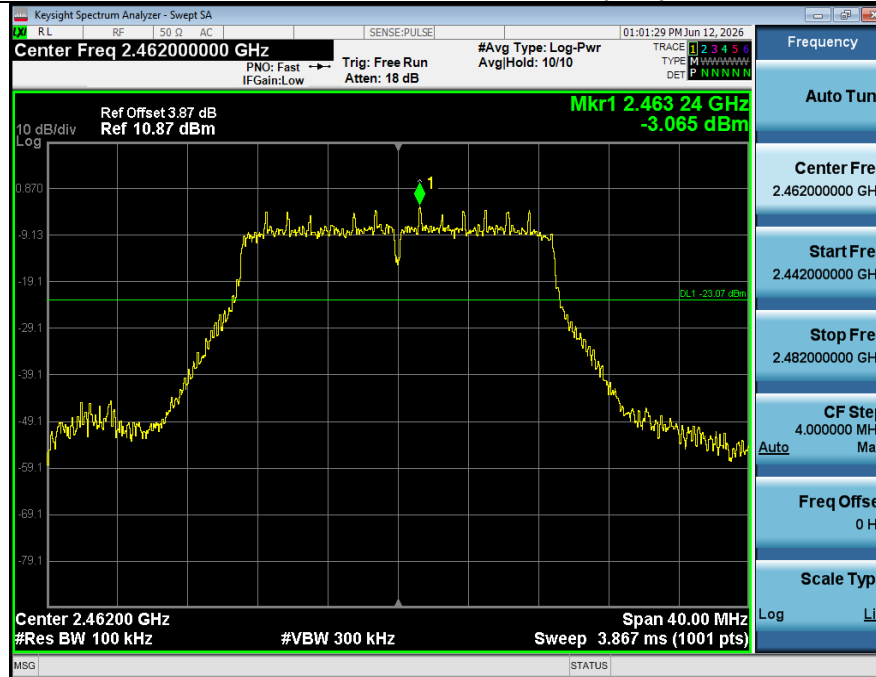


1 Reference_Level_NVNT_ANT1_802_11n(HT20)_2462



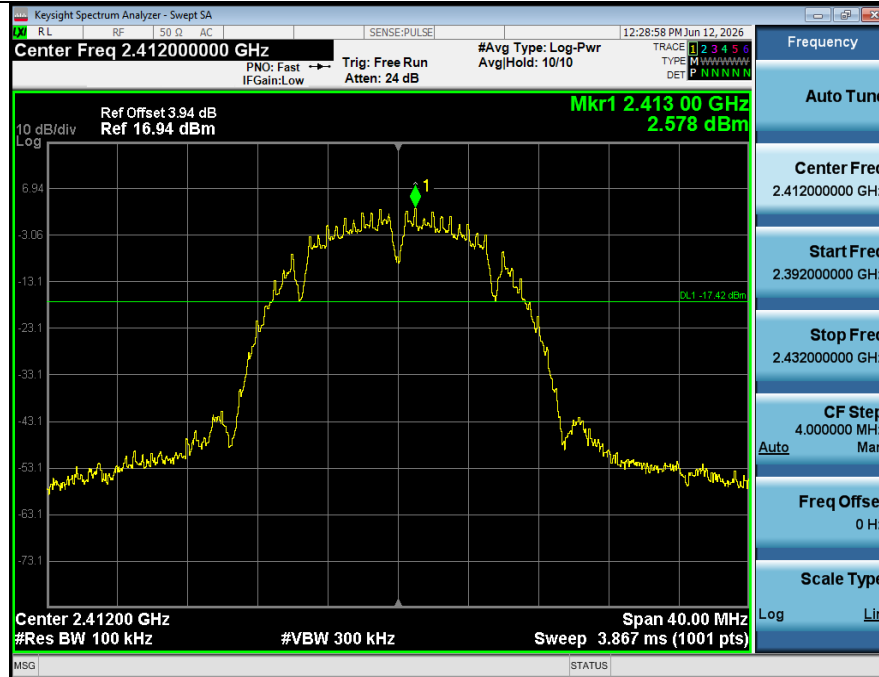
2 Bandedge_NVNT_ANT1_802_11n(HT20)_2462



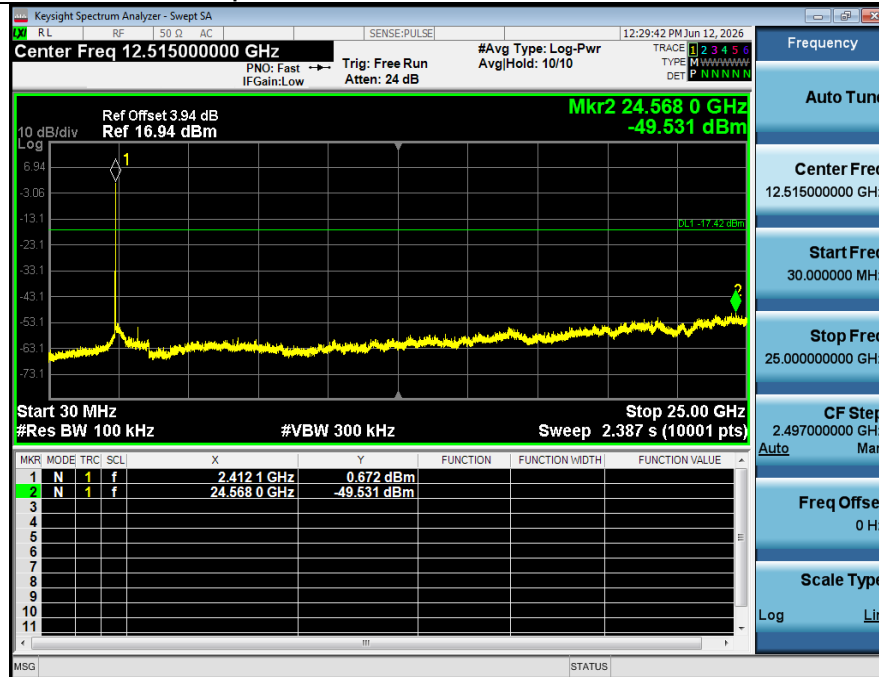
Conducted spurious emission: Pass

Condition	Antenna	Modulation	TX_Frequency (MHz)	Max. Mark_freq(MHz)	Ref_level(dBm)	Spurious level(dBm)	limit(dBm)	Result
NVNT	ANT1	802.11b	2412.00	24568.019	2.578	-49.531	-17.422	Pass
NVNT	ANT1	802.11b	2437.00	24970.036	2.846	-50.190	-17.154	Pass
NVNT	ANT1	802.11b	2462.00	24223.433	2.970	-49.263	-17.030	Pass
NVNT	ANT1	802.11g	2412.00	24945.066	-2.793	-50.076	-22.793	Pass
NVNT	ANT1	802.11g	2437.00	23866.362	-1.901	-49.306	-21.901	Pass
NVNT	ANT1	802.11g	2462.00	24807.731	-2.112	-50.223	-22.112	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	24385.738	-4.075	-51.785	-24.075	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	24732.821	-3.098	-55.558	-23.098	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	24353.277	-3.065	-55.332	-23.065	Pass

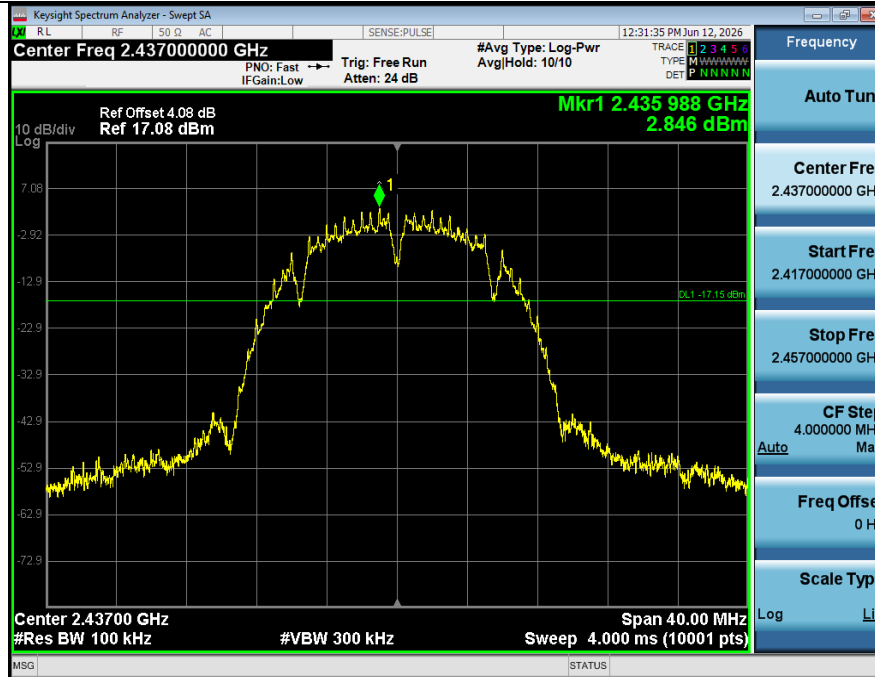
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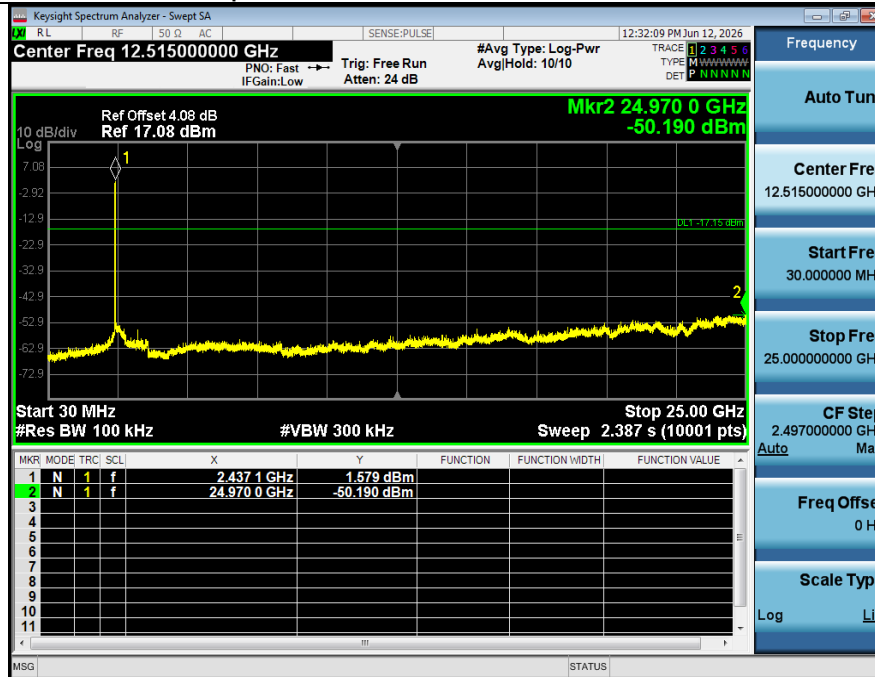
2_Spurious_Emission_NVNT_ANT1_802_11b_2412



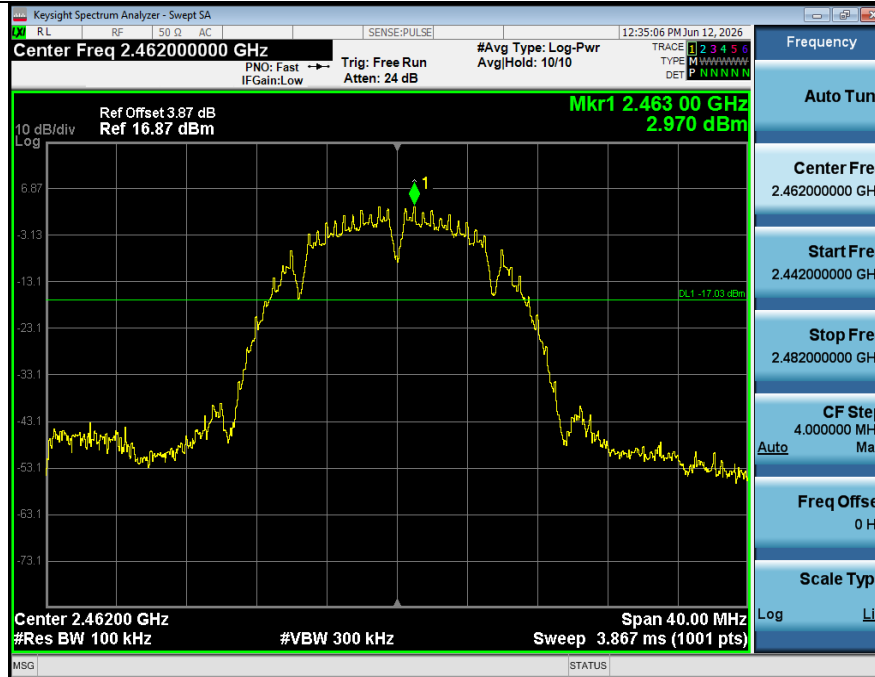
1_Reference_Level_NVNT_ANT1_802_11b_2437



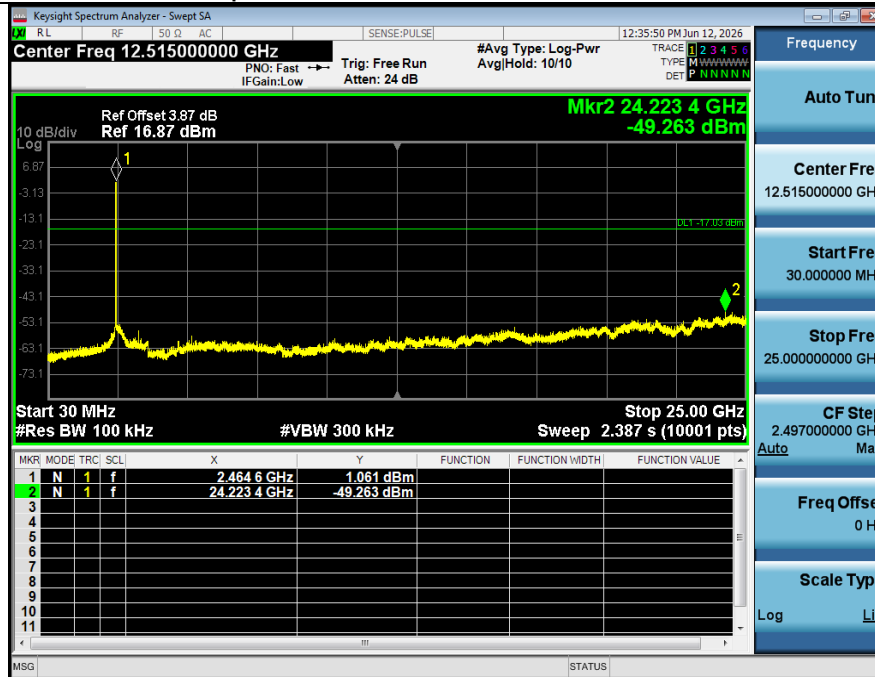
2_Spurious_Emission_NVNT_ANT1_802_11b_2437



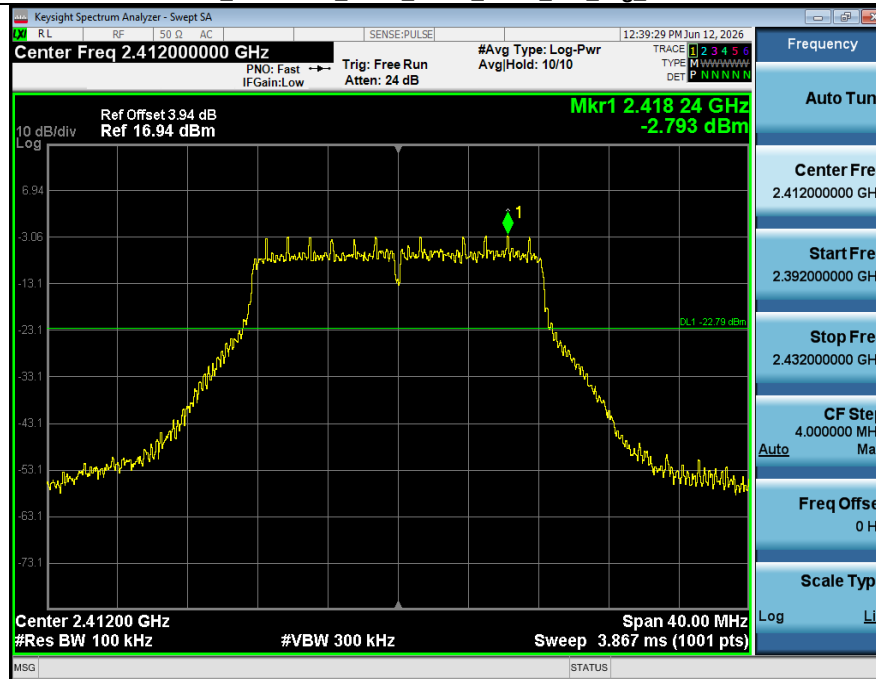
1_Reference_Level_NVNT_ANT1_802_11b_2462



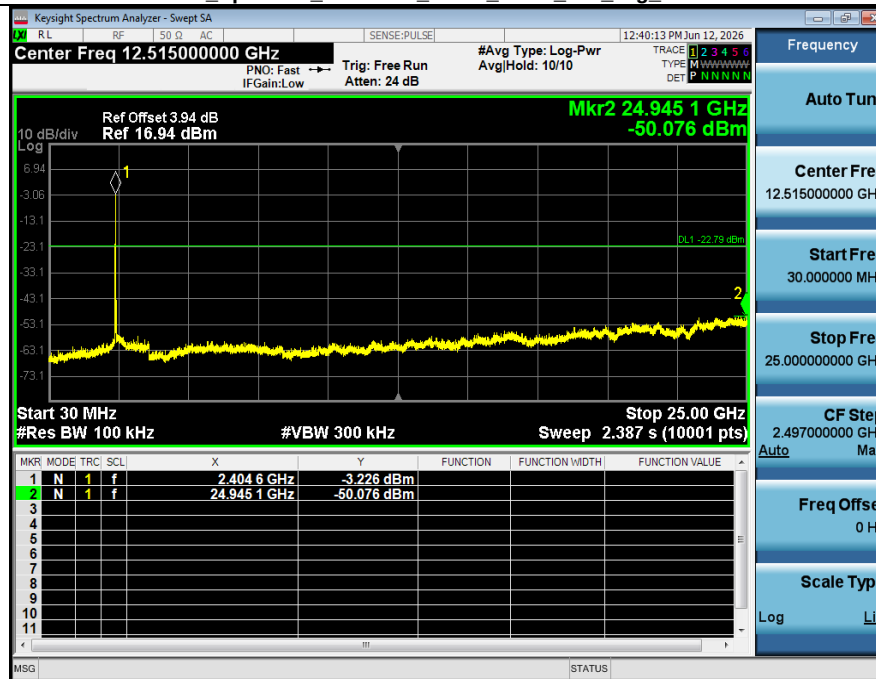
2_Spurious_Emission_NVNT_ANT1_802_11b_2462



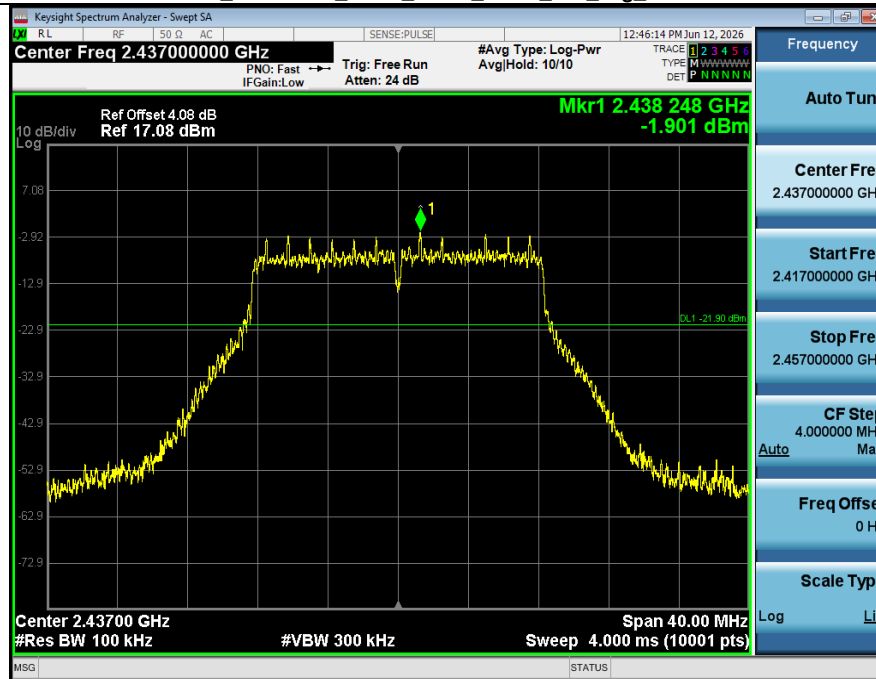
1_Reference_Level_NVNT_ANT1_802_11g_2412



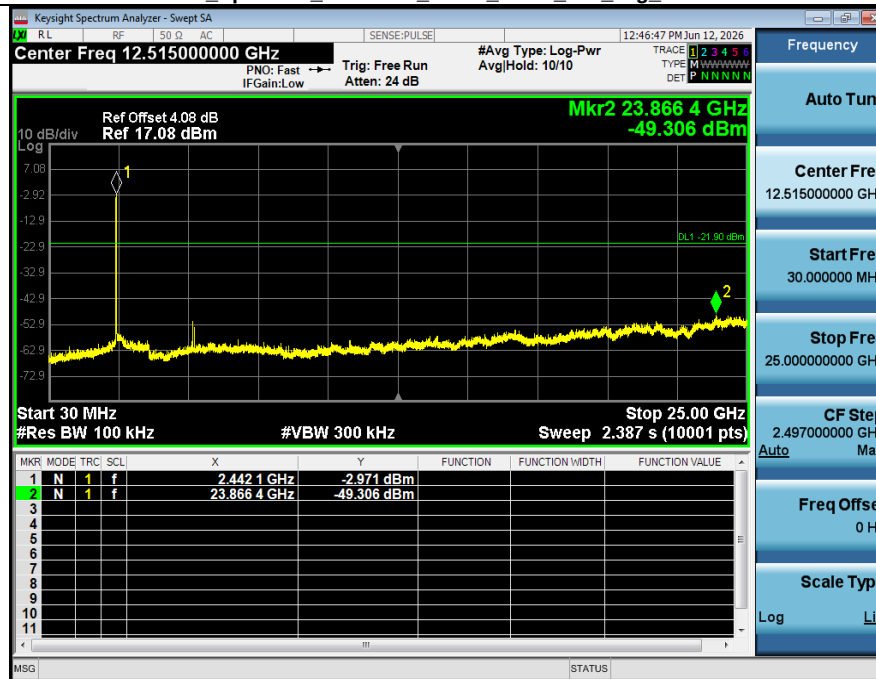
2_Spurious_Emission_NVNT_ANT1_802_11g_2412



