



FCC TEST REPORT

FCC ID: 2BTTG-K221

Product	:	Smart Lock
Model Name	:	K221
Brand	:	Desloc
Report No.	:	PTC25121907808E-FC02
Prepared for		
Hangzhou Key to the Future Technology Co., Ltd.		
Room 102-2, Building 1, No. 7 Jianghui South Road, Changhe Subdistrict, Binjiang District, Hangzhou City, Zhejiang Province, China, 310051		
Prepared by		
Precise Testing & Certification Co., Ltd.		
Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China		



1 TEST RESULT CERTIFICATION

Applicant's name : Hangzhou Key to the Future Technology Co., Ltd.
Address : Room 102-2, Building 1, No. 7 Jianghui South Road, Changhe Subdistrict, Binjiang District, Hangzhou City, Zhejiang Province, China, 310051
Manufacture's name : Zhejiang Desman Intelligent Technology Co., LTD
Address : Floor 1-3, Building 1, No.7 Jianghui South Road, Binjiang District, Hangzhou City, Zhejiang Province, China, 310051
Product name : Smart Lock
Model name : K221
Standards : FCC CFR47 Part 15 Section 15.247
Test procedure : ANSI C63.10-2020
Test Date : Apr. 15, 2026 to Apr. 26 2026
Date of Issue : Apr. 26 2026
Test Result : Pass

This device described above has been tested by PTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Test Engineer:

A handwritten signature in black ink, appearing to read 'Jack Zhou'.

Jack Zhou / Engineer

Technical Manager:

A handwritten signature in black ink, appearing to read 'Simon Pu'.

Simon Pu / Manager



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2 Test Summary

Test Items	Test Requirement	Result
Conduct Emission	15.207	PASS
Radiated Spurious Emissions	15.205(a) 15.209 15.247(d)	PASS
Conducted Spurious Emission	15.247(d)	PASS
Band edge	15.247(d) 15.205(a)	PASS
6dB Bandwidth	15.247(a)(2)	PASS
Maximum Output Power	15.247(b)(3)	PASS
Power Spectral Density	15.247(e)	PASS
Antenna Requirement	15.203	PASS

Remark:

N/A: Not Applicable



3 General Information

3.1 General Description of E.U.T.

Product Name	: Smart Lock
Model Name	: K221
Models Difference	: N/A
Specification	: 802.11b/g/n HT20/HT40
Operating frequency	: 2412-2462MHz for 802.11b/g/ n(HT20) 2422-2452MHz for 802.11 n(HT40)
Numbers of Channel	: 11 channels for 802.11b/g/ n(HT20) 7 channels for 802.11n(HT40)
Antenna Type	: FPC Antenna
Antenna Gain	: -0.95dBi
Type of Modulation	: DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;
Power supply	: Input Voltage: DC 5V Voltage range: 3.2V-4.2V 200mA Li-ion Battery : ZNS-MN-28B Rated Voltage: 3.7V
Hardware Version	: N/A
Software Version	: N/A
Test sample No.	: PTC25121907808E-1/2, PTC25121907808E-2/2



3.2 Channel List

The EUT has been tested under its typical operating condition.

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (802.11b: 1 Mbps; 802.11g: 6 Mbps; 802.11n (HT20): MCS0; 802.11n (HT40): MCS0) were used for all test.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Frequency and Channel list for 802.11 b/g/n (HT20/HT40)

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447		

The maximum duty cycle as following table:

Test Mode	Duty Cycle(%)
802.11b	100%
802.11g	100%
802.11n(HT20)	100%
802.11n(HT40)	100%



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3.3 Test Site

Precise Testing & Certification Co., Ltd

Address: Building 1, No. 6, Tongxin Road, Dongcheng Street, Dongguan, Guangdong, China

FCC Registration Number: 790290

A2LA Certificate No.: 4408.01

IC Registration Number: 12191A

FCC Designation Number: CN1219



4 Equipment During Test

4.1 Equipments List

RF Conducted Test

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Last Calibration	Calibration Interval
MXG Signal Analyzer	Agilent	N9020A	SER MY5111038	10Hz-26.5GHz	Aug.14, 2025	1 Year
Coaxial Cable	CDS	79254	46107086	10Hz-30GHz	Aug.14, 2025	1 Year
Power Meter	Anritsu	ML2495A	0949003	300MHz-40GHz	Aug.14, 2025	1 Year
Power Sensor	Anritsu	MA2411B	0917017	300MHz-40GHz	Aug.14, 2025	1 Year
DC power Supply	Agilent	E3642A	MY52420017	0-8V,5A/0-20 ,2.5A	Aug.14, 2025	1 Year
Humidity Chamber	AI SRY	ASR-HW2-1000	20230926003	-40°C -150°C	Feb.22 ,2026	1year
Test S/W	Tonscend	JS1120-3	/	/	/	/

Remark: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

Radiated Emissions

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Last Calibration	Calibration Interval
EMI Test Receiver	Rohde&Schwarz	ESPI7	101671	9KHz-7GHz	Aug.14, 2025	1 Year
Loop Antenna	Schwarzbeck	FMZB 1519	192	9 KHz -30MHz	Nov.28, 2025	1 Year
Bilog Antenna	SCHWARZBECK	VULB9160	9160-3355	25MHz-2GHz	Sep.10, 2025	1 Year
Preamplifier (low frequency)	SCHWARZBECK	BBV 9475	9745-0013	9KHz-1GHz	Mar.20, 2026	1 Year
Cable	IMRO	AK-	Cable-L	9KHz-3GHz	Aug.14, 2025	1 Year



		9515E(9m)				
Spectrum Analyzer	Rohde&Schwarz	FSV40	6625-01-588-5515	9KHz-40GHz	Aug.14, 2025	1 Year
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1246	1GHz-18GHz	Dec.12, 2025	1 Year
Power Amplifier	ZHINAN	ZN3380C	15002	1GHz-26.5GHz	Aug.14, 2025	1 Year
Horn Antenna	SCHWARZBECK	BBHA 9170	9170-1066	15GHz-40GHz	Jul. 24, 2025	1 Year
Amplifier	SCHWARZBECK	BBV 9721	9721-205	18GHz-40GHz	Jul. 25, 2025	1 Year
Cable	H+S	CBL-26	N/A	1GHz-26.5GHz	Aug.14, 2025	1 Year
RF Cable	R&S	R204	R21X	1GHz-40GHz	Aug.14, 2025	1 Year
Test S/W	Tonscend	TS+	/	/	/	/

Conducted Emissions

Name of Equipment	Manufacturer	Model	Serial No.	Characteristics	Calibration Date	Calibration Interval
EMI Test Receiver	Rohde&Schwarz	ESCI3	101417	9KHz-3GHz	Aug.14, 2025	1 Year
Artificial Mains Network	Rohde&Schwarz	ENV216	102453	9KHz-300MHz	Oct.30, 2025	1 Year
Artificial Mains Network	Rohde&Schwarz	ENV216	101342	9KHz-300MHz	Oct.30, 2025	1 Year
Limiter	R&S	ESH3-Z2	0357.8810.54-102808-NB	0Hz-30MHz	Aug.14, 2025	1 Year
RF Switch	DIAMOND ANTENNA	CX-210	/	0.09MHz-6GHz	Mar. 20,2026	1 Year



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Test S/W	Tonscend	JS32-CE	/	/	/	/
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4.2 Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	$\pm 1.0\text{dB}$
Power Spectral Density, conducted	$\pm 2.2\text{dB}$
Radio Frequency	$\pm 1 \times 10^{-6}$
Bandwidth	$\pm 1.5 \times 10^{-6}$
Time	$\pm 2\%$
Duty Cycle	$\pm 2\%$
Temperature	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 3\%$
Conducted Emissions (150kHz~30MHz)	$\pm 3.64\text{dB}$
Radiated Emission(9kHz~30MHz)	$\pm 3.15\text{dB}$
Radiated Emission(30MHz~1GHz)	$\pm 5.03\text{dB}$
Radiated Emission(1GHz~25GHz)	$\pm 4.74\text{dB}$



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4.3Description of Support Units

Equipment	Model No.	Series No.
Adapter	A0501A	N/A

5 Conducted Emission

Test Requirement: : FCC CFR 47 Part 15 Section 15.207

Test Method : ANSI C63.10-2020

Test Result : PASS

Frequency Range : 150kHz to 30MHz

Class/Severity : Class B

5.1E.U.T. Operation

Operating Environment :

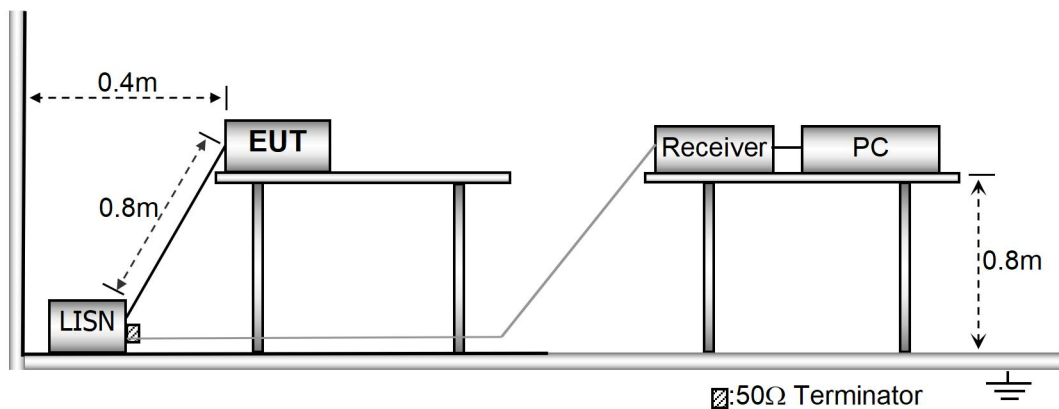
Temperature : 23.9 °C

Humidity : 51.4 % RH

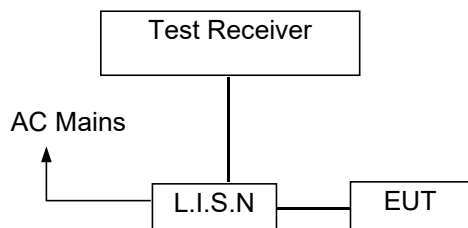
Atmospheric Pressure : 101.21kPa

5.2EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10-2020.



