

FCC TEST REPORT

Product Name: 4K UHD Streaming Box
Trade Mark: SKYWORTH, SDT, DIRECTV, THOMSON, STRONG, Tesla, MECOOL, CoLoVu
Model No.: LEAP-S1
Add. Model No.: OTT-01, HP40A, HP40A3, HP4005, SRT401, THA100, THA 100, HP4035, XA400, KM2, C1 Plus, Leap-S1.
Report Number: 210406006RFC-4
Test Standards: FCC 47 CFR Part 15 Subpart E
FCC ID: WNA-LEAP-S1
Test Result: PASS
Date of Issue: June 23, 2021

Prepared for:

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UTTR-RF-FCCPART15.407-V1.1

Version

Version No.	Date	Description
V1.0	June 23, 2021	Original



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1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Shenzhen Skyworth Digital Technology Co., LTD
Address of Applicant:	Unit A14/F. Skyworth Bldg., Gaoxin Ave. 1s., Nanshan District, Shenzhen, China
Manufacturer:	Shenzhen Skyworth Digital Technology Co., LTD
Address of Manufacturer:	Unit A14/F. Skyworth Bldg., Gaoxin Ave. 1s., Nanshan District, Shenzhen, China

1.2 EUT INFORMATION

1.2.1 General Description of EUT

Product Name:	4K UHD Streaming Box		
Model No.:	LEAP-S1		
Add. Model No.:	OTT-01, HP40A, HP40A3, HP4005, SRT401, THA100, THA 100, HP4035, XA400, KM2, C1 Plus, Leap-S1.		
Trade Mark:	SKYWORTH , SDT, DIRECTV, THOMSON, STRONG, Tesla, MECOOL, CoLoVu		
DUT Stage:	Identical Prototype		
EUT Supports Function:	2.4 GHz ISM Band:	IEEE 802.11b/g/n	
		Bluetooth V4.2	
	5 GHz U-NII Bands:	5 150 MHz to 5 250 MHz	IEEE 802.11a/n/ac
		5 250 MHz to 5 350 MHz	IEEE 802.11a/n/ac
		5 470 MHz to 5 725 MHz	IEEE 802.11a/n/ac
	5 725 MHz to 5 850 MHz	IEEE 802.11a/n/ac	
Sample Received Date:	April 6, 2021		
Sample Tested Date:	May 5, 2021 to June 19, 2021		

1.2.2 Description of Accessories

Adaptor (1)	
Model No.:	RJ23-W120100US
Input:	100-240 V~50/60 Hz 0.5 A
Output:	12V = 1A
DC Cable:	1.50 Meter, Unshielded without ferrite

Adaptor (2)	
Model No.:	F12L33-120100SPAU
Input:	100-240 V~50/60 Hz 0.3 A
Output:	12V = 1A
DC Cable:	1.50 Meter, Unshielded without ferrite

Cable (1)	
Description:	HDMI Cable
Cable Type:	Unshielded without ferrite
Length:	1.5 Meter

1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

Frequency Bands:	5150 MHz to 5250 MHz (U-NII-1)	
	5250 MHz to 5350 MHz (U-NII-2A)	
	5470 MHz to 5725 MHz (U-NII-2C)	
	5 725 MHz to 5 850 MHz (U-NII-3)	
Frequency Ranges:	5180 MHz to 5240 MHz	
	5260 MHz to 5320 MHz	
	5500 MHz to 5700 MHz	
	5 745 MHz to 5 825 MHz	
Support Standards:	IEEE 802.11a/n/ac	
TPC Function:	Not Support	
DFS Operational mode:	Slave without radar Interference detection function	
Type of Modulation:	IEEE 802.11a: OFDM(64QAM, 16QAM, QPSK, BPSK)	
	IEEE 802.11n: OFDM(64QAM, 16QAM, QPSK, BPSK)	
	IEEE 802.11ac: OFDM(64QAM, 16QAM, QPSK, BPSK)	
Channel Spacing:	IEEE 802.11a/n-HT20/ac-VHT20: 20 MHz	
	IEEE 802.11n-HT40/ac-VHT40: 40 MHz	
	IEEE 802.11ac-VHT80: 80 MHz	
Data Rate:	IEEE 802.11a: Up to 54 Mbps	
	IEEE 802.11n-HT20: Up to MCS15	
	IEEE 802.11n-HT40: Up to MCS15	
	IEEE 802.11ac-VHT20: Up to MCS8	
	IEEE 802.11ac-VHT40: Up to MCS9	
	IEEE 802.11ac-VHT80: Up to MCS9	
Number of Channels:	5150 MHz to 5250 MHz: 4 for IEEE 802.11a/n-HT20/ac-VHT20 2 for IEEE 802.11n-HT40/ac-VHT40 1 for IEEE 802.11acVHT80	
	5250 MHz to 5350 MHz: 4 for IEEE 802.11a/n-HT20/ac-VHT20 2 for IEEE 802.11n-HT40/ac-VHT40 1 for IEEE 802.11acVHT80	
	5470 MHz to 5725 MHz: 11 for IEEE 802.11a/n-HT20/ac-VHT20 5 for IEEE 802.11n-HT40/ac-VHT40 2 for IEEE 802.11ac-VHT80	
	5725 MHz to 5850 MHz: 5 for IEEE 802.11a/n-HT20/ac-VHT20 2 for IEEE 802.11n-HT40/ac-VHT40 1 for IEEE 802.11ac-VHT80	
Antenna Type:	Chain 0	PIFA Antenna
	Chain 1	PIFA Antenna
Antenna Gain:	Chain 0	5150 MHz to 5250 MHz: 3.0 dBi
		5250 MHz to 5350 MHz: 3.0 dBi
		5470 MHz to 5725 MHz: 3.0 dBi
		5725 MHz to 5850 MHz: 3.0 dBi
	Chain 1	5150 MHz to 5250 MHz: 4.0 dBi

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		5250 MHz to 5350 MHz: 4.0 dBi			
		5470 MHz to 5725 MHz: 4.0 dBi			
		5725 MHz to 5850 MHz: 4.0 dBi			
Maximum conducted output power (dBm):	SISO_Chain 0	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
	IEEE 802.11a:	12.61	12.84	12.98	15.84
	SISO_Chain 1	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
	IEEE 802.11a:	16.03	15.74	13.46	16.80
	MIMO_Chain 0+1	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
	IEEE 802.11n-HT20:	14.68	13.56	13.57	15.87
	IEEE 802.11n-HT40:	14.23	13.78	13.98	15.50
	IEEE 802.11ac-VHT20:	14.44	13.49	13.58	15.60
	IEEE 802.11ac-VHT40:	14.14	13.78	13.56	15.44
	IEEE 802.11ac-VHT80:	11.49	14.20	13.42	15.58
Normal Test Voltage:	120V~60Hz or 240V~50Hz				

1.4 OTHER INFORMATION

Operation Frequency Each of Channel				
	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
IEEE 802.11a, IEEE 802.11n-HT20, IEEE 802.11ac-VHT20	$f = 5000 + 5k, k = 32 + 4n$			$f = 5000 + 5k, k = 145 + 4n$
	$n = 1, \dots, 4$	$n = 5, \dots, 8$	$n = 17, \dots, 27$	$n = 1, \dots, 5$
IEEE 802.11n-HT40, IEEE 802.11ac-VHT40	$f = 5000 + 5k, k = 30 + 8n$			$f = 5000 + 5k, k = 143 + 8n$
	$n = 1, 2$	$n = 1, \dots, 5$	$n = 9, \dots, 13$	$n = 1, 2$
IEEE 802.11ac-VHT80	$f = 5000 + 5k, k = 26 + 16n$			$f = 5000 + 5k, k = 155$
	$n = 1$	$n = 1, 2$	$n = 5, 6$	
Note: f is the operating frequency (MHz); k is the operating channel.				

1.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested with associated equipment below.

1) Support Equipment

Description	Manufacturer	Model No.	Serial Number	FCC ID	Supplied by
Notebook	Lenovo	E450	SL10G10780	N/A	UnionTrust
USB disk	Kingston	DTSE9	N/A	N/A	UnionTrust
Wireless Home Router	SAGEMCOM	FAST5280	N/A	VW3FAST5280	UnionTrust
Monitor	KTC	U3202S	N/A	N/A	UnionTrust

2) Support Cable

Cable No.	Description	Connector	Length	Supplied by
1	Antenna Cable	SMA	0.30 Meter	UnionTrust
2	Ethernet Cable	RJ45	1.5 Unshielded without ferrite	UnionTrust

1.6 TEST LOCATION

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Address: 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China
Telephone: +86 (0) 755 2823 0888
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1.7 TEST FACILITY

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

CNAS-Lab Code: L9069

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturers recommendations, and is traceable under the ISO/IEC/EN 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

A2LA-Lab Certificate No.: 4312.01

Shenzhen UnionTrust Quality and Technology Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

ISED Wireless Device Testing Laboratories

CAB identifier: CN0032

FCC Accredited Lab.

Designation Number: CN1194
Test Firm Registration Number: 259480

1.8 DEVIATION FROM STANDARDS

None.

1.9 ABNORMALITIES FROM STANDARD CONDITIONS

None.

1.10 OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

1.11 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Measurement Uncertainty
1	Conducted emission 9KHz-150KHz	±3.8 dB
2	Conducted emission 150KHz-30MHz	±3.4 dB
3	Radiated emission 9KHz-30MHz	±4.9 dB
4	Radiated emission 30MHz-1GHz	±4.7 dB
5	Radiated emission 1GHz-18GHz	±5.1 dB
6	Radiated emission 18GHz-26GHz	±5.2 dB
7	Radiated emission 26GHz-40GHz	±5.2 dB

2. TEST SUMMARY

FCC 47 CFR Part 15 Subpart E Test Cases			
Test Item	Test Requirement	Test Method	Result
Antenna Requirement	FCC 47 CFR Part 15 Subpart C Section 15.203 FCC 47 CFR Part 15 Subpart C Section 15.407(a)(1) (2)	N/A	PASS
26 dB emission bandwidth	FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(2)(5)	KDB 789033 D02 v02r01 Section C.1	Verified ^{NOTE 1}
6 dB bandwidth	FCC 47 CFR Part 15 Subpart E Section 15.407 (e)	KDB 789033 D02 v02r01 Section C.2	Verified ^{NOTE 1}
Maximum conducted output power	FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(3)	KDB 789033 D02 v02r01 Section E.3.a (Method PM)	Verified ^{NOTE 2}
Peak Power Spectral Density	FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(3)	KDB 789033 D02 v02r01 Section F	Verified ^{NOTE 1}
Radiated Emissions and Band Edge Measurement	FCC 47 CFR Part 15 Subpart E Section 15.407 (b)(1)(2)(3)(4)(6) FCC 47 CFR Part 15 Subpart C Section 15.209/205	KDB 789033 D02 v02r01 Section G.3, G.4, G.5, and G.6	PASS
Dynamic Frequency Selection	FCC 47 CFR Part 15 Subpart E Section 15.407 (h)	KDB 905462 D03 Client Without DFS New Rules v01r02	Verified ^{NOTE 1}
AC Power Line Conducted Emission	FCC 47 CFR Part 15 Subpart E Section 15.407 (b)(6) FCC 47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013, Section 6.2.	Verified ^{NOTE 1}

NOTE 1: On the basis of the original report 190920001RFC-4 (FCC ID:WNA-LEAP-S1, Date of Issue: November 8, 2019), only one new antenna was replaced, the model was added, and the trademark and name were changed. Others remain unchanged, see the difference statement for details, all technical data is referred to original report 190920001RFC-4.

NOTE 2: Reduced the power setting of Wi-Fi U-NII-1 and U-NII-2 802.11 ac 80MHz (Channels 5210MHz and 5290MHz), update test conducted output power, see the difference statement for details.

3. EQUIPMENT LIST

Radiated Emission Test Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm dd, yyyy)	Cal. Due date (mm dd, yyyy)
<input checked="" type="checkbox"/>	3 m SAC	ETS-LINDGREN	3m	N/A	Jan. 22, 2021	Jan. 21, 2024
<input checked="" type="checkbox"/>	Receiver	R&S	ESIB26	100114	Nov. 18, 2020	Nov. 17, 2021
<input checked="" type="checkbox"/>	Loop Antenna	ETS-LINDGREN	6502	00202525	Nov. 14, 2020	Nov. 13, 2022
<input checked="" type="checkbox"/>	Broadband Antenna (Pre-amplifier)	ETS-Lindgren	3142E	00201566	Nov. 14, 2020	Nov. 13, 2021
<input checked="" type="checkbox"/>	Pre-amplifier	HP	8447F	2805A02960	Nov. 10, 2020	Nov. 09, 2021
<input checked="" type="checkbox"/>	6dB Attenuator	Talent	RA6A5-N-18	18103001	Nov. 14, 2020	Nov. 13, 2021
<input checked="" type="checkbox"/>	Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-Lindgren	3117-PA	00201541	Apr. 30, 2021	Apr. 29, 2023
<input checked="" type="checkbox"/>	Pre-amplifier	ETS-Lindgren	00118385	00201874	Nov. 10, 2020	Nov. 09, 2021
<input checked="" type="checkbox"/>	Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-Lindgren	3116C-PA	00202652	Nov. 14, 2020	Nov. 13, 2022
<input checked="" type="checkbox"/>	Pre-amplifier	ETS-Lindgren	00118384	202652	Nov. 14, 2020	Nov. 13, 2022
<input checked="" type="checkbox"/>	Multi device Controller	ETS-LINDGREN	7006-001	00160105	N/A	N/A
<input checked="" type="checkbox"/>	Test Software	Audix	e3	Software Version: 9.160323		

Conducted RF test Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm dd, yyyy)	Cal. Due date (mm dd, yyyy)
<input checked="" type="checkbox"/>	EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY51440197	Nov. 10, 2020	Nov. 09, 2021
<input checked="" type="checkbox"/>	USB Wideband Power Sensor	KEYSIGHT	U2021XA	MY55430035	Nov. 10, 2020	Nov. 09, 2021
<input type="checkbox"/>	USB Wideband Power Sensor	KEYSIGHT	U2021XA	MY55430023	Nov. 10, 2020	Nov. 09, 2021
<input checked="" type="checkbox"/>	MXG X-Series RF Vector Signal Generator	KEYSIGHT	N5182B	MY51350267	Nov. 10, 2020	Nov. 09, 2021

4. TEST CONFIGURATION

4.1 ENVIRONMENTAL CONDITIONS FOR TESTING

4.1.1 Normal or Extreme Test Conditions

Environment Parameter	Selected Values During Tests		
Test Condition	Ambient		
	Temperature (°C)	Voltage	Relative Humidity (%)
NT/NV	+15 to +35	120V~60Hz	20 to 75
Remark:			
1) NV: Normal Voltage; NT: Normal Temperature			

4.1.2 Record of Normal Environment

Test Item	Temperature (°C)	Relative Humidity (%)	Pressure (kPa)	Tested by
Maximum conducted output power	24.3	56	100.03	Hank Wu
Radiated Emissions and Band Edge Measurement	25.2	52	100.02	Fire Huo

4.2 TEST CHANNELS

Mode	Tx/Rx Frequency	Test RF Channel Lists		
		Lowest(L)	Middle(M)	Highest(H)
IEEE 802.11a IEEE 802.11n-HT20 IEEE 802.11ac-VHT20	5150 MHz to 5250 MHz	Channel 36	Channel 44	Channel 48
		5180 MHz	5220 MHz	5240 MHz
	5250 MHz to 5350 MHz	Channel 52	Channel 60	Channel 64
		5260 MHz	5300 MHz	5320 MHz
	5470 MHz to 5725 MHz	Channel 100	Channel 120	Channel 140
		5500 MHz	5600 MHz	5700 MHz
5725 MHz to 5850 MHz	Channel 149	Channel 157	Channel 165	
	5745 MHz	5785 MHz	5825 MHz	
IEEE 802.11n-HT40 IEEE 802.11ac-VHT40	5150 MHz to 5250 MHz	Channel 38	--	Channel 46
		5190 MHz	--	5230 MHz
	5250 MHz to 5350 MHz	Channel 54	--	Channel 62
		5270 MHz	--	5310 MHz
	5470 MHz to 5725 MHz	Channel 102	Channel 118	Channel 134
		5510 MHz	5590 MHz	5670 MHz
5725 MHz to 5850 MHz	Channel 151	--	Channel 159	
	5755 MHz	--	5795 MHz	
IEEE 802.11ac-VHT80	5150 MHz to 5250 MHz	--	Channel 42	--
		--	5210 MHz	--
	5250 MHz to 5350 MHz	--	Channel 58	--
		--	5290 MHz	--
	5470 MHz to 5725 MHz	Channel 106	--	Channel 122
		5530 MHz	--	5610 MHz
5725 MHz to 5850 MHz	--	Channel 155	--	
	--	5775 MHz	--	

4.3 EUT TEST STATUS

Mode	Tx/Rx Function	Description
IEEE 802.11a/n/ac	1Tx/1Rx or 2Tx/2Rx	1. Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.

Power Setting								
Mode	U-NII-1		U-NII-2A		U-NII-2C		U-NII-3	
	Chain 0	Chain 1	Chain 0	Chain 1	Chain 0	Chain 1	Chain 0	Chain 1
IEEE 802.11a	80	80	83	83	55	55	66	66
IEEE 802.11n-HT20	65	65	65	65	44	44	50	50
IEEE 802.11n-HT40	66	66	68	68	46	46	50	50
IEEE 802.11ac-VHT20	65	65	65	65	44	44	50	50
IEEE 802.11ac-VHT40	66	66	68	68	46	46	50	50
IEEE 802.11ac-VHT80	62	62	68	68	46	46	52	52

Test Software
Test software name: MP tool(Realtek);

4.4 PRE-SCAN

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. Following data rate was (were) selected for the final test as listed below

Mode	Worst-case data rates
IEEE 802.11a	54 Mbps
IEEE 802.11n-HT20	MCS15
IEEE 802.11n-HT40	MCS15
IEEE 802.11ac-VHT20	MCS8
IEEE 802.11ac-VHT40	MCS9
IEEE 802.11ac-VHT80	MCS9

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4.5 TEST SETUP

4.5.1 For Radiated Emissions test setup

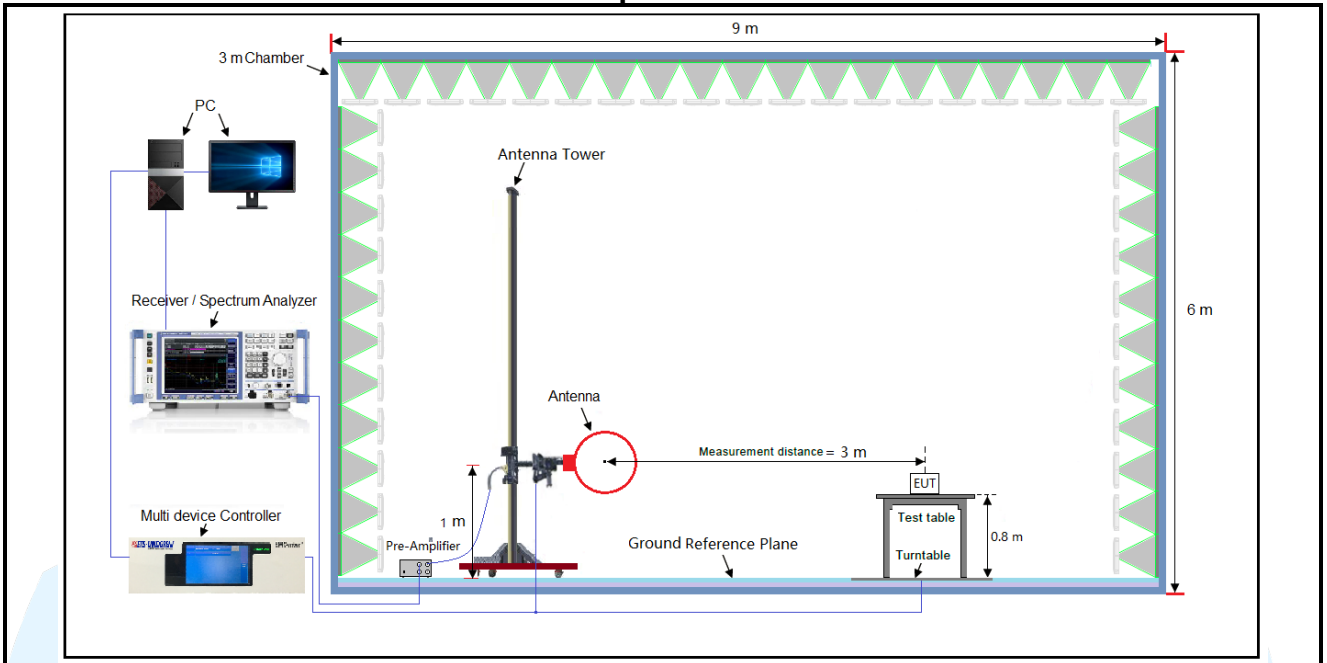


Figure 1. Below 30MHz

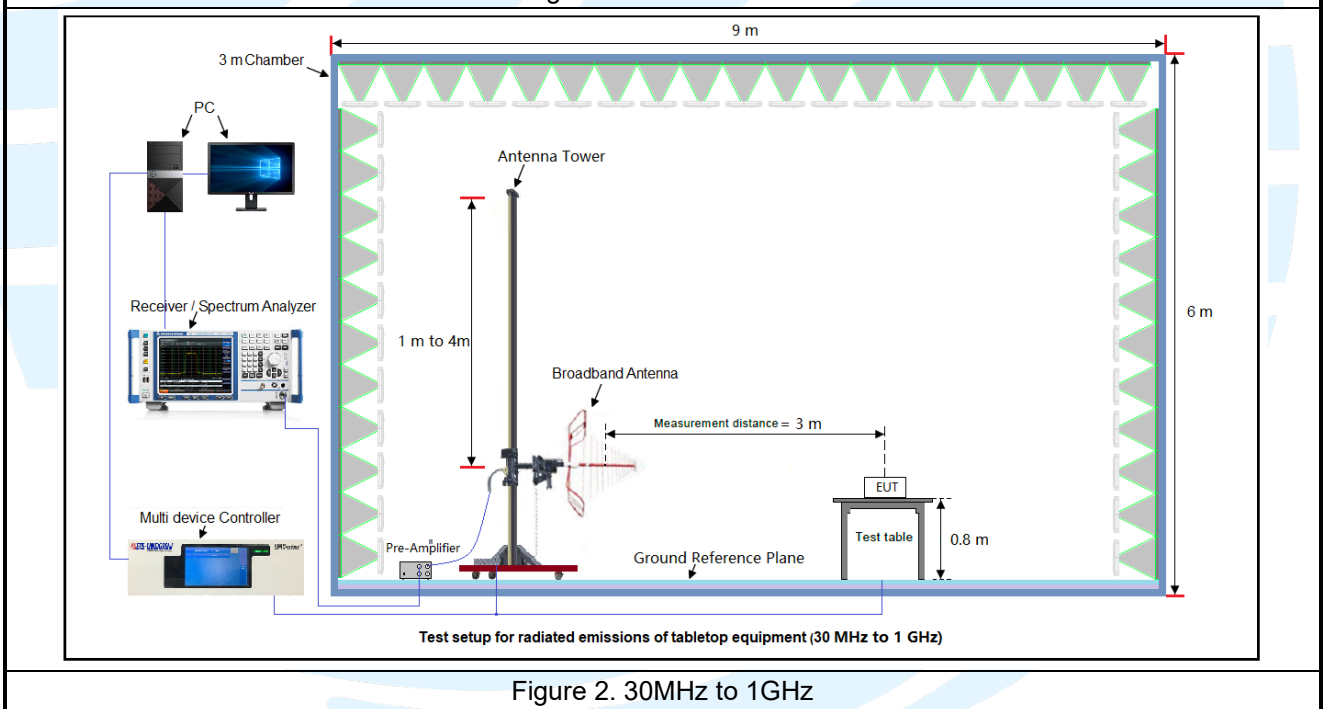


Figure 2. 30MHz to 1GHz

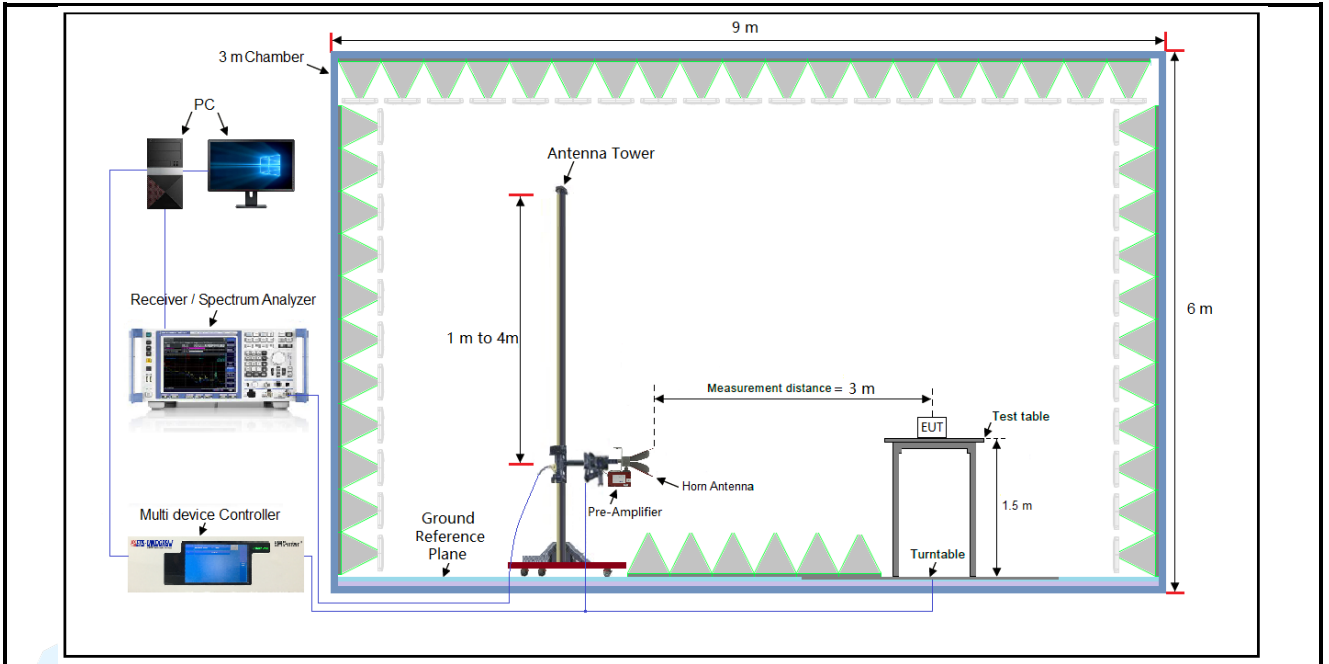
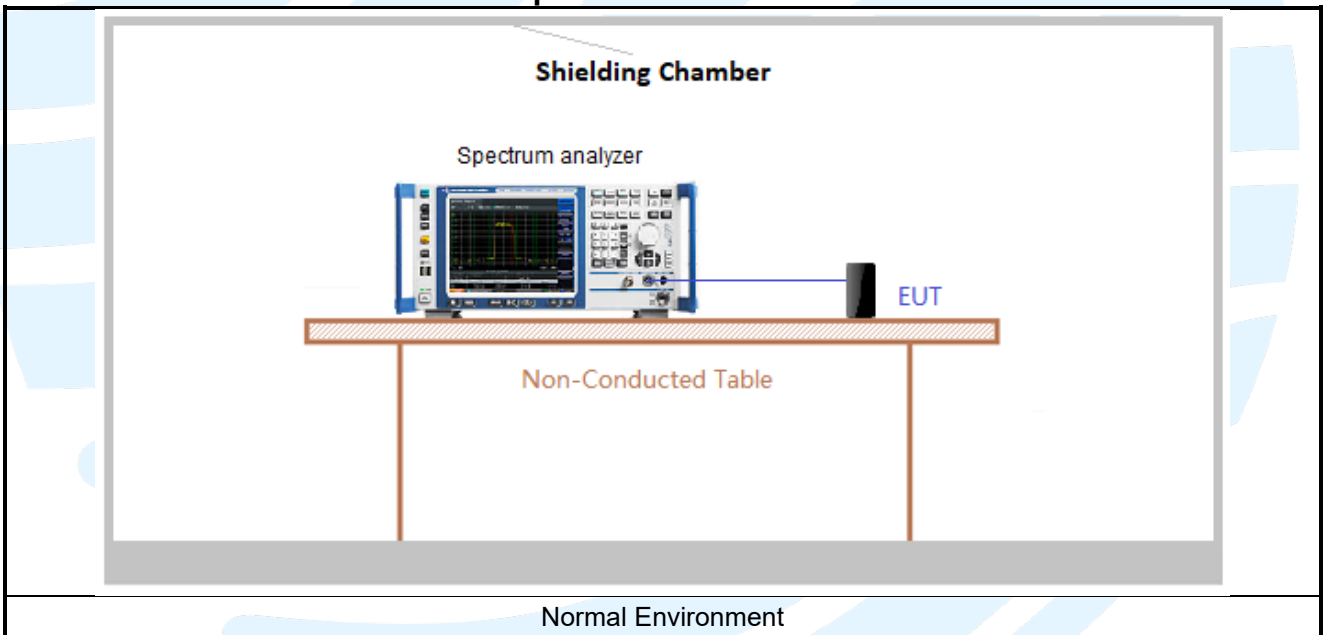


Figure 3. Above 1GHz

4.5.2 For Conducted RF test setup



4.6 SYSTEM TEST CONFIGURATION

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, radiated emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario. It was powered by 120V~60Hz or 240V~50Hz. Only the worst case data were recorded in this test report.

The signal is maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000 MHz. The resolution is 1 MHz or greater for frequencies above 1000 MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

5. RADIO TECHNICAL REQUIREMENTS SPECIFICATION

5.1 REFERENCE DOCUMENTS FOR TESTING

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 15	Radio Frequency Devices
3	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
4	KDB 789033 D02 General UNII Test Procedures New Rules v02r01	Guidelines for compliance testing of unlicensed national information infrastructure (U-NII) device part 15, subpart E
5	KDB 905462 D06 802.11 Channel Plans New Rules v02	Operation in U-NII bands -802.11 channel PLAN(§15.407)
6	KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02	Compliance measurement procedures for Unlicensed –National Information Infrastructure devices operates in the frequency bands 5250 MHz to 5350 MHz and 5470 MHz to 5725 MHz bands incorporating dynamic frequency selection
7	KDB 905462 D03 Client Without DFS New Rules v01r02	U-NII client devices without radar detection capability
8	KDB 662911 D01 Multiple Transmitter Output v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band

5.2 ANTENNA REQUIREMENT

Standard Requirement
<p>15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</p>
<p>15.407(a)(1) (2) requirement: The conducted output power limit specified in paragraph (a) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (a) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power and the peak power spectral density shall be reduced by the by the amount in dB that the directional gain of the antenna exceeds 6 dBi.</p>
<p>EUT Antenna: Both antenna in the interior of the equipment and no consideration of replacement. The transmit signals are correlated with each other and the antenna gain of both chains is completely consistent, the best case directional gain of the antenna is 6.52 dBi (See section 5.5).</p>

5.3 MAXIMUM CONDUCTED OUTPUT POWER

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(3)

Test Method: KDB 789033 D02 v02r01 Section E.3.a (Method PM)

Limits:

1. For the band 5.15-5.25 GHz.
 - (i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
 - (ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
 - (iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
 - (iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
2. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
3. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

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Test Procedure:

1. Connected the EUT's antenna port to measure device by 10dB attenuator.
2. Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of Tx on burst.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

Test Setup: Refer to section 4.5.3 for details.

Instruments Used: Refer to section 3 for details

Test Mode: Transmitter mode

Test Results: Pass

Test Data:

For U-NII-2A, U-NII-2C Band:

For IEEE 802.11 a/n/ac, the minimum 26 dB emission bandwidth is 18.51 MHz

$$11 \text{ dBm} + 10\log_{10}(18.51) = 23.67 \text{ dBm} > 24 \text{ dBm (200mW)}$$

So the 24 dB limit applicable

Directional gain and the maximum output power limit.

Frequency Band	Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Correlated chains directional gain (dBi)	Peak Power Limits (dBm)
U-NII-1	3.00	4.00	6.52	23.48
U-NII-2A	3.00	4.00	6.52	23.48
U-NII-2C	3.00	4.00	6.52	23.48
U-NII-3	3.00	4.00	6.52	29.48

Unequal antenna gains, with equal transmit powers. Directional gain is to be computed as follows:

If transmit signals are correlated, then

$$\text{Directional gain} = 10 \log_{10}[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / NANT] \text{ dBi}$$

[Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

Mode	Channel/ Frequency (MHz)	Maximum Conducted Output Power (dBm)						Limits (dBm)	Pass / Fail
		SISO				Total Power MIMO_ Chain 0+1			
		Chain 0		Chain 1					
		Meas Power	Corr'd Power	Meas Power	Corr'd Power				
IEEE 802.11a	36 (5180)	12.48	12.61	15.90	16.03	/	24	Pass	
	44 (5220)	12.46	12.59	15.44	15.57	/	24	Pass	
	48 (5240)	12.29	12.42	15.02	15.15	/	24	Pass	
	52 (5260)	12.71	12.84	15.61	15.74	/	24	Pass	
	60 (5300)	12.34	12.47	14.66	14.79	/	24	Pass	
	64 (5320)	12.24	12.37	14.33	14.46	/	24	Pass	
	100 (5500)	12.04	12.17	10.42	10.55	/	24	Pass	
	120 (5600)	12.85	12.98	12.70	12.83	/	24	Pass	
	140 (5700)	12.39	12.52	13.33	13.46	/	24	Pass	
	149 (5745)	15.67	15.80	16.67	16.80	/	30	Pass	
	157 (5785)	15.71	15.84	16.22	16.35	/	30	Pass	
165 (5825)	15.59	15.72	15.79	15.92	/	30	Pass		

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Mode	Channel/ Frequency (MHz)	Maximum Conducted Output Power (dBm)						
		MIMO				Total Power MIMO_ Chain 0+1	Limits (dBm)	Pass / Fail
		Chain 0		Chain 1				
		Meas Power	Corr'd Power	Meas Power	Corr'd Power			
IEEE 802.11n-HT20	36 (5180)	9.94	10.03	12.77	12.86	14.68	23.48	Pass
	44 (5220)	9.61	9.70	11.86	11.95	13.98	23.48	Pass
	48 (5240)	9.52	9.61	11.36	11.45	13.64	23.48	Pass
	52 (5260)	9.46	9.55	11.28	11.37	13.56	23.48	Pass
	60 (5300)	9.32	9.41	10.46	10.55	13.03	23.48	Pass
	64 (5320)	9.29	9.38	10.08	10.17	12.80	23.48	Pass
	100 (5500)	9.18	9.27	7.73	7.82	11.62	23.48	Pass
	120 (5600)	10.38	10.47	10.02	10.11	13.30	23.48	Pass
	140 (5700)	10.29	10.38	10.63	10.72	13.56	23.48	Pass
	149 (5745)	12.83	12.92	12.71	12.80	15.87	29.48	Pass
	157 (5785)	12.76	12.85	12.32	12.41	15.65	29.48	Pass
	165 (5825)	12.55	12.64	11.93	12.02	15.35	29.48	Pass

Mode	Channel/ Frequency (MHz)	Maximum Conducted Output Power (dBm)						
		MIMO				Total Power MIMO_ Chain 0+1	Limits (dBm)	Pass / Fail
		Chain 0		Chain 1				
		Meas Power	Corr'd Power	Meas Power	Corr'd Power			
IEEE 802.11n-HT40	38 (5190)	9.36	9.50	12.31	12.45	14.23	23.48	Pass
	46 (5230)	9.15	9.29	11.59	11.73	13.69	23.48	Pass
	54 (5270)	9.51	9.65	11.52	11.66	13.78	23.48	Pass
	62 (5310)	9.48	9.62	10.74	10.88	13.31	23.48	Pass
	102 (5510)	9.51	9.65	8.07	8.21	12.00	23.48	Pass
	118 (5590)	10.42	10.56	9.32	9.46	13.06	23.48	Pass
	134 (5670)	10.74	10.88	10.92	11.06	13.98	23.48	Pass
	151 (5755)	12.34	12.48	12.36	12.50	15.50	29.48	Pass
	159 (5795)	12.21	12.35	11.78	11.92	15.15	29.48	Pass

Mode	Channel/ Frequency (MHz)	Maximum Conducted Output Power (dBm)						
		MIMO				Total Power MIMO_ Chain 0+1	Limits (dBm)	Pass / Fail
		Chain 0		Chain 1				
		Meas Power	Corr'd Power	Meas Power	Corr'd Power			
IEEE 802.11ac-VHT20	36 (5180)	9.58	9.58	12.72	12.72	14.44	23.48	Pass
	44 (5220)	9.38	9.38	12.06	12.06	13.93	23.48	Pass
	48 (5240)	9.21	9.21	11.58	11.58	13.57	23.48	Pass
	52 (5260)	9.15	9.15	11.49	11.49	13.49	23.48	Pass
	60 (5300)	9.08	9.08	10.55	10.55	12.89	23.48	Pass
	64 (5320)	9.11	9.11	10.16	10.16	12.68	23.48	Pass
	100 (5500)	9.13	9.13	7.81	7.81	11.53	23.48	Pass
	120 (5600)	10.87	10.87	10.08	10.08	13.50	23.48	Pass
	140 (5700)	10.41	10.41	10.72	10.72	13.58	23.48	Pass
	149 (5745)	12.41	12.41	12.76	12.76	15.60	29.48	Pass
	157 (5785)	12.26	12.26	12.4	12.4	15.34	29.48	Pass
	165 (5825)	12.17	12.17	12.04	12.04	15.12	29.48	Pass

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Mode	Channel/ Frequency (MHz)	Maximum Conducted Output Power (dBm)						Limits (dBm)	Pass / Fail
		MIMO				Total Power MIMO_ Chain 0+1			
		Chain 0		Chain 1					
		Meas Power	Corr'd Power	Meas Power	Corr'd Power				
IEEE 802.11ac- VHT40	38 (5190)	9.37	9.51	12.16	12.30	14.14	23.48	Pass	
	46 (5230)	9.22	9.36	11.48	11.62	13.65	23.48	Pass	
	54 (5270)	9.41	9.55	11.58	11.72	13.78	23.48	Pass	
	62 (5310)	9.33	9.47	10.71	10.85	13.22	23.48	Pass	
	102 (5510)	9.25	9.39	8.12	8.26	11.87	23.48	Pass	
	118 (5590)	9.97	10.11	9.23	9.37	12.77	23.48	Pass	
	134 (5670)	9.89	10.03	10.87	11.01	13.56	23.48	Pass	
	151 (5755)	12.24	12.38	12.33	12.47	15.44	29.48	Pass	
	159 (5795)	12.11	12.25	11.84	11.98	15.13	29.48	Pass	

Mode	Channel/ Frequency (MHz)	Maximum Conducted Output Power (dBm)						Limits (dBm)	Pass / Fail
		MIMO				Total Power MIMO_ Chain 0+1			
		Chain 0		Chain 1					
		Meas Power	Corr'd Power	Meas Power	Corr'd Power				
IEEE 802.11ac- VHT80	42 (5210)	7.10	7.35	9.12	9.37	11.49	23.48	Pass	
	58 (5290)	9.35	9.60	12.10	12.35	14.20	23.48	Pass	
	106 (5530)	9.62	9.87	8.22	8.47	12.24	23.48	Pass	
	122 (5610)	10.56	10.81	9.71	9.96	13.42	23.48	Pass	
	155 (5775)	12.48	12.73	12.16	12.41	15.58	29.48	Pass	

Remark:

1. Corr'd Power = Meas Power + Duty Cycle Factor
2. Total (Chain 0+1) = $10 \cdot \log[(10^{\text{Chain 0}/10}) + (10^{\text{Chain 1}/10})]$

5.4 RADIATED EMISSIONS AND BAND EDGE MEASUREMENT

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (b)(1)(2)(3)(4)(6)
 FCC 47 CFR Part 15 Subpart C Section 15.209/205

Test Method: KDB 789033 D02 v02r01 Section G.3, G.4, G.5, and G.6

Receiver Setup:

Frequency	RBW
0.009 MHz-0.150 MHz	200/300 kHz
0.150 MHz -30 MHz	9/10 kHz
30 MHz-1 GHz	100/120 kHz
Above 1 GHz	1 MHz

Limits:

1. Limits of Radiated Emission and Band edge Measurement

Radiated emissions that fall in the restricted bands must comply with the general emissions limits in 15.209(a) as below table. Other emissions shall be at least 20 dB below the highest level of the desired power.

