



Certificate #4312.01

TEST REPORT

Product Name: Long-Range Enterprise Wi-Fi 6 Access Point
Trade Mark: GRANDSTREAM
Model No.: GWN7660ELR
Report Number: 2311037676RFC-4
Test Standards: FCC 47 CFR Part 15 Subpart E
FCC ID: YZZGWN7660ELR
Test Result: PASS
Date of Issue: February 21, 2024

Prepared for:

Grandstream Networks, Inc.
126 Brookline Ave., 3rd Floor Boston, MA 02215, USA

Prepared by:

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Date: February 21, 2024

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Version

Version No.	Date	Description
V1.0	February 21, 2024	Original

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UTTR-RF-FCCPART15.407-V1.3

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1. GENERAL INFORMATION

1.1 CLIENT INFORMATION

Applicant:	Grandstream Networks, Inc.
Address of Applicant:	126 Brookline Ave., 3rd Floor Boston, MA 02215, USA
Manufacturer:	Grandstream Networks, Inc.
Address of Manufacturer:	126 Brookline Ave., 3rd Floor Boston, MA 02215, USA

1.2 EUT INFORMATION

1.2.1 General Description of EUT

Product Name:	Long-Range Enterprise Wi-Fi 6 Access Point		
Model No.:	GWN7660ELR		
Trade Mark:	GRANDSTREAM		
DUT Stage:	Identical Prototype		
EUT Supports Function: (Provided by the customer)	2.4 GHz ISM Band:	IEEE 802.11b/g/n/ax	
		Bluetooth 5.1	
	U-NII 5 GHz Bands:	5 150 MHz to 5 250 MHz	IEEE 802.11a/n/ac/ax
		5 250 MHz to 5 350 MHz	IEEE 802.11a/n/ac/ax
		5 470 MHz to 5 725 MHz	IEEE 802.11a/n/ac/ax
	5 725 MHz to 5 850 MHz	IEEE 802.11a/n/ac/ax	
Software Version:	0.11.22.1 (Provided by the customer)		
Hardware Version:	V1.2 (Provided by the customer)		
Sample Received Date:	November 3, 2023		
Sample Tested Date:	November 3, 2023 to January 31, 2024		

1.2.2 Description of Accessories

Others
1x Mounting Bracket, 1x Base Bracket

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)				
	5725 MHz to 5850 MHz (U-NII-3)				
Frequency Ranges:	5180 MHz to 5240 MHz				
	5260 MHz to 5320 MHz				
	5500 MHz to 5700 MHz				
	5745 MHz to 5825 MHz				
Support Standards:	IEEE 802.11a/n/ac/ax				
TPC Function:	Support				
DFS Operational mode:	Master				
Type of Modulation:	IEEE 802.11a/n: OFDM (64QAM, 16QAM, QPSK, BPSK)				
	IEEE 802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)				
	IEEE 802.11ax: OFDM/OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK)				
Channel Spacing:	IEEE 802.11a/n-HT20/ac-VHT20/ax-HE20: 20 MHz				
	IEEE 802.11n-HT40/ac-VHT40/ax-HE40: 40 MHz				
	IEEE 802.11ac-VHT80/ax-HE80: 80 MHz				
	IEEE 802.11ac-VHT160/ax-HE160: 160 MHz				
Data Rate:	IEEE 802.11a: Up to 54 Mbps				
	IEEE 802.11n: Up to MCS15				
	IEEE 802.11ac-VHT20: Up to MCS8				
	IEEE 802.11ac-VHT40/VHT80/VHT160: Up to MCS9				
	IEEE 802.11ax-HE20/HE40/HE80/HE160: Up to MCS11				
Number of Channels:	5150 MHz to 5350 MHz: 8 for 802.11a/n-HT20/ac-VHT20/ax-HE20 4 for 802.11n-HT40/ac-VHT40/ax-HE40 2 for 802.11ac-VHT80/ax-HE80 1 for 802.11ac-VHT160/ax-HE160				
	5470 MHz to 5725 MHz: 11 for 802.11a/n-HT20/ac-VHT20/ax-HE20 5 for 802.11n-HT40/ac-VHT40/ax-HE40 2 for 802.11ac-VHT80/ax-HE80 1 for 802.11ac-VHT160/ax-HE160				
	5725 MHz to 5850 MHz: 5 for IEEE 802.11a/n-HT20/ac-VHT20/ax-HE20 2 for IEEE 802.11n-HT40/ac-VHT40/ax-HE40 1 for IEEE 802.11ac-VHT80/ax-HE80				
Antenna Type: (Provided by the customer)	Antenna 0:	PCB Antenna			
	Antenna 1:	PCB Antenna			
Antenna Gain (dBi): (Provided by the customer)	Antenna	U-NII-1	U-NII-2A	U-NII-2C	U-NII-3
	Antenna 0:	7.16	7.16	7.16	7.16
	Antenna 1:	7.14	7.14	7.14	7.14
Normal Test Voltage:	48 Vdc				

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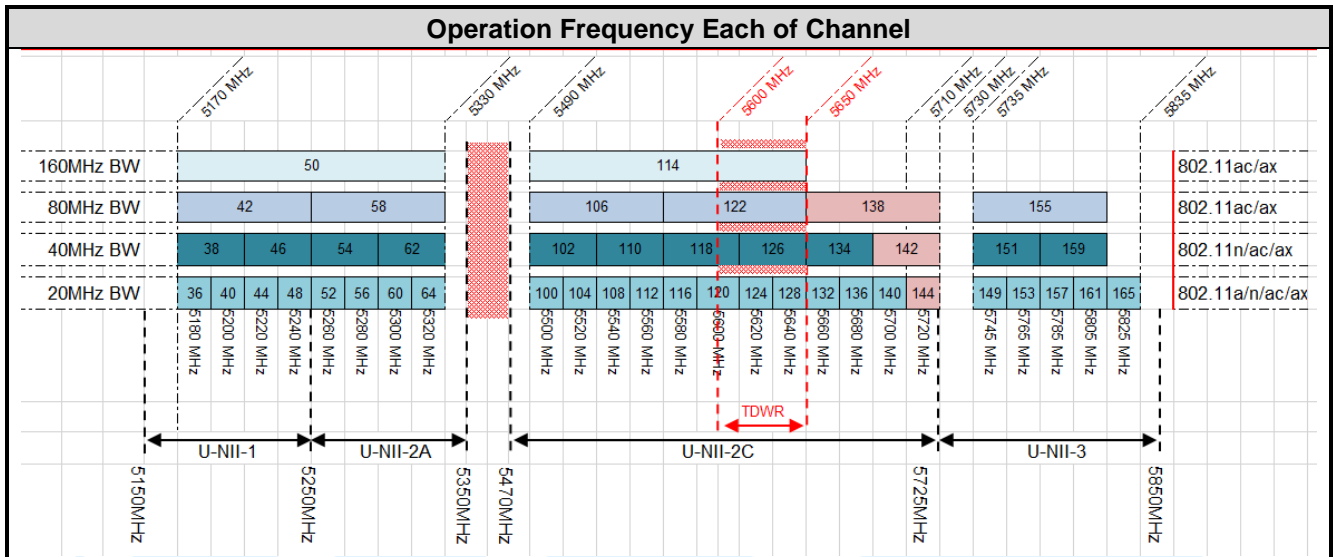
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1.4 OTHER INFORMATION



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
POE	CISCO	MA-INJ-4	QS-6593-01N A02	N/A	UnionTrust
Key-Press Attenuator	Huaxin	KT2.5-90/1S-2S	N/A	N/A	UnionTrust
4 Way Divider	WOKEN	0120A040560002 D	N/A	N/A	UnionTrust
Wireless Router	SAGEMCOM	RAC2V1S	253703944	VW3FAST5280	UnionTrust
Notebook	Lenovo	Lenovo B40-80	MP12NEQ6	N/A	UnionTrust
Notebook	Lenovo	TP00067A	PN-0FZDEU 16\02	N/A	UnionTrust
Mouse	DELL	MS111	CN-011D3V-7382 6-62N-0LK	N/A	UnionTrust
Mouse	DELL	MS111	CN-011D3V-7382 6-62N-0CUT	N/A	UnionTrust
Enterprise Full Touch Handheld Computer	Bluebird Inc.	EF551	N/A	N/A	UnionTrust

2) Support Cable

Cable No.	Description	Connector	Length(Meter)	Supplied by
1	Ethernet Cable*2	RJ45	1.5 Unshielded without ferrite	UnionTrust
2	Antenna Cable*2	SMA	0.1	UnionTrust

1.6 TEST LOCATION

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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 manufacturer's recommendations, and is traceable under the ISO/IEC 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 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.

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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	±3.2 dB
2	Conducted emission 150KHz-30MHz	±2.7 dB
3	Radiated emission 9KHz-30MHz	± 4.7 dB
4	Radiated emission 30MHz-1GHz	± 4.9 dB
5	Radiated emission 1GHz-18GHz	± 4.8 dB
6	Radiated emission 18GHz-26GHz	± 5.1 dB
7	Radiated emission 26GHz-40GHz	± 5.1 dB
8	Conducted spurious emissions	± 2.7 dB
9	RF Power, Conducted	± 0.68 dB
10	Occupied Bandwidth	± 1.86 %
11	Radio Frequency	5.6 GHz: ± 6.4 x 10 ⁻⁸
12	Transmission Time	± 0.19 %

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 E 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	PASS
6 dB bandwidth	FCC 47 CFR Part 15 Subpart E Section 15.407 (e)	KDB 789033 D02 v02r01 Section C.2	PASS
Maximum conducted output power & Transmit Power Control	FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(3)& (h)(1)	KDB 789033 D02 v02r01 Section E.3.a (Method PM)	PASS
Peak Power Spectral Density	FCC 47 CFR Part 15 Subpart E Section 15.407 (a)(1)(2)(3)	KDB 789033 D02 v02r01 Section F	PASS
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 D02 UNII DFS Compliance Procedures New Rules v02	PASS Note2
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.	PASS
<p>Note:</p> <p>1) N/A: In this whole report not applicable.</p> <p>2) Please refer to Report No.: 2311037676RFC-5 for DFS Test report.</p> <p>Disclaimer and Explanations:</p> <p>The declared of product specification and data (e.g., antenna gain, RF specification, etc) for EUT presented in the report are provided by the customer, and the customer takes all the responsibilities for the accuracy of product specification.</p>			

3. EQUIPMENT LIST

Radiated Emission Test Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date	Cal. Due date
<input checked="" type="checkbox"/>	3m SAC	ETS-LINDGREN	3M	Euroshiedpn-CT001270-1317	22-Jan-2021	21-Jan-2024
<input checked="" type="checkbox"/>	Receiver	R&S	ESIB26	100114	27-Oct-2023	26-Oct-2024
<input checked="" type="checkbox"/>	EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY51440197	14-Apr-2023	13-Apr-2024
<input checked="" type="checkbox"/>	Loop Antenna	ETS-LINDGREN	6502	00202525	30-Oct-2023	29-Oct-2024
<input checked="" type="checkbox"/>	Broadband Antenna	ETS-LINDGREN	3142E	00201566	30-Oct-2023	29-Oct-2024
<input checked="" type="checkbox"/>	6dB Attenuator	Talent	RA6A5-N-18	18103001	30-Oct-2023	29-Oct-2024
<input checked="" type="checkbox"/>	Preamplifier	HP	8447F	2805A02960	31-Oct-2023	30-Oct-2024
<input checked="" type="checkbox"/>	Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3117-PA	00201541	16-Apr-2023	15-Apr-2025
<input checked="" type="checkbox"/>	Pre-amplifier	ETS-LINDGREN	00118385	00201874	31-Oct-2023	30-Oct-2024
<input checked="" type="checkbox"/>	Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3116C-PA	00202652	30-Oct-2023	29-Oct-2024
<input checked="" type="checkbox"/>	Pre-amplifier	ETS-LINDGREN	00118384	00202652	30-Oct-2023	29-Oct-2024
<input checked="" type="checkbox"/>	Band Rejection Filter (5150MHz~5880MHz)	Micro-Tronics	BRM50716	G186	27-Oct-2023	26-Oct-2024
<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 Emission Test Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date	Cal. Due date
<input checked="" type="checkbox"/>	Receiver	R&S	ESR7	101181	27-Oct-2023	26-Oct-2024
<input checked="" type="checkbox"/>	Pulse Limiter	R&S	ESH3-Z2	0357.8810.54	27-Oct-2023	26-Oct-2024
<input checked="" type="checkbox"/>	LISN	R&S	ESH2-Z5	860014/024	27-Oct-2023	26-Oct-2024
<input checked="" type="checkbox"/>	LISN	ETS-Lindgren	3816/2SH	00201088	27-Oct-2023	26-Oct-2024
<input checked="" type="checkbox"/>	Shielding room	ETS-Lindgren	843	Euroshiedpn-CT001270-1246	5-Nov-2021	4-Nov-2024
<input checked="" type="checkbox"/>	Test Software	EZ-EMC	EZ-CON	Software Version: EMC-CON 3A1.1		

Conducted RF test Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date	Cal. Due date
<input checked="" type="checkbox"/>	EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY51440197	14-Apr-2023	13-Apr-2024
<input checked="" type="checkbox"/>	USB Wideband Power Sensor	KEYSIGHT	U2021XA	MY55430035	27-Oct-2023	26-Oct-2024
<input checked="" type="checkbox"/>	EXG-B RF Analog Signal Generator	KEYSIGHT	N5171B	MY53051777	27-Oct-2023	26-Oct-2024
<input checked="" type="checkbox"/>	MXG X-Series RF Vector Signal Generator	KEYSIGHT	N5182B	MY51350267	27-Oct-2023	26-Oct-2024
<input checked="" type="checkbox"/>	Spectrum Analyzer	R&S	FSV40-N	101653	14-Apr-2023	13-Apr-2024

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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	48Vdc	20 to 75
Remark:			
1) NV: Normal Voltage; NT: Normal Temperature			

4.1.2 Record of Normal Environment and Test Sample

Test Item	Temp. (°C)	Relative Humidity (%)	Pressure (kPa)	Sample No.	Tested by
AC Power Line Conducted Emission	24.8	62.1	99.8	S202311032347-ZJA03/4	Linson Xie
26 dB emission bandwidth	24.7	52	100.0	S202311032347-ZJD010/10	Rain Wang
Maximum conducted output power					
Peak Power Spectral Density					
6 dB bandwidth	24.7	52	100.0	S202311032347-ZJD010/10	Rain Wang
Dynamic Frequency Selection	25.5	56.1	100.0	S202311032347-ZJA03/4	Fire Huo
Radiated Emissions and Band Edge Measurement					

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 IEEE 802.11ax-HE20	5150 - 5250 MHz	Channel 36	Channel 44	Channel 48
		5180 MHz	5220 MHz	5240 MHz
	5250 - 5350 MHz	Channel 52	Channel 60	Channel 64
		5260 MHz	5300 MHz	5320 MHz
	5470 - 5725 MHz	Channel 100	Channel 116	Channel 140
		5500 MHz	5580 MHz	5700 MHz
	5725 - 5850 MHz	Channel 149	Channel 157	Channel 165
		5745 MHz	5785 MHz	5825 MHz
IEEE 802.11n-HT40 IEEE 802.11ac-VHT40 IEEE 802.11ax-HE40	5150 - 5250 MHz	Channel 38	--	Channel 46
		5190 MHz	--	5230 MHz
	5250 - 5350 MHz	Channel 54	--	Channel 62
		5270 MHz	--	5310 MHz
	5470 - 5725 MHz	Channel 102	Channel 110	Channel 134
		5510 MHz	5550 MHz	5670 MHz
	5725 - 5850 MHz	Channel 151	--	Channel 159
		5755 MHz	--	5795 MHz
IEEE 802.11ac-VHT80 IEEE 802.11ax-HE80	5150 - 5250 MHz	--	Channel 42	--
		--	5210 MHz	--
	5250 - 5350 MHz	--	Channel 58	--
		--	5290 MHz	--
	5470 - 5725 MHz	Channel 106	--	--
		5530 MHz	--	--
	5725 - 5850 MHz	--	Channel 155	--
		--	5775 MHz	--
IEEE 802.11ac-VHT160 IEEE IEEE 802.11ax-HE160	5150 - 5350 MHz	Channel 50		
		5250 MHz		
	5470 - 5725 MHz	Channel 114		
		5570 MHz		
5725 - 5850 MHz				

4.3 EUT TEST STATUS

Mode	Tx/Rx Function	Description
IEEE 802.11a	1Tx/1Rx	1. Keep the EUT in continuously transmitting or receiving with modulation and data rates test single. 2. Keep the equipment in normal operation and achieve a certain throughput.
IEEE 802.11n	2Tx/2Rx	
IEEE 802.11ac		
IEEE 802.11ax		

Power Setting (Provided by the customer)												
Mode	U-NII-1		U-NII-2A			U-NII-2C		U-NII-3				
	Ant. 0	Ant. 1	Ant. 0			Ant. 1		Ant. 0	Ant. 1			
IEEE 802.11a	18	19	18			19		18	17	20	20	
IEEE 802.11n-HT20	15	15	16	16	15	16	16	15	14	14	20	20
IEEE 802.11n-HT40	10	10	10			10		12	12	20	20	
IEEE 802.11ac-VHT20	15	15	16	15	15	16	15	15	14	14	20	20
IEEE 802.11ac-VHT40	10	10	10			10		12	12	20	20	
IEEE 802.11ac-VHT80	11	11	11			11		13	13	19	19	
IEEE 802.11ac-VHT160	11	11	11			11		13	13	/	/	
IEEE 802.11ax-HE20 (SU)	15	15	15			15		13.5	13.5	20	20	
IEEE 802.11ax-HE40 (SU)	10	10	10			10		13	13	20	20	
IEEE 802.11ax-HE80 (SU)	11	11	13			13		10	10	19	19	
IEEE 802.11ax-HE160(SU)	10	10	10			10		10	10	/	/	

IEEE 802.11ax only supports SU Mode.

Test Software (Provided by the customer)
Test software name: Radio Control Toolkit v4.0;

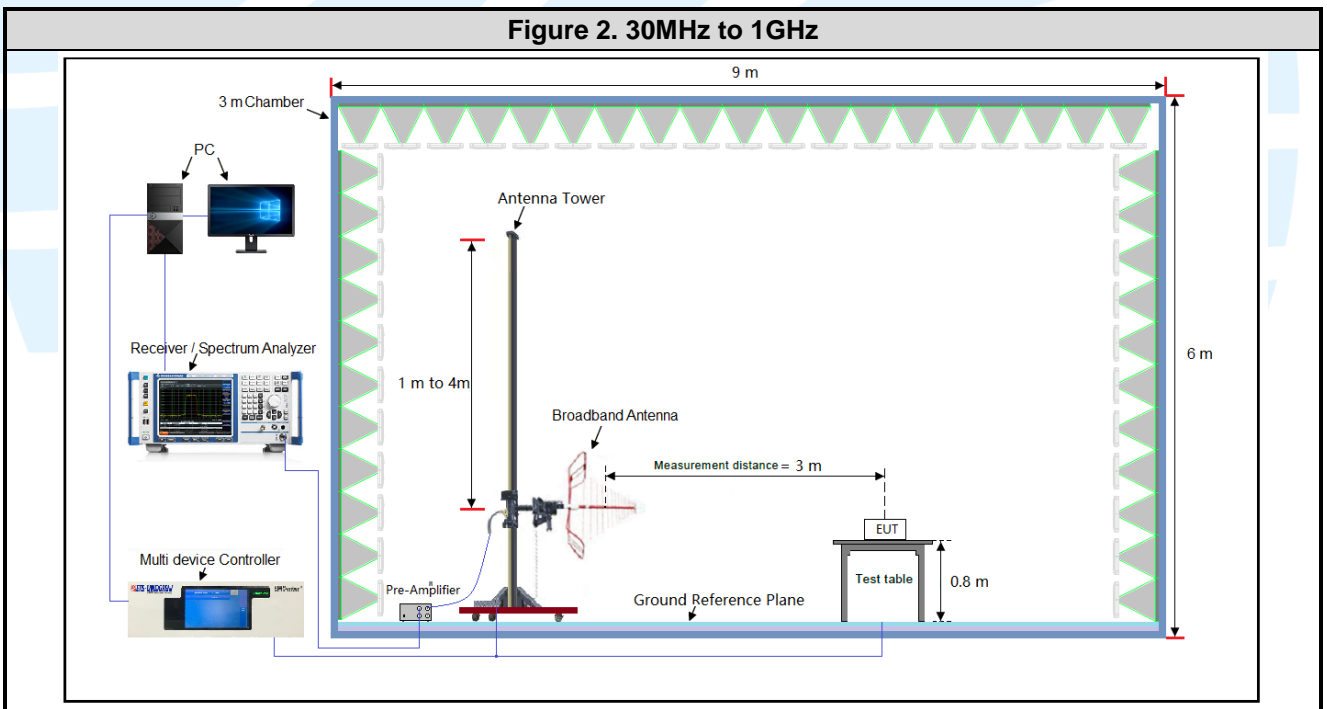
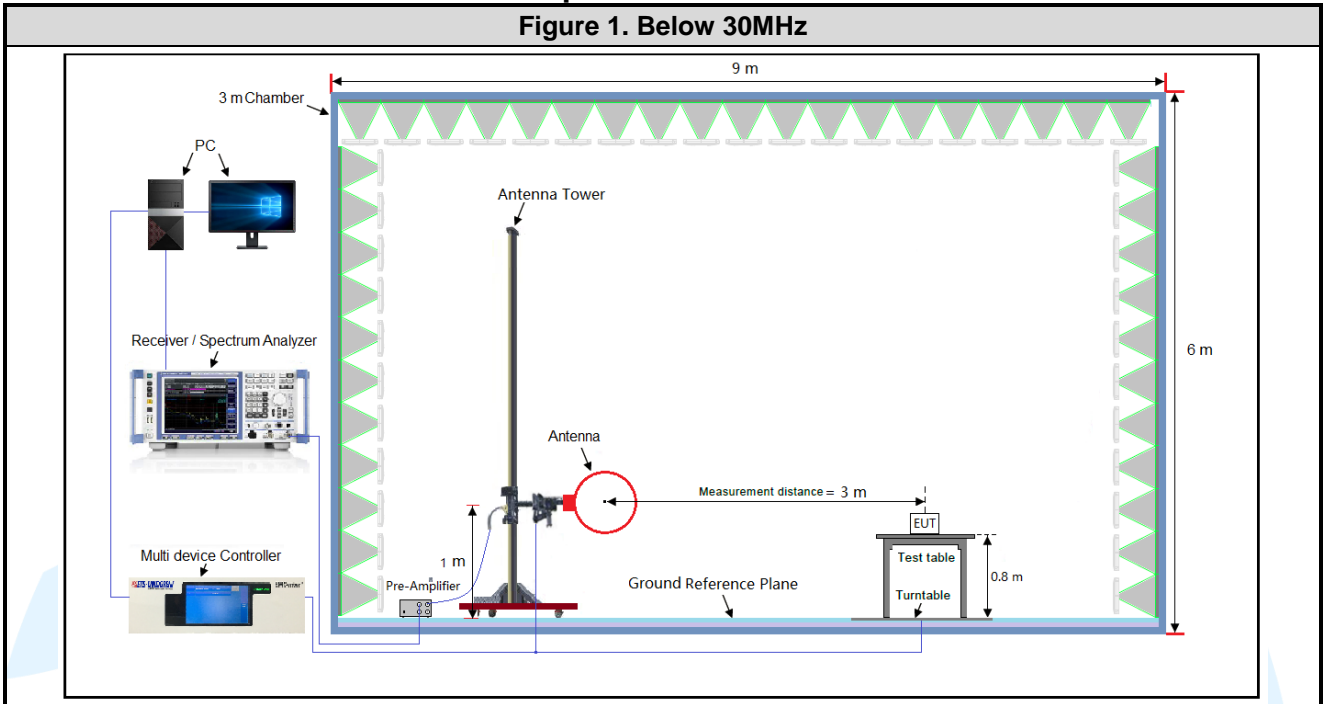
4.4 PRE-SCAN

