



11G-Ant1-2437-PASS



11G-Ant1-2462-PASS



11N20SISO-Ant1-2412-PASS



11N20SISO-Ant1-2437-PASS



11N20SISO-Ant1-2462-PASS



11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2437-PASS



11N40SISO-Ant1-2452-PASS



10 Maximum conducted output power

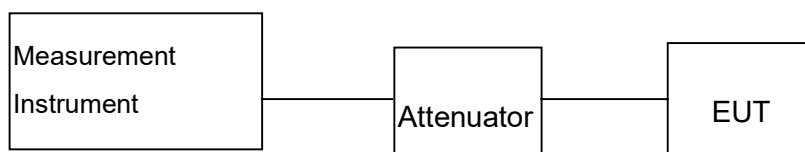
Test Requirement	:	FCC CFR47 Part 15 Section 15.247
Test Method	:	ANSI C63.10-2020
Test Limit	:	Regulation 15.247 (b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power.

10.1 Test Procedure

According to ANSI C63.10-2020 clause 11.9.2.2.4 Method AVGSA-2
Method AVGSA-2 uses trace averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:

- a) Measure the duty cycle D of the transmitter output signal as described in 11.6.
- b) Set span to >1.5 times the OBW.
- c) Set RBW = 1% to 5% of the OBW, but do not exceed 1 MHz.
- d) Set VBW $\geq [3 \times \text{RBW}]$.
- e) Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- f) Sweep time = auto.
- g) Detector = Power averaging (rms), if available. Otherwise, use the sample detector mode.
- h) Do not use sweep triggering. Allow the sweep to “free run.”
- i) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 until trace is stabilized so that the average accurately represents the true average over the ON and OFF periods of the transmitter.
- j) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band-power measurement function with band limits set equal to the OBW band-edges. If the instrument does not have a band-power function, then sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
- k) Add $[10 \log (1 / D)]$, where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission). For example, add $[10 \log (1/0.25)] = 6 \text{ dB}$ if the duty cycle is 25%.

10.2 Test Setup

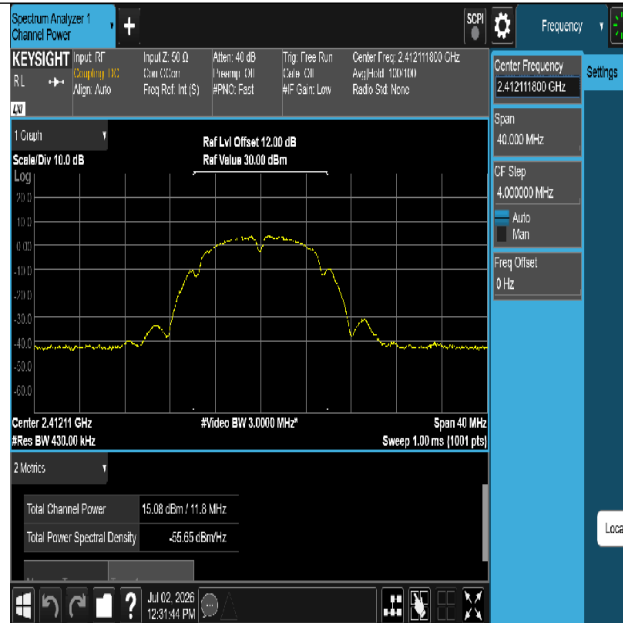




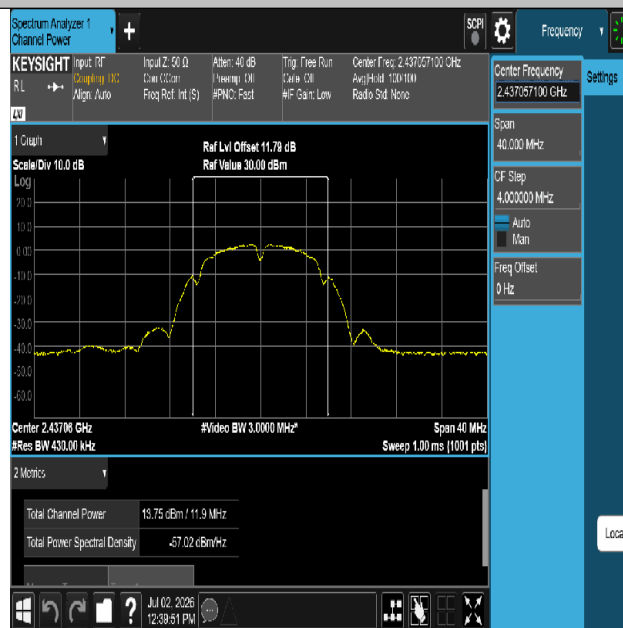
Report No.: PTC26052917301E-FC03

10.3 Test Result

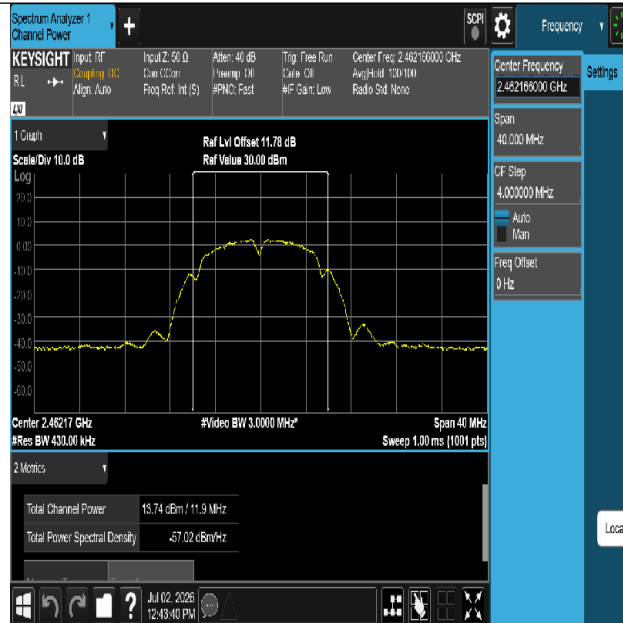
Test Mode	Antenna	Frequency[M Hz]	Set Power	Average power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	NA	15.08	100.00	0.00	15.08	≤30.00	PASS
11B	Ant1	2437	NA	13.75	100.00	0.00	13.75	≤30.00	PASS
11B	Ant1	2462	NA	13.74	100.00	0.00	13.74	≤30.00	PASS
11G	Ant1	2412	NA	13.42	100.00	0.00	13.42	≤30.00	PASS
11G	Ant1	2437	NA	12.51	100.00	0.00	12.51	≤30.00	PASS
11G	Ant1	2462	NA	12.18	100.00	0.00	12.18	≤30.00	PASS
11N20SISO	Ant1	2412	NA	13.70	100.00	0.00	13.70	≤30.00	PASS
11N20SISO	Ant1	2437	NA	12.82	100.00	0.00	12.82	≤30.00	PASS
11N20SISO	Ant1	2462	NA	12.34	100.00	0.00	12.34	≤30.00	PASS
11N40SISO	Ant1	2422	NA	14.20	100.00	0.00	14.20	≤30.00	PASS
11N40SISO	Ant1	2437	NA	12.74	100.00	0.00	12.74	≤30.00	PASS
11N40SISO	Ant1	2452	NA	13.43	100.00	0.00	13.43	≤30.00	PASS



