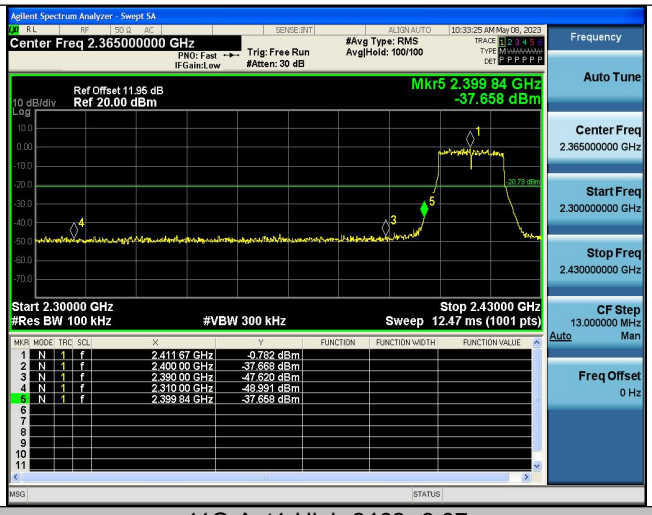
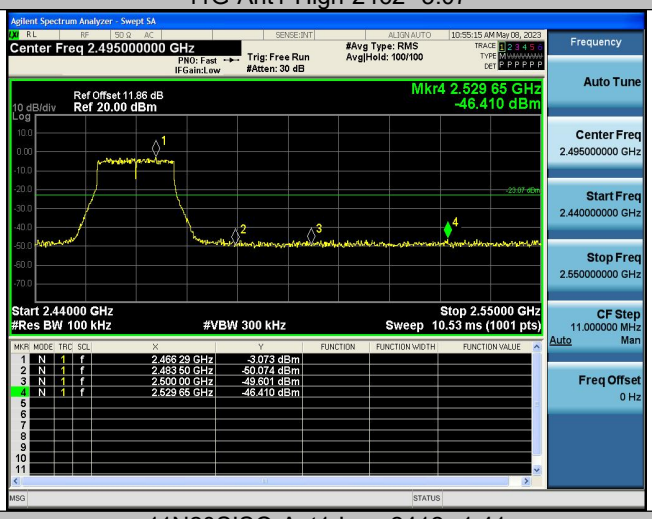
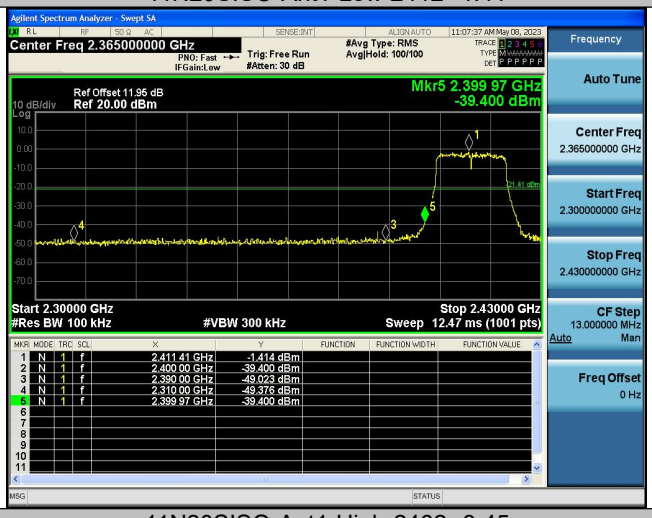


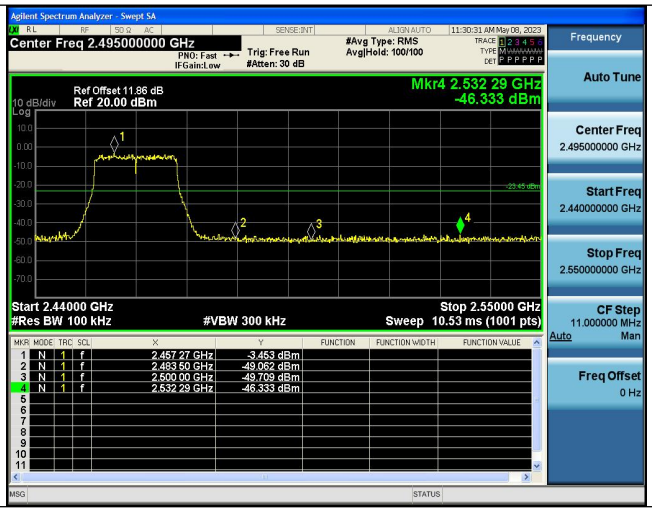
11G-Ant1-High-2462--3.07



11N20SISO-Ant1-Low-2412--1.41



11N20SISO-Ant1-High-2462--3.45


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.495000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 100/100
11:30:31 AM May 08, 2023
Ref Offset 11.86 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr4 2.532 29 GHz
-46.333 dBm
Start 2.44000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.55000 GHz
Sweep 10.53 ms (1001 pts)
1 N 1 f 2.457 27 GHz -3.453 dBm
2 N 1 f 2.483 50 GHz -49.062 dBm
3 N 1 f 2.500 00 GHz -49.709 dBm
4 N 1 f 2.532 29 GHz -46.333 dBm
Frequency
Auto Tune
Center Freq
2.495000000 GHz
Start Freq
2.440000000 GHz
Stop Freq
2.550000000 GHz
CF Step
11.000000 MHz
Auto
Man
Freq Offset
0 Hz