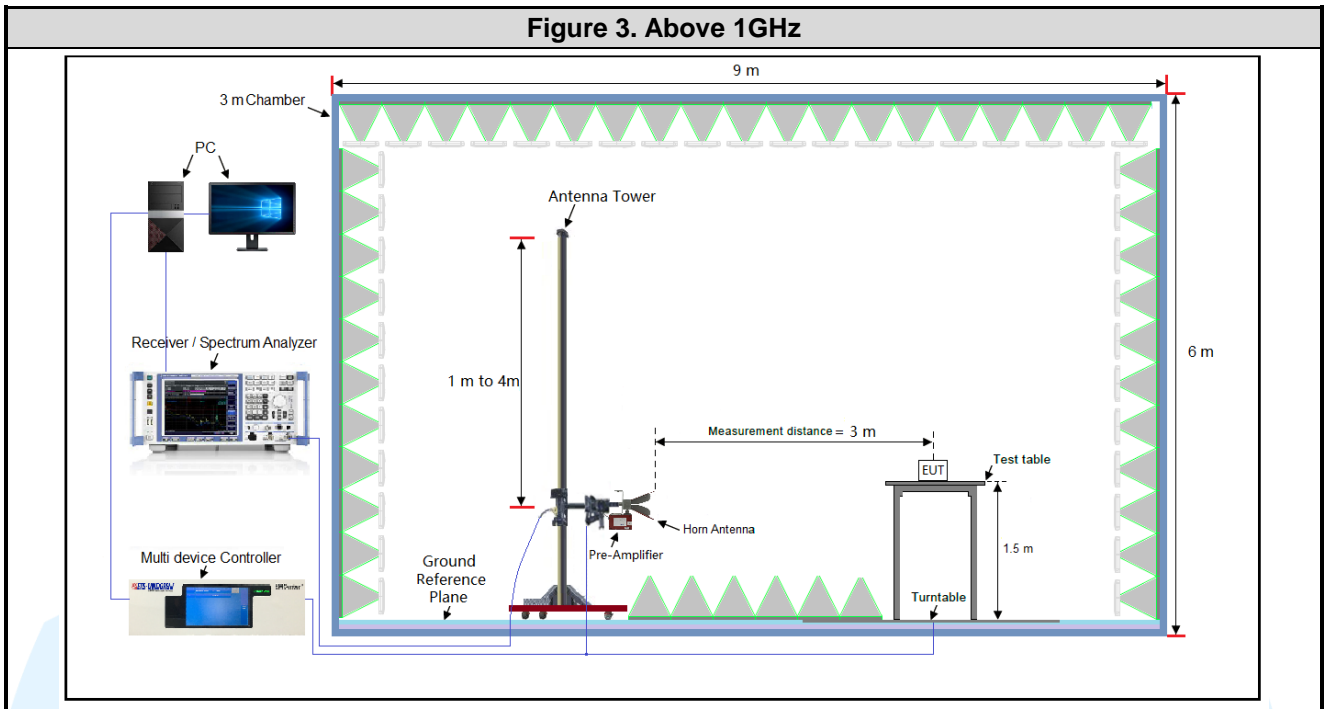
Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations and data rate. Following data rate was (were) selected for the final test as listed below

Mode	Worst-case data rates
IEEE 802.11a	6 Mbps
IEEE 802.11n-HT20	MCS8
IEEE 802.11n-HT40	MCS8
IEEE 802.11ac-VHT20	MCS0
IEEE 802.11ac-VHT40	MCS0
IEEE 802.11ac-VHT80	MCS0
IEEE 802.11ac-VHT160	MCS0
IEEE 802.11ax-HE20	MCS0
IEEE 802.11ax-HE40	MCS0
IEEE 802.11ax-HE80	MCS0
IEEE 802.11ax-HE160	MCS0

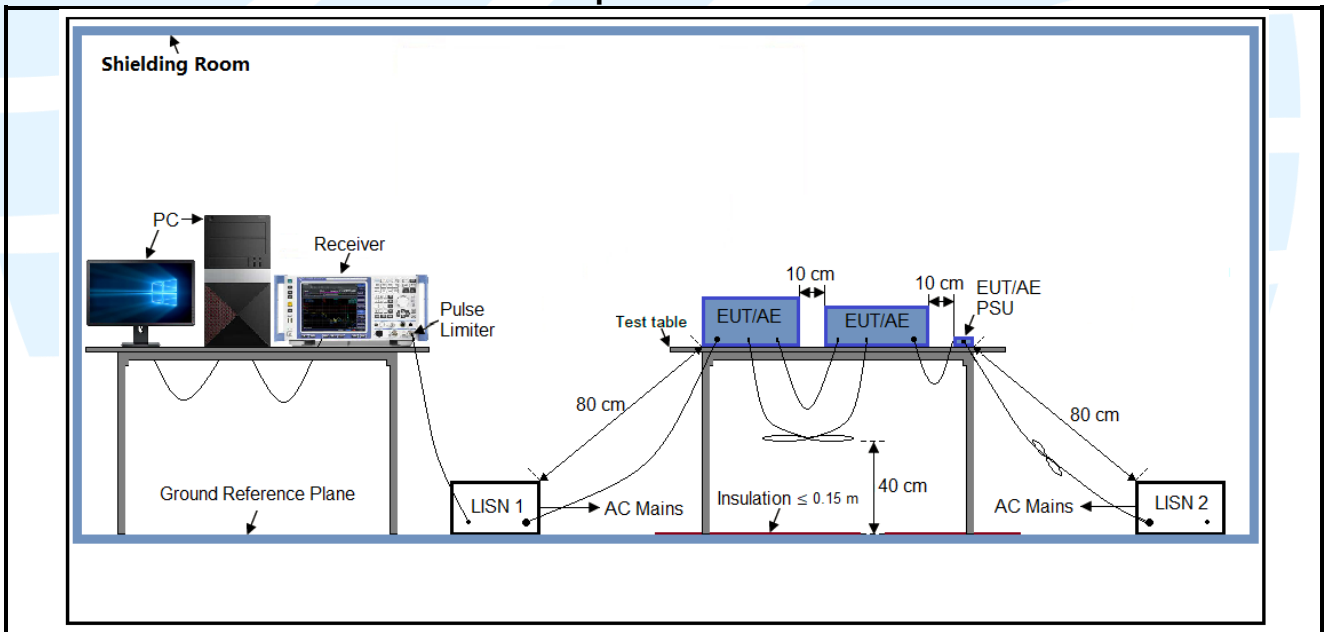
4.5 TEST SETUP

4.5.1 For Radiated Emissions test setup

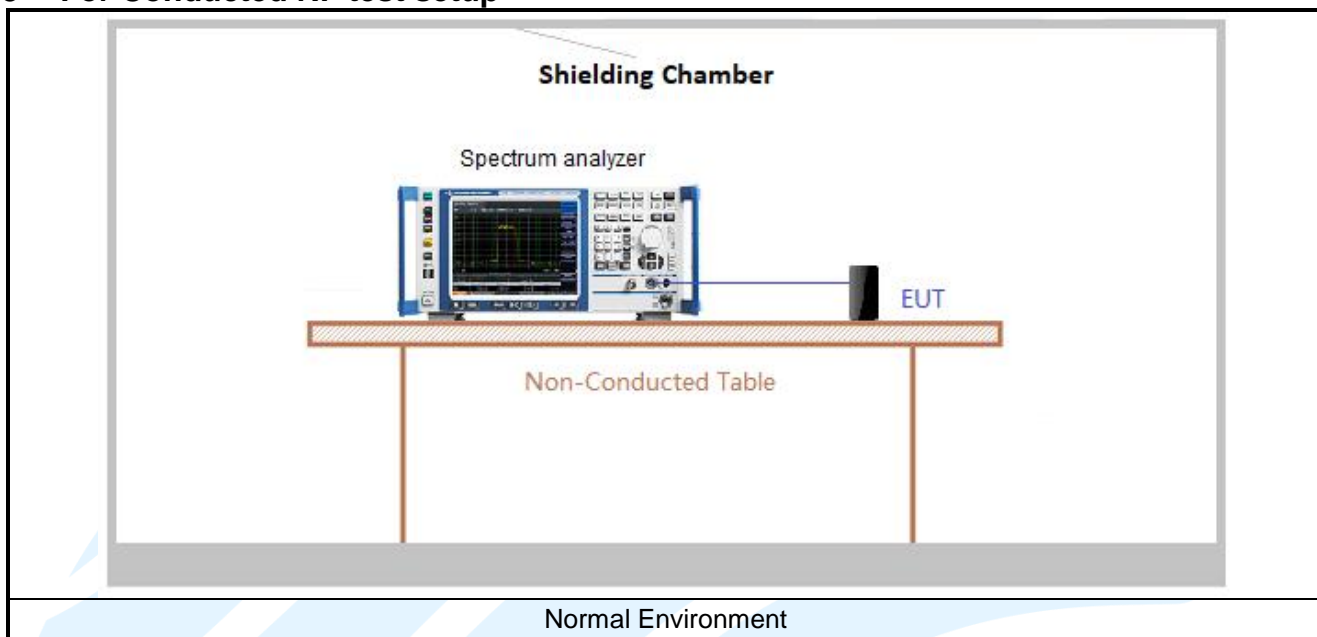




4.5.2 For Conducted Emissions test setup



4.5.3 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. 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. Therefore, all final radiated testing was performed with the EUT in orientation.

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.

4.7 DUTY CYCLE

Test Procedure: ANSI C63.10-2013 Clause 12.2.

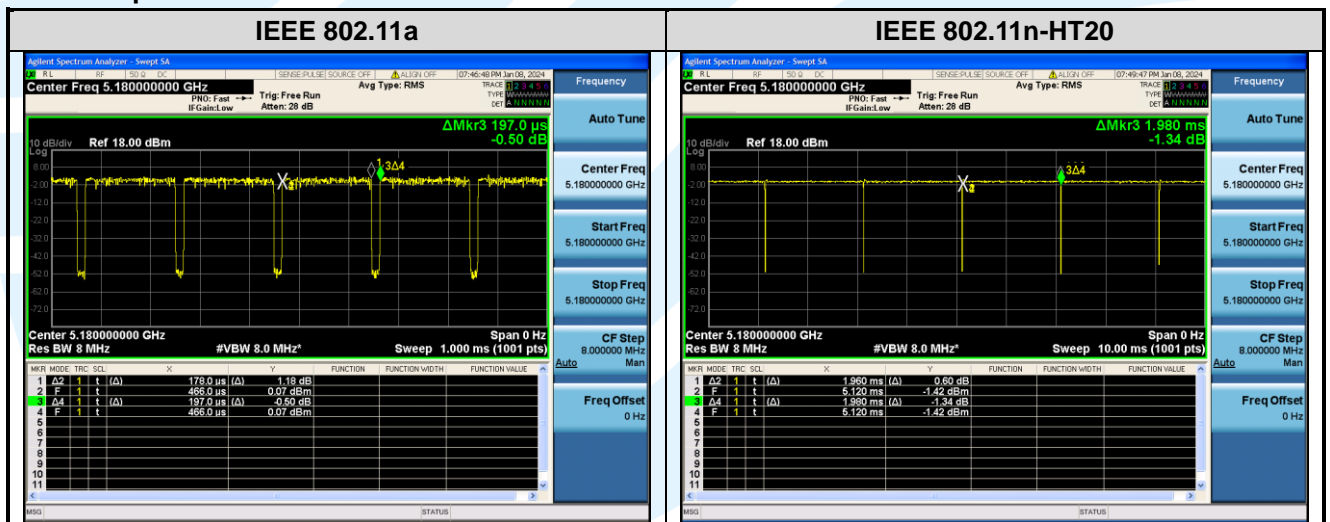
Test Results

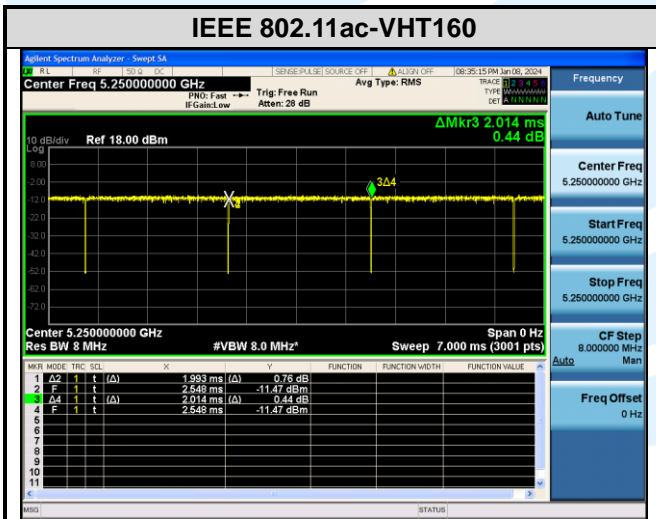
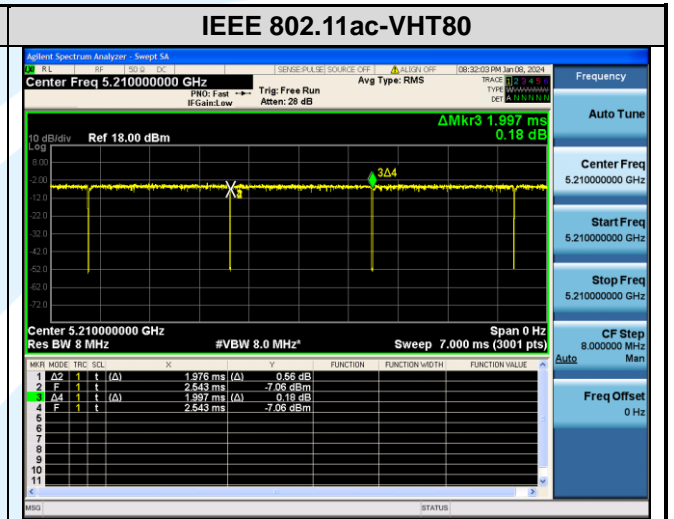
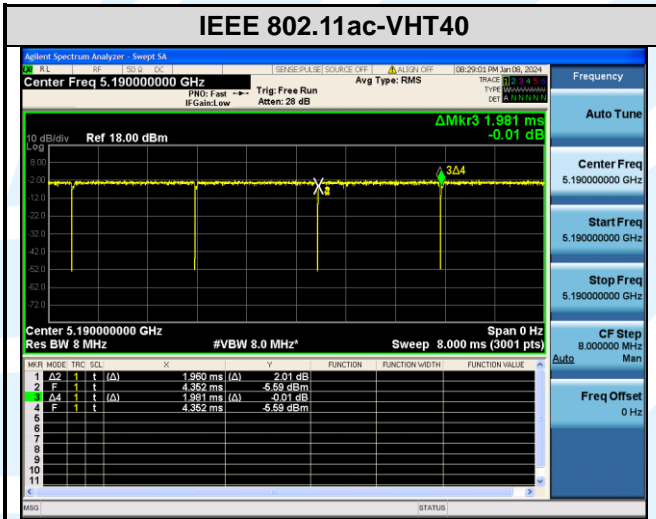
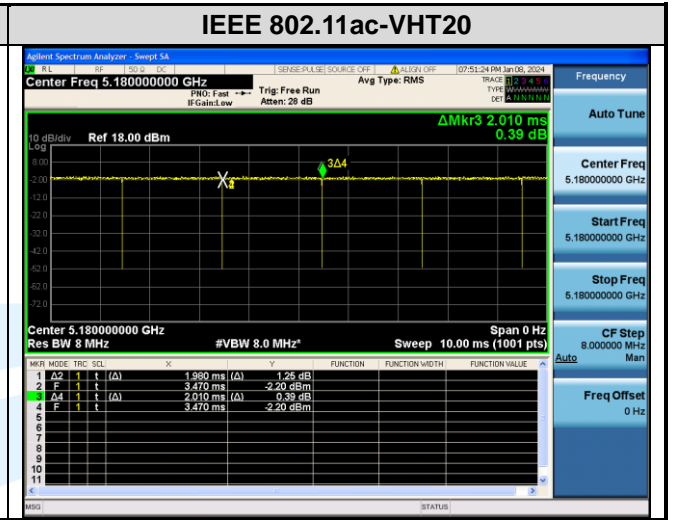
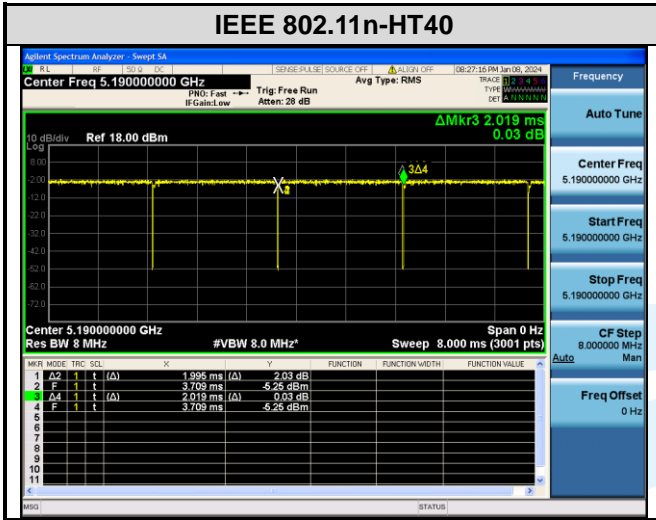
Mode	RU	Data Rates	On Time (msec)	Period (msec)	Duty Cycle (linear)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/T Minimum VBW (kHz)
IEEE 802.11a	N/A	6 Mbps	0.178	0.197	0.90	90.36	0.44	5.62
IEEE 802.11n-HT20	N/A	MCS 8	1.960	1.980	0.99	98.99	0.00	0.01
IEEE 802.11n-HT40	N/A	MCS 8	1.995	2.019	0.99	98.81	0.00	0.01
IEEE 802.11ac-VHT20	N/A	MCS 0	1.980	2.010	0.99	98.51	0.00	0.01
IEEE 802.11ac-VHT40	N/A	MCS 0	1.960	1.981	0.99	98.94	0.00	0.01
IEEE 802.11ac-VHT80	N/A	MCS 0	1.976	1.997	0.99	98.95	0.00	0.01
IEEE 802.11ac-VHT160	N/A	MCS 0	1.993	2.014	0.99	98.96	0.00	0.01
IEEE 802.11ax-HE20	SU	MCS 0	1.950	1.980	0.98	98.48	0.00	0.01
IEEE 802.11ax-HE40	SU	MCS 0	1.955	1.976	0.99	98.94	0.00	0.01
IEEE 802.11ax-HE80	SU	MCS 0	1.976	1.995	0.99	99.05	0.00	0.01
IEEE 802.11ax-HE160	SU	MCS 0	1.974	1.995	0.99	98.95	0.00	0.01

Remark:

- 1) Duty cycle= On Time/ Period;
- 2) Duty Cycle factor = 10 * log(1/ Duty cycle)

The test plots as follows





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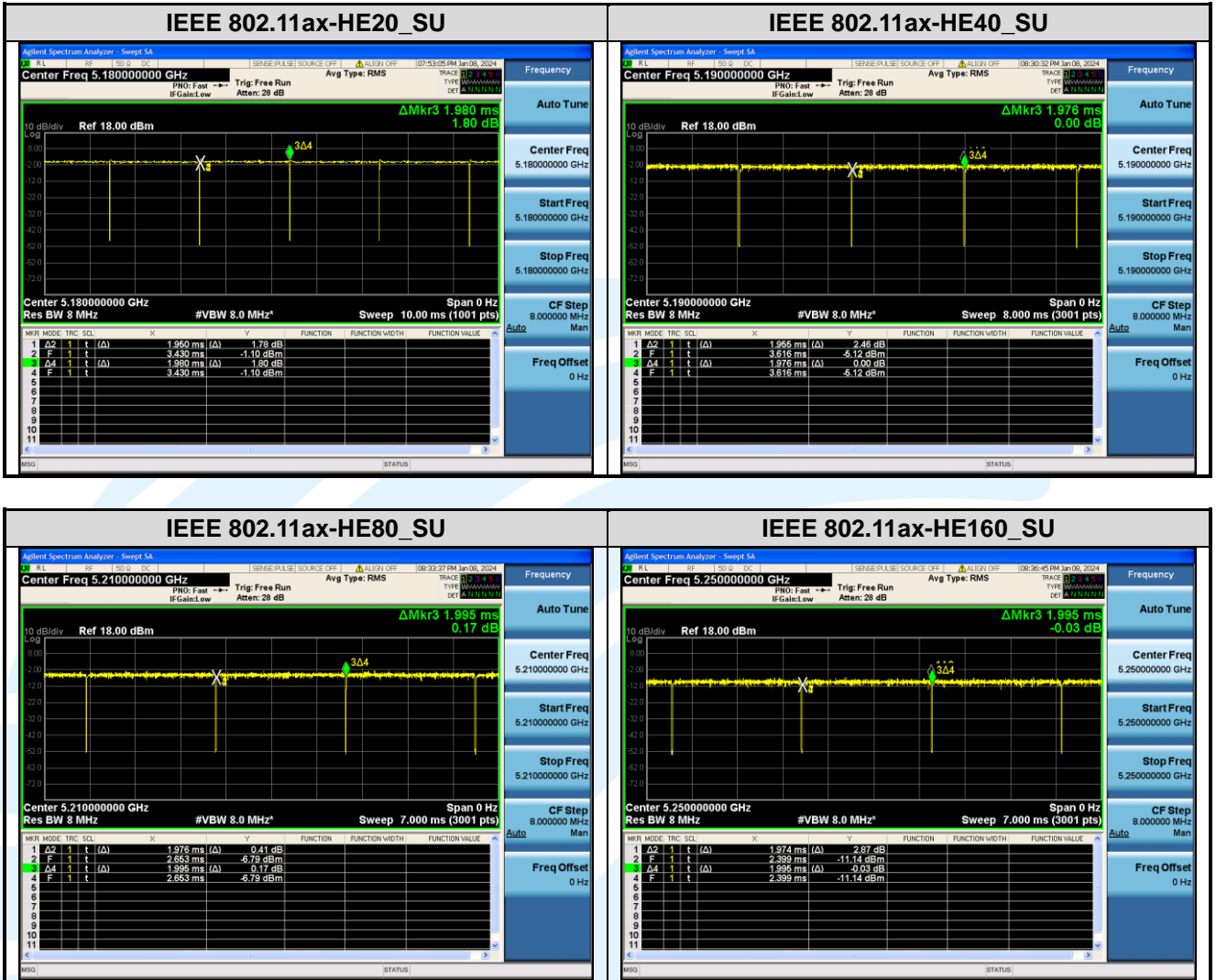
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5. RADIO TECHNICAL REQUIREMENTS SPECIFICATION

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 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, the best case directional gain of the antenna is 10.16 dBi. (See section 5.5).</p>

5.326 DB BANDWIDTH

Test Requirement: FCC 47 CFR Part 15 Subpart E Section 15.407 (a) (2)(5)

Test Method: KDB 789033 D02 v02r01 Section C.1

Limit: None; for reporting purposes only.

Test Procedure:

The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum analyzer.

Spectrum analyzer according to the following Settings:

a) Set RBW = approximately 1 % of the emission bandwidth.

b) Set the VBW > RBW.

c) Detector = Peak.

d) Trace mode = max hold.

e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

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 Results: Pass

Test Results: Please refer to Appendix A

5.46 DB BANDWIDTH

Test Requirement: FCC 47 CFR Part 15 Subpart C Section 15.407 (e)

Test Method: KDB 789033 D02 v02r01Section C.2

Limit: Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Test Procedure:

The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum Analyzer.

Spectrum analyzer according to the following Settings:

a) Set RBW = 100 kHz.

b) Set the video bandwidth (VBW) $\geq 3 * RBW$.

c) Detector = Peak.

d) Trace mode = max hold.

e) Sweep = auto couple.

f) Allow the trace to stabilize.

g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

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 Results: Please refer to Appendix A

5.5 MAXIMUM CONDUCTED OUTPUT POWER & TRANSMIT POWER CONTROL

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

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

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directional antennas are used exclusively for fixed, point-to-point operations.

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:

Directional gain and the maximum output power limit.

Frequency (MHz)	Antenna Gain (dBi)		Directional gain (dBi)		Limit	
	Ant .0	Ant .1	Power	PSD	Power (dBm)	PSD (dBm/MHz or dBm/500kHz)
U-NII-1	7.16	7.14	10.16	10.16	25.84	12.84
U-NII-2A	7.16	7.14	10.16	10.16	19.84	6.84
U-NII-2C	7.16	7.14	10.16	10.16	19.84	6.84
U-NII-3	7.16	7.14	10.16	10.16	25.84	25.84

Unequal antenna gains, with equal transmit powers. Directional gain is to be computed as follows:
 If transmit signals are correlated, then
 Directional gain = 10 log₁₀[(10^{G1} /20 + 10^{G2} /20 + ... + 10^{GN} /20)² /NANT] 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.]

