TEST REPORT

FCC ID: 2AMY3-8T9-422L

Product: Tablet PC

Model No.: Acer One 8 T9-422L

Trade Mark: Acer

Report No.: WSCT-A2LA-R&E230300002A-Wi-Fi2

Issued Date: 13 April 2023

Issued for:

Acer India Pvt Ltd.
Embassy Heights 6th Floor, No. 13, Magrath Road, (Next to Hosmat Hospital),
Bangalore-560 025, India.

Issued By:

World Standardization Certification & Testing Group(Shenzhen) Co., Ltd.
Building A-B, Baoshi Science & Technology Park, Baoshi Road,
Bao'an District, Shenzhen, Guangdong, China
TEL: +86-755-26996192
FAX: +86-755-86376605

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1 Test Certification

Product:	Tablet PC
Model No.:	Acer One 8 T9-422L
Trade Mark:	Acer
Applicant:	**Acer India Pvt Ltd.**
Address:	Embassy Heights 6th Floor, No. 13, Magrath Road, (Next to Hosmat Hospital), Bangalore-560 025, India.
Manufacturer:	**Acer India Pvt Ltd.**
Address:	Embassy Heights 6th Floor, No. 13, Magrath Road, (Next to Hosmat Hospital), Bangalore-560 025, India.
Factory:	**Acer India Pvt Ltd.**
Address:	RS No. 38/2, Sedarapet Village, Villianur Commune, Pondicherry – 605111.
Date of Test:	12 January 2023 to 15 March 2023
Applicable Standards:	FCC CFR Title 47 FCC Part 15 Subpart E

The above equipment has been tested by World Standardization Certification & Testing Group(Shenzhen)Co., Ltd. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By: Wang Xiang **(Wang Xiang)**

Checked By: Qin Shuiquan **(Qin Shuiquan)**

Approved By: Liu Fuxin **(Liu Fuxin)**

Date: 13 April 2023

2 EUT Description

Product:	Tablet PC
Model No.:	Acer One 8 T9-422L
Trade Mark:	Acer
Operation Frequency:	Band 1: 5180-5240 MHz Band 2: 5260-5320 MHz Band 3: 5500-5700 MHz Band 4: 5745-5825 MHz
Modulation type:	IEEE 802.11a/n/ac: OFDM/OFDMA (BPSK/QPSK/16QAM/64QAM/256QAM)
Antenna Type:	Integral Antenna
Antenna Gain	2.27dBi
Rechargeable Li-Polymer Battery:	Model: GFL 1100100 1ICP4/100/100 Nominal Voltage: 3.8V Rated capacity: 5100mAh/19.38Wh Limited Charge Voltage: 4.35V
Adapter:	Model: BSY01J3050200UU Input: 100-240V~50/60Hz 0.3A Output:5.0V⎓2.0A 10.0W
Remark:	N/A.

3 TEST DESCRIPTION

3.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

No.	Item	Uncertainty
1	Conducted Emission Test	±3.2dB
2	RF power, conducted	±0.16dB
3	Spurious emissions, conducted	±0.21dB
4	All emissions, radiated(<1GHz)	±4.7dB
5	All emissions, radiated(>1GHz)	±4.7dB
6	Temperature	±0.5°C
7	Humidity	±2%

3.2 TEST ENVIRONMENT AND MODE

Operating Environment:	
Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010 mbar
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel and modulations(The value of duty cycle is 98.46%)

The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. For the full battery state and The output power to the maximum state.

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test Mode	Description
Mode 1	802.11a
Mode 2	802.11n20
Mode 3	802.11n40
Mode 4	802.11ac20
Mode 5	802.11ac40
Mode 6	802.11ac80

Note:

(1) The measurements are performed at the highest, lowest available channels.

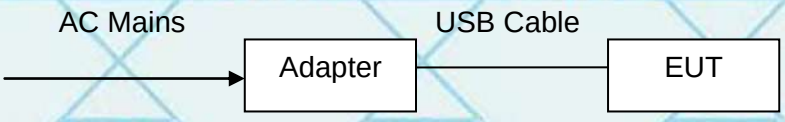
(2) The EUT use new battery.

(3) Record the worst case of each test item in this report.

3.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

Test program	*#*#3646633#*#*											
Mode	Test Frequency (MHz)											
	NCB: 20MHz											
802.11a	5180 MHz	5240 MHz	5260 MHz	5320 MHz	5500 MHz	5700 MHz	5745 MHz	5825 MHz				
802.11n	5180 MHz	5240 MHz	5260 MHz	5320 MHz	5500 MHz	5700 MHz	5745 MHz	5825 MHz				
802.11ac	5180 MHz	5240 MHz	5260 MHz	5320 MHz	5500 MHz	5700 MHz	5745 MHz	5825 MHz				
	NCB: 40MHz											
802.11n	5190 MHz	5230 MHz	5270 MHz	5310 MHz	5510 MHz	5670 MHz	5755 MHz	5795 MHz				
802.11ac	5190 MHz	5230 MHz	5270 MHz	5310 MHz	5510 MHz	5670 MHz	5755 MHz	5795 MHz				
	NCB: 80MHz											
802.11ac	5210 MHz	5290 MHz	5530 MHz	5610 MHz	5775 MHz							
During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.												

3.4 CONFIGURATION OF SYSTEM UNDER TEST



(EUT: Tablet PC)

3.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
1	Adapter	/	BSY01J3050200UU	/	/
2	Earphone	/	N/A	/	/

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.
(4) The adapter supply by the applicant.

4 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 Subpart C&E			
Standard Section	Test Item	Judgment	Remark
2.1049 15.403(i)	26dB & 99% Bandwidth	PASS	Complies
15.407(e)	6dB Spectrum Bandwidth	PASS	Complies
15.407(a)	Maximum Conducted Output Power	PASS	Complies
15.407(a)	Power Spectral Density	PASS	Complies
15.407(b)	Unwanted Emissions	PASS	Complies
15.207	AC Conducted Emission	PASS	Complies
15.407(g)	Frequency Stability	PASS	Complies
15.407(c)	Automatically Discontinue Transmission	PASS	Complies
15.203 & 15.407(a)	Antenna Requirement	PASS	Complies
15.407(h)	Transmit Power Control (TPC) and Dynamic Frequency Selection (DFS)	PASS	Complies

NOTE:

(1)" N/A" denotes test is not applicable in this test report.

5 MEASUREMENT INSTRUMENTS

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	Calibration Date	Calibration Due.
Test software	--	EZ-EMC	CON-03A	-	-
Test software	--	MTS8310	-	-	-
EMI Test Receiver	R&S	ESCI	100005	11/05/2022	11/04/2023
LISN	AFJ	LS16	16010222119	11/05/2022	11/04/2023
LISN(EUT)	Mestec	AN3016	04/10040	11/05/2022	11/04/2023
Universal Radio Communication Tester	R&S	CMU 200	1100.0008.02	11/05/2022	11/04/2023
Coaxial cable	Megalon	LMR400	N/A	11/05/2022	11/04/2023
GPIB cable	Megalon	GPIB	N/A	11/05/2022	11/04/2023
Spectrum Analyzer	R&S	FSU	100114	11/05/2022	11/04/2023
Pre Amplifier	H.P.	HP8447E	2945A02715	11/05/2022	11/04/2023
Pre-Amplifier	CDSI	PAP-1G18-38	--	11/05/2022	11/04/2023
Bi-log Antenna	SUNOL Sciences	JB3	A021907	11/05/2022	11/04/2023
9*6*6 Anechoic	--	--	--	11/05/2022	11/04/2023
Horn Antenna	COMPLIANCE ENGINEERING	CE18000	--	11/05/2022	11/04/2023
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-631	11/05/2022	11/04/2023
Cable	TIME MICROWAVE	LMR-400	N-TYPE04	11/05/2022	11/04/2023
System-Controller	CCS	N/A	N/A	N.C.R	N.C.R
Turn Table	CCS	N/A	N/A	N.C.R	N.C.R
Antenna Tower	CCS	N/A	N/A	N.C.R	N.C.R
RF cable	Murata	MXHQ87WA3000	-	11/05/2022	11/04/2023
Loop Antenna	EMCO	6502	00042960	11/05/2022	11/04/2023
Horn Antenna	SCHWARZBECK	BBHA 9170	1123	11/05/2022	11/04/2023
Power meter	Anritsu	ML2487A	6K00003613	11/05/2022	11/04/2023
Power sensor	Anritsu	MX248XD	--	11/05/2022	11/04/2023
Spectrum Analyzer	Keysight	N9010B	MY60241089	11/05/2022	11/04/2023

6 Facilities and Accreditations

6.1 FACILITIES

All measurement facilities used to collect the measurement data are located at **Building A-B, Baoshi Science & Technology Park, Baoshi Road, Bao'an District, Shenzhen, Guangdong, China of the World Standardization Certification & Testing Group(Shenzhen) CO., LTD**

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

6.2 ACCREDITATIONS

China National Accreditation Service for Conformity Assessment (CNAS)
Registration number NO: L3732

American Association for Laboratory Accreditation(A2LA)

Registration NO：5768.01

Copies of granted accreditation certificates are available for downloading from our web site, http://www.wsct-cert.com

7 Test Results and Measurement Data

7.1 CONDUCTED EMISSION MEASUREMENT

POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

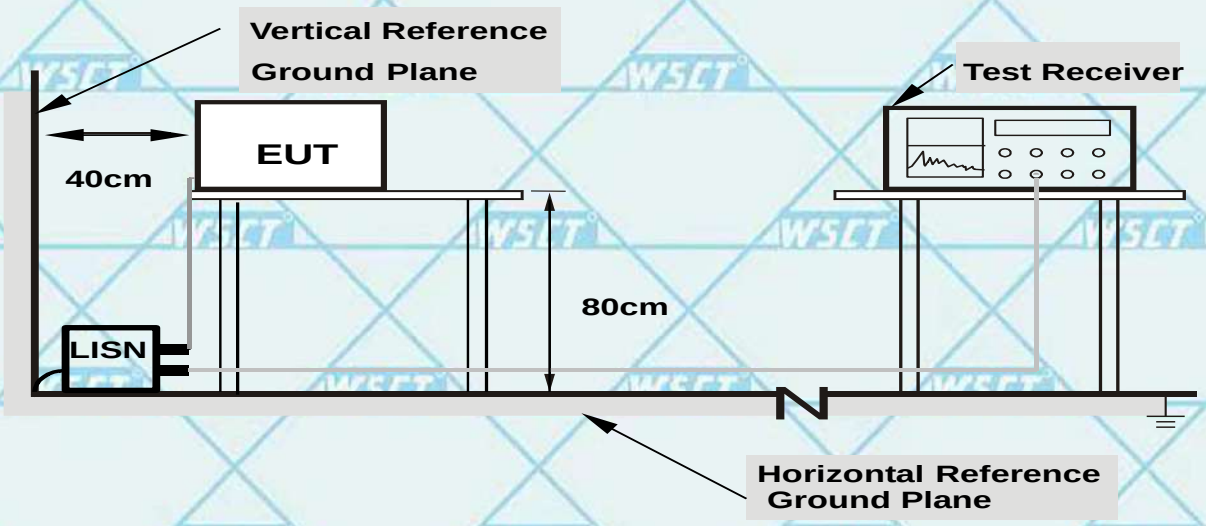
7.1.1 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

7.2 DEVIATION FROM TEST STANDARD

No deviation

TEST SETUP



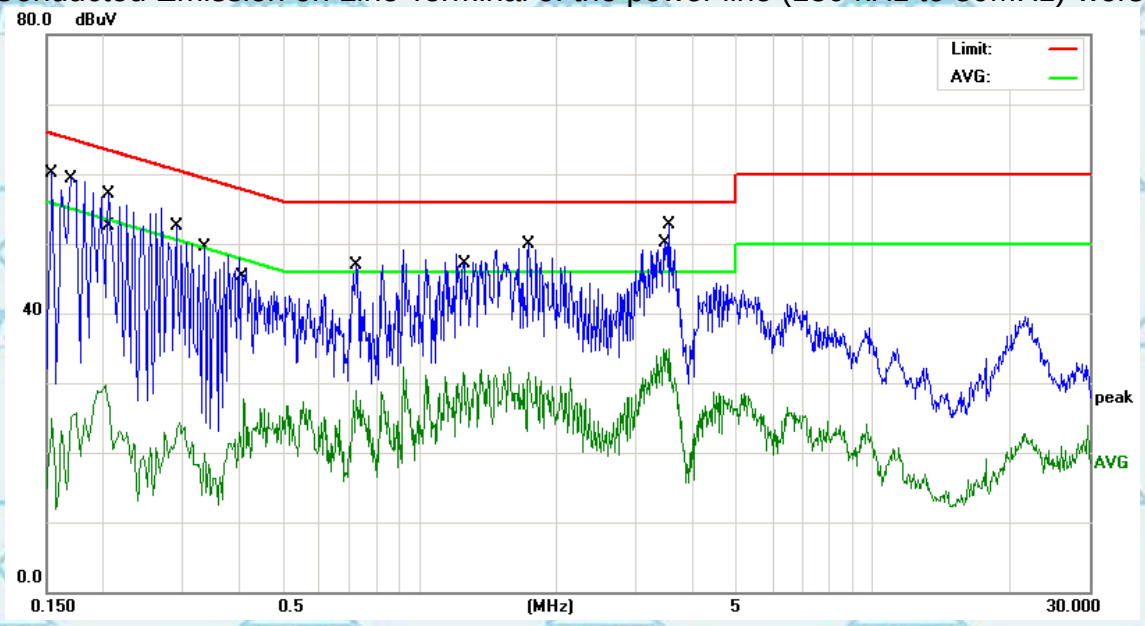
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