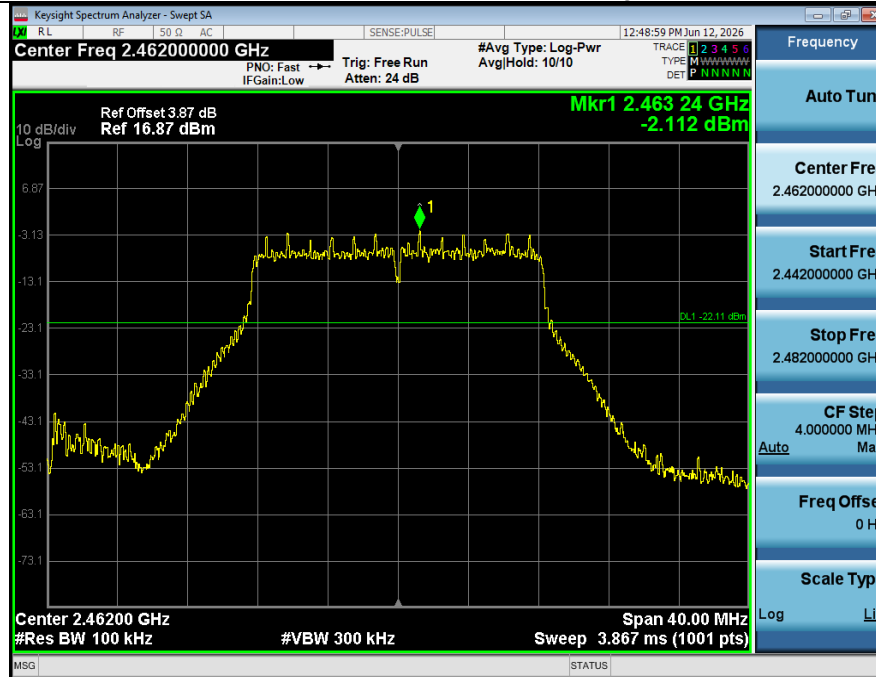
1_Reference_Level_NVNT_ANT1_802_11g_2437



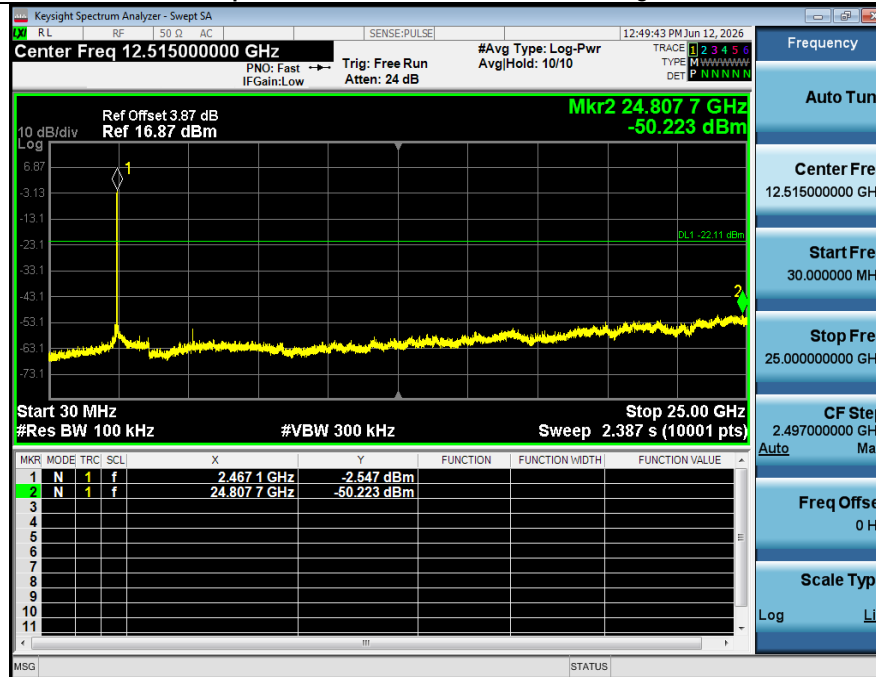
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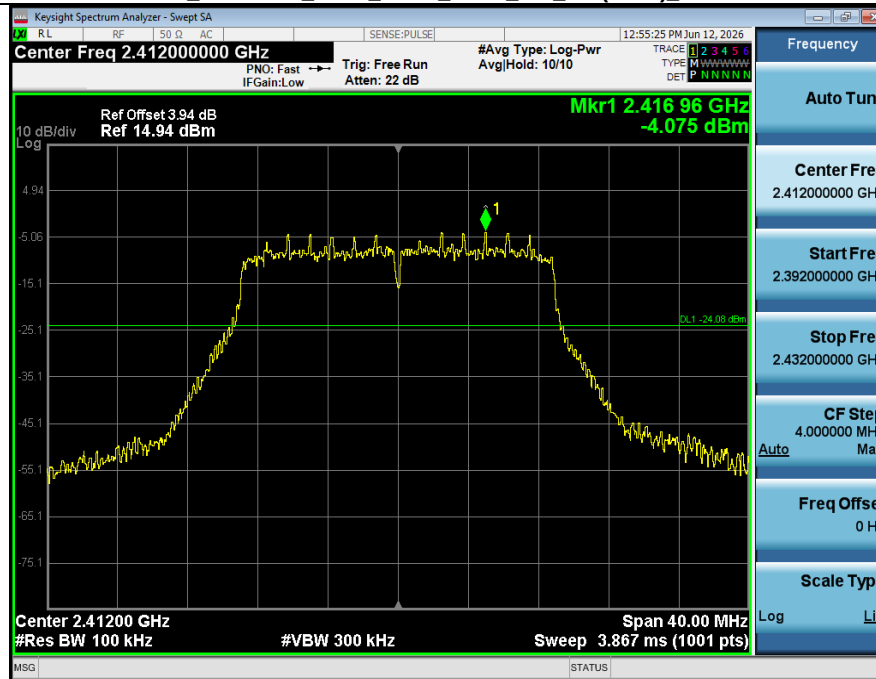
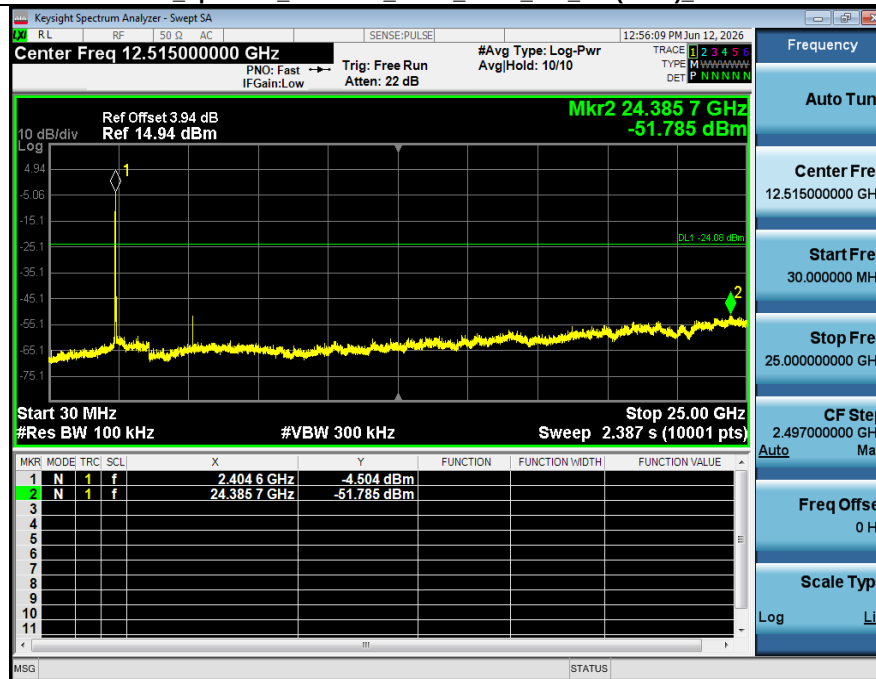


1_Reference_Level_NVNT_ANT1_802_11g_2462

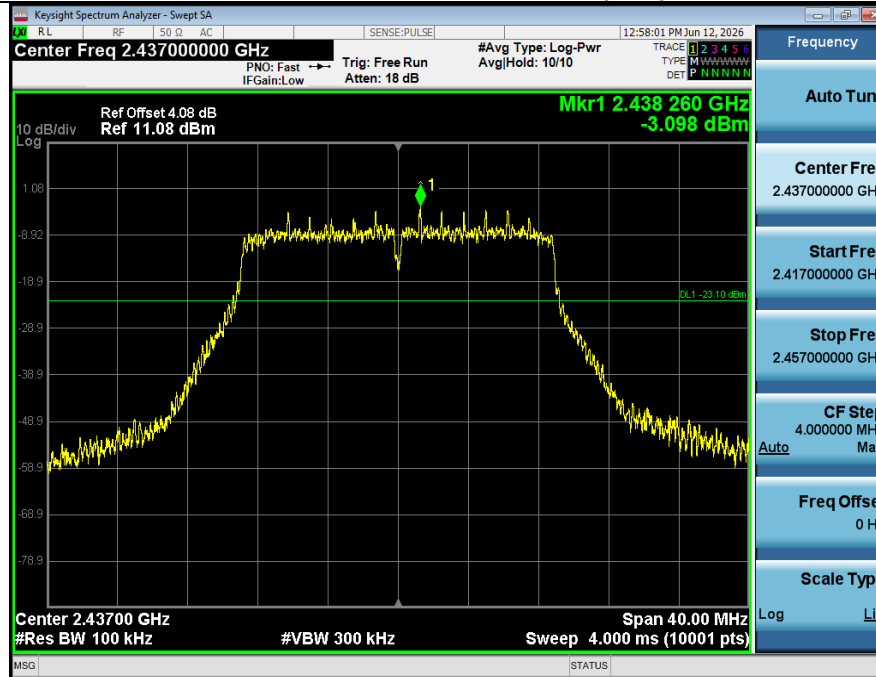


2_Spurious_Emission_NVNT_ANT1_802_11g_2462

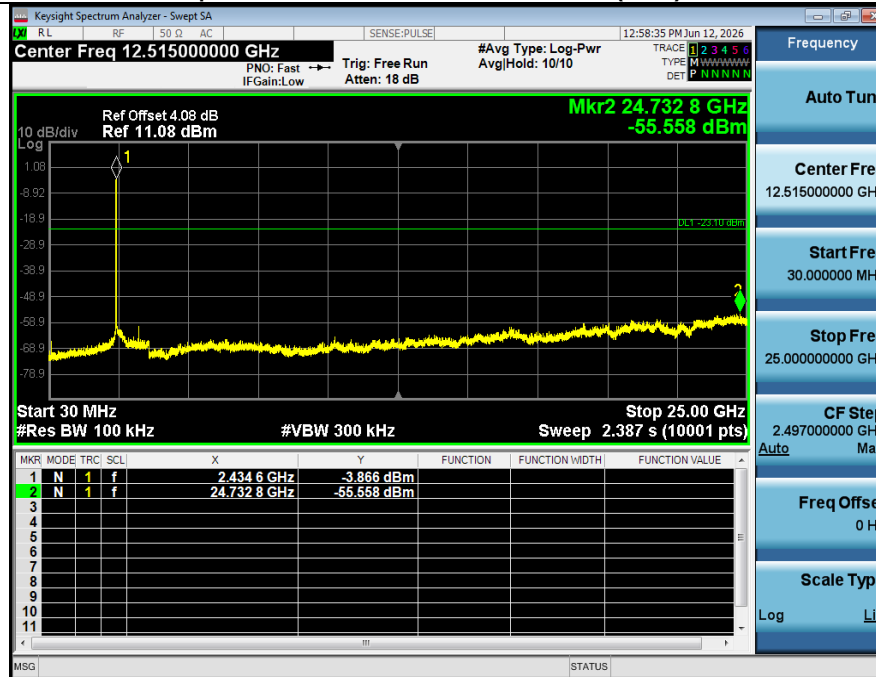


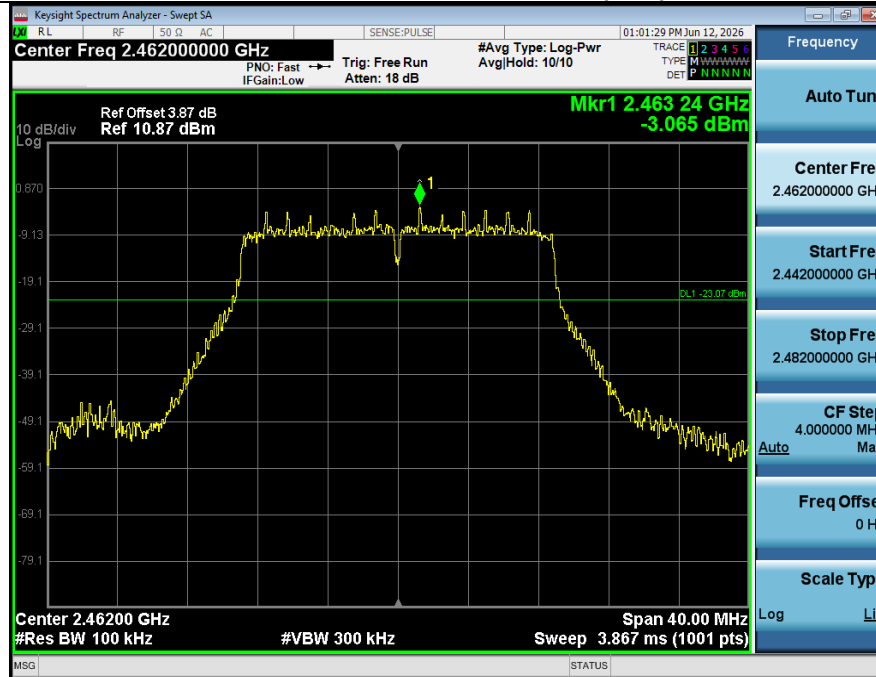
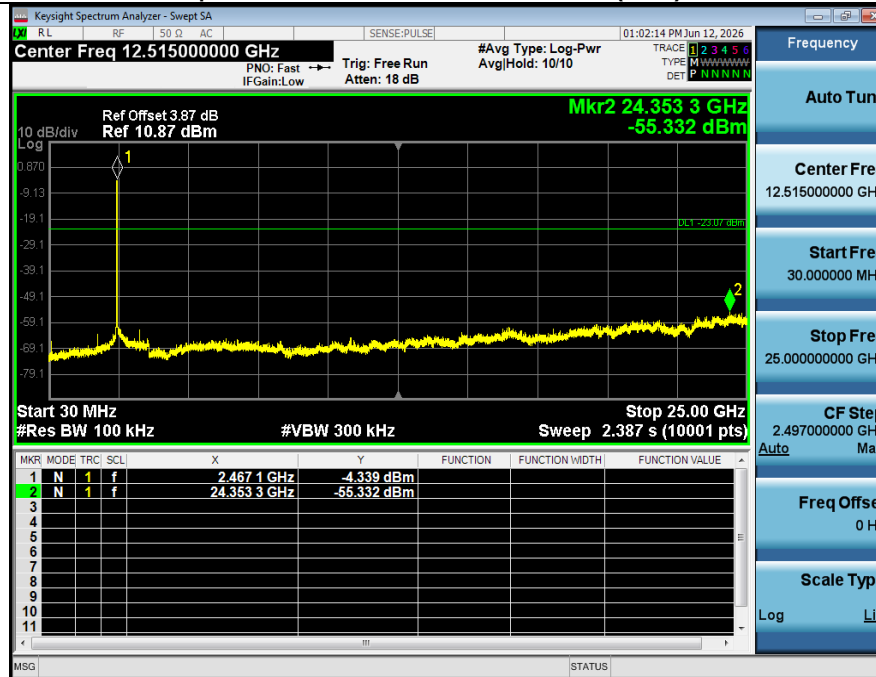
1_Reference_Level_NVNT_ANT1_802_11n(HT20)_2412**2_Spurious_Emission_NVNT_ANT1_802_11n(HT20)_2412**

1 Reference_Level_NVNT_ANT1_802_11n(HT20)_2437



2 Spurious Emission_NVNT_ANT1_802_11n(HT20)_2437



1 Reference_Level_NVNT_ANT1_802_11n(HT20)_2462**2 Spurious Emission_NVNT_ANT1_802_11n(HT20)_2462**

6. Conducted Maximum Output Power

6.1. Test limits

Please refer RSS-247 & FCC Part 15.247.

Regulation 15.247(b) The limit of Maximum Peak Output Power Measurement is 1 W(30dBm)

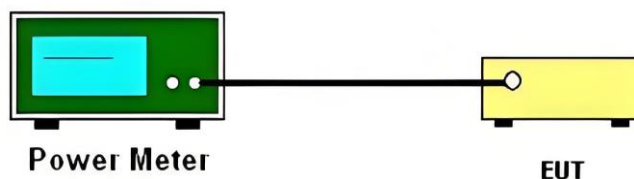
6.2. Test Procedure

Details see the KDB558074 D01 Meas Guidance v05r02

1. Place the EUT on the table and set it in transmitting mode.
2. Connected the EUT's antenna port to peak power meter by 20dB attenuator.
3. Measure out each mode and each bands peak output power of EUT.

Note: The cable loss and attenuator loss were offset into measure device as amplitude offset.

6.3. Test Setup



6.4. Test Results

Condition	Antenna	Modulation	Frequency (MHz)	Detector	Conducted Power(dBm)	Duty factor(dB)	Total Power(dBm)	limit(dBm)	Result
NVNT	ANT1	802.11b	2412.00	Peak	13.57	N/A	13.57	30	Pass
NVNT	ANT1	802.11b	2437.00	Peak	14.02	N/A	14.02	30	Pass
NVNT	ANT1	802.11b	2462.00	Peak	14.10	N/A	14.10	30	Pass
NVNT	ANT1	802.11g	2412.00	Peak	15.27	N/A	15.27	30	Pass
NVNT	ANT1	802.11g	2437.00	Peak	15.55	N/A	15.55	30	Pass
NVNT	ANT1	802.11g	2462.00	Peak	15.30	N/A	15.30	30	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	Peak	14.26	N/A	14.26	30	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	Peak	14.41	N/A	14.41	30	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	Peak	14.45	N/A	14.45	30	Pass

Condition	Antenna	Modulation	Frequency (MHz)	Duty cycle(%)	Duty factor(dB)
NVNT	ANT1	802.11b	2412.00	92.73	0.33
NVNT	ANT1	802.11b	2437.00	94.55	0.24
NVNT	ANT1	802.11b	2462.00	94.55	0.24
NVNT	ANT1	802.11g	2412.00	93.94	0.27
NVNT	ANT1	802.11g	2437.00	96.88	0.14
NVNT	ANT1	802.11g	2462.00	96.97	0.13
NVNT	ANT1	802.11n(HT20)	2412.00	96.88	0.14
NVNT	ANT1	802.11n(HT20)	2437.00	96.88	0.14
NVNT	ANT1	802.11n(HT20)	2462.00	98.46	0.00

7. Peak Power Spectral Density

7.1. Test limits

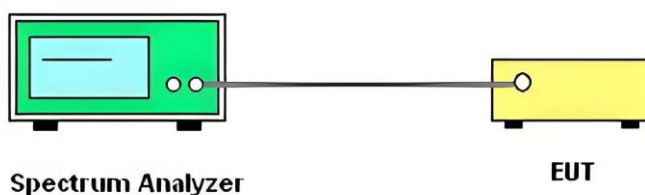
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

7.2. Test Procedure

Details see the KDB558074 D01 Meas Guidance v05r02

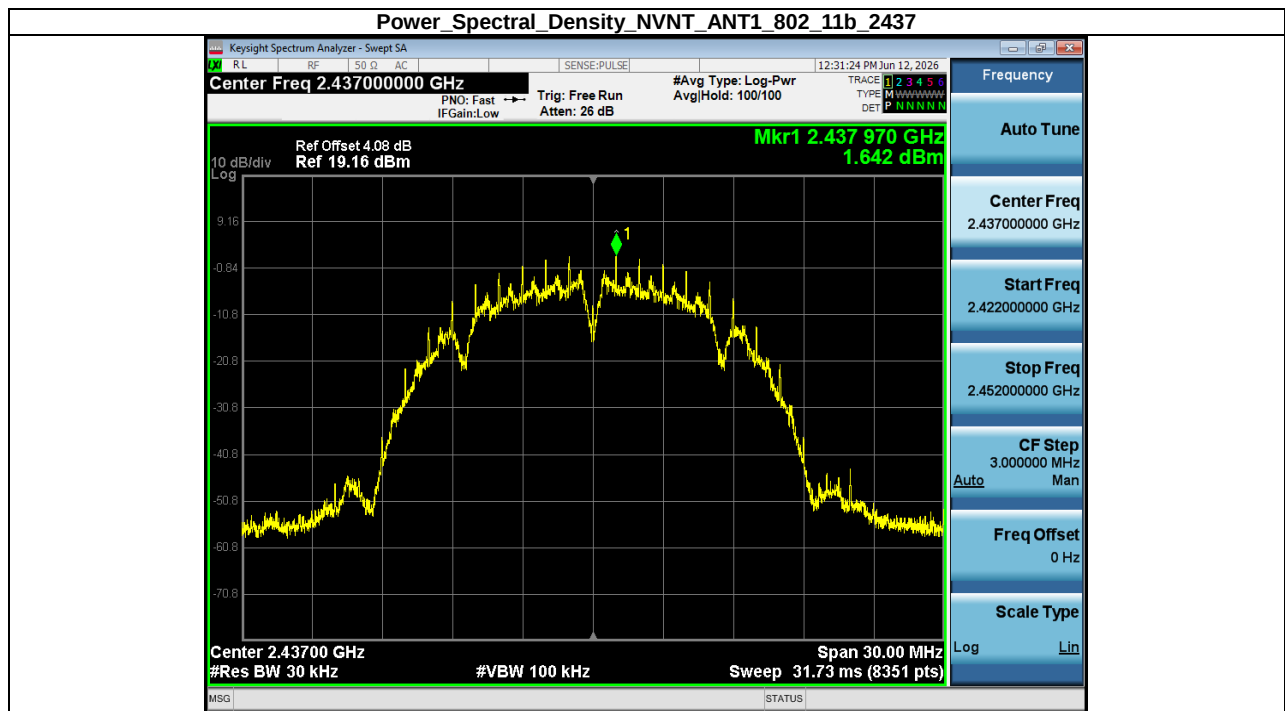
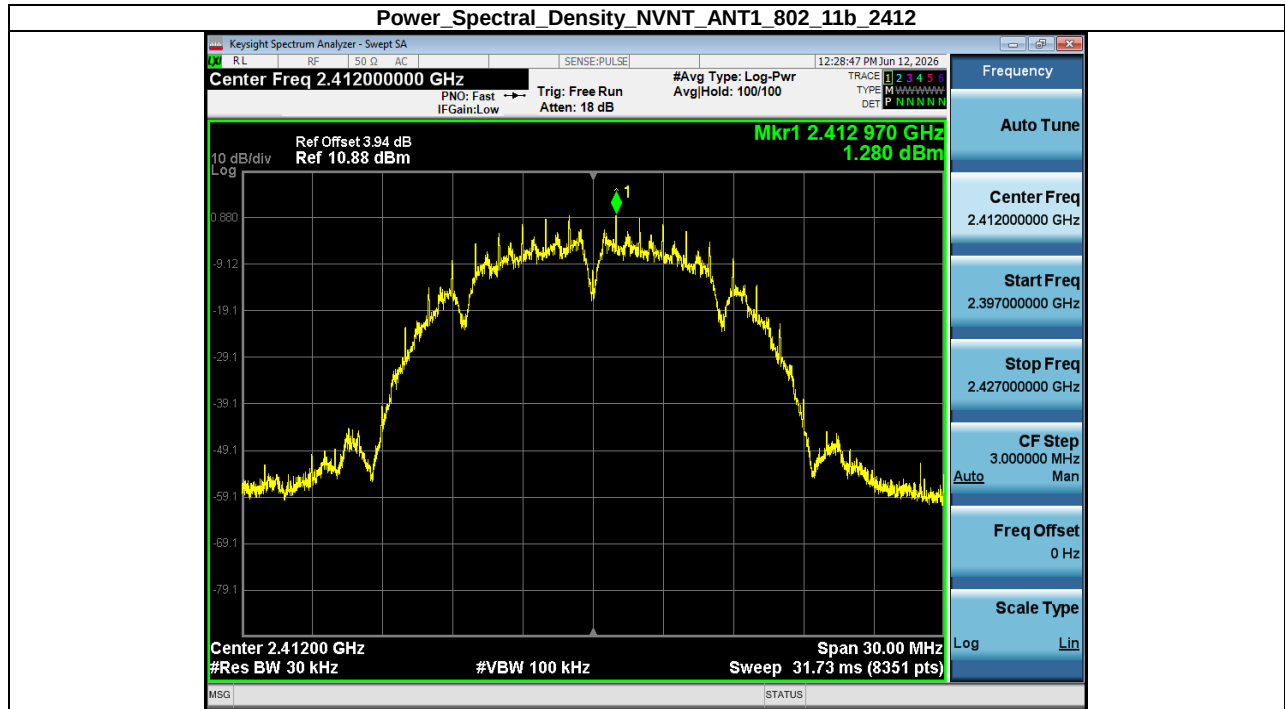
1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 30kHz(Set the RBW to: $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$.), VBW = 100kHz(Set the $\text{VBW} \geq 3 \times \text{RBW}$), span $\geq 1.5 \times \text{DTS bandwidth}$., detail see the test plot.
4. Record the max reading.
5. Repeat the above procedure until the measurements for all frequencies are completed.

