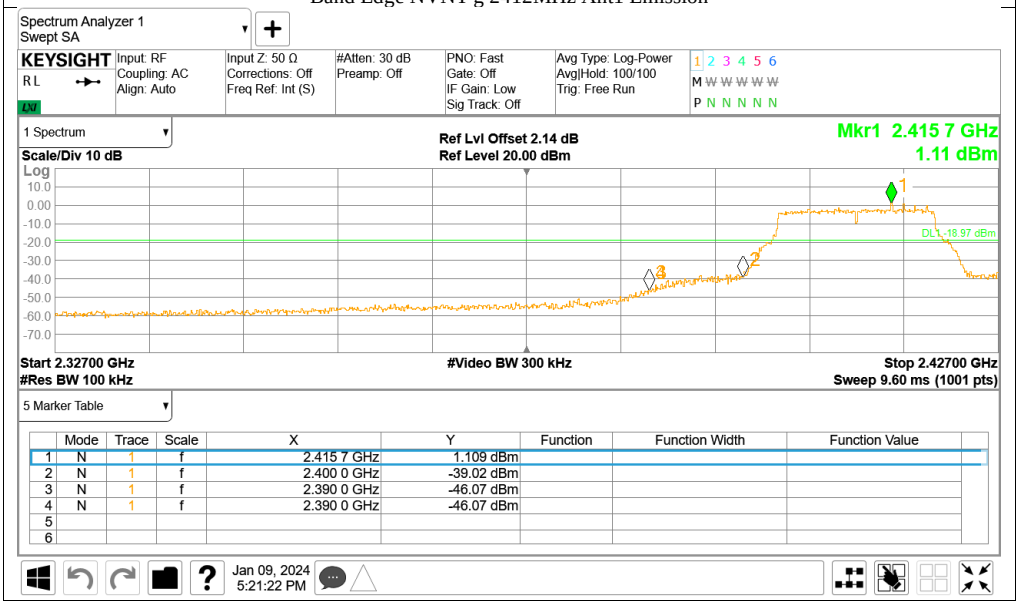
Band Edge NVNT g 2412MHz Ant1 Ref



Band Edge NVNT g 2412MHz Ant1 Emission



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.415 7 GHz	1.109 dBm			
2	N	1	f	2.400 0 GHz	-39.02 dBm			
3	N	1	f	2.390 0 GHz	-46.07 dBm			
4	N	1	f	2.390 0 GHz	-46.07 dBm			
5								
6								

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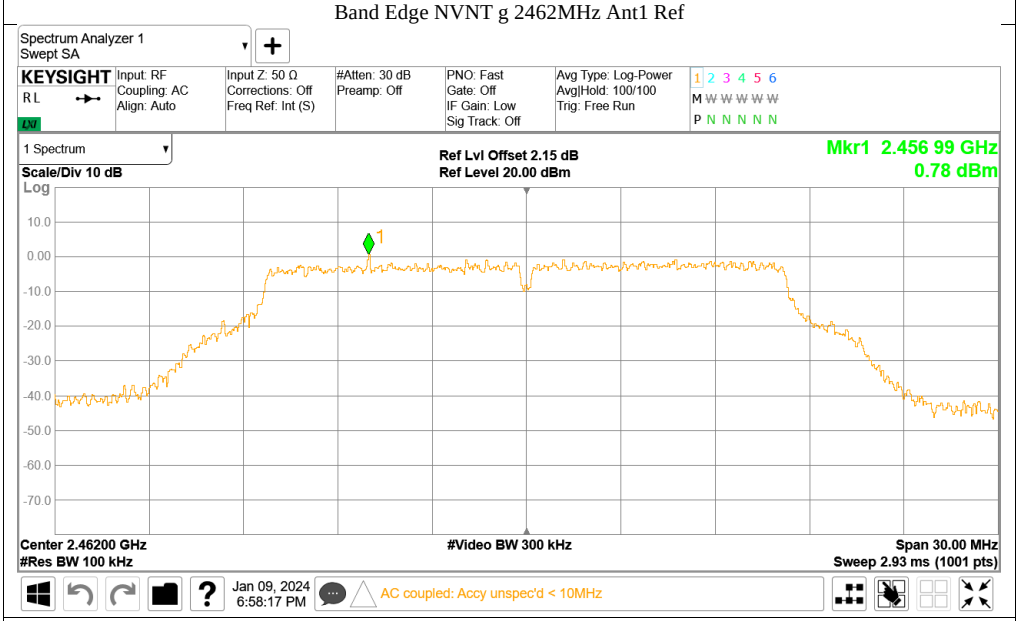
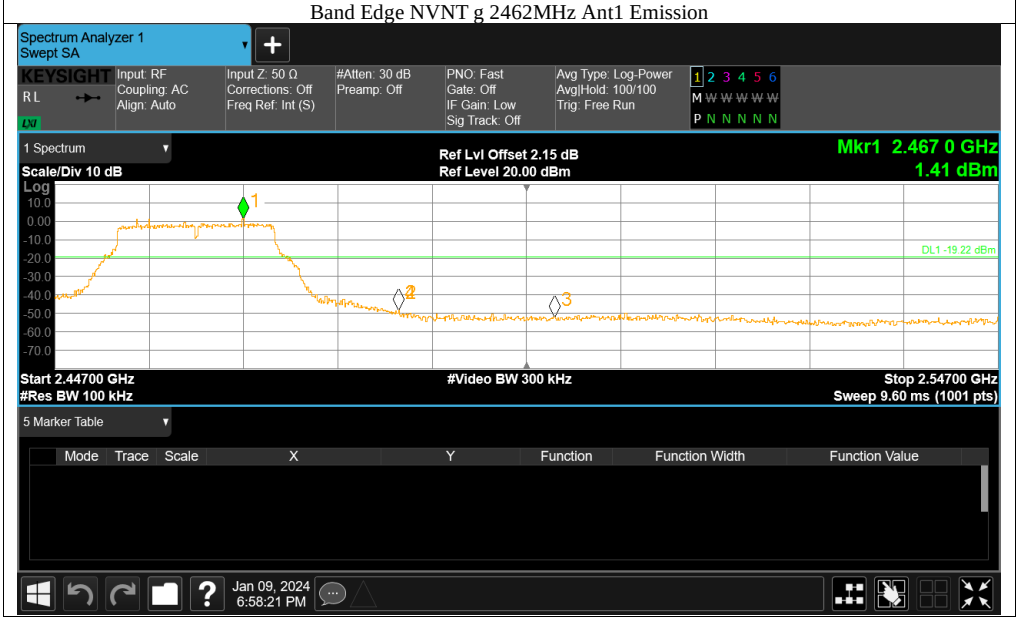
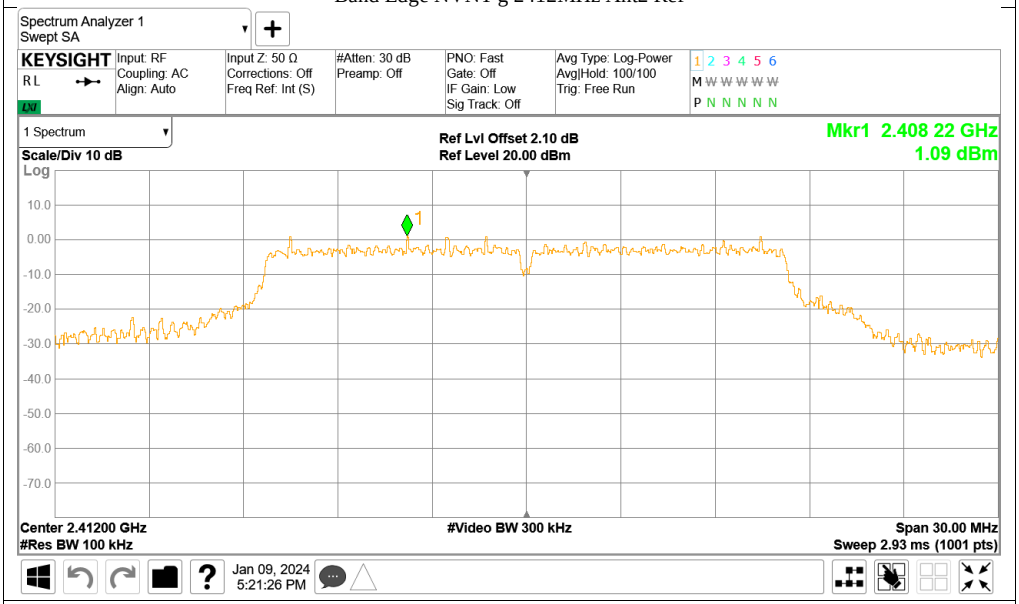
Band Edge NVNT g 2462MHz Ant1 Ref



