



Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640

Fax: +86-755-26648637

Website: www.cqa-cert.com

Report Template Version: V05

Report Template Revision Date: 2021-11-03

Test Report

Report No.: CQASZ20220901608E-03
Applicant: DP Audio Video LLC
Address of Applicant: 920 Malcolm Ave Los Angeles 90024 California United States
Equipment Under Test (EUT):
Product: 55"4K SMART LED TV
Model No.: DRPTV550SM
Test Model No.: DRPTV550SM
Brand Name: DuraPro
FCC ID: 2AVRVDRPTV550SM
Standards: 47 CFR Part 15, Subpart E
ANSI C63.10-2013
KDB 789033 D02 General UNII Test Procedures New Rules v02
Date of Receipt: 2022-09-13
Date of Test: 2022-09-13 to 2022-09-28
Date of Issue: 2022-10-12
Test Result: **PASS***

*In the configuration tested, the EUT complied with the standards specified above

Tested By: Lewis Zhou

(Lewis Zhou)

Reviewed By: Timo Lei

(Timo Lei)

Approved By: Jack Ai

(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20220901608E-03	Rev.01	Initial report	2022-10-12

2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203	ANSI C63.10-2013; KDB789033	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart E Section 15.207	ANSI C63.10-2013; KDB789033	PASS
Maximum Conducted Output Power	47 CFR Part 15 Subpart C Section 15.407 (a)	ANSI C63.10-2013; KDB789033	PASS
Emission Bandwidth	47 CFR Part 15 Subpart C Section 15.407 (a)(e)	ANSI C63.10-2013; KDB789033	PASS
Maximum Power Spectral Density	47 CFR Part 15 Subpart E Section 15.407 (a)	ANSI C63.10-2013; KDB789033	PASS
Band Edge Measurements	47 CFR Part 15 Subpart C Section 15.209 & 15.407(b)	ANSI C63.10-2013; KDB789033	PASS
Frequency stability	47 CFR Part 15 Subpart E Section 15.407 (g)	ANSI C63.10-2013; KDB789033	PASS
Operation in the absence of information to the transmit	47 CFR Part 15 Subpart E Section 15.407 (c)	47 CFR Part 15 Subpart E	PASS
Radiated Spurious Emissions	47 CFR Part 15 Subpart E Section 15.407 (b)	ANSI C63.10-2013; KDB789033	PASS

Remark:

The tested sample(s) and the sample information are provided by the client.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

CH: In this whole report CH means channel.

Volt: In this whole report Volt means Voltage.

Temp: In this whole report Temp means Temperature.

Humid: In this whole report Humid means humidity.

Press: In this whole report Press means Pressure.

N/A: In this whole report not application

3 Content

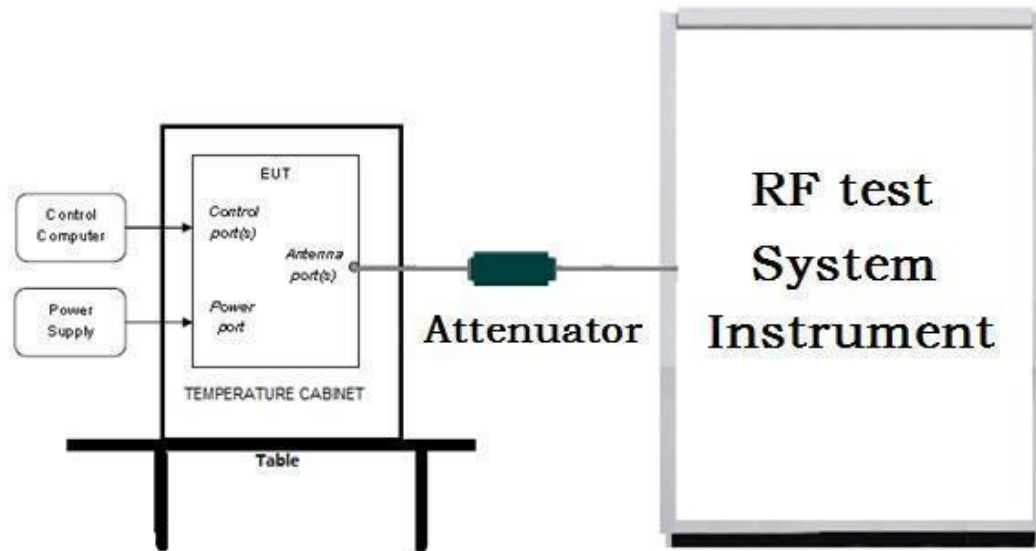
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The antenna is Omni Directional Antenna	46
The best case gain of the ANT1 is 0.97dBi. The best case gain of the ANT2 is 0.97dBi	46
MIMO mode:the antenna gain is 3.98dBi	46
Transmit signals are correlated with each other,	46
Directional gain= $G_{ANT}+10\log(N_{ANT})dBi=0.97+10\log(2)dBi=3.98dBi$	46
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4 Test Requirement

4.1 Test setup

4.1.1 For Conducted test setup



4.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

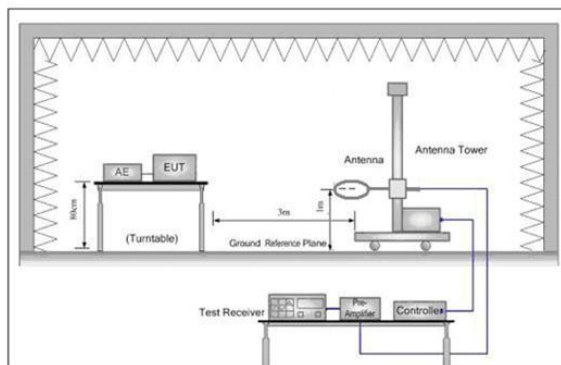


Figure 1. Below 30MHz

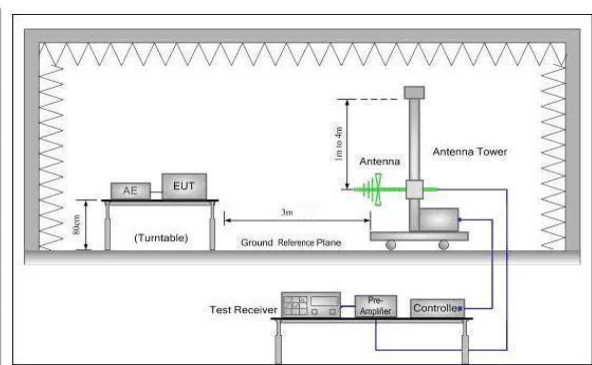


Figure 2. 30MHz to 1GHz

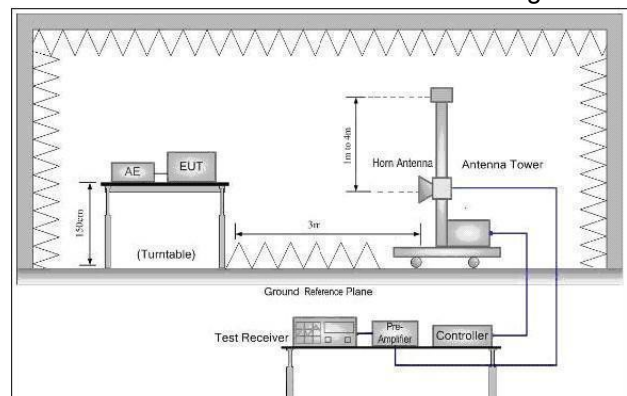
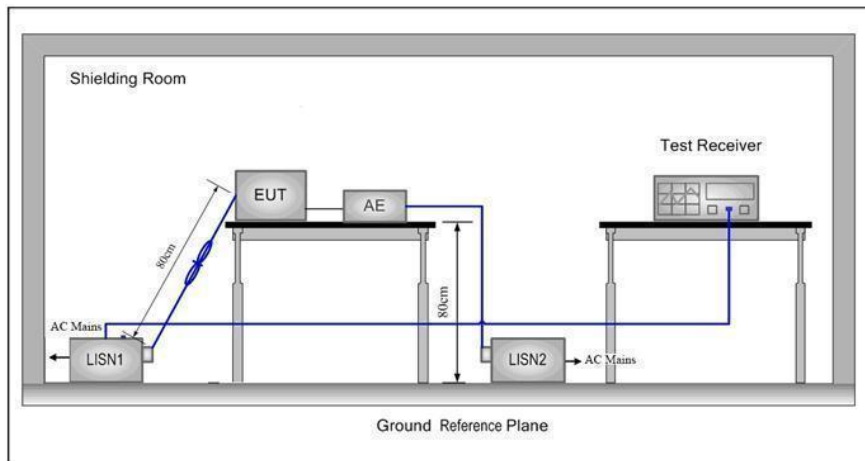


Figure 3. Above 1GHz

4.1.3 For Conducted Emissions test setup

Conducted Emissions setup



4.2 Test Environment

Operating Environment:		
Conducted Emissions:		
Temperature:	25.2 °C	
Humidity:	60 % RH	
Atmospheric Pressure:	1009 mbar	
Radiated Emissions:		
Temperature:	25.4 °C	
Humidity:	54 % RH	
Atmospheric Pressure:	1009mbar	
Radio conducted item test (RF Conducted test room):		
Temperature:	25.4 °C	
Humidity:	50 % RH	
Atmospheric Pressure:	1009 mbar	
Test Condition	Temperature (°C)	Voltage (V)
TN/VN	0 to +45	19
TL/VL	0	17.1
TH/VL	45	17.1
TL/VH	0	20.9
TH/VH	45	20.9
Remark:		
1)The test extreme temperature is 0 °C to 45 °C and the test extreme voltage is 17.1V to 20.9V, The manufacturer specified maximum ambient temperature is 0-45 °C.		
2)VN: Normal Voltage; TN: Normal Temperature;		
TL: Low Extreme Test Temperature; TH: High Extreme Test Temperature;		
VL: Low Extreme Test Voltage; VH: High Extreme Test Voltage.		

4.3 Test Condition

Test channel:

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
802.11a/n/ac(20M)	5150MHz ~5250 MHz	Channel 36	Channel 40	Channel 48
		5180MHz	5220MHz	5240MHz
802.11n/ac(40M)	5150MHz ~5250 MHz	Channel 38	N/A	Channel 46
		5190MHz	N/A	5230MHz
802.11ac(80M)	5150MHz ~5250 MHz	N/A	Channel 42	N/A
		N/A	5210MHz	N/A

Test mode:

Pre-scan under all rate at lowest channel for Ant1

Through Pre-scan, 6Mbps is the worst case of 802.11a (20M); MCS0 is the worst case of 802.11n (20M); MCS0 is the worst case of 802.11ac (20M); MCS0 is the worst case of 802.11n(40M); MCS0 is the worst case of 802.11ac (40M); MCS0 is the worst case of 802.11ac(80M).

5 General Information

5.1 Client Information

Applicant:	DP Audio Video LLC
Address of Applicant:	920 Malcolm Ave Los Angeles 90024 California United States
Manufacturer:	DP Audio Video LLC
Address of Manufacturer:	920 Malcolm Ave Los Angeles 90024 California United States
Factory:	Ganzhou City Mosws Electronics Ltd
Address of Factory:	SOUTH OF JINLINGXI ROAD, EAST OF QIFENGSHAN ROAD, GANZHOU DEVELOPMENT AREA GANZHOU CITY, JIANGXI PROVINCE, CHINA

5.2 General Description of EUT

Product Name:	55"4K SMART LED TV
Model No.:	DRPTV550SM
Test Model No.:	DRPTV550SM
Trade Mark:	DuraPro
Software Version:	23-03.10.23
Hardware Version:	LT-2874WV6.2
Power Supply:	Power by AC 120V/60Hz
EUT Supports Radios application:	BT: 2402-2480MHz 2.4GHz: Wi-Fi: 802.11b/g/n(HT20): 2412MHz~2462MHz; 802.11n(HT40): 2422MHz~2452MHz 5GHz: Wi-Fi: U-NII-1: 5.15-5.25GHz
EUT Type:	Client devices

5.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11a/n/ac(20M): 5150MHz ~5250 MHz IEEE802.11n/ac(40M): 5150MHz ~5250 MHz IEEE802.11ac(80M): 5150MHz ~5250 MHz
Channel Numbers:	IEEE 802.11a/n/ac(20M): 5150MHz ~5250MHz/ 4 channel IEEE 802.11n/ac(40M): 5150MHz ~5250MHz/ 2 channel IEEE 802.11ac(80M): 5150MHz ~5250MHz/ 1 channel
Type of Modulation:	OFDM
Sample Type:	☒ Mobile ☐ Portable ☐ Fix Location
Test Software of EUT:	WCN Combo Tool
Antenna Type:	Metal antenna
Antenna gain:	ANT1= 0.97 dBi,ANT2= 0.97 dBi.