5.3 Test SET-UP (Block Diagram of Configuration)



5.4 Measurement Procedure

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

5.5 Conducted Emission Limit

Conducted Emission

Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note:

1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

5.6 Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

5.7 Conducted Emission Test Result

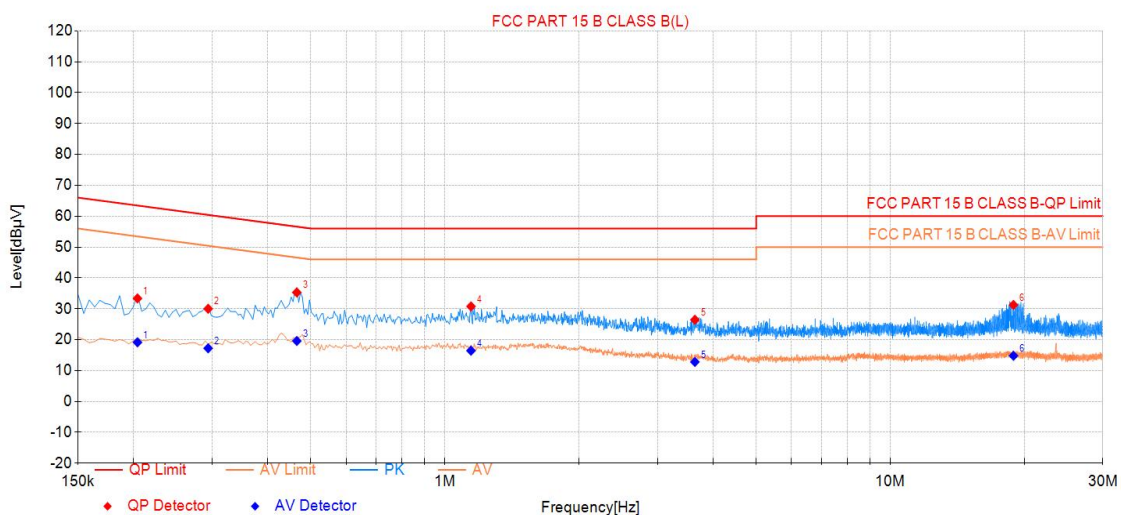
Pass.

During the test, the 120Vac/60Hz and 240Vac/60Hz power supplies were scanned in advance, and it was found that (120Vac/60Hz, TX 802.11b Low Channel) was a poor mode, and the report only reflected the poor mode.

Please refer to the following pages.



Line- AC 120V/60Hz

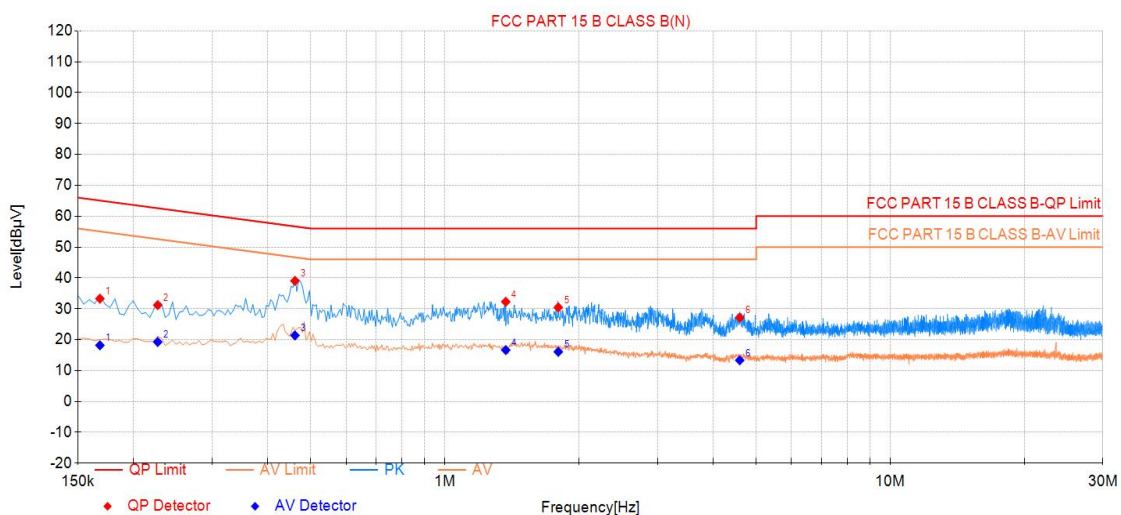


Final test data

NO.	Freq. [MHz]	Factor [dB]	QP Value	QP Limit	QP Margin	AV Value	AV Limit	AV Margin	Verdict
1	0.204	19.86	33.37	63.45	30.08	19.17	53.45	34.28	PASS
2	0.294	19.89	30.02	60.41	30.39	17.23	50.41	33.18	PASS
3	0.465	19.89	35.31	56.60	21.29	19.59	46.60	27.01	PASS
4	1.145	19.83	30.79	56.00	25.21	16.46	46.00	29.54	PASS
5	3.642	19.86	26.45	56.00	29.55	12.82	46.00	33.18	PASS
6	18.911	20.01	31.27	60.00	28.73	14.82	50.00	35.18	PASS



Neutral-AC 120V/60Hz



Final test data									
NO.	Freq. [MHz]	Factor [dB]	QP Value	QP Limit	QP Margin	AV Value	AV Limit	AV Margin	Verdict
1	0.168	19.79	33.29	65.06	31.77	18.20	55.06	36.86	PASS
2	0.227	19.89	31.20	62.58	31.38	19.27	52.58	33.31	PASS
3	0.461	19.87	39.05	56.68	17.63	21.39	46.68	25.29	PASS
4	1.370	19.85	32.30	56.00	23.70	16.66	46.00	29.34	PASS
5	1.797	19.85	30.48	56.00	25.52	16.10	46.00	29.90	PASS
6	4.592	19.87	27.16	56.00	28.84	13.35	46.00	32.65	PASS

Note: QP Margin[dB]= QP Limit[dBμV]- QP Value[dBμV], AV Margin[dB]= AV Limit[dBμV]- AV Value[dBμV].



6 Radiated Spurious Emissions

Test Requirement : FCC CFR47 Part 15 Section 15.209 & 15.247
 Test Method : ANSI C63.10-2020
 Test Result : PASS
 Measurement Distance : 3m
 Limit : See the follow table

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	$2400/F(\text{kHz})$	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	$24000/F(\text{kHz})$	30	$100 * 24000/F(\text{kHz})$	$20\log^{(24000/F(\text{kHz}))} + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

6.1EUT Operation

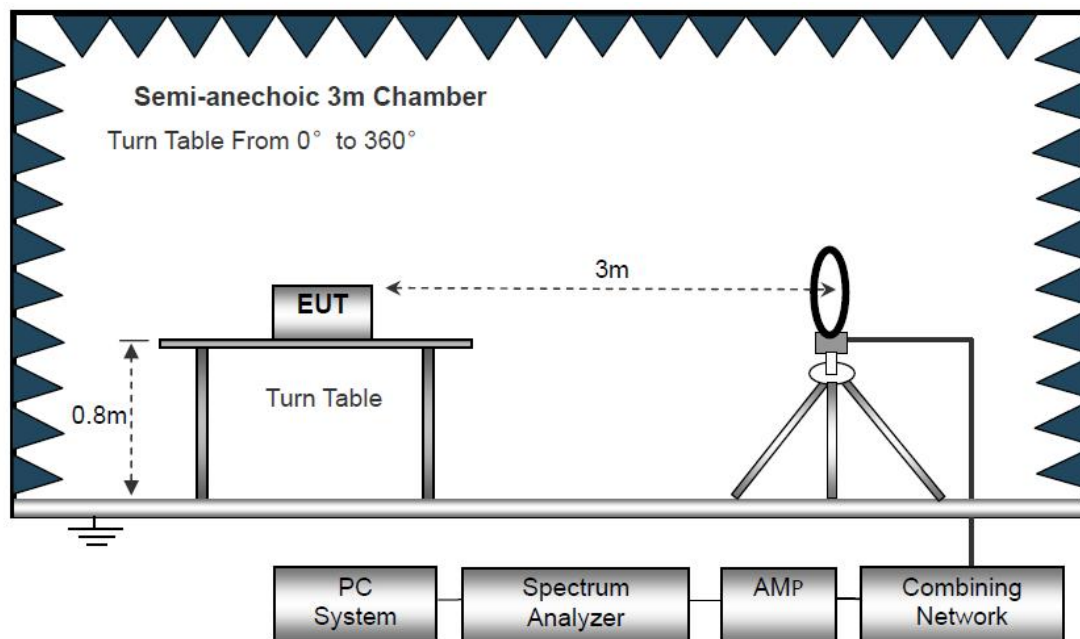
Operating Environment :

