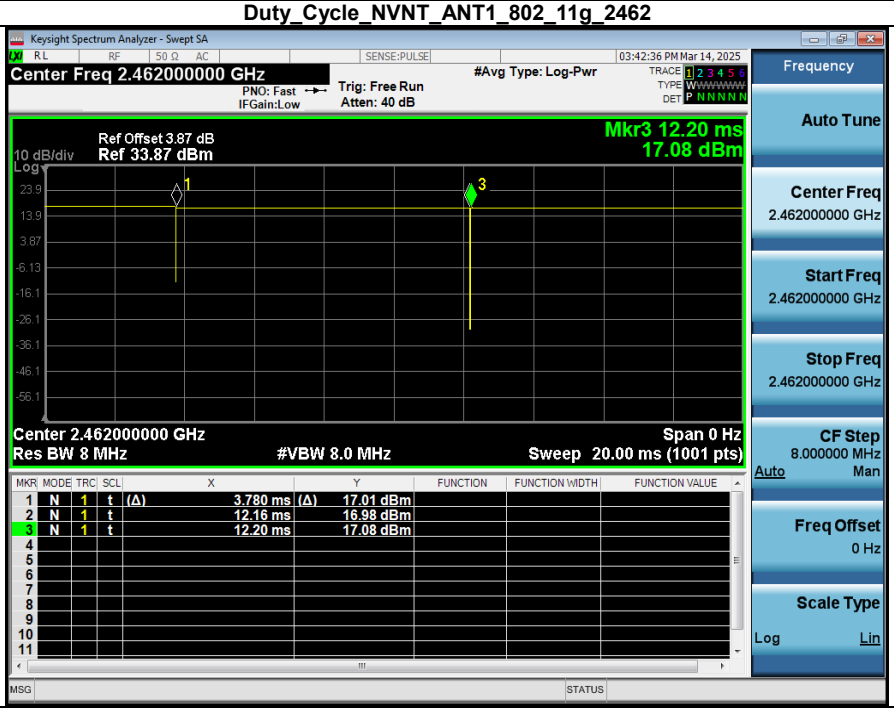
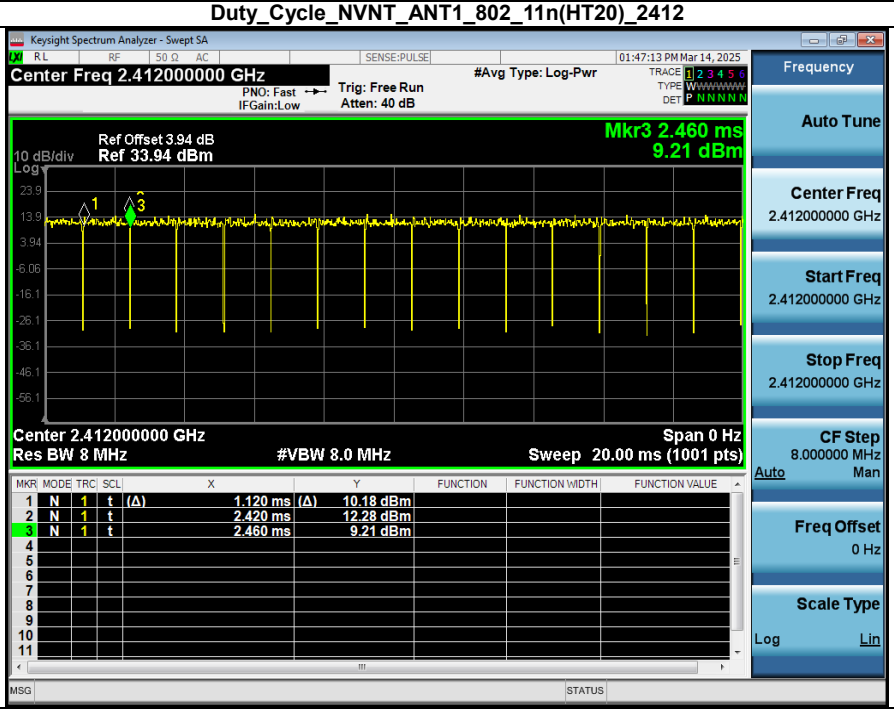
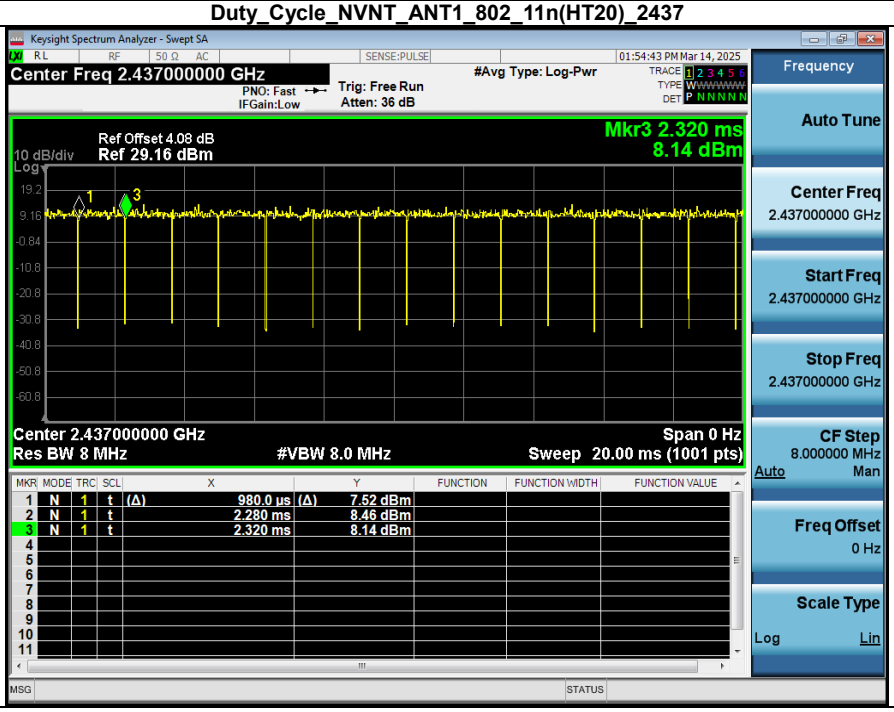
Duty_Cycle_NVNT_ANT1_802_11g_2462



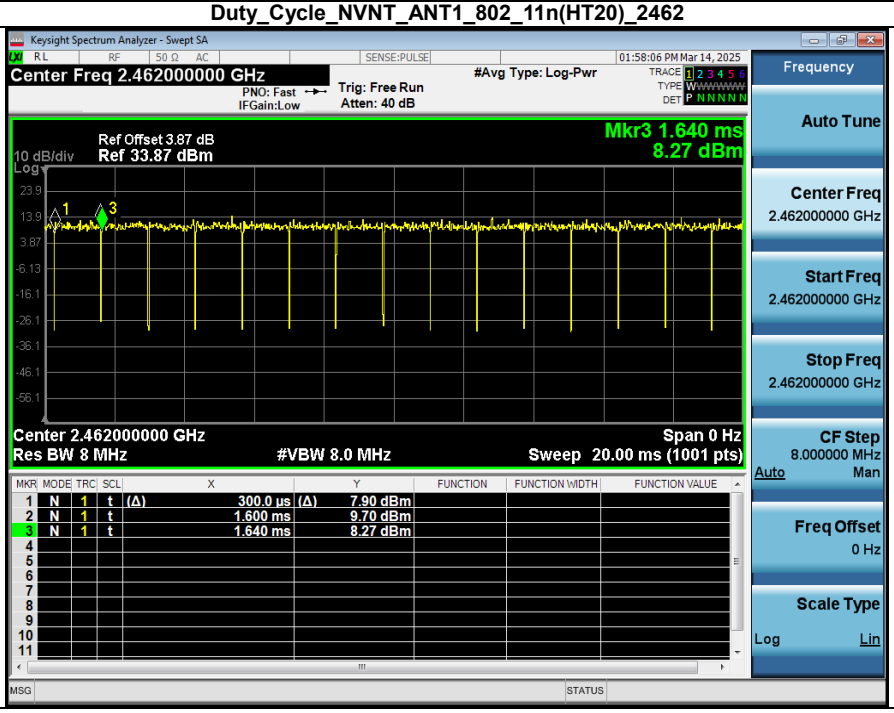
Duty_Cycle_NVNT_ANT1_802_11n(HT20)_2412



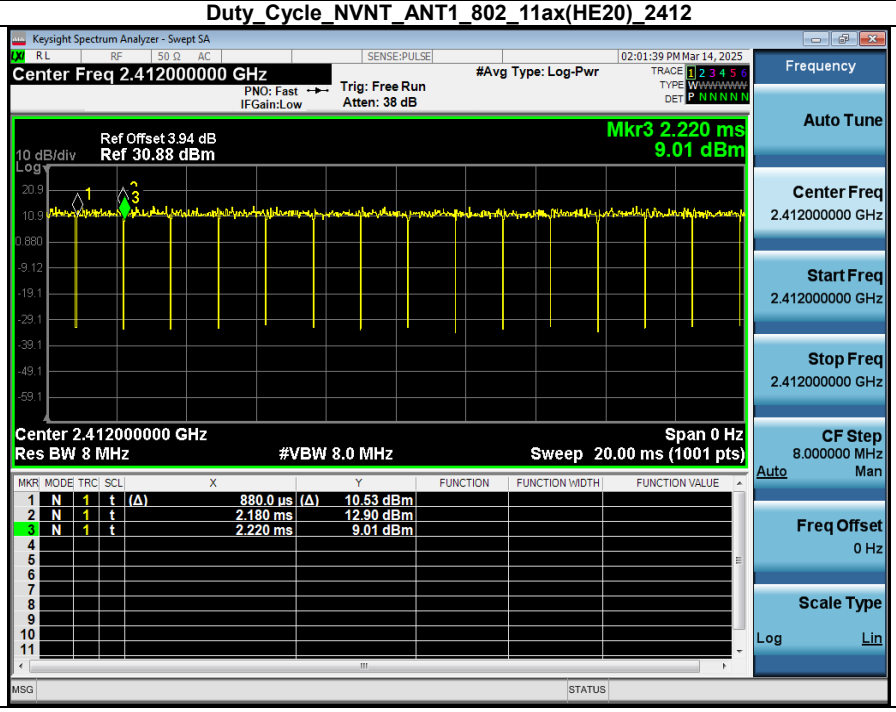
Duty_Cycle_NVNT_ANT1_802_11n(HT20)_2437



Duty_Cycle_NVNT_ANT1_802_11n(HT20)_2462



Duty_Cycle_NVNT_ANT1_802_11ax(HE20)_2412



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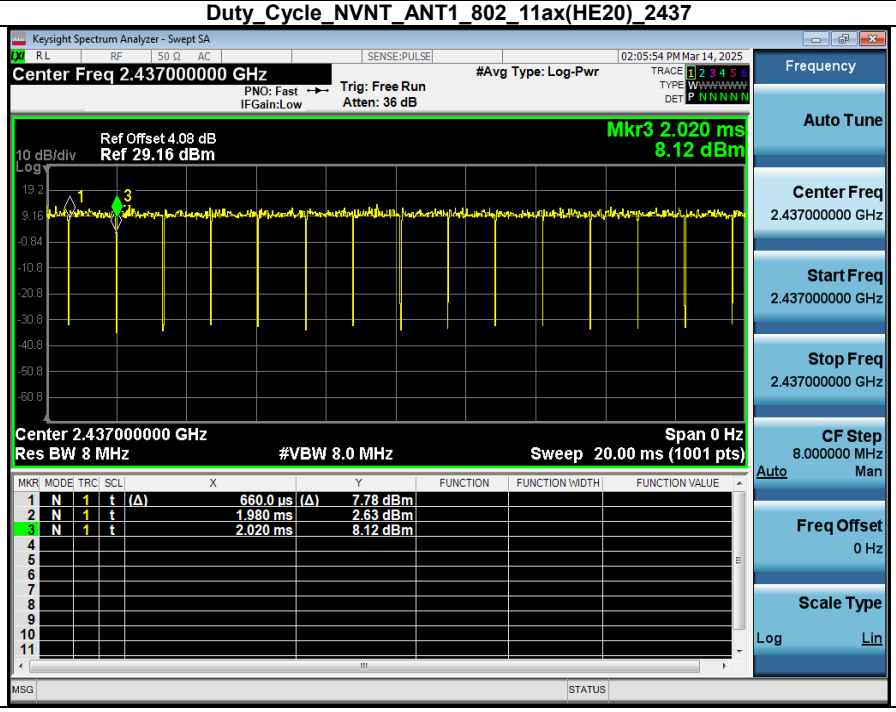

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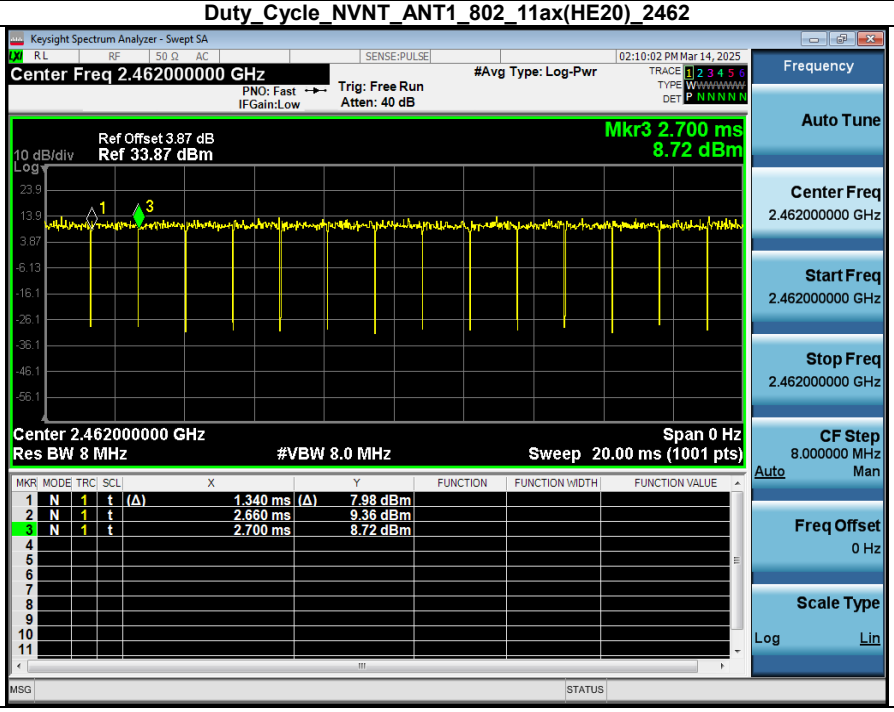
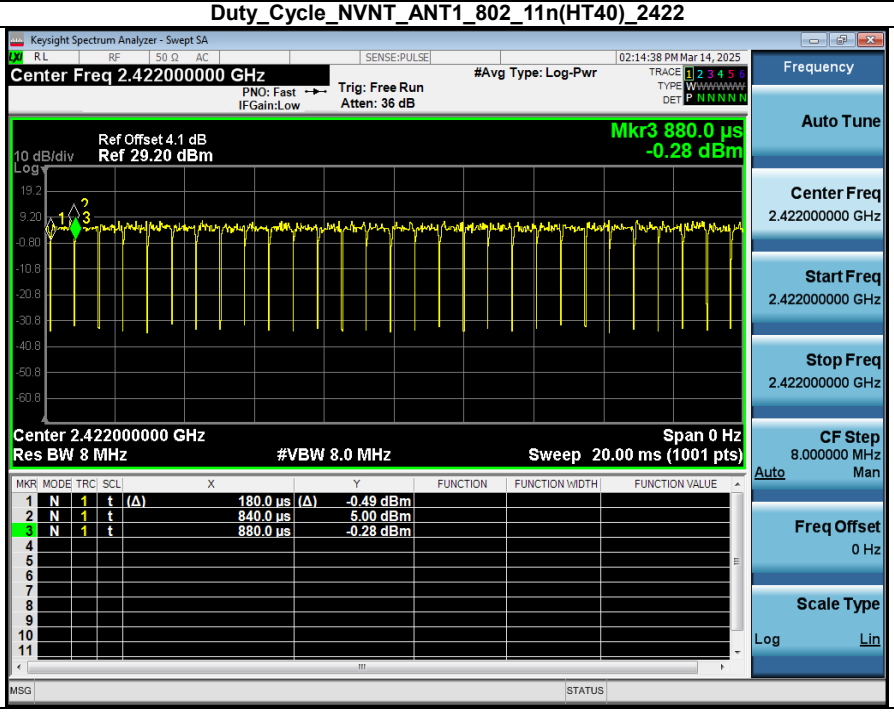
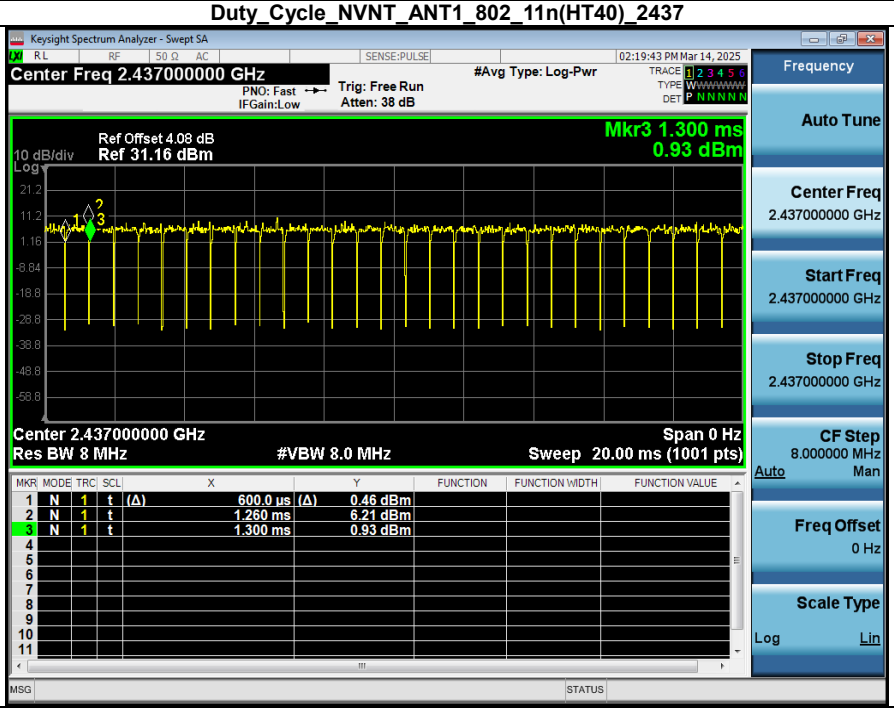