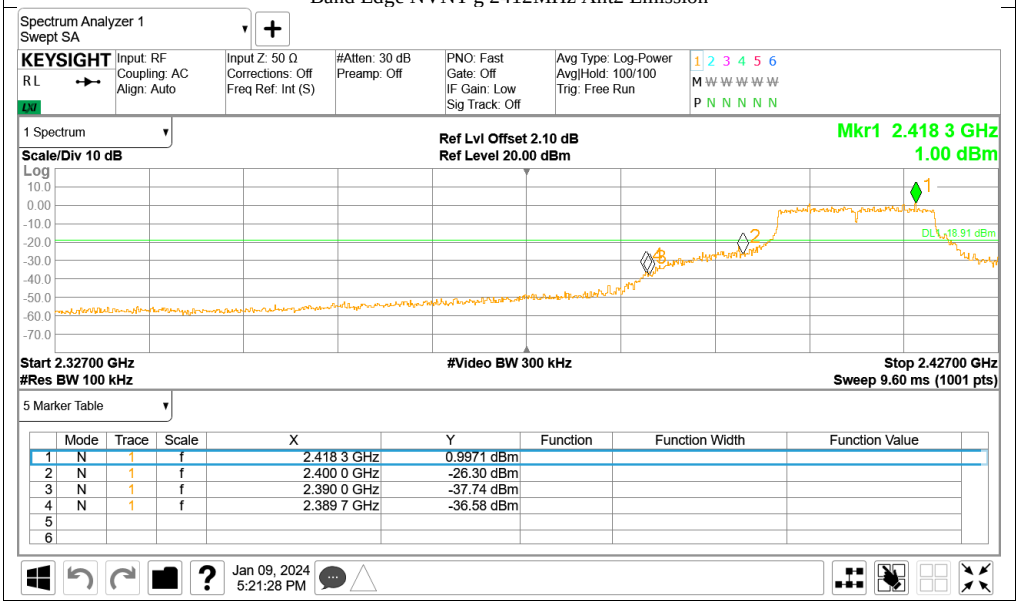
Band Edge NVNT g 2462MHz Ant1 Emission



Band Edge NVNT g 2412MHz Ant2 Ref



Band Edge NVNT g 2412MHz Ant2 Emission



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.418 3 GHz	0.9971 dBm			
2	N	1	f	2.400 0 GHz	-26.30 dBm			
3	N	1	f	2.390 0 GHz	-37.74 dBm			
4	N	1	f	2.389 7 GHz	-36.58 dBm			
5								
6								