Temperature: : 24.5 °C
 Humidity: : 52 % RH
 Atmospheric Pressure: : 101.3kPa
 Test Voltage : AC 120V 60Hz

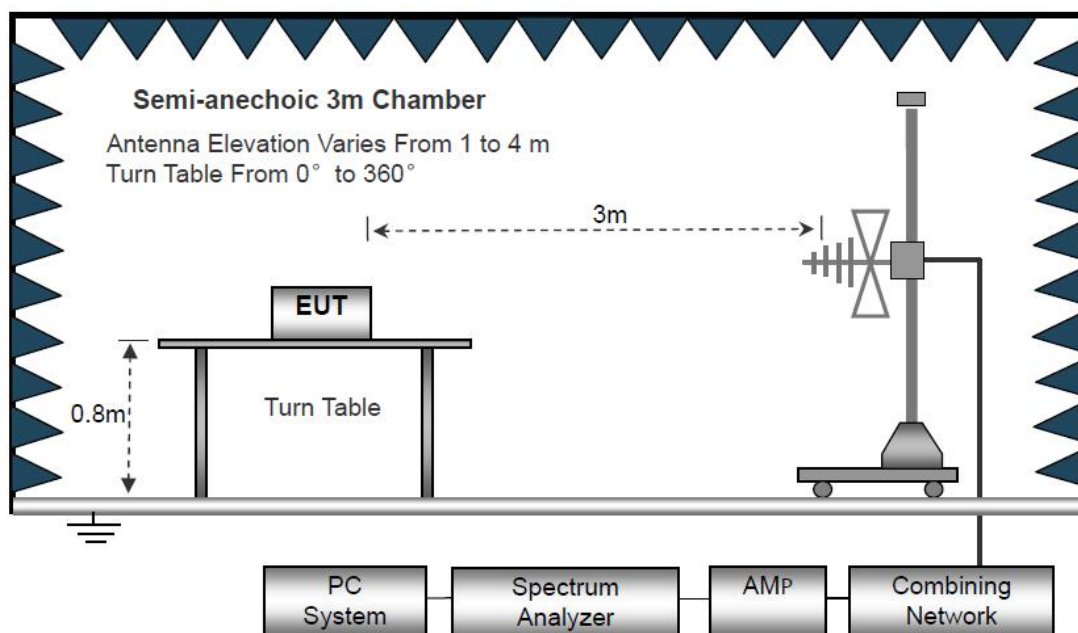
6.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site

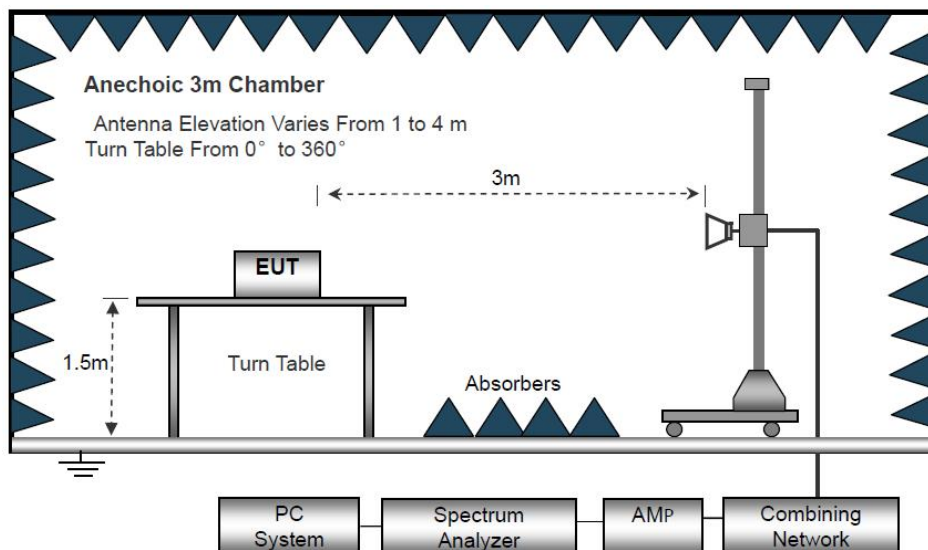
The test setup for emission measurement below 30MHz



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz



6.3 Spectrum Analyzer Setup

	Frequency	Detector	RBW	VBW	Remark
Receiver Setup	Below 30MHz	--	10kHz	10kHz	--
	30MHz ~ 1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		RMS	1MHz	3MHz	Average Value



6.4 Test Procedure

1. Below 1000MHz, The EUT was placed on a turn table which is 0.8m above ground plane, And above 1000MHz, The EUT was placed on a styrofoam table which is 1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.
8. The test above 1GHz must be use the fully anechoic room, and the test below 1GHz use the half anechoic room



6.5 Summary of Test Results

Test Frequency: 9KHz-30MHz

Note:

The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

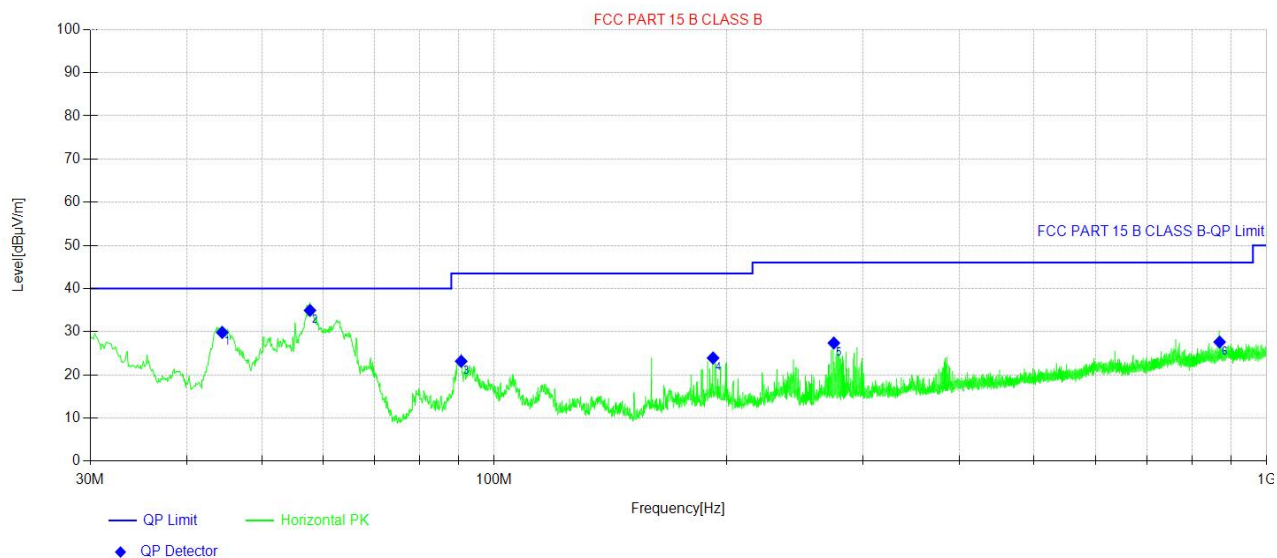
Distance extrapolation factor = $40\log(\text{Specific distance} / \text{test distance})$ (dB);
Limit line = Specific limits (dBuV) + distance extrapolation factor.

Test Frequency: 30MHz ~ 1GHz

All the modulation modes were tested the data of the worst mode (TX 802.11b Low Channel) are recorded in the following pages and the others modulation methods do not exceed the limits.

