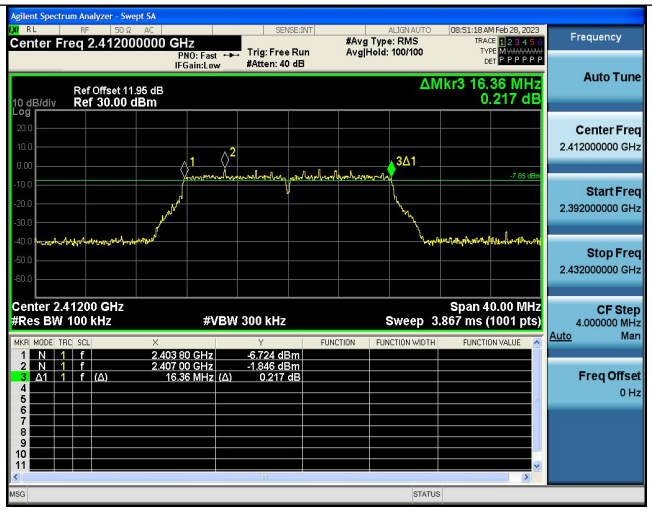
11B-Ant1-2437

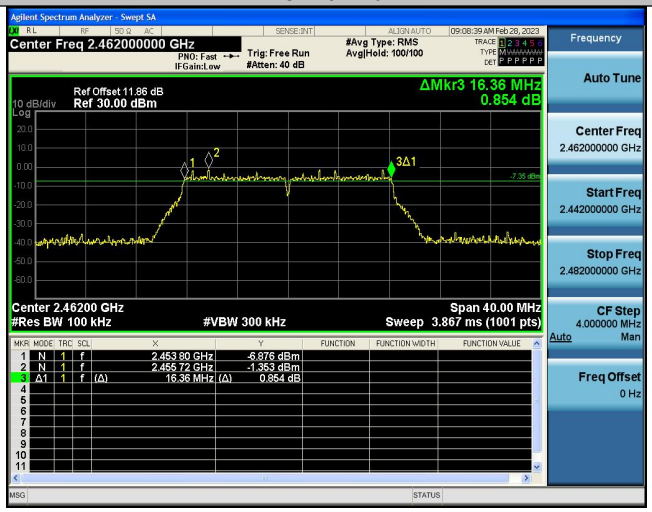
11B-Ant1-2462

11G-Ant1-2412

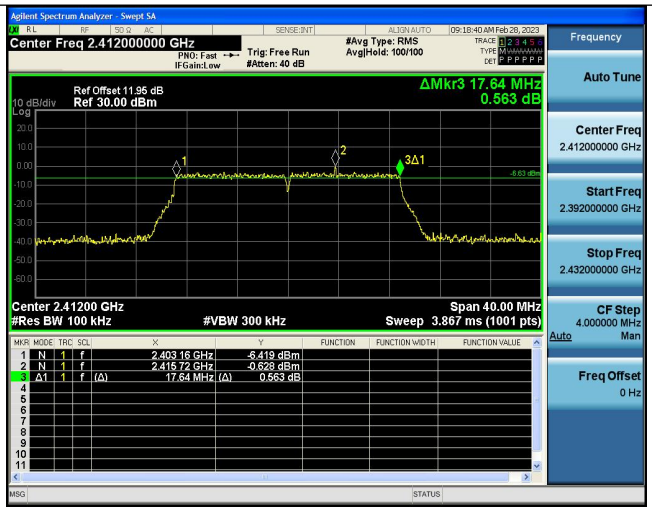


11G-Ant1-2437

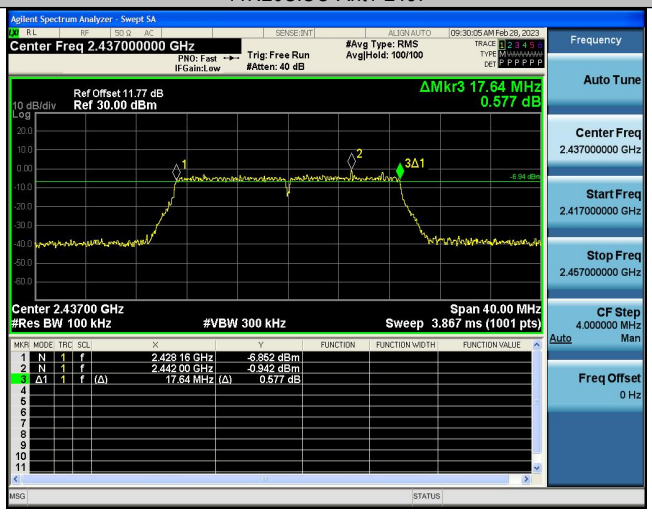
11G-Ant1-2462



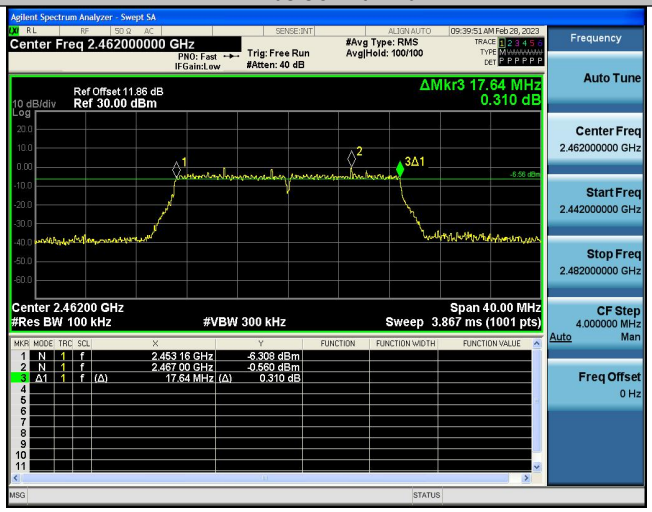
11N20SISO-Ant1-2412



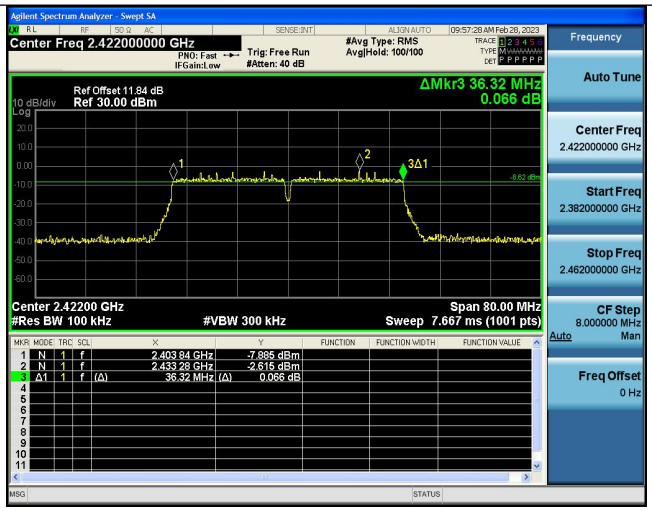
11N20SISO-Ant1-2437



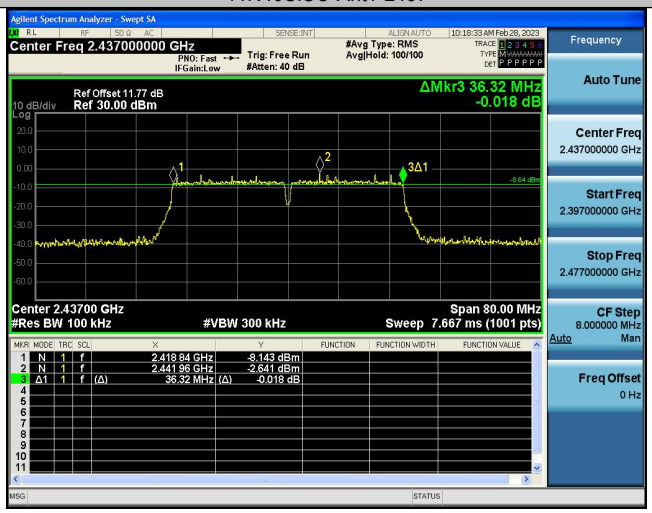
11N20SISO-Ant1-2462



11N40SISO-Ant1-2422



11N40SISO-Ant1-2437



11N40SISO-Ant1-2452

Occupied Channel Bandwidth

TestMode	Antenna	Channel Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	15.335	2404.3182	2419.6532	---	---
11B	Ant1	2437	15.316	2429.3314	2444.6474	---	---