7.2.1 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

7.2.2 TEST RESULTS

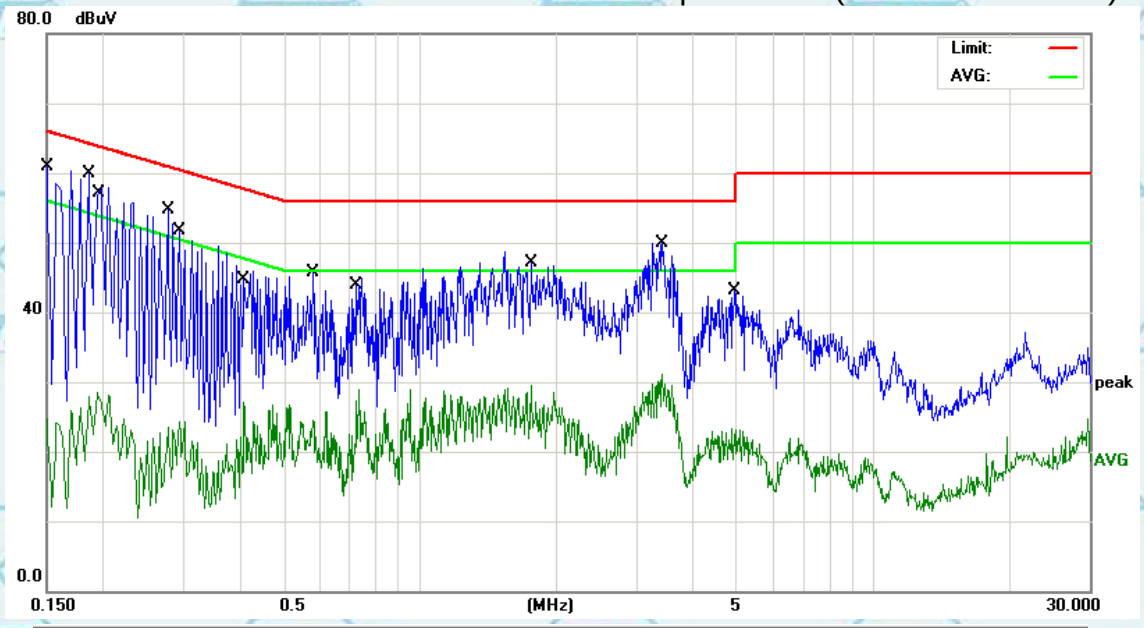
Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)-worst



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1539	49.77	10.41	60.18	65.78	-5.60	QP
2		0.1700	48.94	10.41	59.35	64.96	-5.61	QP
3		0.2020	19.21	10.41	29.62	53.52	-23.90	AVG
4		0.2060	46.76	10.41	57.17	63.36	-6.19	QP
5		0.2900	42.08	10.43	52.51	60.52	-8.01	QP
6		0.3339	39.05	10.44	49.49	59.35	-9.86	QP
7		0.4100	17.31	10.45	27.76	47.65	-19.89	AVG
8		0.7220	18.37	10.49	28.86	46.00	-17.14	AVG
9		1.2460	20.95	10.55	31.50	46.00	-14.50	AVG
10		1.7420	20.80	10.62	31.42	46.00	-14.58	AVG
11		3.4460	24.30	10.67	34.97	46.00	-11.03	AVG
12	*	3.5580	41.95	10.68	52.63	56.00	-3.37	QP

Remark: All the modes have been investigated, and only worst mode is presented in this report.

Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1500	50.41	10.41	60.82	65.99	-5.17	QP
2	*	0.1860	49.44	10.41	59.85	64.21	-4.36	QP
3		0.1940	18.03	10.41	28.44	53.86	-25.42	AVG
4		0.2779	44.32	10.43	54.75	60.88	-6.13	QP
5		0.2940	41.31	10.43	51.74	60.41	-8.67	QP
6		0.4100	16.67	10.45	27.12	47.65	-20.53	AVG
7		0.5820	35.31	10.48	45.79	56.00	-10.21	QP
8		0.7340	18.46	10.49	28.95	46.00	-17.05	AVG
9		1.7540	18.87	10.62	29.49	46.00	-16.51	AVG
10		3.4220	39.16	10.67	49.83	56.00	-6.17	QP
11		3.4220	20.33	10.67	31.00	46.00	-15.00	AVG
12		4.8820	12.57	10.69	23.26	46.00	-22.74	AVG

Note1:

Freq. = Emission frequency in MHz

Reading level (dBμV) = Receiver reading

Corr. Factor (dB) = Antenna factor + Cable loss

Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)

Limit (dBμV) = Limit stated in standard

Margin (dB) = Measurement (dBμV) – Limits (dBμV)

Q.P. =Quasi-Peak AVG =average

** is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.*

7.3 RADIATED EMISSION MEASUREMENT

Radiated Emission Limits(Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 1Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

7.3.1 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

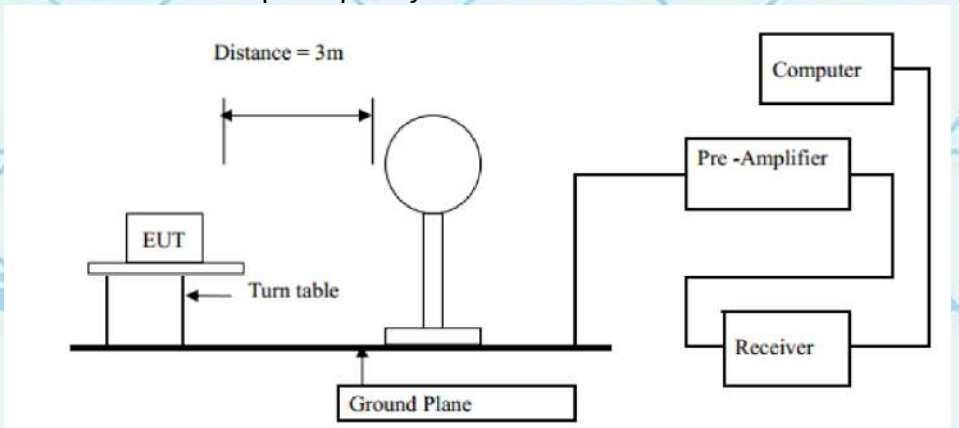
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

7.3.2 DEVIATION FROM TEST STANDARD

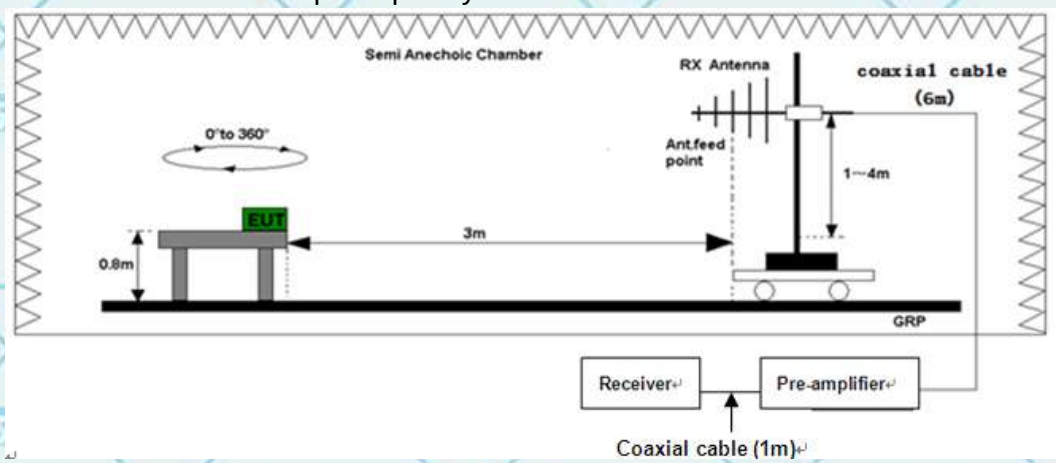
No deviation

7.3.3 TEST SETUP

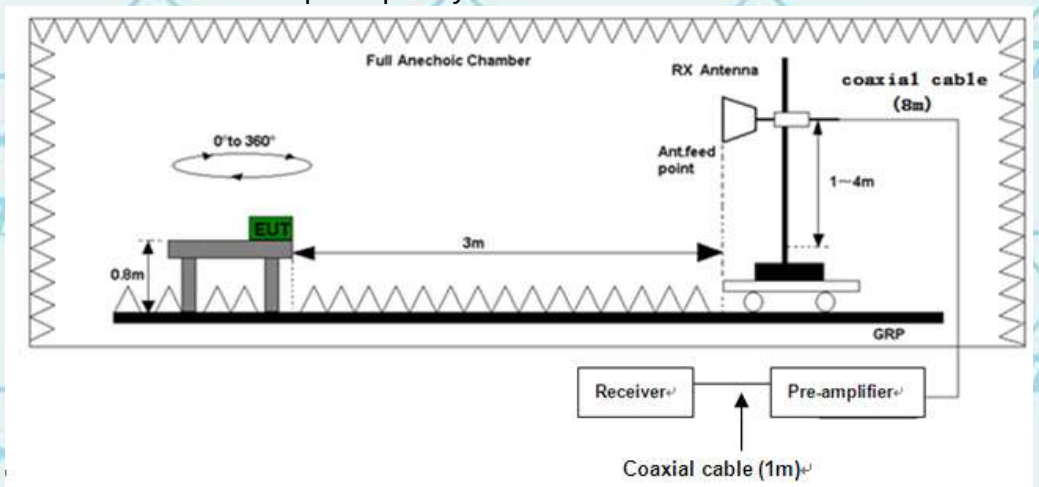
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



7.3.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.3.5 RESULTS (BELOW 30 MHZ)

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	P
--	--	--	--	P

Note:

No result in this part for margin above 20dB.

Distance extrapolation factor =20 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuV) + distance extrapolation factor.

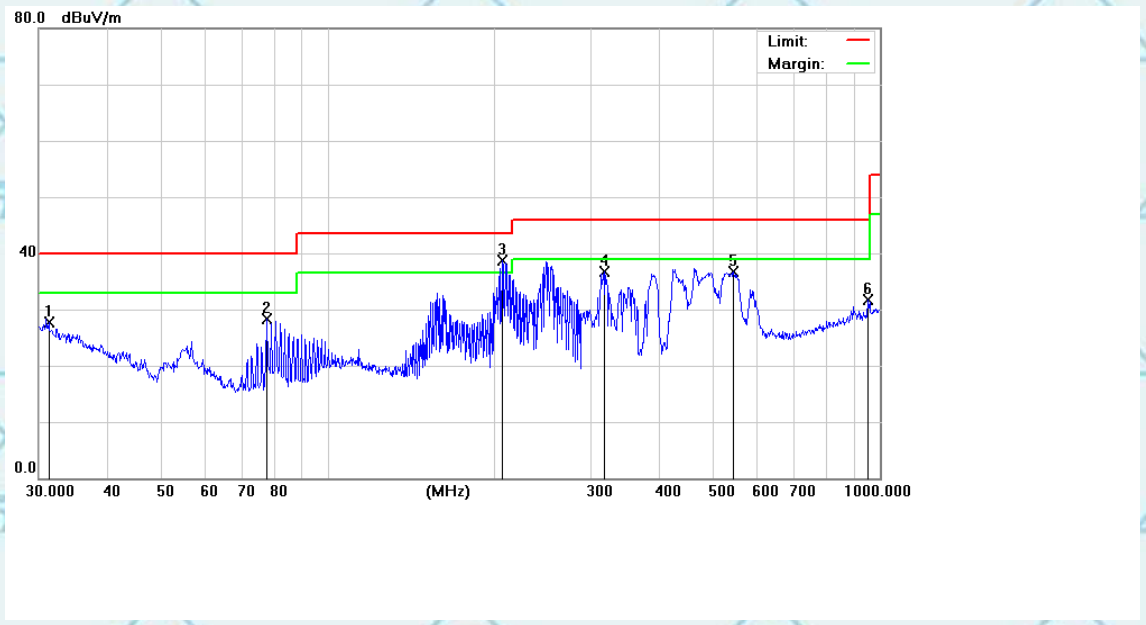
All the x/y/z orientation has been investigated, and only worst case is presented in this report.

7.3.6 TEST RESULTS (BETWEEN 30M – 1000 MHZ)

Please refer to following diagram for individual

Below 1GHz

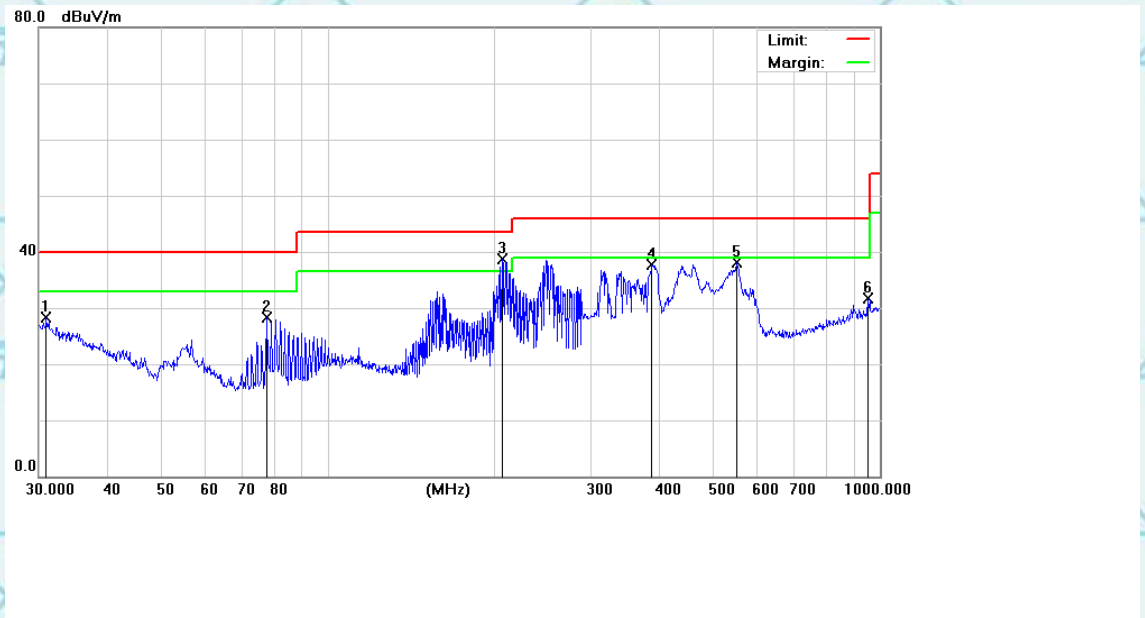
Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		31.2893	23.44	4.29	27.73	40.00	-12.27	QP
2		77.5928	35.39	-7.14	28.25	40.00	-11.75	QP
3	*	207.1226	45.44	-6.68	38.76	43.50	-4.74	QP
4		316.5890	38.79	-2.04	36.75	46.00	-9.25	QP
5		543.2742	35.92	0.88	36.80	46.00	-9.20	QP
6		952.0937	25.32	6.45	31.77	46.00	-14.23	QP

Remark: All the modes have been investigated, and only worst mode is presented in this report.

Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		30.9619	23.94	4.43	28.37	40.00	-11.63	QP
2		77.5928	35.39	-7.14	28.25	40.00	-11.75	QP
3	*	207.1226	45.44	-6.68	38.76	43.50	-4.74	QP
4		386.6338	38.90	-1.14	37.76	46.00	-8.24	QP
5		550.9480	37.07	0.96	38.03	46.00	-7.97	QP
6		952.0937	25.32	6.45	31.77	46.00	-14.23	QP

Note1:
Freq. = Emission frequency in MHz
Reading level (dBµV) = Receiver reading
Corr. Factor (dB) = Antenna factor + Cable loss - Amplifier factor.
Measurement (dBµV) = Reading level (dBµV) + Corr. Factor (dB)
Limit (dBµV) = Limit stated in standard
Margin (dB) = Measurement (dBµV) – Limits (dBµV)

7.3.7 TEST RESULTS (ABOVE 1GHZ)

Above 1GHz

Freq. (MHz)	Low channel: 5180MHz						
	Ant.Pol	Emission Level(dBuV)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
10360	V	59.40	41.76	74	54	-14.60	-12.24
15540	V	59.79	40.07	74	54	-14.21	-13.93
10360	H	58.31	40.42	74	54	-15.69	-13.58
15540	H	59.15	40.15	74	54	-14.85	-13.85

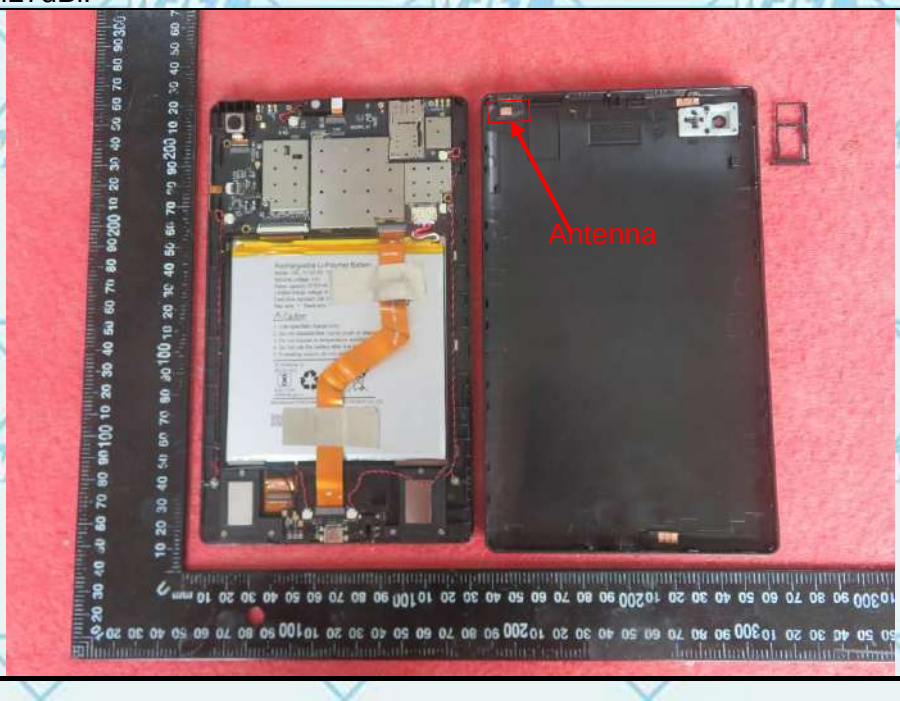
Freq. (MHz)	Low channel: 5180MHz						
	Ant.Pol	Emission Level(dBuV)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
10360	V	60.69	39.24	74	54	-13.31	-14.76
15540	V	58.51	40.59	74	54	-15.49	-13.41
10360	H	58.72	39.64	74	54	-15.28	-14.36
15540	H	58.85	39.85	74	54	-15.15	-14.15

Freq. (MHz)	Low channel: 5180MHz						
	Ant.Pol	Emission Level(dBuV)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
10360	V	58.16	41.02	74	54	-15.84	-12.98
15540	V	58.07	40.80	74	54	-15.93	-13.20
10360	H	59.51	39.43	74	54	-14.49	-14.57
15540	H	58.53	39.53	74	54	-15.47	-14.47

Freq. (MHz)	Low channel: 5180MHz						
	Ant.Pol	Emission Level(dBuV)		Limit 3m(dBuV/m)		Over(dB)	
	H/V	PK	AV	PK	AV	PK	AV
10360	V	60.32	40.25	74	54	-13.68	-13.75
15540	V	58.93	39.30	74	54	-15.07	-14.70
10360	H	59.95	39.29	74	54	-14.05	-14.71
15540	H	58.14	39.14	74	54	-15.86	-14.86

Note:
1. All emissions not reported were more than 20dB below the specified limit or in the noise floor.
2. Emission Level= Reading Level+ Probe Factor +Cable Loss.
3. Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

7.4 ANTENNA REQUIREMENT

Standard requirement:	The EUT'S antenna is met the requirement of FCC part 15C section 15.203 and FCC part 15C section 15.407.
FCC part 15C section 15.203 and FCC part 15C section 15.407 requirements: Systems operating in the 5150~5850MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum peak output power of the intentional radiator is reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.	
E.U.T Antenna:	
The Wi-Fi antenna is a Integral Antenna. it meets the standards, and the best case gain of the antenna is 2.27dBi.	
	

7.5 EMISSION BANDWIDTH

7.5.1 TEST EQUIPMENT

Please refer to Section 5 this report.

7.5.2 TEST PROCEDURE

-26dB Bandwidth and 99% Occupied Bandwidth:	
Test Method:	a)The transmitter was radiated to the spectrum analyzer in peak hold mode. b)Measure the maximum width of the emission that is 26 dB down from the peak of the emission Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
Test Equipment Setting – 26dB Bandwidth:	Test Equipment Setting – 99%% Bandwidth:
a)Attenuation: Auto b)Span Frequency: > 26dB Bandwidth c)RBW: Approximately 1% of the emission bandwidth d)VBW: VBW > RBW e)Detector: Peak f)Trace: Max Hold g)Sweep Time: Auto	a)Span: 1.5 times to 5.0 times the OBW b)RBW: 1 % to 5 % of the OBW c)VBW: ≥ 3 x RBW d)Detector: Peak e)Trace: Max Hold
6 dB Bandwidth:	
Test Method:	a)The transmitter was radiated to the spectrum analyzer in peak hold mode. b)Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (C) Emission Bandwidth. c)Multiple antenna system was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band. d)Measured the spectrum width with power higher than 6dB below carrier.
Test Equipment Setting:	
a)Attenuation: Auto b)Span Frequency: > 6dB Bandwidth c)RBW: 100kHz d)VBW: ≥ 3 x RBW	e)Detector: Peak f)Trace: Max Hold g)Sweep Time: Auto
Maximum Conducted Output Power Measurement:	
Test Method:	a)The transmitter output (antenna port) was connected to the power meter. b)Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (E) Maximum conducted output power =>3. Measurement using a Power Meter (PM) =>b) Method PM-G (Measurement using a gated RF average power meter). c)Multiple antenna systems was performed in accordance with KDB662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band. d)When measuring maximum conducted output power with multiple antenna systems, add every result of the values by mathematic formula.
Test Equipment Setting: Detector - Average	
Power Spectral Density:	
Test Method:	a)The transmitter output (antenna port) was connected RF switch to the spectrum analyzer. b)Test was performed in accordance with KDB789033 D02 v01 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - section (F) Maximum Power Spectral Density (PSD). c)Multiple antenna systems was performed in accordance KDB662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs. d)When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum. The summed spectrum value for each of the other frequency bins is computed in the same way. e)For 5.725~5.85 GHz, the measured result of PSD level must add 10log(500kHz/RBW)

	and the final result should ≤ 30 dBm.

Test Equipment Setting:

a)Attenuation: Auto b)Span Frequency: Encompass the entire emissions bandwidth (EBW) of the signal c)RBW: 1000 kHz d)VBW: 3000 kHz	e)Detector: RMS f)Trace: AVERAGE g)Sweep Time: Auto h)Trace Average: 100 times

Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

Frequency Stability Measurement:

Test Method:	a)The transmitter output (antenna port) was connected to the spectrum analyzer. b)EUT have transmitted absence of modulation signal and fixed channelize. c)Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth. d)Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings. e)fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification). f)The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value g)Extreme temperature is 0°C~40°C

Test Equipment Setting:

a)Attenuation: Auto b)Span Frequency: Entire absence of modulation emissions bandwidth c)RBW: 10 kHz d)VBW: 10 kHz	e)Sweep Time: Auto

7.5.3 CONFIGURATION OF THE EUT

Same as section 3.4 of this report

7.5.4 EUT OPERATING CONDITION

Same as section 3.5 of this report.

7.5.5 LIMIT

-26dB Bandwidth and 99% Occupied Bandwidth:	
Limit:	No restriction limits.
-6 dB Bandwidth:	
Limit:	For digital modulation systems, the minimum 6dB bandwidth shall be at least 500 kHz.
Test Equipment Setting:	
a)Attenuation: Auto b)Span Frequency: > 6dB Bandwidth c)RBW: 100kHz d)VBW: ≥ 3 x RBW	e)Detector: Peak f)Trace: Max Hold g)Sweep Time: Auto
Maximum Conducted Output Power Measurement:	
☒5.15~5.25 GHz	
☐Limit of Outdoor access point:	☐Limit of Indoor access point:
The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).	The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☐Limit of Fixed point-to-point access points:	☒Limit of Mobile and portable client devices:
The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.	The maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24dBm) provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
☒5.25-5.35 GHz & ☒5.470-5.725 GHz	
The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
☒5.725~5.85 GHz	
The maximum conducted output power over the frequency band of operation shall not exceed 1 W (30dBm). If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.	
Power Spectral Density	
☒5.15~5.25 GHz	
☐Limit of Outdoor access point: 17 dBm/MHz	☐Limit of Indoor access point: 17 dBm/MHz
☐Limit of Fixed point-to-point access points: 17 dBm/MHz	☒Limit of Mobile and portable client devices: 11 dBm/MHz
☐5.25-5.35 GHz	11 dBm/MHz
☐5.470-5.725 GHz	11 dBm/MHz
☒5.725~5.85 GHz	30 dBm/500kHz
Frequency Stability Measurement:	
Limit:	In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual. The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE

	802.11n specification).

7.5.6 TEST RESULT

-26dB Bandwidth and 99% Occupied Bandwidth

Product	: EUT-Sample	Test Mode	: See section 3.4
Test Item	: -26dB Bandwidth/-6dB Bandwidth and 99% Occupied Bandwidth	Temperature	: 25 ℃
Test Voltage	: DC 3.8V	Humidity	: 56%RH
Test Result	: PASS		

-26dB Bandwidth

Band	Channel	Frequency (MHz)	-26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
20MHz(IEEE 802.11a/n/ac)						
1	Low	5180	20.463	17.598	0.5	Pass
	High	5240	20.415	17.624	0.5	Pass
2	Low	5260	20.317	17.605	0.5	Pass
	High	5320	20.388	17.589	0.5	Pass
3	Low	5500	20.204	17.607	0.5	Pass
	High	5700	20.297	17.606	0.5	Pass
40MHz(IEEE 802.11n/ac)						
1	Low	5190	40.202	35.844	0.5	Pass
	High	5230	39.996	35.925	0.5	Pass
2	Low	5270	40	35.865	0.5	Pass
	High	5310	39.742	35.949	0.5	Pass
3	Low	5510	39.548	35.862	0.5	Pass
	High	5670	39.618	35.921	0.5	Pass
80MHz(IEEE 802.11ac)						
1	Low	5210	79.058	75.160	0.5	Pass
2	Low	5290	78.758	75.252	0.5	Pass
3	Low	5530	79.484	75.126	0.5	Pass
	High	5610	79.32	75.265	0.5	Pass

-6dB Bandwidth

Band	Channel	Frequency (MHz)	-6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
20MHz(IEEE 802.11a/n/ac)						
4	Low	5745	16.67	17.527	> 0.5	Pass
	High	5825	15.398	17.536	> 0.5	Pass
40MHz(IEEE 802.11n/ac)						
4	Low	5755	35.042	35.825	> 0.5	Pass
	High	5795	33.846	35.809	> 0.5	Pass
80MHz(IEEE 802.11ac)						
4	Low	5775	75.101	75.178	> 0.5	Pass