Please refer to the following test plots:

Antenna Polarization: Horizontal

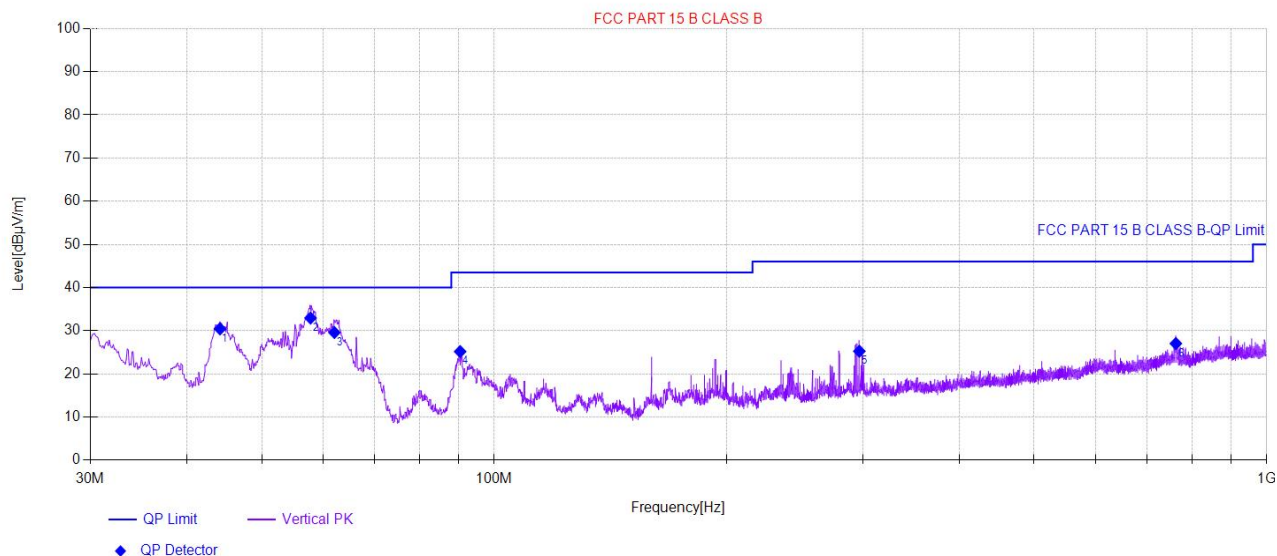


Final Test Data								
NO.	Freq. [MHz]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity	Result
1	44.45	29.83	40.00	10.17	200	96	Horizontal	PASS
2	57.74	34.93	40.00	5.07	200	220	Horizontal	PASS
3	90.63	23.15	43.50	20.35	200	227	Horizontal	PASS
4	192.01	23.92	43.50	19.58	200	114	Horizontal	PASS
5	275.24	27.38	46.00	18.62	200	11	Horizontal	PASS
6	869.13	27.61	46.00	18.39	200	44	Horizontal	PASS

Remark:1. QP Value= QP Reading+ Factor;
2.QP Margin= QP Limit- QP Value;
3.Factor= ANT Factor+ Cable Loss -AMP Factor.



Antenna Polarization: Vertical



Final Test Data								
NO.	Freq. [MHz]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity	Result
1	44.16	30.42	40.00	9.58	100	229	Vertical	PASS
2	57.84	32.94	40.00	7.06	100	316	Vertical	PASS
3	62.11	29.58	40.00	10.42	100	167	Vertical	PASS
4	90.34	25.17	43.50	18.33	100	80	Vertical	PASS
5	296.97	25.25	46.00	20.75	100	149	Vertical	PASS
6	762.81	27.03	46.00	18.97	100	185	Vertical	PASS

Remark: Emission Level = Reading + Cable Loss + ANT Factor - AMP Factor



Test Frequency: From 1GHz to 18GHz

2.4G Wi-Fi (802.11b/g/n) mode have been tested, and the worst result(802.11b) was report as below:

Worst case 802.11b

Test Mode: 2412					Test channel: Lowest			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4824	46.37	32.35	4.12	28.44	54.40	74	-19.60	V
7236	35.46	36.08	6.3	27.74	50.10	74	-23.90	V
9648	36.56	38.25	7.91	24.65	58.07	74	-15.93	V
4824	43.60	32.35	4.12	28.44	51.63	74	-22.37	H
7236	36.36	36.08	6.3	27.74	51.00	74	-23.00	H
9648	34.57	38.25	7.91	24.65	56.08	74	-17.92	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4824	28.61	32.35	4.12	28.44	36.64	54	-17.36	V
7236	21.23	36.08	6.3	27.74	35.87	54	-18.13	V
9648	19.85	38.25	7.91	24.65	41.36	54	-12.64	V
4824	32.30	32.35	4.12	28.44	40.33	54	-13.67	H
7236	26.16	36.08	6.3	27.74	40.80	54	-13.20	H
9648	18.47	38.25	7.91	24.65	39.98	54	-14.02	H



Worst case 802.11b

Test Mode: 2437					Test channel: Middle			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4874	47.37	32.35	4.12	28.44	55.40	74	-18.60	V
7311	37.21	36.08	6.3	27.74	51.85	74	-22.15	V
9748	33.83	38.25	7.91	24.65	55.34	74	-18.66	V
4874	44.71	32.35	4.12	28.44	52.74	74	-21.26	H
7311	36.67	36.08	6.3	27.74	51.31	74	-22.69	H
9748	33.75	38.25	7.91	24.65	55.26	74	-18.74	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4874	28.75	32.35	4.12	28.44	36.78	54	-17.22	V
7311	25.30	36.08	6.3	27.74	39.94	54	-14.06	V
9748	18.44	38.25	7.91	24.65	39.95	54	-14.05	V
4874	33.23	32.35	4.12	28.44	41.26	54	-12.74	H
7311	23.87	36.08	6.3	27.74	38.51	54	-15.49	H
9748	21.94	38.25	7.91	24.65	43.45	54	-10.55	H



Worst case 802.11b

Test Mode: 2462					Test channel: High			
Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4924	44.27	32.41	4.14	28.42	52.40	74	-21.60	V
7386	37.78	36.15	6.36	27.68	52.61	74	-21.39	V
9848	32.17	38.35	7.97	24.33	54.16	74	-19.84	V
4924	44.90	32.41	4.14	28.42	53.03	74	-20.97	H
7386	39.13	36.15	6.36	27.68	53.96	74	-20.04	H
9848	32.54	38.35	7.97	24.33	54.53	74	-19.47	H
Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.
4924	31.08	32.41	4.14	28.42	39.21	54	-14.79	V
7386	26.30	36.15	6.36	27.68	41.13	54	-12.87	V
9848	20.83	38.35	7.97	24.33	42.82	54	-11.18	V
4924	29.99	32.41	4.14	28.42	38.12	54	-15.88	H
7386	22.97	36.15	6.36	27.68	37.80	54	-16.20	H
9848	21.77	38.35	7.97	24.33	43.76	54	-10.24	H

Note:

1. The testing has been conformed to $10 \times 2462 \text{ MHz} = 24620 \text{ MHz}$.
2. All other emissions more than 30dB below the limit.
3. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Emission Level = Reading + Factor
Margin=Emission Level-Limit
4. X-Axis, Y-Axis and Z-Axis were investigated. The results above show only the worst case.

Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz



2.4G WiFi (802.11b/g/n) mode have been tested, and the worst result(802.11g) was report as below
 Test Mode: Worst case 802.11g Low Channel 2412MHz

Test Mode: 802.11g Low Channel 2412MHz									Test Value
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Polarity H/V	
2390	51.75	28.67	6.72	37.26	49.88	74	-24.12	H	Peak
2400	62.71	28.08	6.81	37.12	60.48	74	-13.52	H	
2390	47.02	28.67	6.72	37.26	45.15	74	-28.85	V	
2400	56.78	28.08	6.81	37.12	54.55	74	-19.45	V	
2390	40.10	28.67	6.72	37.26	38.23	54	-15.77	H	Average
2400	46.97	28.08	6.81	37.12	44.74	54	-9.26	H	
2390	40.10	28.67	6.72	37.26	38.23	54	-15.77	V	
2400	42.27	28.08	6.81	37.12	40.04	54	-13.96	V	

Test Mode: Worst case 802.11g High Channel 2462MHz

Test Mode: 802.11g High Channel 2462MHz									Test Value
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over (dB)	Polarity H/V	
2483.5	60.66	27.38	6.15	36.29	57.90	74	-16.10	H	Peak
2500	49.79	27.43	6.68	36.79	47.11	74	-26.89	H	
2483.5	58.31	27.38	6.15	36.29	55.55	74	-18.45	V	
2500	50.55	27.43	6.68	36.79	47.87	74	-26.13	V	
2483.5	41.74	27.38	6.15	36.29	38.98	54	-15.02	H	Average
2500	40.29	27.43	6.68	36.79	37.61	54	-16.39	H	
2483.5	40.51	27.38	6.15	36.29	37.75	54	-16.25	V	
2500	41.24	27.43	6.68	36.79	38.56	54	-15.44	V	

Test Frequency: From 18GHz to 25GHz

The measurements were more than 20dB below the limit and not reported.



7 Conducted Spurious Emission

Test Requirement	:	FCC CFR47 Part 15 Section 15.247
Test Method	:	ANSI C63.10-2020
Test Limit	:	Regulation 15.247 (d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. 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)).

7.1 Test Procedure

Reference Level:

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum; Set to the maximum power setting and enable the EUT transmit continuously.
2. Establish a reference level by using the following procedure:
 - a) Set instrument center frequency to DTS channel center frequency.
 - b) Set the span to ≥ 1.5 times the DTS bandwidth.
 - c) Set the RBW = 100 kHz.
 - d) Set the VBW $\geq [3 \times \text{RBW}]$.
 - e) Detector = peak.
 - f) Sweep time = No faster than coupled (auto) time.
 - g) Trace mode = max-hold.
 - h) Allow trace to fully stabilize.
 - i) Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level

Spurious Emissions Measurement:

Establish an emission level by using the following procedure:

- a) Set the center frequency and span to encompass frequency range to be measured. Note that the



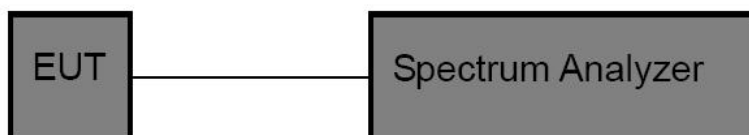
frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.