For U-NII-2A :

IEEE 802.11a/n/ac/ax: the minimum 26 dB emission bandwidth is 18.45 MHz

$$11 \text{ dBm} + 10\log_{10}(18.45) = 23.66 \text{ dBm}$$

$$19.84 \text{ dBm} < 23.66 \text{ dBm} < 24 \text{ dBm}$$

So the 19.84 dBm limit applicable

For U-NII-2C Band:

IEEE 802.11a: the minimum 26 dB emission bandwidth is 18.42 MHz

$$11 \text{ dBm} + 10\log_{10}(18.42) = 23.65 \text{ dBm}$$

$$24 \text{ dBm} > 23.65 \text{ dBm} > 19.84 \text{ dBm}$$

So the 19.84 dBm limit applicable

Maximum output power

Mode	Band	Channel	Freq. (MHz)	CONDUCTED AVG POWER					Limit (dBm)	Result
				Meas Value (dBm)		Corr'd Value (dBm)				
				Ant. 0	Ant. 1	Ant. 0	Ant. 1	Total		
IEEE 802.11a	U-NII-1	36	5180	17.03	17.26	17.47	17.70	N/A	28.84	Pass
		44	5220	17.15	17.94	17.59	18.38	N/A	28.84	Pass
		48	5240	16.00	17.21	16.44	17.65	N/A	28.84	Pass
	U-NII-2A	52	5260	15.06	16.31	15.50	16.75	N/A	22.84	Pass
		60	5300	16.75	17.71	17.19	18.15	N/A	22.84	Pass
		64	5320	16.91	18.20	17.35	18.64	N/A	22.84	Pass
	U-NII-2C	100	5500	16.79	15.62	17.23	16.06	N/A	22.84	Pass
		116	5580	14.50	14.23	14.94	14.67	N/A	22.84	Pass
		140	5700	15.81	16.00	16.25	16.44	N/A	22.84	Pass
	U-NII-3	144	5720	15.40	15.69	15.84	16.13	N/A	22.84	Pass
		149	5745	17.91	19.21	18.35	19.65	N/A	28.84	Pass
		157	5785	18.19	19.23	18.63	19.67	N/A	28.84	Pass
IEEE 802.11n-HT20	U-NII-1	36	5180	13.45	12.94	13.45	12.94	16.21	25.84	Pass
		44	5220	13.65	12.96	13.65	12.96	16.33	25.84	Pass
		48	5240	12.74	12.85	12.74	12.85	15.81	25.84	Pass
	U-NII-2A	52	5260	12.90	13.21	12.90	13.21	16.07	19.84	Pass
		60	5300	13.31	13.59	13.31	13.59	16.46	19.84	Pass
		64	5320	13.57	13.88	13.57	13.88	16.74	19.84	Pass
	U-NII-2C	100	5500	12.32	12.58	12.32	12.58	15.46	19.84	Pass
		116	5580	10.39	11.22	10.39	11.22	13.84	19.84	Pass
		140	5700	11.64	12.76	11.64	12.76	15.25	19.84	Pass
U-NII-3	144	5720	11.35	12.66	11.35	12.66	15.06	19.84	Pass	
	149	5745	17.73	19.09	17.73	19.09	21.47	25.84	Pass	
	157	5785	18.01	19.08	18.01	19.08	21.59	25.84	Pass	
IEEE 802.11n-HT40	U-NII-1	165	5825	17.33	18.17	17.33	18.17	20.78	25.84	Pass
		38	5190	9.10	9.02	9.10	9.02	12.07	25.84	Pass
	U-NII-2A	46	5230	8.93	9.28	8.93	9.28	12.12	25.84	Pass
		54	5270	8.02	8.57	8.02	8.57	11.31	19.84	Pass
	U-NII-2C	62	5310	8.93	9.71	8.93	9.71	12.35	19.84	Pass
		102	5510	10.42	10.77	10.42	10.77	13.61	19.84	Pass
		110	5550	9.33	10.01	9.33	10.01	12.69	19.84	Pass

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	U-NII-3	134	5670	10.21	11.59	10.21	11.59	13.96	19.84	Pass
		142	5710	10.22	11.55	10.22	11.55	13.95	19.84	Pass
		151	5755	18.41	19.73	18.41	19.73	22.13	25.84	Pass
		159	5795	18.39	19.38	18.39	19.38	21.92	25.84	Pass
IEEE 802.11ac-VHT20	U-NII-1	36	5180	13.51	12.94	13.51	12.94	16.24	25.84	Pass
		44	5220	13.41	13.22	13.41	13.22	16.33	25.84	Pass
		48	5240	12.77	12.89	12.77	12.89	15.84	25.84	Pass
	U-NII-2A	52	5260	12.84	13.18	12.84	13.18	16.02	19.84	Pass
		60	5300	13.30	13.59	13.30	13.59	16.46	19.84	Pass
		64	5320	13.51	13.86	13.51	13.86	16.70	19.84	Pass
	U-NII-2C	100	5500	12.23	12.59	12.23	12.59	15.42	19.84	Pass
		116	5580	10.31	11.19	10.31	11.19	13.78	19.84	Pass
		140	5700	11.56	12.78	11.56	12.78	15.22	19.84	Pass
		144	5720	11.26	12.73	11.26	12.73	15.07	18.88	Pass
	U-NII-3	149	5745	17.49	18.86	17.49	18.86	21.24	25.84	Pass
		157	5785	17.78	18.89	17.78	18.89	21.38	25.84	Pass
165		5825	17.05	17.94	17.05	17.94	20.53	25.84	Pass	
IEEE 802.11ac-VHT40	U-NII-1	38	5190	9.00	8.97	9.00	8.97	12.00	25.84	Pass
		46	5230	8.82	9.23	8.82	9.23	12.04	25.84	Pass
	U-NII-2A	54	5270	7.91	8.49	7.91	8.49	11.22	19.84	Pass
		62	5310	8.83	9.63	8.83	9.63	12.26	19.84	Pass
	U-NII-2C	102	5510	10.26	10.66	10.26	10.66	13.47	19.84	Pass
		110	5550	9.18	9.96	9.18	9.96	12.60	19.84	Pass
		134	5670	10.07	11.54	10.07	11.54	13.88	19.84	Pass
	U-NII-3	142	5710	10.13	11.60	10.13	11.60	13.94	19.84	Pass
151		5755	18.15	19.75	18.15	19.75	22.03	25.84	Pass	
	U-NII-3	159	5795	18.16	19.35	18.16	19.35	21.81	25.84	Pass
IEEE 802.11ac-VHT80	U-NII-1	42	5210	9.88	9.49	9.88	9.49	12.70	25.84	Pass
	U-NII-2A	58	5290	8.94	9.32	8.94	9.32	12.14	19.84	Pass
	U-NII-2C	106	5530	10.20	10.66	10.20	10.66	13.45	19.84	Pass
		138	5690	10.86	12.16	10.86	12.16	14.57	19.84	Pass
	U-NII-3	155	5775	17.18	18.49	17.18	18.49	20.89	25.84	Pass
IEEE 802.11ac-VHT160	U-NII-1	50	5250	8.84	9.45	8.84	9.45	12.17	25.84	Pass
	U-NII-2C	114	5570	9.90	10.91	9.90	10.91	13.44	19.84	Pass

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Mode	Band	Channel	Freq. (MHz)	RU & Index	CONDUCTED AVG POWER						Limit (dBm)	Result
					Meas Value (dBm)		Corr'd Value (dBm)					
					Ant. 0	Ant. 1	Ant. 0	Ant. 1	Total			
IEEE 802.11ax-HE20	U-NII-1	36	5180	SU	13.57	13.03	13.57	13.03	16.32	25.84	Pass	
		44	5220	SU	13.38	13.21	13.38	13.21	16.31	25.84	Pass	
		48	5240	SU	12.83	13.10	12.83	13.10	15.98	25.84	Pass	
	U-NII-2A	52	5260	SU	11.98	12.41	11.98	12.41	15.21	19.84	Pass	
		60	5300	SU	13.44	13.78	13.44	13.78	16.62	19.84	Pass	
		64	5320	SU	13.66	14.05	13.66	14.05	16.87	19.84	Pass	
	U-NII-2C	100	5500	SU	11.89	12.23	11.89	12.23	15.07	19.84	Pass	
		116	5580	SU	9.93	10.85	9.93	10.85	13.42	19.84	Pass	
		140	5700	SU	11.25	12.53	11.25	12.53	14.95	19.84	Pass	
		144	5720	SU	10.90	12.29	10.90	12.29	14.66	19.84	Pass	
	U-NII-3	149	5745	SU	17.91	19.34	17.91	19.34	21.69	25.84	Pass	
		157	5785	SU	18.18	19.36	18.18	19.36	21.82	25.84	Pass	
165		5825	SU	17.49	18.41	17.49	18.41	20.98	25.84	Pass		
IEEE 802.11ax-HE40	U-NII-1	38	5190	SU	8.70	8.71	8.70	8.71	11.72	25.84	Pass	
		46	5230	SU	8.53	8.96	8.53	8.96	11.76	25.84	Pass	
	U-NII-2A	54	5270	SU	7.60	8.20	7.60	8.20	10.92	19.84	Pass	
		62	5310	SU	8.55	9.38	8.55	9.38	12.00	19.84	Pass	
	U-NII-2C	102	5510	SU	11.00	11.47	11.00	11.47	14.25	19.84	Pass	
		110	5550	SU	10.00	10.80	10.00	10.80	13.43	19.84	Pass	
		134	5670	SU	10.90	12.16	10.90	12.16	14.59	19.84	Pass	
	U-NII-3	142	5710	SU	10.82	12.21	10.82	12.21	14.58	19.84	Pass	
151		5755	SU	18.11	19.72	18.11	19.72	22.00	25.84	Pass		
IEEE 802.11ax-HE80	U-NII-1	42	5210	SU	9.81	9.44	9.81	9.44	12.64	25.84	Pass	
		58	5290	SU	11.02	11.32	11.02	11.32	14.18	19.84	Pass	
	U-NII-2C	106	5530	SU	7.07	7.96	7.07	7.96	10.55	19.84	Pass	
		138	5690	SU	7.81	9.19	7.81	9.19	11.56	19.84	Pass	
	U-NII-3	155	5775	SU	17.21	18.41	17.21	18.41	20.86	25.84	Pass	
	IEEE 802.11ax-HE160	U-NII-1	50	5250	SU	8.08	8.55	8.08	8.55	11.33	25.84	Pass
		U-NII-2C	114	5570	SU	7.11	8.28	7.11	8.28	10.74	19.84	Pass

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EIRP

Mode	Band	Channel	Freq. (MHz)	CONDUCTED AVG POWER					Elevation angle above 30 degrees Gain(dBi)			EIRP			Limit (dBm)	Result
				Meas Value (dBm)		Corr'd Value (dBm)			Ant. 0	Ant. 1	Sum	Ant. 0 (dBm)	Ant. 1 (dBm)	Total (dBm)		
				Ant. 0	Ant. 1	Ant. 0	Ant. 1	Total								
IEEE 802.11a	U-NII-1	36	5180	17.03	17.26	17.47	17.70	N/A	2.3	0.8	4.62	19.77	18.50	N/A	21	Pass
		44	5220	17.15	17.94	17.59	18.38	N/A	2.3	0.8	4.62	19.89	19.18	N/A	21	Pass
		48	5240	16.00	17.21	16.44	17.65	N/A	2.3	0.8	4.62	18.74	18.45	N/A	21	Pass
IEEE 802.11n-HT20	U-NII-1	36	5180	13.45	12.94	13.45	12.94	16.21	2.3	0.8	4.62	15.75	13.74	20.83	21	Pass
		44	5220	13.65	12.96	13.65	12.96	16.33	2.3	0.8	4.62	15.95	13.76	20.95	21	Pass
		48	5240	12.74	12.85	12.74	12.85	15.81	2.3	0.8	4.62	15.04	13.65	20.43	21	Pass
IEEE 802.11n-HT40	U-NII-1	38	5190	9.10	9.02	9.10	9.02	12.07	2.3	0.8	4.62	11.40	9.82	16.69	21	Pass
		46	5230	8.93	9.28	8.93	9.28	12.12	2.3	0.8	4.62	11.23	10.08	16.74	21	Pass
IEEE 802.11ac-VHT20	U-NII-1	36	5180	13.51	12.94	13.51	12.94	16.24	2.3	0.8	4.62	15.81	13.74	20.86	21	Pass
		44	5220	13.41	13.22	13.41	13.22	16.33	2.3	0.8	4.62	15.71	14.02	20.95	21	Pass
		48	5240	12.77	12.89	12.77	12.89	15.84	2.3	0.8	4.62	15.07	13.69	20.46	21	Pass
IEEE 802.11ac-VHT40	U-NII-1	38	5190	9.00	8.97	9.00	8.97	12.00	2.3	0.8	4.62	11.30	9.77	16.62	21	Pass
		46	5230	8.82	9.23	8.82	9.23	12.04	2.3	0.8	4.62	11.12	10.03	16.66	21	Pass
IEEE 802.11ac-VHT80	U-NII-1	42	5210	9.88	9.49	9.88	9.49	12.70	2.3	0.8	4.62	12.18	10.29	17.32	21	Pass
IEEE 802.11ac-VHT160	U-NII-1	50	5250	8.84	9.45	8.84	9.45	12.17	2.3	0.8	4.62	11.14	10.25	16.79	21	Pass

Mode	Band	Channel	Freq. (MHz)	RU & Index	CONDUCTED AVG POWER					Elevation angle above 30 degrees Gain(dBi)			EIRP			Limit (dBm)	Result
					Meas Value (dBm)		Corr'd Value (dBm)			Ant. 0	Ant. 1	Sum	Ant. 0 (dBm)	Ant. 1 (dBm)	Total (dBm)		
					Ant. 0	Ant. 1	Ant. 0	Ant. 1	Total								
IEEE 802.11ax-HE20	U-NII-1	36	5180	SU	13.57	13.03	13.57	13.03	16.32	2.3	0.8	4.62	15.87	13.83	20.94	21	Pass
		44	5220	SU	13.38	13.21	13.38	13.21	16.31	2.3	0.8	4.62	15.68	14.01	20.93	21	Pass
		48	5240	SU	12.83	13.10	12.83	13.10	15.98	2.3	0.8	4.62	15.13	13.90	20.6	21	Pass
IEEE 802.11ax-HE40	U-NII-1	38	5190	SU	8.70	8.71	8.70	8.71	11.72	2.3	0.8	4.62	11.00	9.51	16.34	21	Pass
		46	5230	SU	8.53	8.96	8.53	8.96	11.76	2.3	0.8	4.62	10.83	9.76	16.38	21	Pass

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IEEE 802.11ax-HE80	U-NII-1	42	5210	SU	9.81	9.44	9.81	9.44	12.64	2.3	0.8	4.62	12.11	10.24	17.26	21	Pass
IEEE 802.11ax-HE160	U-NII-1	50	5250	SU	8.08	8.55	8.08	8.55	11.33	2.3	0.8	4.62	10.38	9.35	15.95	21	Pass

TPC Function:

Mode	Band	Channel	Freq. (MHz)	CONDUCTED AVG POWER					Effective Isotropic Radiated Power					Limit (dBm)	Result
				Meas Value (dBm)		Corr'd Value (dBm)			EIRP (dBm)						
				Ant. 0	Ant. 1	Ant. 0	Ant. 1	Total	Ant. 0	Ant. 1	Total				
IEEE 802.11a	U-NII-2A	52	5260	8.75	10.22	9.19	10.66	N/A	16.35	17.80	N/A	24	Pass		
		60	5300	10.38	11.65	10.82	12.09	N/A	17.98	19.23	N/A	24	Pass		
		64	5320	10.74	11.90	11.18	12.34	N/A	18.34	19.48	N/A	24	Pass		
	U-NII-2C	100	5500	10.38	9.54	10.82	9.98	N/A	17.98	17.12	N/A	24	Pass		
		116	5580	8.24	8.15	8.68	8.59	N/A	15.84	15.73	N/A	24	Pass		
		140	5700	9.58	9.76	10.02	10.20	N/A	17.18	17.34	N/A	24	Pass		
		144	5720	9.27	9.49	9.71	9.93	N/A	16.87	17.07	N/A	24	Pass		
IEEE 802.11n-HT20	U-NII-2A	52	5260	6.84	7.15	6.84	7.15	10.01	14.00	14.29	20.17	24	Pass		
		60	5300	7.27	7.55	7.27	7.55	10.42	14.43	14.69	20.58	24	Pass		
		64	5320	7.45	7.85	7.45	7.85	10.66	14.61	14.99	20.82	24	Pass		
	U-NII-2C	100	5500	6.25	6.56	6.25	6.56	9.42	13.41	13.70	19.58	24	Pass		
		116	5580	4.00	5.13	4.00	5.13	7.61	11.16	12.27	17.77	24	Pass		
		140	5700	5.43	6.48	5.43	6.48	9.00	12.59	13.62	19.16	24	Pass		
		144	5720	5.00	6.10	5.00	6.10	8.60	12.16	13.24	18.76	24	Pass		
IEEE 802.11n-HT40	U-NII-2A	54	5270	1.25	2.18	1.25	2.18	4.75	8.41	9.32	14.91	24	Pass		
		62	5310	2.89	3.38	2.89	3.38	6.15	10.05	10.52	16.31	24	Pass		
	U-NII-2C	102	5510	4.15	4.71	4.15	4.71	7.45	11.31	11.85	17.61	24	Pass		
		110	5550	3.11	3.99	3.11	3.99	6.58	10.27	11.13	16.74	24	Pass		
		134	5670	4.13	5.55	4.13	5.55	7.91	11.29	12.69	18.07	24	Pass		
		142	5710	4.15	5.51	4.15	5.51	7.89	11.31	12.65	18.05	24	Pass		
IEEE 802.11ac-VHT20	U-NII-2A	52	5260	6.78	6.74	6.78	6.74	9.77	13.94	13.88	19.93	24	Pass		
		60	5300	7.25	7.55	7.25	7.55	10.41	14.41	14.69	20.57	24	Pass		
		64	5320	7.42	7.51	7.42	7.51	10.48	14.58	14.65	20.64	24	Pass		
	U-NII-2C	100	5500	5.70	6.05	5.70	6.05	8.89	12.86	13.19	19.05	24	Pass		
		116	5580	3.99	5.13	3.99	5.13	7.61	11.15	12.27	17.77	24	Pass		
		140	5700	5.45	6.40	5.45	6.40	8.96	12.61	13.54	19.12	24	Pass		
		144	5720	5.03	6.12	5.03	6.12	8.62	12.19	13.26	18.78	24	Pass		
IEEE 802.11ac-VHT40	U-NII-2A	54	5270	0.78	1.75	0.78	1.75	4.30	7.94	8.89	14.46	24	Pass		

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	U-NII-2C	62	5310	2.55	3.30	2.55	3.30	5.95	9.71	10.44	16.11	24	Pass
		102	5510	4.10	4.60	4.10	4.60	7.37	11.26	11.74	17.53	24	Pass
		110	5550	3.05	3.40	3.05	3.40	6.24	10.21	10.54	16.40	24	Pass
		134	5670	4.00	5.49	4.00	5.49	7.82	11.16	12.63	17.98	24	Pass
		142	5710	3.92	5.55	3.92	5.55	7.82	11.08	12.69	17.98	24	Pass
IEEE 802.11ac-VHT80	U-NII-2A	58	5290	2.90	3.11	2.90	3.11	6.02	10.06	10.25	16.18	24	Pass
	U-NII-2C	106	5530	4.00	4.62	4.00	4.62	7.33	11.16	11.76	17.49	24	Pass
		138	5690	4.78	5.84	4.78	5.84	8.35	11.94	12.98	18.51	24	Pass
IEEE 802.11ac-VHT160	U-NII-2A	50	5250	4.83	5.06	4.83	5.06	7.96	11.99	12.20	18.12	24	Pass
	U-NII-2C	114	5570	3.78	4.85	3.78	4.85	7.36	10.94	11.99	17.52	24	Pass

Mode	Band	Channel	Freq. (MHz)	RU & Index	CONDUCTED AVG POWER					Effective Isotropic Radiated Power			Limit (dBm)	Result
					Meas Value (dBm)		Corr'd Value (dBm)			EIRP (dBm)				
					Ant. 0	Ant. 1	Ant. 0	Ant. 1	Total	Ant. 0	Ant. 1	Total		
IEEE 802.11ax-HE20	U-NII-2A	52	5260	SU	5.78	6.38	5.78	6.38	9.10	12.94	13.52	19.26	24	Pass
		60	5300	SU	7.35	7.20	7.35	7.20	10.29	14.51	14.34	20.45	24	Pass
		64	5320	SU	7.57	7.68	7.57	7.68	10.64	14.73	14.82	20.80	24	Pass
	U-NII-2C	100	5500	SU	5.85	6.18	5.85	6.18	9.03	13.01	13.32	19.19	24	Pass
		116	5580	SU	3.66	4.82	3.66	4.82	7.29	10.82	11.96	17.45	24	Pass
		140	5700	SU	5.15	6.45	5.15	6.45	8.86	12.31	13.59	19.02	24	Pass
		144	5720	SU	4.66	6.24	4.66	6.24	8.53	11.82	13.38	18.69	24	Pass
IEEE 802.11ax-HE40	U-NII-2A	54	5270	SU	0.78	1.70	0.78	1.70	4.27	7.94	8.84	14.43	24	Pass
		62	5310	SU	2.45	3.15	2.45	3.15	5.82	9.61	10.29	15.98	24	Pass
	U-NII-2C	102	5510	SU	4.85	5.45	4.85	5.45	8.17	12.01	12.59	18.33	24	Pass
		110	5550	SU	3.80	4.79	3.80	4.79	7.33	10.96	11.93	17.49	24	Pass
		134	5670	SU	4.83	5.81	4.83	5.81	8.36	11.99	12.95	18.52	24	Pass
		142	5710	SU	4.69	5.80	4.69	5.80	8.29	11.85	12.94	18.45	24	Pass
IEEE 802.11ax-HE80	U-NII-2A	58	5290	SU	4.92	5.31	4.92	5.31	8.13	12.08	12.45	18.29	24	Pass
	U-NII-2C	106	5530	SU	0.85	1.33	0.85	1.33	4.11	8.01	8.47	14.27	24	Pass
		138	5690	SU	1.75	2.49	1.75	2.49	5.15	8.91	9.63	15.31	24	Pass
IEEE 802.11ax-HE160	U-NII-2A	50	5250	SU	4.88	4.96	4.88	4.96	7.93	12.04	12.10	18.09	24	Pass
	U-NII-2C	114	5570	SU	3.80	4.88	3.80	4.88	7.38	10.96	12.02	17.54	24	Pass

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5.6 PEAK POWER SPECTRAL DENSITY

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

Test Method: KDB 789033 D02 v02r01 Section F

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.

Test Procedure:

The output from the transmitter was connected to an attenuator and then to the input of the RF Spectrum Analyzer.

Spectrum analyzer according to the following Settings:

1. For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-2

- a) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- b) Set RBW = 1 MHz, Set VBW ≥ 3 RBW, Detector = RMS
- c) Sweep time = auto, trigger set to “free run”.
- d) Trace average at least 100 traces in power averaging mode.
- e) Record the max value and add 10 log (1/duty cycle)

2. For U-NII-3 band:

- a) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- b) Set RBW = 500 kHz, Set VBW ≥ 3 RBW, Detector = RMS
- c) Use the peak marker function to determine the maximum power level in any 500 kHz band segment within the fundamental EBW.
- d) Sweep time = auto, trigger set to “free run”.
- e) Trace average at least 100 traces in power averaging mode.
- f) Record the max value and add 10 log (1/duty cycle)

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: Please refer to Appendix A

Directional gain and the maximum power spectral density limit.

Frequency (MHz)	Antenna Gain (dBi)		Directional gain (dBi)		Limit	
	Ant .0	Ant .1	Power	PSD	Power (dBm)	PSD (dBm/MHz or dBm/500kHz)
U-NII-1	7.16	7.14	10.16	10.16	25.84	12.84
U-NII-2A	7.16	7.14	10.16	10.16	19.84	6.84
U-NII-2C	7.16	7.14	10.16	10.16	19.84	6.84
U-NII-3	7.16	7.14	10.16	10.16	25.84	25.84

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

If transmit signals are correlated, then

Directional gain = 10 log₁₀[(10^{G1} /20 + 10^{G2} /20 + ... + 10^{GN} /20)² /NANT] 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.]

5.7 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 (dBuV/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.	

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Test Setup: Refer to section 4.5.1 for details.

Test Procedures:

1. 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.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. 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.
4. 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.
5. 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.
6. 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:

- a) The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
- b) 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.
- c) 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 ($10 \log(1/\text{duty cycle})$).
- d) The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz (Duty cycle $\geq 98 \%$) or $\geq 1/T$ (duty cycle is < 98%) for Average detection (AV) at frequency above 1 GHz.
- e) All modes of operation were investigated and the worst-case emissions are reported.