20MHz(IEEE 802.11a/n/ac)
Band1

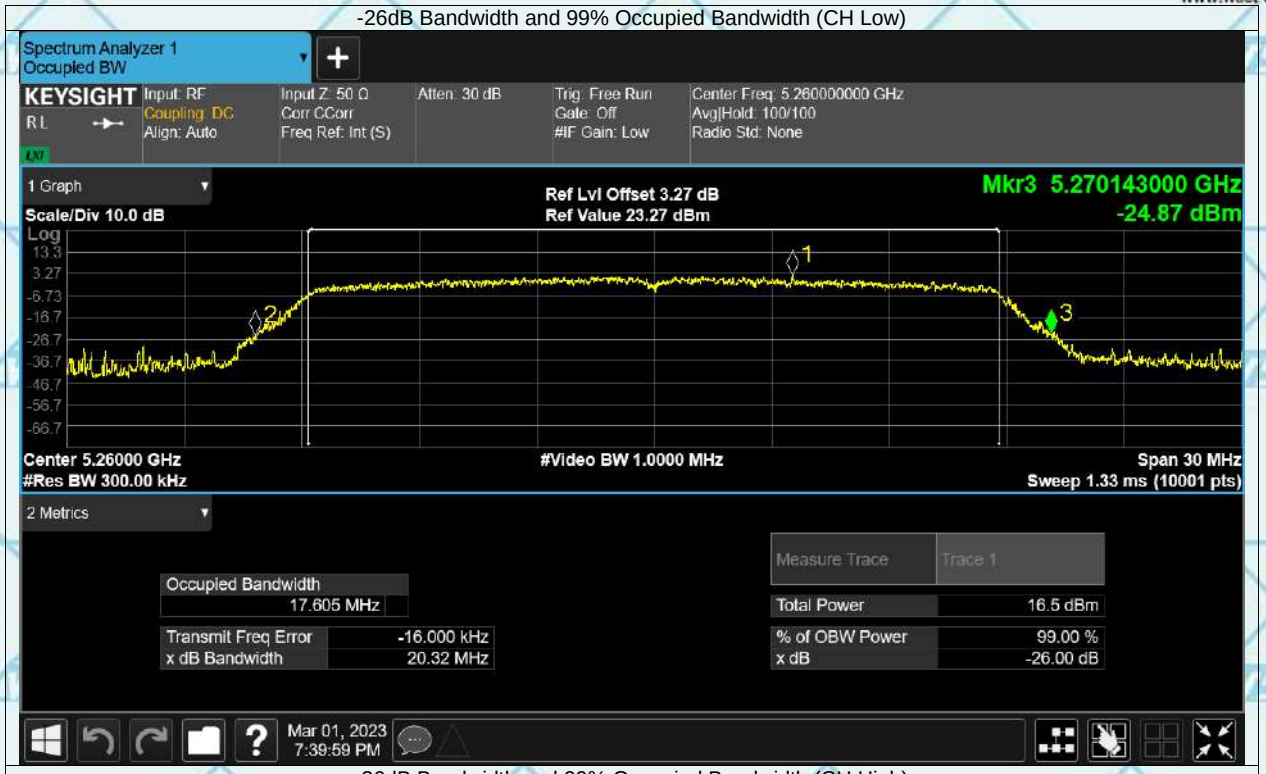
Test Graphs

-26dB Bandwidth and 99% Occupied Bandwidth (CH Low)

-26dB Bandwidth and 99% Occupied Bandwidth (CH High)

Band2

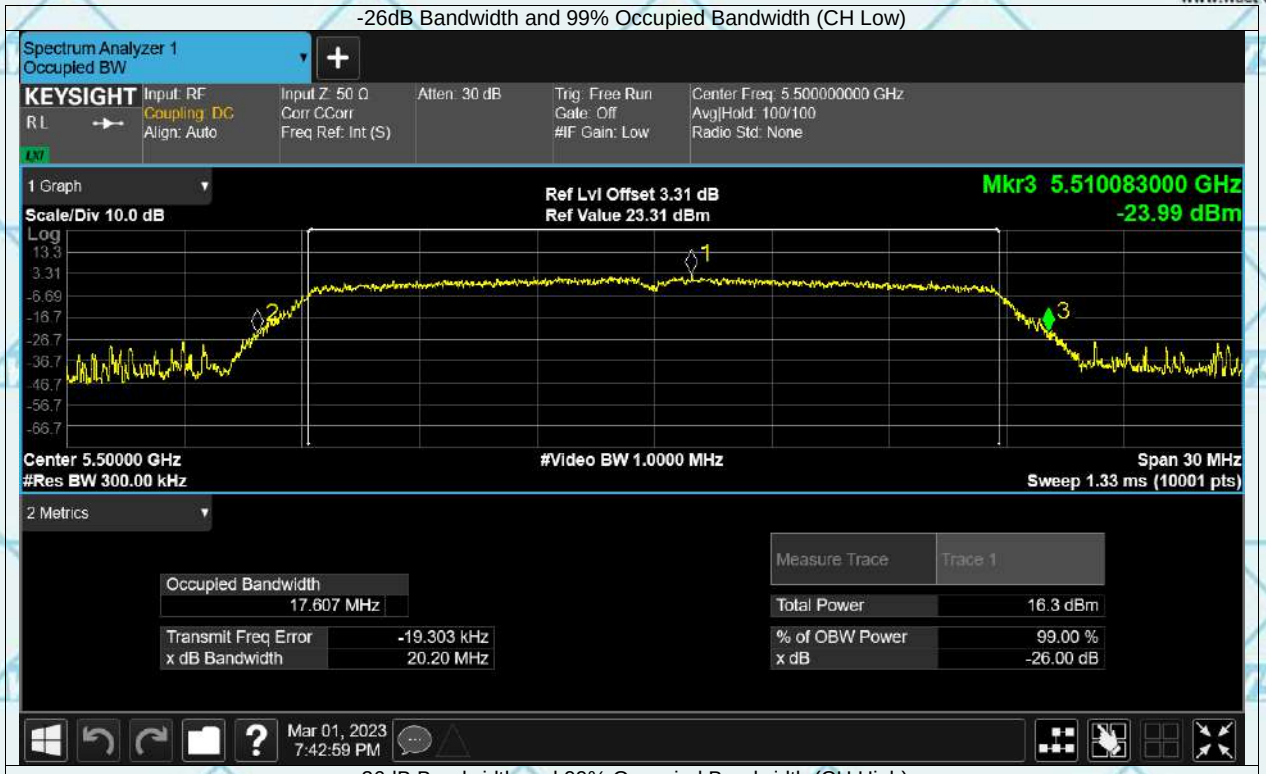
-26dB Bandwidth and 99% Occupied Bandwidth (CH Low)



-26dB Bandwidth and 99% Occupied Bandwidth (CH High)

Band3

-26dB Bandwidth and 99% Occupied Bandwidth (CH Low)



-26dB Bandwidth and 99% Occupied Bandwidth (CH High)

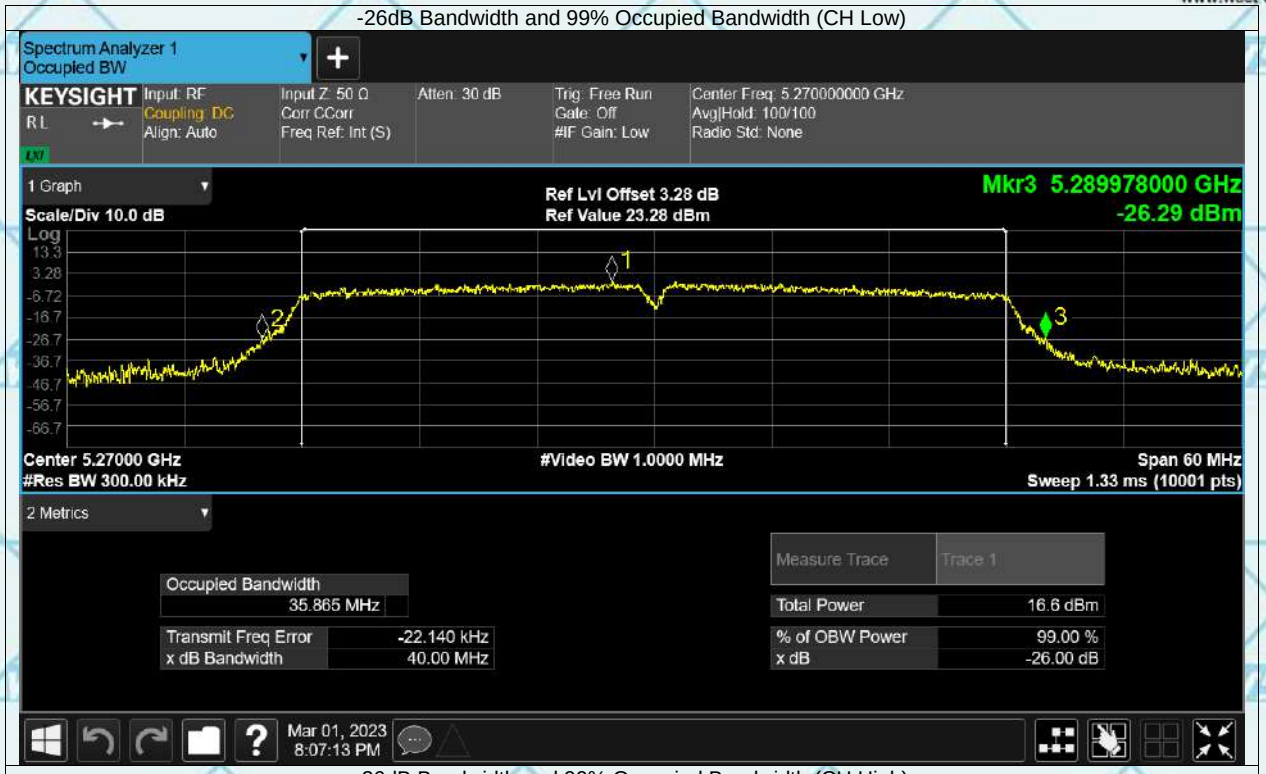
40MHz(IEEE 802.11n/ac)
Band1

-26dB Bandwidth and 99% Occupied Bandwidth (CH Low)

-26dB Bandwidth and 99% Occupied Bandwidth (CH High)

Band2

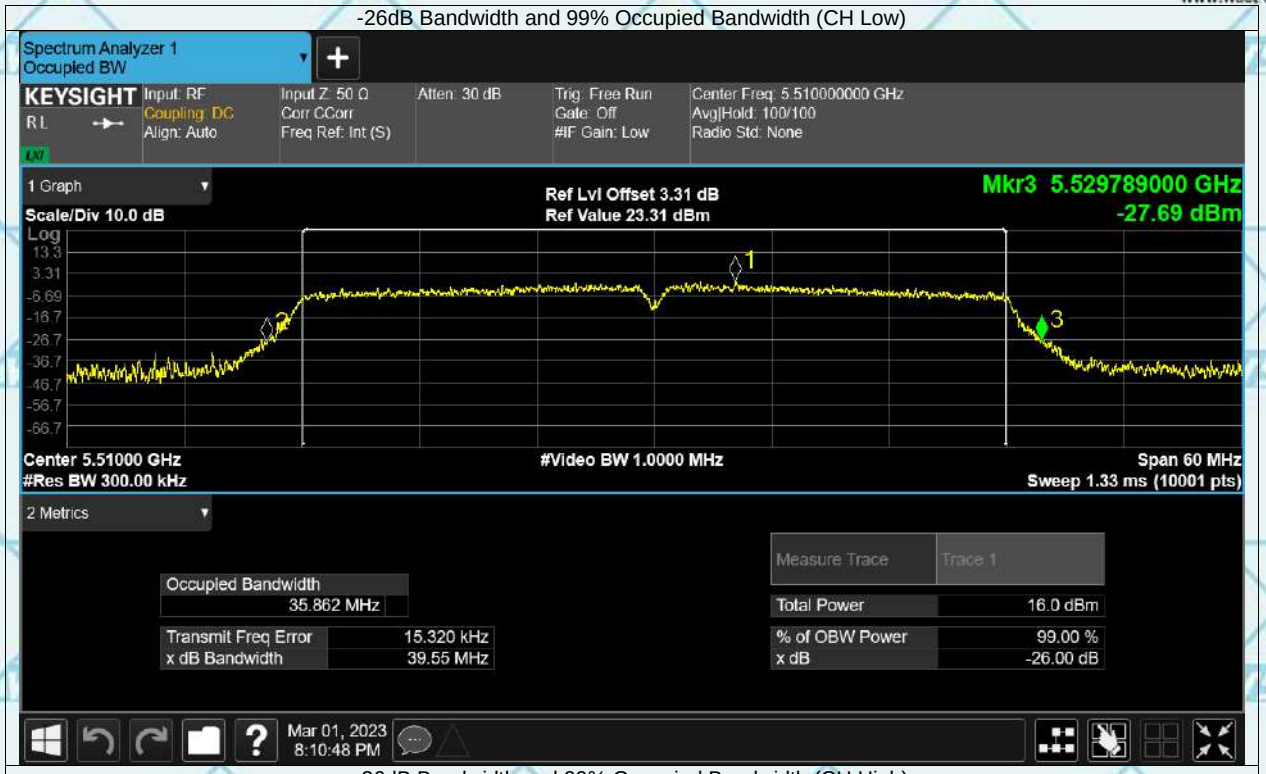
-26dB Bandwidth and 99% Occupied Bandwidth (CH Low)



-26dB Bandwidth and 99% Occupied Bandwidth (CH High)

Band3

-26dB Bandwidth and 99% Occupied Bandwidth (CH Low)



-26dB Bandwidth and 99% Occupied Bandwidth (CH High)

80MHz(IEEE 802.11ac)
Band1

-26dB Bandwidth and 99% Occupied Bandwidth (CH Low)