NOTE—the number of points can also be increased for large spans to retain frequency resolution

- b) Set the RBW = 100 kHz.
- c) Set the VBW $\geq [3 \times \text{RBW}]$.
- d) Detector = peak.
- e) Sweep time = No faster than coupled (auto) time.
- f) Trace mode = max-hold.
- g) Allow trace to fully stabilize.
- h) Use the peak marker function to determine the maximum amplitude level.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

7.2 Test Setup



7.3 Test Result

TestMode	Antenna	Frequency[MHz]	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	0~Reference	3.93	3.93	---	PASS
11B	Ant1	2412	30~1000	3.93	-59.29	≤ -26.07	PASS
11B	Ant1	2412	1000~26500	3.93	-48.55	≤ -26.07	PASS
11B	Ant1	2437	0~Reference	3.53	3.53	---	PASS
11B	Ant1	2437	30~1000	3.53	-59.24	≤ -26.47	PASS
11B	Ant1	2437	1000~26500	3.53	-49.86	≤ -26.47	PASS
11B	Ant1	2462	0~Reference	2.99	2.99	---	PASS
11B	Ant1	2462	30~1000	2.99	-59.14	≤ -27.01	PASS
11B	Ant1	2462	1000~26500	2.99	-50.79	≤ -27.01	PASS
11G	Ant1	2412	0~Reference	2.97	2.97	---	PASS
11G	Ant1	2412	30~1000	2.97	-59.61	≤ -27.03	PASS
11G	Ant1	2412	1000~26500	2.97	-49.86	≤ -27.03	PASS
11G	Ant1	2437	0~Reference	1.81	1.81	---	PASS
11G	Ant1	2437	30~1000	1.81	-59.85	≤ -28.19	PASS
11G	Ant1	2437	1000~26500	1.81	-50.38	≤ -28.19	PASS
11G	Ant1	2462	0~Reference	1.57	1.57	---	PASS
11G	Ant1	2462	30~1000	1.57	-59.22	≤ -28.43	PASS



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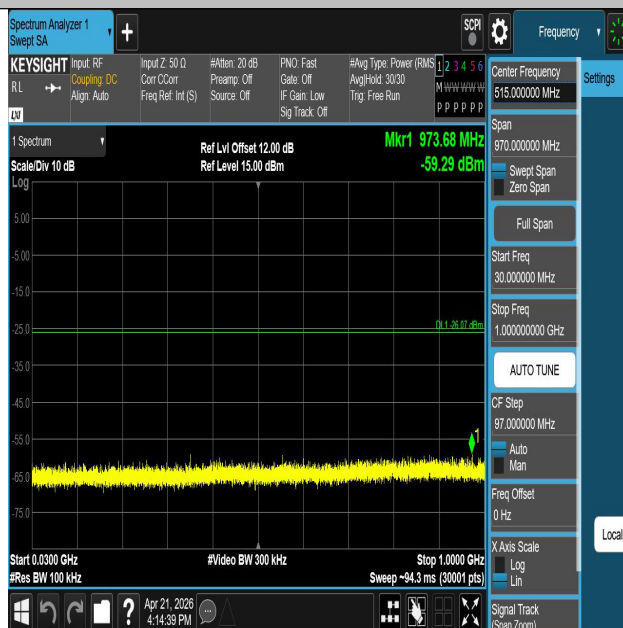
11G	Ant1	2462	1000~26500	1.57	-50.62	≤ -28.43	PASS
11N20SISO	Ant1	2412	0~Reference	2.31	2.31	---	PASS
11N20SISO	Ant1	2412	30~1000	2.31	-58.45	≤ -27.69	PASS
11N20SISO	Ant1	2412	1000~26500	2.31	-50.46	≤ -27.69	PASS
11N20SISO	Ant1	2437	0~Reference	1.63	1.63	---	PASS
11N20SISO	Ant1	2437	30~1000	1.63	-58.96	≤ -28.37	PASS
11N20SISO	Ant1	2437	1000~26500	1.63	-49.39	≤ -28.37	PASS
11N20SISO	Ant1	2462	0~Reference	1.57	1.57	---	PASS
11N20SISO	Ant1	2462	30~1000	1.57	-58.33	≤ -28.43	PASS
11N20SISO	Ant1	2462	1000~26500	1.57	-50.58	≤ -28.43	PASS
11N40SISO	Ant1	2422	0~Reference	-0.64	-0.64	---	PASS
11N40SISO	Ant1	2422	30~1000	-0.64	-59.64	≤ -30.64	PASS
11N40SISO	Ant1	2422	1000~26500	-0.64	-50.32	≤ -30.64	PASS
11N40SISO	Ant1	2437	0~Reference	-0.76	-0.76	---	PASS
11N40SISO	Ant1	2437	30~1000	-0.76	-58.41	≤ -30.76	PASS
11N40SISO	Ant1	2437	1000~26500	-0.76	-50.77	≤ -30.76	PASS
11N40SISO	Ant1	2452	0~Reference	-1.27	-1.27	---	PASS
11N40SISO	Ant1	2452	30~1000	-1.27	-58.98	≤ -31.27	PASS
11N40SISO	Ant1	2452	1000~26500	-1.27	-50.06	≤ -31.27	PASS



Test Graphs:



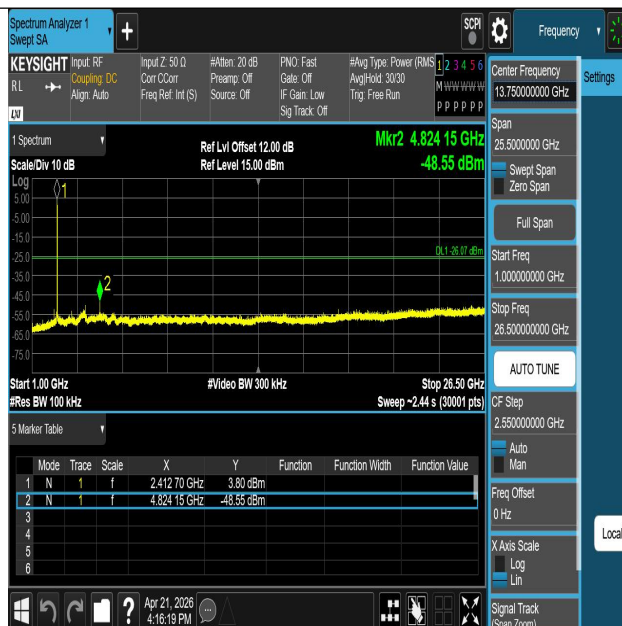
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11B-Ant1-2412-30~1000-PASS



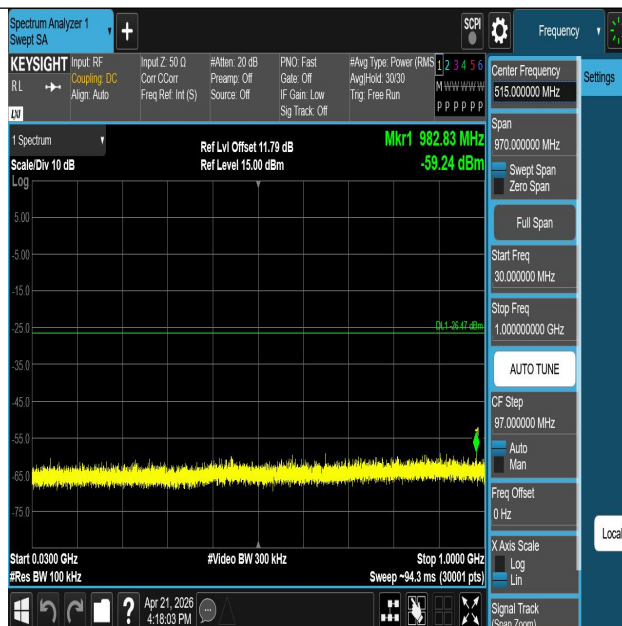
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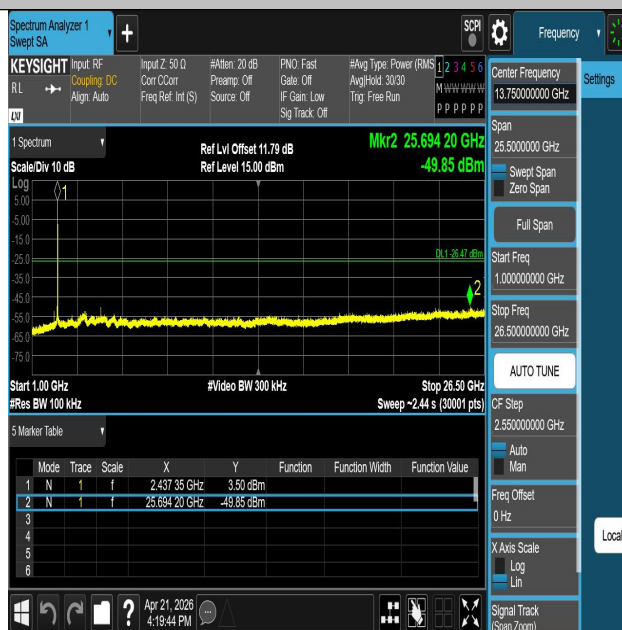
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11B-Ant1-2437-0~Reference-PASS



