FCC RF Test Report

(U-NII)

Applicant:	PAX Technology Limited
Address of Applicant:	Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour, Hong Kong
Equipment Under Test (EUT)	
Product Name:	Smart Kiosk
Model No.:	SK300
Trade mark:	PAX
FCC ID:	V5PSK300
Applicable standards:	FCC CFR Title 47 Part 15E (§15.407)
Date of sample receipt:	24 Jan., 2022
Date of Test:	25 Jan., to 03 Mar., 2022
Date of report issued:	04 Mar., 2022
Test Result:	PASS

Tested by:	Mike.ou ***Test Engineer***	***Date:***	*04 Mar., 2022*
Reviewed by:	Winner Zhang ***Project Engineer***	***Date:***	*04 Mar., 2022*
Approved by:	Manager ***Manager***	***Date:***	*04 Mar., 2022*

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

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2 Version

Version No.	Date	Description
00	*04 Mar., 2022*	*Original*

3 Contents

Page

1 COVER PAGE 1

2 VERSION 2

3 CONTENTS 3

4 GENERAL INFORMATION 4

4.1 CLIENT INFORMATION 4
4.2 GENERAL DESCRIPTION OF E.U.T. 4
4.3 TEST MODE AND ENVIRONMENT 5
4.4 DESCRIPTION OF SUPPORT UNITS 5
4.5 MEASUREMENT UNCERTAINTY 5
4.6 ADDITIONS TO, DEVIATIONS, OR EXCLUSIONS FROM THE METHOD 5
4.7 LABORATORY FACILITY 5
4.8 LABORATORY LOCATION 6
4.9 TEST INSTRUMENTS LIST 6

5 MEASUREMENT SETUP AND PROCEDURE 8

5.1 TEST CHANNEL 8
5.2 TEST SETUP 9
5.3 TEST PROCEDURE 11

6 TEST RESULTS 12

6.1 SUMMARY 12
6.1.1 Clause and data summary 12
6.1.2 Test Limit 13
6.2 ANTENNA REQUIREMENT 15
6.3 CONDUCTED EMISSION 16
6.4 UNWANTED EMISSIONS IN THE RESTRICTED BANDS 18
6.5 UNWANTED EMISSIONS 27

APPENDIX A – 5.2G WI-FI 35

APPENDIX B – 5.8G WI-FI 69

4 General Information

4.1 Client Information

Applicant:	PAX Technology Limited
Address:	Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour, Hong Kong
Manufacturer:	PAX Computer Technology (Shenzhen) Co., Ltd.
Address:	401 and 402, Building 3, Shenzhen Software Park, Nanshan District, Shenzhen City, Guangdong Province, P.R.C

4.2 General Description of E.U.T.

Product name:	Smart Kiosk
Model No.:	SK300
Operation frequency:	Band 1: 5150 MHz - 5250 MHz
	Band 4: 5725 MHz - 5825 MHz
Channel numbers:	Band 1: 4 , Band 4: 5 (802.11a, n-HT20, ac-VHT20)
	Band 1, 4: 2 , (802.11n-HT40, ac-VHT40)
	Band 1, 4: 1 , (802.11ac-VHT80)
Modulation technology: (IEEE 802.11a/802.11n)	OFDM-BPSK, QPSK, 16QAM, 64QAM
Modulation technology: (IEEE 802.11ac)	OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM
Antenna type:	Internal Antenna
Antenna gain:	1.5dBi
Antenna transmit mode:	SISO (1TX, 1RX)
AC adapter:	Model: G065A1-240002700 Input: AC100-240V, 50/60Hz,1.5A Output: DC 24.0V, 2.7A
Test sample condition:	The test samples were provided in good working order with no visible defects.

4.3 Test Mode and Environment

Test mode:	
Transmitting mode:	Keep the EUT in continuous transmitting with modulation

Per-scan all kind of data rate, the follow list were the worst case:

Mode	Data rate
802.11a	6.0 Mbps
802.11n-HT20	6.5 Mbps
802.11n-HT40	13.5 Mbps
802.11ac-VHT20	6.5 Mbps
802.11ac-VHT40	13.5 Mbps
802.11ac-VHT80	29.3 Mbps

Remark: *For AC power line conducted emission and radiated spurious emission (below 1GHz), pre-scan 802.11a, n, ac, modulation mode, found 802.11a modulation mode was worse case mode. The report only reflects the test data of worst mode.*

Operating Environment:	
Temperature:	15℃ ~ 35℃
Humidity:	20 % ~ 75 % RH
Atmospheric Pressure:	1010 mbar

4.4 Description of Support Units

The EUT has been tested as an independent unit.

4.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
Conducted Emission for LISN (9kHz ~ 150kHz)	±3.11 dB
Conducted Emission for LISN (150kHz ~ 30MHz)	±2.62 dB
Radiated Emission (30MHz ~ 1GHz) (3m SAC)	±4.45 dB
Radiated Emission (1GHz ~ 18GHz) (3m SAC)	±5.34 dB
Radiated Emission (18GHz ~ 40GHz) (3m SAC)	±5.34 dB

Note: *All the measurement uncertainty value were shown with a coverage k=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.*

4.6 Additions to, Deviations, or Exclusions from the Method

No

4.7 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

4.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.
Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info-JYTee@lets.com, Website: http://jyt.lets.com

4.9 Test Instruments list

Radiated Emission(3m SAC):

Test Equipment	Manufacturer	Model No.	Manage No.	Cal.Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	ETS	9m*6m*6m	WXJ001-1	01-19-2021	01-18-2024
BiConiLog Antenna	Schwarzbeck	VULB9163	WXJ002	03-03-2021	03-02-2022
				02-17-2022	02-16-2023
Biconical Antenna	Schwarzbeck	VUBA9117	WXJ002-1	06-20-2021	06-19-2022
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-2	03-03-2021	03-02-2022
				02-17-2022	02-16-2023
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-3	06-18-2021	06-17-2022
Pre-amplifier (30MHz ~ 1GHz)	Schwarzbeck	BBV9743B	WXG001-7	03-07-2021	03-06-2022
				02-17-2022	02-16-2023
Pre-amplifier (1GHz ~ 18GHz)	SKET	LNPA_0118G-50	WXG001-3	03-07-2021	03-06-2022
				02-17-2022	02-16-2023
Pre-amplifier (18GHz ~ 40GHz)	RF System	TRLA-180400G45B	WXG001-9	03-07-2021	03-06-2022
				02-17-2022	02-16-2023
EMI Test Receiver	Rohde & Schwarz	ESRP7	WXJ003-1	03-03-2021	03-02-2022
				02-17-2022	02-16-2023
Spectrum Analyzer	KEYSIGHT	N9010B	WXJ004-2	11-27-2021	11-26-2022
Coaxial Cable (30MHz ~ 1GHz)	JYTSZ	JYT3M-1G-NN-8M	WXG001-4	03-07-2021	03-06-2022
				02-17-2022	02-16-2023
Coaxial Cable (1GHz ~ 18GHz)	JYTSZ	JYT3M-18G-NN-8M	WXG001-5	03-07-2021	03-06-2022
				02-17-2022	02-16-2023
Coaxial Cable (18GHz ~ 40GHz)	JYTSZ	JYT3M-40G-SS-8M	WXG001-7	03-07-2021	03-06-2022
				02-17-2022	02-16-2023
Band Reject Filter Group	Tonscend	JS0806-F	WXJ089	N/A	
Test Software	Tonscend	TS+	Version: 3.0.0.1		

Conducted Emission:

Test Equipment	Manufacturer	Model No.	Manage No.	Cal.Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI 3	WXJ003	03-03-2021	03-02-2022
				02-17-2022	02-16-2023
RF Switch	TOP PRECISION	RSU0301	WXG003	03-03-2021	03-02-2022
				02-17-2022	02-16-2023
LISN	Schwarzbeck	NSLK 8127	QCJ001-13	03-18-2021	03-17-2022
				02-17-2022	02-16-2023
LISN	Rohde & Schwarz	ESH3-Z5	WXJ005-1	06-18-2021	06-17-2022
LISN Coaxial Cable (9kHz ~ 30MHz)	JYTSZ	JYTCE-1G-NN-2M	WXG003-1	03-03-2021	03-02-2022
				02-17-2022	02-16-2023
Test Software	AUDIX	E3	Version: 6.110919b		

Conducted Method:					
Test Equipment	**Manufacturer**	**Model No.**	**Manage No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
Spectrum Analyzer	Keysight	N9010B	WXJ004-3	10-25-2021	10-24-2022
Vector Signal Generator	Keysight	N5182B	WXJ006-6	10-25-2021	10-24-2022
Signal Generator	Keysight	N5173B	WXJ006-4	10-25-2021	10-24-2022
Wireless Connectivity Tester	Rohde & Schwarz	CMW270	WXJ008-7	10-25-2021	10-24-2022
DC Power Supply	Keysight	E3642A	WXJ025-2	10-25-2021	10-24-2022
Temperature Humidity Chamber	HONG ZHI	CZ-A-80D	WXJ032-3	03-19-2021	03-18-2022
Power Detector Box	MWRFTEST	MW100-PSB	WXJ007-4	10-25-2021	10-24-2022
RF Control Unit	MWRFTEST	MW100-RFCB	WXG006	N/A	
Test Software	MWRFTEST	MTS 8310	Version: 2.0.0.0		

5 Measurement setup and procedure

5.1 Test channel

According to ANSI C63.10-2013 chapter 5.6.1 Table 4 requirement, select lowest channel, middle channel, and highest channel in the frequency range in which device operates for testing. The detailed frequency points are as follows:

Operation frequency: 5150 MHz – 5250 MHz

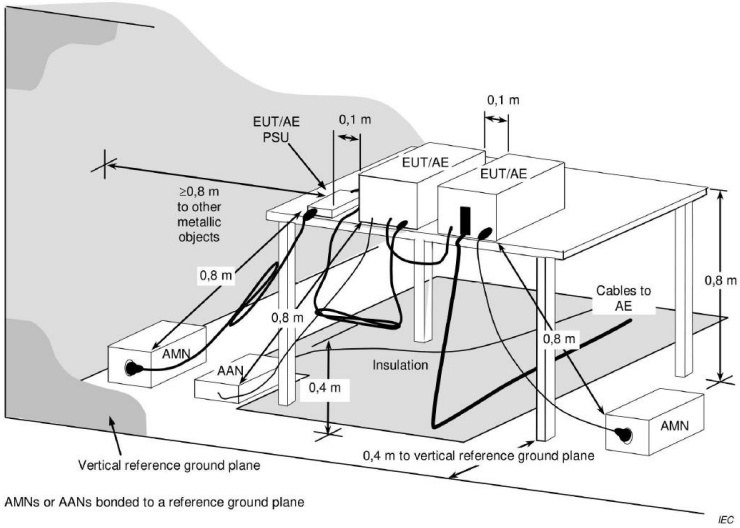
Modulation mode	Lowest channel		Middle channel		Highest channel	
	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
802.11a, n-HT20, ac-VHT20	36	5180	40	5200	48	5240
802.11n-HT40, ac-VHT40	38	5190	/	/	46	5230
802.11ac-VHT80	/	/	42	5210	/	/

Operation frequency: 5725 MHz – 5850 MHz

Modulation mode	Lowest channel		Middle channel		Highest channel	
	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
802.11a, n-HT20, ac-VHT20	149	5745	157	5785	165	5825
802.11n-HT40, ac-VHT40	151	5755	/	/	159	5795
802.11ac-VHT80	/	/	155	5775	/	/

5.2 Test setup

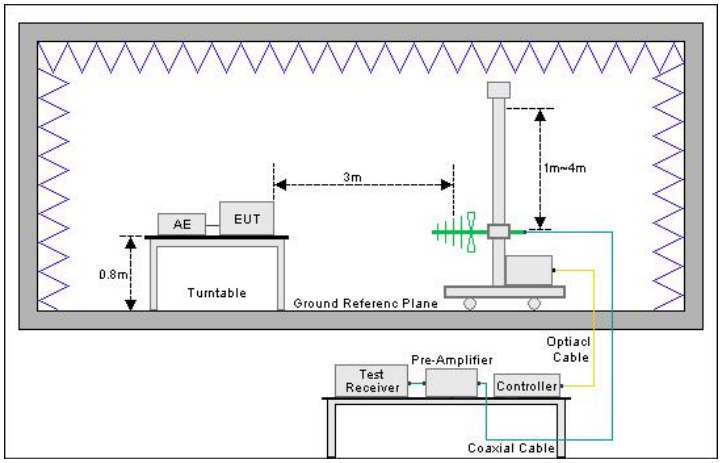
1) Conducted emission measurement:



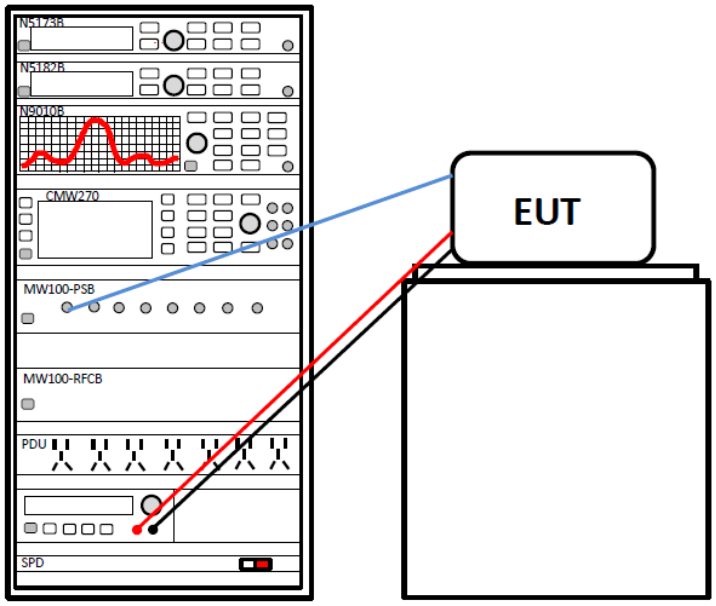
Note: The 0.8 m distance specified between EUT/AE/PSU and AMN/AAN, is applicable only to the EUT being measured. If the device is AE then it shall be >0.8 m.

2) Radiated emission measurement:

Above 1GHz (10m SAC)



3) Conducted test method



5.3 Test procedure

Test method	Test step
Conducted emission	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
Radiated emission	**For below 1GHz:** 1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested，and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data. **For above 1GHz:** 1. The EUT was placed on the tabletop of a rotating table 1.5 m the ground at a 3 m fully anechoic room. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested，and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.
Conducted test method	1. The Wi-Fi antenna port of EUT was connected to the test port of the test system through an RF cable. 2. The EUT is keeping in continuous transmission mode and tested in all modulation modes. 3. Open the test software, prepare a test plan, and control the system through the software. After the test is completed, the test report is exported through the test software.

6 Test Results

6.1 Summary

6.1.1 Clause and data summary

Test Items	FCC Part Section(s)	Test Data	Result
Antenna Requirement	15.203	See Section 6.2	Pass
AC Power Line Conducted Emission	15.207 15.407 (b)(9)	See Section 6.3	Pass
Duty Cycle	ANSI C63.10-2013	Appendix A – 5.2G Wi-Fi Appendix B – 5.8G Wi-Fi	Pass
Conducted Peak Output Power Power Spectral Density	15.407 (a)(1)(iv), (a)(2), (a)(3)(i)	Appendix A – 5.2G Wi-Fi Appendix B – 5.8G Wi-Fi	Pass
26dB Emission Bandwidth 99% Occupied Bandwidth	15.407 (a)(12)	Appendix A – 5.2G Wi-Fi Appendix B – 5.8G Wi-Fi	Pass
6dB Emission Bandwidth	15.407 (e)	Appendix A – 5.2G Wi-Fi Appendix B – 5.8G Wi-Fi	Pass
Unwanted Emissions in the Restricted Bands	15.205 15.407 (b)(10)	See Section 6.4	Pass
Unwanted Emissions	15.209 15.407 (b)(1), (2), (3), (4), (9)	See Section 6.5	Pass
Frequency Stability	15.407 (g)	Appendix A – 5.2G Wi-Fi Appendix B – 5.8G Wi-Fi	Pass

Remark:

1. *Pass: The EUT complies with the essential requirements in the standard.*
2. *N/A: Not Applicable.*
3. *The cable insertion loss used by "RF Output Power" and other conduction measurement items is 1.0dB (provided by the customer).*

Test Method:	*ANSI C63.10-2013* *KDB 789033 D02 General U-NII Test Procedures New Rules v02r01*

6.1.2 Test Limit

<table>
<tr><th>Items</th><th>Limit</th></tr>
<tr><td>AC Power Line Conducted Emission</td><td>
<table>
<tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr>
<tr><th>Quasi-peak</th><th>Average</th></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
<tr><td colspan="3">* Decreases with the logarithm of the frequency.</td></tr>
</table>
</td></tr>
<tr><td>Conducted Peak Output Power
Power Spectral Density</td><td>For the 5.15-5.25 GHz band:
For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. 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.

For the band 5.725-5.895 GHz:
For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. 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. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.</td></tr>
<tr><td>26dB Emission Bandwidth
99% Occupied Bandwidth</td><td>N/A</td></tr>
<tr><td>6dB Emission Bandwidth</td><td>Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.</td></tr>
</table>

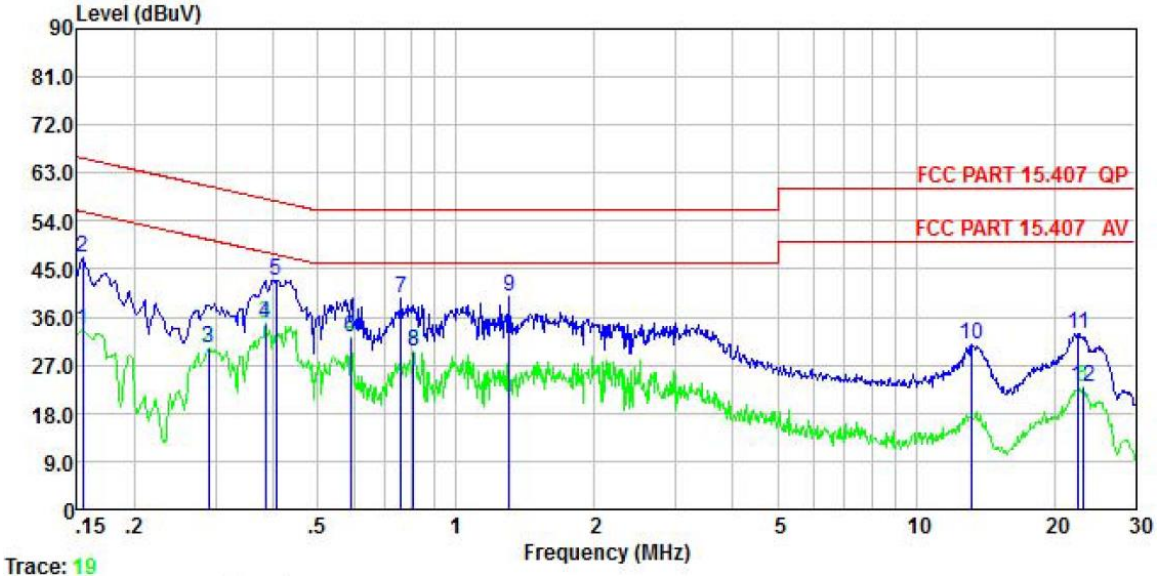
<table>
<tr><td>Unwanted Emissions in the Restricted Bands</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Detector</th></tr>
<tr><td>30 MHz – 88 MHz</td><td>40.0</td><td>Quasi-peak</td></tr>
<tr><td>88 MHz – 216 MHz</td><td>43.5</td><td>Quasi-peak</td></tr>
<tr><td>216 MHz – 960 MHz</td><td>46.0</td><td>Quasi-peak</td></tr>
<tr><td>960 MHz – 1000 MHz</td><td>54.0</td><td>Quasi-peak</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average value</td></tr>
<tr><td>74.0</td><td>Peak value</td></tr>
</table>
</td></tr>
<tr><td>Unwanted Emissions</td><td>
(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating solely in the 5.725-5.850 GHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
(5) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209:
Measurement distance for 3 m
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Detector</th></tr>
<tr><td>30 MHz – 88 MHz</td><td>40.0</td><td>Quasi-peak</td></tr>
<tr><td>88 MHz – 216 MHz</td><td>43.5</td><td>Quasi-peak</td></tr>
<tr><td>216 MHz – 960 MHz</td><td>46.0</td><td>Quasi-peak</td></tr>
<tr><td>960 MHz – 1000 MHz</td><td>54.0</td><td>Quasi-peak</td></tr>
</table>
</td></tr>
<tr><td>Frequency Stability</td><td>Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.</td></tr>
</table>

6.2 Antenna requirement

Standard requirement:	FCC Part 15 C Section 15.203 /247(b)
15.203 requirement: 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(b) (4) requirement: (4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
E.U.T Antenna:	
The Wi-Fi antenna is an internal antenna which cannot replace by end-user, the best case gain of the antenna is 1.5 dBi. See product internal photos for details.	

