



中国认可  
国际互认  
检测  
TESTING  
CNAS L5662



## ETSI EN 301 893 V2.1.1 (2017-05)

### TEST REPORT

For

## SHENZHEN TENDA TECHNOLOGY CO., LTD.

6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052

**Tested Model: A18 Pro**  
**Multiple Models: A18**

<b>Report Type:</b> Original Report	<b>Product Type:</b> AC1200 Dual-Band Wi-Fi Range Extender
<b>Report Number:</b>	2402Z107018E-22B
<b>Report Date:</b>	2024/12/20
<b>Reviewed By:</b>	Ivy Tang Project Engineer <i>Ivy Tang</i>
<b>Approved By:</b>	Rocky Xiao RF Supervisor
<b>Test Laboratory:</b>	Bay Area Compliance Laboratories Corp. (Dongguan) (No.12, Pulong East 1 <sup>st</sup> Road, Tangxia Town, Dongguan, Guangdong, China) Tel: +86-769-86858888 Fax: +86-769-86858891 <a href="http://www.baclcorp.com.cn">www.baclcorp.com.cn</a>

# **TABLE OF CONTENTS**

<b>DOCUMENT REVISION HISTORY .....</b>	<b>4</b>
<b>GENERAL INFORMATION .....</b>	<b>5</b>
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) .....	5
TECHNICAL SPECIFICATION .....	5
OBJECTIVE .....	5
TEST METHODOLOGY .....	5
TEST FACILITY .....	5
MEASUREMENT UNCERTAINTY .....	6
DECLARATIONS .....	6
<b>SYSTEM TEST CONFIGURATION .....</b>	<b>7</b>
DESCRIPTION OF TEST CONFIGURATION .....	7
EUT EXERCISE SOFTWARE .....	7
SUPPORT EQUIPMENT LIST AND DETAILS .....	8
BLOCK DIAGRAM OF TEST SETUP .....	8
TEST EQUIPMENT LIST .....	9
ENVIRONMENTAL CONDITIONS .....	10
<b>SUMMARY OF TEST RESULTS .....</b>	<b>11</b>
<b>1 – CARRIER FREQUENCIES .....</b>	<b>12</b>
DEFINITION .....	12
LIMIT .....	12
TEST PROCEDURE .....	12
TEST DATA .....	12
<b>2 – NOMINAL CHANNEL BANDWIDTH AND OCCUPIED CHANNEL BANDWIDTH .....</b>	<b>13</b>
DEFINITION .....	13
LIMIT .....	13
TEST PROCEDURE .....	13
TEST DATA .....	13
<b>3 – RF OUTPUT POWER, TRANSMIT POWER CONTROL (TPC), POWER DENSITY .....</b>	<b>14</b>
DEFINITION .....	14
LIMIT .....	14
TEST PROCEDURE .....	15
TEST DATA .....	15
<b>4 – TRANSMITTER UNWANTED EMISSIONS OUTSIDE THE 5 GHZ RLAN BANDS .....</b>	<b>16</b>
DEFINITION .....	16
LIMIT .....	16
TEST PROCEDURE .....	16
TEST DATA .....	17
<b>5 – TRANSMITTER UNWANTED EMISSIONS WITHIN THE 5 GHZ RLAN BANDS .....</b>	<b>20</b>
DEFINITION .....	20
LIMIT .....	20
TEST PROCEDURE .....	20
TEST DATA .....	20
<b>6 – RECEIVER SPURIOUS EMISSIONS .....</b>	<b>21</b>
DEFINITION .....	21
LIMIT .....	21
TEST PROCEDURE .....	21
TEST DATA .....	22
<b>8 – ADAPTIVITY .....</b>	<b>25</b>
APPLICABLE STANDARD .....	25
LIMIT .....	25

TEST PROCEDURE.....	25
BLOCK DIAGRAM OF TEST SETUP .....	25
TEST DATA.....	25
<b>9 – RECEIVER BLOCKING.....</b>	<b>26</b>
APPLICABLE STANDARD.....	26
LIMIT.....	26
TEST PROCEDURE.....	26
BLOCK DIAGRAM OF TEST SETUP .....	26
TEST DATA.....	27
<b>EXHIBIT A – EUT PHOTOGRAPHS .....</b>	<b>28</b>
<b>EXHIBIT B – TEST SETUP PHOTOGRAPHS.....</b>	<b>29</b>
<b>APPENDIX – RF CONDUCTED TEST DATA.....</b>	<b>30</b>
APPENDIX A: CARRIER FREQUENCIES .....	30
APPENDIX B: RF OUTPUT POWER .....	40
APPENDIX C: POWER SPECTRAL DENSITY .....	44
APPENDIX D: OCCUPIED CHANNEL BANDWIDTH .....	86
APPENDIX E: TRANSMITTER UNWANTED EMISSIONS WITHIN THE 5 GHz RLAN BANDS .....	95
APPENDIX F: ADAPTIVITY .....	118
APPENDIX G: DUTY CYCLE .....	125
<b>DECLARATION OF SIMILARITY LETTER .....</b>	<b>134</b>

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2402Z107018E-22B	Original Report	2024/12/20



## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

<b>Product Name:</b>	AC1200 Dual-Band Wi-Fi Range Extender
<b>EUT Model:</b>	A18 Pro
<b>Multiple Models:</b>	A18
<b>Model Difference:</b>	Only the model names are different. Refer to Dos
<b>Rated Input Voltage:</b>	100-240Vac
<b>Serial Number:</b>	2V5L-1, 2V5L-2
<b>EUT Received Date:</b>	2024/11/28
<b>EUT Received Status:</b>	Good

### Technical Specification

<b>Operation Frequency Range (MHz):</b>		802.11 a/n20/ac20: 5180-5240 802.11 n40/ac40: 5190-5230 802.11 ac80: 5210
<b>RF Output Power (EIRP) (dBm):</b>		22.92
<b>Number of Chains</b>	<b>Transmit:</b>	2
	<b>Receive:</b>	2
<b>Antenna Gain (dBi)▲:</b>		4.07
<b>Antenna Gain (dBi)▲:</b>		4.47
<b>Beamforming-Antenna Gain (dB)▲:</b>		3
<b>Modulation Type:</b>		OFDM

### Objective

This report is prepared on behalf of **SHENZHEN TENDA TECHNOLOGY CO., LTD.** in accordance with ETSI EN 301 893 V2.1.1 (2017-05) 5 GHz RLAN; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU.

The objective is to determine the compliance of EUT with: ETSI EN 301 893 V2.1.1 (2017-05).

### Test Methodology

All measurements contained in this report were conducted with ETSI EN 301 893 V2.1.1 (2017-05) 5 GHz RLAN; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU.

### Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.12, Pulong East 1<sup>st</sup> Road, Tangxia Town, Dongguan, Guangdong, China.

## Measurement Uncertainty

Parameter	F <sub>lab</sub>	Maximum allow uncertainty
RF Frequency	$\pm 0.82 \times 10^{-7}$	$\pm 1 \times 10^{-5}$
RF power conducted	$\pm 0.61 \text{ dB}$	$\pm 1,5 \text{ dB}$
RF power radiated	$\pm 3.62 \text{ dB}$	$\pm 6 \text{ dB}$
Spurious emissions, conducted	$\pm 2.47 \text{ dB}$	$\pm 3 \text{ dB}$
Spurious emissions, radiated	$\pm 3.62 \text{ dB}$	$\pm 6 \text{ dB}$
Temperature	$\pm 1 ^\circ \text{C}$	$\pm 2 ^\circ \text{C}$
Humidity	$\pm 5\%$	$\pm 5\%$
Time	1%	$\pm 10\%$

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

## Declarations

The information marked ▲ is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

This report cannot be reproduced except in full, without prior written approval of the Company.

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

This report may contain data that are not covered by the accreditation scope and shall be marked with ★.

Each test item follows the test standard(s) without deviation.

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

The system was configured for testing in engineering mode, which was provided by manufacture. The system support 802.11a/n ht20/n ht40/ac vht20/ac vht40/ac vht80, the vht20/vht40 were reduced since the identical parameters with 802.11n ht20 and ht40.

For 5150~5250 MHz band(W52), 7 channels were provided. 802.11a /n ht20 mode was tested with 5180MHz; 802.11n ht40 mode was tested with 5190MHz; 802.11ac vht80 mode was tested with 5210 MHz:

Frequency (MHz)	Frequency (MHz)
5180	5220
5190	5230
5200	5240
5210	/

Test condition as below:

NT: Normal Temperature 25°C, LT: Low Temperature 0°C, HT: High Temperature +40°C

### EUT Exercise Software

Software “RTL819x 3.6<sup>▲</sup>” was used and the power level was configured as below. The worst-case data rates are determined to be as follows for each mode based upon investigation by measuring the average power and PSD across all data rates, bandwidths, and modulations<sup>▲</sup>.

Band	Mode	Frequency (MHz)	Data rate (Mbps)	Power level	
				Ant 1(Chain 0)	Ant 2(Chain 1)
5150-5250 MHz (W52)	802.11 a	5180	6 Mbps	87	95
		5240	6 Mbps	82	95
	802.11 n20	5180	HT MCS8	76	85
		5240	HT MCS8	72	84
	802.11 n40	5190	HT MCS8	77	87
		5230	HT MCS8	74	86
	802.11 ac20	5180	VHT MCS8	76	84
		5240	VHT MCS8	71	83
	802.11 ac40	5190	VHT MCS8	77	86
		5230	VHT MCS8	74	86
	802.11 ac80	5210	VHT MCS8	74	86

Beamforming

Band	Mode	Frequency (MHz)	Data rate (Mbps)	Power level	
				Ant 1(Chain 0)	Ant 2(Chain 1)
5150-5250	802.11 n20	5180	HT MCS8	62	72
		5240	HT MCS8	59	72
	802.11 n40	5190	HT MCS8	64	74
		5230	HT MCS8	61	73
	802.11 ac20	5180	VHT MCS8	64	73
		5240	VHT MCS8	59	72
	802.11 ac40	5190	VHT MCS8	65	74
		5230	VHT MCS8	63	74
	802.11 ac80	5210	VHT MCS8	62	73

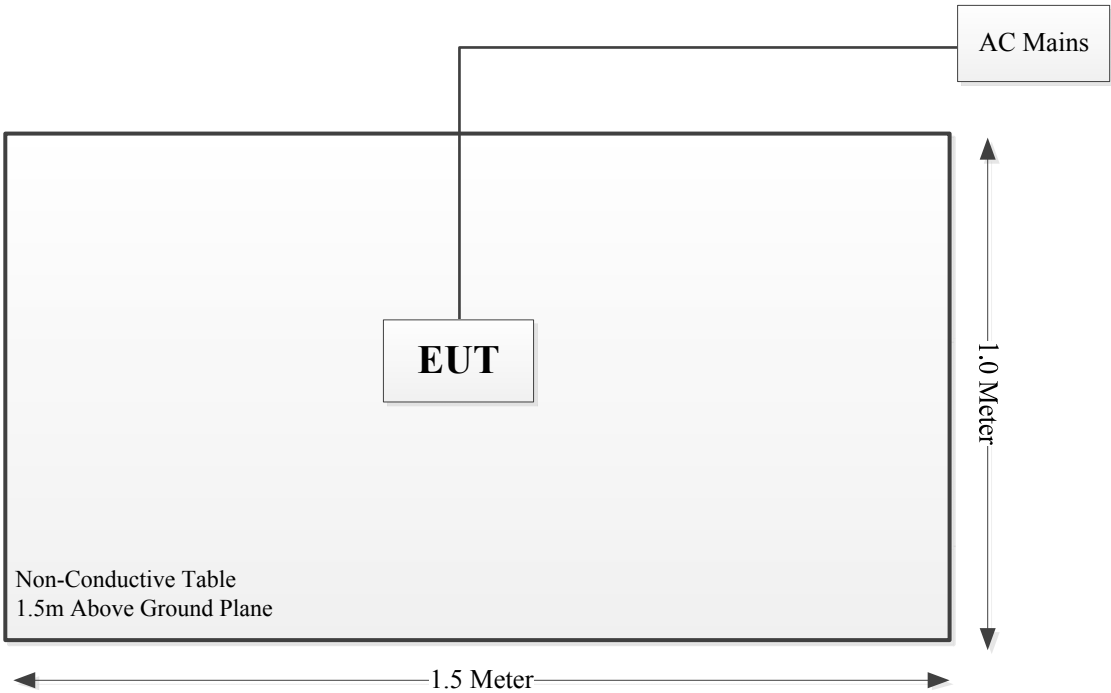
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
/	/	/	/

Support Cable List and Details

Cable Description	Shielding Cable	Ferrite Core	Length (m)	From Port	To
/	/	/	/	/	/

Block Diagram of Test Setup



**Test Equipment List**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated emissions below 1GHz					
Sunol Sciences	Hybrid Antenna	JB3	A060611-2	2024/4/16	2027/4/15
Narda	Coaxial Attenuator	757C-6dB	34010	2024/4/16	2027/4/15
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2024/7/1	2025/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2024/7/1	2025/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-1400-01	2024/7/1	2025/6/30
Sonoma	Amplifier	310N	372193	2024/8/16	2025/8/15
R&S	EMI Test Receiver	ESR3	102453	2024/8/26	2025/8/25
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
Micro-Coax	Coaxial Cable	UFA210B	99G1448	2024/9/5	2025/9/4
Agilent	Signal Generator	E8247C	MY43321350	2024/9/5	2025/9/4
Radiated emissions above 1GHz					
ETS-Lindgren	Horn Antenna	3115	000 527 35	2023/9/7	2026/9/6
AH	Horn Antenna	SAS-571	1177	2023/2/22	2026/2/21
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-02 1304	2023/2/22	2026/2/21
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-03 1304	2023/2/22	2026/2/21
Xinhang Macrowave	Coaxial Cable	XH750A-N/J-SMA/J-10M	20231117004 #0001	2024/11/17	2025/11/16
Xinhang Macrowave	Coaxial Cable	XH360A-2.92/J-2.92/J-6M-A	20231208001 #0001	2024/12/9	2025/12/8
Micro-Coax	Coaxial Cable	UFA210B	99G1448	2024/9/5	2025/9/4
Agilent	Signal Generator	E8247C	MY43321350	2024/9/5	2025/9/4
AH	Preamplifier	PAM-0118P	469	2024/4/15	2025/4/14
AH	Preamplifier	PAM-1840VH	191	2024/9/5	2025/9/4
R&S	Spectrum Analyzer	FSV40	101944	2024/9/6	2025/9/5
Sinoscite	Band Rejection Filter	BSF5150-5850MN	0899003	2024/2/21	2025/2/20
Mini-Circuits	High Pass Filter	VHF-6010+	31119	2024/6/4	2025/6/3
RF conducted					
Eastsheep	Coaxial Attenuator	2W-SMA-JK-6G-10dB	F-08-EM509	2024/6/7	2025/6/6
Eastsheep	Coaxial Attenuator	2W-SMA-JK-6G-10dB	F-08-EM510	2024/6/7	2025/6/6
R&S	Wideband Radio Communication Tester	CMW500	149216	2024/9/5	2025/9/4
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30173	2024/9/6	2025/9/5
Keysight	MXA Signal Analyzer	N9020A	MY48490106	2024/9/5	2025/9/4
Agilent	MXG Vector Signal Generator	N5182A	MY49060274	2024/9/5	2025/9/4
Tonscend	RF Control Unit	JS0806-2	19G8060171	2024/9/5	2025/9/4

\* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Environmental Conditions

Test Item:	Radiated emissions (below 1GHz)	Radiated emissions (above 1GHz)	RF conducted
Temperature:	20.9 °C	20.5 °C	23.2~24.1 °C
Relative Humidity:	30.0 %	32.0 %	50~59%
ATM Pressure:	102.5 kPa	102.3 kPa	101.1~101.7kPa
Tester:	Jayce Wang	Nat Zhou	Harper Shen
Test Date:	2024/12/19	2024/12/18	2024/12/3~2024/12/10

## SUMMARY OF TEST RESULTS

SN	Rule and Clause	Description of Test	Test Result
1	EN 301 893 Clause 4.2.1	Carrier frequencies	Compliant
2	EN 301 893 Clause 4.2.2	Nominal channel bandwidth and occupied channel bandwidth	Compliant
3	EN 301 893 Clause 4.2.3	RF output power	Compliant
		Transmit power control (TPC)	Not applicable*
		Power Density	Compliant
4	EN 301 893 Clause 4.2.4.1	Transmitter unwanted emissions outside the 5 GHz RLAN bands	Compliant
5	EN 301 893 Clause 4.2.4.2	Transmitter unwanted emissions within the 5 GHz RLAN bands	Compliant
6	EN 301 893 Clause 4.2.5	Receiver spurious emissions	Compliant
7	EN 301 893 Clause 4.2.6	Dynamic frequency selection (DFS)	Not applicable**
8	EN 301 893 Clause 4.2.7	Adaptivity	Compliant
9	EN 301 893 Clause 4.2.8	Receiver blocking	Compliant
10	EN 301 893 Clause 4.2.9	User access restrictions	Compliant*
11	EN 301 893 Clause 4.2.10	Geo-location capability	Not applicable*

Note:

**Not applicable\*:** The device without this function.

**Not applicable\*\*:** The device do not works on DFS frequency Band.

**Compliant\*:** Please refer to the product information declared by the manufacturer.

## 1 – CARRIER FREQUENCIES

---

### Definition

The Nominal Centre Frequency is the centre of the Operating Channel.

### Limit

The actual centre frequency for any given channel declared by the manufacturer shall be maintained within the range  $f_c \pm 20$  ppm.

### Test Procedure

According to ETSI EN 301 893 V2.1.1 (2017-05) §5.4.2

### Test Data

**Test Result:** *Compliant. The test data please refer to the Appendix.*



## 2 – NOMINAL CHANNEL BANDWIDTH AND OCCUPIED CHANNEL BANDWIDTH

---

### Definition

The Nominal Channel Bandwidth is the widest band of frequencies, inclusive of guard bands, assigned to a single channel.

The Occupied Channel Bandwidth is the bandwidth containing 99 % of the power of the signal.

When equipment has simultaneous transmissions in adjacent channels, these transmissions may be considered as one signal with an actual Nominal Channel Bandwidth of 'n' times the individual Nominal Channel Bandwidth where 'n' is the number of adjacent channels. When equipment has simultaneous transmissions in non-adjacent channels, each power envelope shall be considered separately.

### Limit

The Nominal Channel Bandwidth for a single Operating Channel shall be 20 MHz.

Alternatively, equipment may implement a lower Nominal Channel Bandwidth with a minimum of 5 MHz, providing they still comply with the Nominal Centre Frequencies defined in clause 4.2.1 (20 MHz raster). The Occupied Channel Bandwidth shall be between 80 % and 100 % of the Nominal Channel Bandwidth. In case of smart antenna systems (devices with multiple transmit chains) each of the transmit chains shall meet this requirement.

The Occupied Channel Bandwidth might change with time/payload.

During a Channel Occupancy Time (COT), equipment may operate temporarily with an Occupied Channel Bandwidth of less than 80 % of its Nominal Channel Bandwidth with a minimum of 2 MHz.

### Test Procedure

According to ETSI EN 301 893 V2.1.1 (2017-05) §5.4.3

### Test Data

**Test Result:** *Compliant. The test data please refer to the Appendix.*

### 3 – RF OUTPUT POWER, TRANSMIT POWER CONTROL (TPC), POWER DENSITY

#### Definition

##### RF Output Power:

The RF Output Power is the mean equivalent isotropically radiated power (e.i.r.p.) during a transmission burst.

##### Transmit Power Control (TPC):

Transmit Power Control (TPC) is a mechanism to be used by the RLAN device to ensure a mitigation factor of at least 3 dB on the aggregate power from a large number of devices. This requires the RLAN device to have a TPC range from which the lowest value is at least 6 dB below the values for mean e.i.r.p. given in table 2 for devices with TPC.

##### Power Density:

The Power Density is the mean Equivalent Isotropically Radiated Power (e.i.r.p.) density during a transmission burst.

#### Limit

TPC is not required for channels whose nominal bandwidth falls completely within the band 5150 MHz to 5250 MHz.

For devices with TPC, the RF output power and the power density when configured to operate at the highest stated power level of the TPC range shall not exceed the levels given in table 2.

Devices are allowed to operate without TPC. See table 2 for the applicable limits in this case.

**Table 2: Mean e.i.r.p. limits for RF output power and Power Density at the highest power level ( $P_H$ )**

Frequency range (MHz)	Mean e.i.r.p. limit for $P_H$ (dBm)		Mean e.i.r.p. density limit (dBm/MHz)	
	with TPC	without TPC	with TPC	without TPC
5 150 to 5 350	23	20/23 (see note 1)	10	7/10 (see note 2)
5 470 to 5 725	30 (see note 3)	27 (see note 3)	17 (see note 3)	14 (see note 3)
NOTE 1: The applicable limit is 20 dBm, except for transmissions whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz, in which case the applicable limit is 23 dBm.				
NOTE 2: The applicable limit is 7 dBm/MHz, except for transmissions whose nominal bandwidth falls completely within the band 5 150 MHz to 5 250 MHz, in which case the applicable limit is 10 dBm/MHz.				
NOTE 3: Slave devices without a <i>Radar Interference Detection</i> function shall comply with the limits for the frequency range 5 250 MHz to 5 350 MHz.				

**Table 3: Mean e.i.r.p. limits for RF Output Power  
at the lowest power level of the TPC range**

Frequency range	Mean e.i.r.p. (dBm) limit for $P_L$
5 250 MHz to 5 350 MHz	17
5 470 MHz to 5 725 MHz	24 (see note)
NOTE: Slave devices without a <i>Radar Interference Detection</i> function shall comply with the limits for the band 5 250 MHz to 5 350 MHz.	

### Test Procedure

According to ETSI EN 301 893 V2.1.1 (2017-05) §5.4.4

### Test Data

**Test Result:** *Compliant. The test data please refer to the Appendix.*

## 4 – TRANSMITTER UNWANTED EMISSIONS OUTSIDE THE 5 GHZ RLAN BANDS

### Definition

Transmitter unwanted emissions outside the 5 GHz RLAN bands are radio frequency emissions outside the 5 GHz RLAN bands defined in clause 3.1.

### Limit

The level of transmitter unwanted emissions outside the 5 GHz RLAN bands shall not exceed the limits given in table 4.

**Table 4: Transmitter unwanted emission limits outside the 5 GHz RLAN bands**

Frequency range	Maximum power	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 862 MHz	-54 dBm	100 kHz
862 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 5,15 GHz	-30 dBm	1 MHz
5,35 GHz to 5,47 GHz	-30 dBm	1 MHz
5,725 GHz to 26 GHz	-30 dBm	1 MHz

### Test Procedure

According to ETSI EN 301 893 V2.1.1 (2017-05) §5.4.5

**Test Data**

**Test Result:** Compliant. Pre-scan all modes, worst case please refer to following tables.

**802.11 a Chain 0****5180 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
685.77	H	32.65	-74.46	0.00	0.29	-74.75	-54.00	20.75
640.61	V	40.09	-70.20	0.00	0.26	-70.46	-54.00	16.46
10360.00	H	50.32	-55.66	13.48	0.40	-42.58	-30.00	12.58
10360.00	V	50.16	-55.26	13.48	0.40	-42.18	-30.00	12.18

**802.11 a Chain 0****5240 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
662.16	H	33.26	-73.98	0.00	0.27	-74.25	-54.00	20.25
640.61	V	38.92	-71.37	0.00	0.26	-71.63	-54.00	17.63
10480.00	H	51.62	-54.19	13.32	0.30	-41.17	-30.00	11.17
10480.00	V	52.32	-52.75	13.32	0.30	-39.73	-30.00	9.73

**802.11 a Chain 1****5180 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.61	H	30.72	-76.63	0.00	0.26	-76.89	-54.00	22.89
640.61	V	38.22	-72.07	0.00	0.26	-72.33	-54.00	18.33
10360.00	H	50.49	-55.49	13.48	0.40	-42.41	-30.00	12.41
10360.00	V	50.17	-55.25	13.48	0.40	-42.17	-30.00	12.17

**802.11 a Chain 1****5240 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
693.01	H	32.65	-74.43	0.00	0.30	-74.73	-54.00	20.73
640.61	V	39.30	-70.99	0.00	0.26	-71.25	-54.00	17.25
10480.00	H	50.84	-54.97	13.32	0.30	-41.95	-30.00	11.95
10480.00	V	50.33	-54.74	13.32	0.30	-41.72	-30.00	11.72

**802.11 n20 Low channel****5180 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.61	H	32.58	-74.77	0.00	0.26	-75.03	-54.00	21.03
640.61	V	40.65	-69.64	0.00	0.26	-69.90	-54.00	15.90
10360.00	H	50.74	-55.24	13.48	0.40	-42.16	-30.00	12.16
10360.00	V	51.35	-54.07	13.48	0.40	-40.99	-30.00	10.99

**802.11 n20 High channel****5240 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
639.59	H	32.51	-74.84	0.00	0.26	-75.10	-54.00	21.10
639.48	V	41.60	-68.70	0.00	0.26	-68.96	-54.00	14.96
10480.00	H	51.32	-54.49	13.32	0.30	-41.47	-30.00	11.47
10480.00	V	51.06	-54.01	13.32	0.30	-40.99	-30.00	10.99

**802.11 n40 Low channel****5190 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
693.62	H	33.05	-74.02	0.00	0.30	-74.32	-54.00	20.32
640.15	V	40.51	-69.78	0.00	0.26	-70.04	-54.00	16.04
10380.00	H	50.59	-55.36	13.44	0.38	-42.30	-30.00	12.30
10380.00	V	50.66	-54.70	13.44	0.38	-41.64	-30.00	11.64

**802.11 n40 High channel****5230 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.15	H	32.51	-74.85	0.00	0.26	-75.11	-54.00	21.11
640.61	V	40.21	-70.08	0.00	0.26	-70.34	-54.00	16.34
10460.00	H	51.06	-54.78	13.34	0.31	-41.75	-30.00	11.75
10460.00	V	50.89	-54.24	13.34	0.31	-41.21	-30.00	11.21

**802.11 ac20****5180 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.18	H	32.05	-75.30	0.00	0.26	-75.56	-54.00	21.56
640.29	V	41.92	-68.37	0.00	0.26	-68.63	-54.00	14.63
10360.00	H	50.84	-55.14	13.48	0.40	-42.06	-30.00	12.06
10360.00	V	50.66	-54.76	13.48	0.40	-41.68	-30.00	11.68

## 802.11 ac20

## 5240 MHz

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
662.15	H	33.05	-74.19	0.00	0.27	-74.46	-54.00	20.46
640.35	V	42.04	-68.25	0.00	0.26	-68.51	-54.00	14.51
10480.00	H	50.74	-55.07	13.32	0.30	-42.05	-30.00	12.05
10480.00	V	50.33	-54.74	13.32	0.30	-41.72	-30.00	11.72

## 802.11 ac40

## 5190 MHz

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.16	H	34.56	-72.79	0.00	0.26	-73.05	-54.00	19.05
662.19	V	42.31	-67.70	0.00	0.27	-67.97	-54.00	13.97
10380.00	H	51.32	-54.63	13.44	0.38	-41.57	-30.00	11.57
10380.00	V	50.78	-54.58	13.44	0.38	-41.52	-30.00	11.52

## 802.11 ac40

## 5230 MHz

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.32	H	33.26	-74.09	0.00	0.26	-74.35	-54.00	20.35
661.04	V	43.18	-66.84	0.00	0.27	-67.11	-54.00	13.11
10460.00	H	50.36	-55.48	13.34	0.31	-42.45	-30.00	12.45
10460.00	V	50.55	-54.58	13.34	0.31	-41.55	-30.00	11.55

## 802.11 ac80

## 5210 MHz

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.22	H	33.58	-73.77	0.00	0.26	-74.03	-54.00	20.03
640.59	V	42.17	-68.12	0.00	0.26	-68.38	-54.00	14.38
10420.00	H	50.67	-55.23	13.38	0.35	-42.20	-30.00	12.20
10420.00	V	51.43	-53.82	13.38	0.35	-40.79	-30.00	10.79

Note 1: The unit of antenna gain is dBd for frequency below 1GHz and is dBi for frequency above 1GHz.

Note 2:

Absolute Level = Substituted Level - Cable loss + Antenna Gain

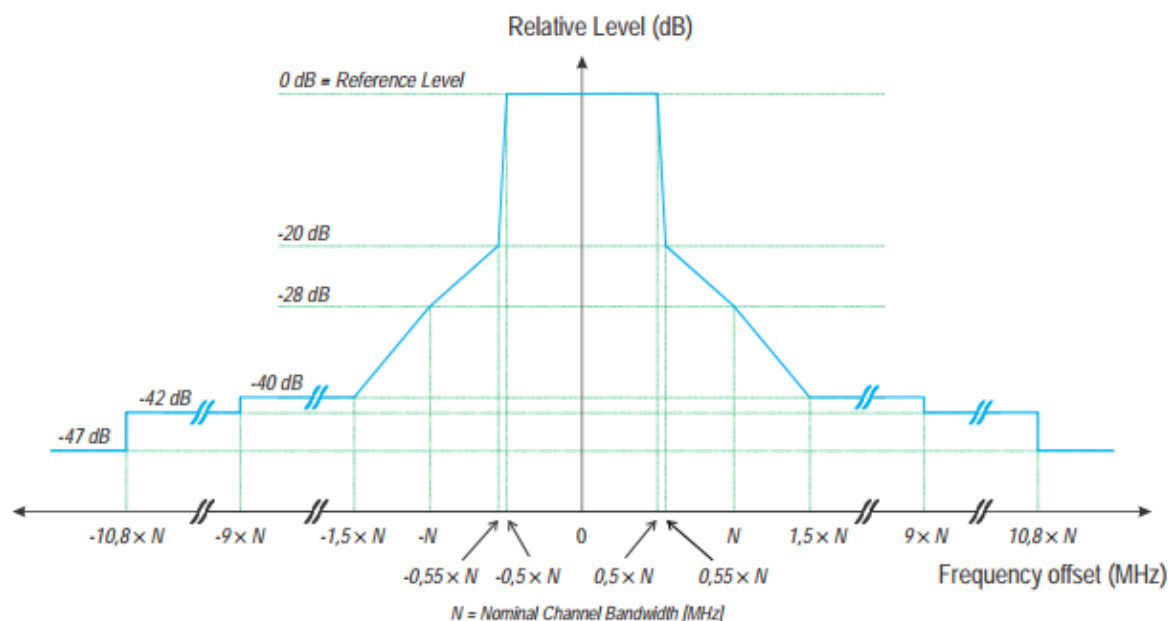
Margin = Limit- Absolute Level

## 5 – TRANSMITTER UNWANTED EMISSIONS WITHIN THE 5 GHZ RLAN BANDS

### Definition

Transmitter unwanted emissions within the 5 GHz RLAN bands are radio frequency emissions within the 5 GHz RLAN bands defined in clause 3.1.

### Limit



**Figure 1: Transmit spectral power mask**

### Test Procedure

According to ETSI EN 301 893 V2.1.1 (2017-05) §5.4.6

### Test Data

**Test Result:** Compliant. The test data please refer to the Appendix.



## 6 – RECEIVER SPURIOUS EMISSIONS

---

### Definition

Receiver spurious emissions are emissions at any frequency when the equipment is in receive mode.

### Limit

The spurious emissions of the receiver shall not exceed the limits given in table 5.

In case of equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted). For emissions radiated by the cabinet or emissions radiated by integral antenna equipment (without antenna connectors), these limits are e.r.p. for emissions up to 1 GHz and e.i.r.p. for emissions above 1 GHz.

**Table 5: Spurious radiated emission limits**

Frequency range	Maximum power	Measurement bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 26 GHz	-47 dBm	1 MHz

### Test Procedure

According to ETSI EN 301 893 V2.1.1 (2017-05) §5.4.7

**Test Data**

**Test Result:** Compliant. Pre-scan all modes, worst case please refer to following tables.

**802.11 a Chain 0****5180 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.61	H	30.65	-76.70	0.00	0.26	-76.96	-57.00	19.96
640.61	V	38.95	-71.34	0.00	0.26	-71.60	-57.00	14.60
1326.59	H	50.32	-74.20	8.49	1.19	-66.90	-47.00	19.90
1548.20	V	50.44	-75.91	9.79	1.03	-67.15	-47.00	20.15

**802.11 a Chain 0****5240 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.61	H	31.62	-75.73	0.00	0.26	-75.99	-57.00	18.99
640.61	V	39.65	-70.64	0.00	0.26	-70.90	-57.00	13.90
1487.29	H	50.08	-75.80	9.44	1.33	-67.69	-47.00	20.69
1648.20	V	50.41	-75.32	10.44	0.71	-65.59	-47.00	18.59

**802.11 a Chain 1****5180 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.65	H	32.05	-75.30	0.00	0.26	-75.56	-57.00	18.56
640.61	V	38.41	-71.88	0.00	0.26	-72.14	-57.00	15.14
1475.32	H	51.32	-74.33	9.38	1.31	-66.26	-47.00	19.26
1258.08	V	52.04	-73.24	7.88	1.15	-66.51	-47.00	19.51

**802.11 a Chain 1****5240 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.11	H	31.65	-75.70	0.00	0.26	-75.96	-57.00	18.96
640.32	V	39.26	-71.03	0.00	0.26	-71.29	-57.00	14.29
1326.59	H	53.09	-71.43	8.49	1.19	-64.13	-47.00	17.13
1485.09	V	52.69	-73.33	9.43	1.33	-65.23	-47.00	18.23

**802.11 n20 Low channel****5180 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.58	H	33.26	-74.09	0.00	0.26	-74.35	-57.00	17.35
663.59	V	38.41	-71.58	0.00	0.27	-71.85	-57.00	14.85
1487.96	H	51.48	-74.42	9.44	1.33	-66.31	-47.00	19.31
1326.54	V	52.06	-73.28	8.49	1.19	-65.98	-47.00	18.98

**802.11 n20 High channel****5240 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.51	H	32.65	-74.70	0.00	0.26	-74.96	-57.00	17.96
640.32	V	38.64	-71.66	0.00	0.26	-71.92	-57.00	14.92
1594.20	H	50.74	-75.16	10.07	0.72	-65.81	-47.00	18.81
1629.52	V	50.23	-75.79	10.31	0.70	-66.18	-47.00	19.18

**802.11 n40 Low channel****5190 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.57	H	33.26	-74.09	0.00	0.26	-74.35	-57.00	17.35
640.15	V	39.65	-70.64	0.00	0.26	-70.90	-57.00	13.90
1987.49	H	51.32	-73.92	11.97	1.12	-63.07	-47.00	16.07
1654.22	V	52.04	-73.60	10.48	0.72	-63.84	-47.00	16.84

**802.11 n40 High channel****5230 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.59	H	32.62	-74.73	0.00	0.26	-74.99	-57.00	17.99
640.25	V	39.65	-70.64	0.00	0.26	-70.90	-57.00	13.90
1471.23	H	50.75	-74.82	9.36	1.31	-66.77	-47.00	19.77
1245.00	V	50.29	-74.91	7.75	1.14	-68.30	-47.00	21.30

**802.11 ac20****5180 MHz**

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
641.25	H	33.26	-74.09	0.00	0.26	-74.35	-57.00	17.35
640.58	V	39.41	-70.88	0.00	0.26	-71.14	-57.00	14.14
1659.20	H	50.55	-74.41	10.51	0.72	-64.62	-47.00	17.62
1025.65	V	50.17	-76.10	7.77	0.81	-69.14	-47.00	22.14

## 802.11 ac20

## 5240 MHz

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.18	H	32.15	-75.20	0.00	0.26	-75.46	-57.00	18.46
642.35	V	39.47	-70.80	0.00	0.26	-71.06	-57.00	14.06
1487.65	H	50.48	-75.41	9.44	1.33	-67.30	-47.00	20.30
1329.50	V	50.45	-74.87	8.51	1.19	-67.55	-47.00	20.55

## 802.11 ac40

## 5190 MHz

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
640.22	H	33.26	-74.09	0.00	0.26	-74.35	-57.00	17.35
641.36	V	38.65	-71.63	0.00	0.26	-71.89	-57.00	14.89
1497.65	H	50.27	-75.81	9.49	1.35	-67.67	-47.00	20.67
1326.64	V	50.38	-74.96	8.49	1.19	-67.66	-47.00	20.66

## 802.11 ac40

## 5230 MHz

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
642.32	H	33.25	-74.09	0.00	0.26	-74.35	-57.00	17.35
640.55	V	39.14	-71.15	0.00	0.26	-71.41	-57.00	14.41
1328.67	H	50.74	-73.77	8.50	1.19	-66.46	-47.00	19.46
1692.41	V	50.17	-74.88	10.75	0.74	-64.87	-47.00	17.87

## 802.11 ac80

## 5210 MHz

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
641.00	H	32.21	-75.14	0.00	0.26	-75.40	-57.00	18.40
641.25	V	39.47	-70.81	0.00	0.26	-71.07	-57.00	14.07
1487.29	H	50.51	-75.37	9.44	1.33	-67.26	-47.00	20.26
1326.57	V	50.32	-75.02	8.49	1.19	-67.72	-47.00	20.72

Note 1: The unit of antenna gain is dBd for frequency below 1GHz and is dBi for frequency above 1GHz.

Note 2:

Absolute Level = Substituted Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

## 8 – ADAPTIVITY

### Applicable Standard

Adaptivity (Channel Access Mechanism) is an automatic mechanism by which a device limits its transmissions and gains access to an Operating Channel.

#### §4.2.7.3.1 Frame Based Equipment:

Frame Based Equipment shall implement a Listen Before Talk (LBT) based Channel Access Mechanism to detect the presence of other RLAN transmissions on an Operating Channel.