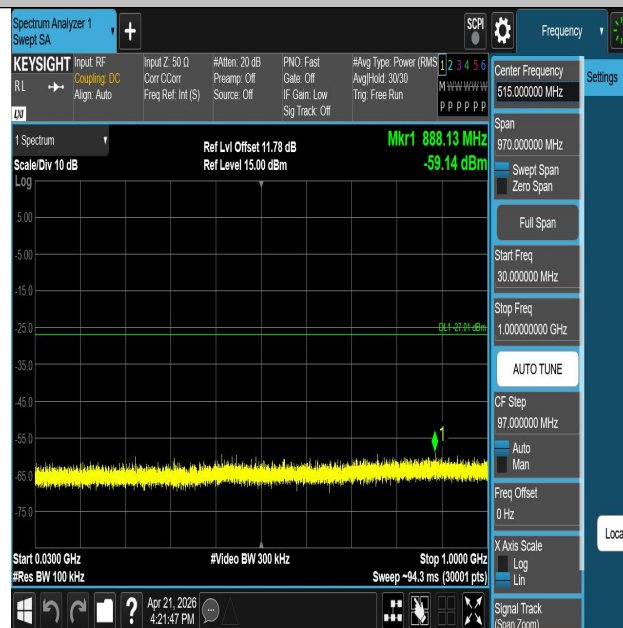
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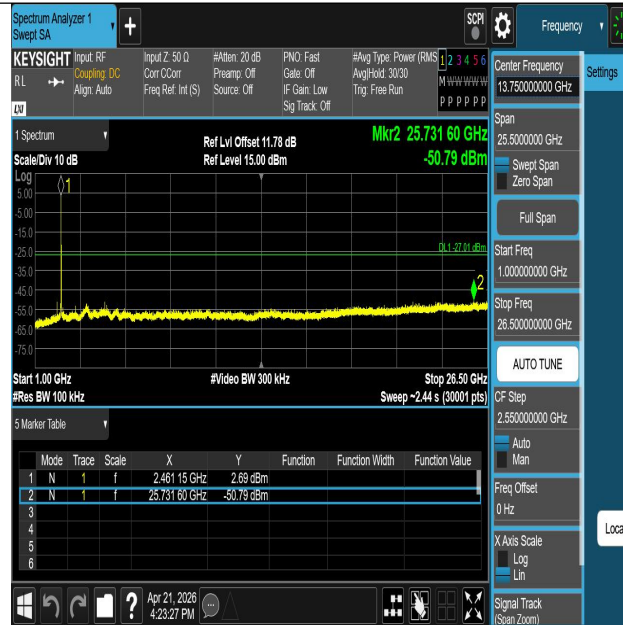
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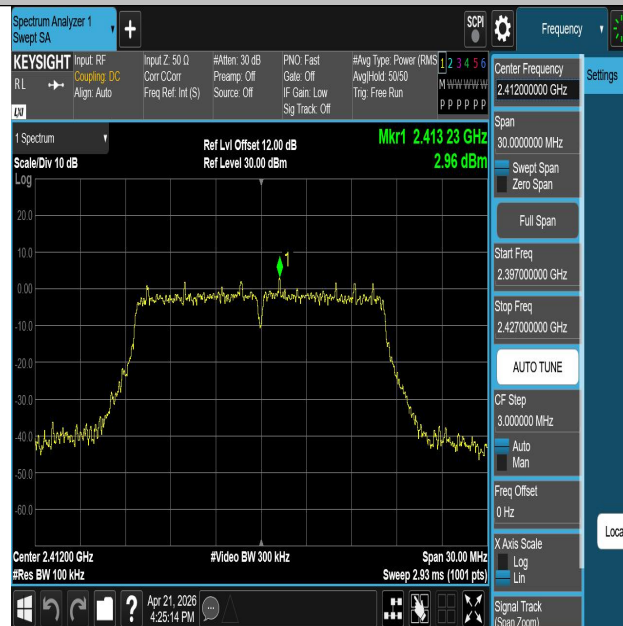
11B-Ant1-2462-0~Reference-PASS