6.3 Conducted Emission

Product name:	Smart Kiosk	**Product model:**	SK300
Test by:	Mike	**Test mode:**	5G Wi-Fi Tx mode
Test frequency:	150 kHz ~ 30 MHz	**Phase:**	Line
Test voltage:	AC 120 V/60 Hz		



	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	33.62	0.04	0.01	33.67	55.78	-22.11	Average
2	0.154	46.97	0.04	0.01	47.02	65.78	-18.76	QP
3	0.289	30.06	0.04	0.03	30.13	50.54	-20.41	Average
4	0.385	34.64	0.04	0.03	34.71	48.17	-13.46	Average
5	0.406	42.84	0.04	0.04	42.92	57.73	-14.81	QP
6	0.589	32.11	0.04	0.02	32.17	46.00	-13.83	Average
7	0.759	39.47	0.04	0.03	39.54	56.00	-16.46	QP
8	0.809	29.56	0.04	0.03	29.63	46.00	-16.37	Average
9	1.303	39.56	0.06	0.11	39.73	56.00	-16.27	QP
10	13.197	30.53	0.25	0.11	30.89	60.00	-29.11	QP
11	22.535	32.49	0.34	0.16	32.99	60.00	-27.01	QP
12	23.018	22.54	0.35	0.16	23.05	50.00	-26.95	Average

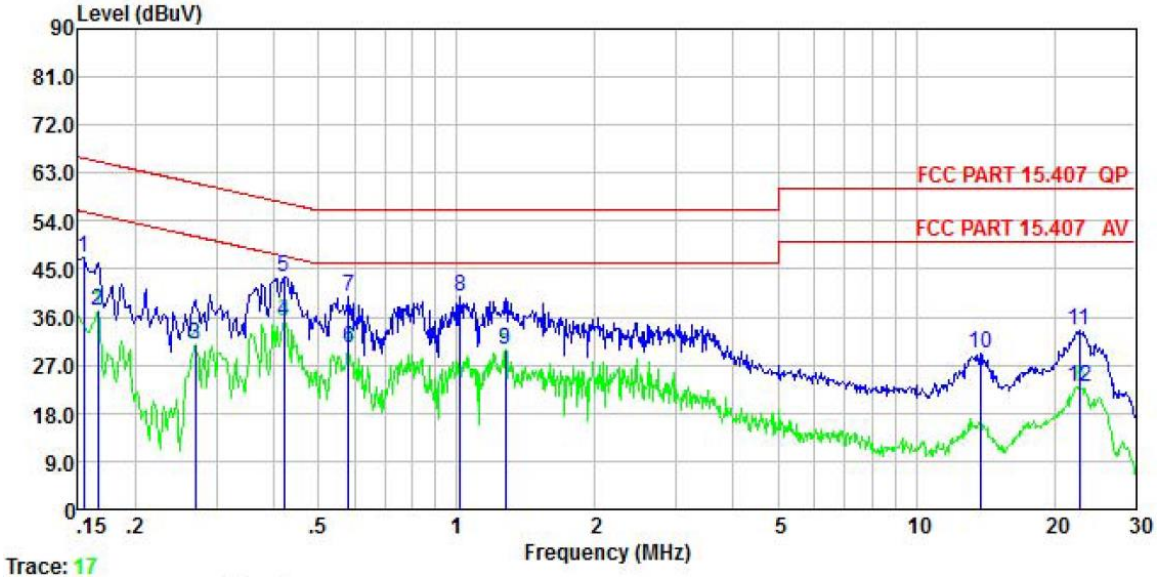
Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.

2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.

3. Final Level = Receiver Read level + LISN Factor + Aux Factor + Cable Loss.

Product name:	Smart Kiosk	Product model:	SK300
Test by:	Mike	Test mode:	5G Wi-Fi Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz		



	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	46.99	0.05	0.01	47.05	65.78	-18.73	QP
2	0.166	37.13	0.05	0.01	37.19	55.16	-17.97	Average
3	0.270	30.83	0.04	0.02	30.89	51.12	-20.23	Average
4	0.421	35.05	0.04	0.04	35.13	47.42	-12.29	Average
5	0.421	43.58	0.04	0.04	43.66	57.42	-13.76	QP
6	0.582	30.24	0.04	0.02	30.30	46.00	-15.70	Average
7	0.582	39.94	0.04	0.02	40.00	56.00	-16.00	QP
8	1.016	39.74	0.05	0.05	39.84	56.00	-16.16	QP
9	1.276	29.67	0.05	0.11	29.83	46.00	-16.17	Average
10	13.841	28.78	0.24	0.12	29.14	60.00	-30.86	QP
11	22.655	32.90	0.33	0.16	33.39	60.00	-26.61	QP
12	22.775	22.48	0.33	0.16	22.97	50.00	-27.03	Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.

2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.

3. Final Level = Receiver Read level + LISN Factor + Aux Factor + Cable Loss.

6.4 Unwanted Emissions in the Restricted Bands

Band 1:

Band 1 – 802.11a							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	47.52	15.49	63.01	68.20	5.19	Horizontal	Peak
5150.00	49.24	15.49	64.73	68.20	3.47	Vertical	Peak
5150.00	31.60	15.49	47.09	54.00	6.91	Horizontal	Average
5150.00	32.93	15.49	48.42	54.00	5.58	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	35.98	16.44	52.42	68.20	15.78	Horizontal	Peak
5350.00	34.90	16.44	51.34	68.20	16.86	Vertical	Peak
5350.00	25.07	16.44	41.51	54.00	12.49	Horizontal	Average
5350.00	25.29	16.44	41.73	54.00	12.27	Vertical	Average

Band 1 – 802.11n(HT20)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	47.83	15.49	63.32	68.20	4.88	Horizontal	Peak
5150.00	49.64	15.49	65.13	68.20	3.07	Vertical	Peak
5150.00	31.94	15.49	47.43	54.00	6.57	Horizontal	Average
5150.00	32.87	15.49	48.36	54.00	5.64	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	36.48	16.44	52.92	68.20	15.28	Horizontal	Peak
5350.00	35.31	16.44	51.75	68.20	16.45	Vertical	Peak
5350.00	25.53	16.44	41.97	54.00	12.03	Horizontal	Average
5350.00	25.55	16.44	41.99	54.00	12.01	Vertical	Average

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Band 1 – 802.11n(HT40)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	48.80	15.49	64.29	68.20	3.91	Horizontal	Peak
5150.00	47.02	15.49	62.51	68.20	5.69	Vertical	Peak
5150.00	32.47	15.49	47.96	54.00	6.04	Horizontal	Average
5150.00	33.03	15.49	48.52	54.00	5.48	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	36.26	16.44	52.70	68.20	15.5	Horizontal	Peak
5350.00	36.47	16.44	52.91	68.20	15.29	Vertical	Peak
5350.00	25.24	16.44	41.68	54.00	12.32	Horizontal	Average
5350.00	25.67	16.44	42.11	54.00	11.89	Vertical	Average

Band 1 – 802.11ac(HT20)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	47.82	15.49	63.31	68.20	4.89	Horizontal	Peak
5150.00	49.88	15.49	65.37	68.20	2.83	Vertical	Peak
5150.00	31.95	15.49	47.44	54.00	6.56	Horizontal	Average
5150.00	32.61	15.49	48.10	54.00	5.9	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	36.25	16.44	52.69	68.20	15.51	Horizontal	Peak
5350.00	34.92	16.44	51.36	68.20	16.84	Vertical	Peak
5350.00	25.90	16.44	42.34	54.00	11.66	Horizontal	Average
5350.00	25.22	16.44	41.66	54.00	12.34	Vertical	Average

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Band 1 – 802.11ac(HT40)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	49.29	15.49	64.78	68.20	3.42	Horizontal	Peak
5150.00	46.69	15.49	62.18	68.20	6.02	Vertical	Peak
5150.00	32.75	15.49	48.24	54.00	5.76	Horizontal	Average
5150.00	32.70	15.49	48.19	54.00	5.81	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	36.72	16.44	53.16	68.20	15.04	Horizontal	Peak
5350.00	36.77	16.44	53.21	68.20	14.99	Vertical	Peak
5350.00	25.33	16.44	41.77	54.00	12.23	Horizontal	Average
5350.00	25.98	16.44	42.42	54.00	11.58	Vertical	Average

Band 1 – 802.11ac(HT80)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5150.00	47.08	15.49	62.57	68.20	5.63	Horizontal	Peak
5150.00	47.06	15.49	62.55	68.20	5.65	Vertical	Peak
5150.00	32.64	15.49	48.13	54.00	5.87	Horizontal	Average
5150.00	33.56	15.49	49.05	54.00	4.95	Vertical	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Polarity
5350.00	36.74	16.44	53.18	68.20	15.02	Horizontal	Peak
5350.00	35.82	16.44	52.26	68.20	15.94	Vertical	Peak
5350.00	25.97	16.44	42.41	54.00	11.59	Horizontal	Average
5350.00	26.08	16.44	42.52	54.00	11.48	Vertical	Average

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Band 4:

Band 4 – 802.11a						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	41.09	17.02	58.11	68.20	10.09	Horizontal
5700.00	40.26	17.13	57.39	105.20	47.81	Horizontal
5720.00	45.77	17.21	62.98	110.80	47.82	Horizontal
5725.00	55.95	17.23	73.18	122.20	49.02	Horizontal
5650.00	39.70	17.02	56.72	68.20	11.48	Vertical
5700.00	40.64	17.13	57.77	105.20	47.43	Vertical
5720.00	44.73	17.21	61.94	110.80	48.86	Vertical
5725.00	49.91	17.23	67.14	122.20	55.06	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	43.89	17.55	61.44	122.20	60.76	Horizontal
5855.00	41.96	17.55	59.51	110.80	51.29	Horizontal
5875.00	38.79	17.57	56.36	105.20	48.84	Horizontal
5925.00	38.70	17.37	56.07	68.20	12.13	Horizontal
5850.00	42.82	17.55	60.37	122.20	61.83	Vertical
5855.00	39.70	17.55	57.25	110.80	53.55	Vertical
5875.00	38.06	17.57	55.63	105.20	49.57	Vertical
5925.00	39.08	17.37	56.45	68.20	11.75	Vertical

Remark:

1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Band 4 – 802.11n(HT20)						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	40.68	17.02	57.70	68.20	10.50	Horizontal
5700.00	39.94	17.13	57.07	105.20	48.13	Horizontal
5720.00	45.41	17.21	62.62	110.80	48.18	Horizontal
5725.00	56.20	17.23	73.43	122.20	48.77	Horizontal
5650.00	40.11	17.02	57.13	68.20	11.07	Vertical
5700.00	40.23	17.13	57.36	105.20	47.84	Vertical
5720.00	44.92	17.21	62.13	110.80	48.67	Vertical
5725.00	49.63	17.23	66.86	122.20	55.34	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	44.22	17.55	61.77	122.20	60.43	Horizontal
5855.00	42.10	17.55	59.65	110.80	51.15	Horizontal
5875.00	38.89	17.57	56.46	105.20	48.74	Horizontal
5925.00	38.86	17.37	56.23	68.20	11.97	Horizontal
5850.00	42.46	17.55	60.01	122.20	62.19	Vertical
5855.00	39.65	17.55	57.20	110.80	53.60	Vertical
5875.00	38.29	17.57	55.86	105.20	49.34	Vertical
5925.00	39.04	17.37	56.41	68.20	11.79	Vertical

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Band 4 – 802.11n(HT40)						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	38.92	17.02	55.94	68.20	12.26	Horizontal
5700.00	39.06	17.13	56.19	105.20	49.01	Horizontal
5720.00	49.05	17.21	66.26	110.80	44.54	Horizontal
5725.00	51.91	17.23	69.14	122.20	53.06	Horizontal
5650.00	40.18	17.02	57.20	68.20	11.00	Vertical
5700.00	40.03	17.13	57.16	105.20	48.04	Vertical
5720.00	46.04	17.21	63.25	110.80	47.55	Vertical
5725.00	50.36	17.23	67.59	122.20	54.61	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	39.84	17.55	57.39	122.20	64.81	Horizontal
5855.00	38.98	17.55	56.53	110.80	54.27	Horizontal
5875.00	39.60	17.57	57.17	105.20	48.03	Horizontal
5925.00	39.97	17.37	57.34	68.20	10.86	Horizontal
5850.00	39.87	17.55	57.42	122.20	64.78	Vertical
5855.00	39.15	17.55	56.70	110.80	54.10	Vertical
5875.00	39.15	17.57	56.72	105.20	48.48	Vertical
5925.00	39.70	17.37	57.07	68.20	11.13	Vertical

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Band 4 – 802.11ac(HT20)						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	40.61	17.02	57.63	68.20	10.57	Horizontal
5700.00	39.47	17.13	56.60	105.20	48.60	Horizontal
5720.00	45.50	17.21	62.71	110.80	48.09	Horizontal
5725.00	56.37	17.23	73.60	122.20	48.60	Horizontal
5650.00	39.77	17.02	56.79	68.20	11.41	Vertical
5700.00	40.40	17.13	57.53	105.20	47.67	Vertical
5720.00	45.32	17.21	62.53	110.80	48.27	Vertical
5725.00	49.91	17.23	67.14	122.20	55.06	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	44.64	17.55	62.19	122.20	60.01	Horizontal
5855.00	42.46	17.55	60.01	110.80	50.79	Horizontal
5875.00	39.14	17.57	56.71	105.20	48.49	Horizontal
5925.00	38.87	17.37	56.24	68.20	11.96	Horizontal
5850.00	42.2	17.55	59.75	122.20	62.45	Vertical
5855.00	39.70	17.55	57.25	110.80	53.55	Vertical
5875.00	38.27	17.57	55.84	105.20	49.36	Vertical
5925.00	39.26	17.37	56.63	68.20	11.57	Vertical

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Band 4 – 802.11ac(HT40)						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	39.25	17.02	56.27	68.20	11.93	Horizontal
5700.00	39.47	17.13	56.60	105.20	48.60	Horizontal
5720.00	48.89	17.21	66.10	110.80	44.70	Horizontal
5725.00	51.98	17.23	69.21	122.20	52.99	Horizontal
5650.00	40.43	17.02	57.45	68.20	10.75	Vertical
5700.00	40.47	17.13	57.60	105.20	47.60	Vertical
5720.00	45.66	17.21	62.87	110.80	47.93	Vertical
5725.00	50.55	17.23	67.78	122.20	54.42	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	39.65	17.55	57.20	122.20	65.00	Horizontal
5855.00	39.17	17.55	56.72	110.80	54.08	Horizontal
5875.00	39.77	17.57	57.34	105.20	47.86	Horizontal
5925.00	39.80	17.37	57.17	68.20	11.03	Horizontal
5850.00	39.54	17.55	57.09	122.20	65.11	Vertical
5855.00	39.09	17.55	56.64	110.80	54.16	Vertical
5875.00	39.35	17.57	56.92	105.20	48.28	Vertical
5925.00	40.10	17.37	57.47	68.20	10.73	Vertical

Remark:

1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Band 4 – 802.11ac(HT80)						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5650.00	40.07	17.02	57.09	68.20	11.11	Horizontal
5700.00	40.72	17.13	57.85	105.20	47.35	Horizontal
5720.00	48.63	17.21	65.84	110.80	44.96	Horizontal
5725.00	48.72	17.23	65.95	122.20	56.25	Horizontal
5650.00	39.76	17.02	56.78	68.20	11.42	Vertical
5700.00	40.30	17.13	57.43	105.20	47.77	Vertical
5720.00	43.49	17.21	60.70	110.80	50.10	Vertical
5725.00	44.56	17.23	61.79	122.20	60.41	Vertical
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization
5850.00	40.22	17.55	57.77	122.20	64.43	Horizontal
5855.00	40.11	17.55	57.66	110.80	53.14	Horizontal
5875.00	38.74	17.57	56.31	105.20	48.89	Horizontal
5925.00	39.33	17.37	56.70	68.20	11.50	Horizontal
5850.00	38.95	17.55	56.50	122.20	65.70	Vertical
5855.00	40.34	17.55	57.89	110.80	52.91	Vertical
5875.00	39.93	17.57	57.50	105.20	47.70	Vertical
5925.00	40.01	17.37	57.38	68.20	10.82	Vertical

Remark:

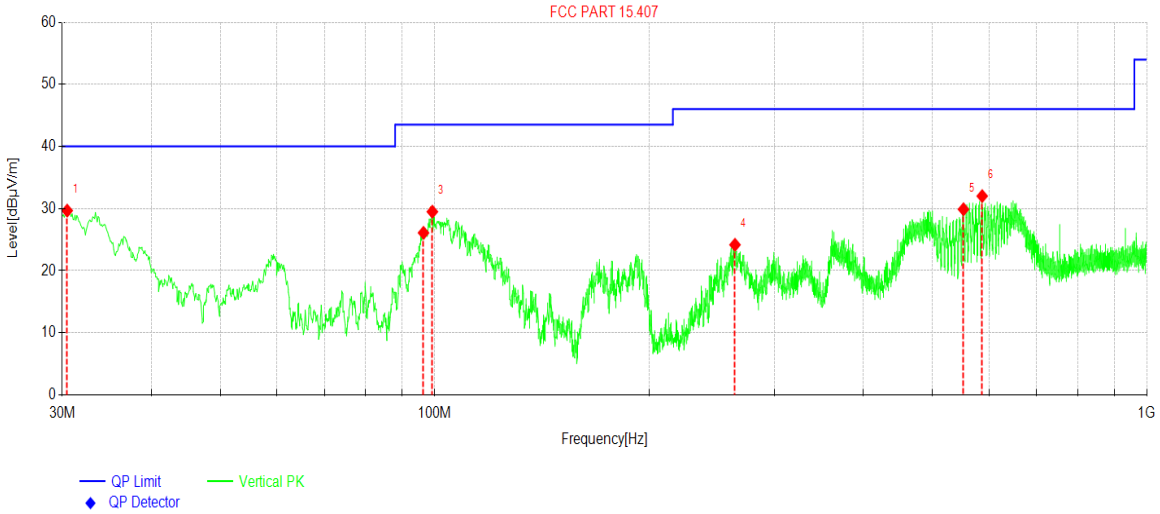
1. Final Level = Receiver Read level + Factor.