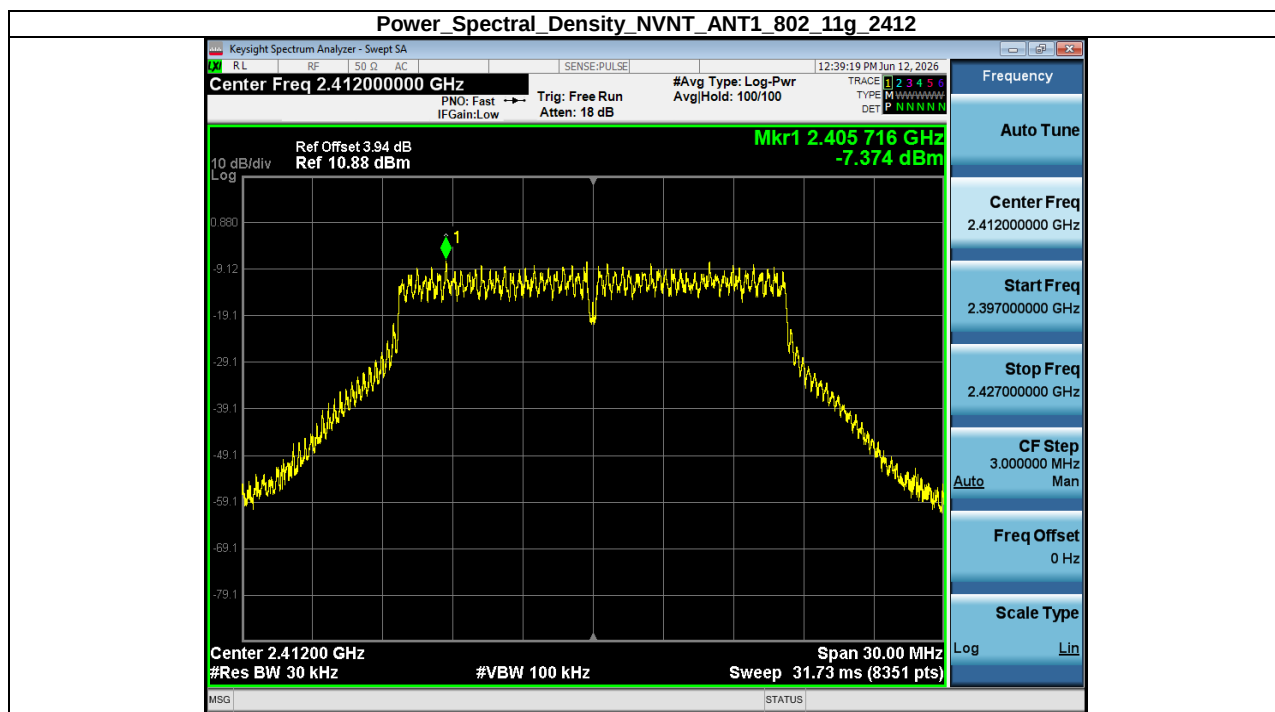
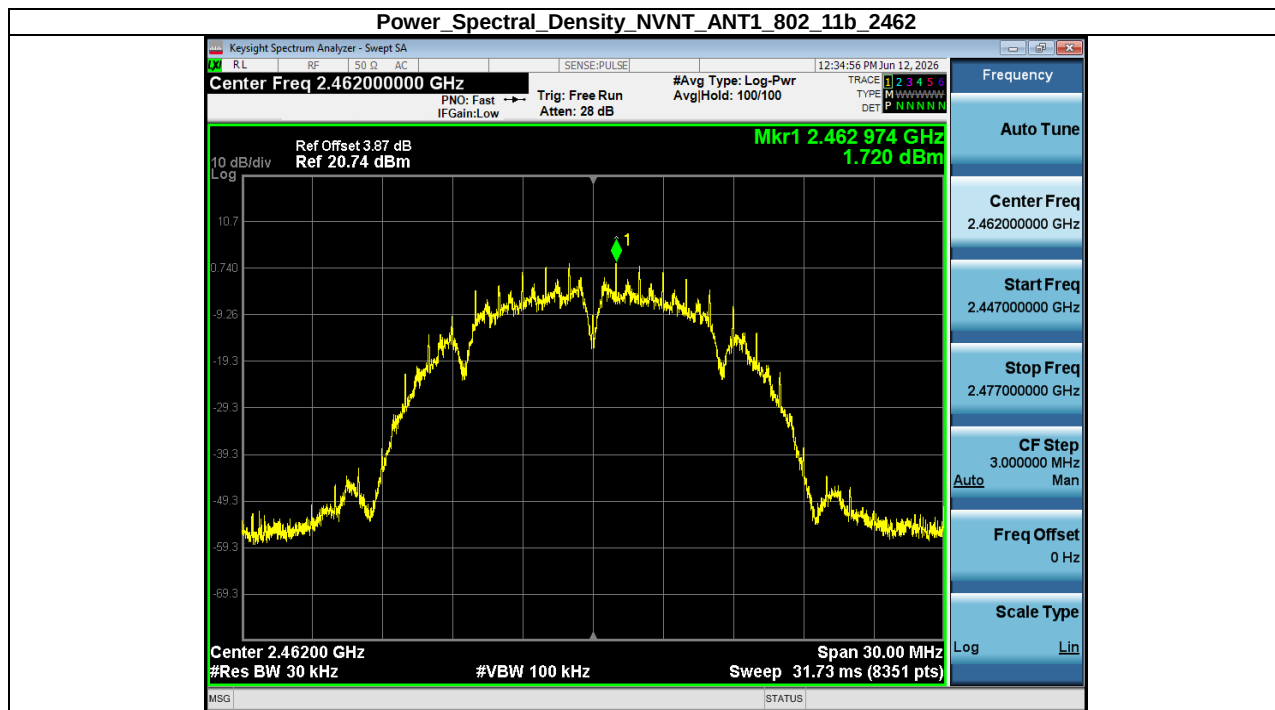
7.3. Test Setup

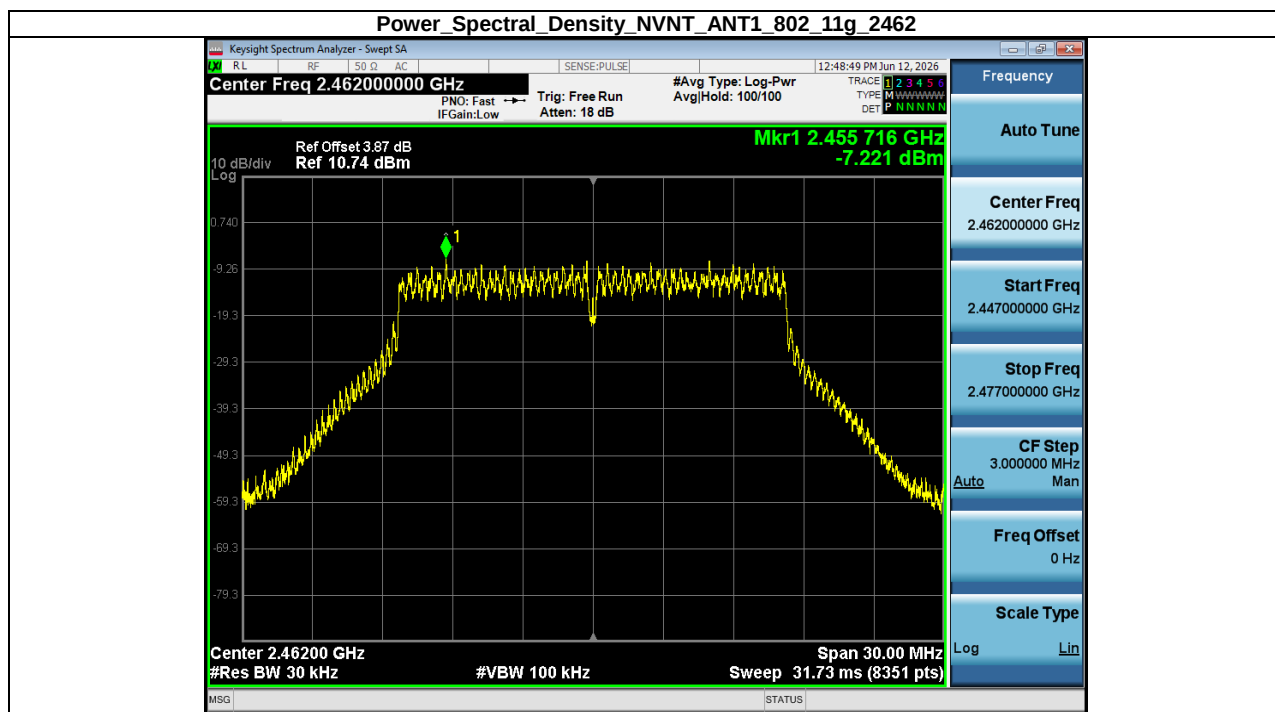
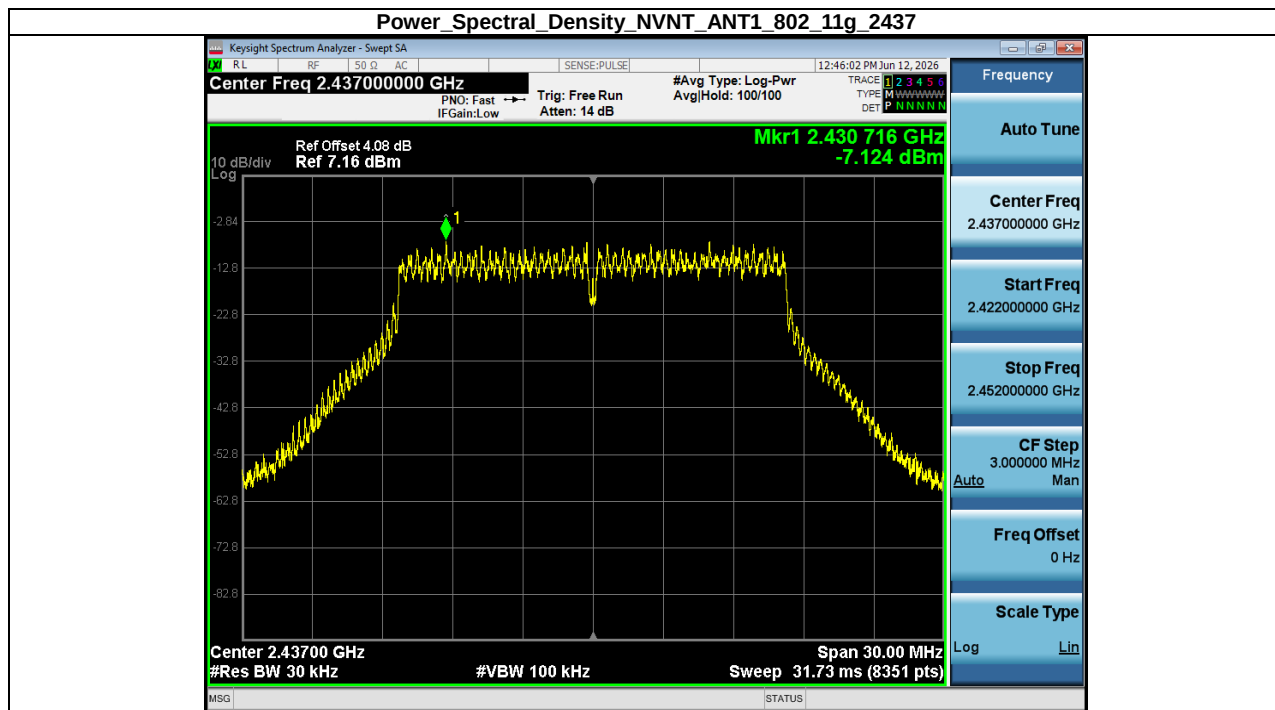


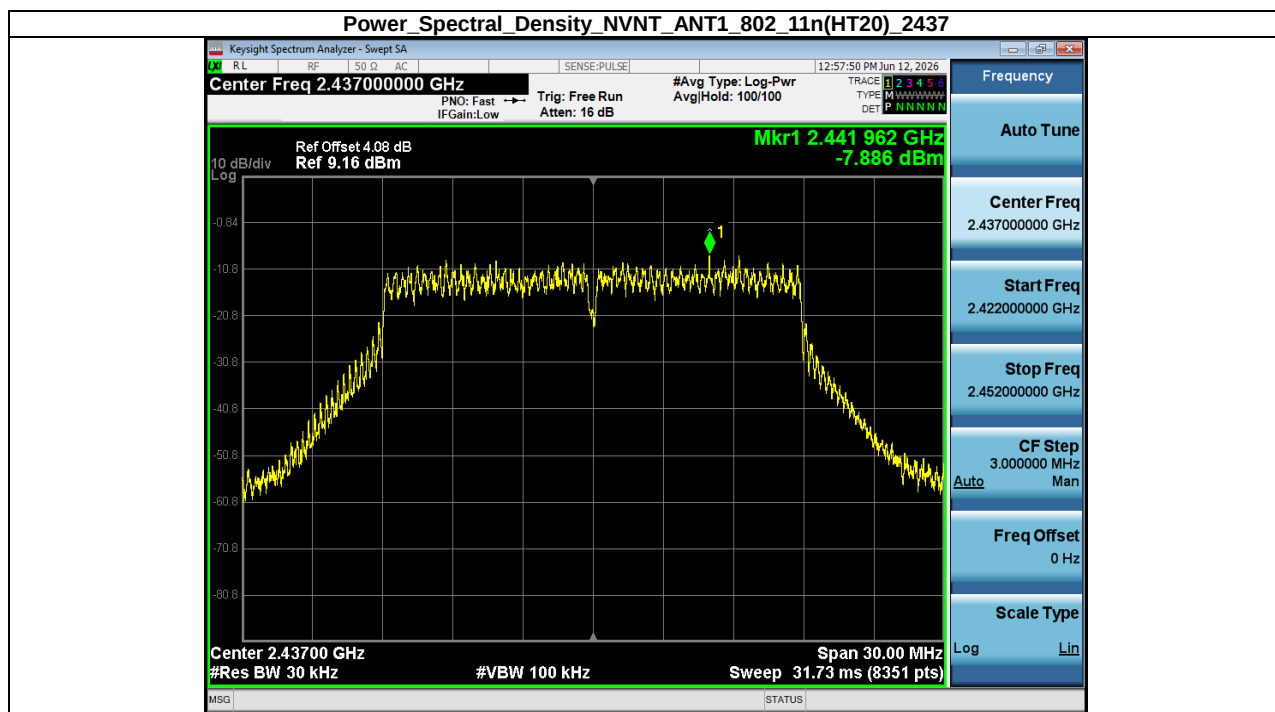
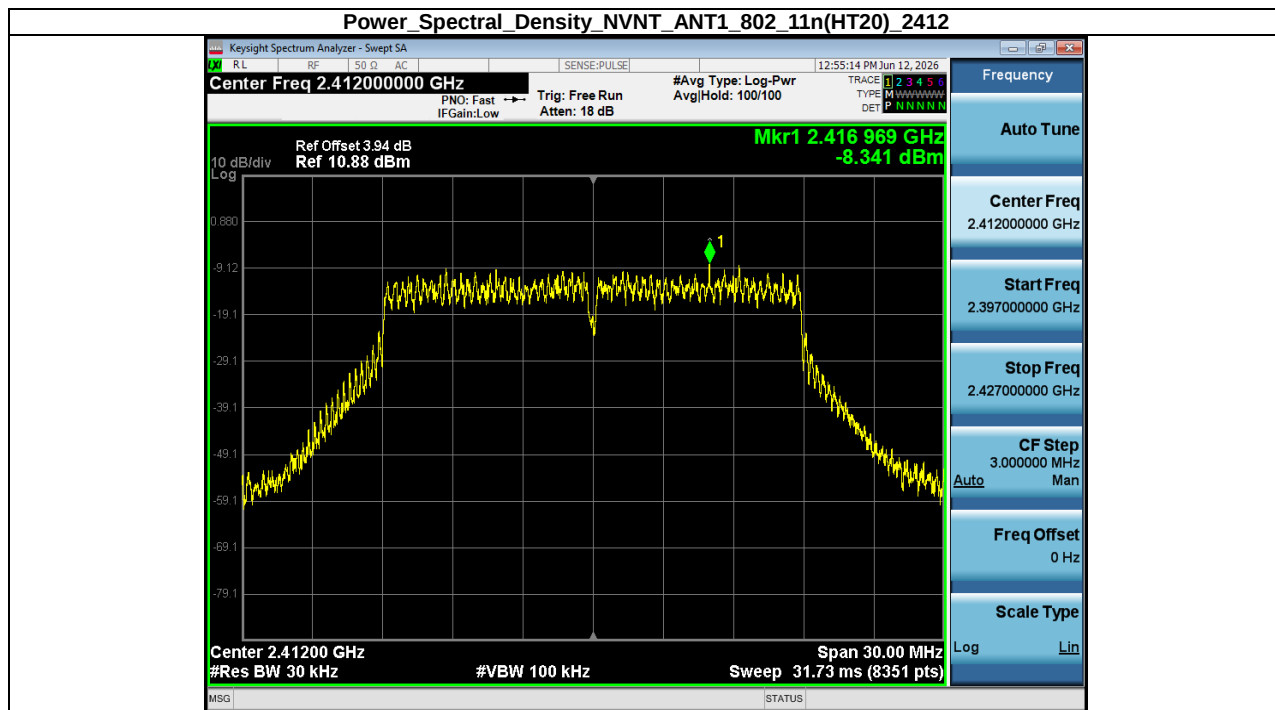
7.4. Test Results

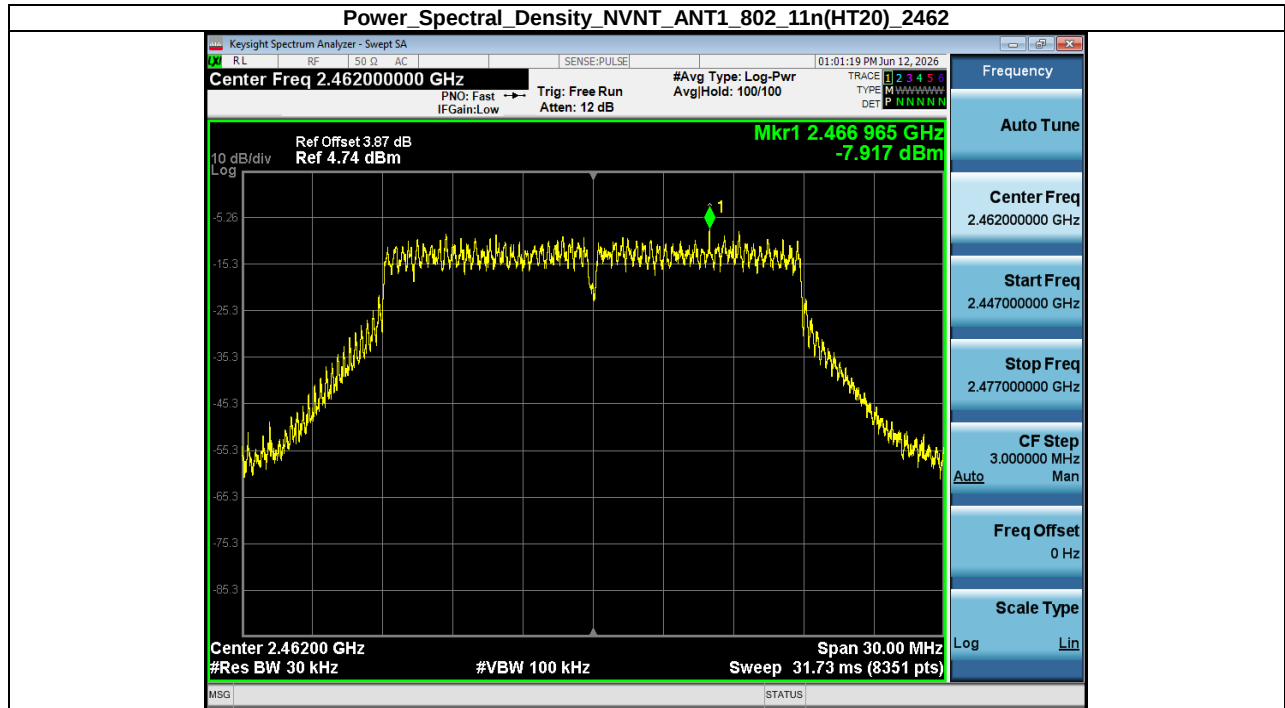
Condition	Antenna	Modulation	Frequency (MHz)	SA_PSD (dBm/30kHz)	Duty factor(dB)	Limit (dBm/3kHz)	Result
NVNT	ANT1	802.11b	2412.00	1.28	N/A	8	Pass
NVNT	ANT1	802.11b	2437.00	1.64	N/A	8	Pass
NVNT	ANT1	802.11b	2462.00	1.72	N/A	8	Pass
NVNT	ANT1	802.11g	2412.00	-7.37	N/A	8	Pass
NVNT	ANT1	802.11g	2437.00	-7.12	N/A	8	Pass
NVNT	ANT1	802.11g	2462.00	-7.22	N/A	8	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	-8.34	N/A	8	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	-7.89	N/A	8	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	-7.92	N/A	8	Pass











8. Occupied Bandwidth

8.1. Test limits

Systems using digital modulation techniques may operate in the 902-928 MHz, and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz

8.2. Test Procedure

Details see the ANSI C63.10:2020+Cor.1-2023 section 6.9.3 and section 11.8.1

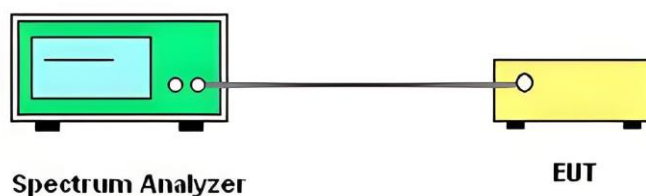
DTS bandwidth

- 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.
- The test receiver set RBW = 100kHz, VBW $\geq$ 3*RBW =300kHz, Peak Detector, Sweep time set auto, detail see the test plot.