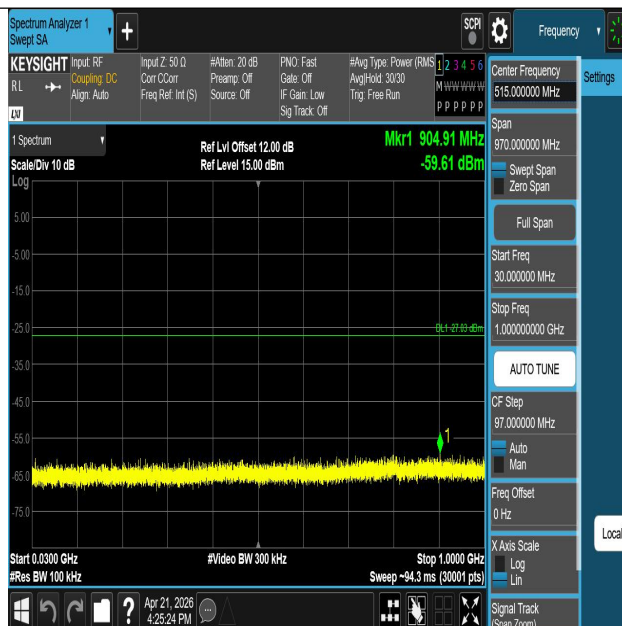
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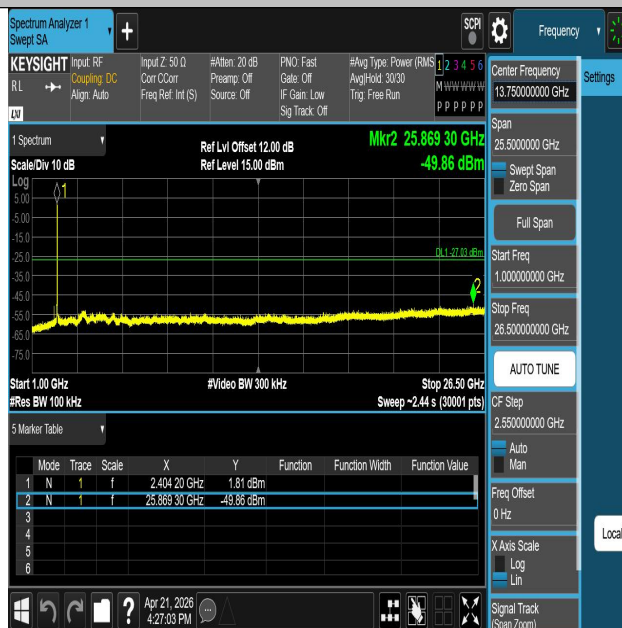
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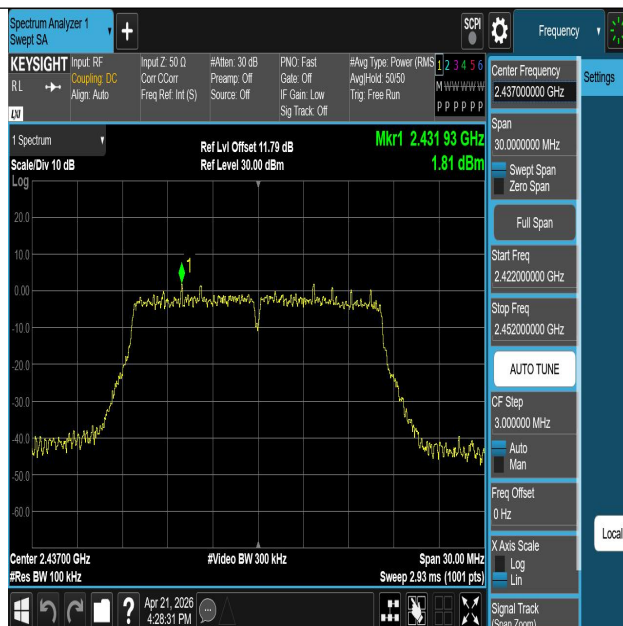
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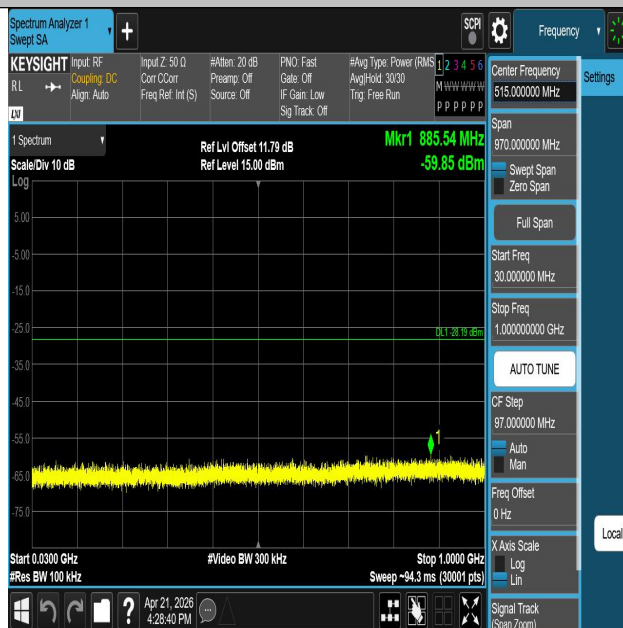
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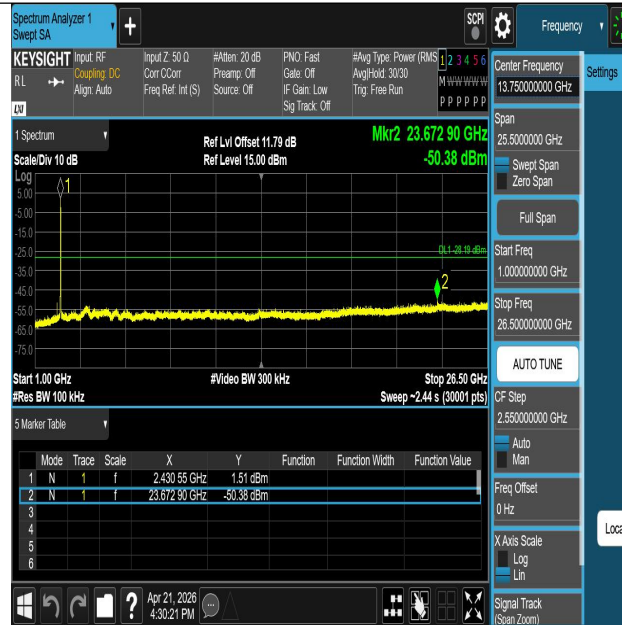
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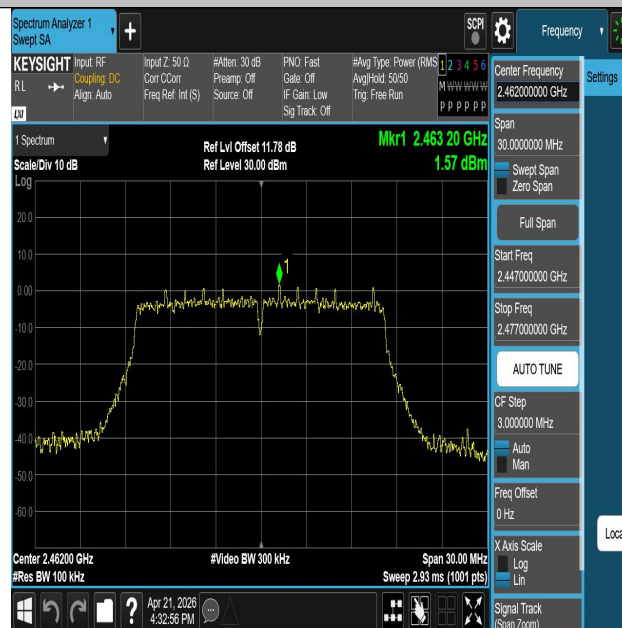
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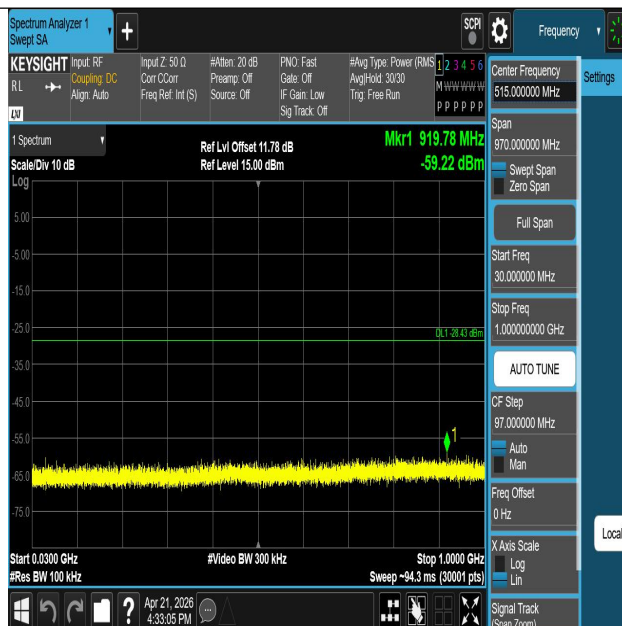
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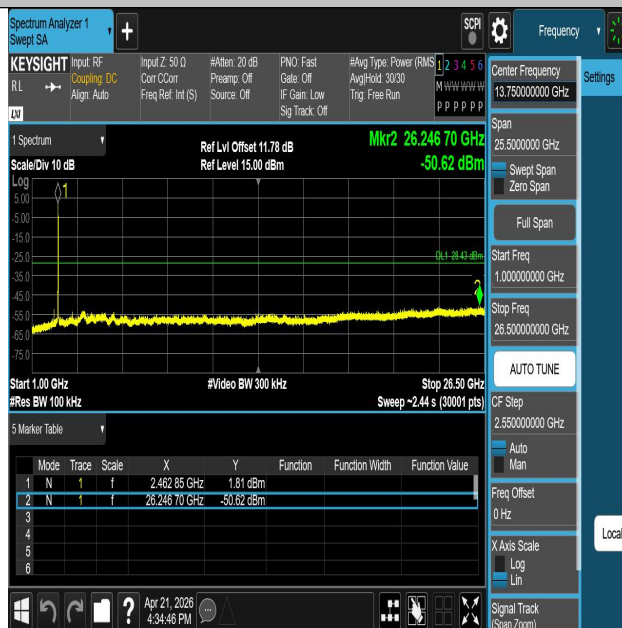
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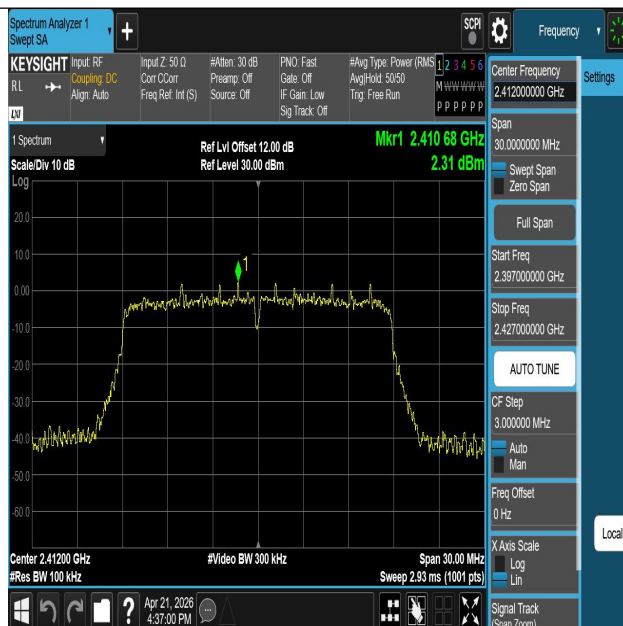
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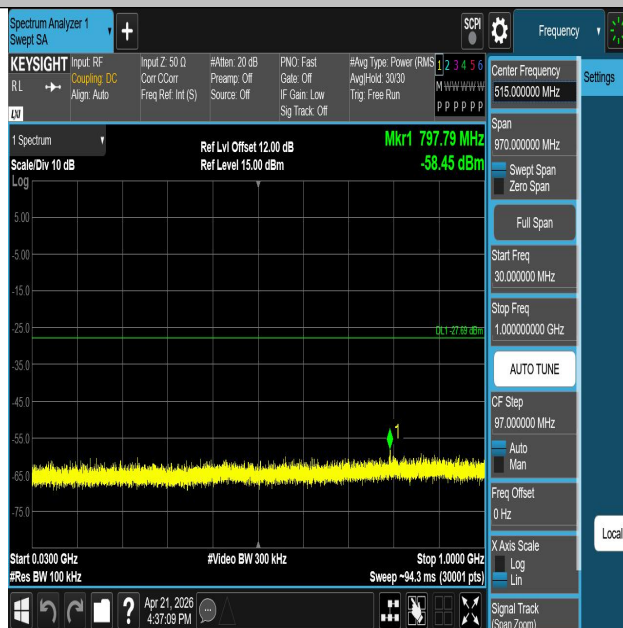
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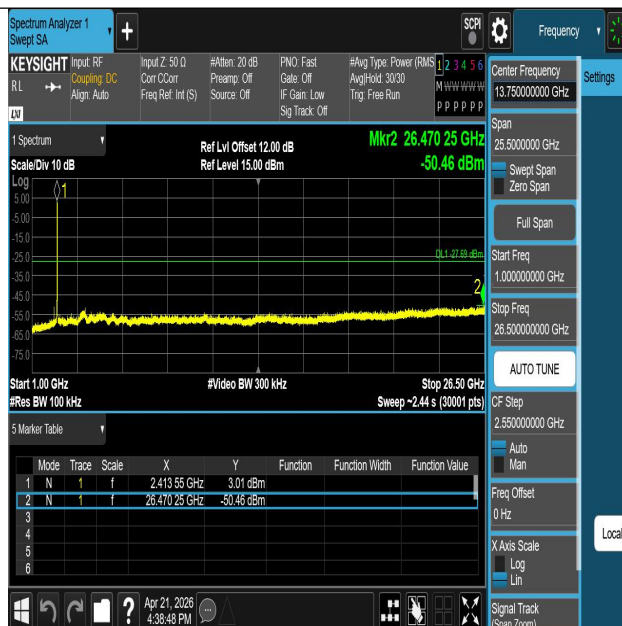
11G-Ant1-2462-1000~26500-PASS