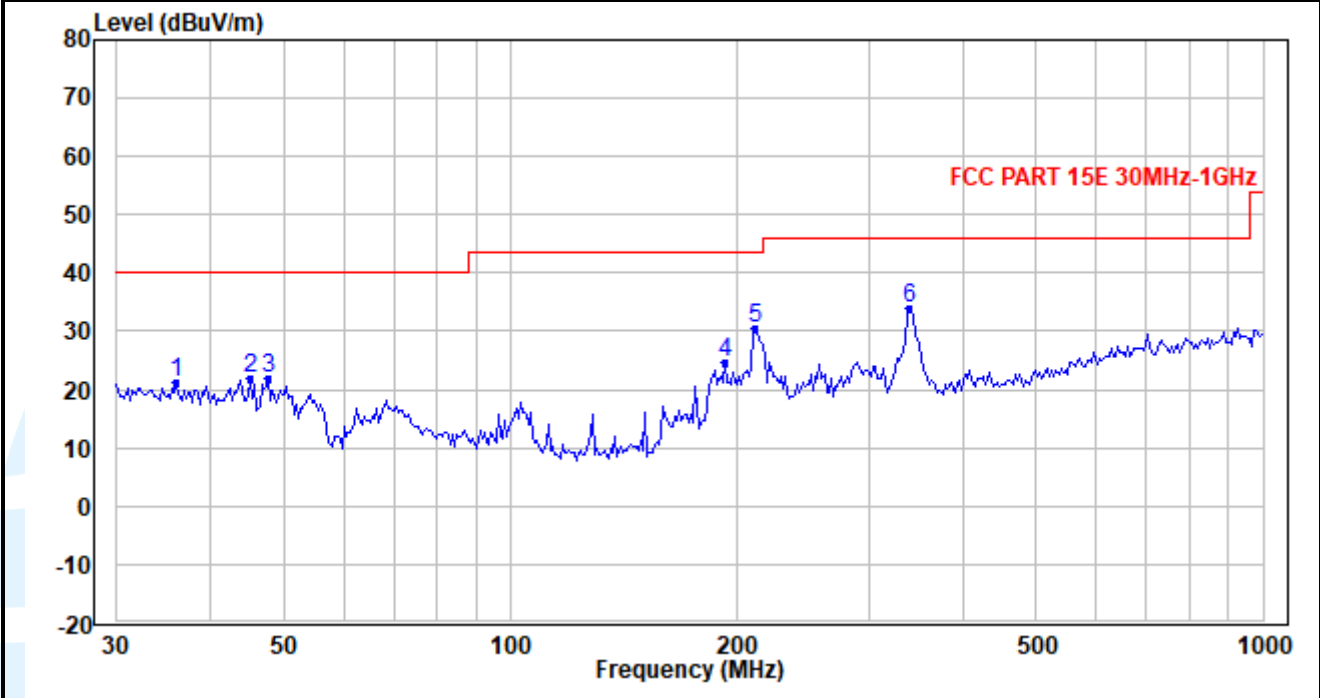
Equipment Used: Refer to section 3 for details.

Test Result: Pass

The measurement data as follows:

Radiated Emission Test Data (9 KHz ~ 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 (dBuV)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	36.014	26.97	-5.67	21.30	40.00	-18.70	QP
2	45.095	33.54	-11.47	22.07	40.00	-17.93	QP
3	47.703	35.02	-13.26	21.76	40.00	-18.24	QP
4	193.137	35.12	-10.47	24.65	43.50	-18.85	QP
5	211.611	41.17	-10.72	30.45	43.50	-13.05	QP
6	338.855	38.67	-4.68	33.99	46.00	-12.01	QP

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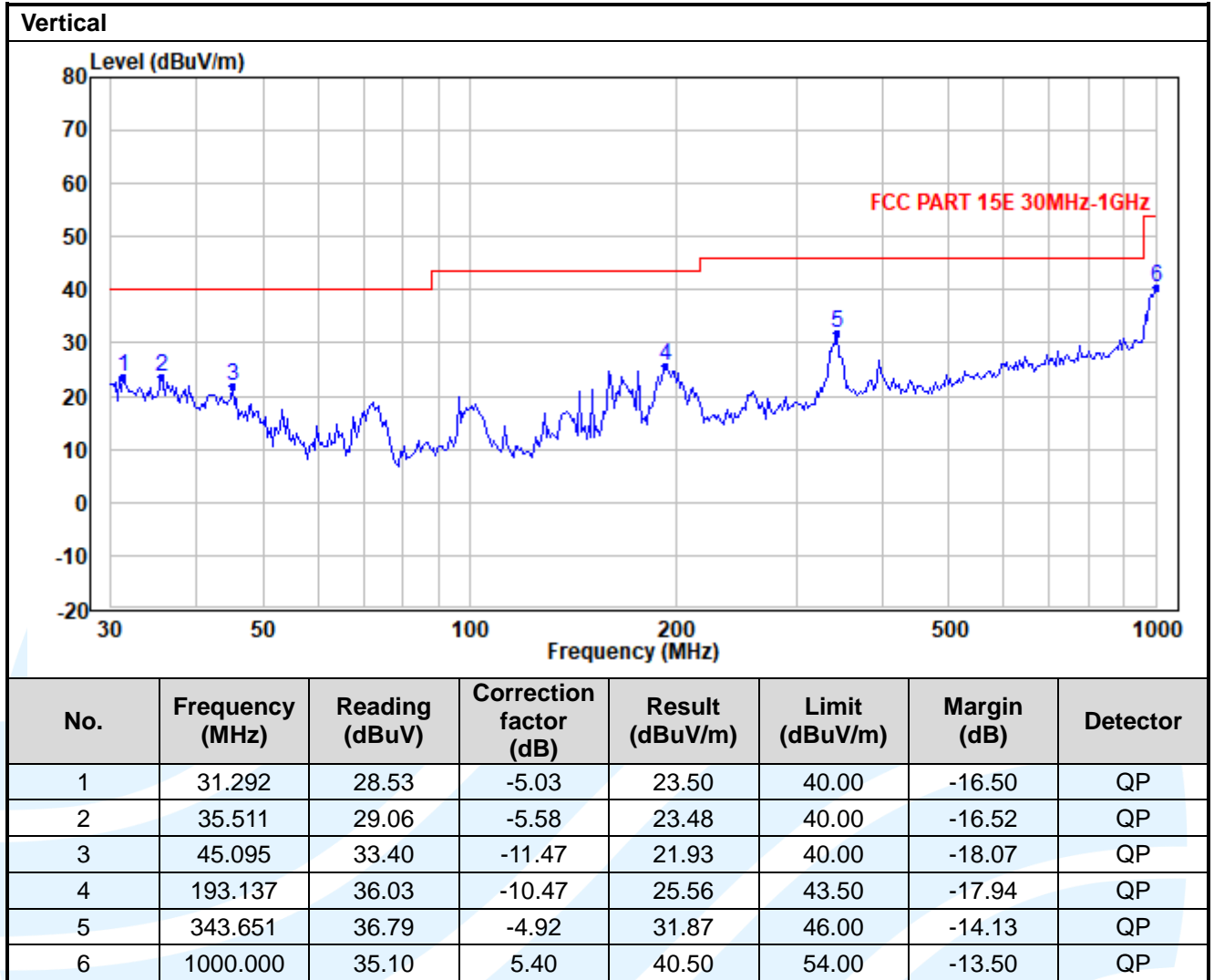
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Radiated Emission Test Data (Above 1GHz):								
No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
SISO_Ant. 0_IEEE 802.11a_Channel 36								
1	10360.00	37.80	7.19	44.99	68.2	-23.21	Peak	Horizontal
2	10360.00	25.28	7.19	32.47	54	-21.53	Average	Horizontal
3	15540.00	34.48	11.93	46.41	74	-27.59	Peak	Horizontal
4	15540.00	23.61	11.93	35.54	54	-18.46	Average	Horizontal
5	10360.00	36.49	7.19	43.68	68.2	-24.52	Peak	Vertical
6	10360.00	25.28	7.19	32.47	54	-21.53	Average	Vertical
7	15540.00	35.11	11.93	47.04	74	-26.96	Peak	Vertical
8	15540.00	23.80	11.93	35.73	54	-18.27	Average	Vertical
SISO_Ant. 0_IEEE 802.11a_Channel 44								
1	10440.00	39.74	7.23	46.97	68.2	-21.23	Peak	Horizontal
2	10440.00	26.84	7.23	34.07	54	-19.93	Average	Horizontal
3	15660.00	35.33	11.94	47.27	74	-26.73	Peak	Horizontal
4	15660.00	24.09	11.94	36.03	54	-17.97	Average	Horizontal
5	10440.00	38.78	7.23	46.01	68.2	-22.19	Peak	Vertical
6	10440.00	26.97	7.23	34.20	54	-19.80	Average	Vertical
7	15660.00	35.62	11.94	47.56	74	-26.44	Peak	Vertical
8	15660.00	24.09	11.94	36.03	54	-17.97	Average	Vertical
SISO_Ant. 0_IEEE 802.11a_Channel 48								
1	10480.00	38.18	7.24	45.42	68.2	-22.78	Peak	Horizontal
2	10480.00	25.81	7.24	33.05	54	-20.95	Average	Horizontal
3	15720.00	34.79	11.96	46.75	74	-27.25	Peak	Horizontal
4	15720.00	23.82	11.96	35.78	54	-18.22	Average	Horizontal
5	10480.00	36.77	7.24	44.01	68.2	-24.19	Peak	Vertical
6	10480.00	25.66	7.24	32.90	54	-21.10	Average	Vertical
7	15720.00	34.95	11.96	46.91	74	-27.09	Peak	Vertical
8	15720.00	23.63	11.96	35.59	54	-18.41	Average	Vertical
SISO_Ant. 0_IEEE 802.11a_Channel 52								
1	10520.00	37.50	7.29	44.79	68.2	-23.41	Peak	Horizontal
2	10520.00	25.53	7.29	32.82	54	-21.18	Average	Horizontal
3	15780.00	35.70	11.98	47.68	74	-26.32	Peak	Horizontal
4	15780.00	23.61	11.98	35.59	54	-18.41	Average	Horizontal
5	10520.00	37.13	7.29	44.42	68.2	-23.78	Peak	Vertical
6	10520.00	25.76	7.29	33.05	54	-20.95	Average	Vertical
7	15780.00	36.42	11.98	48.40	74	-25.60	Peak	Vertical
8	15780.00	23.41	11.98	35.39	54	-18.61	Average	Vertical

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No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
SISO_Ant. 0_IEEE 802.11a_Channel 60								
1	10600.00	37.37	7.44	44.81	74	-29.19	Peak	Horizontal
2	10600.00	25.07	7.44	32.51	54	-21.49	Average	Horizontal
3	15900.00	34.91	12.01	46.92	74	-27.08	Peak	Horizontal
4	15900.00	22.93	12.01	34.94	54	-19.06	Average	Horizontal
5	10600.00	38.57	7.44	46.01	74	-27.99	Peak	Vertical
6	10600.00	26.00	7.44	33.44	54	-20.56	Average	Vertical
7	15900.00	34.84	12.01	46.85	74	-27.15	Peak	Vertical
8	15900.00	22.93	12.01	34.94	54	-19.06	Average	Vertical
SISO_Ant. 0_IEEE 802.11a_Channel 64								
1	10640.00	35.98	7.52	43.50	74	-30.50	Peak	Horizontal
2	10640.00	24.99	7.52	32.51	54	-21.49	Average	Horizontal
3	15960.00	33.07	12.01	45.08	74	-28.92	Peak	Horizontal
4	15960.00	22.82	12.01	34.83	54	-19.17	Average	Horizontal
5	10640.00	36.87	7.52	44.39	74	-29.61	Peak	Vertical
6	10640.00	25.31	7.52	32.83	54	-21.17	Average	Vertical
7	15960.00	33.84	12.01	45.85	74	-28.15	Peak	Vertical
8	15960.00	23.83	12.01	35.84	54	-18.16	Average	Vertical
SISO_Ant. 0_IEEE 802.11a_Channel 100								
1	11000.00	40.11	8.22	48.33	74	-25.67	Peak	Horizontal
2	11000.00	26.16	8.22	34.38	54	-19.62	Average	Horizontal
3	16500.00	35.12	12.75	47.87	68.2	-20.33	Peak	Horizontal
4	16500.00	23.23	12.75	35.98	54	-18.02	Average	Horizontal
5	11000.00	38.38	8.22	46.60	74	-27.40	Peak	Vertical
6	11000.00	26.09	8.22	34.31	54	-19.69	Average	Vertical
7	16500.00	35.90	12.75	48.65	68.2	-19.55	Peak	Vertical
8	16500.00	23.13	12.75	35.88	54	-18.12	Average	Vertical
SISO_Ant. 0_IEEE 802.11a_Channel 116								
1	11160.00	37.41	8.05	45.46	74	-28.54	Peak	Horizontal
2	11160.00	25.60	8.05	33.65	54	-20.35	Average	Horizontal
3	16740.00	34.49	12.86	47.35	68.2	-20.85	Peak	Horizontal
4	16740.00	22.69	12.86	35.55	54	-18.45	Average	Horizontal
5	11160.00	36.91	8.05	44.96	74	-29.04	Peak	Vertical
6	11160.00	25.45	8.05	33.50	54	-20.50	Average	Vertical
7	16740.00	33.36	12.86	46.22	68.2	-21.98	Peak	Vertical
8	16740.00	22.59	12.86	35.45	54	-18.55	Average	Vertical

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No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
SISO_Ant. 0_IEEE 802.11a_Channel 140								
1	11400.00	35.18	7.79	42.97	74	-31.03	Peak	Horizontal
2	11400.00	24.36	7.79	32.15	54	-21.85	Average	Horizontal
3	17100.00	33.55	13.26	46.81	68.2	-21.39	Peak	Horizontal
4	17100.00	22.78	13.26	36.04	54	-17.96	Average	Horizontal
5	11400.00	40.64	7.79	48.43	74	-25.57	Peak	Vertical
6	11400.00	25.74	7.79	33.53	54	-20.47	Average	Vertical
7	17100.00	34.42	13.26	47.68	68.2	-20.52	Peak	Vertical
8	17100.00	22.67	13.26	35.93	54	-18.07	Average	Vertical
SISO_Ant. 0_IEEE 802.11a_Channel 144								
1	11440.00	37.30	7.75	45.05	74	-28.95	Peak	Horizontal
2	11440.00	24.67	7.75	32.42	54	-21.58	Average	Horizontal
3	17160.00	35.03	13.43	48.46	68.2	-19.74	Peak	Horizontal
4	17160.00	22.78	13.43	36.21	54	-17.79	Average	Horizontal
5	11440.00	36.96	7.75	44.71	74	-29.29	Peak	Vertical
6	11440.00	25.00	7.75	32.75	54	-21.25	Average	Vertical
7	17160.00	33.17	13.43	46.60	68.2	-21.60	Peak	Vertical
8	17160.00	22.78	13.43	36.21	54	-17.79	Average	Vertical
SISO_Ant. 0_IEEE 802.11a_Channel 149								
1	11490.00	34.53	7.70	42.23	74	-31.77	Peak	Horizontal
2	11490.00	22.52	7.70	30.22	54	-23.78	Average	Horizontal
3	17235.00	33.23	13.65	46.88	68.2	-21.32	Peak	Horizontal
4	17235.00	22.41	13.65	36.06	54	-17.94	Average	Horizontal
5	11490.00	35.48	7.70	43.18	74	-30.82	Peak	Vertical
6	11490.00	22.94	7.70	30.64	54	-23.36	Average	Vertical
7	17235.00	34.23	13.65	47.88	68.2	-20.32	Peak	Vertical
8	17235.00	22.30	13.65	35.95	54	-18.05	Average	Vertical
SISO_Ant. 0_IEEE 802.11a_Channel 157								
1	11570.00	36.09	7.79	43.88	74	-30.12	Peak	Horizontal
2	11570.00	24.81	7.79	32.60	54	-21.40	Average	Horizontal
3	17355.00	34.07	13.98	48.05	68.2	-20.15	Peak	Horizontal
4	17355.00	22.69	13.98	36.67	54	-17.33	Average	Horizontal
5	11570.00	38.18	7.79	45.97	74	-28.03	Peak	Vertical
6	11570.00	25.30	7.79	33.09	54	-20.91	Average	Vertical
7	17355.00	33.31	13.98	47.29	68.2	-20.91	Peak	Vertical
8	17355.00	22.69	13.98	36.67	54	-17.33	Average	Vertical

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SISO_Ant. 0_IEEE 802.11a_Channel 165								
1	11650.00	37.20	7.91	45.11	74	-28.89	Peak	Horizontal
2	11650.00	25.59	7.91	33.50	54	-20.50	Average	Horizontal
3	17475.00	34.18	14.32	48.50	68.2	-19.70	Peak	Horizontal
4	17475.00	22.20	14.32	36.52	54	-17.48	Average	Horizontal
5	11650.00	39.93	7.91	47.84	74	-26.16	Peak	Vertical
6	11650.00	25.96	7.91	33.87	54	-20.13	Average	Vertical
7	17475.00	32.46	14.32	46.78	68.2	-21.42	Peak	Vertical
8	17475.00	22.09	14.32	36.41	54	-17.59	Average	Vertical
SISO_Ant. 1_IEEE 802.11a_Channel 36								
1	10360.00	37.63	7.19	44.82	68.2	-23.38	Peak	Horizontal
2	10360.00	24.87	7.19	32.06	54	-21.94	Average	Horizontal
3	15540.00	35.70	11.93	47.63	74	-26.37	Peak	Horizontal
4	15540.00	23.52	11.93	35.45	54	-18.55	Average	Horizontal
5	10360.00	38.75	7.19	45.94	68.2	-22.26	Peak	Vertical
6	10360.00	25.35	7.19	32.54	54	-21.46	Average	Vertical
7	15540.00	35.11	11.93	47.04	74	-26.96	Peak	Vertical
8	15540.00	23.61	11.93	35.54	54	-18.46	Average	Vertical
SISO_Ant. 1_IEEE 802.11a_Channel 44								
1	10440.00	38.98	7.23	46.21	68.2	-21.99	Peak	Horizontal
2	10440.00	26.71	7.23	33.94	54	-20.06	Average	Horizontal
3	15660.00	36.18	11.94	48.12	74	-25.88	Peak	Horizontal
4	15660.00	23.91	11.94	35.85	54	-18.15	Average	Horizontal
5	10440.00	42.27	7.23	49.50	68.2	-18.70	Peak	Vertical
6	10440.00	26.97	7.23	34.20	54	-19.80	Average	Vertical
7	15660.00	35.47	11.94	47.41	74	-26.59	Peak	Vertical
8	15660.00	23.72	11.94	35.66	54	-18.34	Average	Vertical
SISO_Ant. 1_IEEE 802.11a_Channel 48								
1	10480.00	37.47	7.24	44.71	68.2	-23.49	Peak	Horizontal
2	10480.00	25.51	7.24	32.75	54	-21.25	Average	Horizontal
3	15720.00	35.43	11.96	47.39	74	-26.61	Peak	Horizontal
4	15720.00	23.43	11.96	35.39	54	-18.61	Average	Horizontal
5	10480.00	38.29	7.24	45.53	68.2	-22.67	Peak	Vertical
6	10480.00	25.51	7.24	32.75	54	-21.25	Average	Vertical
7	15720.00	35.28	11.96	47.24	74	-26.76	Peak	Vertical
8	15720.00	23.43	11.96	35.39	54	-18.61	Average	Vertical

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SISO_Ant. 1_IEEE 802.11a_Channel 52								
1	10520.00	37.69	7.29	44.98	68.2	-23.22	Peak	Horizontal
2	10520.00	25.46	7.29	32.75	54	-21.25	Average	Horizontal
3	15780.00	35.36	11.98	47.34	74	-26.66	Peak	Horizontal
4	15780.00	23.41	11.98	35.39	54	-18.61	Average	Horizontal
5	10520.00	35.95	7.29	43.24	68.2	-24.96	Peak	Vertical
6	10520.00	25.53	7.29	32.82	54	-21.18	Average	Vertical
7	15780.00	34.80	11.98	46.78	74	-27.22	Peak	Vertical
8	15780.00	23.41	11.98	35.39	54	-18.61	Average	Vertical
SISO_Ant. 1_IEEE 802.11a_Channel 60								
1	10600.00	38.90	7.44	46.34	74	-27.66	Peak	Horizontal
2	10600.00	25.31	7.44	32.75	54	-21.25	Average	Horizontal
3	15900.00	34.60	12.01	46.61	74	-27.39	Peak	Horizontal
4	15900.00	22.72	12.01	34.73	54	-19.27	Average	Horizontal
5	10600.00	36.61	7.44	44.05	74	-29.95	Peak	Vertical
6	10600.00	25.07	7.44	32.51	54	-21.49	Average	Vertical
7	15900.00	34.68	12.01	46.69	74	-27.31	Peak	Vertical
8	15900.00	22.82	12.01	34.83	54	-19.17	Average	Vertical
SISO_Ant. 1_IEEE 802.11a_Channel 64								
1	10640.00	40.96	7.52	48.48	74	-25.52	Peak	Horizontal
2	10640.00	25.47	7.52	32.99	54	-21.01	Average	Horizontal
3	15960.00	35.07	12.01	47.08	74	-26.92	Peak	Horizontal
4	15960.00	22.82	12.01	34.83	54	-19.17	Average	Horizontal
5	10640.00	36.23	7.52	43.75	74	-30.25	Peak	Vertical
6	10640.00	24.99	7.52	32.51	54	-21.49	Average	Vertical
7	15960.00	35.22	12.01	47.23	74	-26.77	Peak	Vertical
8	15960.00	22.82	12.01	34.83	54	-19.17	Average	Vertical
SISO_Ant. 1_IEEE 802.11a_Channel 100								
1	11000.00	36.73	8.22	44.95	74	-29.05	Peak	Horizontal
2	11000.00	25.49	8.22	33.71	54	-20.29	Average	Horizontal
3	16500.00	34.21	12.75	46.96	68.2	-21.24	Peak	Horizontal
4	16500.00	22.82	12.75	35.57	54	-18.43	Average	Horizontal
5	11000.00	41.47	8.22	49.69	74	-24.31	Peak	Vertical
6	11000.00	26.51	8.22	34.73	54	-19.27	Average	Vertical
7	16500.00	34.27	12.75	47.02	68.2	-21.18	Peak	Vertical
8	16500.00	23.03	12.75	35.78	54	-18.22	Average	Vertical

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No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
SISO_Ant. 1_IEEE 802.11a_Channel 140								
1	11400.00	37.59	7.79	45.38	74	-28.62	Peak	Horizontal
2	11400.00	24.36	7.79	32.15	54	-21.85	Average	Horizontal
3	17100.00	35.50	13.26	48.76	68.2	-19.44	Peak	Horizontal
4	17100.00	22.78	13.26	36.04	54	-17.96	Average	Horizontal
5	11400.00	34.92	7.79	42.71	74	-31.29	Peak	Vertical
6	11400.00	24.27	7.79	32.06	54	-21.94	Average	Vertical
7	17100.00	33.40	13.26	46.66	68.2	-21.54	Peak	Vertical
8	17100.00	22.67	13.26	35.93	54	-18.07	Average	Vertical
SISO_Ant. 1_IEEE 802.11a_Channel 144								
1	11440.00	36.59	7.75	44.34	74	-29.66	Peak	Horizontal
2	11440.00	24.67	7.75	32.42	54	-21.58	Average	Horizontal
3	17160.00	35.03	13.43	48.46	68.2	-19.74	Peak	Horizontal
4	17160.00	22.68	13.43	36.11	54	-17.89	Average	Horizontal
5	11440.00	37.71	7.75	45.46	74	-28.54	Peak	Vertical
6	11440.00	24.76	7.75	32.51	54	-21.49	Average	Vertical
7	17160.00	34.25	13.43	47.68	68.2	-20.52	Peak	Vertical
8	17160.00	22.68	13.43	36.11	54	-17.89	Average	Vertical
SISO_Ant. 1_IEEE 802.11a_Channel 149								
1	11490.00	33.97	7.70	41.67	74	-32.33	Peak	Horizontal
2	11490.00	22.62	7.70	30.32	54	-23.68	Average	Horizontal
3	17235.00	33.64	13.65	47.29	68.2	-20.91	Peak	Horizontal
4	17235.00	22.19	13.65	35.84	54	-18.16	Average	Horizontal
5	11490.00	33.88	7.70	41.58	74	-32.42	Peak	Vertical
6	11490.00	22.62	7.70	30.32	54	-23.68	Average	Vertical
7	17235.00	35.60	13.65	49.25	68.2	-18.95	Peak	Vertical
8	17235.00	22.30	13.65	35.95	54	-18.05	Average	Vertical
SISO_Ant. 1_IEEE 802.11a_Channel 157								
1	11570.00	35.64	7.79	43.43	74	-30.57	Peak	Horizontal
2	11570.00	24.55	7.79	32.34	54	-21.66	Average	Horizontal
3	17355.00	33.47	13.98	47.45	68.2	-20.75	Peak	Horizontal
4	17355.00	22.69	13.98	36.67	54	-17.33	Average	Horizontal
5	11570.00	36.40	7.79	44.19	74	-29.81	Peak	Vertical
6	11570.00	25.06	7.79	32.85	54	-21.15	Average	Vertical
7	17355.00	33.18	13.98	47.16	68.2	-21.04	Peak	Vertical
8	17355.00	22.80	13.98	36.78	54	-17.22	Average	Vertical