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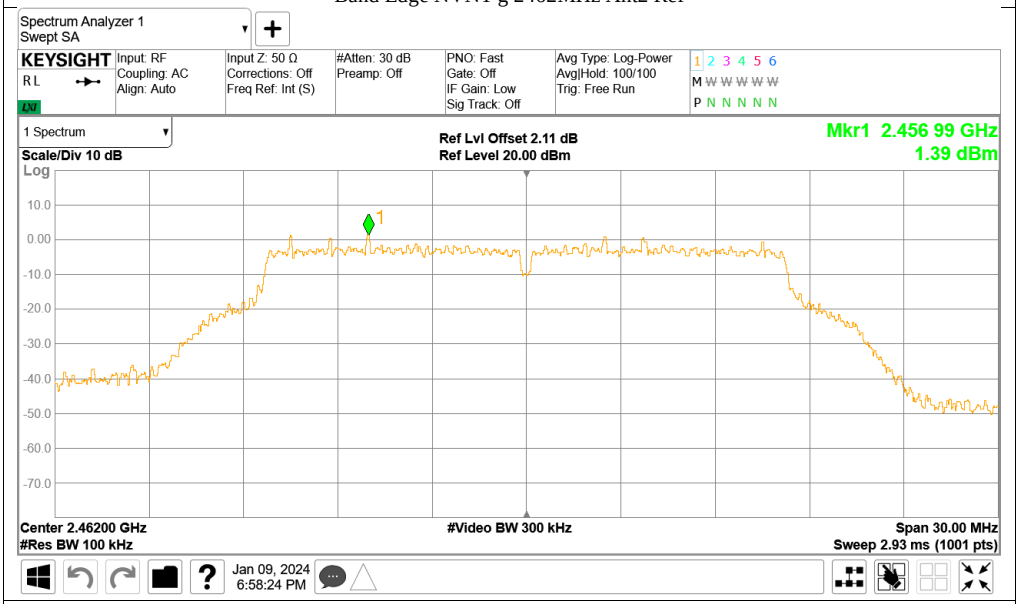
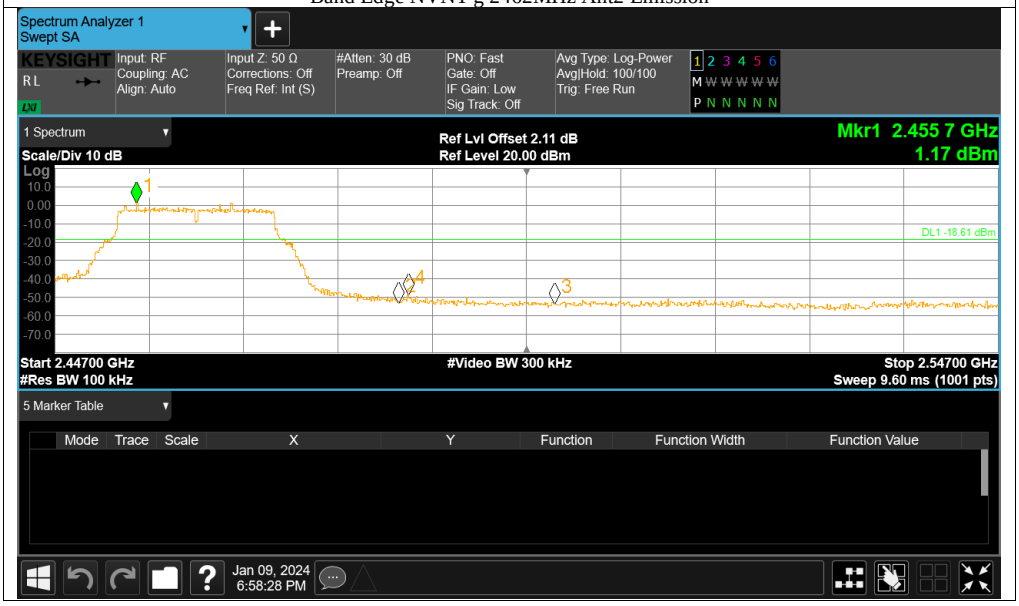
Band Edge NVNT g 2462MHz Ant2 Ref



Band Edge NVNT g 2462MHz Ant2 Emission



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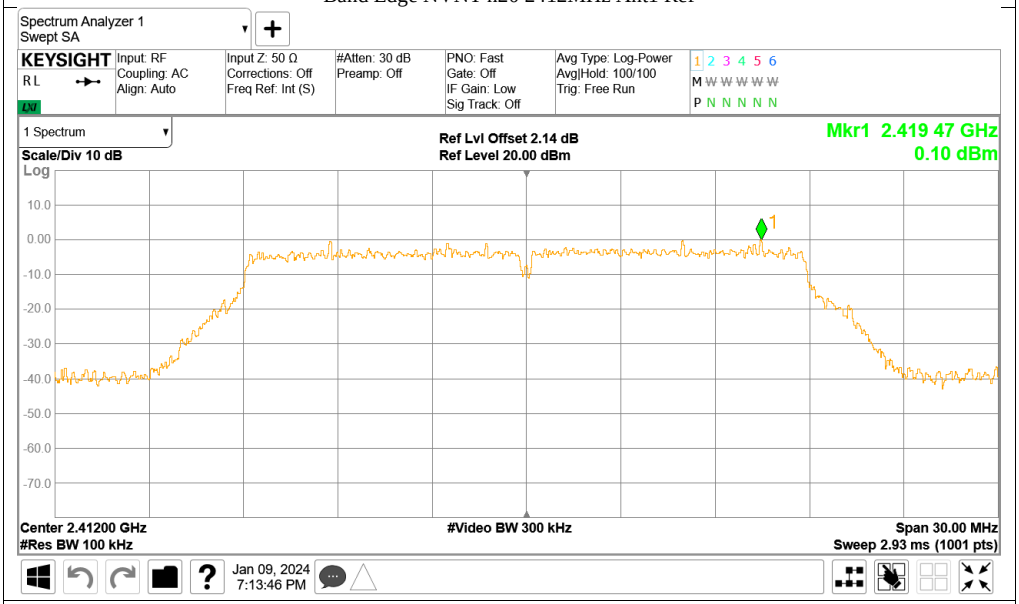
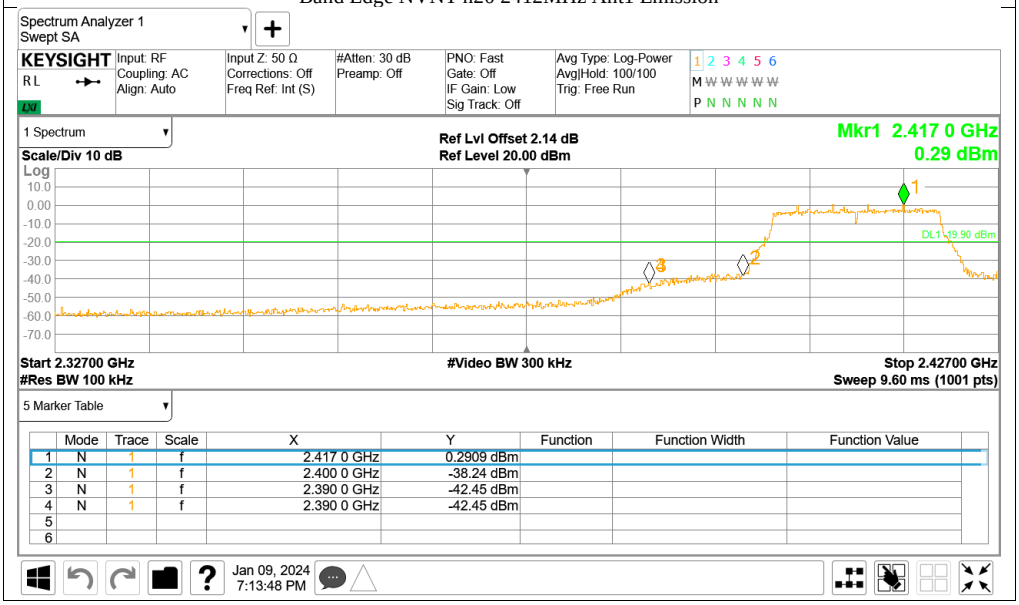
Band Edge NVNT n20 2412MHz Ant1 Ref