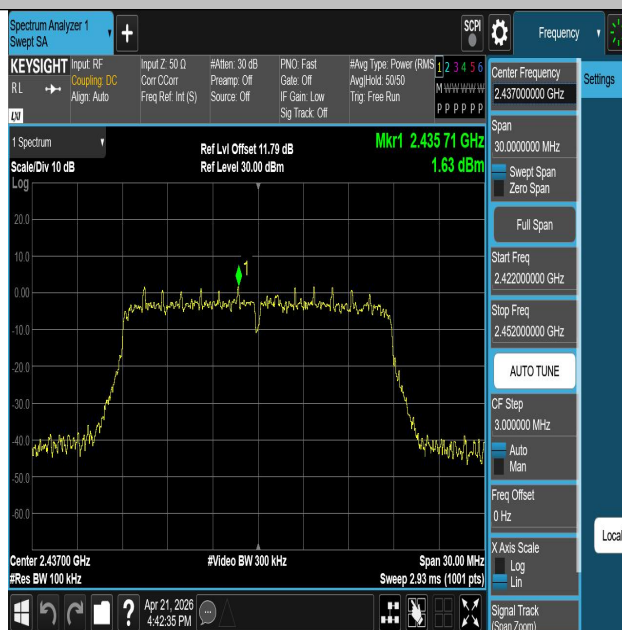
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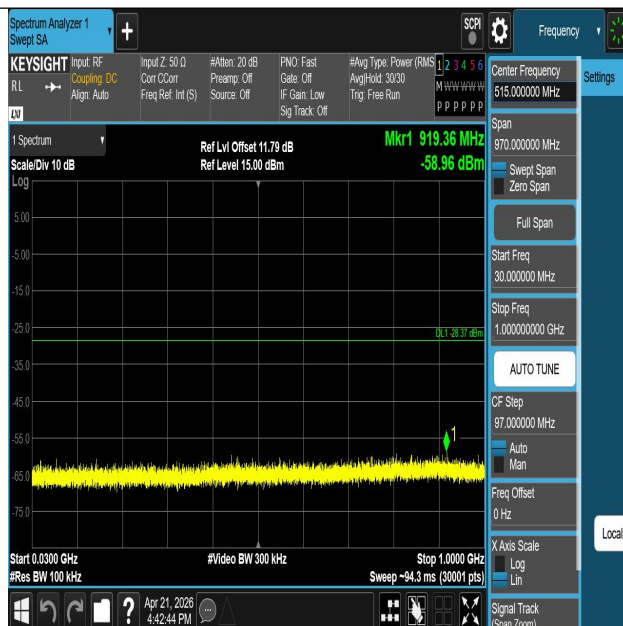
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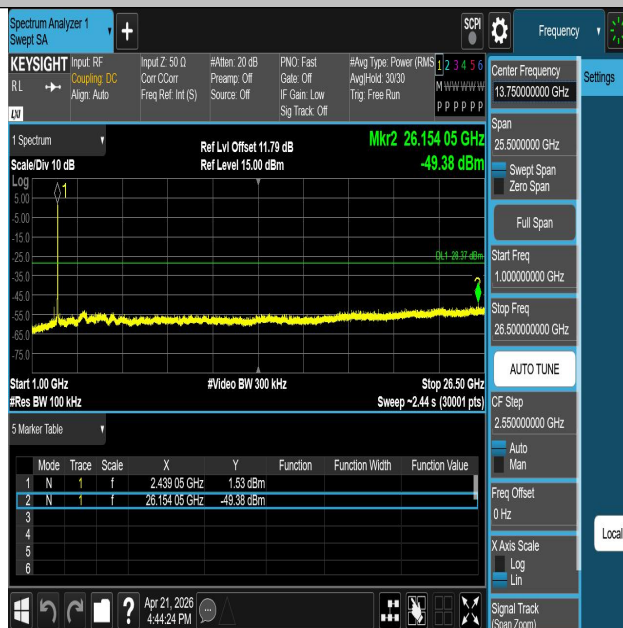
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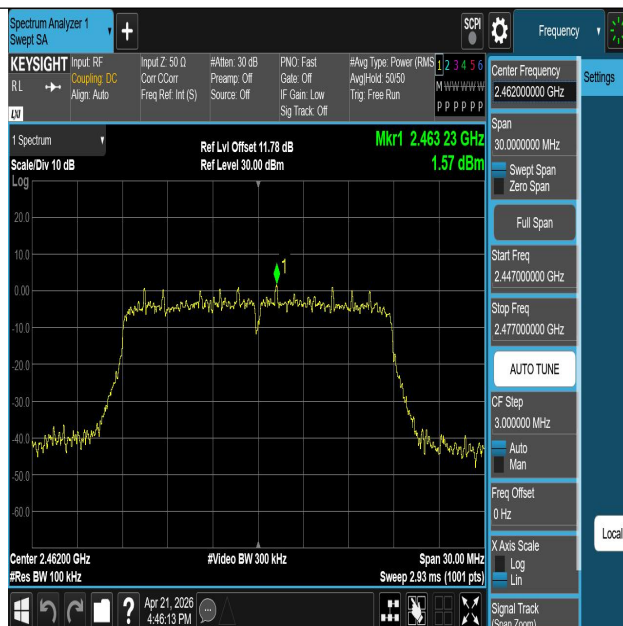
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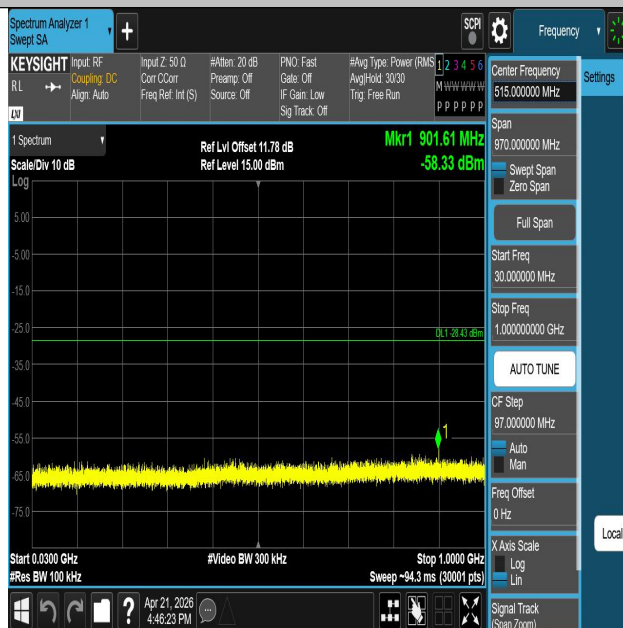
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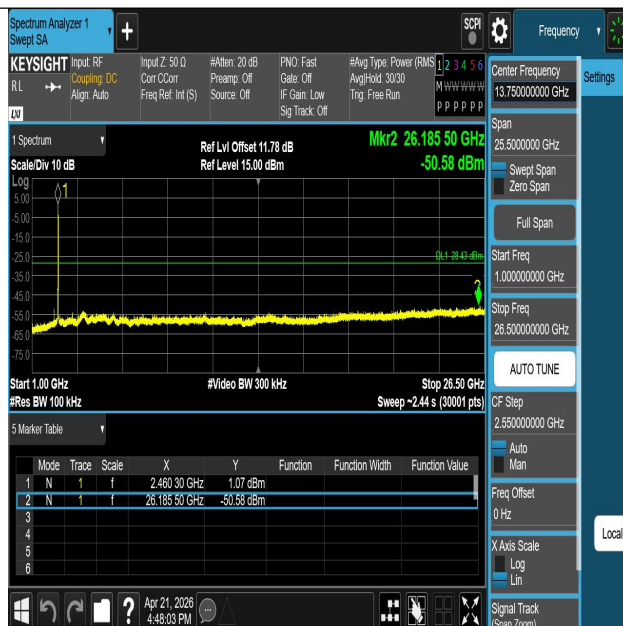
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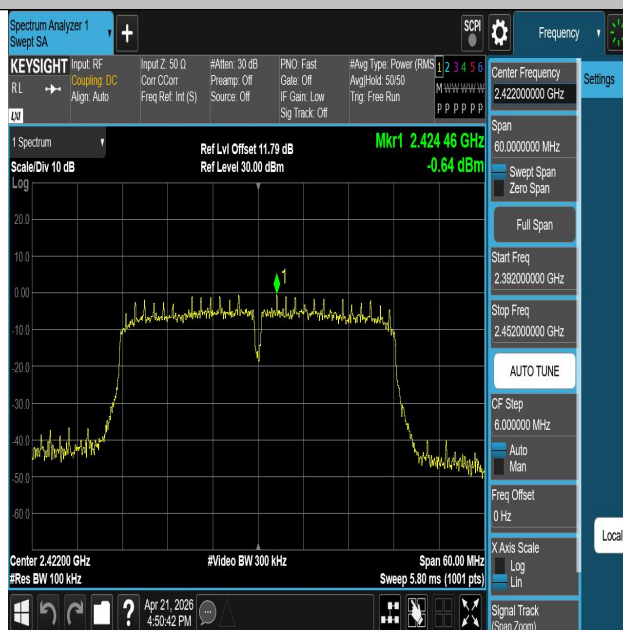
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11N20SISO-Ant1-2462-30~1000-PASS



11N20SISO-Ant1-2462-1000~26500-PASS



11N40SISO-Ant1-2422-0~Reference-PASS