2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

6.5 Unwanted Emissions

Below 1GHz:

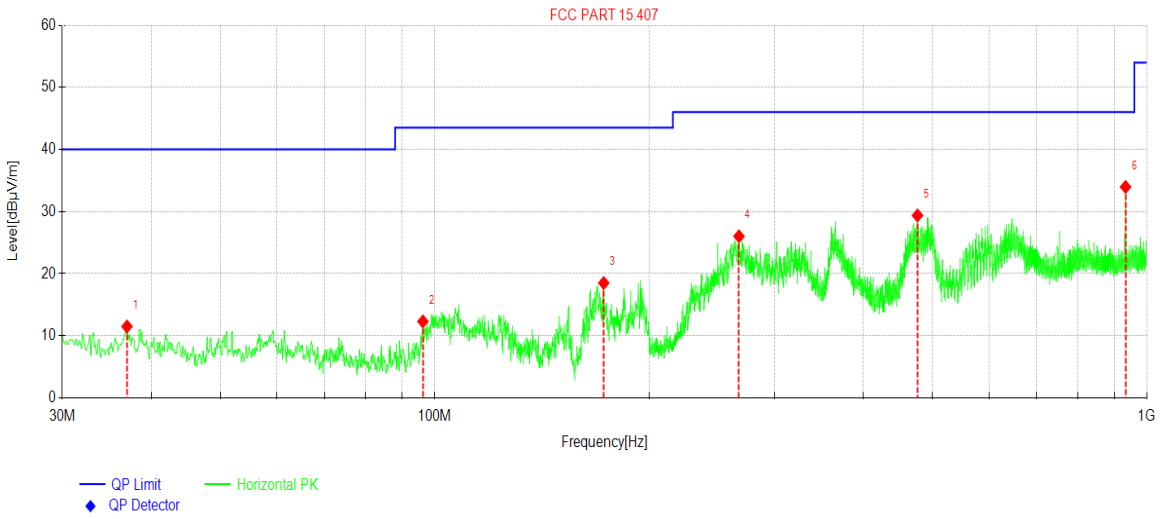
Product Name:	Smart Kiosk	**Product Model:**	SK300
Test By:	Mike	**Test mode:**	5G Wi-Fi Tx mode
Test Frequency:	30 MHz ~ 1 GHz	**Polarization:**	Vertical
Test Voltage:	AC 120/60Hz		



NO.	Freq. [MHz]	Reading[dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Trace	Polarity
1	30.4850	45.72	29.67	-16.05	40.00	10.33	PK	Vertical
2	96.4516	42.92	26.09	-16.83	43.50	17.41	PK	Vertical
3	99.2649	45.80	29.49	-16.31	43.50	14.01	PK	Vertical
4	263.987	37.73	24.16	-13.57	46.00	21.84	PK	Vertical
5	552.591	36.68	29.88	-6.80	46.00	16.12	PK	Vertical
6	587.029	37.83	32.01	-5.82	46.00	13.99	PK	Vertical

Remark:
1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Kiosk	**Product Model:**	SK300
Test By:	Mike	**Test mode:**	5G Wi-Fi Tx mode
Test Frequency:	30 MHz ~ 1 GHz	**Polarization:**	Horizontal
Test Voltage:	AC 120/60Hz		



NO.	Freq. [MHz]	Reading[dBµV/m]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Trace	Polarity
1	36.9847	26.29	11.50	-14.79	40.00	28.50	PK	Horizontal
2	96.2576	29.17	12.31	-16.86	43.50	31.19	PK	Horizontal
3	172.701	35.49	18.50	-16.99	43.50	25.00	PK	Horizontal
4	267.382	39.54	26.02	-13.52	46.00	19.98	PK	Horizontal
5	476.244	37.15	29.38	-7.77	46.00	16.62	PK	Horizontal
6	933.063	35.14	33.97	-1.17	46.00	12.03	PK	Horizontal

Remark:
1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Above 1GHz Band 1:

Band 1 – 802.11a							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10360.00	52.51	5.48	57.99	68.20	10.21	Vertical	Peak
10360.00	51.88	5.48	57.36	68.20	10.84	Horizontal	Peak
10360.00	44.90	5.48	50.38	54.00	3.62	Vertical	Average
10360.00	44.32	5.48	49.80	54.00	4.20	Horizontal	Average
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10400.00	52.11	5.31	57.42	68.20	10.78	Vertical	Peak
10400.00	51.39	5.31	56.70	68.20	11.50	Horizontal	Peak
10400.00	44.94	5.31	50.25	54.00	3.75	Vertical	Average
10400.00	44.75	5.31	50.06	54.00	3.94	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10480.00	52.32	5.98	58.30	68.20	9.90	Vertical	Peak
10480.00	51.94	5.98	57.92	68.20	10.28	Horizontal	Peak
10480.00	45.07	5.98	51.05	54.00	2.95	Vertical	Average
10480.00	44.45	5.98	50.43	54.00	3.57	Horizontal	Average
Band 1 – 802.11n(HT20)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10360.00	52.68	5.48	58.16	68.20	10.04	Vertical	Peak
10360.00	51.90	5.48	57.38	68.20	10.82	Horizontal	Peak
10360.00	44.42	5.48	49.90	54.00	4.10	Vertical	Average
10360.00	44.58	5.48	50.06	54.00	3.94	Horizontal	Average
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10400.00	52.65	5.31	57.96	68.20	10.24	Vertical	Peak
10400.00	52.05	5.31	57.36	68.20	10.84	Horizontal	Peak
10400.00	44.36	5.31	49.67	54.00	4.33	Vertical	Average
10400.00	44.91	5.31	50.22	54.00	3.78	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10480.00	52.40	5.98	58.38	68.20	9.82	Vertical	Peak
10480.00	52.17	5.98	58.15	68.20	10.05	Horizontal	Peak
10480.00	44.50	5.98	50.48	54.00	3.52	Vertical	Average
10480.00	44.59	5.98	50.57	54.00	3.43	Horizontal	Average

Remark:
1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Band 1 – 802.11n(HT40)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10380.00	52.84	5.39	58.23	68.20	9.97	Vertical	Peak
10380.00	52.16	5.39	57.55	68.20	10.65	Horizontal	Peak
10380.00	44.90	5.39	50.29	54.00	3.71	Vertical	Average
10380.00	44.15	5.39	49.54	54.00	4.46	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10460.00	52.35	5.81	58.16	68.20	10.04	Vertical	Peak
10460.00	52.55	5.81	58.36	68.20	9.84	Horizontal	Peak
10460.00	44.80	5.81	50.61	54.00	3.39	Vertical	Average
10460.00	44.26	5.81	50.07	54.00	3.93	Horizontal	Average
Band 1 – 802.11ac(HT20)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10360.00	52.68	5.48	58.16	68.20	10.04	Vertical	Peak
10360.00	51.48	5.48	56.96	68.20	11.24	Horizontal	Peak
10360.00	44.49	5.48	49.97	54.00	4.03	Vertical	Average
10360.00	43.92	5.48	49.40	54.00	4.60	Horizontal	Average
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10400.00	52.34	5.31	57.65	68.20	10.55	Vertical	Peak
10400.00	51.13	5.31	56.44	68.20	11.76	Horizontal	Peak
10400.00	44.18	5.31	49.49	54.00	4.51	Vertical	Average
10400.00	43.61	5.31	48.92	54.00	5.08	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10480.00	52.94	5.98	58.92	68.20	9.28	Vertical	Peak
10480.00	51.16	5.98	57.14	68.20	11.06	Horizontal	Peak
10480.00	44.43	5.98	50.41	54.00	3.59	Vertical	Average
10480.00	44.13	5.98	50.11	54.00	3.89	Horizontal	Average

Remark:
1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Band 1 – 802.11ac(HT40)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10380.00	52.87	5.39	58.26	68.20	9.94	Vertical	Peak
10380.00	52.15	5.39	57.54	68.20	10.66	Horizontal	Peak
10380.00	44.99	5.39	50.38	54.00	3.62	Vertical	Average
10380.00	44.29	5.39	49.68	54.00	4.32	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10460.00	52.65	5.81	58.46	68.20	9.74	Vertical	Peak
10460.00	52.11	5.81	57.92	68.20	10.28	Horizontal	Peak
10460.00	44.68	5.81	50.49	54.00	3.51	Vertical	Average
10460.00	44.11	5.81	49.92	54.00	4.08	Horizontal	Average
Band 1 – 802.11ac(HT80)							
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
10420.00	52.61	5.48	58.09	68.20	10.11	Vertical	Peak
10420.00	51.83	5.48	57.31	68.20	10.89	Horizontal	Peak
10420.00	44.98	5.48	50.46	54.00	3.54	Vertical	Average
10420.00	44.70	5.48	50.18	54.00	3.82	Horizontal	Average

Remark:
1. Final Level = Receiver Read level + Factor.
2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Band 4:

Band 4 – 802.11a							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11490.00	51.48	7.21	58.69	74.00	15.31	Vertical	Peak
11490.00	51.66	7.21	58.87	74.00	15.13	Horizontal	Peak
11490.00	45.02	7.21	52.23	54.00	1.77	Vertical	Average
11490.00	43.57	7.21	50.78	54.00	3.22	Horizontal	Average
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11570.00	51.45	6.88	58.33	74.00	15.67	Vertical	Peak
11570.00	51.54	6.88	58.42	74.00	15.58	Horizontal	Peak
11570.00	45.39	6.88	52.27	54.00	1.73	Vertical	Average
11570.00	43.67	6.88	50.55	54.00	3.45	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11650.00	51.38	7.09	58.47	74.00	15.53	Vertical	Peak
11650.00	51.89	7.09	58.98	74.00	15.02	Horizontal	Peak
11650.00	45.01	7.09	52.10	54.00	1.90	Vertical	Average
11650.00	44.07	7.09	51.16	54.00	2.84	Horizontal	Average
Band 4 – 802.11n(HT20)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11490.00	51.79	7.21	59.00	74.00	15.00	Vertical	Peak
11490.00	52.24	7.21	59.45	74.00	14.55	Horizontal	Peak
11490.00	44.60	7.21	51.81	54.00	2.19	Vertical	Average
11490.00	44.15	7.21	51.36	54.00	2.64	Horizontal	Average
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11570.00	52.21	6.88	59.09	74.00	14.91	Vertical	Peak
11570.00	52.22	6.88	59.10	74.00	14.90	Horizontal	Peak
11570.00	44.86	6.88	51.74	54.00	2.26	Vertical	Average
11570.00	44.60	6.88	51.48	54.00	2.52	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11650.00	51.76	7.09	58.85	74.00	15.15	Vertical	Peak
11650.00	52.20	7.09	59.29	74.00	14.71	Horizontal	Peak
11650.00	44.33	7.09	51.42	54.00	2.58	Vertical	Average
11650.00	43.88	7.09	50.97	54.00	3.03	Horizontal	Average

Remark:
1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Band 4 – 802.11n(HT40)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11510.00	50.79	7.20	57.99	74.00	16.01	Vertical	Peak
11510.00	51.67	7.20	58.87	74.00	15.13	Horizontal	Peak
11510.00	44.67	7.20	51.87	54.00	2.13	Vertical	Average
11510.00	44.51	7.20	51.71	54.00	2.29	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11590.00	51.07	6.77	57.84	74.00	16.16	Vertical	Peak
11590.00	51.89	6.77	58.66	74.00	15.34	Horizontal	Peak
11590.00	44.52	6.77	51.29	54.00	2.71	Vertical	Average
11590.00	44.95	6.77	51.72	54.00	2.28	Horizontal	Average
Band 4 – 802.11ac(HT20)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11490.00	51.23	7.21	58.44	74.00	15.56	Vertical	Peak
11490.00	52.16	7.21	59.37	74.00	14.63	Horizontal	Peak
11490.00	44.68	7.21	51.89	54.00	2.11	Vertical	Average
11490.00	43.87	7.21	51.08	54.00	2.92	Horizontal	Average
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11570.00	51.64	6.88	58.52	74.00	15.48	Vertical	Peak
11570.00	51.92	6.88	58.80	74.00	15.20	Horizontal	Peak
11570.00	44.90	6.88	51.78	54.00	2.22	Vertical	Average
11570.00	43.45	6.88	50.33	54.00	3.67	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11650.00	50.73	7.09	57.82	74.00	16.18	Vertical	Peak
11650.00	51.71	7.09	58.80	74.00	15.20	Horizontal	Peak
11650.00	44.18	7.09	51.27	54.00	2.73	Vertical	Average
11650.00	44.27	7.09	51.36	54.00	2.64	Horizontal	Average

Remark:
1. *Final Level = Receiver Read level + Factor.*
2. *The emission levels of other frequencies are lower than the limit 20dB and not show in test report.*

Band 4 – 802.11ac(HT40)							
Test channel: Lowest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11510.00	51.15	7.20	58.35	74.00	15.65	Vertical	Peak
11510.00	51.75	7.20	58.95	74.00	15.05	Horizontal	Peak
11510.00	44.73	7.20	51.93	54.00	2.07	Vertical	Average
11510.00	44.07	7.20	51.27	54.00	2.73	Horizontal	Average
Test channel: Highest channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11590.00	51.53	6.77	58.30	74.00	15.70	Vertical	Peak
11590.00	52.00	6.77	58.77	74.00	15.23	Horizontal	Peak
11590.00	45.16	6.77	51.93	54.00	2.07	Vertical	Average
11590.00	43.74	6.77	50.51	54.00	3.49	Horizontal	Average

Band 4 – 802.11ac(HT80)							
Test channel: Middle channel							
Frequency (MHz)	Read Level (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Margin [dB]	Polarization	Trace
11550.00	51.65	6.99	58.64	74.00	15.36	Vertical	Peak
11550.00	51.52	6.99	58.51	74.00	15.49	Horizontal	Peak
11550.00	45.04	6.99	52.03	54.00	1.97	Vertical	Average
11550.00	44.20	6.99	51.19	54.00	2.81	Horizontal	Average

Remark:
1. Final Level = Receiver Read level + Factor.
2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

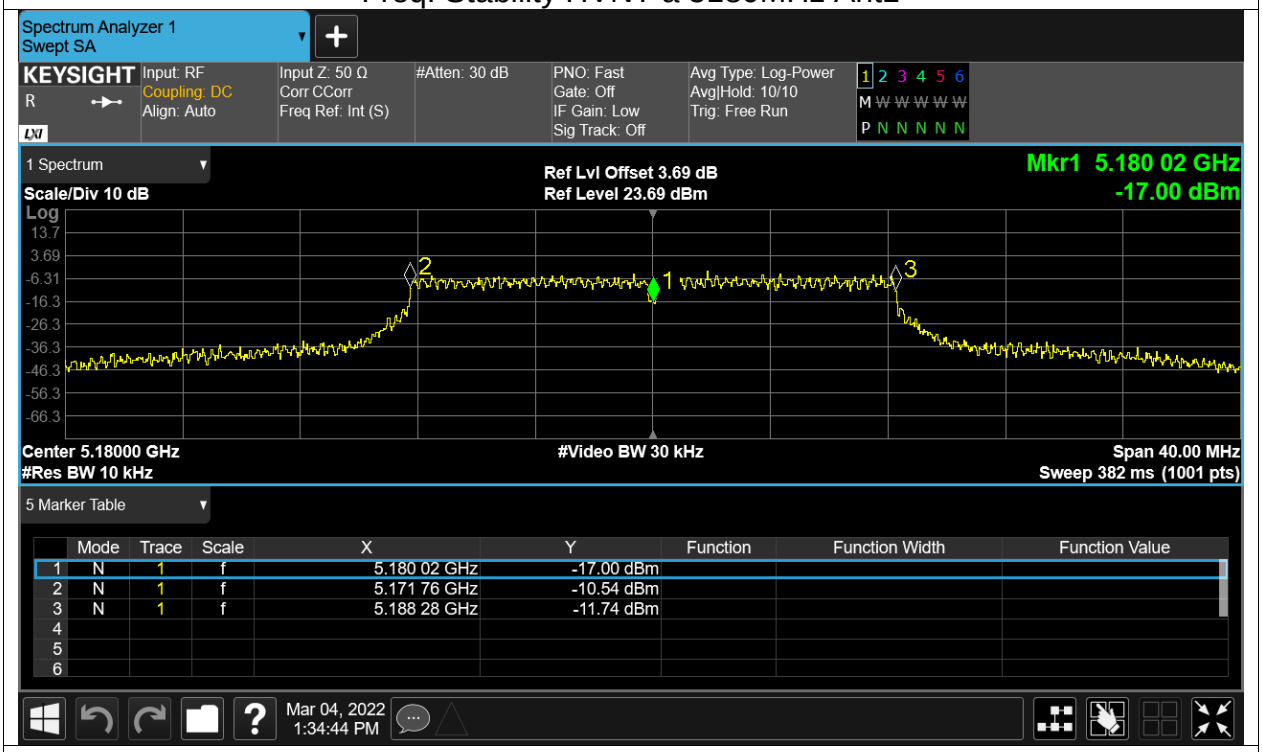
Appendix A – 5.2G Wi-Fi

Frequency Stability

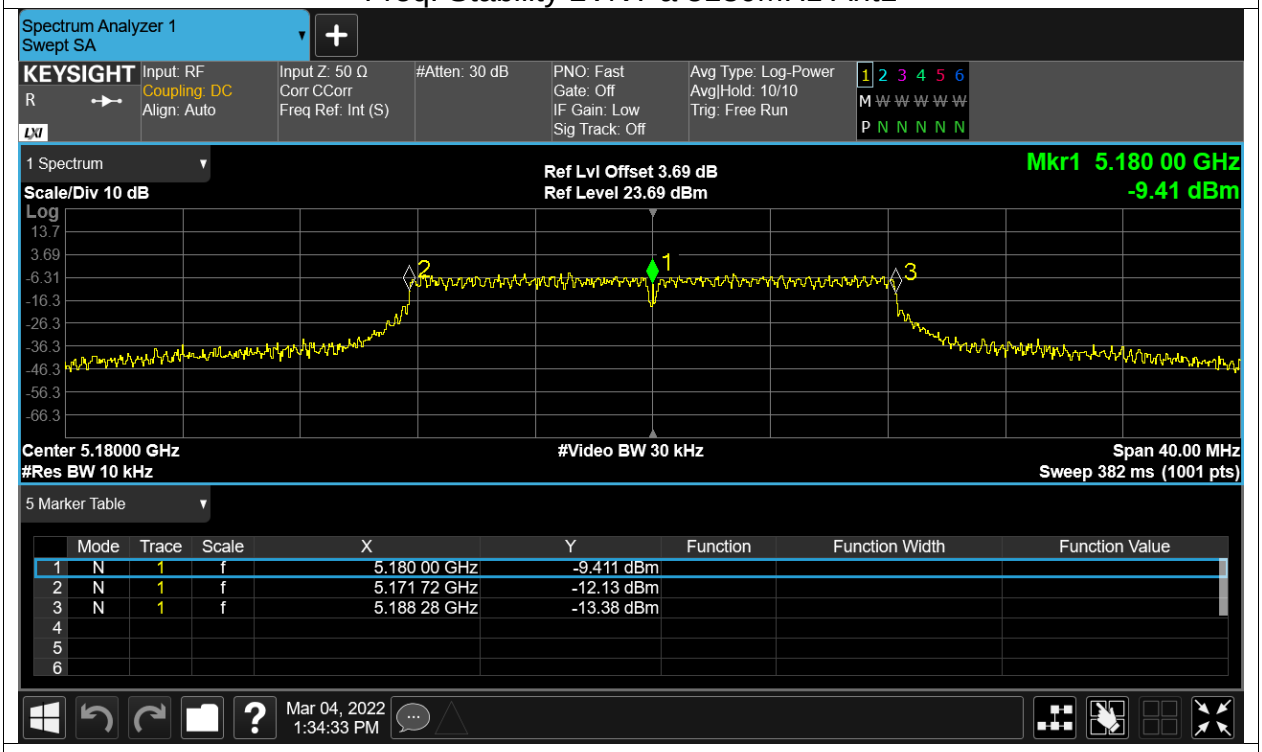
Condition	Mode	Frequency (MHz)	Antenna	Measured Frequency (MHz)	Deviation (ppm)	Limit (ppm)	Verdict
HVNT	a	5180	Ant1	5180.02	3.86	Within authorized band	Pass
LVNT	a	5180	Ant1	5180	0		Pass
NVHT	a	5180	Ant1	5180	0		Pass
NVLT	a	5180	Ant1	5179.98	-3.86		Pass
NVNT	a	5180	Ant1	5179.98	-3.86		Pass
HVNT	ac80	5210	Ant1	5210	0		Pass
LVNT	ac80	5210	Ant1	5210	0		Pass
NVHT	ac80	5210	Ant1	5210	0		Pass
NVLT	ac80	5210	Ant1	5210	0		Pass
NVNT	ac80	5210	Ant1	5210	0		Pass
HVNT	n40	5190	Ant1	5190	0		Pass
LVNT	n40	5190	Ant1	5190	0		Pass
NVHT	n40	5190	Ant1	5190.04	7.71		Pass
NVLT	n40	5190	Ant1	5190	0		Pass
NVNT	n40	5190	Ant1	5190	0		Pass
Remark: “NTNV” means Normal Temperature Normal Voltage, “HVNT” means High Voltage Normal Temperature, “LVNT” means Low Voltage Normal Temperature, “NVHT” means Normal Voltage High Temperature, “NVLT” means Normal Voltage Low Temperature,							