Occupied bandwidth-power bandwidth (99%) measurement procedure

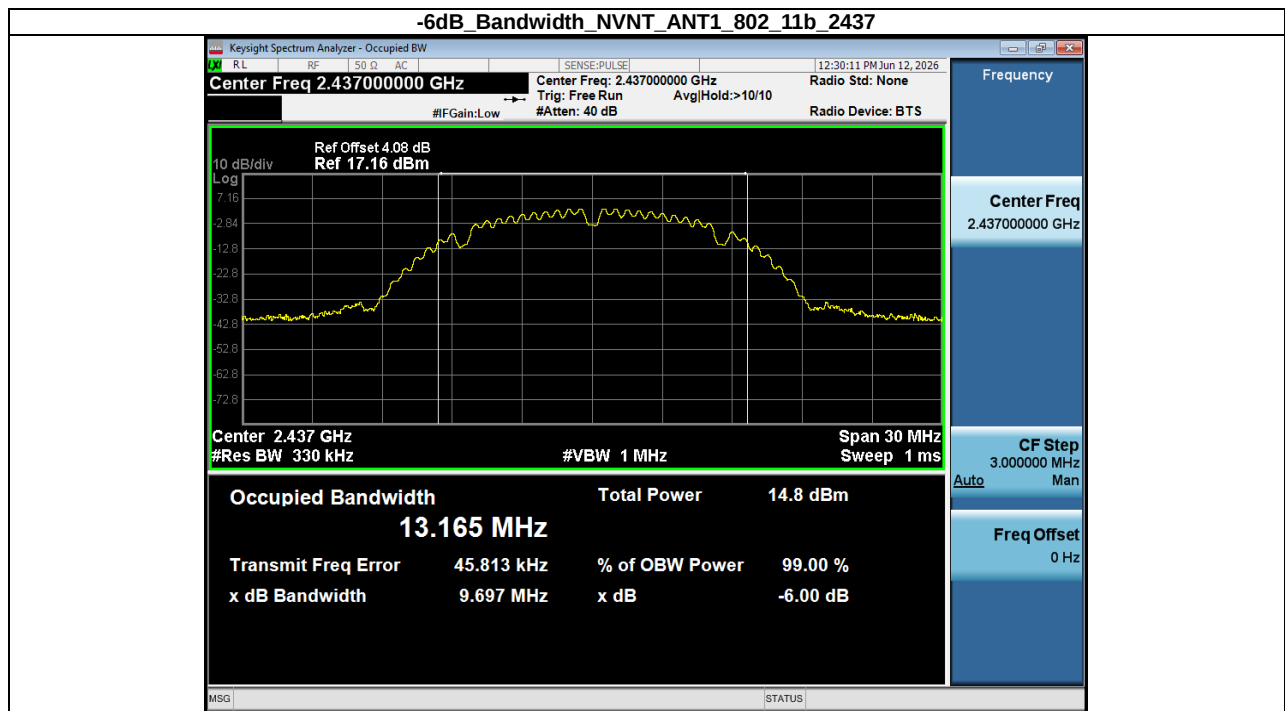
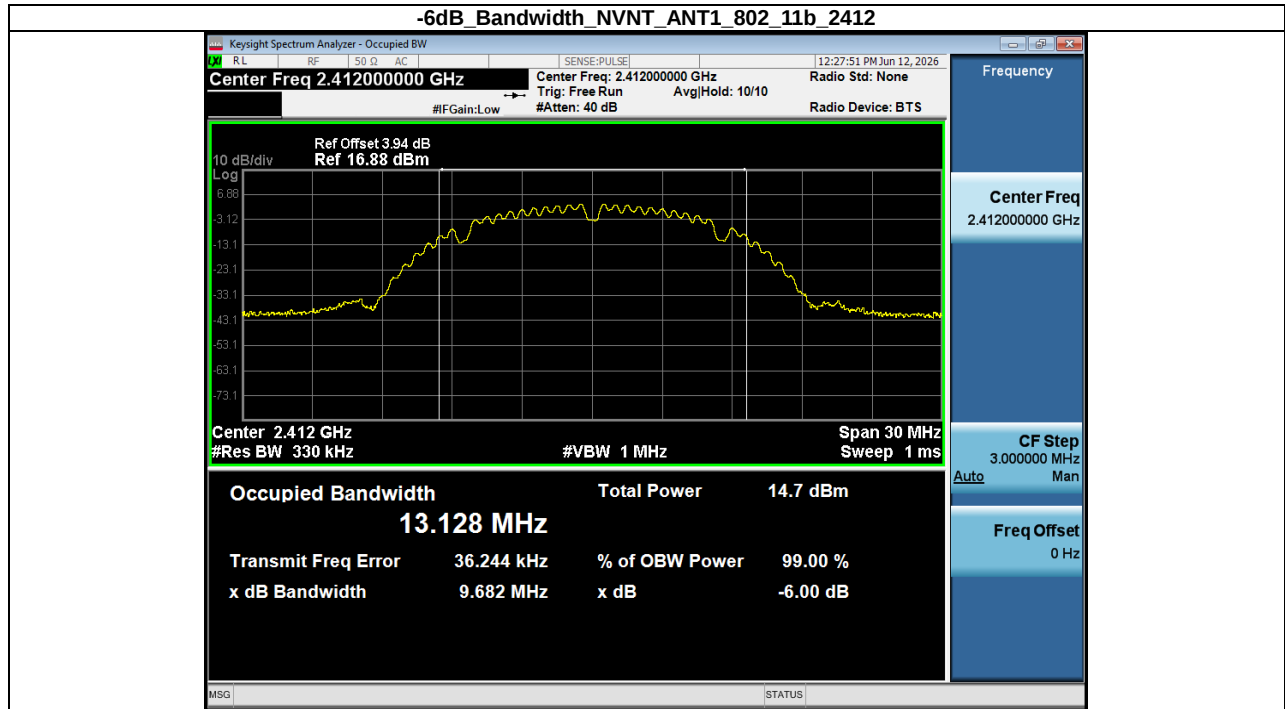
- The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
- Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than 10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2.

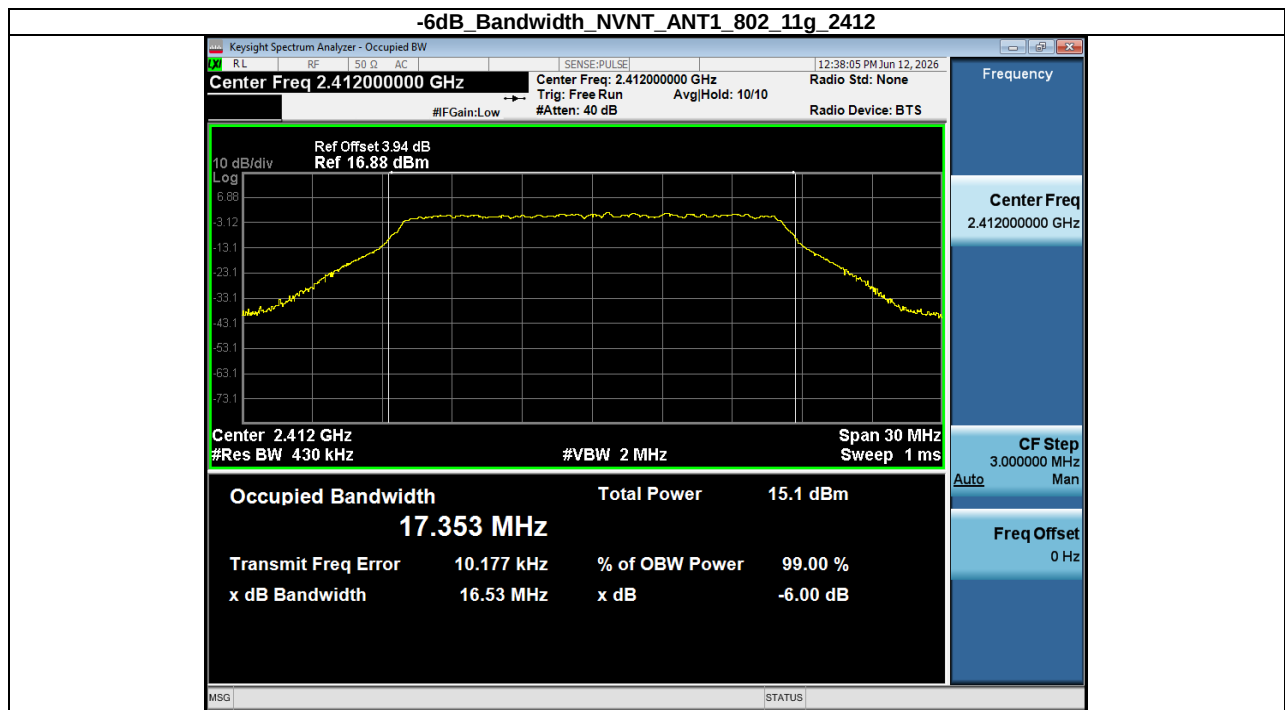
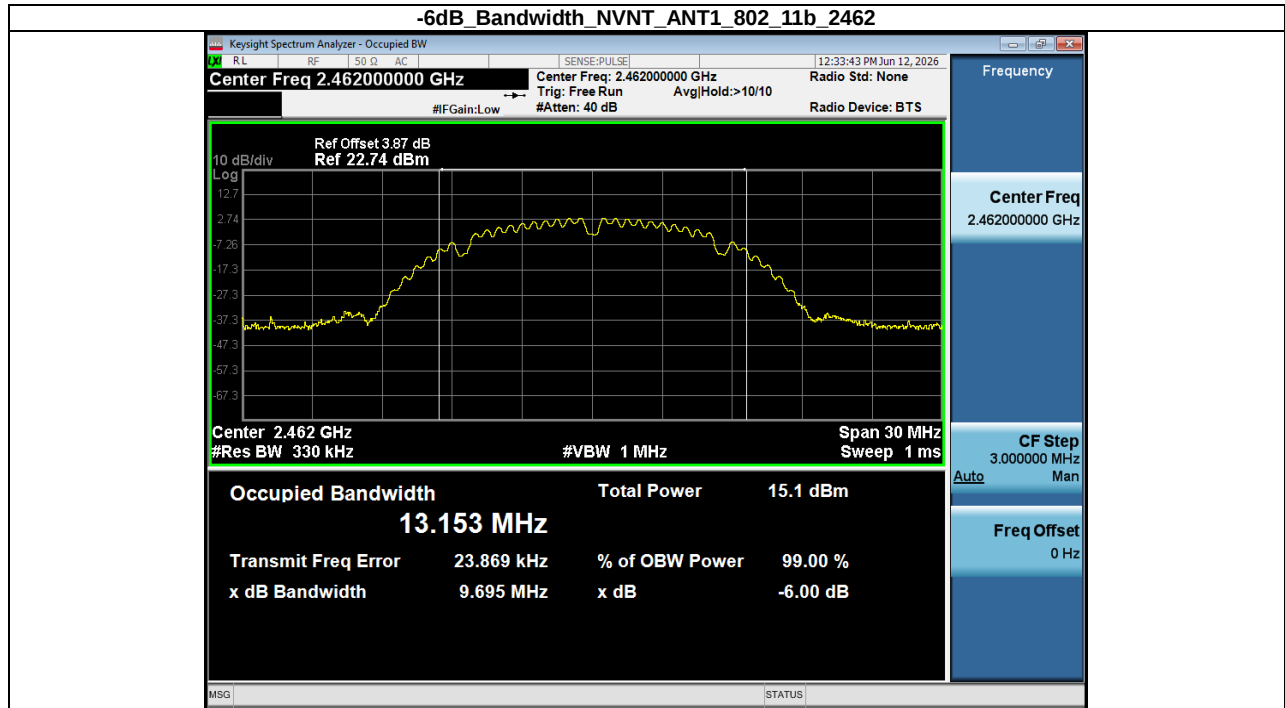
8.3. Test Setup

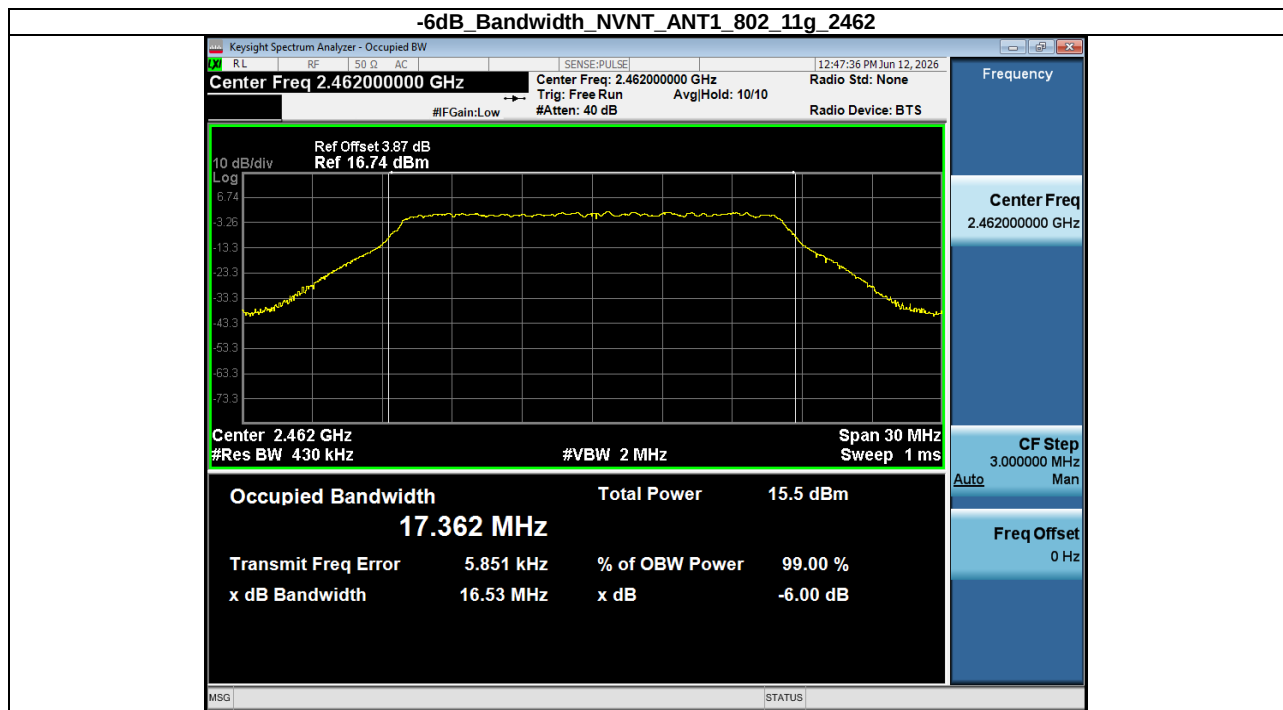
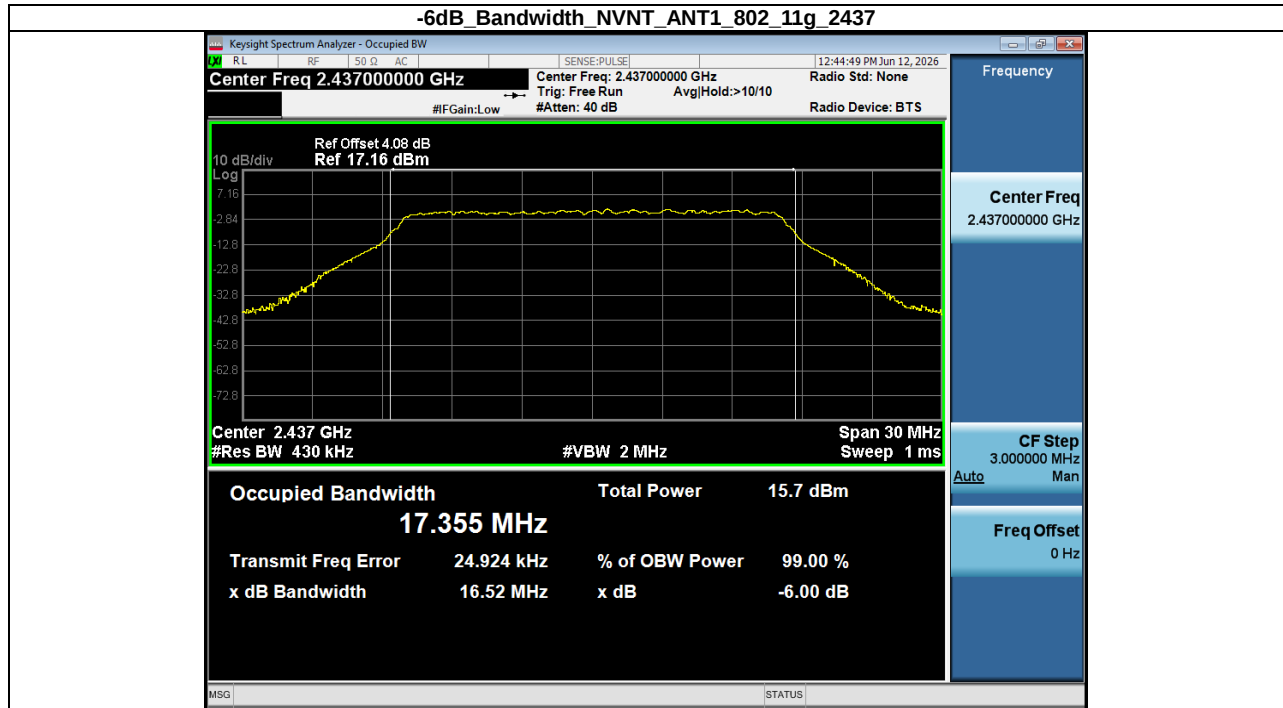


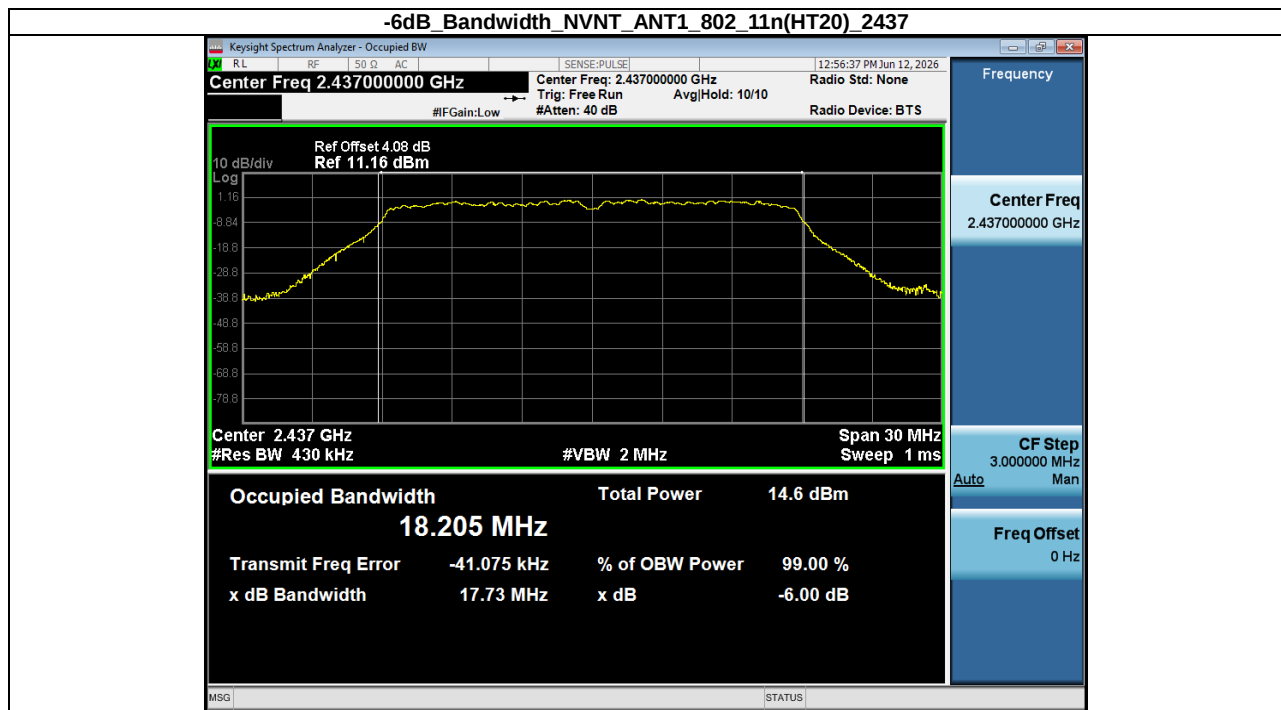
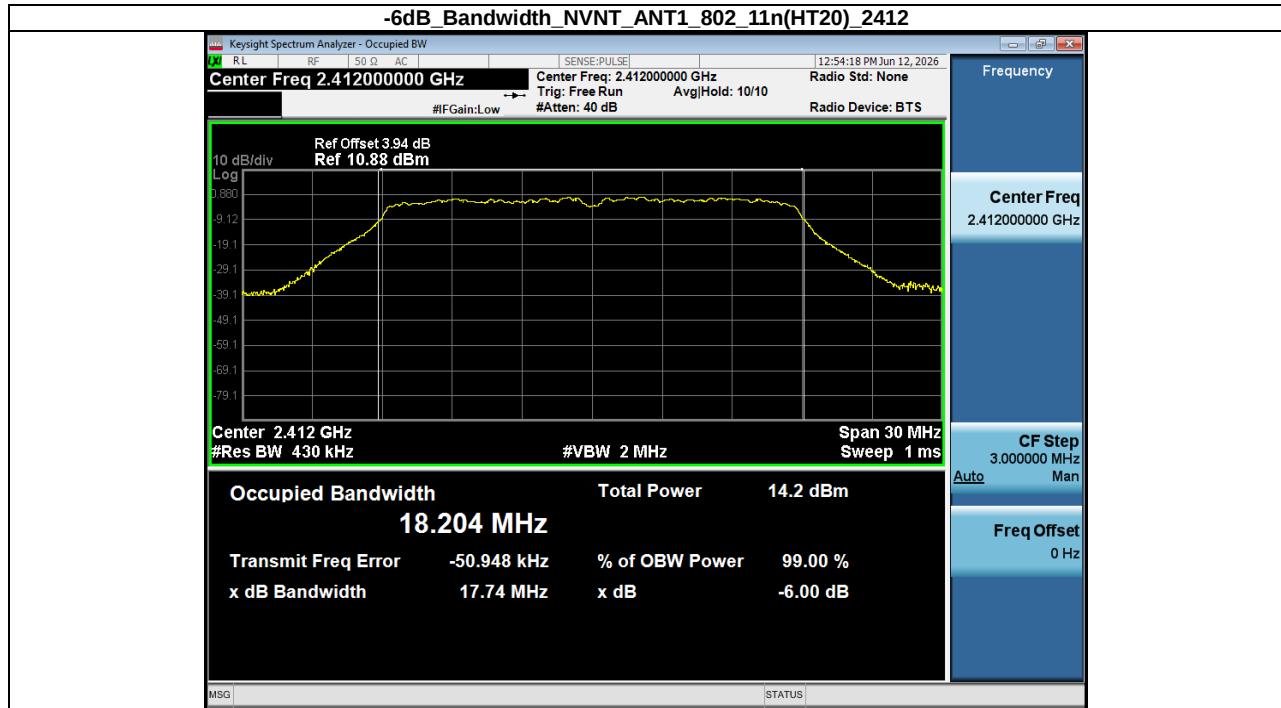
8.4. Test Results