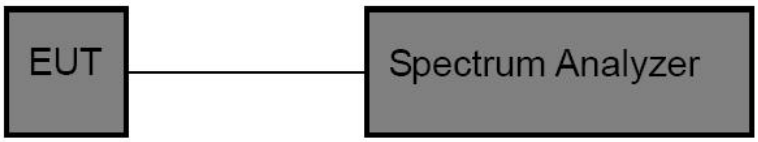
9 6dB Bandwidth Measurement

Test Requirement	:	FCC CFR47 Part 15 Section 15.247
Test Method	:	ANSI C63.10:2013
Test Limit		Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

9.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz

9.2 Test Setup



9.3 Test Result

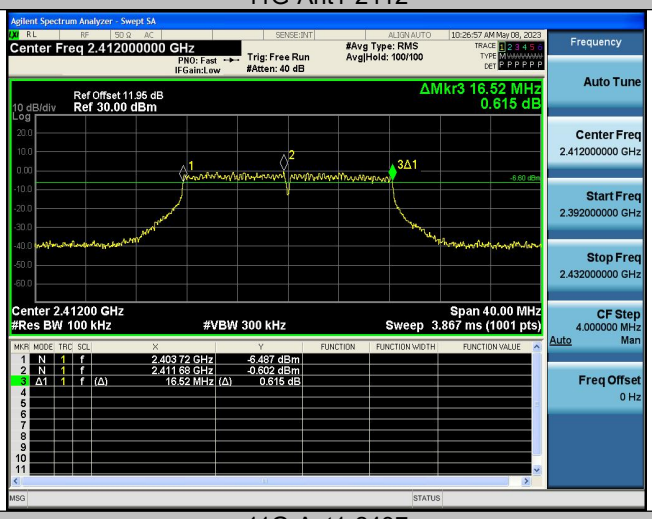
TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	7.880	2407.880	2415.760	0.5	PASS
11B	Ant1	2437	7.880	2432.880	2440.760	0.5	PASS
11B	Ant1	2462	7.840	2457.880	2465.720	0.5	PASS
11G	Ant1	2412	16.520	2403.720	2420.240	0.5	PASS
11G	Ant1	2437	16.520	2428.720	2445.240	0.5	PASS
11G	Ant1	2462	16.520	2453.720	2470.240	0.5	PASS
11N20SISO	Ant1	2412	17.680	2403.120	2420.800	0.5	PASS
11N20SISO	Ant1	2437	17.760	2428.120	2445.880	0.5	PASS
11N20SISO	Ant1	2462	17.760	2453.080	2470.840	0.5	PASS

11B-Ant1-2412

11B-Ant1-2437

11B-Ant1-2462

11G-Ant1-2412



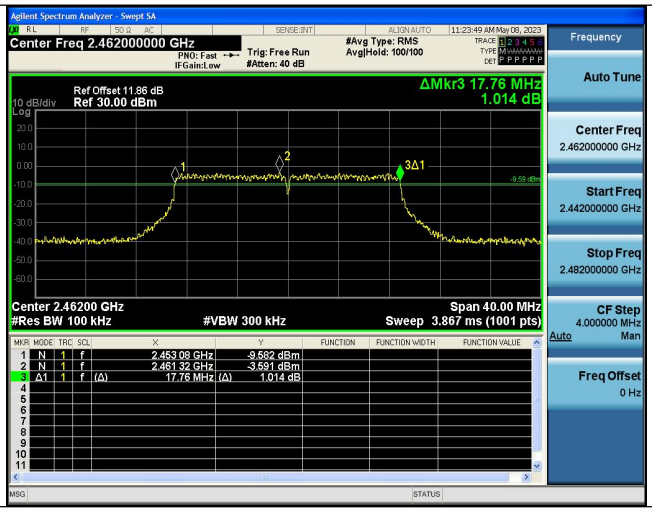
11G-Ant1-2437

11G-Ant1-2462

11N20SISO-Ant1-2412

11N20SISO-Ant1-2437

11N20SISO-Ant1-2462


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.462000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
#Avg Type: RMS
Avg|Hold: 100/100
11:23:49 AM May 08, 2023
Ref Offset 11.86 dB
10 dB/div
Ref 30.00 dBm
ΔMkr3 17.76 MHz
1.014 dB
-9.59 dBm
Center 2.46200 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40.00 MHz
Sweep 3.867 ms (1001 pts)
1 N 1 f 2.453 08 GHz -9.582 dBm
2 N 1 f 2.461 32 GHz -3.591 dBm
3 Δ1 1 f (Δ) 17.76 MHz (Δ) 1.014 dB
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.442000000 GHz
Stop Freq
2.482000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz

10 Maximum Peak Output Power

Test Requirement : FCC CFR47 Part 15 Section 15.247

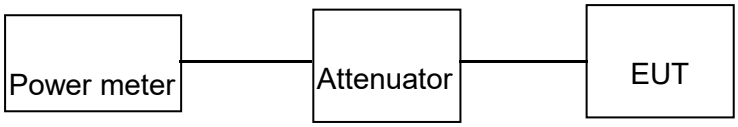
Test Method : ANSI C63.10:2013

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 power meter by RF cable and attenuator. 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.

10.2 Test Setup



10.3 Test Result

TestMode	Antenna	Frequency[MHz]	Set Power	Peak Powert[dBm]	Conducted Limit[dBm]	EIRP [dBm]	EIRP Limit[dBm]	Verdict
11B	Ant1	2412	---	22.90	≤30.00	25.34	≤36.00	PASS
11B	Ant1	2437	---	21.79	≤30.00	24.23	≤36.00	PASS
11B	Ant1	2462	---	20.69	≤30.00	23.13	≤36.00	PASS
11G	Ant1	2412	---	19.36	≤30.00	21.80	≤36.00	PASS
11G	Ant1	2437	---	18.20	≤30.00	20.64	≤36.00	PASS
11G	Ant1	2462	---	17.32	≤30.00	19.76	≤36.00	PASS
11N20SISO	Ant1	2412	---	19.25	≤30.00	21.69	≤36.00	PASS
11N20SISO	Ant1	2437	---	17.62	≤30.00	20.06	≤36.00	PASS
11N20SISO	Ant1	2462	---	17.02	≤30.00	19.46	≤36.00	PASS

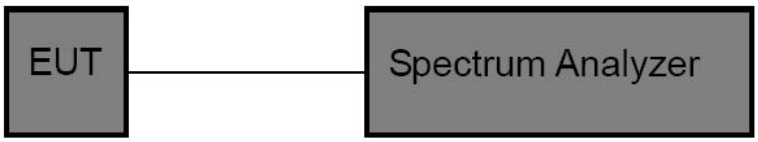
11 Power Spectral density

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.

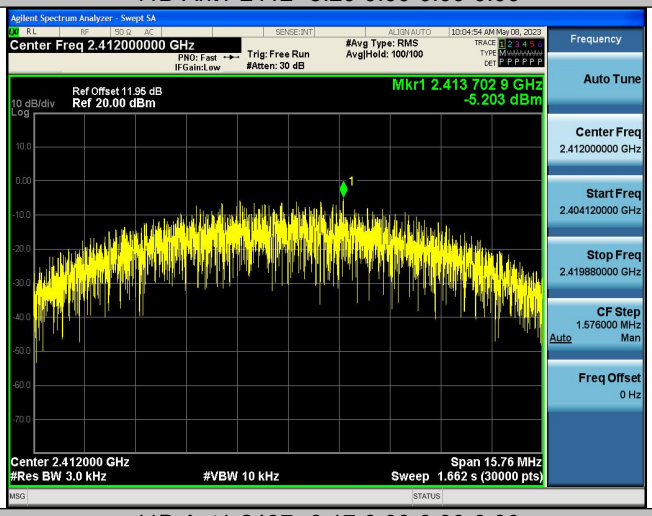
11.2 Test Setup



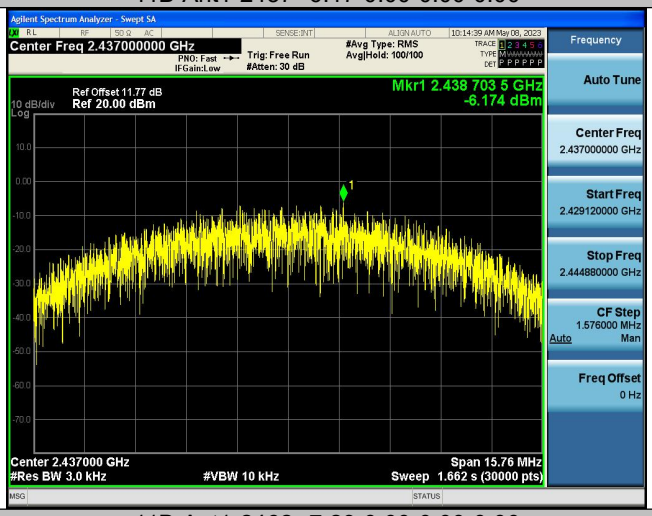
11.3 Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-5.2	≤8.00	PASS
11B	Ant1	2437	-6.17	≤8.00	PASS
11B	Ant1	2462	-7.29	≤8.00	PASS
11G	Ant1	2412	-14.5	≤8.00	PASS
11G	Ant1	2437	-15.71	≤8.00	PASS
11G	Ant1	2462	-16.71	≤8.00	PASS
11N20SISO	Ant1	2412	-14.66	≤8.00	PASS
11N20SISO	Ant1	2437	-16.04	≤8.00	PASS
11N20SISO	Ant1	2462	-16.95	≤8.00	PASS