Frequency	Field strength (microvolt/meter)	Limit (dBµV/m)	Remark	Measurement distance (m)
0.009 MHz-0.490 MHz	2400/F(kHz)	--	--	300
0.490 MHz-1.705 MHz	24000/F(kHz)	--	--	30
1.705 MHz-30 MHz	30	--	--	30
30 MHz-88 MHz	100	40.0	Quasi-peak	3
88 MHz-216 MHz	150	43.5	Quasi-peak	3
216 MHz-960 MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1 GHz	500	54.0	Average	3

Remark:

- a. The lower limit shall apply at the transition frequencies.
- b. Emission level (dBµV/m) = 20 log Emission level (uV/m).
- c. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

2. Limits of Unwanted Emission Out of the Restricted Bands

Applicable To	Limit	
789033 D02 General U-NII Test Procedures New Rules v01r04	Field Strength at 3 m	
	PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
FCC Part 15.407 (b)(1)	PK: -27 (dBm/MHz)	PK: 74 (dBµV/m)
FCC Part 15.407 (b)(2)	PK: -27 (dBm/MHz)	PK: 74 (dBµV/m)
FCC Part 15.407 (b)(3)	PK: -27 (dBm/MHz)	PK: 68.2 (dBµV/m)
FCC Part 15.407 (b)(4)	27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;	PK: 68.2 (dBµV/m)
	15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;	
	10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges;	
	-27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.	

Test Setup: Refer to section 4.5.1 for details.

Test Procedures:

- The EUT was placed on the top of a rotating table 0.8 meters (for below 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Remark:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for RMS Average (Duty cycle < 98 %) for Average detection (AV) at frequency above 1 GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz (Duty cycle ≥ 98 %) or ≥ 1/T(duty cycle is < 98%) for Average detection (AV) at frequency above 1 GHz.
- All modes of operation were investigated and the worst-case emissions are reported.

Equipment Used: Refer to section 3 for details.

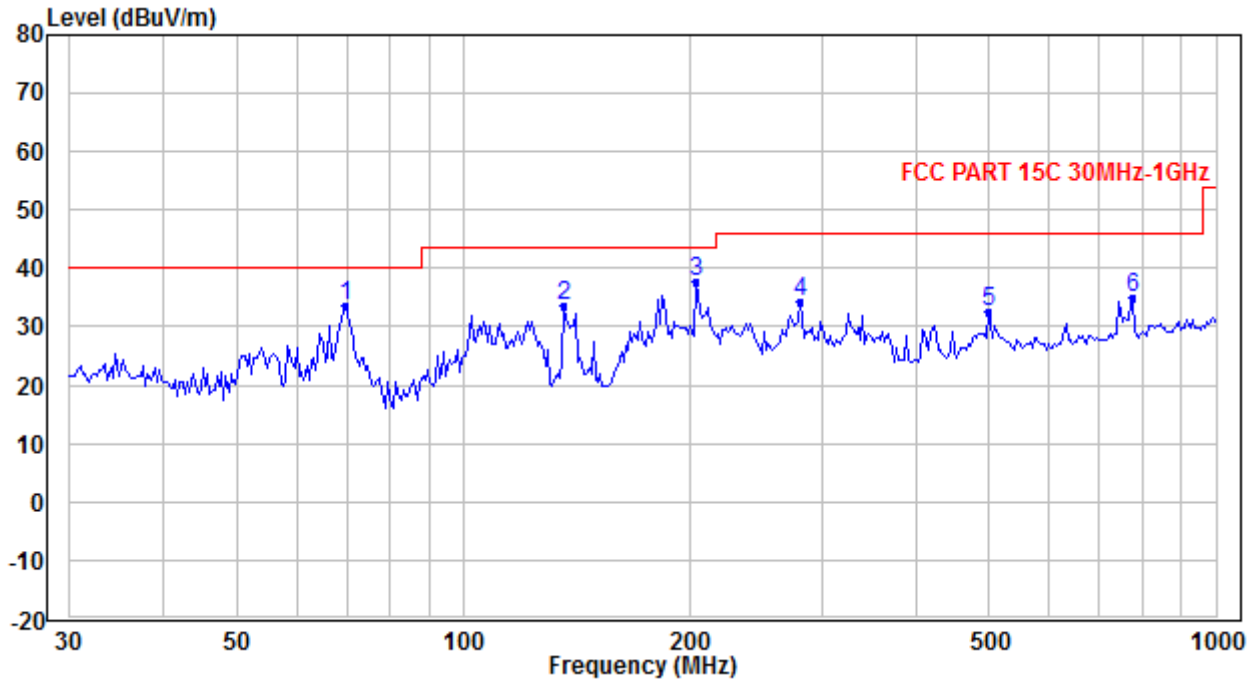
Test Result: Pass

The measurement data as follows:

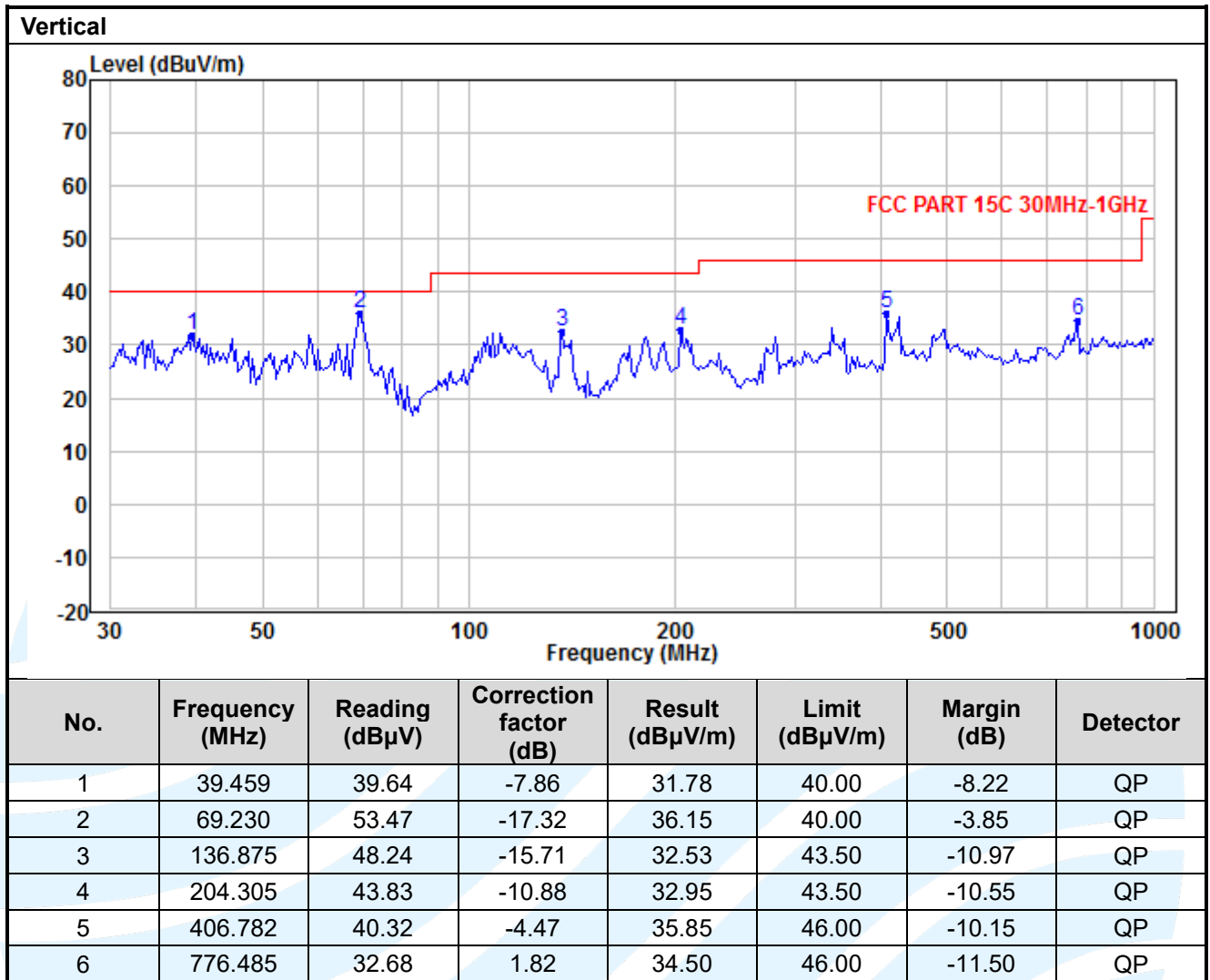
Radiated Emission Test Data (9kHz ~ 30 MHz):
 The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

Radiated Emission Test Data (30 MHz ~ 1 GHz):
Worst-Case Configuration

Horizontal



No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
1	69.718	50.89	-17.27	33.62	40.00	-6.38	QP
2	135.916	49.17	-15.71	33.46	43.50	-10.04	QP
3	204.305	48.48	-10.88	37.60	43.50	-5.90	QP
4	280.294	41.82	-7.50	34.32	46.00	-11.68	QP
5	498.730	35.53	-2.98	32.55	46.00	-13.45	QP
6	776.485	33.10	1.82	34.92	46.00	-11.08	QP



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Radiated Emission Test Data (Above 1GHz):

SISO_Chain 0_IEEE 802.11a_Channel 36

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10360.00	44.53	7.32	51.85	74.00	-22.15	Peak	Horizontal
2	10360.00	30.54	7.32	37.86	54.00	-16.14	Average	Horizontal
3	15540.00	39.16	12.81	51.97	74.00	-22.03	Peak	Horizontal
4	15540.00	26.23	12.81	39.04	54.00	-14.96	Average	Horizontal
5	10360.00	45.68	7.32	53.00	74.00	-21.00	Peak	Vertical
6	10360.00	30.92	7.32	38.24	54.00	-15.76	Average	Vertical
7	15540.00	39.00	12.81	51.81	74.00	-22.19	Peak	Vertical
8	15540.00	26.23	12.81	39.04	54.00	-14.96	Average	Vertical

SISO_Chain 0_IEEE 802.11a_Channel 44

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10440.00	42.70	7.46	50.16	74.00	-23.84	Peak	Horizontal
2	10440.00	30.05	7.46	37.51	54.00	-16.49	Average	Horizontal
3	15660.00	38.15	13.06	51.21	74.00	-22.79	Peak	Horizontal
4	15660.00	26.18	13.06	39.24	54.00	-14.76	Average	Horizontal
5	10440.00	46.35	7.46	53.81	74.00	-20.19	Peak	Vertical
6	10440.00	30.75	7.46	38.21	54.00	-15.79	Average	Vertical
7	15660.00	38.04	13.06	51.10	74.00	-22.90	Peak	Vertical
8	15660.00	26.25	13.06	39.31	54.00	-14.69	Average	Vertical

SISO_Chain 0_IEEE 802.11a_Channel 48

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10480.00	43.95	7.51	51.46	74.00	-22.54	Peak	Horizontal
2	10480.00	30.22	7.51	37.73	54.00	-16.27	Average	Horizontal
3	15720.00	38.41	13.20	51.61	74.00	-22.39	Peak	Horizontal
4	15720.00	26.10	13.20	39.30	54.00	-14.70	Average	Horizontal
5	10480.00	44.62	7.51	52.13	74.00	-21.87	Peak	Vertical
6	10480.00	30.31	7.51	37.82	54.00	-16.18	Average	Vertical
7	15720.00	38.30	13.20	51.50	74.00	-22.50	Peak	Vertical
8	15720.00	26.10	13.20	39.30	54.00	-14.70	Average	Vertical

SISO_Chain 0_IEEE 802.11a_Channel 52								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10520.00	46.69	7.52	54.21	74.00	-19.79	Peak	Horizontal
2	10520.00	31.10	7.52	38.62	54.00	-15.38	Average	Horizontal
3	15780.00	39.23	13.34	52.57	74.00	-21.43	Peak	Horizontal
4	15780.00	26.10	13.34	39.44	54.00	-14.56	Average	Horizontal
5	10520.00	44.55	7.52	52.07	74.00	-21.93	Peak	Vertical
6	10520.00	30.73	7.52	38.25	54.00	-15.75	Average	Vertical
7	15780.00	38.18	13.34	51.52	74.00	-22.48	Peak	Vertical
8	15780.00	25.96	13.34	39.30	54.00	-14.70	Average	Vertical

SISO_Chain 0_IEEE 802.11a_Channel 60								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10600.00	44.78	7.44	52.22	74.00	-21.78	Peak	Horizontal
2	10600.00	29.75	7.44	37.19	54.00	-16.81	Average	Horizontal
3	15900.00	38.69	13.61	52.30	74.00	-21.70	Peak	Horizontal
4	15900.00	26.10	13.61	39.71	54.00	-14.29	Average	Horizontal
5	10600.00	44.15	7.44	51.59	74.00	-22.41	Peak	Vertical
6	10600.00	30.03	7.44	37.47	54.00	-16.53	Average	Vertical
7	15900.00	39.89	13.61	53.50	74.00	-20.50	Peak	Vertical
8	15900.00	26.17	13.61	39.78	54.00	-14.22	Average	Vertical

SISO_Chain 0_IEEE 802.11a_Channel 64								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10640.00	44.70	7.40	52.10	74.00	-21.90	Peak	Horizontal
2	10640.00	29.31	7.40	36.71	54.00	-17.29	Average	Horizontal
3	15960.00	39.06	13.73	52.79	74.00	-21.21	Peak	Horizontal
4	15960.00	26.12	13.73	39.85	54.00	-14.15	Average	Horizontal
5	10640.00	45.03	7.40	52.43	74.00	-21.57	Peak	Vertical
6	10640.00	29.79	7.40	37.19	54.00	-16.81	Average	Vertical
7	15960.00	38.46	13.73	52.19	74.00	-21.81	Peak	Vertical
8	15960.00	26.19	13.73	39.92	54.00	-14.08	Average	Vertical

SISO_Chain 0_IEEE 802.11a_Channel 100								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11000.00	40.26	7.02	47.28	74.00	-26.72	Peak	Horizontal
2	11000.00	28.30	7.02	35.32	54.00	-18.68	Average	Horizontal
3	16500.00	38.82	14.75	53.57	74.00	-20.43	Peak	Horizontal
4	16500.00	25.87	14.75	40.62	54.00	-13.38	Average	Horizontal
5	11000.00	40.27	7.02	47.29	74.00	-26.71	Peak	Vertical
6	11000.00	28.46	7.02	35.48	54.00	-18.52	Average	Vertical
7	16500.00	38.21	14.75	52.96	74.00	-21.04	Peak	Vertical
8	16500.00	25.95	14.75	40.70	54.00	-13.30	Average	Vertical

SISO_Chain 0_IEEE 802.11a_Channel 120								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11200.00	40.22	7.17	47.39	74.00	-26.61	Peak	Horizontal
2	11200.00	27.27	7.17	34.44	54.00	-19.56	Average	Horizontal
3	16800.00	38.55	14.48	53.03	74.00	-20.97	Peak	Horizontal
4	16800.00	26.21	14.48	40.69	54.00	-13.31	Average	Horizontal
5	11200.00	40.36	7.17	47.53	74.00	-26.47	Peak	Vertical
6	11200.00	27.39	7.17	34.56	54.00	-19.44	Average	Vertical
7	16800.00	38.48	14.48	52.96	74.00	-21.04	Peak	Vertical
8	16800.00	26.28	14.48	40.76	54.00	-13.24	Average	Vertical

SISO_Chain 0_IEEE 802.11a_Channel 140								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11400.00	40.18	7.39	47.57	74.00	-26.43	Peak	Horizontal
2	11400.00	28.06	7.39	35.45	54.00	-18.55	Average	Horizontal
3	17100.00	37.41	14.44	51.85	74.00	-22.15	Peak	Horizontal
4	17100.00	24.91	14.44	39.35	54.00	-14.65	Average	Horizontal
5	11400.00	39.48	7.71	47.19	74.00	-26.81	Peak	Vertical
6	11400.00	27.63	7.71	35.34	54.00	-18.66	Average	Vertical
7	17100.00	37.33	14.44	51.77	74.00	-22.23	Peak	Vertical
8	17100.00	24.99	14.44	39.43	54.00	-14.57	Average	Vertical

SISO_Chain 0_IEEE 802.11a_Channel 149								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11490.00	41.65	7.48	49.13	74.00	-24.87	Peak	Horizontal
2	11490.00	28.50	7.48	35.98	54.00	-18.02	Average	Horizontal
3	17235.00	37.82	14.80	52.62	74.00	-21.38	Peak	Horizontal
4	17235.00	25.31	14.80	40.11	54.00	-13.89	Average	Horizontal
5	11490.00	40.85	7.48	48.33	74.00	-25.67	Peak	Vertical
6	11490.00	28.39	7.48	35.87	54.00	-18.13	Average	Vertical
7	17235.00	37.84	14.80	52.64	74.00	-21.36	Peak	Vertical
8	17235.00	25.23	14.80	40.03	54.00	-13.97	Average	Vertical

SISO_Chain 0_IEEE 802.11a_Channel 157								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11570.00	40.03	7.59	47.62	74.00	-26.38	Peak	Horizontal
2	11570.00	27.81	7.59	35.40	54.00	-18.60	Average	Horizontal
3	17355.00	38.27	15.11	53.38	74.00	-20.62	Peak	Horizontal
4	17355.00	25.96	15.11	41.07	54.00	-12.93	Average	Horizontal
5	11570.00	40.40	7.59	47.99	74.00	-26.01	Peak	Vertical
6	11570.00	28.16	7.59	35.75	54.00	-18.25	Average	Vertical
7	17355.00	42.68	15.11	57.79	74.00	-16.21	Peak	Vertical
8	17355.00	25.96	15.11	41.07	54.00	-12.93	Average	Vertical

SISO_Chain 0_IEEE 802.11a_Channel 165								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11650.00	39.78	8.01	47.79	74.00	-26.21	Peak	Horizontal
2	11650.00	27.56	8.01	35.57	54.00	-18.43	Average	Horizontal
3	17475.00	38.36	15.43	53.79	74.00	-20.21	Peak	Horizontal
4	17475.00	25.21	15.43	40.64	54.00	-13.36	Average	Horizontal
5	11650.00	40.88	7.71	48.59	74.00	-25.41	Peak	Vertical
6	11650.00	28.20	7.71	35.91	54.00	-18.09	Average	Vertical
7	17475.00	38.72	15.43	54.15	74.00	-19.85	Peak	Vertical
8	17475.00	25.29	15.43	40.72	54.00	-13.28	Average	Vertical

SISO_Chain 1_ IEEE 802.11a_Channel 36

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10360.00	42.02	7.32	49.34	74.00	-24.66	Peak	Horizontal
2	10360.00	29.68	7.32	37.00	54.00	-17.00	Average	Horizontal
3	15540.00	38.44	12.81	51.25	74.00	-22.75	Peak	Horizontal
4	15540.00	26.51	12.81	39.32	54.00	-14.68	Average	Horizontal
5	10360.00	46.28	7.32	53.60	74.00	-20.40	Peak	Vertical
6	10360.00	31.13	7.32	38.45	54.00	-15.55	Average	Vertical
7	15540.00	39.63	12.81	52.44	74.00	-21.56	Peak	Vertical
8	15540.00	26.44	12.81	39.25	54.00	-14.75	Average	Vertical

SISO_Chain 1_ IEEE 802.11a_Channel 44

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10440.00	43.47	7.46	50.93	74.00	-23.07	Peak	Horizontal
2	10440.00	29.44	7.46	36.90	54.00	-17.10	Average	Horizontal
3	15660.00	38.84	13.06	51.90	74.00	-22.10	Peak	Horizontal
4	15660.00	26.39	13.06	39.45	54.00	-14.55	Average	Horizontal
5	10440.00	45.30	7.46	52.76	74.00	-21.24	Peak	Vertical
6	10440.00	31.04	7.46	38.50	54.00	-15.50	Average	Vertical
7	15660.00	38.43	13.06	51.49	74.00	-22.51	Peak	Vertical
8	15660.00	26.32	13.06	39.38	54.00	-14.62	Average	Vertical

SISO_Chain 1_ IEEE 802.11a_Channel 48

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10480.00	42.48	7.51	49.99	74.00	-24.01	Peak	Horizontal
2	10480.00	29.28	7.51	36.79	54.00	-17.21	Average	Horizontal
3	15720.00	39.02	13.20	52.22	74.00	-21.78	Peak	Horizontal
4	15720.00	26.10	13.20	39.30	54.00	-14.70	Average	Horizontal
5	10480.00	44.37	7.51	51.88	74.00	-22.12	Peak	Vertical
6	10480.00	30.36	7.51	37.87	54.00	-16.13	Average	Vertical
7	15720.00	38.25	13.20	51.45	74.00	-22.55	Peak	Vertical
8	15720.00	26.17	13.20	39.37	54.00	-14.63	Average	Vertical

SISO_Chain 1_ IEEE 802.11a_Channel 52								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10520.00	42.30	7.52	49.82	74.00	-24.18	Peak	Horizontal
2	10520.00	29.27	7.52	36.79	54.00	-17.21	Average	Horizontal
3	15780.00	39.12	13.34	52.46	74.00	-21.54	Peak	Horizontal
4	15780.00	26.17	13.34	39.51	54.00	-14.49	Average	Horizontal
5	10520.00	44.44	7.52	51.96	74.00	-22.04	Peak	Vertical
6	10520.00	30.35	7.52	37.87	54.00	-16.13	Average	Vertical
7	15780.00	41.57	13.34	54.91	74.00	-19.09	Peak	Vertical
8	15780.00	26.65	13.34	39.99	54.00	-14.01	Average	Vertical

SISO_Chain 1_ IEEE 802.11a_Channel 60								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10600.00	41.92	7.44	49.36	74.00	-24.64	Peak	Horizontal
2	10600.00	28.33	7.44	35.77	54.00	-18.23	Average	Horizontal
3	15900.00	38.23	13.61	51.84	74.00	-22.16	Peak	Horizontal
4	15900.00	26.24	13.61	39.85	54.00	-14.15	Average	Horizontal
5	10600.00	42.88	7.44	50.32	74.00	-23.68	Peak	Vertical
6	10600.00	29.27	7.44	36.71	54.00	-17.29	Average	Vertical
7	15900.00	42.48	10.44	52.92	74.00	-21.08	Peak	Vertical
8	15900.00	29.34	10.44	39.78	54.00	-14.22	Average	Vertical

SISO_Chain 1_ IEEE 802.11a_Channel 64								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10640.00	42.97	8.85	50.37	74.00	-22.18	Peak	Horizontal
2	10640.00	27.61	8.85	36.14	54.00	-17.54	Average	Horizontal
3	15960.00	38.77	13.73	52.50	74.00	-18.01	Peak	Horizontal
4	15960.00	26.68	13.73	40.06	54.00	-13.59	Average	Horizontal
5	10640.00	44.42	5.95	51.82	74.00	-23.63	Peak	Vertical
6	10640.00	30.19	5.95	36.46	54.00	-17.86	Average	Vertical
7	15960.00	42.26	13.73	55.99	74.00	-21.50	Peak	Vertical
8	15960.00	26.33	13.73	40.41	54.00	-13.94	Average	Vertical

SISO_Chain 1_IEEE 802.11a_Channel 100								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11000.00	40.83	7.02	47.85	74.00	-26.15	Peak	Horizontal
2	11000.00	28.30	7.02	35.32	54.00	-18.68	Average	Horizontal
3	16500.00	38.28	14.75	53.03	74.00	-20.97	Peak	Horizontal
4	16500.00	26.02	14.75	40.77	54.00	-13.23	Average	Horizontal
5	11000.00	40.38	7.02	47.40	74.00	-26.60	Peak	Vertical
6	11000.00	28.30	7.02	35.32	54.00	-18.68	Average	Vertical
7	16500.00	38.38	14.75	53.13	74.00	-20.87	Peak	Vertical
8	16500.00	26.02	14.75	40.77	54.00	-13.23	Average	Vertical

SISO_Chain 1_IEEE 802.11a_Channel 120								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11200.00	39.98	7.17	47.15	74.00	-26.85	Peak	Horizontal
2	11200.00	27.33	7.17	34.50	54.00	-19.50	Average	Horizontal
3	16800.00	38.92	14.48	53.40	74.00	-20.60	Peak	Horizontal
4	16800.00	26.28	14.48	40.76	54.00	-13.24	Average	Horizontal
5	11200.00	39.87	7.17	47.04	74.00	-26.96	Peak	Vertical
6	11200.00	27.39	7.17	34.56	54.00	-19.44	Average	Vertical
7	16800.00	39.25	14.48	53.73	74.00	-20.27	Peak	Vertical
8	16800.00	26.42	14.48	40.90	54.00	-13.10	Average	Vertical

SISO_Chain 1_IEEE 802.11a_Channel 140								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11400.00	40.35	7.39	47.74	74.00	-26.26	Peak	Horizontal
2	11400.00	28.01	7.39	35.40	54.00	-18.60	Average	Horizontal
3	17100.00	37.67	14.44	52.11	74.00	-21.89	Peak	Horizontal
4	17100.00	25.07	14.44	39.51	54.00	-14.49	Average	Horizontal
5	11400.00	41.25	7.39	48.64	74.00	-25.36	Peak	Vertical
6	11400.00	28.06	7.39	35.45	54.00	-18.55	Average	Vertical
7	17100.00	37.17	14.44	51.61	74.00	-22.39	Peak	Vertical
8	17100.00	24.99	14.44	39.43	54.00	-14.57	Average	Vertical

SISO_Chain 1_IEEE 802.11a_Channel 149								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11490.00	40.76	7.48	48.24	74.00	-25.76	Peak	Horizontal
2	11490.00	28.39	7.48	35.87	54.00	-18.13	Average	Horizontal
3	17235.00	37.82	14.80	52.62	74.00	-21.38	Peak	Horizontal
4	17235.00	25.31	14.80	40.11	54.00	-13.89	Average	Horizontal
5	11490.00	41.25	7.48	48.73	74.00	-25.27	Peak	Vertical
6	11490.00	28.45	7.48	35.93	54.00	-18.07	Average	Vertical
7	17235.00	38.17	14.80	52.97	74.00	-21.03	Peak	Vertical
8	17235.00	25.39	14.80	40.19	54.00	-13.81	Average	Vertical

SISO_Chain 1_IEEE 802.11a_Channel 157								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11570.00	39.21	7.59	46.80	74.00	-27.20	Peak	Horizontal
2	11570.00	27.75	7.59	35.34	54.00	-18.66	Average	Horizontal
3	17355.00	38.23	15.11	53.34	74.00	-20.66	Peak	Horizontal
4	17355.00	26.03	15.11	41.14	54.00	-12.86	Average	Horizontal
5	11570.00	39.87	7.59	47.46	74.00	-26.54	Peak	Vertical
6	11570.00	27.57	7.59	35.16	54.00	-18.84	Average	Vertical
7	17355.00	37.81	15.11	52.92	74.00	-21.08	Peak	Vertical
8	17355.00	26.03	15.11	41.14	54.00	-12.86	Average	Vertical

SISO_Chain 1_IEEE 802.11a_Channel 165								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11650.00	39.94	7.71	47.65	74.00	-26.35	Peak	Horizontal
2	11650.00	27.80	7.71	35.51	54.00	-18.49	Average	Horizontal
3	17475.00	37.59	15.43	53.02	74.00	-20.98	Peak	Horizontal
4	17475.00	25.29	15.43	40.72	54.00	-13.28	Average	Horizontal
5	11650.00	39.93	7.71	47.64	74.00	-26.36	Peak	Vertical
6	11650.00	27.91	7.71	35.62	54.00	-18.38	Average	Vertical
7	17475.00	37.92	15.43	53.35	74.00	-20.65	Peak	Vertical
8	17475.00	25.29	15.43	40.72	54.00	-13.28	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT20_Channel 36

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10360.00	42.22	7.32	49.54	74.00	-24.46	Peak	Horizontal
2	10360.00	29.63	7.32	36.95	54.00	-17.05	Average	Horizontal
3	15540.00	38.94	12.81	51.75	74.00	-22.25	Peak	Horizontal
4	15540.00	26.44	12.81	39.25	54.00	-14.75	Average	Horizontal
5	10360.00	42.59	7.32	49.91	74.00	-24.09	Peak	Vertical
6	10360.00	29.91	7.32	37.23	54.00	-16.77	Average	Vertical
7	15540.00	38.85	12.81	51.66	74.00	-22.34	Peak	Vertical
8	15540.00	26.51	12.81	39.32	54.00	-14.68	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT20_Channel 44

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10440.00	41.55	7.32	48.87	74.00	-25.13	Peak	Horizontal
2	10440.00	29.23	7.32	36.55	54.00	-17.45	Average	Horizontal
3	15660.00	38.58	12.81	51.39	74.00	-22.61	Peak	Horizontal
4	15660.00	26.57	12.81	39.38	54.00	-14.62	Average	Horizontal
5	10440.00	42.71	7.46	50.17	74.00	-23.83	Peak	Vertical
6	10440.00	29.54	7.46	37.00	54.00	-17.00	Average	Vertical
7	15660.00	38.59	13.06	51.65	74.00	-22.35	Peak	Vertical
8	15660.00	26.39	13.06	39.45	54.00	-14.55	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT20_Channel 48

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10480.00	40.87	7.51	48.38	74.00	-25.62	Peak	Horizontal
2	10480.00	28.71	7.51	36.22	54.00	-17.78	Average	Horizontal
3	15720.00	42.08	9.87	51.95	74.00	-22.05	Peak	Horizontal
4	15720.00	29.57	9.87	39.44	54.00	-14.56	Average	Horizontal
5	10480.00	42.06	7.51	49.57	74.00	-24.43	Peak	Vertical
6	10480.00	29.23	7.51	36.74	54.00	-17.26	Average	Vertical
7	15720.00	39.21	13.20	52.41	74.00	-21.59	Peak	Vertical
8	15720.00	26.38	13.20	39.58	54.00	-14.42	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT20_Channel 52

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10520.00	41.33	7.52	48.85	74.00	-25.15	Peak	Horizontal
2	10520.00	28.81	7.52	36.33	54.00	-17.67	Average	Horizontal
3	15780.00	39.40	13.34	52.74	74.00	-21.26	Peak	Horizontal
4	15780.00	26.17	13.34	39.51	54.00	-14.49	Average	Horizontal
5	10520.00	42.00	7.52	49.52	74.00	-24.48	Peak	Vertical
6	10520.00	29.07	7.52	36.59	54.00	-17.41	Average	Vertical
7	15780.00	38.73	13.34	52.07	74.00	-21.93	Peak	Vertical
8	15780.00	26.17	13.34	39.51	54.00	-14.49	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT20_Channel 60

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10600.00	39.87	7.44	47.31	74.00	-26.69	Peak	Horizontal
2	10600.00	27.81	7.44	35.25	54.00	-18.75	Average	Horizontal
3	15900.00	39.18	13.61	52.79	74.00	-21.21	Peak	Horizontal
4	15900.00	26.24	13.61	39.85	54.00	-14.15	Average	Horizontal
5	10600.00	40.53	7.44	47.97	74.00	-26.03	Peak	Vertical
6	10600.00	28.21	7.44	35.65	54.00	-18.35	Average	Vertical
7	15900.00	38.99	13.61	52.60	74.00	-21.40	Peak	Vertical
8	15900.00	26.24	13.61	39.85	54.00	-14.15	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT20_Channel 64

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10640.00	39.86	7.40	47.26	74.00	-26.74	Peak	Horizontal
2	10640.00	27.73	7.40	35.13	54.00	-18.87	Average	Horizontal
3	15960.00	38.72	13.73	52.45	74.00	-21.55	Peak	Horizontal
4	15960.00	26.12	13.73	39.85	54.00	-14.15	Average	Horizontal
5	10640.00	40.71	7.40	48.11	74.00	-25.89	Peak	Vertical
6	10640.00	28.03	7.40	35.43	54.00	-18.57	Average	Vertical
7	15960.00	38.53	13.73	52.26	74.00	-21.74	Peak	Vertical
8	15960.00	26.12	13.73	39.85	54.00	-14.15	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT20_Channel 100								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11000.00	40.56	7.02	47.58	74.00	-26.42	Peak	Horizontal
2	11000.00	28.24	7.02	35.26	54.00	-18.74	Average	Horizontal
3	16500.00	38.31	14.75	53.06	74.00	-20.94	Peak	Horizontal
4	16500.00	26.02	14.75	40.77	54.00	-13.23	Average	Horizontal
5	11000.00	40.97	7.02	47.99	74.00	-26.01	Peak	Vertical
6	11000.00	28.30	7.02	35.32	54.00	-18.68	Average	Vertical
7	16500.00	38.33	14.75	53.08	74.00	-20.92	Peak	Vertical
8	16500.00	26.09	14.75	40.84	54.00	-13.16	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT20_Channel 120								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11200.00	40.74	7.17	47.91	74.00	-26.09	Peak	Horizontal
2	11200.00	27.45	7.17	34.62	54.00	-19.38	Average	Horizontal
3	16800.00	39.18	14.48	53.66	74.00	-20.34	Peak	Horizontal
4	16800.00	26.28	14.48	40.76	54.00	-13.24	Average	Horizontal
5	11200.00	41.22	7.17	48.39	74.00	-25.61	Peak	Vertical
6	11200.00	27.45	7.17	34.62	54.00	-19.38	Average	Vertical
7	16800.00	38.87	14.48	53.35	74.00	-20.65	Peak	Vertical
8	16800.00	26.35	14.48	40.83	54.00	-13.17	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT20_Channel 140								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11400.00	40.96	7.39	48.35	74.00	-25.65	Peak	Horizontal
2	11400.00	27.89	7.39	35.28	54.00	-18.72	Average	Horizontal
3	17100.00	37.37	14.44	51.81	74.00	-22.19	Peak	Horizontal
4	17100.00	25.07	14.44	39.51	54.00	-14.49	Average	Horizontal
5	11400.00	40.25	7.39	47.64	74.00	-26.36	Peak	Vertical
6	11400.00	28.06	7.39	35.45	54.00	-18.55	Average	Vertical
7	17100.00	37.19	14.44	51.63	74.00	-22.37	Peak	Vertical
8	17100.00	25.07	14.44	39.51	54.00	-14.49	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT20_Channel 149

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11490.00	41.25	7.48	48.73	74.00	-25.27	Peak	Horizontal
2	11490.00	28.28	7.48	35.76	54.00	-18.24	Average	Horizontal
3	17235.00	37.45	14.80	52.25	74.00	-21.75	Peak	Horizontal
4	17235.00	25.31	14.80	40.11	54.00	-13.89	Average	Horizontal
5	11490.00	41.38	7.48	48.86	74.00	-25.14	Peak	Vertical
6	11490.00	28.34	7.48	35.82	54.00	-18.18	Average	Vertical
7	17235.00	38.33	14.80	53.13	74.00	-20.87	Peak	Vertical
8	17235.00	25.31	14.80	40.11	54.00	-13.89	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT20_Channel 157