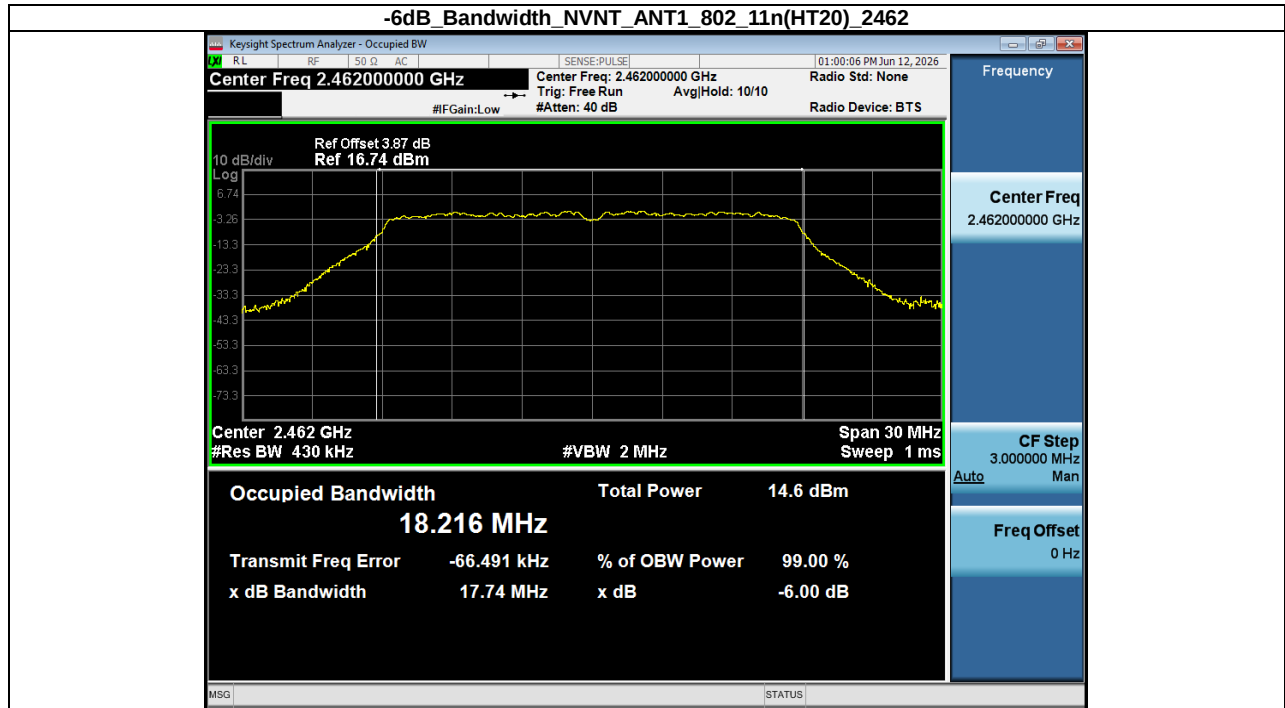
Condition	Antenna	Modulation	Frequency (MHz)	-6dB BW(MHz)	limit(kHz)	Result
NVNT	ANT1	802.11b	2412.00	9.68	500	Pass
NVNT	ANT1	802.11b	2437.00	9.70	500	Pass
NVNT	ANT1	802.11b	2462.00	9.70	500	Pass
NVNT	ANT1	802.11g	2412.00	16.53	500	Pass
NVNT	ANT1	802.11g	2437.00	16.52	500	Pass
NVNT	ANT1	802.11g	2462.00	16.53	500	Pass
NVNT	ANT1	802.11n(HT20)	2412.00	17.74	500	Pass
NVNT	ANT1	802.11n(HT20)	2437.00	17.73	500	Pass
NVNT	ANT1	802.11n(HT20)	2462.00	17.74	500	Pass



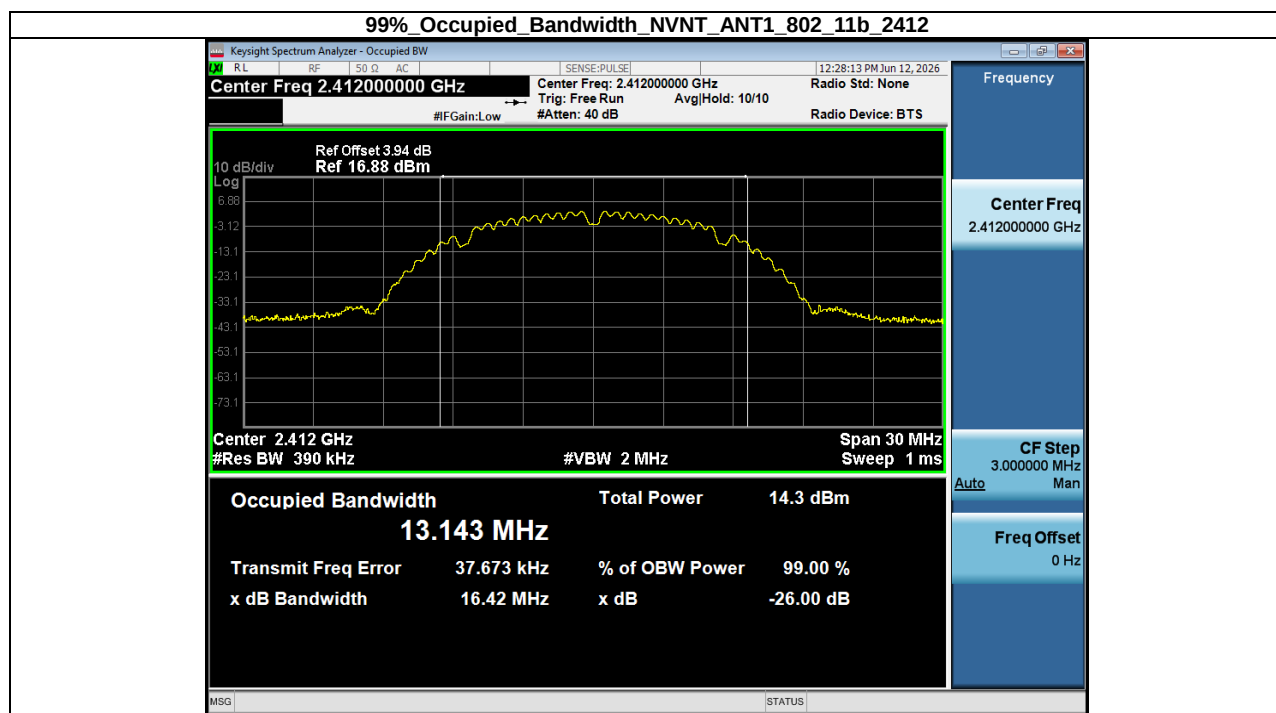


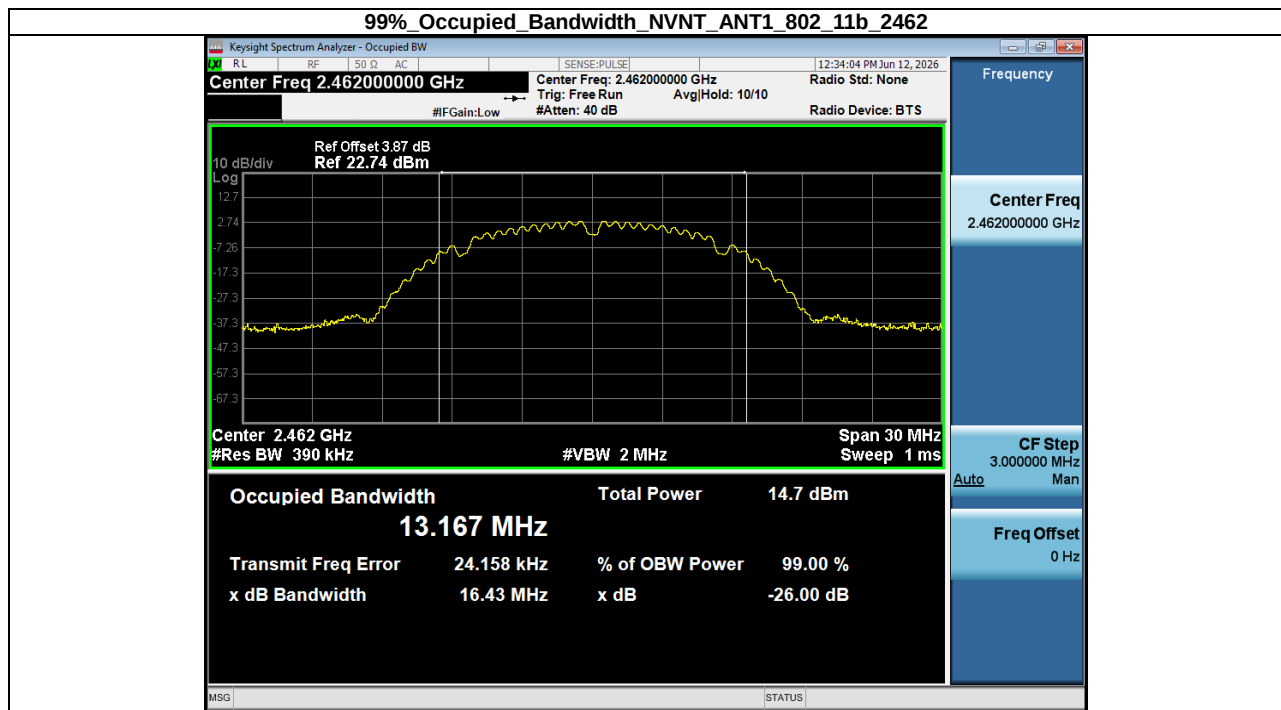
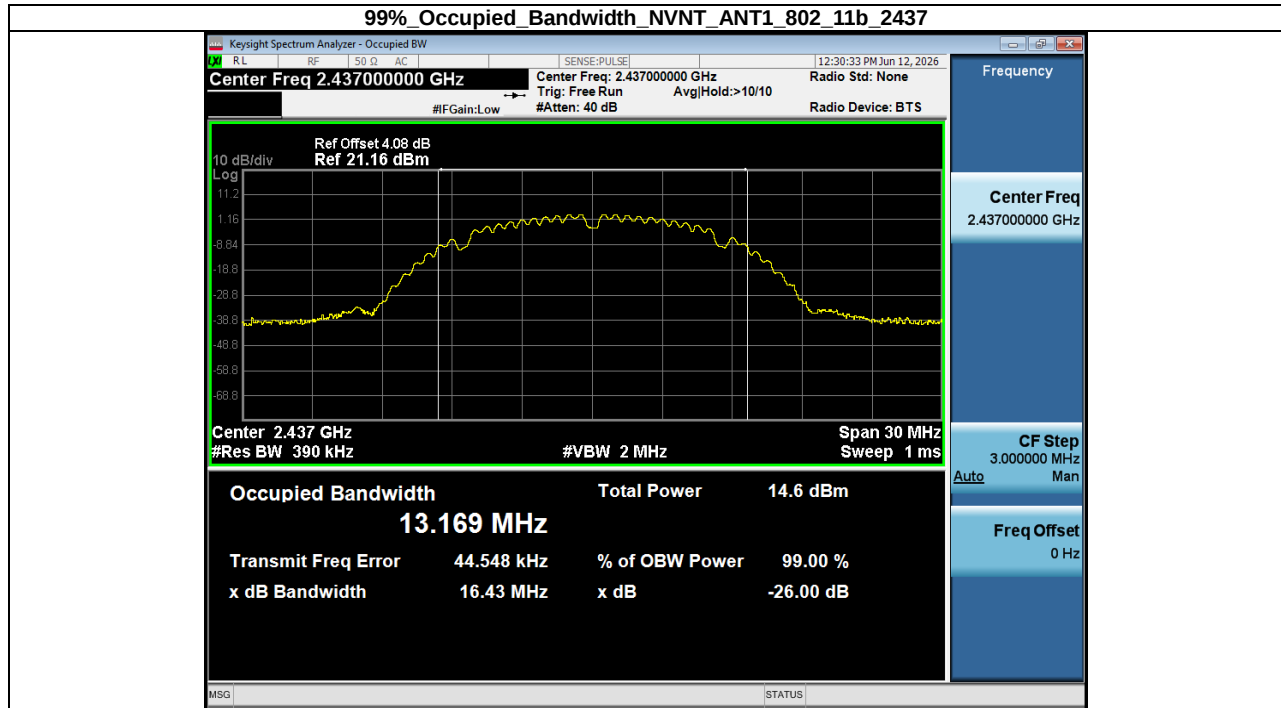


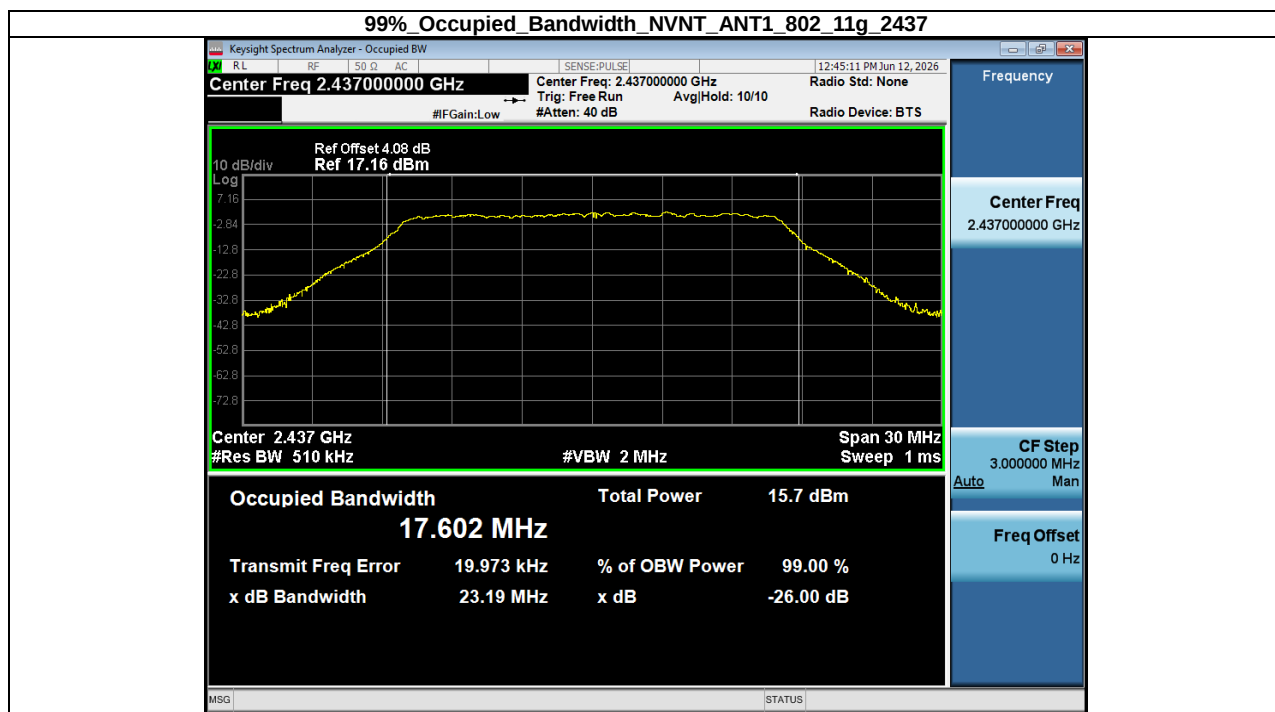
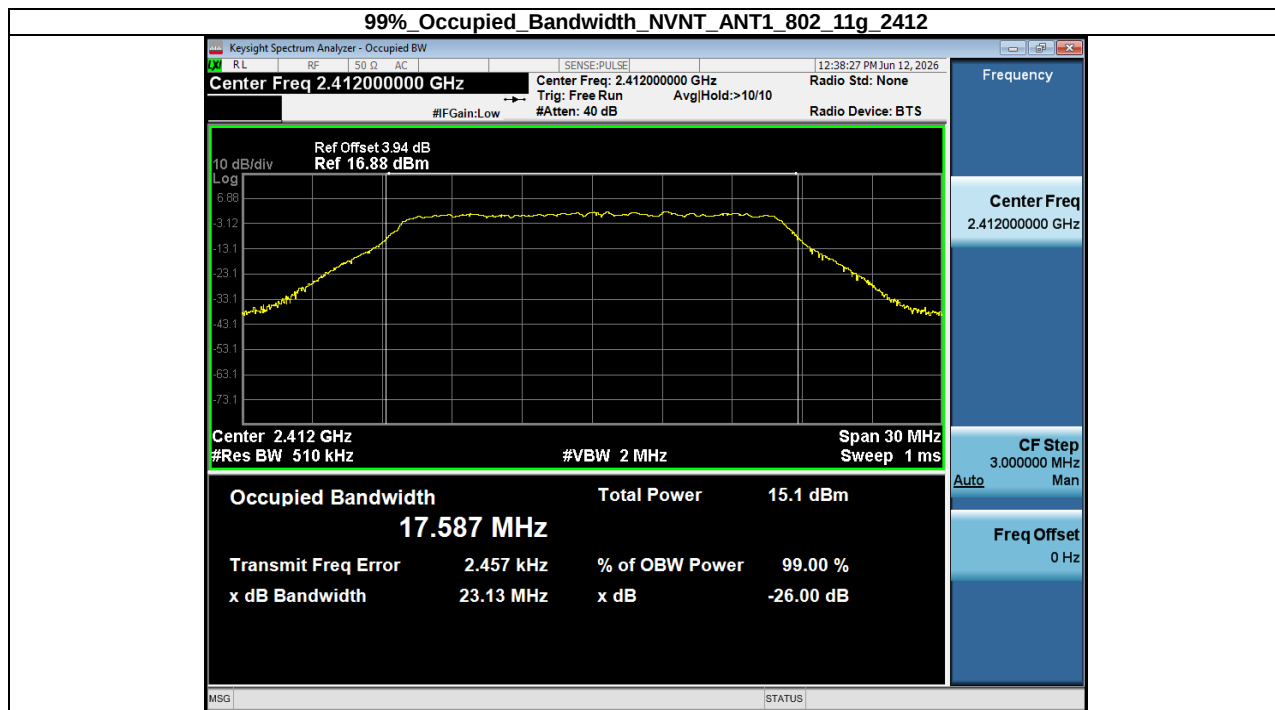


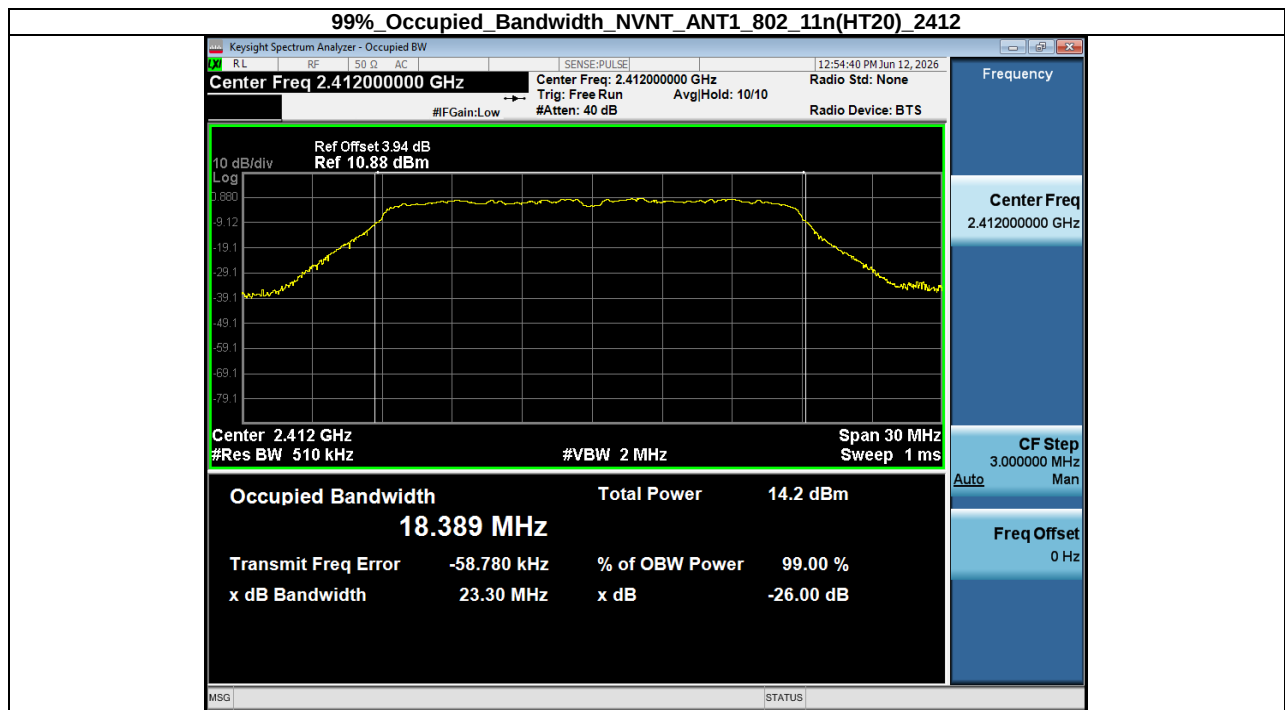
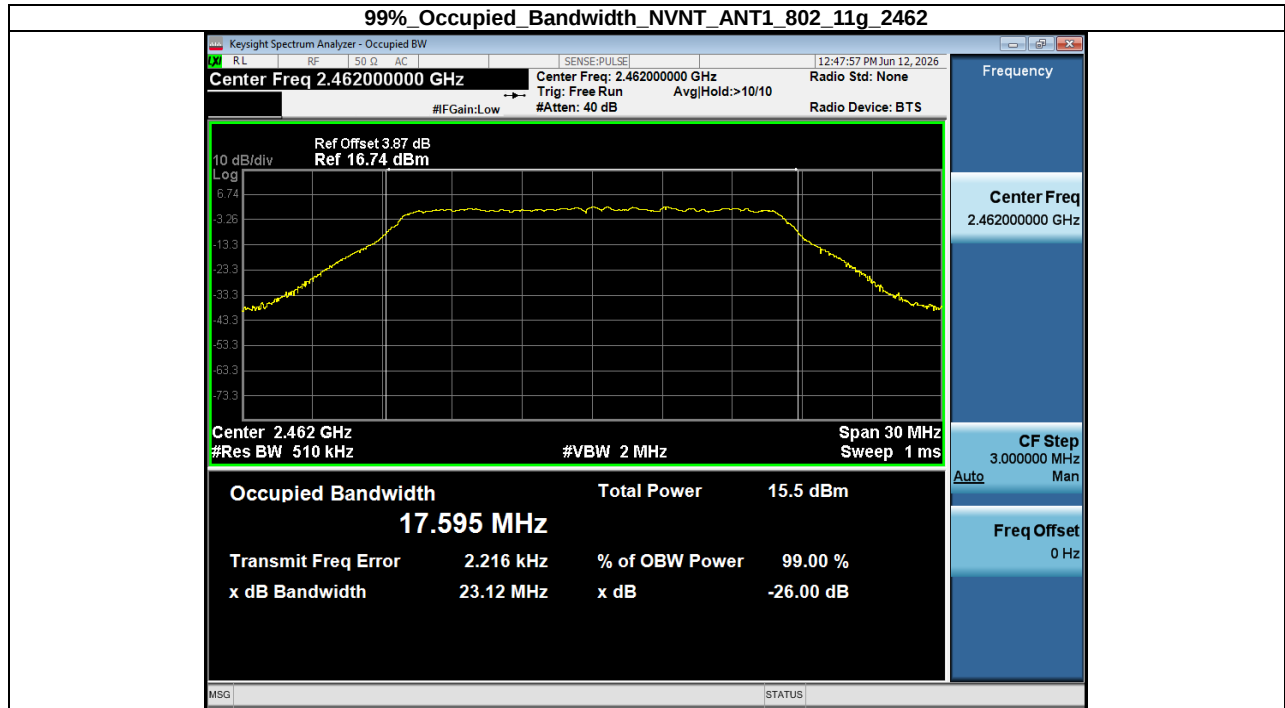