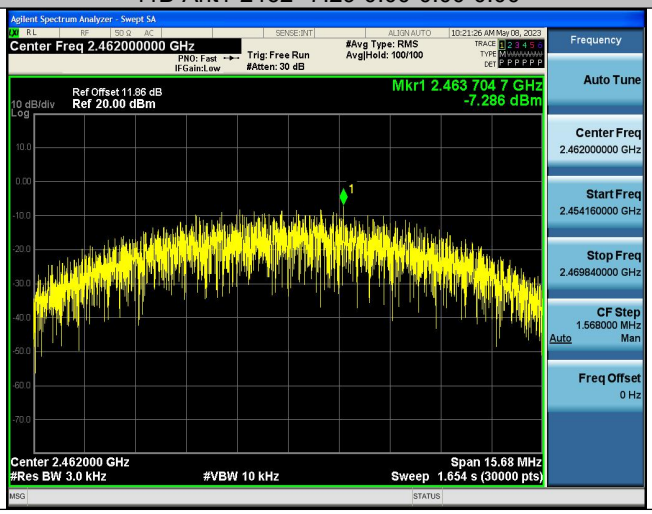
11B-Ant1-2412--5.20-0.00-0.00-0.00



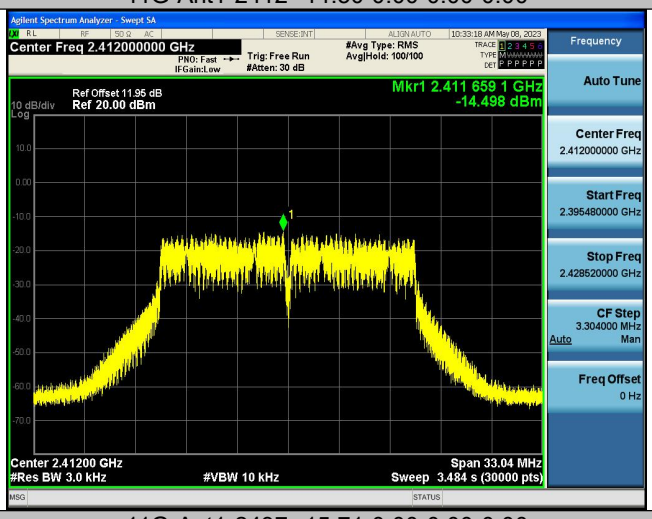
11B-Ant1-2437--6.17-0.00-0.00-0.00



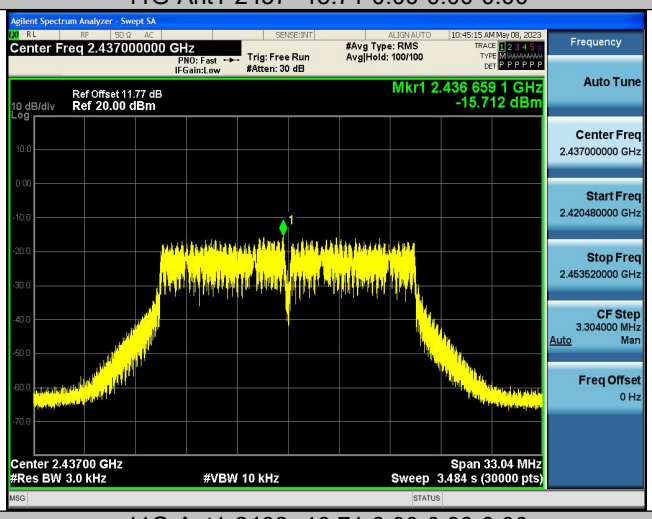
11B-Ant1-2462--7.29-0.00-0.00-0.00



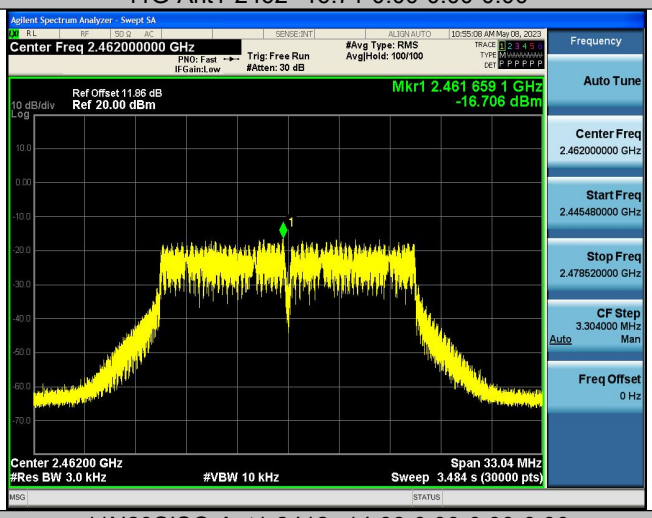