5.4 Operation Frequency each of channel

For 802.11a/n/ac(20M) Operation in the 5150MHz ~5250 MHz band			
Channel	Frequency	Channel	Frequency
36	5180MHz	44	5220MHz
40	5220MHz	48	5240MHz

For 802.11n/ac(40M) Operation in the 5150MHz ~5250 MHz band			
Channel	Frequency	Channel	Frequency
38	5190MHz	46	5230MHz

For 802.11ac(80M) Operation in the 5150MHz ~5250 MHz band			
Channel	Frequency	NA	NA
42	5210MHz	NA	NA

5.5 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Certification	Supplied by
/	/	/	/	/

5.6 Test Location

All tests were performed at:

Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua New District, Shenzhen, Guangdong, China

5.7 Test Facility

• A2LA (Certificate No. 4742.01)

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

• FCC Registration No.: 522263

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

5.8 Deviation from Standards

None.

5.9 Abnormalities from Standard Conditions

None.

5.10 Other Information Requested by the Customer

None.

5.11 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	3×10^{-8}
2	RF power, conducted	0.86dB
3	Radiated Spurious emission test	5.12dB (Below 1GHz)
		4.6dB (Above 1GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.8°C
6	Humidity test	2.0%
7	DC power voltages	0.5%

6 Equipments List

Test Equipment	Manufacturer	Model No.	Instrument No.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2022/09/9	2023/09/08
Spectrum analyzer	R&S	FSU26	CQA-038	2022/09/9	2023/09/08
Spectrum analyzer	R&S	FSU40	CQA-075	2022/09/9	2023/09/08

Preamplifier	MITEQ	AFS4-00010300-18-10P-4	CQA-035	2022/09/9	2023/09/08
Preamplifier	MITEQ	AMF-6D-02001800-29-20P	CQA-036	2022/09/9	2023/09/08
Preamplifier	EMCI	EMC184055SE	CQA-089	2022/09/9	2023/09/08
Loop antenna	Schwarzbeck	FMZB1516	CQA-060	2021/09/16	2024/09/15
Bilog Antenna	R&S	HL562	CQA-011	2021/09/16	2024/09/15
Horn Antenna	R&S	HF906	CQA-012	2021/09/16	2024/09/15
Horn Antenna	Schwarzbeck	BBHA 9170	CQA-088	2021/09/16	2024/09/15
Coaxial Cable (Above 1GHz)	CQA	N/A	C007	2022/09/9	2023/09/08
Coaxial Cable (Below 1GHz)	CQA	N/A	C013	2022/09/9	2023/09/08
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2022/09/9	2023/09/08
Antenna Connector	CQA	RFC-01	CQA-080	2022/09/9	2023/09/08
Power Sensor	KEYSIGHT	U2021XA	CQA-30	2022/09/9	2023/09/08
N1918A Power Analysis Manager Power Panel	Agilent	N1918A	CQA-074	2022/09/9	2023/09/08
Power meter	R&S	NRVD	CQA-029	2022/09/9	2023/09/08
Power divider	MIDWEST	PWD-2533-02-SMA-79	CQA-067	2022/09/9	2023/09/08
EMI Test Receiver	R&S	ESR7	CQA-005	2022/09/9	2023/09/08
LISN	R&S	ENV216	CQA-003	2022/09/9	2023/09/08
Coaxial cable	CQA	N/A	CQA-C009	2022/09/9	2023/09/08
DC power	KEYSIGHT	E3631A	CQA-028	2022/09/9	2023/09/08

Test software:

	Manufacturer	Software brand
Radiated Emissions test software	Tonscend	JS1120-3
Conducted Emissions test software	Audix	e3
RF Conducted test software	Audix	e3

7 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15E	Subpart C-Intentional Radiators
2	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
3	KDB 789033 D02 General U-NII Test Procedures New Rules v02r01	Guidelines for compliance testing of unlicensed national information infrastructure (U-NII) device part 15, subpart E
4	KDB 662911 D01 Multiple Transmitter Output v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band

Appendix A): Emission Bandwidth

26dB Emission bandwidth

Test Requirement: 47 CFR Part 15, Subpart C 15.407 (a)

Test Method: KDB 789033 D02 General UNII Test Procedures New Rules v02

6 dB bandwidth (5.725-5.85 GHz band)

Test Requirement 47 CFR Part 15, Subpart C 15.407 (e)

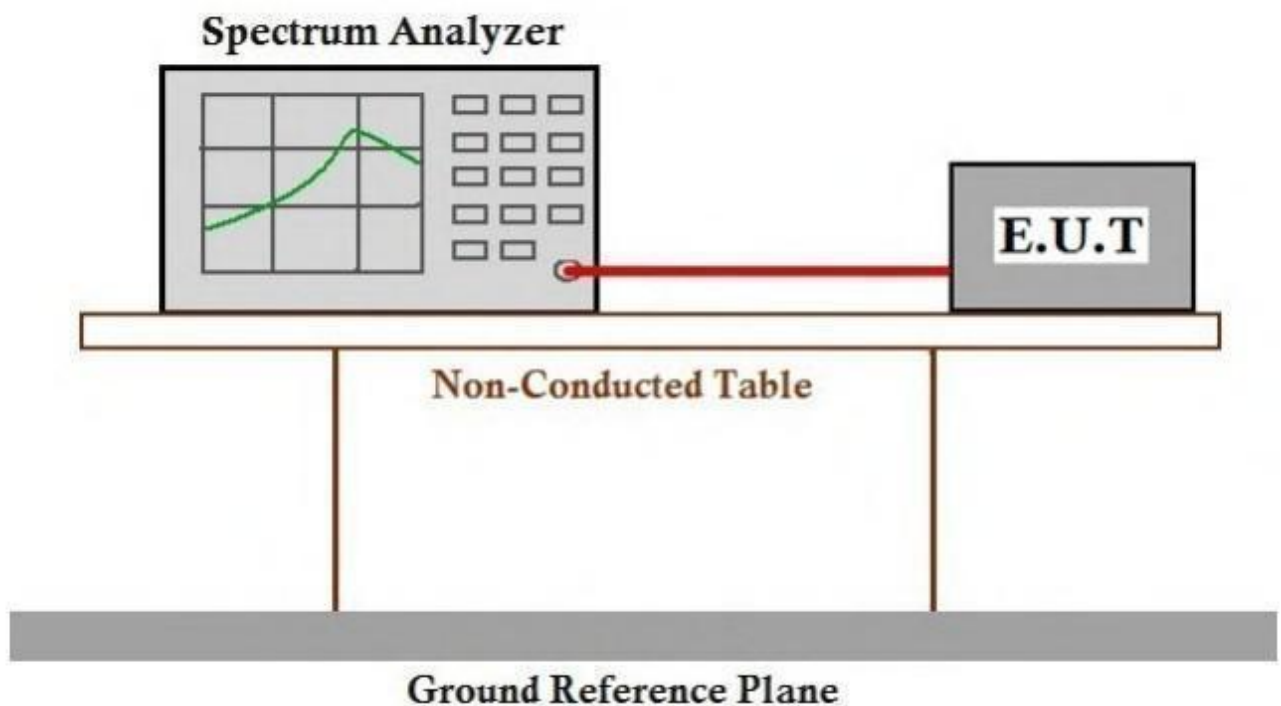
Test Method: KDB 789033 D02 General UNII Test Procedures New Rules v02

Limit: ≥ 500 kHz

Test Procedure:

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

Test Setup Diagram



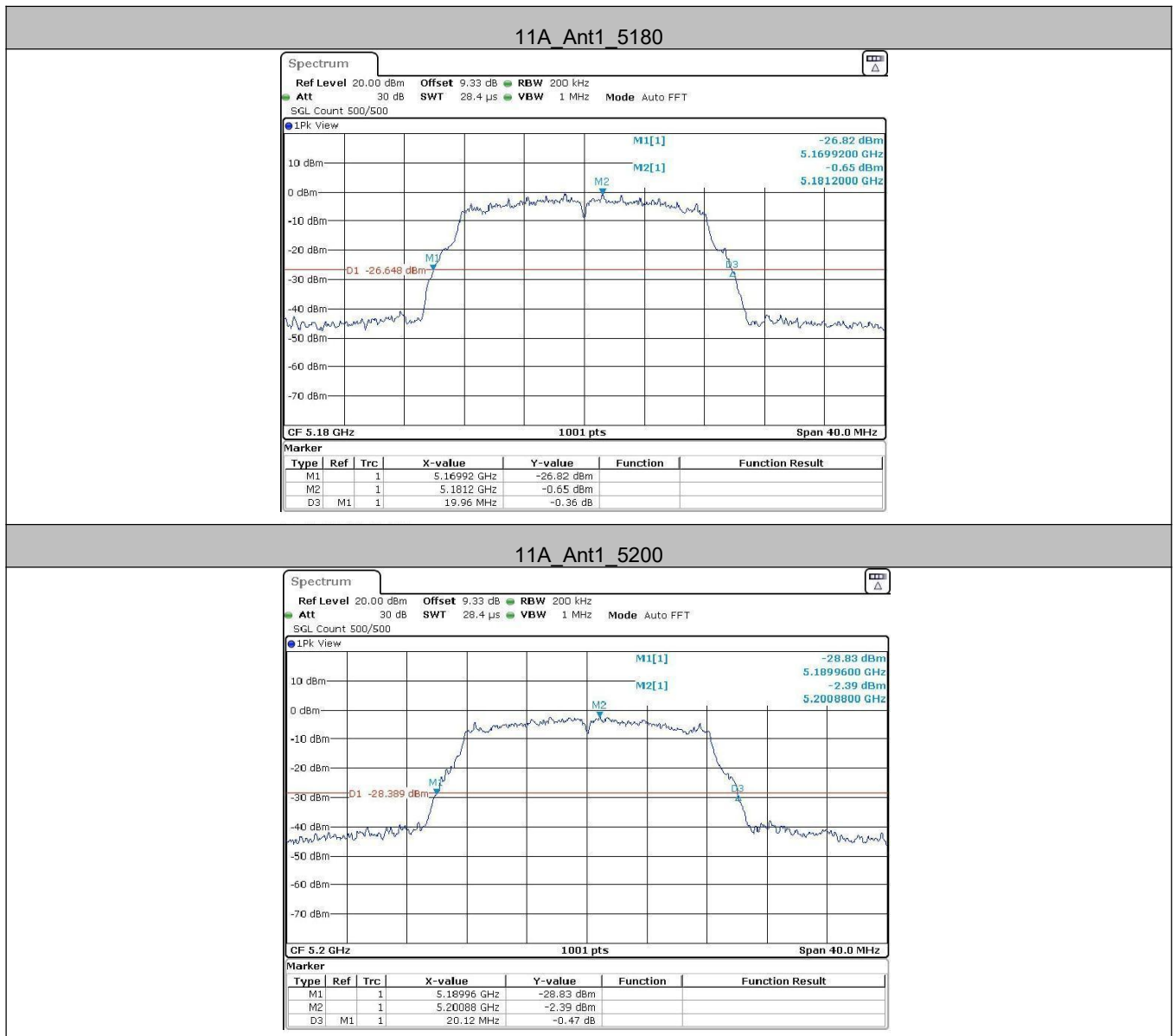
7.1 Appendix A1: Emission Bandwidth

7.1.1 Test Result

TestMode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	19.960	5169.920	5189.880	---	PASS
		5200	20.120	5189.960	5210.080	---	PASS
		5240	19.920	5230.280	5250.200	---	PASS
11N20SISO	Ant1	5180	20.320	5169.960	5190.280	---	PASS
		5200	20.280	5190.120	5210.400	---	PASS
		5240	19.960	5230.480	5250.440	---	PASS
11N40SISO	Ant1	5190	40.960	5169.760	5210.720	---	PASS
		5230	40.560	5210.080	5250.640	---	PASS
11AC20SISO	Ant1	5180	20.200	5170.160	5190.360	---	PASS
		5200	20.240	5190.120	5210.360	---	PASS
		5240	20.040	5230.360	5250.400	---	PASS
11AC40SISO	Ant1	5190	40.480	5169.440	5209.920	---	PASS
		5230	41.120	5209.440	5250.560	---	PASS
11AC80SISO	Ant1	5210	80.320	5170.160	5250.480	---	PASS

TestMode	Antenna	Channel	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant2	5180	20.440	5169.760	5190.200	---	PASS
		5200	20.640	5189.680	5210.320	---	PASS
		5240	20.520	5229.840	5250.360	---	PASS
11N20SISO	Ant2	5180	20.720	5169.640	5190.360	---	PASS
		5200	20.720	5189.560	5210.280	---	PASS
		5240	20.680	5229.720	5250.400	---	PASS
11N40SISO	Ant2	5190	39.360	5170.320	5209.680	---	PASS
		5230	43.200	5210.160	5253.360	---	PASS
11AC20SISO	Ant2	5180	20.320	5169.760	5190.080	---	PASS
		5200	20.400	5189.720	5210.120	---	PASS
		5240	20.760	5229.800	5250.560	---	PASS
11AC40SISO	Ant2	5190	40.160	5169.760	5209.920	---	PASS
		5230	52.560	5209.680	5262.240	---	PASS
11AC80SISO	Ant2	5210	80.960	5170.000	5250.960	---	PASS