Band Edge NVNT n20 2412MHz Ant1 Emission



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.417 0 GHz	0.2909 dBm			
2	N	1	f	2.400 0 GHz	-38.24 dBm			
3	N	1	f	2.390 0 GHz	-42.45 dBm			
4	N	1	f	2.390 0 GHz	-42.45 dBm			
5								
6								

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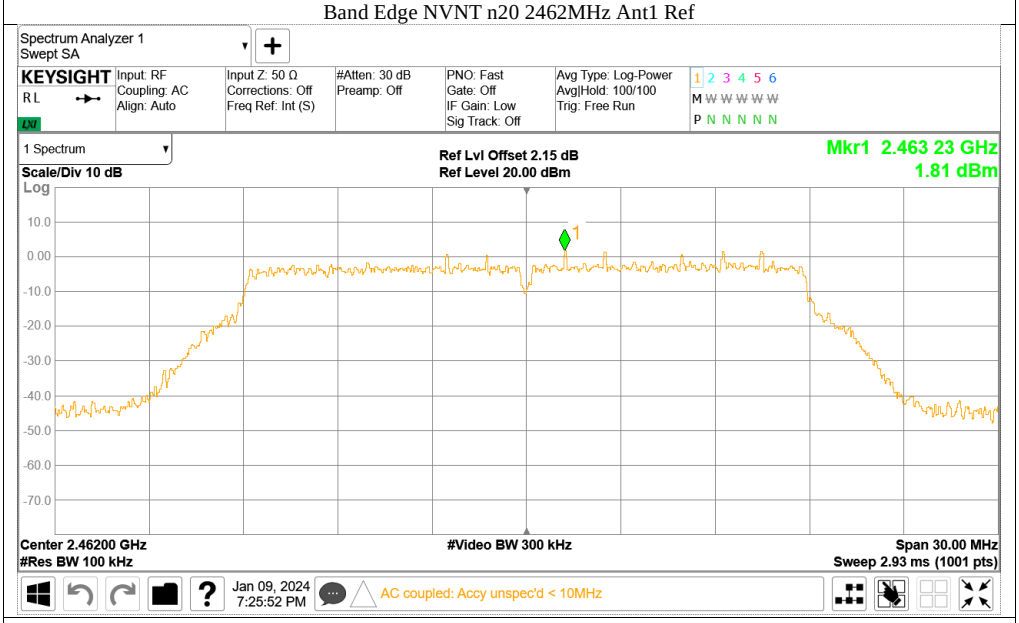
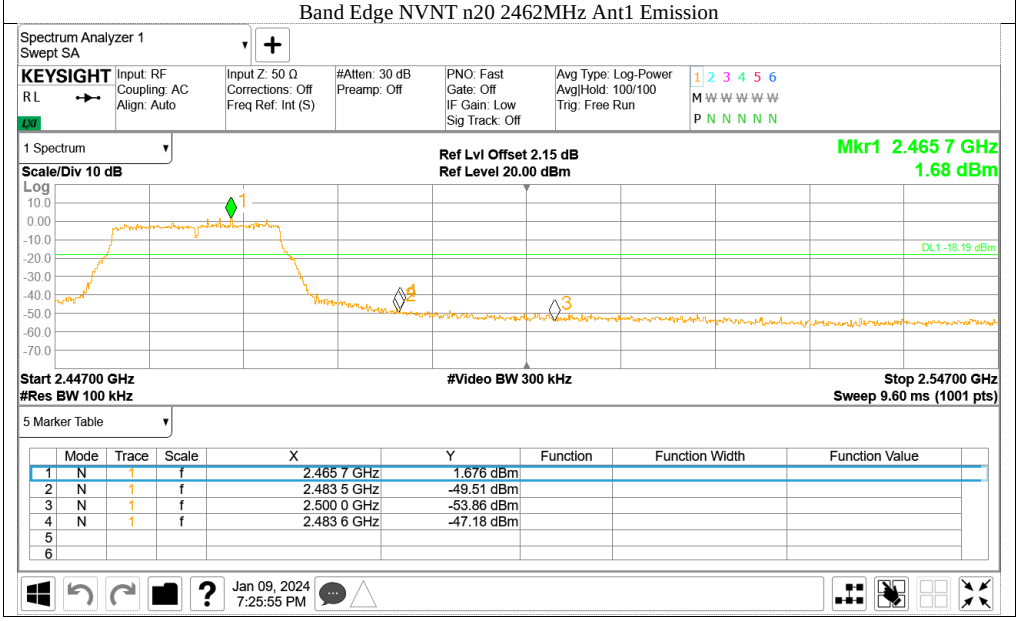
Band Edge NVNT n20 2462MHz Ant1 Ref



Band Edge NVNT n20 2462MHz Ant1 Emission



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.465 7 GHz	1.676 dBm			
2	N	1	f	2.483 5 GHz	-49.51 dBm			
3	N	1	f	2.500 0 GHz	-53.86 dBm			
4	N	1	f	2.483 6 GHz	-47.18 dBm			
5								
6								