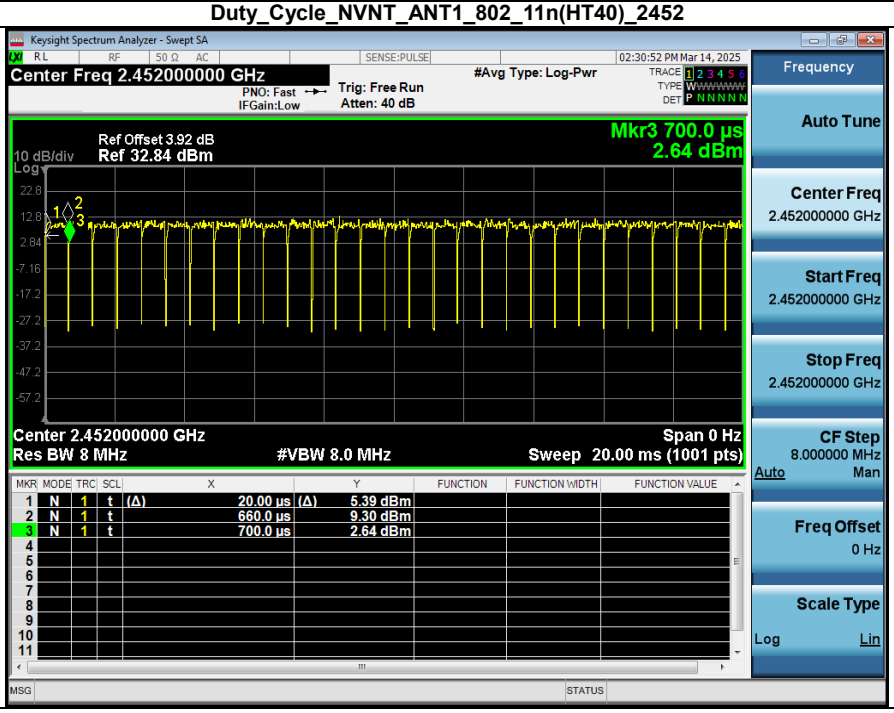
Duty_Cycle_NVNT_ANT1_802_11n(HT40)_2422



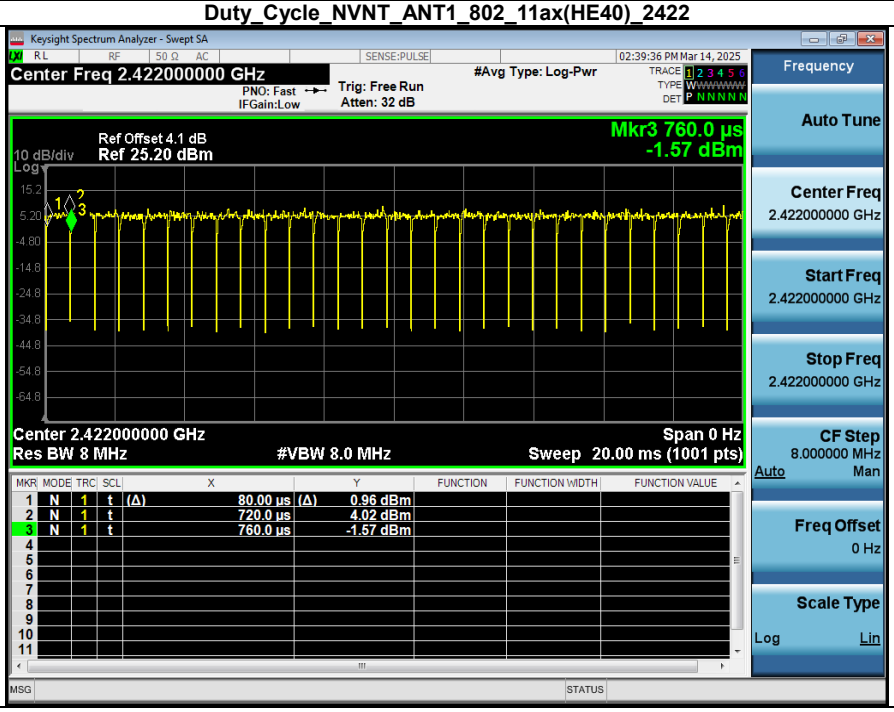
Duty_Cycle_NVNT_ANT1_802_11n(HT40)_2437



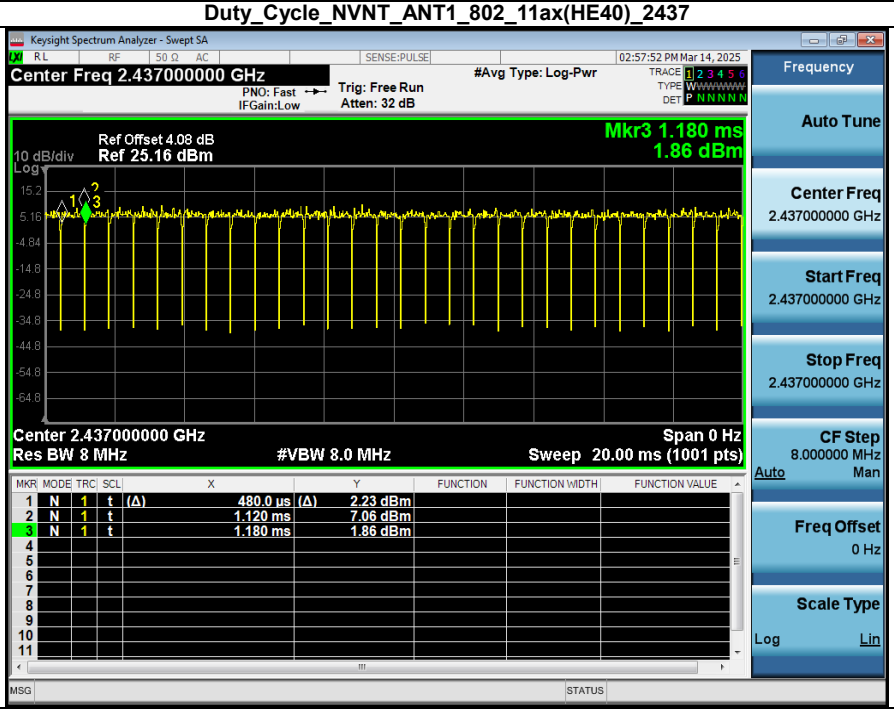
Duty_Cycle_NVNT_ANT1_802_11n(HT40)_2452



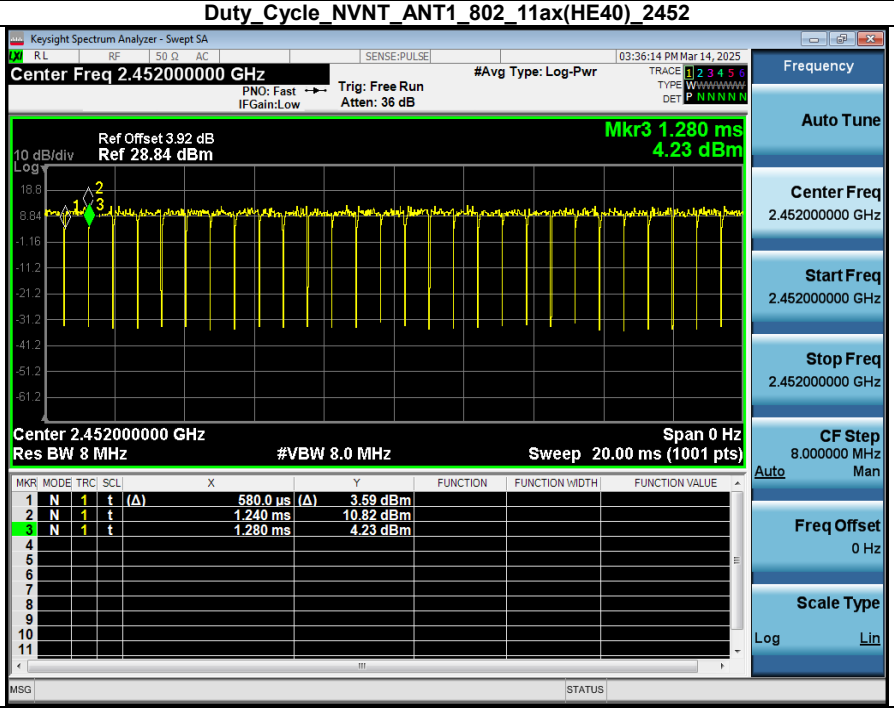
Duty_Cycle_NVNT_ANT1_802_11ax(HE40)_2422



Duty_Cycle_NVNT_ANT1_802_11ax(HE40)_2437



Duty_Cycle_NVNT_ANT1_802_11ax(HE40)_2452



7. Peak Power Spectral Density

7.1. Test limits

(1) Please refer RSS-247 & FCC Part 15.247.

(2) For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

(3) The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

7.2. Test Procedure

Details see the KDB558074 D01 Meas Guidance v05r02

(1) Place the EUT on the table and set it in transmitting mode.

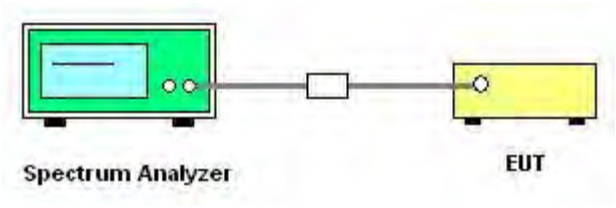
(2) Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

(3) Set the spectrum analyzer as RBW = 30kHz(Set the RBW to: 3 kHz≤RBW≤100 kHz.), VBW = 300kHz(Set the VBW≥3×RBW), span≥1.5×DTS bandwidth., detail see the test plot.

(4) Record the max reading.

(5) Repeat the above procedure until the measurements for all frequencies are completed.

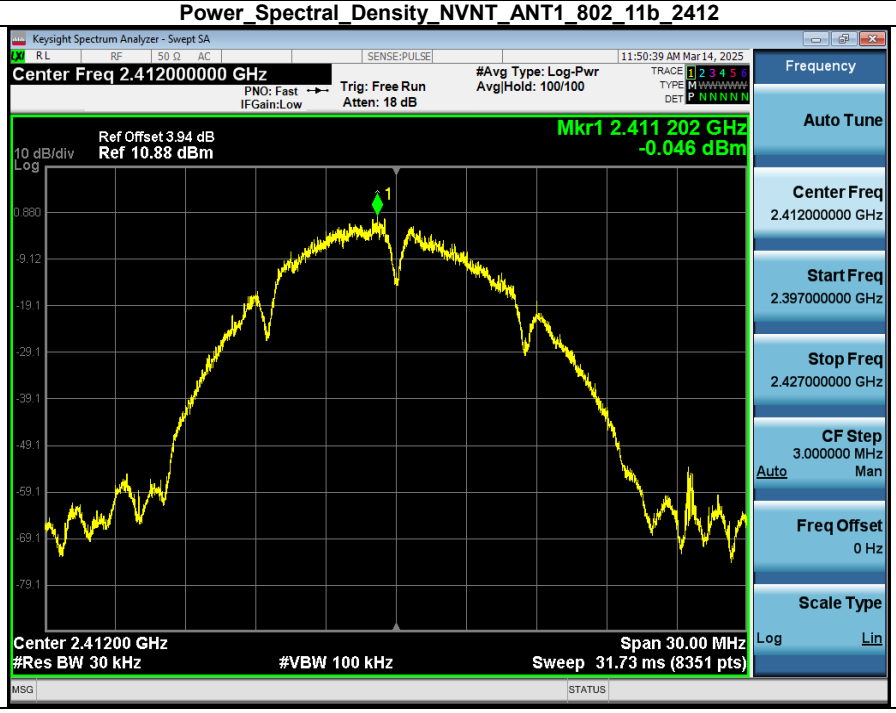
7.3. Test Setup



7.4. Test Results

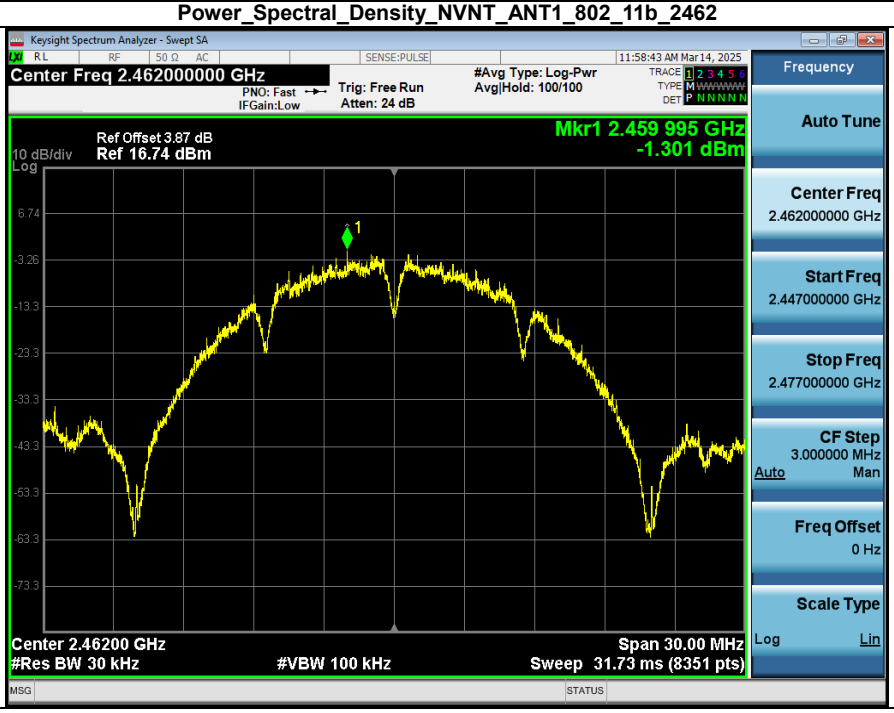
Modulation	Frequency (MHz)	SA_PSD(dBm/30kHz)	Duty factor(dB)	RB factor(dB)	PSD(dBm/3kHz)	limit(dBm/3kHz)	Result
802.11b	2412.00	-0.05	N/A	-10.00	-10.05	8	Pass
802.11b	2437.00	-1.72	N/A	-10.00	-11.72	8	Pass
802.11b	2462.00	-1.30	N/A	-10.00	-11.30	8	Pass
802.11g	2412.00	-6.85	N/A	-10.00	-16.85	8	Pass
802.11g	2437.00	-5.29	N/A	-10.00	-15.29	8	Pass
802.11g	2462.00	-9.30	N/A	-10.00	-19.30	8	Pass
802.11n(HT20)	2412.00	-5.73	N/A	-10.00	-15.73	8	Pass
802.11n(HT20)	2437.00	-6.24	N/A	-10.00	-16.24	8	Pass
802.11n(HT20)	2462.00	-9.00	N/A	-10.00	-19.00	8	Pass
802.11ax(HE20)	2412.00	-6.59	N/A	-10.00	-16.59	8	Pass
802.11ax(HE20)	2437.00	-6.36	N/A	-10.00	-16.36	8	Pass
802.11ax(HE20)	2462.00	-8.85	N/A	-10.00	-18.85	8	Pass
802.11n(HT40)	2422.00	-8.12	N/A	-10.00	-18.12	8	Pass
802.11n(HT40)	2437.00	-7.30	N/A	-10.00	-17.30	8	Pass
802.11n(HT40)	2452.00	-6.66	N/A	-10.00	-16.66	8	Pass
802.11ax(HE40)	2422.00	-7.73	N/A	-10.00	-17.73	8	Pass
802.11ax(HE40)	2437.00	-6.75	N/A	-10.00	-16.75	8	Pass
802.11ax(HE40)	2452.00	-6.74	N/A	-10.00	-16.74	8	Pass