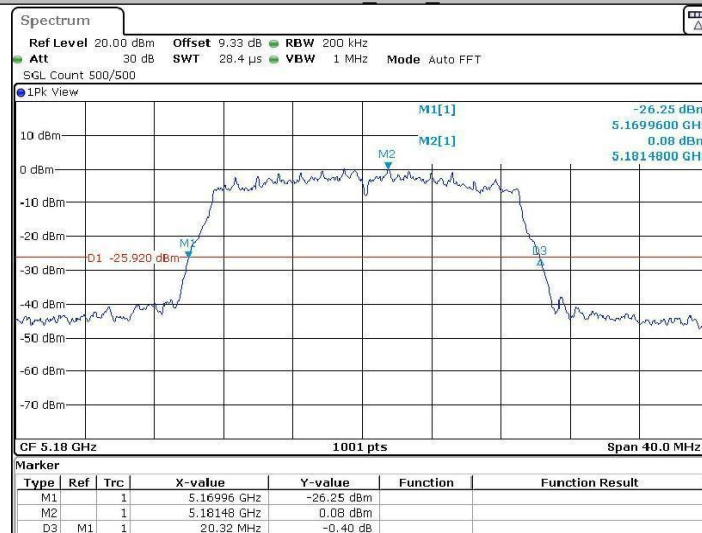
7.1.2 Test Graphs



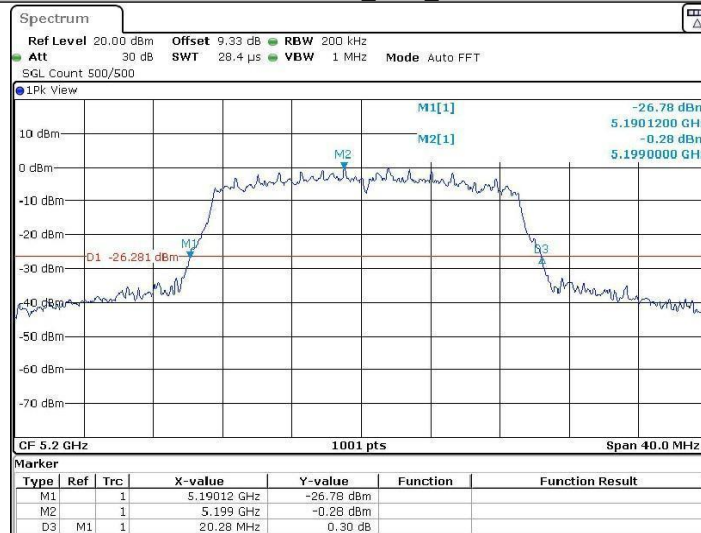
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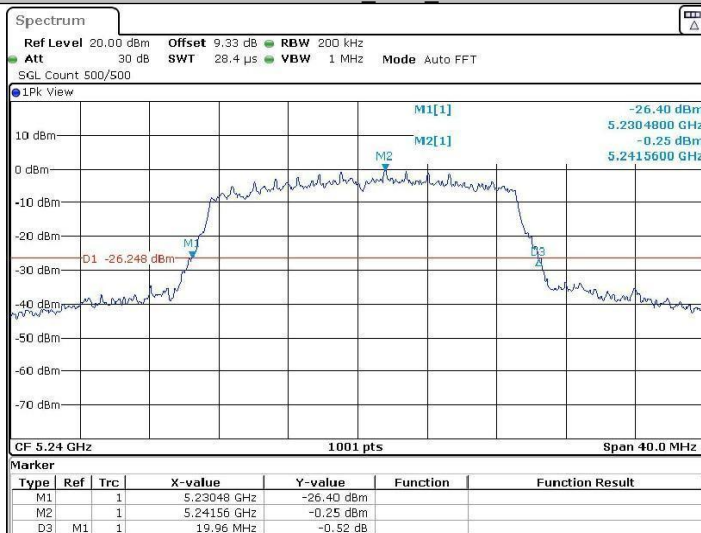
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11N20SISO_Ant1_5200



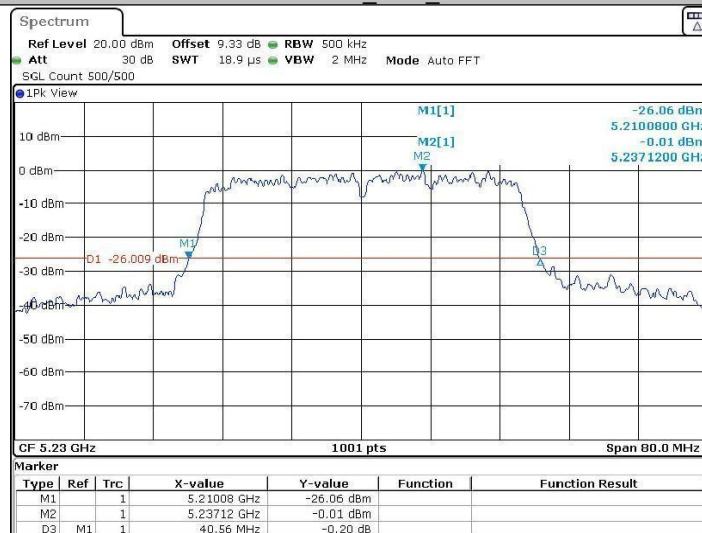
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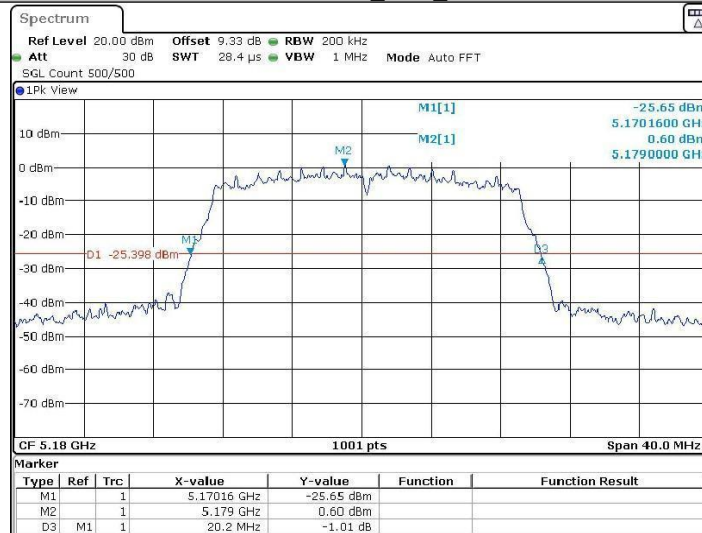
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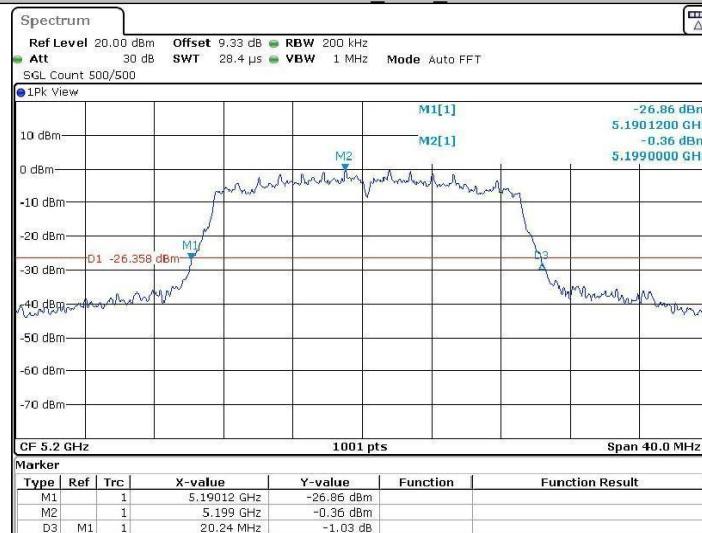
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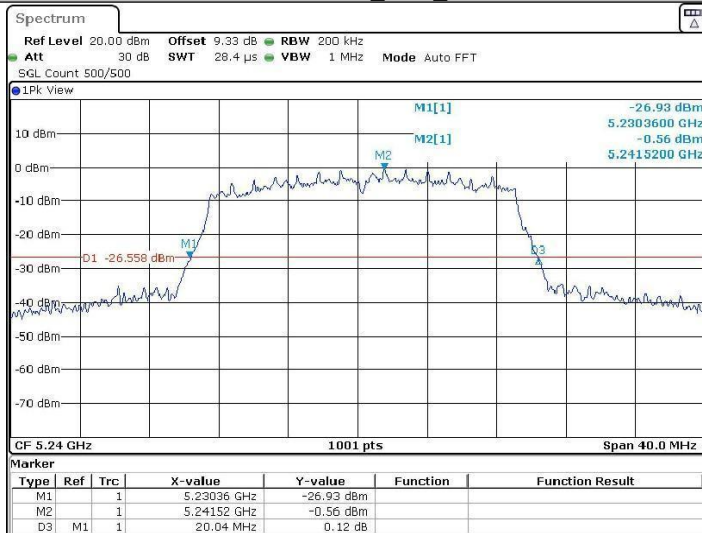
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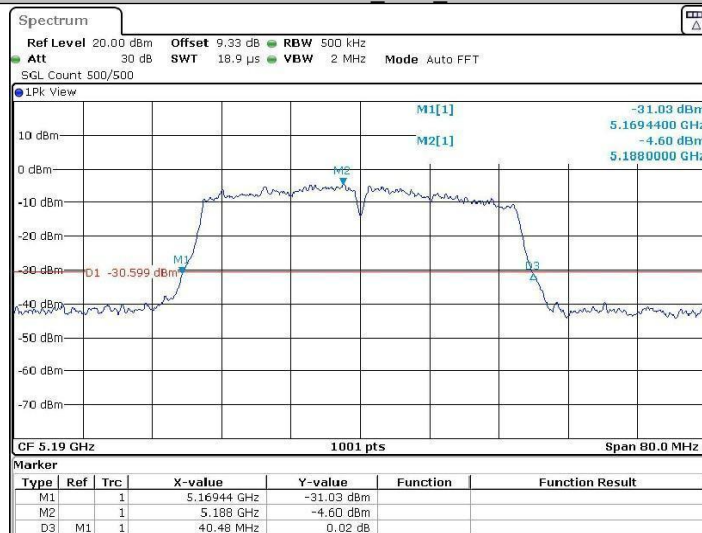
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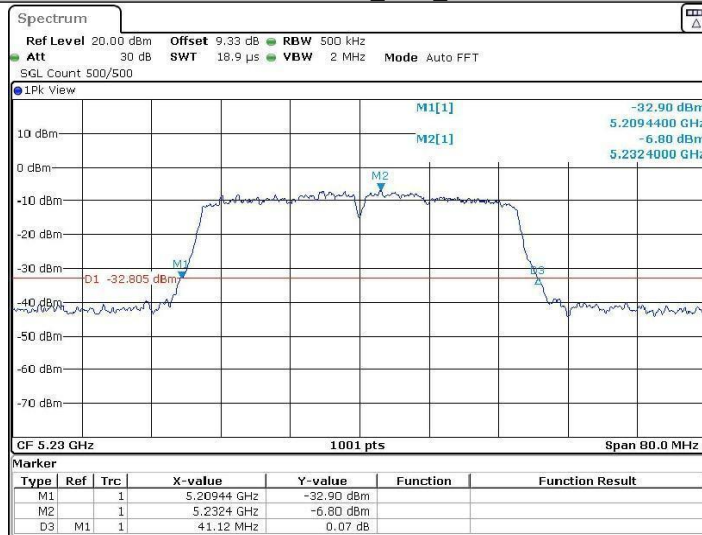
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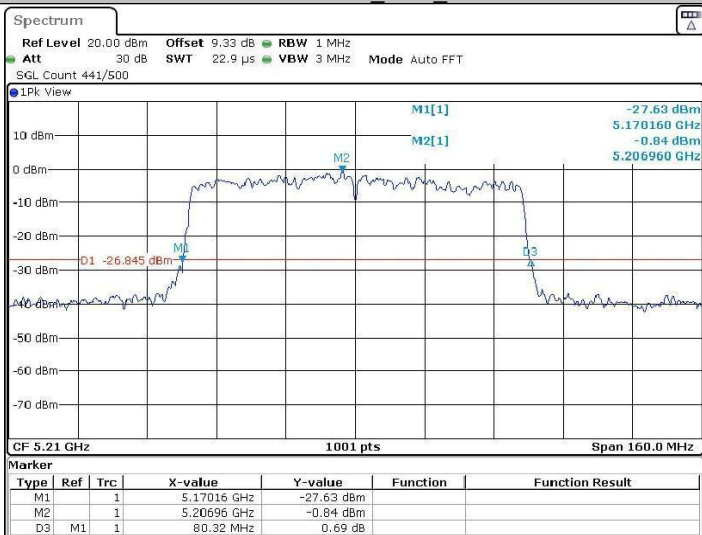
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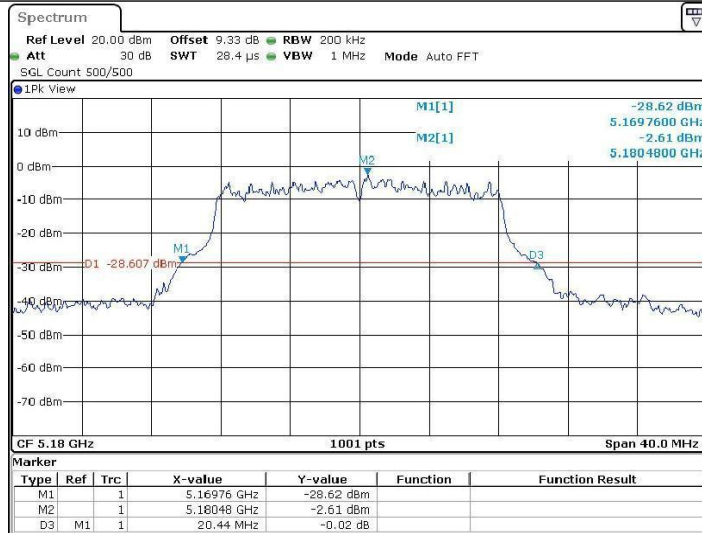
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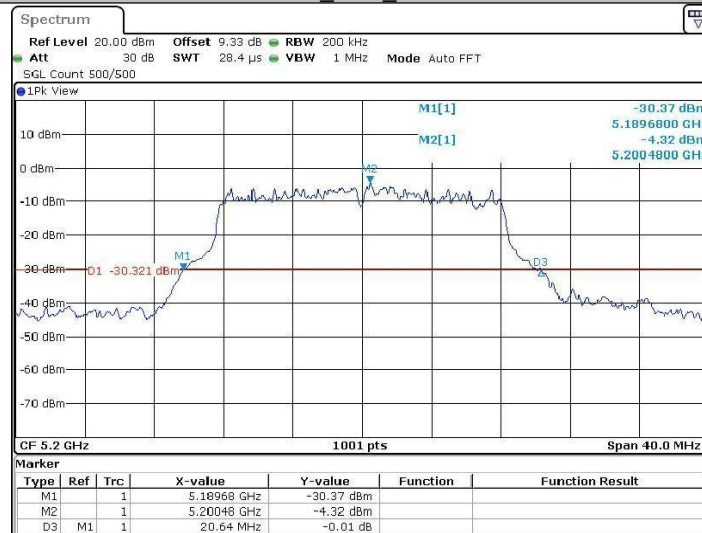
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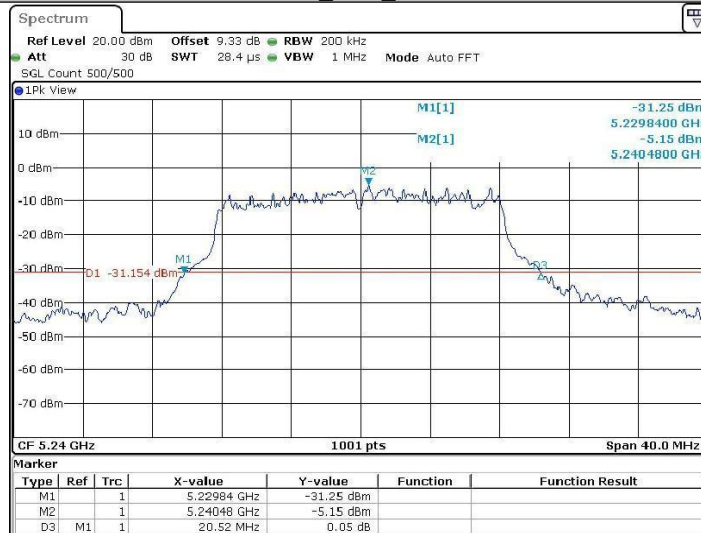
11A_Ant2_5180