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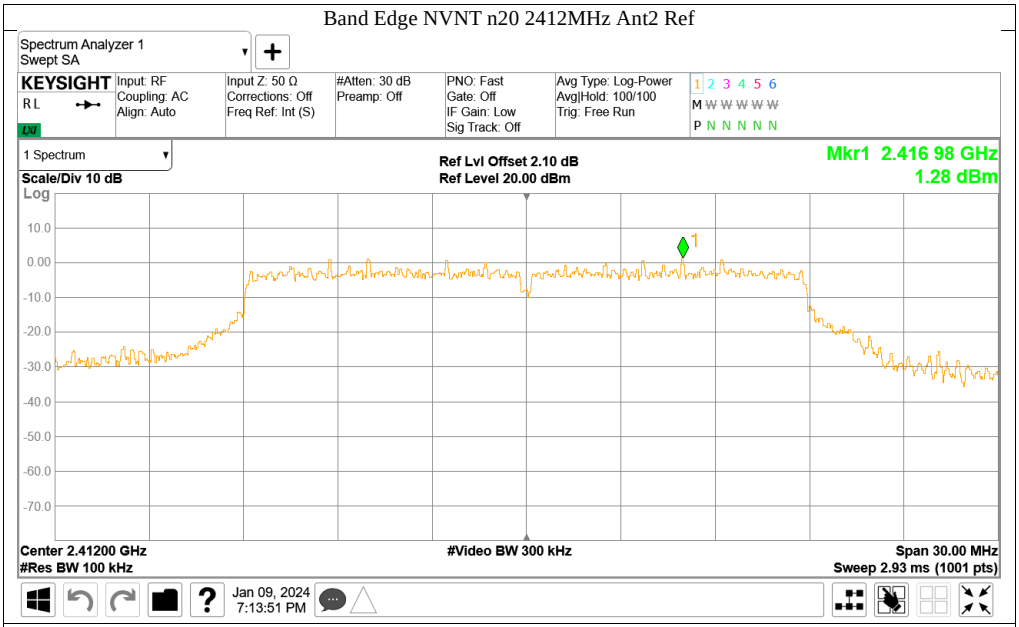
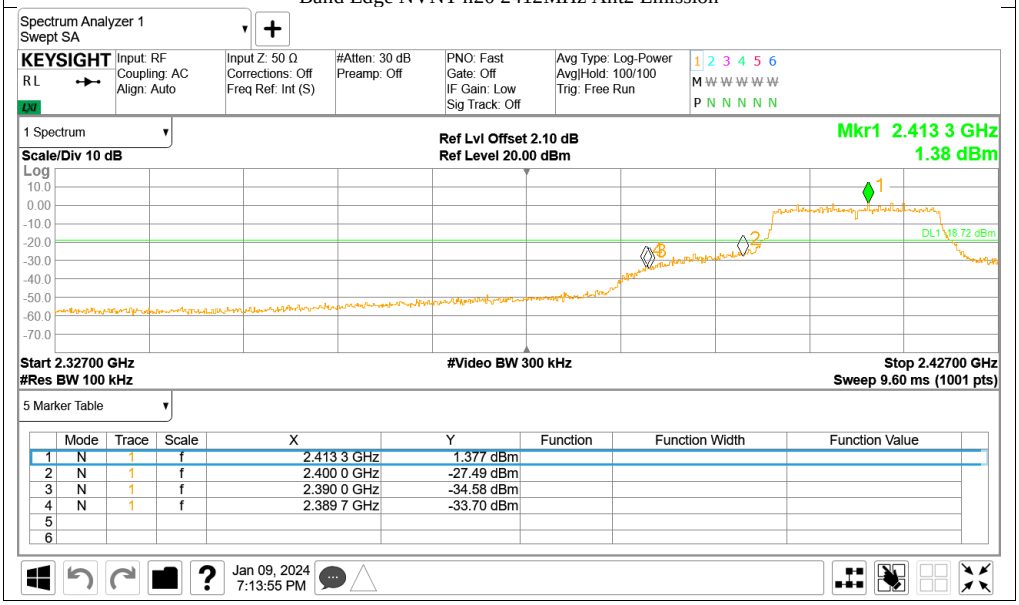
Band Edge NVNT n20 2412MHz Ant2 Ref



Band Edge NVNT n20 2412MHz Ant2 Emission



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.413 3 GHz	1.377 dBm			
2	N	1	f	2.400 0 GHz	-27.49 dBm			
3	N	1	f	2.390 0 GHz	-34.58 dBm			
4	N	1	f	2.389 7 GHz	-33.70 dBm			
5								
6								

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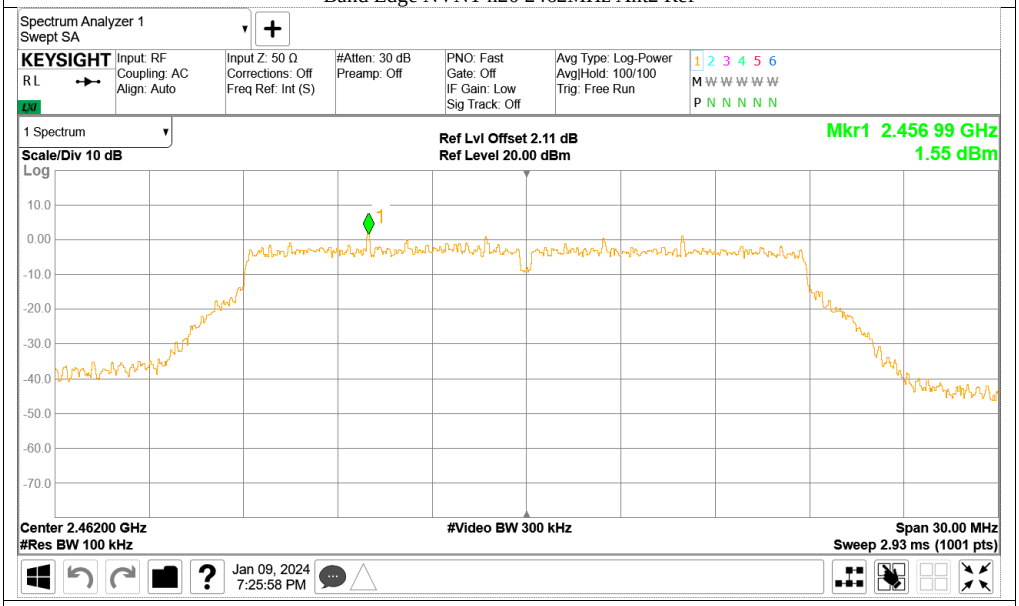
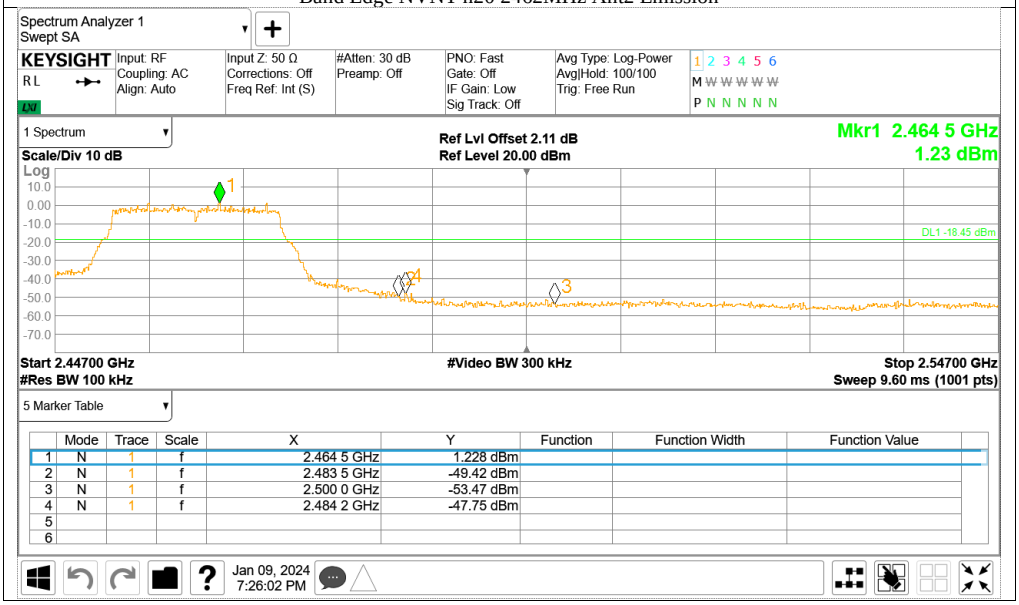
Band Edge NVNT n20 2462MHz Ant2 Ref