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11570.00	40.36	7.59	47.95	74.00	-26.05	Peak	Horizontal
2	11570.00	27.39	7.59	34.98	54.00	-19.02	Average	Horizontal
3	17355.00	38.26	15.08	53.34	74.00	-20.66	Peak	Horizontal
4	17355.00	26.06	15.08	41.14	54.00	-12.86	Average	Horizontal
5	11570.00	39.63	7.59	47.22	74.00	-26.78	Peak	Vertical
6	11570.00	27.45	7.59	35.04	54.00	-18.96	Average	Vertical
7	17355.00	38.11	15.11	53.22	74.00	-20.78	Peak	Vertical
8	17355.00	26.03	15.11	41.14	54.00	-12.86	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT20_Channel 165

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11650.00	39.64	7.71	47.35	74.00	-26.65	Peak	Horizontal
2	11650.00	27.97	7.71	35.68	54.00	-18.32	Average	Horizontal
3	17475.00	37.91	15.43	53.34	74.00	-20.66	Peak	Horizontal
4	17475.00	25.21	15.43	40.64	54.00	-13.36	Average	Horizontal
5	11650.00	41.32	7.71	49.03	74.00	-24.97	Peak	Vertical
6	11650.00	27.86	7.71	35.57	54.00	-18.43	Average	Vertical
7	17475.00	37.62	15.43	53.05	74.00	-20.95	Peak	Vertical
8	17475.00	25.29	15.43	40.72	54.00	-13.28	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT40_Channel 38

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10380.00	41.37	7.35	48.72	74.00	-25.28	Peak	Horizontal
2	10380.00	29.46	7.35	36.81	54.00	-17.19	Average	Horizontal
3	15570.00	39.58	12.86	52.44	74.00	-21.56	Peak	Horizontal
4	15570.00	26.39	12.86	39.25	54.00	-14.75	Average	Horizontal
5	10380.00	41.81	7.35	49.16	74.00	-24.84	Peak	Vertical
6	10380.00	29.88	7.35	37.23	54.00	-16.77	Average	Vertical
7	15570.00	38.39	12.86	51.25	74.00	-22.75	Peak	Vertical
8	15570.00	26.39	12.86	39.25	54.00	-14.75	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT40_Channel 46

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10460.00	41.23	7.48	48.71	74.00	-25.29	Peak	Horizontal
2	10460.00	28.71	7.48	36.19	54.00	-17.81	Average	Horizontal
3	15690.00	38.69	13.14	51.83	74.00	-22.17	Peak	Horizontal
4	15690.00	26.24	13.14	39.38	54.00	-14.62	Average	Horizontal
5	10460.00	41.46	7.48	48.94	74.00	-25.06	Peak	Vertical
6	10460.00	29.12	7.48	36.60	54.00	-17.40	Average	Vertical
7	15690.00	39.36	13.73	53.09	74.00	-20.91	Peak	Vertical
8	15690.00	26.12	13.73	39.85	54.00	-14.15	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT40_Channel 54

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10540.00	41.31	7.50	48.81	74.00	-25.19	Peak	Horizontal
2	10540.00	28.66	7.50	36.16	54.00	-17.84	Average	Horizontal
3	15810.00	39.02	13.15	52.17	74.00	-21.83	Peak	Horizontal
4	15810.00	38.77	13.15	39.28	54.00	-14.72	Average	Horizontal
5	10540.00	40.78	7.50	48.28	74.00	-25.72	Peak	Vertical
6	10540.00	28.97	7.50	36.47	54.00	-17.53	Average	Vertical
7	15810.00	39.02	13.40	52.42	74.00	-21.58	Peak	Vertical
8	15810.00	25.96	13.40	39.36	54.00	-14.64	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT40_Channel 62

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10620.00	40.01	7.42	47.43	74.00	-26.57	Peak	Horizontal
2	10620.00	27.59	7.42	35.01	54.00	-18.99	Average	Horizontal
3	15930.00	38.68	13.68	52.36	74.00	-21.64	Peak	Horizontal
4	15930.00	26.10	13.68	39.78	54.00	-14.22	Average	Horizontal
5	10620.00	40.59	7.42	48.01	74.00	-25.99	Peak	Vertical
6	10620.00	28.01	7.42	35.43	54.00	-18.57	Average	Vertical
7	15930.00	38.07	13.68	51.75	74.00	-22.25	Peak	Vertical
8	15930.00	26.17	13.68	39.85	54.00	-14.15	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT40_Channel 102

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11020.00	40.55	7.03	47.58	74.00	-26.42	Peak	Horizontal
2	11020.00	28.18	7.03	35.21	54.00	-18.79	Average	Horizontal
3	16530.00	38.51	14.73	53.24	74.00	-20.76	Peak	Horizontal
4	16530.00	26.04	14.73	40.77	54.00	-13.23	Average	Horizontal
5	11020.00	40.45	7.03	47.48	74.00	-26.52	Peak	Vertical
6	11020.00	28.29	7.03	35.32	54.00	-18.68	Average	Vertical
7	16530.00	38.28	14.73	53.01	74.00	-20.99	Peak	Vertical
8	16530.00	26.04	14.73	40.77	54.00	-13.23	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT40_Channel 118

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11180.00	40.31	7.02	47.33	74.00	-26.67	Peak	Horizontal
2	11180.00	28.30	7.02	35.32	54.00	-18.68	Average	Horizontal
3	16770.00	38.81	14.75	53.56	74.00	-20.44	Peak	Horizontal
4	16770.00	25.95	14.75	40.70	54.00	-13.30	Average	Horizontal
5	11180.00	40.55	7.02	47.57	74.00	-26.43	Peak	Vertical
6	11180.00	28.24	7.02	35.26	54.00	-18.74	Average	Vertical
7	16770.00	38.81	14.75	53.56	74.00	-20.44	Peak	Vertical
8	16770.00	26.09	14.75	40.84	54.00	-13.16	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT40_Channel 134

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11340.00	39.21	7.34	46.55	74.00	-27.45	Peak	Horizontal
2	11340.00	26.83	7.34	34.17	54.00	-19.83	Average	Horizontal
3	17010.00	43.40	8.43	51.83	74.00	-22.17	Peak	Horizontal
4	17010.00	30.79	8.43	39.22	54.00	-14.78	Average	Horizontal
5	11340.00	39.94	6.36	46.30	74.00	-27.70	Peak	Vertical
6	11340.00	27.87	6.36	34.23	54.00	-19.77	Average	Vertical
7	17010.00	37.48	9.40	46.88	74.00	-27.12	Peak	Vertical
8	17010.00	29.90	9.40	39.30	54.00	-14.70	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT40_Channel 151

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11510.00	40.86	7.50	48.36	74.00	-25.64	Peak	Horizontal
2	11510.00	28.03	7.50	35.53	54.00	-18.47	Average	Horizontal
3	17265.00	37.45	14.88	52.33	74.00	-21.67	Peak	Horizontal
4	17265.00	24.99	14.88	39.87	54.00	-14.13	Average	Horizontal
5	11510.00	41.05	7.50	48.55	74.00	-25.45	Peak	Vertical
6	11510.00	27.98	7.50	35.48	54.00	-18.52	Average	Vertical
7	17265.00	37.57	4.88	42.45	74.00	-31.55	Peak	Vertical
8	17265.00	35.15	4.88	40.03	54.00	-13.97	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11n-HT40_Channel 159

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11590.00	40.44	7.62	48.06	74.00	-25.94	Peak	Horizontal
2	11590.00	27.04	7.62	34.66	54.00	-19.34	Average	Horizontal
3	17385.00	38.15	15.19	53.34	74.00	-20.66	Peak	Horizontal
4	17385.00	25.73	15.19	40.92	54.00	-13.08	Average	Horizontal
5	11590.00	39.51	7.62	47.13	74.00	-26.87	Peak	Vertical
6	11590.00	27.11	7.62	34.73	54.00	-19.27	Average	Vertical
7	17385.00	37.64	15.19	52.83	74.00	-21.17	Peak	Vertical
8	17385.00	25.73	15.19	40.92	54.00	-13.08	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11ac-VHT80_Channel 42

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10420.00	41.11	7.43	48.54	74.00	-25.46	Peak	Horizontal
2	10420.00	28.54	7.43	35.97	54.00	-18.03	Average	Horizontal
3	15630.00	38.65	13.00	51.65	74.00	-22.35	Peak	Horizontal
4	15630.00	26.31	13.00	39.31	54.00	-14.69	Average	Horizontal
5	10420.00	41.74	7.43	49.17	74.00	-24.83	Peak	Vertical
6	10420.00	28.81	7.43	36.24	54.00	-17.76	Average	Vertical
7	15630.00	38.63	13.00	51.63	74.00	-22.37	Peak	Vertical
8	15630.00	26.24	13.00	39.24	54.00	-14.76	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11ac-VHT80_Channel 58

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	10580.00	40.72	7.46	48.18	74.00	-25.82	Peak	Horizontal
2	10580.00	28.15	7.46	35.61	54.00	-18.39	Average	Horizontal
3	15870.00	38.20	13.54	51.74	74.00	-22.26	Peak	Horizontal
4	15870.00	25.52	13.54	39.06	54.00	-14.94	Average	Horizontal
5	10580.00	40.12	7.46	47.58	74.00	-26.42	Peak	Vertical
6	10580.00	28.64	7.46	36.10	54.00	-17.90	Average	Vertical
7	15870.00	38.24	13.54	51.78	74.00	-22.22	Peak	Vertical
8	15870.00	25.59	13.54	39.13	54.00	-14.87	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11ac-VHT80_Channel 106

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11060.00	40.60	7.07	47.67	74.00	-26.33	Peak	Horizontal
2	11060.00	27.91	7.07	34.98	54.00	-19.02	Average	Horizontal
3	16590.00	37.71	14.66	52.37	74.00	-21.63	Peak	Horizontal
4	16590.00	25.48	14.66	40.14	54.00	-13.86	Average	Horizontal
5	11060.00	40.95	7.07	48.02	74.00	-25.98	Peak	Vertical
6	11060.00	27.85	7.07	34.92	54.00	-19.08	Average	Vertical
7	16590.00	38.38	14.66	53.04	74.00	-20.96	Peak	Vertical
8	16590.00	25.40	14.66	40.06	54.00	-13.94	Average	Vertical

MIMO_Chain 0+1_ IEEE 802.11ac-VHT80_Channel 122								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11220.00	39.58	7.22	46.80	74.00	-27.20	Peak	Horizontal
2	11220.00	27.15	7.22	34.37	54.00	-19.63	Average	Horizontal
3	16830.00	38.81	14.38	53.19	74.00	-20.81	Peak	Horizontal
4	16830.00	26.41	14.38	40.79	54.00	-13.21	Average	Horizontal
5	11220.00	39.55	7.22	46.77	74.00	-27.23	Peak	Vertical
6	11220.00	27.09	7.22	34.31	54.00	-19.69	Average	Vertical
7	16830.00	38.76	14.38	53.14	74.00	-20.86	Peak	Vertical
8	16830.00	26.34	14.38	40.72	54.00	-13.28	Average	Vertical

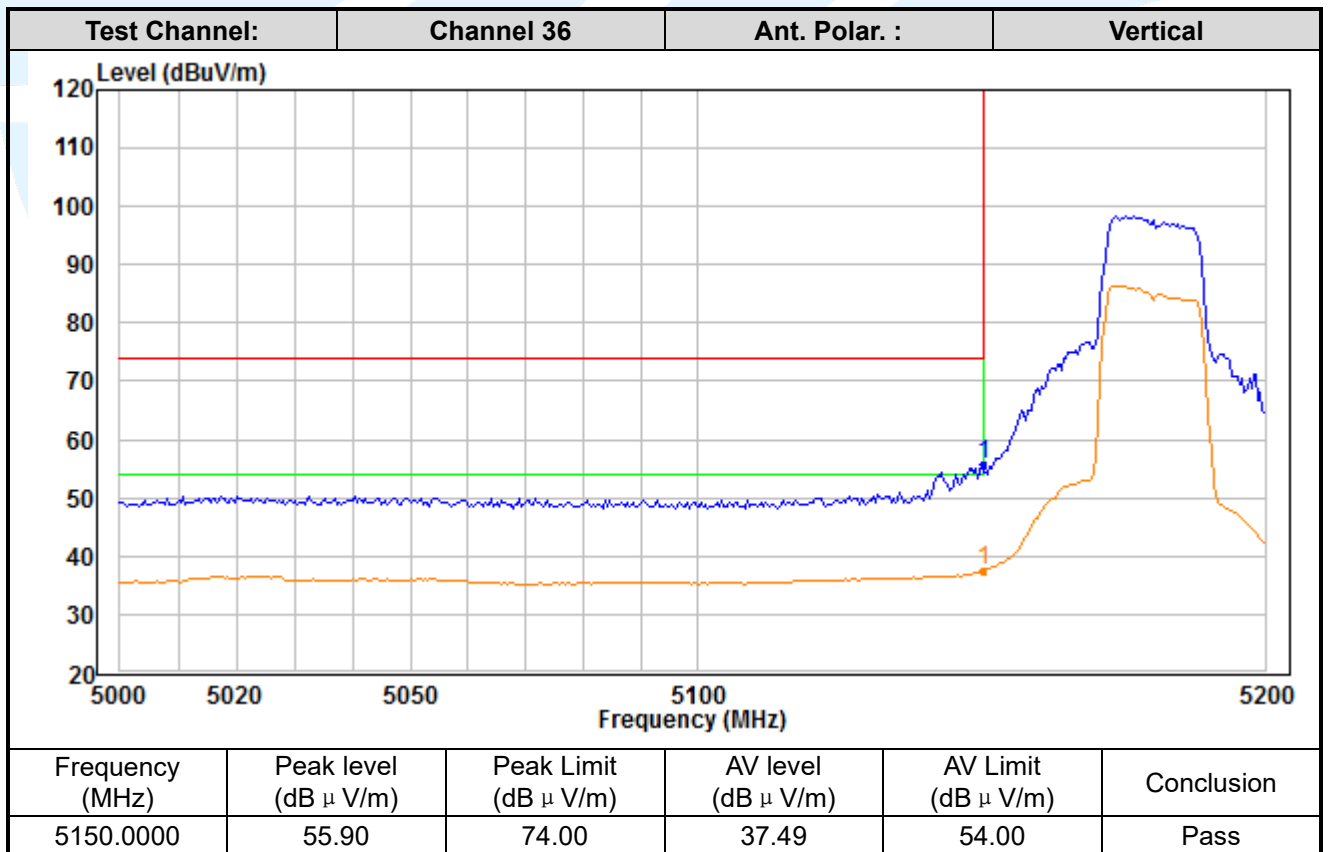
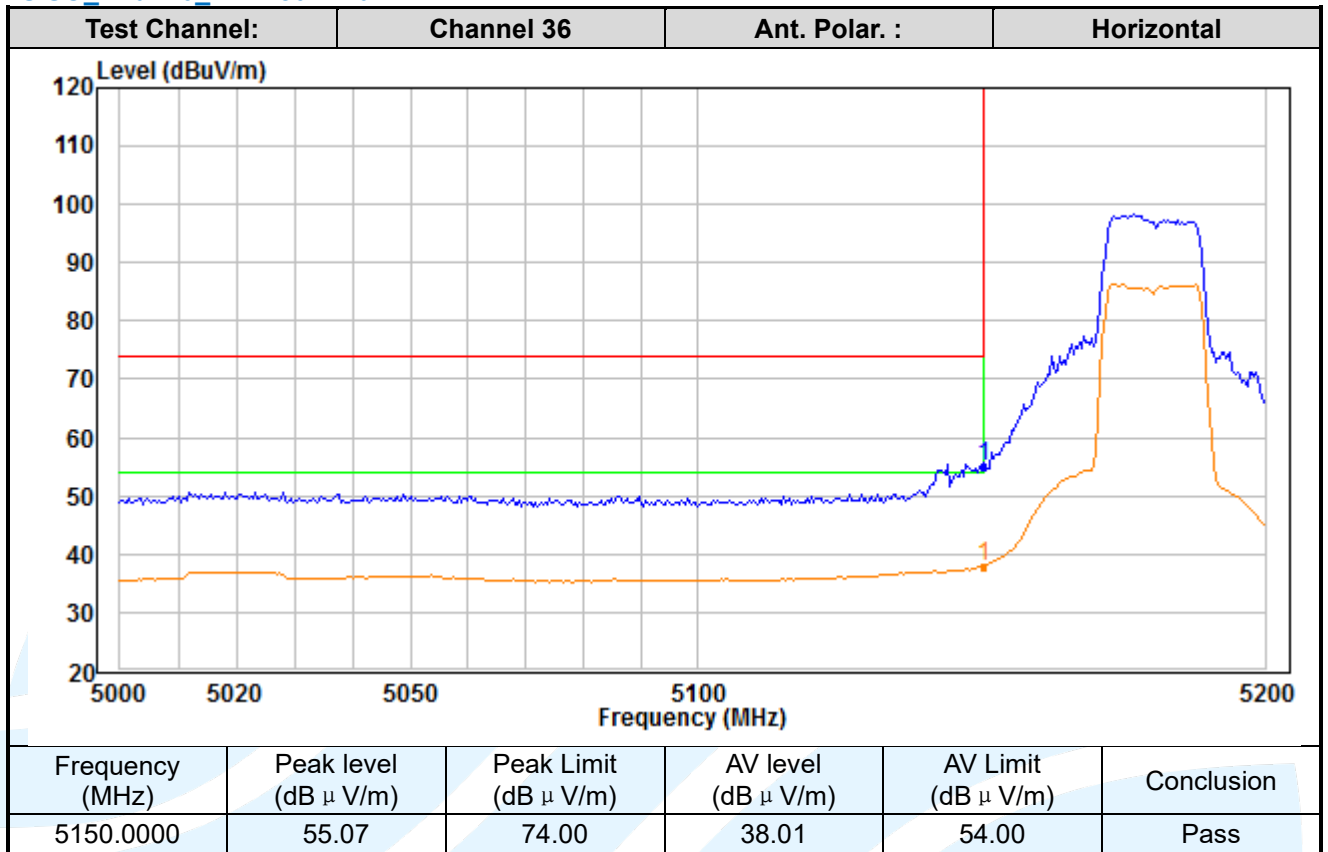
MIMO_Chain 0+1_ IEEE 802.11ac-VHT80_Channel 155								
No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	11550.00	39.93	7.56	47.49	74.00	-26.51	Peak	Horizontal
2	11550.00	27.97	7.56	35.53	54.00	-18.47	Average	Horizontal
3	17325.00	37.36	15.03	52.39	74.00	-21.61	Peak	Horizontal
4	17325.00	24.76	15.03	39.79	54.00	-14.21	Average	Horizontal
5	11550.00	40.51	7.56	48.07	74.00	-25.93	Peak	Vertical
6	11550.00	27.86	7.56	35.42	54.00	-18.58	Average	Vertical
7	17325.00	38.01	15.03	53.04	74.00	-20.96	Peak	Vertical
8	17325.00	24.84	15.03	39.87	54.00	-14.13	Average	Vertical

Remark:

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

Band Edge Measurements (Radiated)