Power_Spectral_Density_NVNT_ANT1_802_11b_2412

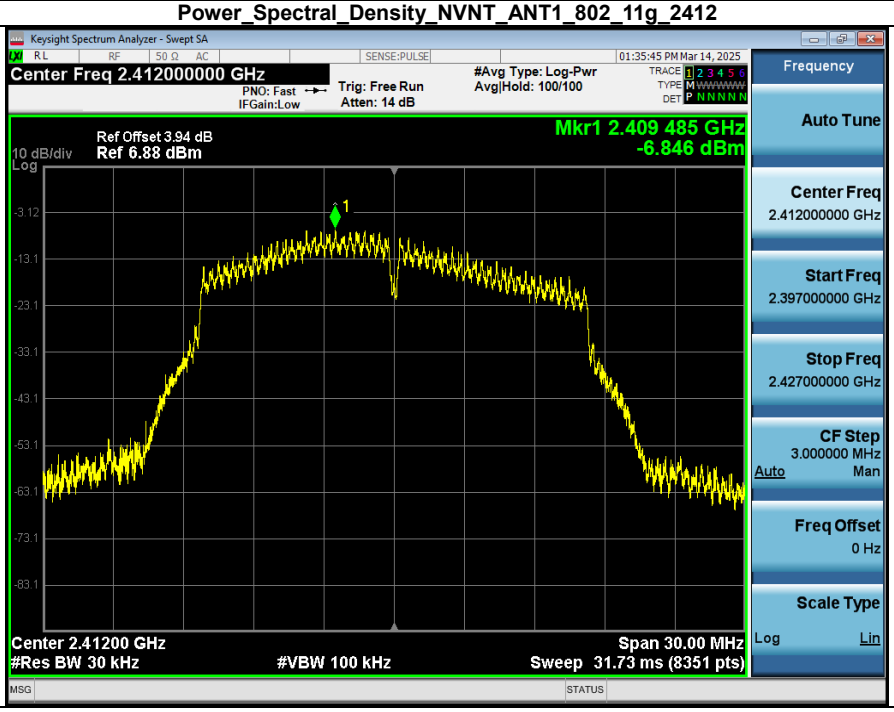


Power_Spectral_Density_NVNT_ANT1_802_11b_2437

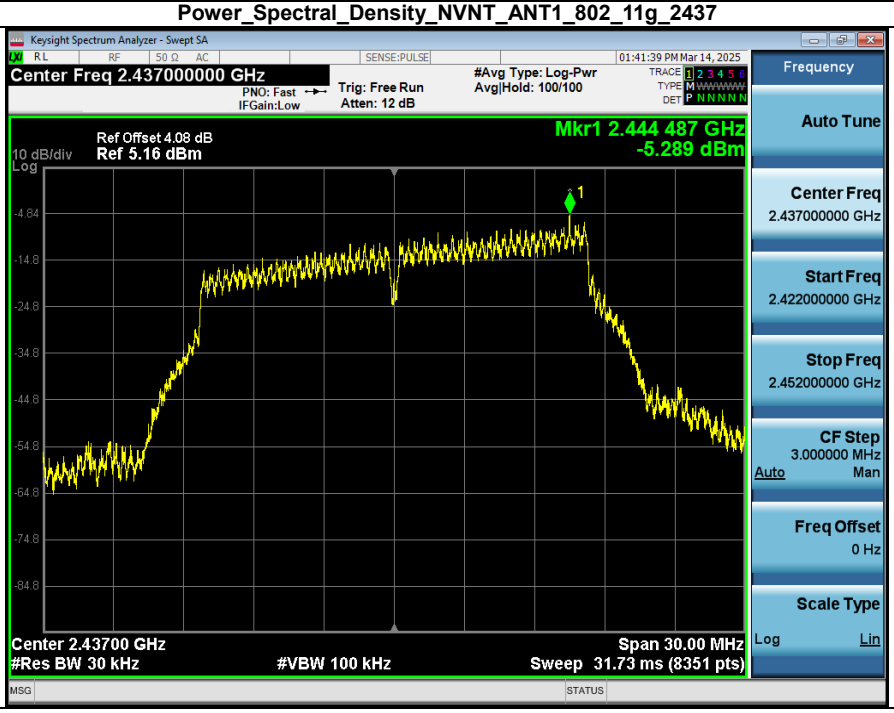
Power_Spectral_Density_NVNT_ANT1_802_11b_2462



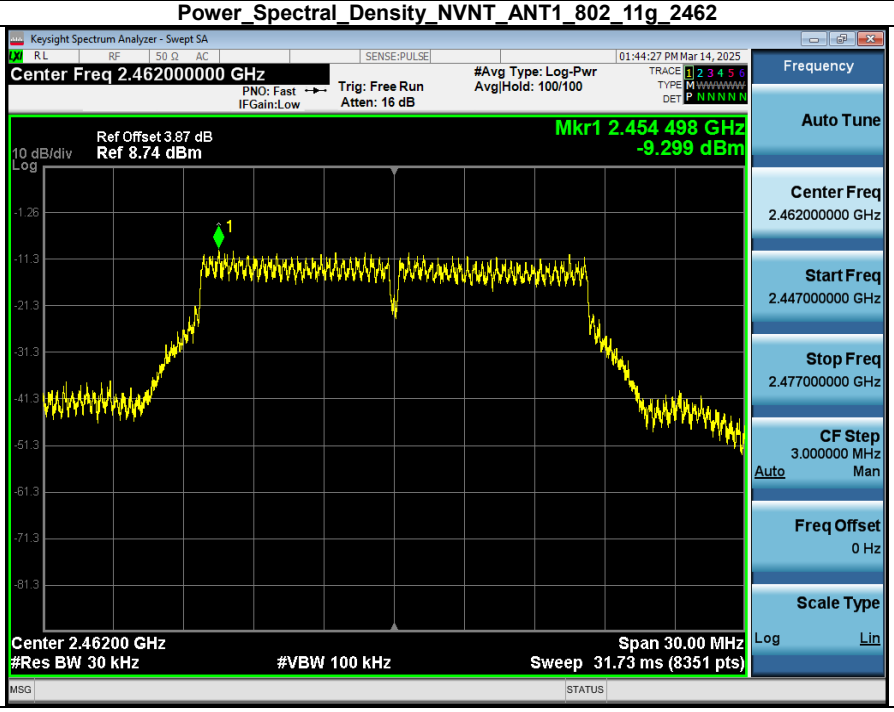
Power_Spectral_Density_NVNT_ANT1_802_11g_2412



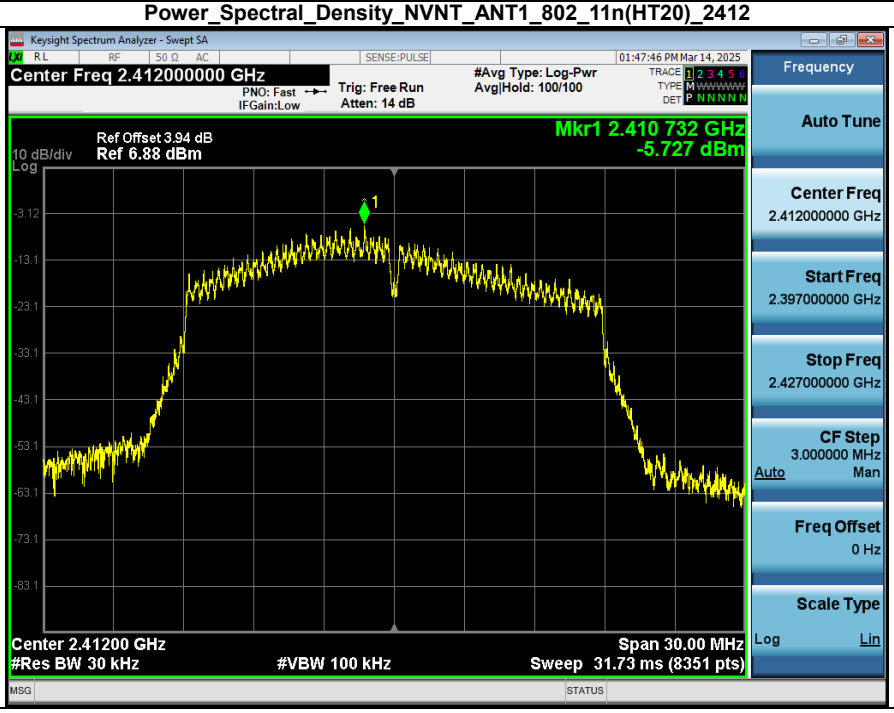
Power_Spectral_Density_NVNT_ANT1_802_11g_2437



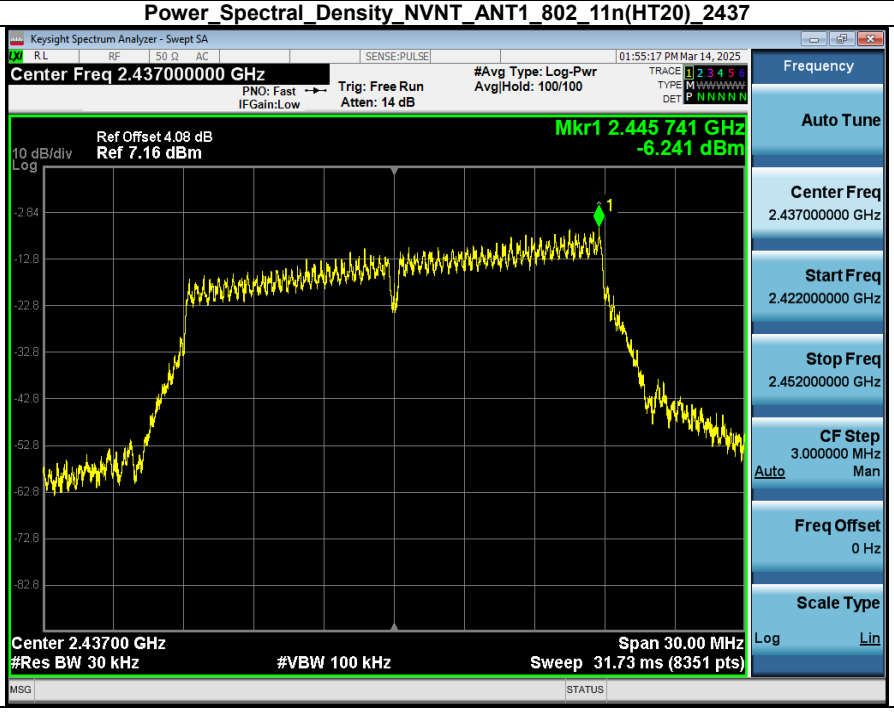
Power_Spectral_Density_NVNT_ANT1_802_11g_2462



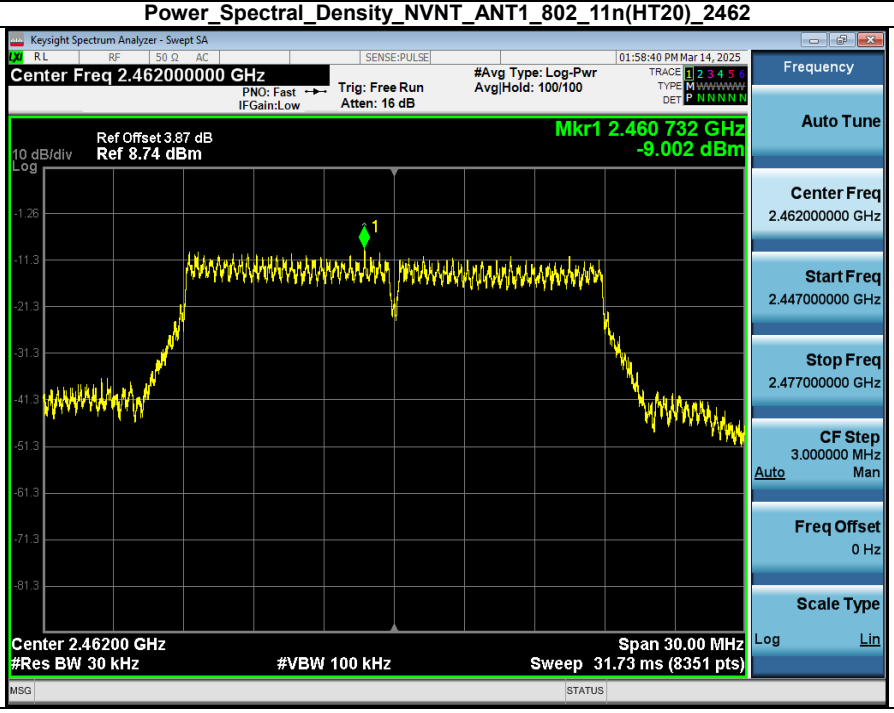
Power_Spectral_Density_NVNT_ANT1_802_11n(HT20)_2412



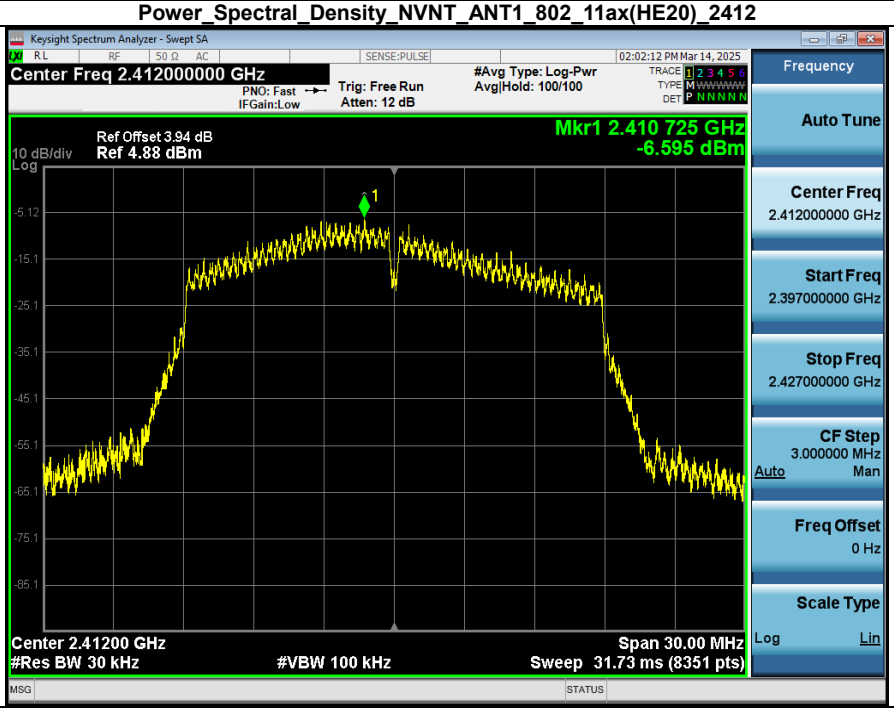
Power_Spectral_Density_NVNT_ANT1_802_11n(HT20)_2437



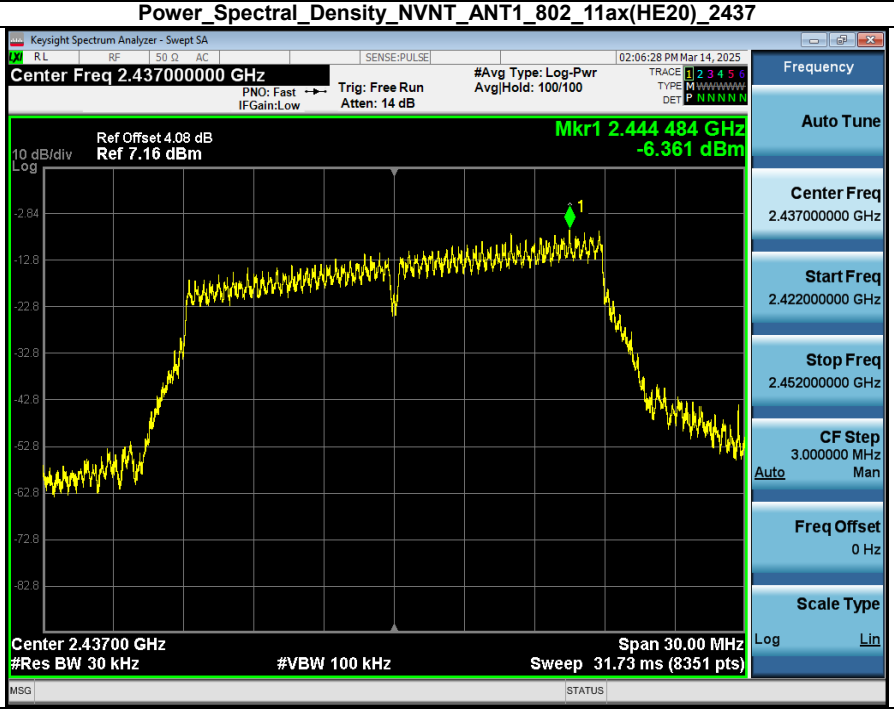
Power_Spectral_Density_NVNT_ANT1_802_11n(HT20)_2462



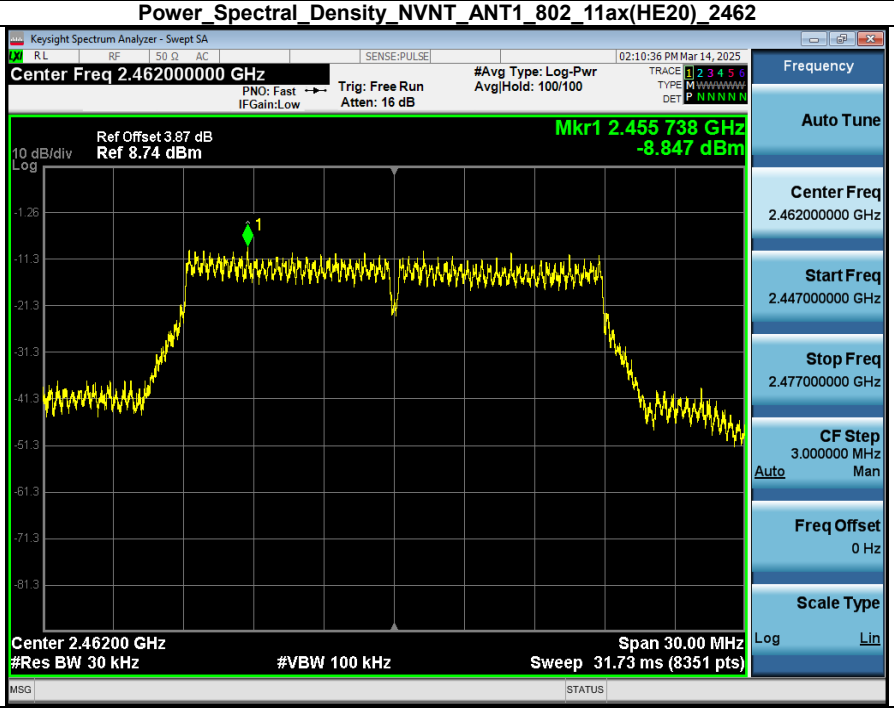
Power_Spectral_Density_NVNT_ANT1_802_11ax(HE20)_2412