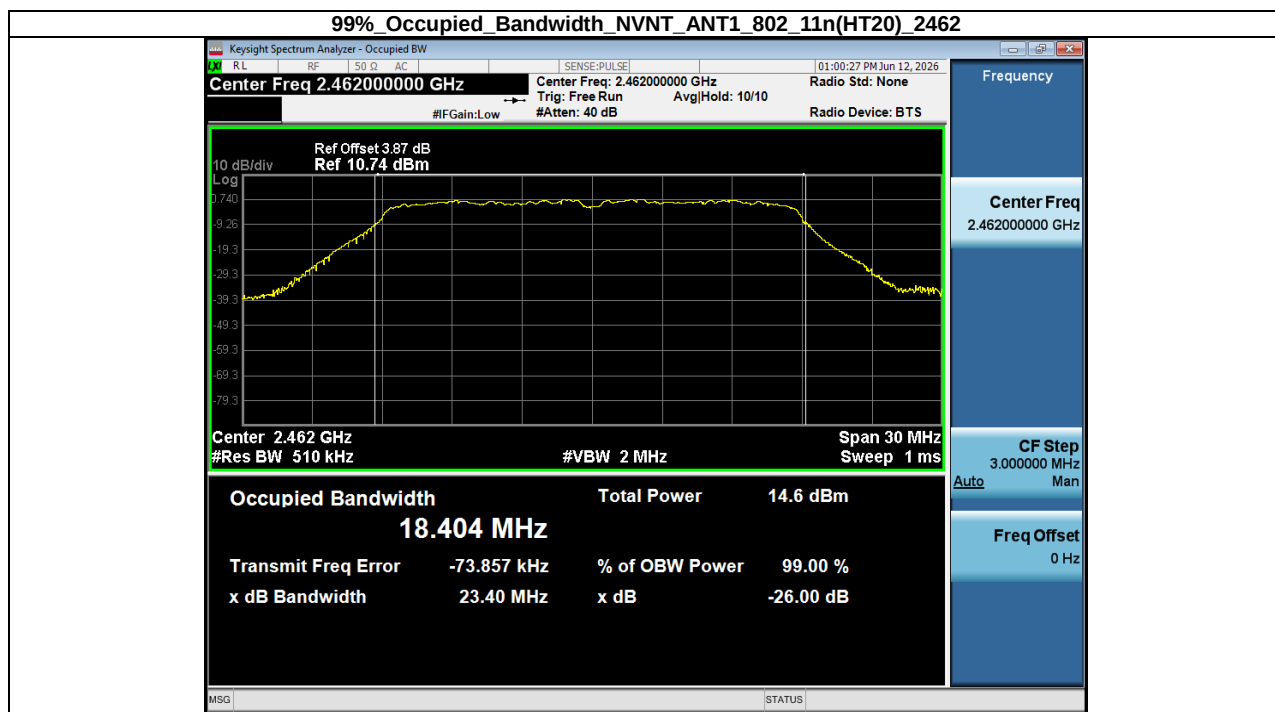
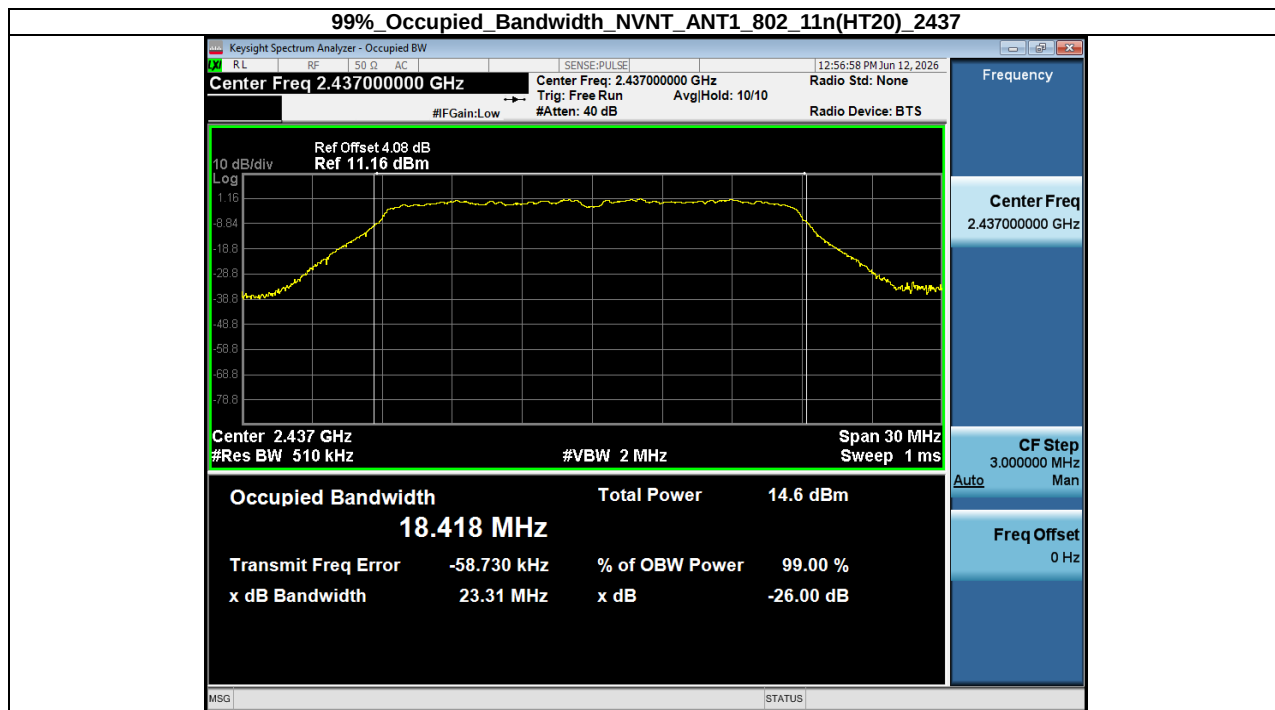
Condition	Antenna	Modulation	Frequency (MHz)	99%BW(MHz)
NVNT	ANT1	802.11b	2412.00	13.143
NVNT	ANT1	802.11b	2437.00	13.169
NVNT	ANT1	802.11b	2462.00	13.167
NVNT	ANT1	802.11g	2412.00	17.587
NVNT	ANT1	802.11g	2437.00	17.602
NVNT	ANT1	802.11g	2462.00	17.595
NVNT	ANT1	802.11n(HT20)	2412.00	18.389
NVNT	ANT1	802.11n(HT20)	2437.00	18.418
NVNT	ANT1	802.11n(HT20)	2462.00	18.404











9. Band Edge Test

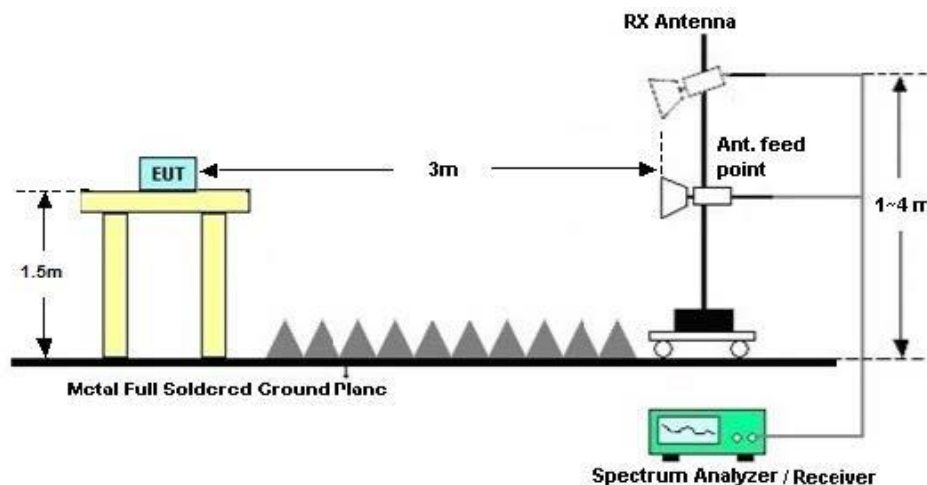
9.1. Test Limit

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)(see § 15.205(c)).

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
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 **	3
88-216	150 **	3
216-960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241

9.2. Block Diagram of Test Setup



9.3. Test Procedure

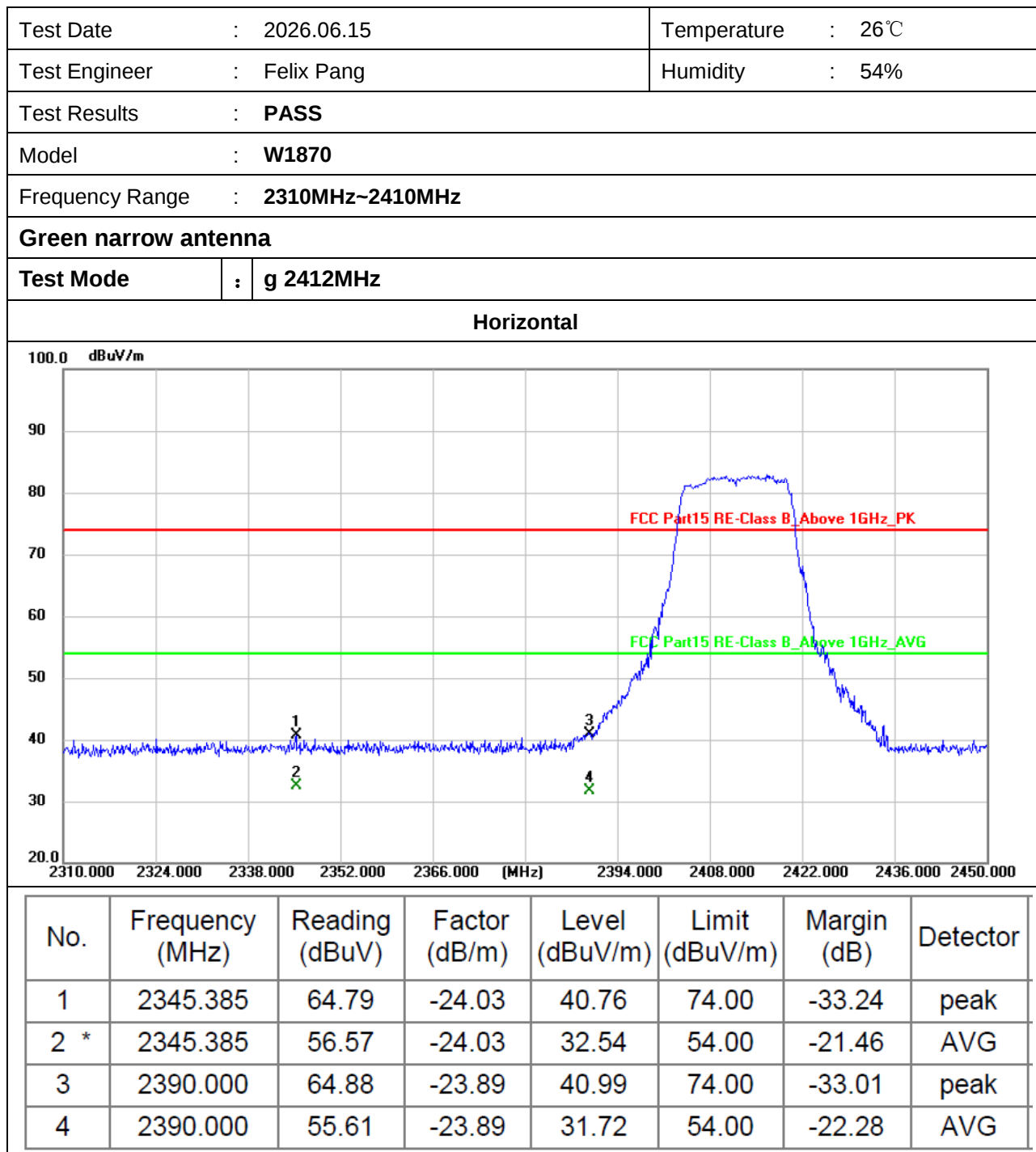
ANSI C63.10-2020+Cor.1-2023 section 6.10.5.2

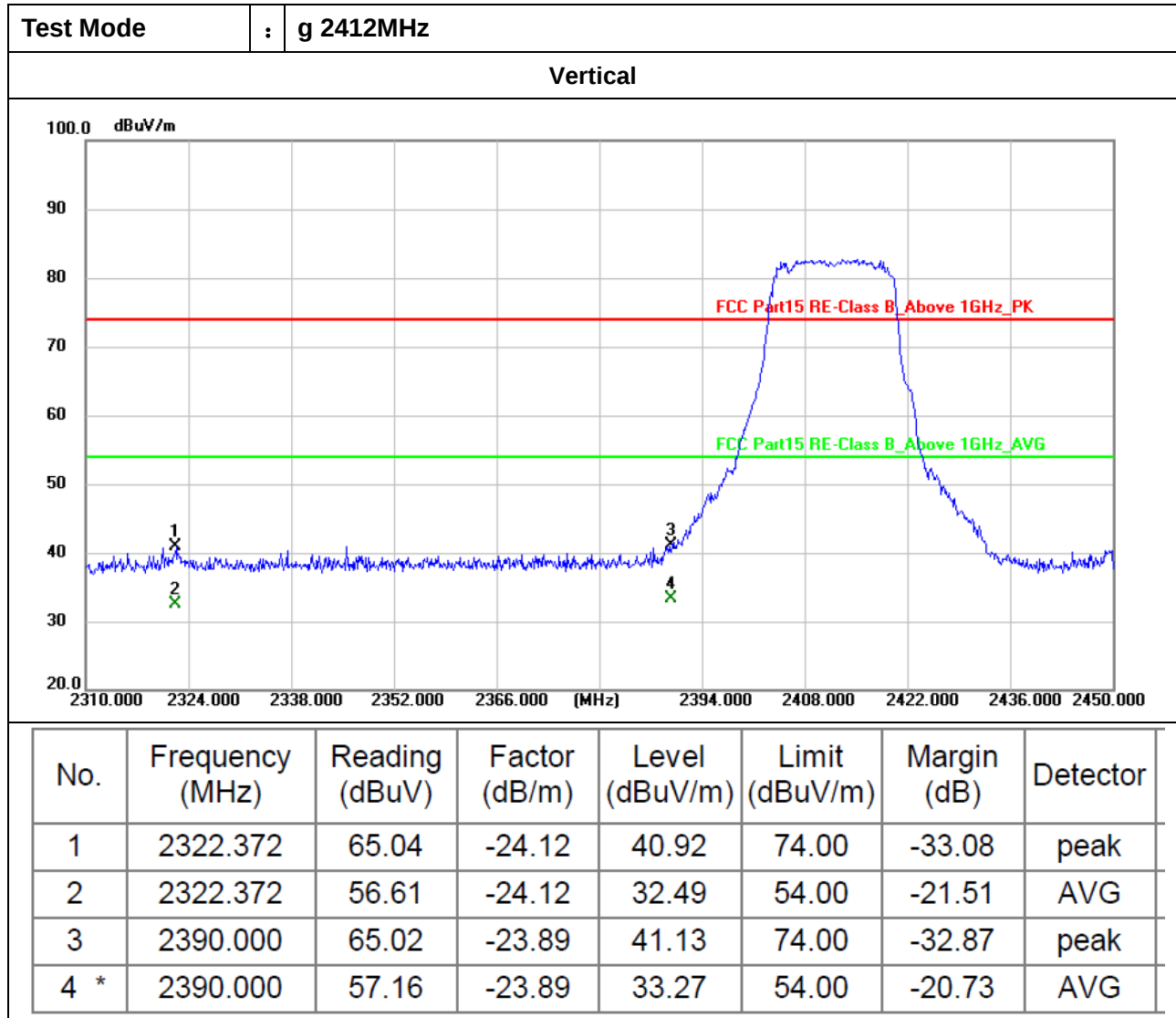
All restriction band and non- restriction band have been tested, only worse case is reported.

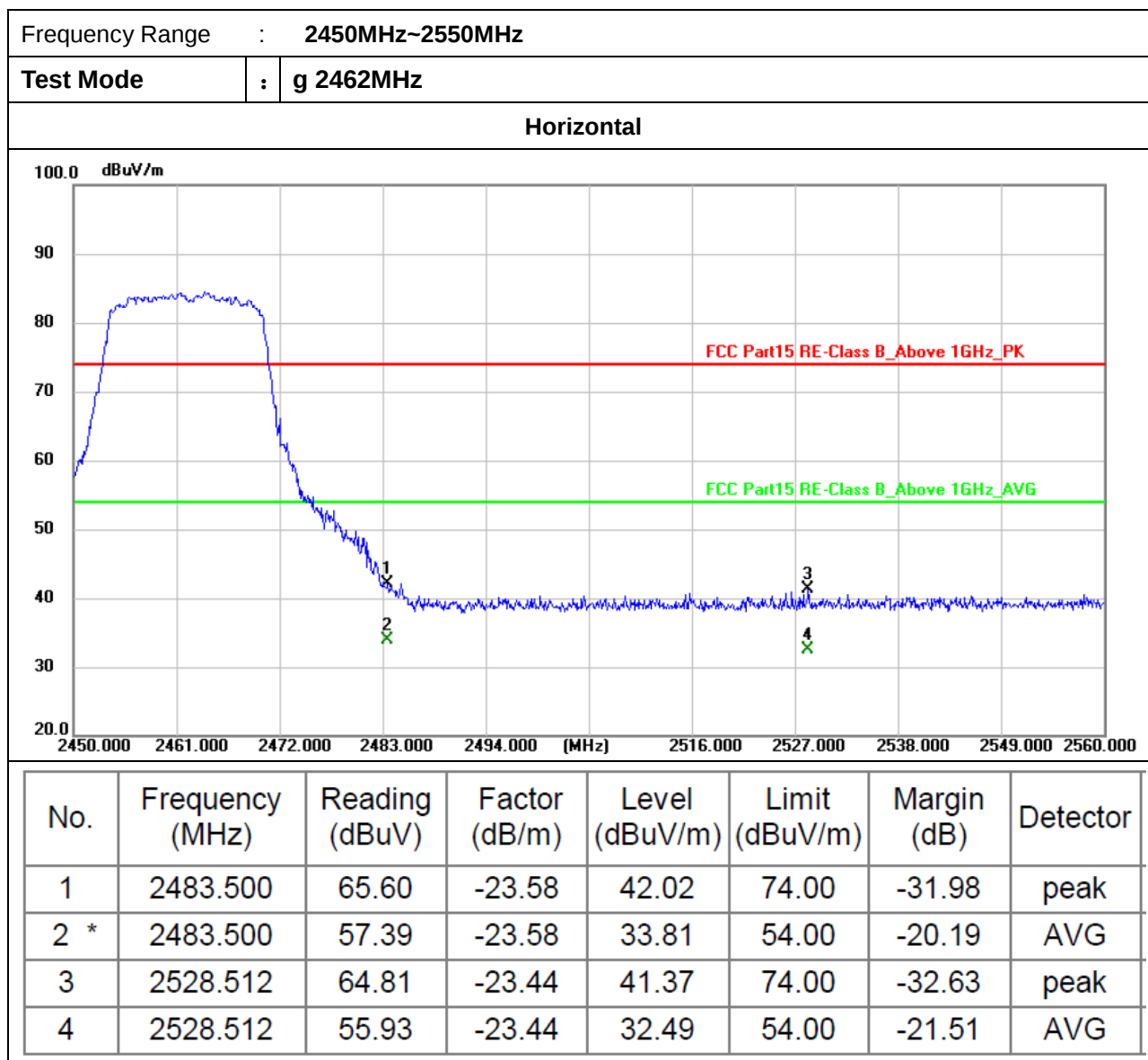
Details see the KDB558074 D01 Meas Guidance v05r02

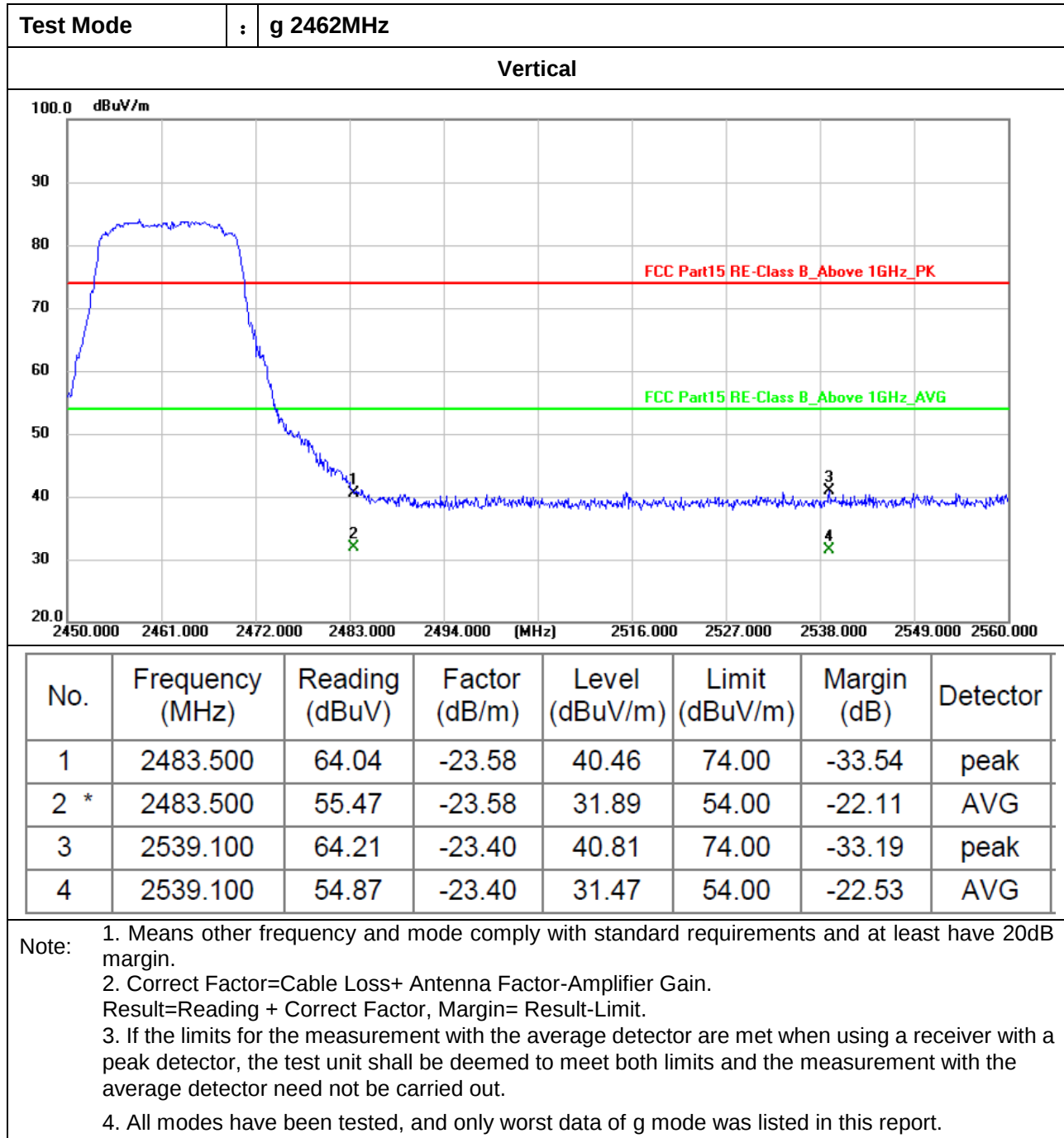
1. Put the EUT on a 1.5m high table, power on the EUT. Emissions were scanned and measured rotating the EUT to 360 degrees, Find the maximum Emission
2. Check the spurious emissions out of band.
3. RBW 1MHz, VBW 3MHz, peak detector for peak value, RBW 1MHz, VBW 10Hz, RMS detector for AV value.