11G-Ant1-2412--14.50-0.00-0.00-0.00



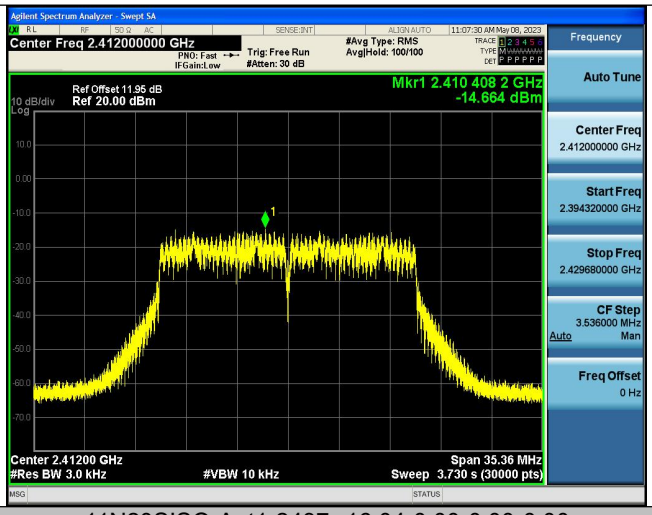
11G-Ant1-2437--15.71-0.00-0.00-0.00



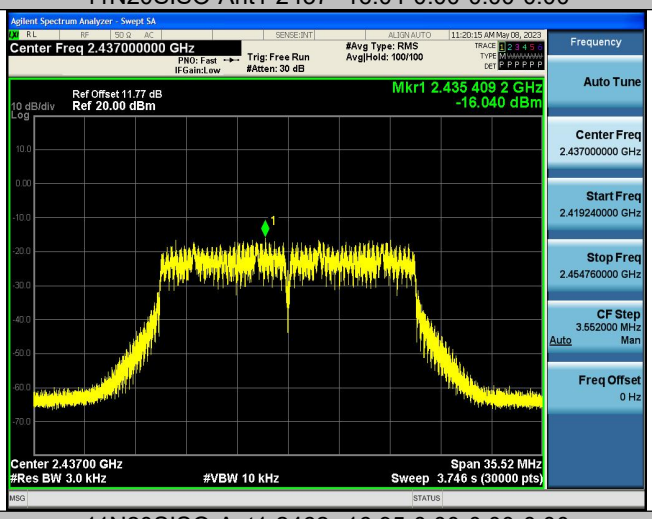
11G-Ant1-2462--16.71-0.00-0.00-0.00



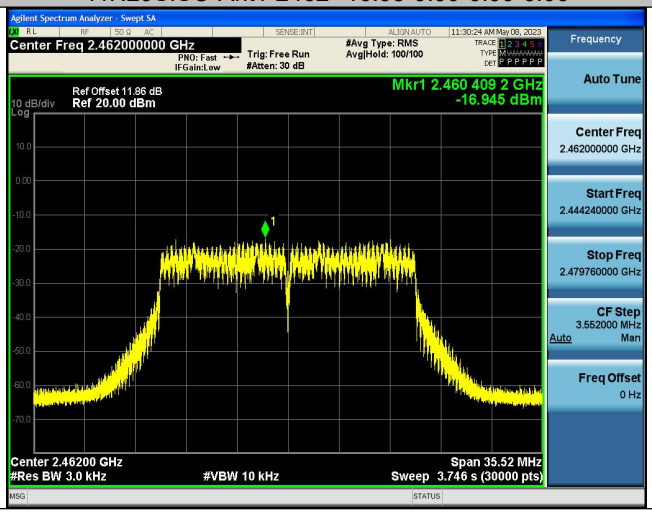
11N20SISO-Ant1-2412--14.66-0.00-0.00-0.00