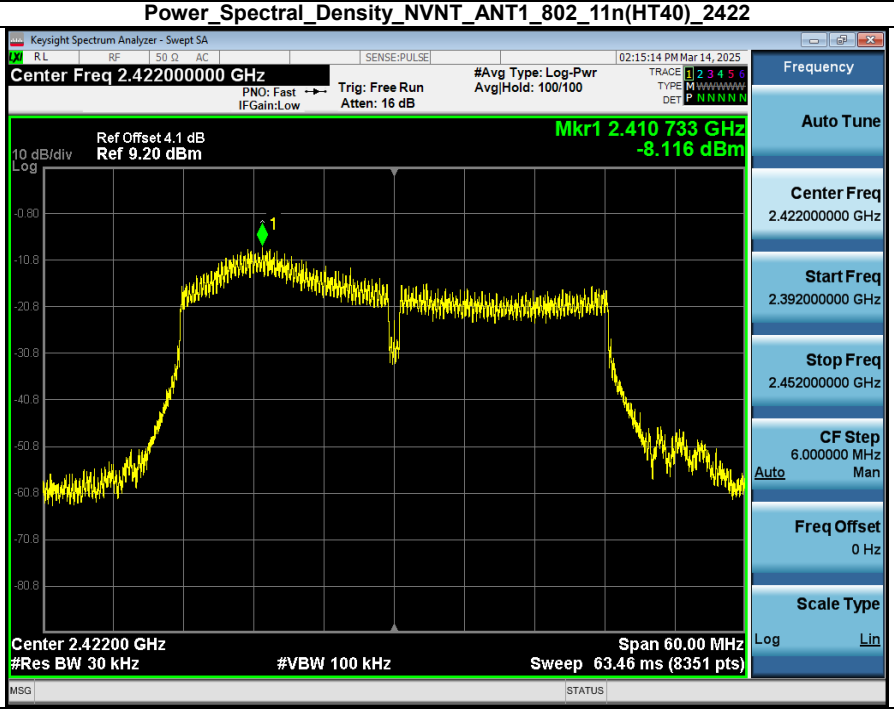
Power_Spectral_Density_NVNT_ANT1_802_11ax(HE20)_2437



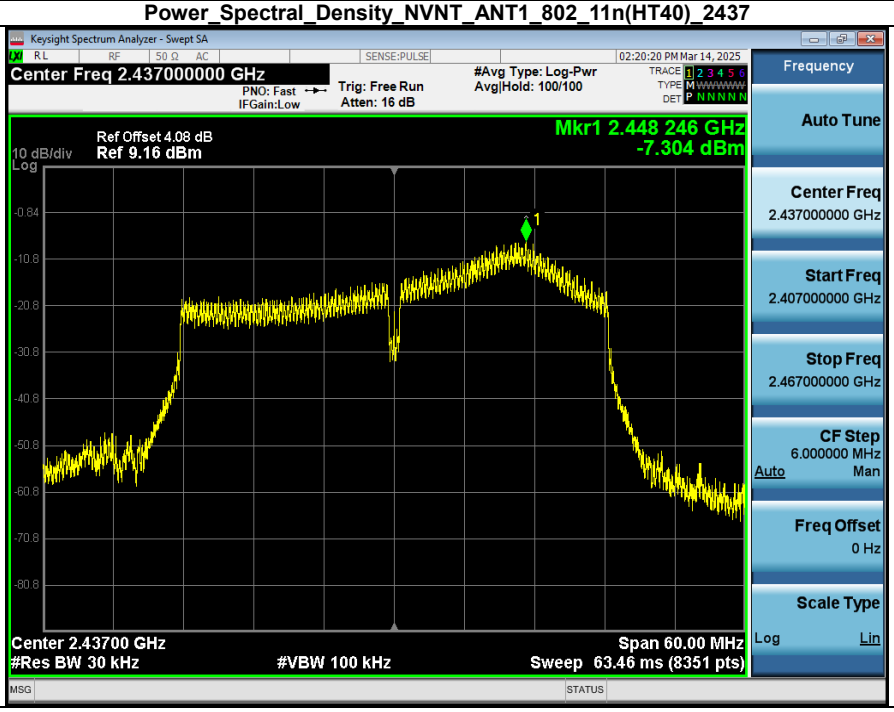
Power_Spectral_Density_NVNT_ANT1_802_11ax(HE20)_2462



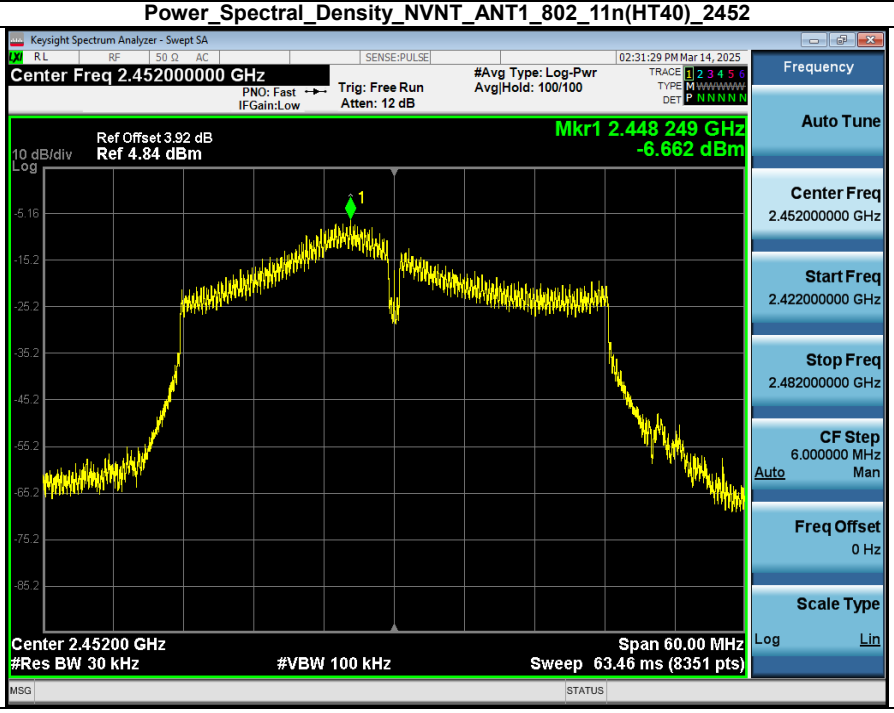
Power_Spectral_Density_NVNT_ANT1_802_11n(HT40)_2422



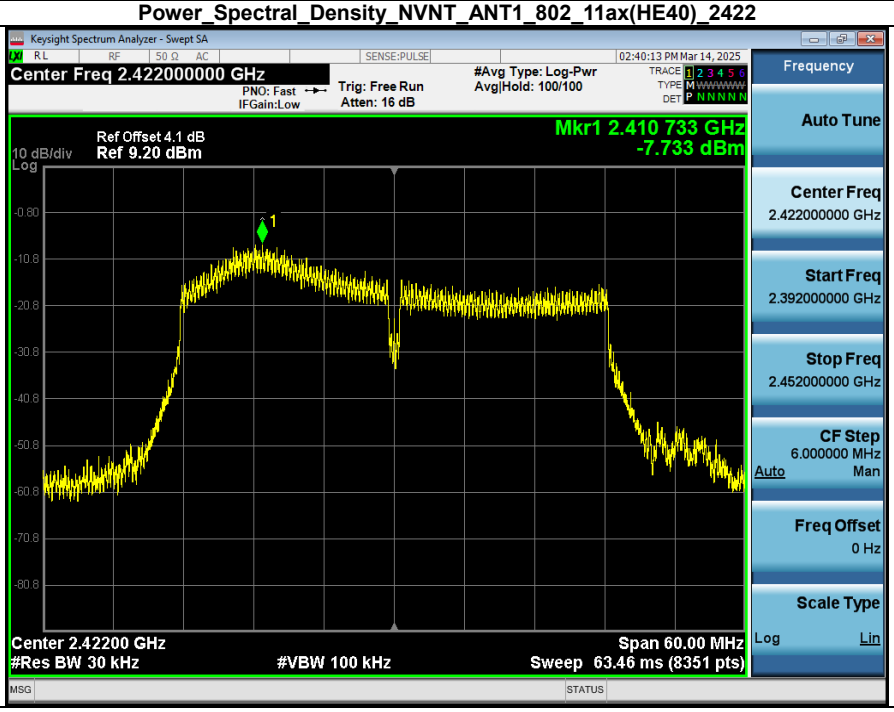
Power_Spectral_Density_NVNT_ANT1_802_11n(HT40)_2437



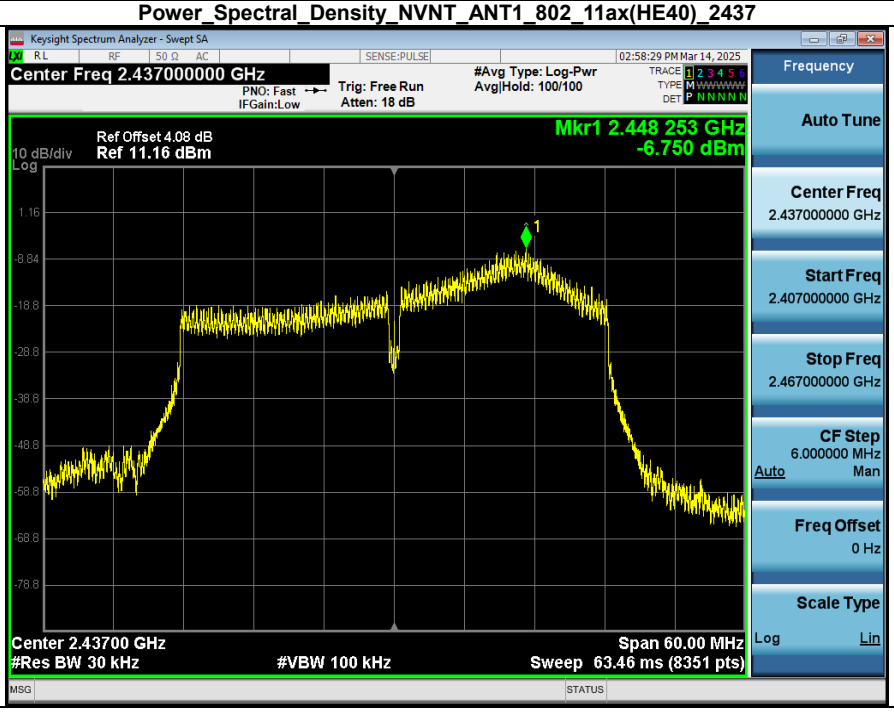
Power_Spectral_Density_NVNT_ANT1_802_11n(HT40)_2452



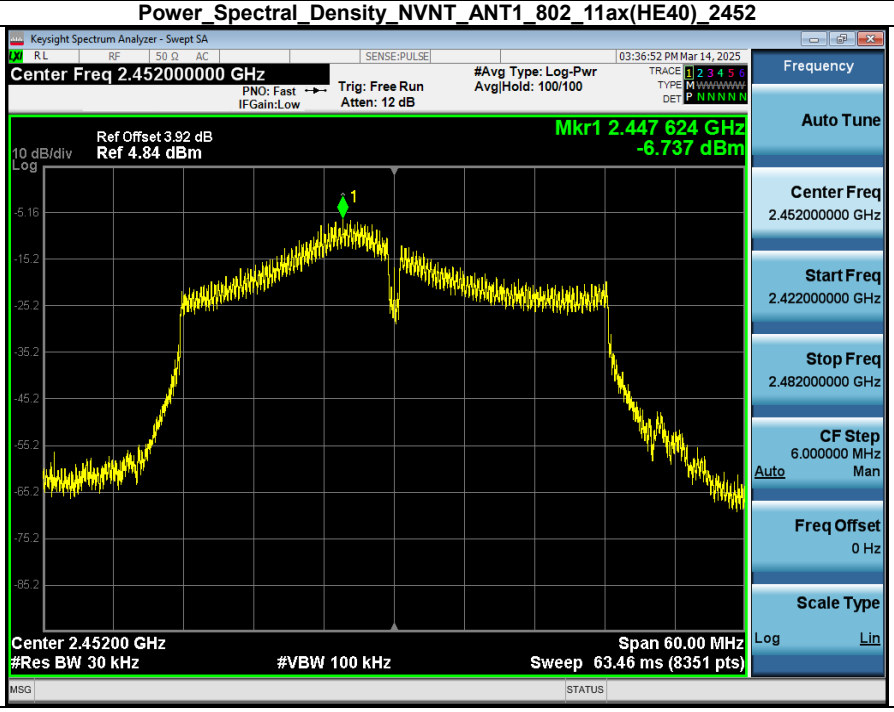
Power_Spectral_Density_NVNT_ANT1_802_11ax(HE40)_2422



Power_Spectral_Density_NVNT_ANT1_802_11ax(HE40)_2437



Power_Spectral_Density_NVNT_ANT1_802_11ax(HE40)_2452



8. Bandwidth

8.1. Test limits

Please refer RSS-247 & FCC Part 15.247

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500 kHz.

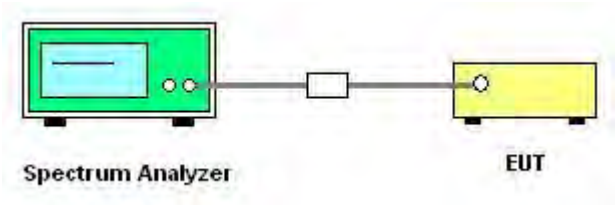
8.2. Test Procedure

Details see the KDB558074 D01 Meas Guidance v05r02

a) The bandwidth is measured at an amplitude level reduced 6dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

b) The test receiver set RBW = 100kHz, VBW≥3*RBW =300kHz, Peak Detector, Sweep time set auto, detail see the test plot.

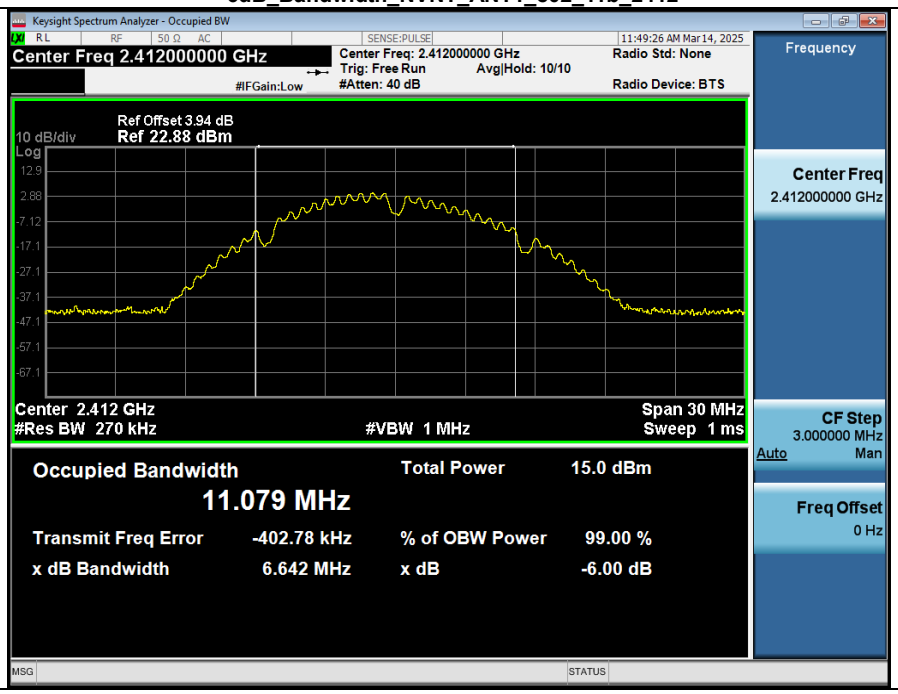
8.3. Test Setup



8.4. Test Results

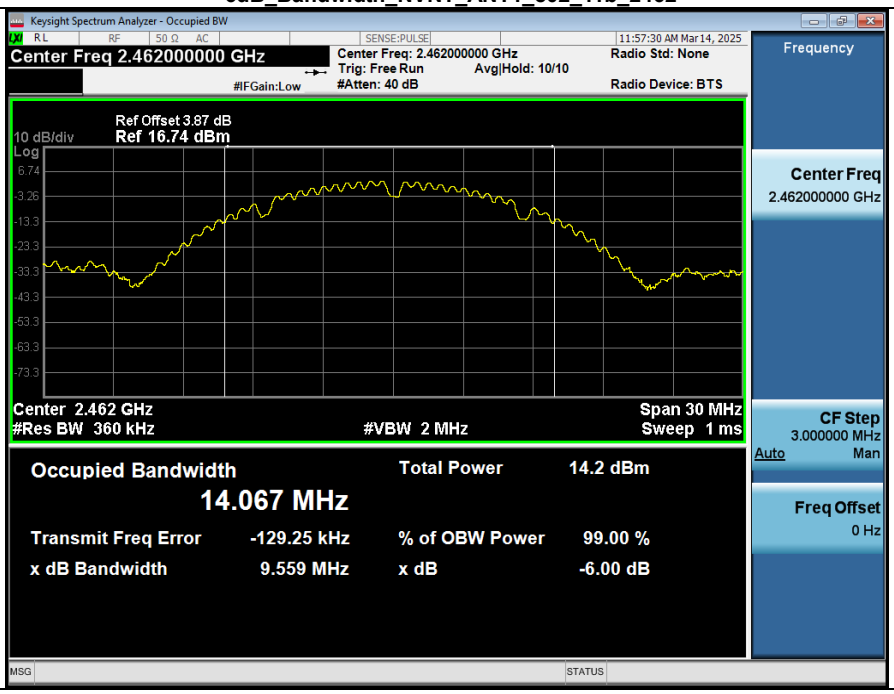
Condition	Antenna	Modulation	Frequency (MHz)	-6dB BW(MHz)	limit(kHz)	Result
NVNT	ANT1	802.11b	2412.00	6.64	500	Pass
NVNT	ANT1	802.11b	2437.00	8.71	500	Pass
NVNT	ANT1	802.11b	2462.00	9.56	500	Pass
NVNT	ANT1	802.11g	2412.00	9.89	500	Pass
NVNT	ANT1	802.11g	2437.00	10.96	500	Pass
NVNT	ANT1	802.11g	2462.00	16.78	500	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	9.05	500	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	11.88	500	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	18.20	500	Pass
NVNT	ANT1	802.11ax(HE20)	2412.00	8.55	500	Pass
NVNT	ANT1	802.11ax(HE20)	2437.00	12.64	500	Pass
NVNT	ANT1	802.11ax(HE20)	2462.00	18.12	500	Pass
NVNT	ANT1	802.11n(HT40)	2422.00	12.58	500	Pass
NVNT	ANT1	802.11n(HT40)	2437.00	10.23	500	Pass
NVNT	ANT1	802.11n(HT40)	2452.00	9.20	500	Pass
NVNT	ANT1	802.11ax(HE40)	2422.00	12.03	500	Pass
NVNT	ANT1	802.11ax(HE40)	2437.00	9.60	500	Pass
NVNT	ANT1	802.11ax(HE40)	2452.00	8.21	500	Pass