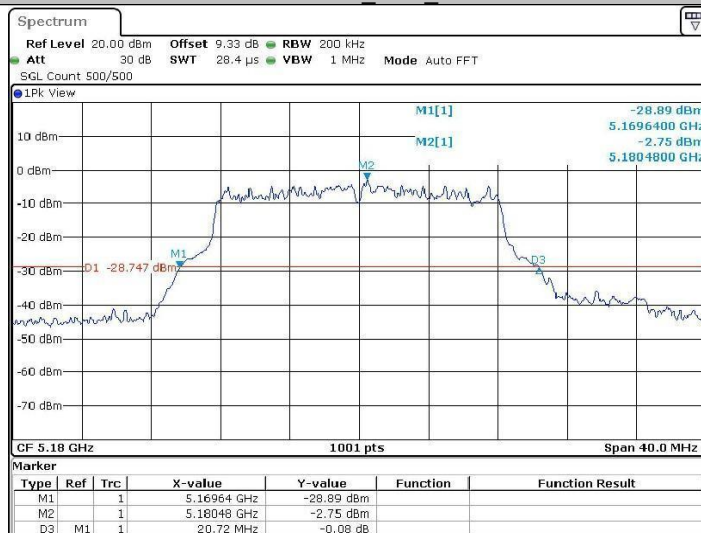
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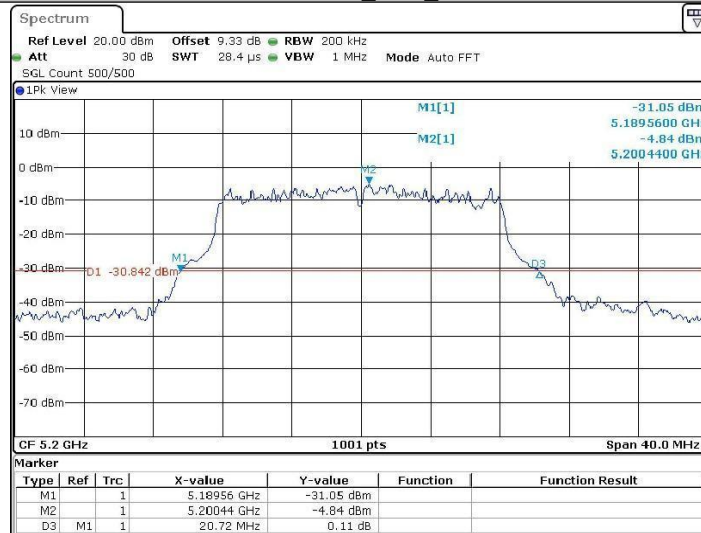
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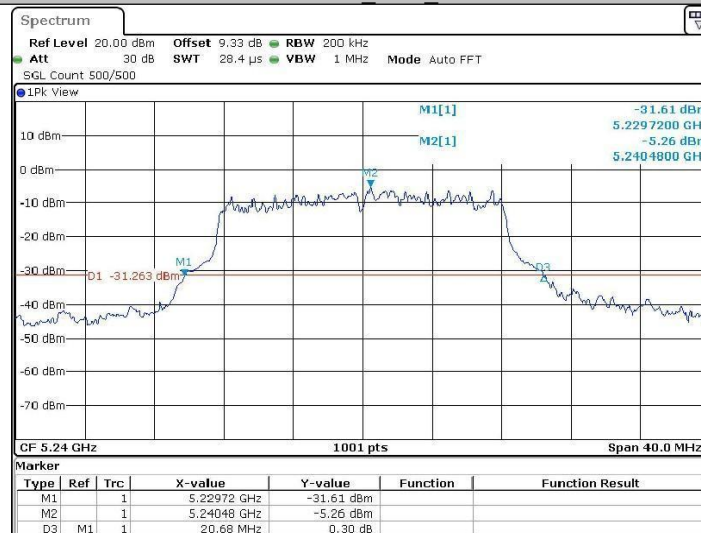
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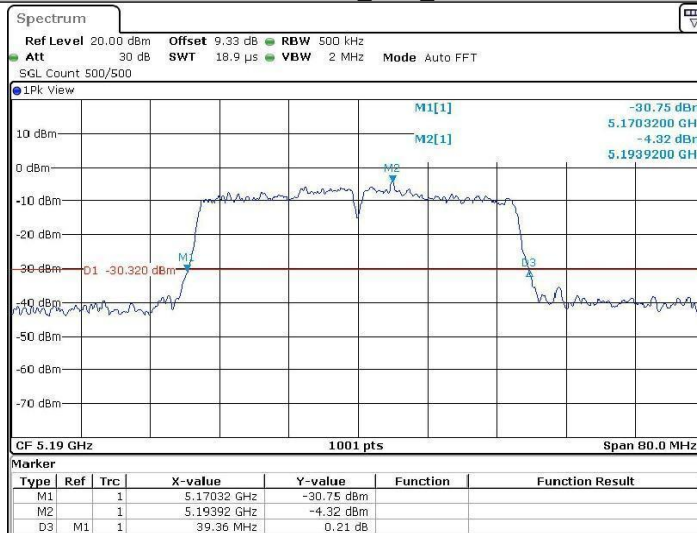
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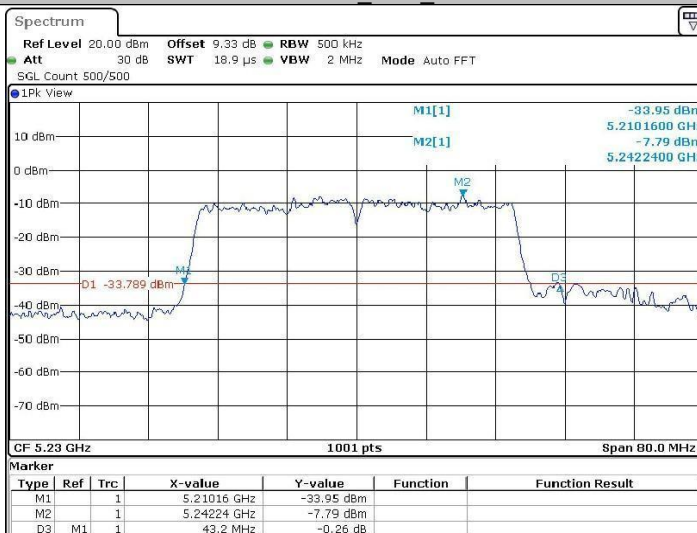
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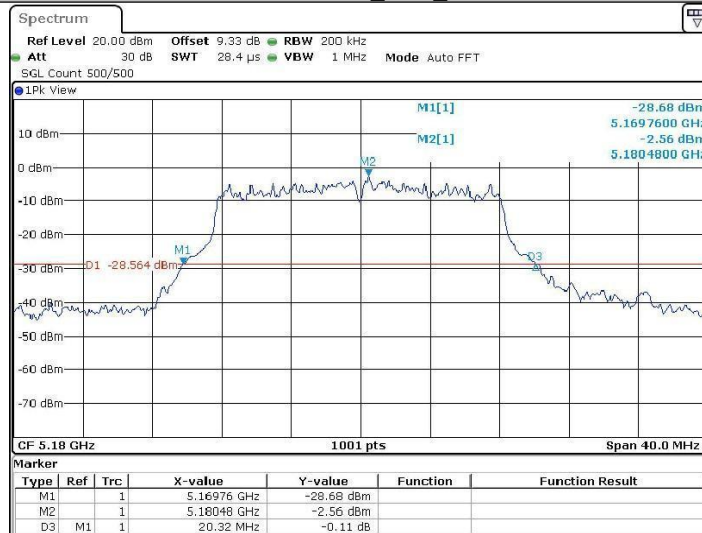
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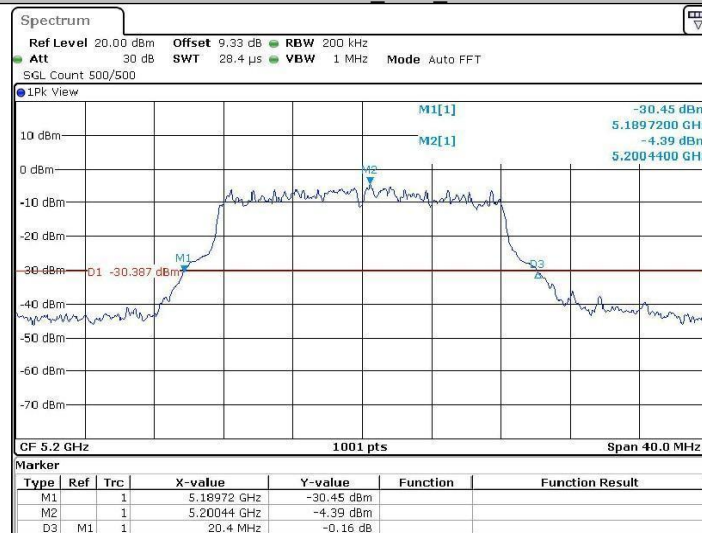
11N40SISO_Ant2_5230