#### §4.2.7.3.2 Load Based Equipment:

Load based Equipment shall implement a Listen Before Talk (LBT) based Channel Access Mechanism to detect the presence of other RLAN transmissions on an Operating Channel.

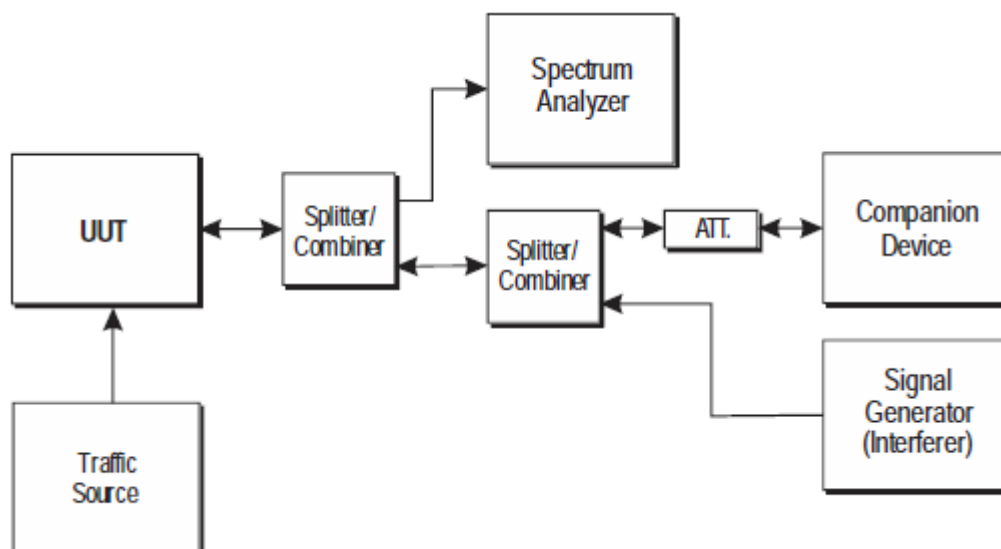
### Limit

According to ETSI EN 301 893 V2.1.1 (2017-05) §4.2.7.3.1&§4.2.7.3.2

### Test Procedure

According to ETSI EN 301 893 V2.1.1 (2017-05) §5.4.9

### Block Diagram of Test Setup



### Test Data

**Test Result:** Compliant. The test data please refer to the Appendix.

## 9 – RECEIVER BLOCKING

### Applicable Standard

Receiver blocking is a measure of the capability of the equipment to receive a wanted signal on its operating channel without exceeding a given degradation due to the presence of an unwanted input signal (blocking signal) on frequencies other than those of the operating bands provided in table 1.

### Limit

The minimum performance criterion shall be a PER of less than or equal to 10 %. The manufacturer may declare alternative performance criteria as long as that is appropriate for the intended use of the equipment

While maintaining the minimum performance criteria as defined in clause 4.2.8.3, the blocking levels at specified frequency offsets shall be equal to or greater than the limits defined in table 9.

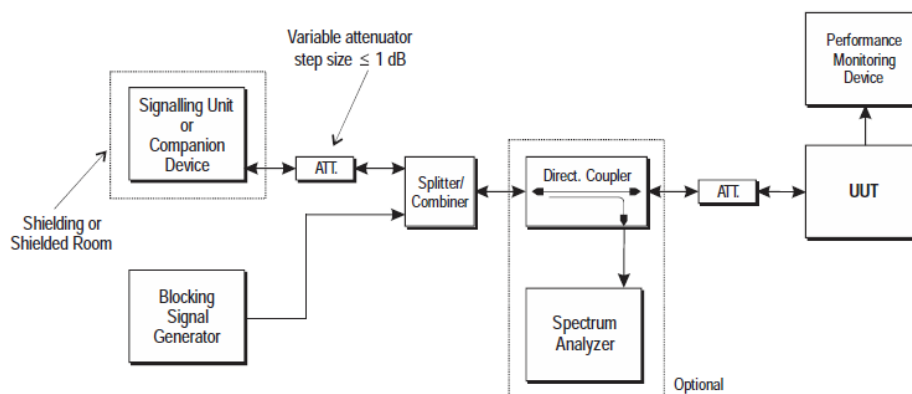
**Table 9: Receiver Blocking parameters**

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 2)		Type of blocking signal
		Master or Slave with radar detection (see table D.2, note 2)	Slave without radar detection (see table D.2, note 2)	
$P_{min} + 6$ dB	5 100	-53	-59	Continuous Wave
$P_{min} + 6$ dB	4 900 5 000 5 975	-47	-53	Continuous Wave
NOTE 1: $P_{min}$ is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined clause 4.2.8.3 in the absence of any blocking signal.				
NOTE 2: The levels specified are levels in front of the UUT antenna. In case of conducted measurements, the same levels should be used at the antenna connector irrespective of antenna gain.				

### Test Procedure

According to ETSI EN 301 893 V2.1.1 (2017-05) §5.4.10

### Block Diagram of Test Setup



**Figure 14: Test Set-up for receiver blocking**

**Test Data**

**Test Result:** Compliant. Please refer to following tables.

**Note:** CMW500 was used to monitor the PER, and the worst case as below.

Test Mode	Pmin (dBm)	Wanted signal Power from companion device (dBm)	Blocking Signal Frequency (MHz)	Blocking Signal Power (dBm)	Max Blocking Signal Power (dBm)	PER (%)	Limit (%)
802.11 a (5180 MHz)	-85	-79	5100	-53	-51	6.5	≤ 10
			4900	-47	-45	4.2	
			5000	-47	-44	5.7	
			5975	-47	-41	6.1	

## **EXHIBIT A – EUT PHOTOGRAPHS**

---

For photos in this section, please refer to report No.: 2402Z107018E-02 EXHIBIT A..



## EXHIBIT B – TEST SETUP PHOTOGRAPHS

Radiated Emission Below 1GHz View



Radiated Emission Above 1GHz View



# APPENDIX – RF CONDUCTED TEST DATA

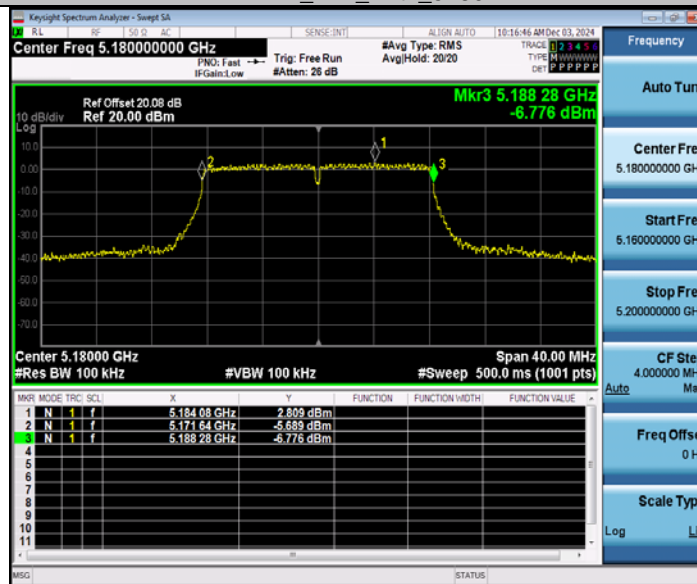
## Appendix A: Carrier frequencies Test Result

Test Condition	Test Mode	Antenna	Freq(MHz)	F1(MHz)	F2(MHz)	Result[ppm]	Limit[ppm]	Verdict
NTNV	11A	Ant1	5180	5171.64	5188.28	-7.72201	±20	PASS
		Ant2	5180	5171.64	5188.28	-7.72201	±20	PASS
		Ant1	5240	5231.64	5248.28	-7.63359	±20	PASS
		Ant2	5240	5231.64	5248.28	-7.63359	±20	PASS
	11N20MIMO	Ant1	5180	5171.04	5188.88	-7.72201	±20	PASS
		Ant2	5180	5171.04	5188.88	-7.72201	±20	PASS
		Ant1	5240	5231.04	5248.88	-7.63359	±20	PASS
		Ant2	5240	5231.04	5248.88	-7.63359	±20	PASS
	11N40MIMO	Ant1	5190	5171.68	5208.24	-7.70713	±20	PASS
		Ant2	5190	5171.68	5208.24	-7.70713	±20	PASS
		Ant1	5230	5211.68	5248.24	-7.64818	±20	PASS
		Ant2	5230	5211.68	5248.24	-7.64818	±20	PASS
	11AC20MIMO	Ant1	5180	5171.04	5188.88	-7.72201	±20	PASS
		Ant2	5180	5171.04	5188.88	-7.72201	±20	PASS
		Ant1	5240	5231.04	5248.88	-7.63359	±20	PASS
		Ant2	5240	5231.04	5248.88	-7.63359	±20	PASS
	11AC40MIMO	Ant1	5190	5171.68	5208.24	-7.70713	±20	PASS
		Ant2	5190	5171.68	5208.24	-7.70713	±20	PASS
		Ant1	5230	5211.68	5248.24	-7.64818	±20	PASS
		Ant2	5230	5211.68	5248.24	-7.64818	±20	PASS
	11AC80MIMO	Ant1	5210	5171.76	5248.24	0.00000	±20	PASS
		Ant2	5210	5171.76	5248.24	0.00000	±20	PASS
LTVN	11A	Ant1	5180	5171.64	5188.28	-7.72201	±20	PASS
		Ant2	5180	5171.64	5188.28	-7.72201	±20	PASS
		Ant1	5240	5231.64	5248.28	-7.63359	±20	PASS
		Ant2	5240	5231.64	5248.28	-7.63359	±20	PASS
	11N20MIMO	Ant1	5180	5171.04	5188.88	-7.72201	±20	PASS
		Ant2	5180	5171.04	5188.88	-7.72201	±20	PASS
		Ant1	5240	5231.04	5248.88	-7.63359	±20	PASS
		Ant2	5240	5231.04	5248.88	-7.63359	±20	PASS
	11N40MIMO	Ant1	5190	5171.68	5208.24	-7.70713	±20	PASS
		Ant2	5190	5171.68	5208.24	-7.70713	±20	PASS
		Ant1	5230	5211.68	5248.24	-7.64818	±20	PASS
		Ant2	5230	5211.68	5248.24	-7.64818	±20	PASS
	11AC20MIMO	Ant1	5180	5171.04	5188.88	-7.72201	±20	PASS
		Ant2	5180	5171.04	5188.88	-7.72201	±20	PASS
		Ant1	5240	5231.04	5248.88	-7.63359	±20	PASS
		Ant2	5240	5231.04	5248.88	-7.63359	±20	PASS
	11AC40MIMO	Ant1	5190	5171.68	5208.24	-7.70713	±20	PASS
		Ant2	5190	5171.68	5208.24	-7.70713	±20	PASS
		Ant1	5230	5211.68	5248.24	-7.64818	±20	PASS
		Ant2	5230	5211.68	5248.24	-7.64818	±20	PASS
	11AC80MIMO	Ant1	5210	5171.76	5248.24	0.00000	±20	PASS
		Ant2	5210	5171.76	5248.24	0.00000	±20	PASS
HTNV	11A	Ant1	5180	5171.64	5188.28	-7.72201	±20	PASS
		Ant2	5180	5171.64	5188.28	-7.72201	±20	PASS
		Ant1	5240	5231.64	5248.28	-7.63359	±20	PASS
		Ant2	5240	5231.64	5248.28	-7.63359	±20	PASS
	11N20MIMO	Ant1	5180	5171.04	5188.88	-7.72201	±20	PASS
		Ant2	5180	5171.04	5188.88	-7.72201	±20	PASS
		Ant1	5240	5231.04	5248.88	-7.63359	±20	PASS
		Ant2	5240	5231.04	5248.88	-7.63359	±20	PASS
	11N40MIMO	Ant1	5190	5171.68	5208.24	-7.70713	±20	PASS
		Ant2	5190	5171.68	5208.24	-7.70713	±20	PASS
		Ant1	5230	5211.68	5248.24	-7.64818	±20	PASS
		Ant2	5230	5211.68	5248.24	-7.64818	±20	PASS
	11AC20MIMO	Ant1	5180	5171.04	5188.88	-7.72201	±20	PASS
		Ant2	5180	5171.04	5188.88	-7.72201	±20	PASS
		Ant1	5240	5231.04	5248.88	-7.63359	±20	PASS
		Ant2	5240	5231.04	5248.88	-7.63359	±20	PASS

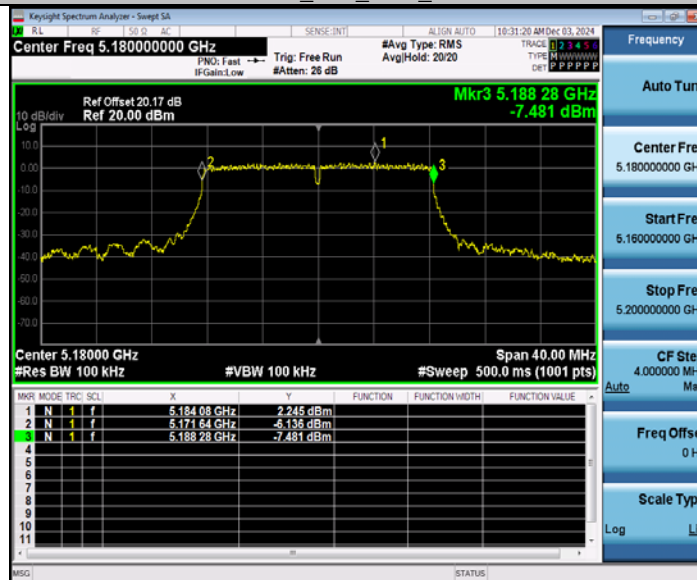
	11AC40MIMO	Ant1	5190	5171.68	5208.24	-7.70713	±20	PASS
		Ant2	5190	5171.68	5208.24	-7.70713	±20	PASS
		Ant1	5230	5211.68	5248.24	-7.64818	±20	PASS
	11AC80MIMO	Ant2	5230	5211.68	5248.24	-7.64818	±20	PASS
		Ant1	5210	5171.76	5248.24	0.00000	±20	PASS
		Ant2	5210	5171.76	5248.24	0.00000	±20	PASS

# Test Graphs (NTNV)

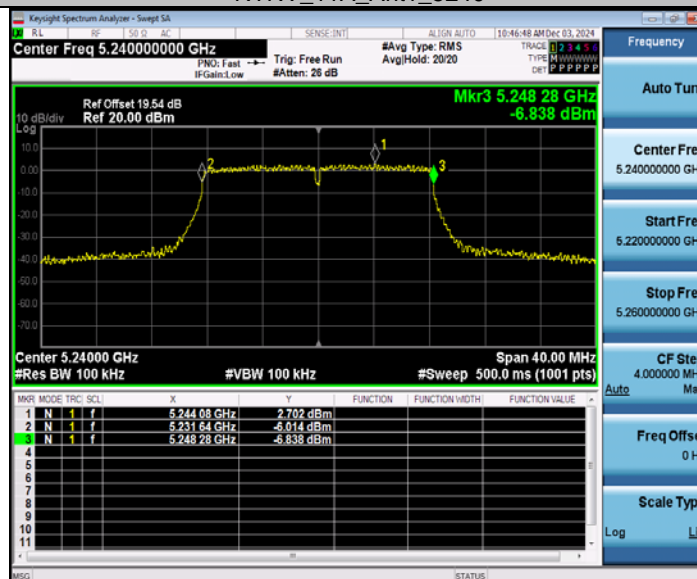
NTNV\_11A\_Ant1\_5180

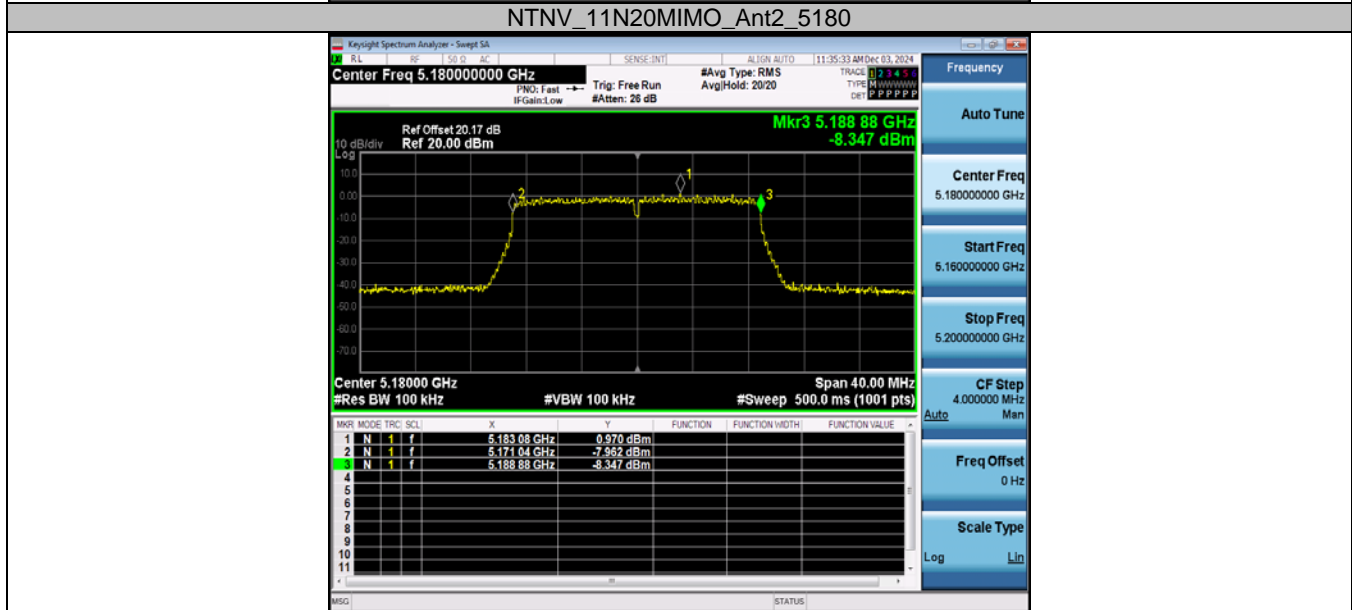
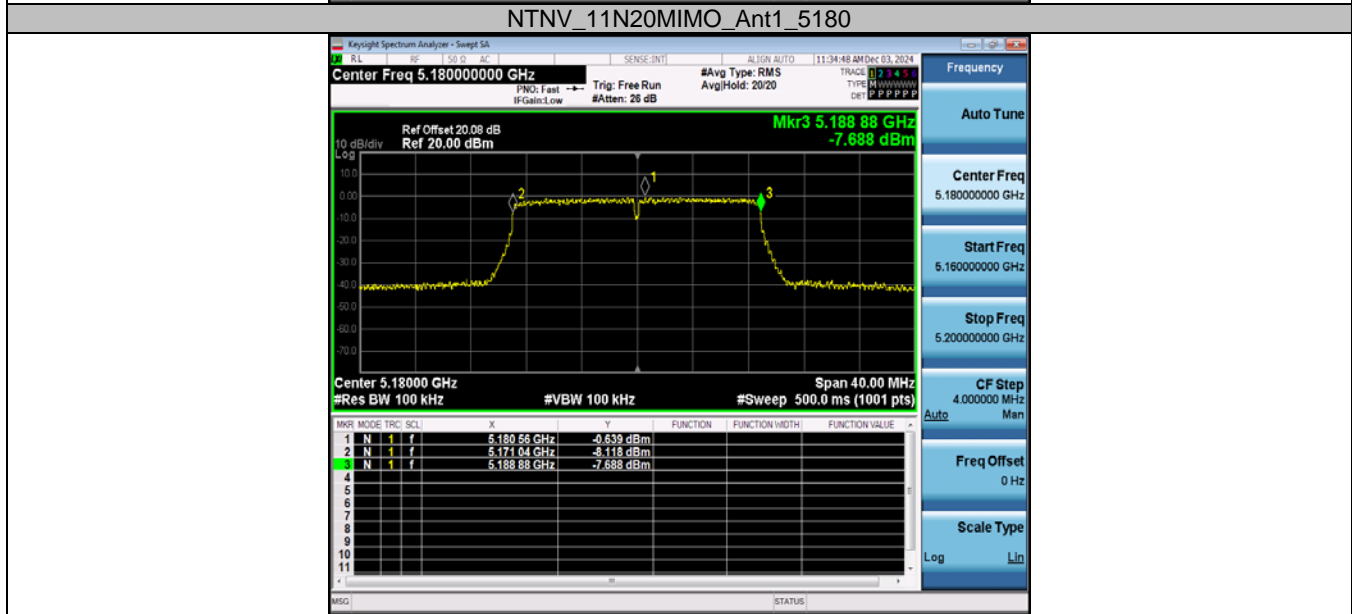
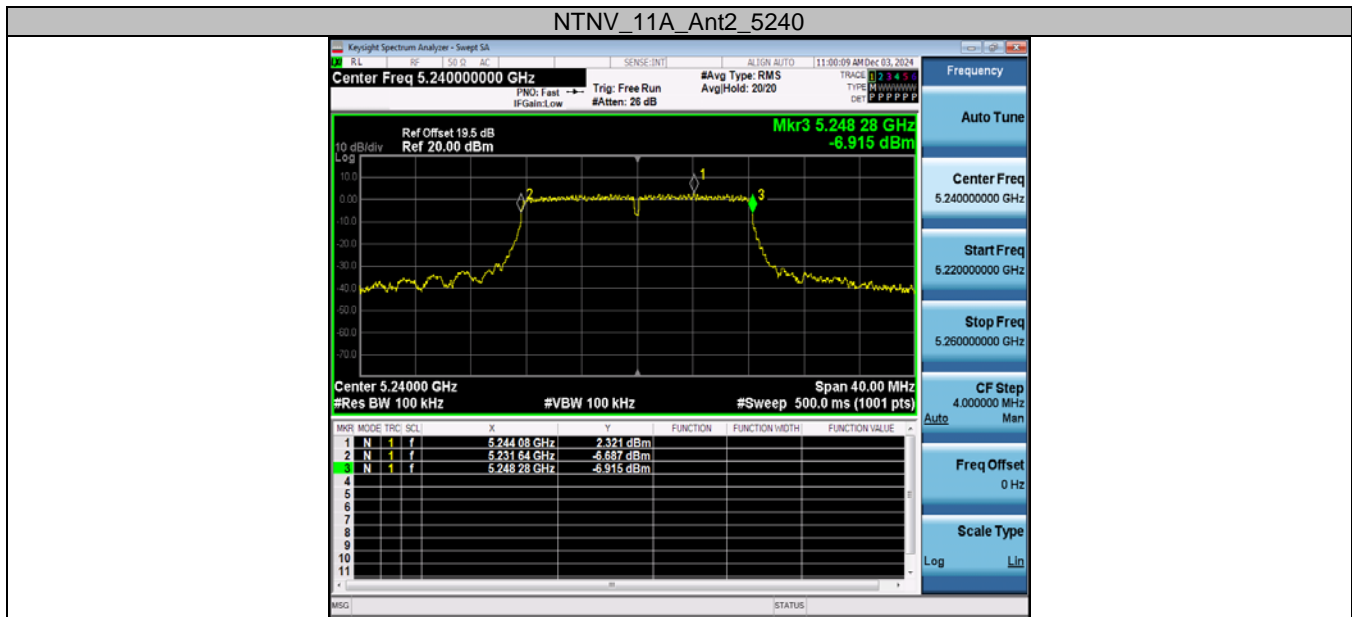