-6dB_Bandwidth_NVNT_ANT1_802_11b_2412

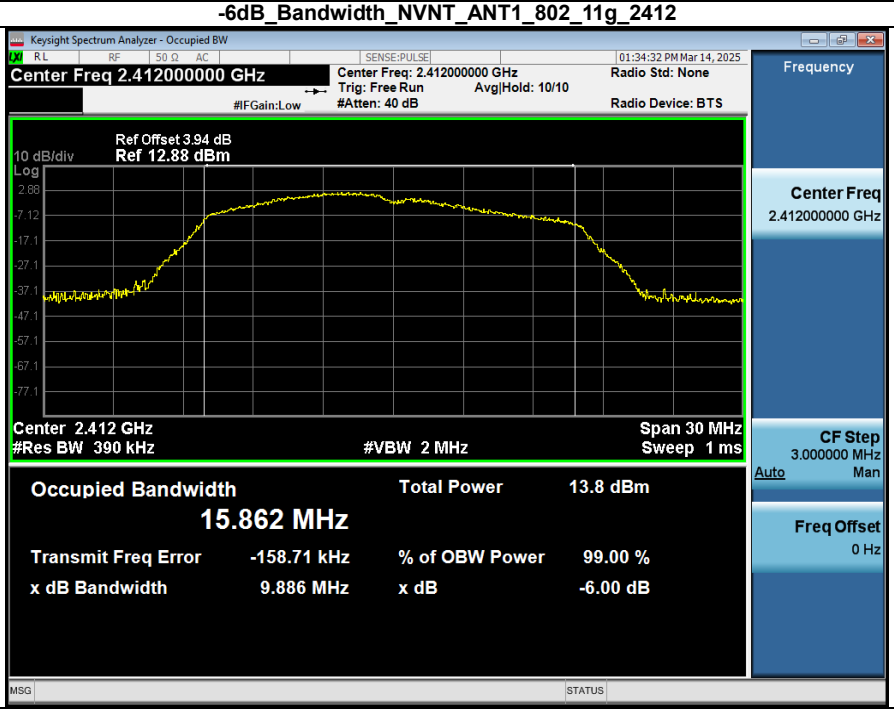


-6dB_Bandwidth_NVNT_ANT1_802_11b_2437

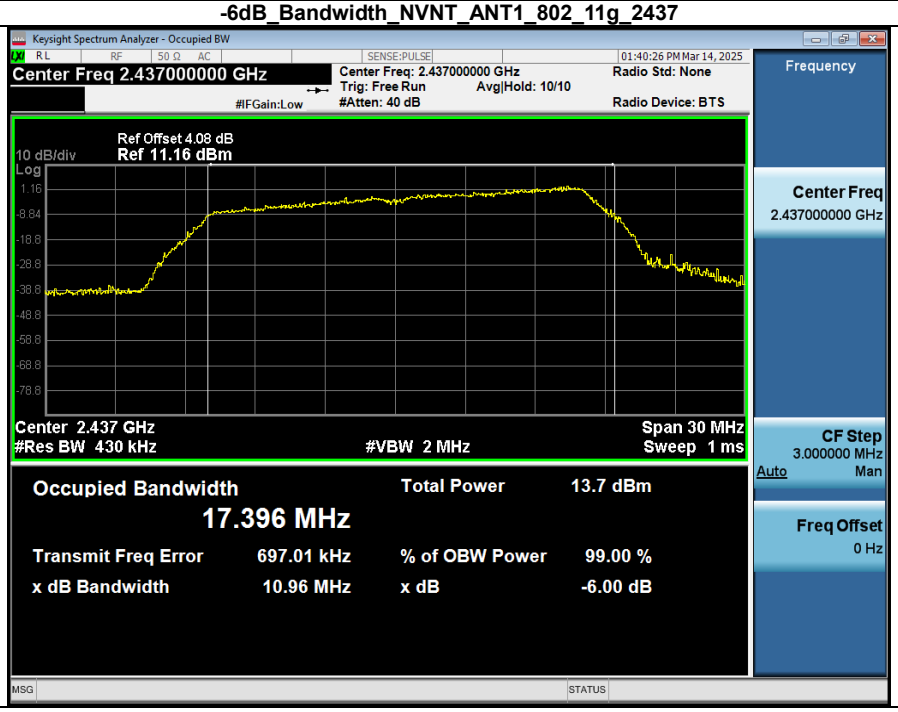
-6dB_Bandwidth_NVNT_ANT1_802_11b_2462



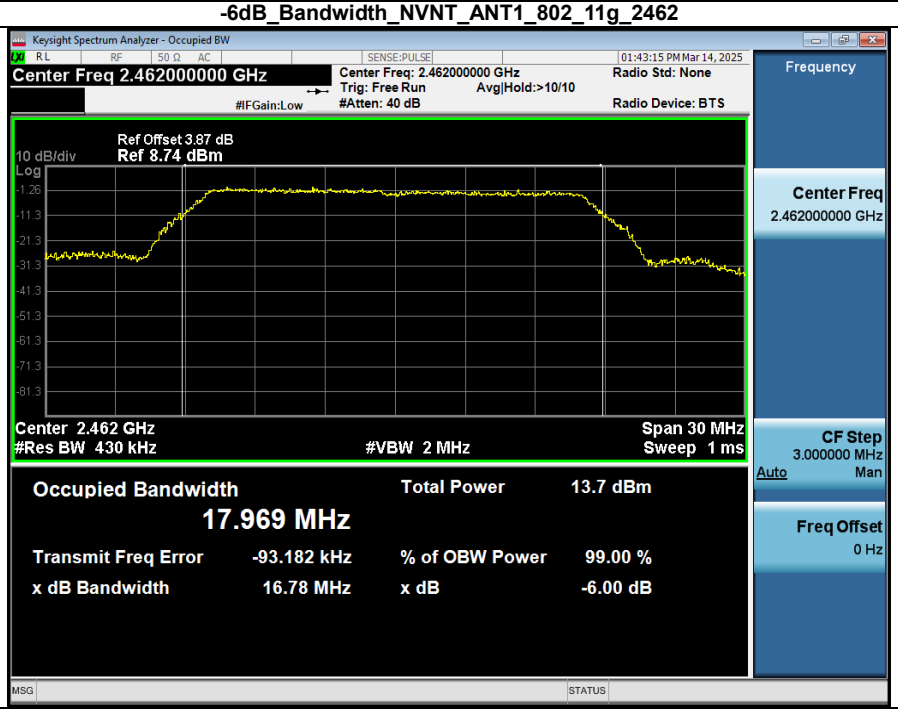
-6dB_Bandwidth_NVNT_ANT1_802_11g_2412



-6dB_Bandwidth_NVNT_ANT1_802_11g_2437

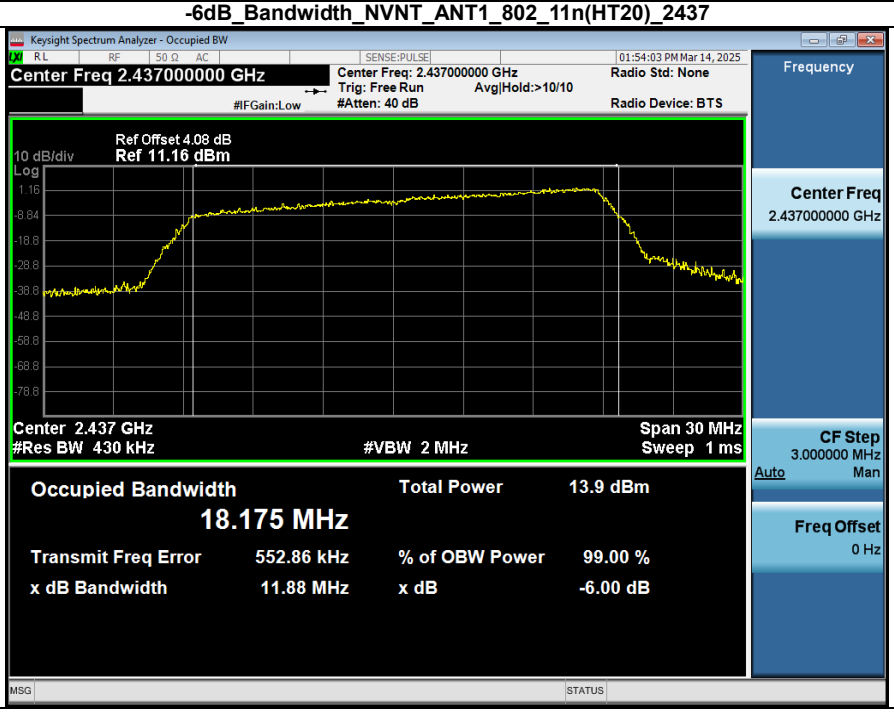


-6dB_Bandwidth_NVNT_ANT1_802_11g_2462

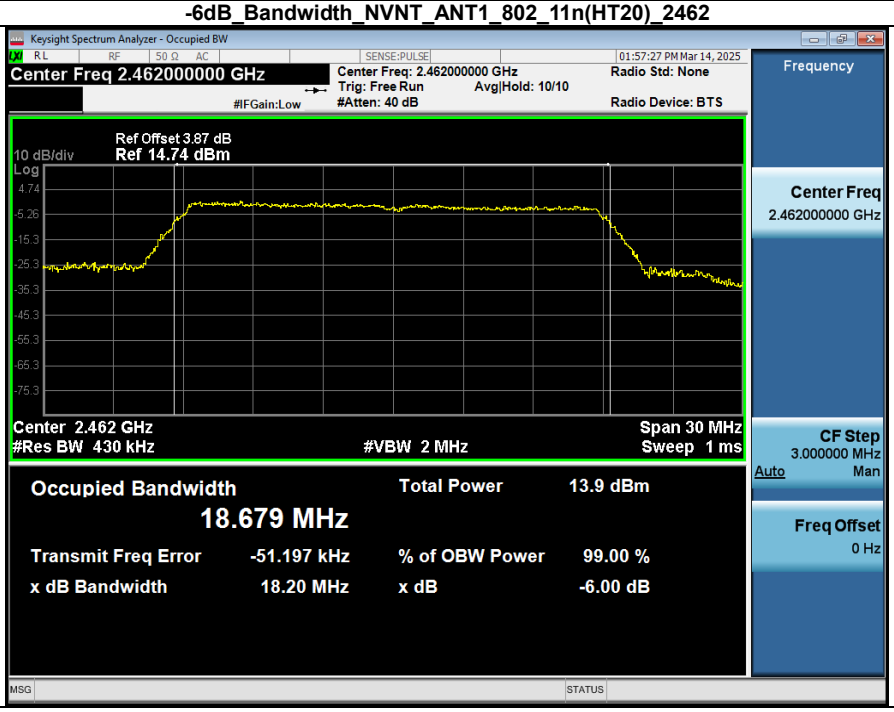


-6dB_Bandwidth_NVNT_ANT1_802_11n(HT20)_2412

-6dB_Bandwidth_NVNT_ANT1_802_11n(HT20)_2437



-6dB_Bandwidth_NVNT_ANT1_802_11n(HT20)_2462



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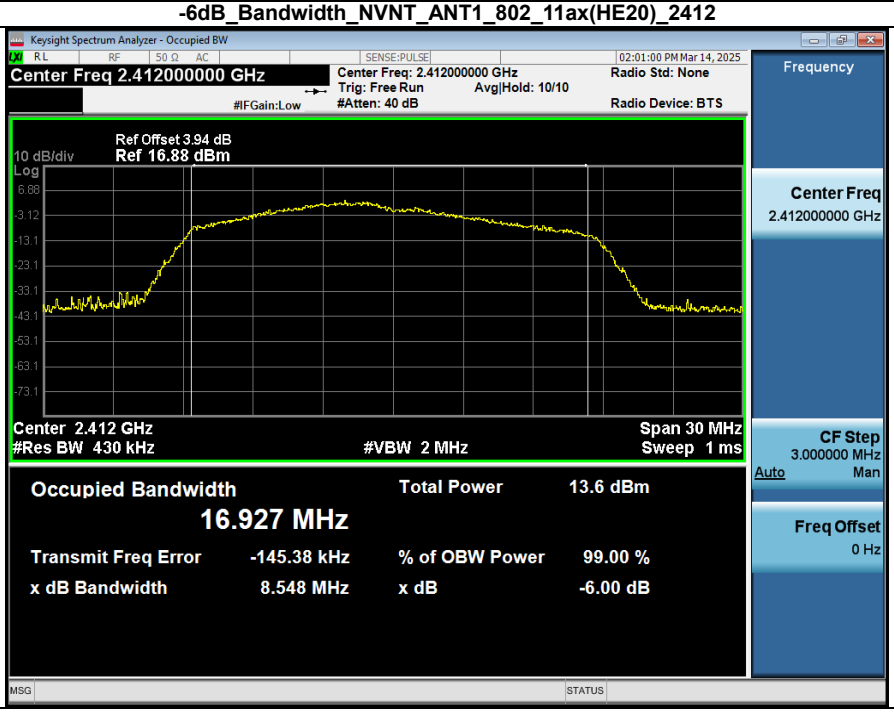
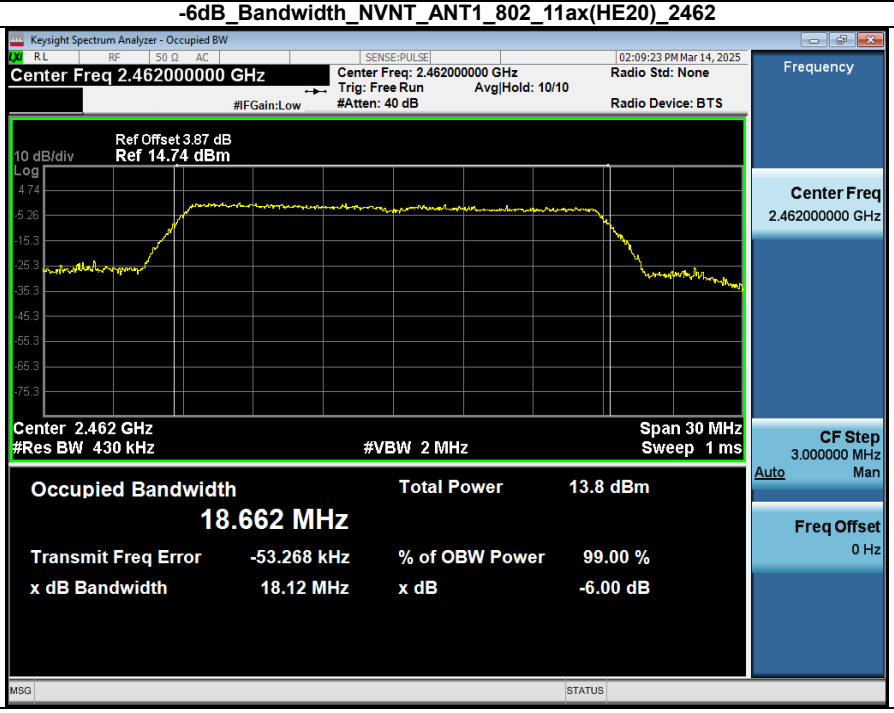
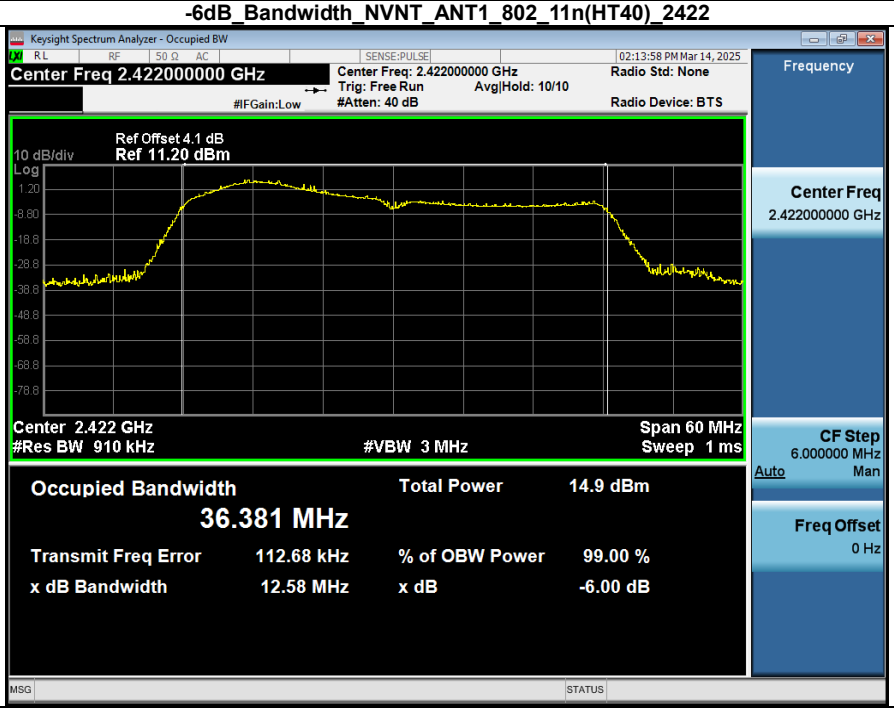