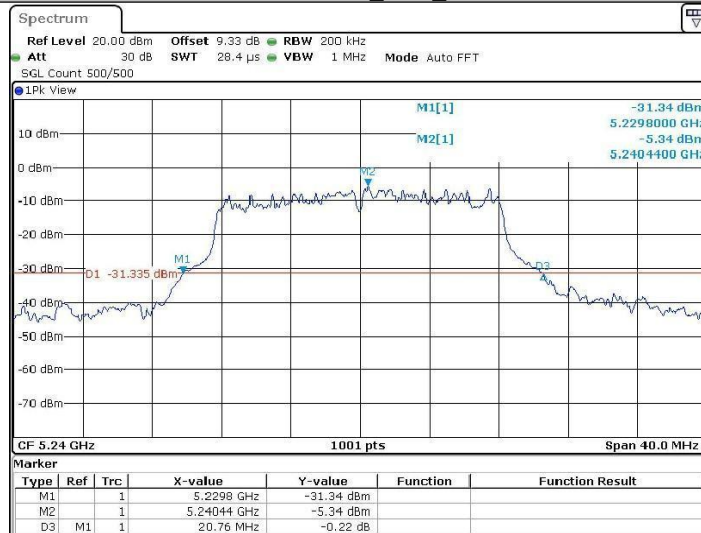
11AC20SISO_Ant2_5180



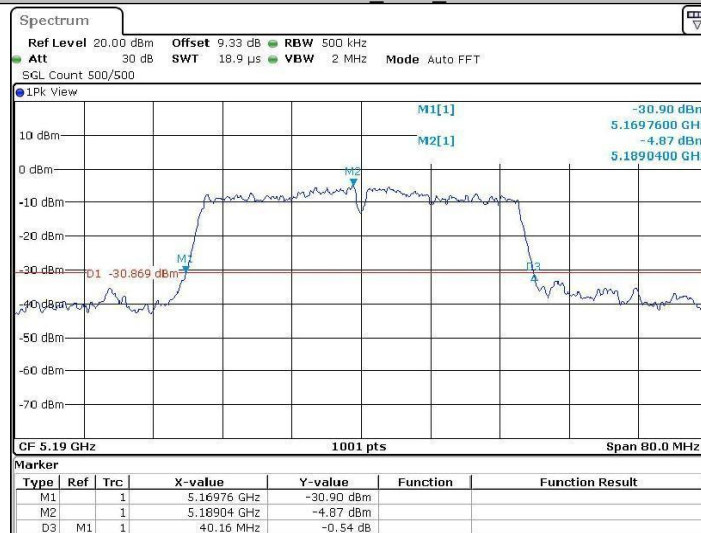
11AC20SISO_Ant2_5200



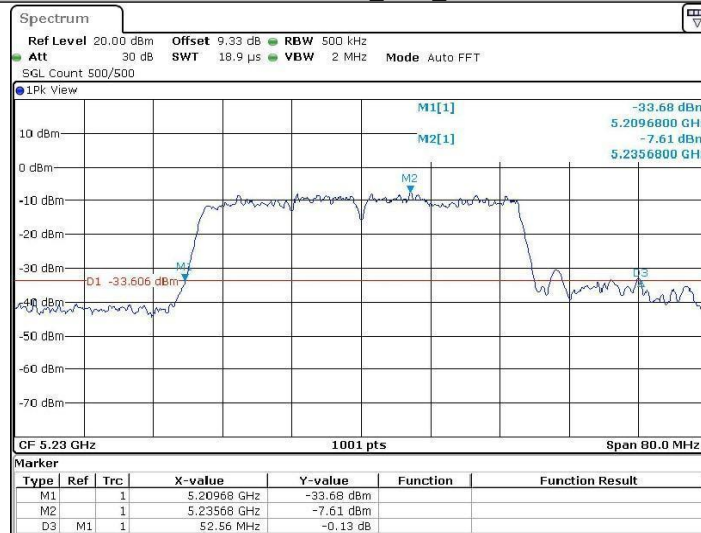
11AC20SISO_Ant2_5240



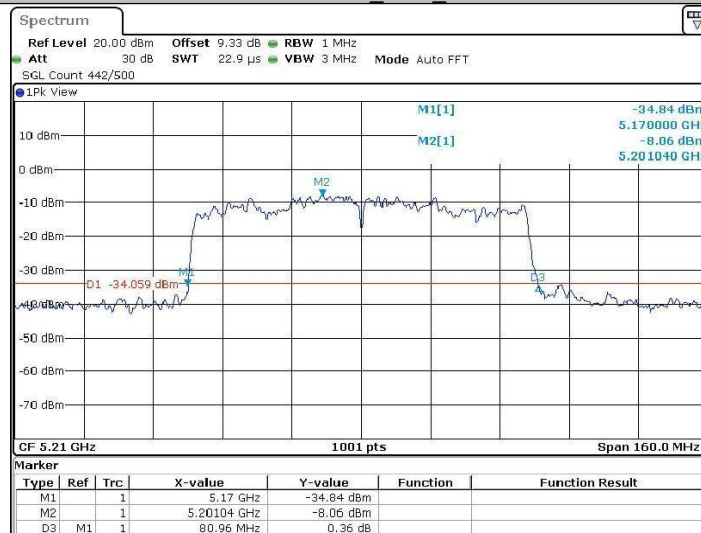
11AC40SISO_Ant2_5190



11AC40SISO_Ant2_5230



11AC80SISO_Ant2_5210



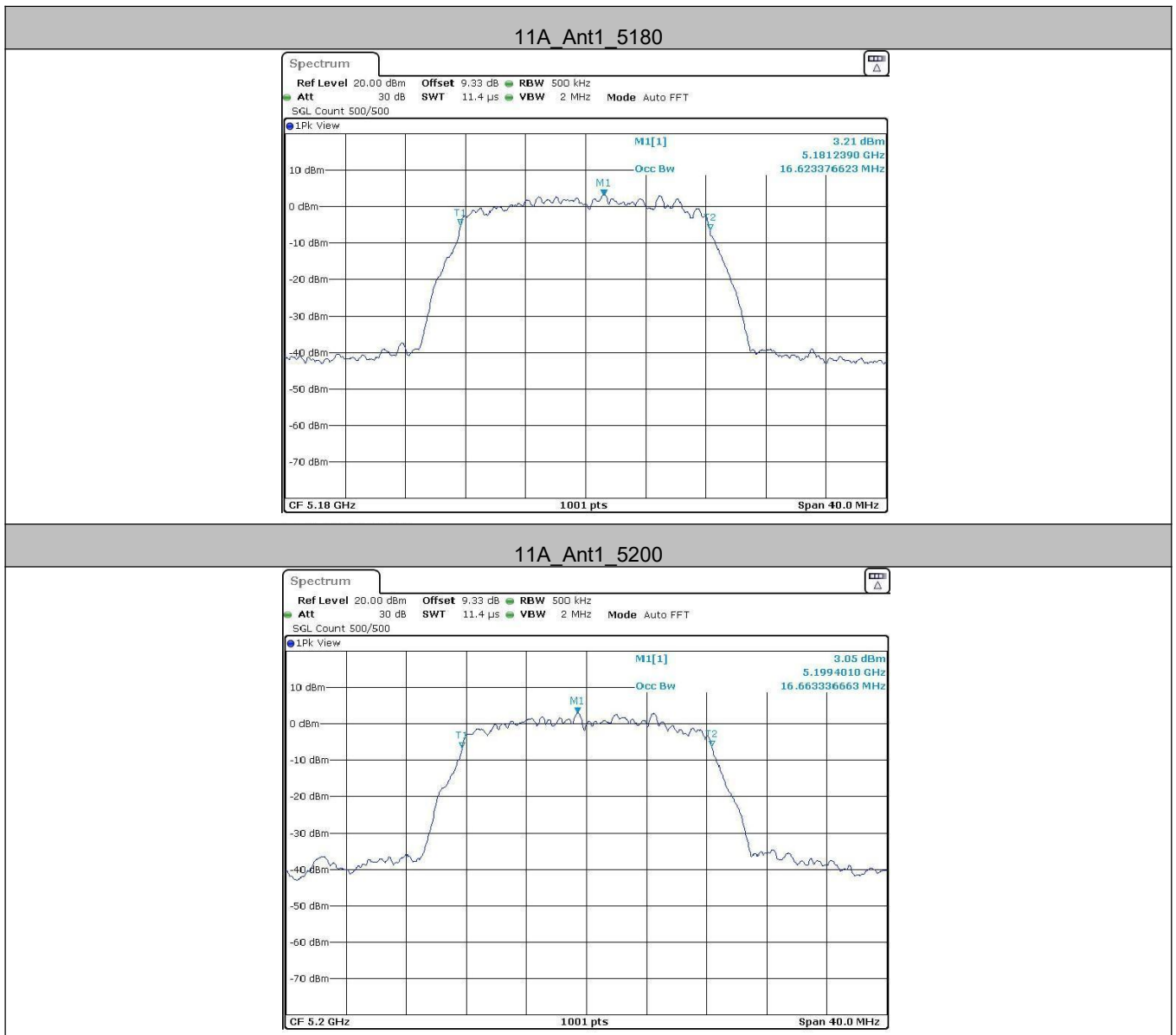
7.2 Appendix A2: Occupied channel bandwidth

7.2.1 Test Result

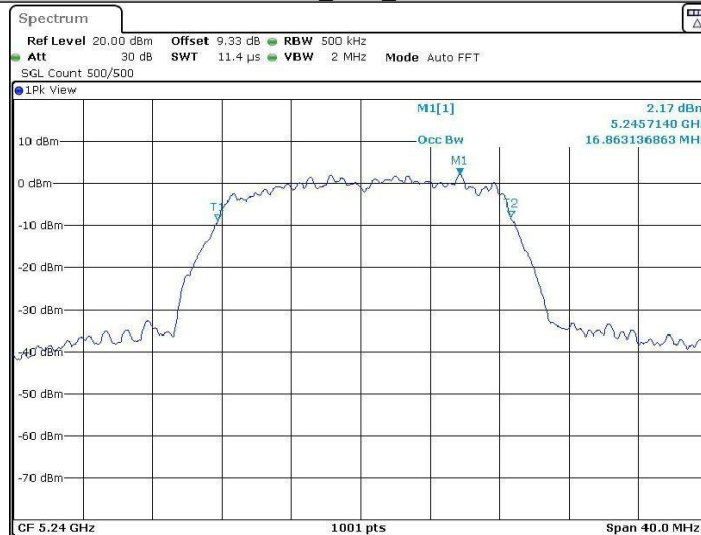
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	16.623	5171.648	5188.272	---	PASS
		5200	16.663	5191.688	5208.352	---	PASS
		5240	16.863	5231.768	5248.631	---	PASS
11N20SISO	Ant1	5180	17.902	5171.289	5189.191	---	PASS
		5200	17.742	5191.409	5209.151	---	PASS
		5240	17.822	5231.449	5249.271	---	PASS
11N40SISO	Ant1	5190	36.044	5172.178	5208.222	---	PASS
		5230	36.523	5212.018	5248.541	---	PASS
11AC20SISO	Ant1	5180	17.742	5171.409	5189.151	---	PASS
		5200	17.822	5191.369	5209.191	---	PASS
		5240	17.782	5231.289	5249.071	---	PASS
11AC40SISO	Ant1	5190	36.124	5171.698	5207.822	---	PASS
		5230	36.444	5211.698	5248.142	---	PASS
11AC80SISO	Ant1	5210	76.563	5171.958	5248.521	---	PASS

TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant2	5180	16.983	5171.528	5188.511	---	PASS
		5200	16.903	5191.449	5208.352	---	PASS
		5240	16.983	5231.568	5248.551	---	PASS
11N20SISO	Ant2	5180	16.903	5171.528	5188.432	---	PASS
		5200	16.943	5191.528	5208.472	---	PASS
		5240	16.983	5231.568	5248.551	---	PASS
11N40SISO	Ant2	5190	36.284	5171.778	5208.062	---	PASS
		5230	36.763	5211.698	5248.462	---	PASS
11AC20SISO	Ant2	5180	16.943	5171.489	5188.432	---	PASS
		5200	16.863	5191.528	5208.392	---	PASS
		5240	17.023	5231.568	5248.591	---	PASS
11AC40SISO	Ant2	5190	36.923	5171.219	5208.142	---	PASS
		5230	37.083	5211.299	5248.382	---	PASS
11AC80SISO	Ant2	5210	76.244	5171.958	5248.202	---	PASS