11B	Ant1	2462	15.421	2454.2714	2469.6924	---	---
11G	Ant1	2412	17.251	2403.3469	2420.5979	---	---
11G	Ant1	2437	17.243	2428.3710	2445.6140	---	---
11G	Ant1	2462	17.329	2453.3316	2470.6606	---	---
11N20SISO	Ant1	2412	18.198	2402.8639	2421.0619	---	---
11N20SISO	Ant1	2437	18.196	2427.9062	2446.1022	---	---
11N20SISO	Ant1	2462	18.239	2452.8699	2471.1089	---	---
11N40SISO	Ant1	2422	36.650	2403.6765	2440.3265	---	---
11N40SISO	Ant1	2437	36.670	2418.6723	2455.3423	---	---
11N40SISO	Ant1	2452	36.711	2433.6670	2470.3780	---	---

11B-Ant1-2412

11B-Ant1-2437

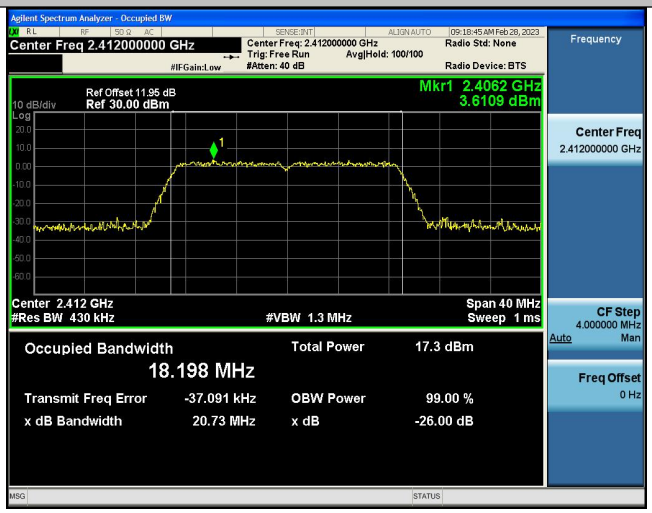
11B-Ant1-2462

11G-Ant1-2412

11G-Ant1-2437

11G-Ant1-2462

11N20SISO-Ant1-2412

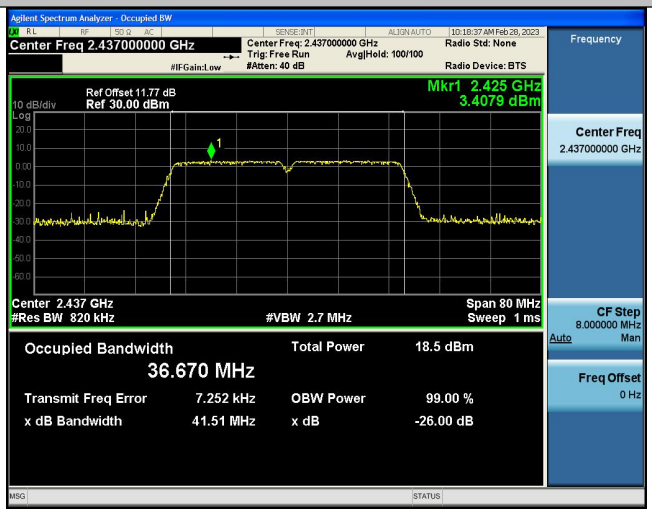


11N20SISO-Ant1-2437

11N20SISO-Ant1-2462

11N40SISO-Ant1-2422

11N40SISO-Ant1-2437



11N40SISO-Ant1-2452


Agilent Spectrum Analyzer - Occupied BW
Center Freq 2.452000000 GHz
Center Freq: 2.452000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#Atten: 40 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
10:35:34 AM Feb 28, 2023
Ref Offset 11.96 dB
10 dB/div
Ref 30.00 dBm
Mkr1 2.44624 GHz
4.3609 dBm
Center 2.452 GHz
#Res BW 820 kHz
#VBW 2.7 MHz
Span 80 MHz
Sweep 1 ms
Occupied Bandwidth
36.711 MHz
Total Power 18.8 dBm
Transmit Freq Error 22.467 kHz
OBW Power 99.00 %
x dB Bandwidth 41.27 MHz
x dB -26.00 dB
Frequency
Center Freq
2.452000000 GHz
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