NTNV\_11A\_Ant2\_5180



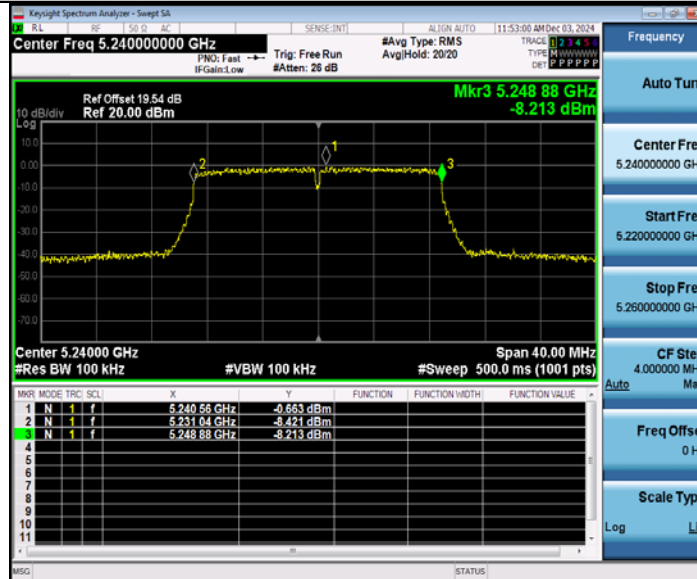
NTNV\_11A\_Ant1\_5240



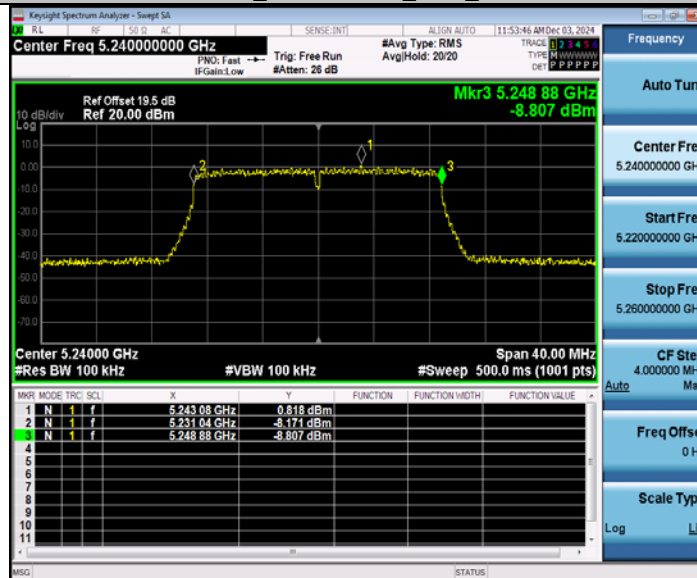




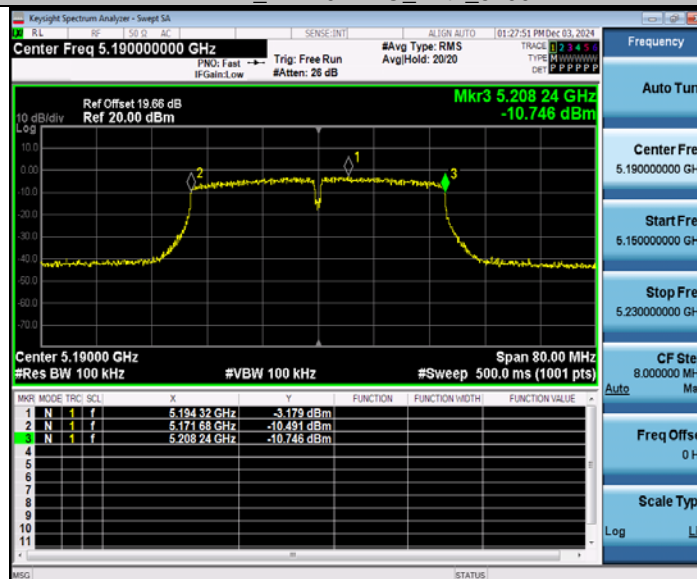
### NTNV\_11N20MIMO\_Ant1\_5240



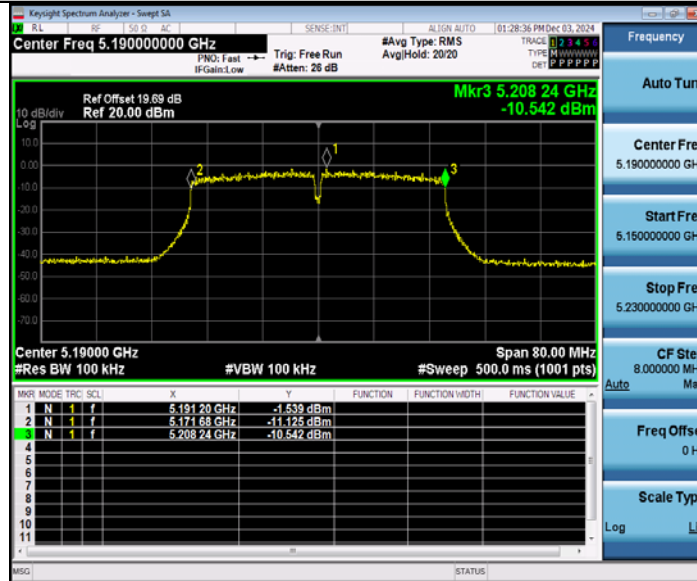
### NTNV\_11N20MIMO\_Ant2\_5240



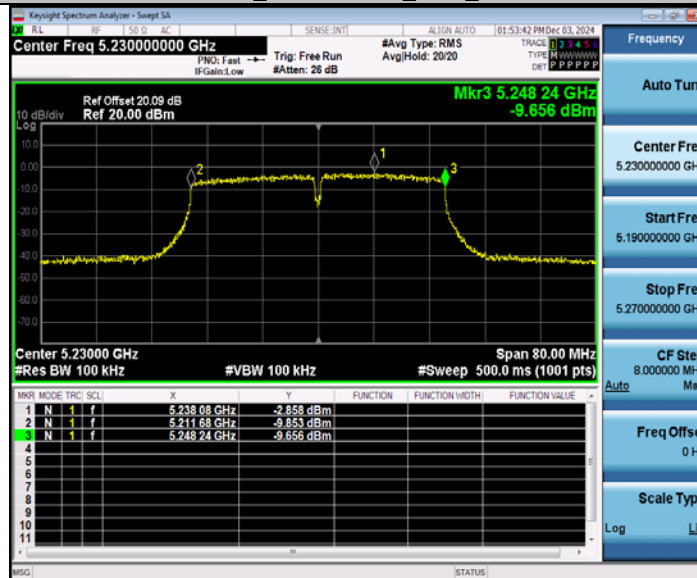
### NTNV\_11N40MIMO\_Ant1\_5190



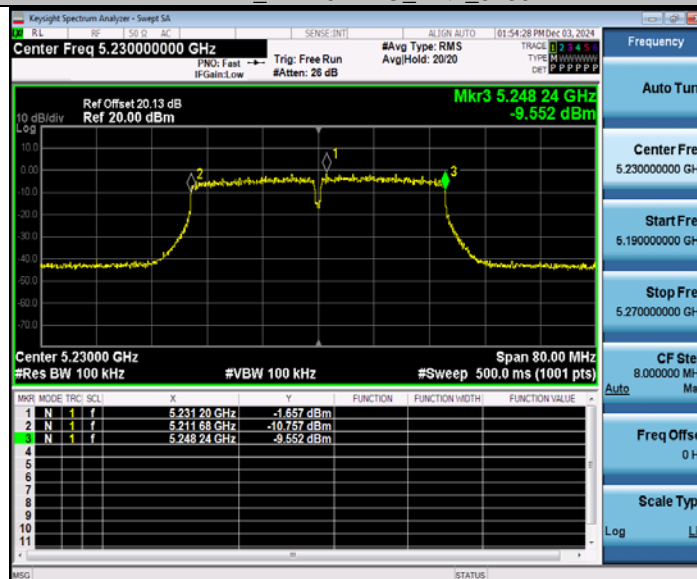
### NTNV\_11N40MIMO\_Ant2\_5190



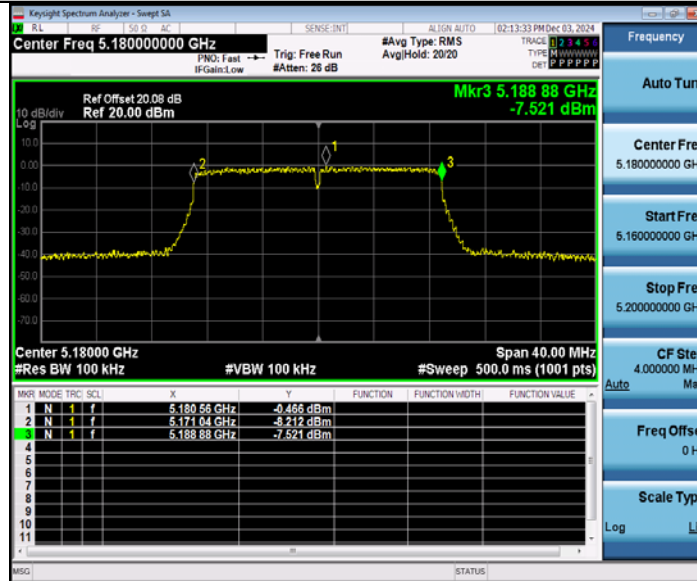
### NTNV\_11N40MIMO\_Ant1\_5230



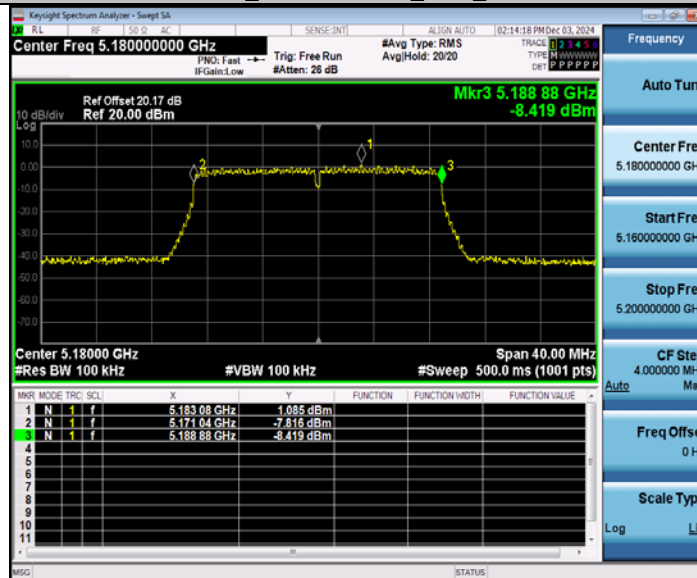
### NTNV\_11N40MIMO\_Ant2\_5230



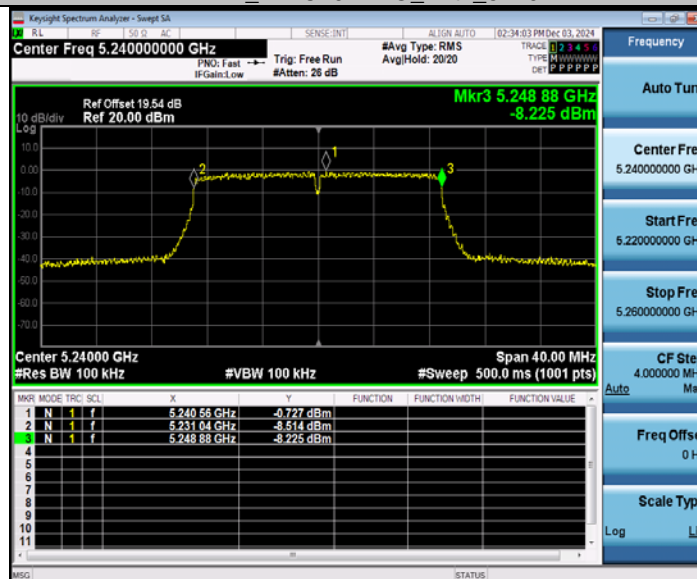
### NTNV\_11AC20MIMO\_Ant1\_5180



### NTNV\_11AC20MIMO\_Ant2\_5180

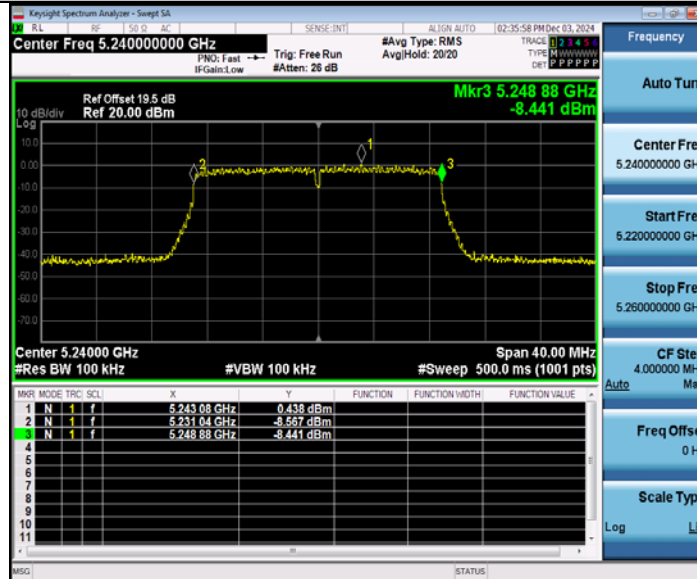


### NTNV\_11AC20MIMO\_Ant1\_5240

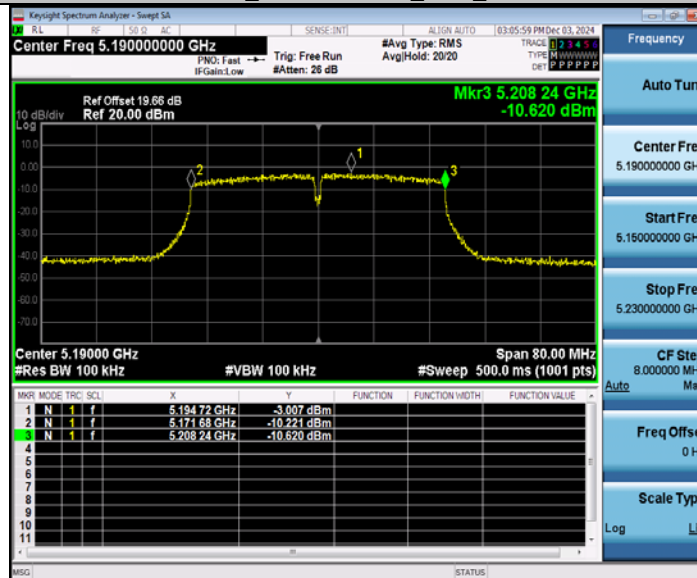




### NTNV\_11AC20MIMO\_Ant2\_5240



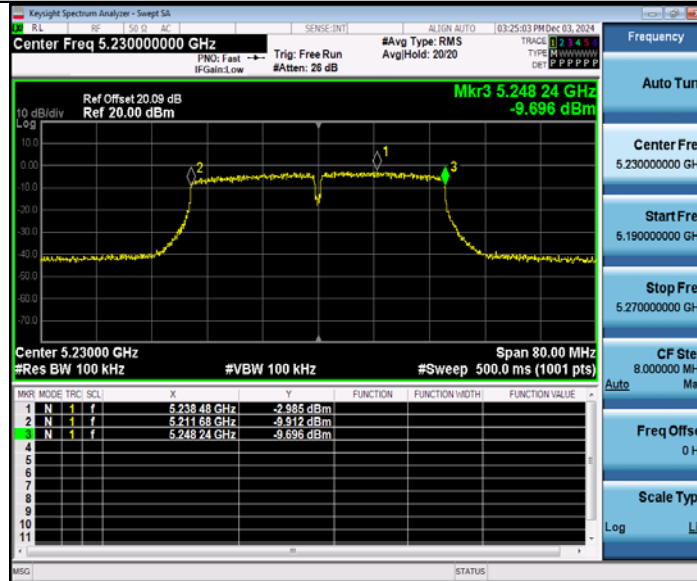
### NTNV\_11AC40MIMO\_Ant1\_5190



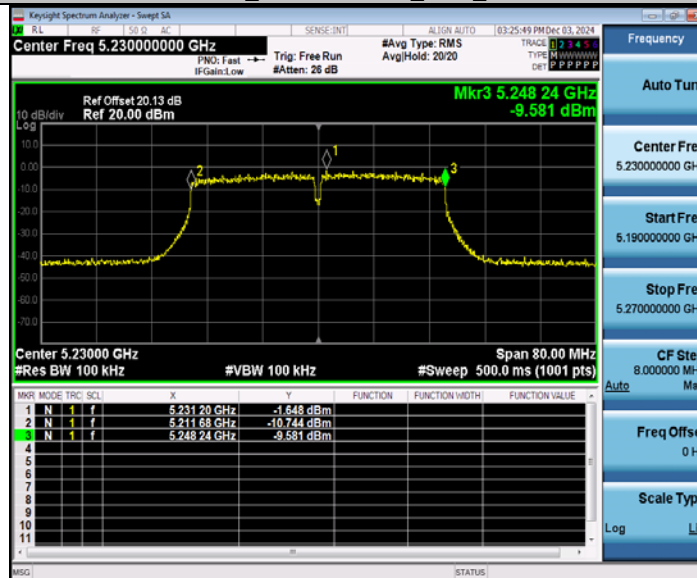
### NTNV\_11AC40MIMO\_Ant2\_5190



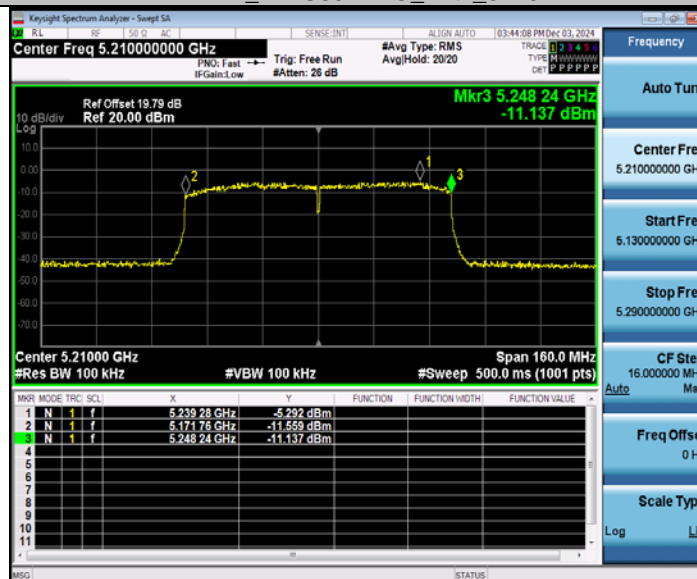
### NTNV\_11AC40MIMO\_Ant1\_5230

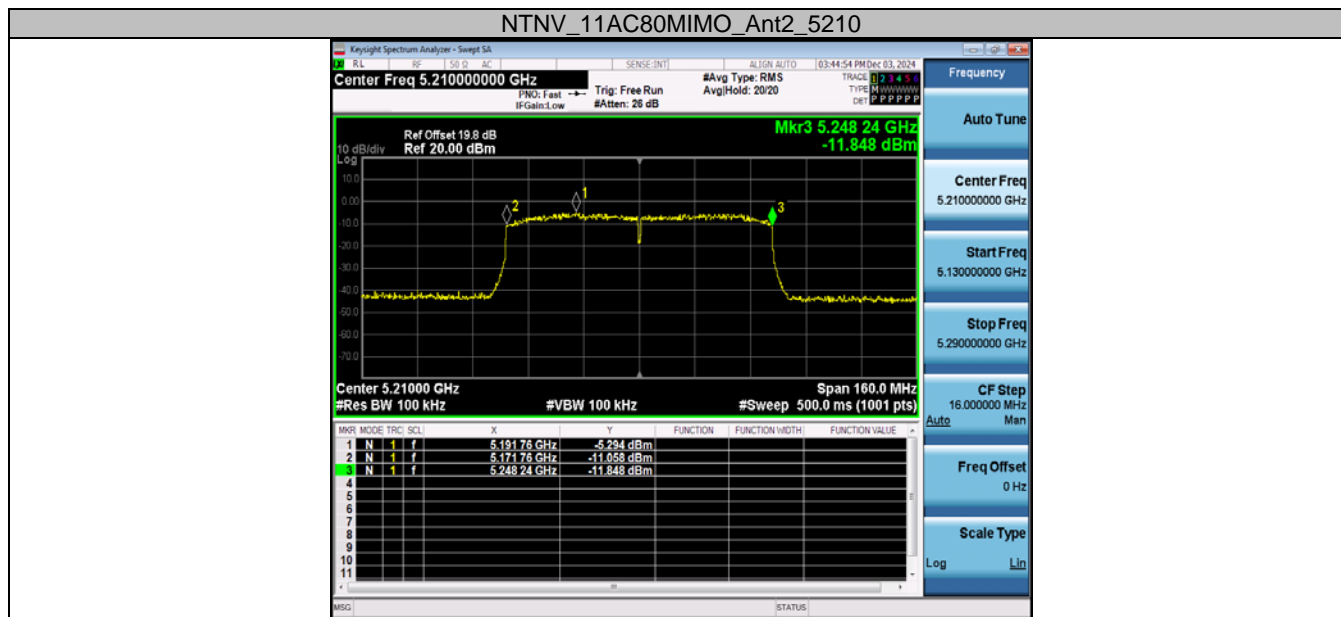


### NTNV\_11AC40MIMO\_Ant2\_5230



### NTNV\_11AC80MIMO\_Ant1\_5210





# Appendix B: RF Output Power Test Result

Test Condition	Test Mode	Antenna	Freq(MHz)	Result [dBm]	Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
NTNV	11A	Ant1	5180	18.07	4.07	22.14	23	PASS
		Ant2	5180	17.69	4.47	22.16	23	PASS
		Ant1	5240	18.06	4.07	22.13	23	PASS
		Ant2	5240	18.07	4.47	22.54	23	PASS
	11N20MIMO	Ant1	5180	15.36	4.07	19.43	23	PASS
		Ant2	5180	15.22	4.47	19.69	23	PASS
		total	5180	18.30	4.47	22.77	23	PASS
		Ant1	5240	15.28	4.07	19.35	23	PASS
		Ant2	5240	15.40	4.47	19.87	23	PASS
		total	5240	18.35	4.47	22.82	23	PASS
	11N40MIMO	Ant1	5190	15.41	4.07	19.48	23	PASS
		Ant2	5190	15.45	4.47	19.92	23	PASS
		total	5190	18.43	4.47	22.90	23	PASS
		Ant1	5230	15.38	4.07	19.45	23	PASS
		Ant2	5230	15.39	4.47	19.86	23	PASS
		total	5230	18.40	4.47	22.87	23	PASS
	11AC20MIMO	Ant1	5180	15.35	4.07	19.42	23	PASS
		Ant2	5180	15.33	4.47	19.80	23	PASS
		total	5180	18.34	4.47	22.81	23	PASS
		Ant1	5240	15.32	4.07	19.39	23	PASS
		Ant2	5240	15.18	4.47	19.65	23	PASS
		total	5240	18.26	4.47	22.73	23	PASS
	11AC40MIMO	Ant1	5190	15.54	4.07	19.61	23	PASS
		Ant2	5190	15.27	4.47	19.74	23	PASS
		total	5190	18.41	4.47	22.88	23	PASS
		Ant1	5230	15.37	4.07	19.44	23	PASS
		Ant2	5230	15.39	4.47	19.86	23	PASS
		total	5230	18.39	4.47	22.86	23	PASS
	11AC80MIMO	Ant1	5210	15.23	4.07	19.30	23	PASS
		Ant2	5210	15.56	4.47	20.03	23	PASS
		total	5210	18.40	4.47	22.87	23	PASS
LTVN	11A	Ant1	5180	18.10	4.07	22.17	23	PASS
		Ant2	5180	17.72	4.47	22.19	23	PASS
		Ant1	5240	18.09	4.07	22.16	23	PASS
		Ant2	5240	18.11	4.47	22.58	23	PASS
	11N20MIMO	Ant1	5180	15.38	4.07	19.45	23	PASS
		Ant2	5180	15.25	4.47	19.72	23	PASS
		total	5180	18.33	4.47	22.8	23	PASS
		Ant1	5240	15.30	4.07	19.37	23	PASS
		Ant2	5240	15.45	4.47	19.92	23	PASS
		total	5240	18.38	4.47	22.85	23	PASS
	11N40MIMO	Ant1	5190	15.42	4.07	19.49	23	PASS
		Ant2	5190	15.47	4.47	19.94	23	PASS
		total	5190	18.45	4.47	22.92	23	PASS
		Ant1	5230	15.42	4.07	19.49	23	PASS
		Ant2	5230	15.41	4.47	19.88	23	PASS
		total	5230	18.43	4.47	22.90	23	PASS
	11AC20MIMO	Ant1	5180	15.37	4.07	19.44	23	PASS
		Ant2	5180	15.36	4.47	19.83	23	PASS
		total	5180	18.37	4.47	22.84	23	PASS
		Ant1	5240	15.35	4.07	19.42	23	PASS
		Ant2	5240	15.21	4.47	19.68	23	PASS
		total	5240	18.29	4.47	22.76	23	PASS
	11AC40MIMO	Ant1	5190	15.55	4.07	19.62	23	PASS
		Ant2	5190	15.29	4.47	19.76	23	PASS
		total	5190	18.45	4.47	22.92	23	PASS
		Ant1	5230	15.41	4.07	19.48	23	PASS
		Ant2	5230	15.42	4.47	19.89	23	PASS
		total	5230	18.41	4.47	22.88	23	PASS
	11AC80MIMO	Ant1	5210	15.25	4.07	19.32	23	PASS
		Ant2	5210	15.59	4.47	20.06	23	PASS

HTNV	11A	total	5210	18.42	4.47	22.89	23	PASS
		Ant1	5180	18.05	4.07	22.12	23	PASS
		Ant2	5180	17.66	4.47	22.13	23	PASS
		Ant1	5240	18.03	4.07	22.10	23	PASS
	11N20MIMO	Ant2	5240	18.05	4.47	22.52	23	PASS
		Ant1	5180	15.33	4.07	19.40	23	PASS
		Ant2	5180	15.20	4.47	19.67	23	PASS
		total	5180	18.27	4.47	22.74	23	PASS
		Ant1	5240	15.25	4.07	19.32	23	PASS
		Ant2	5240	15.37	4.47	19.84	23	PASS
	11N40MIMO	total	5240	18.31	4.47	22.78	23	PASS
		Ant1	5190	15.39	4.07	19.46	23	PASS
		Ant2	5190	15.42	4.47	19.89	23	PASS
		total	5190	18.41	4.47	22.88	23	PASS
		Ant1	5230	15.34	4.07	19.41	23	PASS
		Ant2	5230	15.35	4.47	19.82	23	PASS
	11AC20MIMO	total	5230	18.38	4.47	22.85	23	PASS
		Ant1	5180	15.31	4.07	19.38	23	PASS
		Ant2	5180	15.31	4.47	19.78	23	PASS
		total	5180	18.30	4.47	22.77	23	PASS
		Ant1	5240	15.30	4.07	19.37	23	PASS
		Ant2	5240	15.15	4.47	19.62	23	PASS
	11AC40MIMO	total	5240	18.24	4.47	22.71	23	PASS
		Ant1	5190	15.50	4.07	19.57	23	PASS
		Ant2	5190	15.24	4.47	19.71	23	PASS
		total	5190	18.37	4.47	22.84	23	PASS
		Ant1	5230	15.35	4.07	19.42	23	PASS
		Ant2	5230	15.37	4.47	19.84	23	PASS
	11AC80MIMO	total	5230	18.36	4.47	22.83	23	PASS
		Ant1	5210	15.20	4.07	19.27	23	PASS
		Ant2	5210	15.52	4.47	19.99	23	PASS
	11AC80MIMO	total	5210	18.37	4.47	22.84	23	PASS

Note: The duty cycle factor was added into the result.

**Beamforming**

Test Condition	Test Mode	Antenna	Freq(MHz)	Result [dBm]	Gain [dBi]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
NTNV	11N20MIMO	Ant1	5180	12.39	4.07	16.46	23	PASS
		Ant2	5180	12.30	4.47	16.77	23	PASS
		total	5180	15.36	7.47	22.83	23	PASS
		Ant1	5240	12.37	4.07	16.44	23	PASS
		Ant2	5240	12.29	4.47	16.76	23	PASS
		total	5240	15.34	7.47	22.81	23	PASS
	11N40MIMO	Ant1	5190	12.44	4.07	16.51	23	PASS
		Ant2	5190	12.28	4.47	16.75	23	PASS
		total	5190	15.37	7.47	22.84	23	PASS
		Ant1	5230	12.45	4.07	16.52	23	PASS
		Ant2	5230	12.20	4.47	16.67	23	PASS
		total	5230	15.34	7.47	22.81	23	PASS
	11AC20MIMO	Ant1	5180	12.52	4.07	16.59	23	PASS
		Ant2	5180	12.28	4.47	16.75	23	PASS
		total	5180	15.41	7.47	22.88	23	PASS
		Ant1	5240	12.16	4.07	16.23	23	PASS
		Ant2	5240	12.34	4.47	16.81	23	PASS
		total	5240	15.26	7.47	22.73	23	PASS
	11AC40MIMO	Ant1	5190	12.38	4.07	16.45	23	PASS
		Ant2	5190	12.24	4.47	16.71	23	PASS
		total	5190	15.32	7.47	22.79	23	PASS
		Ant1	5230	12.46	4.07	16.53	23	PASS
		Ant2	5230	12.23	4.47	16.70	23	PASS
		total	5230	15.36	7.47	22.83	23	PASS
	11AC80MIMO	Ant1	5210	12.33	4.07	16.40	23	PASS
		Ant2	5210	12.49	4.47	16.96	23	PASS
		total	5210	15.42	7.47	22.89	23	PASS
LTNV	11N20MIMO	Ant1	5180	12.42	4.07	16.49	23	PASS
		Ant2	5180	12.33	4.47	16.80	23	PASS
		total	5180	15.39	7.47	22.86	23	PASS
		Ant1	5240	12.39	4.07	16.46	23	PASS
		Ant2	5240	12.32	4.47	16.79	23	PASS
		total	5240	15.36	7.47	22.83	23	PASS
	11N40MIMO	Ant1	5190	12.46	4.07	16.53	23	PASS
		Ant2	5190	12.32	4.47	16.79	23	PASS
		total	5190	15.39	7.47	22.86	23	PASS
		Ant1	5230	12.48	4.07	16.55	23	PASS
		Ant2	5230	12.24	4.47	16.71	23	PASS
		total	5230	15.36	7.47	22.83	23	PASS
	11AC20MIMO	Ant1	5180	12.54	4.07	16.61	23	PASS
		Ant2	5180	12.32	4.47	16.79	23	PASS
		total	5180	15.44	7.47	22.91	23	PASS
		Ant1	5240	12.19	4.07	16.26	23	PASS
		Ant2	5240	12.37	4.47	16.84	23	PASS
		total	5240	15.29	7.47	22.76	23	PASS
	11AC40MIMO	Ant1	5190	12.41	4.07	16.48	23	PASS
		Ant2	5190	12.26	4.47	16.73	23	PASS
		total	5190	15.35	7.47	22.82	23	PASS
		Ant1	5230	12.49	4.07	16.56	23	PASS
		Ant2	5230	12.25	4.47	16.72	23	PASS
		total	5230	15.38	7.47	22.85	23	PASS
	11AC80MIMO	Ant1	5210	12.35	4.07	16.42	23	PASS
		Ant2	5210	12.51	4.47	16.98	23	PASS
		total	5210	15.44	7.47	22.91	23	PASS
HTNV	11N20MIMO	Ant1	5180	12.40	4.07	16.47	23	PASS
		Ant2	5180	12.31	4.47	16.78	23	PASS
		total	5180	15.36	7.47	22.83	23	PASS
		Ant1	5240	12.37	4.07	16.44	23	PASS
		Ant2	5240	12.30	4.47	16.77	23	PASS
		total	5240	15.34	7.47	22.81	23	PASS
	11N40MIMO	Ant1	5190	12.43	4.07	16.50	23	PASS

		Ant2	5190	12.28	4.47	16.75	23	PASS
		total	5190	15.35	7.47	22.82	23	PASS
		Ant1	5230	12.45	4.07	16.52	23	PASS
		Ant2	5230	12.20	4.47	16.67	23	PASS
	11AC20MIMO	total	5230	15.33	7.47	22.80	23	PASS
		Ant1	5180	12.51	4.07	16.58	23	PASS
		Ant2	5180	12.30	4.47	16.77	23	PASS
		total	5180	15.41	7.47	22.88	23	PASS
		Ant1	5240	12.15	4.07	16.22	23	PASS
		Ant2	5240	12.35	4.47	16.82	23	PASS
		total	5240	15.26	7.47	22.73	23	PASS
	11AC40MIMO	Ant1	5190	12.38	4.07	16.45	23	PASS
		Ant2	5190	12.24	4.47	16.71	23	PASS
		total	5190	15.33	7.47	22.80	23	PASS
		Ant1	5230	12.45	4.07	16.52	23	PASS
		Ant2	5230	12.23	4.47	16.70	23	PASS
		total	5230	15.35	7.47	22.82	23	PASS
	11AC80MIMO	Ant1	5210	12.33	4.07	16.40	23	PASS
		Ant2	5210	12.48	4.47	16.95	23	PASS
		total	5210	15.41	7.47	22.88	23	PASS

Note: The duty cycle factor was added into the result.

### Appendix C: Power Spectral Density Test Result

Test Mode	Antenna	Freq(MHz)	Result [dBm/MHz]	DC Factor [dB]	PD [dBm/MHz]	Gain [dBi]	EIRP PSD [dBm/MHz]	Limit [dBm]	Verdict
11A	Ant1	5180	5.84	0	5.84	4.07	9.91	10	PASS
	Ant2	5180	5.37	0	5.37	4.47	9.84	10	PASS
	Ant1	5240	5.56	0	5.56	4.07	9.63	10	PASS
	Ant2	5240	5.47	0	5.47	4.47	9.94	10	PASS
11N20MIMO	Ant1	5180	2.04	0	2.04	4.07	6.11	10	PASS
	Ant2	5180	2.21	0	2.21	4.47	6.68	10	PASS
	total	5180	---	---	5.14	4.47	9.61	10	PASS
	Ant1	5240	2.04	0	2.04	4.07	6.11	10	PASS
	Ant2	5240	2.86	0	2.86	4.47	7.33	10	PASS
	total	5240	---	---	5.48	4.47	9.95	10	PASS
11N40MIMO	Ant1	5190	-0.38	0	-0.38	4.07	3.69	10	PASS
	Ant2	5190	-0.58	0	-0.58	4.47	3.89	10	PASS
	total	5190	---	---	2.53	4.47	7.00	10	PASS
	Ant1	5230	0.09	0	0.09	4.07	4.16	10	PASS
	Ant2	5230	-0.26	0	-0.26	4.47	4.21	10	PASS
	total	5230	---	---	2.93	4.47	7.40	10	PASS
11AC20MIMO	Ant1	5180	2.25	0	2.25	4.07	6.32	10	PASS
	Ant2	5180	2.52	0	2.52	4.47	6.99	10	PASS
	total	5180	---	---	5.40	4.47	9.87	10	PASS
	Ant1	5240	2.13	0	2.13	4.07	6.20	10	PASS
	Ant2	5240	1.85	0	1.85	4.47	6.32	10	PASS
	total	5240	---	---	5.00	4.47	9.47	10	PASS
11AC40MIMO	Ant1	5190	-0.25	0	-0.25	4.07	3.82	10	PASS
	Ant2	5190	-0.77	0	-0.77	4.47	3.70	10	PASS
	total	5190	---	---	2.51	4.47	6.98	10	PASS
	Ant1	5230	-0.01	0	-0.01	4.07	4.06	10	PASS
	Ant2	5230	-0.31	0	-0.31	4.47	4.16	10	PASS
	total	5230	---	---	2.85	4.47	7.32	10	PASS
11AC80MIMO	Ant1	5210	-3.77	0	-3.77	4.07	0.30	10	PASS
	Ant2	5210	-3.66	0	-3.66	4.47	0.81	10	PASS
	total	5210	---	---	-0.70	4.47	3.77	10	PASS

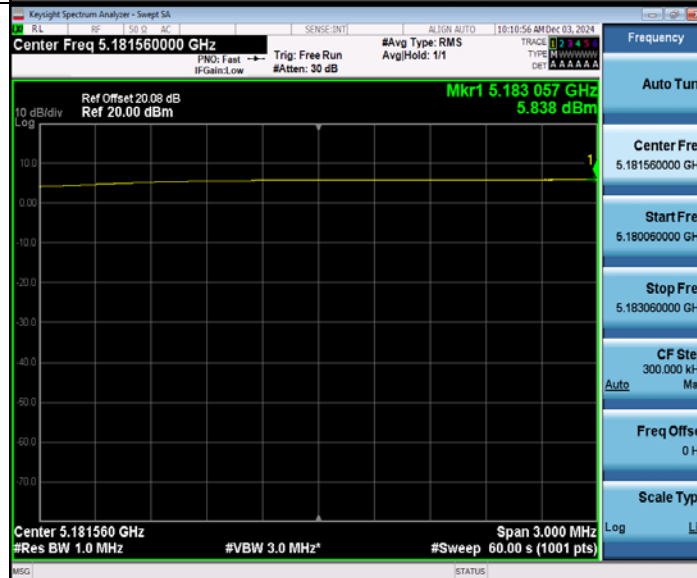
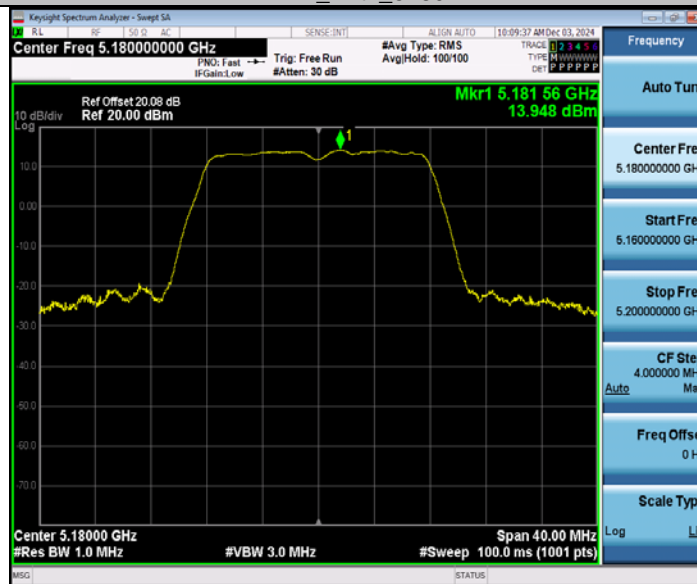


**Beamforming**

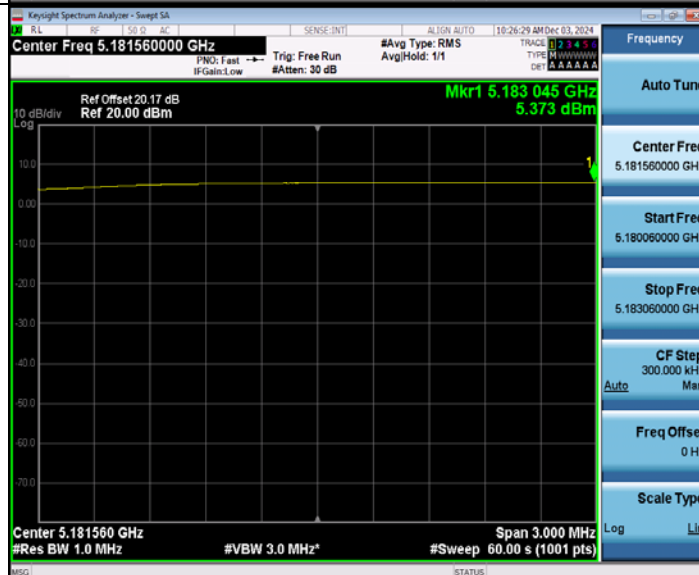
Test Mode	Antenna	Freq(MHz)	Result [dBm/MHz]	DC Factor [dB]	PD [dBm/MHz]	Gain [dBi]	EIRP PSD [dBm/MHz]	Limit [dBm]	Verdict
11N20MIMO	Ant1	5180	-0.83	0.00	-0.83	4.07	3.24	10	PASS
	Ant2	5180	-0.69	0.00	-0.69	4.47	3.78	10	PASS
	total	5180	---	---	2.25	7.47	9.72	10	PASS
	Ant1	5240	-0.73	0.00	-0.73	4.07	3.34	10	PASS
	Ant2	5240	-0.92	0.00	-0.92	4.47	3.55	10	PASS
	total	5240	---	---	2.19	7.47	9.66	10	PASS
11N40MIMO	Ant1	5190	-3.30	0.00	-3.30	4.07	0.77	10	PASS
	Ant2	5190	-3.71	0.00	-3.71	4.47	0.76	10	PASS
	total	5190	---	---	-0.49	7.47	6.98	10	PASS
	Ant1	5230	-2.89	0.00	-2.89	4.07	1.18	10	PASS
	Ant2	5230	-3.44	0.00	-3.44	4.47	1.03	10	PASS
	total	5230	---	---	-0.15	7.47	7.32	10	PASS
11AC20MIMO	Ant1	5180	-0.52	0.00	-0.52	4.07	3.55	10	PASS
	Ant2	5180	-0.55	0.00	-0.55	4.47	3.92	10	PASS
	total	5180	---	---	2.48	7.47	9.95	10	PASS
	Ant1	5240	-0.80	0.00	-0.80	4.07	3.27	10	PASS
	Ant2	5240	-0.60	0.00	-0.60	4.47	3.87	10	PASS
	total	5240	---	---	2.31	7.47	9.78	10	PASS
11AC40MIMO	Ant1	5190	-3.06	0.00	-3.06	4.07	1.01	10	PASS
	Ant2	5190	-3.59	0.00	-3.59	4.47	0.88	10	PASS
	total	5190	---	---	-0.31	7.47	7.16	10	PASS
	Ant1	5230	-2.31	0.00	-2.31	4.07	1.76	10	PASS
	Ant2	5230	-2.79	0.00	-2.79	4.47	1.68	10	PASS
	total	5230	---	---	0.47	7.47	7.94	10	PASS
11AC80MIMO	Ant1	5210	-6.16	0.00	-6.16	4.07	-2.09	10	PASS
	Ant2	5210	-6.66	0.00	-6.66	4.47	-2.19	10	PASS
	total	5210	---	---	-3.39	7.47	4.08	10	PASS

## Test Graphs

11A\_Ant1\_5180

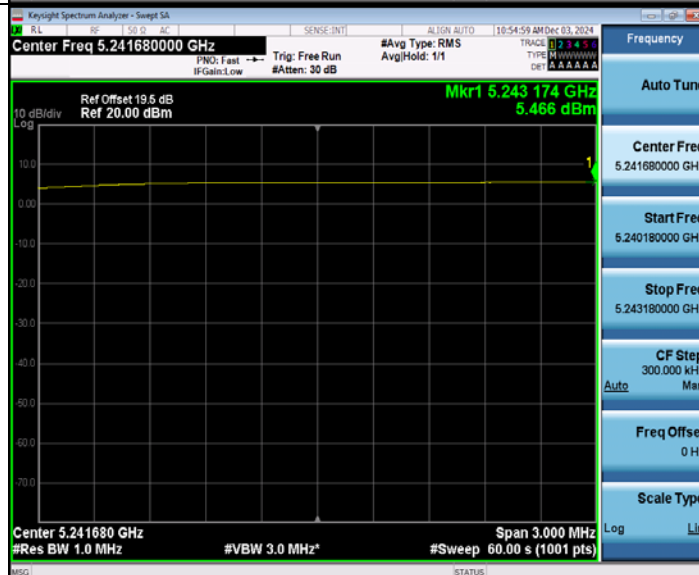
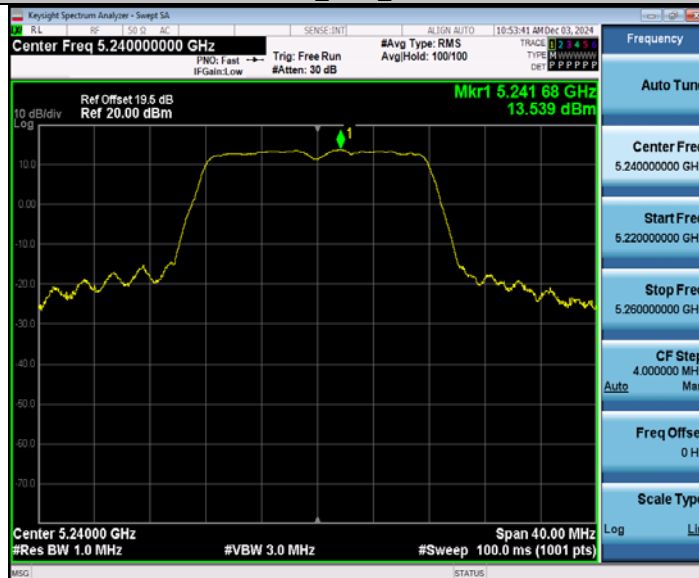