Test Graphs

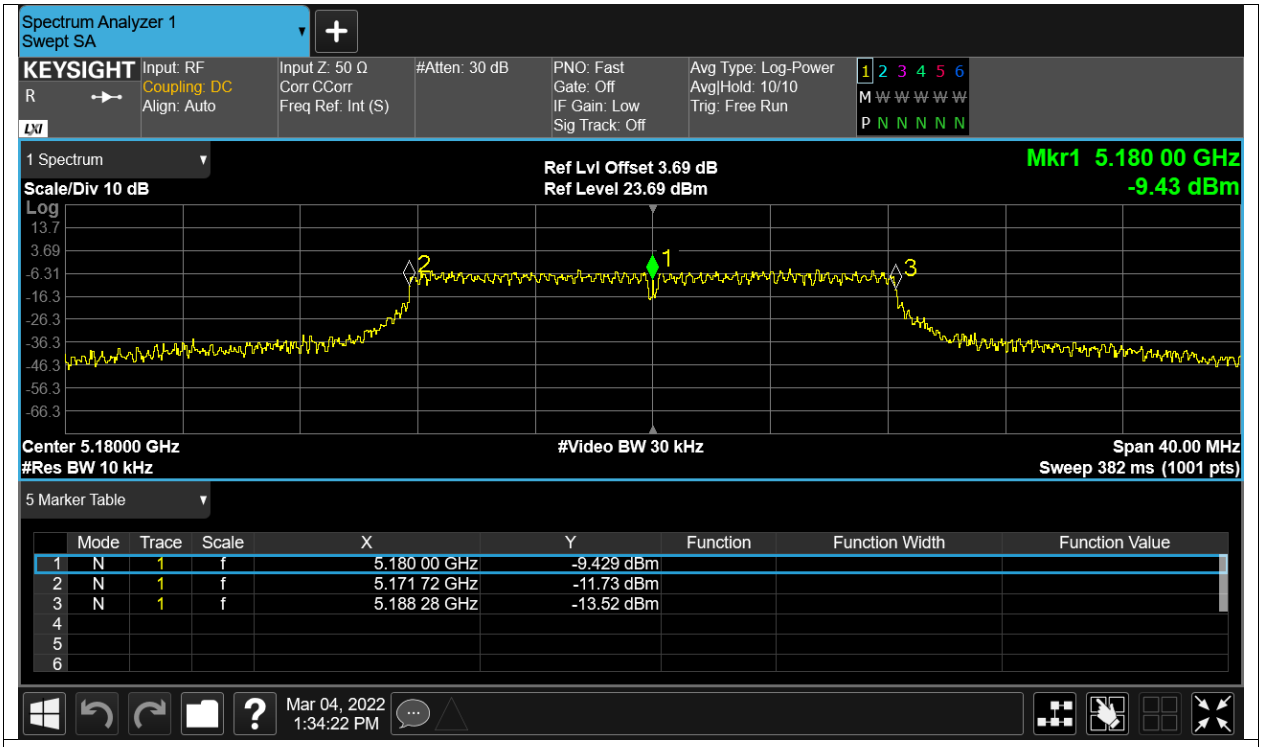
Freq. Stability HVNT a 5180MHz Ant1



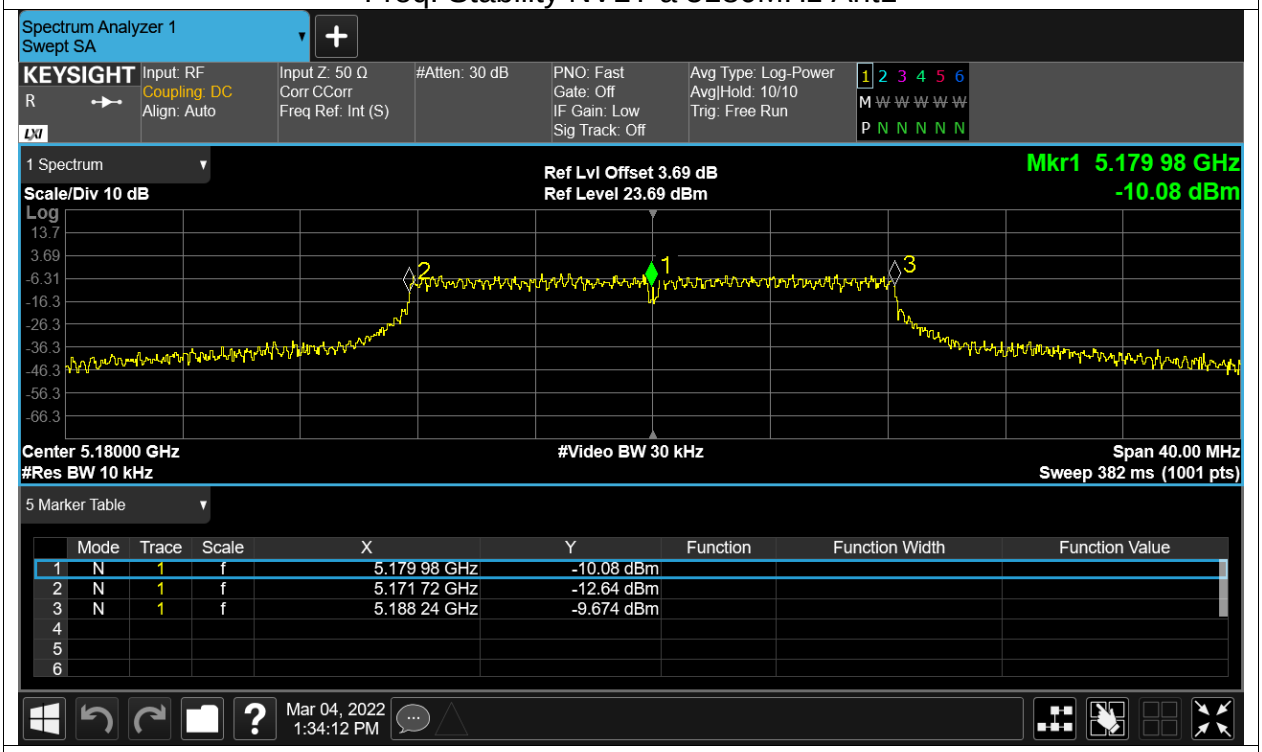
Freq. Stability LVNT a 5180MHz Ant1



Freq. Stability NVHT a 5180MHz Ant1



Freq. Stability NVLT a 5180MHz Ant1



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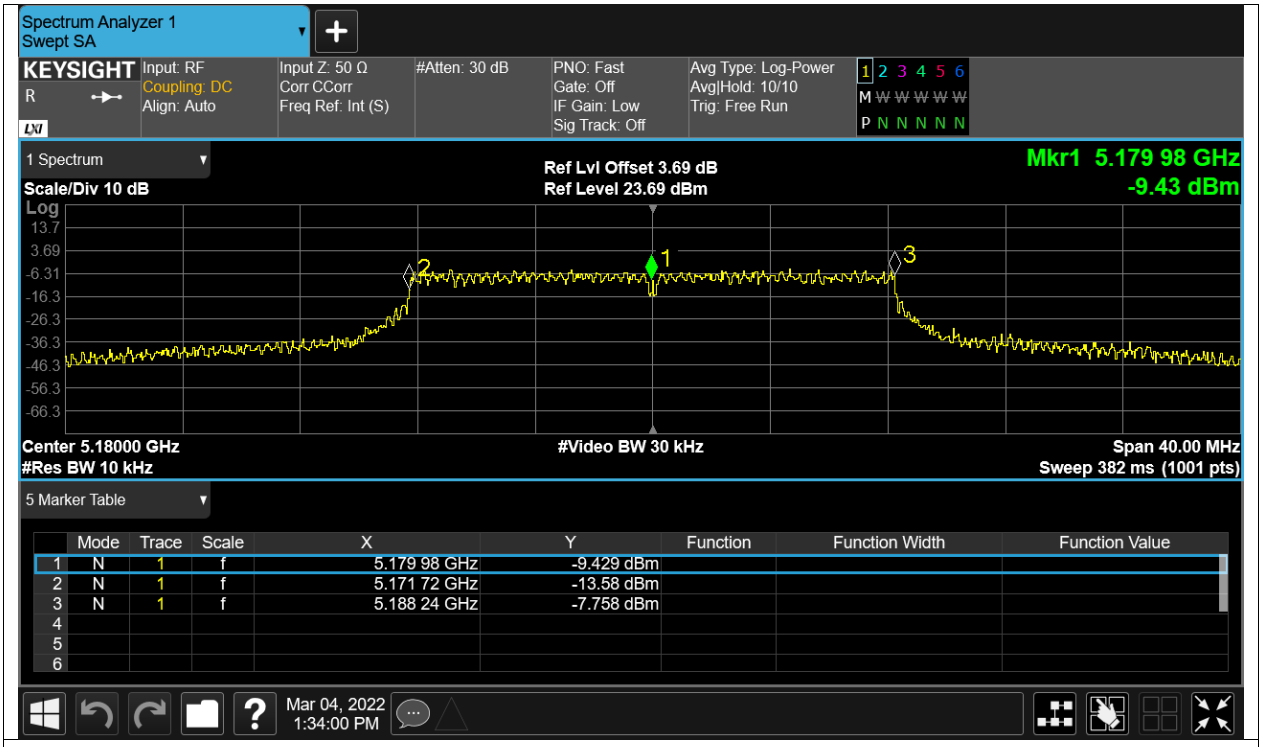
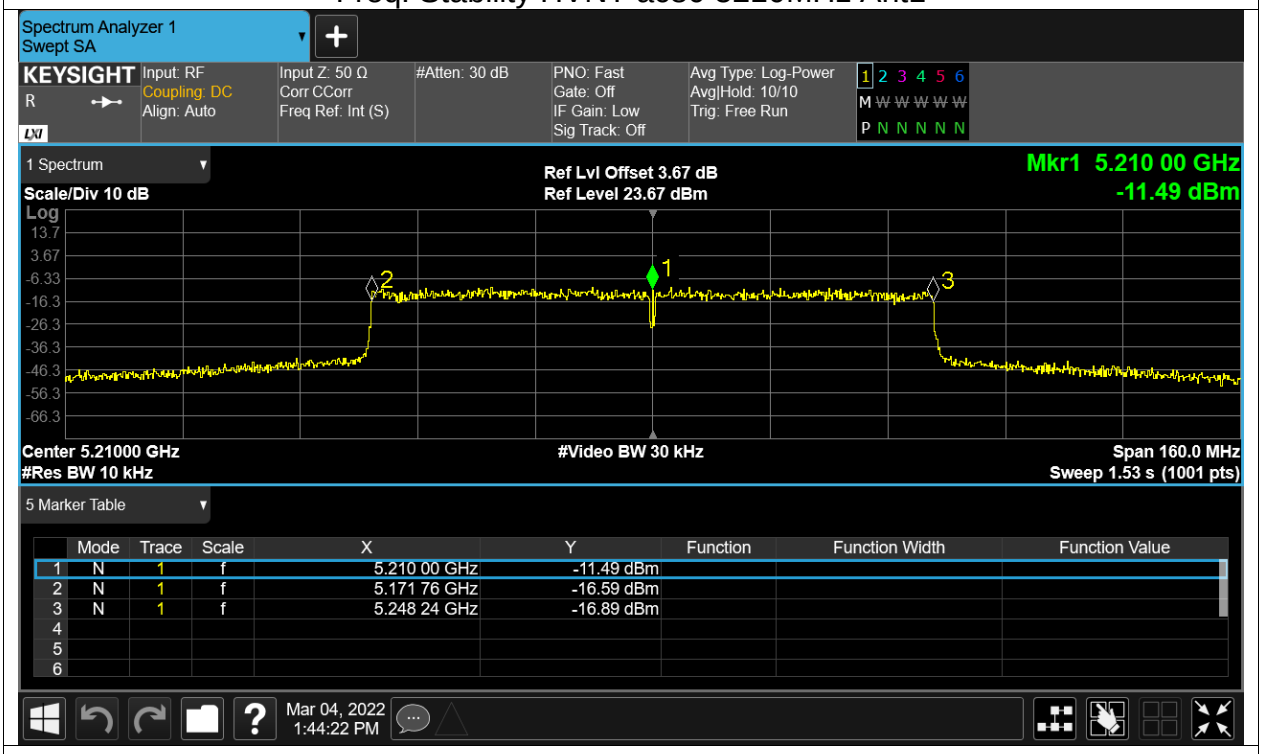
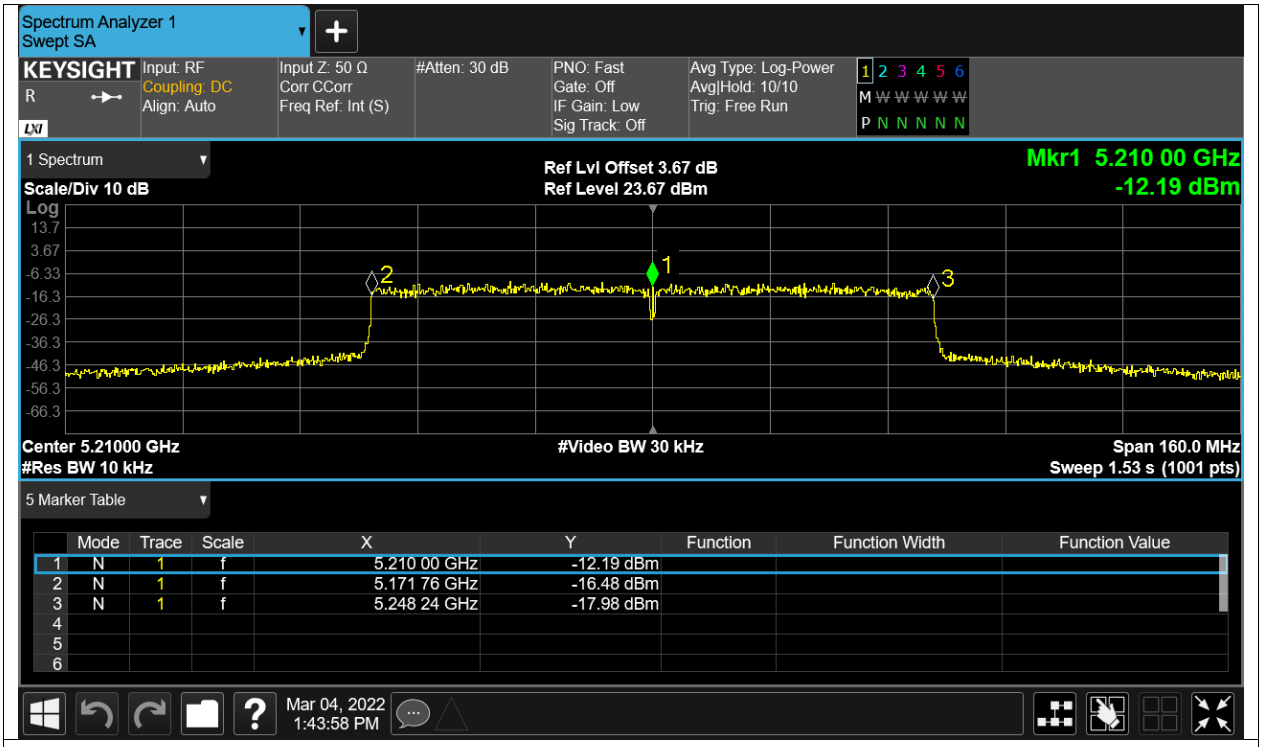