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No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
SISO_ Ant. 1_ IEEE 802.11a_ Channel 165								
1	11650.00	38.06	7.91	45.97	74	-28.03	Peak	Horizontal
2	11650.00	25.59	7.91	33.50	54	-20.50	Average	Horizontal
3	17475.00	32.11	14.32	46.43	68.2	-21.77	Peak	Horizontal
4	17475.00	22.09	14.32	36.41	54	-17.59	Average	Horizontal
5	11650.00	37.00	7.91	44.91	74	-29.09	Peak	Vertical
6	11650.00	25.59	7.91	33.50	54	-20.50	Average	Vertical
7	17475.00	34.41	14.32	48.73	68.2	-19.47	Peak	Vertical
8	17475.00	22.20	14.32	36.52	54	-17.48	Average	Vertical

No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11n-HT20_ Channel 36								
1	10360.00	38.13	7.19	45.32	68.2	-22.88	Peak	Horizontal
2	10360.00	25.04	7.19	32.23	54	-21.77	Average	Horizontal
3	15540.00	37.48	11.93	49.41	74	-24.59	Peak	Horizontal
4	15540.00	23.52	11.93	35.45	54	-18.55	Average	Horizontal
5	10360.00	37.85	7.19	45.04	68.2	-23.16	Peak	Vertical
6	10360.00	25.12	7.19	32.31	54	-21.69	Average	Vertical
7	15540.00	35.58	11.93	47.51	74	-26.49	Peak	Vertical
8	15540.00	23.42	11.93	35.35	54	-18.65	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT20_ Channel 44								
1	10440.00	39.41	7.23	46.64	68.2	-21.56	Peak	Horizontal
2	10440.00	26.37	7.23	33.60	54	-20.40	Average	Horizontal
3	15660.00	35.92	11.94	47.86	74	-26.14	Peak	Horizontal
4	15660.00	23.81	11.94	35.75	54	-18.25	Average	Horizontal
5	10440.00	39.96	7.23	47.19	68.2	-21.01	Peak	Vertical
6	10440.00	26.84	7.23	34.07	54	-19.93	Average	Vertical
7	15660.00	35.97	11.94	47.91	74	-26.09	Peak	Vertical
8	15660.00	23.81	11.94	35.75	54	-18.25	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT20_ Channel 48								
1	10480.00	36.62	7.24	43.86	68.2	-24.34	Peak	Horizontal
2	10480.00	25.11	7.24	32.35	54	-21.65	Average	Horizontal
3	15720.00	35.47	11.96	47.43	74	-26.57	Peak	Horizontal
4	15720.00	23.34	11.96	35.30	54	-18.70	Average	Horizontal
5	10480.00	37.63	7.24	44.87	68.2	-23.33	Peak	Vertical
6	10480.00	25.51	7.24	32.75	54	-21.25	Average	Vertical
7	15720.00	37.28	11.96	49.24	74	-24.76	Peak	Vertical
8	15720.00	23.43	11.96	35.39	54	-18.61	Average	Vertical

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No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11n-HT20_Channel 52								
1	10520.00	36.28	7.29	43.57	68.2	-24.63	Peak	Horizontal
2	10520.00	24.90	7.29	32.19	54	-21.81	Average	Horizontal
3	15780.00	35.67	11.98	47.65	74	-26.35	Peak	Horizontal
4	15780.00	23.40	11.98	35.38	54	-18.62	Average	Horizontal
5	10520.00	36.67	7.29	43.96	68.2	-24.24	Peak	Vertical
6	10520.00	25.46	7.29	32.75	54	-21.25	Average	Vertical
7	15780.00	34.03	11.98	46.01	74	-27.99	Peak	Vertical
8	15780.00	23.32	11.98	35.30	54	-18.70	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT20_Channel 60								
1	10600.00	38.34	7.44	45.78	74	-28.22	Peak	Horizontal
2	10600.00	24.74	7.44	32.18	54	-21.82	Average	Horizontal
3	15900.00	35.87	12.01	47.88	74	-26.12	Peak	Horizontal
4	15900.00	22.72	12.01	34.73	54	-19.27	Average	Horizontal
5	10600.00	36.55	7.44	43.99	74	-30.01	Peak	Vertical
6	10600.00	24.99	7.44	32.43	54	-21.57	Average	Vertical
7	15900.00	34.68	12.01	46.69	74	-27.31	Peak	Vertical
8	15900.00	22.72	12.01	34.73	54	-19.27	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT20_Channel 64								
1	10640.00	37.19	7.52	44.71	74	-29.29	Peak	Horizontal
2	10640.00	25.07	7.52	32.59	54	-21.41	Average	Horizontal
3	15960.00	35.15	12.01	47.16	74	-26.84	Peak	Horizontal
4	15960.00	22.82	12.01	34.83	54	-19.17	Average	Horizontal
5	10640.00	36.49	7.52	44.01	74	-29.99	Peak	Vertical
6	10640.00	24.75	7.52	32.27	54	-21.73	Average	Vertical
7	15960.00	33.95	12.01	45.96	74	-28.04	Peak	Vertical
8	15960.00	22.72	12.01	34.73	54	-19.27	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ac-VHT20_Channel 100								
1	11000.00	37.73	8.22	45.95	74	-28.05	Peak	Horizontal
2	11000.00	25.80	8.22	34.02	54	-19.98	Average	Horizontal
3	16500.00	35.92	12.75	48.67	68.2	-19.53	Peak	Horizontal
4	16500.00	23.13	12.75	35.88	54	-18.12	Average	Horizontal
5	11000.00	38.17	8.22	46.39	74	-27.61	Peak	Vertical
6	11000.00	25.94	8.22	34.16	54	-19.84	Average	Vertical
7	16500.00	34.30	12.75	47.05	68.2	-21.15	Peak	Vertical
8	16500.00	23.13	12.75	35.88	54	-18.12	Average	Vertical

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No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11n-HT20_Channel 116								
1	11160.00	37.30	8.05	45.35	74	-28.65	Peak	Horizontal
2	11160.00	25.29	8.05	33.34	54	-20.66	Average	Horizontal
3	16740.00	34.33	12.86	47.19	68.2	-21.01	Peak	Horizontal
4	16740.00	22.69	12.86	35.55	54	-18.45	Average	Horizontal
5	11160.00	36.97	8.05	45.02	74	-28.98	Peak	Vertical
6	11160.00	25.29	8.05	33.34	54	-20.66	Average	Vertical
7	16740.00	34.73	12.86	47.59	68.2	-20.61	Peak	Vertical
8	16740.00	22.69	12.86	35.55	54	-18.45	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT20_Channel 140								
1	11400.00	36.18	7.79	43.97	74	-30.03	Peak	Horizontal
2	11400.00	24.18	7.79	31.97	54	-22.03	Average	Horizontal
3	17100.00	34.34	13.26	47.60	68.2	-20.60	Peak	Horizontal
4	17100.00	22.78	13.26	36.04	54	-17.96	Average	Horizontal
5	11400.00	35.86	7.79	43.65	74	-30.35	Peak	Vertical
6	11400.00	24.09	7.79	31.88	54	-22.12	Average	Vertical
7	17100.00	34.90	13.26	48.16	68.2	-20.04	Peak	Vertical
8	17100.00	22.67	13.26	35.93	54	-18.07	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT20_Channel 144								
1	11440.00	36.01	7.75	43.76	74	-30.24	Peak	Horizontal
2	11440.00	24.67	7.75	32.42	54	-21.58	Average	Horizontal
3	17160.00	34.34	13.43	47.77	68.2	-20.43	Peak	Horizontal
4	17160.00	22.78	13.43	36.21	54	-17.79	Average	Horizontal
5	11440.00	37.34	7.75	45.09	74	-28.91	Peak	Vertical
6	11440.00	24.50	7.75	32.25	54	-21.75	Average	Vertical
7	17160.00	34.98	13.43	48.41	68.2	-19.79	Peak	Vertical
8	17160.00	22.68	13.43	36.11	54	-17.89	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT20_Channel 149								
1	11490.00	33.08	7.70	40.78	74	-33.22	Peak	Horizontal
2	11490.00	22.62	7.70	30.32	54	-23.68	Average	Horizontal
3	17235.00	34.08	13.65	47.73	68.2	-20.47	Peak	Horizontal
4	17235.00	22.30	13.65	35.95	54	-18.05	Average	Horizontal
5	11490.00	32.72	7.70	40.42	74	-33.58	Peak	Vertical
6	11490.00	22.52	7.70	30.22	54	-23.78	Average	Vertical
7	17235.00	32.90	13.65	46.55	68.2	-21.65	Peak	Vertical
8	17235.00	22.19	13.65	35.84	54	-18.16	Average	Vertical

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MIMO_ Ant. 0+1_ IEEE 802.11n-HT20_Channel 157								
1	11570.00	35.62	7.79	43.41	74	-30.59	Peak	Horizontal
2	11570.00	24.64	7.79	32.43	54	-21.57	Average	Horizontal
3	17355.00	33.56	13.98	47.54	68.2	-20.66	Peak	Horizontal
4	17355.00	22.69	13.98	36.67	54	-17.33	Average	Horizontal
5	11570.00	37.26	7.79	45.05	74	-28.95	Peak	Vertical
6	11570.00	24.47	7.79	32.26	54	-21.74	Average	Vertical
7	17355.00	35.43	13.98	49.41	68.2	-18.79	Peak	Vertical
8	17355.00	22.69	13.98	36.67	54	-17.33	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT20_Channel 165								
1	11650.00	37.26	7.91	45.17	74	-28.83	Peak	Horizontal
2	11650.00	25.51	7.91	33.42	54	-20.58	Average	Horizontal
3	17475.00	33.95	14.32	48.27	68.2	-19.93	Peak	Horizontal
4	17475.00	22.20	14.32	36.52	54	-17.48	Average	Horizontal
5	11650.00	37.67	7.91	45.58	74	-28.42	Peak	Vertical
6	11650.00	25.28	7.91	33.19	54	-20.81	Average	Vertical
7	17475.00	33.63	14.32	47.95	68.2	-20.25	Peak	Vertical
8	17475.00	22.31	14.32	36.63	54	-17.37	Average	Vertical

No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11n-HT40_Channel 38								
1	10380.00	37.25	7.20	44.45	68.2	-23.75	Peak	Horizontal
2	10380.00	25.03	7.20	32.23	54	-21.77	Average	Horizontal
3	15570.00	35.59	11.92	47.51	74	-26.49	Peak	Horizontal
4	15570.00	23.62	11.92	35.54	54	-18.46	Average	Horizontal
5	10380.00	37.33	7.20	44.53	68.2	-23.67	Peak	Vertical
6	10380.00	25.19	7.20	32.39	54	-21.61	Average	Vertical
7	15570.00	36.06	11.92	47.98	74	-26.02	Peak	Vertical
8	15570.00	23.72	11.92	35.64	54	-18.36	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT40_Channel 46								
1	10460.00	38.16	7.23	45.39	68.2	-22.81	Peak	Horizontal
2	10460.00	26.44	7.23	33.67	54	-20.33	Average	Horizontal
3	15690.00	35.97	11.96	47.93	74	-26.07	Peak	Horizontal
4	15690.00	23.89	11.96	35.85	54	-18.15	Average	Horizontal
5	10460.00	37.63	7.23	44.86	68.2	-23.34	Peak	Vertical
6	10460.00	26.57	7.23	33.80	54	-20.20	Average	Vertical
7	15690.00	36.02	11.96	47.98	74	-26.02	Peak	Vertical
8	15690.00	23.89	11.96	35.85	54	-18.15	Average	Vertical

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MIMO_ Ant. 0+1_ IEEE 802.11n-HT40_Channel 54								
1	10540.00	37.31	7.32	44.63	68.2	-23.57	Peak	Horizontal
2	10540.00	23.47	7.32	30.79	54	-23.21	Average	Horizontal
3	15810.00	35.00	11.98	46.98	74	-27.02	Peak	Horizontal
4	15810.00	23.14	11.98	35.12	54	-18.88	Average	Horizontal
5	10540.00	36.68	7.32	44.00	68.2	-24.20	Peak	Vertical
6	10540.00	23.57	7.32	30.89	54	-23.11	Average	Vertical
7	15810.00	35.05	11.98	47.03	74	-26.97	Peak	Vertical
8	15810.00	23.24	11.98	35.22	54	-18.78	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT40_Channel 62								
1	10620.00	37.20	7.49	44.69	74	-29.31	Peak	Horizontal
2	10620.00	25.18	7.49	32.67	54	-21.33	Average	Horizontal
3	15930.00	35.24	12.02	47.26	74	-26.74	Peak	Horizontal
4	15930.00	23.02	12.02	35.04	54	-18.96	Average	Horizontal
5	10620.00	38.08	7.49	45.57	74	-28.43	Peak	Vertical
6	10620.00	24.94	7.49	32.43	54	-21.57	Average	Vertical
7	15930.00	35.91	12.02	47.93	74	-26.07	Peak	Vertical
8	15930.00	22.81	12.02	34.83	54	-19.17	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT40_Channel 102								
1	11020.00	37.52	8.20	45.72	74	-28.28	Peak	Horizontal
2	11020.00	25.67	8.20	33.87	54	-20.13	Average	Horizontal
3	16530.00	34.36	12.77	47.13	68.2	-21.07	Peak	Horizontal
4	16530.00	23.01	12.77	35.78	54	-18.22	Average	Horizontal
5	11020.00	40.68	8.20	48.88	74	-25.12	Peak	Vertical
6	11020.00	25.82	8.20	34.02	54	-19.98	Average	Vertical
7	16530.00	34.39	12.77	47.16	68.2	-21.04	Peak	Vertical
8	16530.00	23.11	12.77	35.88	54	-18.12	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT40_Channel 110								
1	11100.00	36.53	8.11	44.64	74	-29.36	Peak	Horizontal
2	11100.00	25.31	8.11	33.42	54	-20.58	Average	Horizontal
3	16650.00	34.03	12.82	46.85	68.2	-21.35	Peak	Horizontal
4	16650.00	22.84	12.82	35.66	54	-18.34	Average	Horizontal
5	11100.00	38.97	8.11	47.08	74	-26.92	Peak	Vertical
6	11100.00	25.23	8.11	33.34	54	-20.66	Average	Vertical
7	16650.00	34.37	12.82	47.19	68.2	-21.01	Peak	Vertical
8	16650.00	22.73	12.82	35.55	54	-18.45	Average	Vertical

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MIMO_ Ant. 0+1_ IEEE 802.11n-HT40_Channel 134								
1	11340.00	36.57	7.86	44.43	74	-29.57	Peak	Horizontal
2	11340.00	24.18	7.86	32.04	54	-21.96	Average	Horizontal
3	17010.00	34.34	13.01	47.35	68.2	-20.85	Peak	Horizontal
4	17010.00	22.88	13.01	35.89	54	-18.11	Average	Horizontal
5	11340.00	37.20	7.86	45.06	74	-28.94	Peak	Vertical
6	11340.00	24.00	7.86	31.86	54	-22.14	Average	Vertical
7	17010.00	34.90	13.01	47.91	68.2	-20.29	Peak	Vertical
8	17010.00	22.88	13.01	35.89	54	-18.11	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT40_Channel 142								
1	11420.00	36.63	7.78	44.41	74	-29.59	Peak	Horizontal
2	11420.00	24.28	7.78	32.06	54	-21.94	Average	Horizontal
3	17130.00	33.43	13.35	46.78	68.2	-21.42	Peak	Horizontal
4	17130.00	22.58	13.35	35.93	54	-18.07	Average	Horizontal
5	11420.00	35.89	7.78	43.67	74	-30.33	Peak	Vertical
6	11420.00	23.92	7.78	31.70	54	-22.30	Average	Vertical
7	17130.00	35.21	13.35	48.56	68.2	-19.64	Peak	Vertical
8	17130.00	22.58	13.35	35.93	54	-18.07	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT40_Channel 151								
1	11510.00	34.11	7.70	41.81	74	-32.19	Peak	Horizontal
2	11510.00	22.73	7.70	30.43	54	-23.57	Average	Horizontal
3	17265.00	34.70	13.73	48.43	68.2	-19.77	Peak	Horizontal
4	17265.00	22.33	13.73	36.06	54	-17.94	Average	Horizontal
5	11510.00	34.28	7.70	41.98	74	-32.02	Peak	Vertical
6	11510.00	22.73	7.70	30.43	54	-23.57	Average	Vertical
7	17265.00	34.65	13.73	48.38	68.2	-19.82	Peak	Vertical
8	17265.00	22.22	13.73	35.95	54	-18.05	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11n-HT40_Channel 159								
1	11590.00	36.39	7.82	44.21	74	-29.79	Peak	Horizontal
2	11590.00	24.69	7.82	32.51	54	-21.49	Average	Horizontal
3	17385.00	33.69	14.06	47.75	68.2	-20.45	Peak	Horizontal
4	17385.00	22.51	14.06	36.57	54	-17.43	Average	Horizontal
5	11590.00	38.97	7.82	46.79	74	-27.21	Peak	Vertical
6	11590.00	24.69	7.82	32.51	54	-21.49	Average	Vertical
7	17385.00	34.63	14.06	48.69	68.2	-19.51	Peak	Vertical
8	17385.00	22.61	14.06	36.67	54	-17.33	Average	Vertical

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No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11ac-VHT80_Channel 42								
1	10420.00	36.78	7.22	44.00	68.2	-24.20	Peak	Horizontal
2	10420.00	26.52	7.22	33.74	54	-20.26	Average	Horizontal
3	15630.00	34.47	11.94	46.41	74	-27.59	Peak	Horizontal
4	15630.00	23.91	11.94	35.85	54	-18.15	Average	Horizontal
5	10420.00	42.14	7.22	49.36	68.2	-18.84	Peak	Vertical
6	10420.00	26.98	7.22	34.20	54	-19.80	Average	Vertical
7	15630.00	36.72	11.94	48.66	74	-25.34	Peak	Vertical
8	15630.00	24.00	11.94	35.94	54	-18.06	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ac-VHT80_Channel 58								
1	10580.00	35.42	7.39	42.81	68.2	-25.39	Peak	Horizontal
2	10580.00	23.50	7.39	30.89	54	-23.11	Average	Horizontal
3	15870.00	34.93	12.00	46.93	74	-27.07	Peak	Horizontal
4	15870.00	23.12	12.00	35.12	54	-18.88	Average	Horizontal
5	10580.00	35.52	7.39	42.91	68.2	-25.29	Peak	Vertical
6	10580.00	23.30	7.39	30.69	54	-23.31	Average	Vertical
7	15870.00	35.21	12.00	47.21	74	-26.79	Peak	Vertical
8	15870.00	23.22	12.00	35.22	54	-18.78	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ac-VHT80_Channel 106								
1	11060.00	36.43	8.15	44.58	74	-29.42	Peak	Horizontal
2	11060.00	26.02	8.15	34.17	54	-19.83	Average	Horizontal
3	16590.00	32.67	12.80	45.47	68.2	-22.73	Peak	Horizontal
4	16590.00	22.28	12.80	35.08	54	-18.92	Average	Horizontal
5	11060.00	39.58	8.15	47.73	74	-26.27	Peak	Vertical
6	11060.00	25.80	8.15	33.95	54	-20.05	Average	Vertical
7	16590.00	34.56	12.80	47.36	68.2	-20.84	Peak	Vertical
8	16590.00	22.16	12.80	34.96	54	-19.04	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ac-VHT80_Channel 138								
1	11380.00	36.77	7.81	44.58	74	-29.42	Peak	Horizontal
2	11380.00	24.07	7.81	31.88	54	-22.12	Average	Horizontal
3	17070.00	34.34	13.17	47.51	68.2	-20.69	Peak	Horizontal
4	17070.00	22.76	13.17	35.93	54	-18.07	Average	Horizontal
5	11380.00	39.86	7.81	47.67	74	-26.33	Peak	Vertical
6	11380.00	23.98	7.81	31.79	54	-22.21	Average	Vertical
7	17070.00	34.59	13.17	47.76	68.2	-20.44	Peak	Vertical
8	17070.00	22.87	13.17	36.04	54	-17.96	Average	Vertical

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No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11ac-VHT80_ Channel 155								
1	11550.00	32.69	7.76	40.45	74	-33.55	Peak	Horizontal
2	11550.00	22.67	7.76	30.43	54	-23.57	Average	Horizontal
3	17325.00	32.38	13.90	46.28	68.2	-21.92	Peak	Horizontal
4	17325.00	22.05	13.90	35.95	54	-18.05	Average	Horizontal
5	11550.00	34.39	7.76	42.15	74	-31.85	Peak	Vertical
6	11550.00	22.46	7.76	30.22	54	-23.78	Average	Vertical
7	17325.00	34.01	13.90	47.91	68.2	-20.29	Peak	Vertical
8	17325.00	22.05	13.90	35.95	54	-18.05	Average	Vertical

No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11ac-VHT160_ Channel 50								
1	10500.00	36.73	7.25	43.98	68.2	-24.22	Peak	Horizontal
2	10500.00	25.34	7.25	32.59	54	-21.41	Average	Horizontal
3	15750.00	35.12	11.97	47.09	74	-26.91	Peak	Horizontal
4	15750.00	23.71	11.97	35.68	54	-18.32	Average	Horizontal
5	10500.00	39.24	7.25	46.49	68.2	-21.71	Peak	Vertical
6	10500.00	25.73	7.25	32.98	54	-21.02	Average	Vertical
7	15750.00	35.59	11.97	47.56	74	-26.44	Peak	Vertical
8	15750.00	23.62	11.97	35.59	54	-18.41	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ac-VHT160_ Channel 114								
1	11140.00	36.33	8.07	44.40	74	-29.60	Peak	Horizontal
2	11140.00	25.35	8.07	33.42	54	-20.58	Average	Horizontal
3	16710.00	34.14	12.85	46.99	68.2	-21.21	Peak	Horizontal
4	16710.00	22.81	12.85	35.66	54	-18.34	Average	Horizontal
5	11140.00	38.46	8.07	46.53	74	-27.47	Peak	Vertical
6	11140.00	25.03	8.07	33.10	54	-20.90	Average	Vertical
7	16710.00	34.56	12.85	47.41	68.2	-20.79	Peak	Vertical
8	16710.00	22.70	12.85	35.55	54	-18.45	Average	Vertical

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Radiated Emission Test Data (Above 1GHz):								
No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_ Channel 36								
1	10360.00	37.14	7.19	44.33	68.2	-23.87	Peak	Horizontal
2	10360.00	24.95	7.19	32.14	54	-21.86	Average	Horizontal
3	15540.00	35.65	11.93	47.58	74	-26.42	Peak	Horizontal
4	15540.00	23.52	11.93	35.45	54	-18.55	Average	Horizontal
5	10360.00	37.68	7.19	44.87	68.2	-23.33	Peak	Vertical
6	10360.00	25.04	7.19	32.23	54	-21.77	Average	Vertical
7	15540.00	35.68	11.93	47.61	74	-26.39	Peak	Vertical
8	15540.00	23.71	11.93	35.64	54	-18.36	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_ Channel 44								
1	10440.00	36.98	7.23	44.21	68.2	-23.99	Peak	Horizontal
2	10440.00	26.30	7.23	33.53	54	-20.47	Average	Horizontal
3	15660.00	34.52	11.94	46.46	74	-27.54	Peak	Horizontal
4	15660.00	23.81	11.94	35.75	54	-18.25	Average	Horizontal
5	10440.00	38.93	7.23	46.16	68.2	-22.04	Peak	Vertical
6	10440.00	26.51	7.23	33.74	54	-20.26	Average	Vertical
7	15660.00	35.37	11.94	47.31	74	-26.69	Peak	Vertical
8	15660.00	24.00	11.94	35.94	54	-18.06	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_ Channel 48								
1	10480.00	37.30	7.24	44.54	68.2	-23.66	Peak	Horizontal
2	10480.00	25.43	7.24	32.67	54	-21.33	Average	Horizontal
3	15720.00	35.76	11.96	47.72	74	-26.28	Peak	Horizontal
4	15720.00	23.53	11.96	35.49	54	-18.51	Average	Horizontal
5	10480.00	37.85	7.24	45.09	68.2	-23.11	Peak	Vertical
6	10480.00	25.58	7.24	32.82	54	-21.18	Average	Vertical
7	15720.00	35.76	11.96	47.72	74	-26.28	Peak	Vertical
8	15720.00	23.63	11.96	35.59	54	-18.41	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_ Channel 52								
1	10520.00	36.55	7.29	43.84	68.2	-24.36	Peak	Horizontal
2	10520.00	25.30	7.29	32.59	54	-21.41	Average	Horizontal
3	15780.00	36.14	11.98	48.12	74	-25.88	Peak	Horizontal
4	15780.00	23.51	11.98	35.49	54	-18.51	Average	Horizontal
5	10520.00	38.56	7.29	45.85	68.2	-22.35	Peak	Vertical
6	10520.00	25.61	7.29	32.90	54	-21.10	Average	Vertical
7	15780.00	35.93	11.98	47.91	74	-26.09	Peak	Vertical
8	15780.00	23.51	11.98	35.49	54	-18.51	Average	Vertical