## 11A\_Ant2\_5180





## 11A\_Ant2\_5240

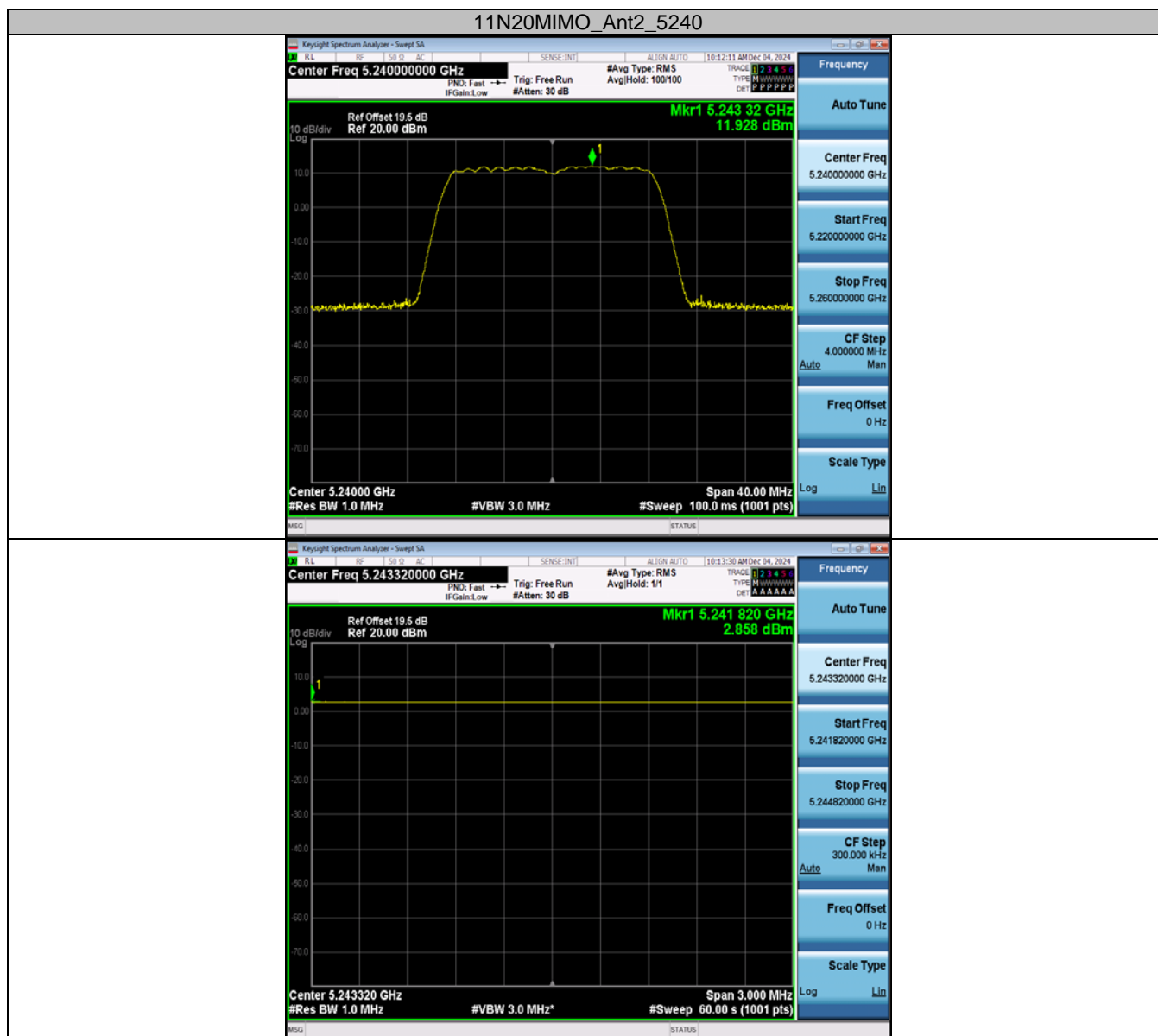














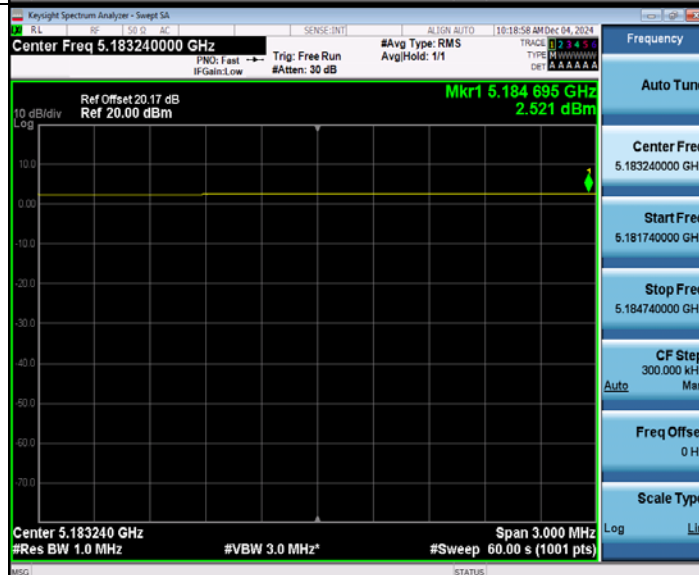






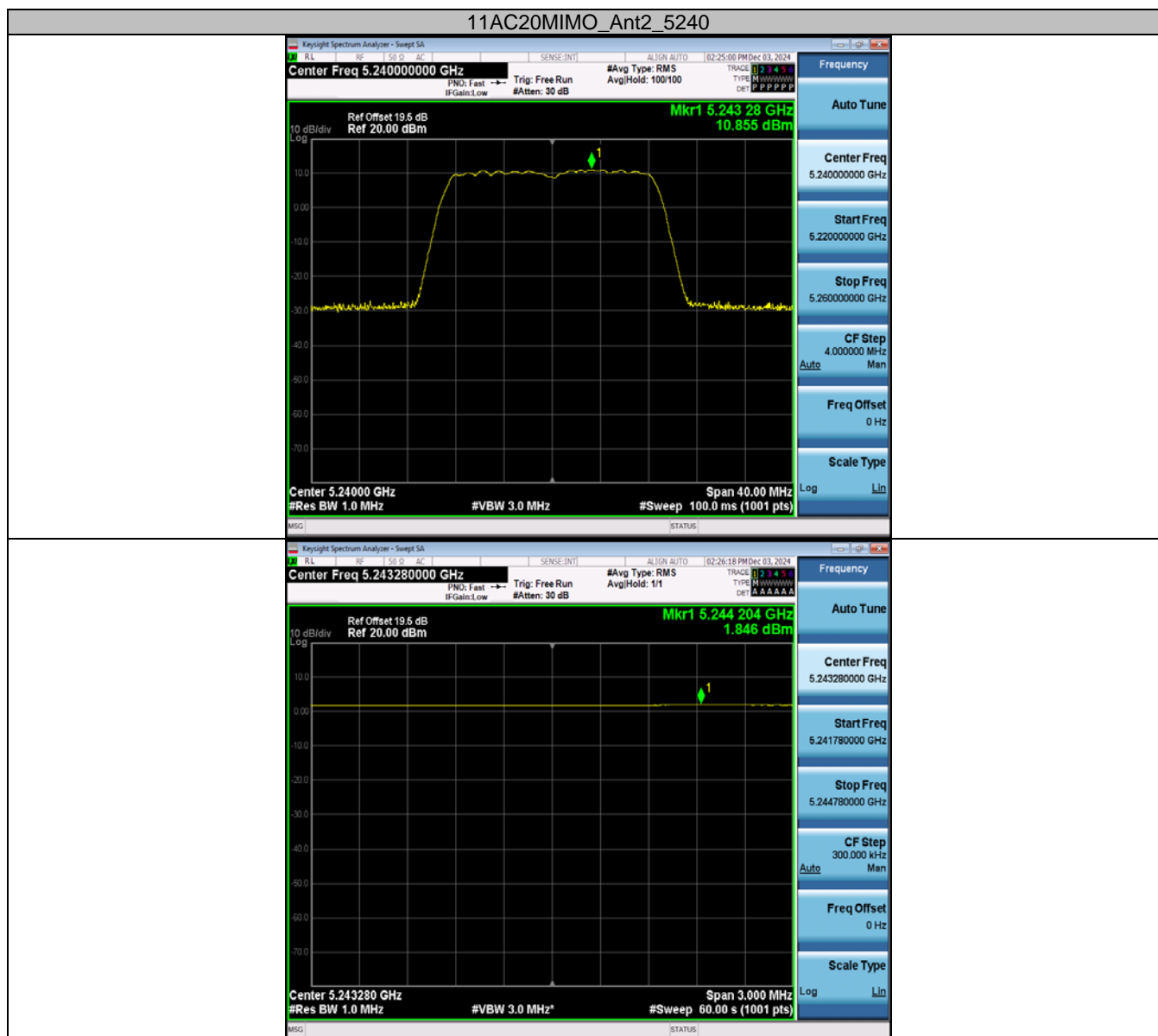


## 11AC20MIMO\_Ant2\_5180







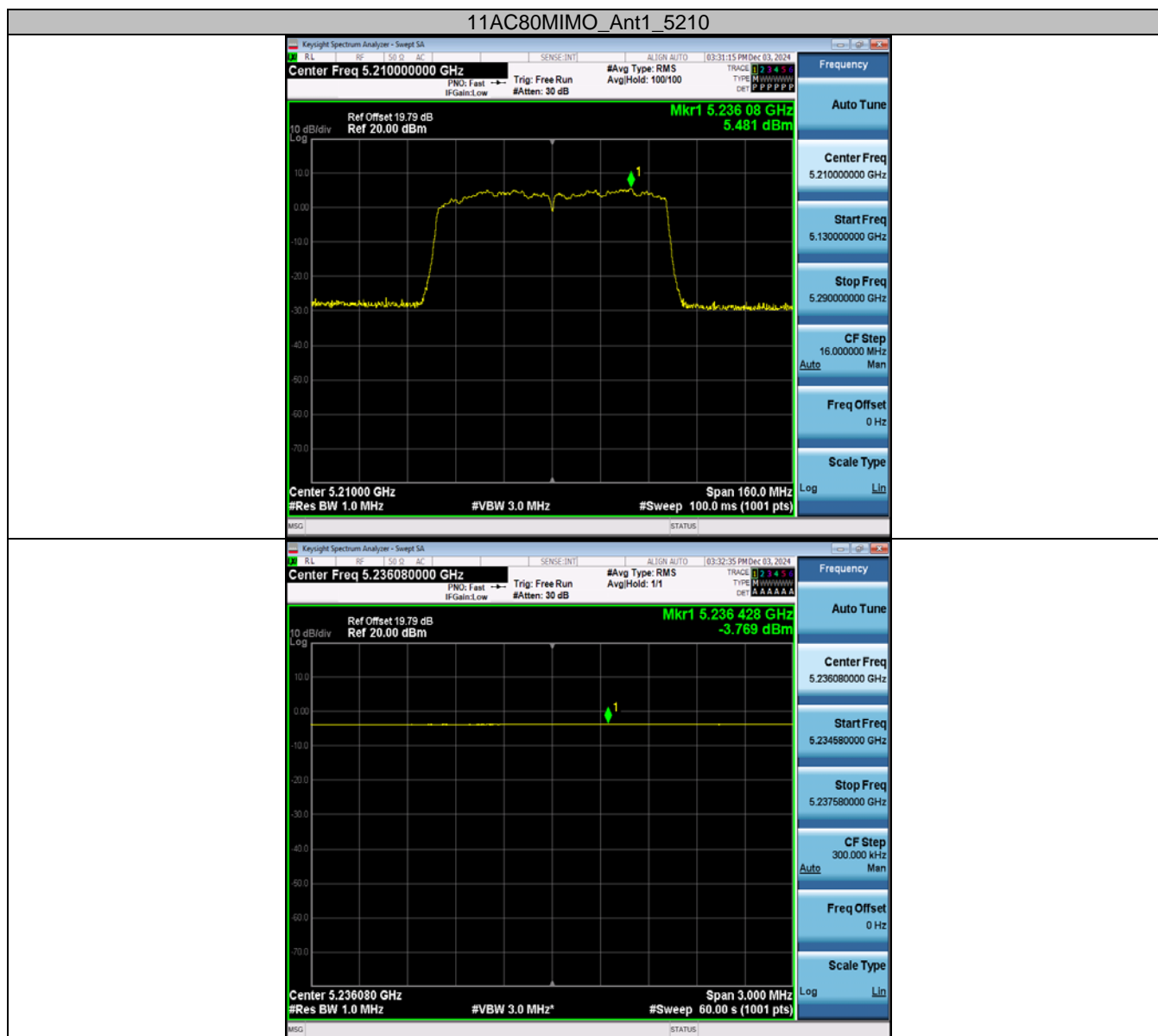












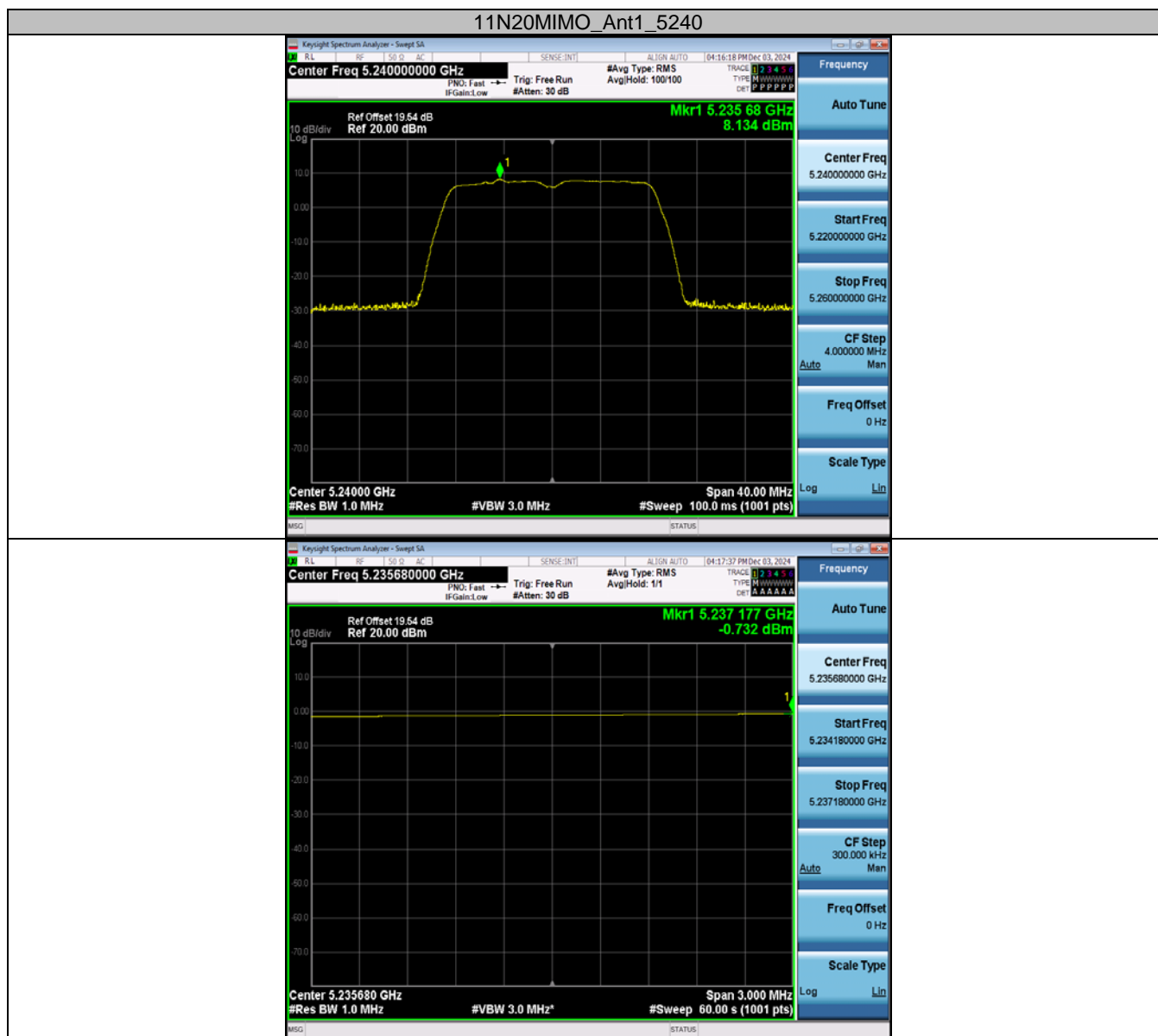


## Beamforming









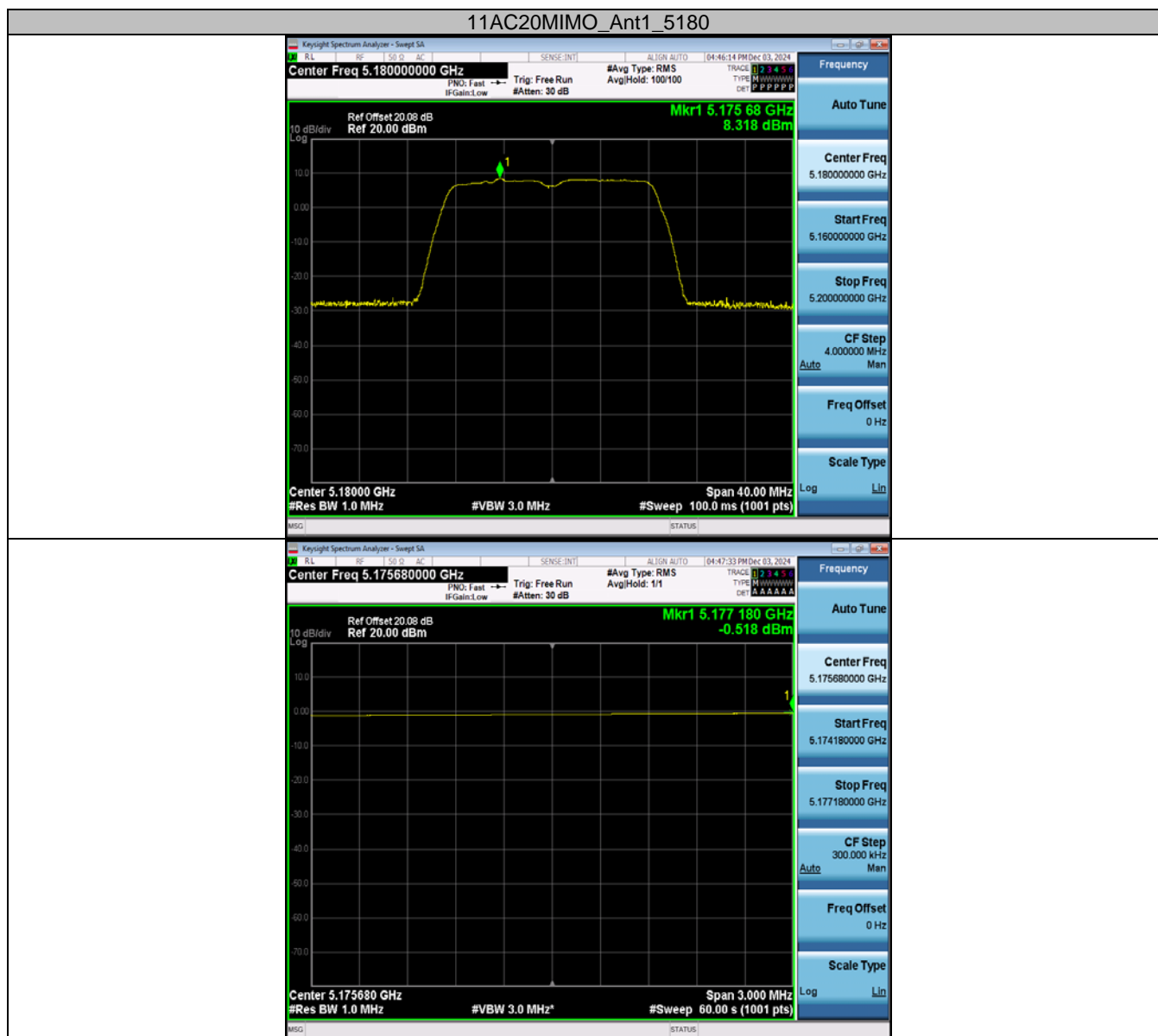






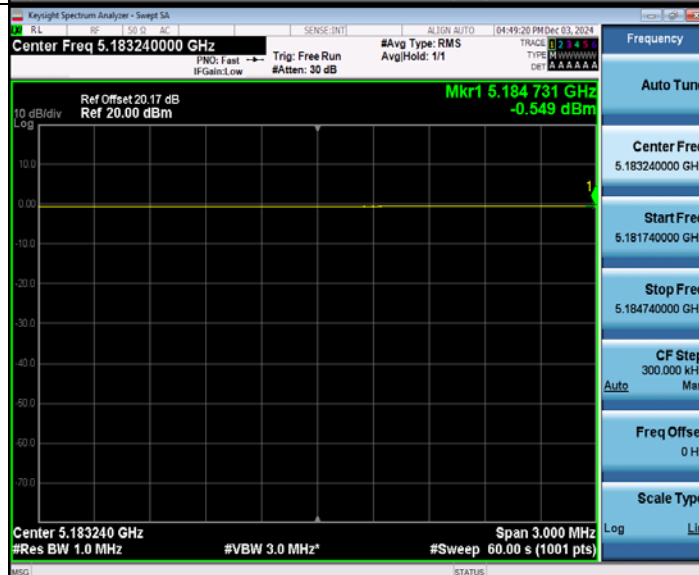
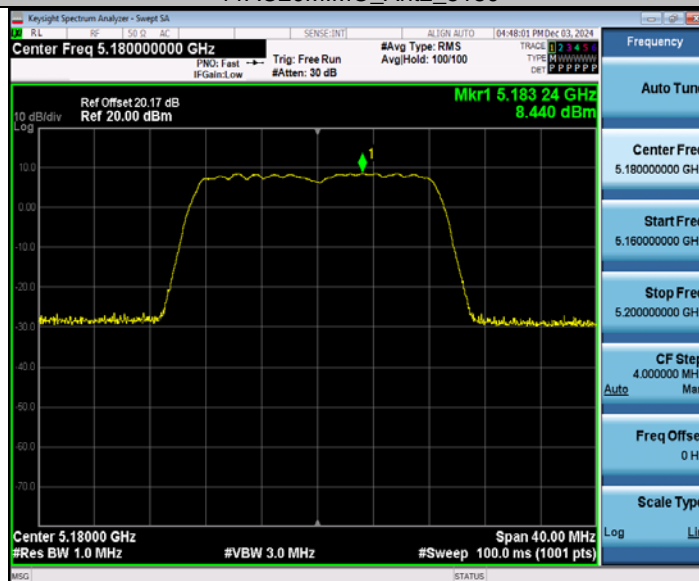








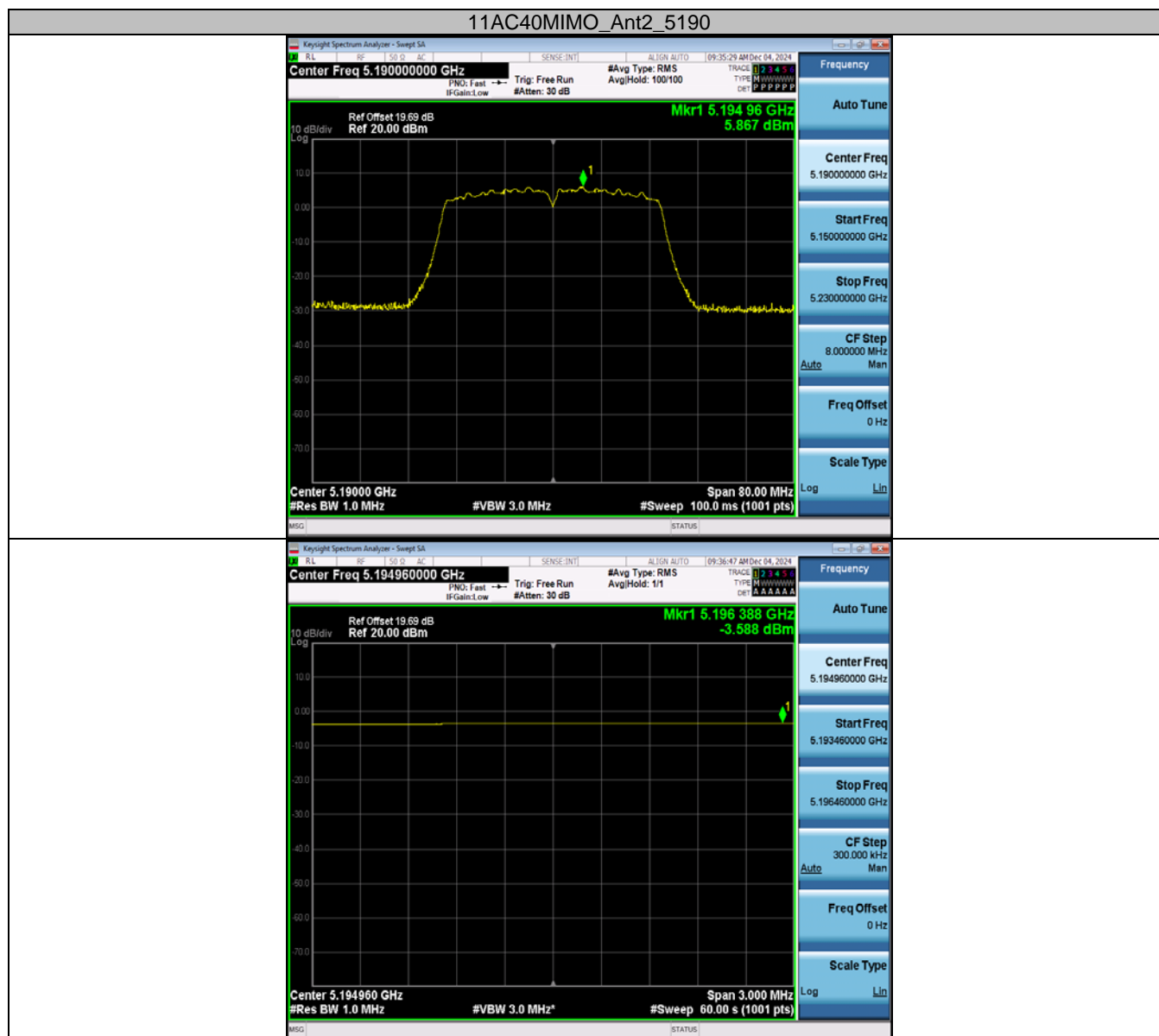
## 11AC20MIMO\_Ant2\_5180





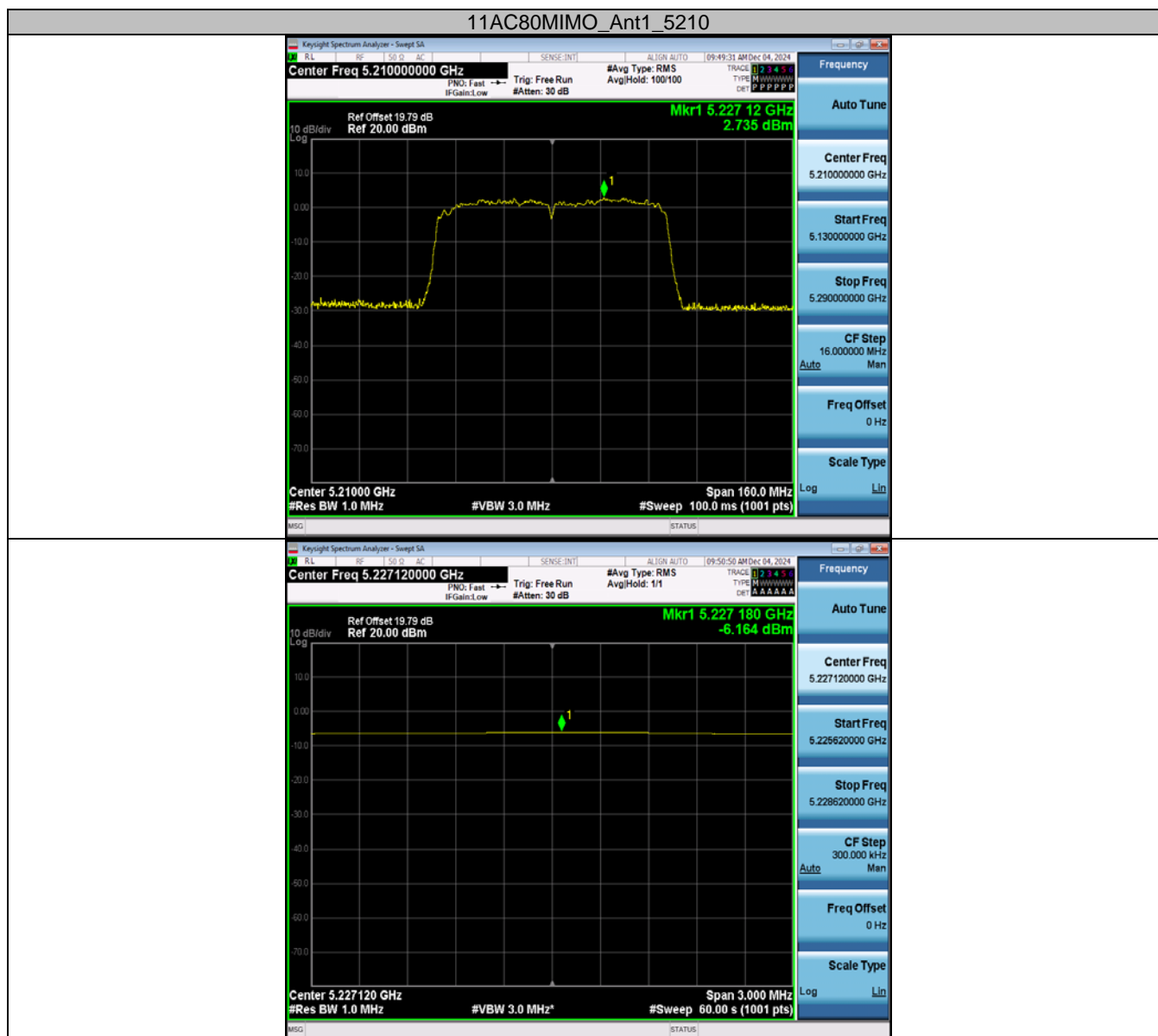














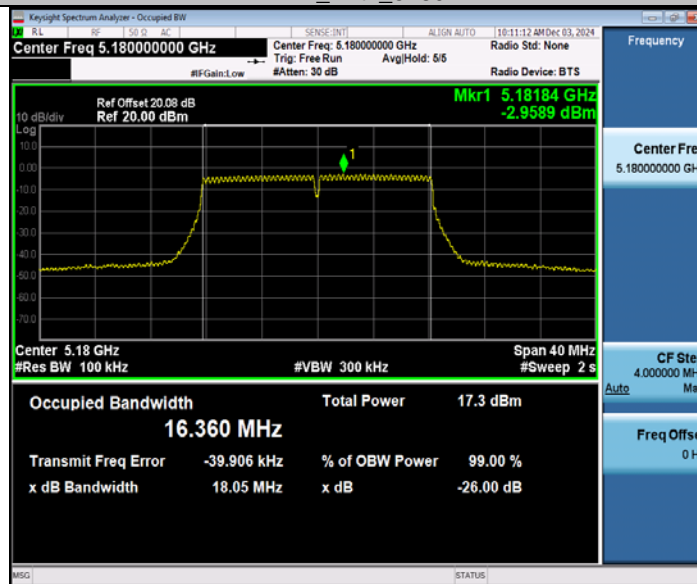


## Appendix D: Occupied Channel Bandwidth Test Result

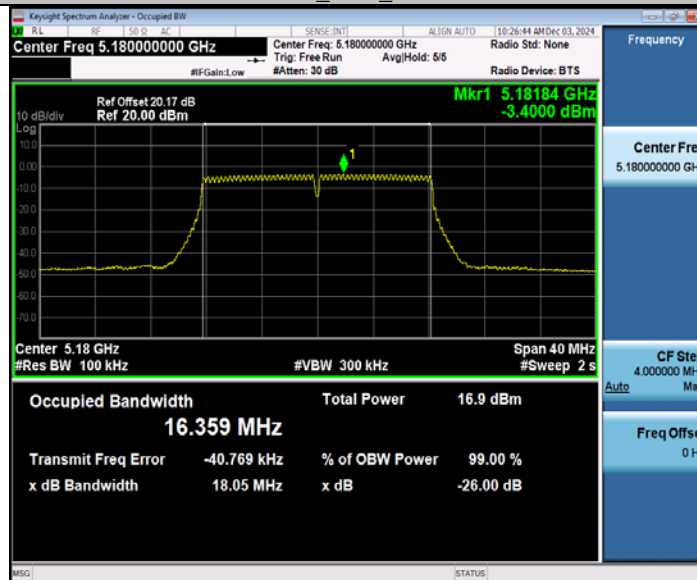
Test Mode	Antenna	Freq(MHz)	OCB[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	16.360	16 to 20	PASS
	Ant2	5180	16.359	16 to 20	PASS
	Ant1	5240	16.354	16 to 20	PASS
	Ant2	5240	16.355	16 to 20	PASS
11N20MIMO	Ant1	5180	17.587	16 to 20	PASS
	Ant2	5180	17.586	16 to 20	PASS
	Ant1	5240	17.580	16 to 20	PASS
	Ant2	5240	17.581	16 to 20	PASS
11N40MIMO	Ant1	5190	35.991	32 to 40	PASS
	Ant2	5190	36.002	32 to 40	PASS
	Ant1	5230	36.060	32 to 40	PASS
	Ant2	5230	36.074	32 to 40	PASS
11AC20MIMO	Ant1	5180	17.586	16 to 20	PASS
	Ant2	5180	17.586	16 to 20	PASS
	Ant1	5240	17.580	16 to 20	PASS
	Ant2	5240	17.582	16 to 20	PASS
11AC40MIMO	Ant1	5190	35.990	32 to 40	PASS
	Ant2	5190	36.001	32 to 40	PASS
	Ant1	5230	36.063	32 to 40	PASS
	Ant2	5230	36.074	32 to 40	PASS
11AC80MIMO	Ant1	5210	75.143	64 to 80	PASS
	Ant2	5210	75.188	64 to 80	PASS