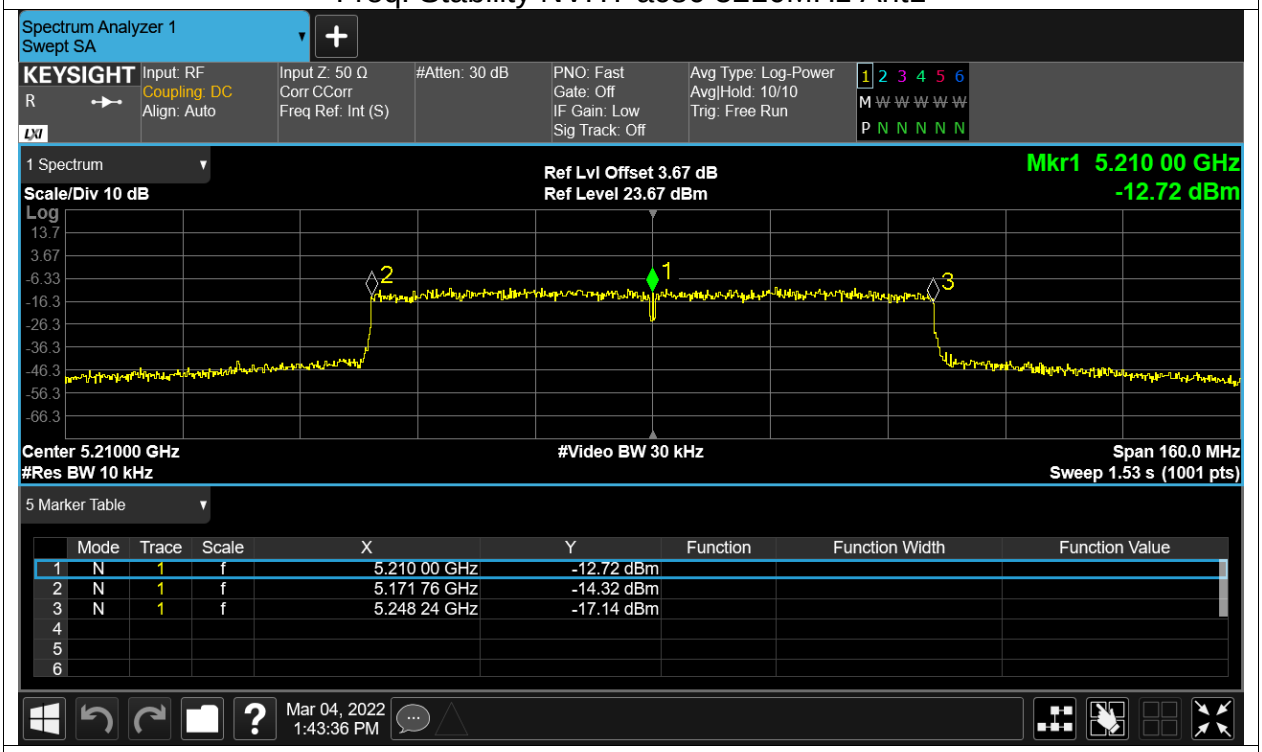
Freq. Stability HVNT ac80 5210MHz Ant1



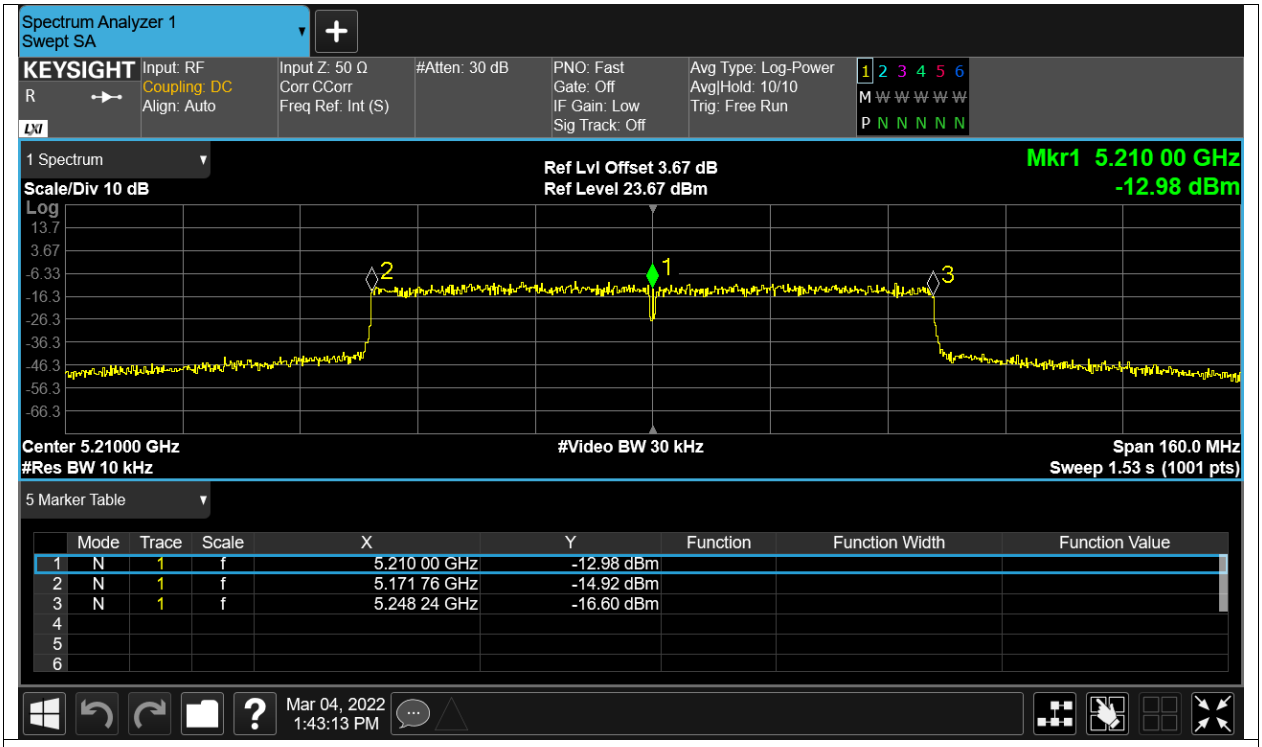
Freq. Stability LVNT ac80 5210MHz Ant1



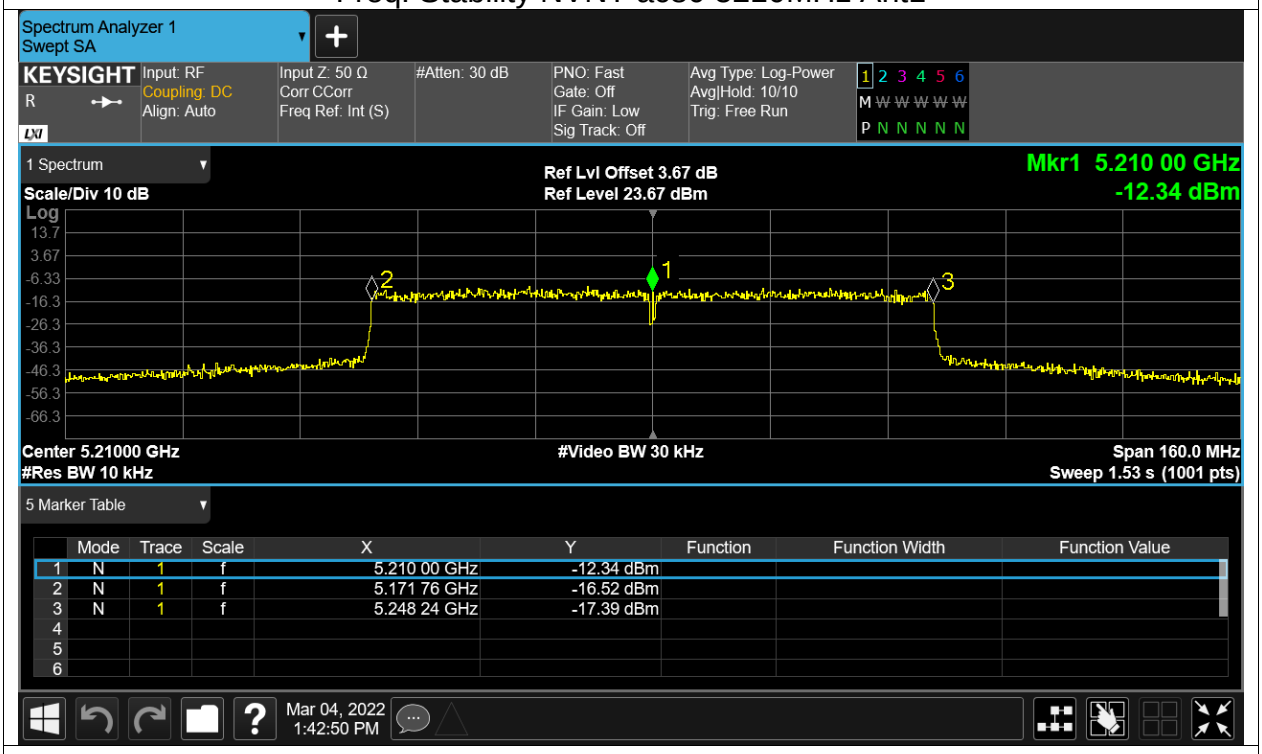
Freq. Stability NVHT ac80 5210MHz Ant1



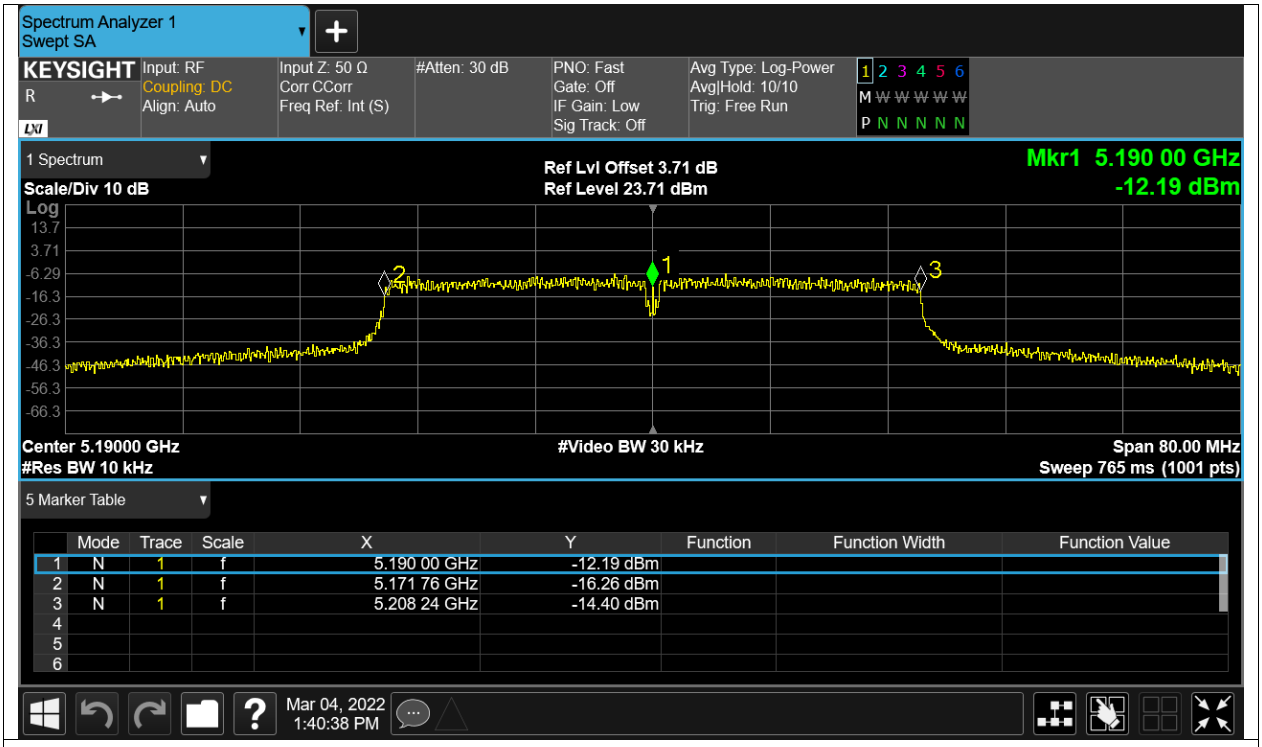
Freq. Stability NVLT ac80 5210MHz Ant1



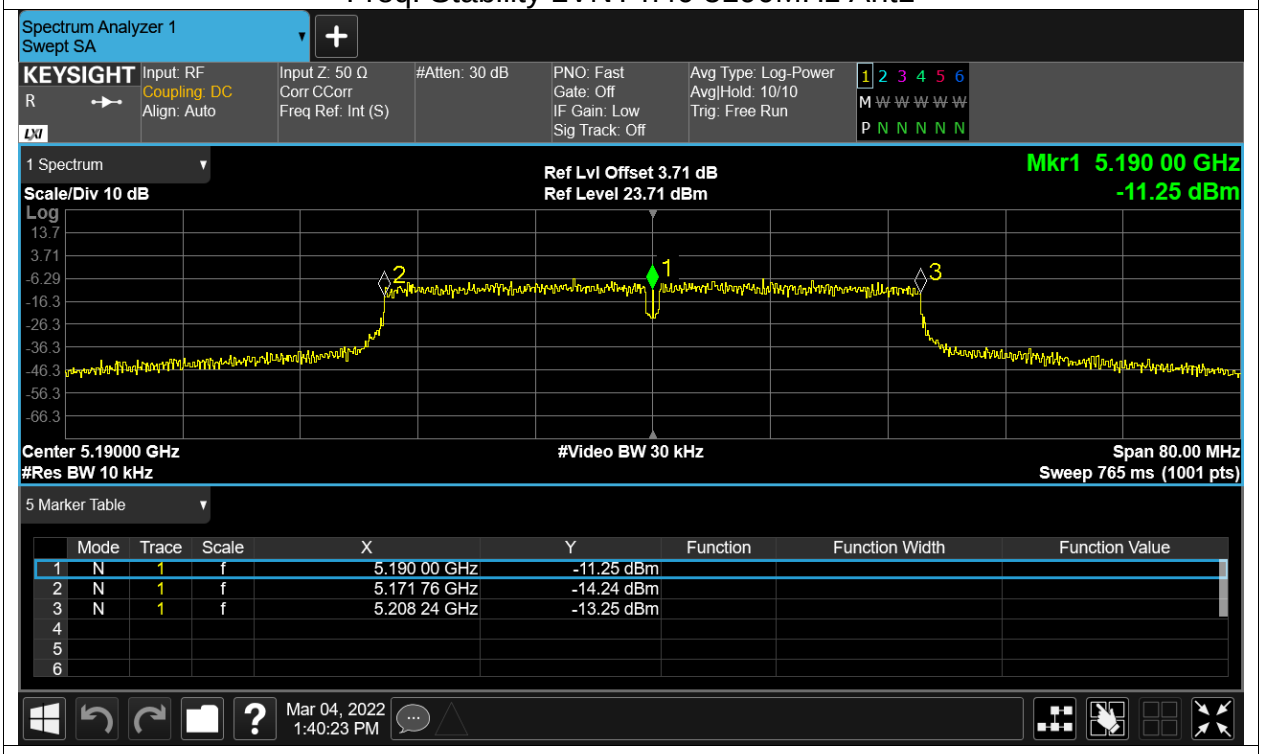
Freq. Stability NVNT ac80 5210MHz Ant1



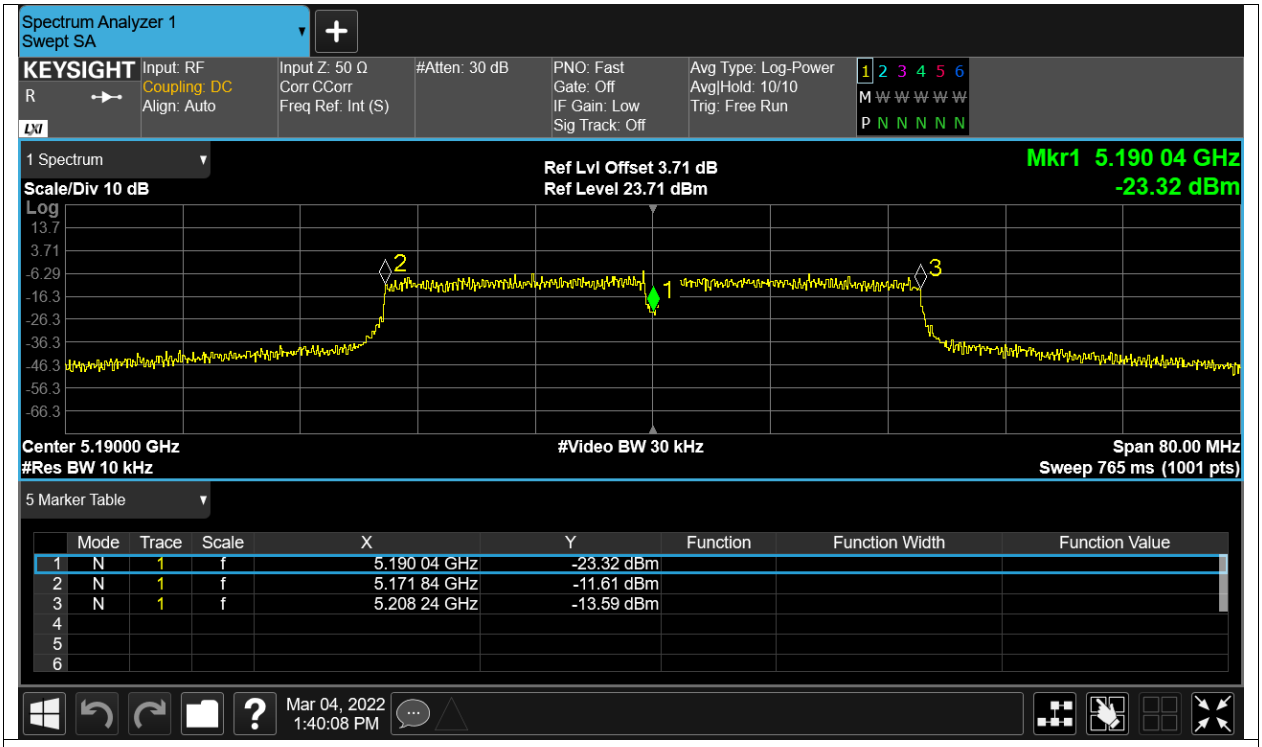
Freq. Stability HVNT n40 5190MHz Ant1



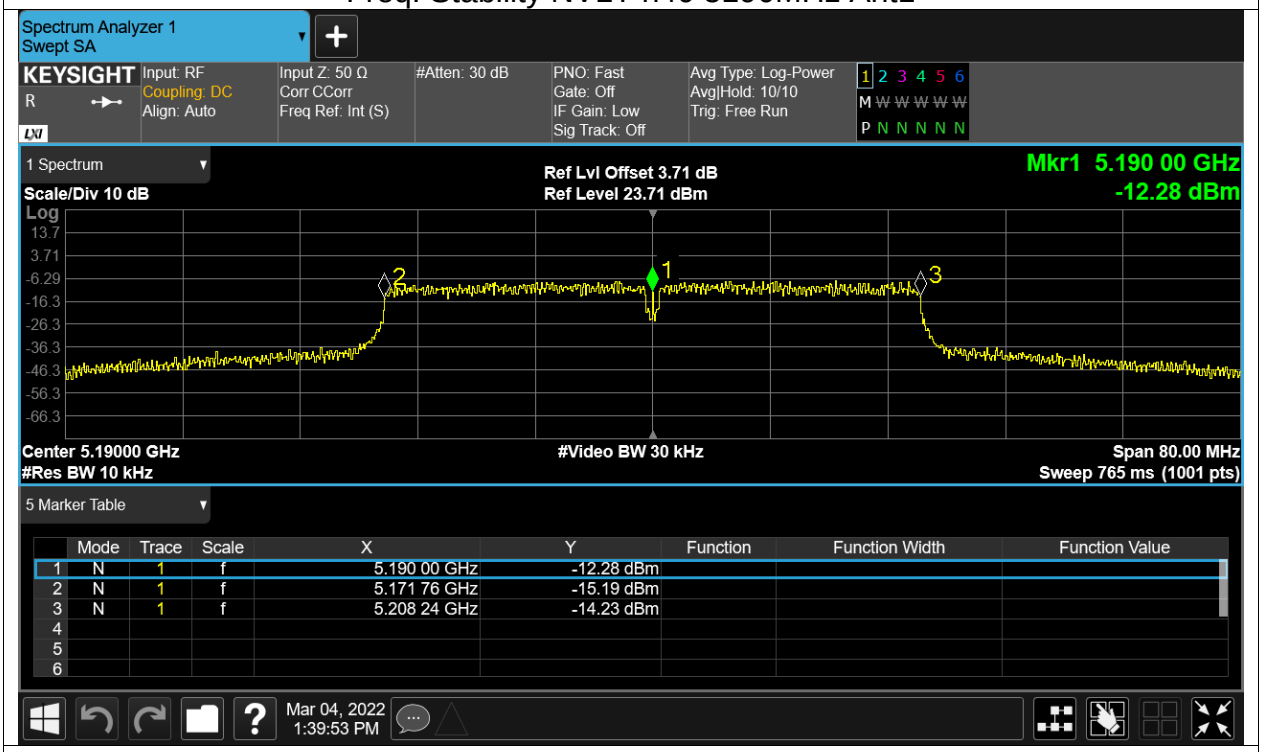
Freq. Stability LVNT n40 5190MHz Ant1



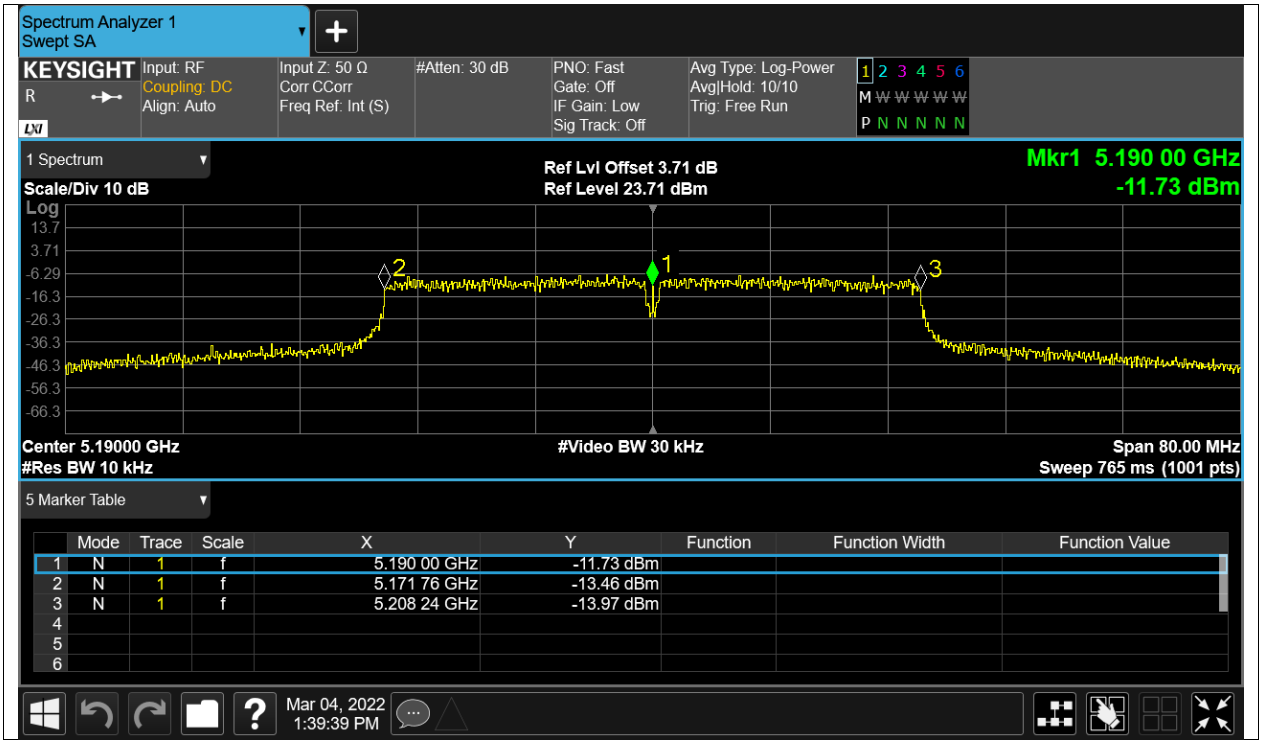
Freq. Stability NVHT n40 5190MHz Ant1



Freq. Stability NVLT n40 5190MHz Ant1



Freq. Stability NVNT n40 5190MHz Ant1

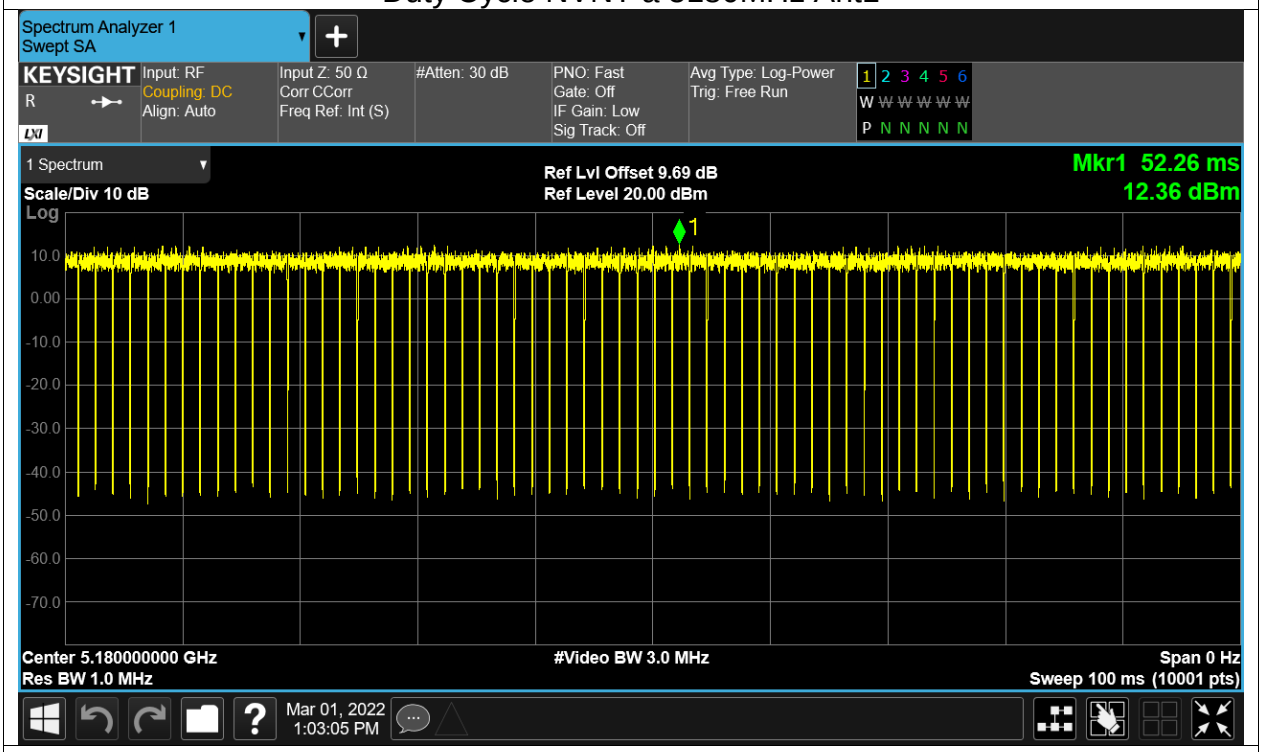

Spectrum Analyzer 1
Swept SA
KEYSIGHT
Input: RF
Coupling: DC
Align: Auto
Input Z: 50 Ω
Corr CCorr
Freq Ref: Int (S)
#Atten: 30 dB
PNO: Fast
Gate: Off
IF Gain: Low
Sig Track: Off
Avg Type: Log-Power
Avg|Hold: 10/10
Trig: Free Run
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 3.71 dB
Ref Level 23.71 dBm
Mkr1 5.190 00 GHz
-11.73 dBm
Center 5.19000 GHz
#Res BW 10 kHz
#Video BW 30 kHz
Span 80.00 MHz
Sweep 765 ms (1001 pts)
5 Marker Table
Mode Trace Scale X Y Function Function Width Function Value
1 N 1 f 5.190 00 GHz -11.73 dBm
2 N 1 f 5.171 76 GHz -13.46 dBm
3 N 1 f 5.208 24 GHz -13.97 dBm
Mar 04, 2022
1:39:39 PM