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No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_Channel 60								
1	10600.00	36.08	7.44	43.52	74	-30.48	Peak	Horizontal
2	10600.00	24.99	7.44	32.43	54	-21.57	Average	Horizontal
3	15900.00	35.07	12.01	47.08	74	-26.92	Peak	Horizontal
4	15900.00	22.82	12.01	34.83	54	-19.17	Average	Horizontal
5	10600.00	38.20	7.44	45.64	74	-28.36	Peak	Vertical
6	10600.00	25.23	7.44	32.67	54	-21.33	Average	Vertical
7	15900.00	34.81	12.01	46.82	74	-27.18	Peak	Vertical
8	15900.00	22.93	12.01	34.94	54	-19.06	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_Channel 64								
1	10640.00	35.93	7.52	43.45	74	-30.55	Peak	Horizontal
2	10640.00	24.99	7.52	32.51	54	-21.49	Average	Horizontal
3	15960.00	34.15	12.01	46.16	74	-27.84	Peak	Horizontal
4	15960.00	22.82	12.01	34.83	54	-19.17	Average	Horizontal
5	10640.00	36.23	7.52	43.75	74	-30.25	Peak	Vertical
6	10640.00	24.75	7.52	32.27	54	-21.73	Average	Vertical
7	15960.00	34.89	12.01	46.90	74	-27.10	Peak	Vertical
8	15960.00	22.82	12.01	34.83	54	-19.17	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_Channel 100								
1	11000.00	36.45	8.22	44.67	74	-29.33	Peak	Horizontal
2	11000.00	25.80	8.22	34.02	54	-19.98	Average	Horizontal
3	16500.00	34.65	12.75	47.40	68.2	-20.80	Peak	Horizontal
4	16500.00	23.03	12.75	35.78	54	-18.22	Average	Horizontal
5	11000.00	37.93	8.22	46.15	74	-27.85	Peak	Vertical
6	11000.00	25.80	8.22	34.02	54	-19.98	Average	Vertical
7	16500.00	34.84	12.75	47.59	68.2	-20.61	Peak	Vertical
8	16500.00	23.13	12.75	35.88	54	-18.12	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_Channel 116								
1	11160.00	35.25	8.05	43.30	74	-30.70	Peak	Horizontal
2	11160.00	25.21	8.05	33.26	54	-20.74	Average	Horizontal
3	16740.00	0.00	0.00	0.00	68.2	-68.20	Peak	Horizontal
4	16740.00	35.55	0.00	35.55	54	-18.45	Average	Horizontal
5	11160.00	36.87	8.05	44.92	74	-29.08	Peak	Vertical
6	11160.00	25.13	8.05	33.18	54	-20.82	Average	Vertical
7	16740.00	35.07	12.86	47.93	68.2	-20.27	Peak	Vertical
8	16740.00	22.80	12.86	35.66	54	-18.34	Average	Vertical

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No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_Channel 140								
1	11400.00	37.59	7.79	45.38	74	-28.62	Peak	Horizontal
2	11400.00	24.27	7.79	32.06	54	-21.94	Average	Horizontal
3	17100.00	35.25	13.26	48.51	68.2	-19.69	Peak	Horizontal
4	17100.00	22.78	13.26	36.04	54	-17.96	Average	Horizontal
5	11400.00	36.49	7.79	44.28	74	-29.72	Peak	Vertical
6	11400.00	24.00	7.79	31.79	54	-22.21	Average	Vertical
7	17100.00	35.57	13.26	48.83	68.2	-19.37	Peak	Vertical
8	17100.00	22.78	13.26	36.04	54	-17.96	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_Channel 144								
1	11440.00	35.59	7.75	43.34	74	-30.66	Peak	Horizontal
2	11440.00	24.67	7.75	32.42	54	-21.58	Average	Horizontal
3	17160.00	33.93	13.43	47.36	68.2	-20.84	Peak	Horizontal
4	17160.00	22.68	13.43	36.11	54	-17.89	Average	Horizontal
5	11440.00	36.30	7.75	44.05	74	-29.95	Peak	Vertical
6	11440.00	24.42	7.75	32.17	54	-21.83	Average	Vertical
7	17160.00	34.19	13.43	47.62	68.2	-20.58	Peak	Vertical
8	17160.00	22.68	13.43	36.11	54	-17.89	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_Channel 149								
1	11490.00	33.30	7.70	41.00	74	-33.00	Peak	Horizontal
2	11490.00	22.73	7.70	30.43	54	-23.57	Average	Horizontal
3	17235.00	32.94	13.65	46.59	68.2	-21.61	Peak	Horizontal
4	17235.00	22.19	13.65	35.84	54	-18.16	Average	Horizontal
5	11490.00	33.58	7.70	41.28	74	-32.72	Peak	Vertical
6	11490.00	22.52	7.70	30.22	54	-23.78	Average	Vertical
7	17235.00	33.67	13.65	47.32	68.2	-20.88	Peak	Vertical
8	17235.00	22.41	13.65	36.06	54	-17.94	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_Channel 157								
1	11570.00	34.68	7.79	42.47	74	-31.53	Peak	Horizontal
2	11570.00	24.55	7.79	32.34	54	-21.66	Average	Horizontal
3	17355.00	33.28	13.98	47.26	68.2	-20.94	Peak	Horizontal
4	17355.00	22.69	13.98	36.67	54	-17.33	Average	Horizontal
5	11570.00	36.09	7.79	43.88	74	-30.12	Peak	Vertical
6	11570.00	24.38	7.79	32.17	54	-21.83	Average	Vertical
7	17355.00	34.30	13.98	48.28	68.2	-19.92	Peak	Vertical
8	17355.00	22.69	13.98	36.67	54	-17.33	Average	Vertical

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MIMO_ Ant. 0+1_ IEEE 802.11ax-HE20_ Channel 165								
1	11650.00	36.34	7.91	44.25	74	-29.75	Peak	Horizontal
2	11650.00	25.43	7.91	33.34	54	-20.66	Average	Horizontal
3	17475.00	34.35	14.32	48.67	68.2	-19.53	Peak	Horizontal
4	17475.00	22.09	14.32	36.41	54	-17.59	Average	Horizontal
5	11650.00	37.91	7.91	45.82	74	-28.18	Peak	Vertical
6	11650.00	25.20	7.91	33.11	54	-20.89	Average	Vertical
7	17475.00	34.33	14.32	48.65	68.2	-19.55	Peak	Vertical
8	17475.00	22.31	14.32	36.63	54	-17.37	Average	Vertical

No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE40_ Channel 38								
1	10380.00	36.52	7.20	43.72	68.2	-24.48	Peak	Horizontal
2	10380.00	25.03	7.20	32.23	54	-21.77	Average	Horizontal
3	15570.00	35.59	11.92	47.51	74	-26.49	Peak	Horizontal
4	15570.00	23.62	11.92	35.54	54	-18.46	Average	Horizontal
5	10380.00	37.62	7.20	44.82	68.2	-23.38	Peak	Vertical
6	10380.00	24.94	7.20	32.14	54	-21.86	Average	Vertical
7	15570.00	35.85	11.92	47.77	74	-26.23	Peak	Vertical
8	15570.00	23.72	11.92	35.64	54	-18.36	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE40_ Channel 46								
1	10460.00	38.36	7.23	45.59	68.2	-22.61	Peak	Horizontal
2	10460.00	26.44	7.23	33.67	54	-20.33	Average	Horizontal
3	15690.00	35.72	11.96	47.68	74	-26.32	Peak	Horizontal
4	15690.00	23.89	11.96	35.85	54	-18.15	Average	Horizontal
5	10460.00	39.33	7.23	46.56	68.2	-21.64	Peak	Vertical
6	10460.00	26.57	7.23	33.80	54	-20.20	Average	Vertical
7	15690.00	36.85	11.96	48.81	74	-25.19	Peak	Vertical
8	15690.00	23.89	11.96	35.85	54	-18.15	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE40_ Channel 54								
1	10540.00	36.31	7.32	43.63	68.2	-24.57	Peak	Horizontal
2	10540.00	24.04	7.32	31.36	54	-22.64	Average	Horizontal
3	15810.00	35.38	11.98	47.36	74	-26.64	Peak	Horizontal
4	15810.00	23.72	11.98	35.70	54	-18.30	Average	Horizontal
5	10540.00	37.41	7.32	44.73	68.2	-23.47	Peak	Vertical
6	10540.00	24.22	7.32	31.54	54	-22.46	Average	Vertical
7	15810.00	35.38	11.98	47.36	74	-26.64	Peak	Vertical
8	15810.00	23.72	11.98	35.70	54	-18.30	Average	Vertical

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No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE40_Channel 62								
1	10620.00	37.36	7.49	44.85	74	-29.15	Peak	Horizontal
2	10620.00	25.26	7.49	32.75	54	-21.25	Average	Horizontal
3	15930.00	33.71	12.02	45.73	74	-28.27	Peak	Horizontal
4	15930.00	23.12	12.02	35.14	54	-18.86	Average	Horizontal
5	10620.00	40.32	7.49	47.81	74	-26.19	Peak	Vertical
6	10620.00	26.09	7.49	33.58	54	-20.42	Average	Vertical
7	15930.00	35.98	12.02	48.00	74	-26.00	Peak	Vertical
8	15930.00	23.32	12.02	35.34	54	-18.66	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE40_Channel 102								
1	11020.00	37.58	8.20	45.78	74	-28.22	Peak	Horizontal
2	11020.00	26.32	8.20	34.52	54	-19.48	Average	Horizontal
3	16530.00	33.79	12.77	46.56	68.2	-21.64	Peak	Horizontal
4	16530.00	23.60	12.77	36.37	54	-17.63	Average	Horizontal
5	11020.00	43.08	8.20	51.28	74	-22.72	Peak	Vertical
6	11020.00	26.86	8.20	35.06	54	-18.94	Average	Vertical
7	16530.00	33.99	12.77	46.76	68.2	-21.44	Peak	Vertical
8	16530.00	23.51	12.77	36.28	54	-17.72	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE40_Channel 110								
1	11100.00	36.68	8.11	44.79	74	-29.21	Peak	Horizontal
2	11100.00	25.62	8.11	33.73	54	-20.27	Average	Horizontal
3	16650.00	34.53	12.82	47.35	68.2	-20.85	Peak	Horizontal
4	16650.00	23.15	12.82	35.97	54	-18.03	Average	Horizontal
5	11100.00	43.65	8.11	51.76	74	-22.24	Peak	Vertical
6	11100.00	26.34	8.11	34.45	54	-19.55	Average	Vertical
7	16650.00	35.36	12.82	48.18	68.2	-20.02	Peak	Vertical
8	16650.00	23.15	12.82	35.97	54	-18.03	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE40_Channel 134								
1	11340.00	36.75	7.86	44.61	74	-29.39	Peak	Horizontal
2	11340.00	24.45	7.86	32.31	54	-21.69	Average	Horizontal
3	17010.00	35.81	13.01	48.82	68.2	-19.38	Peak	Horizontal
4	17010.00	23.39	13.01	36.40	54	-17.60	Average	Horizontal
5	11340.00	36.72	7.86	44.58	74	-29.42	Peak	Vertical
6	11340.00	24.79	7.86	32.65	54	-21.35	Average	Vertical
7	17010.00	35.16	13.01	48.17	68.2	-20.03	Peak	Vertical
8	17010.00	23.39	13.01	36.40	54	-17.60	Average	Vertical

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No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE40_Channel 142								
1	11420.00	35.01	7.78	42.79	74	-31.21	Peak	Horizontal
2	11420.00	24.37	7.78	32.15	54	-21.85	Average	Horizontal
3	17130.00	33.59	13.35	46.94	68.2	-21.26	Peak	Horizontal
4	17130.00	23.00	13.35	36.35	54	-17.65	Average	Horizontal
5	11420.00	35.80	7.78	43.58	74	-30.42	Peak	Vertical
6	11420.00	24.63	7.78	32.41	54	-21.59	Average	Vertical
7	17130.00	34.60	13.35	47.95	68.2	-20.25	Peak	Vertical
8	17130.00	23.00	13.35	36.35	54	-17.65	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE40_Channel 151								
1	11510.00	33.18	7.70	40.88	74	-33.12	Peak	Horizontal
2	11510.00	22.84	7.70	30.54	54	-23.46	Average	Horizontal
3	17265.00	32.72	13.73	46.45	68.2	-21.75	Peak	Horizontal
4	17265.00	22.55	13.73	36.28	54	-17.72	Average	Horizontal
5	11510.00	37.99	7.70	45.69	74	-28.31	Peak	Vertical
6	11510.00	23.54	7.70	31.24	54	-22.76	Average	Vertical
7	17265.00	34.86	13.73	48.59	68.2	-19.61	Peak	Vertical
8	17265.00	22.55	13.73	36.28	54	-17.72	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE40_Channel 159								
1	11590.00	35.59	7.82	43.41	74	-30.59	Peak	Horizontal
2	11590.00	24.94	7.82	32.76	54	-21.24	Average	Horizontal
3	17385.00	34.27	14.06	48.33	68.2	-19.87	Peak	Horizontal
4	17385.00	22.83	14.06	36.89	54	-17.11	Average	Horizontal
5	11590.00	41.61	7.82	49.43	74	-24.57	Peak	Vertical
6	11590.00	25.73	7.82	33.55	54	-20.45	Average	Vertical
7	17385.00	34.19	14.06	48.25	68.2	-19.95	Peak	Vertical
8	17385.00	23.03	14.06	37.09	54	-16.91	Average	Vertical

No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE80_Channel 42								
1	10420.00	37.48	7.22	44.70	68.2	-23.50	Peak	Horizontal
2	10420.00	26.98	7.22	34.20	54	-19.80	Average	Horizontal
3	15630.00	34.81	11.94	46.75	74	-27.25	Peak	Horizontal
4	15630.00	24.27	11.94	36.21	54	-17.79	Average	Horizontal
5	10420.00	39.89	7.22	47.11	68.2	-21.09	Peak	Vertical
6	10420.00	26.98	7.22	34.20	54	-19.80	Average	Vertical
7	15630.00	35.85	11.94	47.79	74	-26.21	Peak	Vertical
8	15630.00	24.36	11.94	36.30	54	-17.70	Average	Vertical

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No.	Frequency (MHz)	Reading (dBμV)	Correction factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE80_Channel 58								
1	10580.00	35.30	7.39	42.69	68.2	-25.51	Peak	Horizontal
2	10580.00	23.69	7.39	31.08	54	-22.92	Average	Horizontal
3	15870.00	35.21	12.00	47.21	74	-26.79	Peak	Horizontal
4	15870.00	23.42	12.00	35.42	54	-18.58	Average	Horizontal
5	10580.00	36.35	7.39	43.74	68.2	-24.46	Peak	Vertical
6	10580.00	23.88	7.39	31.27	54	-22.73	Average	Vertical
7	15870.00	35.48	12.00	47.48	74	-26.52	Peak	Vertical
8	15870.00	23.51	12.00	35.51	54	-18.49	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE80_Channel 106								
1	11060.00	38.22	8.15	46.37	74	-27.63	Peak	Horizontal
2	11060.00	26.51	8.15	34.66	54	-19.34	Average	Horizontal
3	16590.00	33.83	12.80	46.63	68.2	-21.57	Peak	Horizontal
4	16590.00	22.60	12.80	35.40	54	-18.60	Average	Horizontal
5	11060.00	43.36	8.15	51.51	74	-22.49	Peak	Vertical
6	11060.00	27.23	8.15	35.38	54	-18.62	Average	Vertical
7	16590.00	35.06	12.80	47.86	68.2	-20.34	Peak	Vertical
8	16590.00	22.60	12.80	35.40	54	-18.60	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE80_Channel 138								
1	11380.00	35.60	7.81	43.41	74	-30.59	Peak	Horizontal
2	11380.00	24.34	7.81	32.15	54	-21.85	Average	Horizontal
3	17070.00	35.01	13.17	48.18	68.2	-20.02	Peak	Horizontal
4	17070.00	23.18	13.17	36.35	54	-17.65	Average	Horizontal
5	11380.00	40.26	7.81	48.07	74	-25.93	Peak	Vertical
6	11380.00	24.68	7.81	32.49	54	-21.51	Average	Vertical
7	17070.00	35.24	13.17	48.41	68.2	-19.79	Peak	Vertical
8	17070.00	23.18	13.17	36.35	54	-17.65	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE80_Channel 155								
1	11550.00	34.11	7.76	41.87	74	-32.13	Peak	Horizontal
2	11550.00	22.78	7.76	30.54	54	-23.46	Average	Horizontal
3	17325.00	33.51	13.90	47.41	68.2	-20.79	Peak	Horizontal
4	17325.00	22.27	13.90	36.17	54	-17.83	Average	Horizontal
5	11550.00	37.18	7.76	44.94	74	-29.06	Peak	Vertical
6	11550.00	23.28	7.76	31.04	54	-22.96	Average	Vertical
7	17325.00	33.36	13.90	47.26	68.2	-20.94	Peak	Vertical
8	17325.00	22.27	13.90	36.17	54	-17.83	Average	Vertical

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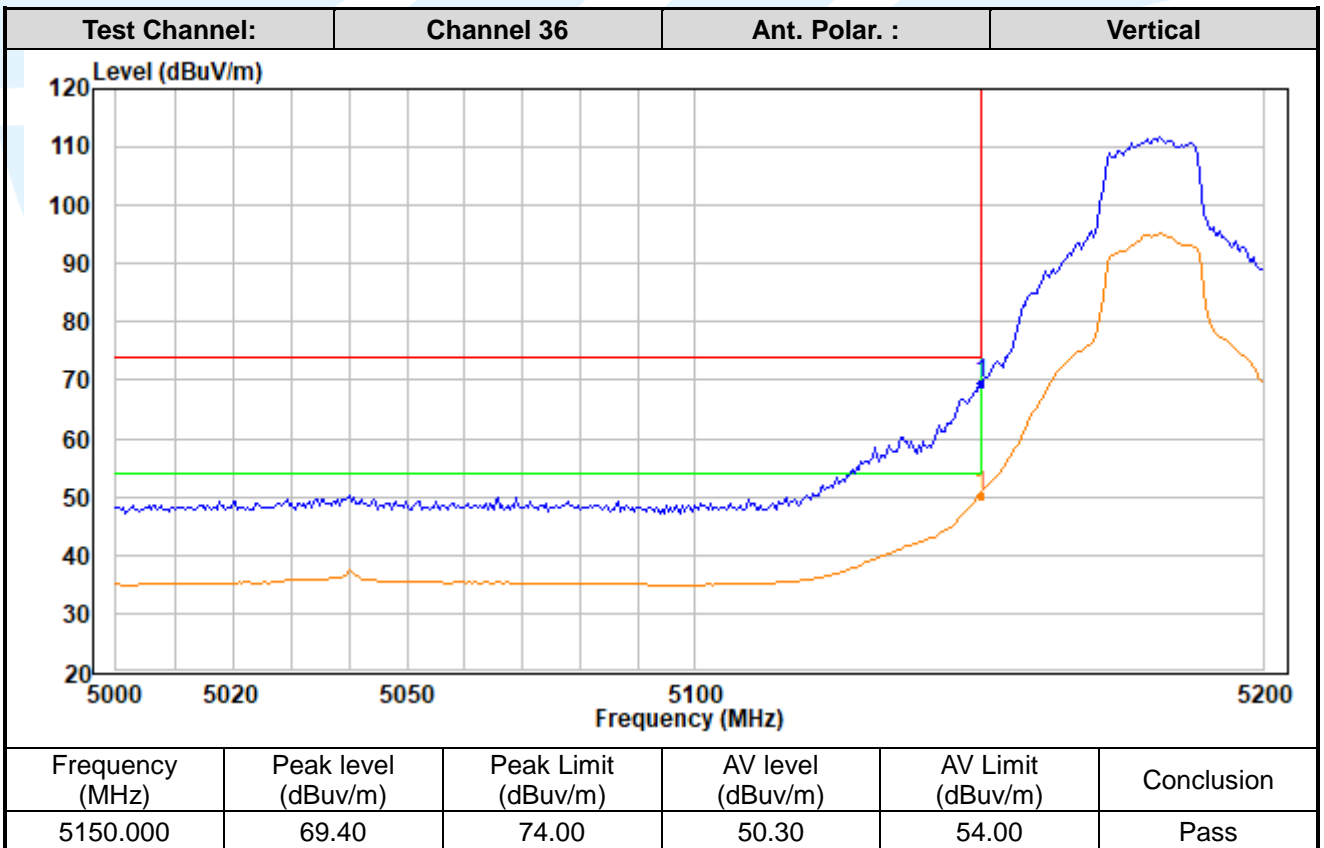
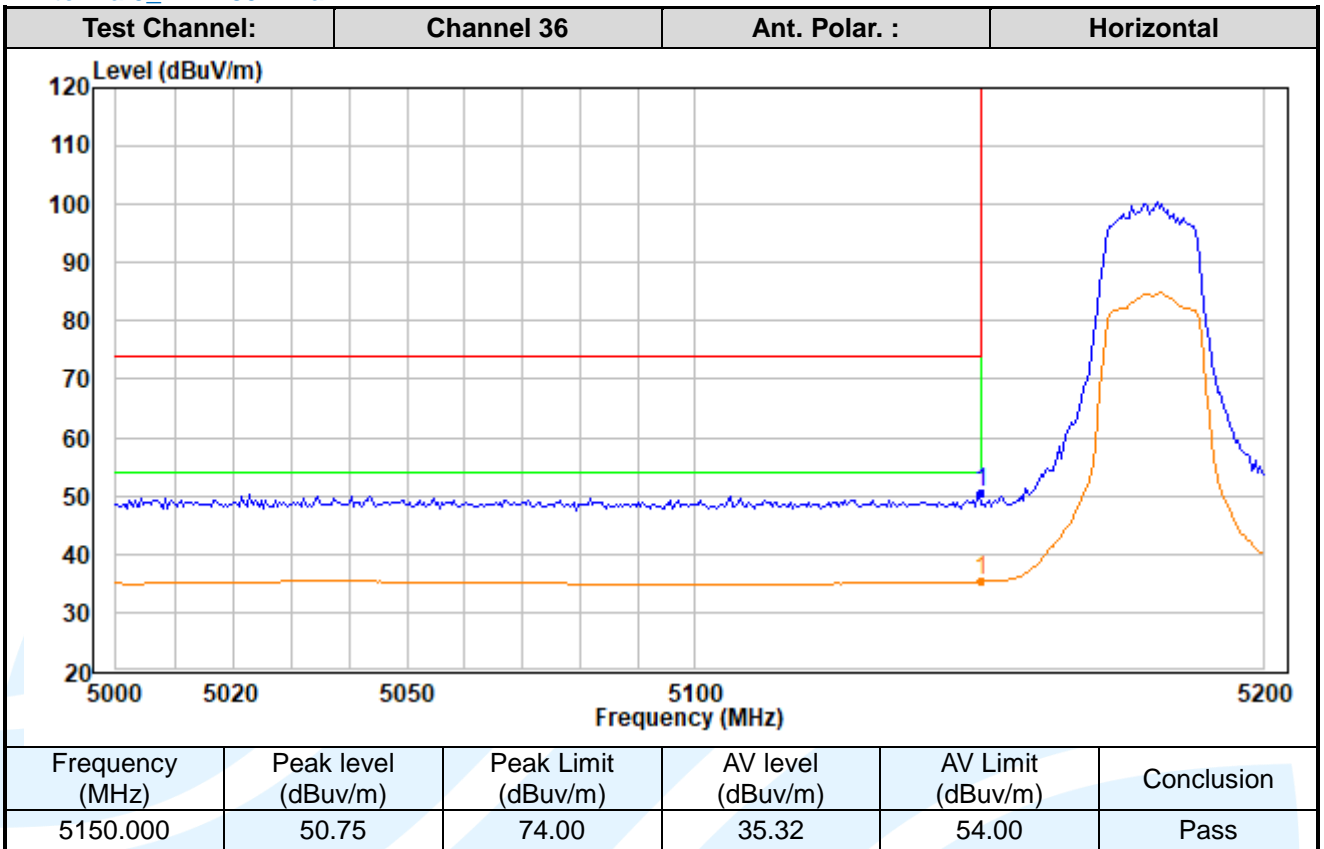
No.	Frequency (MHz)	Reading (dBµV)	Correction factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Antenna Polaxis
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE160_Channel 50								
1	10500.00	37.91	7.25	45.16	68.2	-23.04	Peak	Horizontal
2	10500.00	25.87	7.25	33.12	54	-20.88	Average	Horizontal
3	15750.00	36.73	11.97	48.70	74	-25.30	Peak	Horizontal
4	15750.00	23.81	11.97	35.78	54	-18.22	Average	Horizontal
5	10500.00	38.26	7.25	45.51	68.2	-22.69	Peak	Vertical
6	10500.00	25.80	7.25	33.05	54	-20.95	Average	Vertical
7	15750.00	36.05	11.97	48.02	74	-25.98	Peak	Vertical
8	15750.00	23.90	11.97	35.87	54	-18.13	Average	Vertical
MIMO_ Ant. 0+1_ IEEE 802.11ax-HE160_Channel 114								
1	11140.00	37.61	8.07	45.68	74	-28.32	Peak	Horizontal
2	11140.00	25.66	8.07	33.73	54	-20.27	Average	Horizontal
3	16710.00	35.08	12.85	47.93	68.2	-20.27	Peak	Horizontal
4	16710.00	23.02	12.85	35.87	54	-18.13	Average	Horizontal
5	11140.00	40.52	8.07	48.59	74	-25.41	Peak	Vertical
6	11140.00	26.03	8.07	34.10	54	-19.90	Average	Vertical
7	16710.00	35.58	12.85	48.43	68.2	-19.77	Peak	Vertical
8	16710.00	23.22	12.85	36.07	54	-17.93	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)