# Test Graphs

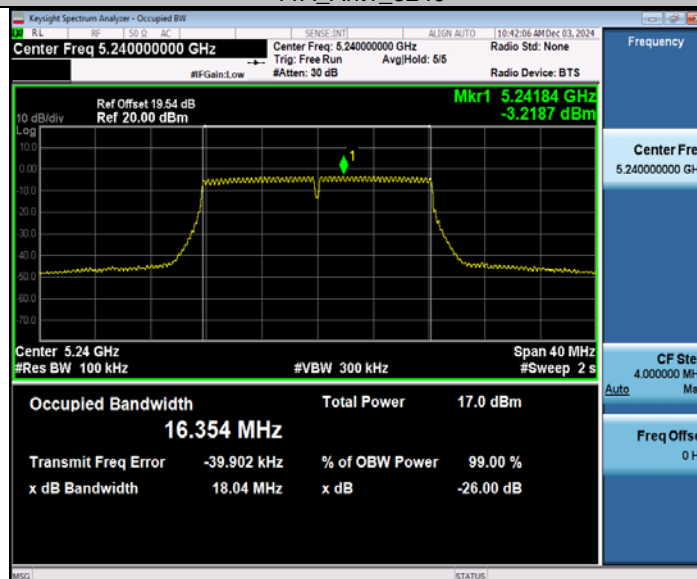
11A\_Ant1\_5180



11A\_Ant2\_5180



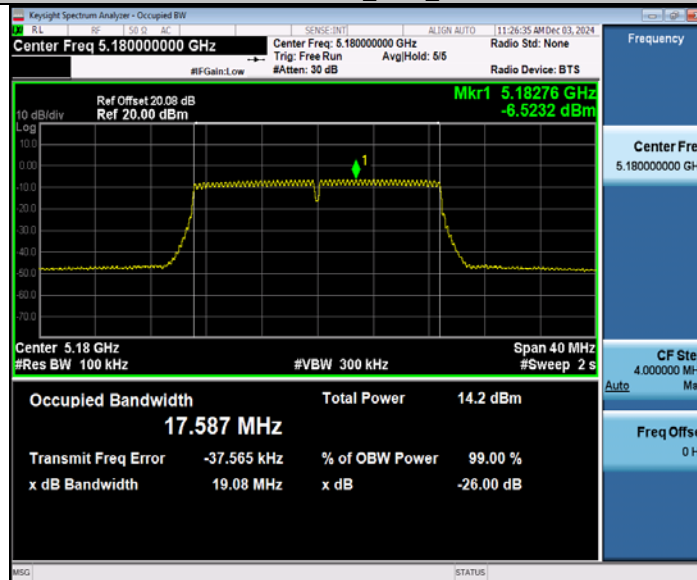
11A\_Ant1\_5240



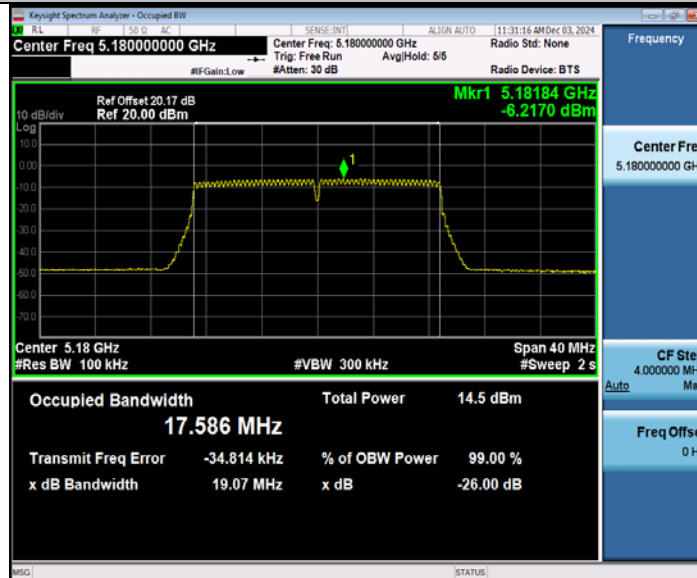
### 11A\_Ant2\_5240



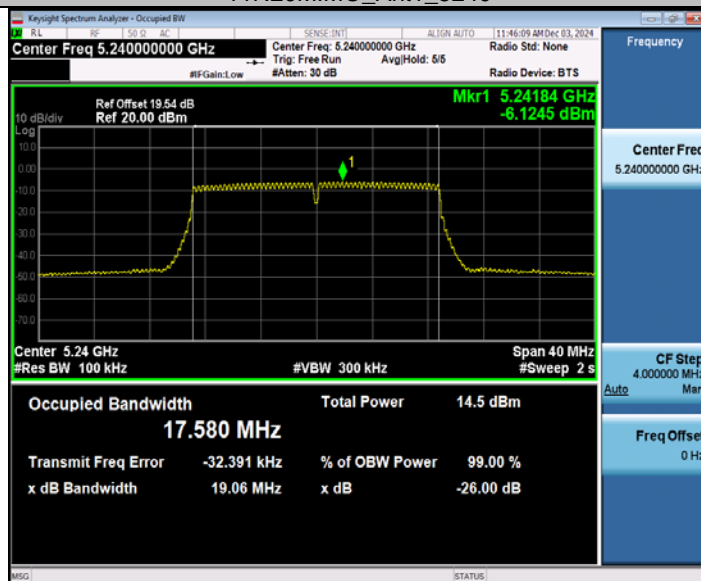
### 11N20MIMO\_Ant1\_5180



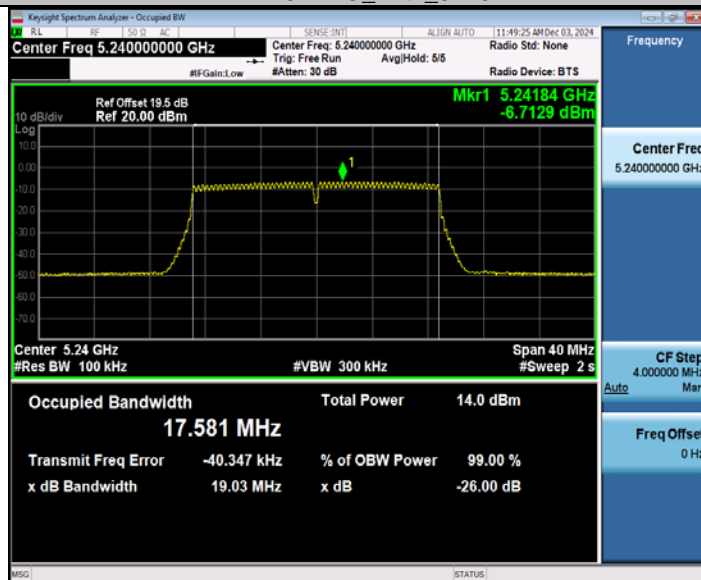
### 11N20MIMO\_Ant2\_5180



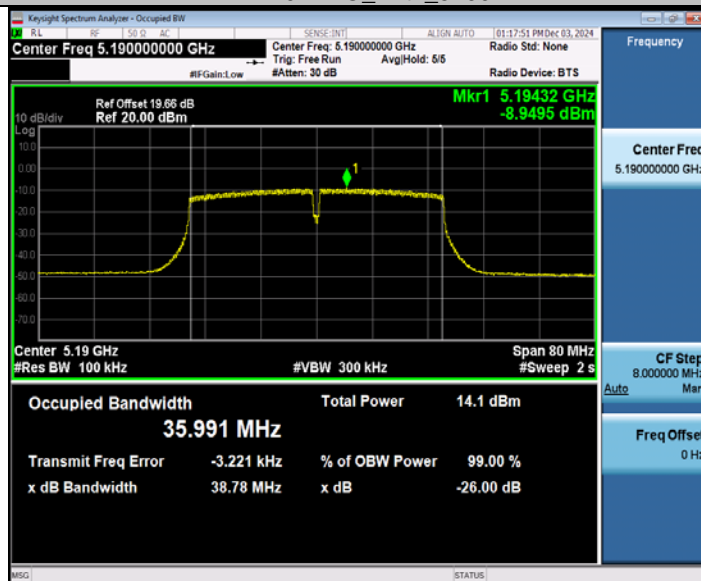
## 11N20MIMO\_Ant1\_5240

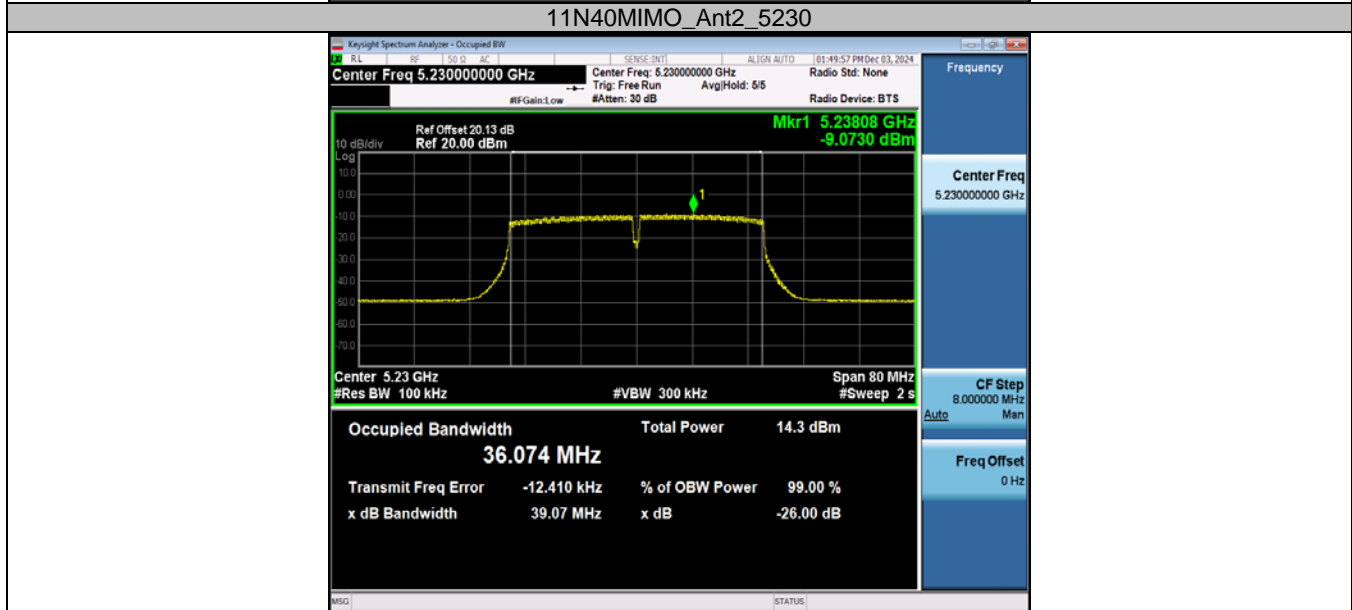
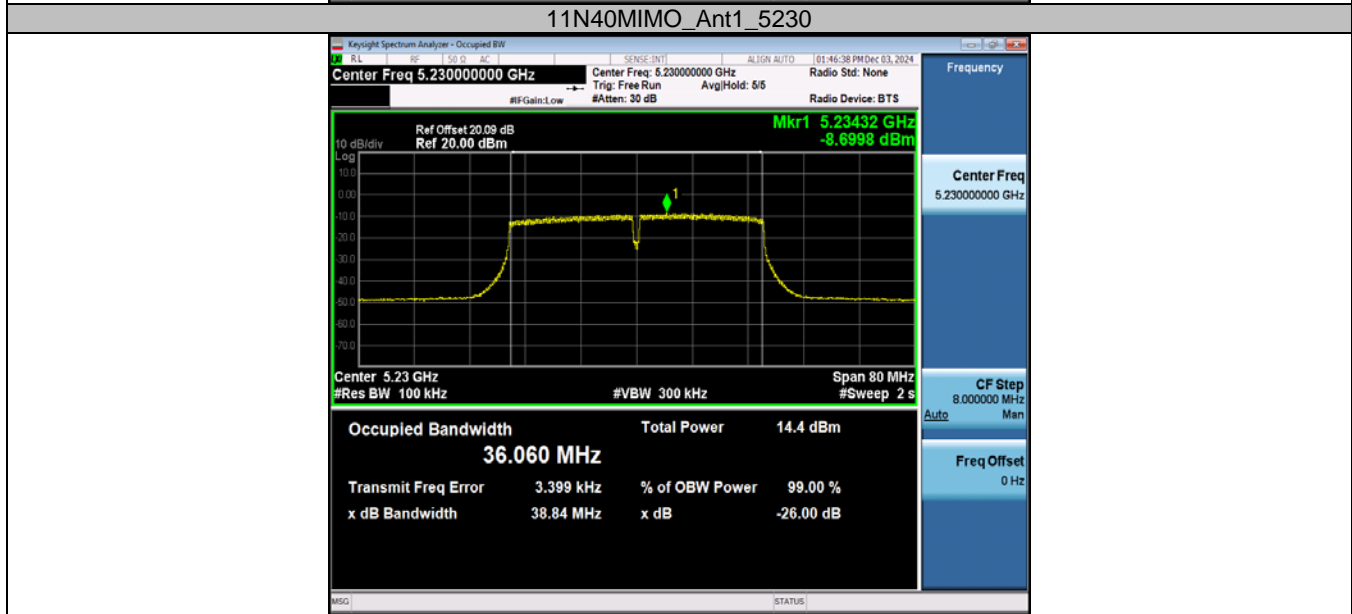
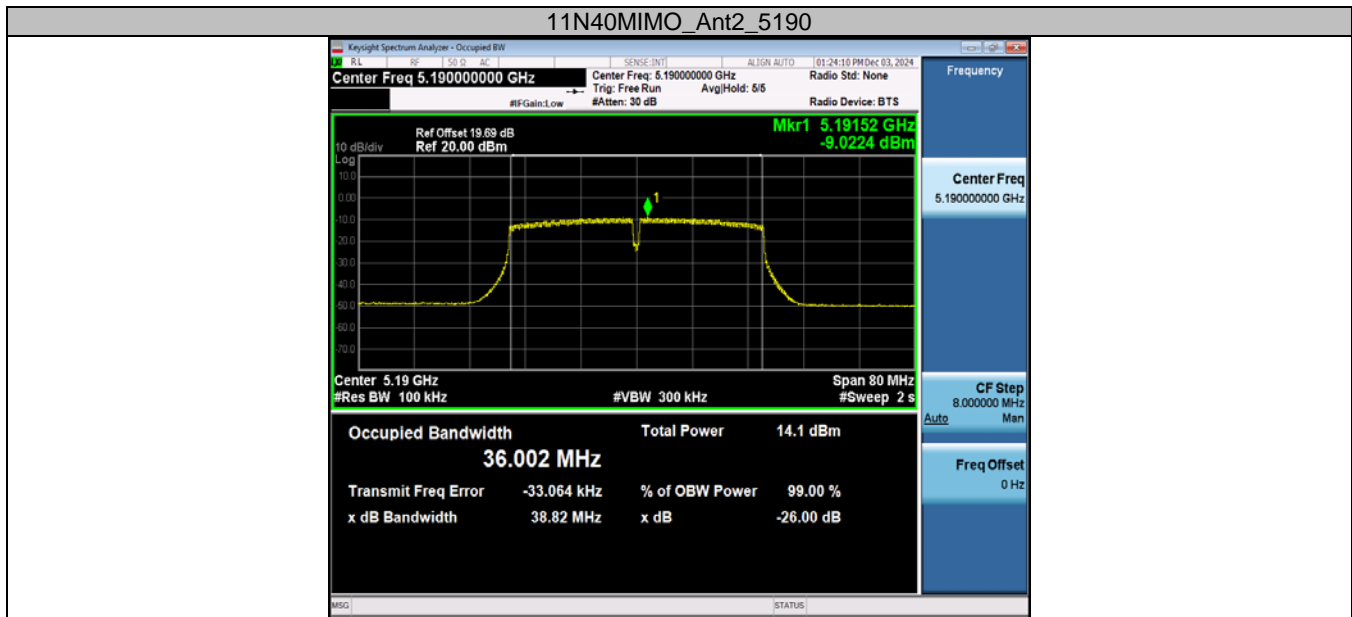


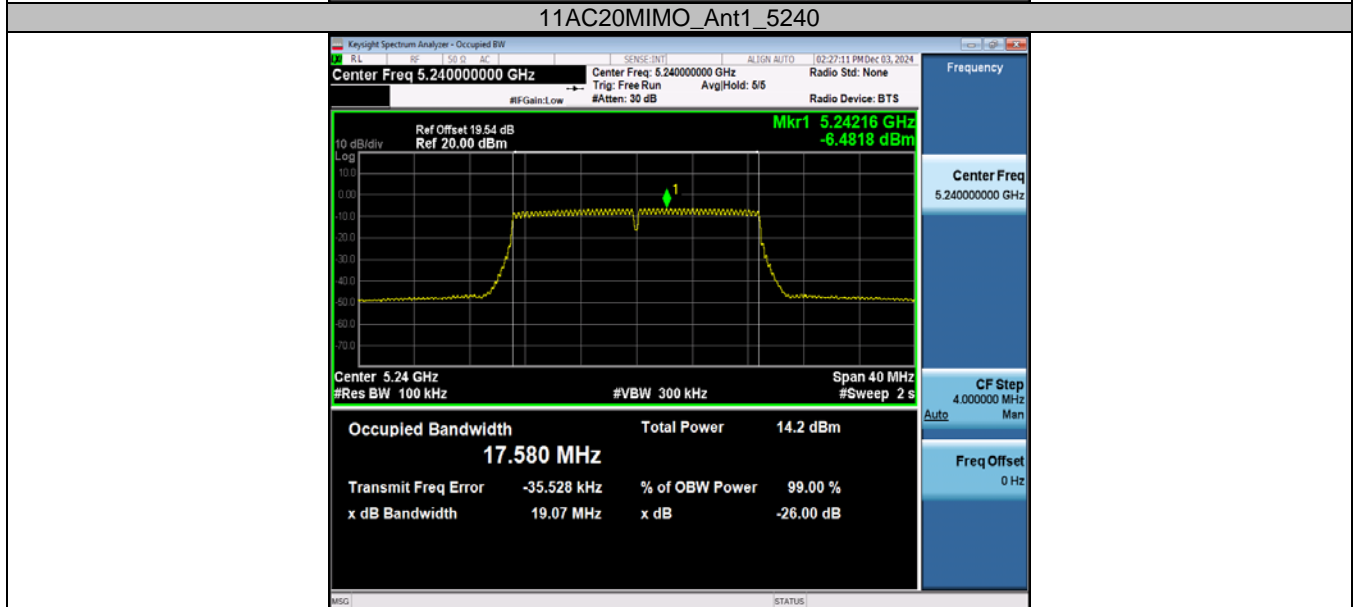
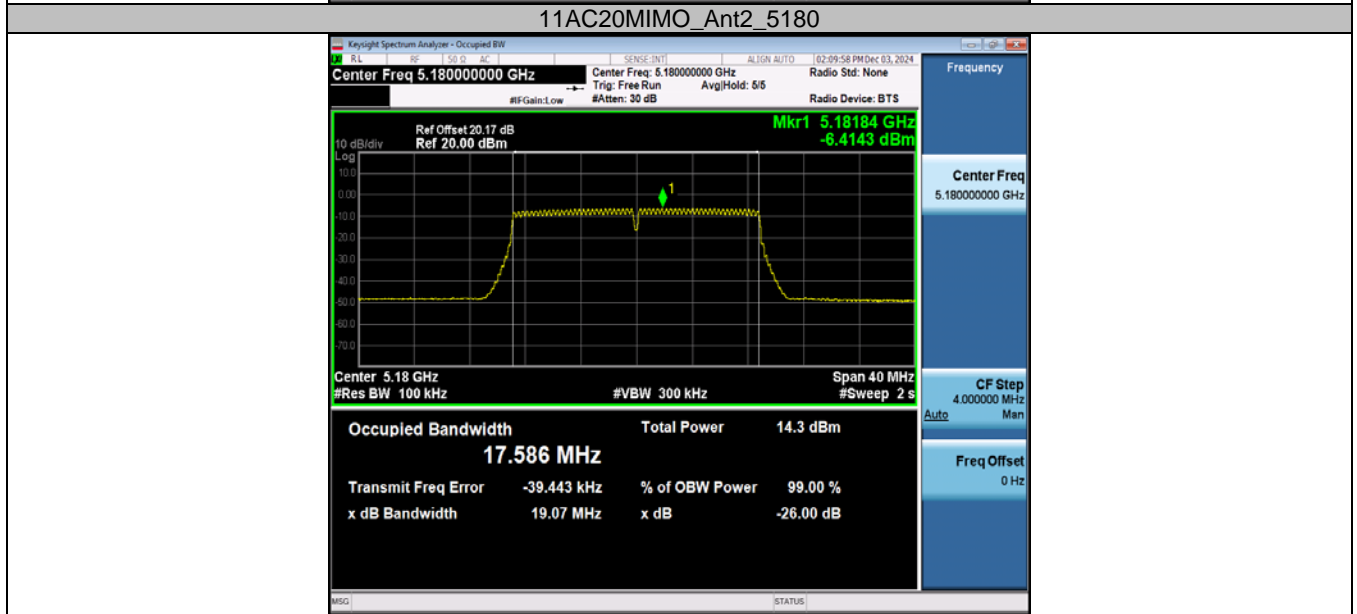
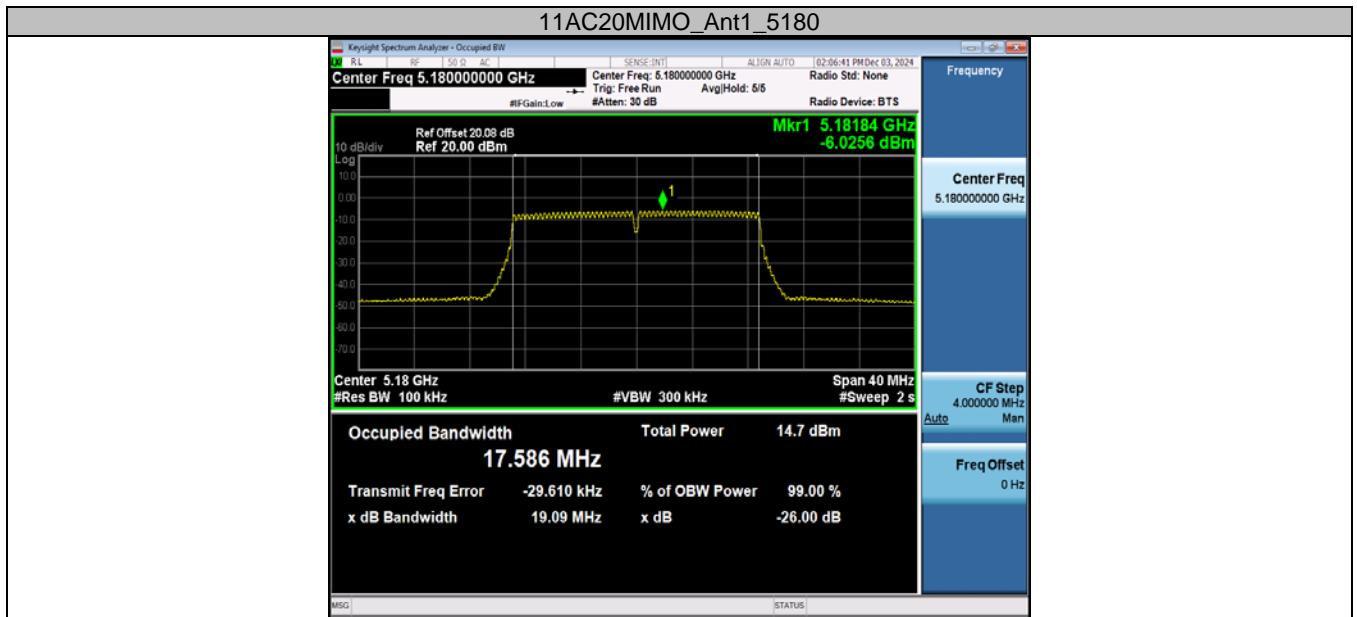
## 11N20MIMO\_Ant2\_5240



## 11N40MIMO\_Ant1\_5190

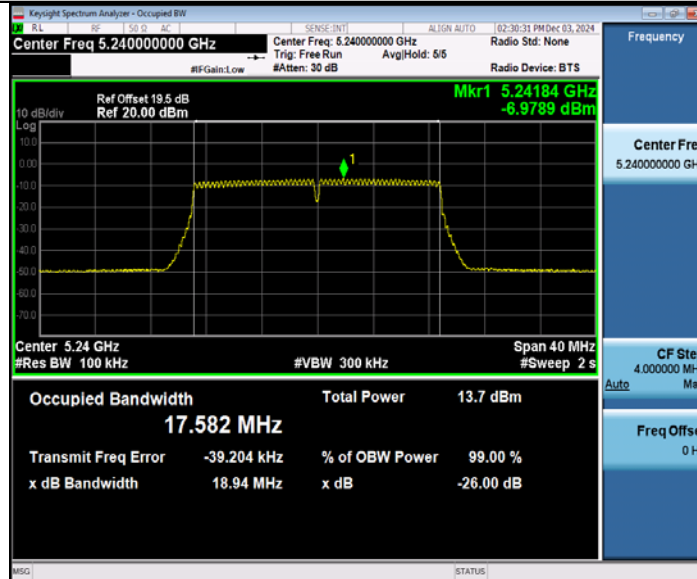




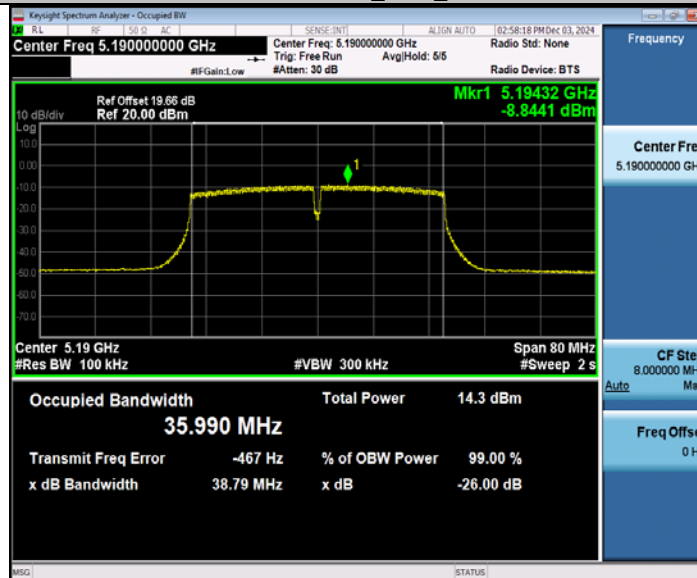




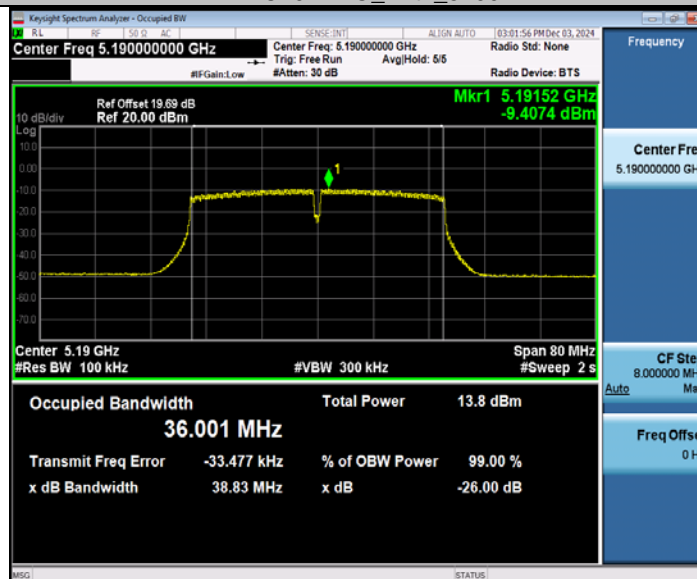
### 11AC20MIMO\_Ant2\_5240



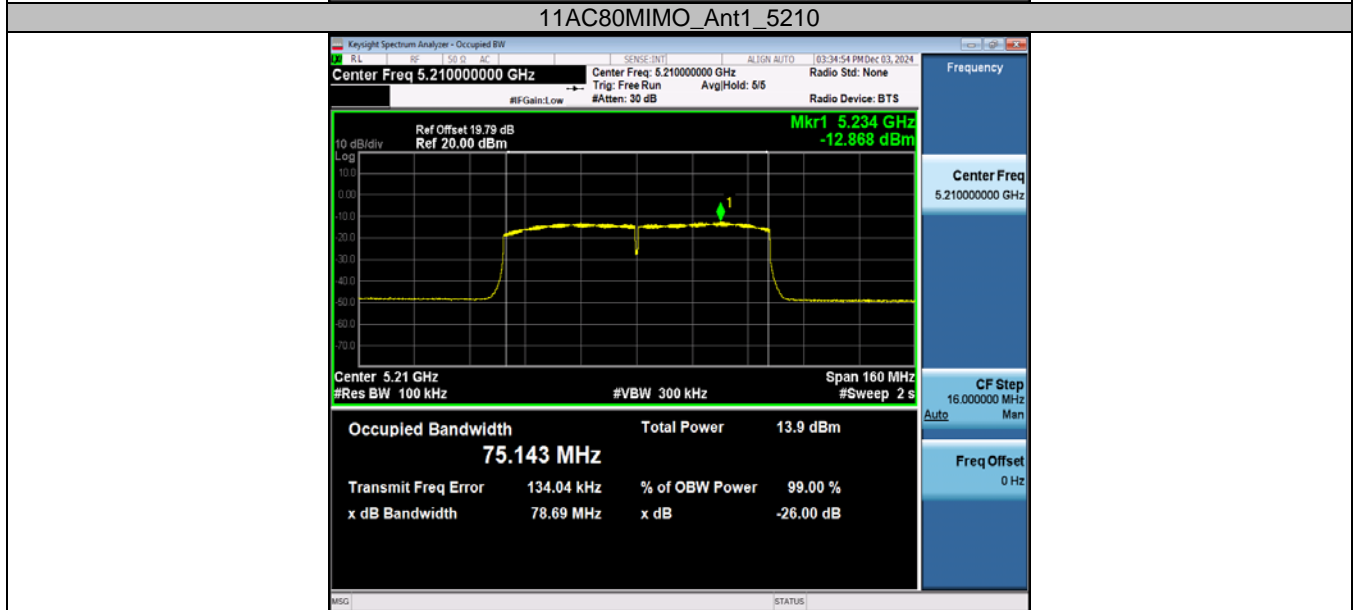
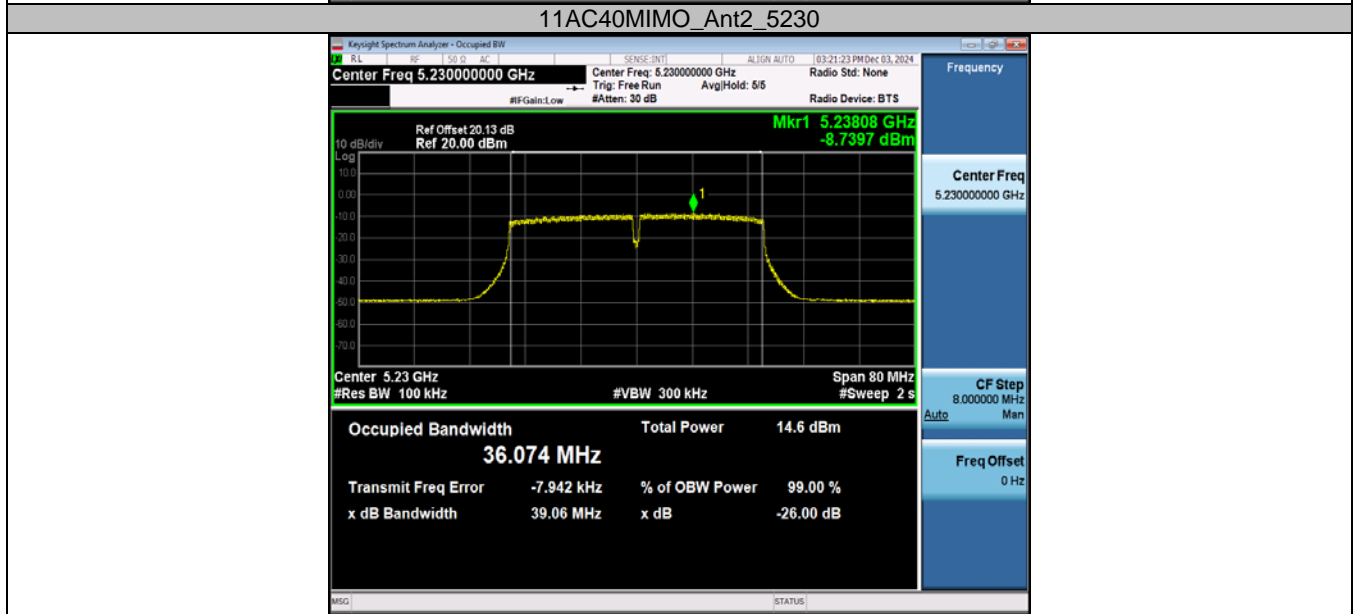
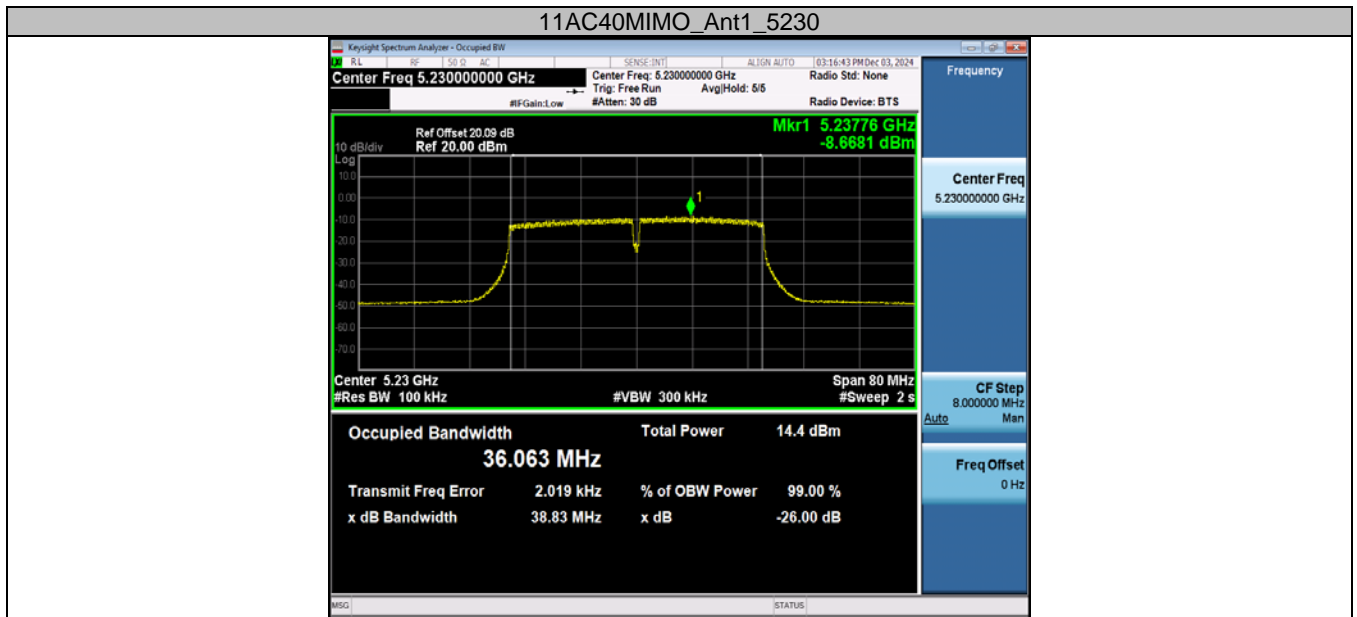
### 11AC40MIMO\_Ant1\_5190

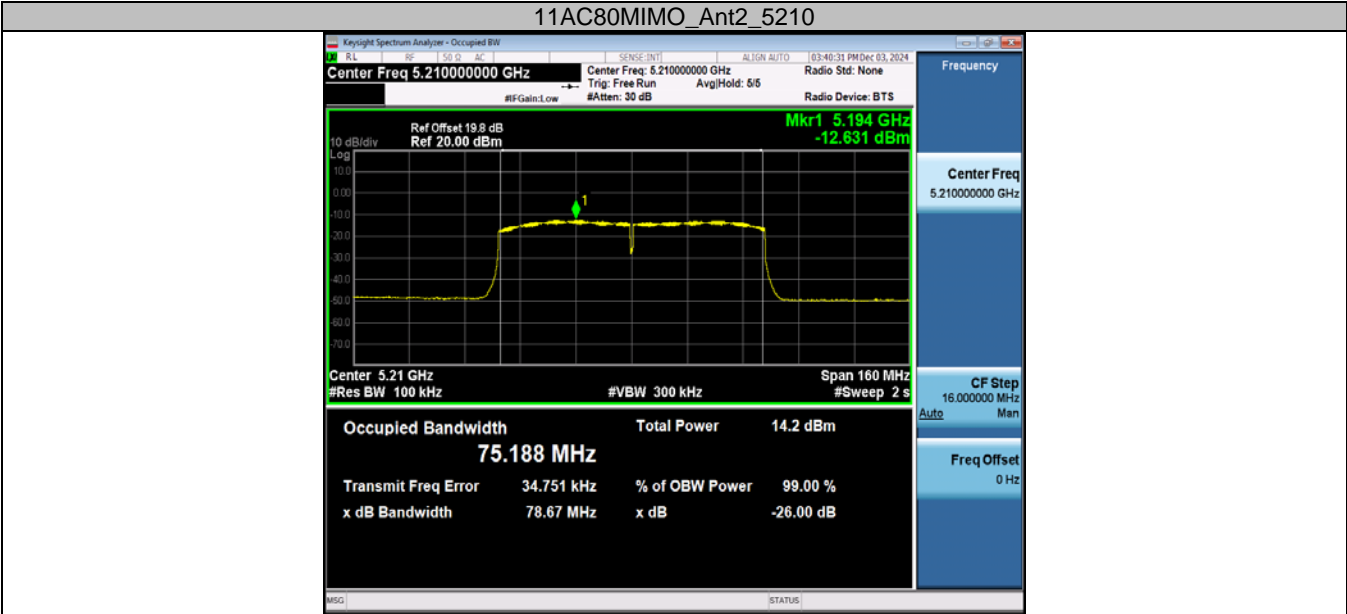


### 11AC40MIMO\_Ant2\_5190









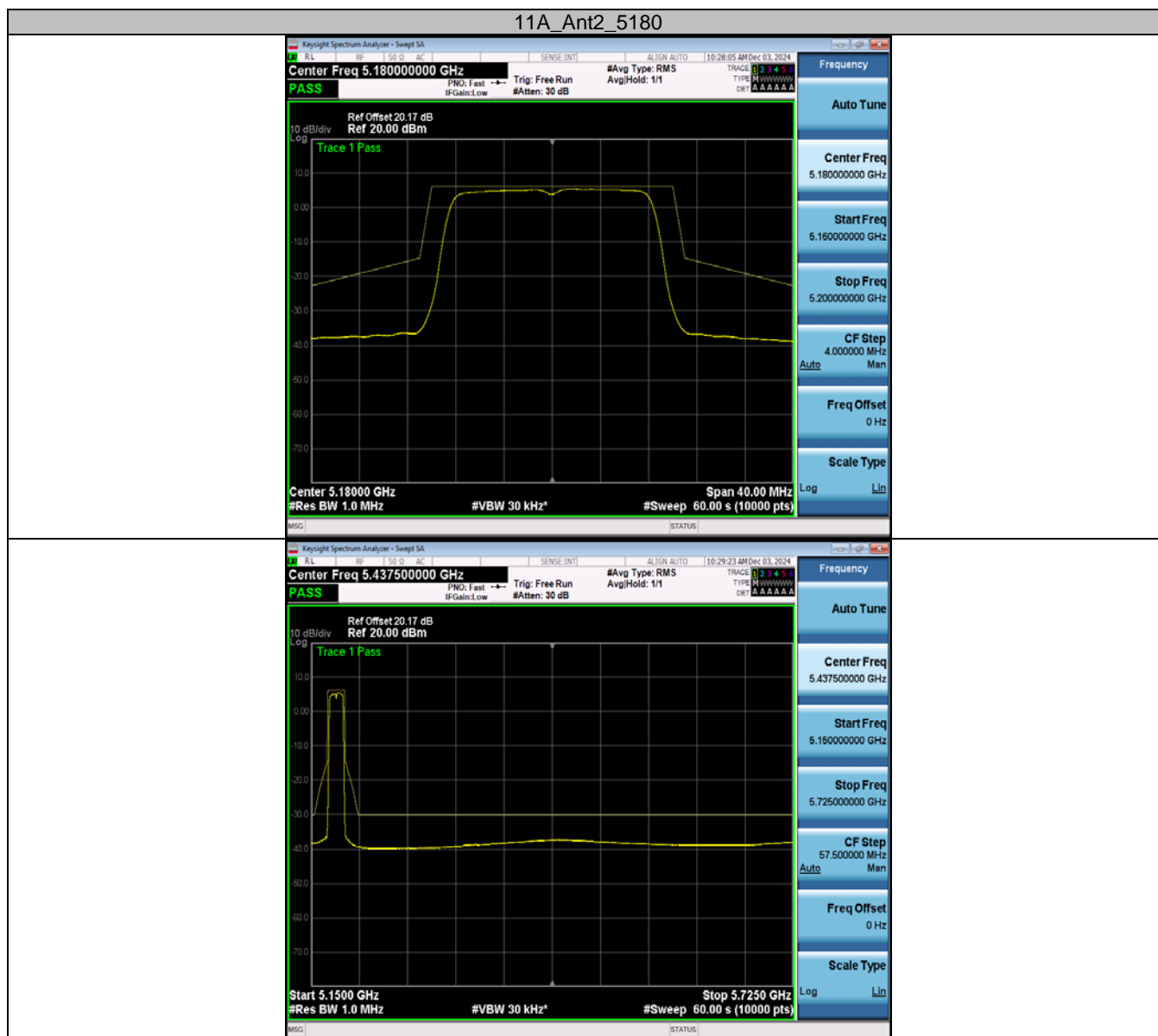
**Appendix E: Transmitter unwanted emissions within the 5 GHz RLAN bands****Test Result**

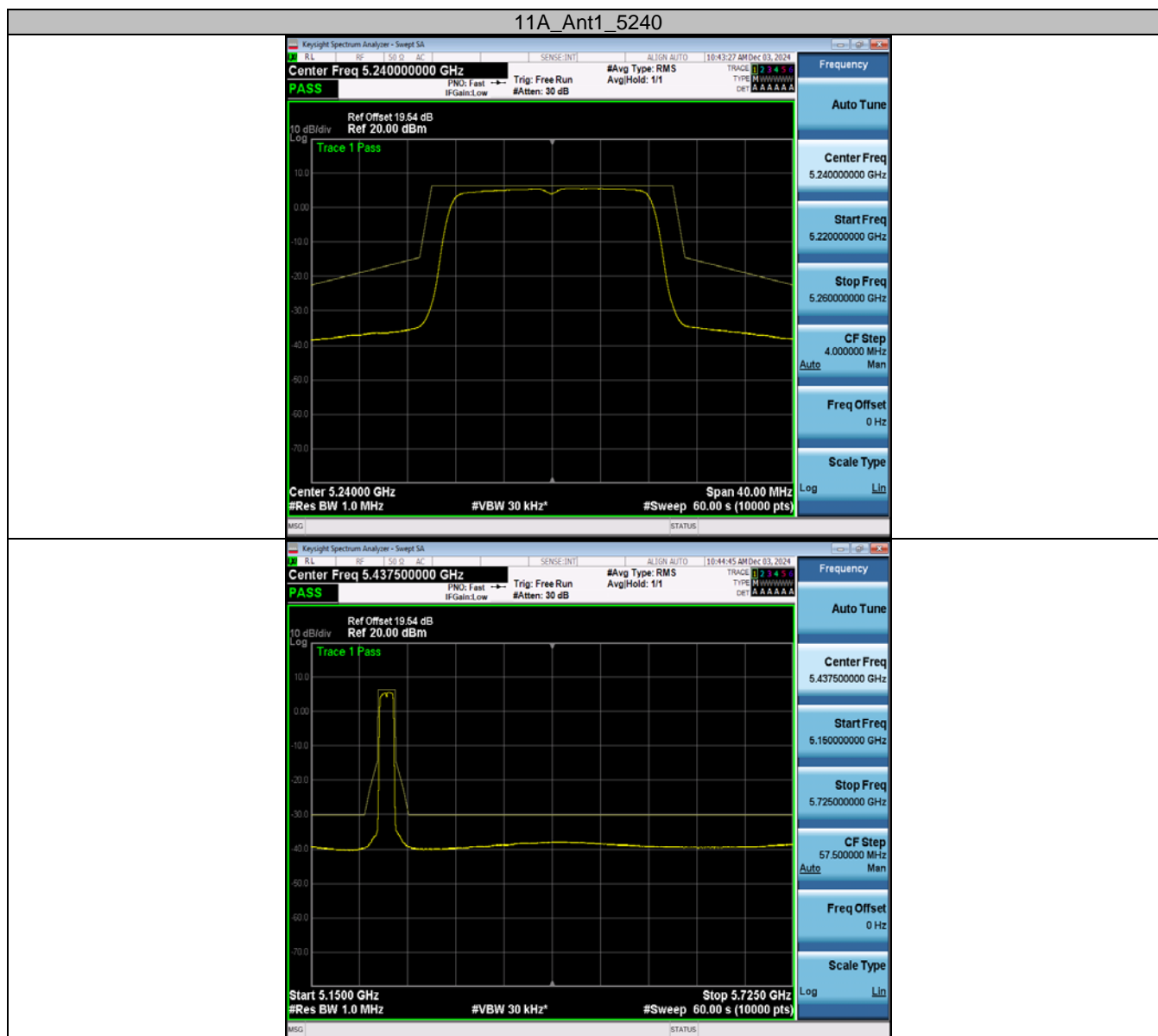
Test Mode	Antenna	Freq(MHz)	Result [dBm]	Limit[dBm]	Verdict
11A	Ant1	5180	See test graph	See test graph	PASS
	Ant2	5180	See test graph	See test graph	PASS
	Ant1	5240	See test graph	See test graph	PASS
	Ant2	5240	See test graph	See test graph	PASS
11N20MIMO	Ant1	5180	See test graph	See test graph	PASS
	Ant2	5180	See test graph	See test graph	PASS
	Ant1	5240	See test graph	See test graph	PASS
	Ant2	5240	See test graph	See test graph	PASS
11N40MIMO	Ant1	5190	See test graph	See test graph	PASS
	Ant2	5190	See test graph	See test graph	PASS
	Ant1	5230	See test graph	See test graph	PASS
	Ant2	5230	See test graph	See test graph	PASS
11AC20MIMO	Ant1	5180	See test graph	See test graph	PASS
	Ant2	5180	See test graph	See test graph	PASS
	Ant1	5240	See test graph	See test graph	PASS
	Ant2	5240	See test graph	See test graph	PASS
11AC40MIMO	Ant1	5190	See test graph	See test graph	PASS
	Ant2	5190	See test graph	See test graph	PASS
	Ant1	5230	See test graph	See test graph	PASS
	Ant2	5230	See test graph	See test graph	PASS
11AC80MIMO	Ant1	5210	See test graph	See test graph	PASS
	Ant2	5210	See test graph	See test graph	PASS