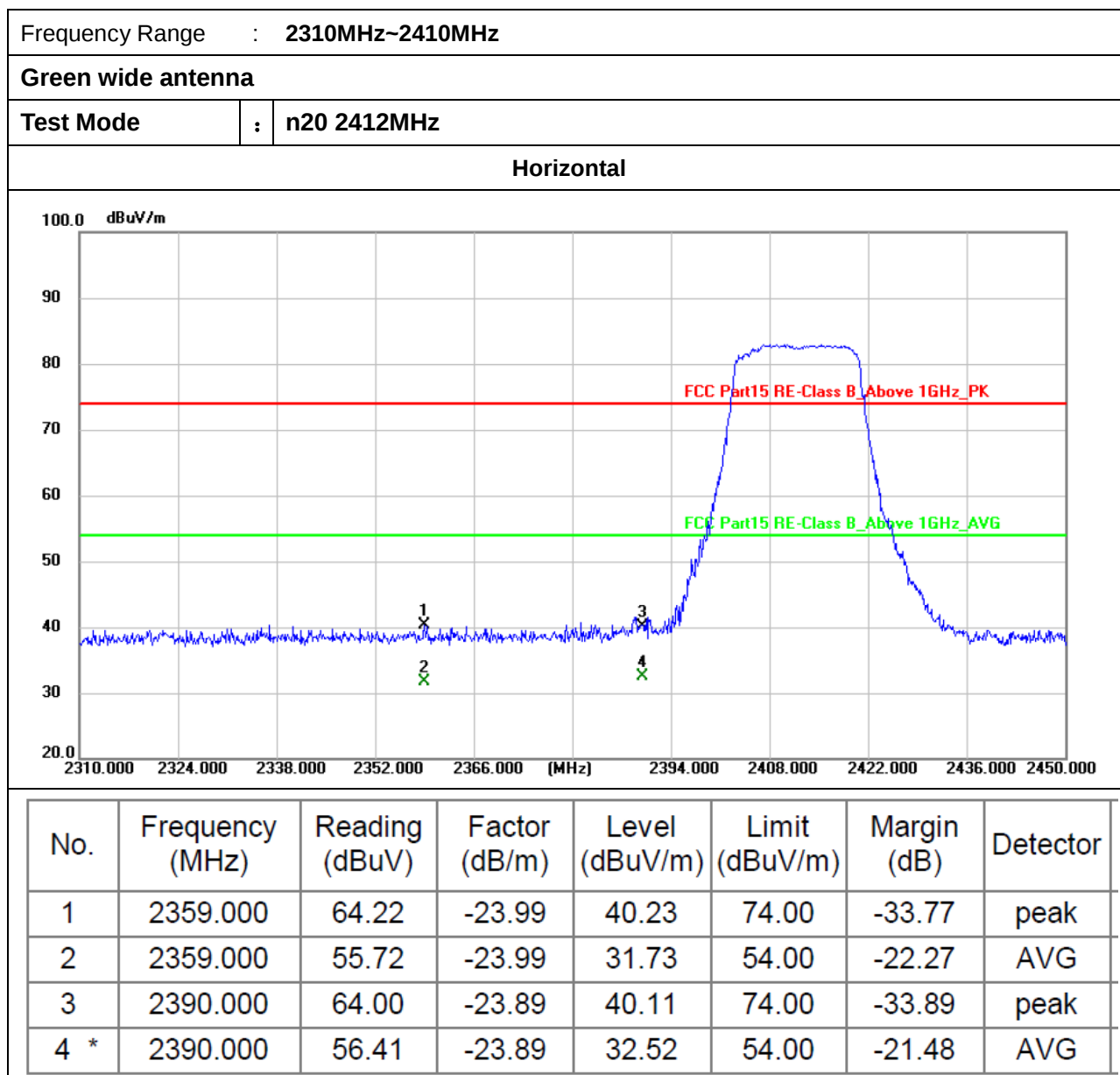
9.4. Test Results

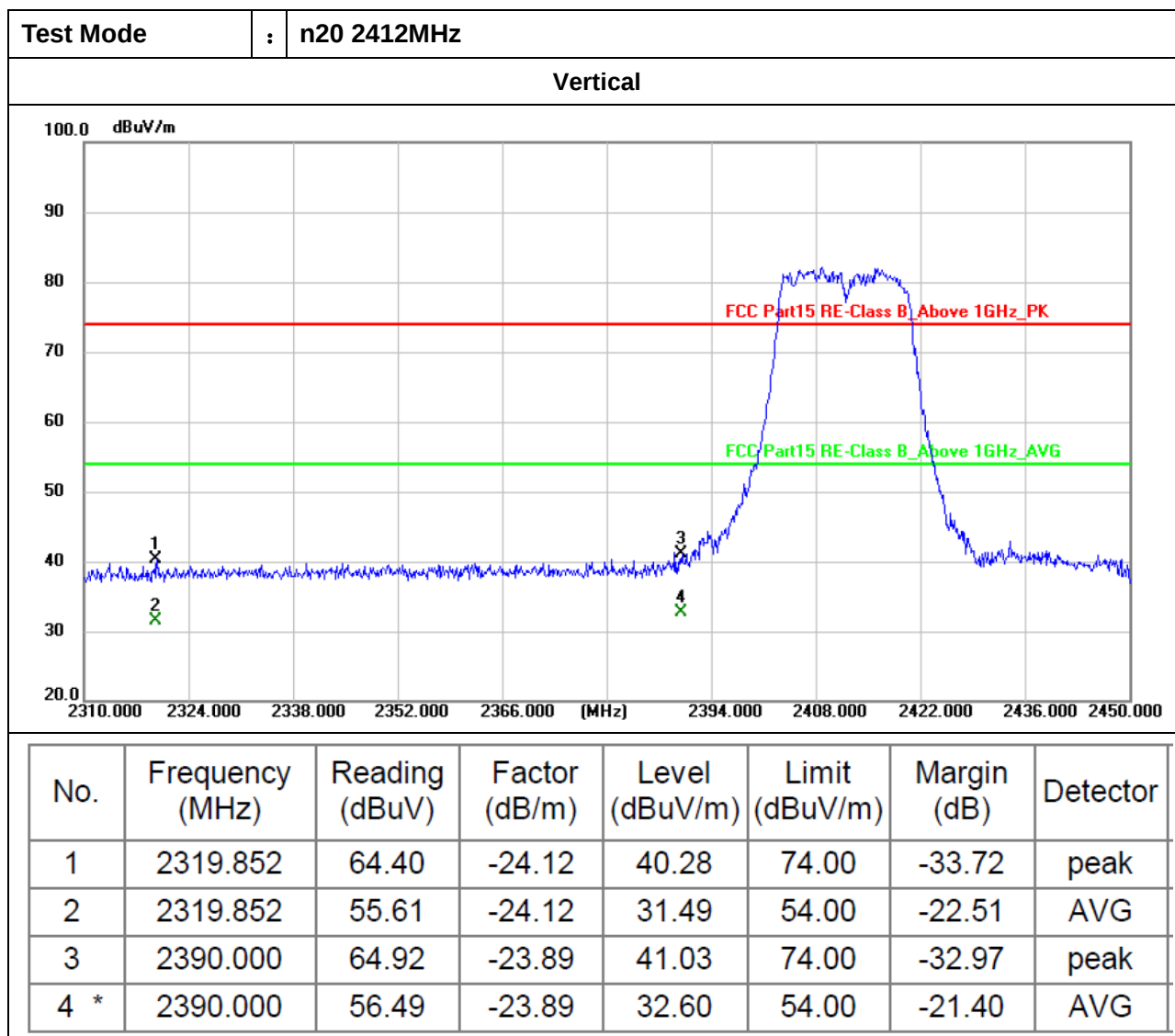


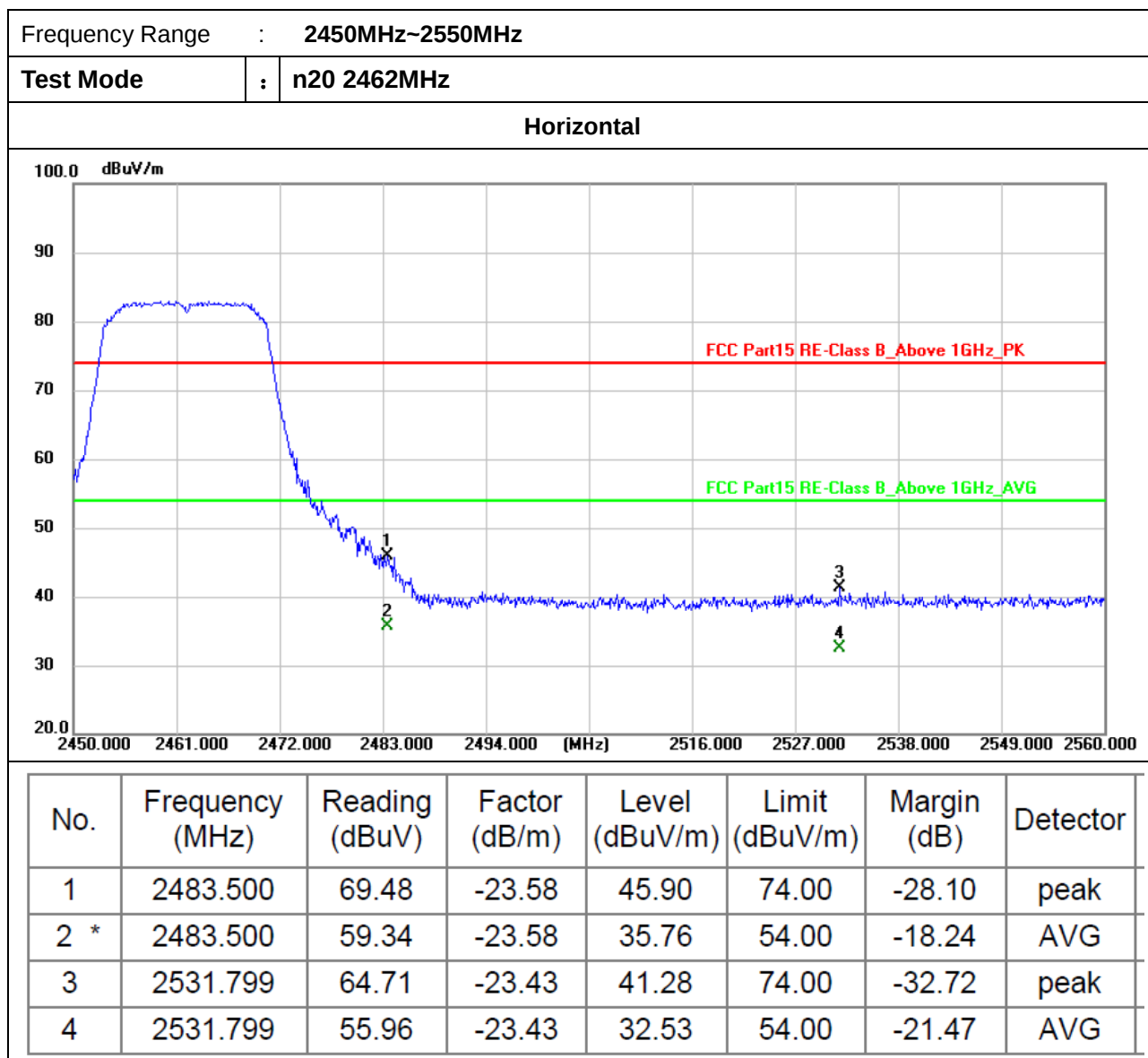


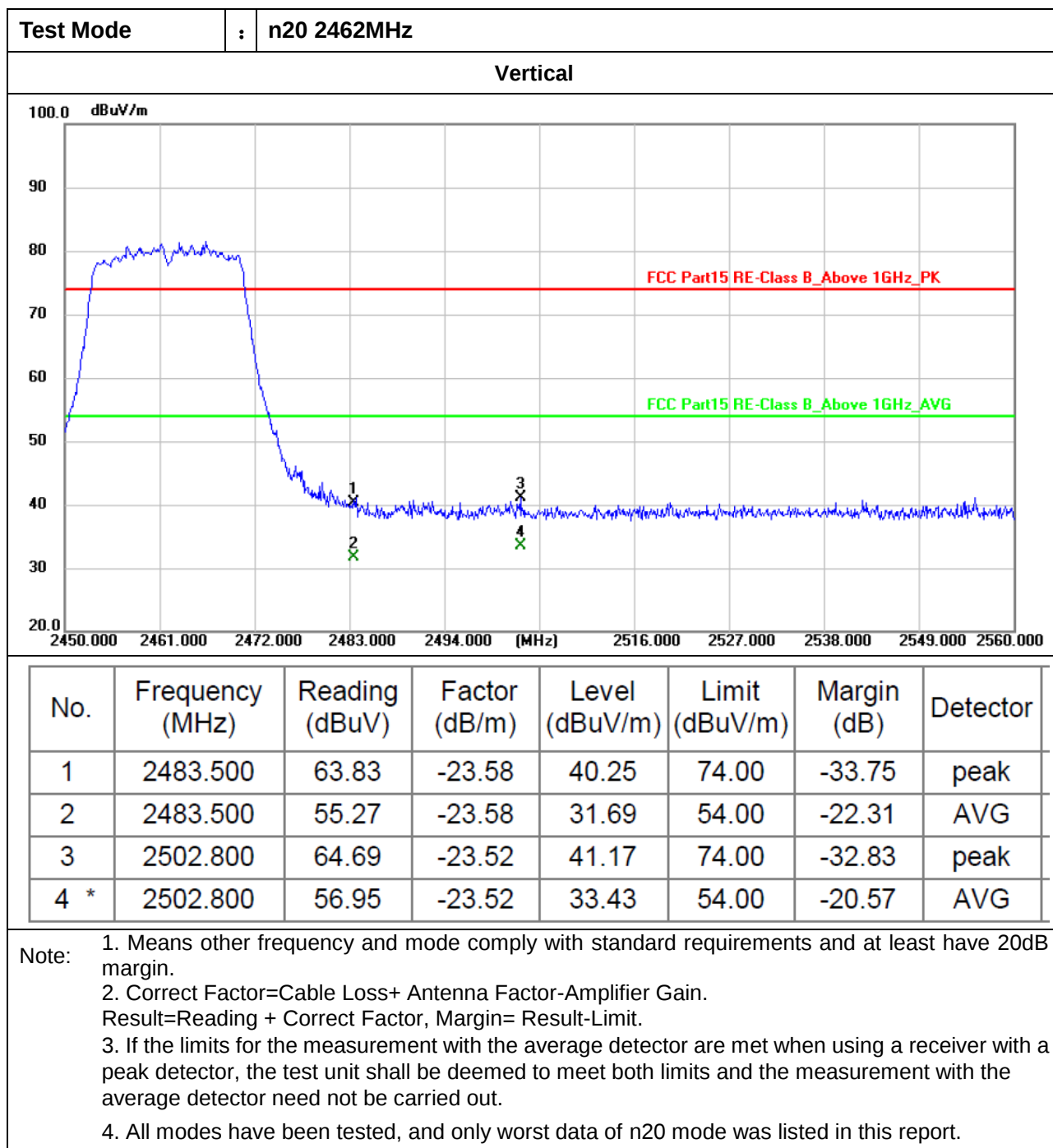


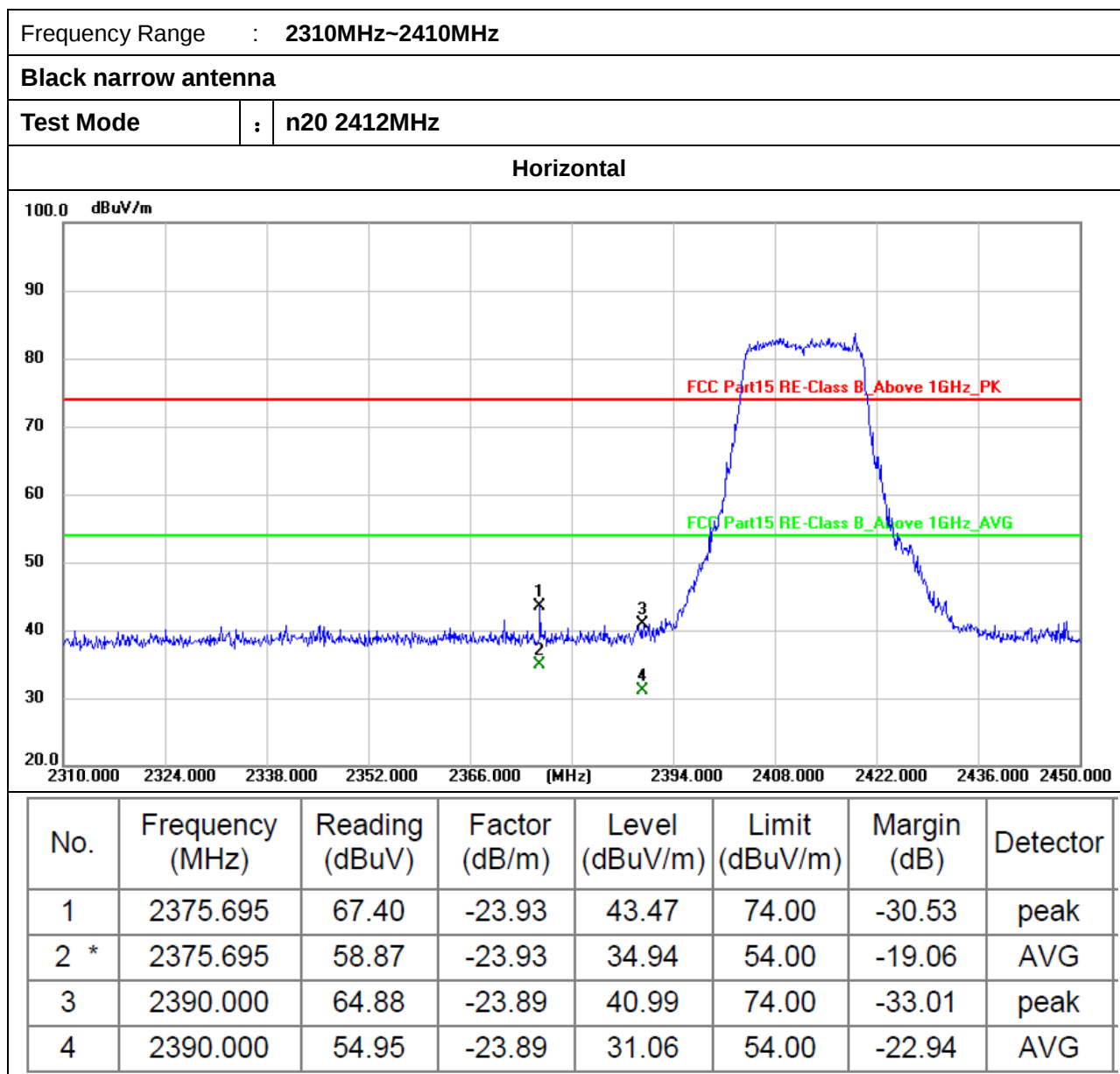


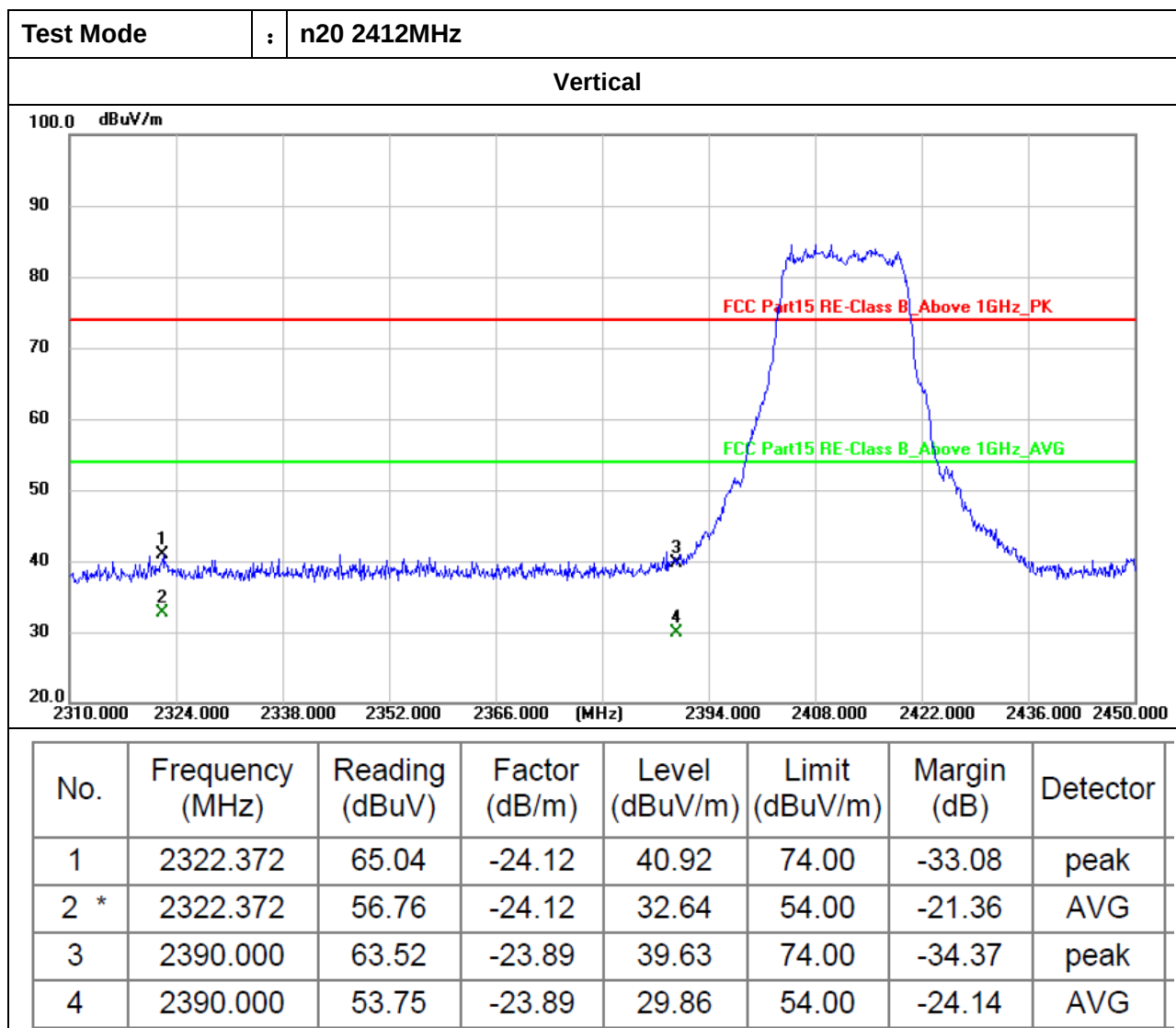


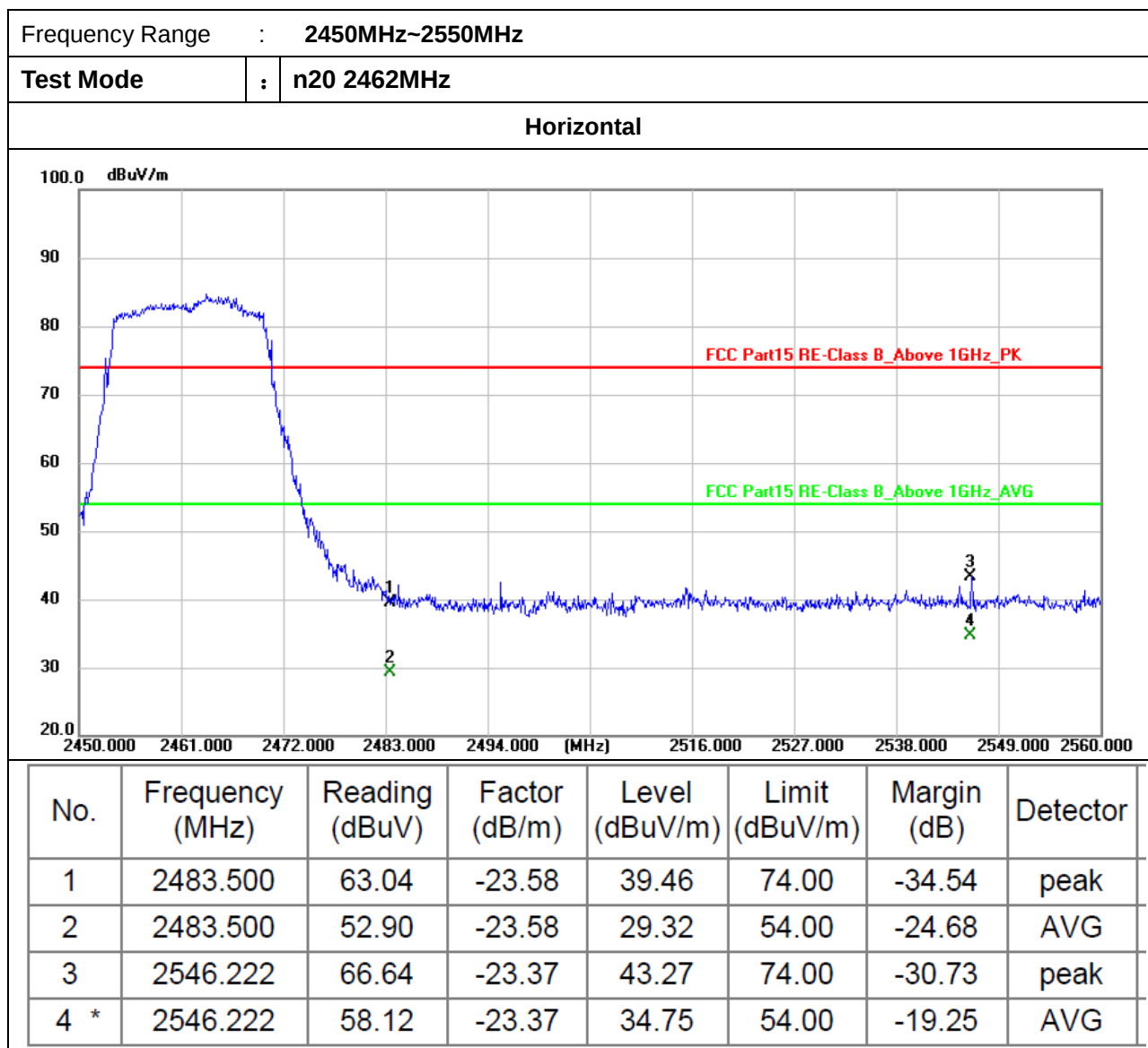


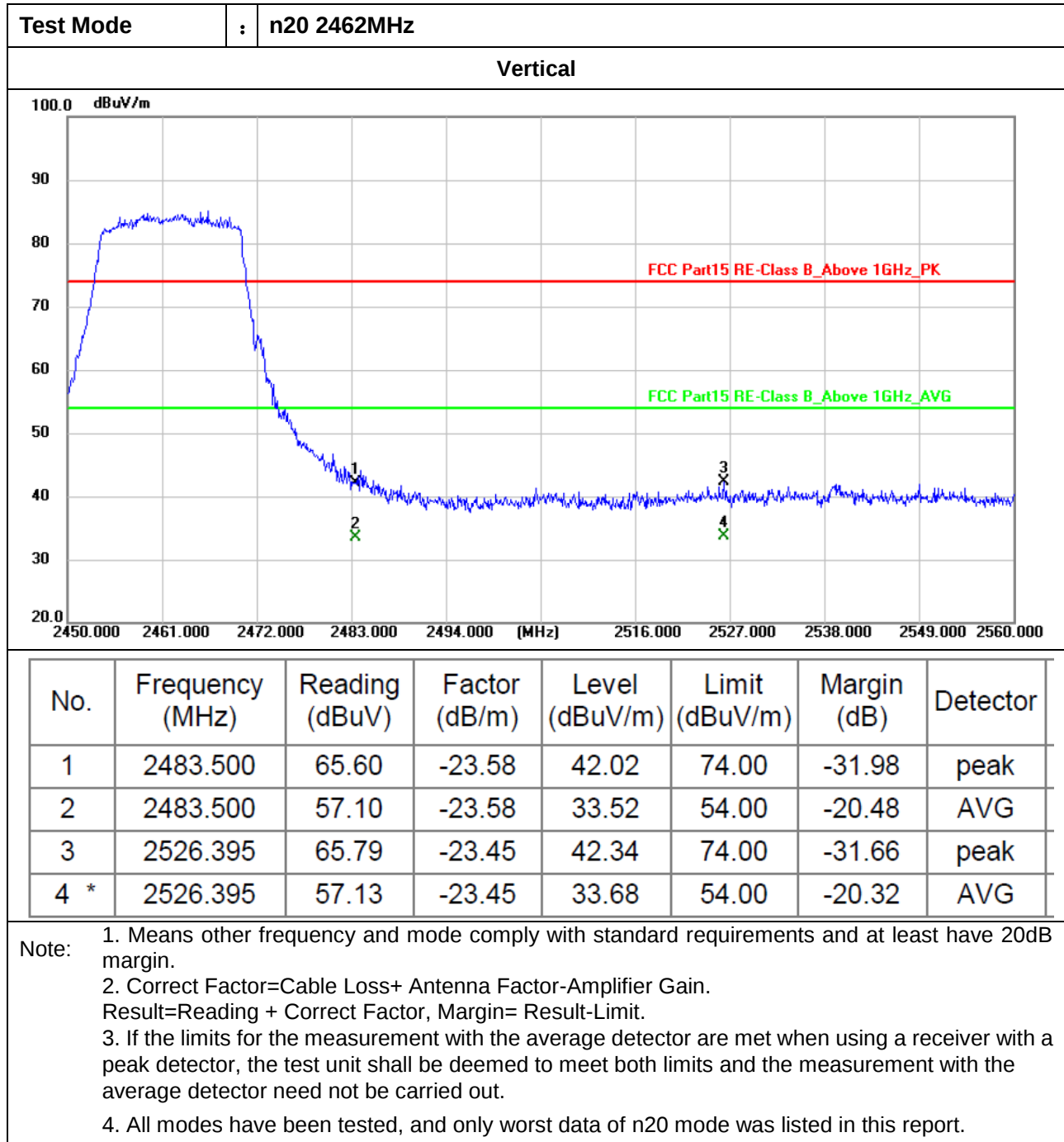


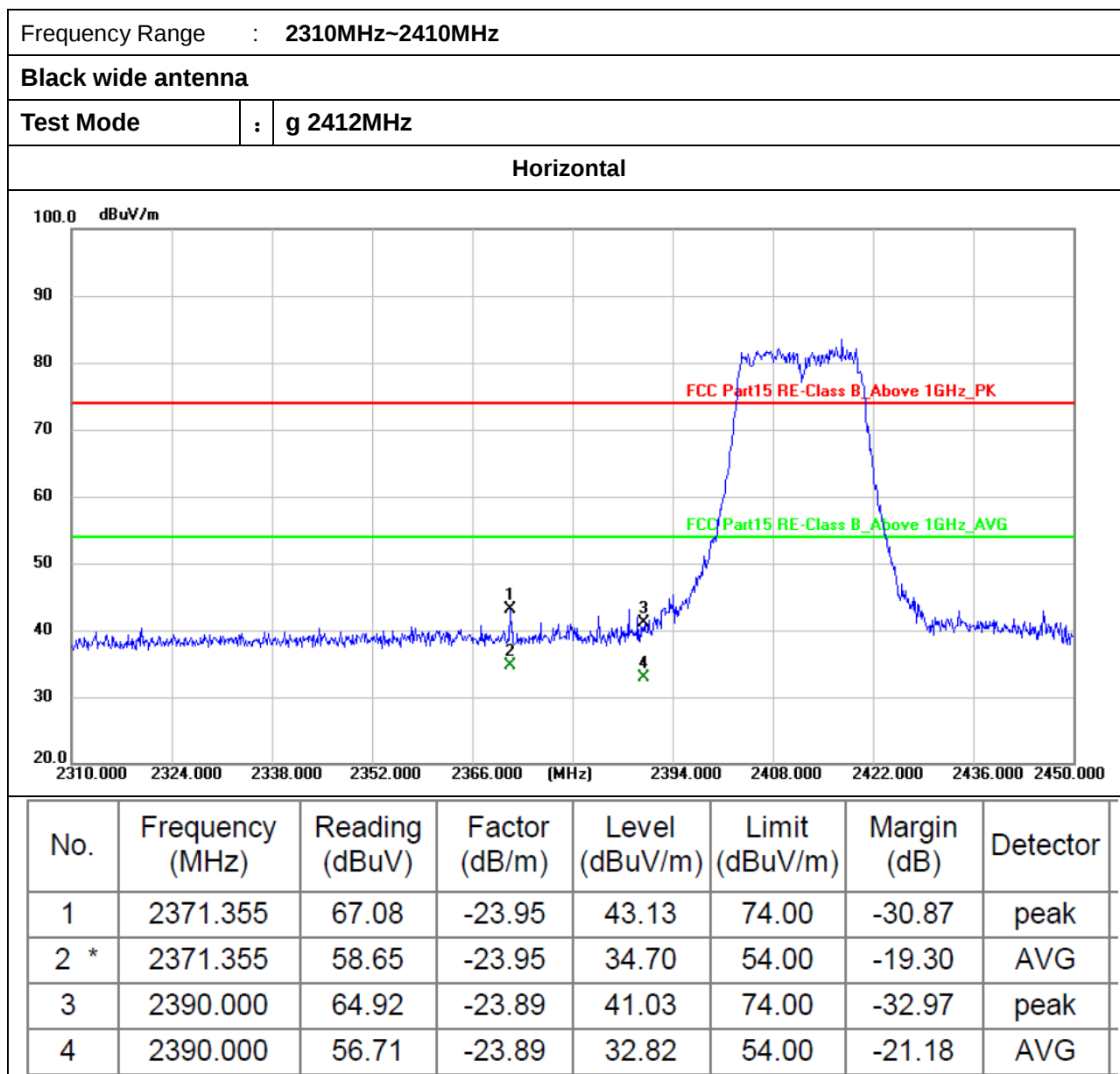


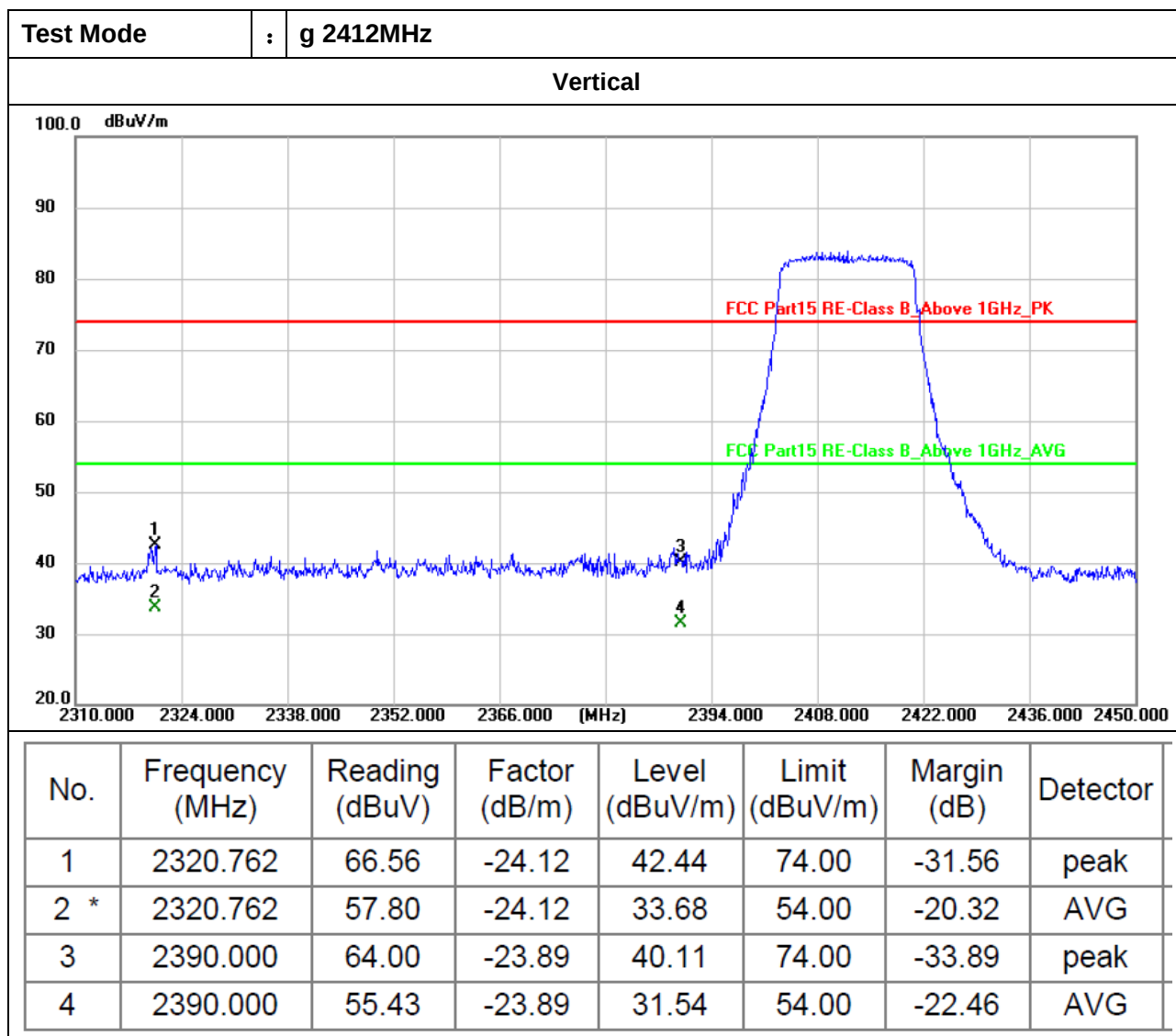