Antenna 0_ IEEE 802.11a



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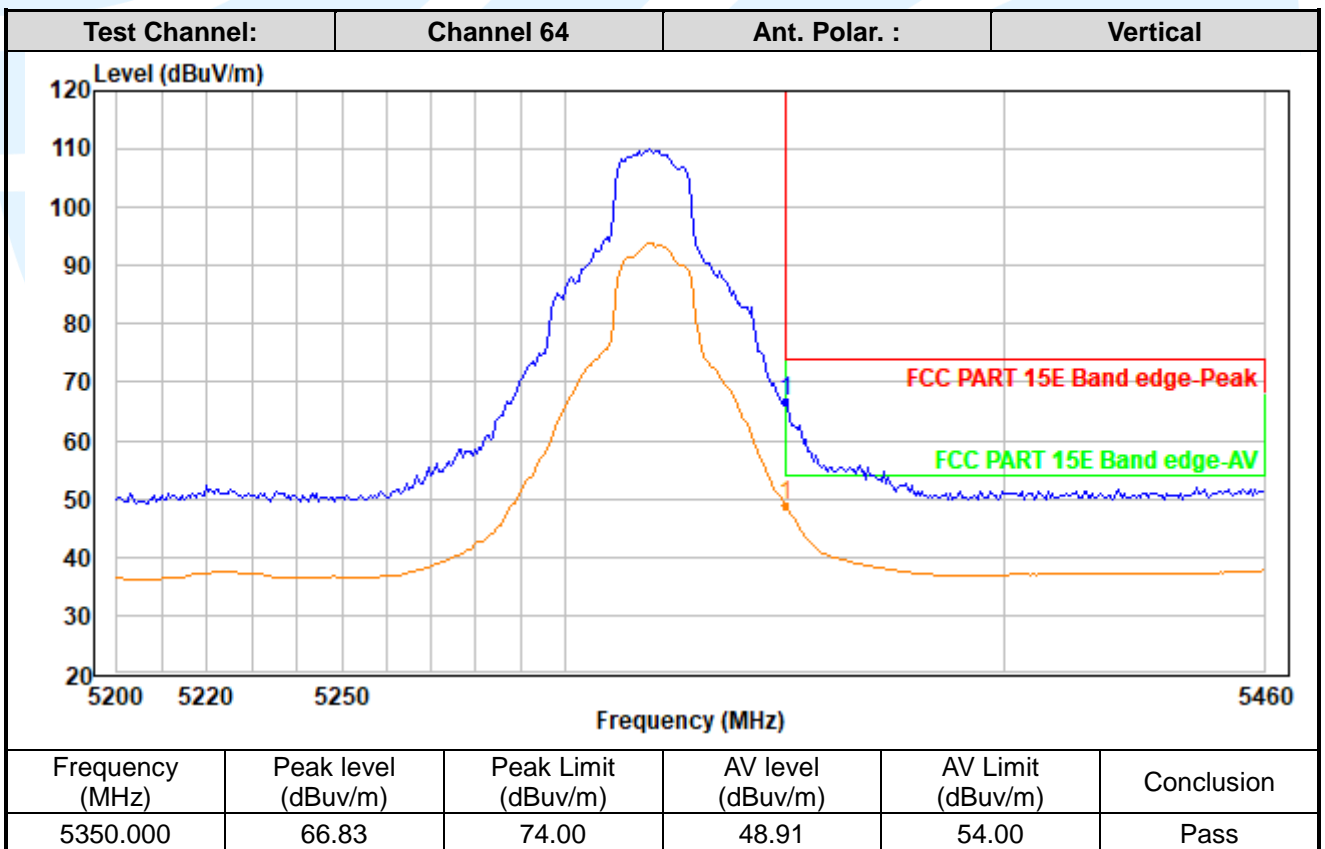
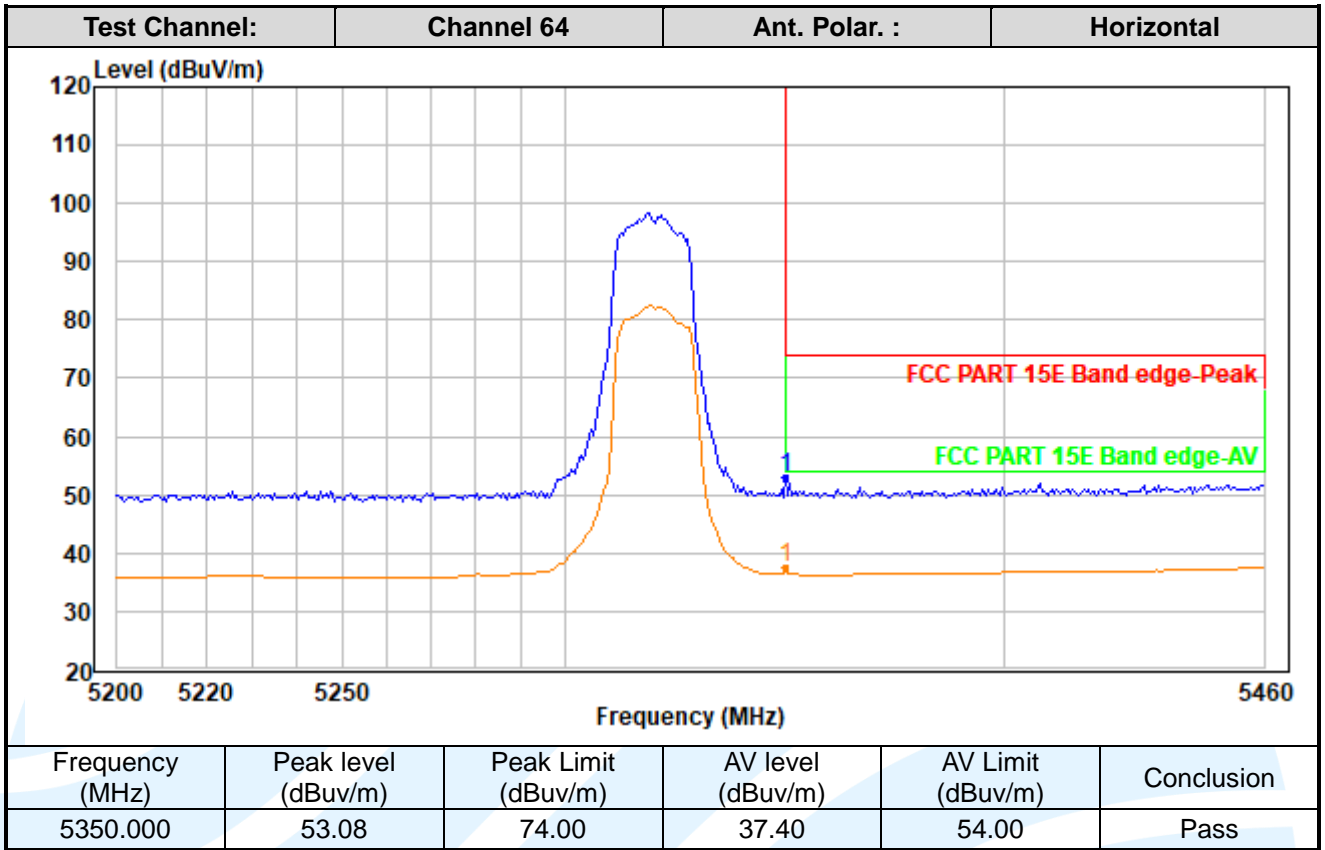
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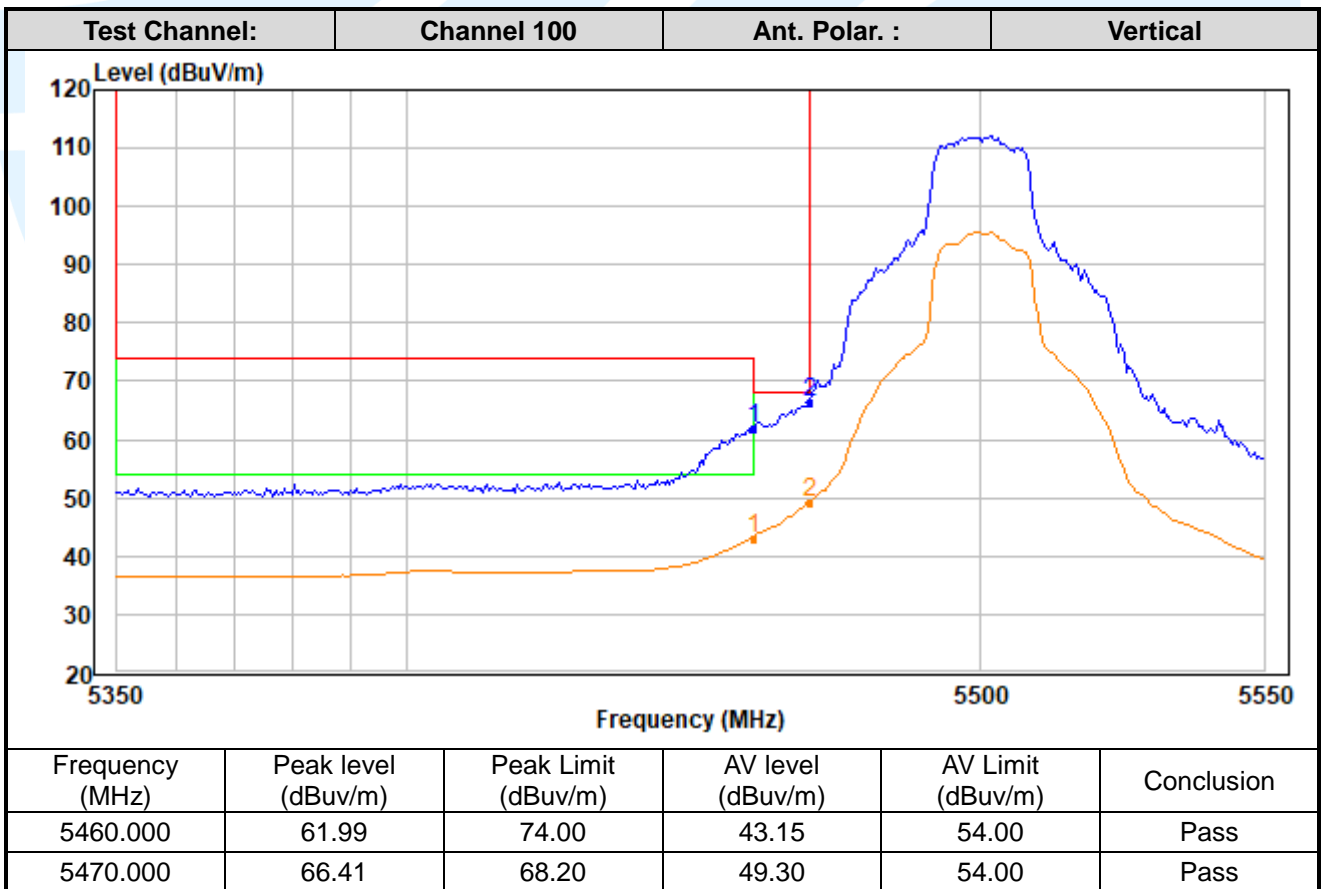
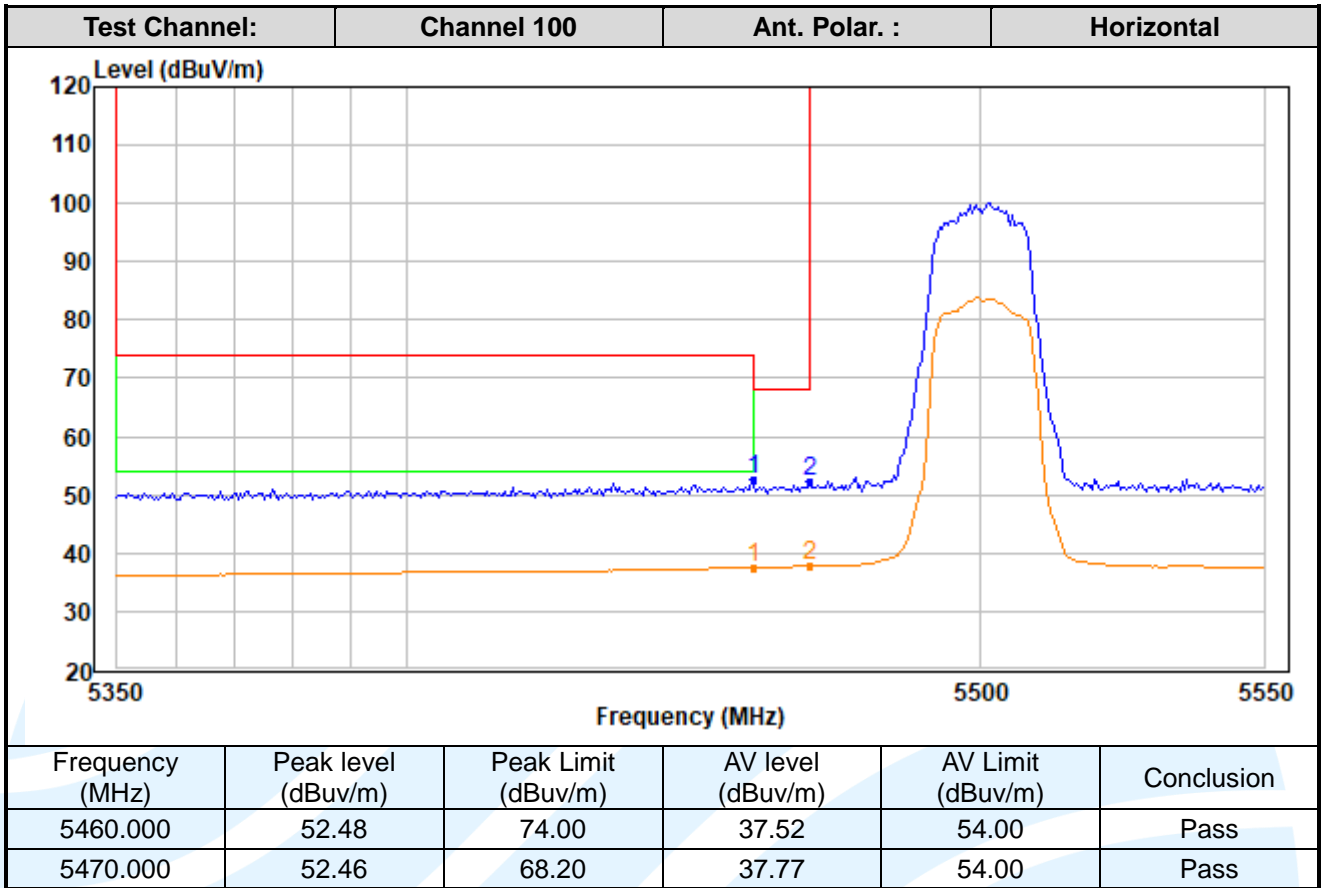
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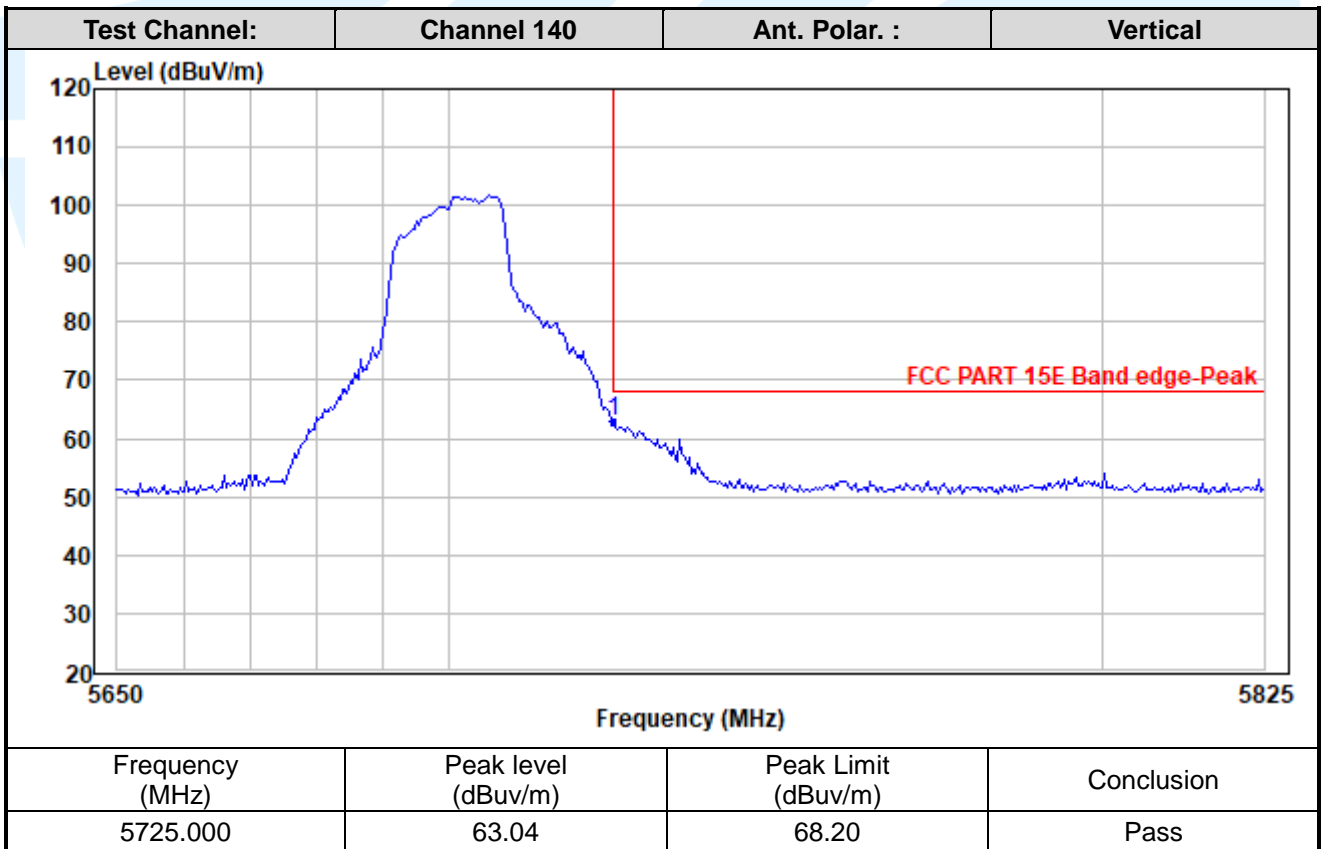
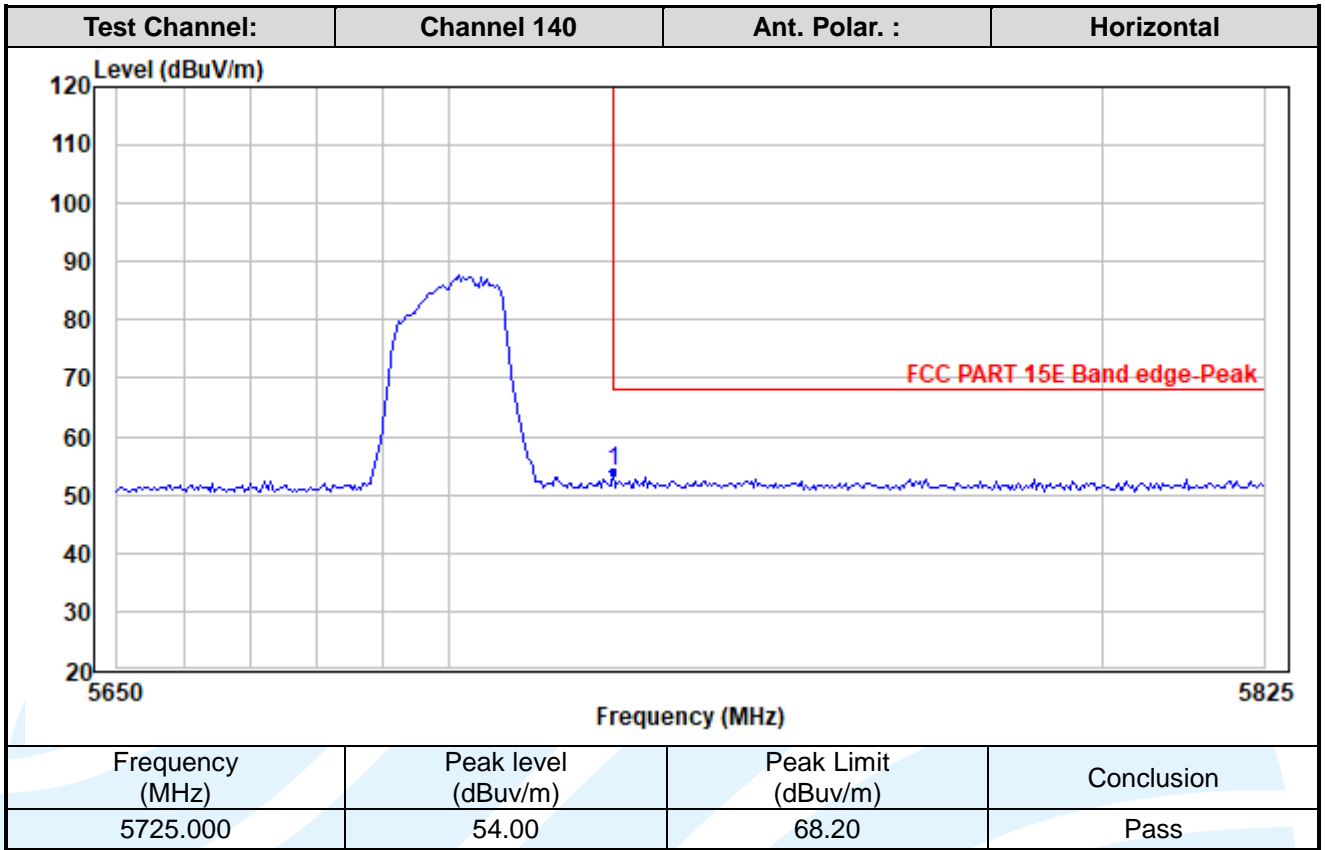