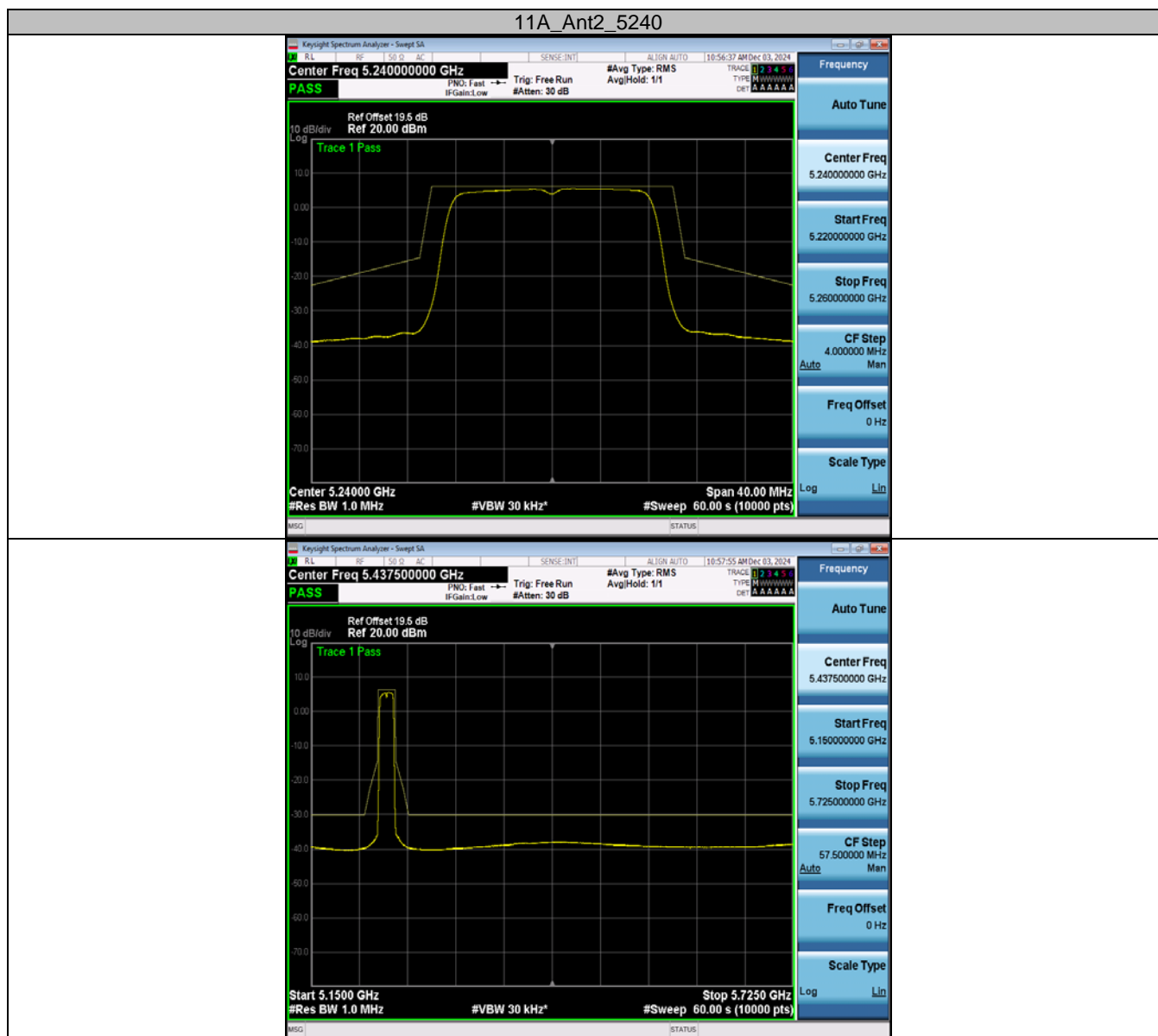
## Test Graphs

11A\_Ant1\_5180



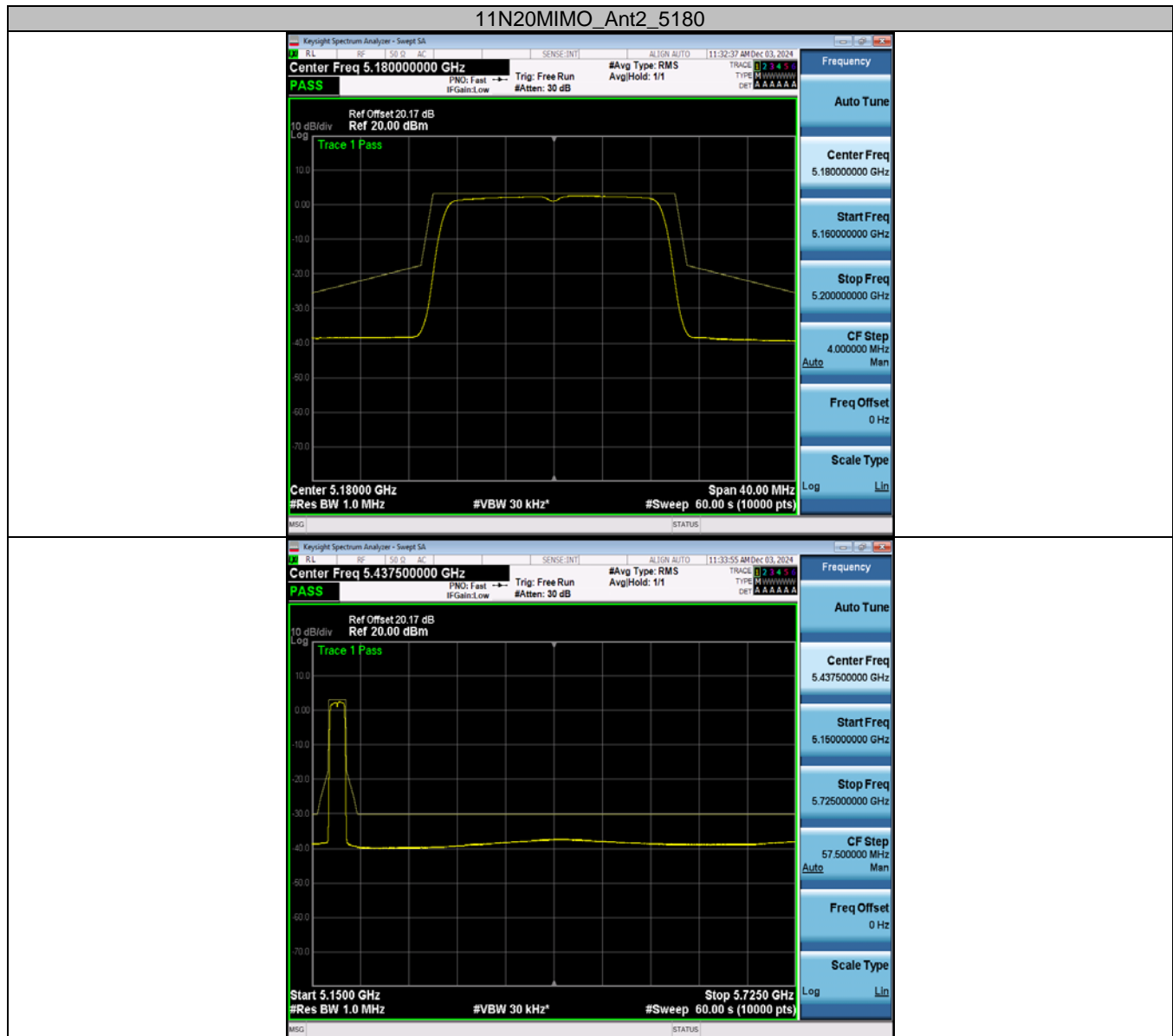


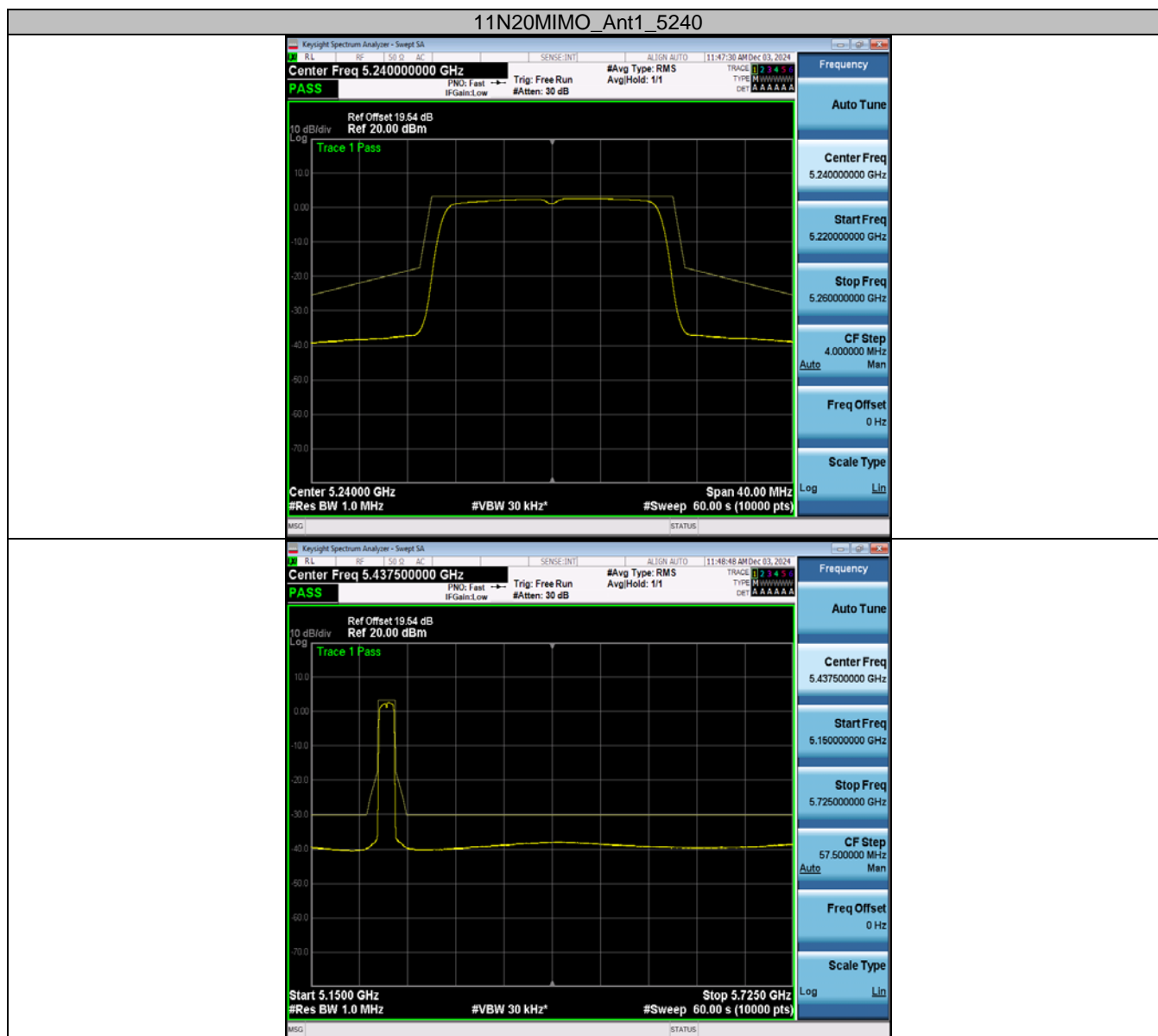


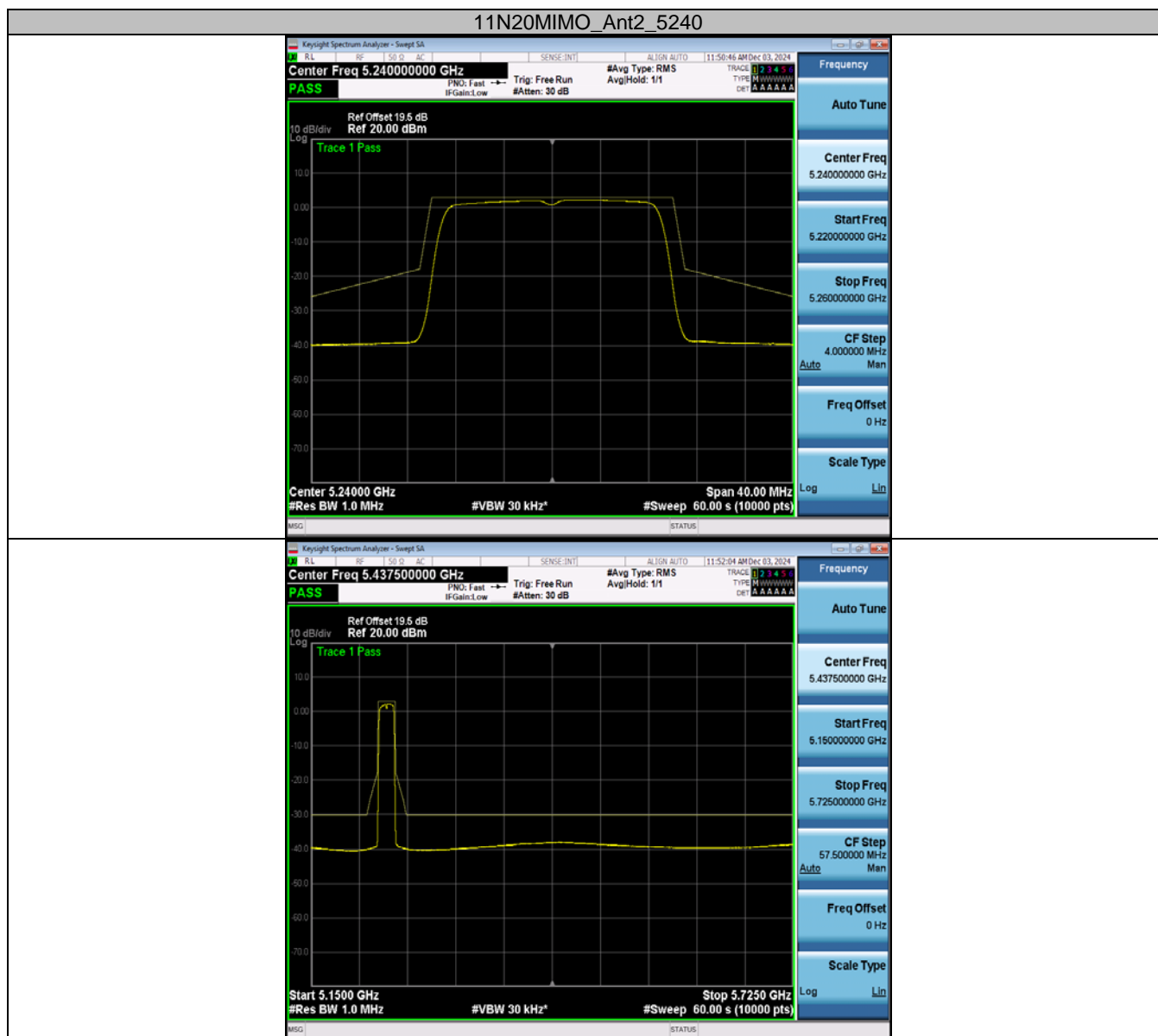


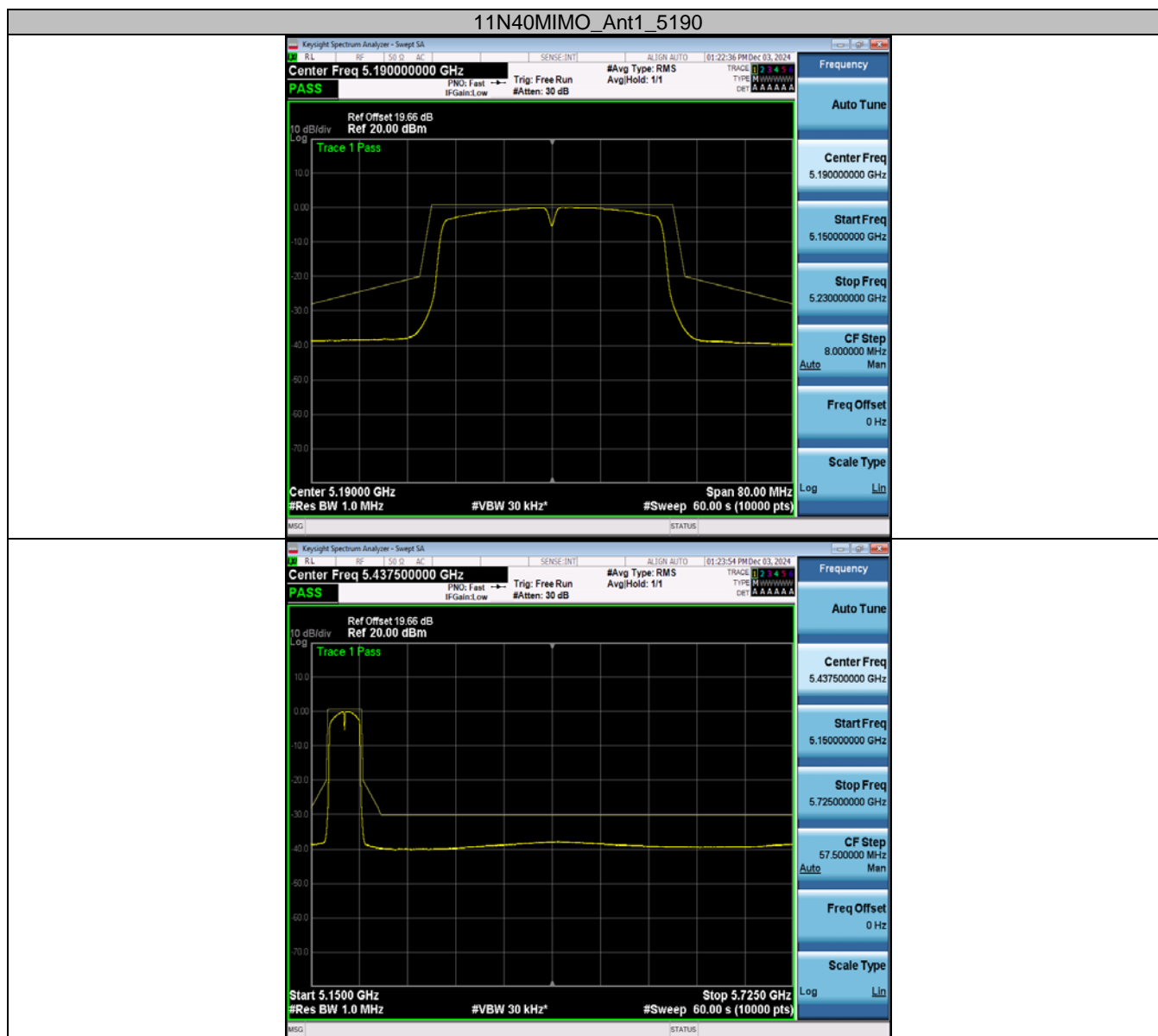


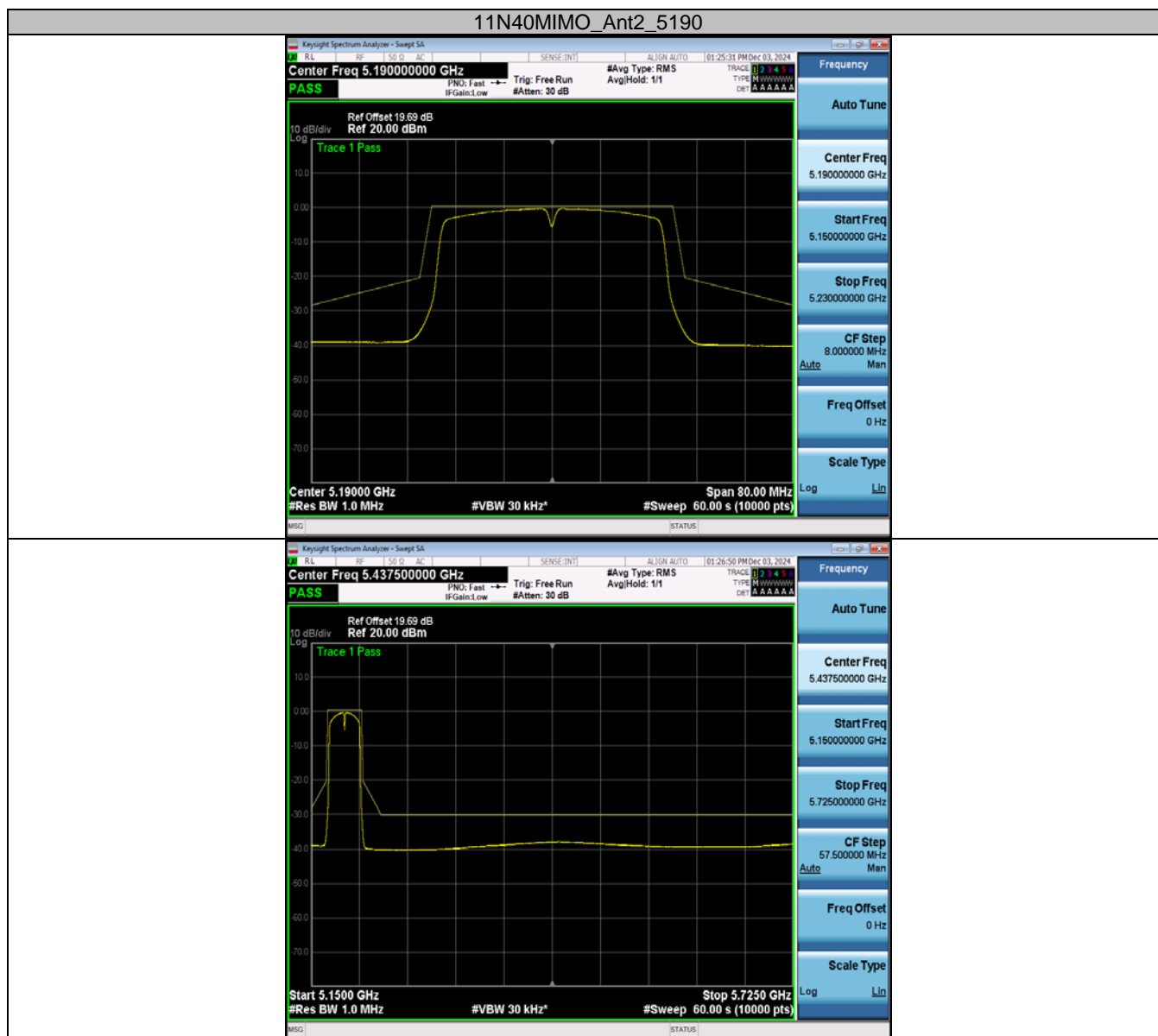


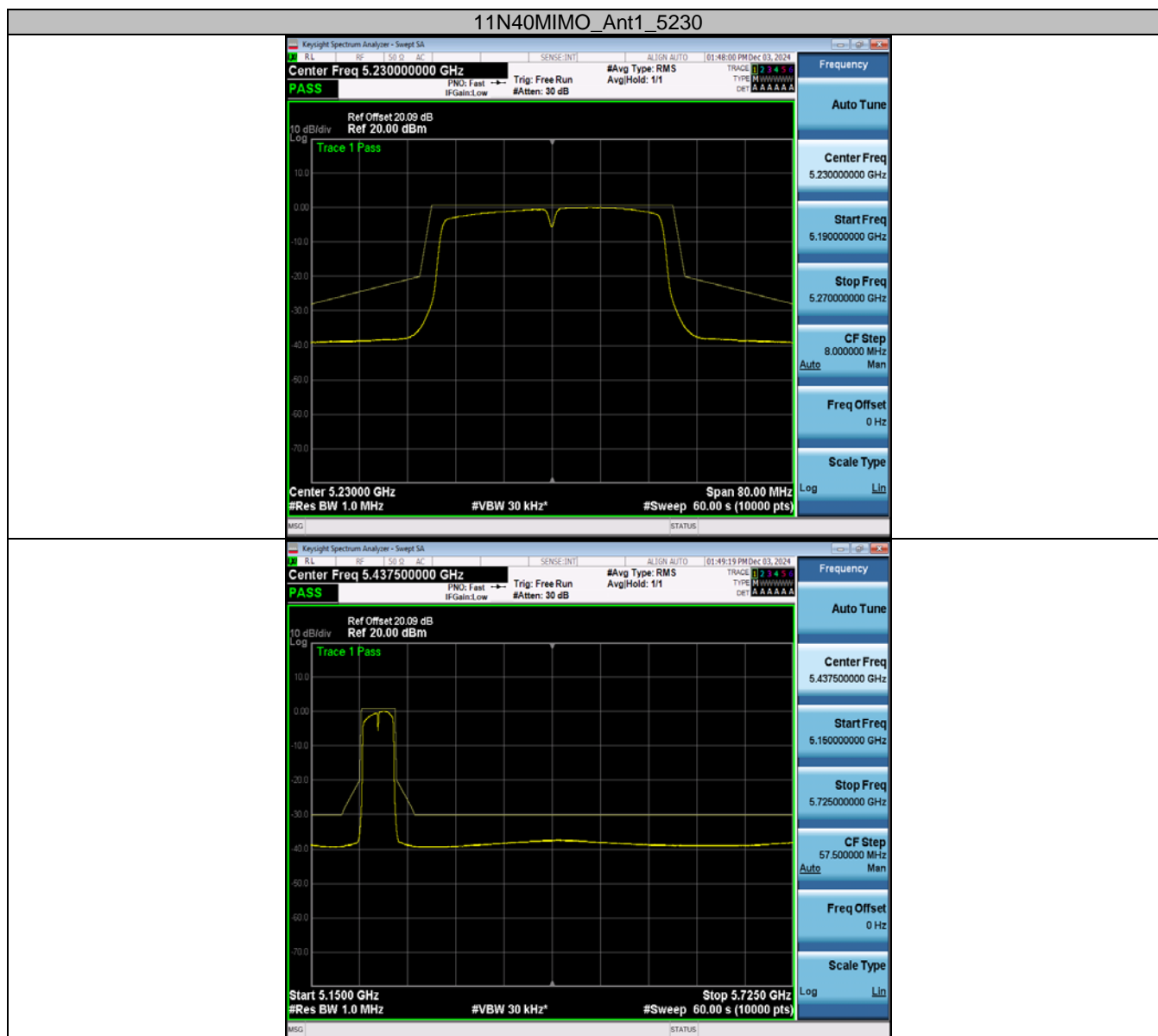










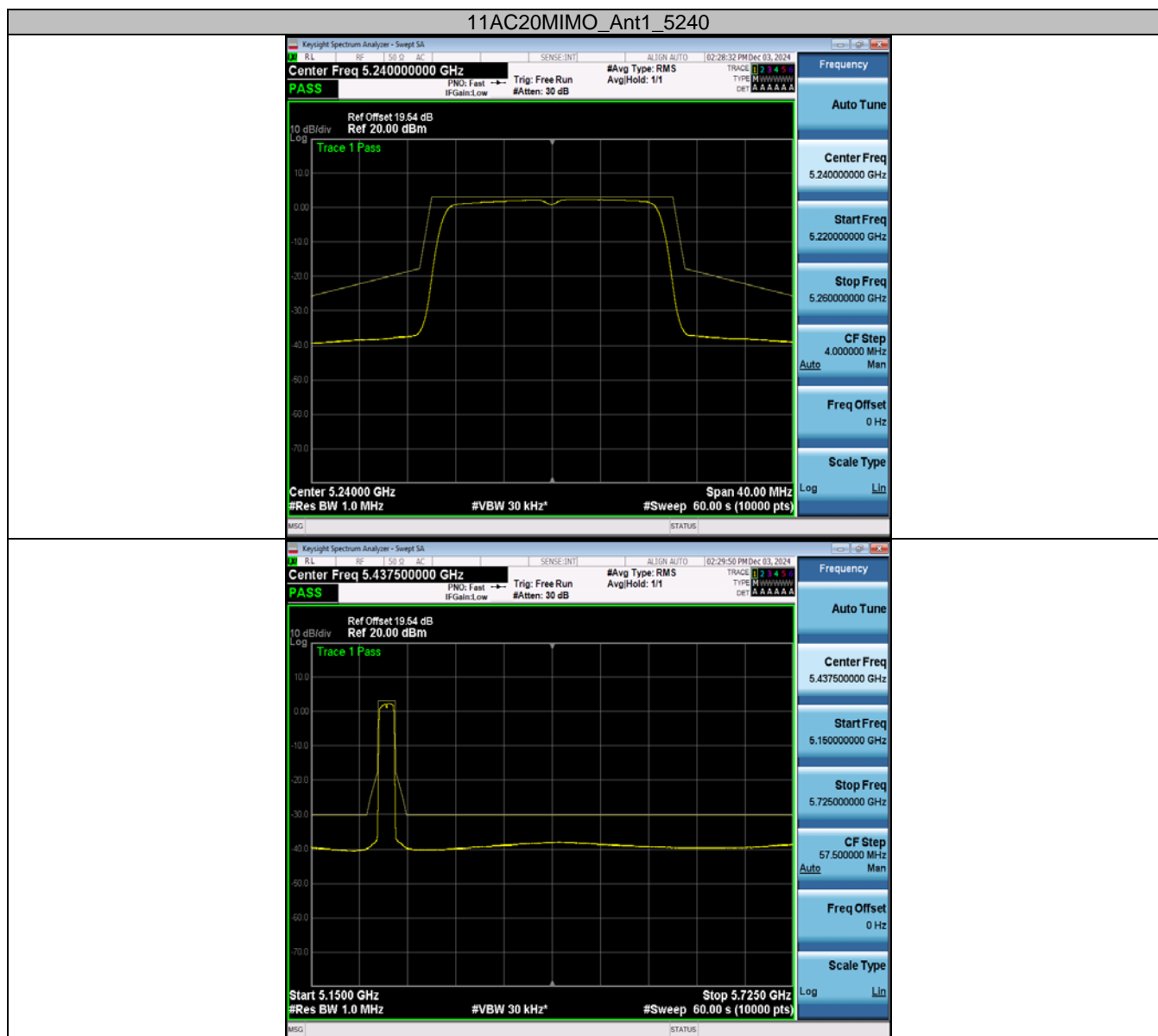




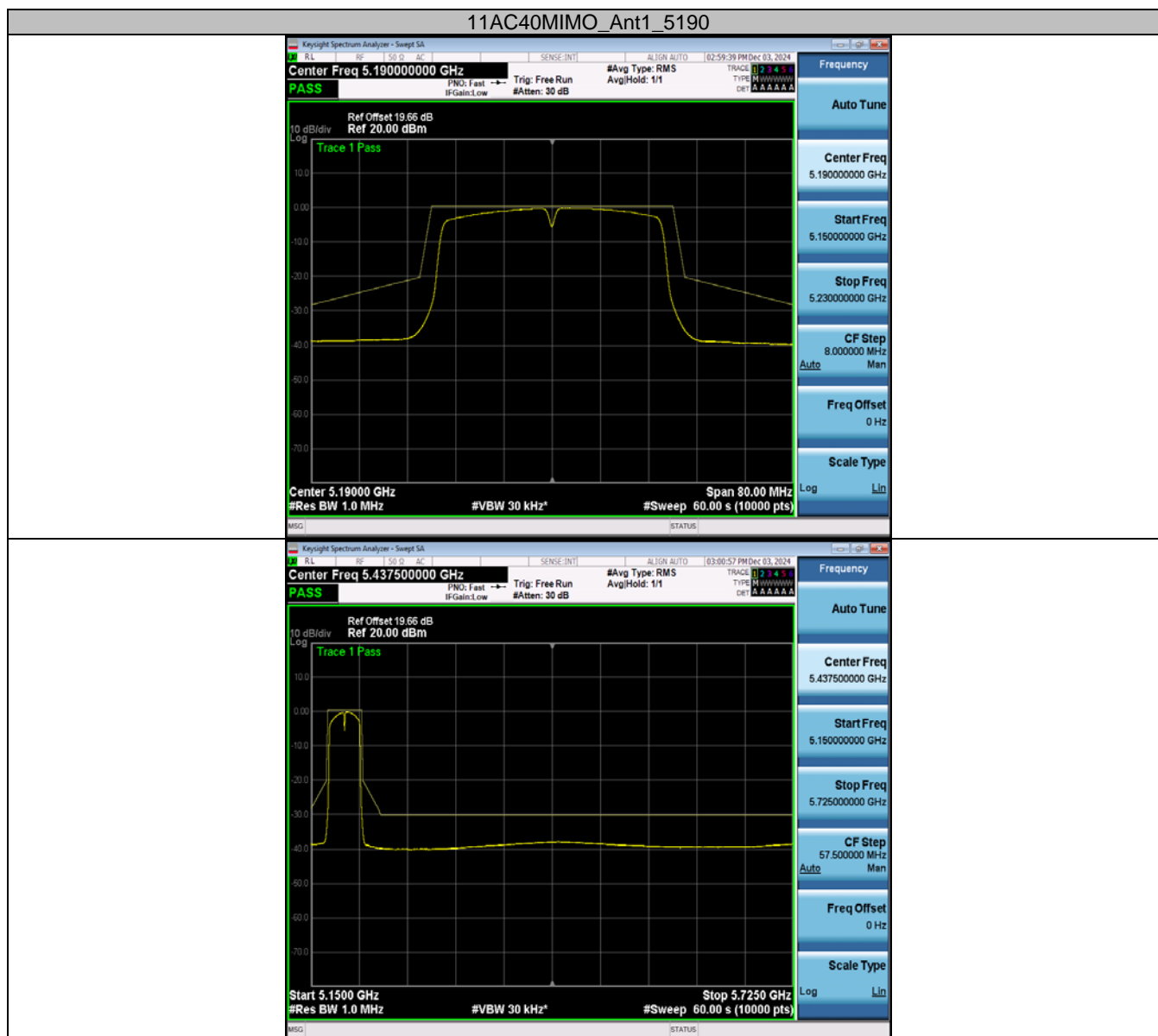


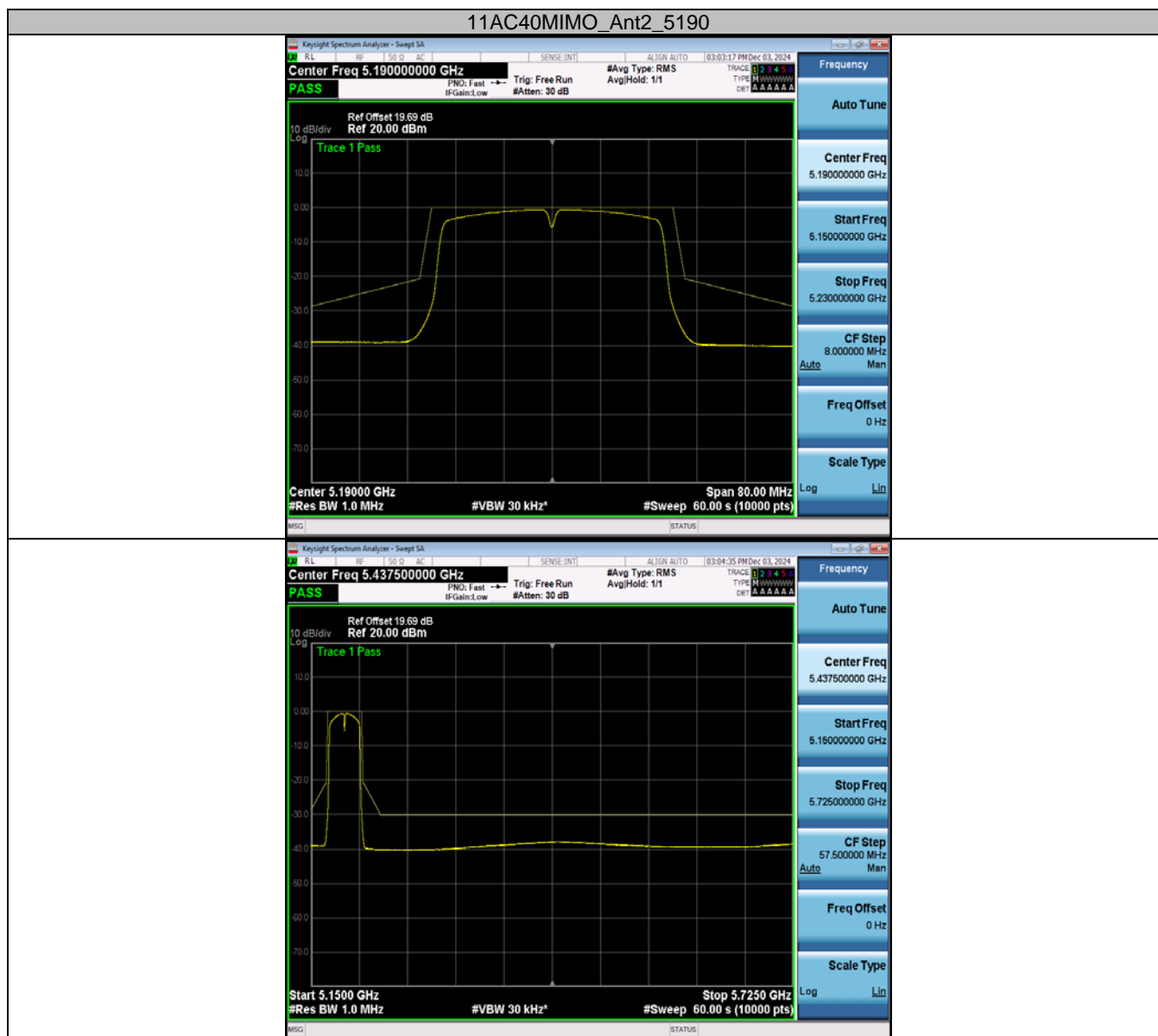


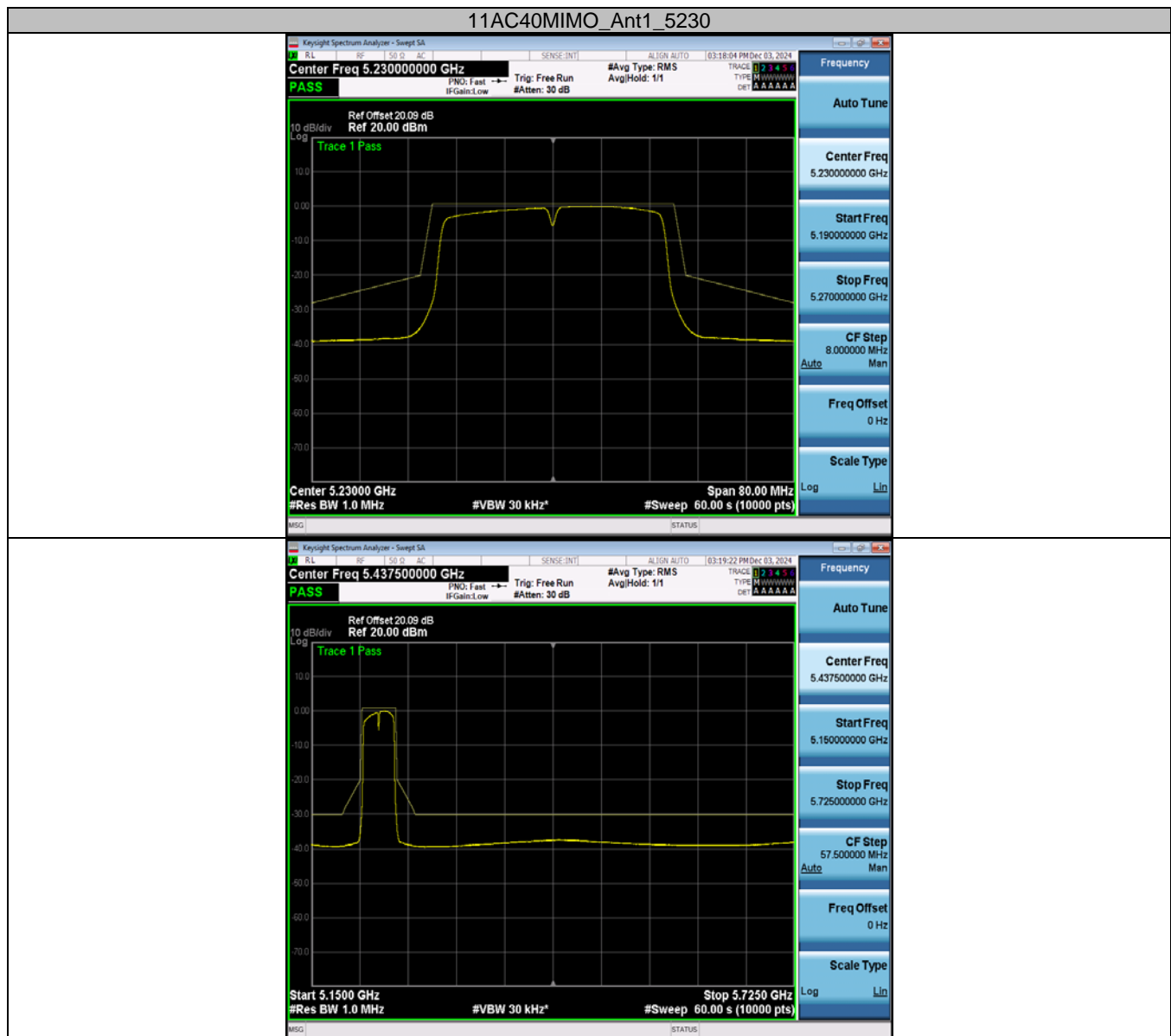


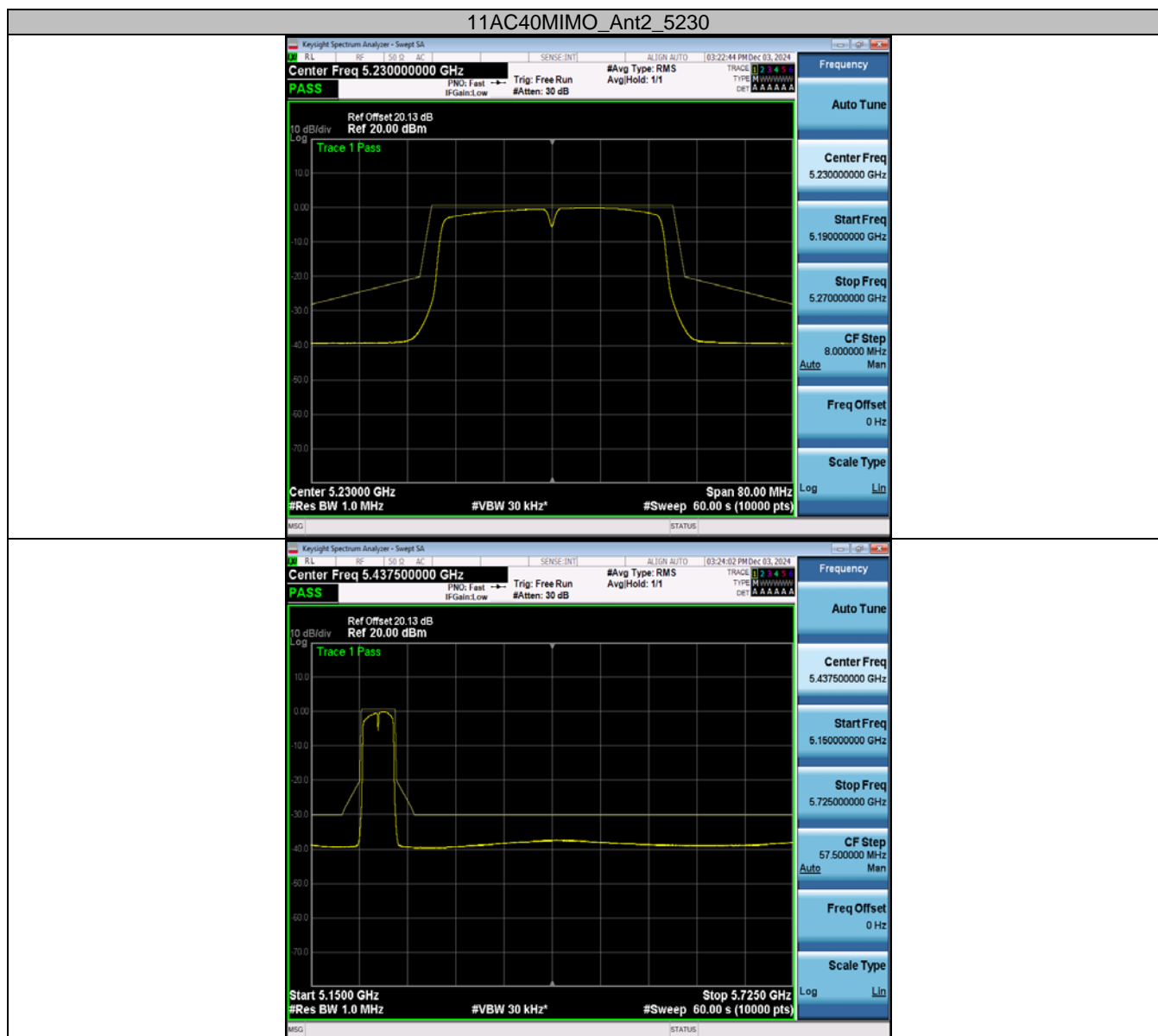


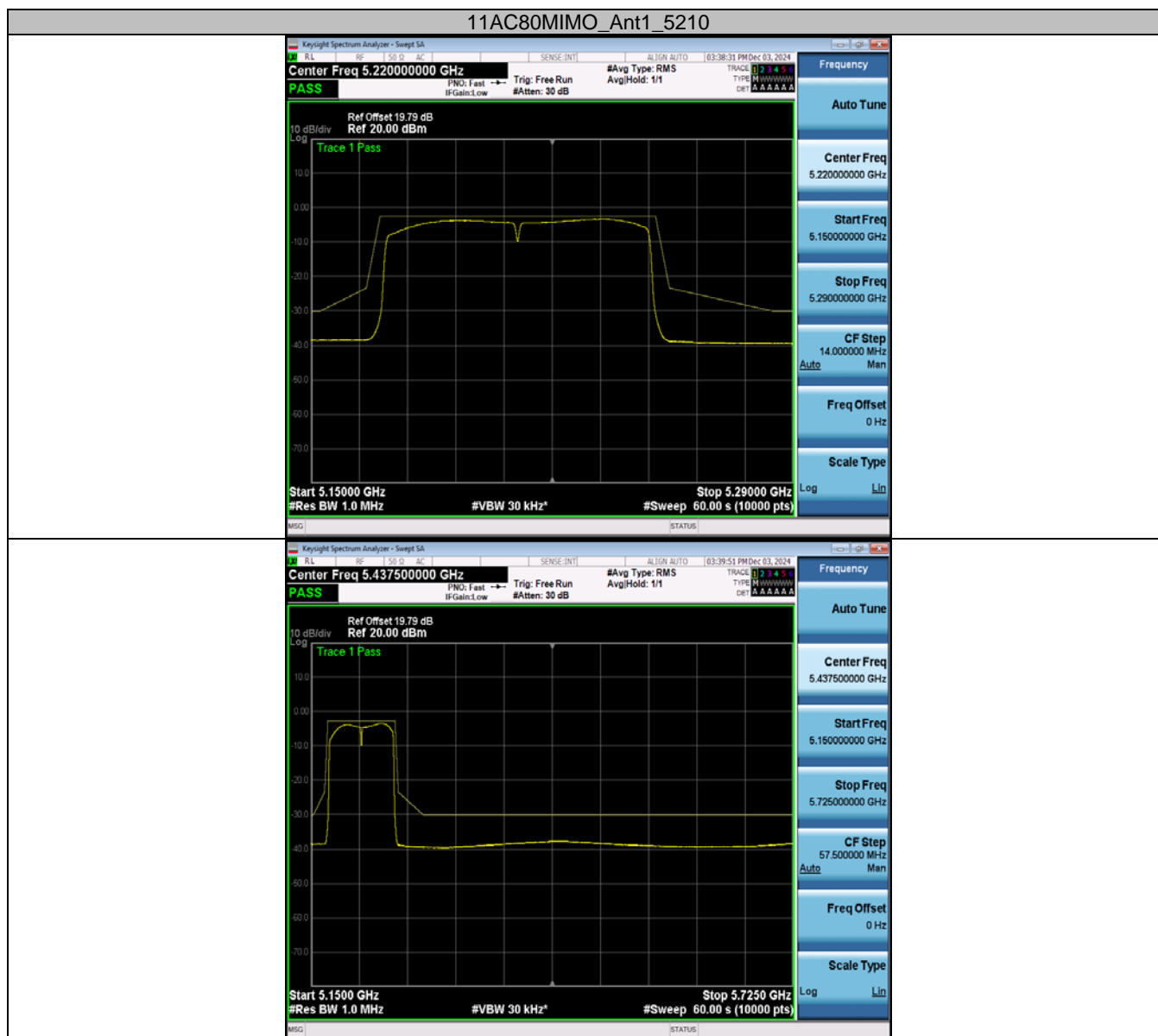




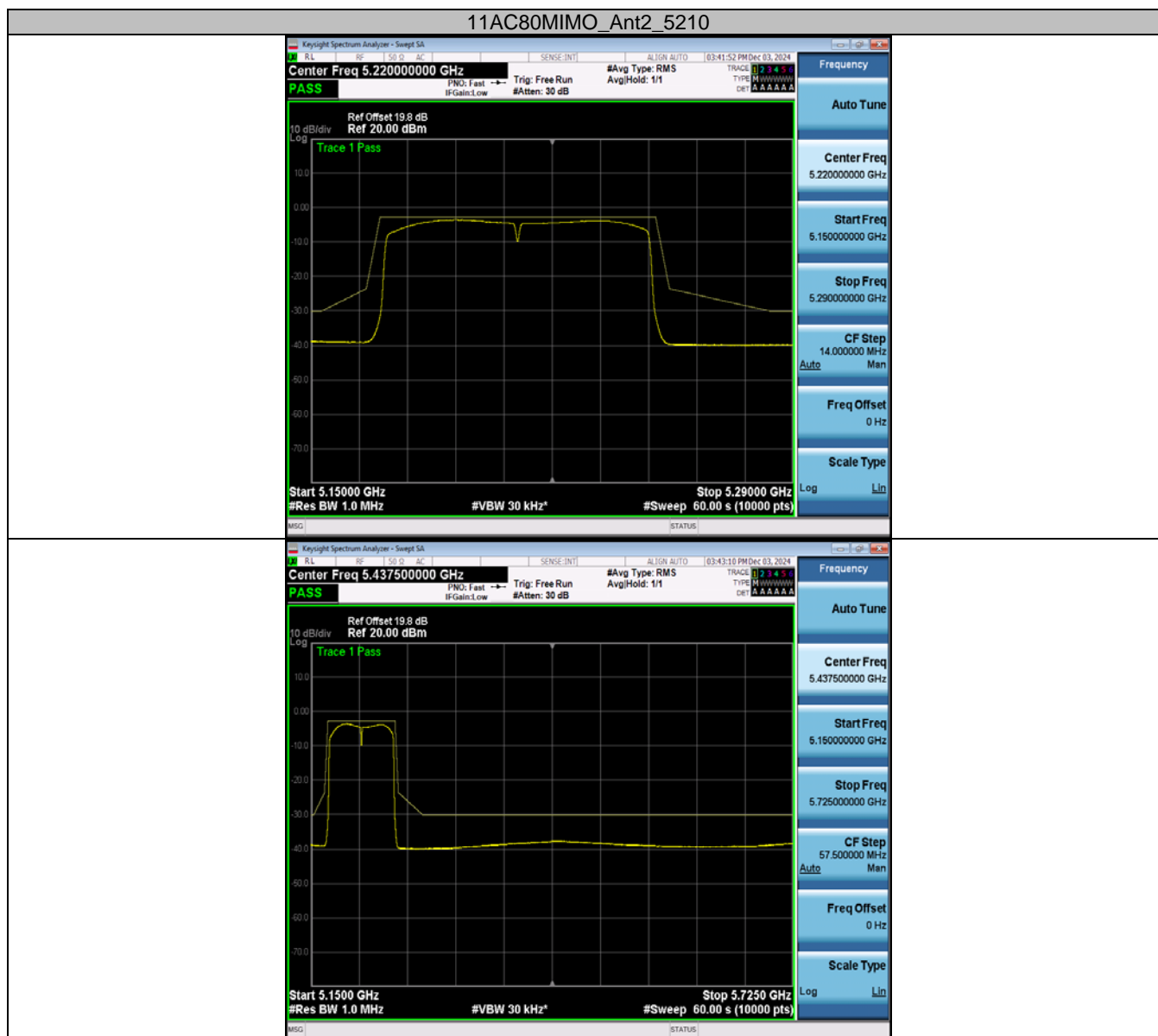










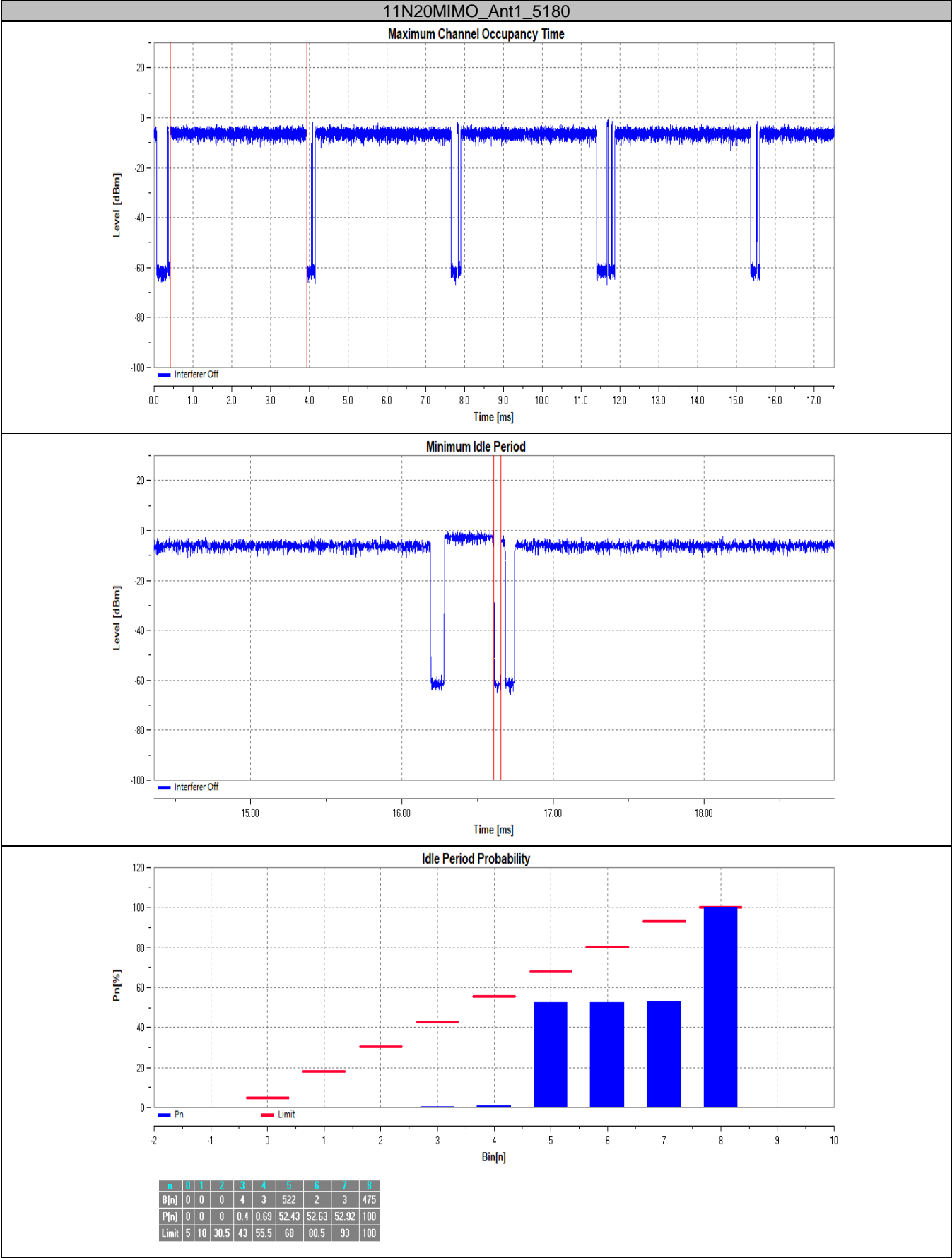


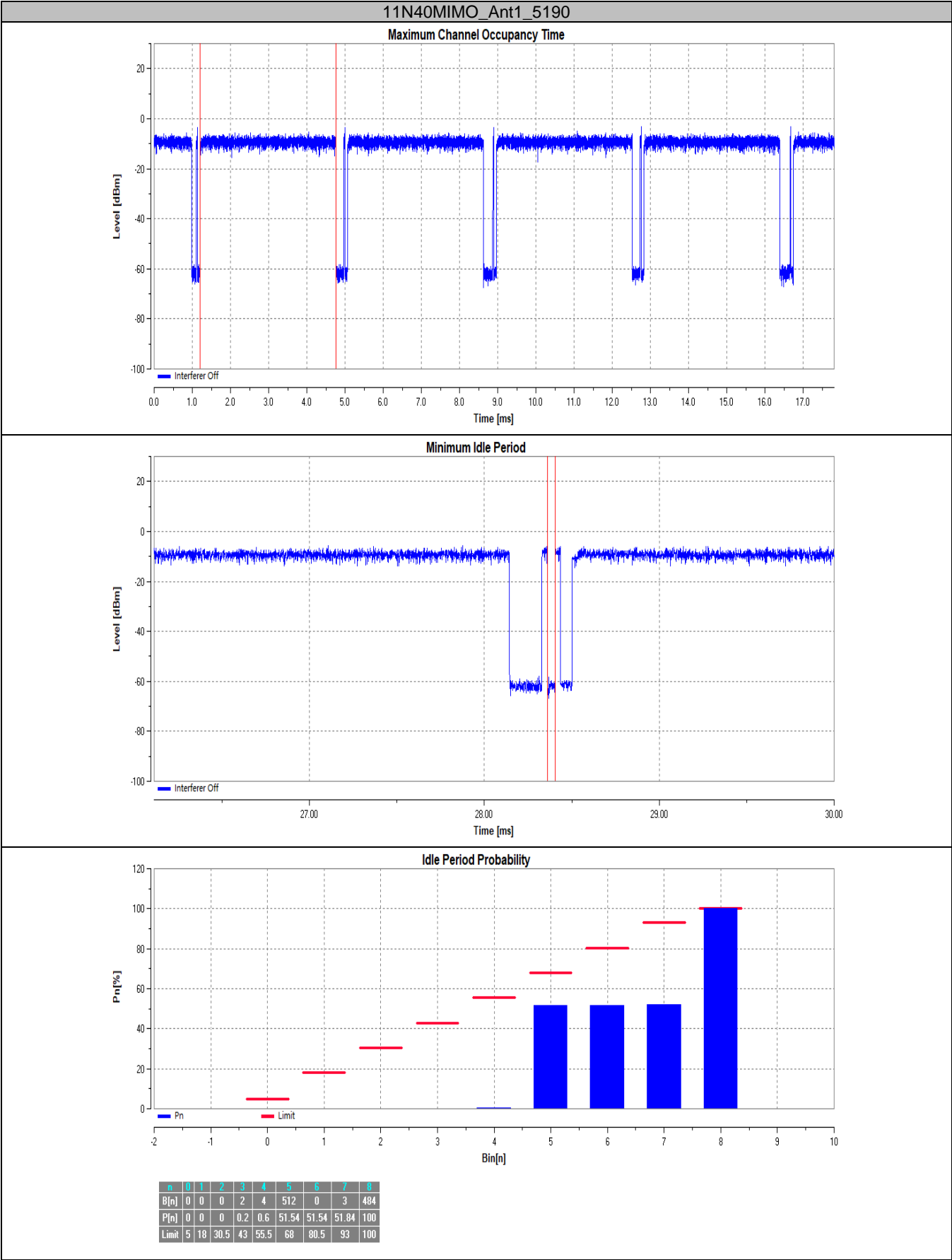
## Appendix F:Adaptivity Test Result

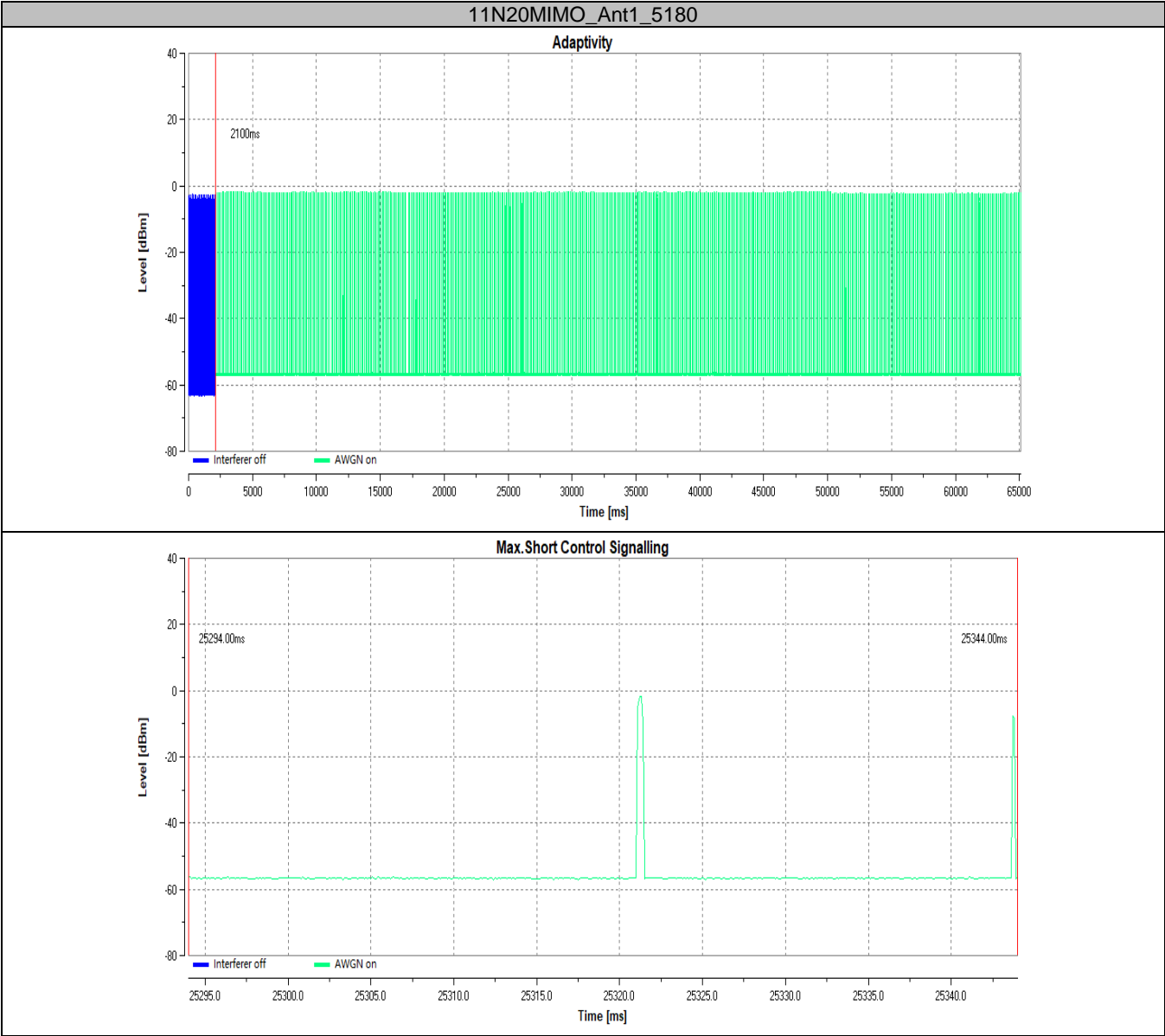
Test Mode	Antenna	Freq(MHz)	Priority Class	COT Num [n]	Max. COT [ms]	Limit [ms]	Min.Idle Time[ms]	Limit [ms]	Idle Period probability	Verdict
11N20MIMO	Ant1	5180	3	10009	3.505	4.000	0.045	0.027	See the graph	PASS
11N40MIMO	Ant1	5190	3	10005	3.561	4.000	0.045	0.027	See the graph	PASS

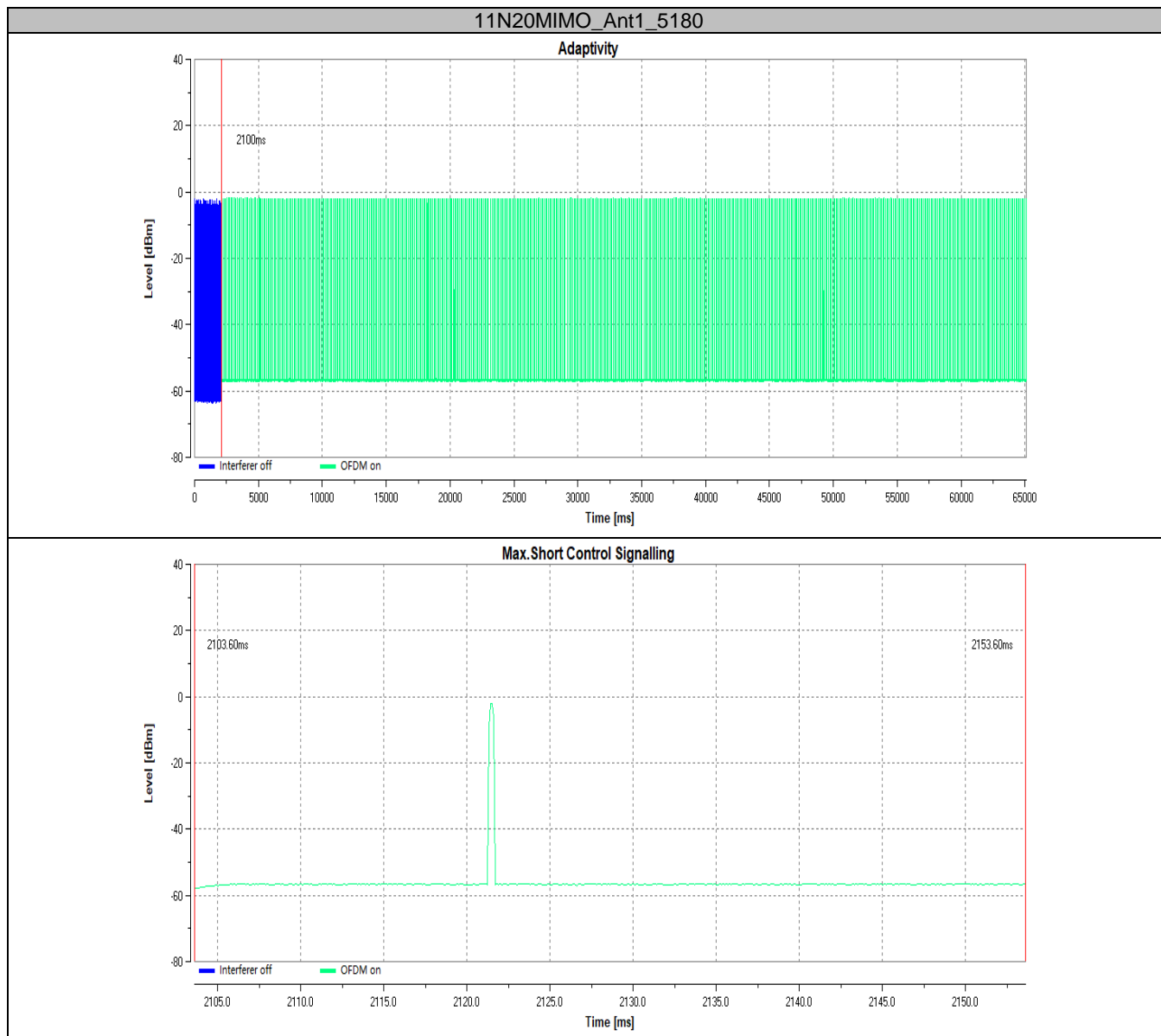
Test Mode	Antenna	Freq(MHz)	Interference Type	Add interference Time [ms]	Interference Level [dBm/MHz]	Max. Short Control number [n]	Limit [n]	Max. Short ControlTime [ms]	Limit [ms]	Verdict