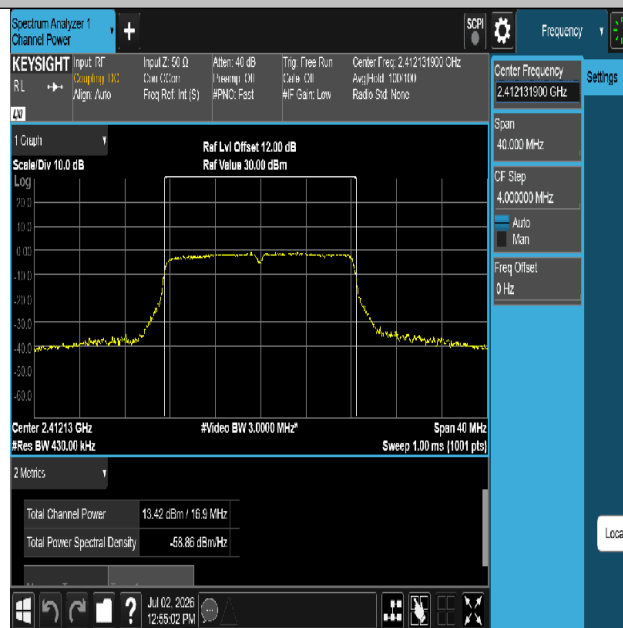
11B-Ant1-2412-PASS



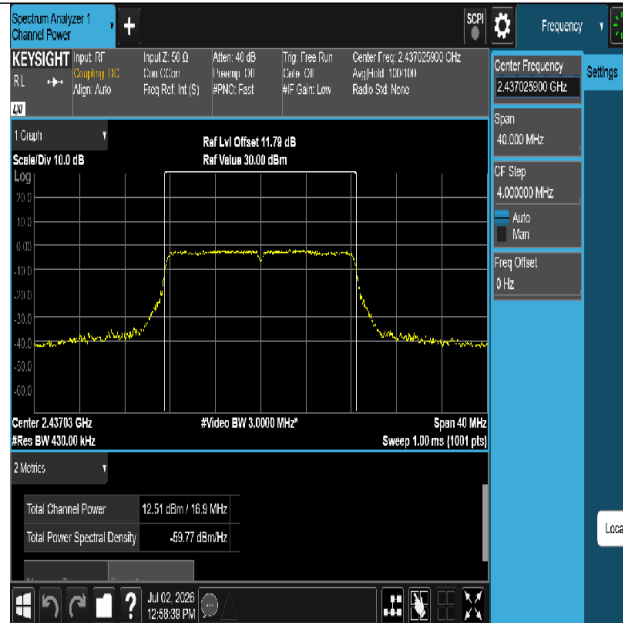
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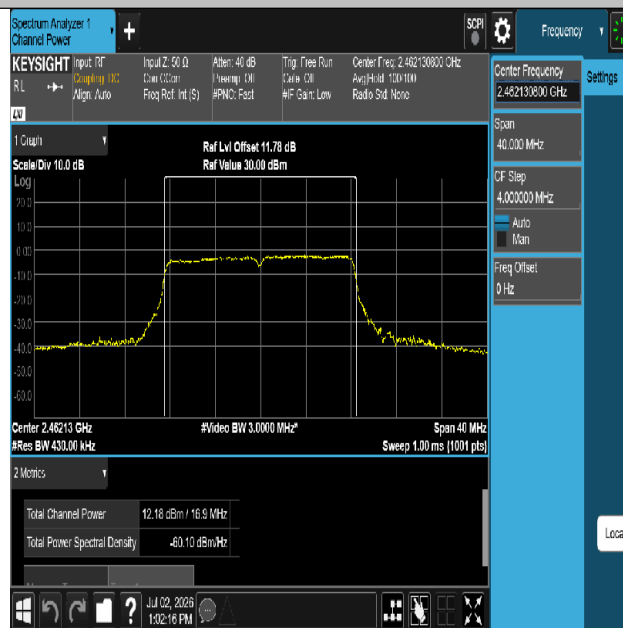
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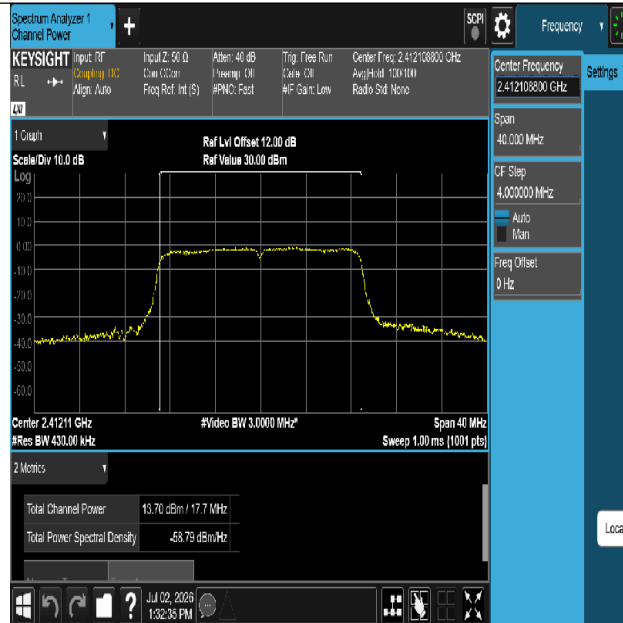
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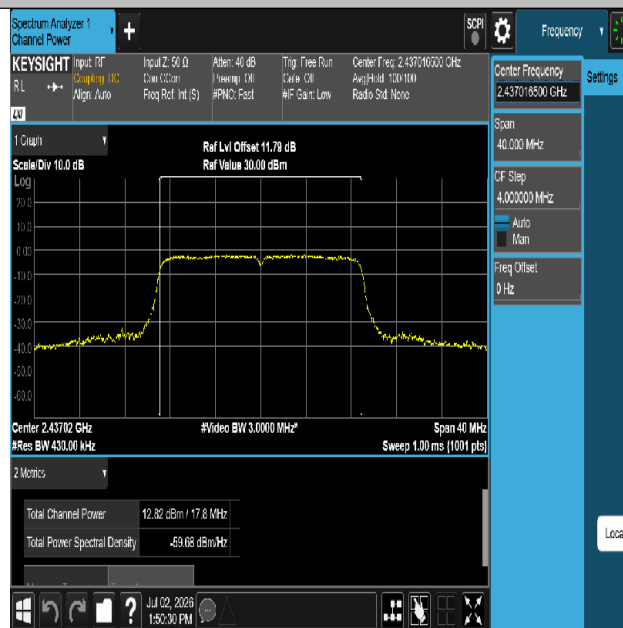
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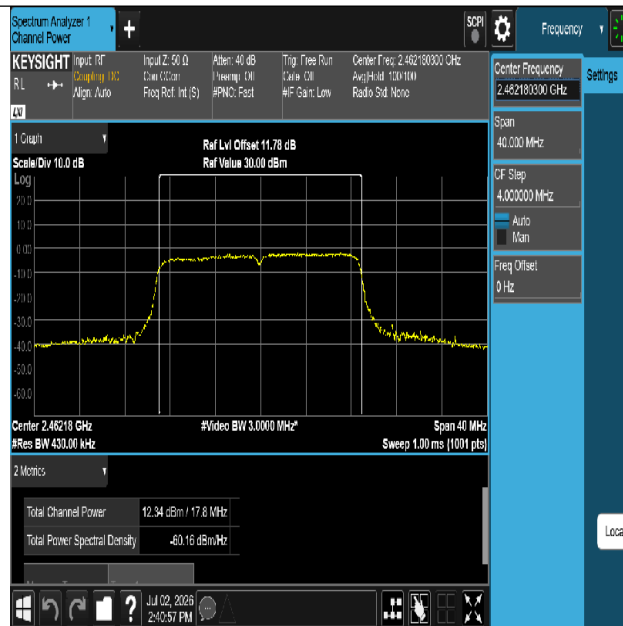
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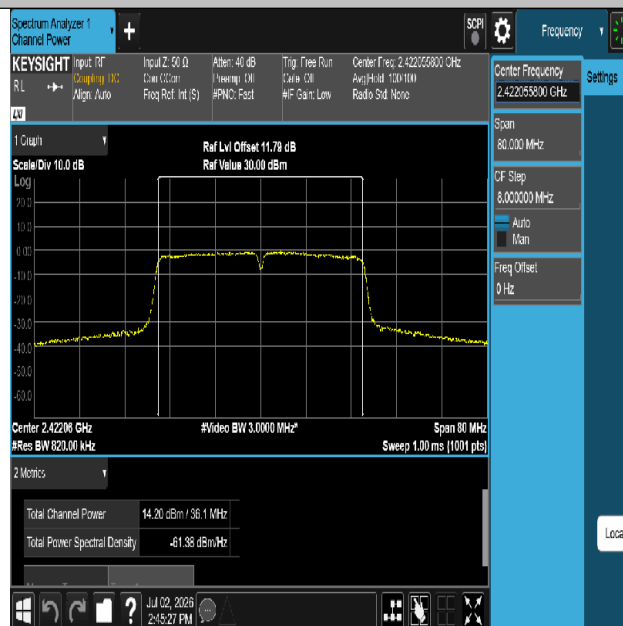
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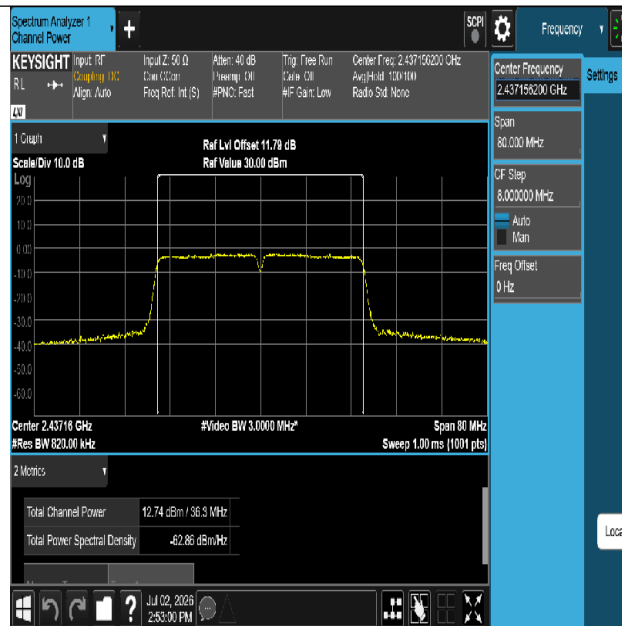
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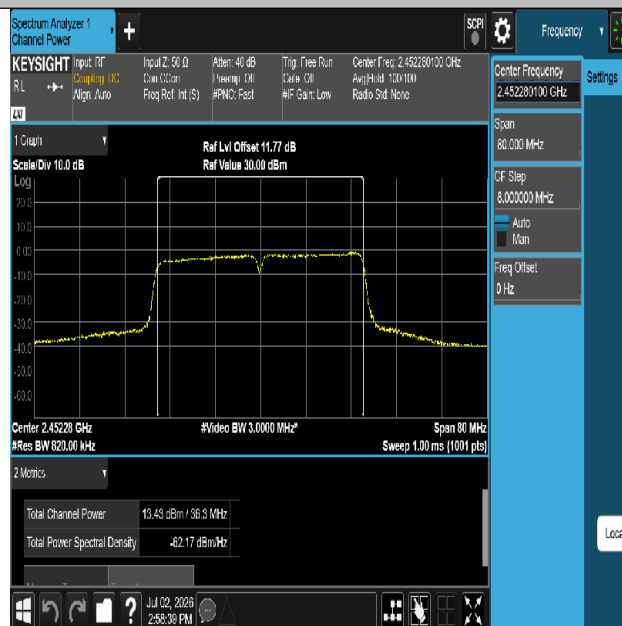
11N20SISO-Ant1-2462-PASS