Duty Cycle

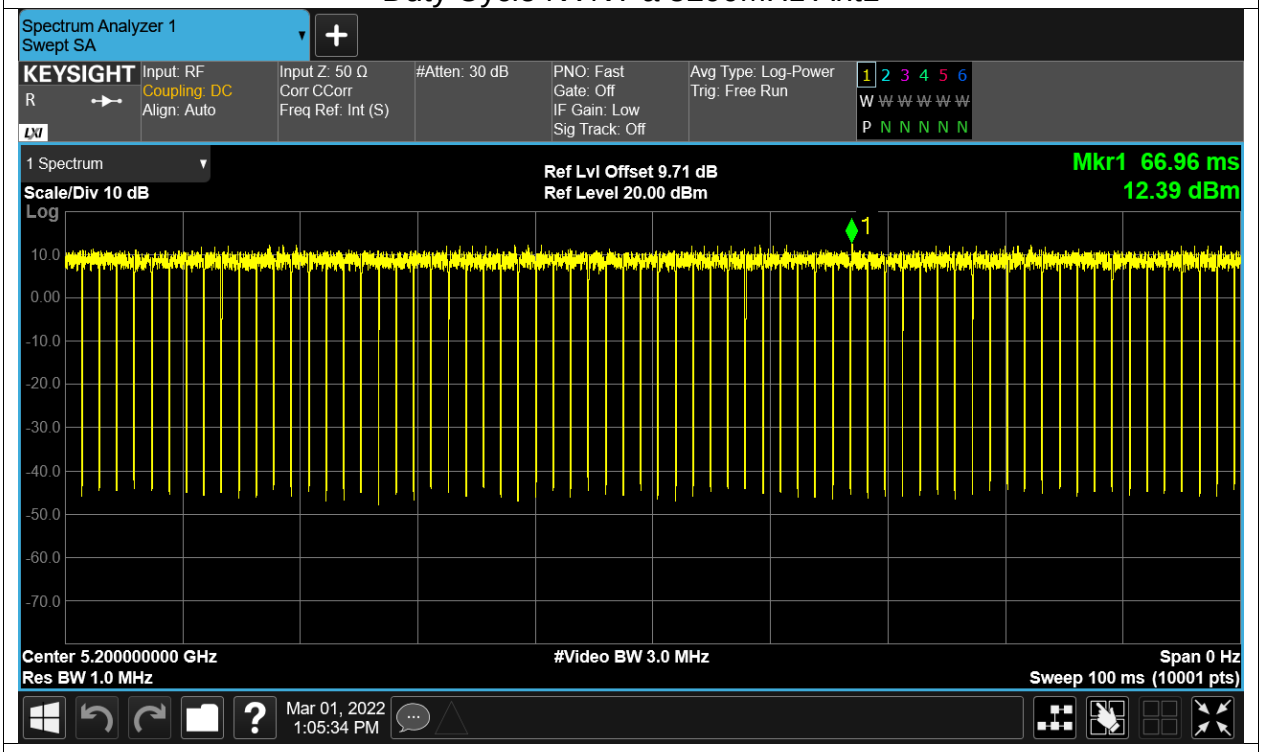
Condition	Mode	Frequency (MHz)	Antenna	Duty Cycle (%)	Correction Factor (dB)
NVNT	a	5180	Ant1	94.8	0.23
NVNT	a	5200	Ant1	94.83	0.23
NVNT	a	5240	Ant1	94.38	0.25
NVNT	ac20	5180	Ant1	93.99	0.27
NVNT	ac20	5200	Ant1	94.18	0.26
NVNT	ac20	5240	Ant1	93.72	0.28
NVNT	ac40	5190	Ant1	89.28	0.49
NVNT	ac40	5230	Ant1	89.52	0.48
NVNT	ac80	5210	Ant1	81.36	0.9
NVNT	n20	5180	Ant1	94.44	0.25
NVNT	n20	5200	Ant1	94.43	0.25
NVNT	n20	5240	Ant1	93.87	0.27
NVNT	n40	5190	Ant1	89.47	0.48
NVNT	n40	5230	Ant1	89.12	0.5