11N20MIMO	Ant1	5180	AWGN	2100	-70.93	2	50	0.60	2.5	PASS
			OFDM	2100	-70.93	1	50	0.40	2.5	PASS
			LTE	2100	-70.93	2	50	0.60	2.5	PASS
11N40MIMO	Ant1	5190	AWGN	2100	-70.93	0	50	0.00	2.5	PASS

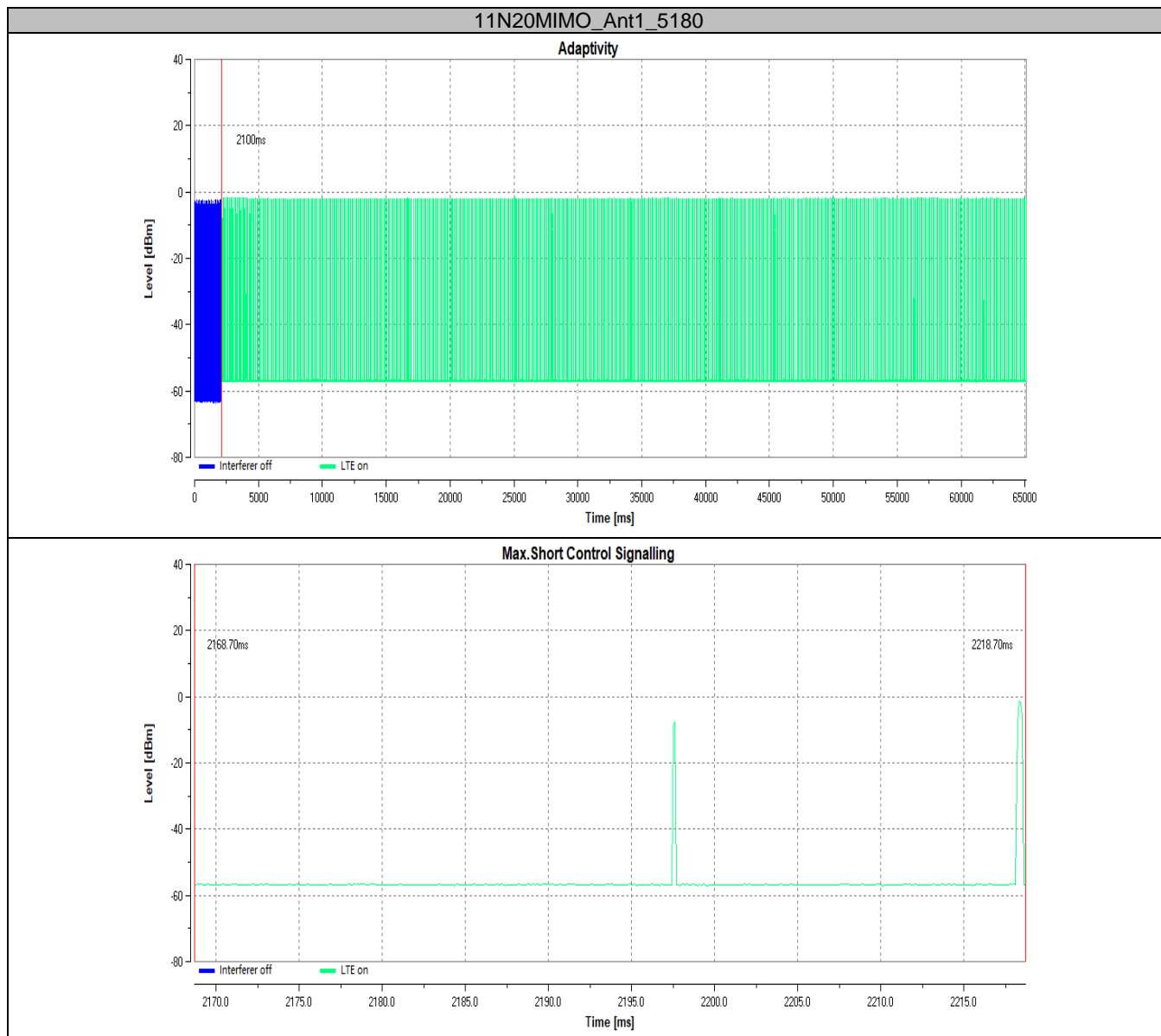
Test Graphs

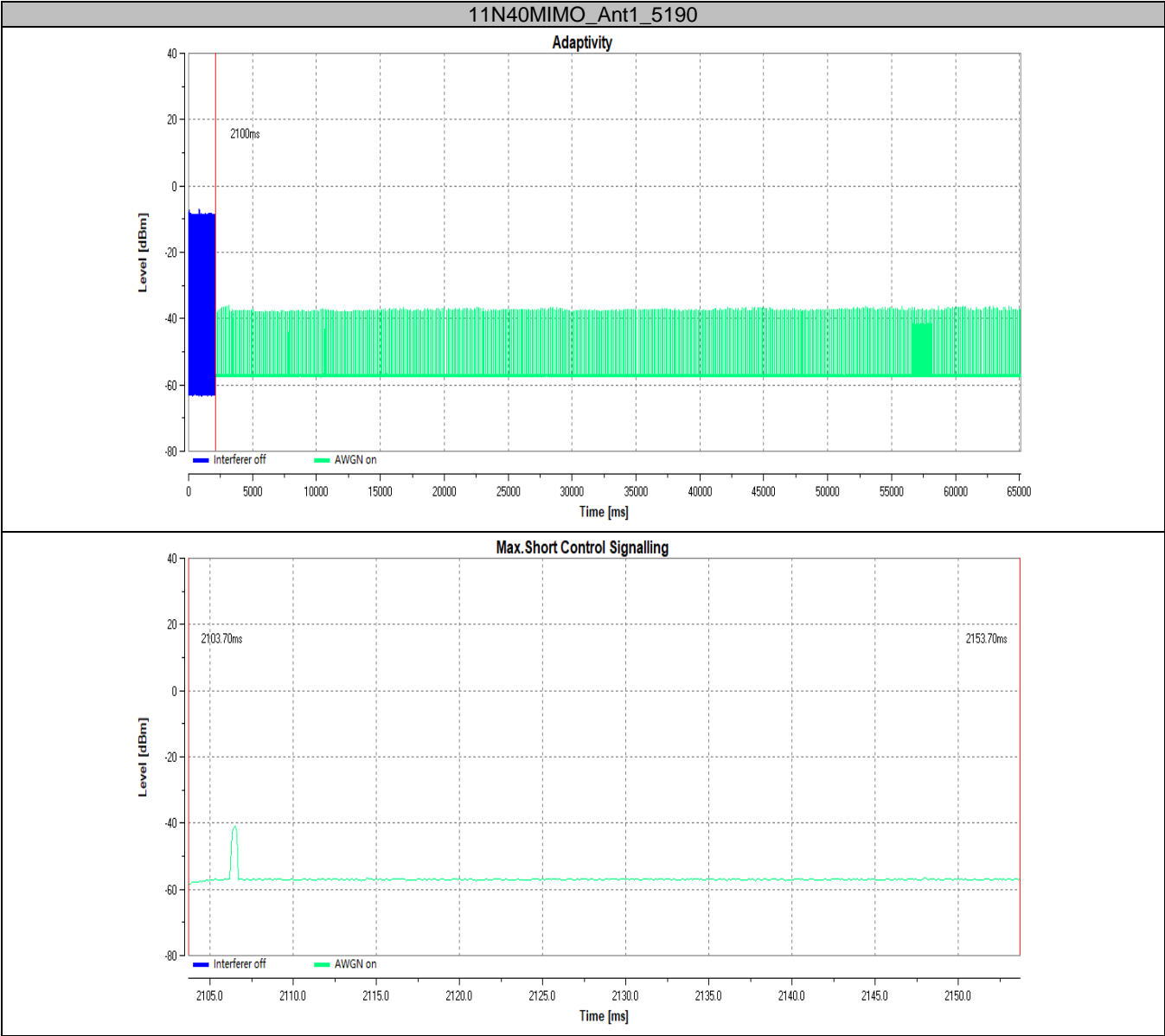












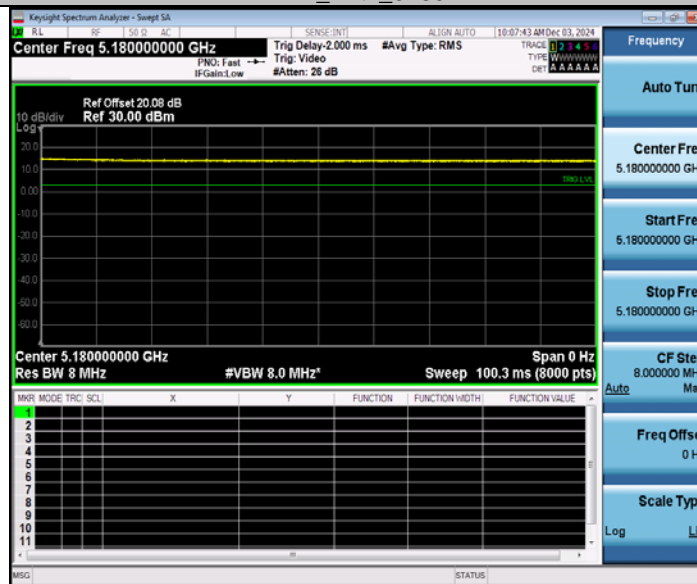


## Appendix G: Duty Cycle Test Result

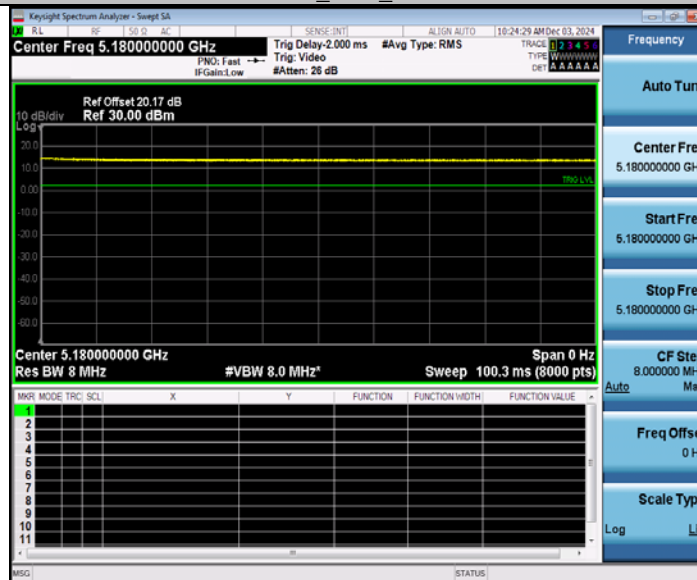
Test Mode	Antenna	Freq(MHz)	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	DC Factor [dB]	Verdict
11A	Ant1	5180	100.00	100.00	100	0	PASS
	Ant2	5180	100.00	100.00	100	0	PASS
	Ant1	5240	100.00	100.00	100	0	PASS
	Ant2	5240	100.00	100.00	100	0	PASS
11N20MIMO	Ant1	5180	100.00	100.00	100	0	PASS
	Ant2	5180	100.00	100.00	100	0	PASS
	Ant1	5240	100.00	100.00	100	0	PASS
	Ant2	5240	100.00	100.00	100	0	PASS
11N40MIMO	Ant1	5190	100.00	100.00	100	0	PASS
	Ant2	5190	100.00	100.00	100	0	PASS
	Ant1	5230	100.00	100.00	100	0	PASS
	Ant2	5230	100.00	100.00	100	0	PASS
11AC20MIMO	Ant1	5180	100.00	100.00	100	0	PASS
	Ant2	5180	100.00	100.00	100	0	PASS
	Ant1	5240	100.00	100.00	100	0	PASS
	Ant2	5240	100.00	100.00	100	0	PASS
11AC40MIMO	Ant1	5190	100.00	100.00	100	0	PASS
	Ant2	5190	100.00	100.00	100	0	PASS
	Ant1	5230	100.00	100.00	100	0	PASS
	Ant2	5230	100.00	100.00	100	0	PASS
11AC80MIMO	Ant1	5210	100.00	100.00	100	0	PASS
	Ant2	5210	100.00	100.00	100	0	PASS