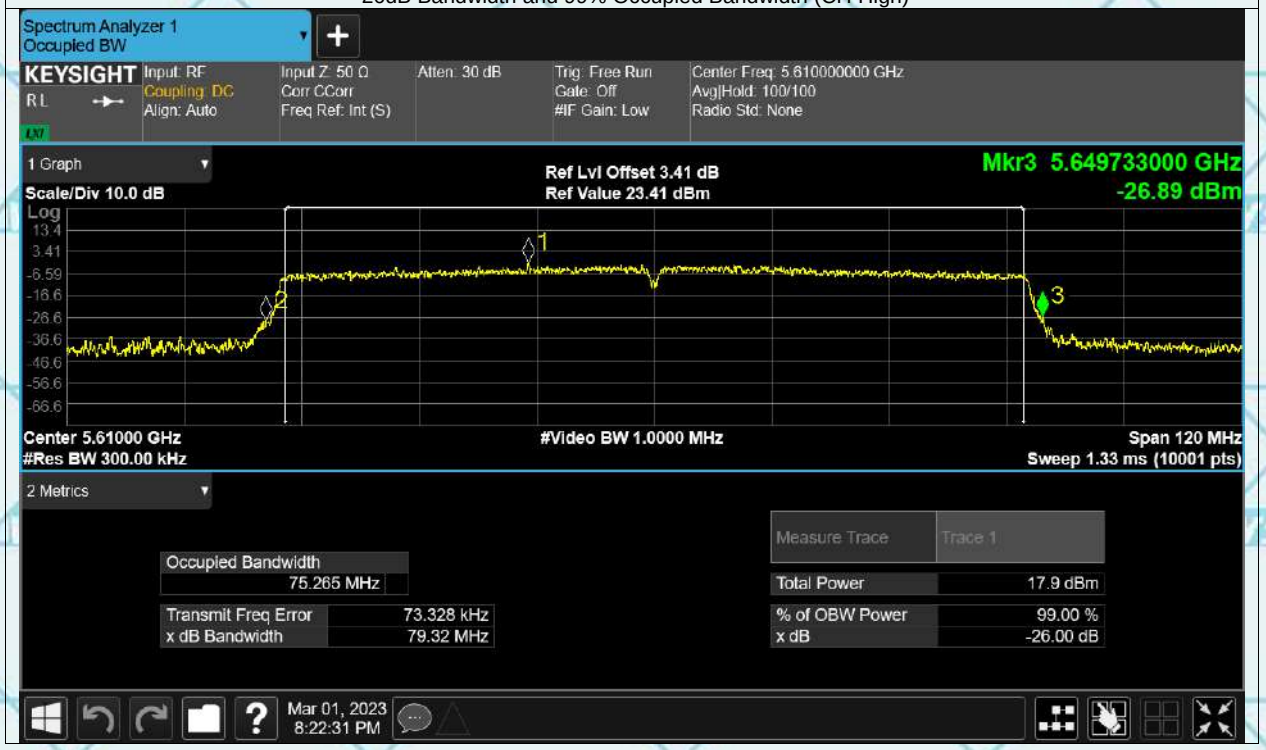
Band2

-26dB Bandwidth and 99% Occupied Bandwidth (CH Low)

Band3

-26dB Bandwidth and 99% Occupied Bandwidth (CH Low)

-26dB Bandwidth and 99% Occupied Bandwidth (CH High)



-6dB Bandwidth

20MHz(IEEE 802.11a/n/ac)

Band4

Test Graphs

-6dB Bandwidth and 99% Occupied Bandwidth (CH Low)

-6dB Bandwidth and 99% Occupied Bandwidth (CH High)

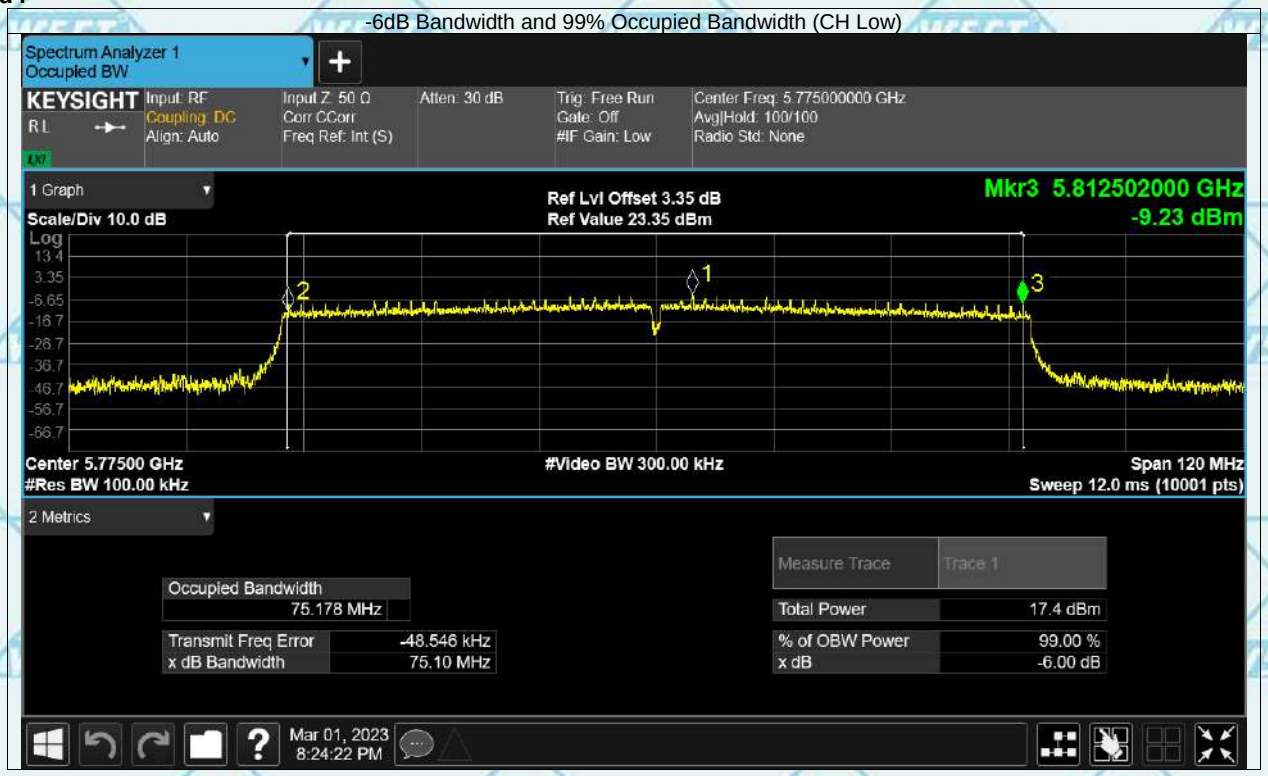
40MHz(IEEE 802.11n/ac)
Band4

-6dB Bandwidth and 99% Occupied Bandwidth (CH Low)

-6dB Bandwidth and 99% Occupied Bandwidth (CH High)

80MHz(IEEE 802.11ac)
Band4

-6dB Bandwidth and 99% Occupied Bandwidth (CH Low)



7.6 PEAK POWER

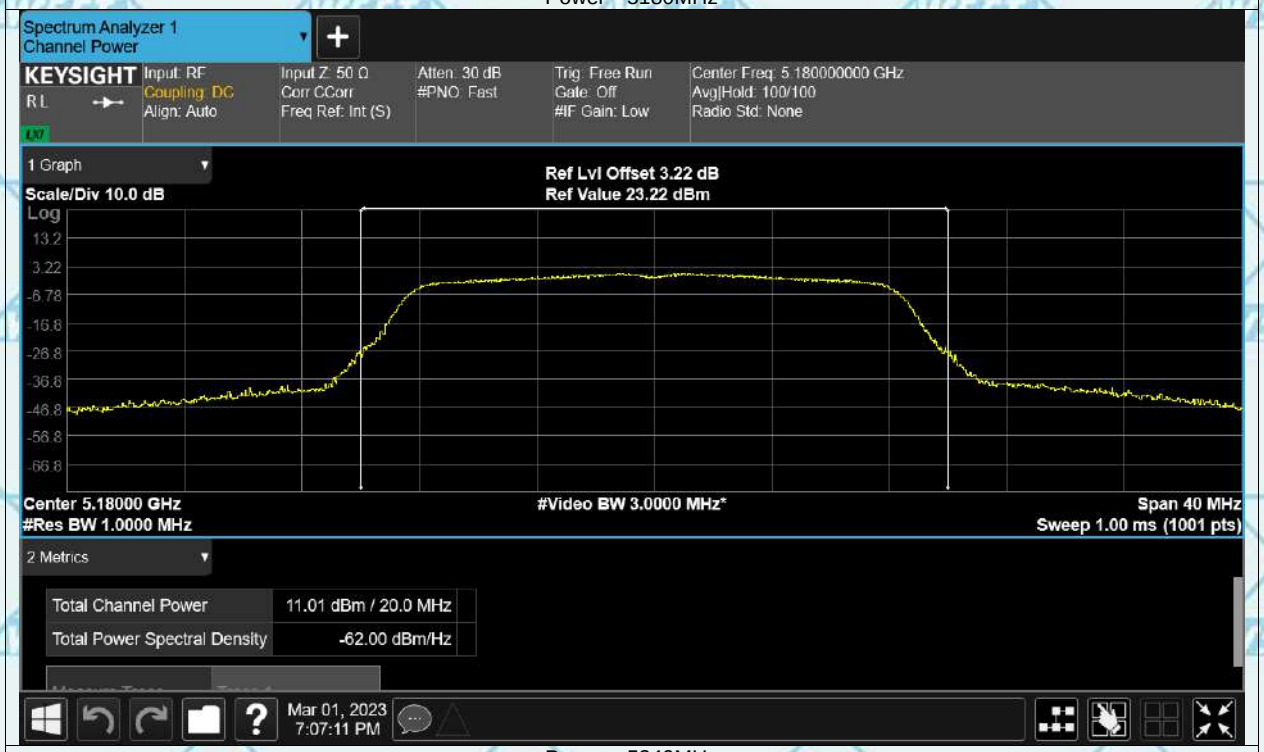
Product	: EUT-Sample	Test Mode	: See section 3.4
Test Item	: Peak Power	Temperature	: 25 ℃
Test Voltage	: DC 3.8V	Humidity	: 56%RH
Test Result	: PASS		

Band	Channel	Frequency (MHz)	Total Power (dBm)	Limit (dBm)	Verdict
20MHz(IEEE 802.11a/n/ac)-worst					
1	Low	5180	11.01	24	Pass
	High	5240	10.78	24	Pass
2	Low	5260	11.08	24	Pass
	High	5320	9.66	24	Pass
3	Low	5500	10.66	24	Pass
	High	5700	12.45	24	Pass
4	Low	5745	**11.98**	30	Pass
	High	5825	11.39	30	Pass
40MHz(IEEE 802.11n/ac)-worst					
1	Low	5190	10.96	24	Pass
	High	5230	10.65	24	Pass
2	Low	5270	10.57	24	Pass
	High	5310	9.59	24	Pass
3	Low	5510	10.29	24	Pass
	High	5670	11.91	24	Pass
4	Low	5755	11.69	30	Pass
	High	5795	11.24	30	Pass
80MHz(IEEE 802.11ac)-worst					
1	Low	5210	10.35	24	Pass
2	Low	5290	10	24	Pass
3	Low	5530	10.58	24	Pass
	High	5610	11.36	24	Pass
4	Low	5775	11.21	30	Pass