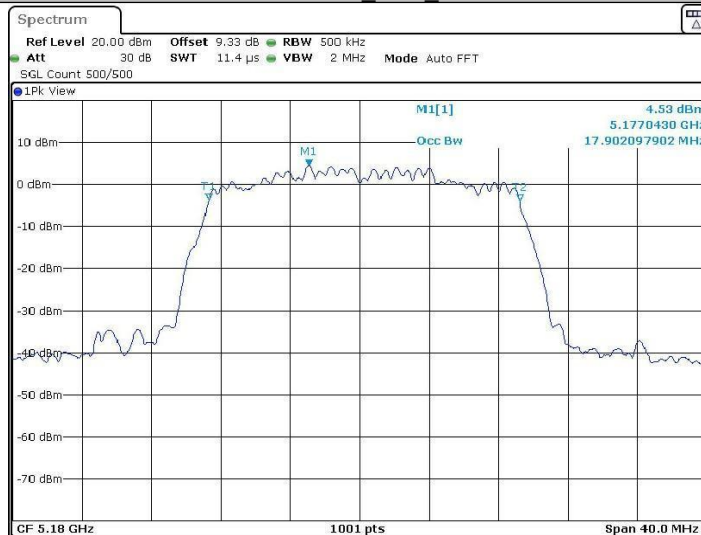
7.2.2 Test Graphs



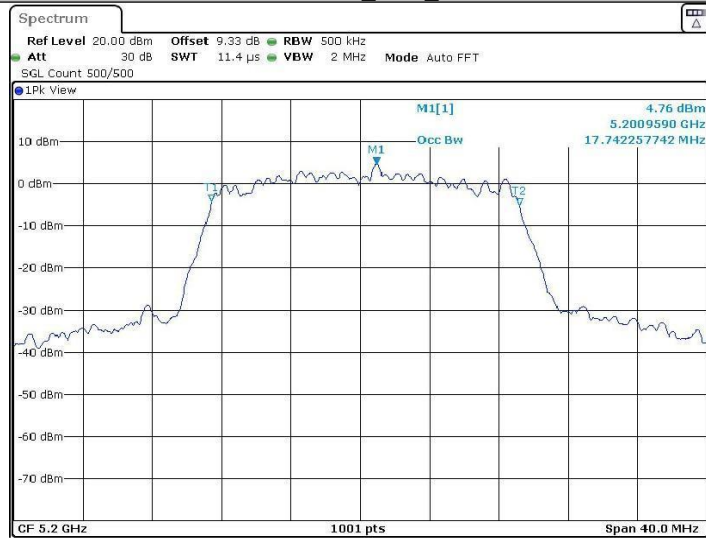
11A_Ant1_5240



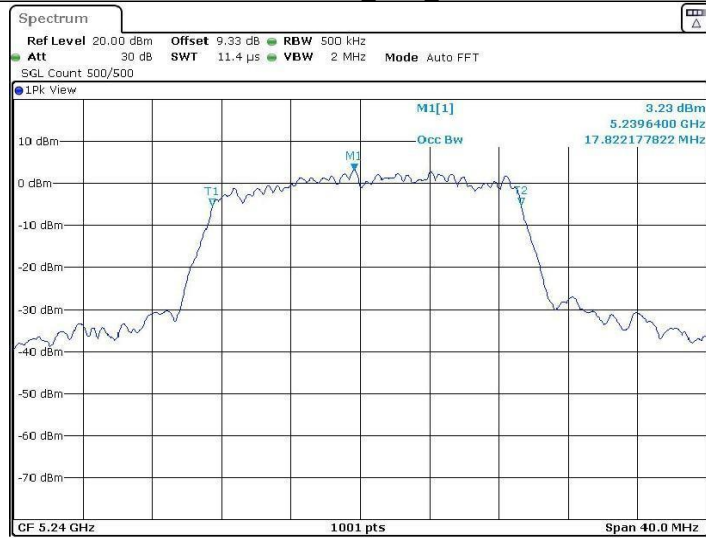
11N20SISO_Ant1_5180



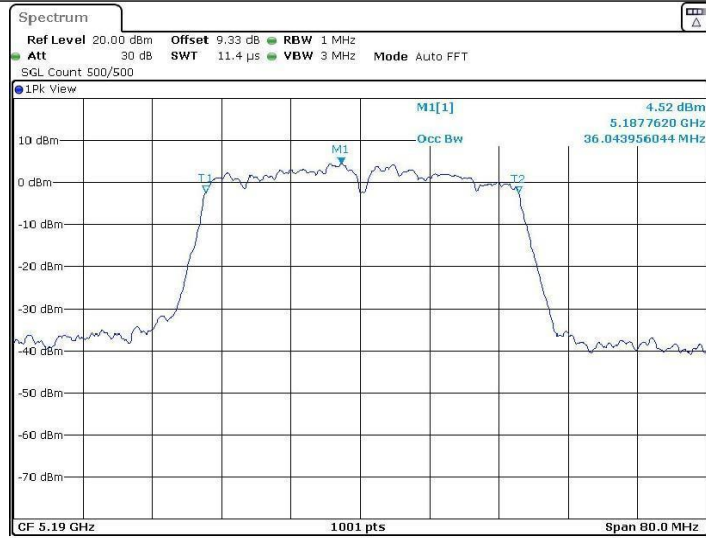
11N20SISO_Ant1_5200



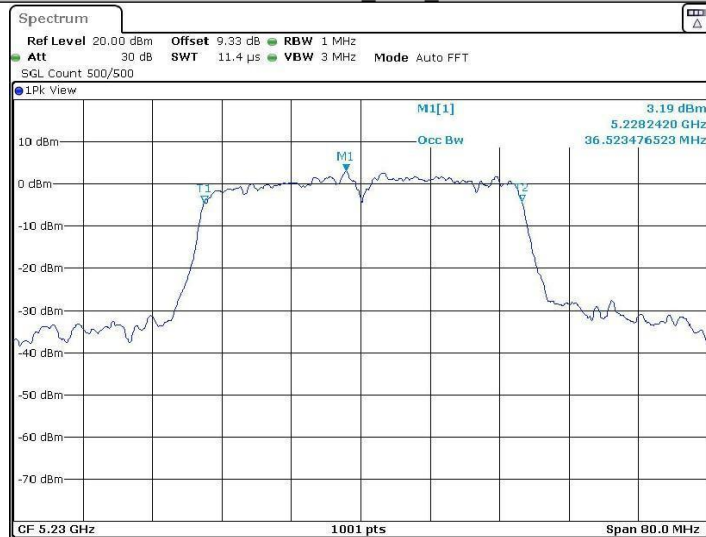
11N20SISO_Ant1_5240



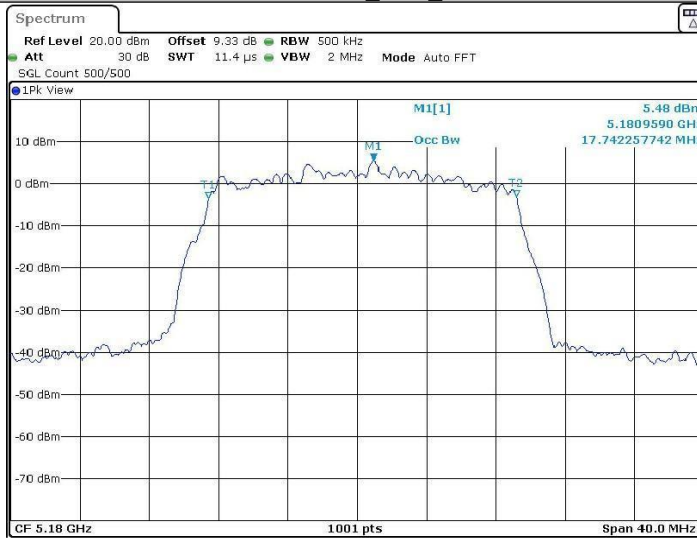
11N40SISO_Ant1_5190



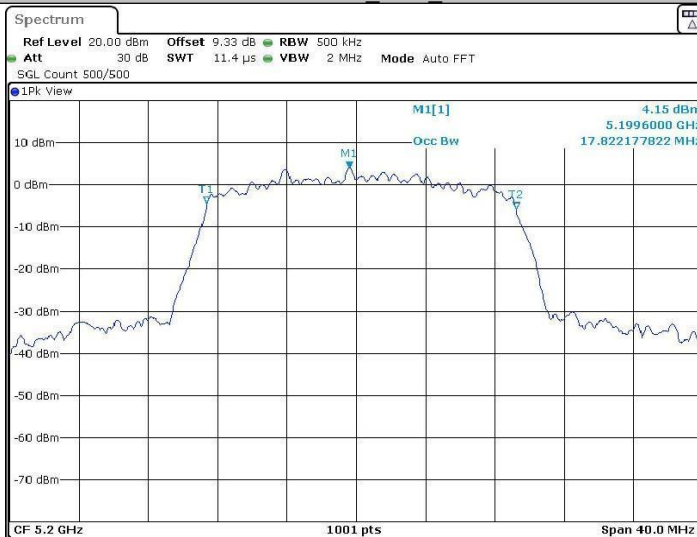
11N40SISO_Ant1_5230



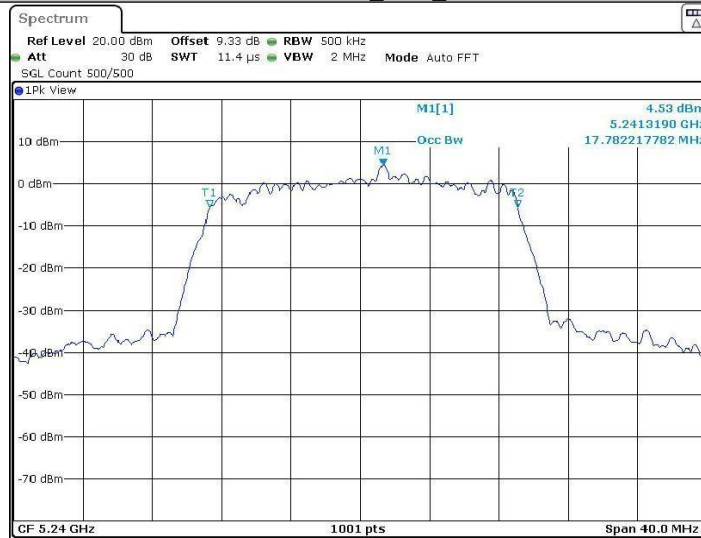
11AC20SISO_Ant1_5180



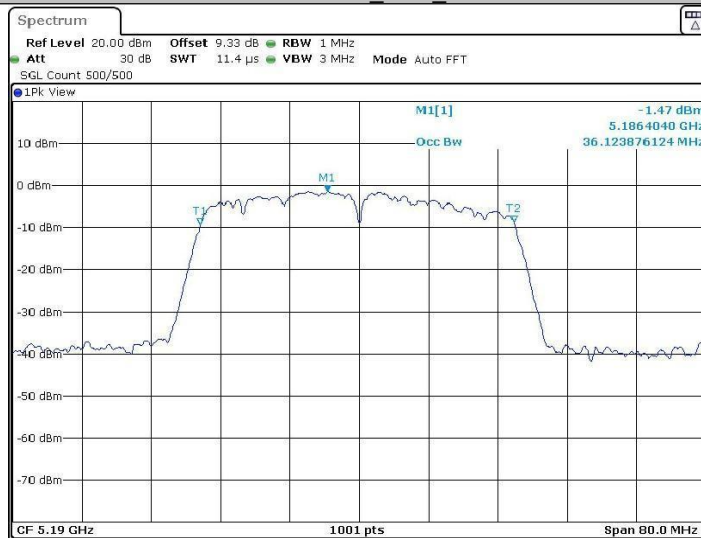
11AC20SISO_Ant1_5200

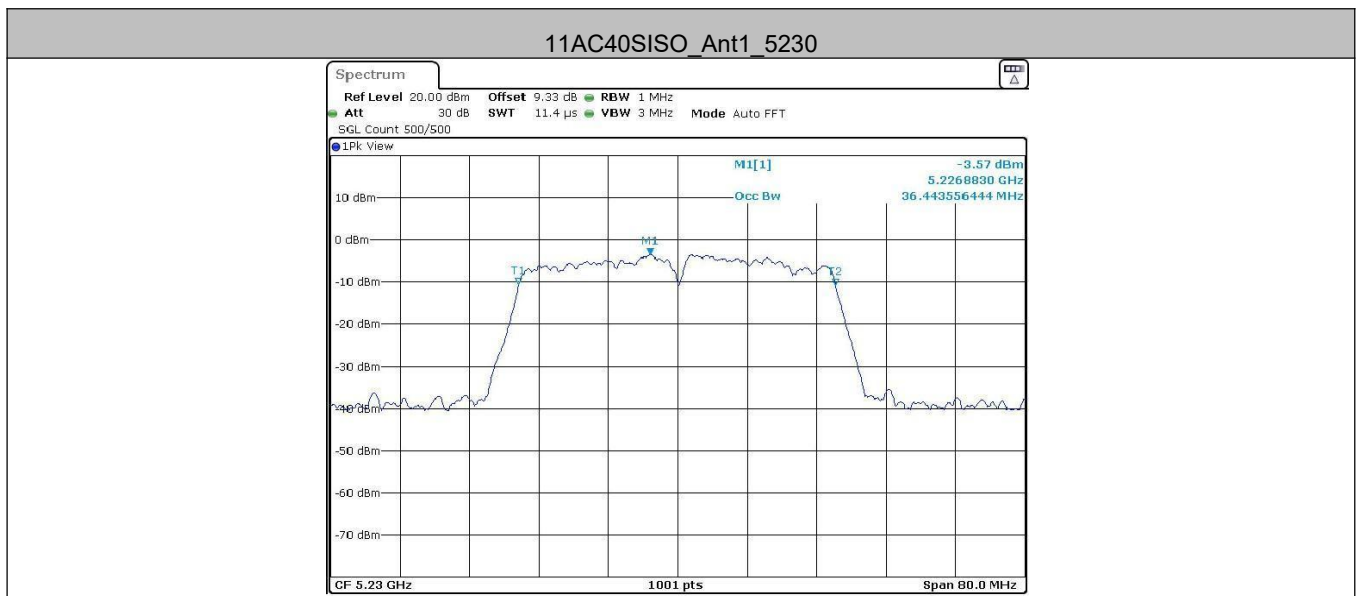


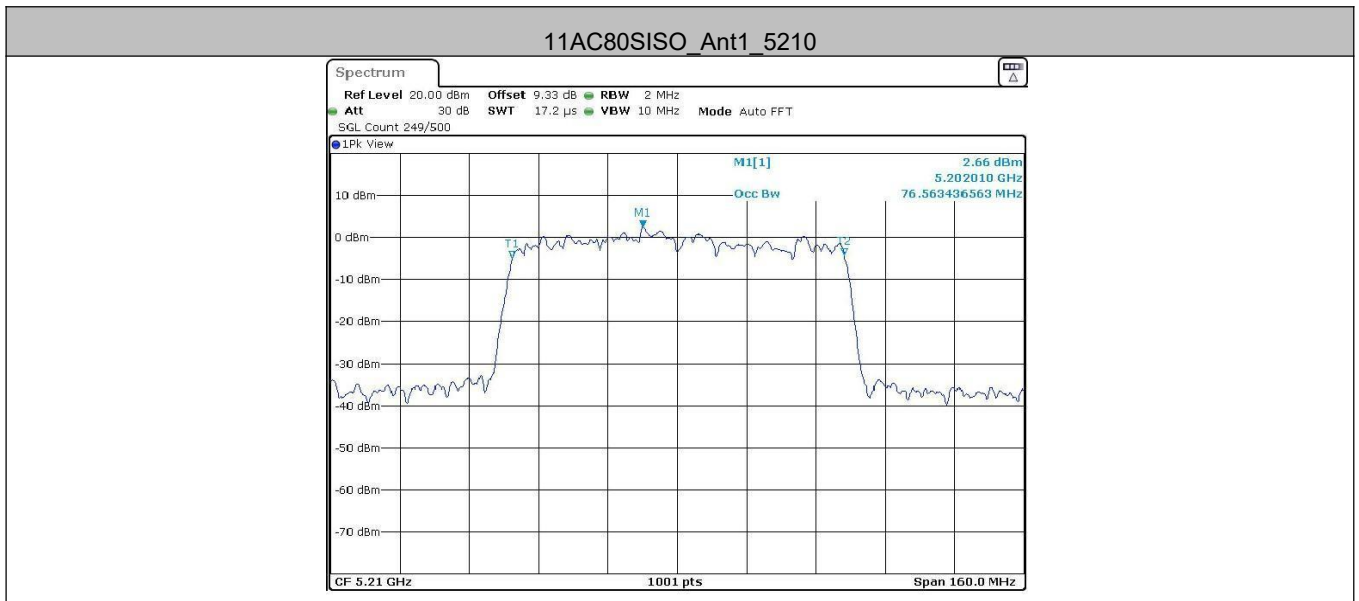
11AC20SISO_Ant1_5240



11AC40SISO_Ant1_5190







Appendix B): Maximum Conduct Output Power

1. Duty Cycle

Note: During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product. Transmitting duty cycle is no less 98%.

2. Maximum Conducted Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.407 (a)

Test Method: KDB 789033 D02 General UNII Test Procedures New Rules v02

Limit:

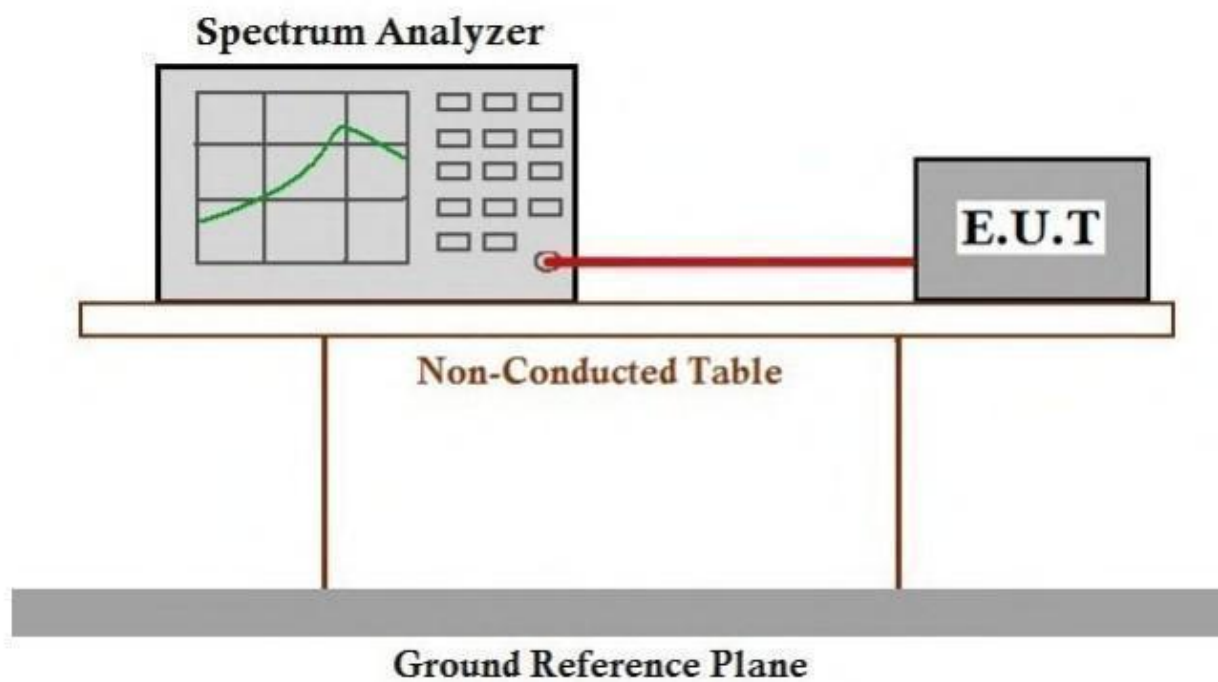
Frequency band(MHz)	Limit
5150-5250	$\leq 1\text{W}(30\text{dBm})$ for master device
	$\leq 250\text{mW}(24\text{dBm})$ for client device
5250-5350	$\leq 250\text{mW}(24\text{dBm})$ for client device or $11\text{dBm}+10\log B^*$
5470-5725	$\leq 250\text{mW}(24\text{dBm})$ for client device or $11\text{dBm}+10\log B^*$
5725-5850	$\leq 1\text{W}(30\text{dBm})$
Remark:	* Where B is the 26dB emission bandwidth in MHz. The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

Test Procedure:

Method SA-2 (trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- (1) Set RBW = 1 MHz.
- (2) Set VBW $\geq$ 3 MHz.
- (3) Detector = power average
- (4) Sweep time = auto.
- (5) Add duty cycle to the measured average power.

Test Setup Diagram



Measurement Data

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11A	Ant1	5180	8.88	≤24	PASS
		5200	8.23	≤24	PASS
		5240	8.11	≤24	PASS