Band Edge NVNT n20 2462MHz Ant2 Emission



	Mode	Trace	Scale	X	Y	Function	Function Width	Function Value
1	N	1	f	2.464 5 GHz	1.228 dBm			
2	N	1	f	2.483 5 GHz	-49.42 dBm			
3	N	1	f	2.500 0 GHz	-53.47 dBm			
4	N	1	f	2.484 2 GHz	-47.75 dBm			
5								
6								

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9.7 Spurious radiated emissions for transmitter

Test Method

1. The EUT was place on a turn table which is 1.5m above ground plane for above 1GHz and 0.8m above ground for below 1GHz at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference – receiving antenna, which was mounted on the top of a variable – height antenna tower.
3. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. Use the following spectrum analyzer settings According to C63.10

   1) Procedure for Unwanted Emissions Measurements Below 1000 MHz

   Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 100 kHz to 120kHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

   2) For Peak unwanted emissions Above 1GHz:

   Span = wide enough to capture the peak level of the in-band emission and all spurious RBW = 1MHz, VBW≥RBW for peak measurement, Sweep = auto, Detector function = peak, Trace = max hold.

   Procedures for average unwanted emissions measurements above 1GHz

   a) RBW = 1MHz.

   b) VBW \ [3 × RBW].

   c) Detector = RMS (power averaging), if [span / (# of points in sweep)] \ RBW / 2. Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.

   d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)

   e) Sweep time = auto.

   f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)

   g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

   1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is [10 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.

   2) If linear voltage averaging mode was used in the preceding step e), then the correction

factor is [20 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.
3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission (AV) at frequency above 1GHz.

Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under § 15.247(b)(3), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in § 15.209(a) and RSS-Gen is not required. In addition, 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).

Frequency MHz	Field Strength µV/m	Field Strength dBµV/m	Detector	Measurement distance meters
0.009-0.490	2400/F(kHz)	48.5-13.8	AV	300
0.490-1.705	24000/F(kHz)	33.8-23.0	QP	30
1.705-30	30	29.5	QP	30
30-88	100	40	QP	3
88-216	150	43.5	QP	3
216-960	200	46	QP	3
960-1000	500	54	QP	3
Above 1000	500	54	AV	3
Above 1000	5000	74	PK	3

Note 1: Limit 3m(dBµV/m)=Limit 300m(dBµV/m)+40Log(300m/3m) (Below 30MHz)
Note 2: Limit 3m(dBµV/m)=Limit 30m(dBµV/m)+40Log(30m/3m) (Below 30MHz)

Spurious Radiated Emissions for Transmitter

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.
Data of measurement within frequency range 9kHz-30MHz is the noise floor or attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so test data does not present in this report.

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Above 1GHz Transmitting spurious emission test result as below:

802.11 b Ant1
2412MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
2383.8	52.9	Horizontal	74.0	Peak	21.1	pass
2383.8	45.7	Horizontal	54.0	Average	8.3	pass
4826.7	44.7	Horizontal	74.0	Peak	29.3	pass
2383.6	53.4	Vertical	74.0	Peak	20.6	pass
2383.6	46.6	Vertical	54.0	Average	7.4	pass
4824.4	45.1	Vertical	74.0	Peak	28.9	pass

2437MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
4874.9	44.7	Horizontal	74.0	Peak	29.3	pass
4874.9	45.0	Vertical	74.0	Peak	29	pass

2462MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
2483.5	50.1	Horizontal	74.0	Peak	23.9	pass
4923.6	45.3	Horizontal	74.0	Peak	28.7	pass
2483.5	49.4	Vertical	74.0	Peak	24.6	pass
4923.6	45.1	Vertical	74.0	Peak	28.9	pass

Remark:

(1) Emission level= Original Receiver Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss -Amplifier gain
(3) Margin = limit – Corrected Reading

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802.11 b Ant2
2412MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
2383.7	53.8	Horizontal	74.0	Peak	20.2	pass
2383.7	43.6	Horizontal	54.0	Average	10.4	pass
4823.3	44.6	Horizontal	74.0	Peak	29.4	pass
2385.1	52.9	Vertical	74.0	Peak	21.1	pass
2385.1	45.6	Vertical	54.0	Average	8.4	pass
4824.4	44.7	Vertical	74.0	Peak	29.3	pass

2437MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
4874.9	44.2	Horizontal	74.0	Peak	29.8	pass
4874.3	44.6	Vertical	74.0	Peak	29.4	pass

2462MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
2483.6	49.3	Horizontal	74.0	Peak	24.7	pass
4923.6	45.3	Horizontal	74.0	Peak	28.7	pass
2483.6	49.5	Vertical	74.0	Peak	24.5	pass
4923.6	43.9	Vertical	74.0	Peak	30.1	pass

Remark:

(1) Emission level= Original Receiver Reading + Correct Factor

(2) Correct Factor = Antenna Factor + Cable Loss -Amplifier gain

Margin = limit – Corrected Reading

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802.11 g Ant1
2412MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
2384.5	53.6	Horizontal	74.0	Peak	20.4	pass
2384.5	45.6	Horizontal	54.0	Average	8.4	pass
4824.4	43.3	Horizontal	74.0	Peak	30.7	pass
2380.9	53.9	Vertical	74.0	Peak	20.1	pass
2380.9	44.5	Vertical	54.0	Average	9.5	pass
4824.4	43.8	Vertical	74.0	Peak	30.2	pass

2437MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
4874.3	42.8	Horizontal	74.0	Peak	31.2	pass
4874.3	44.1	Vertical	74.0	Peak	29.9	pass

2462MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
2483.5	50.0	Horizontal	74.0	Peak	24	pass
4924.2	44.8	Horizontal	74.0	Peak	29.2	pass
2483.6	49.1	Vertical	74.0	Peak	24.9	pass
4924.7	44.5	Vertical	74.0	Peak	29.5	pass

Remark:

(1) Emission level= Original Receiver Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss -Amplifier gain
(3) Margin = limit – Corrected Reading