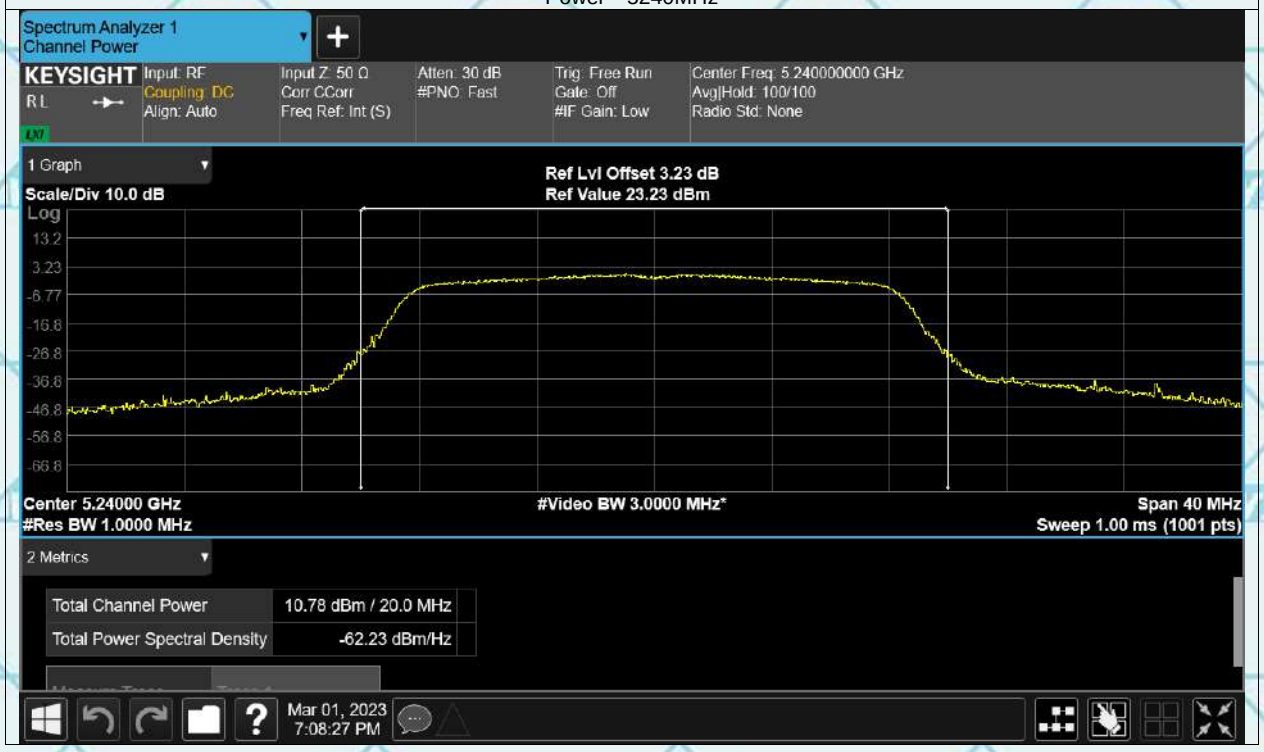
20MMHz(IEEE 802.11a/n/ac)-worst

Test Graphs

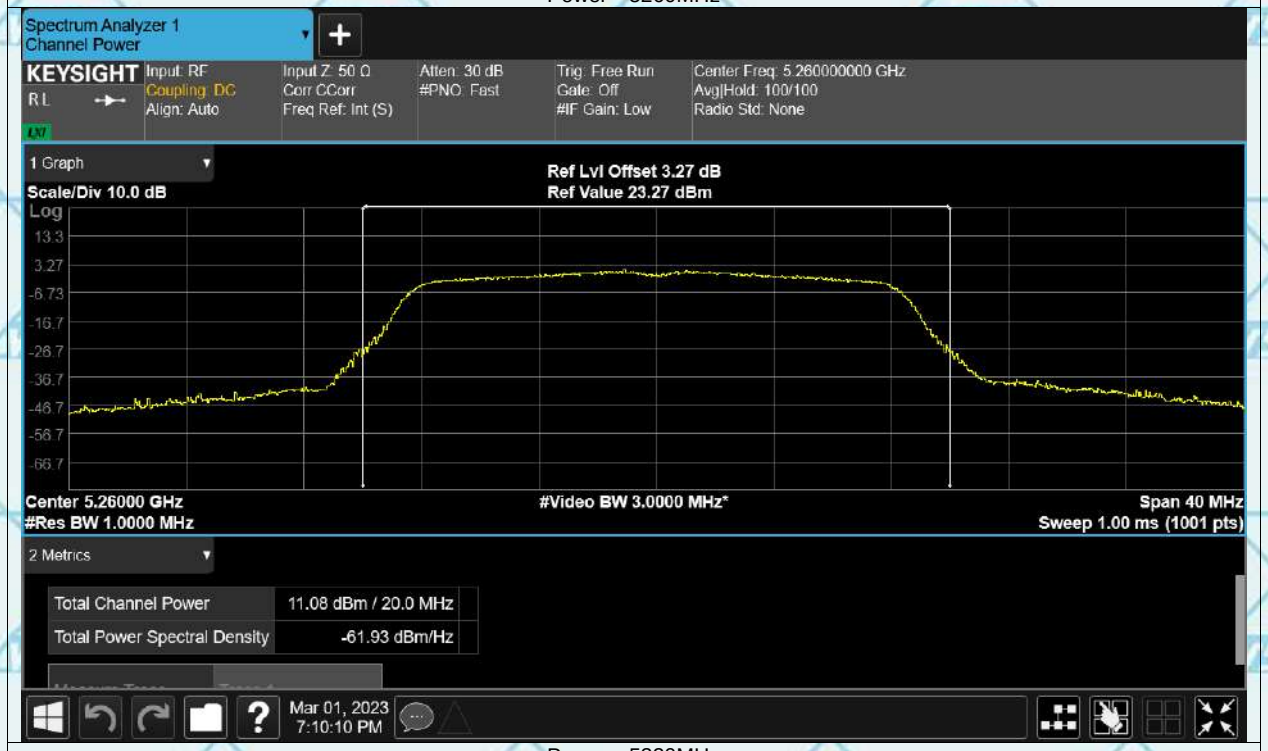
Power 5180MHz



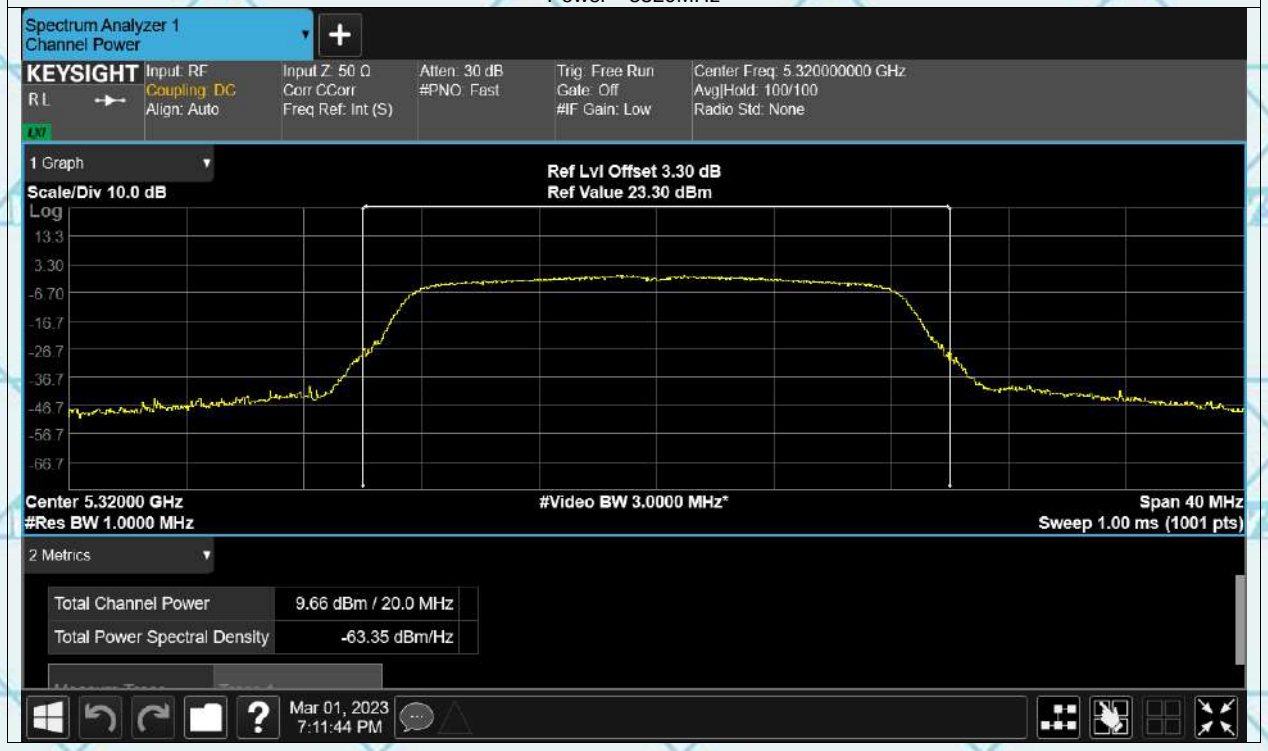
Power 5240MHz



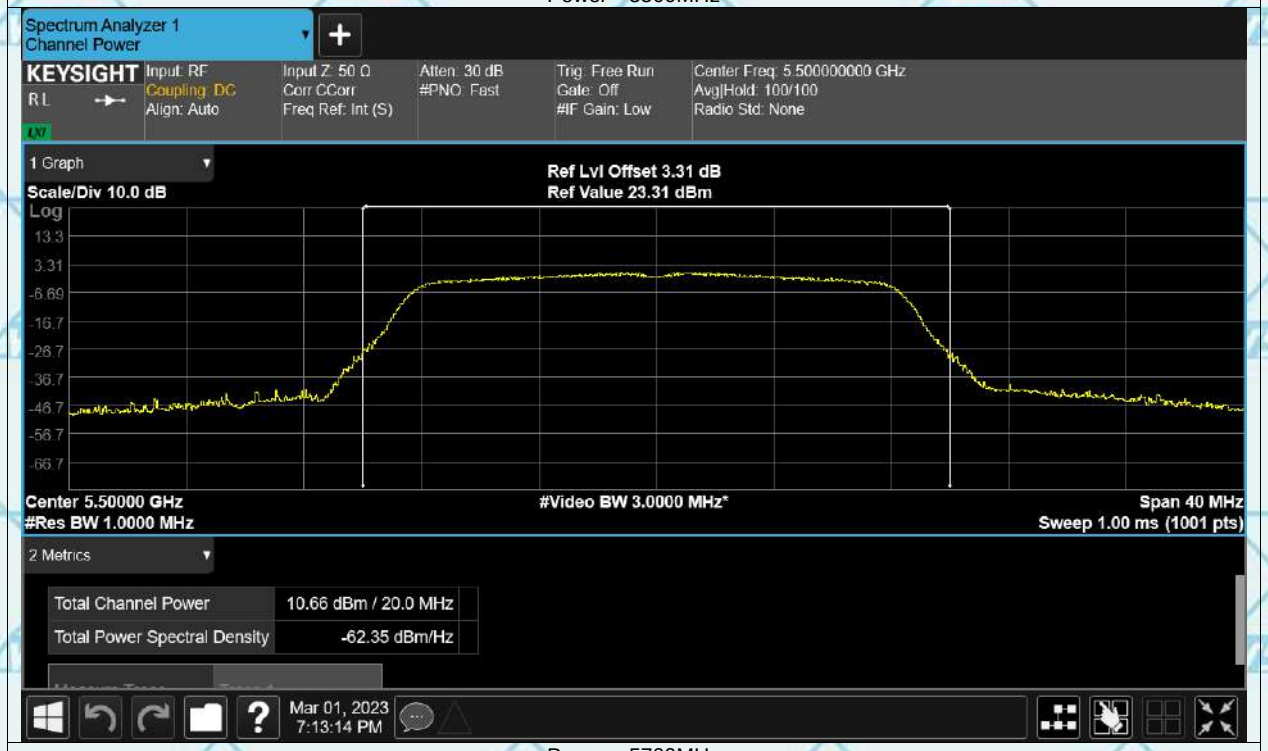
Power 5260MHz



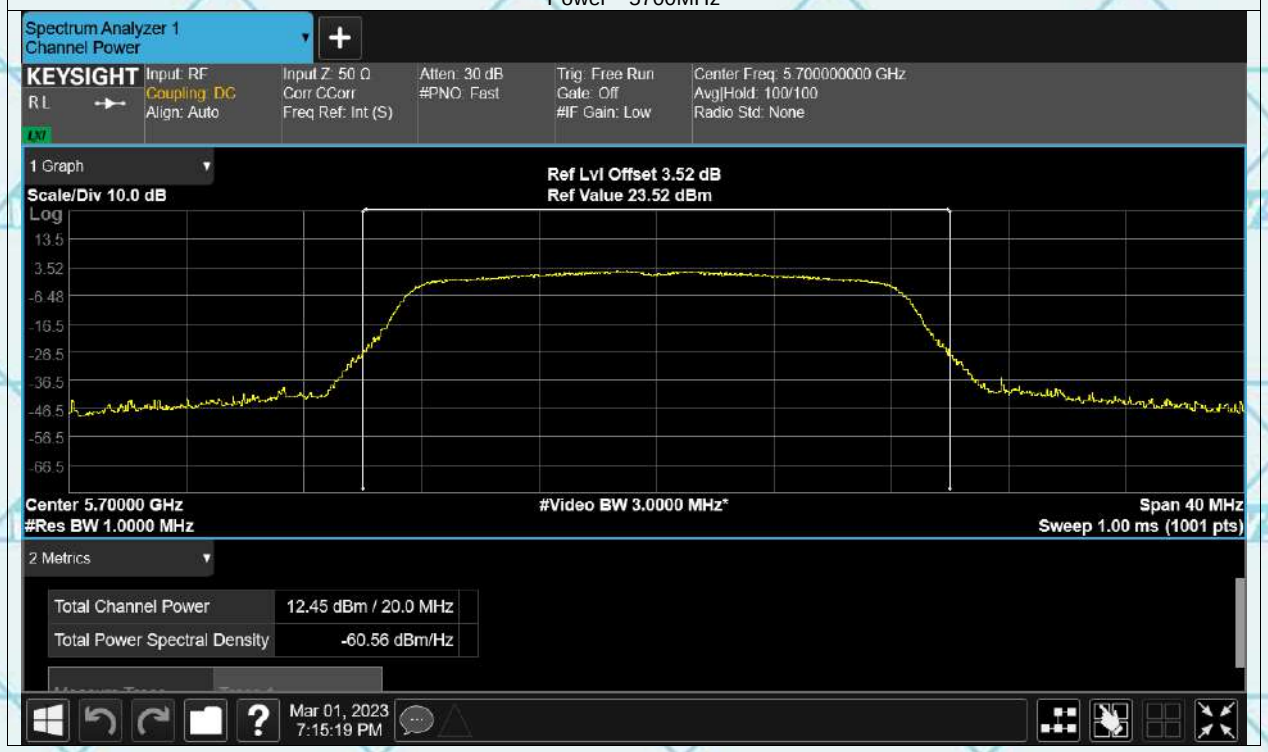
Power 5320MHz



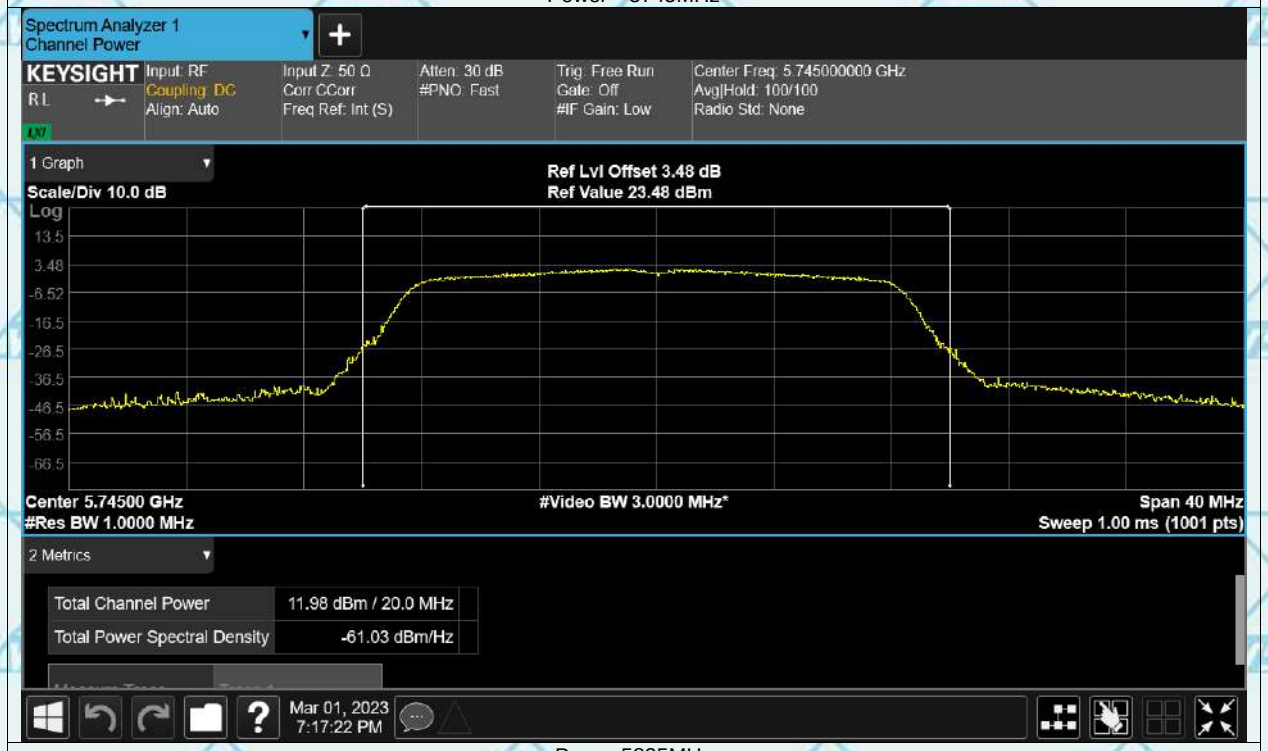