-6dB_Bandwidth_NVNT_ANT1_802_11ax(HE20)_2437

-6dB_Bandwidth_NVNT_ANT1_802_11ax(HE20)_2462



-6dB_Bandwidth_NVNT_ANT1_802_11n(HT40)_2422



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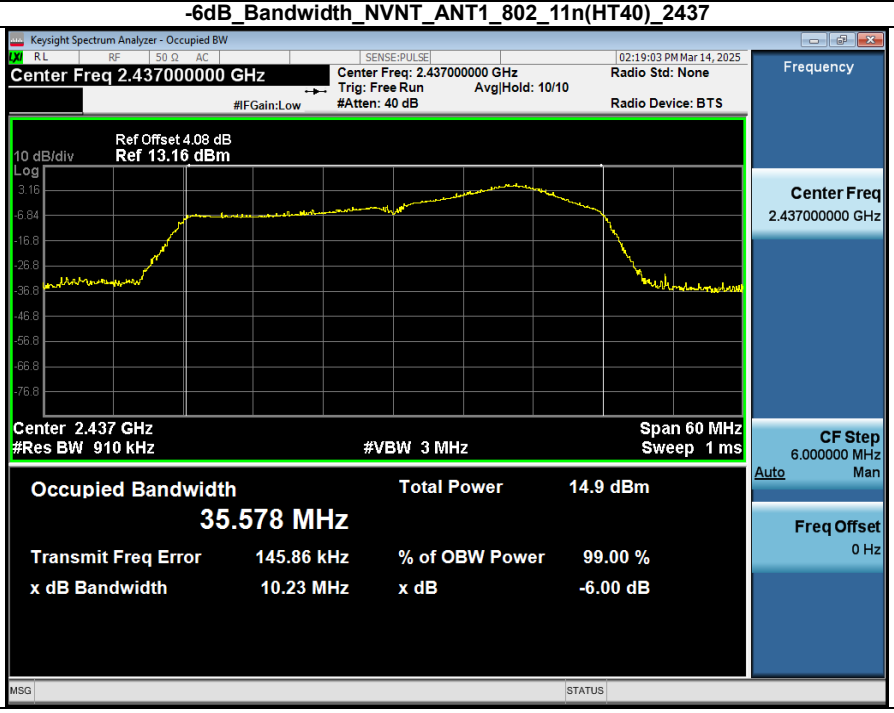

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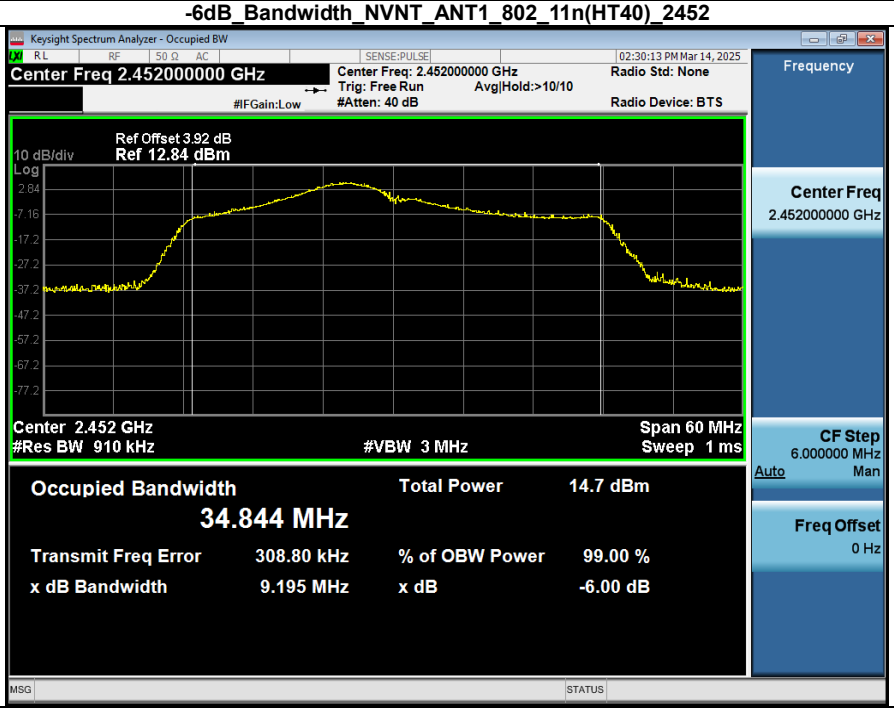

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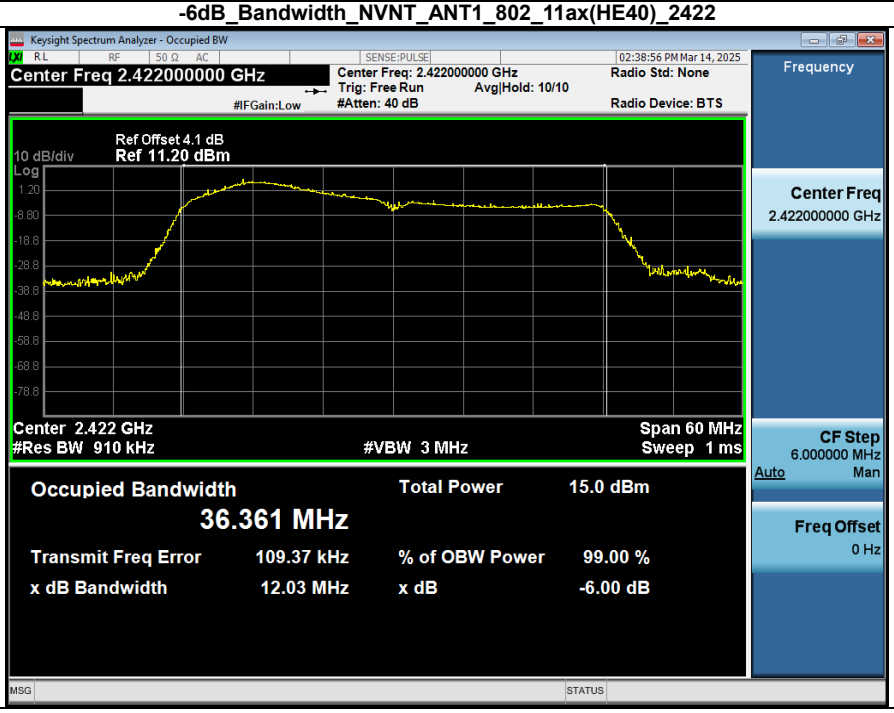

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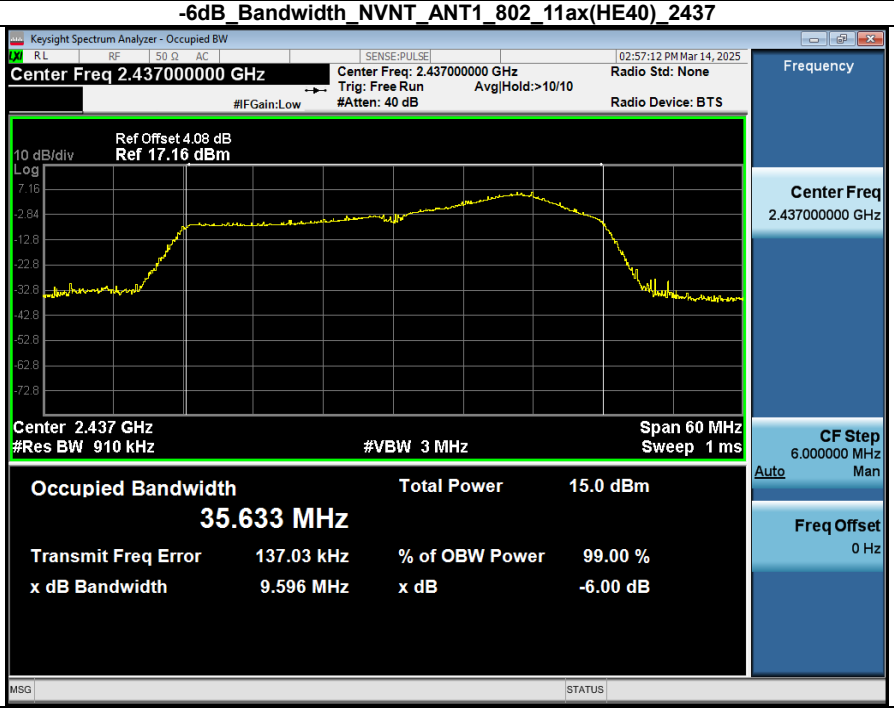

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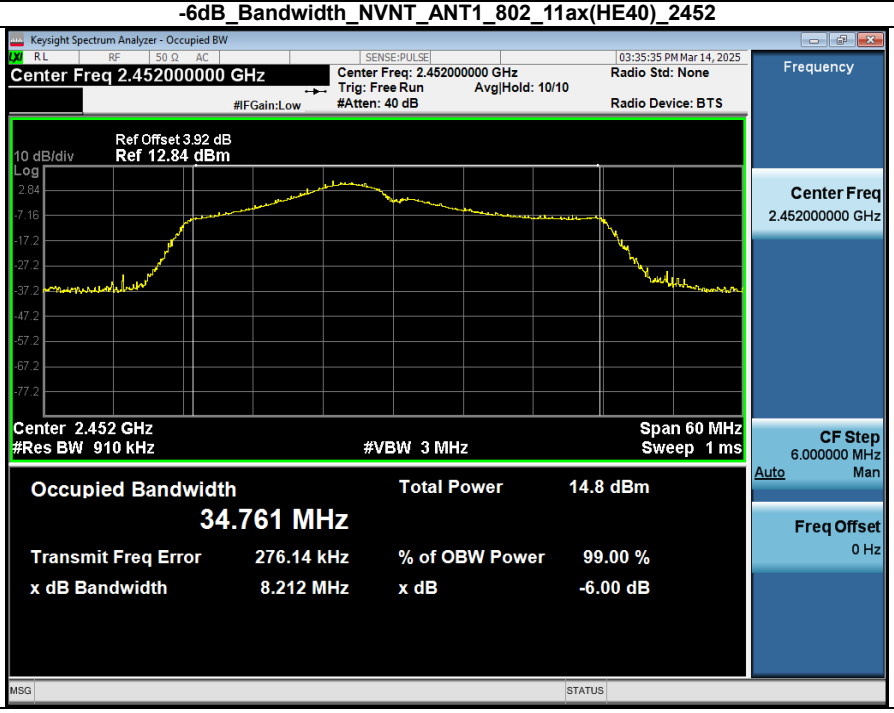
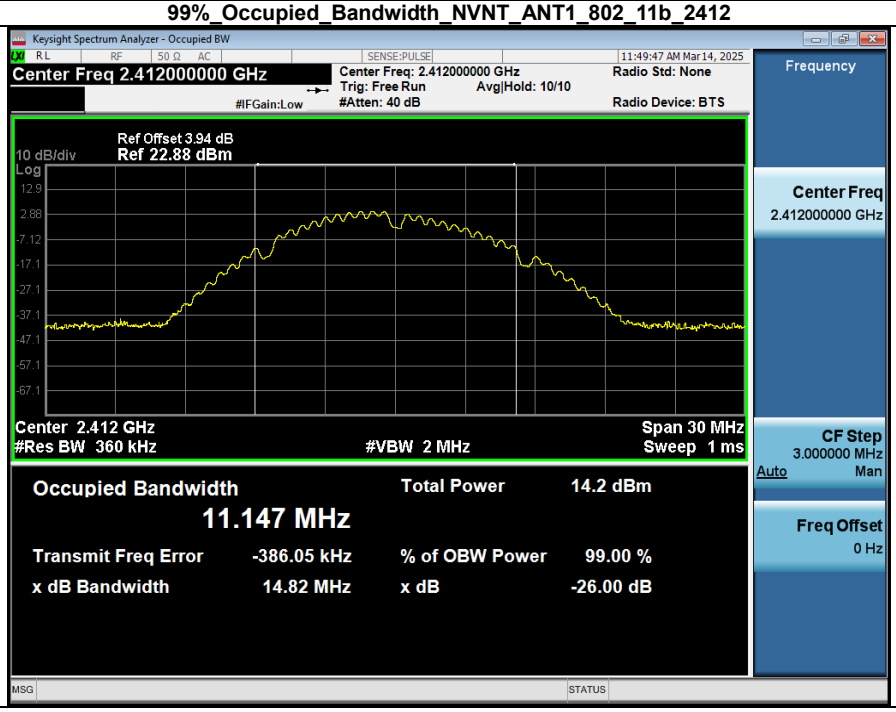
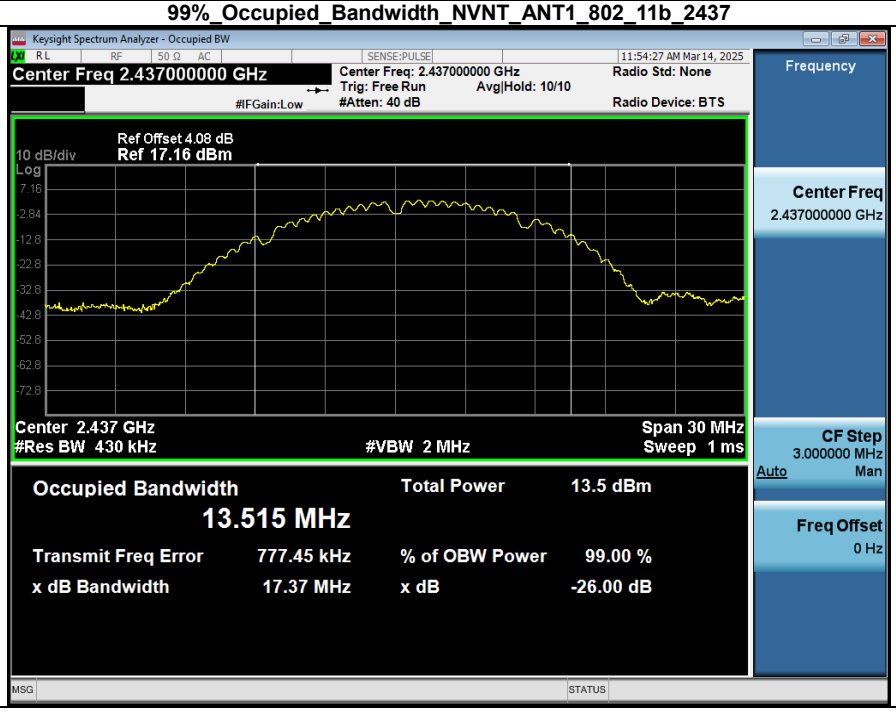


Condition	Antenna	Modulation	Frequency (MHz)	99%%BW(MHz)
NVNT	ANT1	802.11b	2412.00	11.147
NVNT	ANT1	802.11b	2437.00	13.515
NVNT	ANT1	802.11b	2462.00	14.073
NVNT	ANT1	802.11g	2412.00	15.939
NVNT	ANT1	802.11g	2437.00	17.474
NVNT	ANT1	802.11g	2462.00	18.150
NVNT	ANT1	802.11n(HT20)	2412.00	17.002
NVNT	ANT1	802.11n(HT20)	2437.00	18.198
NVNT	ANT1	802.11n(HT20)	2462.00	18.821
NVNT	ANT1	802.11ax(HE20)	2412.00	16.955
NVNT	ANT1	802.11ax(HE20)	2437.00	18.201
NVNT	ANT1	802.11ax(HE20)	2462.00	18.843
NVNT	ANT1	802.11n(HT40)	2422.00	36.373
NVNT	ANT1	802.11n(HT40)	2437.00	35.597
NVNT	ANT1	802.11n(HT40)	2452.00	34.750
NVNT	ANT1	802.11ax(HE40)	2422.00	36.312
NVNT	ANT1	802.11ax(HE40)	2437.00	35.611
NVNT	ANT1	802.11ax(HE40)	2452.00	34.706

99%_Occupied_Bandwidth_NVNT_ANT1_802_11b_2412



99%_Occupied_Bandwidth_NVNT_ANT1_802_11b_2437



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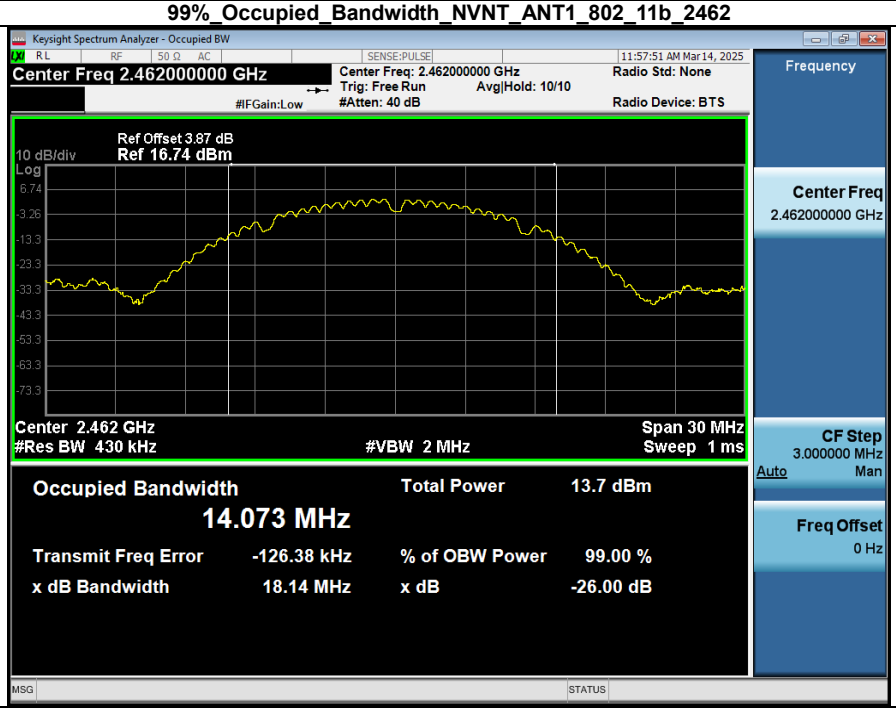