11N40SISO-Ant1-2422-PASS



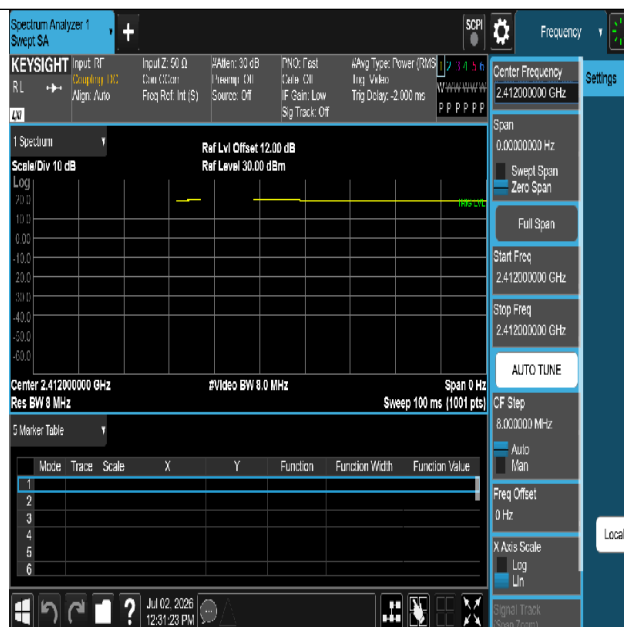
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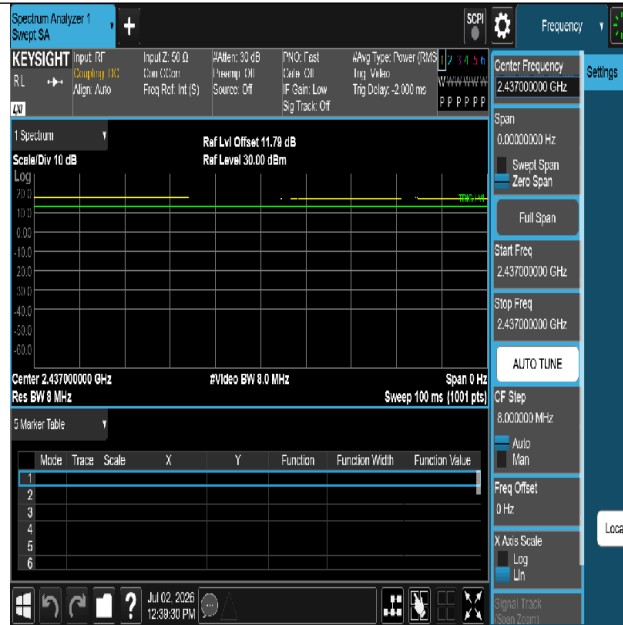
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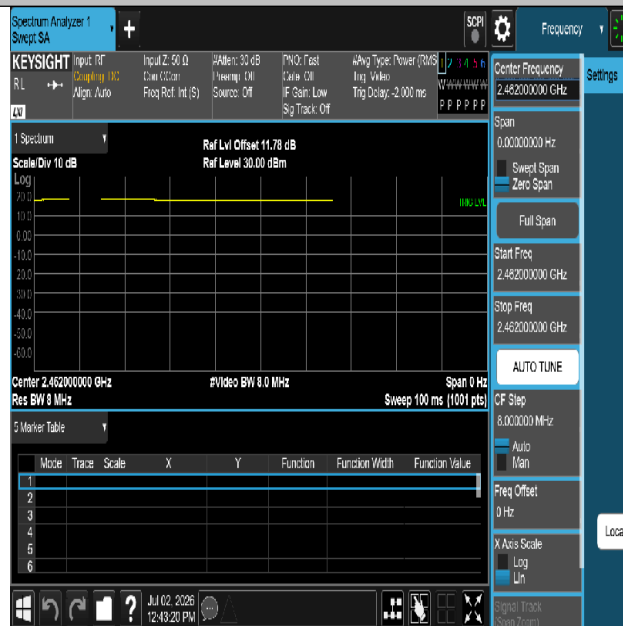
TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	100.00	100.00	100.00	0.00
11B	Ant1	2437	100.00	100.00	100.00	0.00
11B	Ant1	2462	100.00	100.00	100.00	0.00
11G	Ant1	2412	100.00	100.00	100.00	0.00
11G	Ant1	2437	100.00	100.00	100.00	0.00
11G	Ant1	2462	100.00	100.00	100.00	0.00
11N20SISO	Ant1	2412	100.00	100.00	100.00	0.00
11N20SISO	Ant1	2437	100.00	100.00	100.00	0.00
11N20SISO	Ant1	2462	100.00	100.00	100.00	0.00
11N40SISO	Ant1	2422	100.00	100.00	100.00	0.00
11N40SISO	Ant1	2437	100.00	100.00	100.00	0.00
11N40SISO	Ant1	2452	100.00	100.00	100.00	0.00