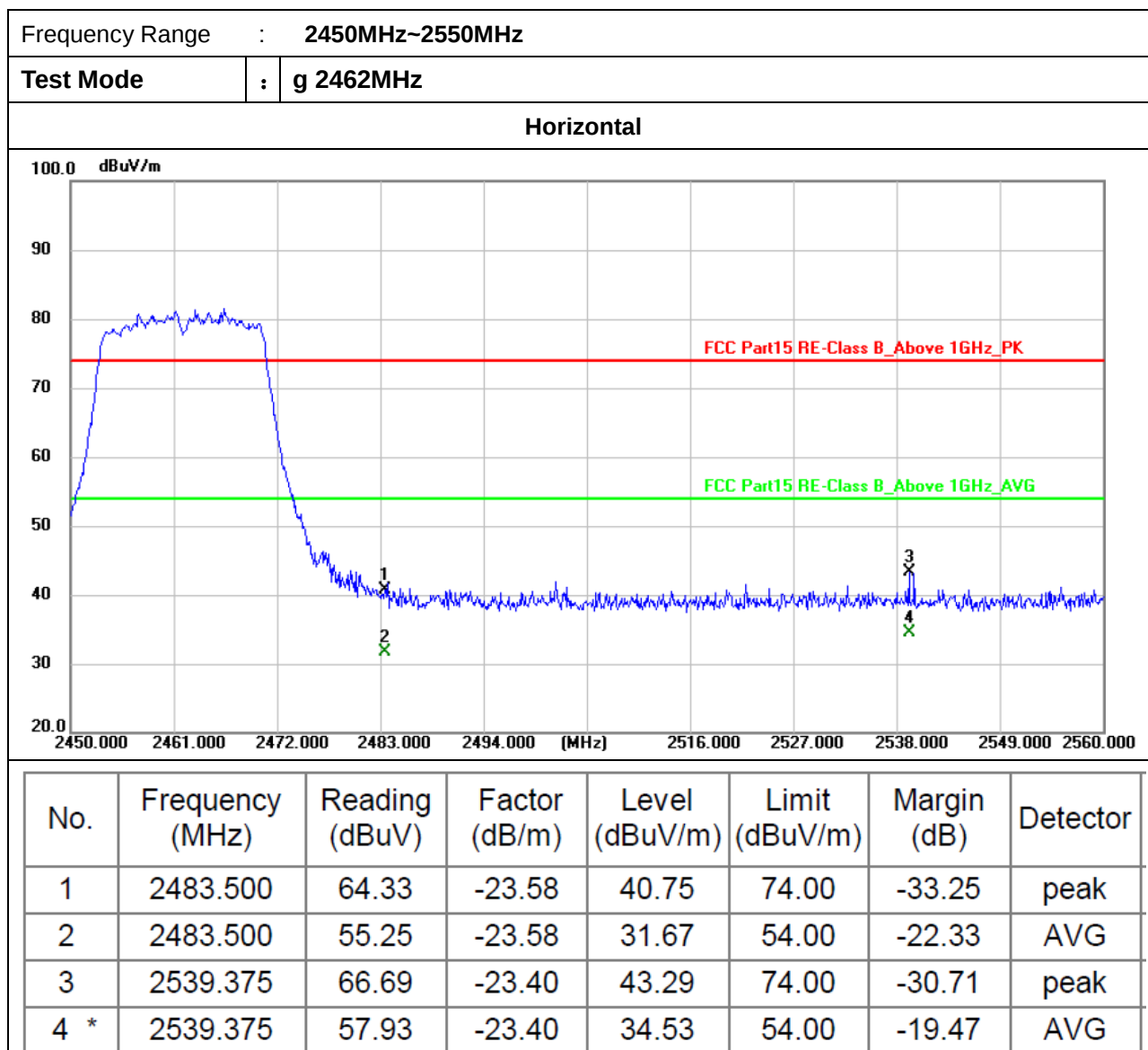


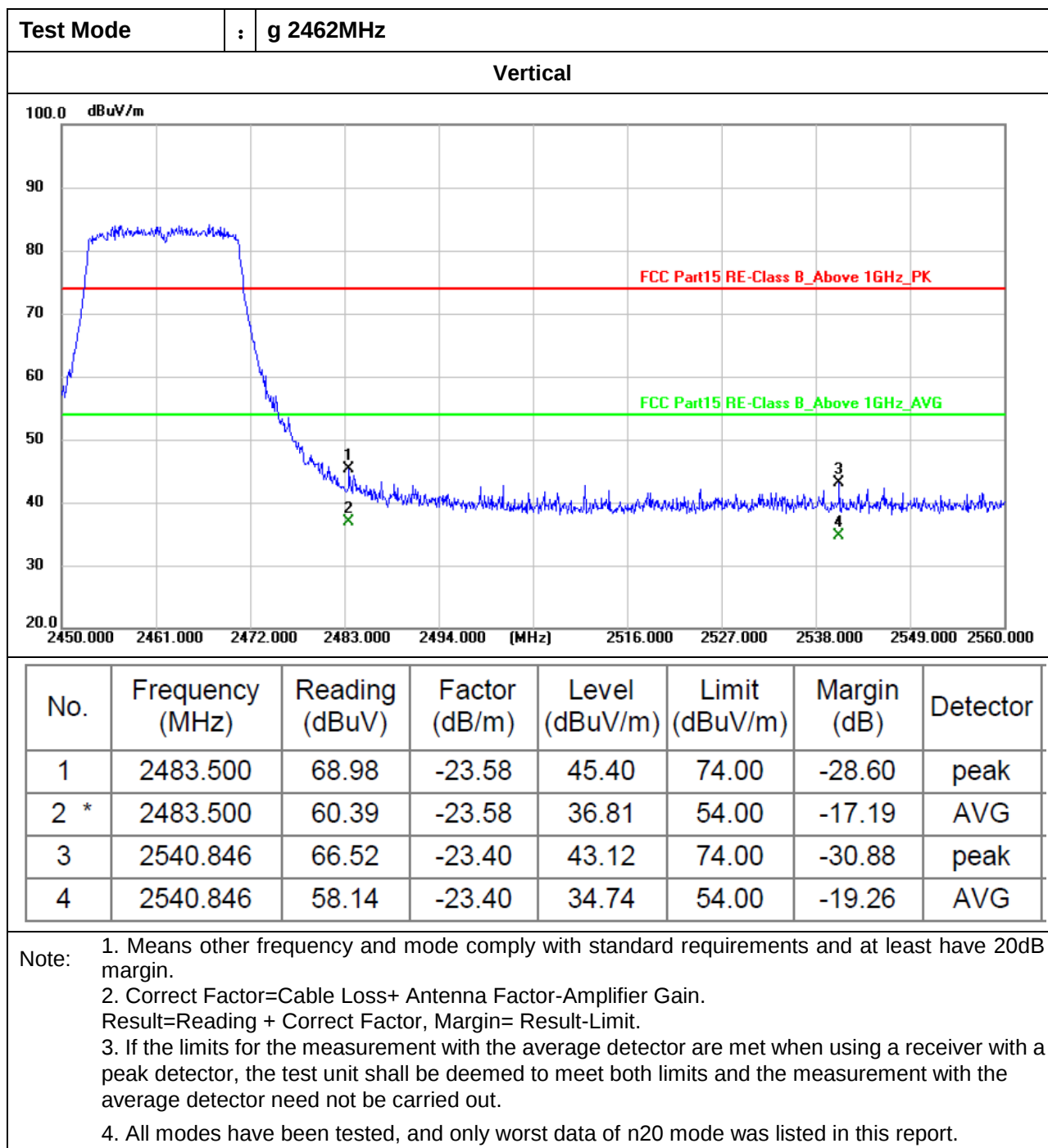












10. Antenna Requirement

10.1. 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.

10.2. Results

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

11. Photos of test setup

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

12. Photos of EUT

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

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