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802.11 g Ant2
2412MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
2384.5	53.4	Horizontal	74.0	Peak	20.6	pass
2384.5	45.1	Horizontal	54.0	Average	8.9	pass
4824.4	42.4	Horizontal	74.0	Peak	31.6	pass
2380.9	54.6	Vertical	74.0	Peak	19.4	pass
2380.9	43.8	Vertical	54.0	Average	10.2	pass
4824.4	44.2	Vertical	74.0	Peak	29.8	pass

2437MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
4874.3	43.1	Horizontal	74.0	Peak	30.9	pass
4874.3	43.4	Vertical	74.0	Peak	30.6	pass

2462MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
2483.5	52.1	Horizontal	74.0	Peak	21.9	pass
4924.2	43.6	Horizontal	74.0	Peak	30.4	pass
2483.6	46.2	Vertical	74.0	Peak	27.8	pass
4924.7	45.3	Vertical	74.0	Peak	28.7	pass

Remark:

(1) Emission level= Original Receiver Reading + Correct Factor

(2) Correct Factor = Antenna Factor + Cable Loss -Amplifier gain

Margin = limit – Corrected Reading

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802.11 n20
2412MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
2385.9	53.2	Horizontal	74.0	Peak	20.8	pass
2385.9	45.3	Horizontal	54.0	Average	8.7	pass
4824.4	44.3	Horizontal	74.0	Peak	29.7	pass
2383.3	53.9	Vertical	74.0	Peak	20.1	pass
2383.3	44.6	Vertical	54.0	Average	9.4	pass
4823.4	42.8	Vertical	74.0	Peak	31.2	pass

2437MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
4874.3	43.2	Horizontal	74.0	Peak	30.8	pass
4874.3	45.4	Vertical	74.0	Peak	28.6	pass

2462MHz

Frequency	Emission Level	Polarization	Limit	Detector	Margin	Result
MHz	dBuV/m		dBµV/m		dBµV/m	
2483.5	50.6	Horizontal	74.0	Peak	23.4	pass
4924.7	43.6	Horizontal	74.0	Peak	30.4	pass
2483.5	49.3	Vertical	74.0	Peak	24.7	pass
4924.7	44.0	Vertical	74.0	Peak	30	pass

Remark:

(1) Emission level= Original Receiver Reading + Correct Factor
(2) Correct Factor = Antenna Factor + Cable Loss -Amplifier gain
(3) Margin = limit – Corrected Reading

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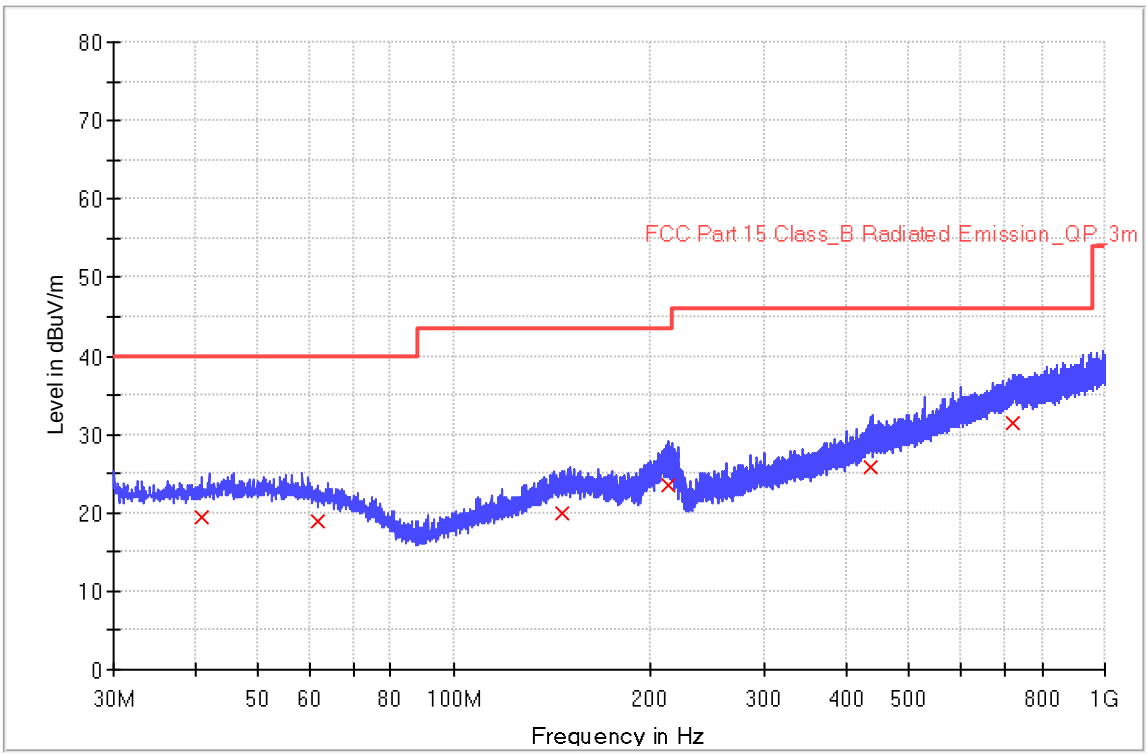
The worst case of Radiated Emission below 1GHz:

Site: 3 meter chamber	Time: 2024/03/05 - 16:01
Limit: FCC_Part15.209_RE(3m)	Engineer: Wenqiang LU
Probe: VULB9168	Polarity: Horizontal
EUT: 3D Printer, Model no: AccuFab-CEL	Power: 120VAC, 60Hz
Note: Transmit by at channel 2462MHz for 802.11HT20 (worst case).	