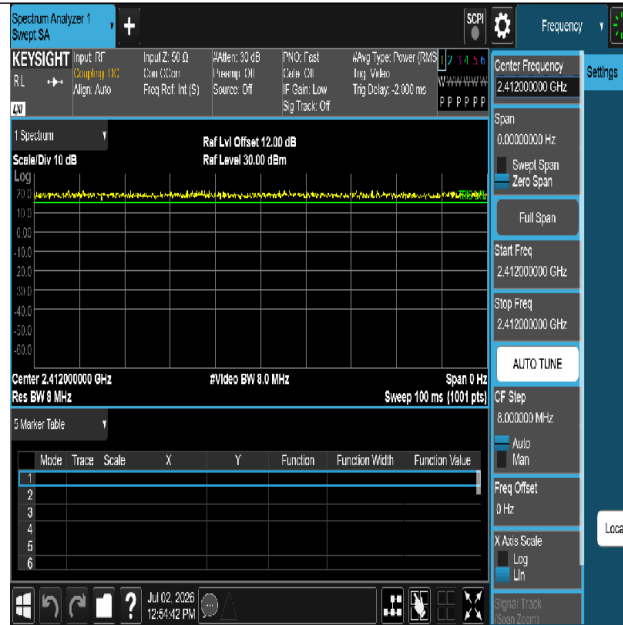
NTNV-11B-Ant1-2412



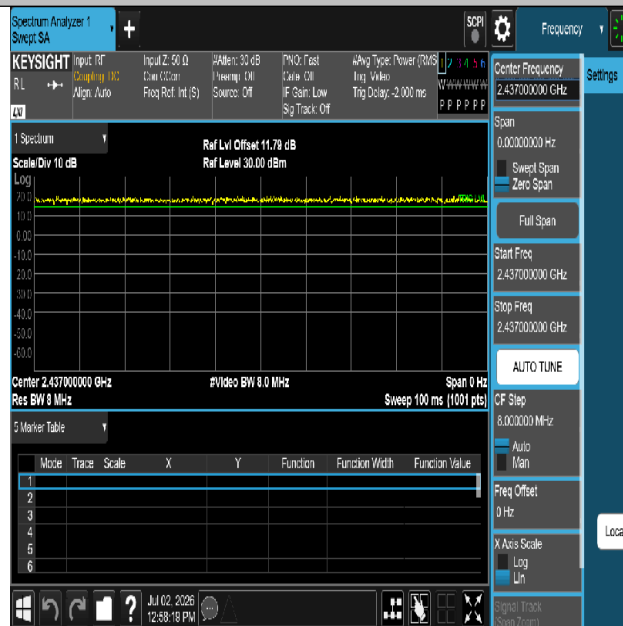
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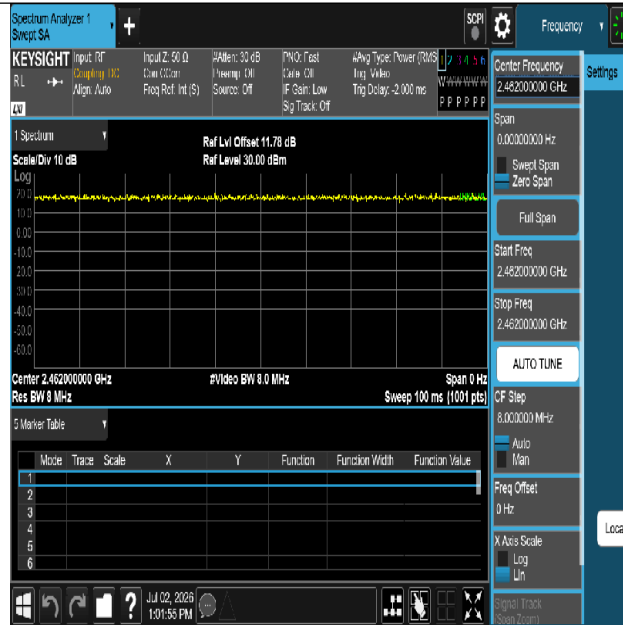
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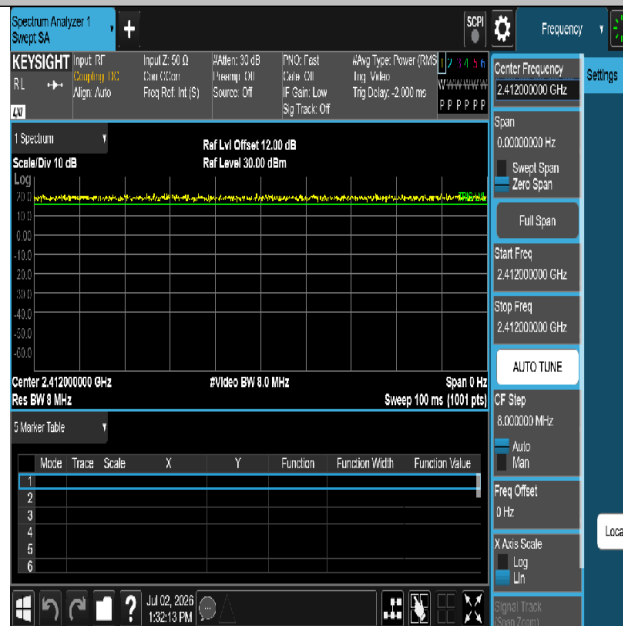
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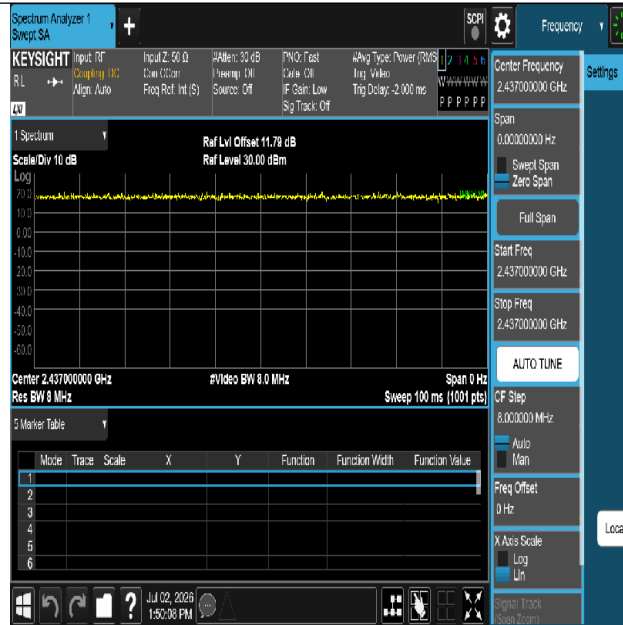