Power 5500MHz



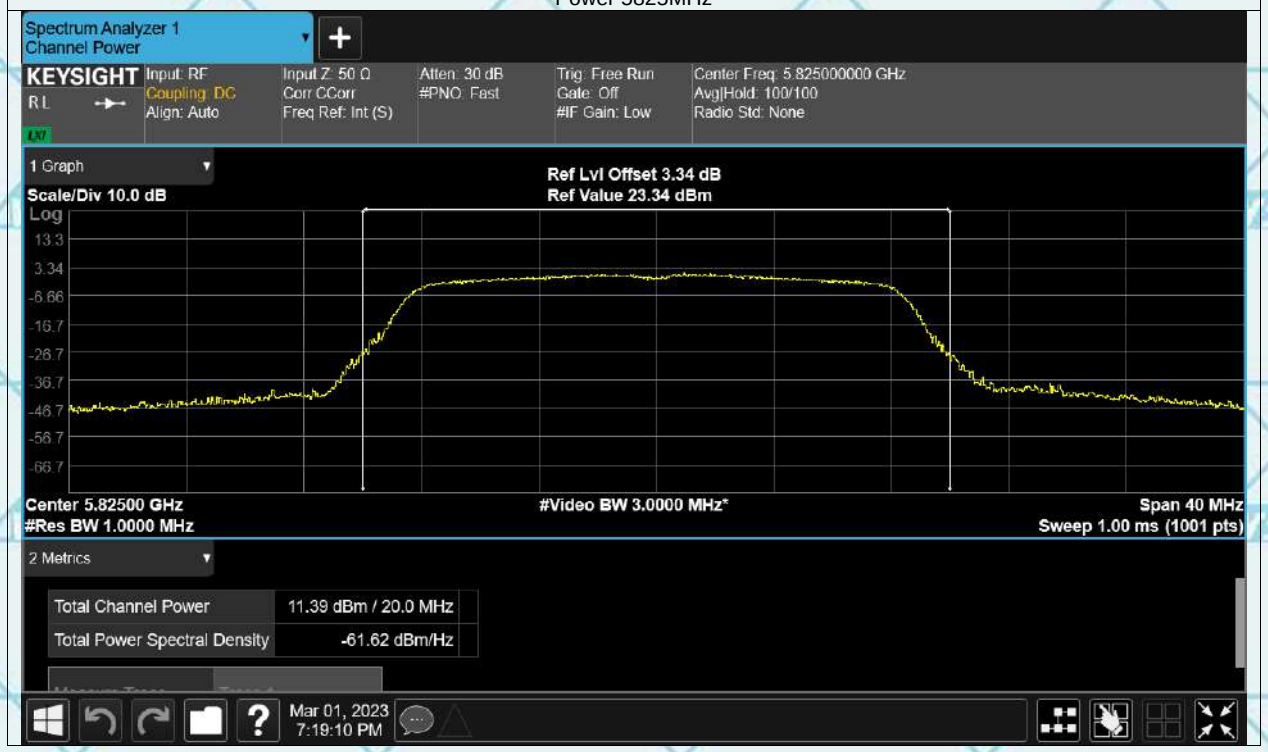
Power 5700MHz



Power 5745MHz



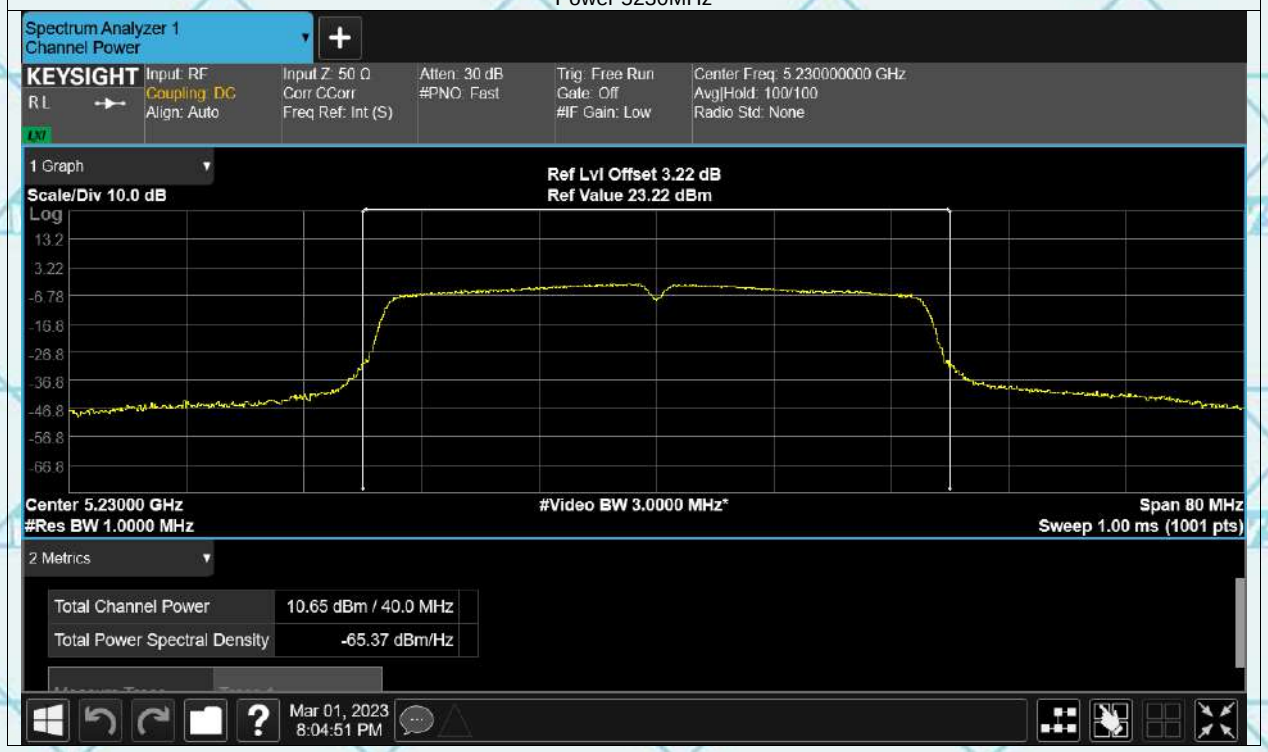
Power 5825MHz



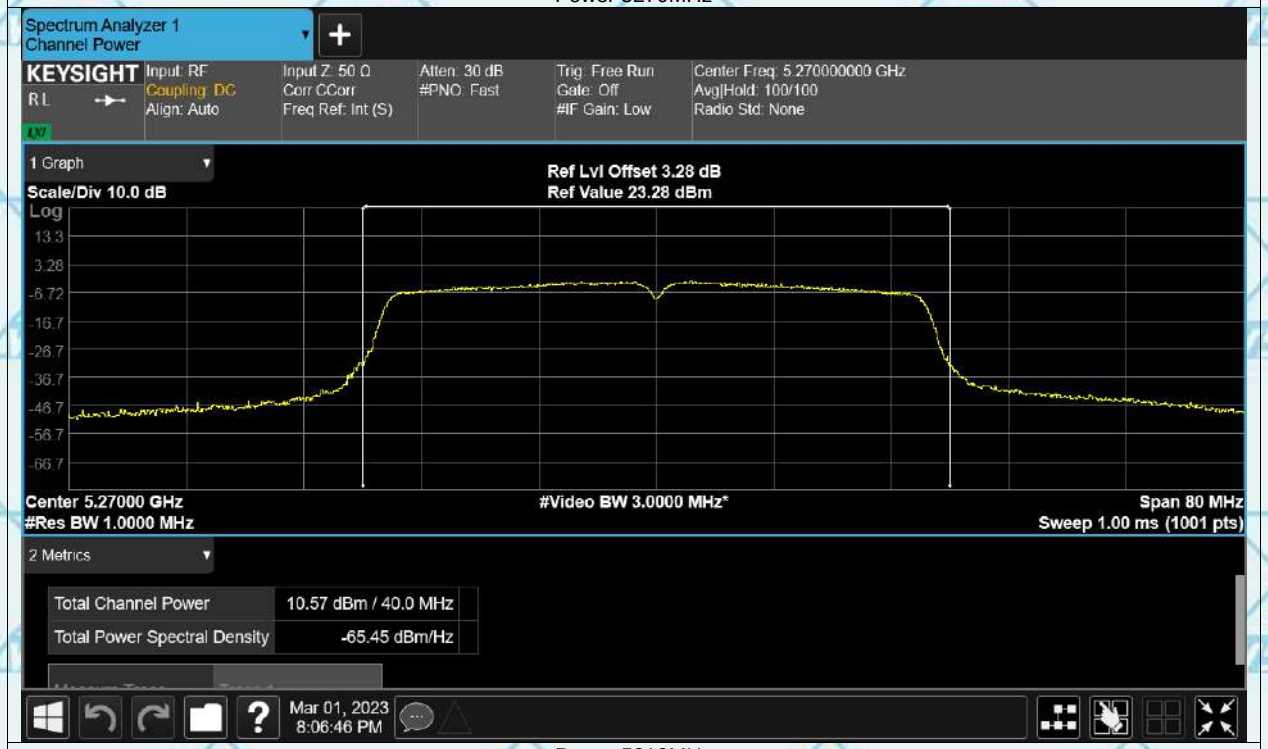
40MMHz(IEEE 802.11n/ac)-worst

Power 5190MHz

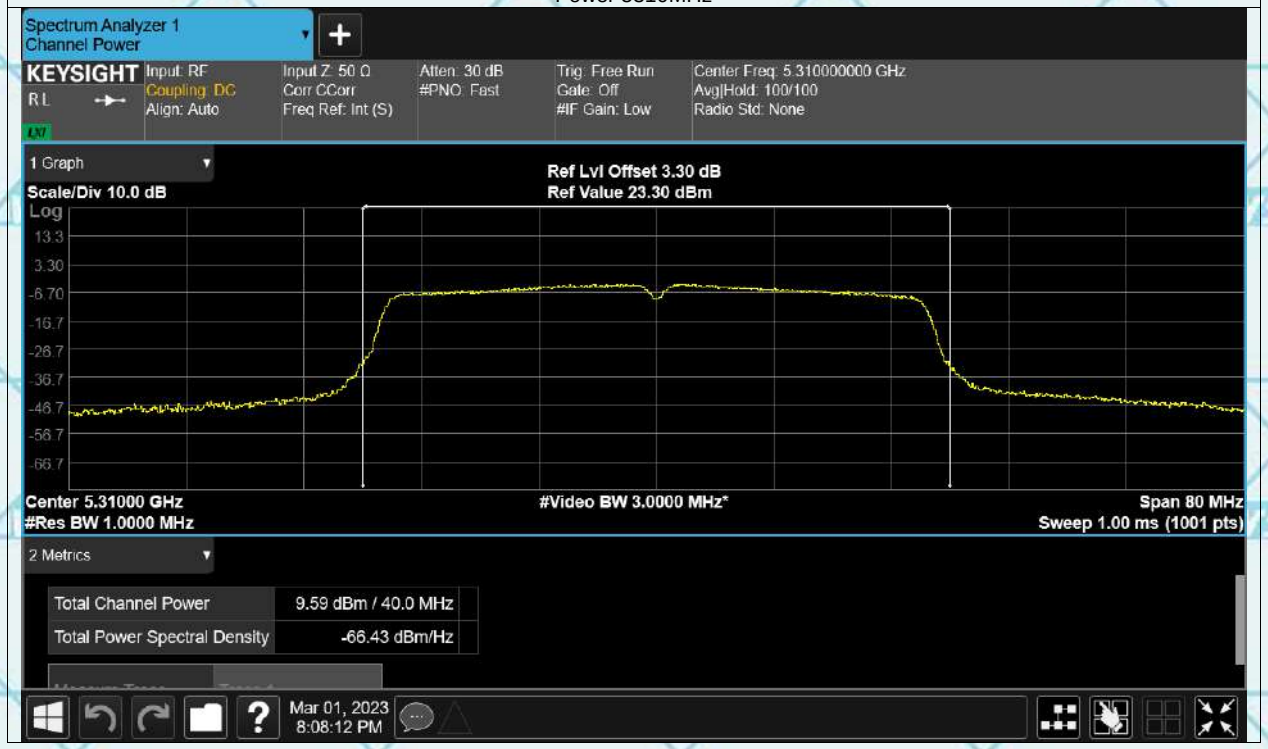
Power 5230MHz



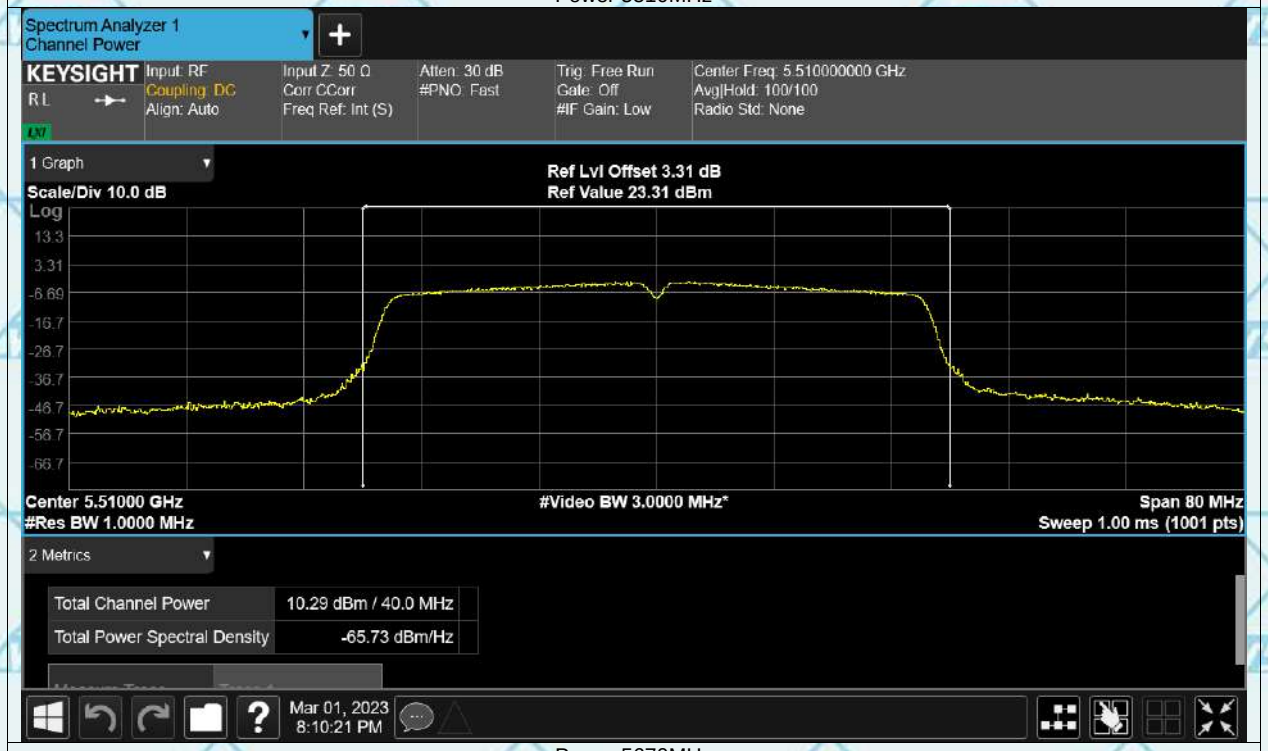
Power 5270MHz