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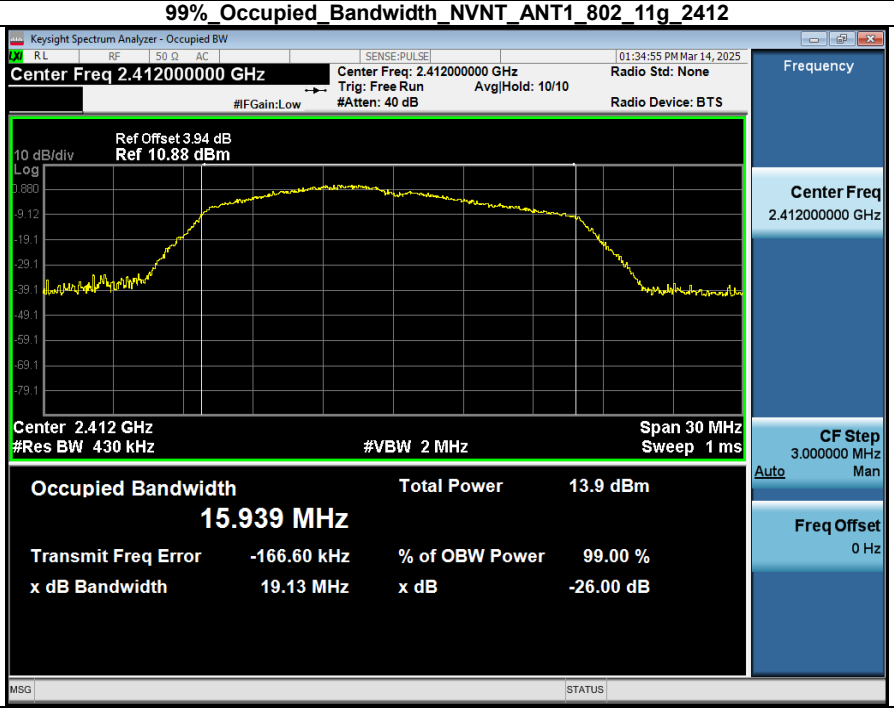

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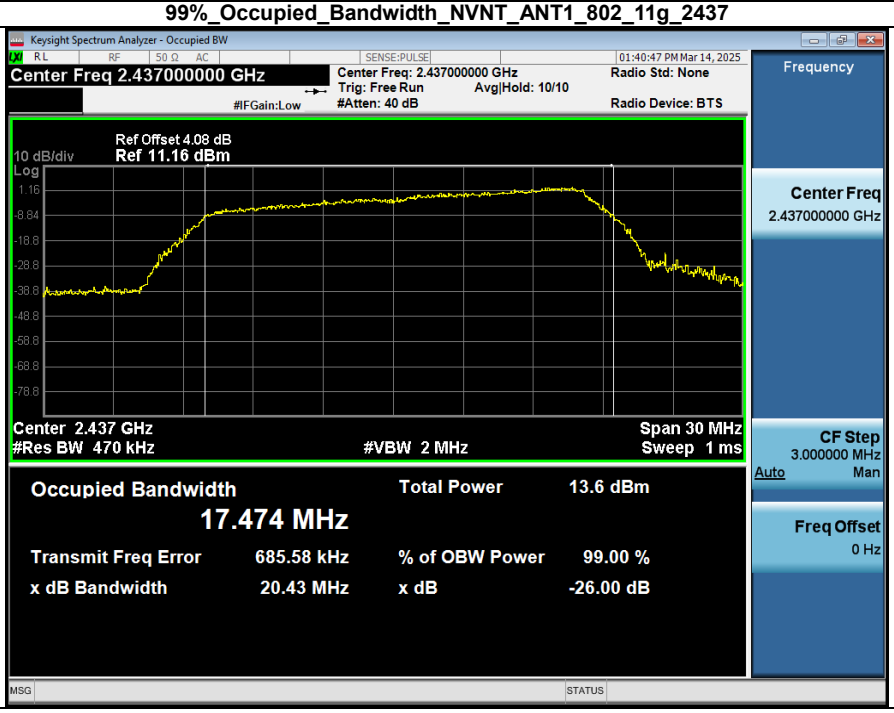

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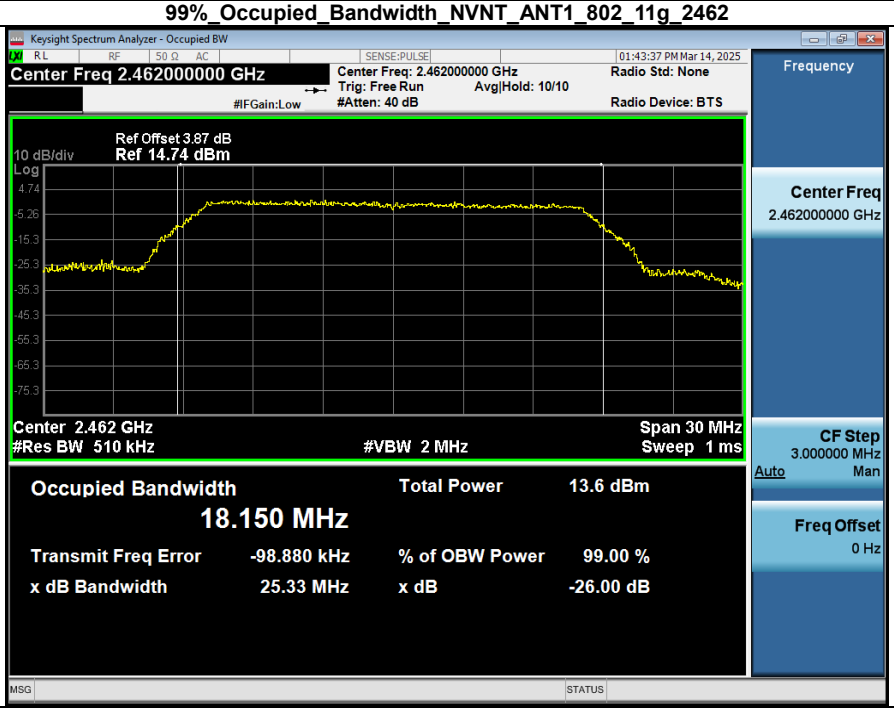
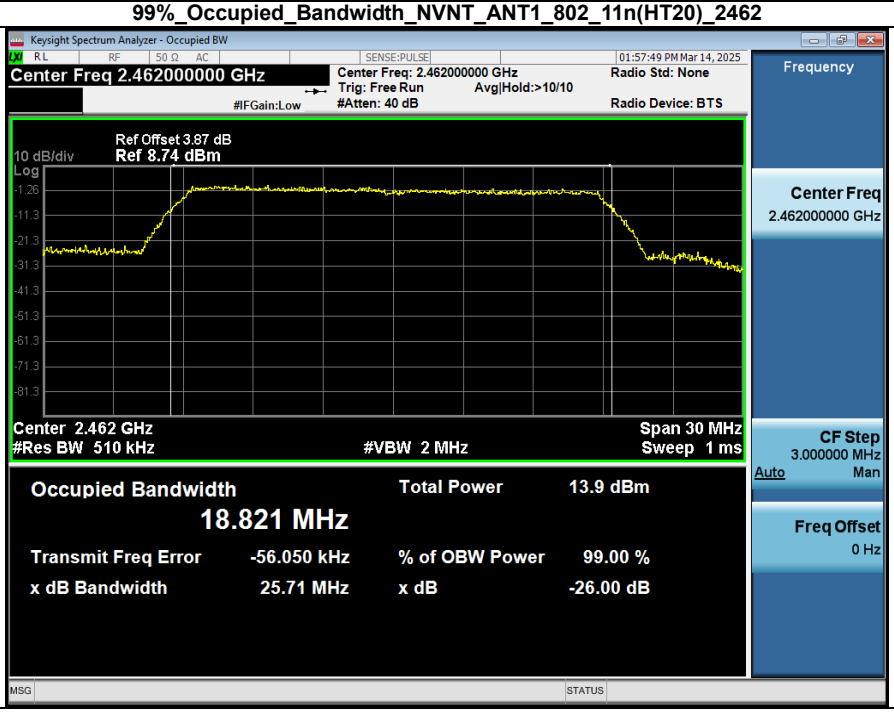


99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT20)_2412

99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT20)_2437

99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT20)_2462



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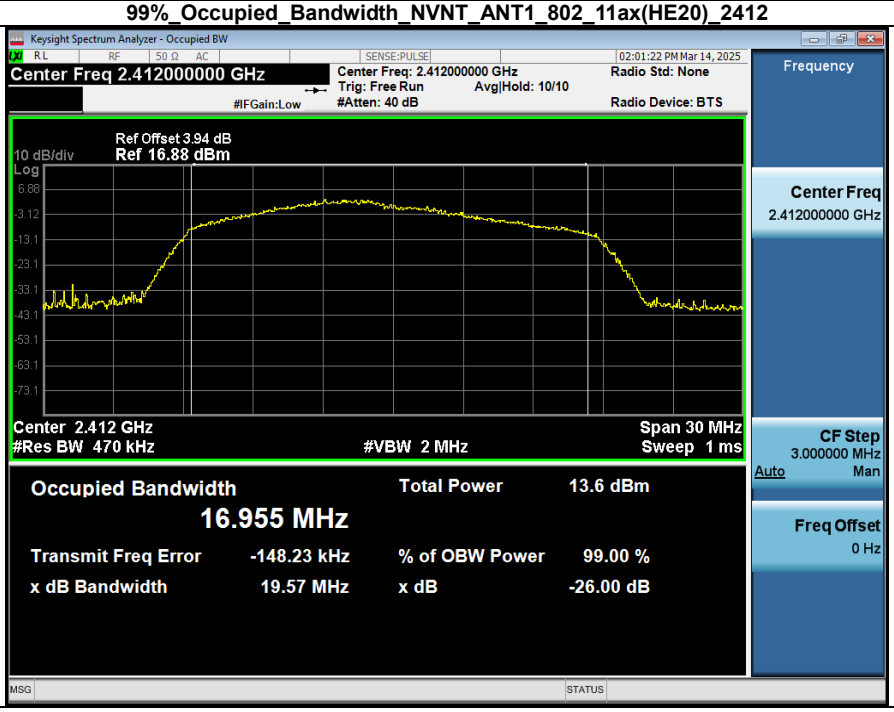
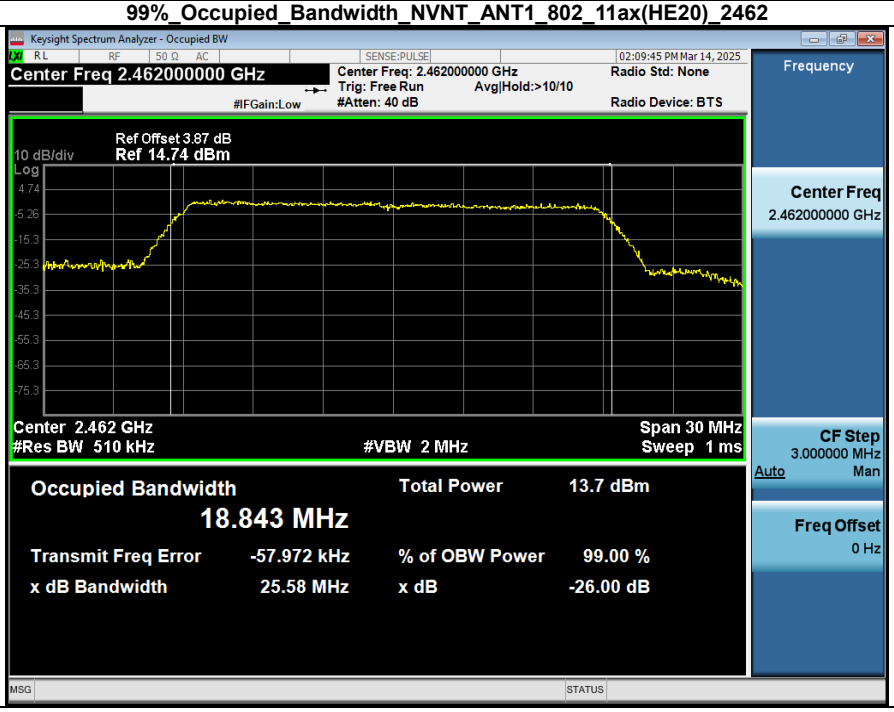


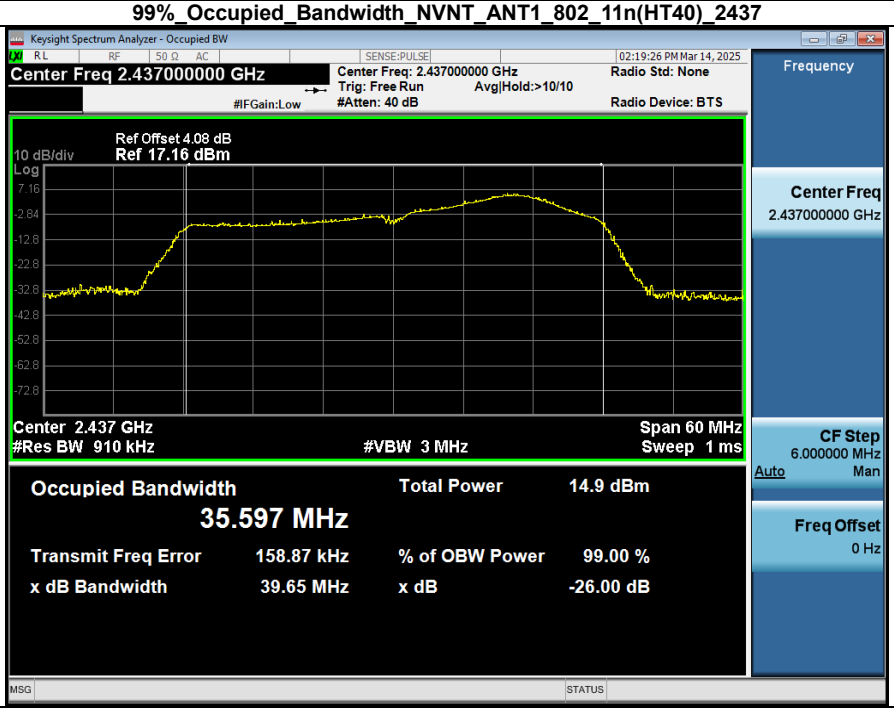
99%_Occupied_Bandwidth_NVNT_ANT1_802_11ax(HE20)_2437

99%_Occupied_Bandwidth_NVNT_ANT1_802_11ax(HE20)_2462



99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT40)_2422

99%_Occupied_Bandwidth_NVNT_ANT1_802_11n(HT40)_2437



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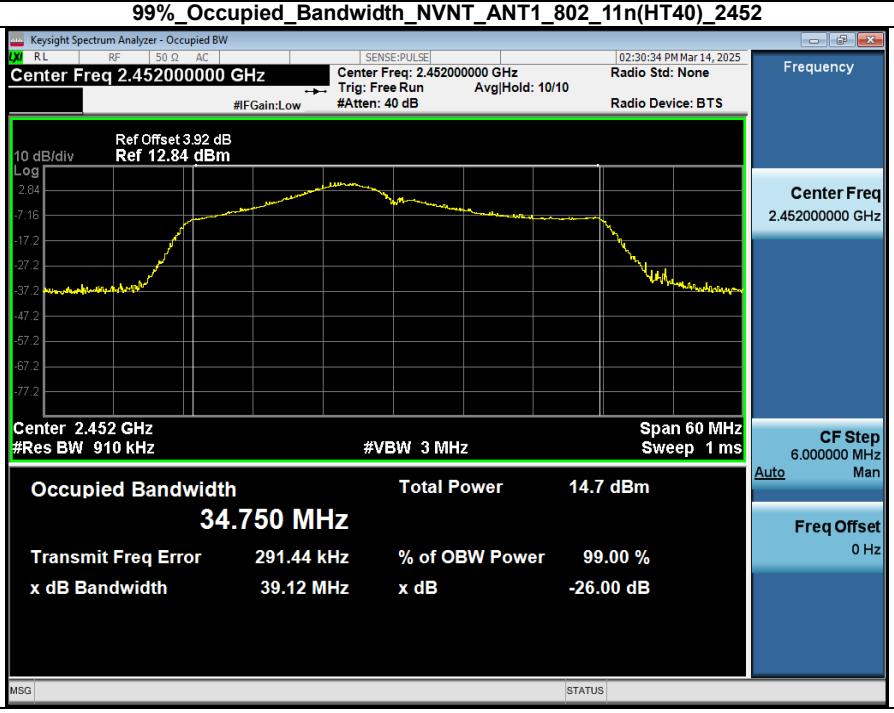
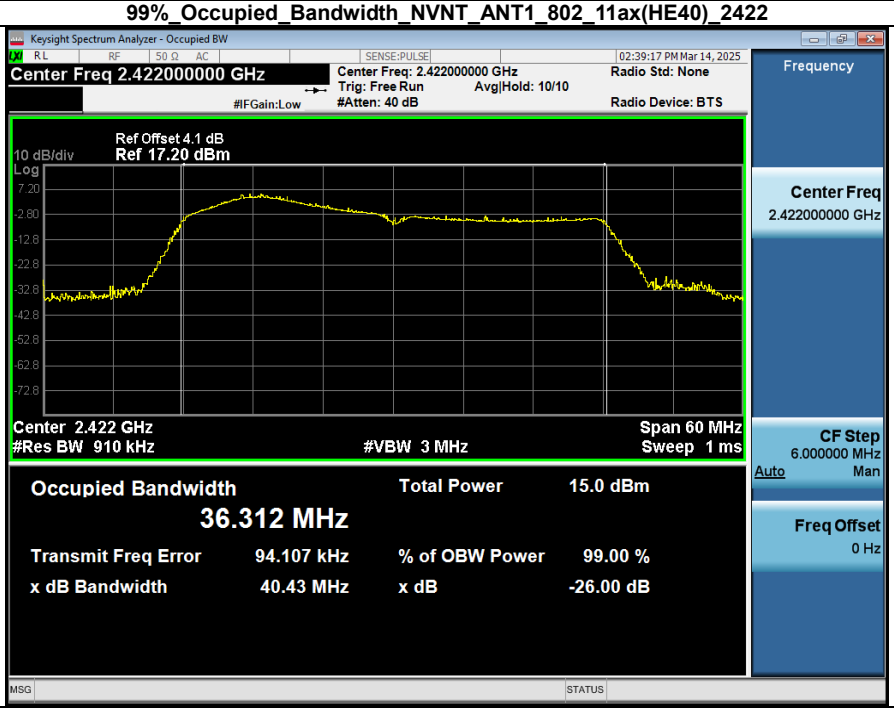