SISO_Chain 0_IEEE 802.11a



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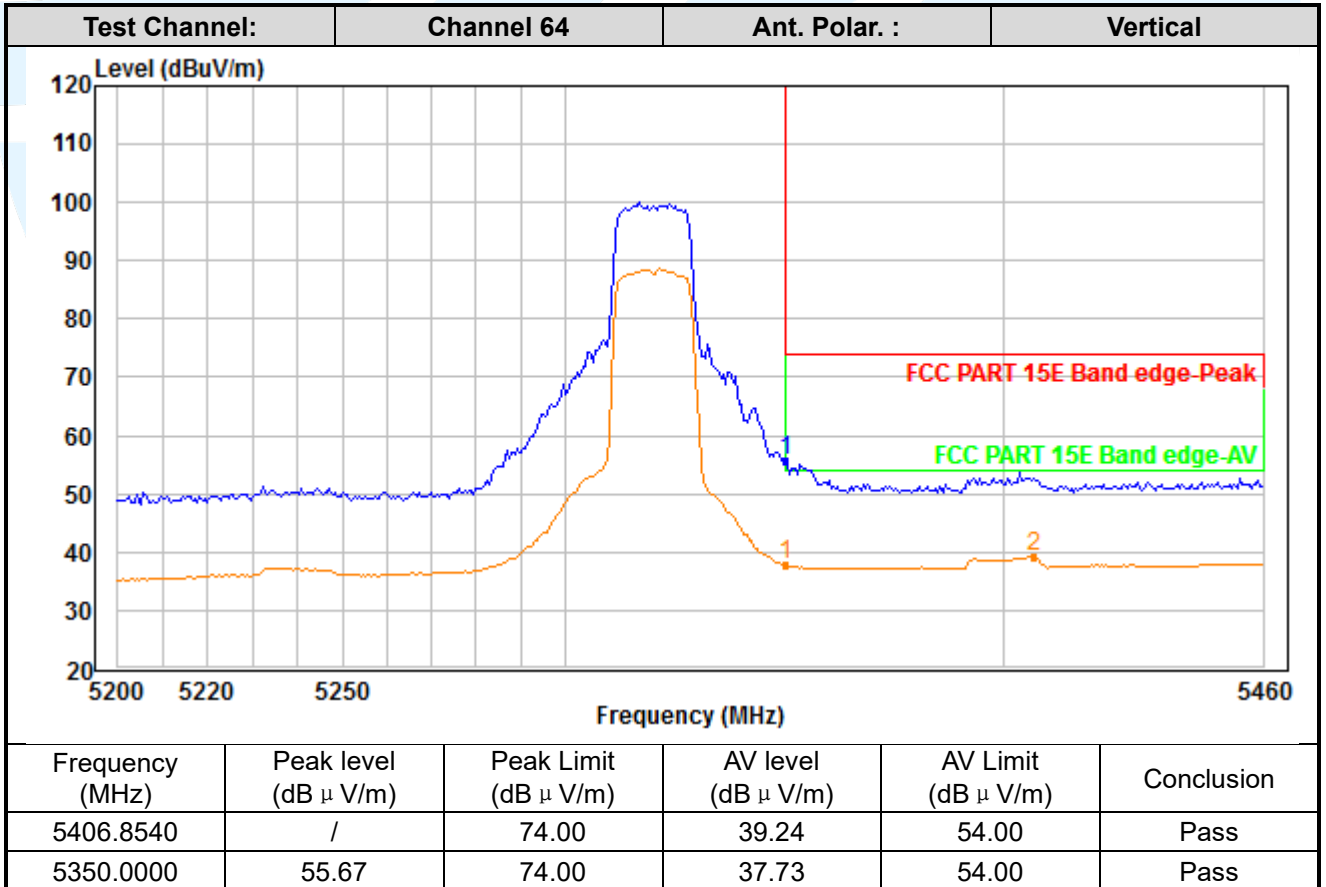
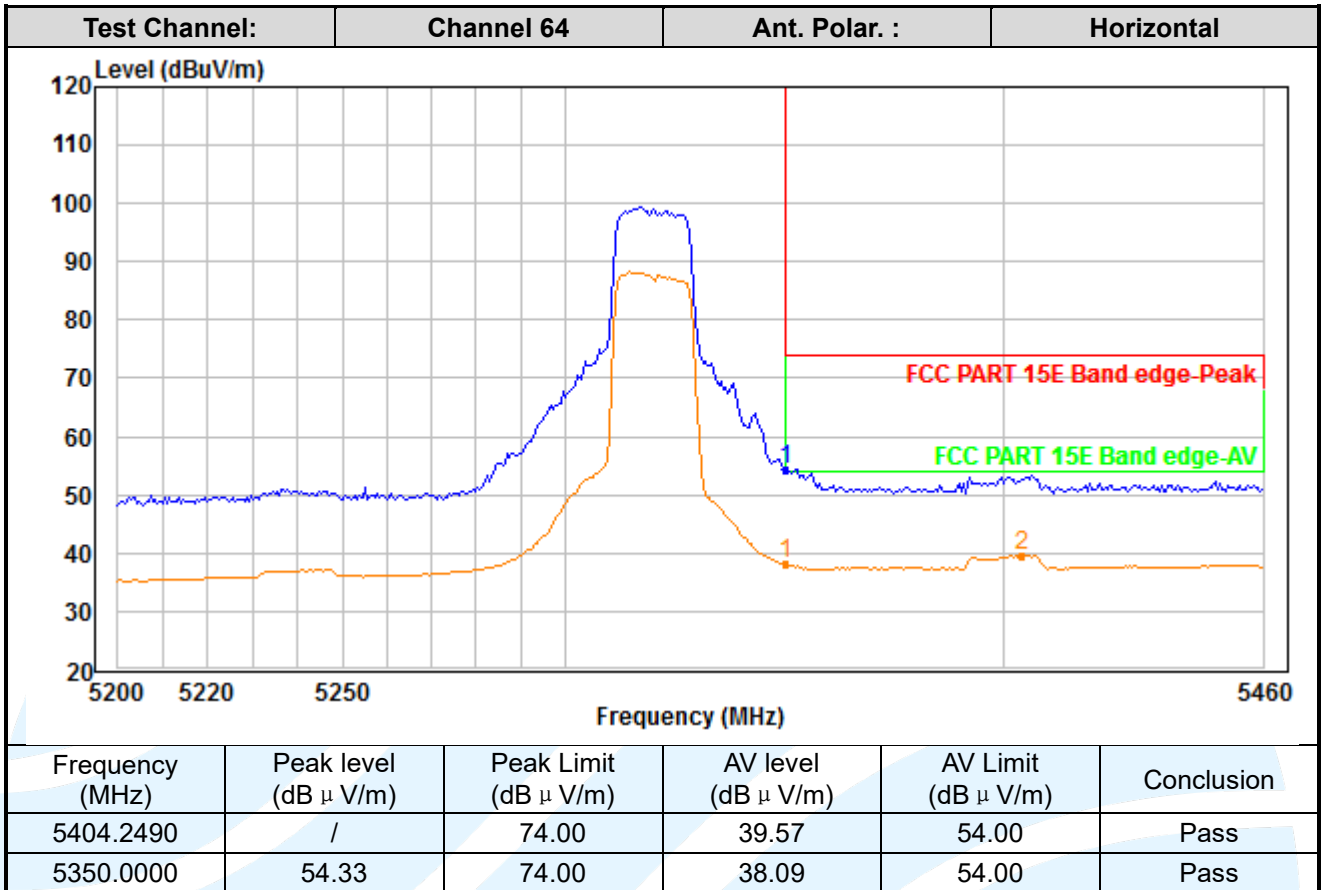
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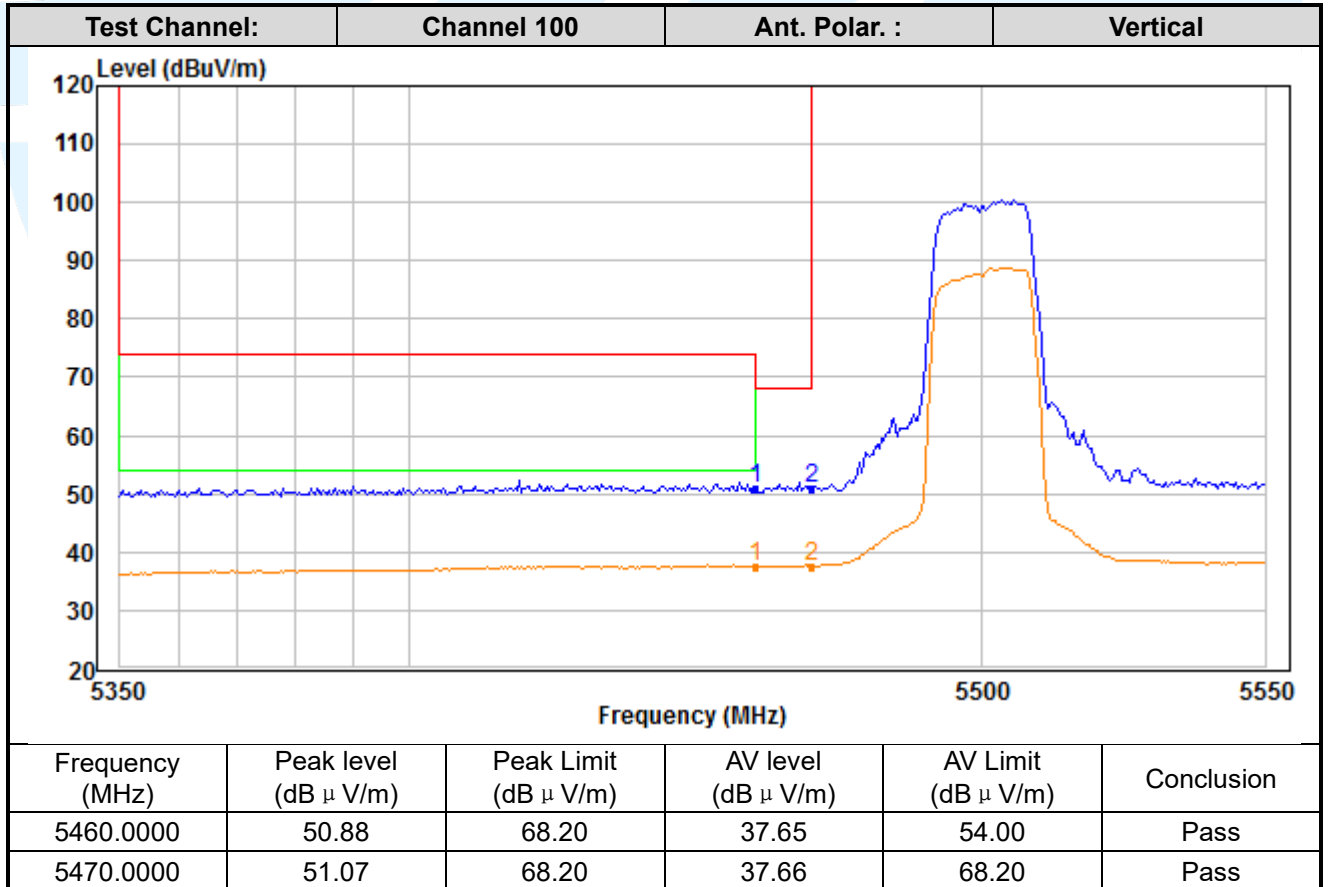
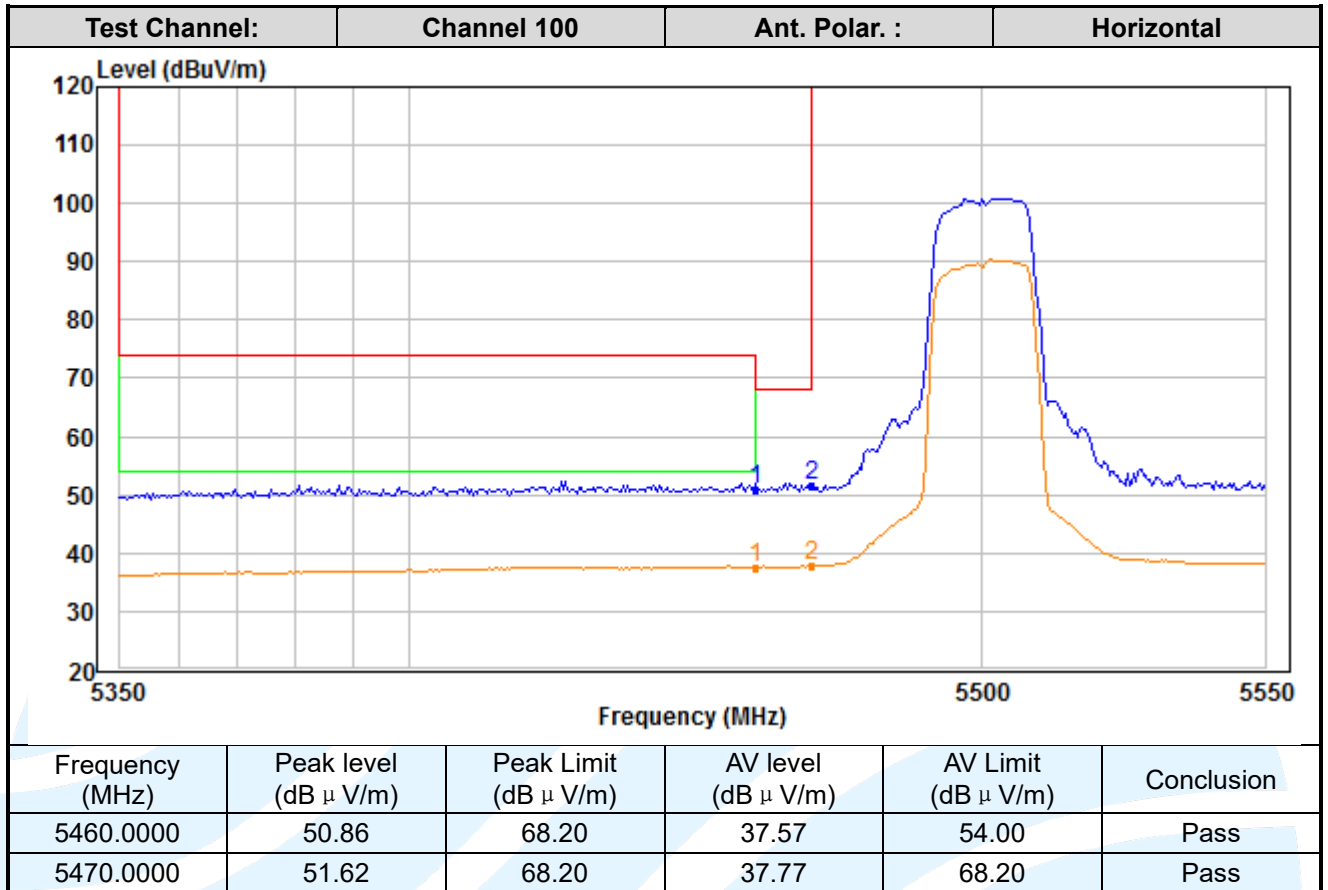
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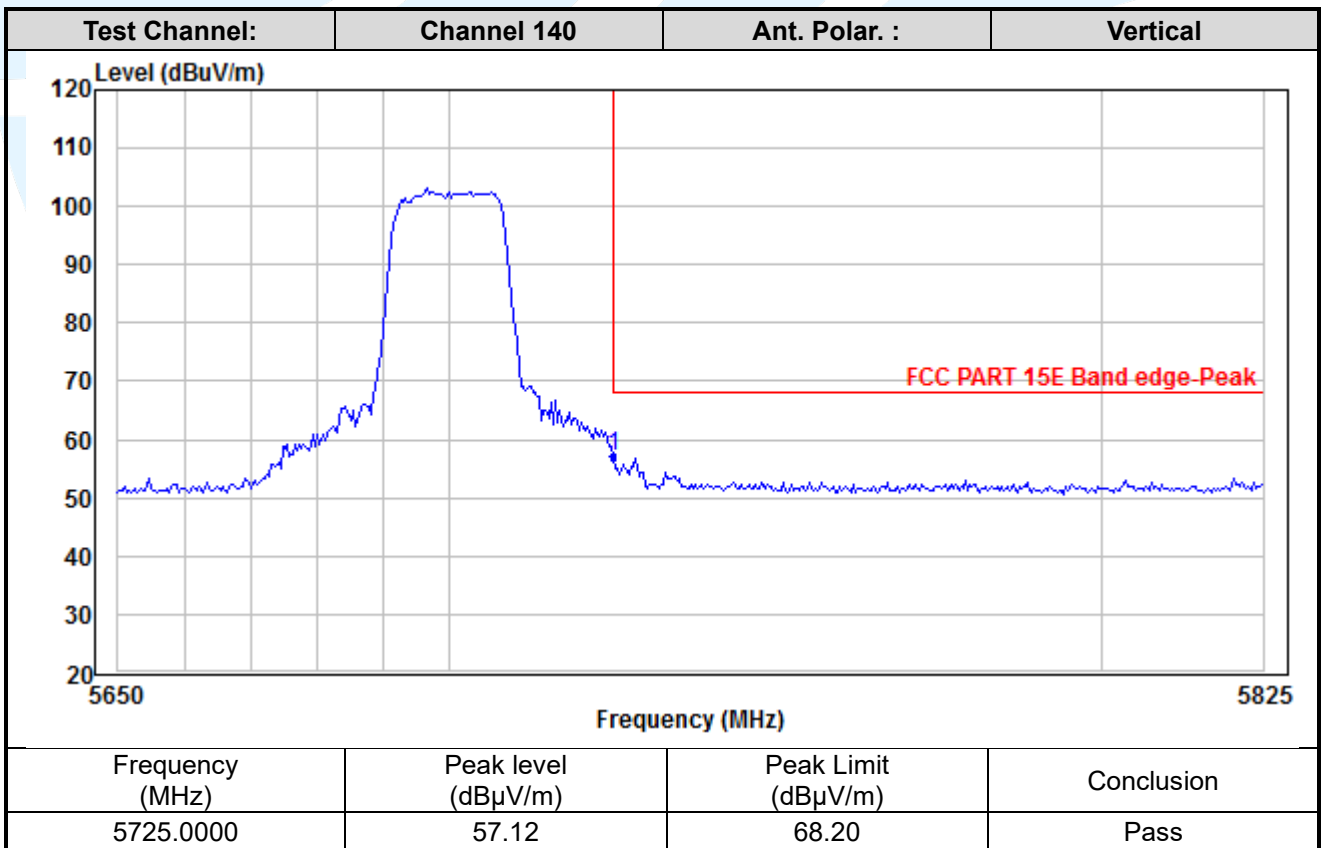
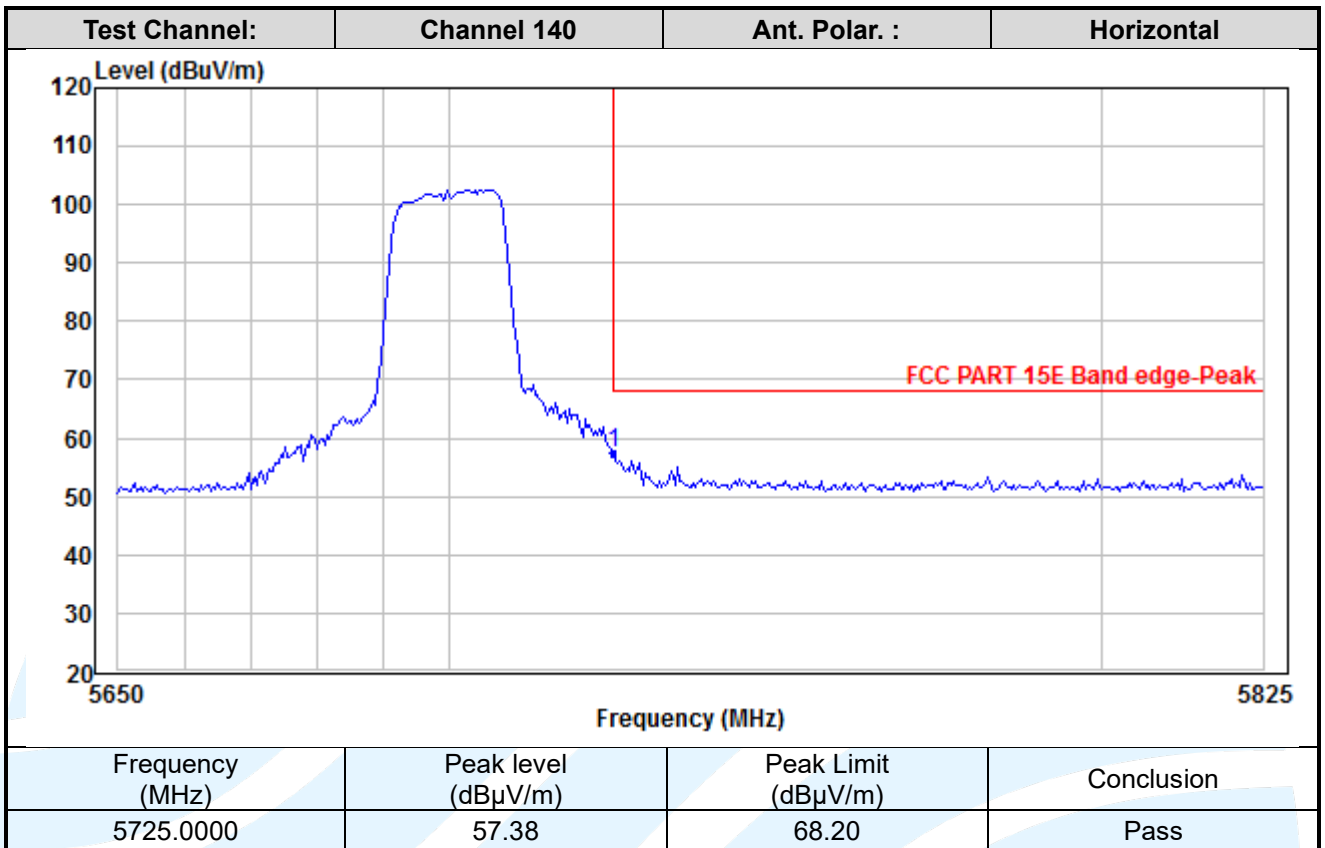
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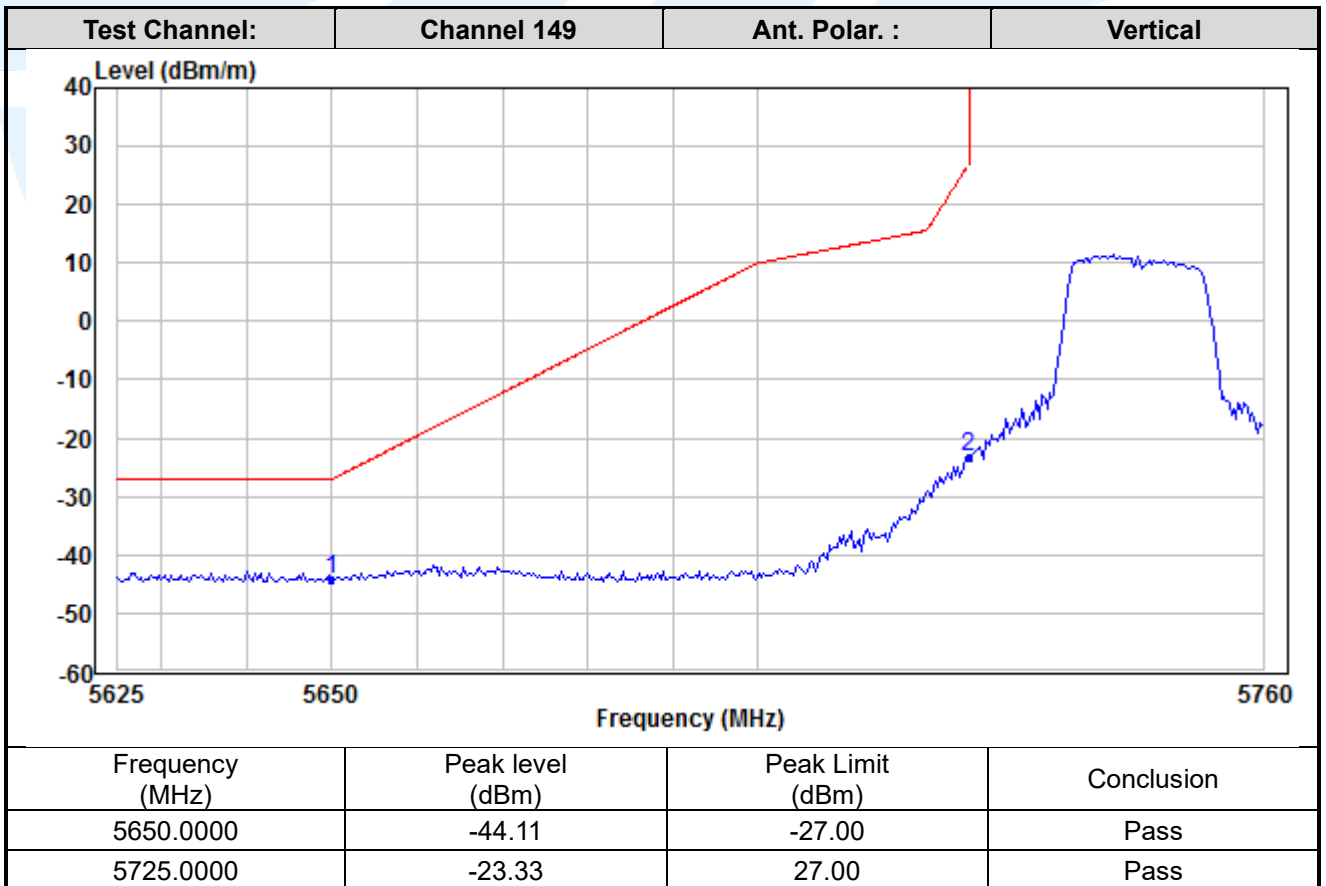
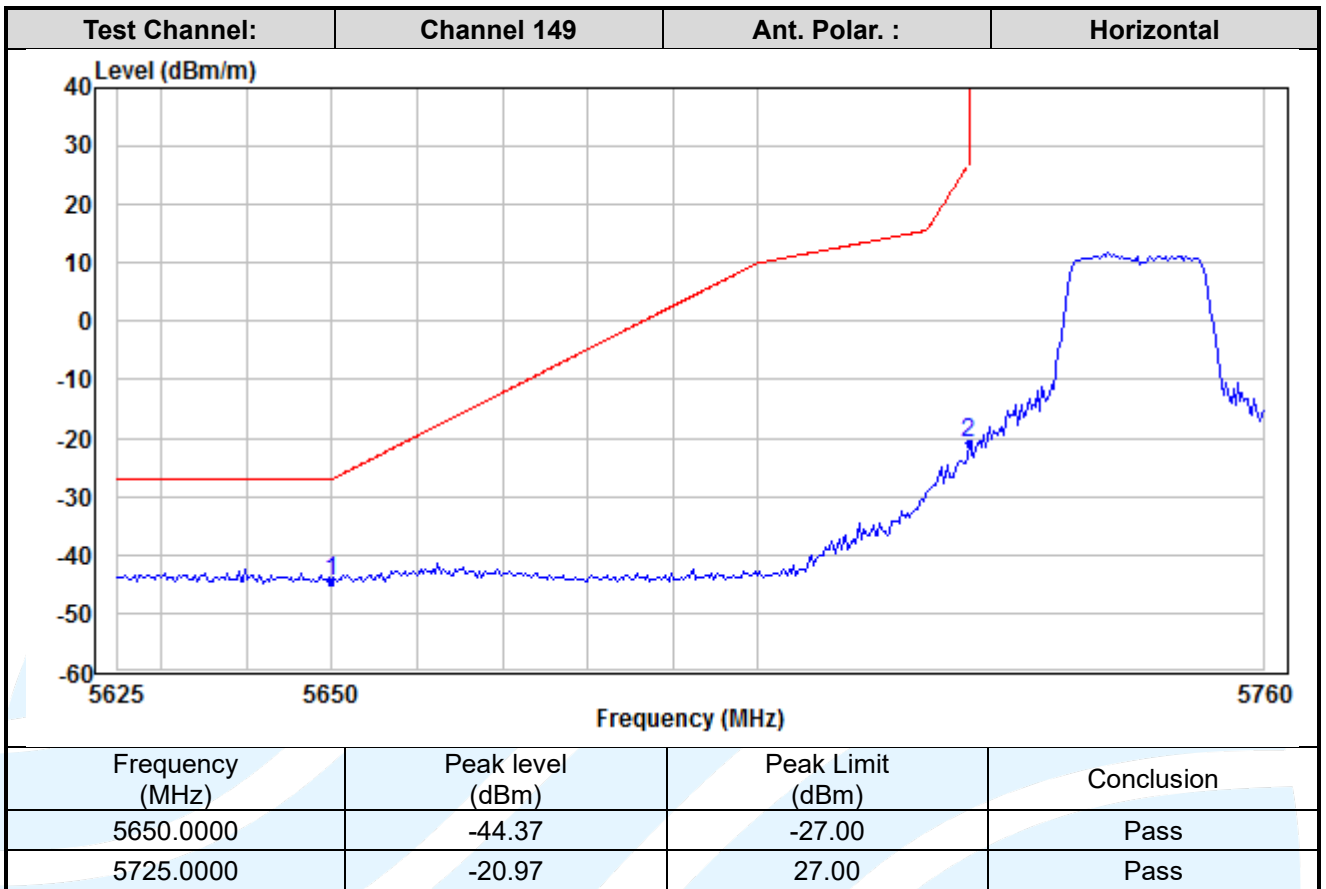
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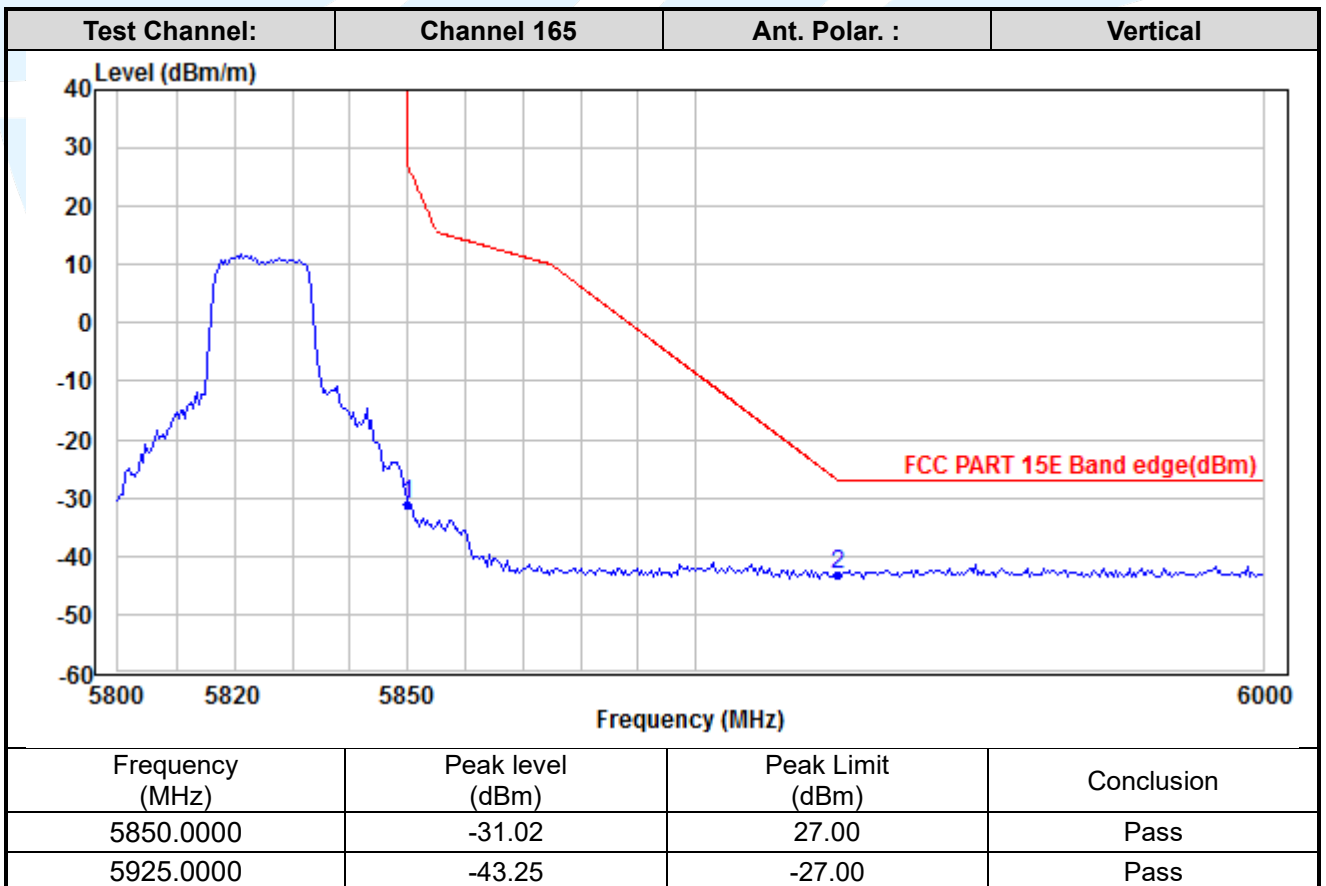
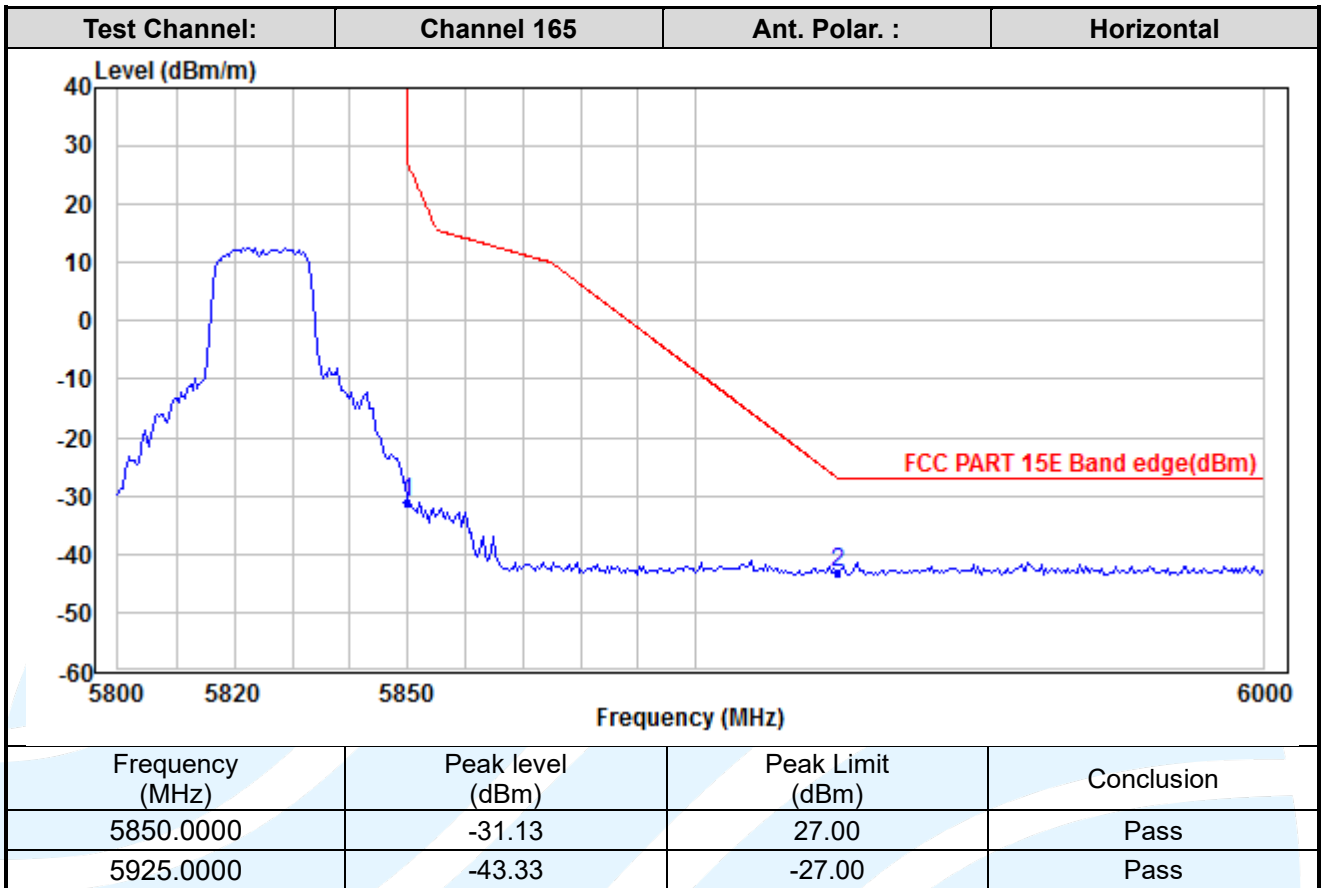
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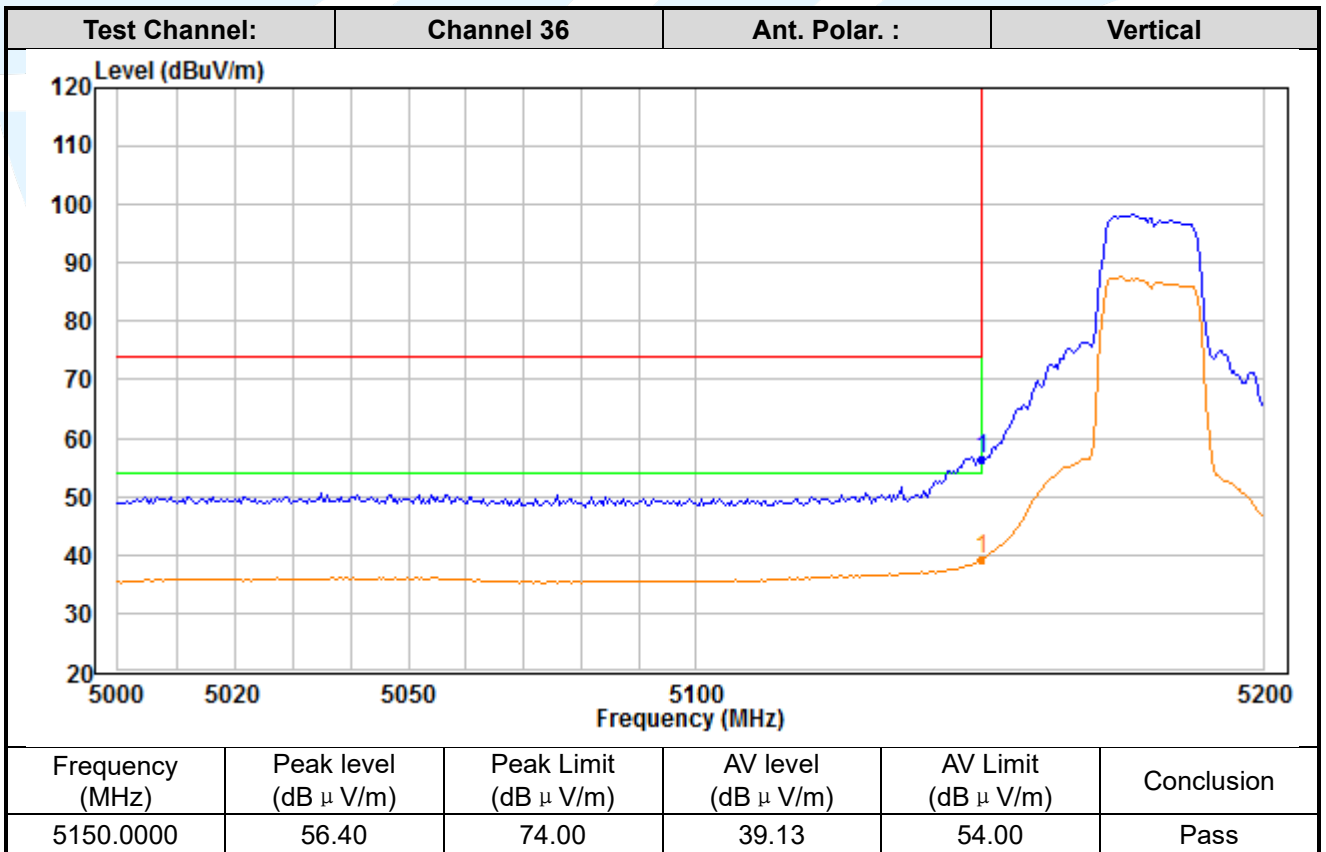
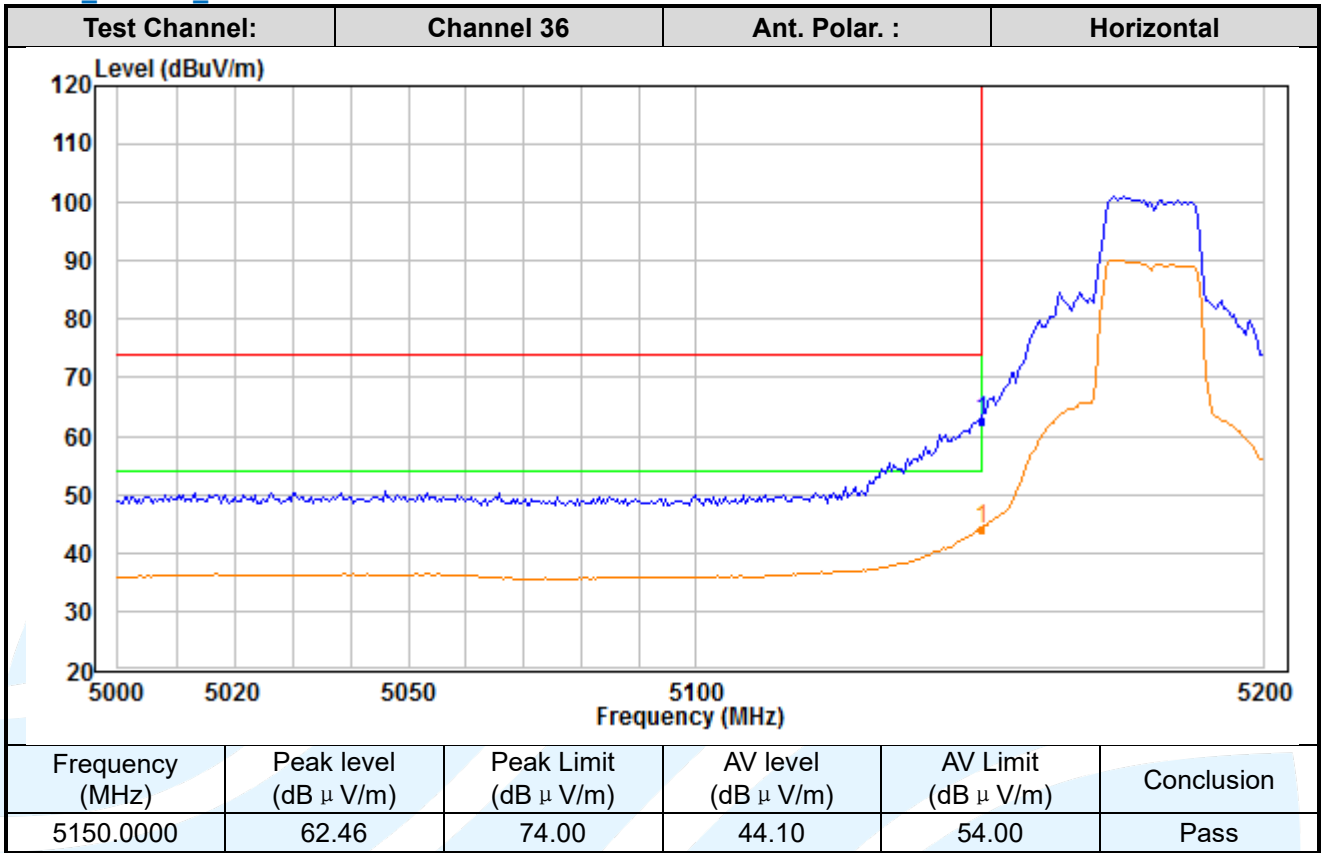
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SISO_Chain 1_ IEEE 802.11a