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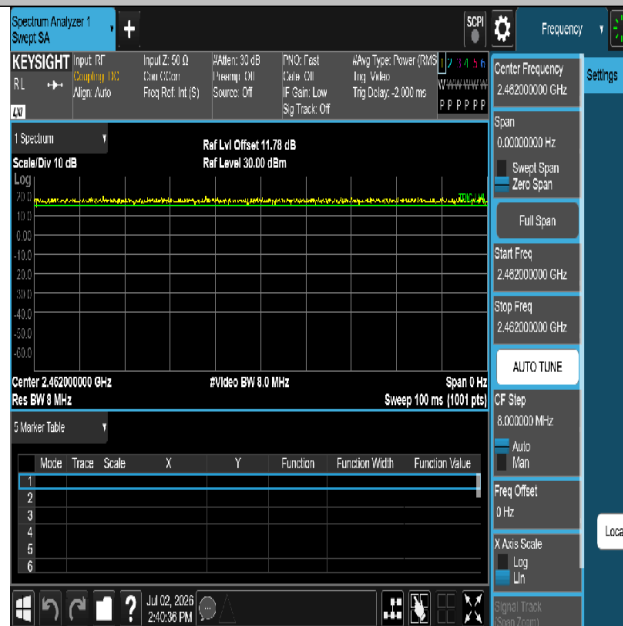
NTNV-11G-Ant1-2462



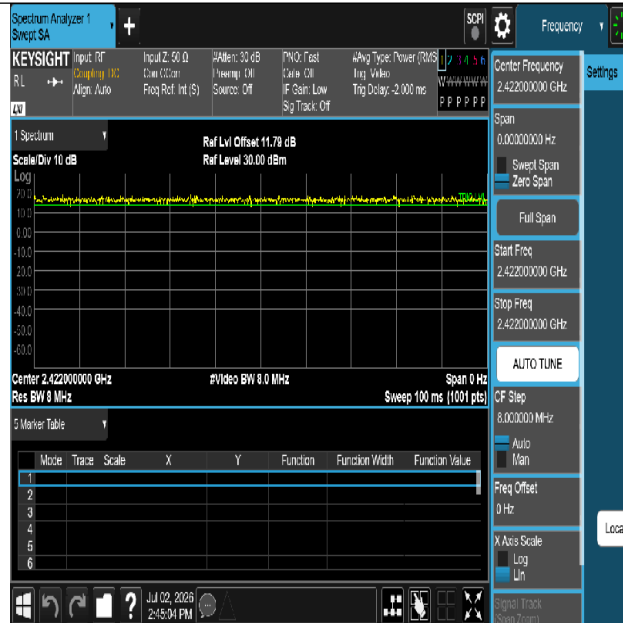
NTNV-11N20SISO-Ant1-2412



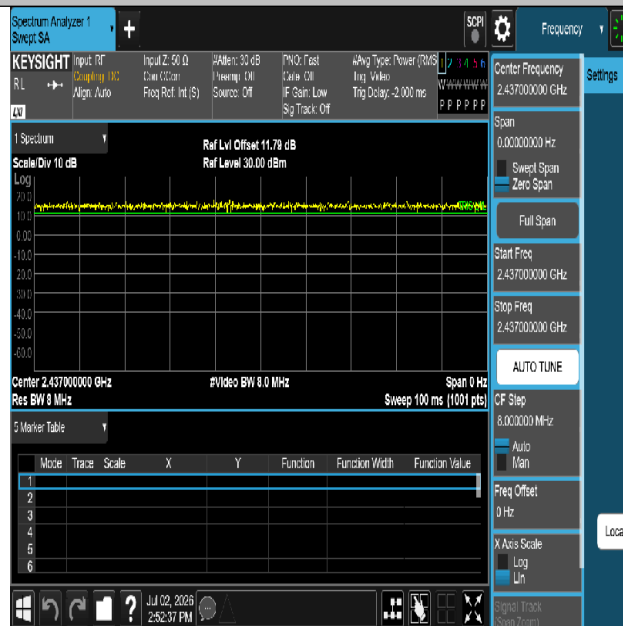
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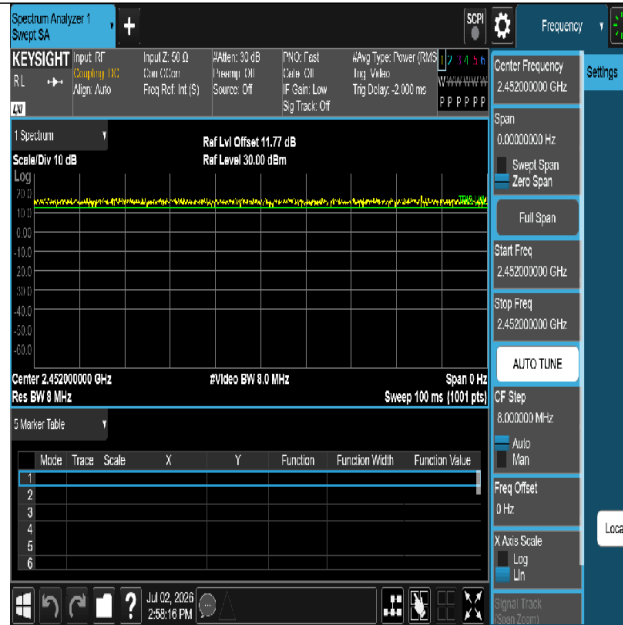
NTVN-11N20SISO-Ant1-2462