10 Maximum Peak Output Power

Test Requirement : FCC CFR47 Part 15 Section 15.247

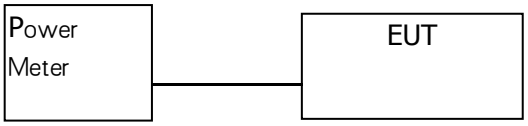
Test Method : ANSI C63.10:2013

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

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 D01 15.247 Meas Guidance v05 section 8.3.1.
2. The RF output of EUT was connected to the spectrum by RF cable . The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

5.Set up:



10.2 Test Result

TestMode	Antenna	Frequency[MHz]	Set Power	Peak Powert[dBm]	Conducted Limit[dBm]	EIRP [dBm]	EIRP Limit[dBm]	Verdict
11B	Ant1	2412	---	13.98	≤30.00	17.59	≤36.00	PASS
11B	Ant1	2437	---	13.81	≤30.00	17.42	≤36.00	PASS
11B	Ant1	2462	---	13.66	≤30.00	17.27	≤36.00	PASS
11G	Ant1	2412	---	17.06	≤30.00	20.06	≤36.00	PASS
11G	Ant1	2437	---	17.18	≤30.00	20.79	≤36.00	PASS
11G	Ant1	2462	---	17.12	≤30.00	20.73	≤36.00	PASS
11N20SISO	Ant1	2412	---	18.64	≤30.00	22.25	≤36.00	PASS
11N20SISO	Ant1	2437	---	18.48	≤30.00	22.09	≤36.00	PASS
11N20SISO	Ant1	2462	---	18.48	≤30.00	22.09	≤36.00	PASS
11N40SISO	Ant1	2422	---	18.88	≤30.00	22.49	≤36.00	PASS
11N40SISO	Ant1	2437	---	18.79	≤30.00	22.40	≤36.00	PASS
11N40SISO	Ant1	2452	---	19.02	≤30.00	22.63	≤36.00	PASS

11 Power Spectral density

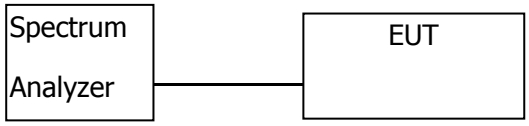
Test Requirement : FCC CFR47 Part 15 Section 15.247

Test Method : ANSI C63.10:2013

Test Limit : Regulation 15.247(f) 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

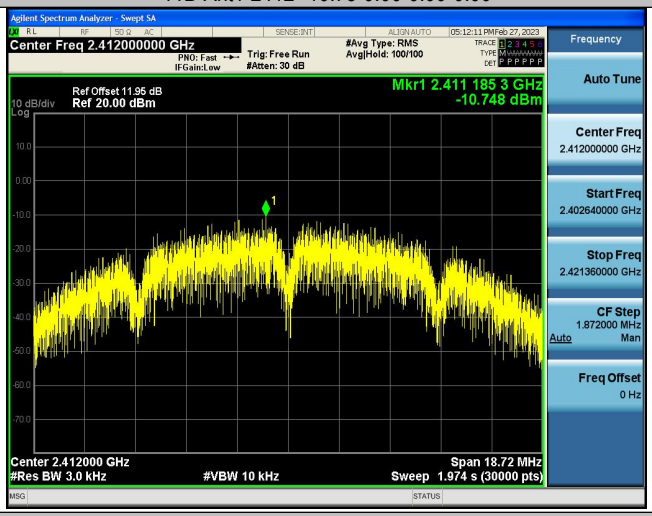
1. Connect the antenna port(s) to the spectrum analyzer input.
2. Configure the spectrum analyzer as shown below:
   Center frequency=DTS channel center frequency
   Span = 1.5 times the DTS bandwidth
   RBW = 3KHz, VBW = 10KHz
   Sweep time = auto couple
   Detector = peak
   Trace mode =max hold
3. 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.
6. Set up:



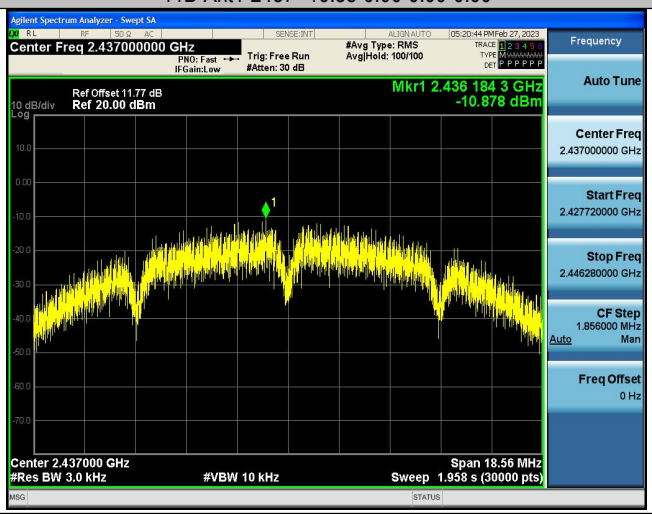
11.2 Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-10.75	≤8.00	PASS
11B	Ant1	2437	-10.88	≤8.00	PASS
11B	Ant1	2462	-10.95	≤8.00	PASS
11G	Ant1	2412	-16.48	≤8.00	PASS
11G	Ant1	2437	-15.49	≤8.00	PASS
11G	Ant1	2462	-16.63	≤8.00	PASS
11N20SISO	Ant1	2412	-15.87	≤8.00	PASS
11N20SISO	Ant1	2437	-15.84	≤8.00	PASS
11N20SISO	Ant1	2462	-15.28	≤8.00	PASS
11N40SISO	Ant1	2422	-17.04	≤8.00	PASS
11N40SISO	Ant1	2437	-17.62	≤8.00	PASS
11N40SISO	Ant1	2452	-17.34	≤8.00	PASS