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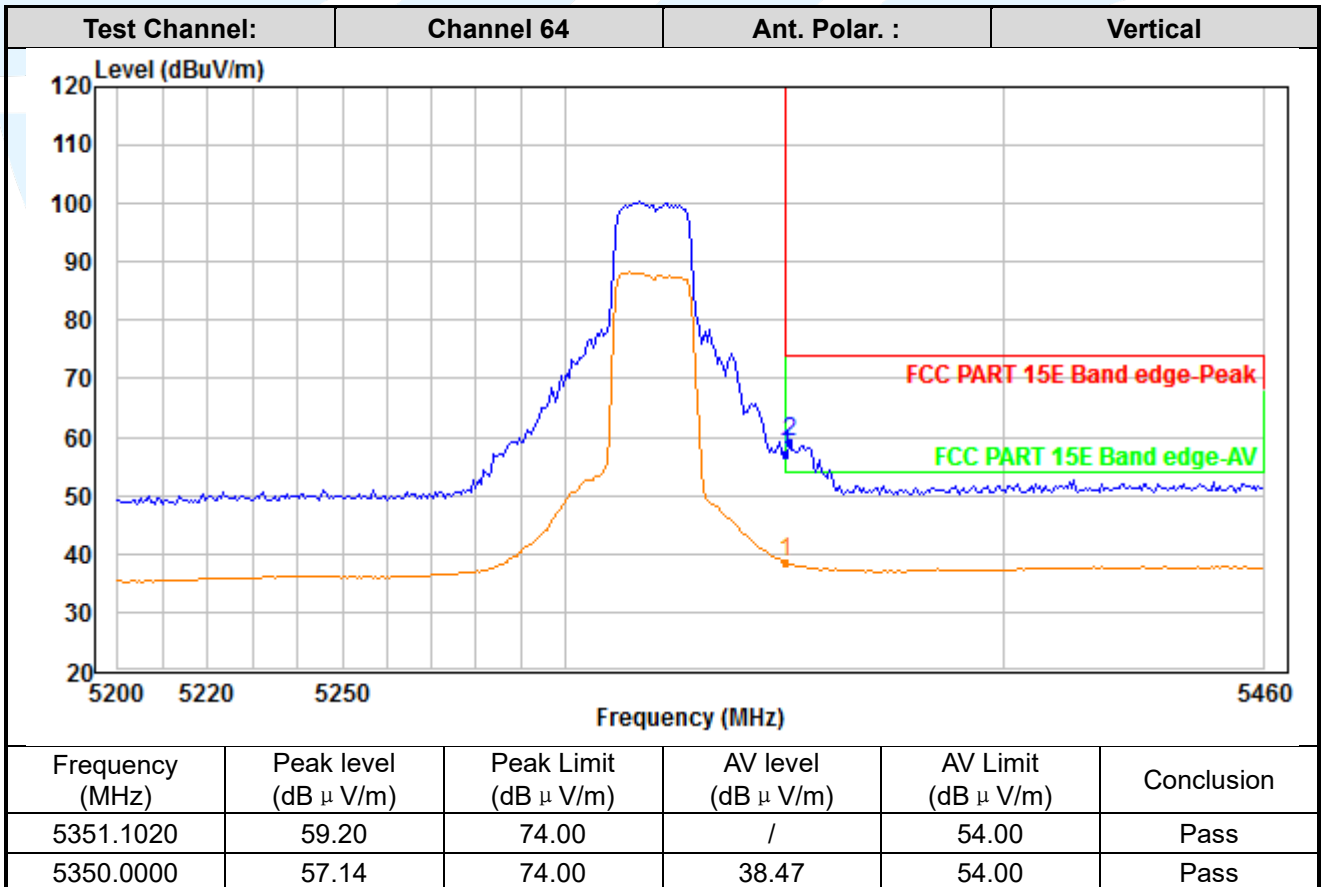
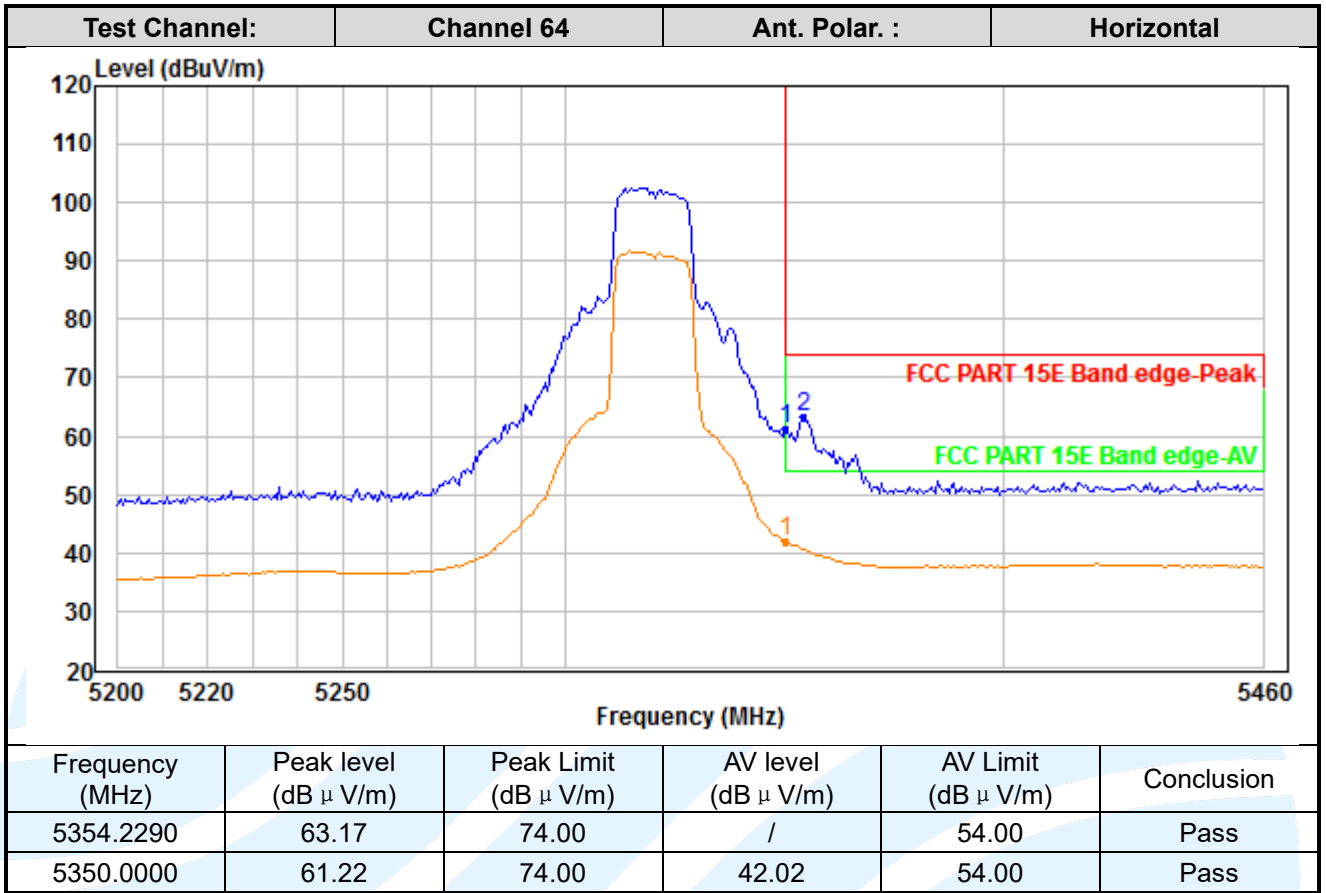
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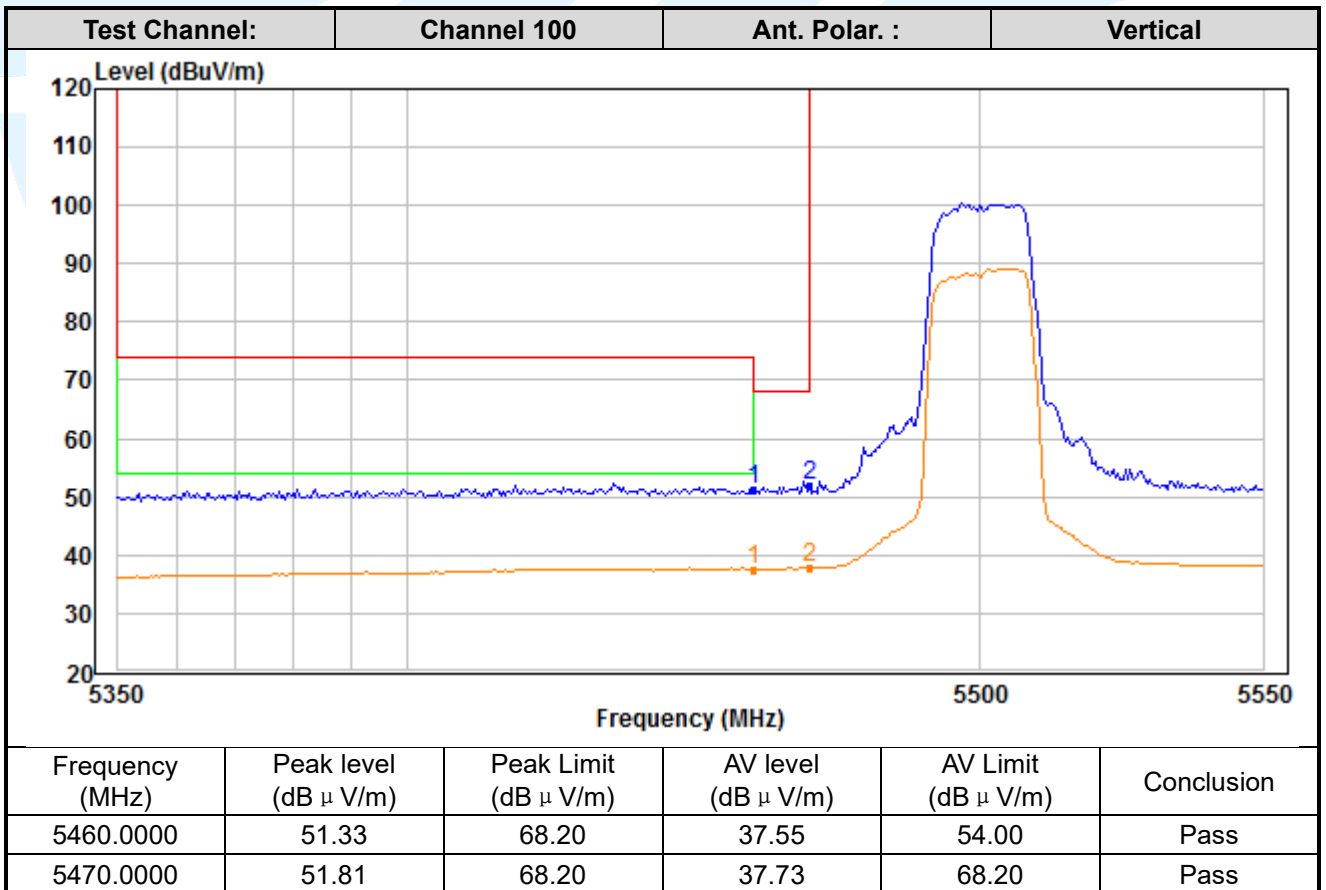
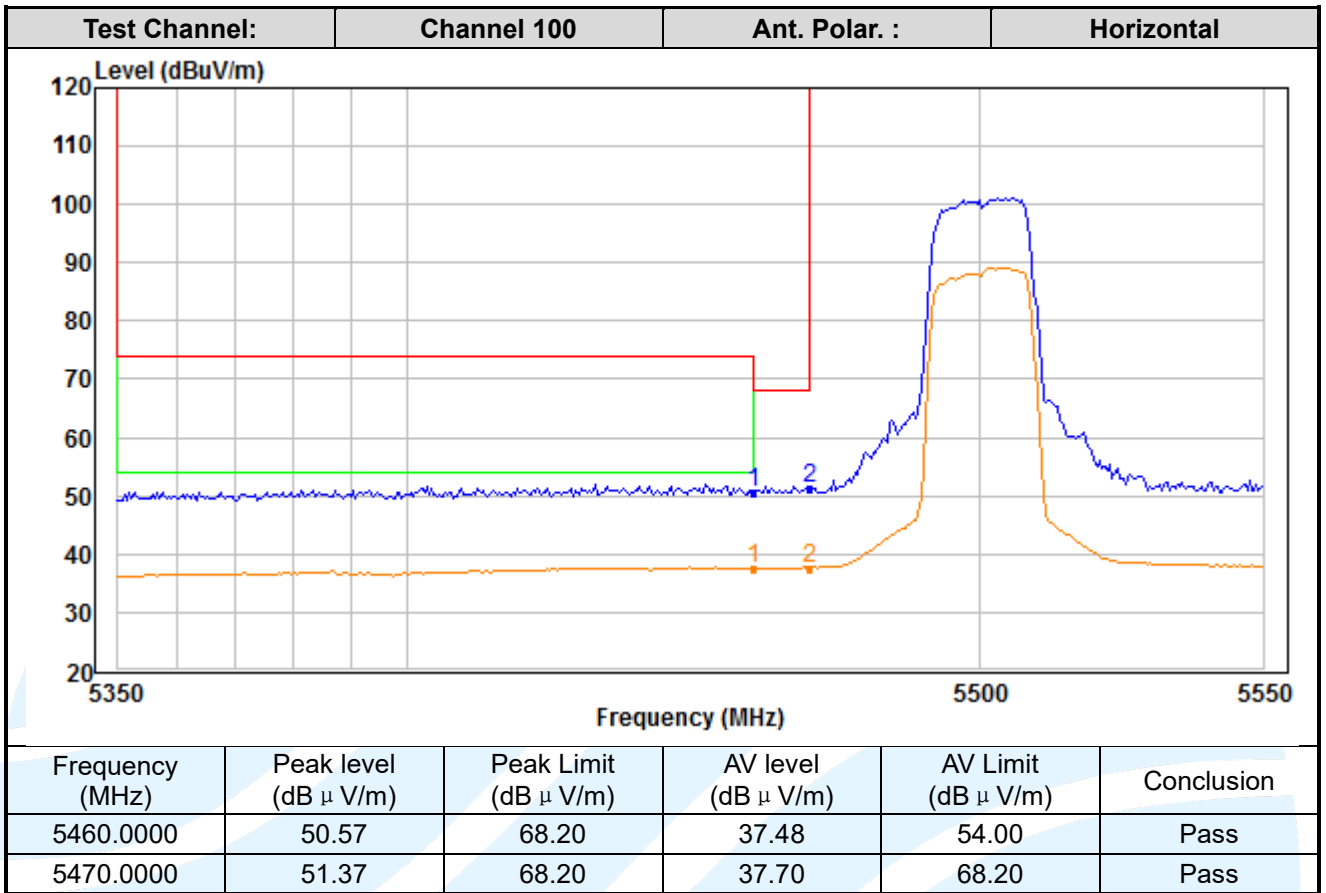
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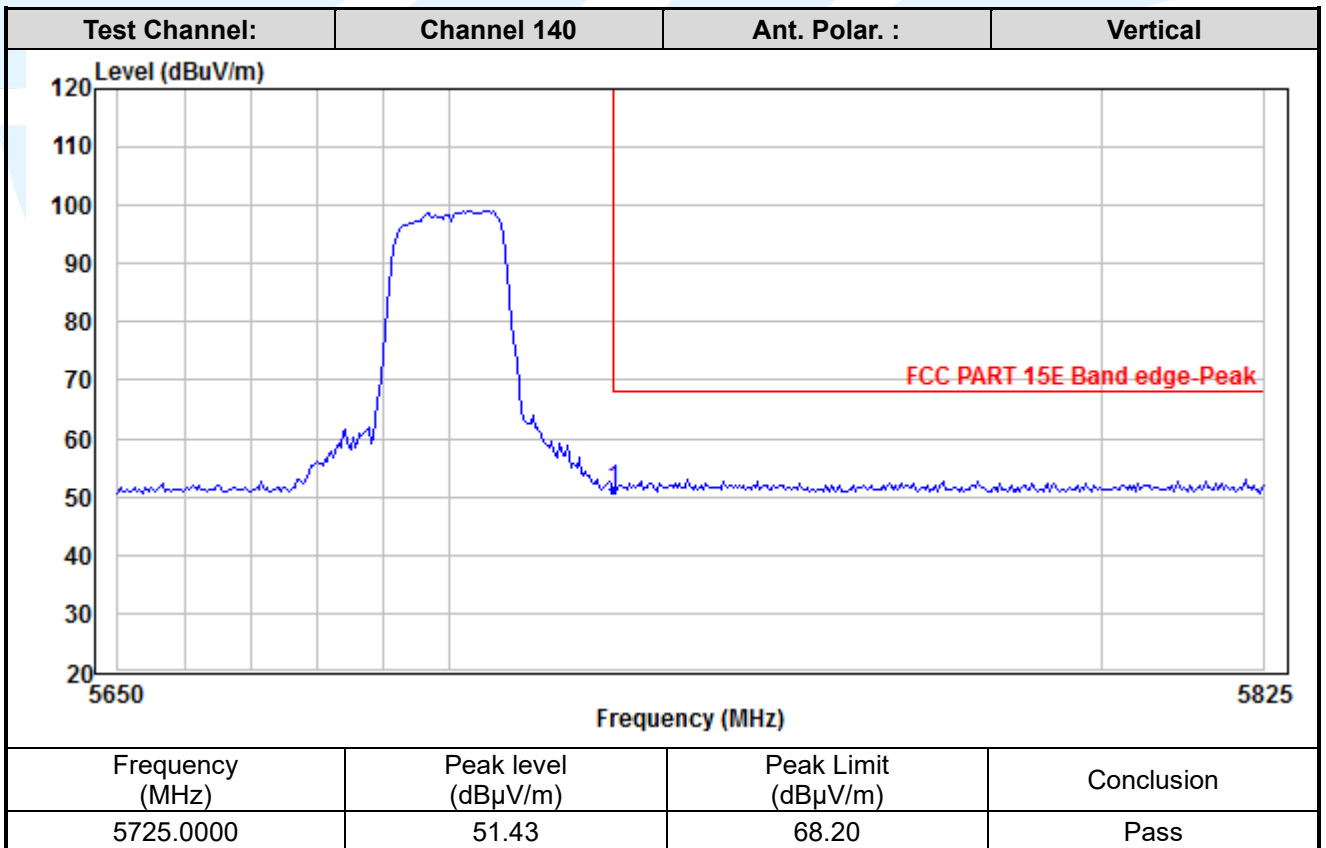
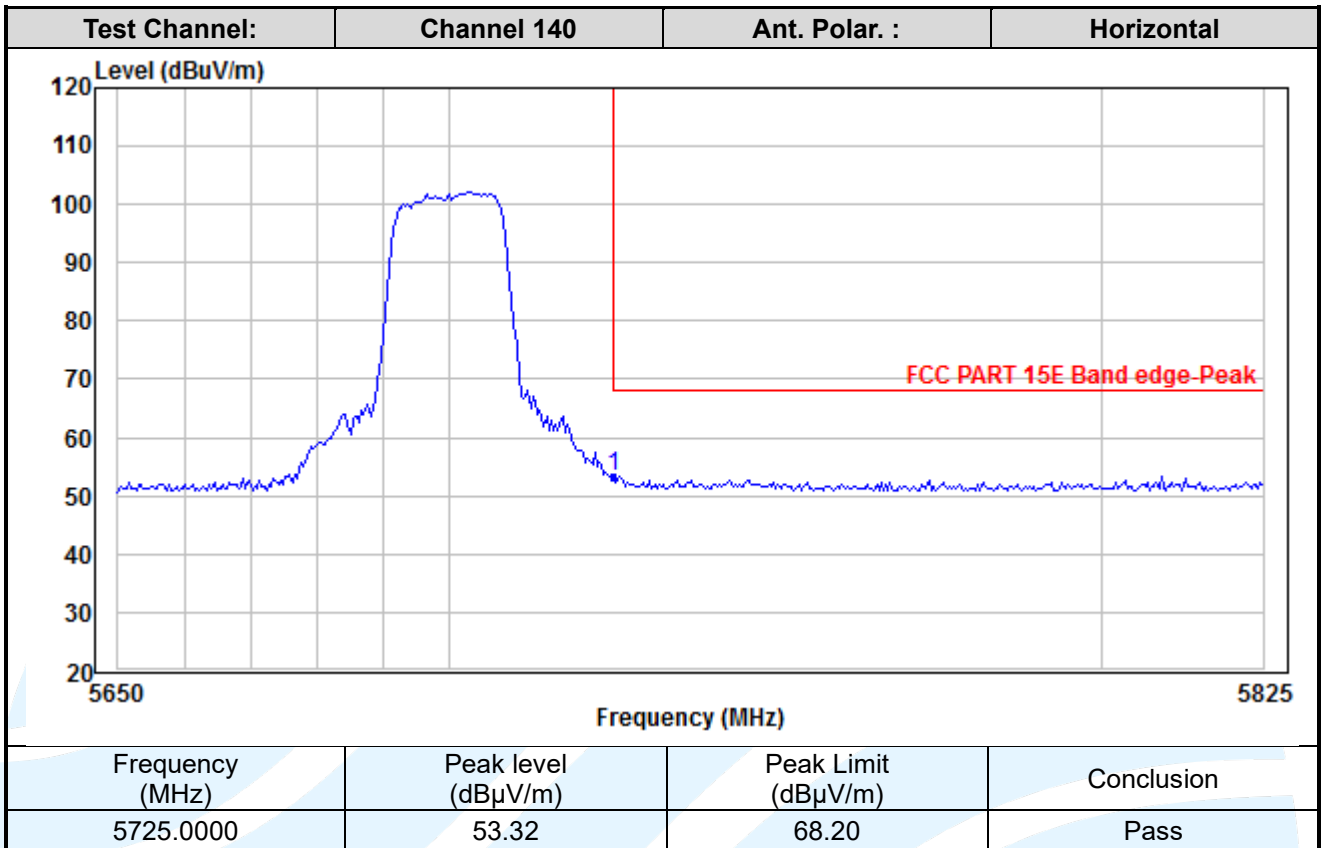
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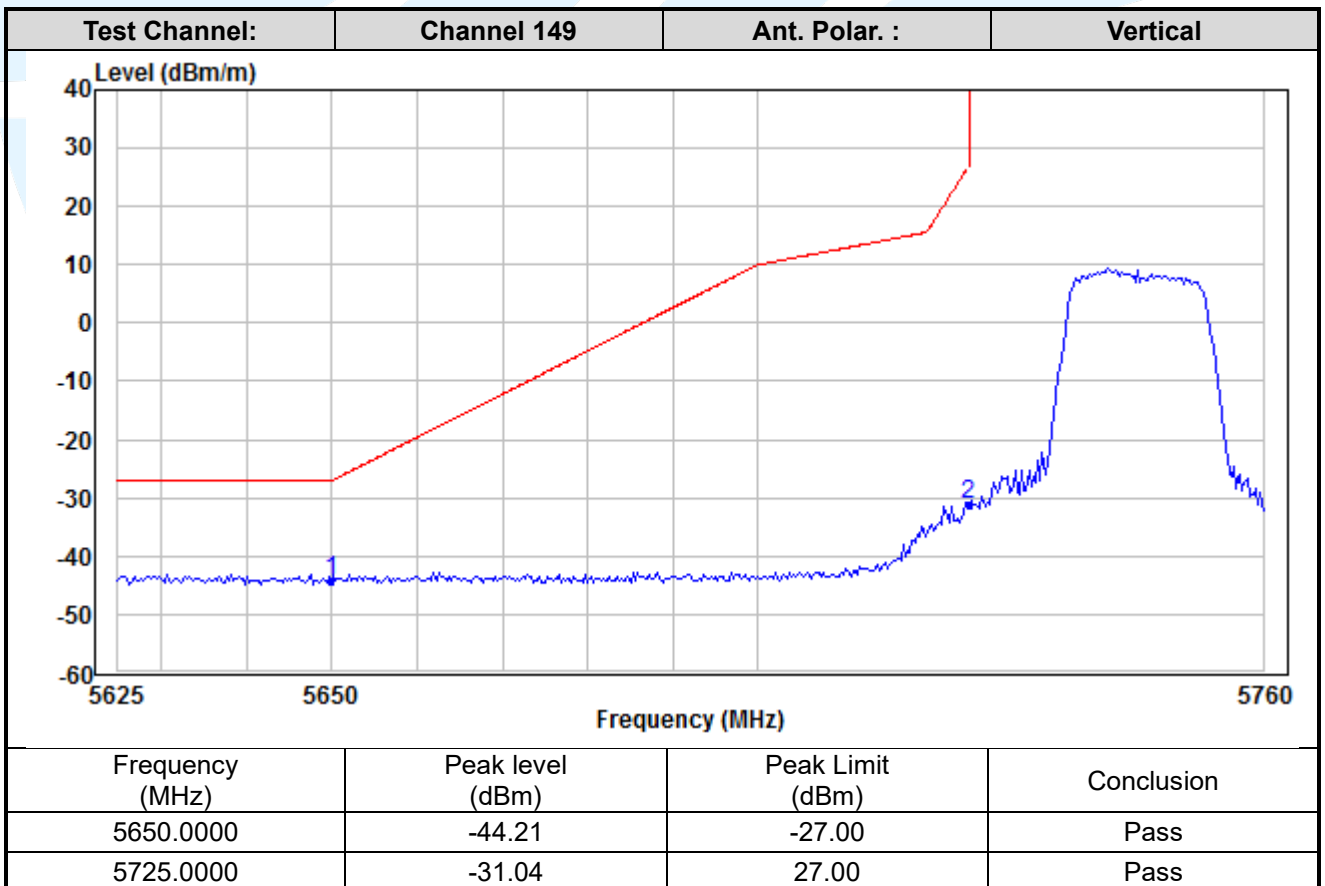
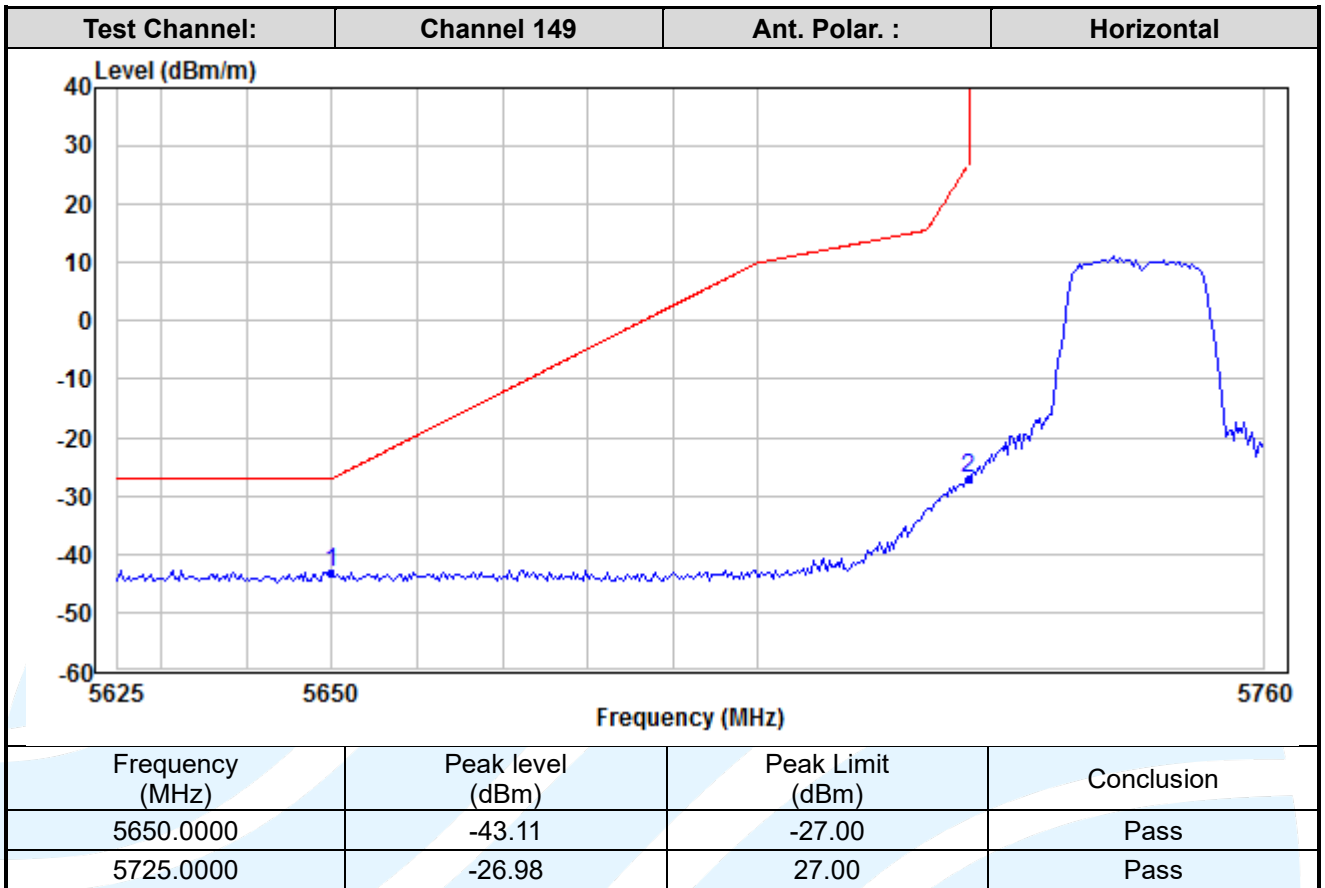
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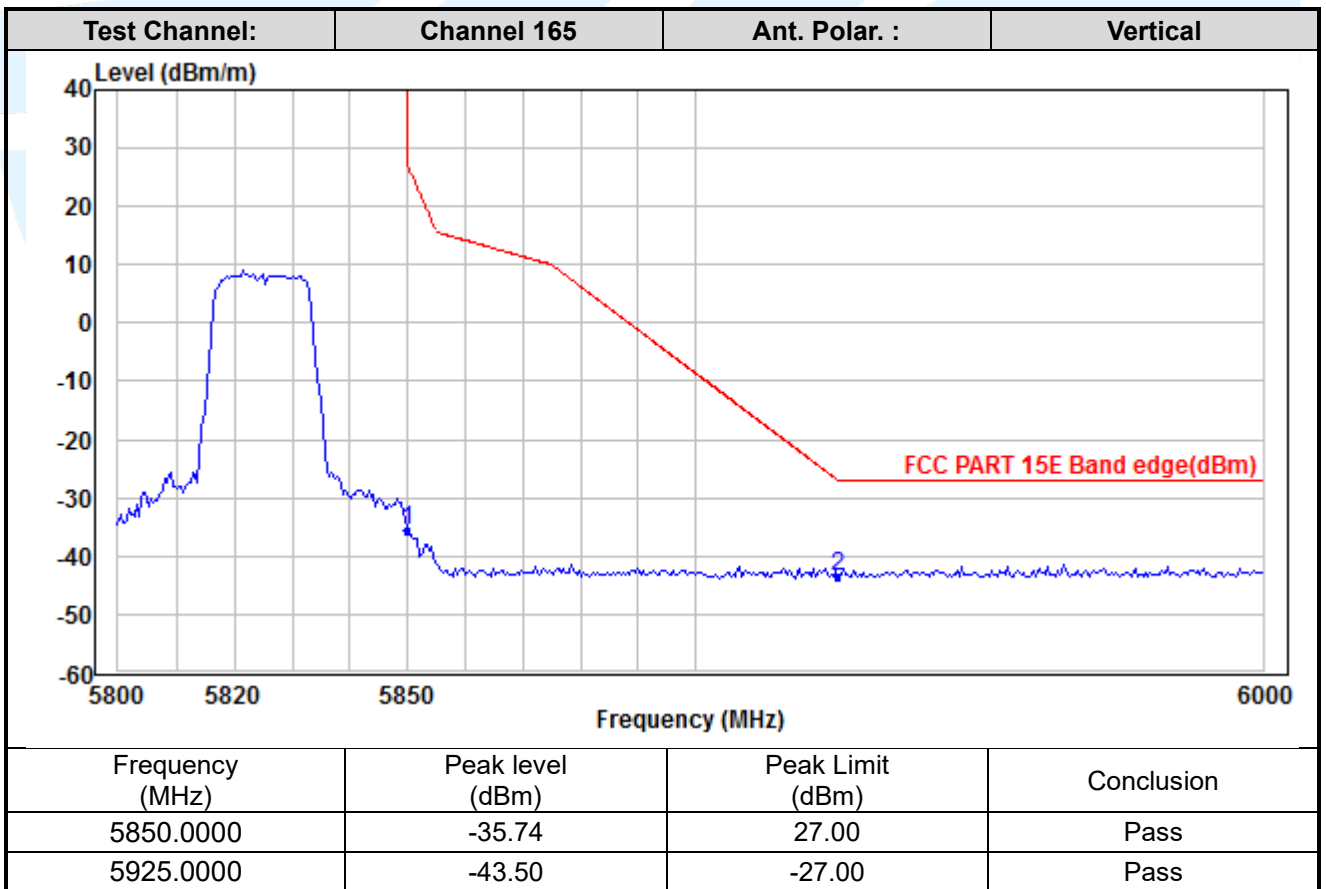
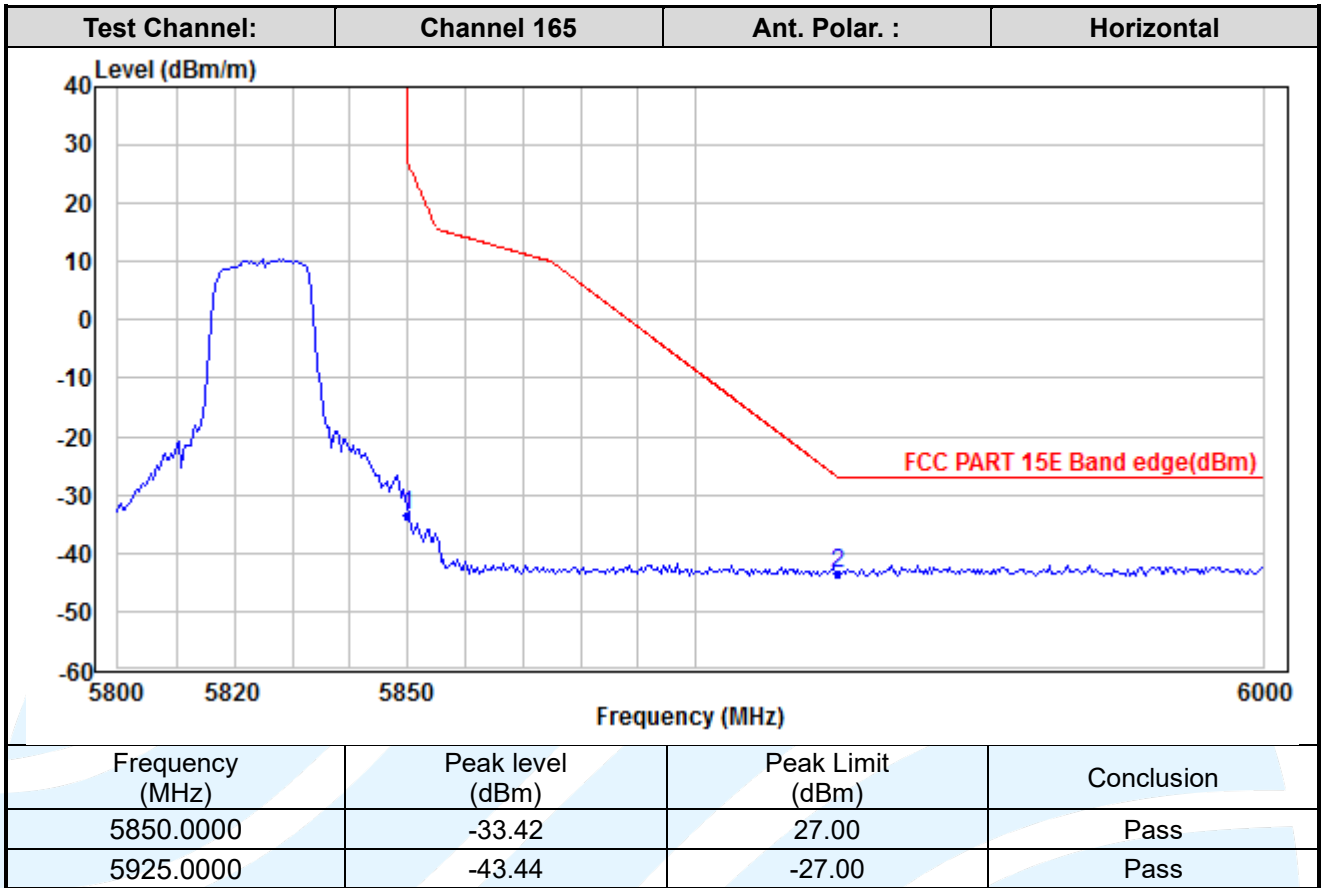
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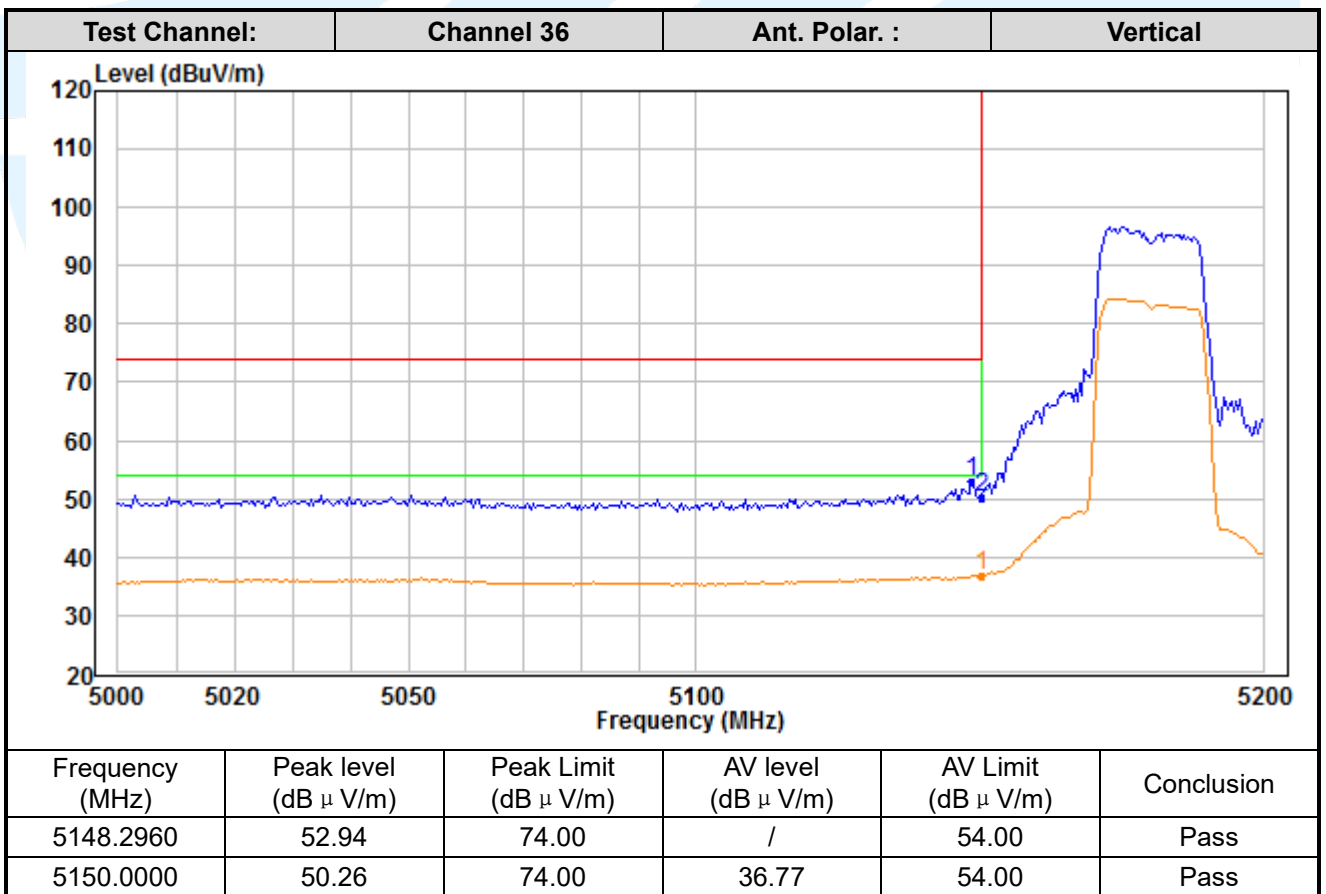
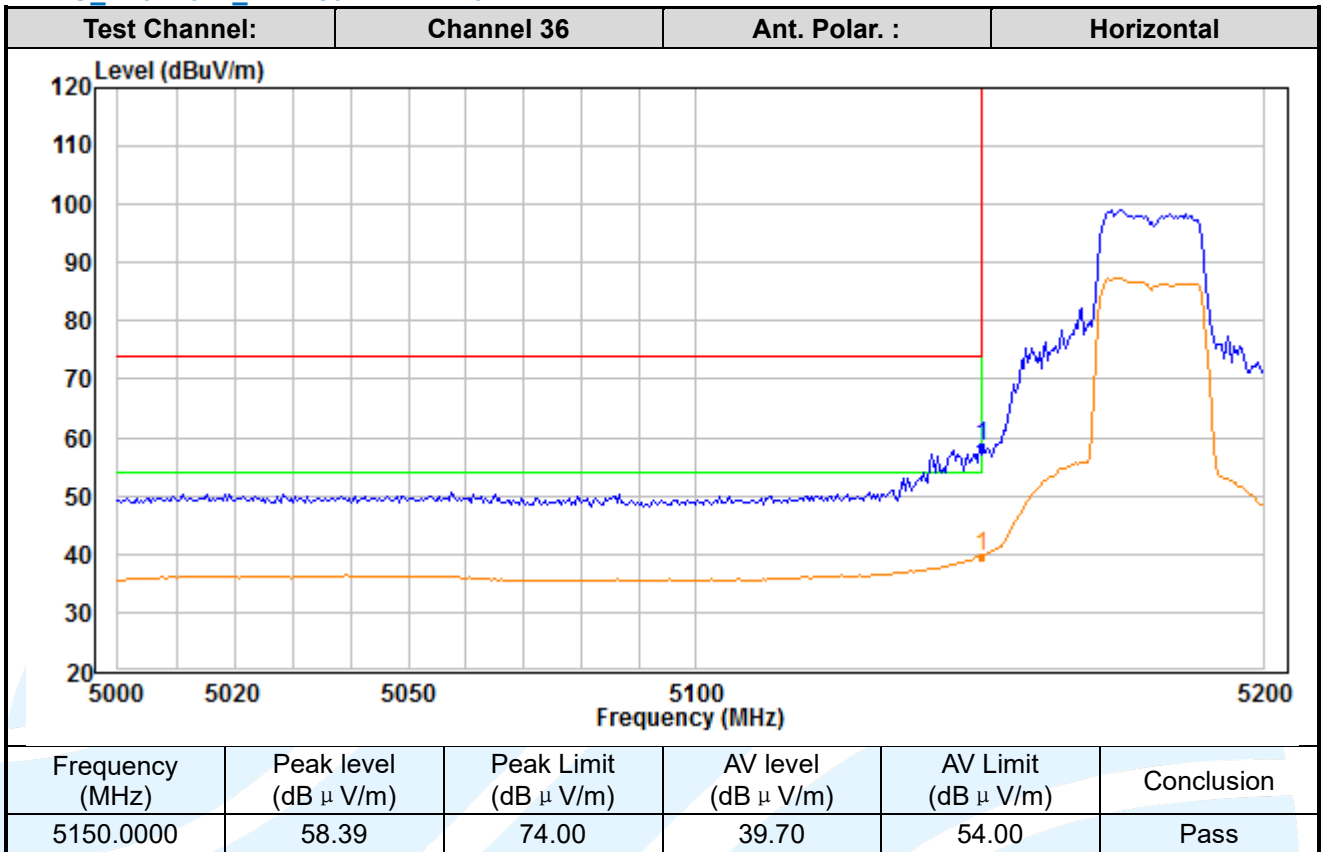
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MIMO_Chain 0+1_ IEEE 802.11n-HT20