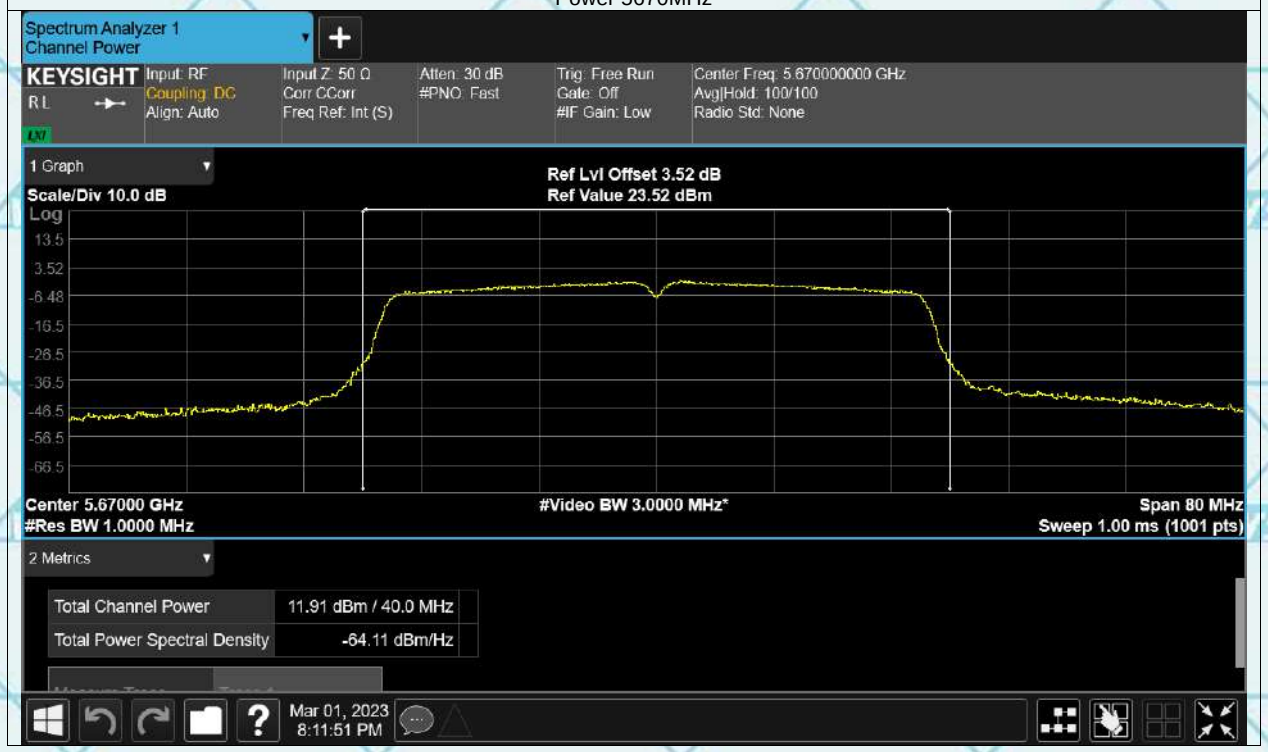
Power 5310MHz



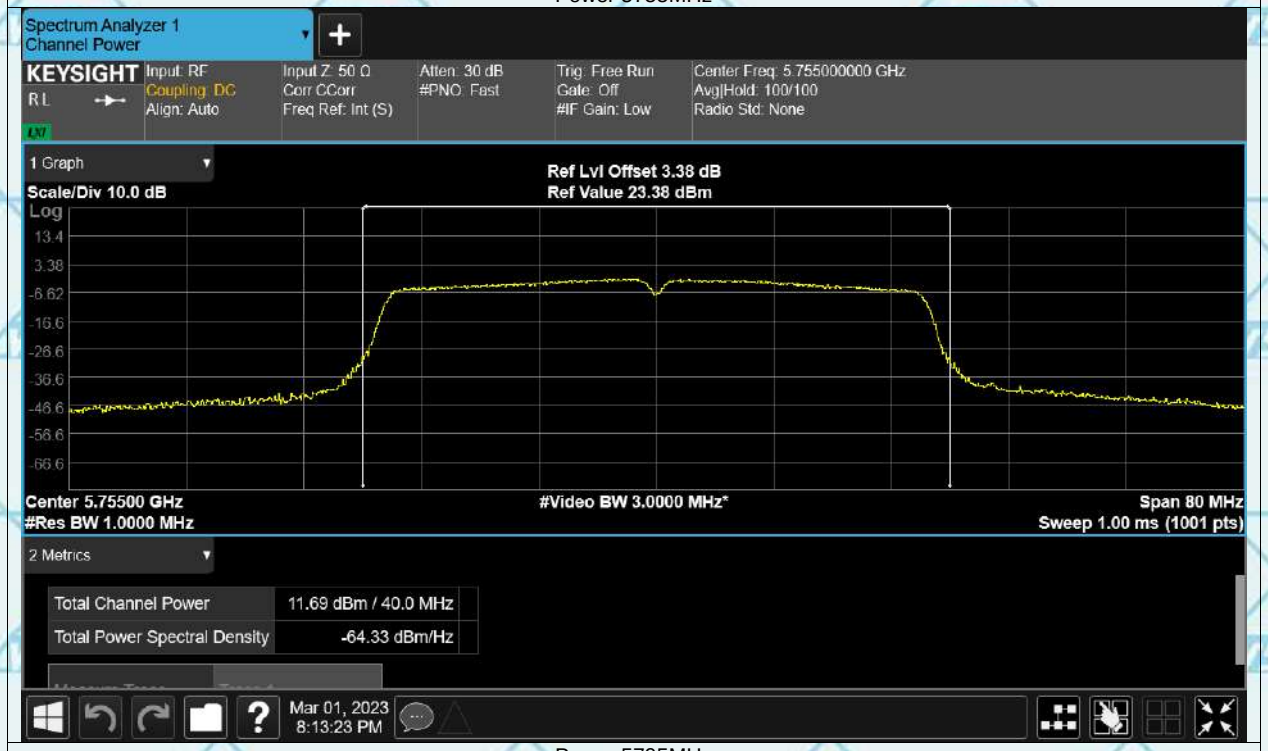
Power 5510MHz



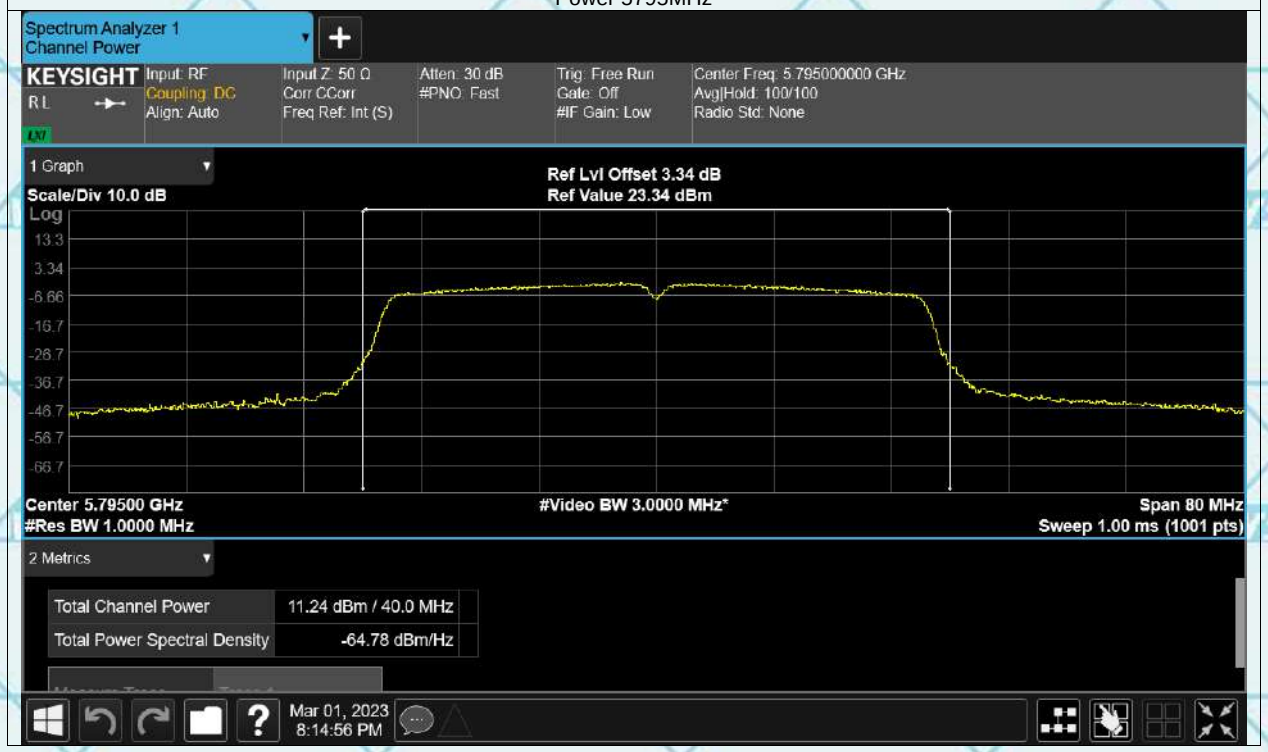
Power 5670MHz



Power 5755MHz



Power 5795MHz



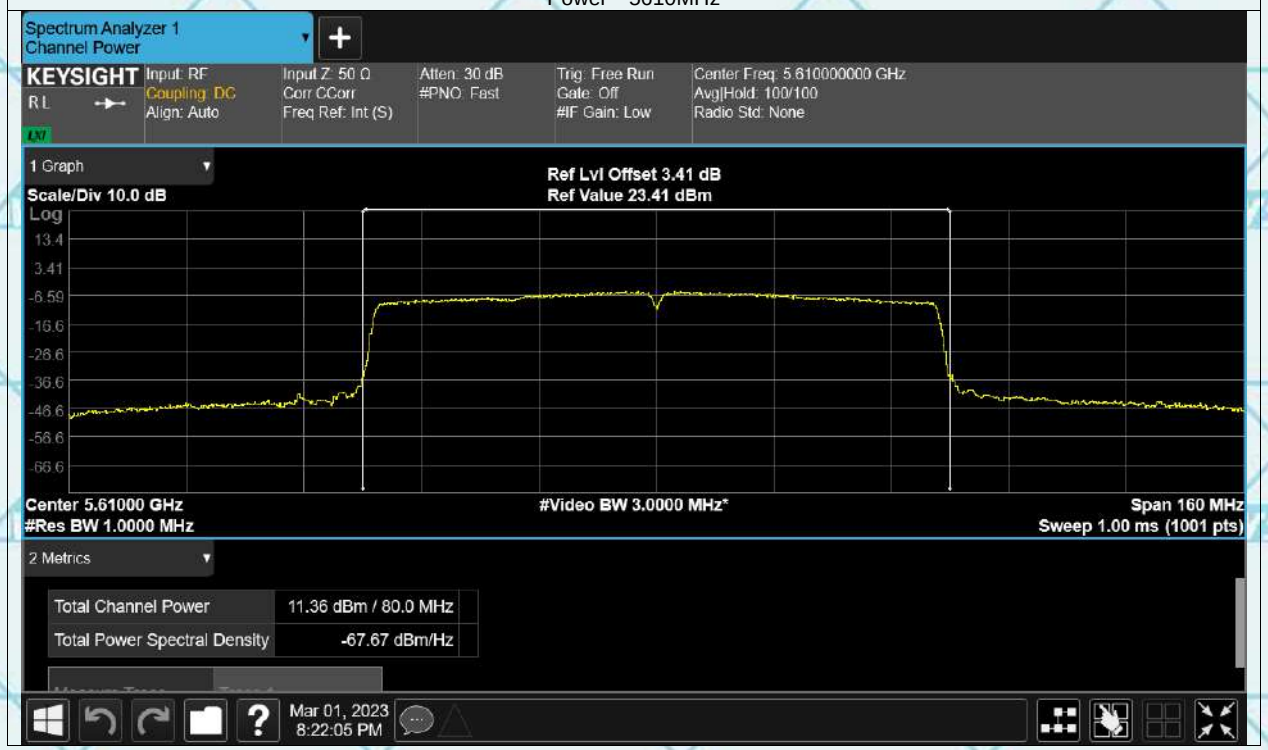
80MMHz(IEEE 802.11ac)-worst

Power 5210MHz

Power 5290MHz

Power 5530MHz

Power 5610MHz



Power 5775MHz