11N20SISO	Ant1	5180	9.86	≤24	PASS
		5200	9.11	≤24	PASS
		5240	8.75	≤24	PASS
11N40SISO	Ant1	5190	9.58	≤24	PASS
		5230	8.18	≤24	PASS
11AC20SISO	Ant1	5180	9.87	≤24	PASS
		5200	9.00	≤24	PASS
		5240	8.53	≤24	PASS
11AC40SISO	Ant1	5190	4.65	≤24	PASS
		5230	2.78	≤24	PASS
11AC80SISO	Ant1	5210	7.83	≤24	PASS

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11A	Ant2	5180	5.99	≤24	PASS
		5200	4.79	≤24	PASS
		5240	1.66	≤24	PASS
11N20SISO	Ant2	5180	5.85	≤24	PASS
		5200	4.59	≤24	PASS
		5240	1.59	≤24	PASS
11N40SISO	Ant2	5190	0.60	≤24	PASS
		5230	-1.54	≤24	PASS
11AC20SISO	Ant2	5180	5.83	≤24	PASS
		5200	4.66	≤24	PASS
		5240	4.22	≤24	PASS
11AC40SISO	Ant2	5190	1.95	≤24	PASS
		5230	-0.07	≤24	PASS
11AC80SISO	Ant2	5210	-0.80	≤24	PASS

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11N20MIMO	Ant1+Ant2	5180	10.10	≤24	PASS
		5200	8.62	≤24	PASS
		5240	11.31	≤24	PASS
11N40MIMO	Ant1+Ant2	5190	10.36	≤24	PASS
		5230	9.90	≤24	PASS
11AC20MIMO	Ant1+Ant2	5180	6.52	≤24	PASS
		5200	4.60	≤24	PASS
		5240	8.39	≤24	PASS
11AC40MIMO	Ant1+Ant2	5190	11.31	≤24	PASS
		5230	10.42	≤24	PASS
11AC80MIMO	Ant1+Ant2	5210	9.51	≤24	PASS

Note:

The antenna is Omni Directional Antenna.

The best case gain of the ANT1 is 0.97dBi. The best case gain of the ANT2 is 0.97dBi.

MIMO mode:the antenna gain is 3.98dBi.

Transmit signals are correlated with each other,

Directional gain= $G_{ANT} + 10\log(N_{ANT})$ dBi = $0.97 + 10\log(2)$ dBi = 3.98dBi

The Duty Cycle Factor is compensated in the graph.

Remark:

Av.Power=Meas.Level+10 log (1/duty cycle)

E.i.r.p=Av.Power+G,

G = antenna gain in dBi.

Appendix C): Maximum Power Spectral Density

Test Requirement 47 CFR Part 15, Subpart C 15.407 (a)

Test Method: KDB 789033 D02 General UNII Test Procedures New Rules v02

Test Procedure:

For 5150-5725MHz:

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on operation frequency individually.
3. Set RBW = 1MHz.
4. Set the VBW $\geq 3 \times$ RBW. Detector = Peak. Trace mode = max hold.