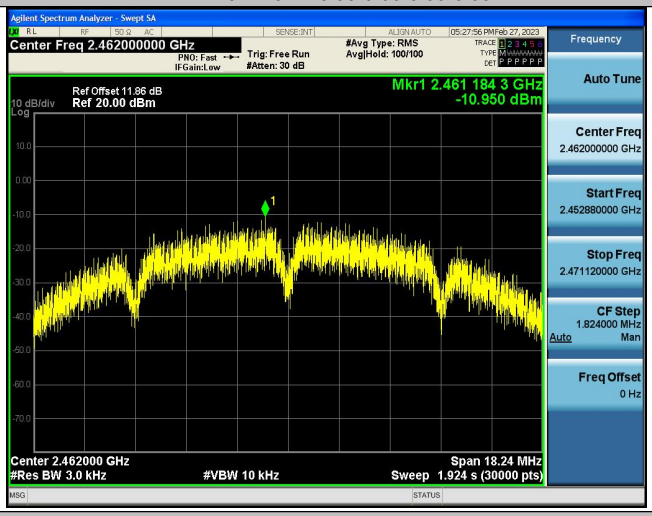
11B-Ant1-2412--10.75-0.00-0.00-0.00



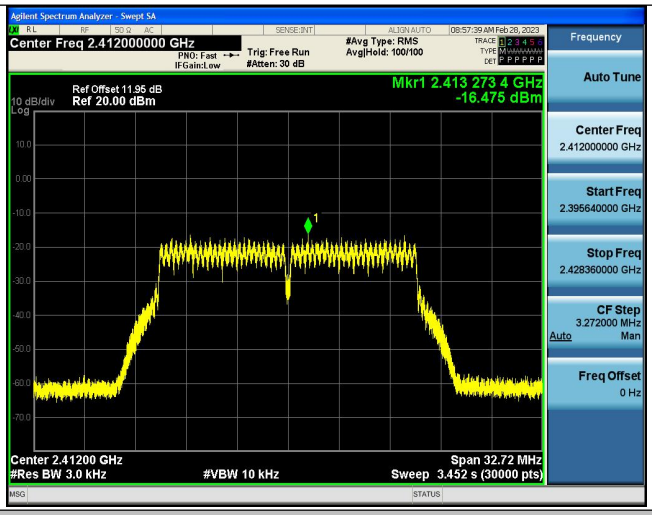
11B-Ant1-2437--10.88-0.00-0.00-0.00



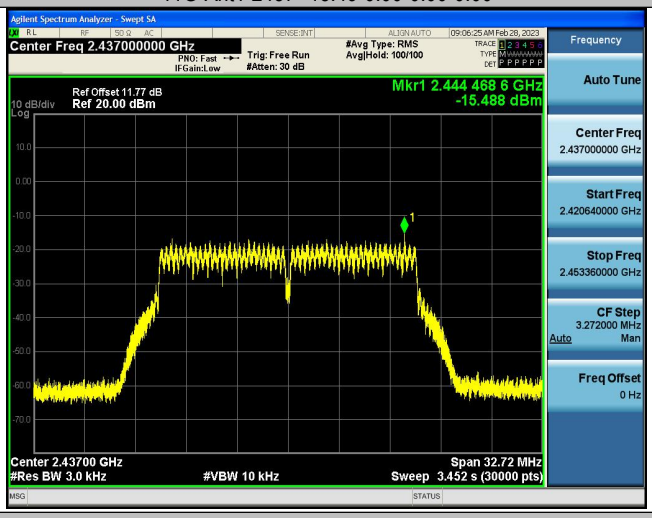
11B-Ant1-2462--10.95-0.00-0.00-0.00



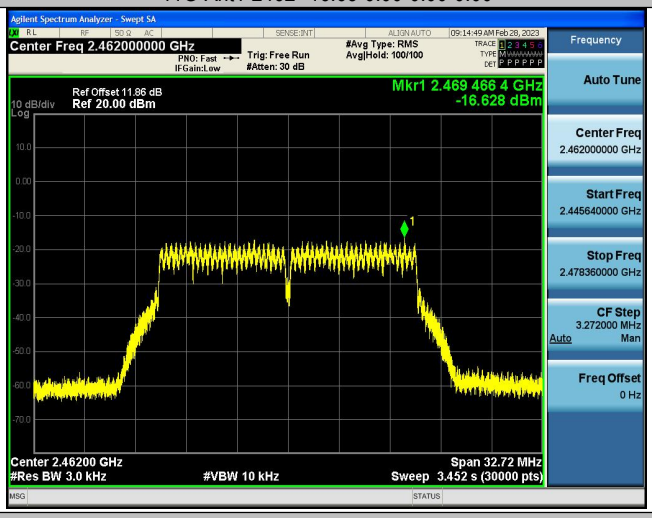
11G-Ant1-2412--16.48-0.00-0.00-0.00



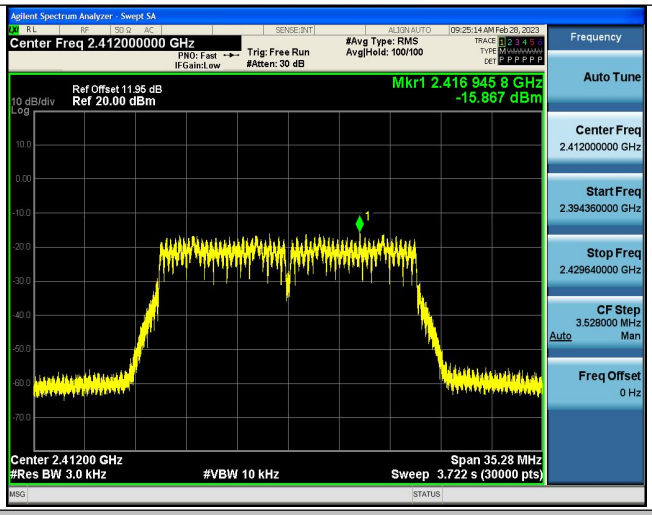