# Test Graphs

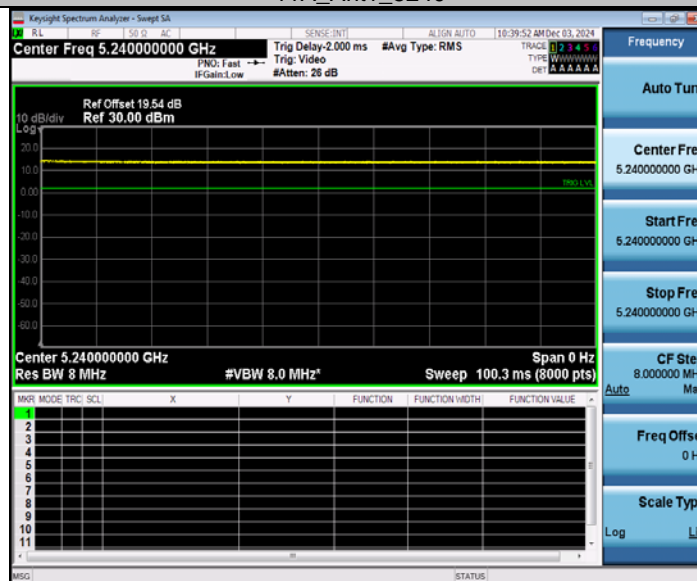
11A\_Ant1\_5180



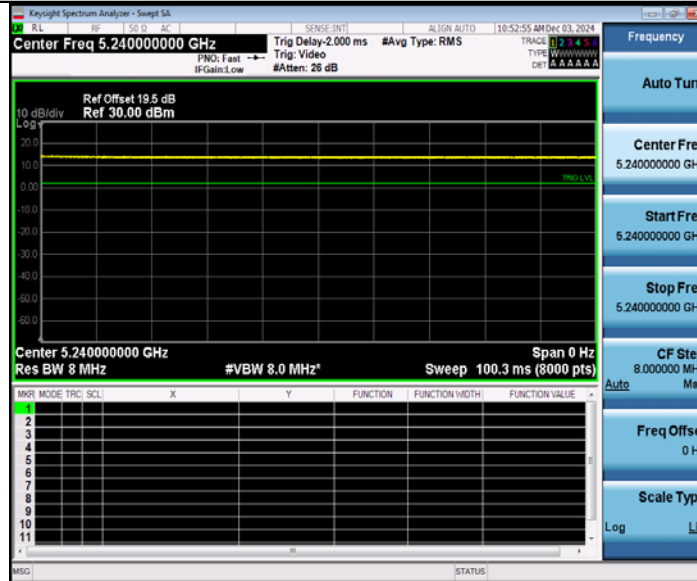
11A\_Ant2\_5180



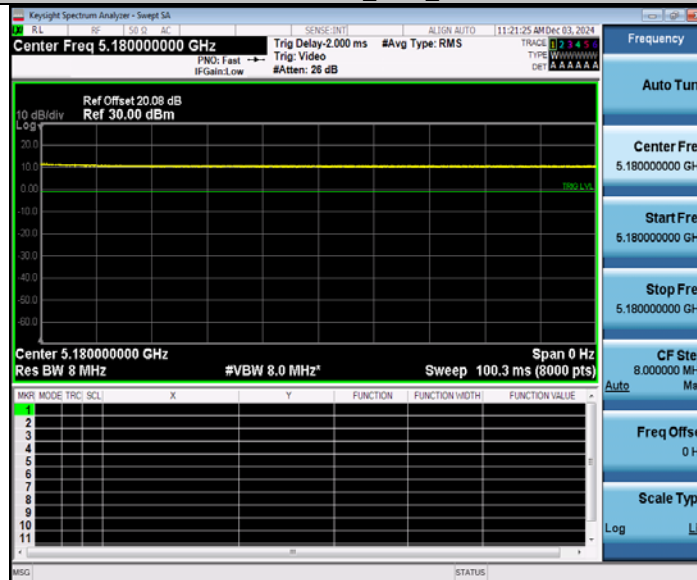
11A\_Ant1\_5240



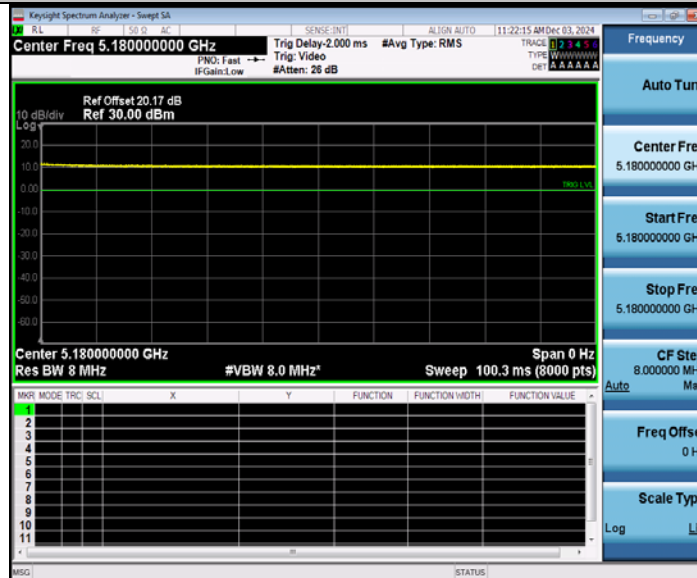
11A\_Ant2\_5240



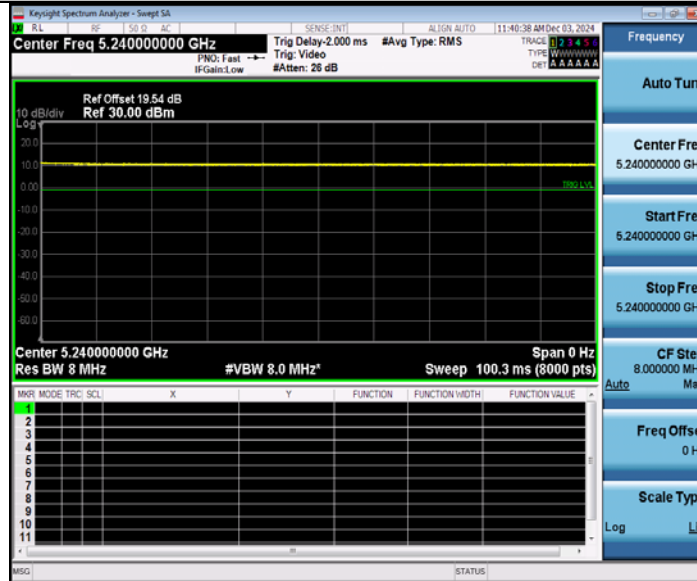
11N20MIMO\_Ant1\_5180



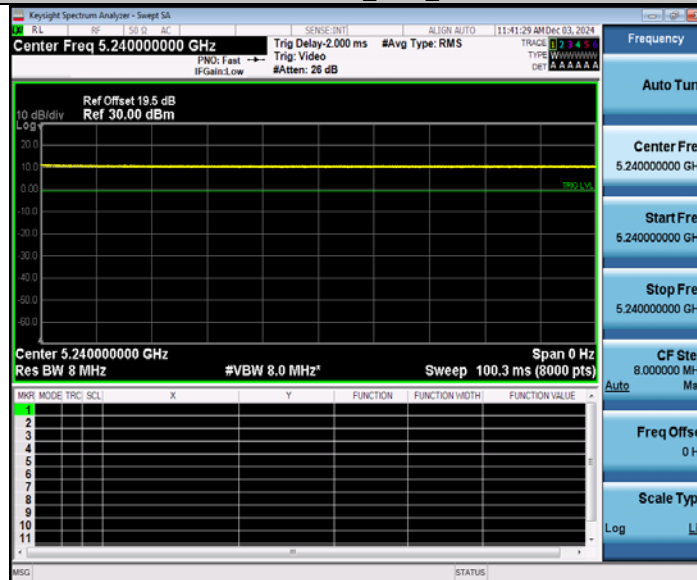
11N20MIMO\_Ant2\_5180



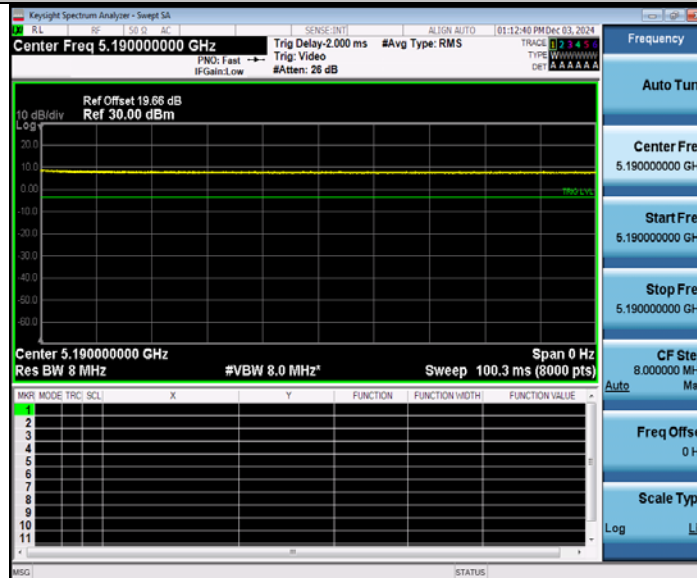
### 11N20MIMO\_Ant1\_5240



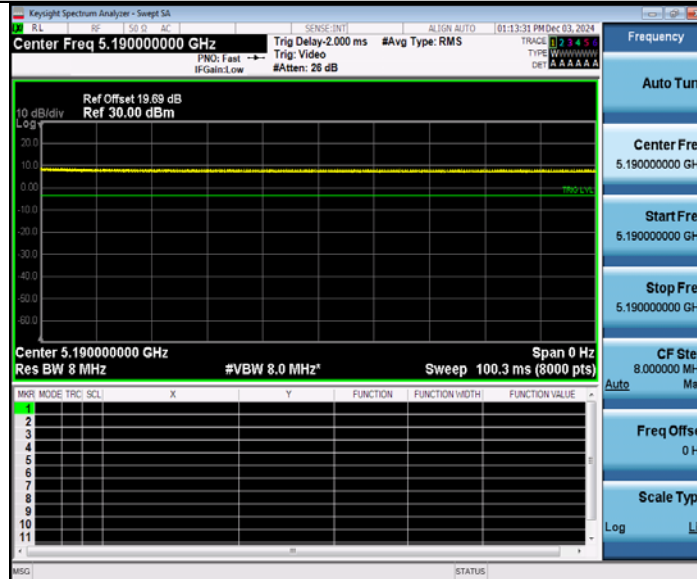
### 11N20MIMO\_Ant2\_5240



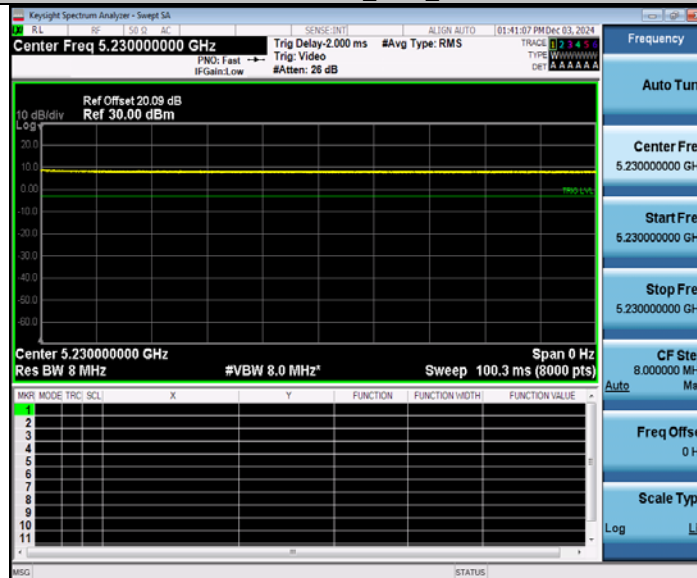
### 11N40MIMO\_Ant1\_5190



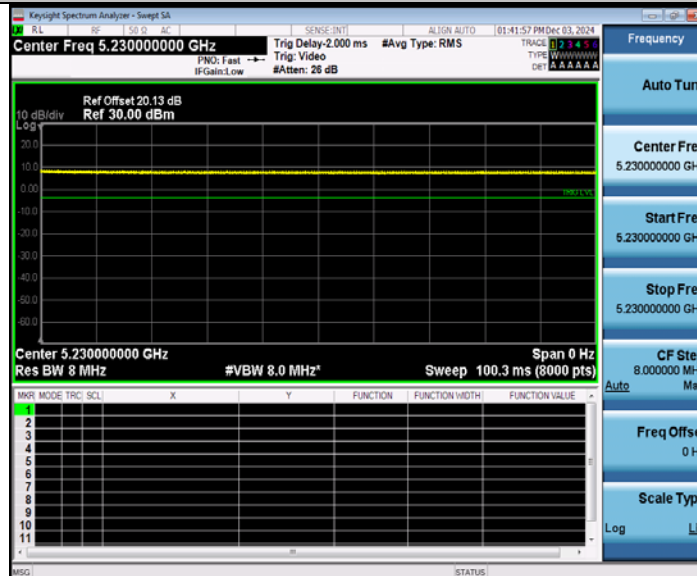
### 11N40MIMO\_Ant2\_5190



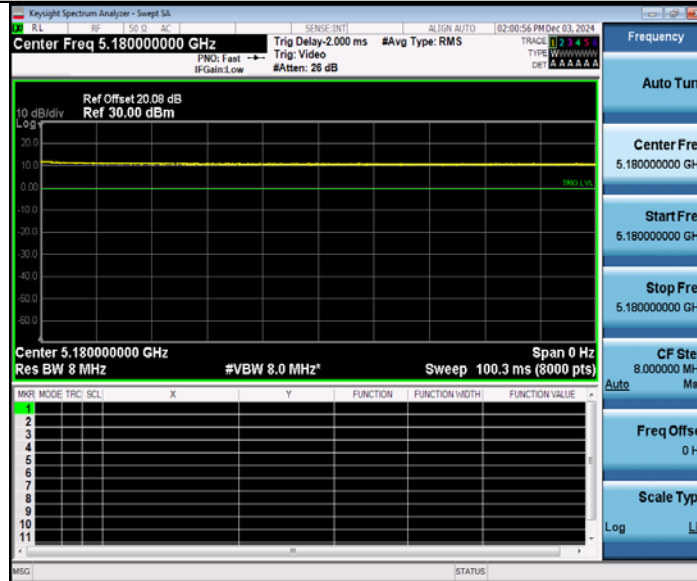
### 11N40MIMO\_Ant1\_5230



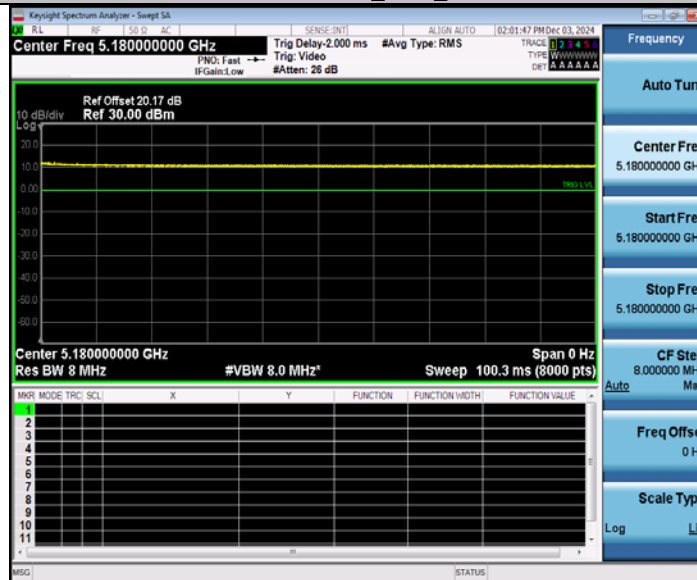
### 11N40MIMO\_Ant2\_5230



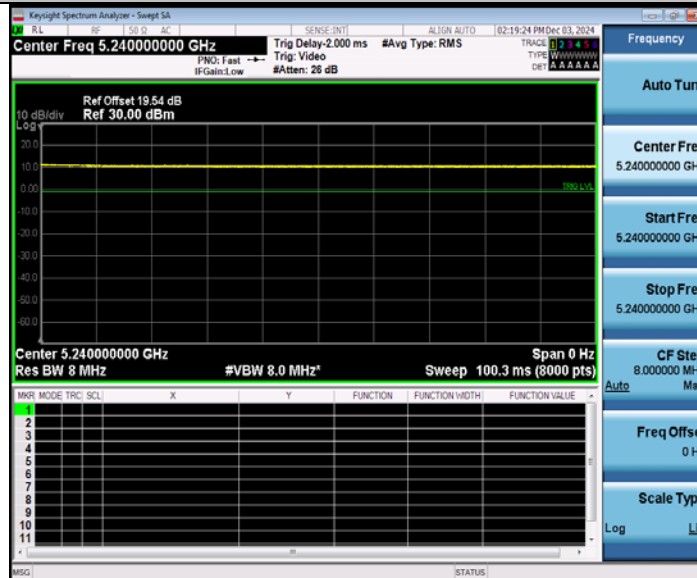
### 11AC20MIMO\_Ant1\_5180

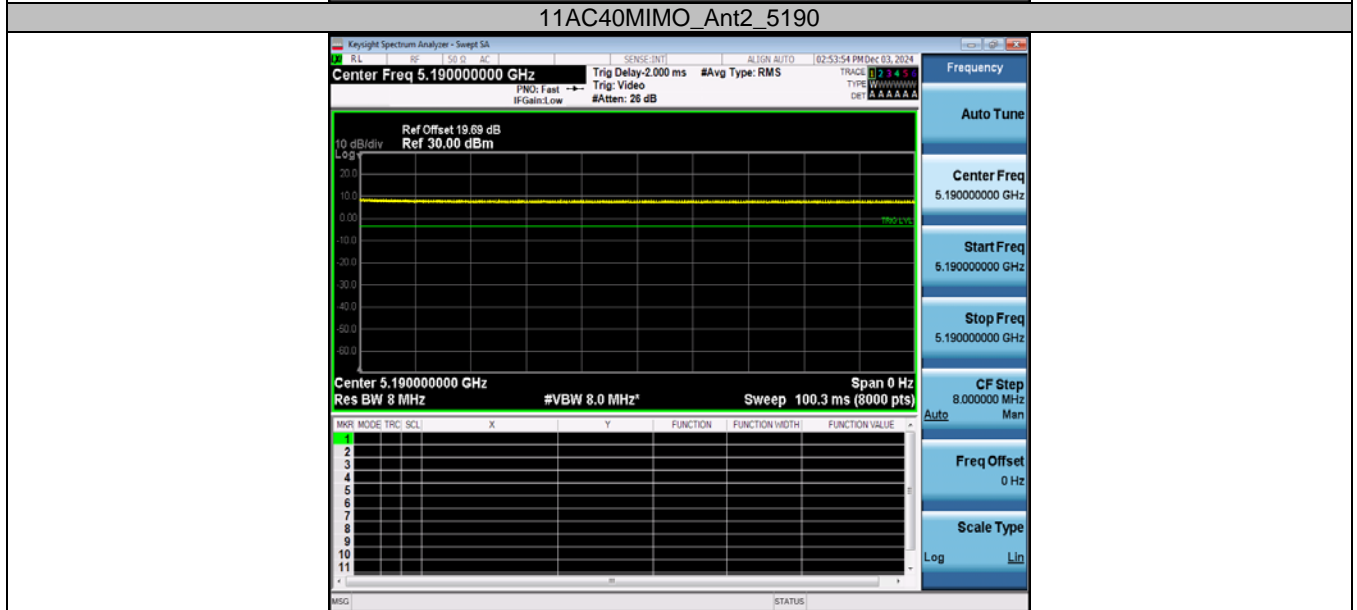
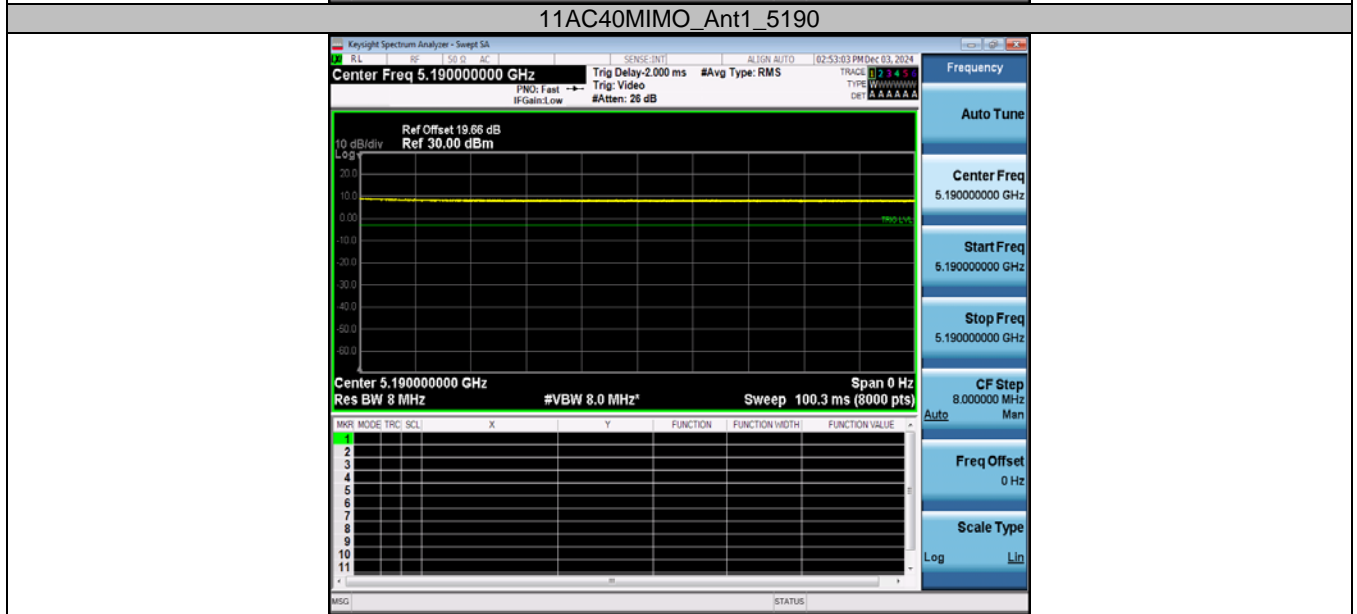
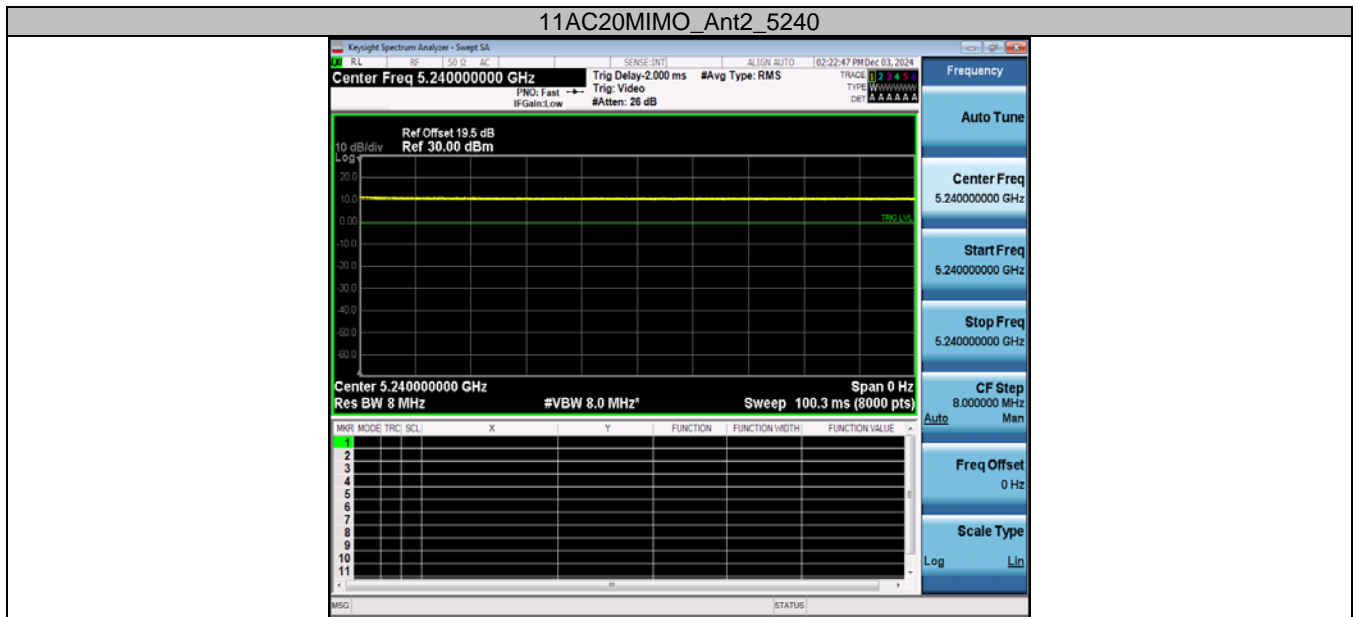


### 11AC20MIMO\_Ant2\_5180



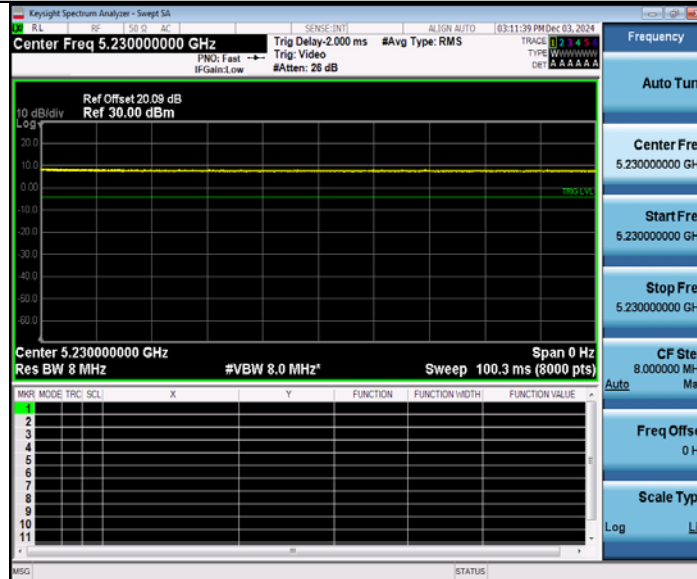
### 11AC20MIMO\_Ant1\_5240



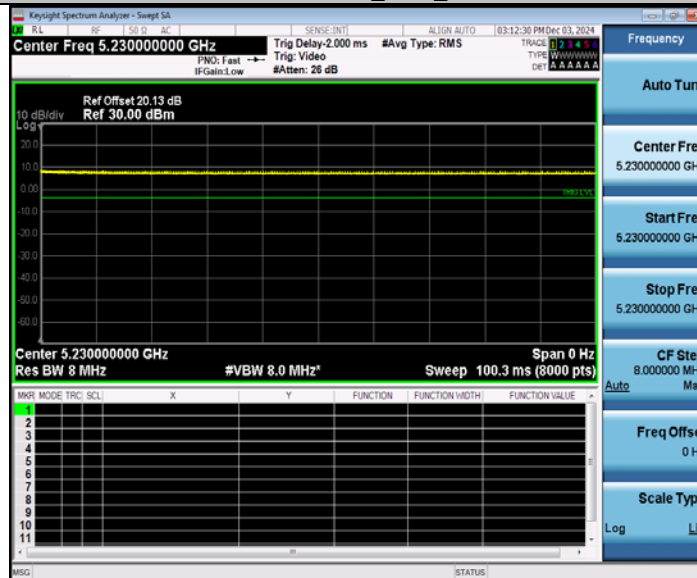




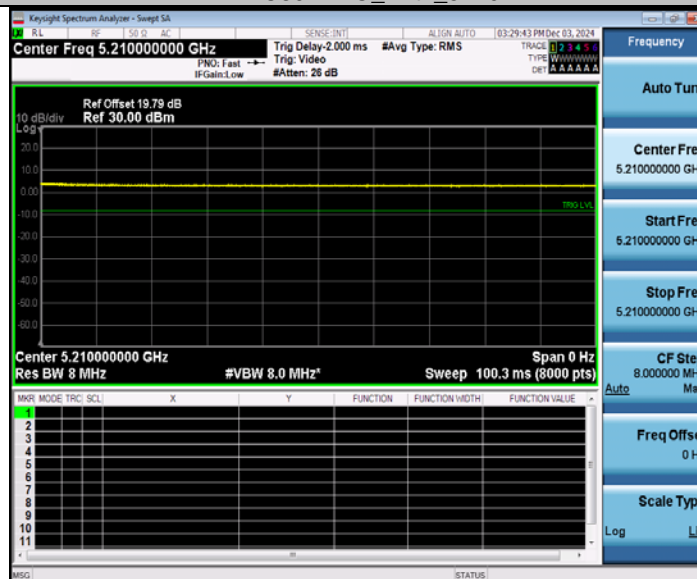
### 11AC40MIMO\_Ant1\_5230



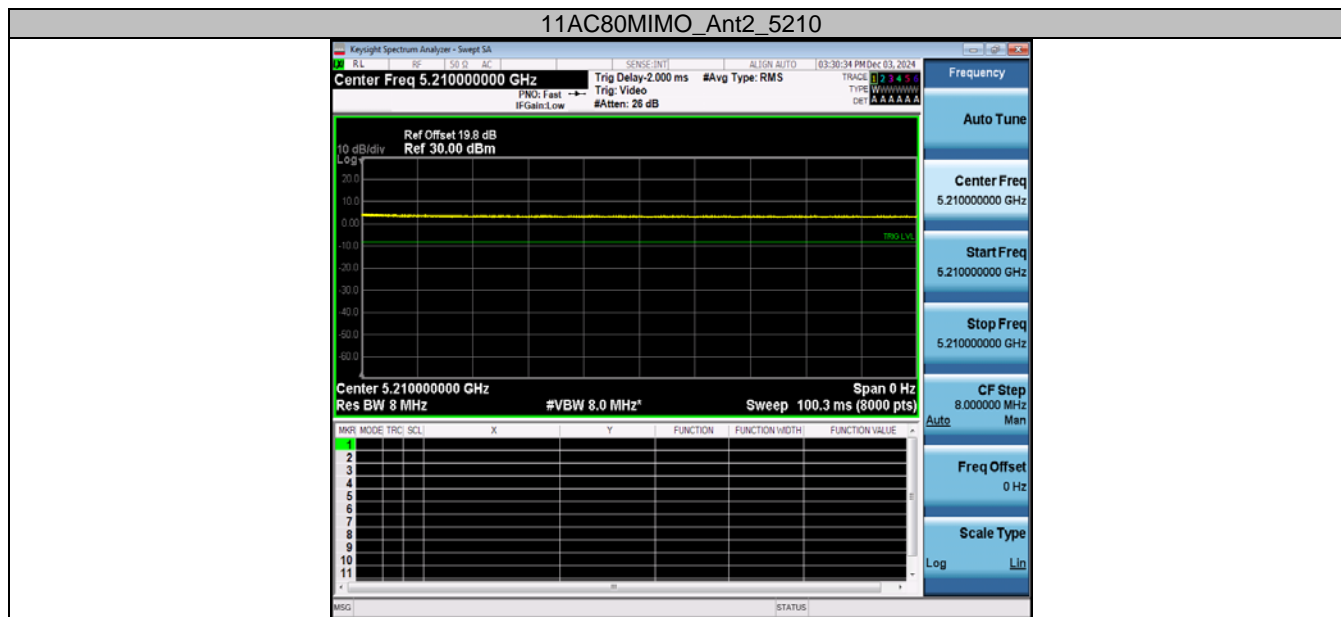
### 11AC40MIMO\_Ant2\_5230



### 11AC80MIMO\_Ant1\_5210







## DECLARATION OF SIMILARITY LETTER

---

SHENZHEN TENDA TECHNOLOGY CO.,LTD.

Add: 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China.  
518052

Tel: 86-755-27657098

Fax: 86-755-27657178

E-mail: cert@tenda.cn

### DECLARATION OF SIMILARITY

Date: 2024-11-28

To whom it may concern

Dear Sir or Madam:

We, SHENZHEN TENDA TECHNOLOGY CO.,LTD., hereby declare that the product: AC1200 Dual-Band Wi-Fi Range Extender, model: A18 is electrically identical with the model: A18 Pro which was tested by Bay Area Compliance Laboratories Corp. (Dongguan).

A description of the differences between those models and that are declared similar are as follows:

They are the same product, just the different model name and A18 is less one gigabit PHY than A18 Pro. the rest are the same.

Please contact me should there be need for any additional clarification or information.

Best Regards,

Signature:

Printed Name: Shen Yue

Title: Engineer

\*\*\*\*\*END OF REPORT\*\*\*\*\*