Test Graphs

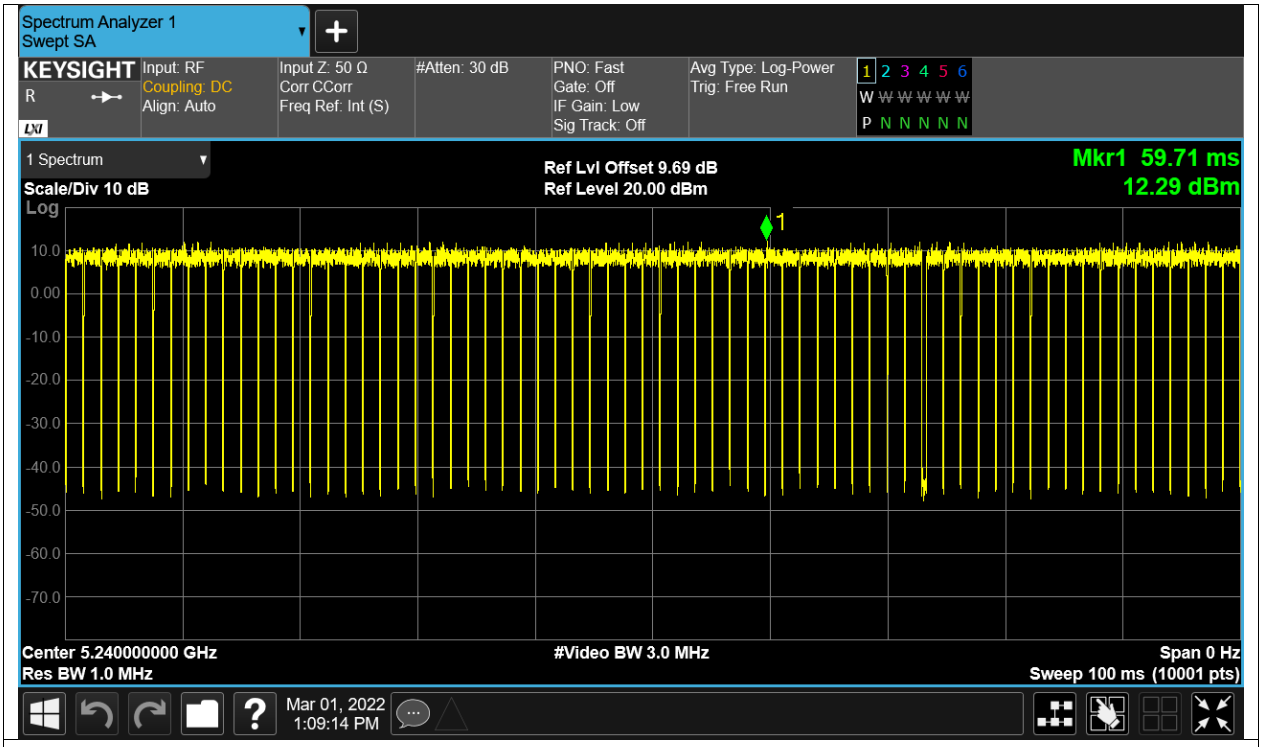
Duty Cycle NVNT a 5180MHz Ant1



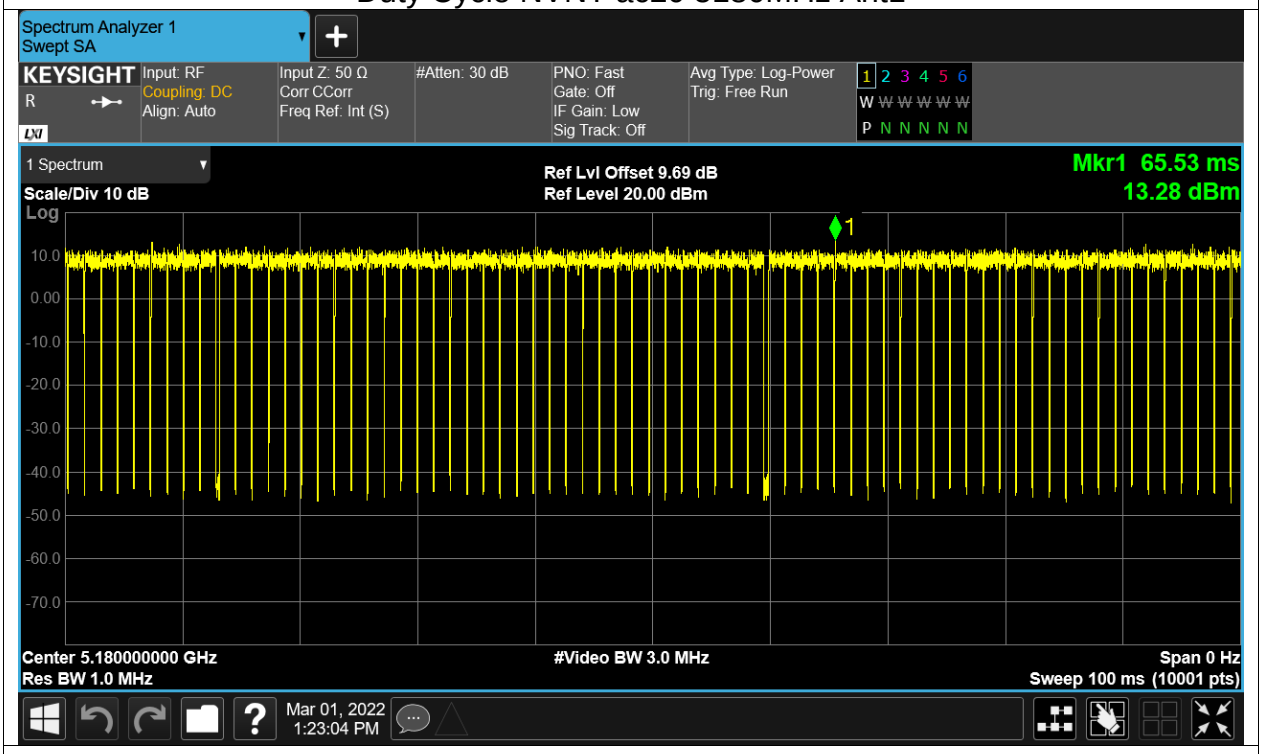
Duty Cycle NVNT a 5200MHz Ant1



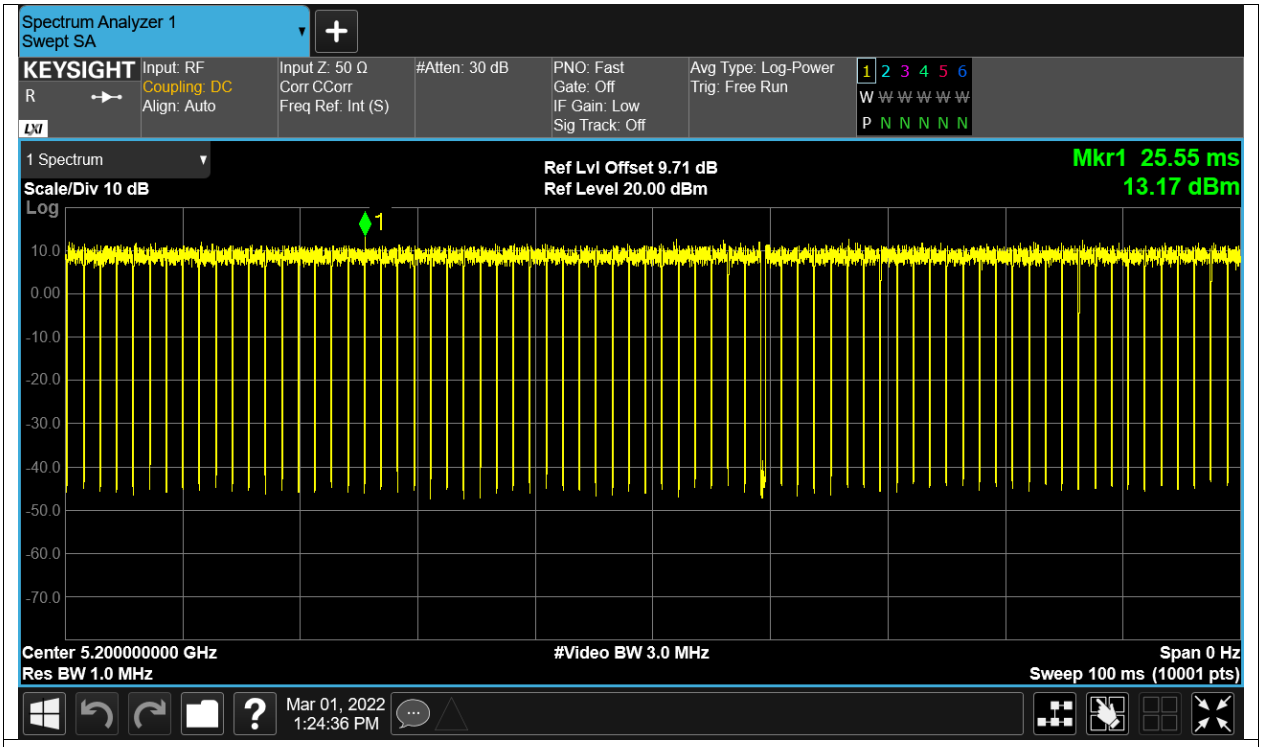
Duty Cycle NVNT a 5240MHz Ant1



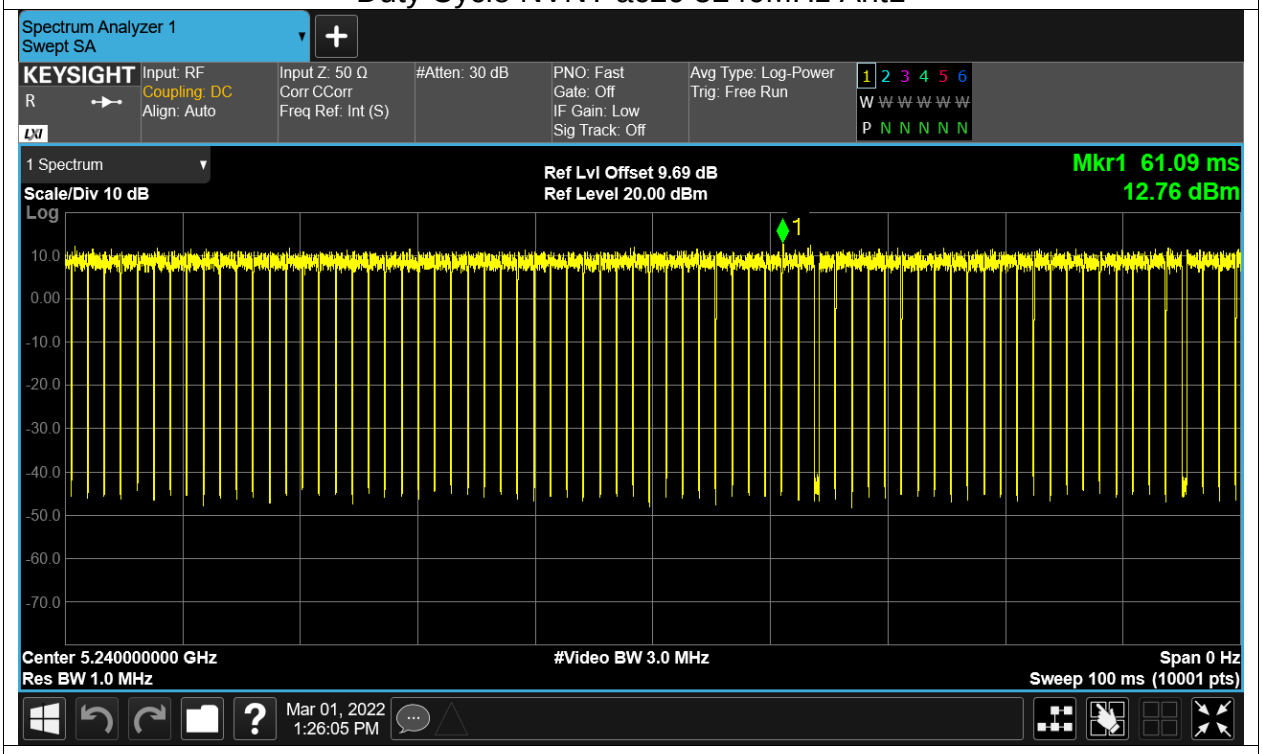
Duty Cycle NVNT ac20 5180MHz Ant1



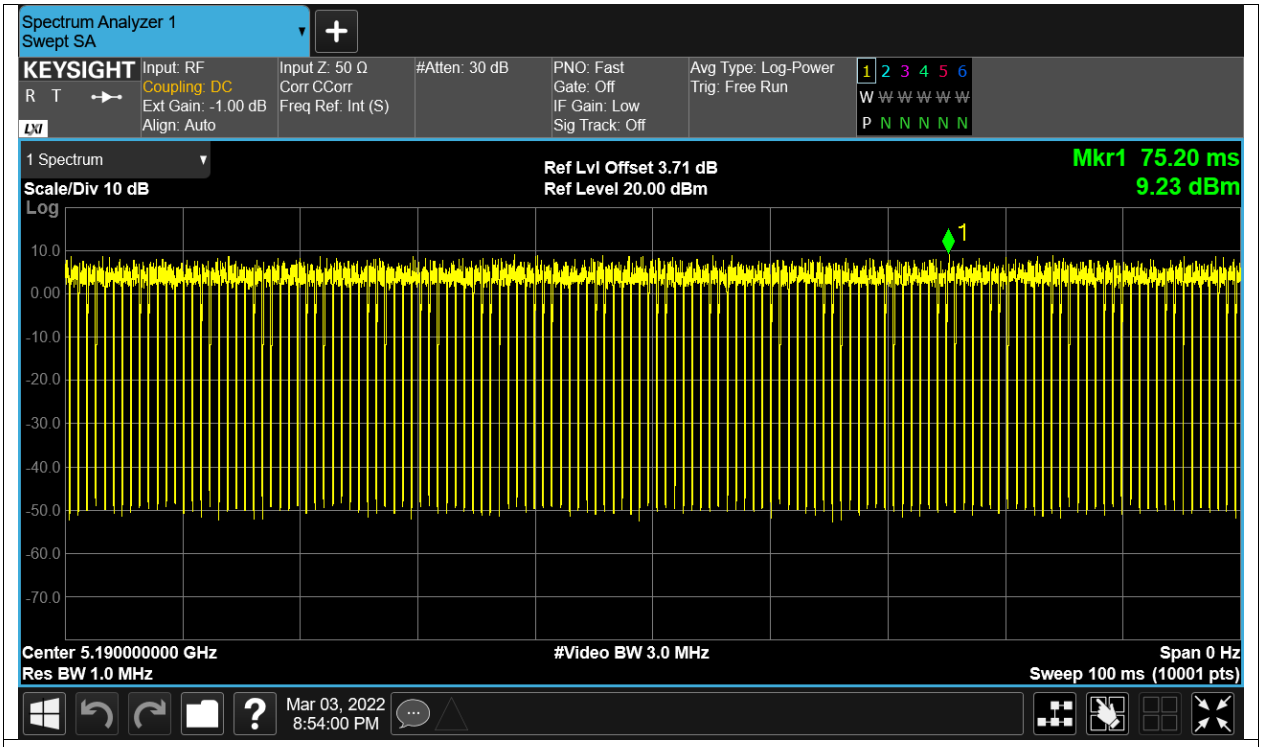
Duty Cycle NVNT ac20 5200MHz Ant1



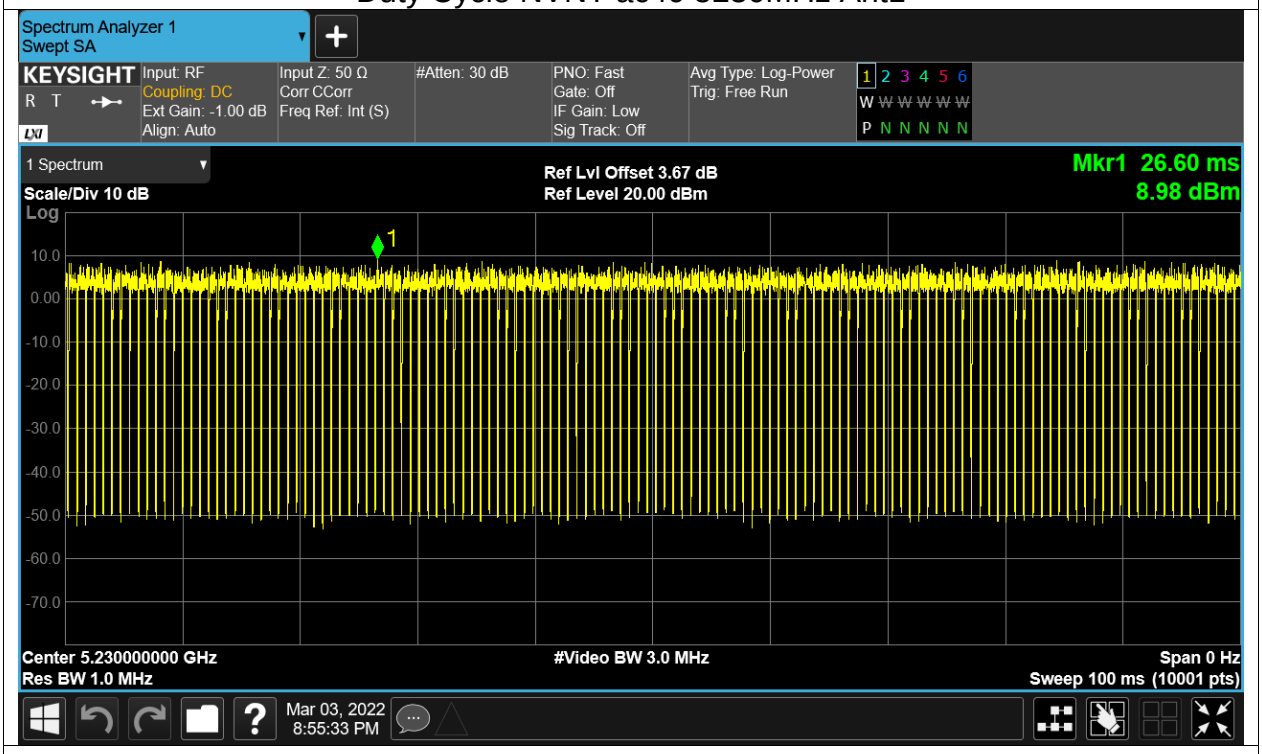
Duty Cycle NVNT ac20 5240MHz Ant1



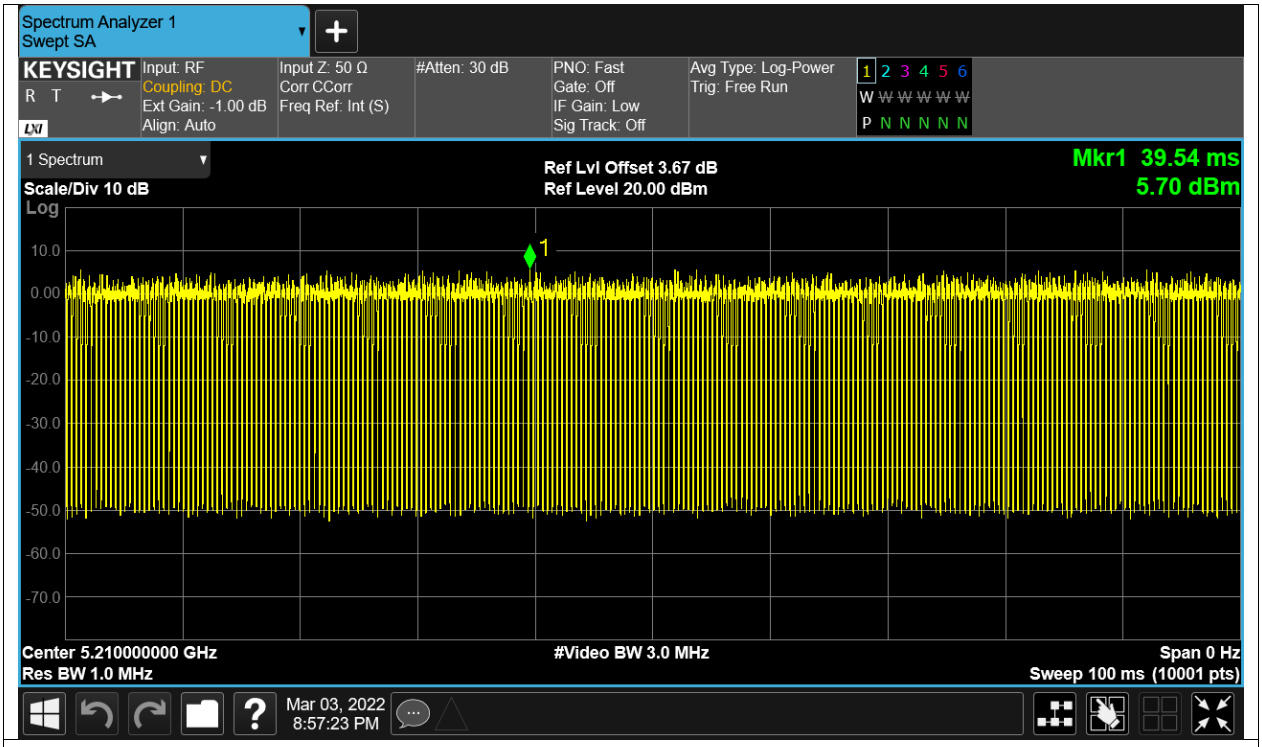
Duty Cycle NVNT ac40 5190MHz Ant1



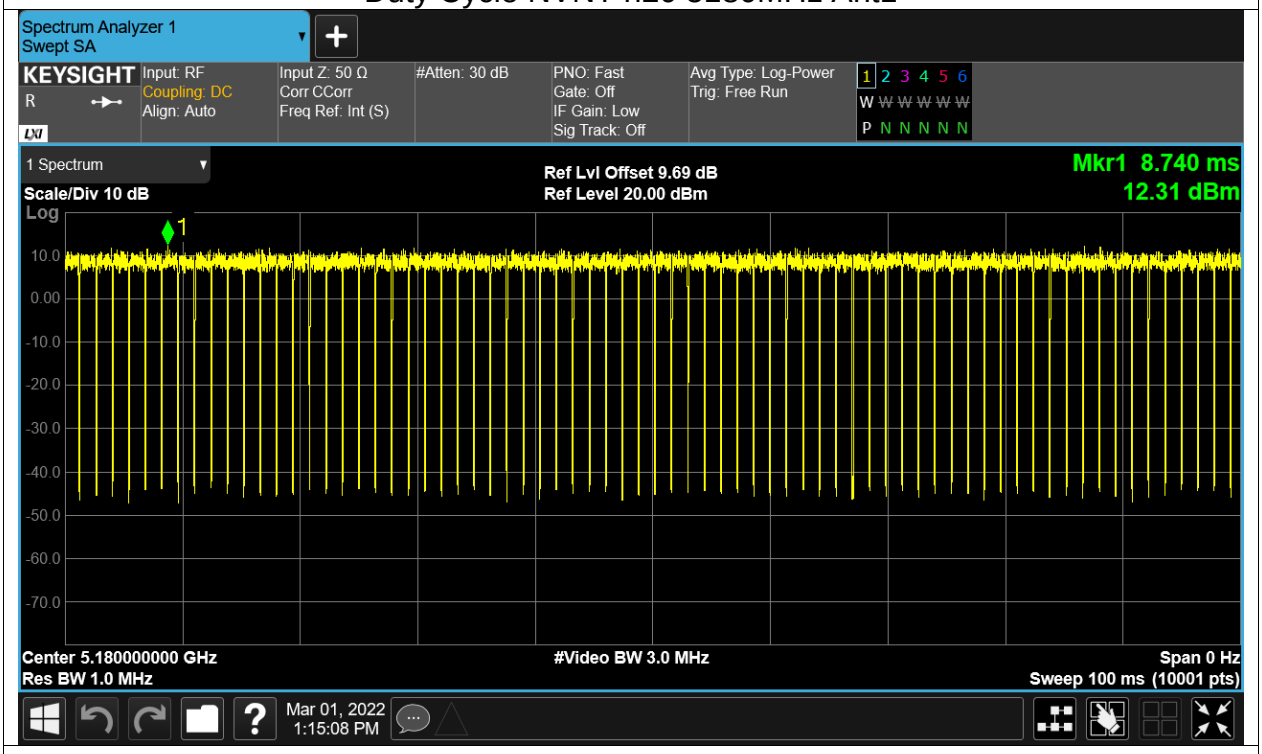
Duty Cycle NVNT ac40 5230MHz Ant1



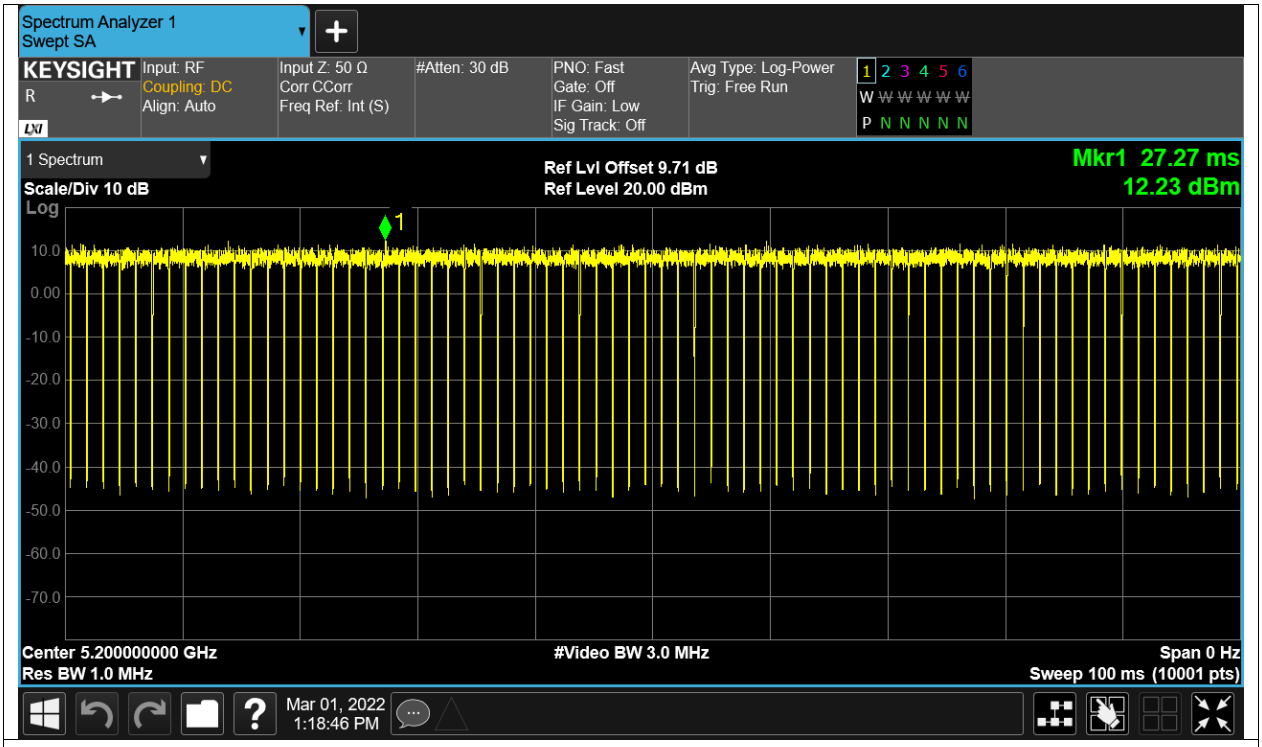
Duty Cycle NVNT ac80 5210MHz Ant1



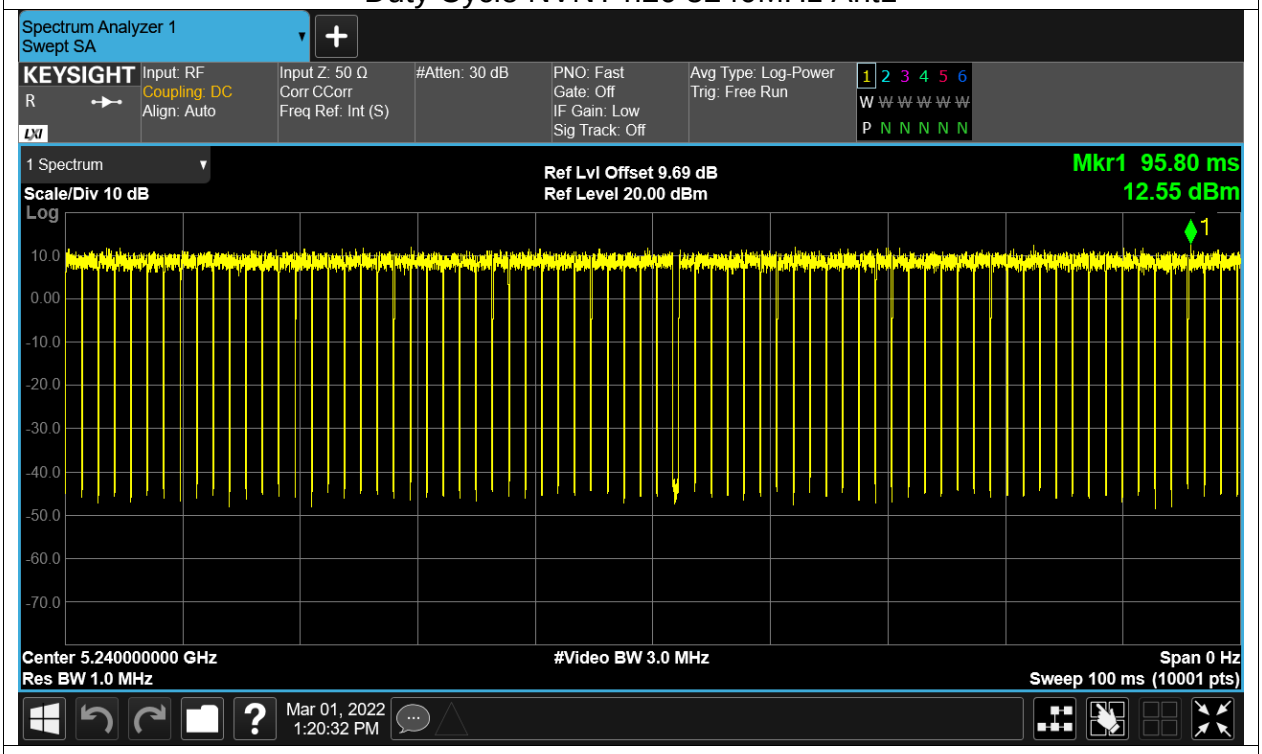
Duty Cycle NVNT n20 5180MHz Ant1



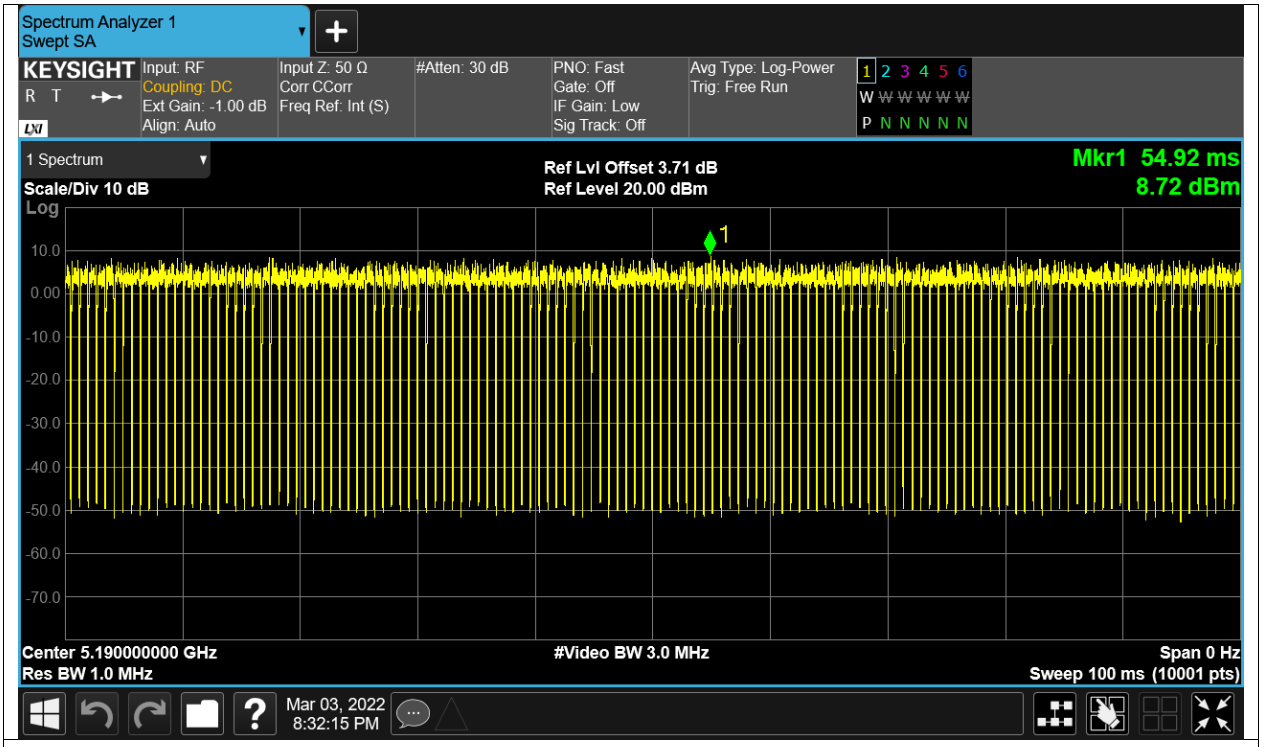
Duty Cycle NVNT n20 5200MHz Ant1



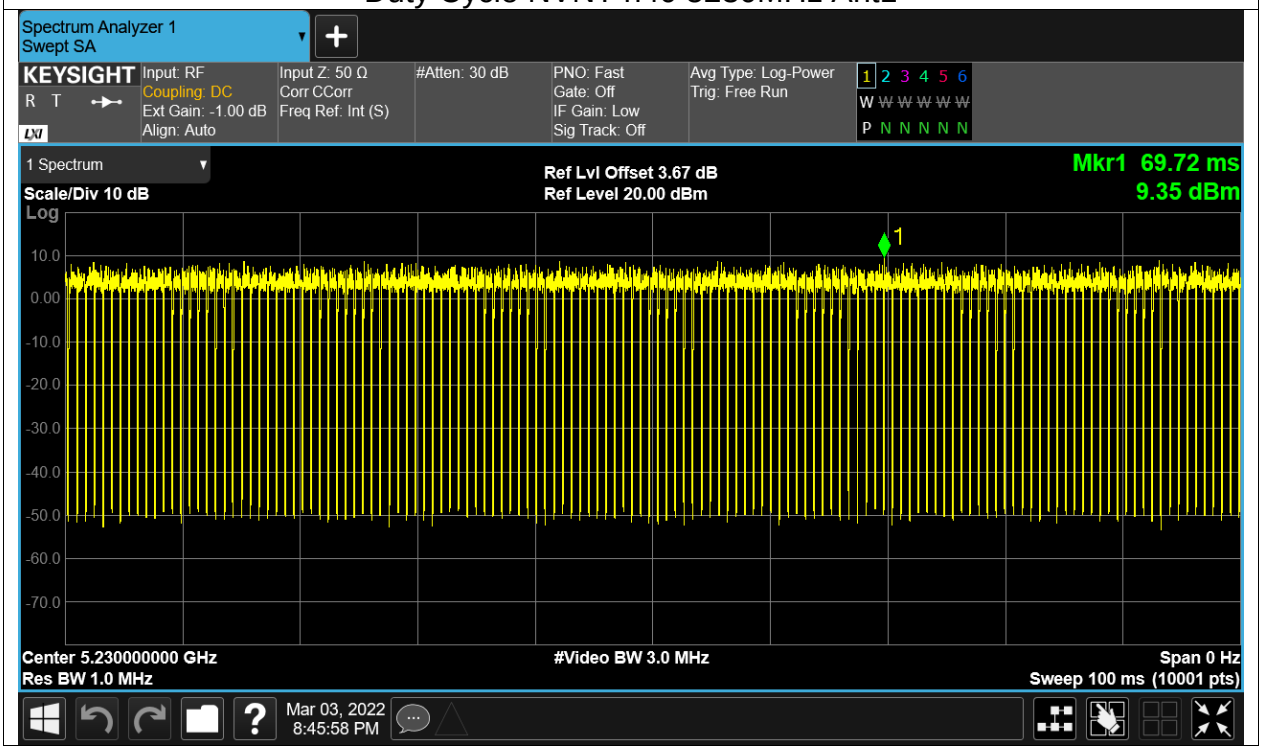
Duty Cycle NVNT n20 5240MHz Ant1



Duty Cycle NVNT n40 5190MHz Ant1



Duty Cycle NVNT n40 5230MHz Ant1



Maximum Conducted Output Power

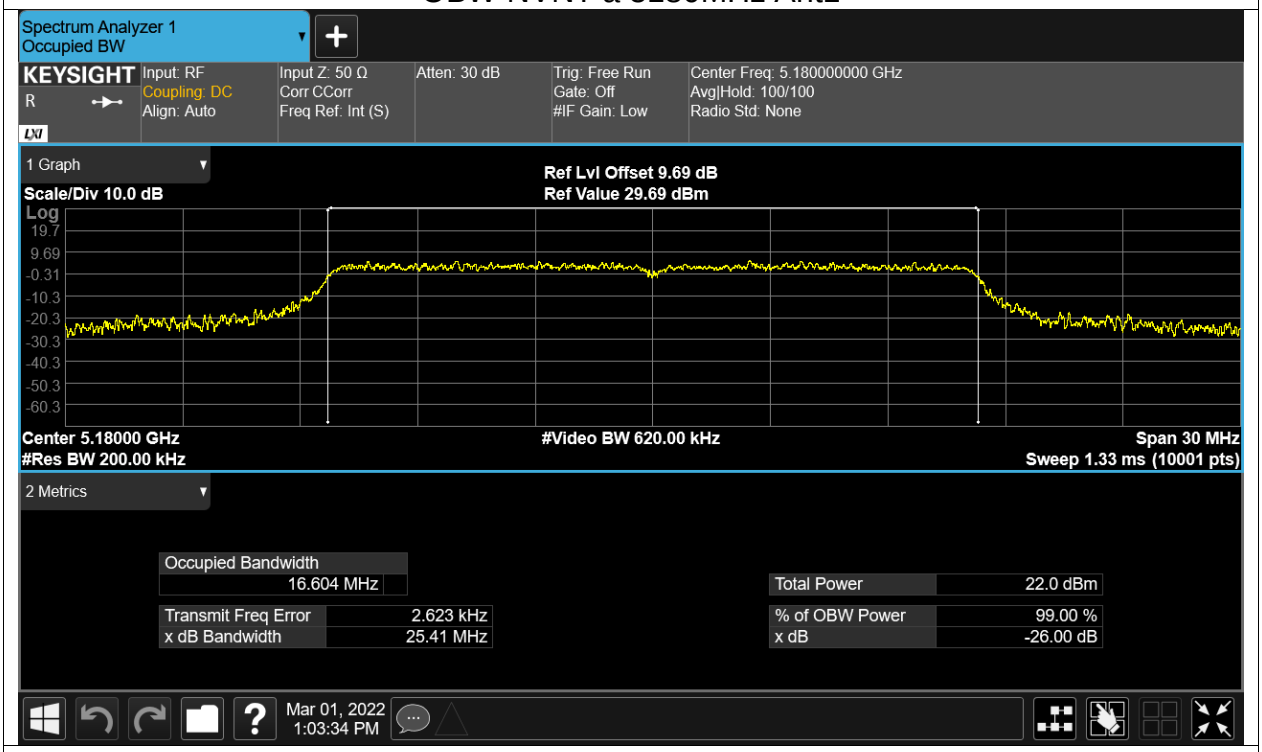
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	16.92	0.23	17.15	24	Pass
NVNT	a	5200	Ant1	16.71	0.23	16.94	24	Pass
NVNT	a	5240	Ant1	16.48	0.25	16.73	24	Pass
NVNT	ac20	5180	Ant1	17.17	0.27	17.44	24	Pass
NVNT	ac20	5200	Ant1	16.96	0.26	17.22	24	Pass