11G-Ant1-2437--15.49-0.00-0.00-0.00



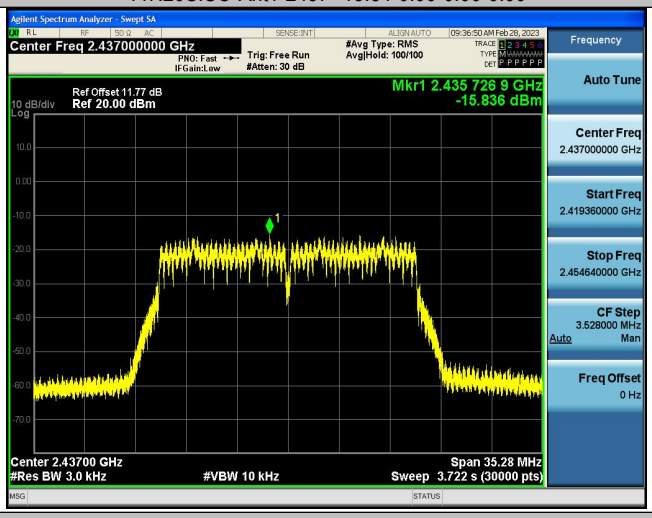
11G-Ant1-2462--16.63-0.00-0.00-0.00



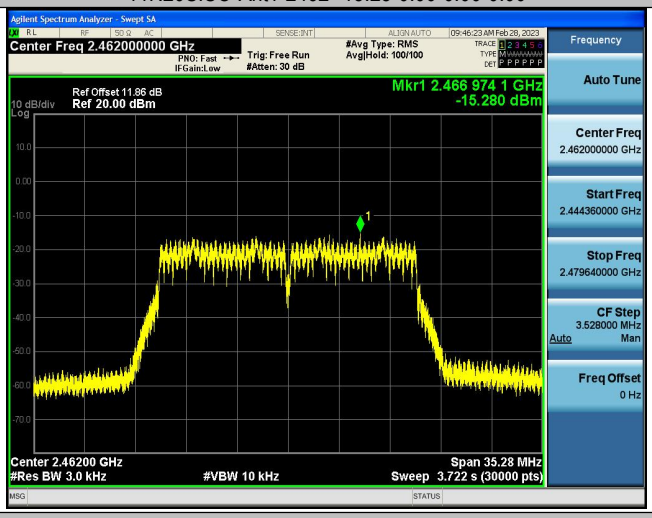
11N20SISO-Ant1-2412--15.87-0.00-0.00-0.00



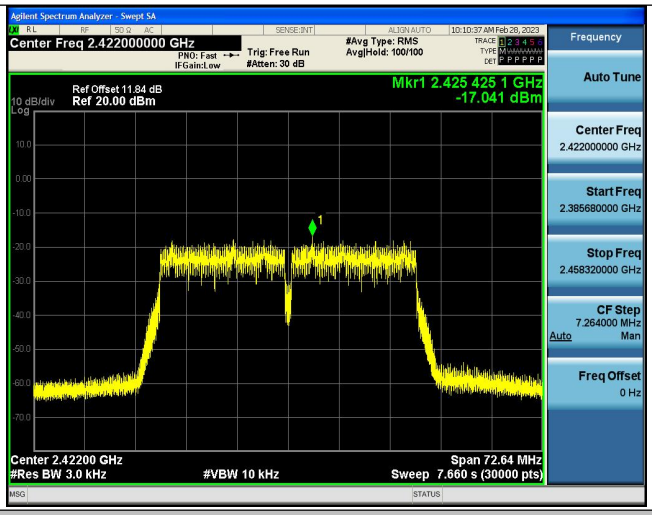
11N20SISO-Ant1-2437--15.84-0.00-0.00-0.00



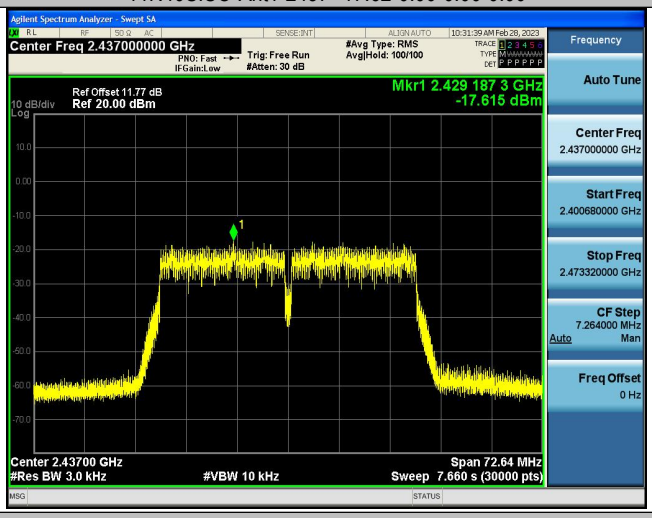
11N20SISO-Ant1-2462--15.28-0.00-0.00-0.00