NTNV-11N40SISO-Ant1-2422



NTNV-11N40SISO-Ant1-2437



NTNV-11N40SISO-Ant1-2452



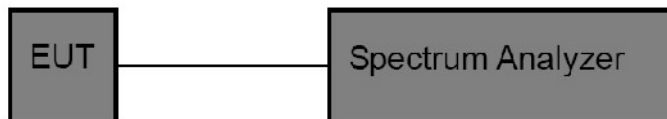
11 Power Spectral density

Test Requirement : FCC CFR47 Part 15 Section 15.247
Test Method : ANSI C63.10-2020
Test Limit : Regulation 15.247(e) The power spectral density conducted from the intentional radiator to the antenna due to the digital modulation operation of the hybrid system, with the frequency hopping operation turned off, shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

11.1 Test Procedure

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Configure the spectrum analyzer as shown below:
Center frequency=DTS channel center frequency
Span = 1.5 times the DTS bandwidth
RBW = 3KHz, VBW = 10KHz
Sweep time = auto couple
Detector = peak
Trace mode =max hold
3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter wave form on the spectrum analyzer.
4. Use the peak marker function to determine the maximum amplitude level within the RBW.
5. If measured value exceeds limit, reduce RBW(no less than 3KHz) and repeat.

11.2 Test Setup

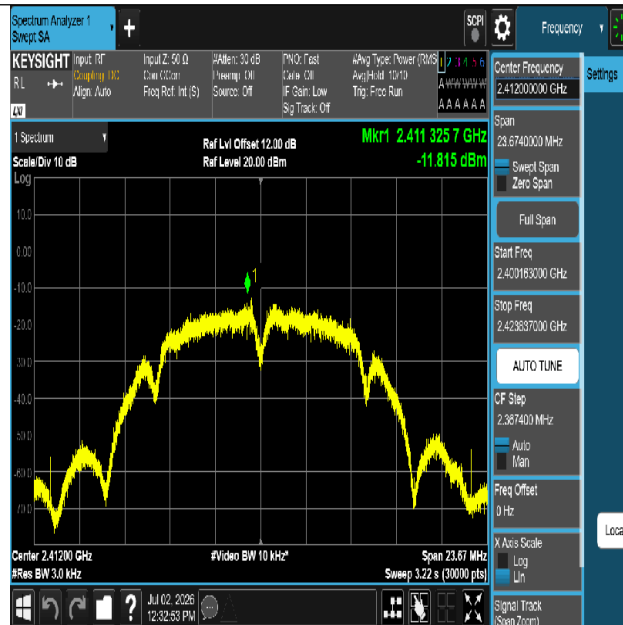


11.3 Test Result

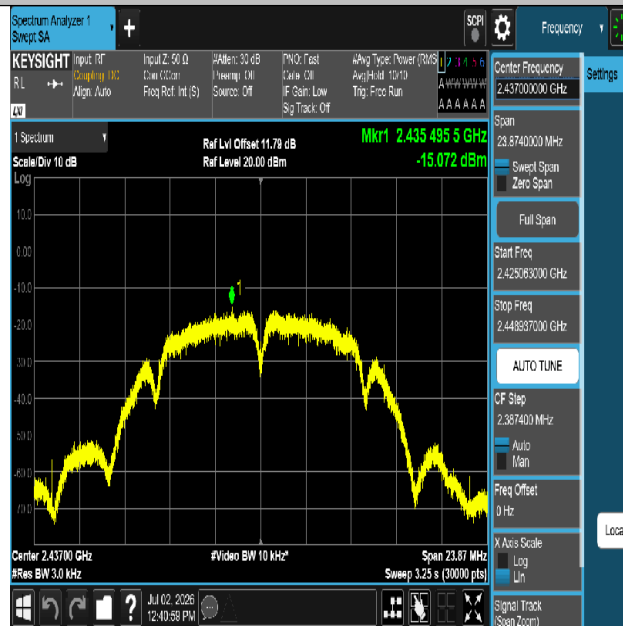
TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-11.82	≤8.00	PASS
11B	Ant1	2437	-15.07	≤8.00	PASS
11B	Ant1	2462	-15.36	≤8.00	PASS
11G	Ant1	2412	-18.55	≤8.00	PASS
11G	Ant1	2437	-19.23	≤8.00	PASS
11G	Ant1	2462	-20.02	≤8.00	PASS
11N20SISO	Ant1	2412	-18.29	≤8.00	PASS
11N20SISO	Ant1	2437	-18.80	≤8.00	PASS
11N20SISO	Ant1	2462	-19.61	≤8.00	PASS
11N40SISO	Ant1	2422	-18.57	≤8.00	PASS
11N40SISO	Ant1	2437	-21.64	≤8.00	PASS
11N40SISO	Ant1	2452	-20.85	≤8.00	PASS



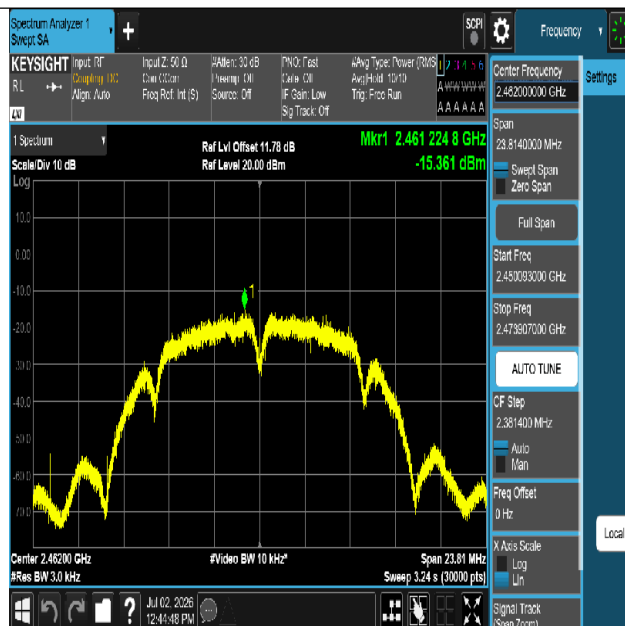
Test Graphs:



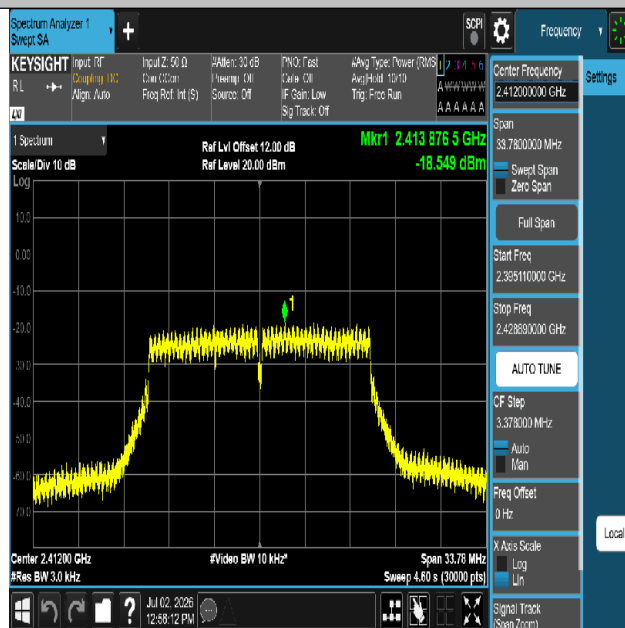
11B-Ant1-2412-PASS



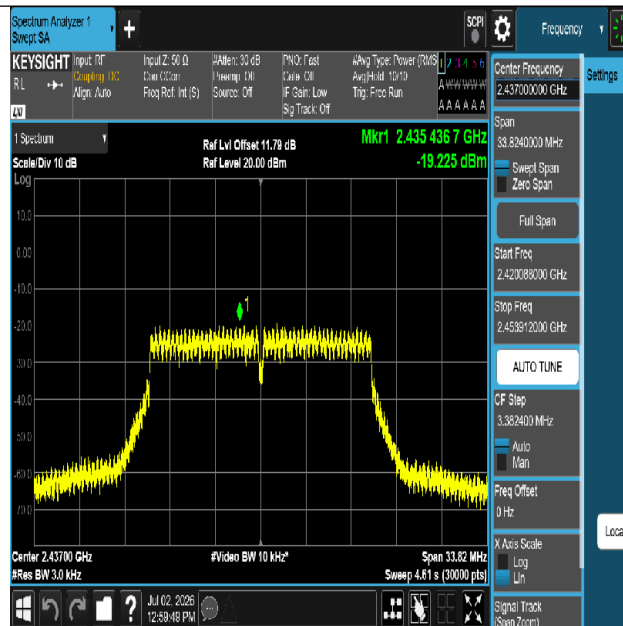
11B-Ant1-2437-PASS



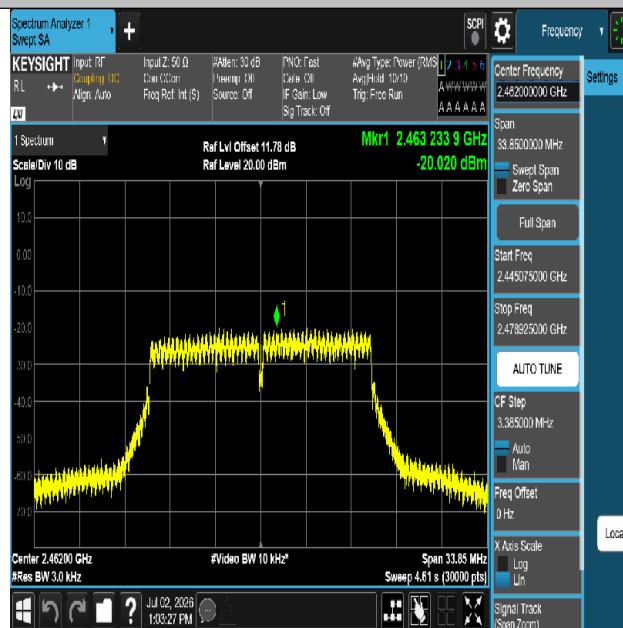
11B-Ant1-2462-PASS



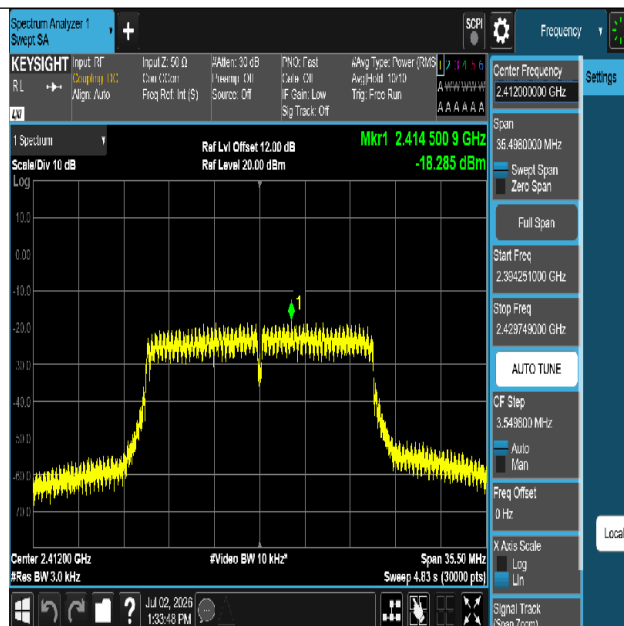
11G-Ant1-2412-PASS



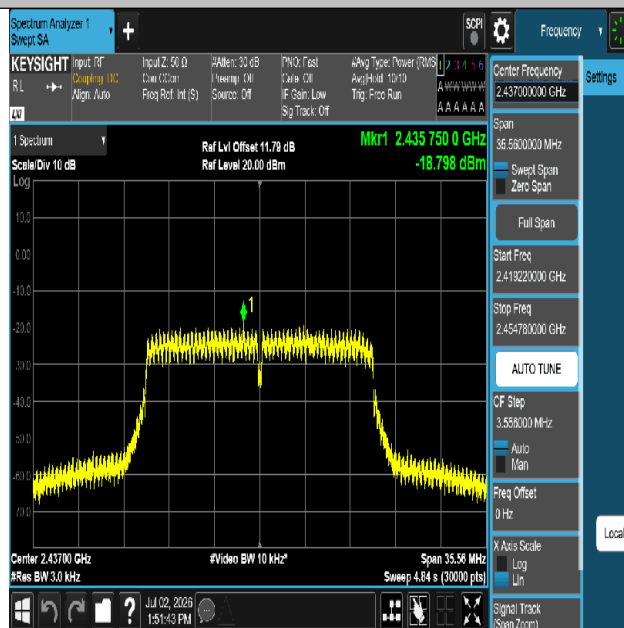
11G-Ant1-2437-PASS



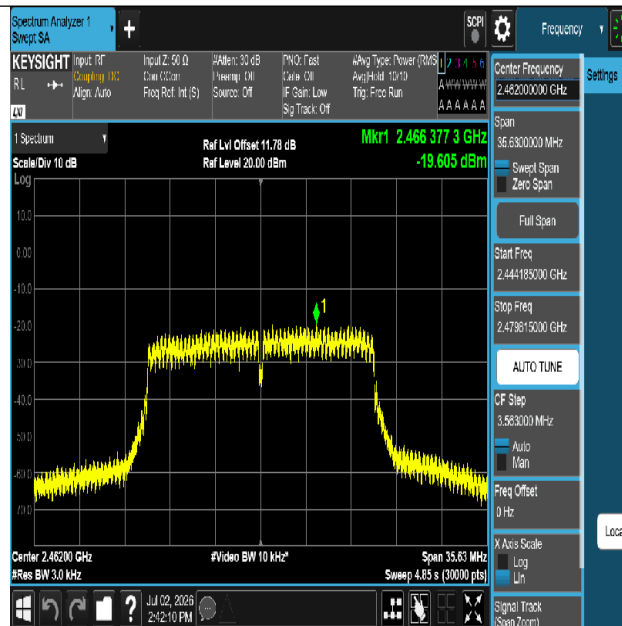
11G-Ant1-2462-PASS



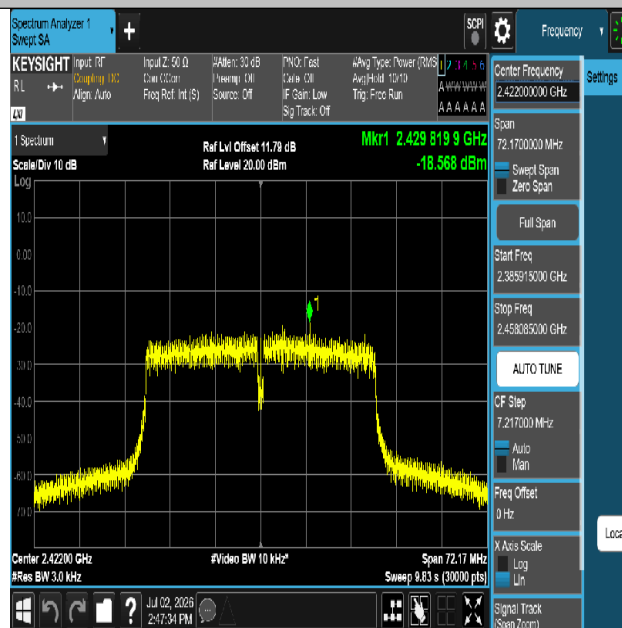
11N20SISO-Ant1-2412-PASS



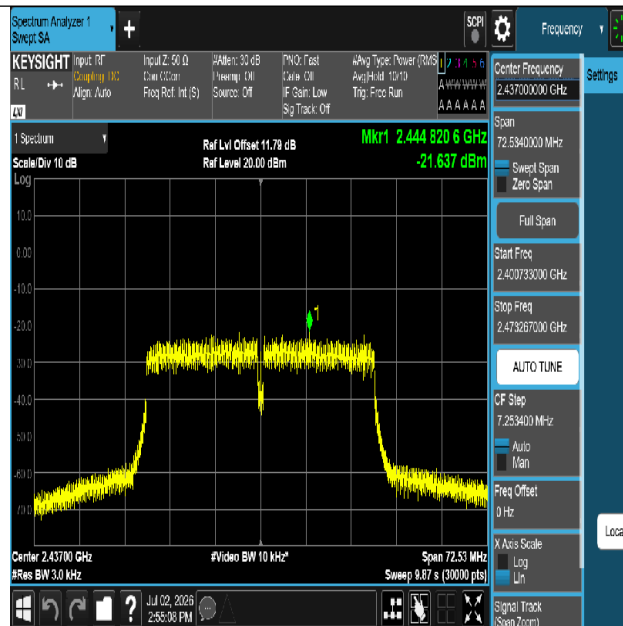
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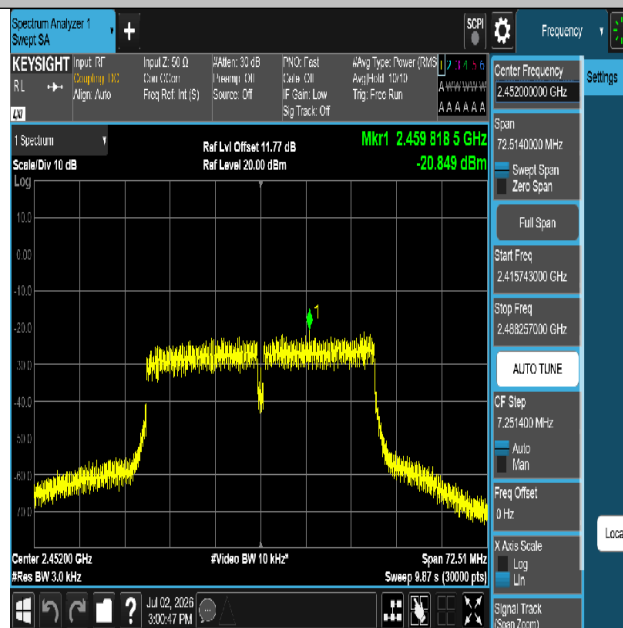
11N20SISO-Ant1-2462-PASS