99%_Occupied_Bandwidth_NVNT_ANT1_802_11ax(HE40)_2422



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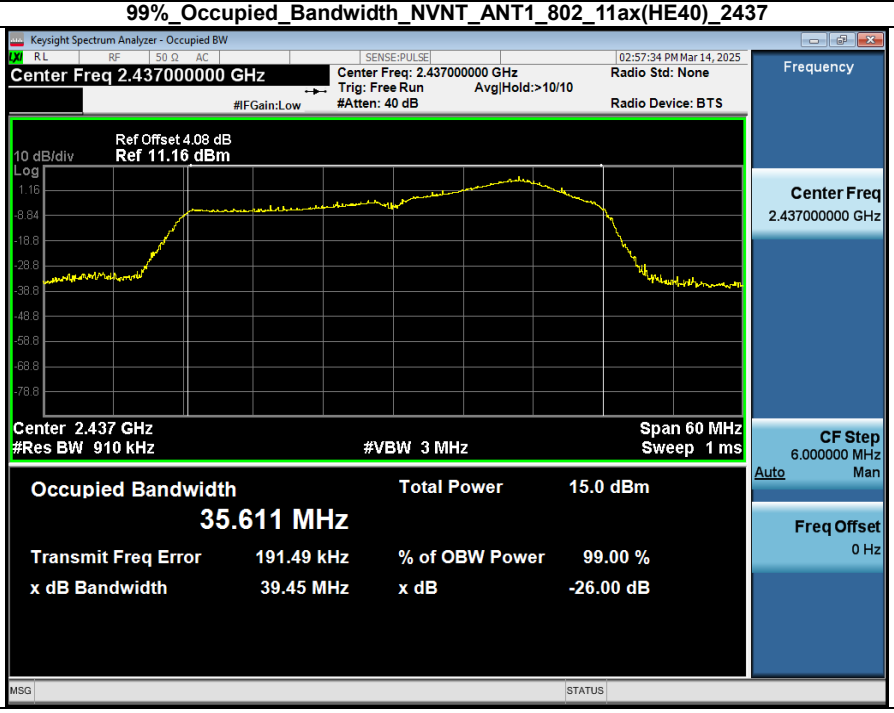

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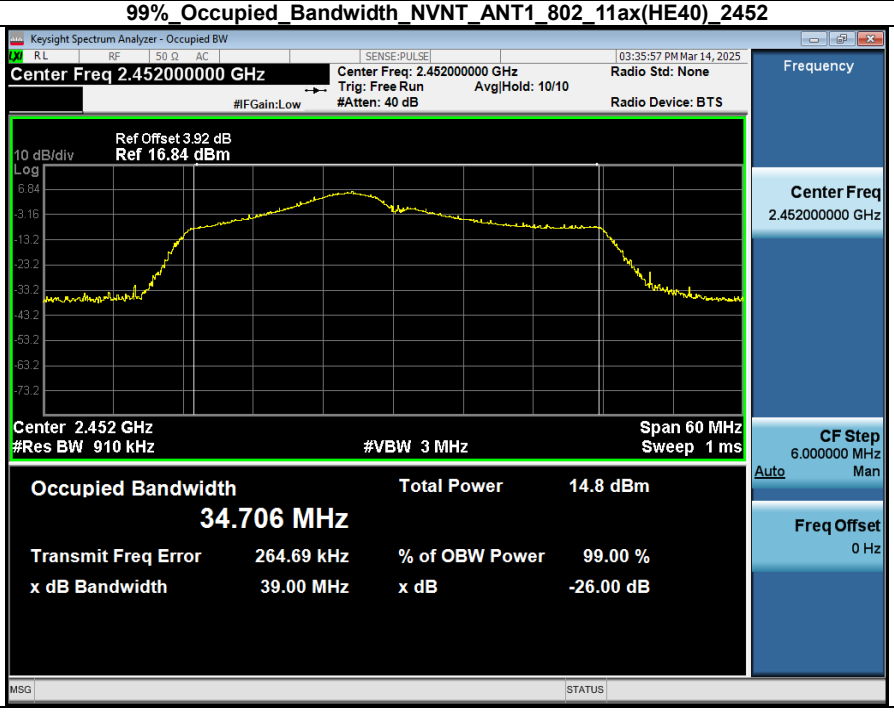
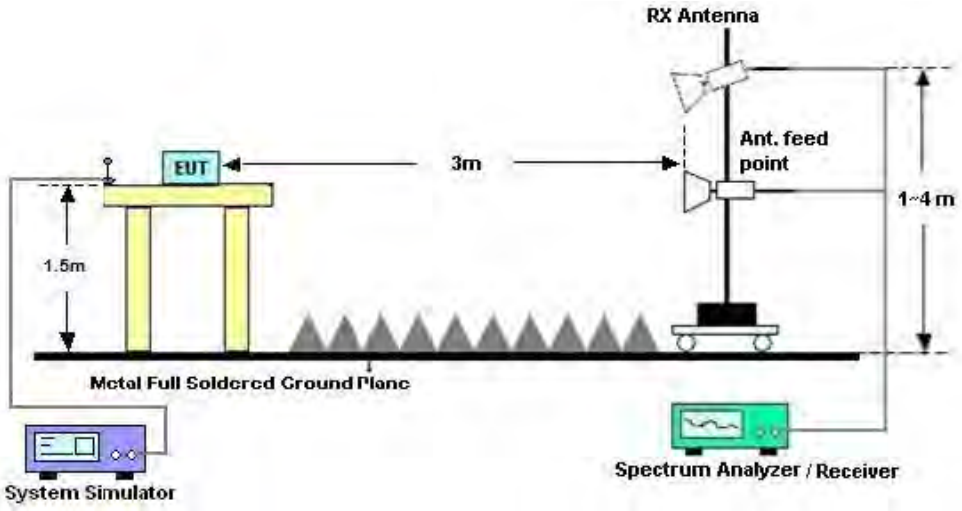


9. Band Edge Test

9.1. Block Diagram of Test Setup



9.2. Test Limit

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)).

Please refer RSS-GEN & FCC Part 15.247

9.3. Test Procedure

Refer to ANSI C 63.10, Clause 6.10.
All restriction band and non- restriction band have been tested, only worse case is reported.
Details see the KDB558074 D01 Meas Guidance v05r02

(1) Put the EUT on a 1.5m high table, power on the EUT. Emissions were scanned and measured rotating the EUT to 360 degrees, Find the maximum Emission
(2) Check the spurious emissions out of band.
(3) RBW 1MHz, VBW 3MHz, peak detector for peak value, RBW 1MHz, VBW 10Hz, RMS detector for AV value.

9.4. Test Results

Test Date	:	2025.03.08	Temperature	:	26℃
Test Engineer	:	Felix Pang	Humidity	:	54%
Test Results	:	**PASS**			

Frequency Range : **2310MHz~2410MHz**								
Test Mode : IEEE 802.11b TX 2412MHz								
No.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	2390	H	70.85	-20.45	50.40	74.00	-23.60	Peak
2	2390	H	--	-20.45	--	54.00	--	Avg
3	2400	H	78.24	-20.41	57.83	74.00	-16.17	Peak
4	2400	H	--	-20.41	--	54.00	--	Avg
1	2390	V	73.86	-20.45	53.41	74.00	-20.59	Peak
2	2390	V	--	-20.45	--	54.00	--	Avg
3	2400	V	83.43	-20.41	63.02	74.00	-10.98	Peak
4	2400	V	--	-20.41	--	54.00	--	Avg
Frequency Range : **2450MHz~2550MHz**								
Test Mode : IEEE 802.11b TX 2462MHz								
1	2483.5	H	76.99	-20.15	56.84	74.00	-17.16	Peak
2	2483.5	H	--	-20.15	--	54.00	--	Avg
1	2483.5	V	77.56	-20.15	57.41	74.00	-16.59	Peak
2	2483.5	V	--	-20.15	--	54.00	--	Avg

Note:
1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.
2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.
Result=Reading + Correct Factor. Margin= Result-Limit.
3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

Frequency Range : **2310MHz~2410MHz**								
Test Mode : IEEE 802.11g TX 2412MHz								
No.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	2390	H	72.90	-20.45	52.45	74.00	-21.55	Peak
2	2390	H	--	-20.45	--	54.00	--	Avg
3	2400	H	79.63	-20.41	59.22	74.00	-14.78	Peak
4	2400	H	--	-20.41	--	54.00	--	Avg
1	2390	V	75.31	-20.45	54.86	74.00	-19.14	Peak
2	2390	V	--	-20.45	--	54.00	--	Avg
3	2400	V	84.52	-20.41	64.11	74.00	-9.89	Peak
4	2400	V	--	-20.41	--	54.00	--	Avg
Frequency Range : **2450MHz~2550MHz**								
Test Mode : IEEE 802.11g TX 2462MHz								
1	2483.5	H	77.44	-20.15	57.29	74.00	-16.71	Peak
2	2483.5	H	--	-20.15	--	54.00	--	Avg
1	2483.5	V	77.37	-20.15	57.22	74.00	-16.78	Peak
2	2483.5	V	--	-20.15	--	54.00	--	Avg

Note:
1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.
2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.
Result=Reading + Correct Factor. Margin= Result-Limit.
3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

Frequency Range : **2310MHz~2410MHz**								
Test Mode : IEEE 802.11n/HT20 TX 2412MHz								
No.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	2390	H	73.27	-20.45	52.82	74.00	-21.18	Peak
2	2390	H	--	-20.45	--	54.00	--	Avg
3	2400	H	76.27	-20.41	55.86	74.00	-18.14	Peak
4	2400	H	--	-20.41	--	54.00	--	Avg
1	2390	V	73.10	-20.45	52.65	74.00	-21.35	Peak
2	2390	V	--	-20.45	--	54.00	--	Avg
3	2400	V	83.38	-20.41	62.97	74.00	-11.03	Peak
4	2400	V	--	-20.41	--	54.00	--	Avg
Frequency Range : **2450MHz~2550MHz**								
Test Mode : IEEE 802.11n/HT20 TX 2462MHz								
1	2483.5	H	77.10	-20.15	56.95	74.00	-17.05	Peak
2	2483.5	H	--	-20.15	--	54.00	--	Avg
1	2483.5	V	79.13	-20.15	58.98	74.00	-15.02	Peak
2	2483.5	V	--	-20.15	--	54.00	--	Avg

Note:
1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.
2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.
Result=Reading + Correct Factor. Margin= Result-Limit.
3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

Frequency Range : **2310MHz~2410MHz**								
Test Mode : IEEE 802.11n/HT40 TX 2422MHz								
No.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	2390	H	73.14	-20.45	52.69	74.00	-21.31	Peak
2	2390	H	--	-20.45	--	54.00	--	Avg
3	2400	H	79.67	-20.41	59.26	74.00	-14.74	Peak
4	2400	H	--	-20.41	--	54.00	--	Avg
1	2390	V	73.00	-20.45	52.55	74.00	-21.45	Peak
2	2390	V	--	-20.45	--	54.00	--	Avg
3	2400	V	84.40	-20.41	63.99	74.00	-10.01	Peak
4	2400	V	--	-20.41	--	54.00	--	Avg
Frequency Range : **2450MHz~2550MHz**								
Test Mode : IEEE 802.11n/HT40 TX 2452MHz								
1	2483.5	H	74.52	-20.15	54.37	74.00	-19.63	Peak
2	2483.5	H	--	-20.15	--	54.00	--	Avg
1	2483.5	V	78.79	-20.15	58.64	74.00	-15.36	Peak
2	2483.5	V	--	-20.15	--	54.00	--	Avg

Note:
1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.
2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.
Result=Reading + Correct Factor, Margin= Result-Limit.
3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

Frequency Range : **2310MHz~2410MHz**								
Test Mode : IEEE 802.11ax20 TX 2412MHz								
No.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	2390	H	72.48	-20.45	52.03	74.00	-21.97	Peak
2	2390	H	--	-20.45	--	54.00	--	Avg
3	2400	H	76.47	-20.41	56.06	74.00	-17.94	Peak
4	2400	H	--	-20.41	--	54.00	--	Avg
1	2390	V	74.62	-20.45	54.17	74.00	-19.83	Peak
2	2390	V	--	-20.45	--	54.00	--	Avg
3	2400	V	81.07	-20.41	60.66	74.00	-13.34	Peak
4	2400	V	--	-20.41	--	54.00	--	Avg
Frequency Range : **2450MHz~2550MHz**								
Test Mode : IEEE 802.11ax20 TX 2462MHz								
1	2483.5	H	75.09	-20.15	54.94	74.00	-19.06	Peak
2	2483.5	H	--	-20.15	--	54.00	--	Avg
1	2483.5	V	79.00	-20.15	58.85	74.00	-15.15	Peak
2	2483.5	V	--	-20.15	--	54.00	--	Avg

Note:
1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.
2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.
Result=Reading + Correct Factor. Margin= Result-Limit.
3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

Frequency Range : **2310MHz~2410MHz**								
Test Mode : IEEE 802.11ax40 TX 2422MHz								
No.	Freq MHz	Polarity	Reading (dBuV/m)	Correct Factor	Result (dBuV/m)	Limit (dBuV/m)	Margin	Remark
1	2390	H	73.85	-20.45	53.40	74.00	-20.60	Peak
2	2390	H	--	-20.45	--	54.00	--	Avg
3	2400	H	77.43	-20.41	57.02	74.00	-16.98	Peak
4	2400	H	--	-20.41	--	54.00	--	Avg
1	2390	V	75.54	-20.45	55.09	74.00	-18.91	Peak
2	2390	V	--	-20.45	--	54.00	--	Avg
3	2400	V	84.53	-20.41	64.12	74.00	-9.88	Peak
4	2400	V	--	-20.41	--	54.00	--	Avg
Frequency Range : **2450MHz~2550MHz**								
Test Mode : IEEE 802.11ax40 TX 2452MHz								
1	2483.5	H	74.70	-20.15	54.55	74.00	-19.45	Peak
2	2483.5	H	--	-20.15	--	54.00	--	Avg
1	2483.5	V	79.75	-20.15	59.60	74.00	-14.40	Peak
2	2483.5	V	--	-20.15	--	54.00	--	Avg

Note:
1. Means other frequency and mode comply with standard requirements and at least have 20dB margin.
2. Correct Factor=Cable Loss+ Antenna Factor-Amplifier Gain.
Result=Reading + Correct Factor, Margin= Result-Limit.
3. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

10. Frequency stability

10.1. Test limit

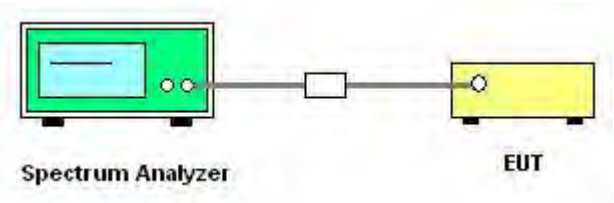
Please refer section RSS-Gen.

Regulation RSS-Gen If the frequency stability of the licence-exempt radio apparatus is not specified in the applicable RSS, the fundamental emissions of the radio apparatus should be kept within at least the central 80% of its permitted operating frequency band in order to minimize the possibility of out-of-band operation. In addition, its occupied bandwidth shall be entirely outside the restricted bands and the prohibited TV bands of 54-72 MHz, 76-88 MHz, 174-216 MHz, and 470-602 MHz, unless otherwise indicated.

10.2. Test Procedure

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

10.3. Test Setup



10.4. Test Results

Not Applicable.

11. Antenna Requirement

11.1. Standard Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

11.2. Antenna Connected Construction

The antenna connector is unique antenna and no consideration of replacement. Please see EUT photo for details.

11.3. Results

The EUT antenna is internal antenna. It complies with the standard requirement.

12. Photos of test setup

Reference to the **appendix I Test Setup Photo** for details.

13. Photos of EUT

Reference to the **appendix II external photos** and **appendix III internal photos** for details.

------ END OF REPORT------