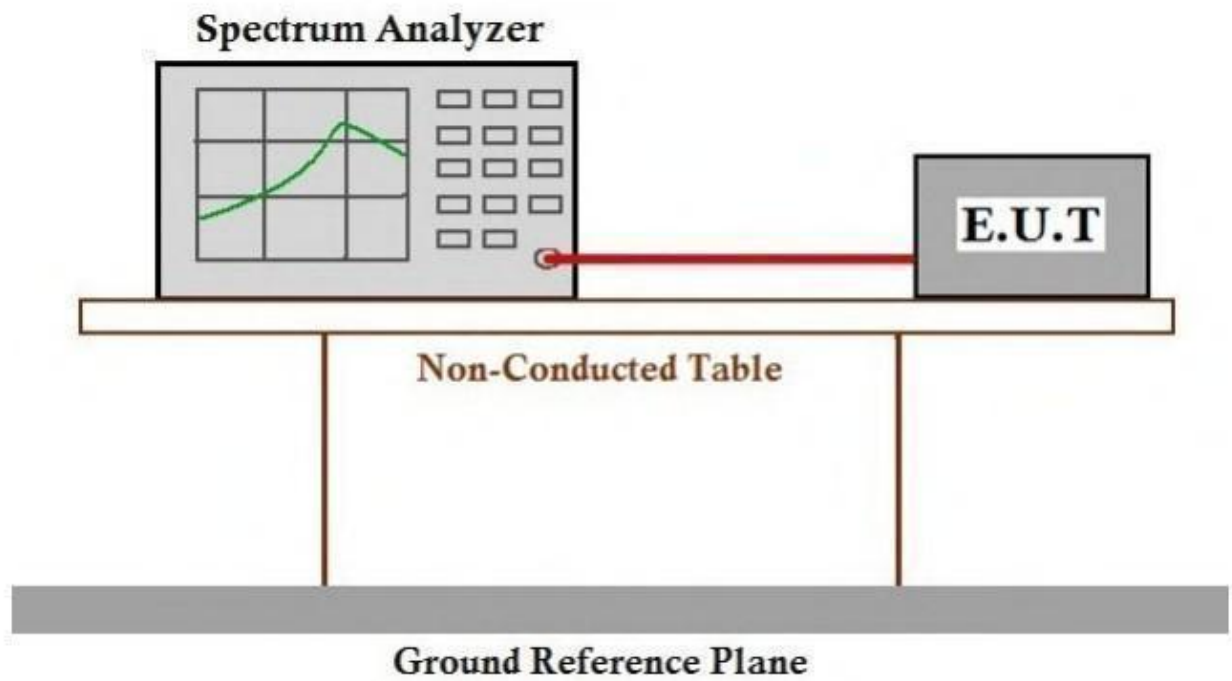
For 5725-5850MHz:

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on operation frequency individually.
3. Set RBW = 500KHz.
4. Set the VBW $\geq 3 \times$ RBW. Detector = Peak. Trace mode = max hold.

Limit:

Frequency band(MHz)	Limit
5150-5250	$\leq 17\text{dBm}$ in 1MHz for master device
	$\leq 11\text{dBm}$ in 1MHz for client device
5250-5350	$\leq 11\text{dBm}$ in 1MHz for client device
5470-5725	$\leq 11\text{dBm}$ in 1MHz for client device
5725-5850	$\leq 30\text{dBm}$ in 500 kHz
Remark:	The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test.

Test Setup Diagram



Test Result

TestMode	Antenna	Channel	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	-1.38	≤11	PASS
		5200	-2.3	≤11	PASS
		5240	-2.42	≤11	PASS
11N20SISO	Ant1	5180	-1.03	≤11	PASS
		5200	-1.11	≤11	PASS
		5240	-2.26	≤11	PASS
11N40SISO	Ant1	5190	-4.2	≤11	PASS
		5230	-5.21	≤11	PASS
11AC20SISO	Ant1	5180	-0.24	≤11	PASS
		5200	-1.58	≤11	PASS
		5240	-1.38	≤11	PASS
11AC40SISO	Ant1	5190	-8.62	≤11	PASS
		5230	-11.03	≤11	PASS
11AC80SISO	Ant1	5210	-8.07	≤11	PASS

TestMode	Antenna	Channel	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant2	5180	-4.45	≤11	PASS
		5200	-4.83	≤11	PASS
		5240	-8.69	≤11	PASS
11N20SISO	Ant2	5180	-4.42	≤11	PASS
		5200	-5.49	≤11	PASS
		5240	-9.35	≤11	PASS
11N40SISO	Ant2	5190	-12.53	≤11	PASS
		5230	-14.88	≤11	PASS
11AC20SISO	Ant2	5180	-4.23	≤11	PASS
		5200	-6.44	≤11	PASS
		5240	-6.2	≤11	PASS
11AC40SISO	Ant2	5190	-11.44	≤11	PASS
		5230	-13.7	≤11	PASS
11AC80SISO	Ant2	5210	-16.38	≤11	PASS

TestMode	Antenna	Channel	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11N20MIMO	Ant1+Ant2	5180	0.61	≤11	PASS
		5200	0.24	≤11	PASS
		5240	-1.48	≤11	PASS
11N40MIMO	Ant1+Ant2	5190	-3.60	≤11	PASS
		5230	-4.77	≤11	PASS
11AC20MIMO	Ant1+Ant2	5180	1.22	≤11	PASS
		5200	-0.35	≤11	PASS
		5240	-0.14	≤11	PASS
11AC40MIMO	Ant1+Ant2	5190	-6.79	≤11	PASS
		5230	-9.15	≤11	PASS
11AC80MIMO	Ant1+Ant2	5210	-7.47	≤11	PASS

Note:

The antenna is Omni Directional Antenna.

The best case gain of the ANT1 is 0.97dBi. The best case gain of the ANT2 is 0.97dBi.

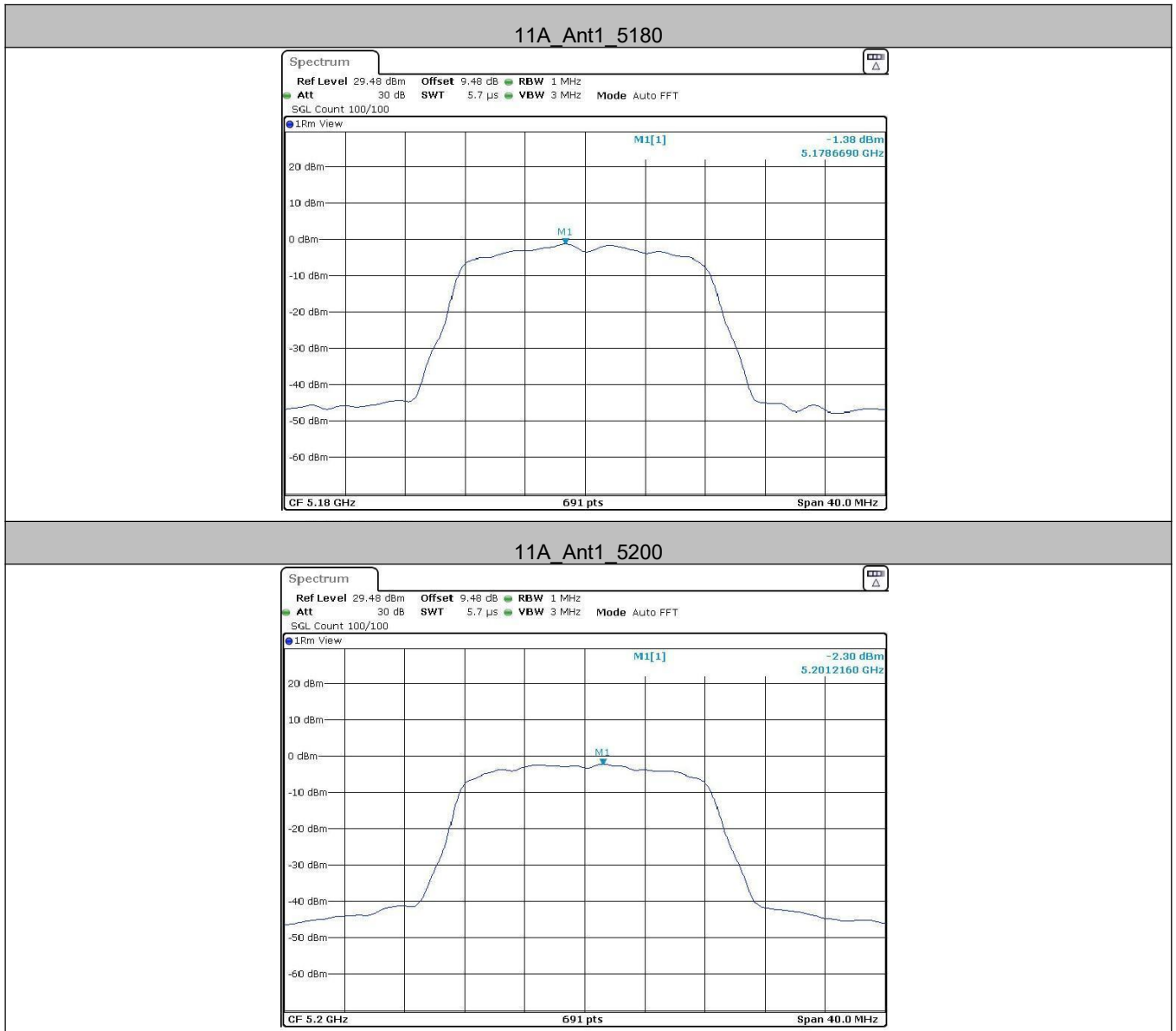
MIMO mode:the antenna gain is 3.98dBi.

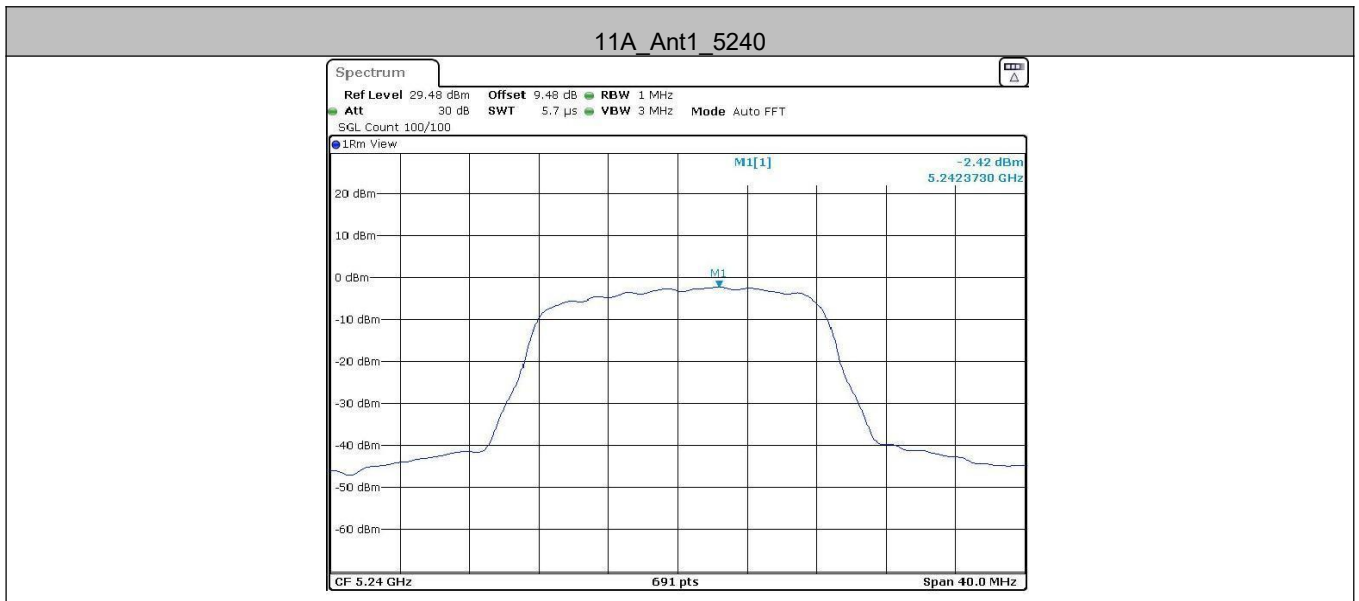
Transmit signals are correlated with each other,

Directional gain= $G_{ANT}+10\log(N_{ANT})\text{dBi}=0.97+10\log(2)\text{dBi}=3.98\text{dBi}$

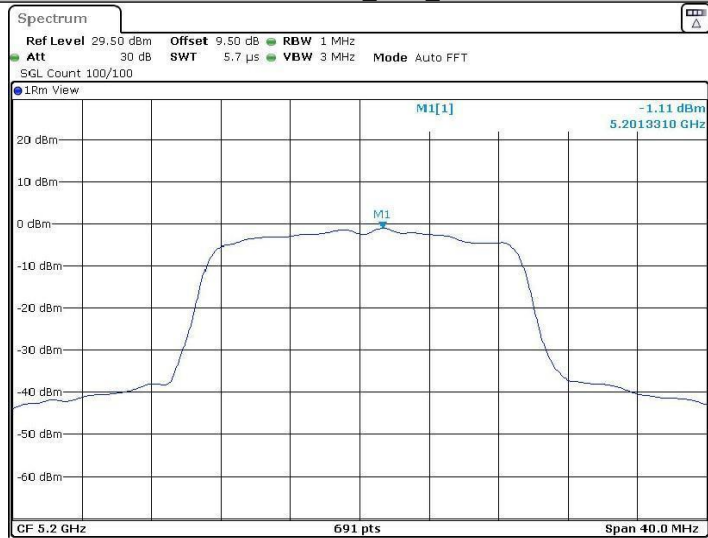
The Duty Cycle Factor is compensated in the graph.

Test Graphs





11N20SISO_Ant1_5200



11N20SISO_Ant1_5240



11N40SISO_Ant1_5190



11N40SISO_Ant1_5230