11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2437-PASS



11N40SISO-Ant1-2452-PASS



12 Antenna Application

12.1 Antenna Requirement

For intentional device, according to FCC 47 CFR Section 15.203, 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

12.2 Result

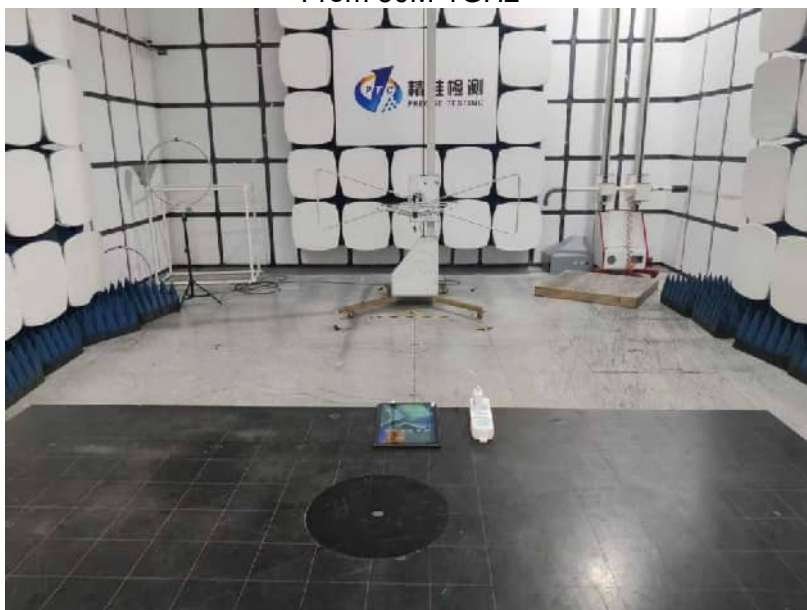
The EUT'S antenna, permanent attached antenna, is FPC Antenna. The antenna's gain is 2.16 dBi and meets the requirement.

13 Test Setup

Conducted Emissions



Radiated Emissions
From 30M-1GHz



Above 1GHz





Report No.: PTC26052917301E-FC03

14 EUT PHOTOS

please reference file "EUT photos"

*****THE END REPORT*****