RE_VULB9168_pre_Cont_30-1000



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
40.920000	19.5	1000.0	120.000	187.0	H	243.0	20.1	20.5	40.0
61.640000	19.0	1000.0	120.000	159.0	H	153.0	19.8	21.0	40.0
146.600000	19.9	1000.0	120.000	187.0	H	214.0	20.9	23.6	43.5
213.680000	23.5	1000.0	120.000	199.0	H	165.0	17.6	20.0	43.5
437.400000	25.9	1000.0	120.000	187.0	H	186.0	25.6	20.1	46.0
719.480000	31.4	1000.0	120.000	158.0	H	163.0	31.0	14.6	46.0

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)
Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)
Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

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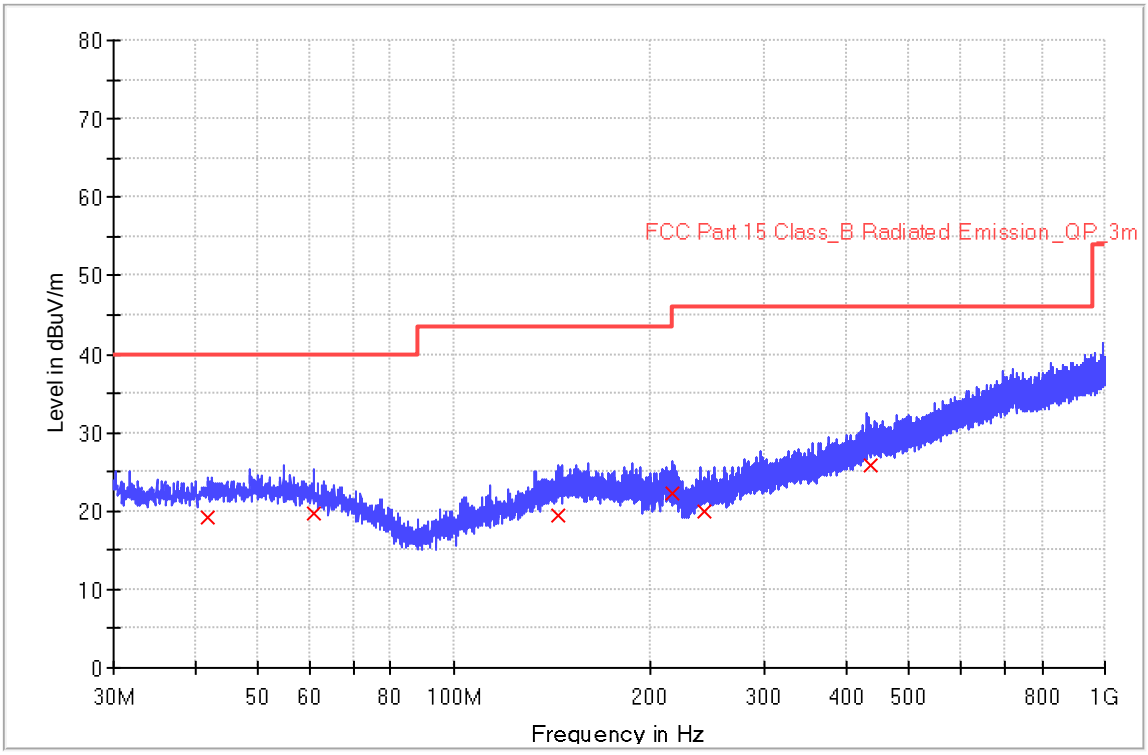
Site: 3 meter chamber	Time: 2024/03/05 - 17:03
Limit: FCC_Part15.209_RE(3m)	Engineer: Wenqiang LU
Probe: VULB9168	Polarity: Vertical
EUT: 3D Printer, Model no: AccuFab-CEL	Power: 120VAC, 60Hz
Note: Transmit by at channel 2462MHz for 802.11HT20 (worst case).	

RE_VULB9168_pre_Cont_30-1000



Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
41.960000	19.2	1000.0	120.000	198.0	V	155.0	20.1	20.8	40.0
61.040000	19.6	1000.0	120.000	176.0	V	175.0	19.9	20.4	40.0
144.880000	19.5	1000.0	120.000	186.0	V	231.0	20.6	24.0	43.5
217.000000	22.3	1000.0	120.000	132.0	V	197.0	17.5	23.7	46.0
243.200000	20.0	1000.0	120.000	186.0	V	252.0	19.7	26.0	46.0
436.240000	25.8	1000.0	120.000	132.0	V	175.0	25.6	20.2	46.0

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB)
Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m)
Note 2: The test trace is same as the ambient noise and the amplitude of the emissions are attenuated more than 20dB below the permissible (the test frequency range: 9kHz ~ 30MHz, 18GHz ~ 25GHz), therefore no data appear in the report.

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10 Test Equipment List

List of Test Instruments
Test Site1

	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DATE	CAL. DUE DATE
C	Signal spectrum analyzer	Agilent	N9020B	MY59050168	2023-2-10	2024-2-9
	Wideband power sensor	Rohde & Schwarz	NRP-Z81	105903	2023-2-10	2024-2-9
	10dB Attenuator	Aeroflex Weinschel	CG-4689	93459	2023-2-10	2024-2-9
RE	EMI Test Receiver	Rohde & Schwarz	ESR3	101906	2023-8-1	2024-7-31
	Signal Analyzer	Rohde & Schwarz	FSV40	101091	2023-8-1	2024-7-31
	Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9168	961	2021-9-23	2024-9-22
	Double-ridged waveguide horn antenna	Rohde & Schwarz	HF907	102868	2021-3-15	2024-3-14
	Pre-amplifier	Rohde & Schwarz	SCU-18D	19006451	2023-8-1	2024-7-31
	Loop antenna	Rohde & Schwarz	HFH2-Z2	100443	2023-6-15	2024-6-14
	Double Ridged Horn Antenna	ETS-Lindgren	3116C	00246076	2023-7-7	2026-7-6
	3m Semi-anechoic chamber	TDK	9X6X6	----	2021-5-8	2024-5-7
CE	EMI Test Receiver	Rohde & Schwarz	ESR3	101907	2023-8-1	2024-7-31
	LISN	Rohde & Schwarz	ENV216	101924	2023-8-1	2024-7-31

Measurement Software Information			
Test Item	Software	Manufacturer	Version
C	MTS 8310	MWRFtest	3.0.0.0
	Power Viewer	Rohde & Schwarz	V 11.0
RE	EMC 32	Rohde & Schwarz	V10.50.40
CE	EMC 32	Rohde & Schwarz	V9.15.03

C - Conducted RF tests

- Conducted peak output power
- 6dB bandwidth and 99% Occupied Bandwidth
- Power spectral density*
- Spurious RF conducted emissions
- Band edge

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11 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Items	Extended Uncertainty
Conducted Disturbance at Mains Terminals	150kHz to 30MHz, LISN, 3.16dB
Radiated Disturbance	9kHz to 30MHz, 3.52dB 30MHz to 1GHz, 5.03dB (Horizontal) 5.12dB (Vertical) 1GHz to 18GHz, 5.49dB 18GHz to 40GHz, 5.63dB
RF Conducted Measurement	Power related： 1.16dB Frequency related： 6.00×10^{-8}

Measurement Uncertainty Decision Rule:

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2021, clause 4.4.3 and 4.5.1.

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12 Photographs of Test Set-ups

Refer to the < Test Setup photos >.

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13 Photographs of EUT

Refer to the < External Photos > & < Internal Photos >.

----------End of Test Report----------

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