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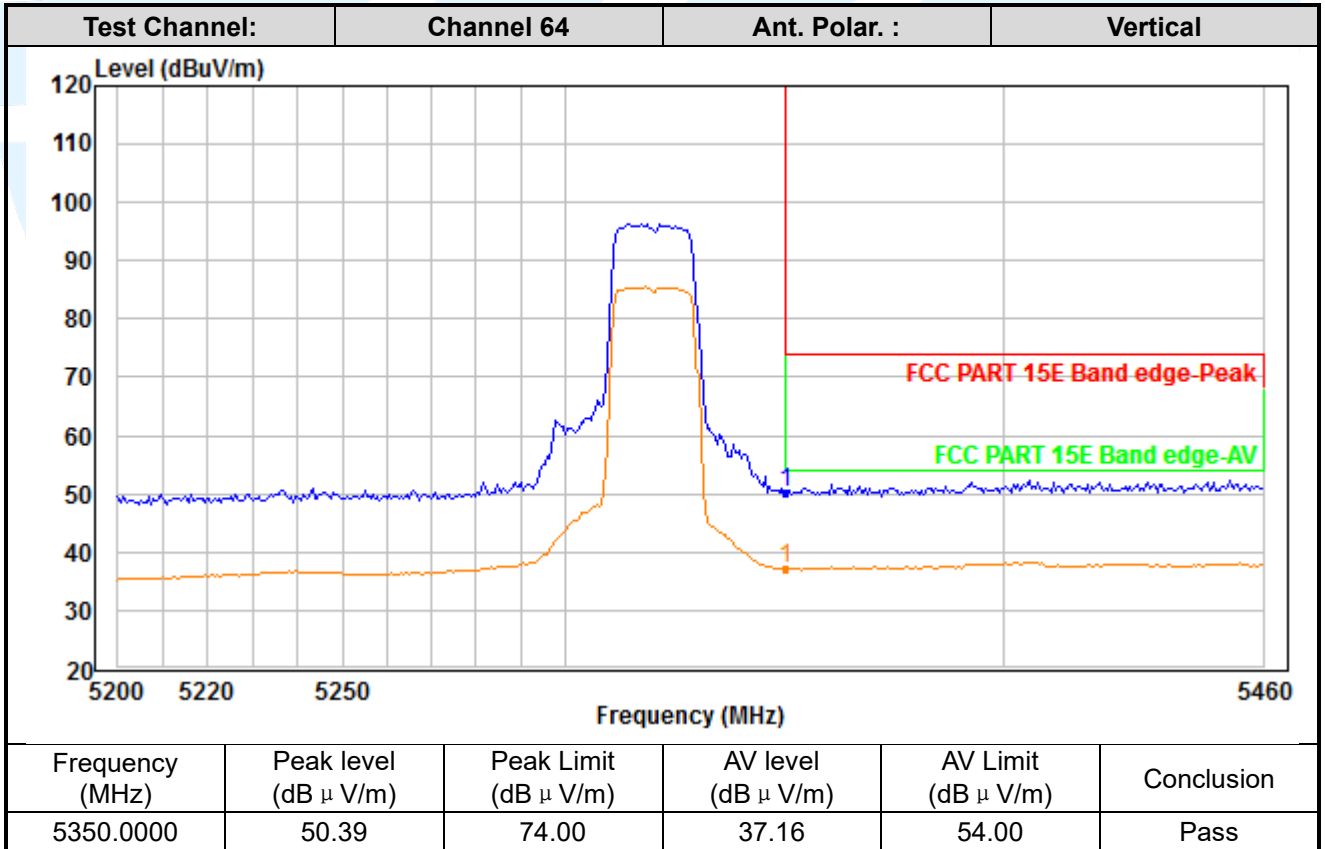
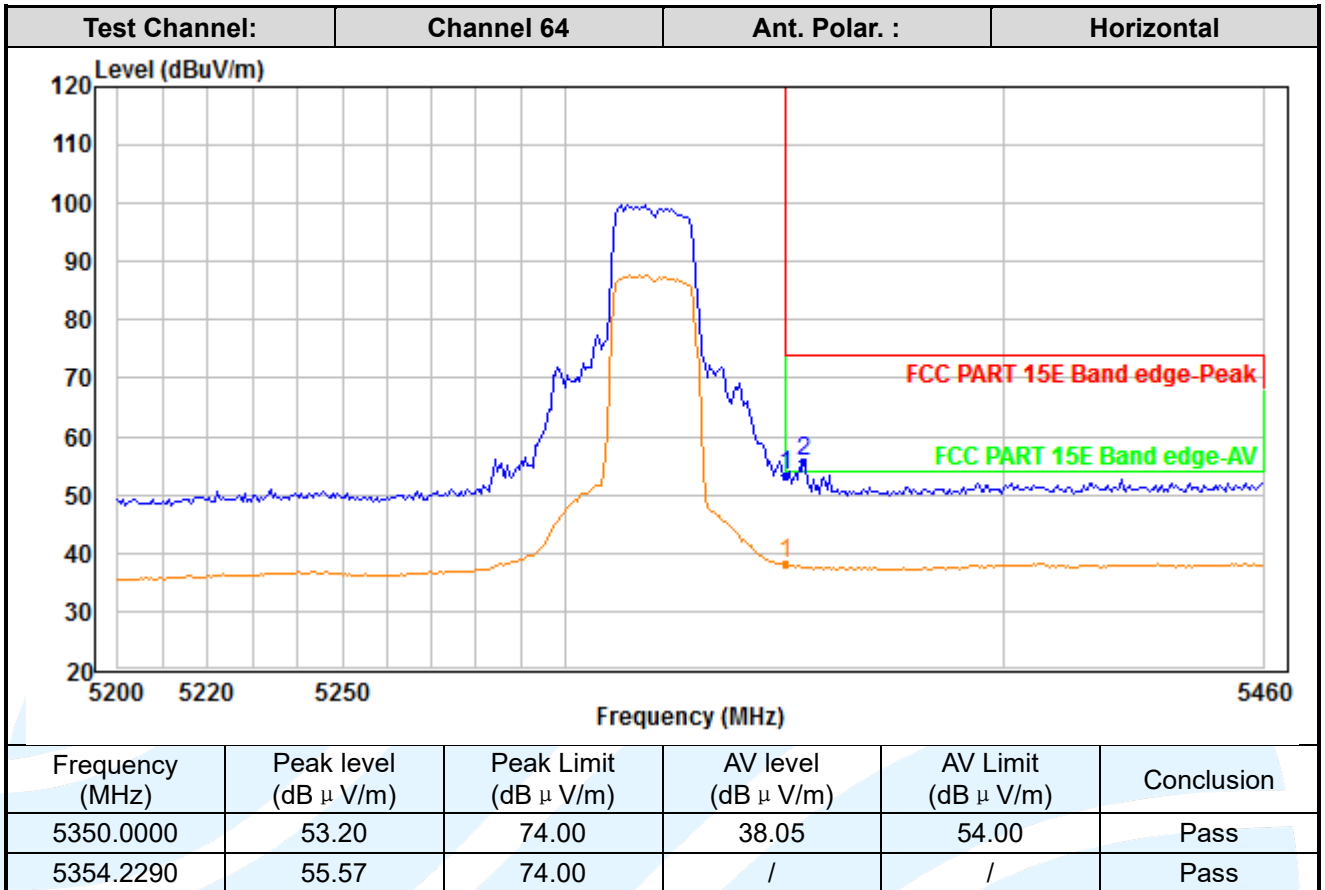
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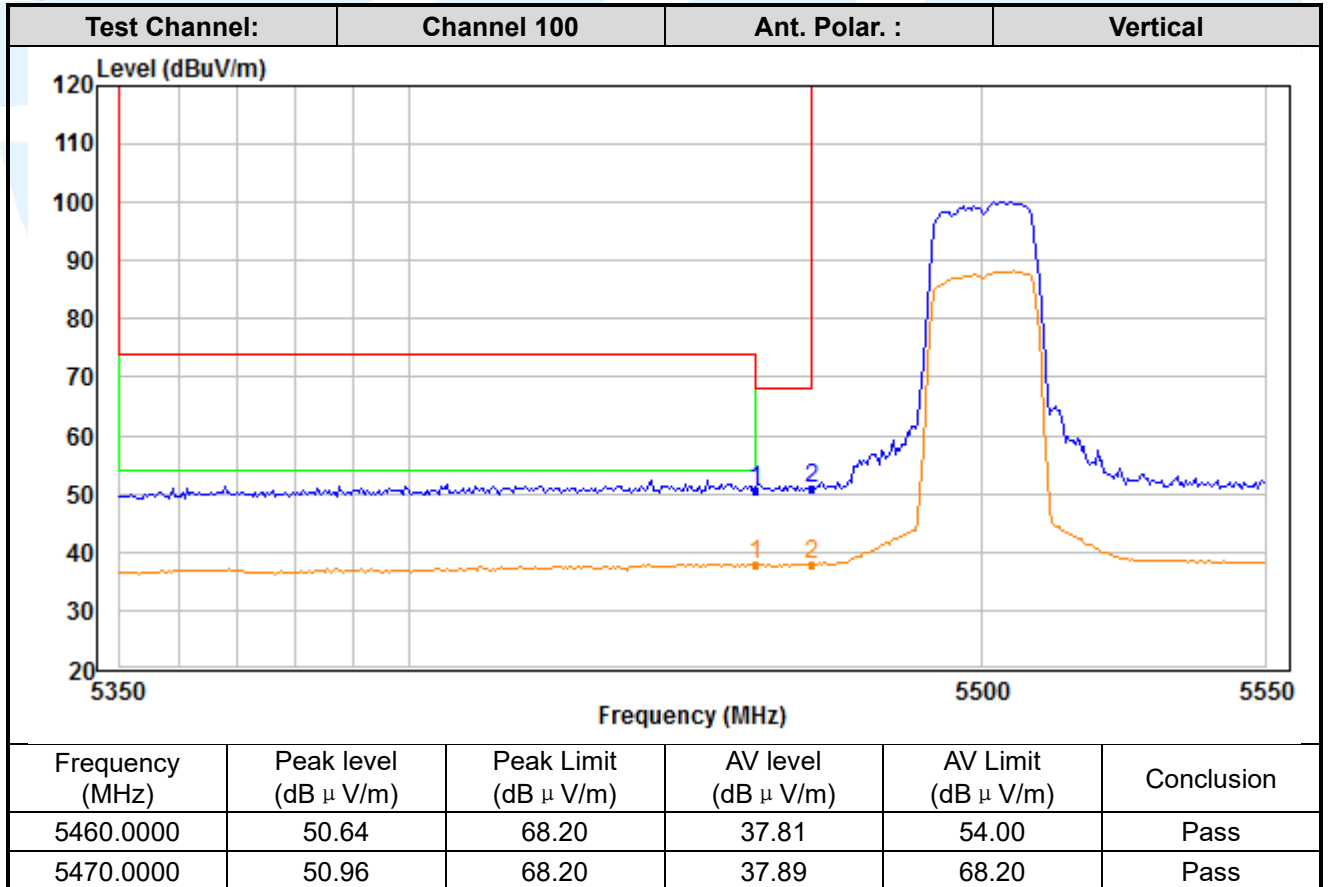
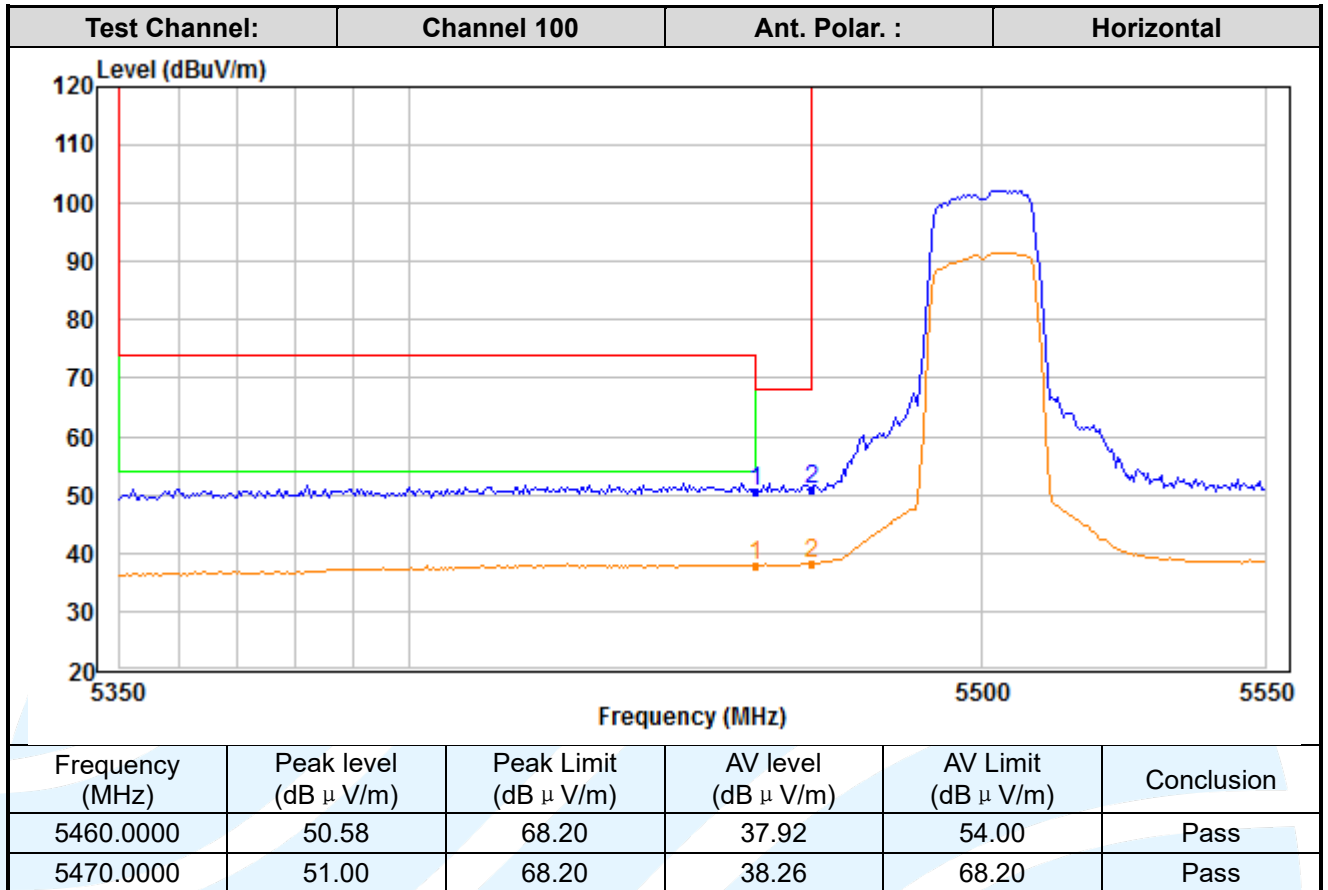
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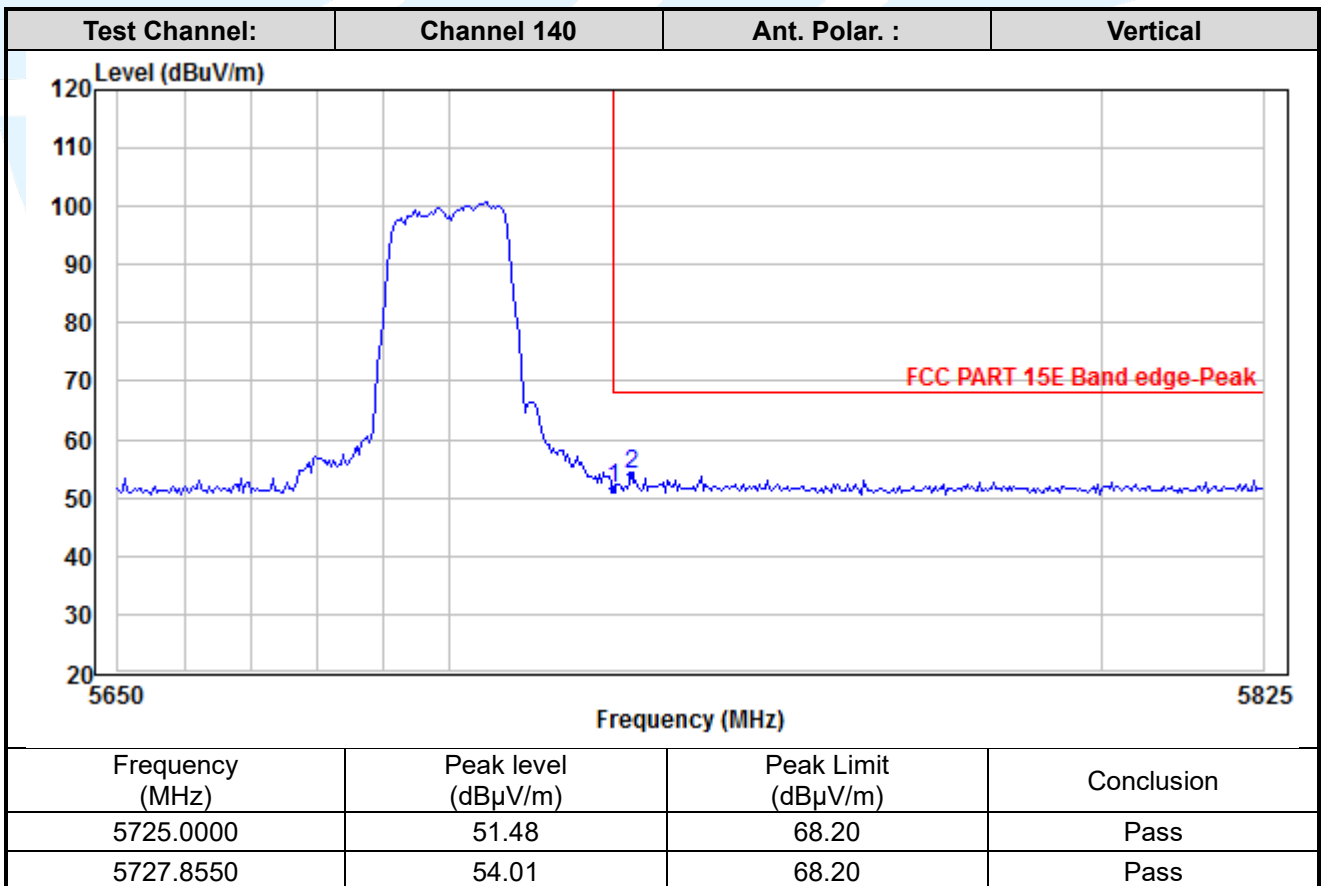
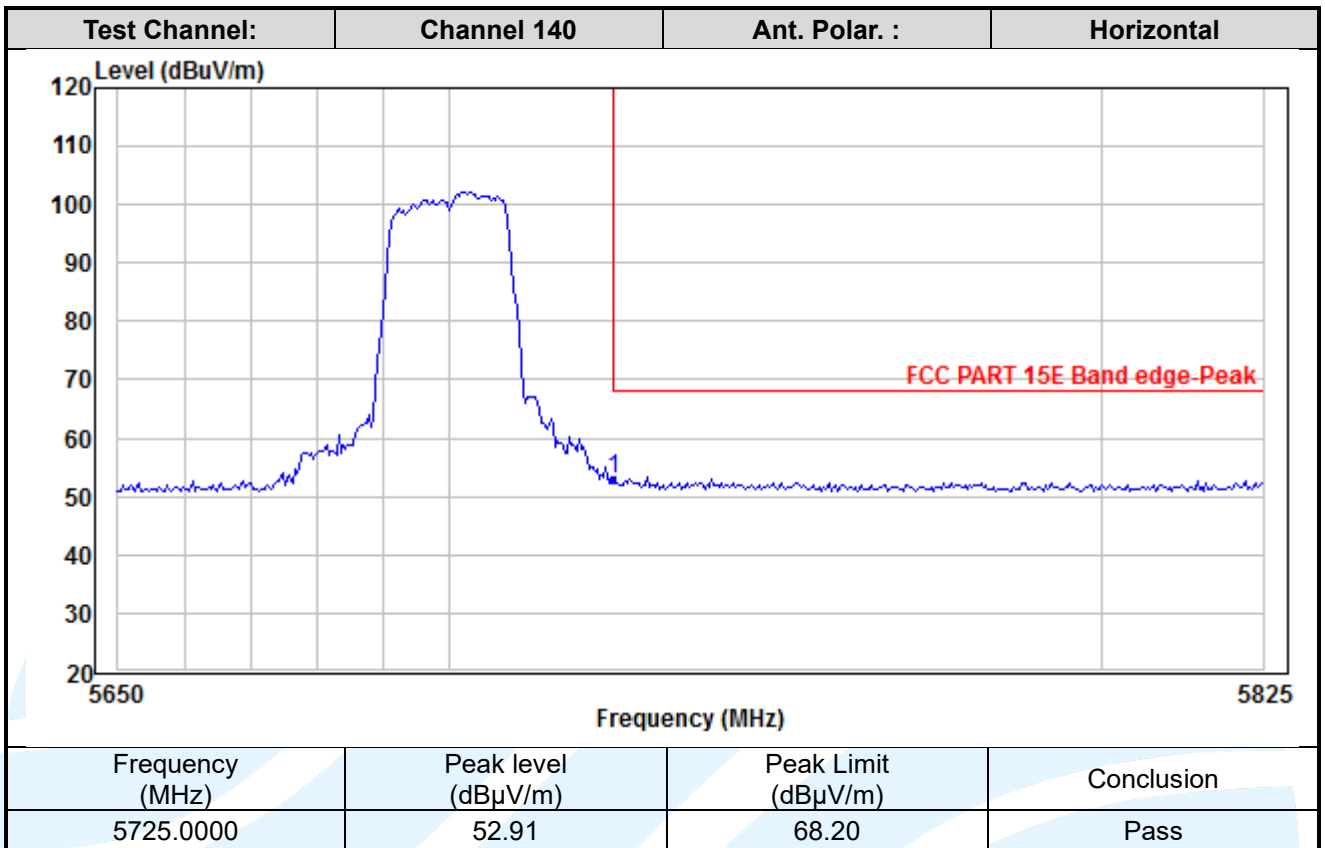
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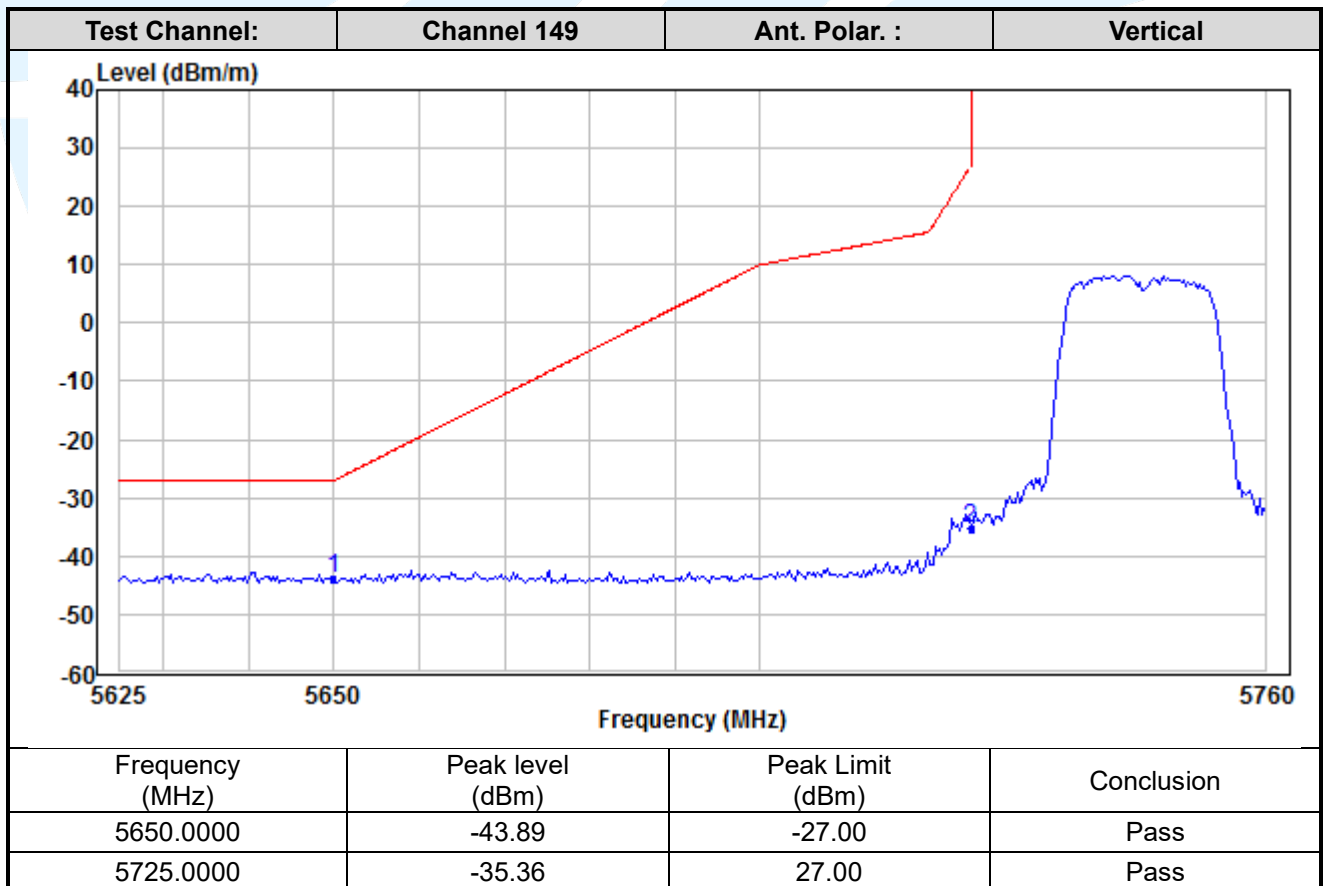
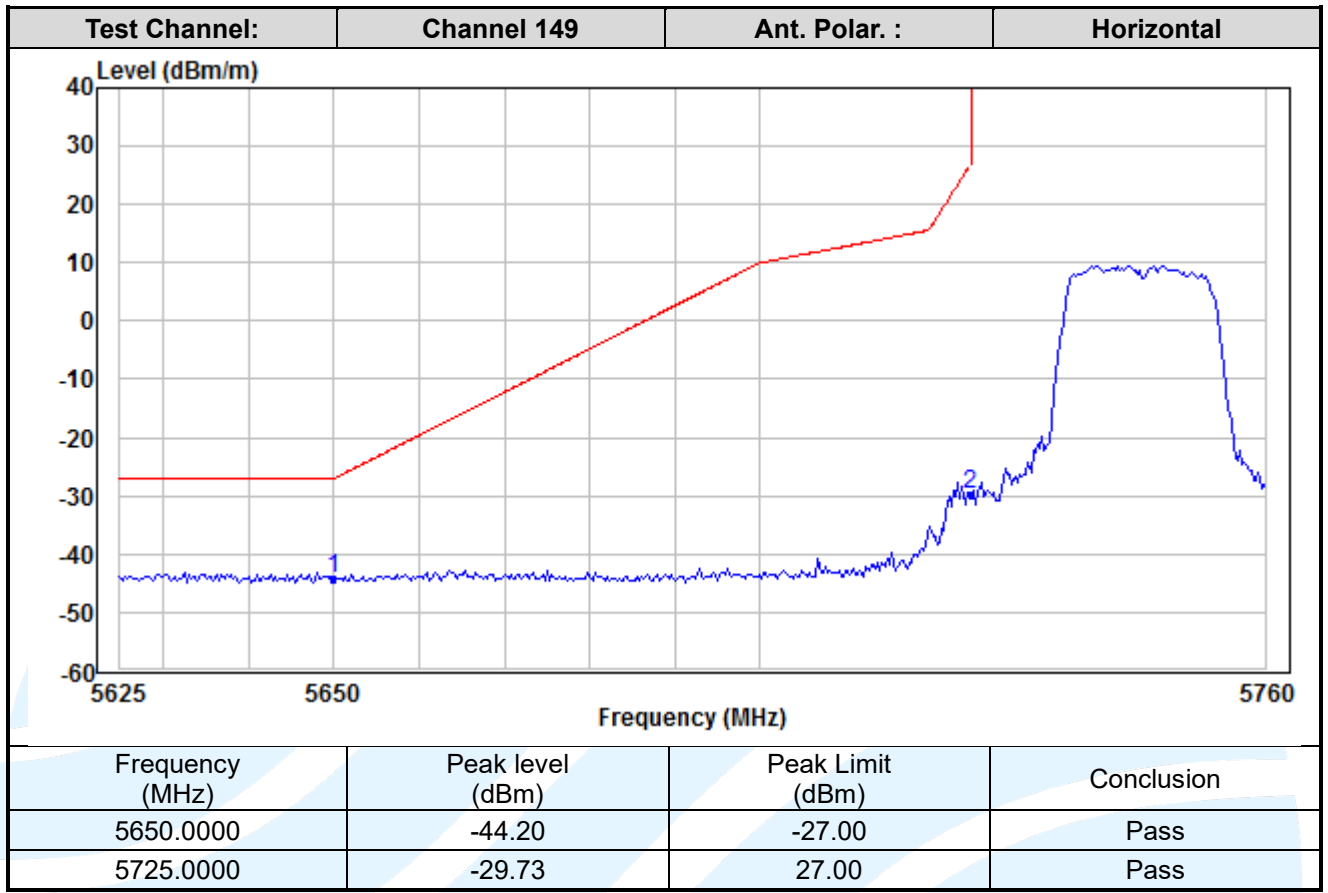
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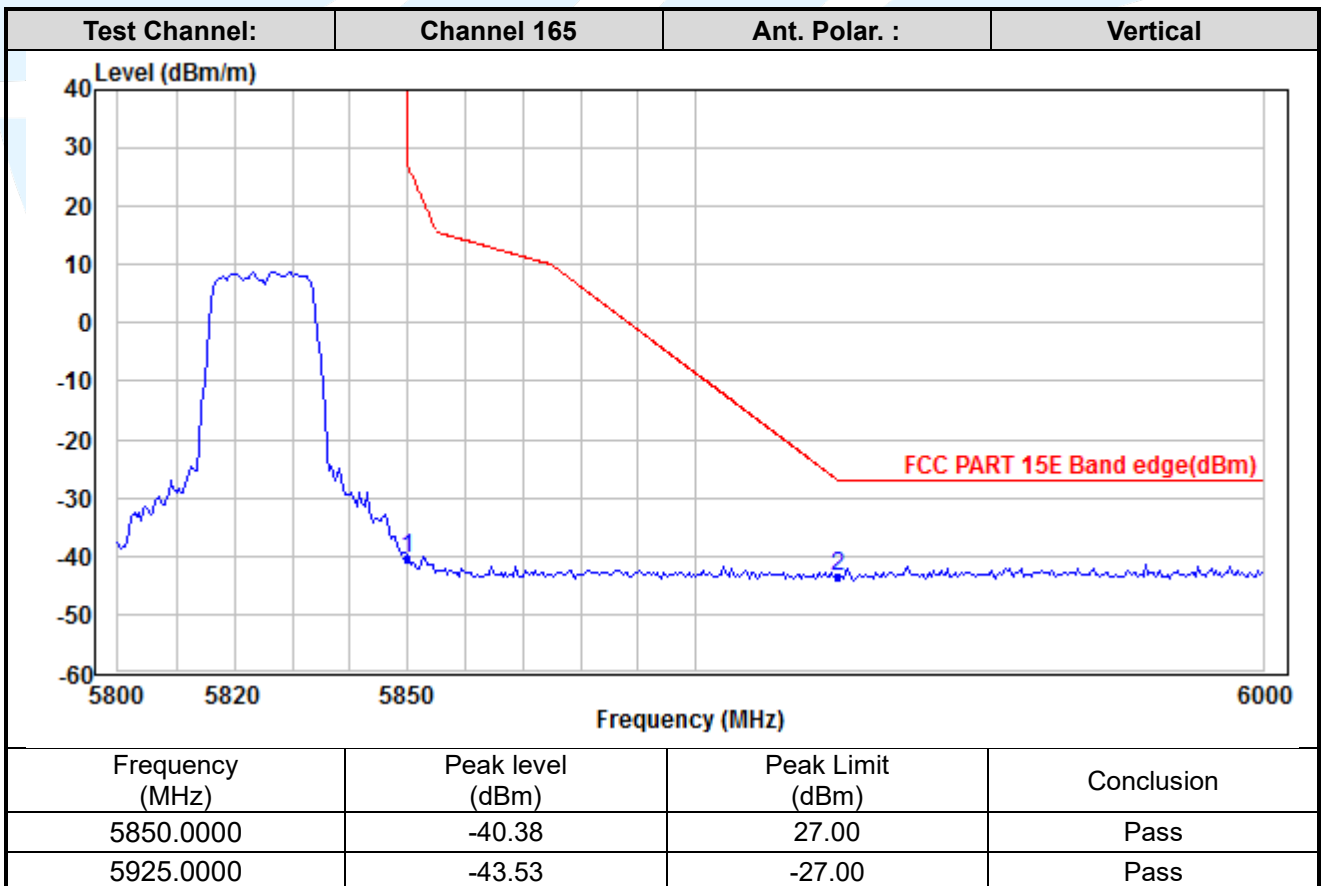
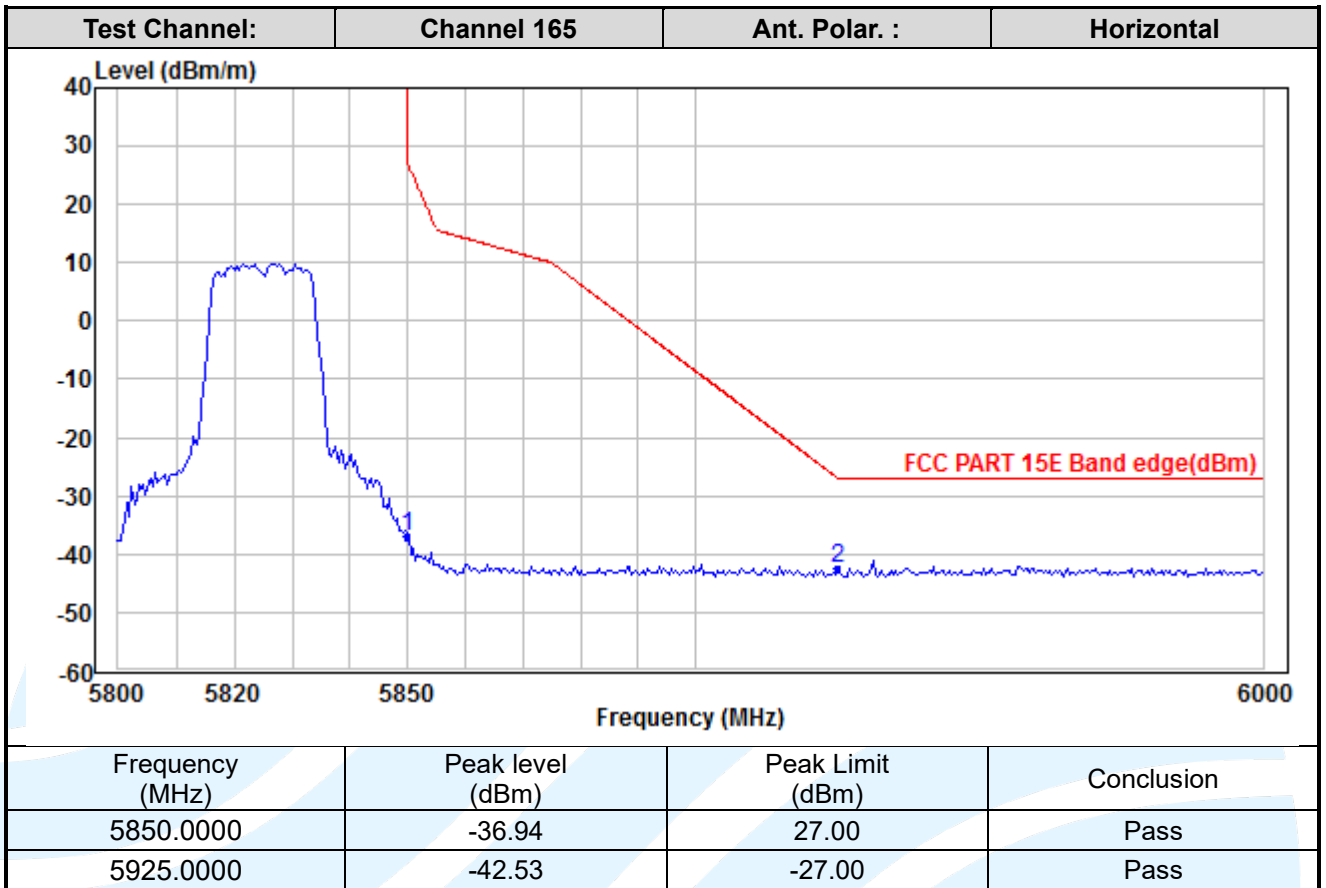
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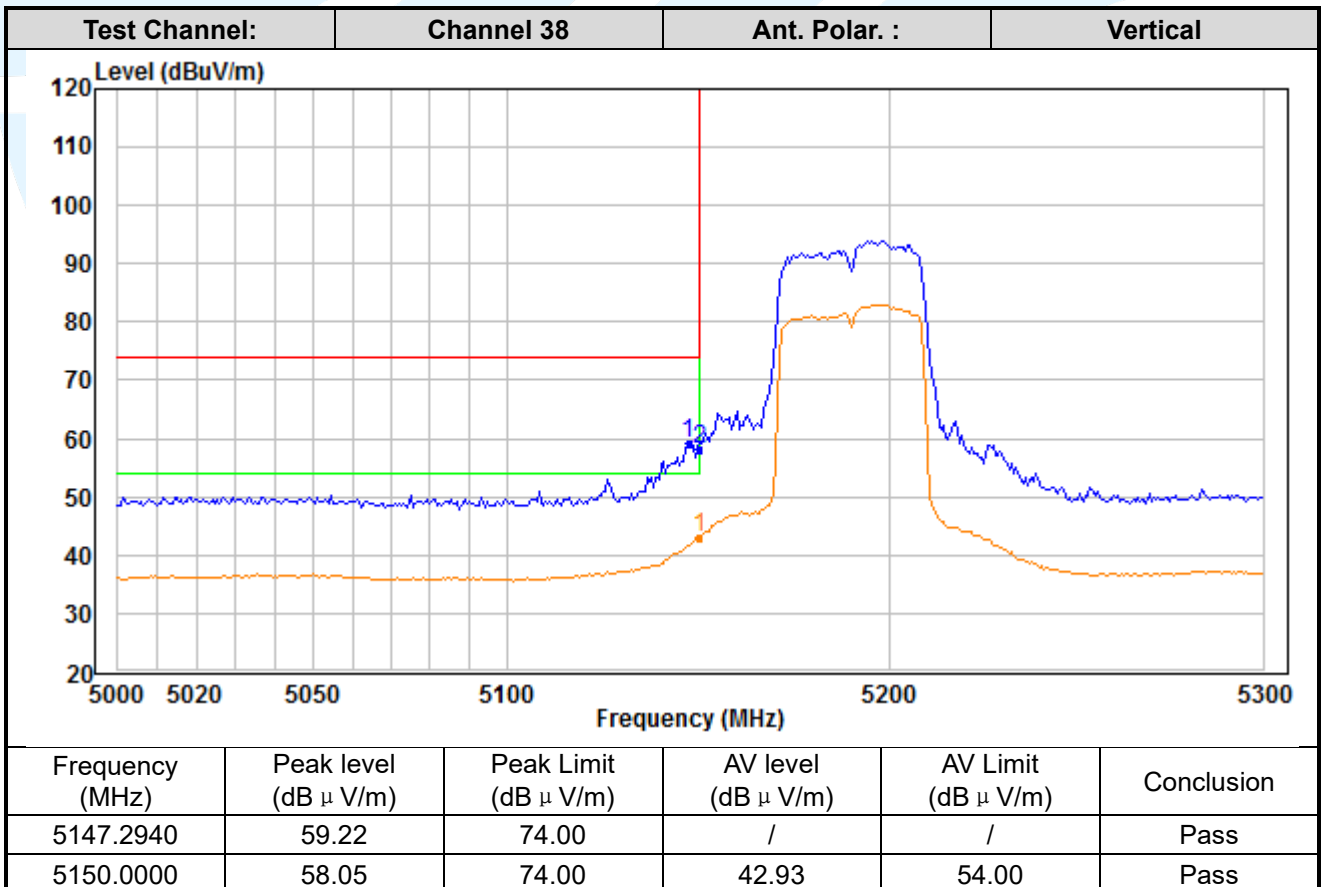
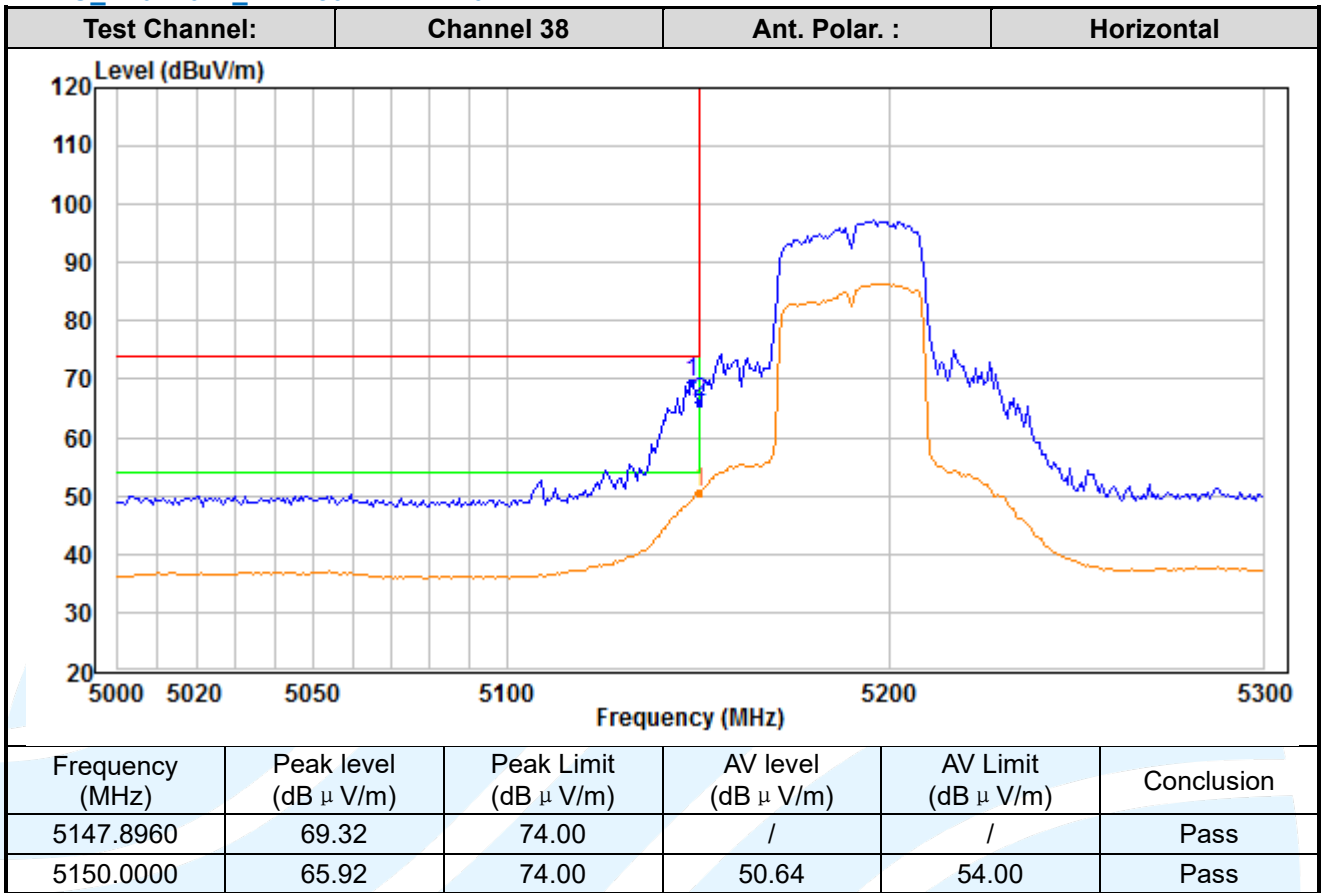
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MIMO_Chain 0+1_ IEEE 802.11n-HT40