NVNT	ac20	5240	Ant1	16.8	0.28	17.08	24	Pass
NVNT	ac40	5190	Ant1	16.33	0	16.33	24	Pass
NVNT	ac40	5230	Ant1	16.64	0	16.64	24	Pass
NVNT	ac80	5210	Ant1	16.52	0	16.52	24	Pass
NVNT	n20	5180	Ant1	16.84	0.25	17.09	24	Pass
NVNT	n20	5200	Ant1	16.56	0.25	16.81	24	Pass
NVNT	n20	5240	Ant1	16.83	0.27	17.1	24	Pass
NVNT	n40	5190	Ant1	16.52	0.48	17	24	Pass
NVNT	n40	5230	Ant1	16.27	0	16.27	24	Pass

Occupied Channel Bandwidth

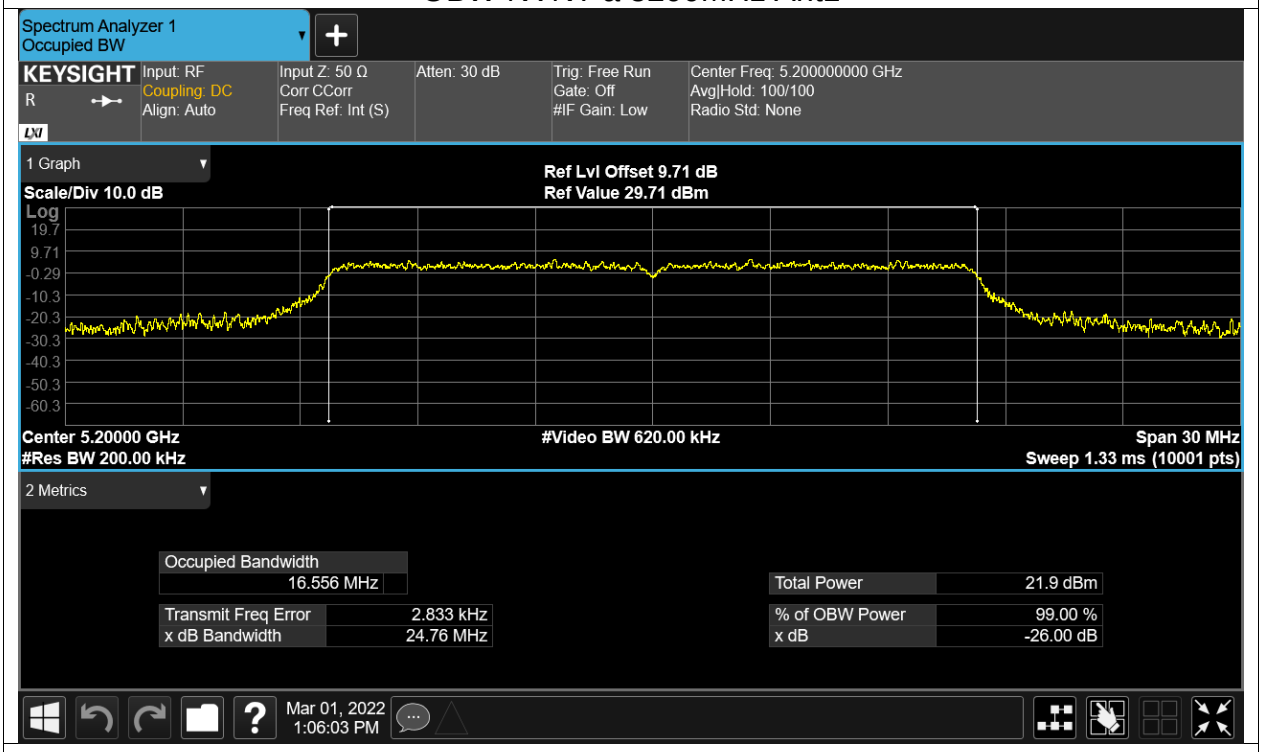
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5180	Ant1	16.60359064
NVNT	a	5200	Ant1	16.55573881
NVNT	a	5240	Ant1	16.55212845
NVNT	ac20	5180	Ant1	17.62087008
NVNT	ac20	5200	Ant1	17.61689698
NVNT	ac20	5240	Ant1	17.60001361
NVNT	ac40	5190	Ant1	36.09614607
NVNT	ac40	5230	Ant1	36.13348671
NVNT	ac80	5210	Ant1	75.56991951
NVNT	n20	5180	Ant1	17.59150013
NVNT	n20	5200	Ant1	17.61023205
NVNT	n20	5240	Ant1	17.59697193
NVNT	n40	5190	Ant1	36.08611175
NVNT	n40	5230	Ant1	36.13478641

Test Graphs

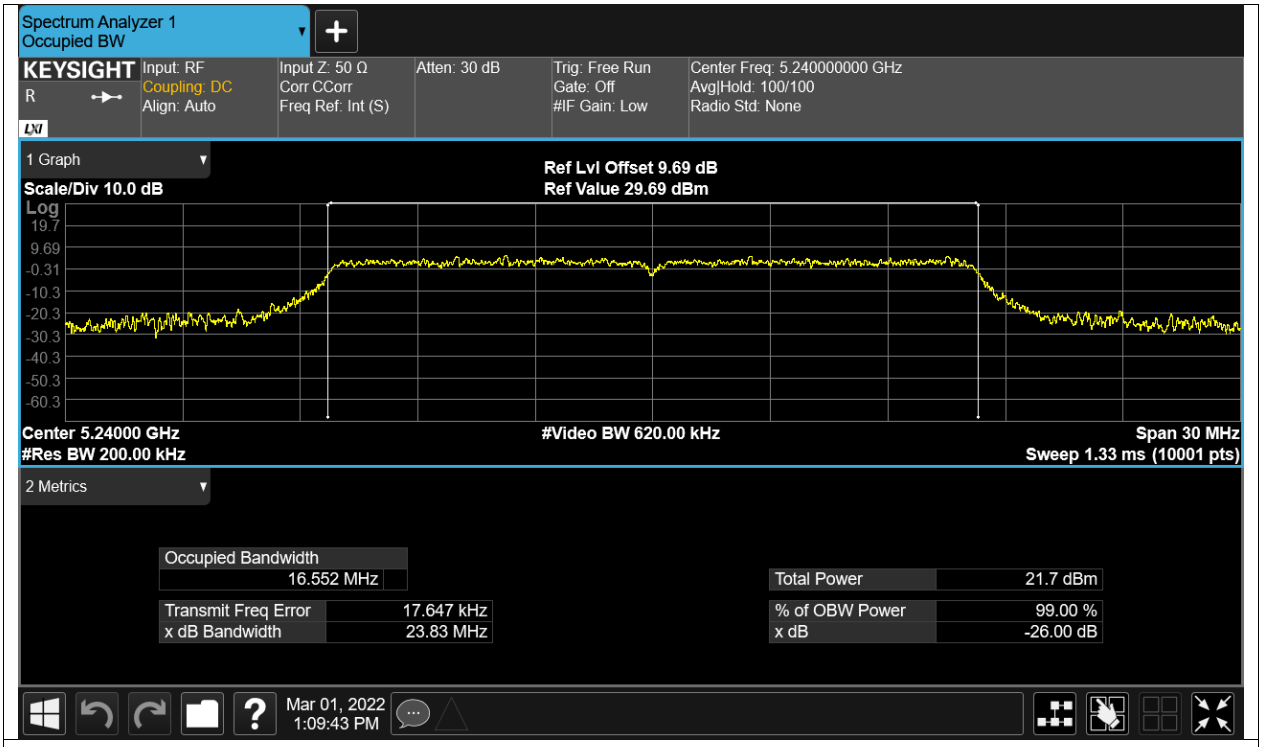
OBW NVNT a 5180MHz Ant1



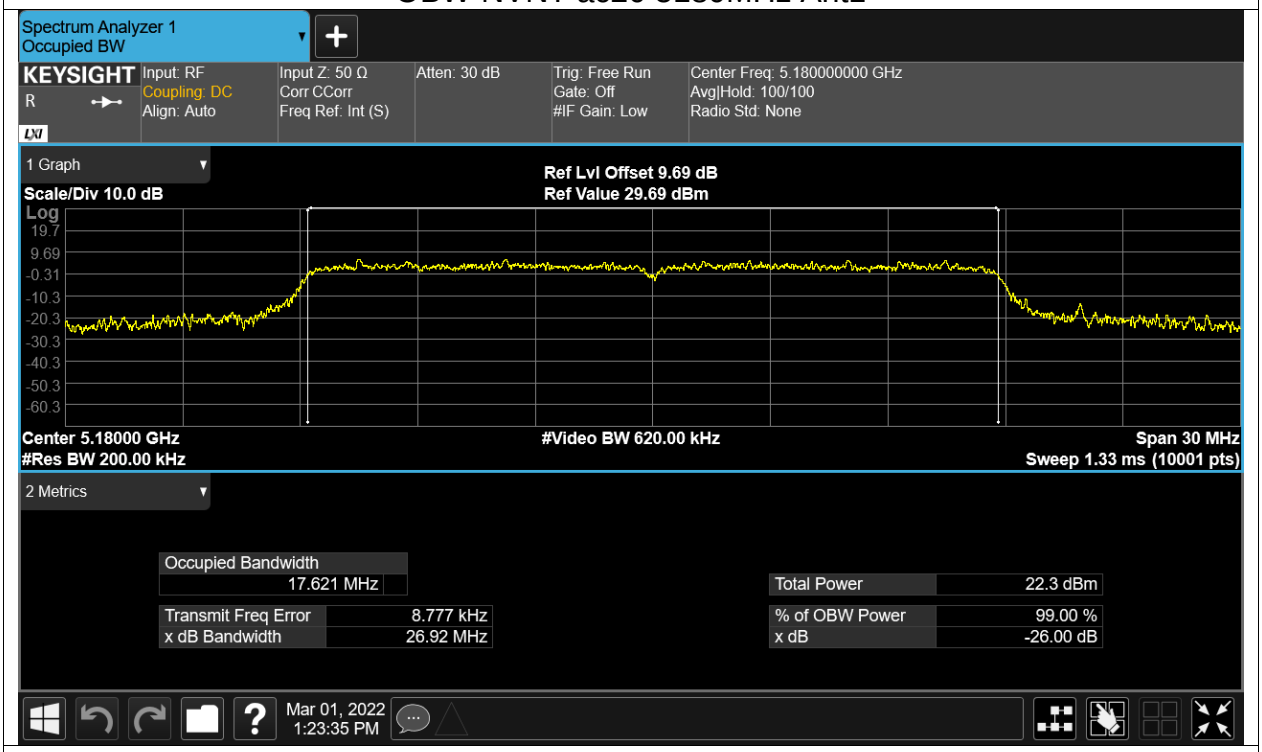
OBW NVNT a 5200MHz Ant1



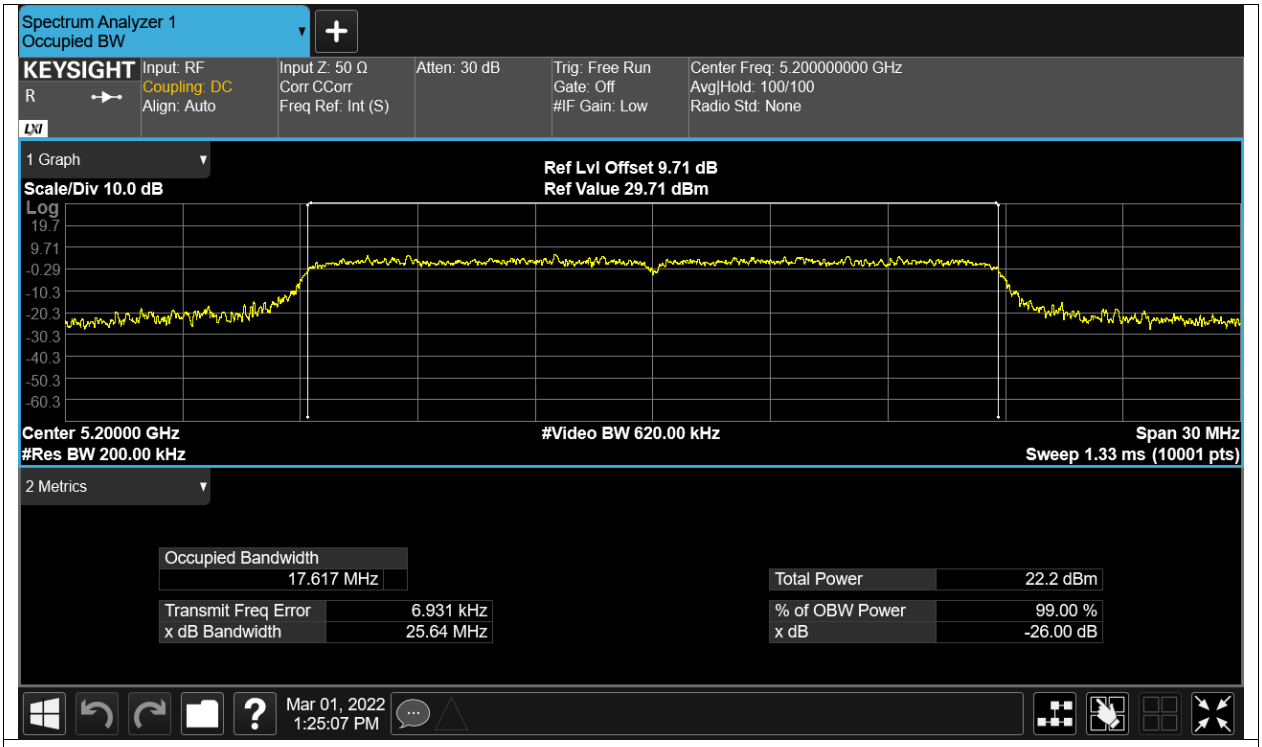
OBW NVNT a 5240MHz Ant1



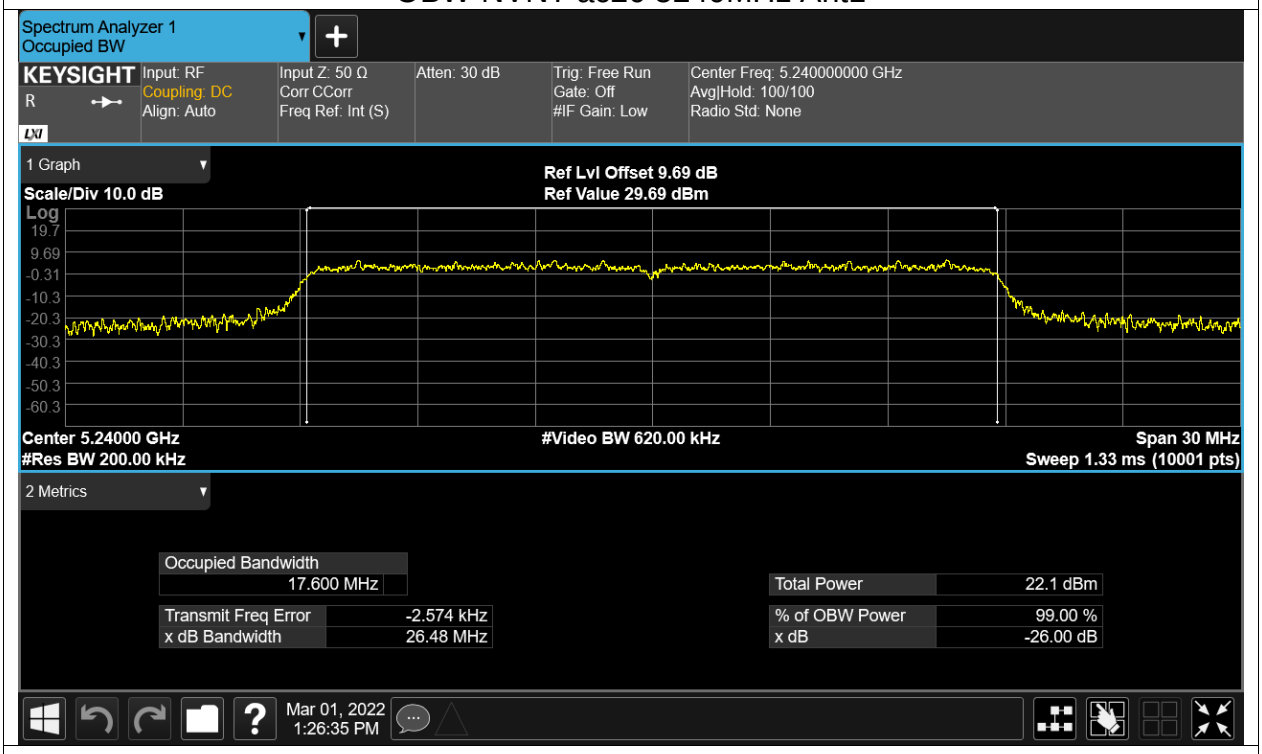
OBW NVNT ac20 5180MHz Ant1



OBW NVNT ac20 5200MHz Ant1



OBW NVNT ac20 5240MHz Ant1



OBW NVNT ac40 5190MHz Ant1