11N20SISO-Ant1-2437--16.04-0.00-0.00-0.00



11N20SISO-Ant1-2462--16.95-0.00-0.00-0.00



12 Antenna Application

12.1 Antenna Requirement

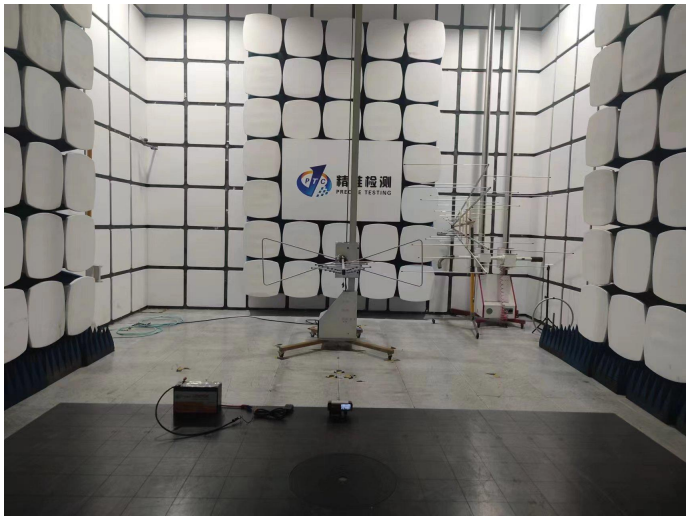
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional 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

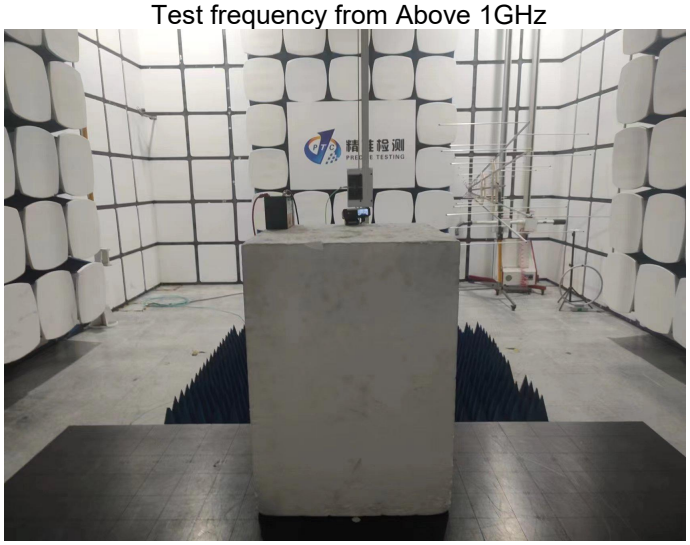
The EUT'S antenna, permanent attached antenna,is FPCB Antenna. The antenna's gain is 2.44 dBi and meets the requirement.