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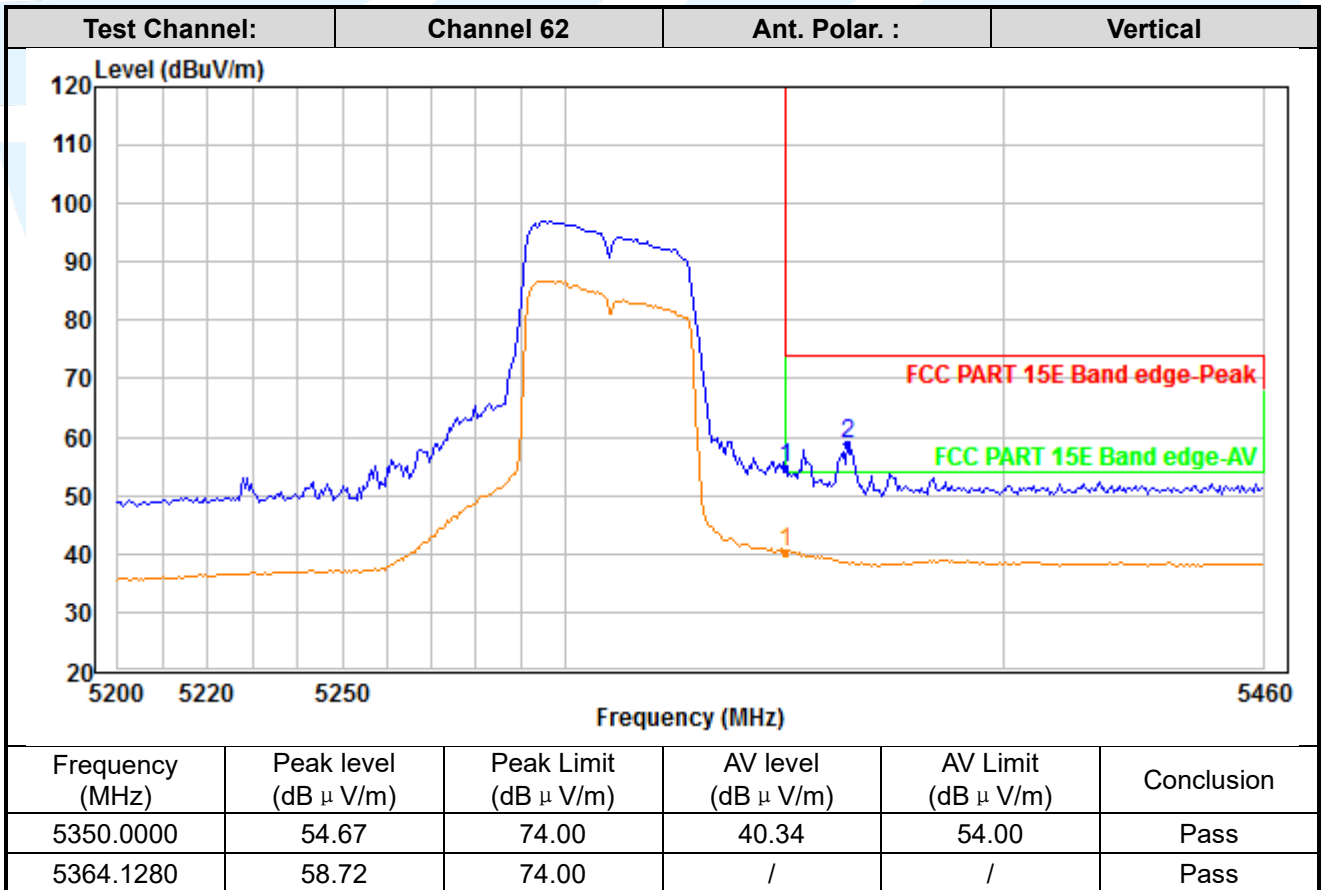
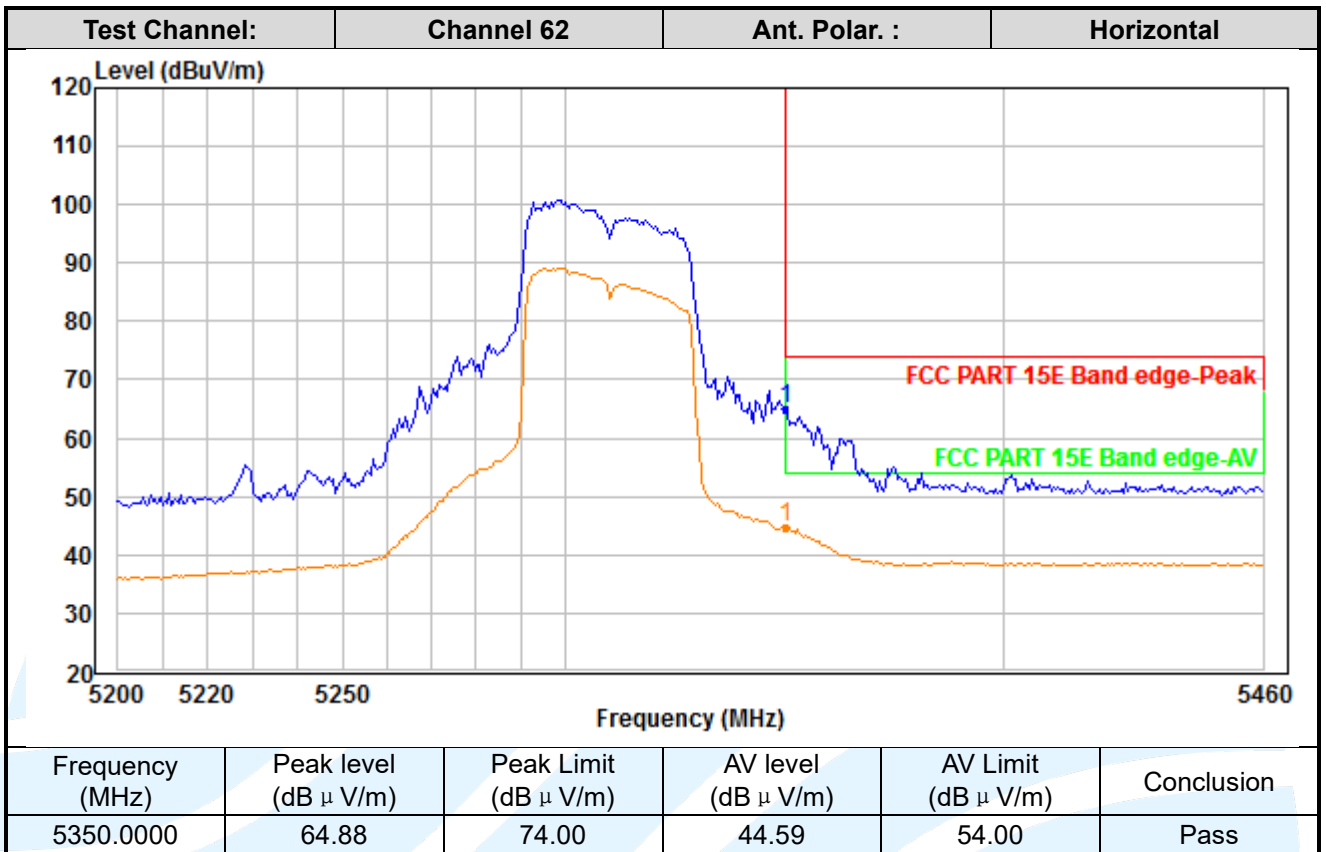
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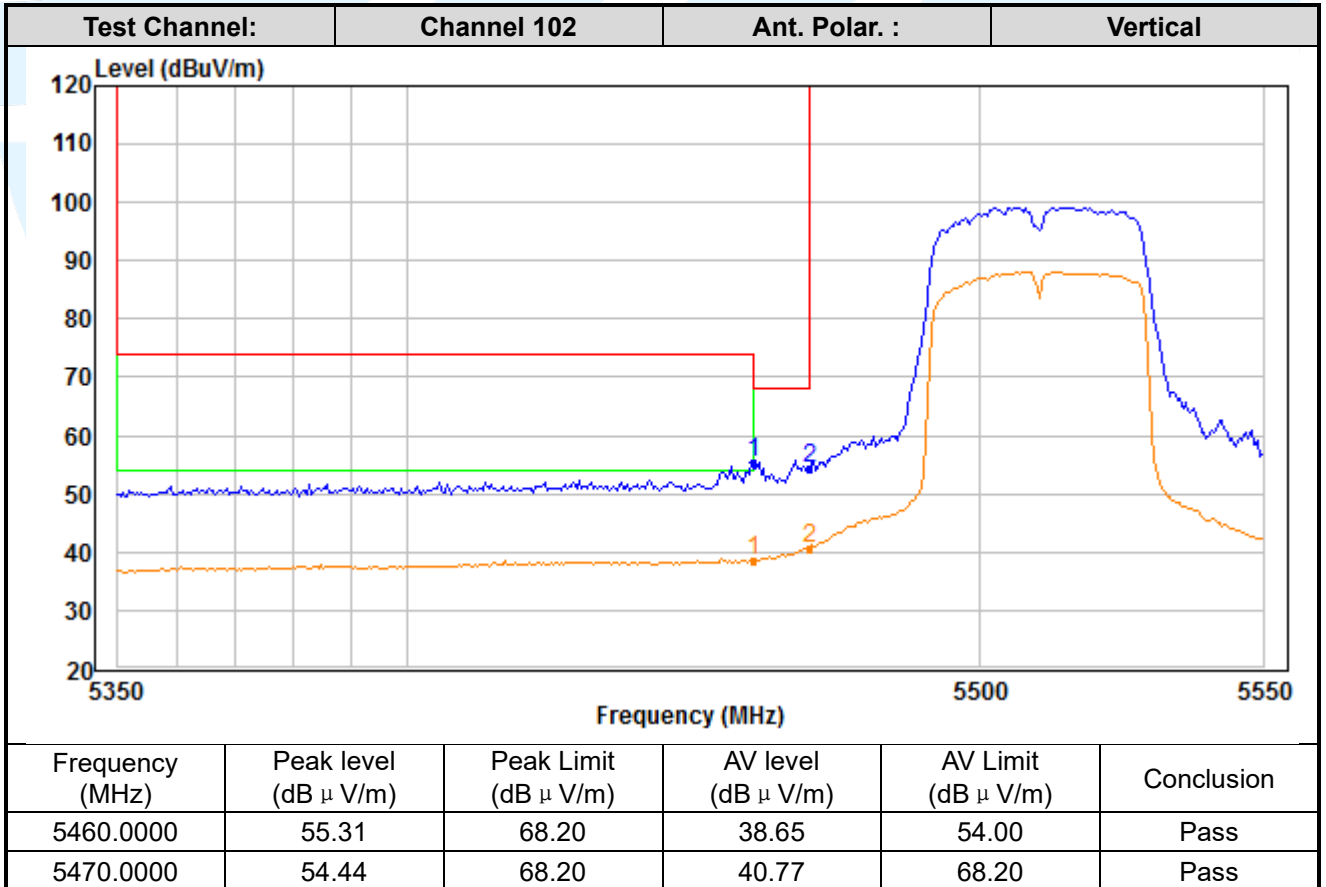
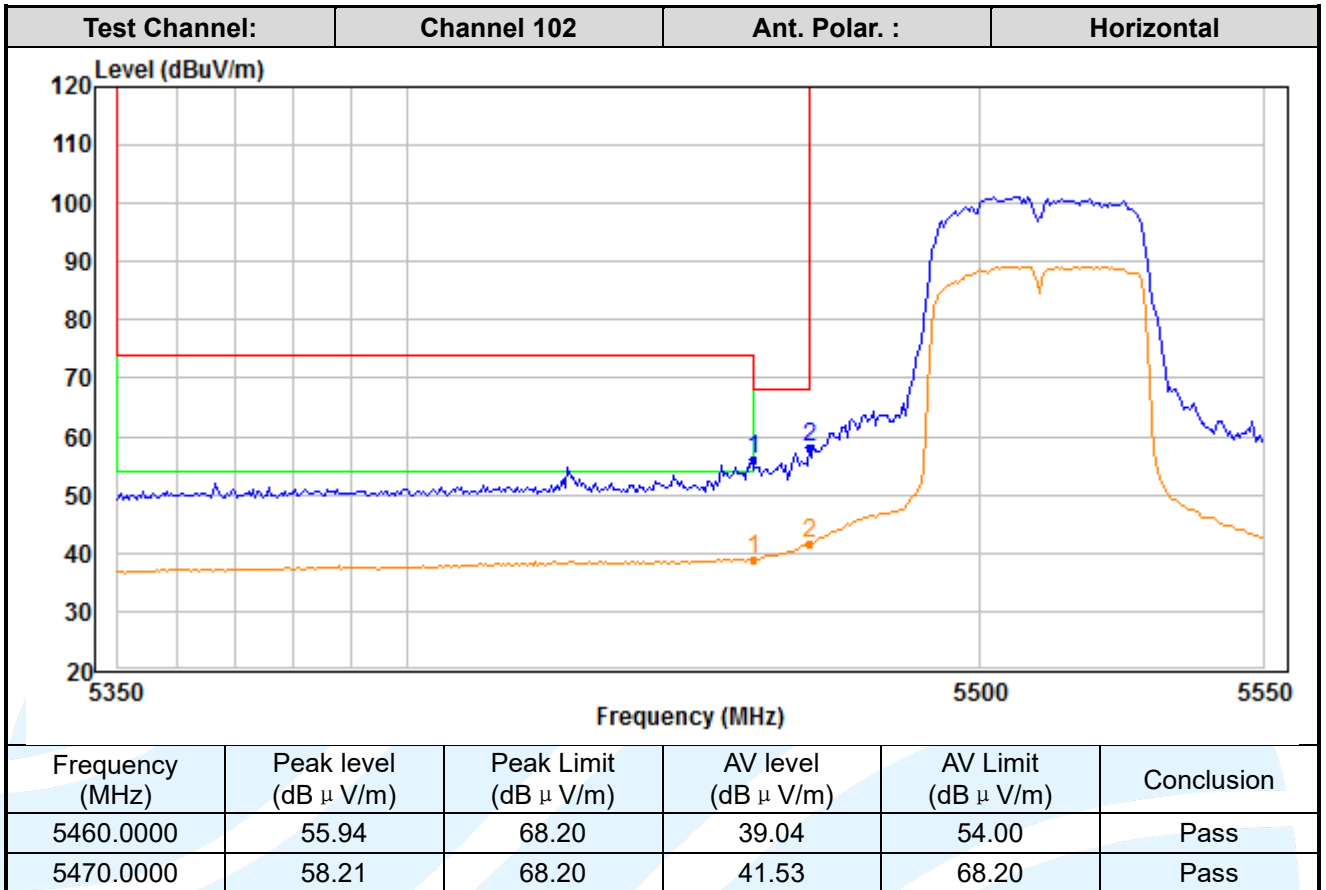
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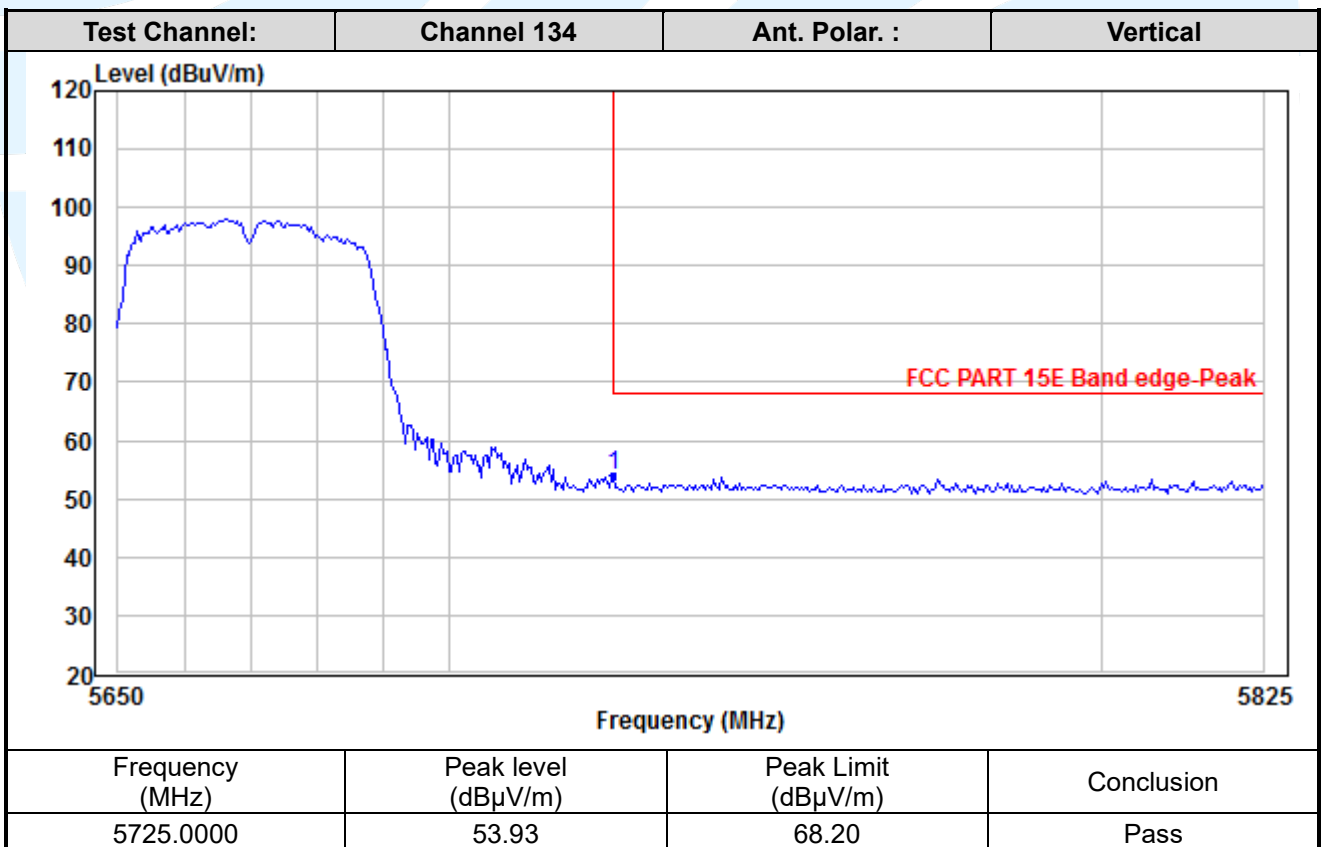
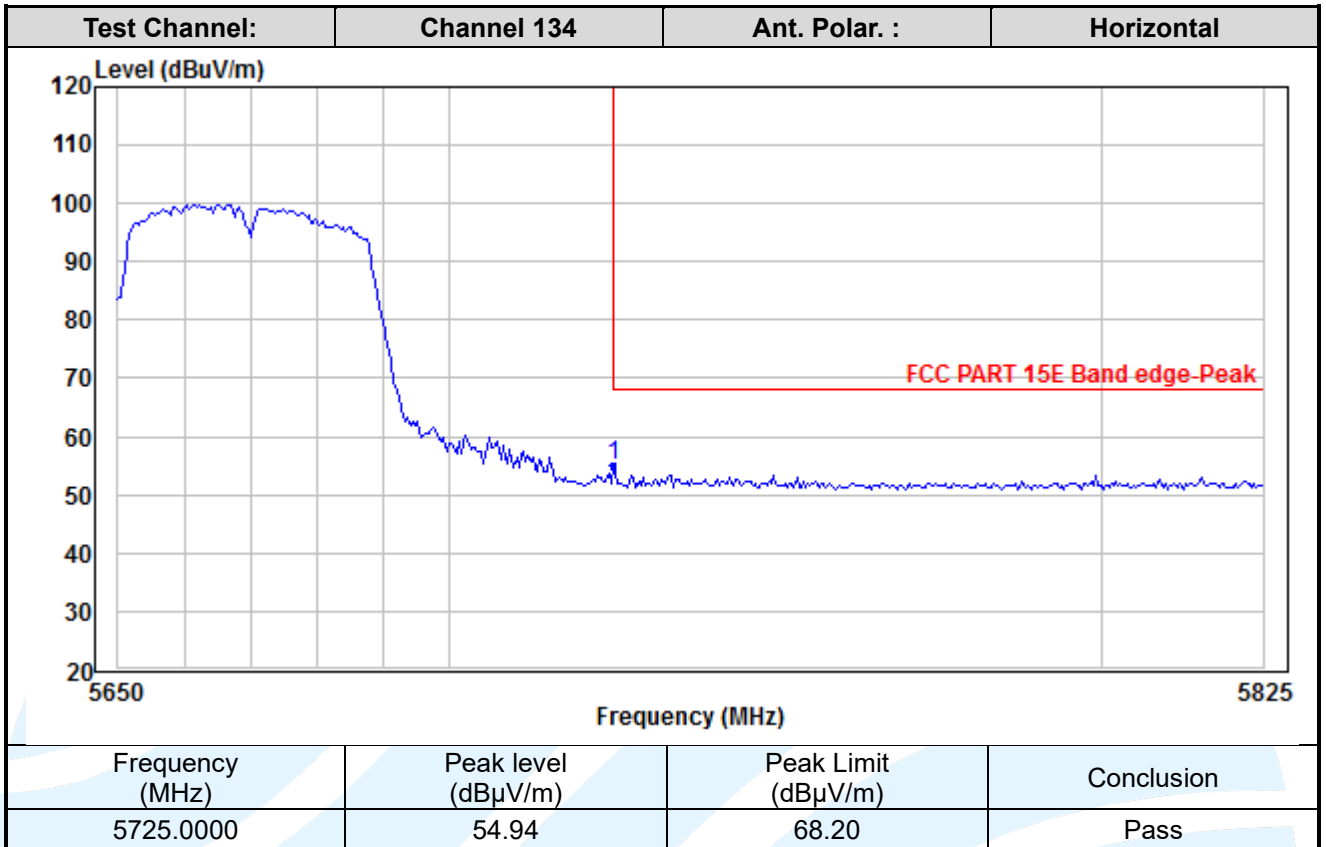
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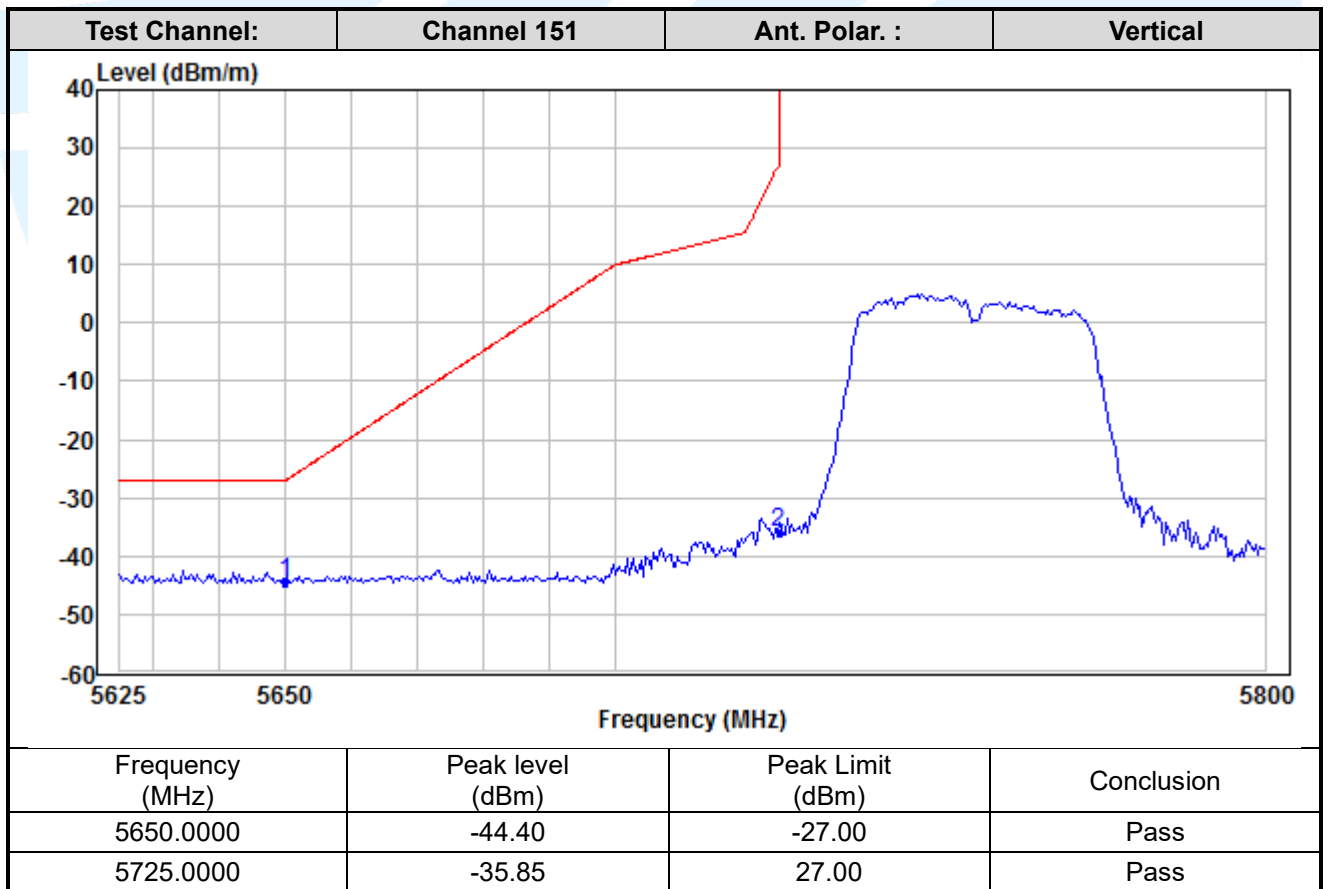
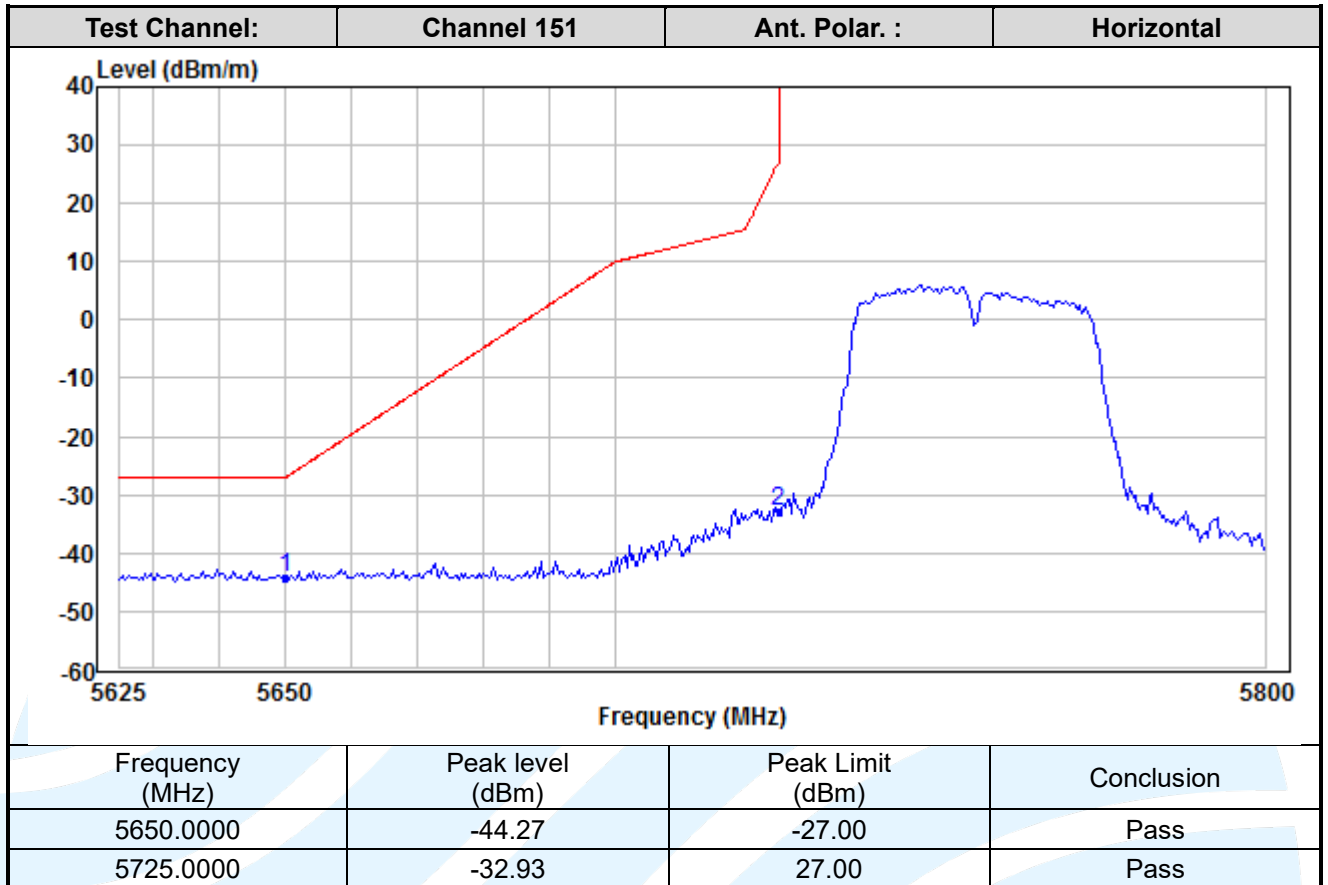
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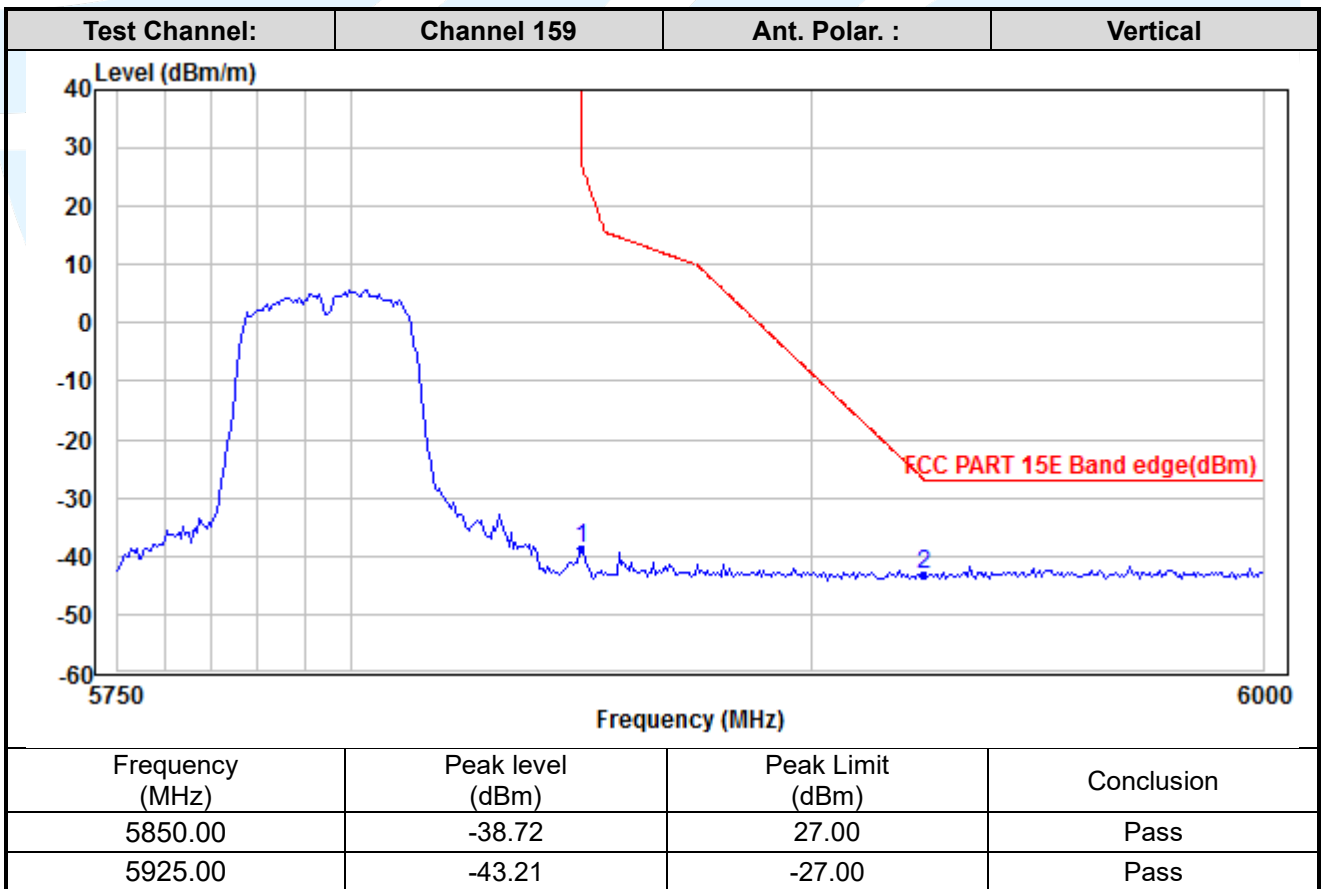
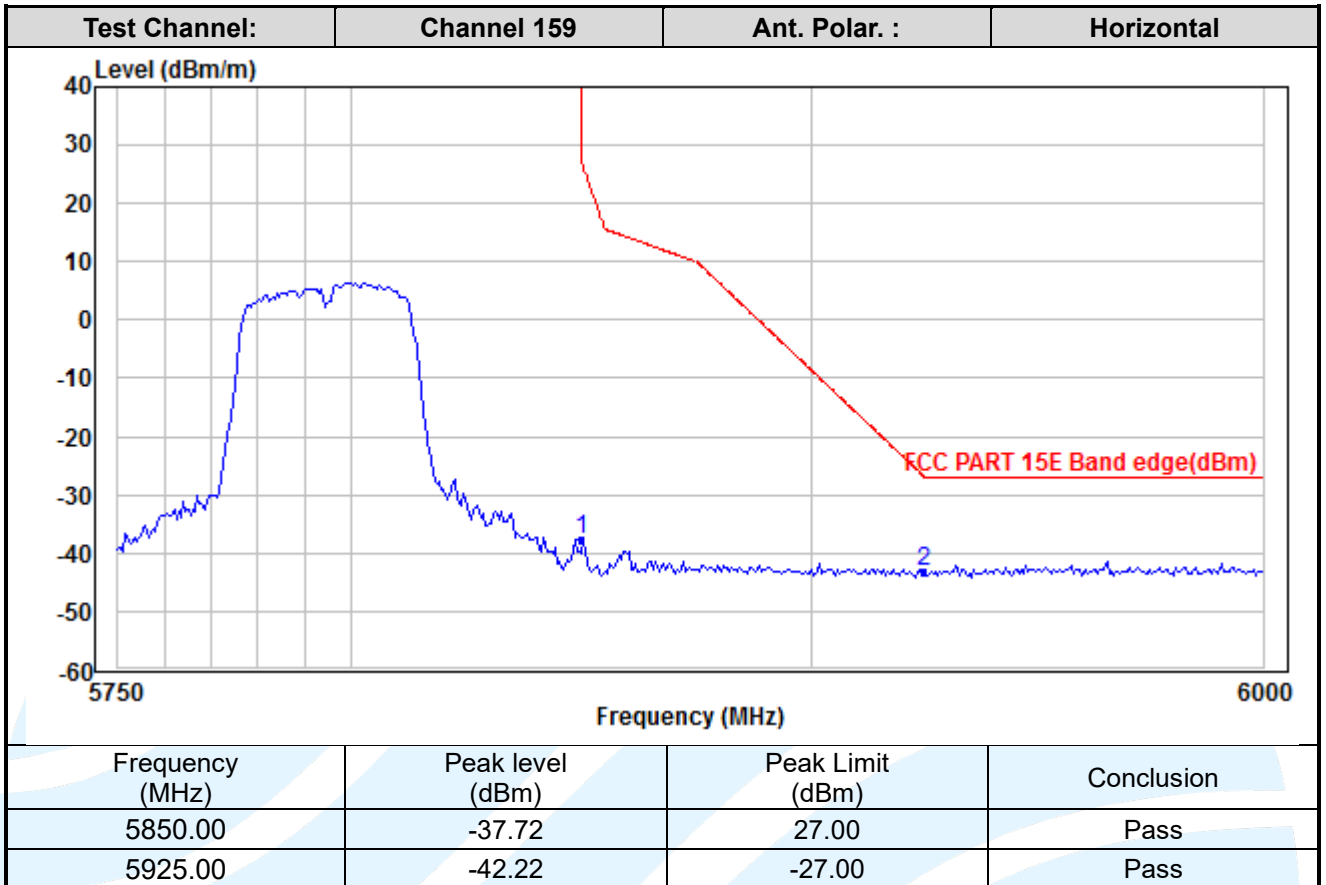
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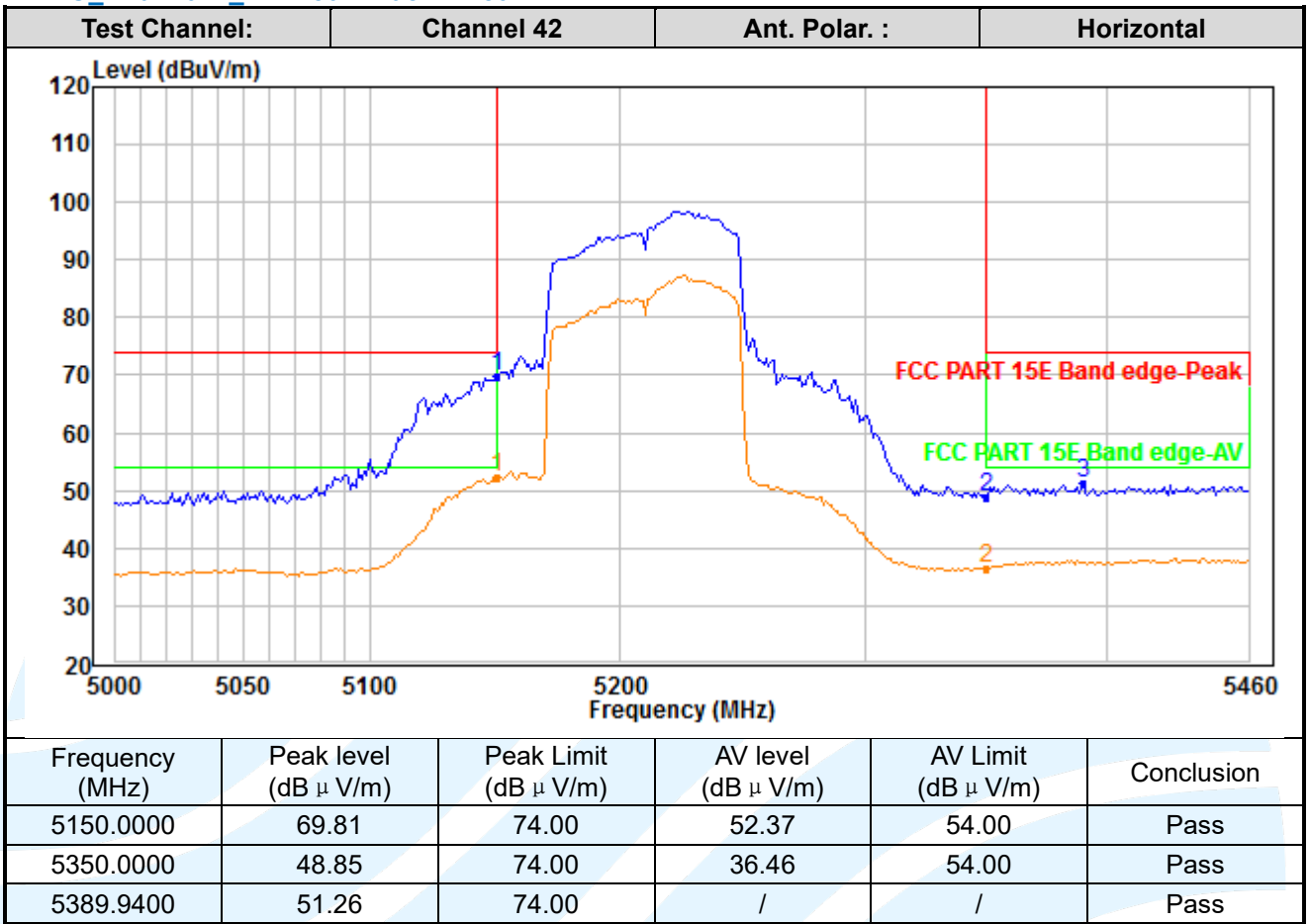
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MIMO_Chain 0+1_ IEEE 802.11ac-VHT80