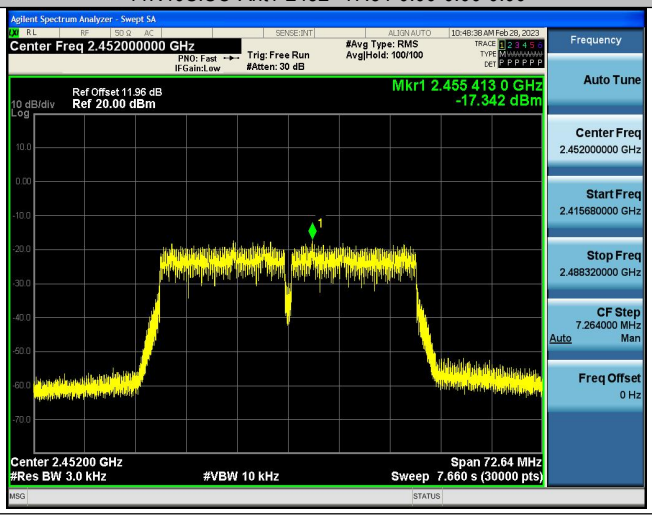
11N40SISO-Ant1-2422--17.04-0.00-0.00-0.00



11N40SISO-Ant1-2437--17.62-0.00-0.00-0.00



11N40SISO-Ant1-2452--17.34-0.00-0.00-0.00



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.

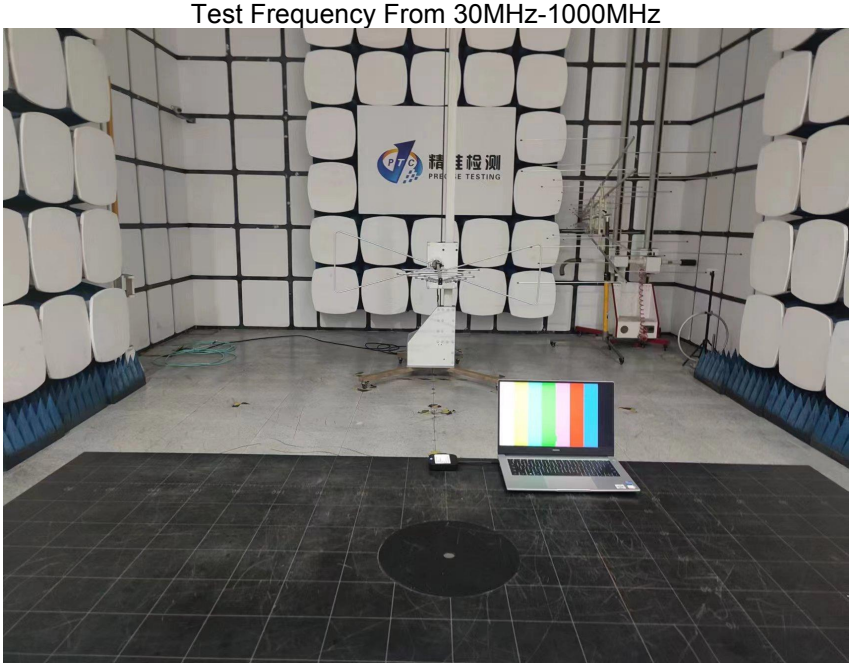
12.2 Result

The EUT'S antenna, permanent attached antenna, is Fpcb Antenna. The antenna's gain is 3.61dBi and meets the requirement.

13 Test Setup

Conduction Emissions

Radiated Spurious Emissions
Test Frequency From 30MHz-1000MHz



Test Frequency above 1G