13 Test Setup

Radiated Spurious Emissions
From 30MHz-1000MHz

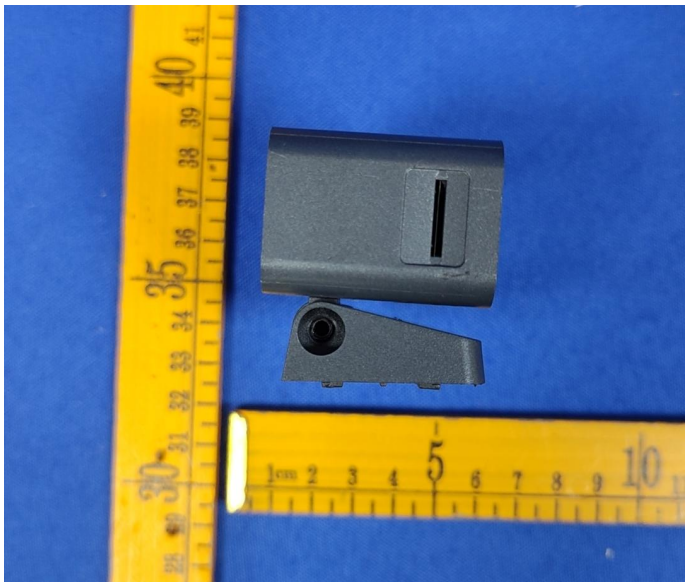


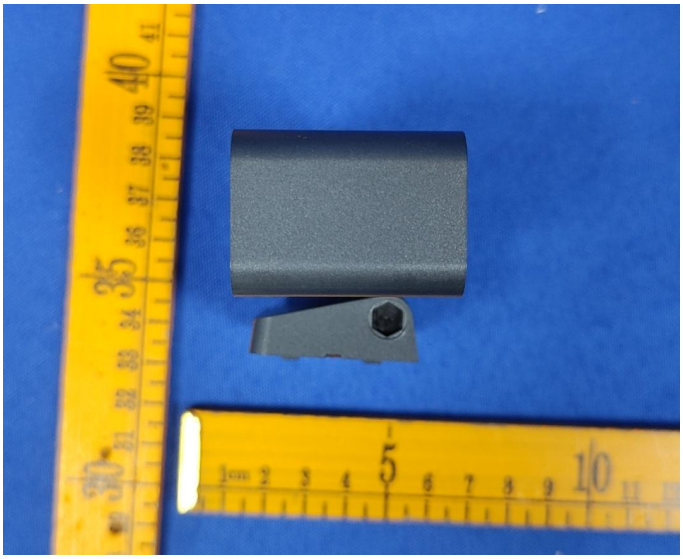
Test frequency from Above 1GHz

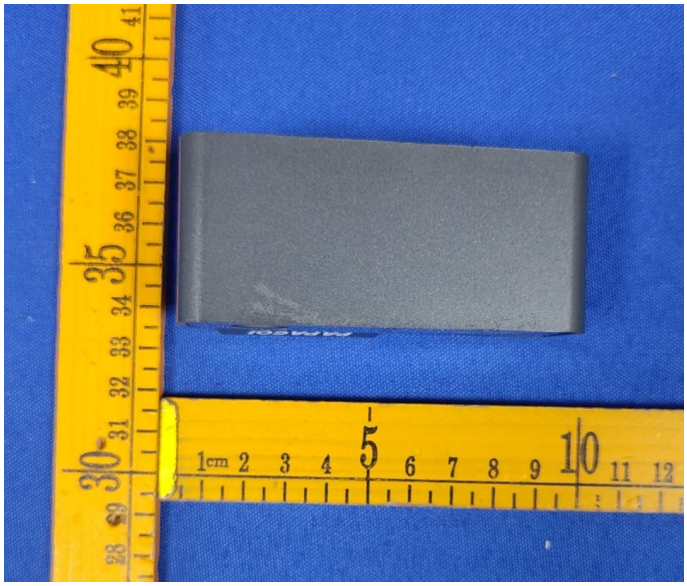


14 EUT PHOTOS

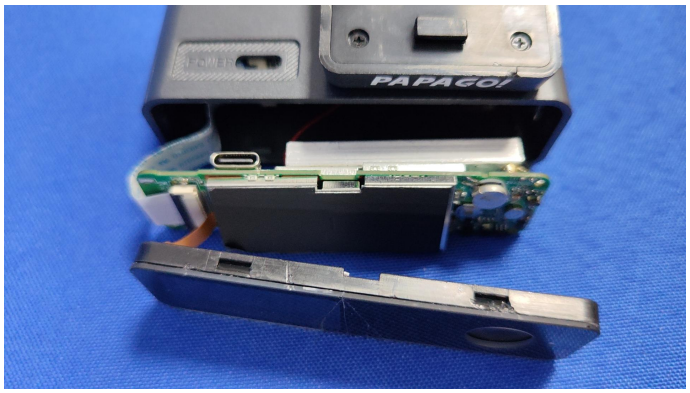
PAPAGOi

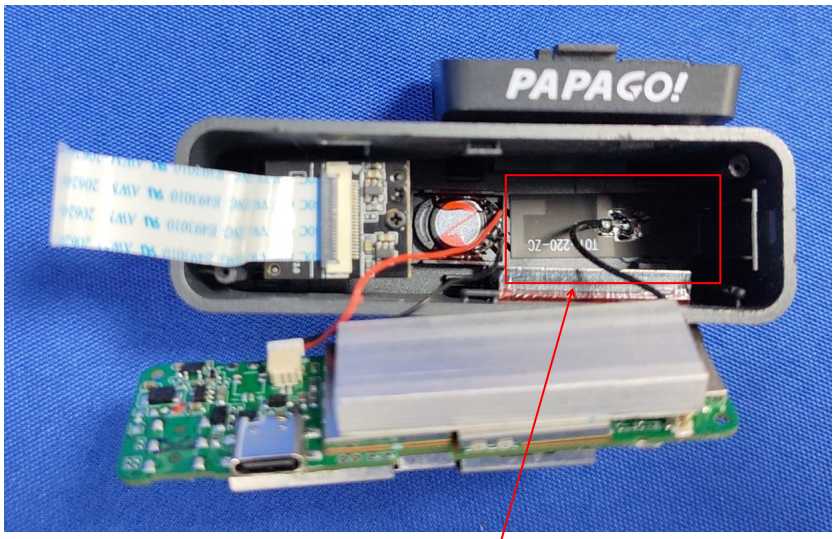