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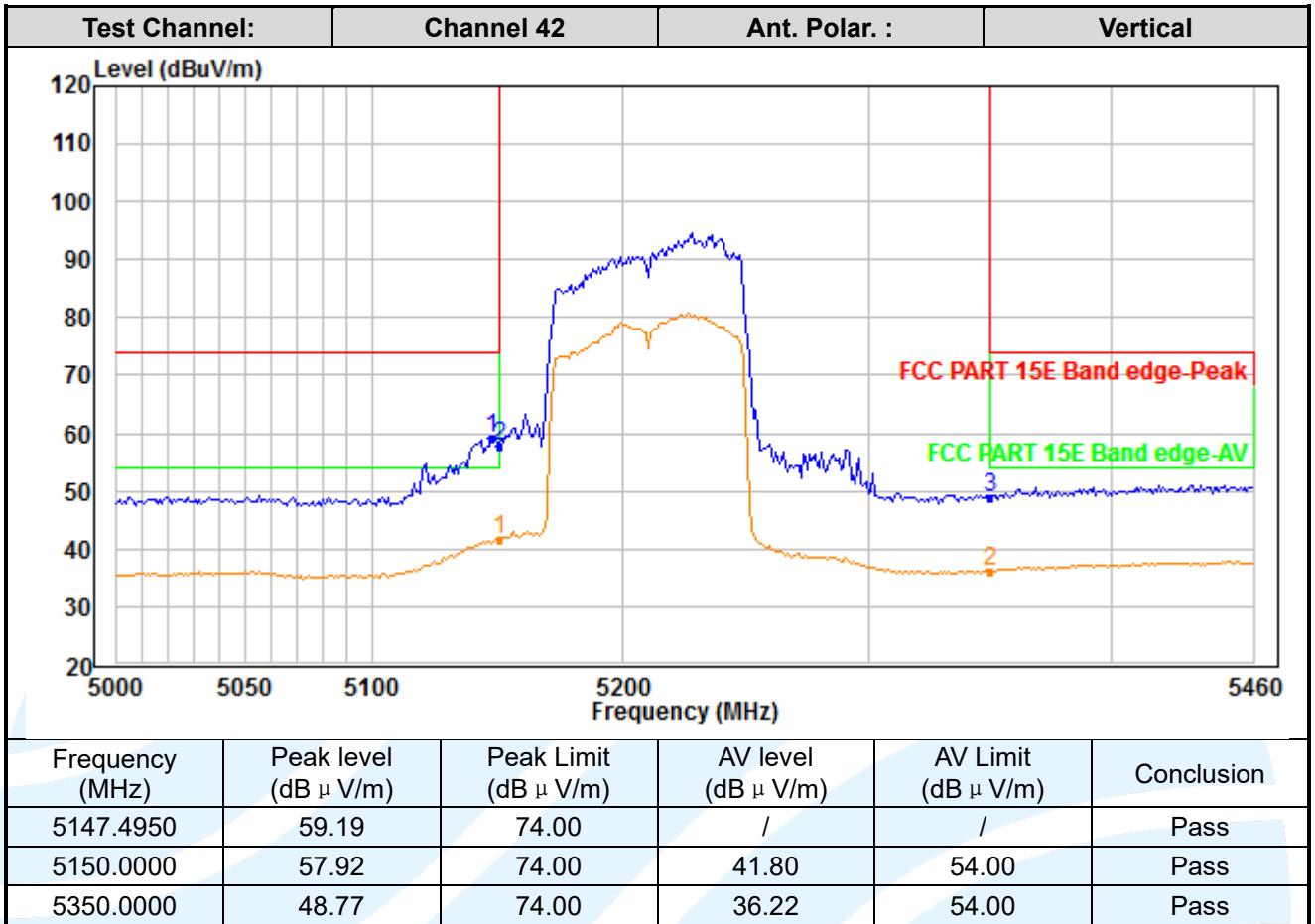
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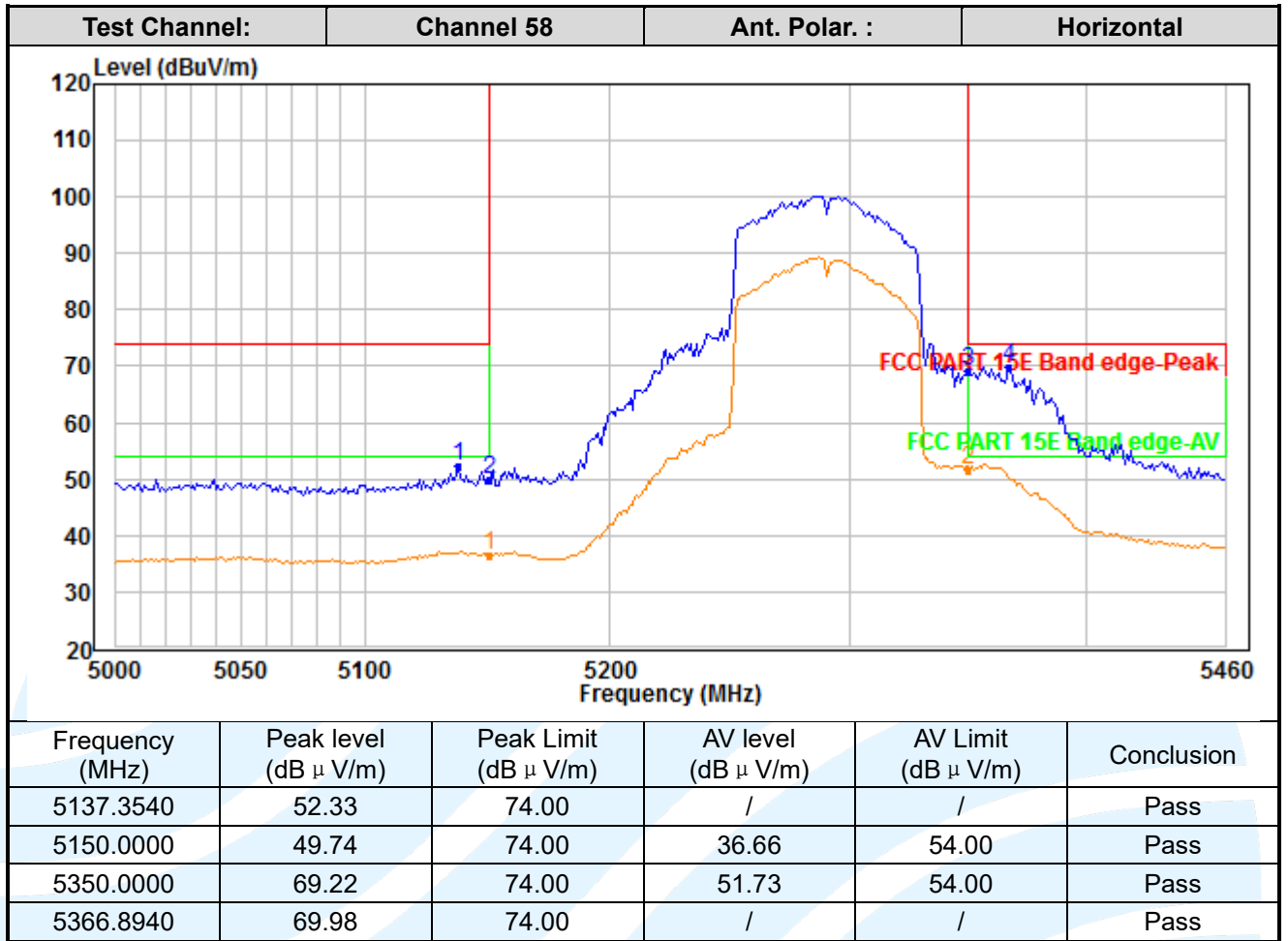
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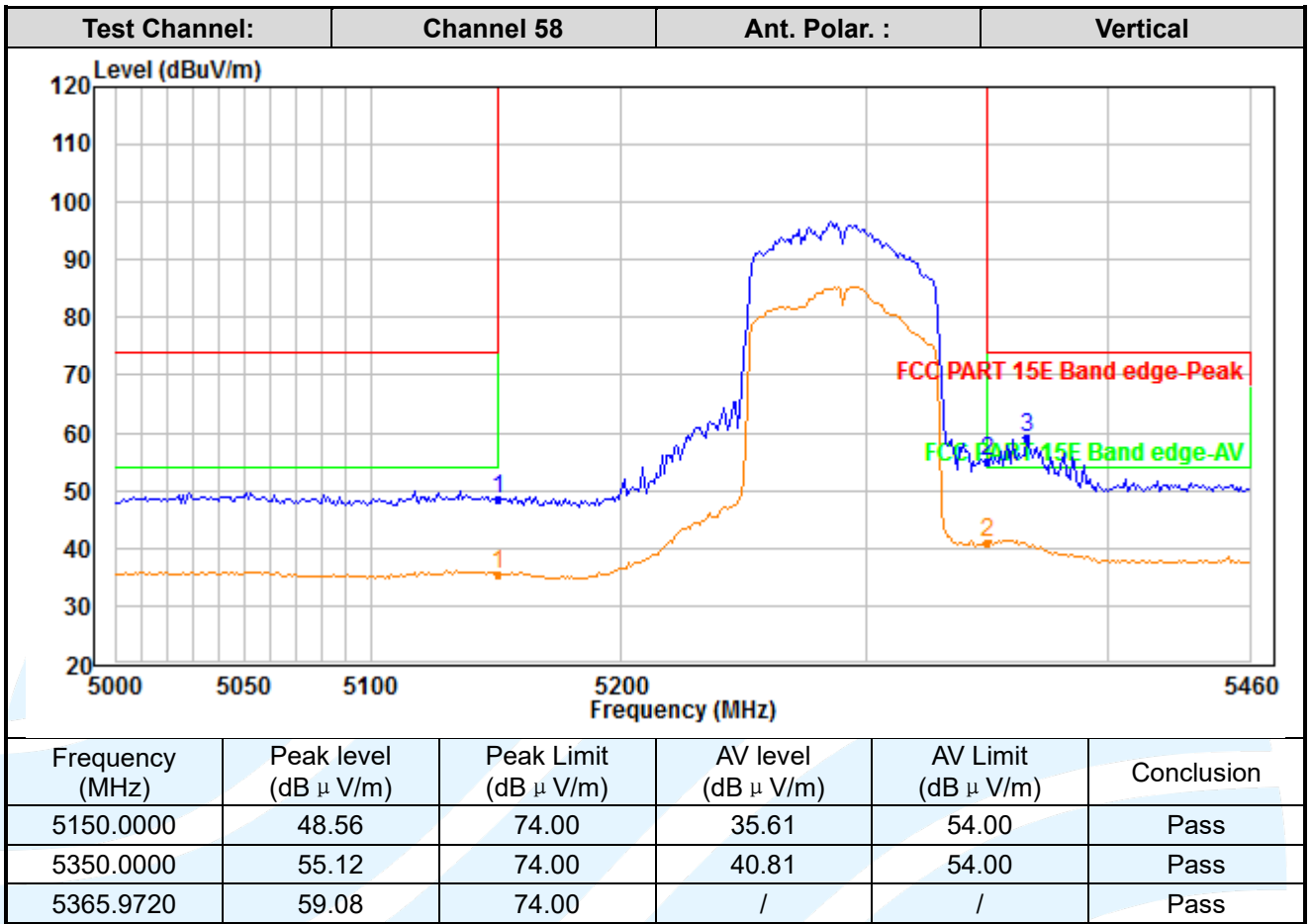
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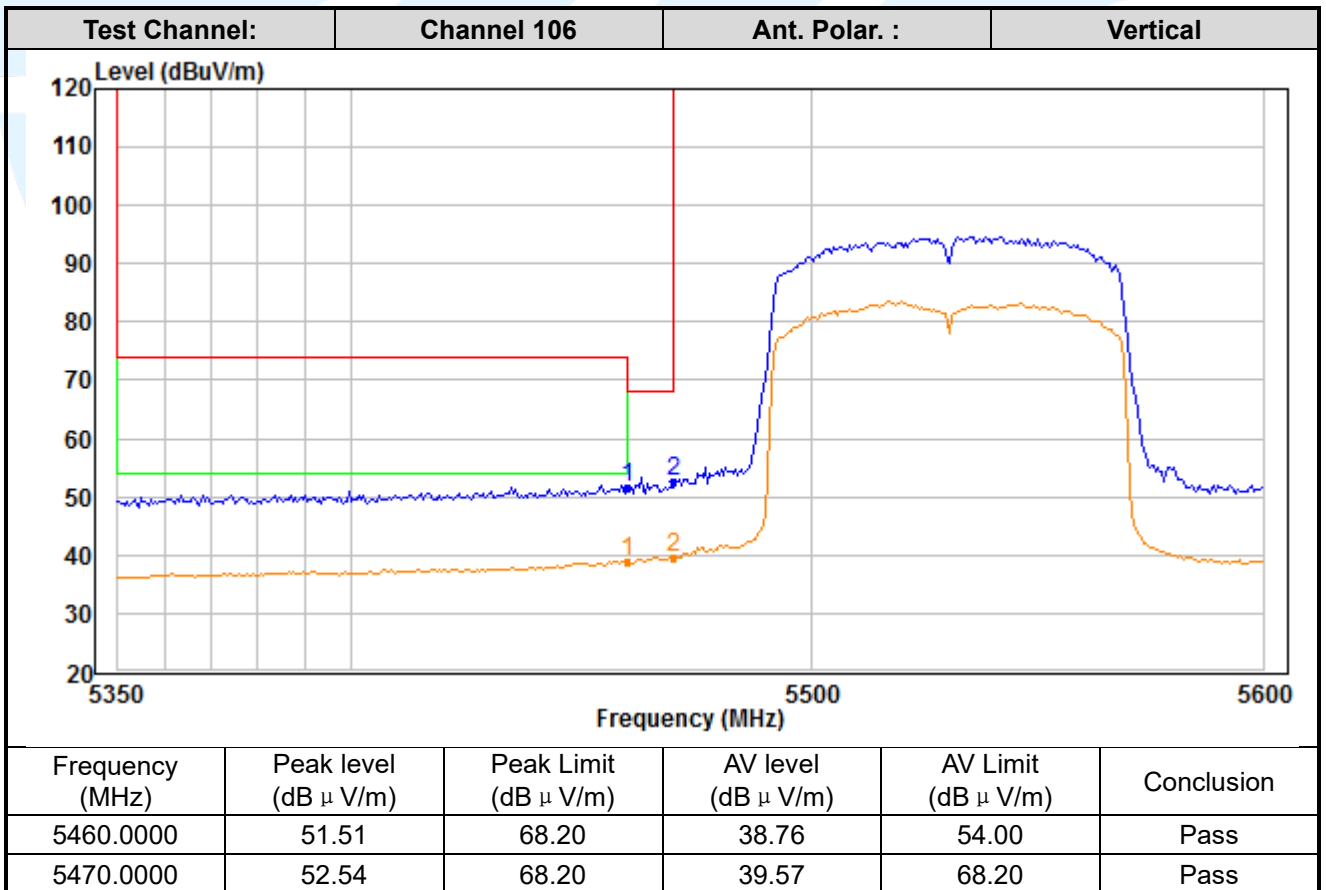
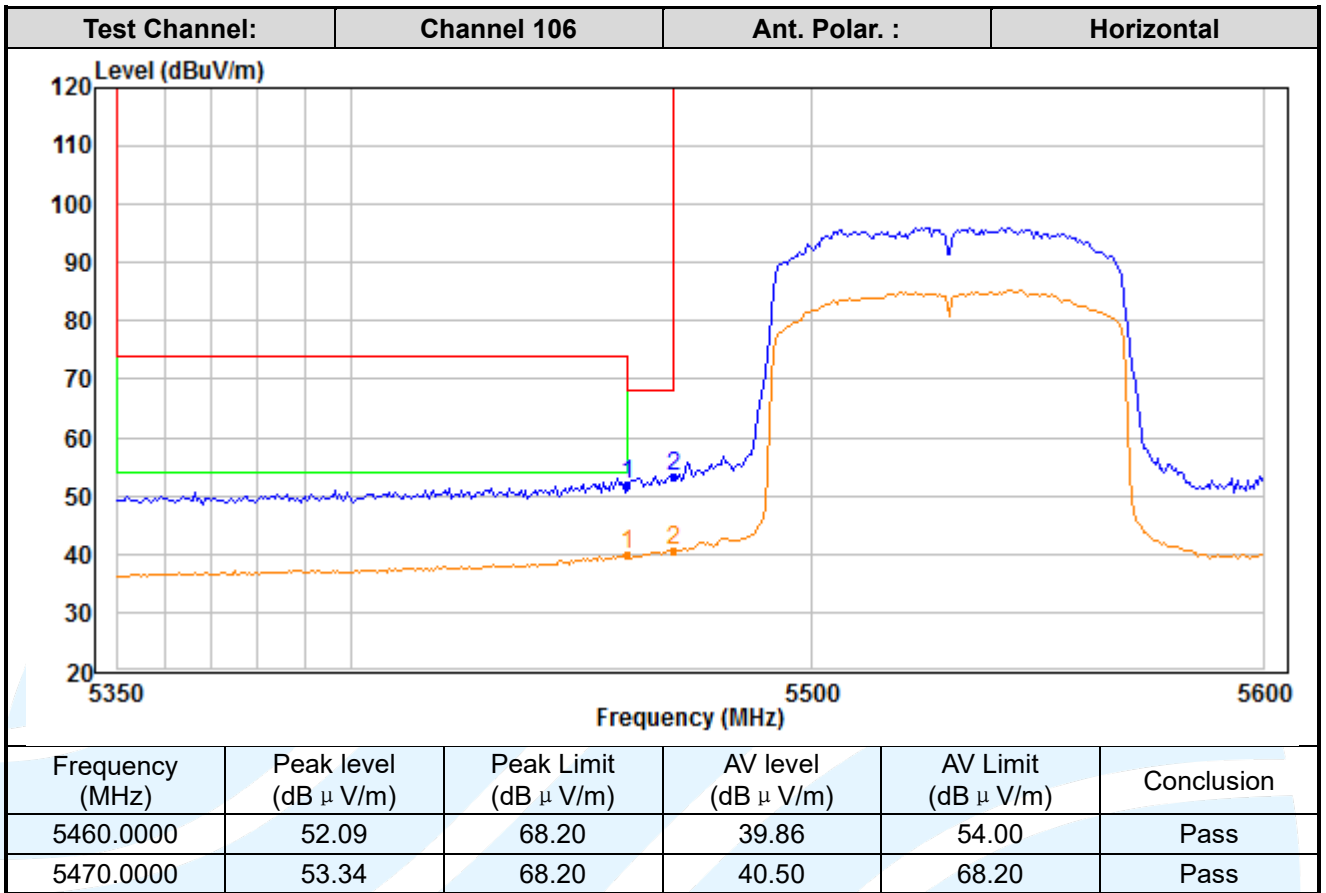
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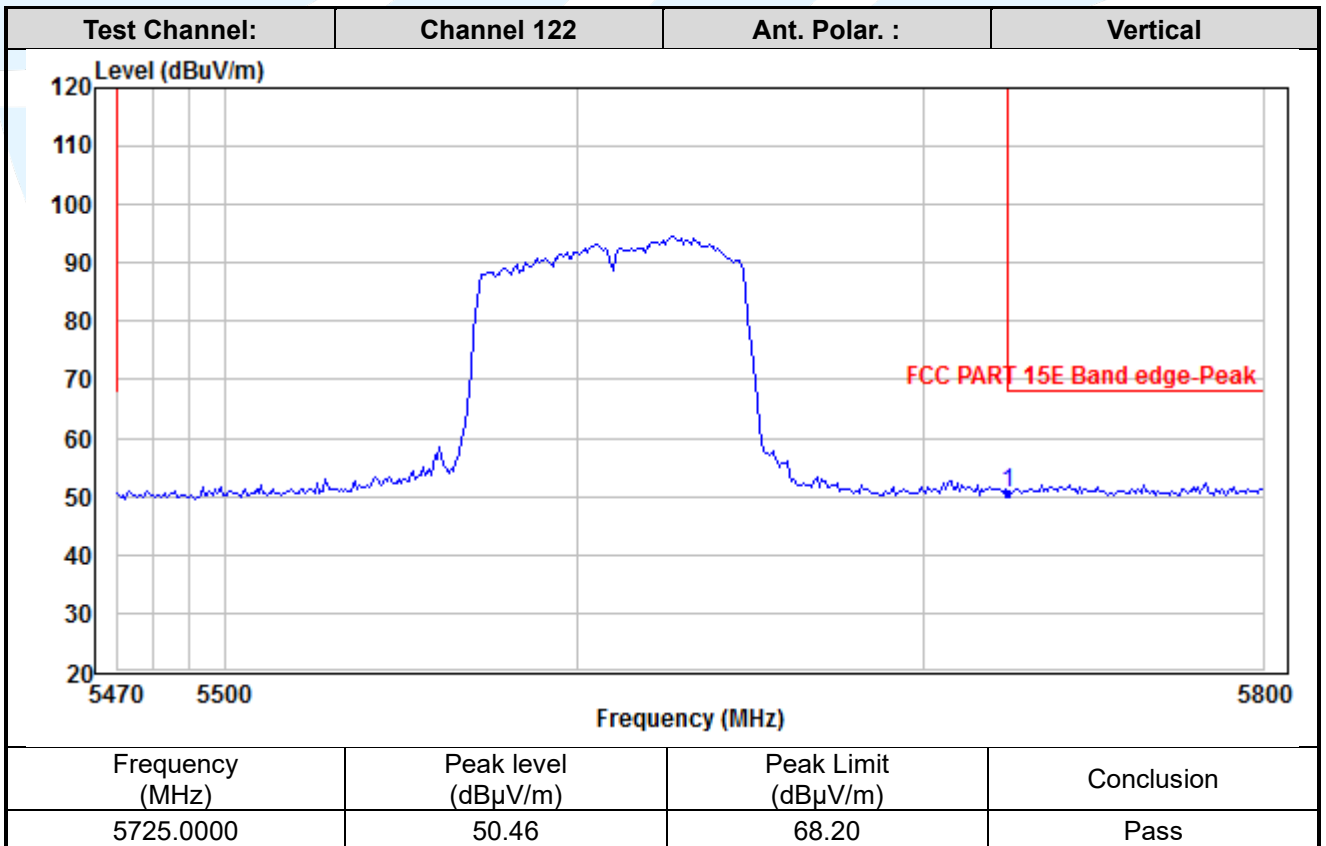
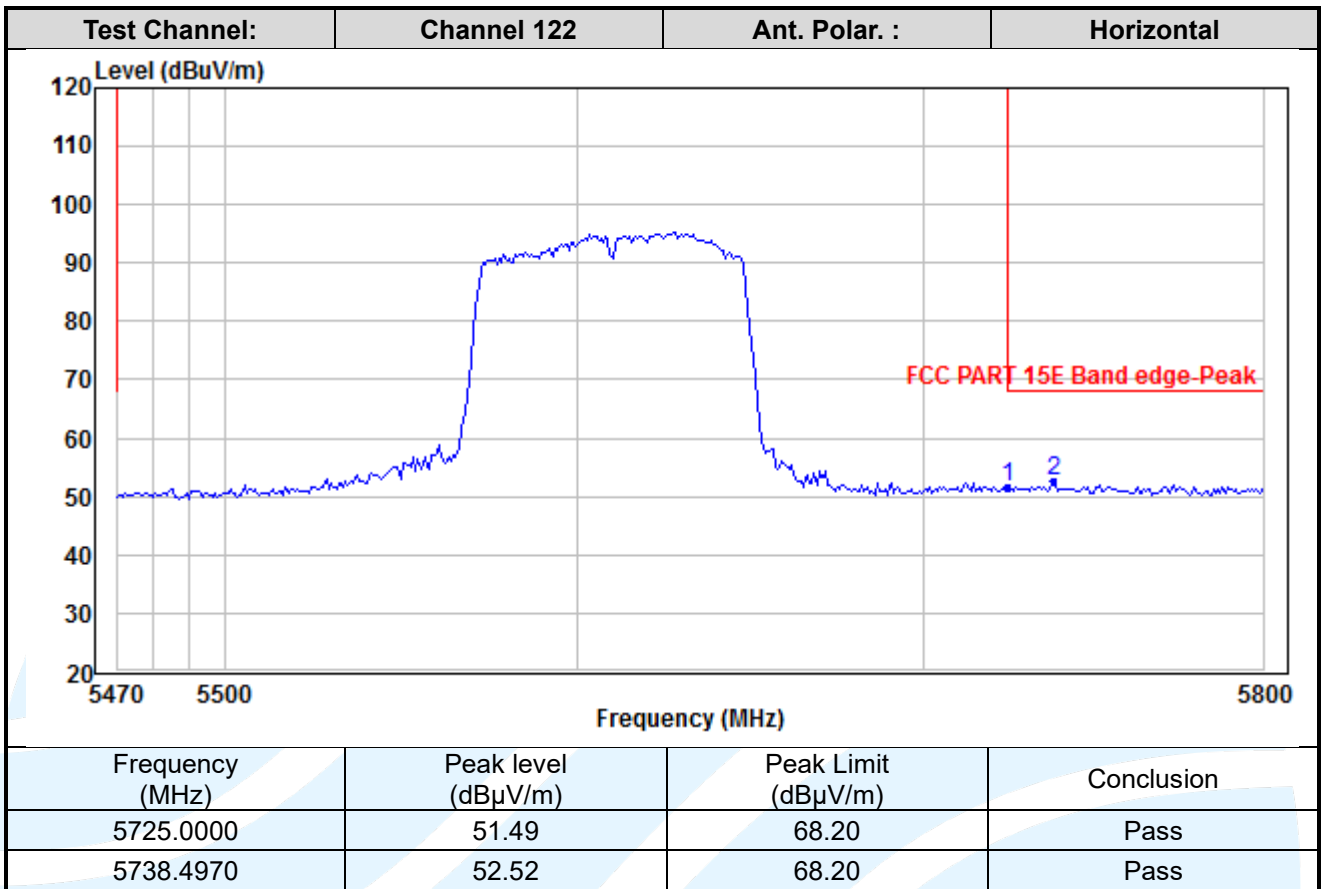
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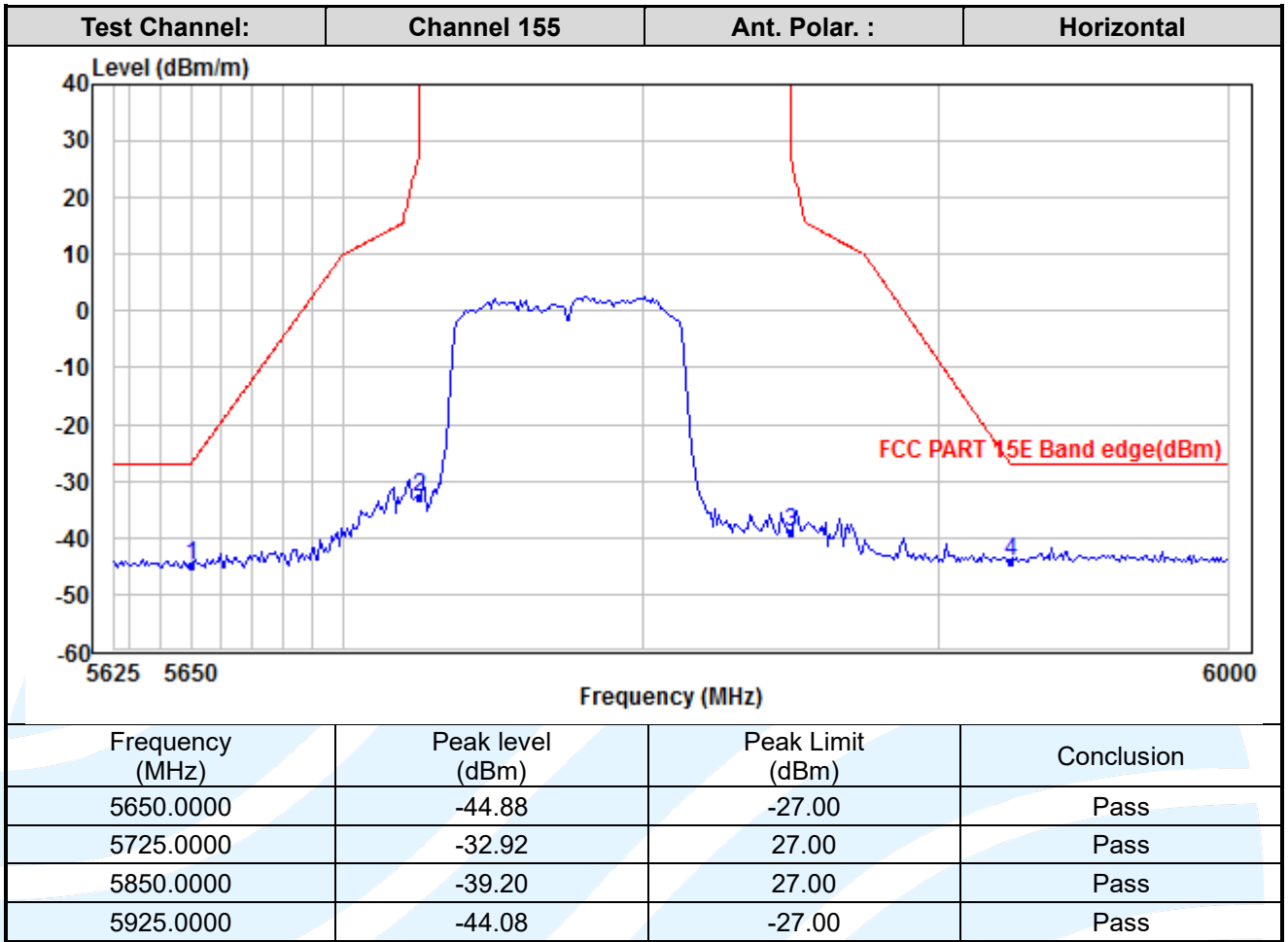
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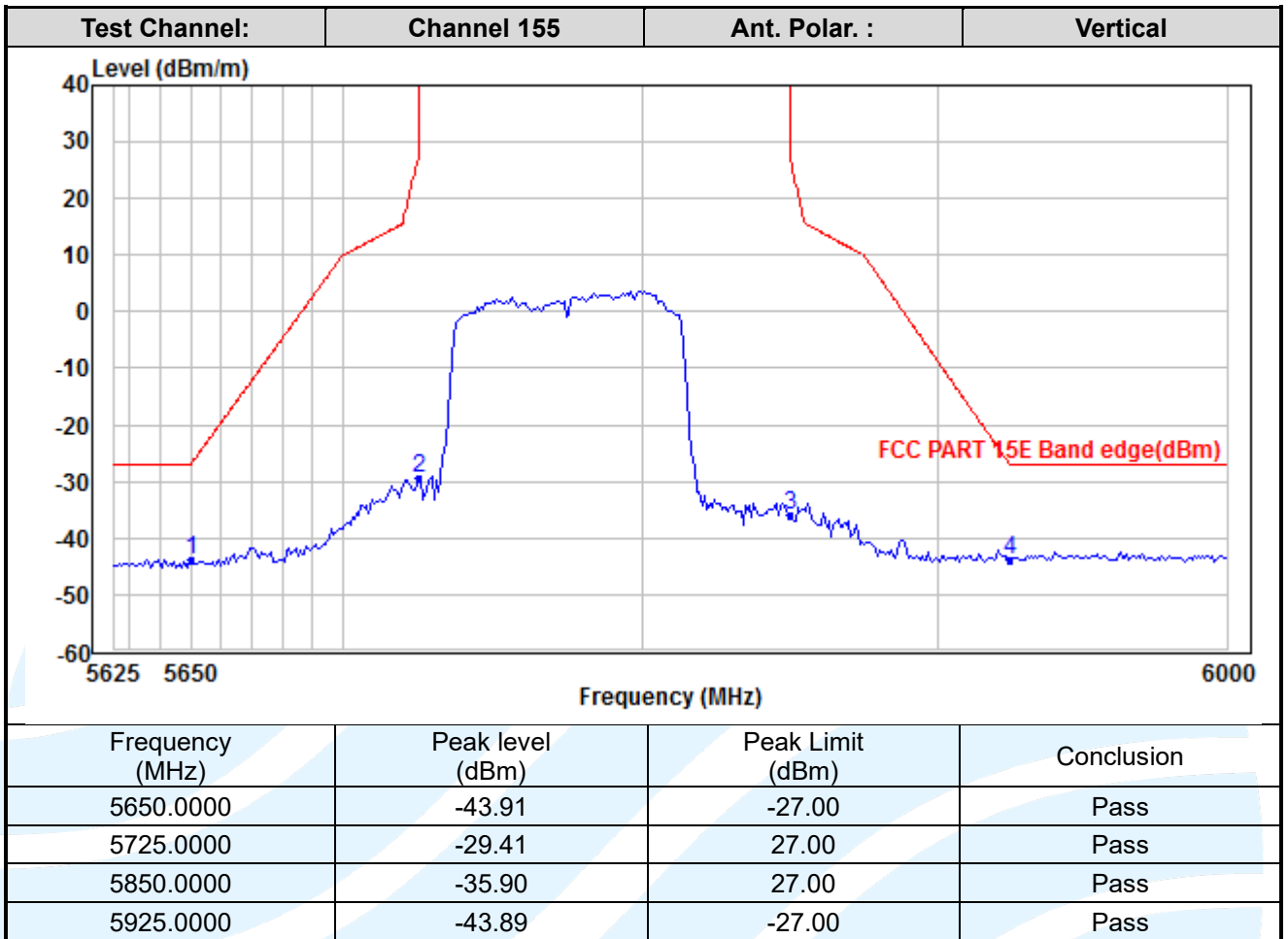
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APPENDIX 1 PHOTOS OF TEST SETUP

See test photos attached in Appendix 1 for the actual connections between Product and support equipment.

APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photos.

*** End of Report ***

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