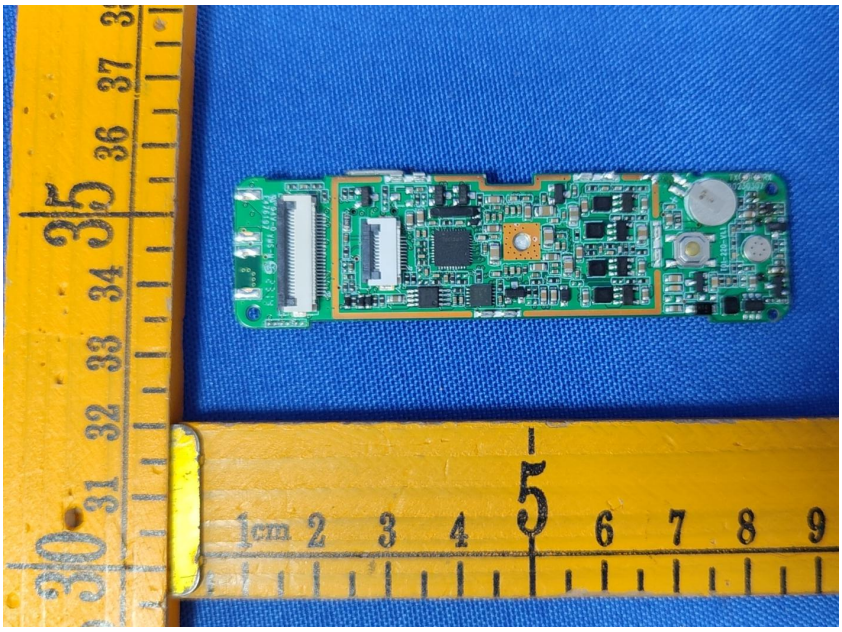


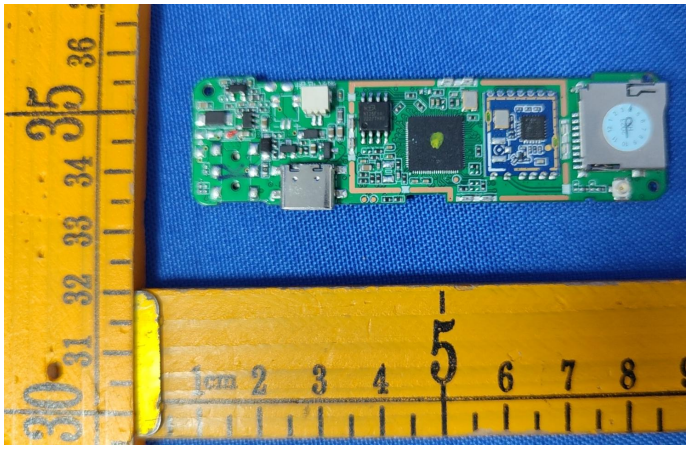
PAPAGO!
POWER

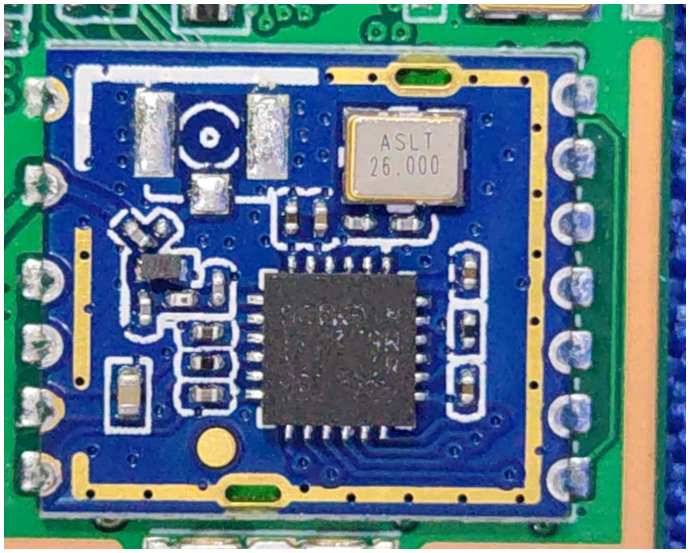

PAPAGO!
POWER

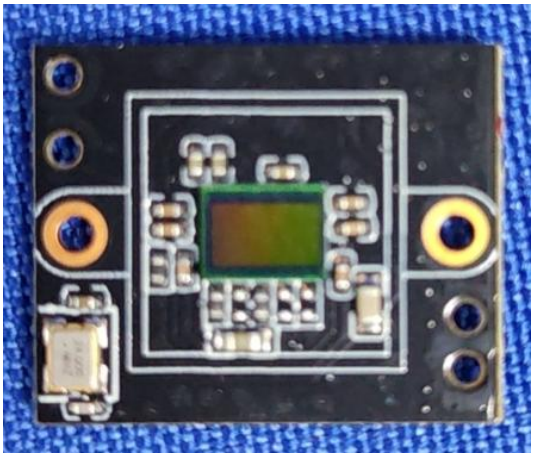


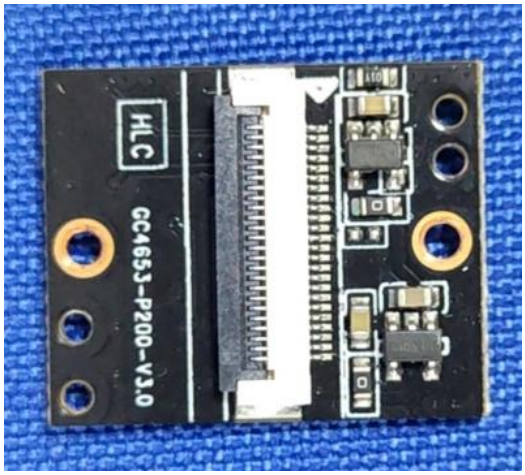
Antenna






ASLT
26.000





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