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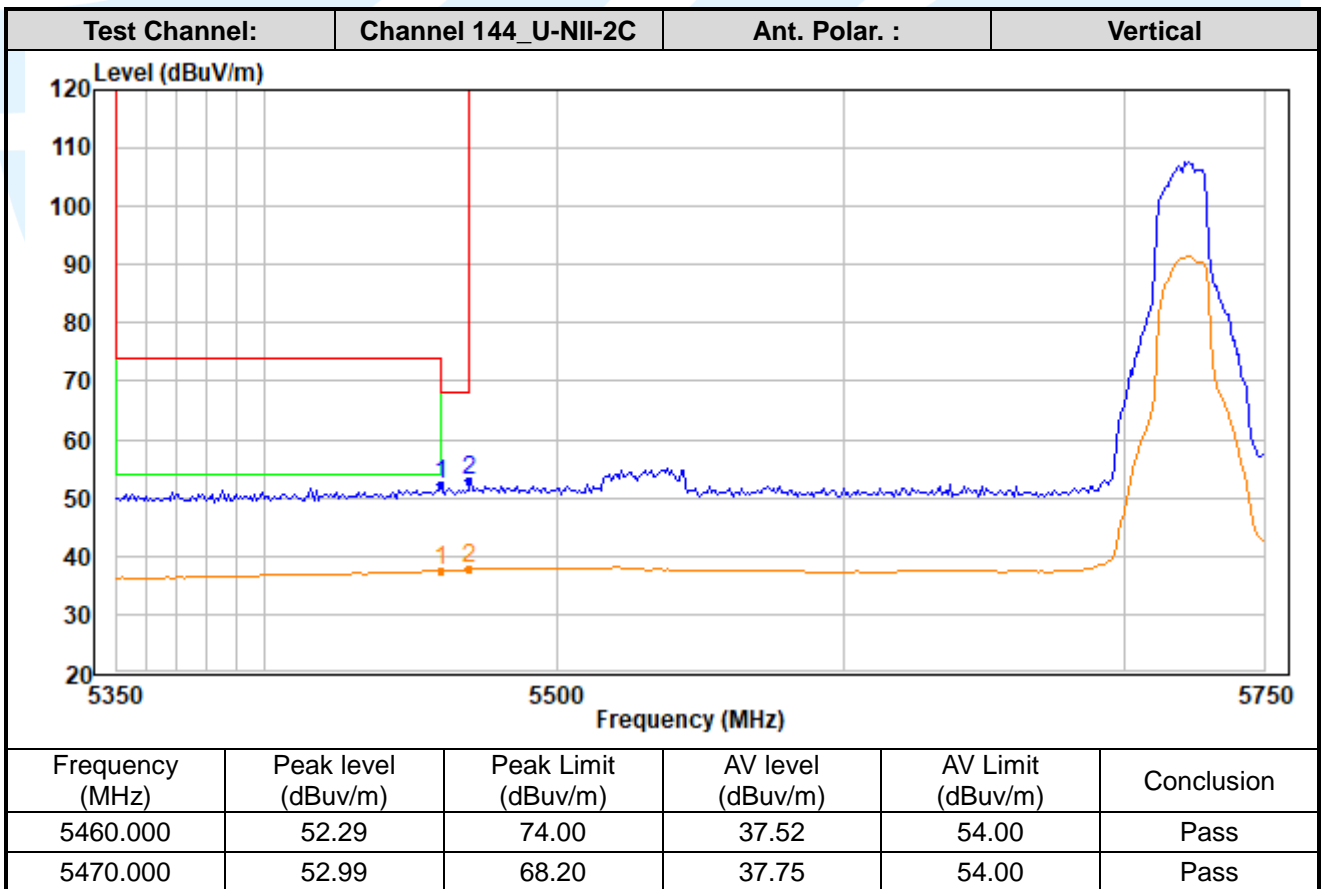
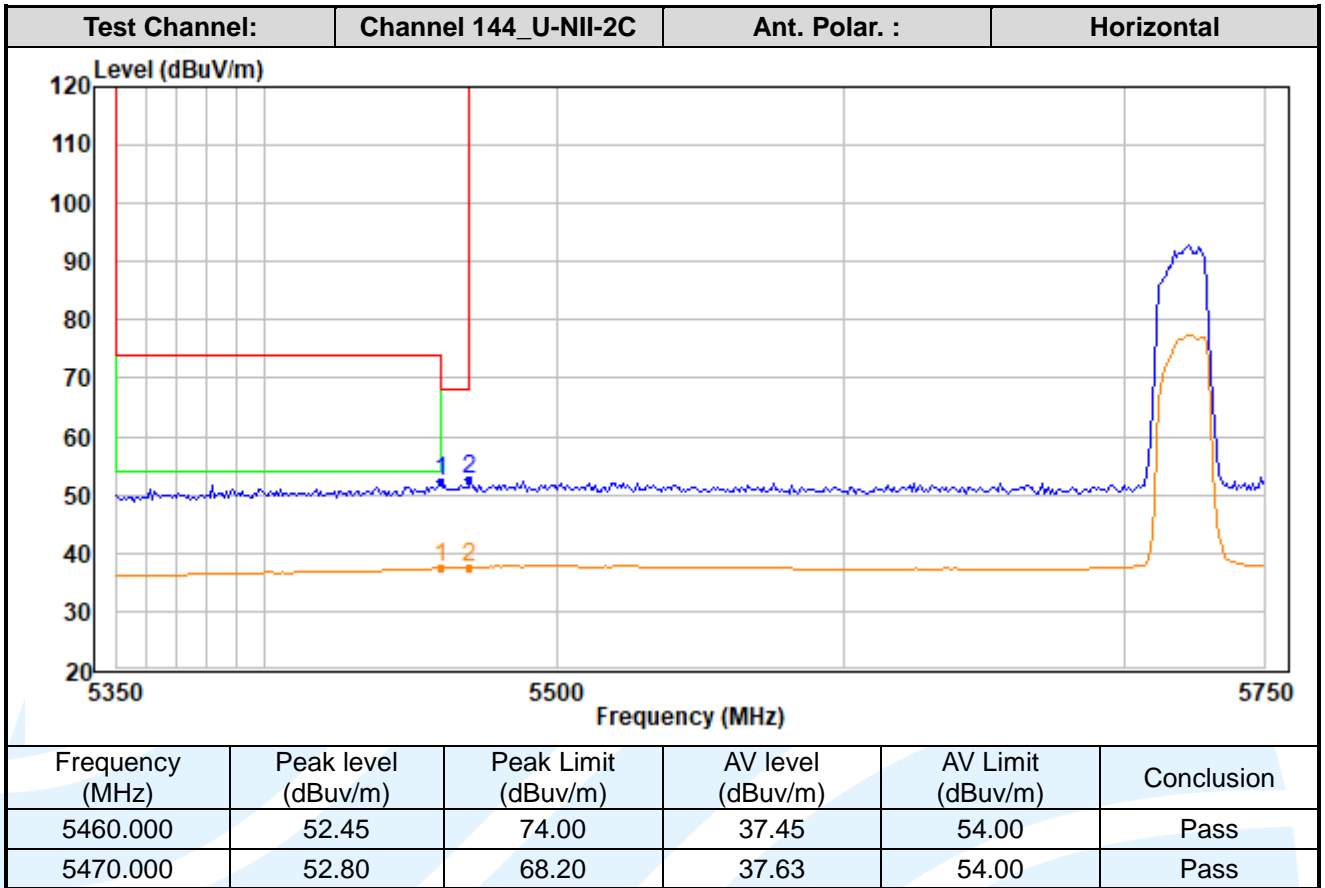
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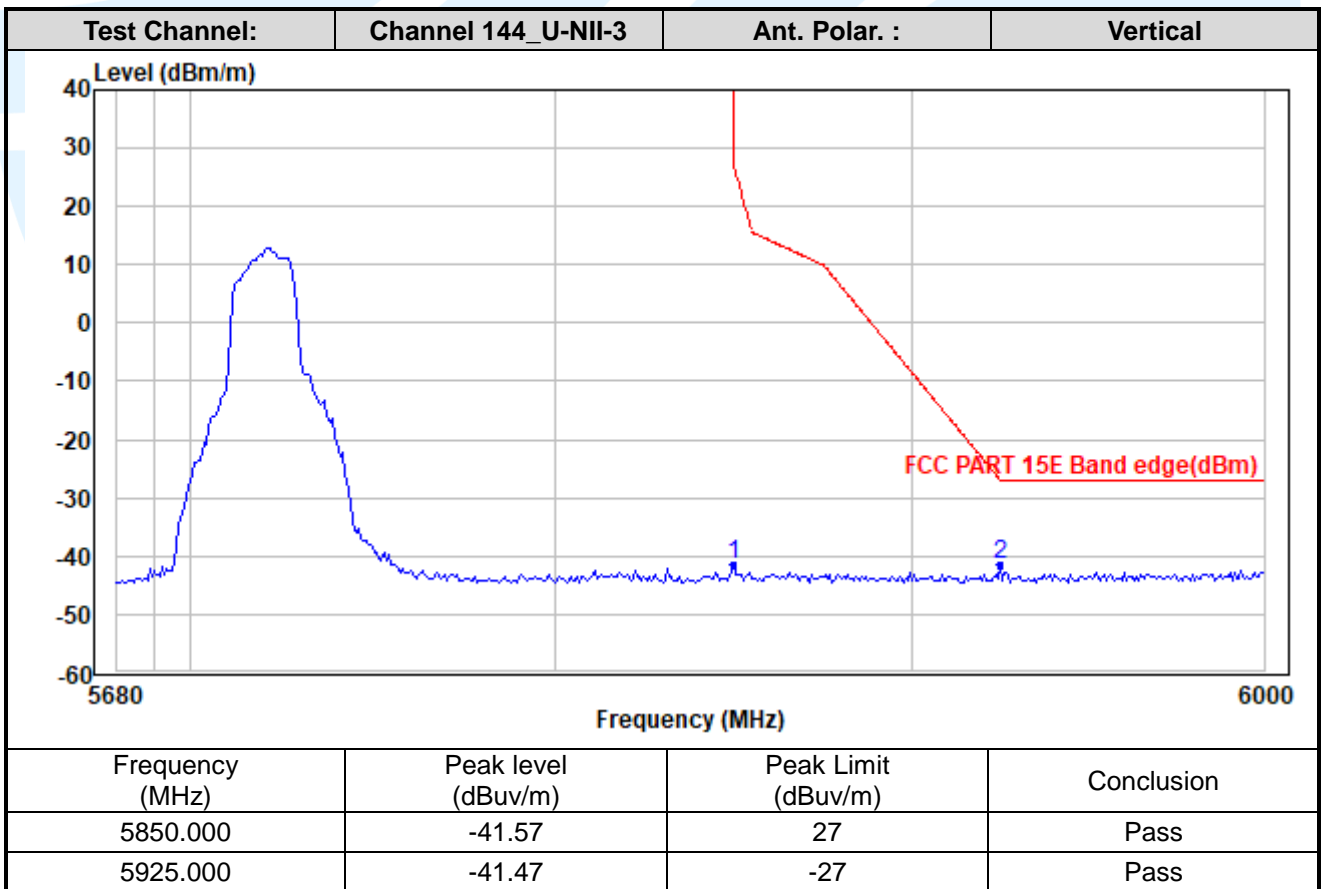
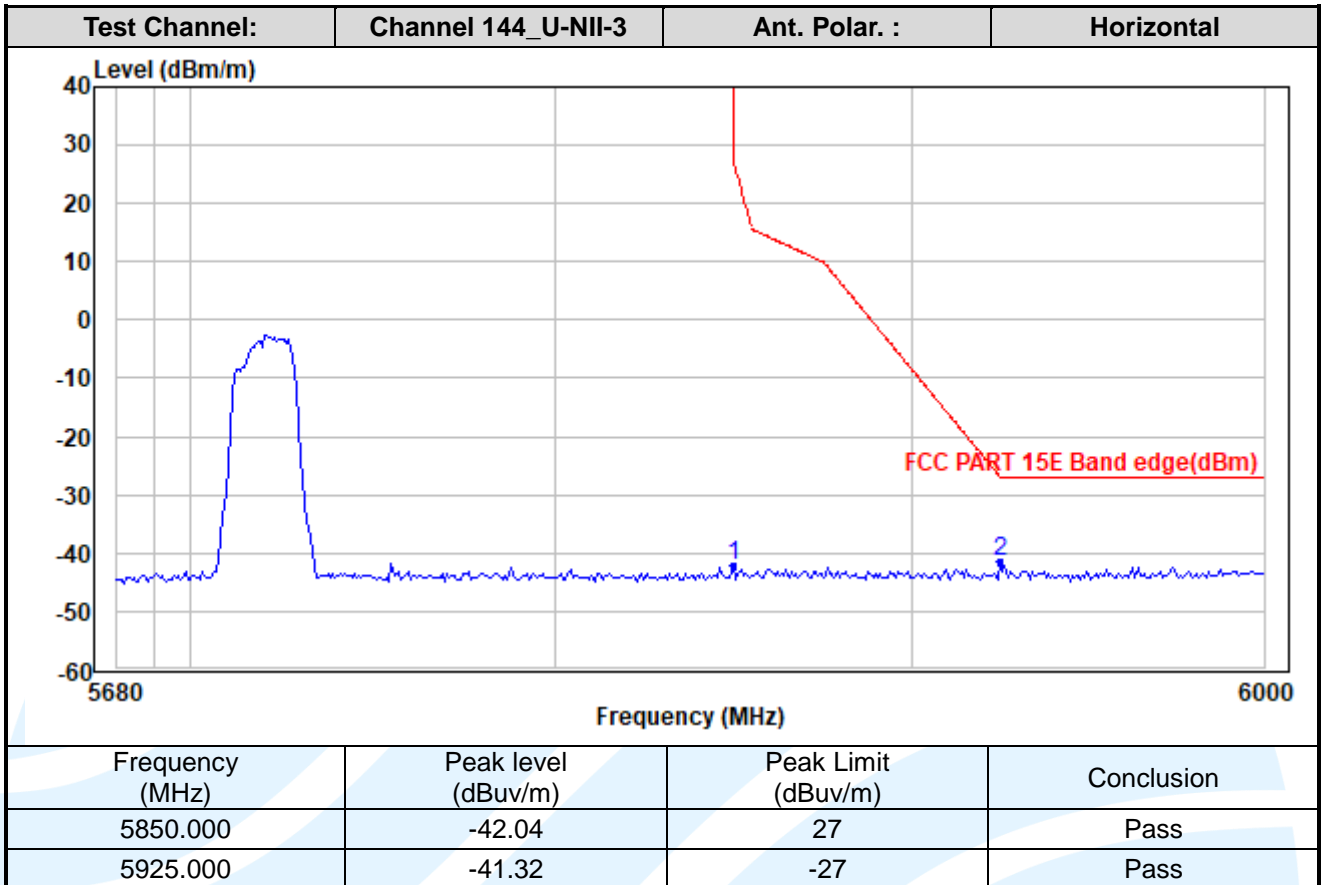
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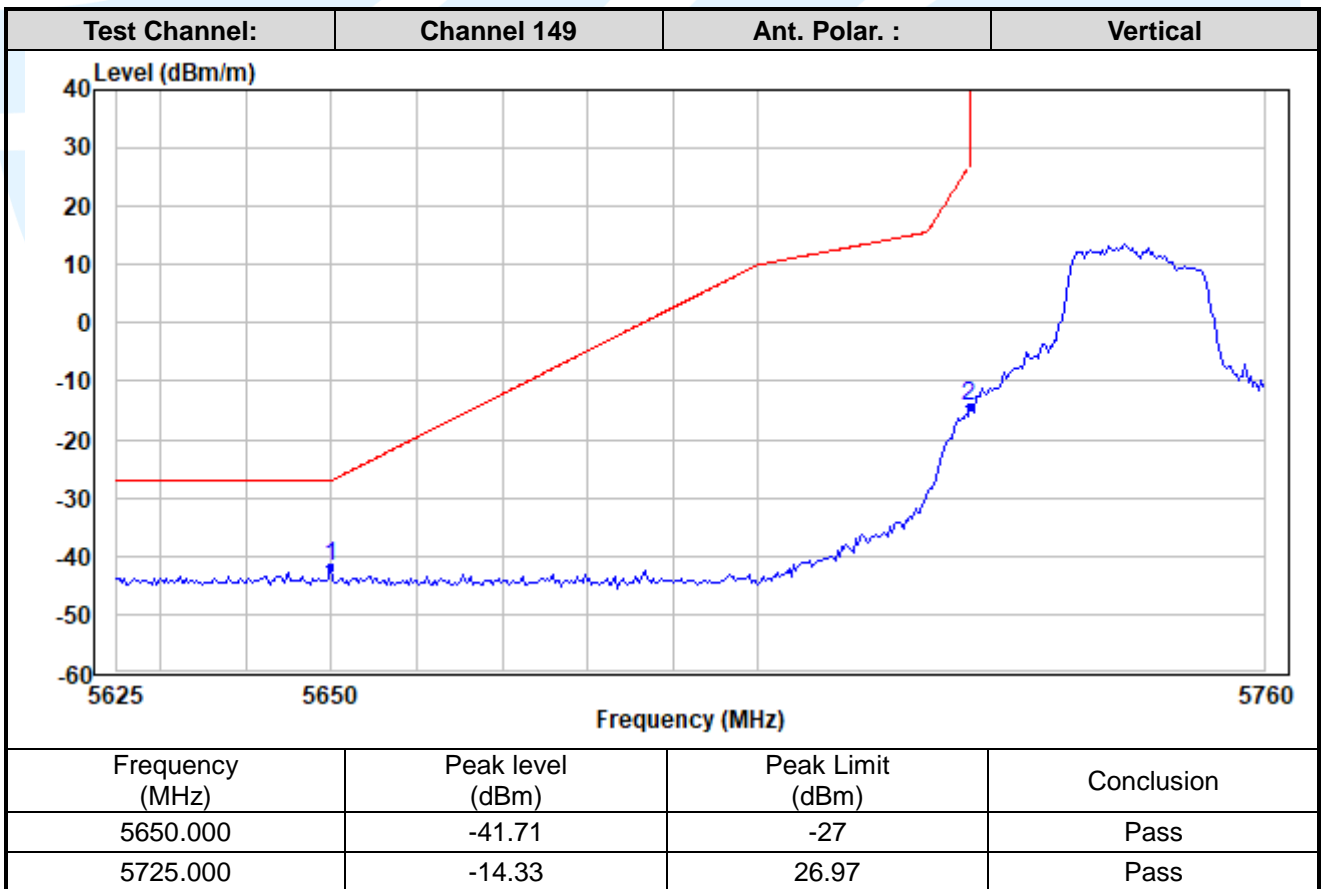
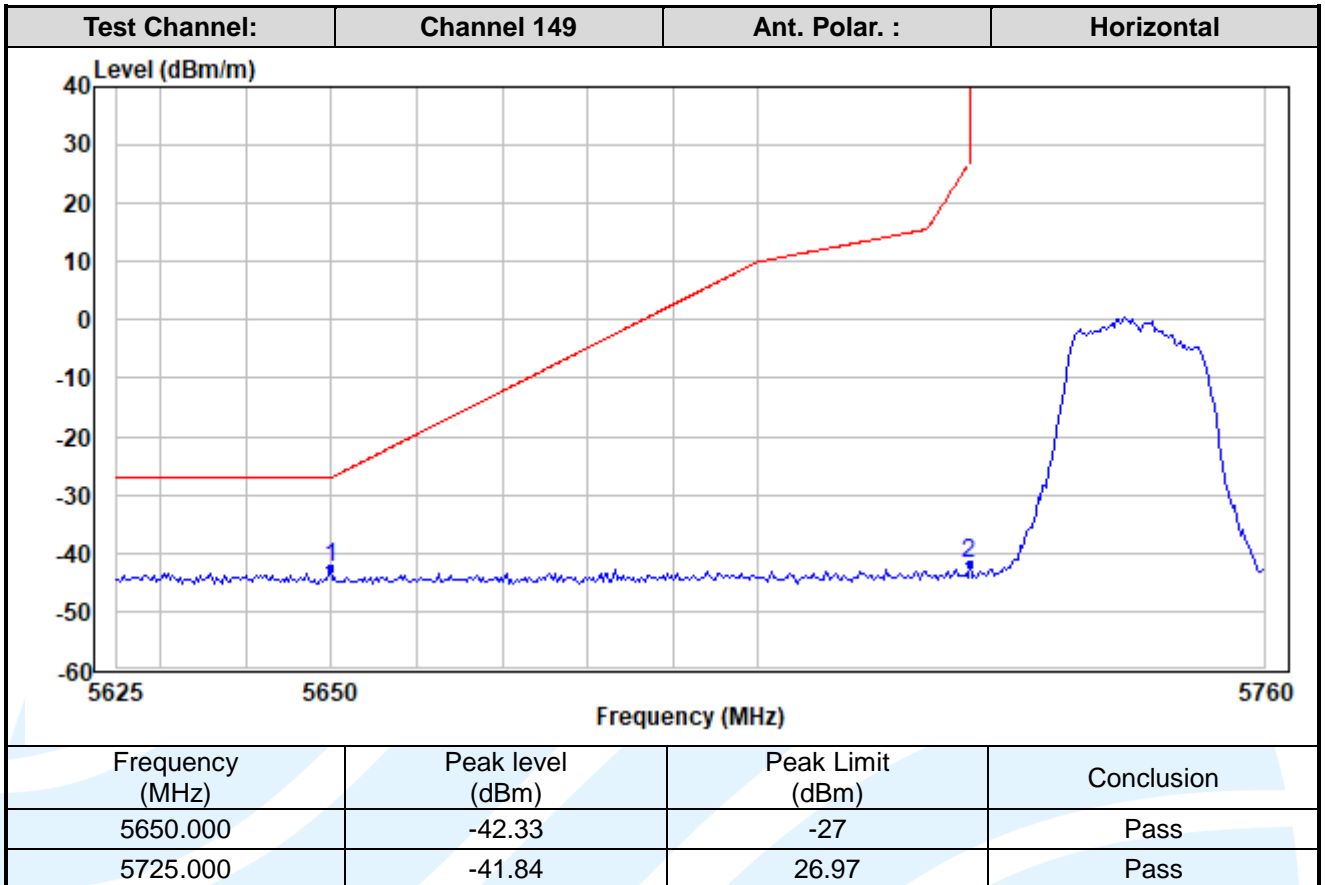
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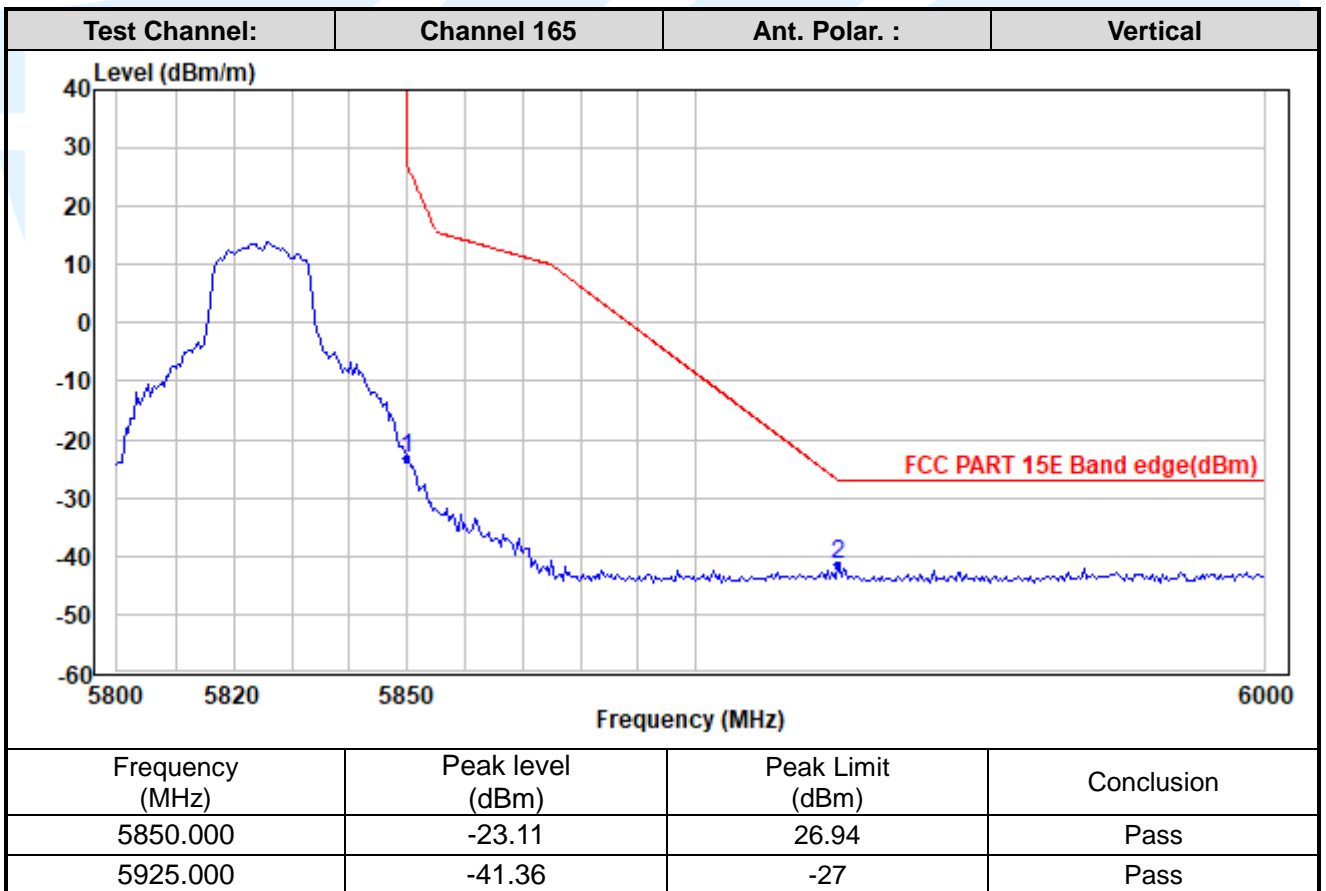
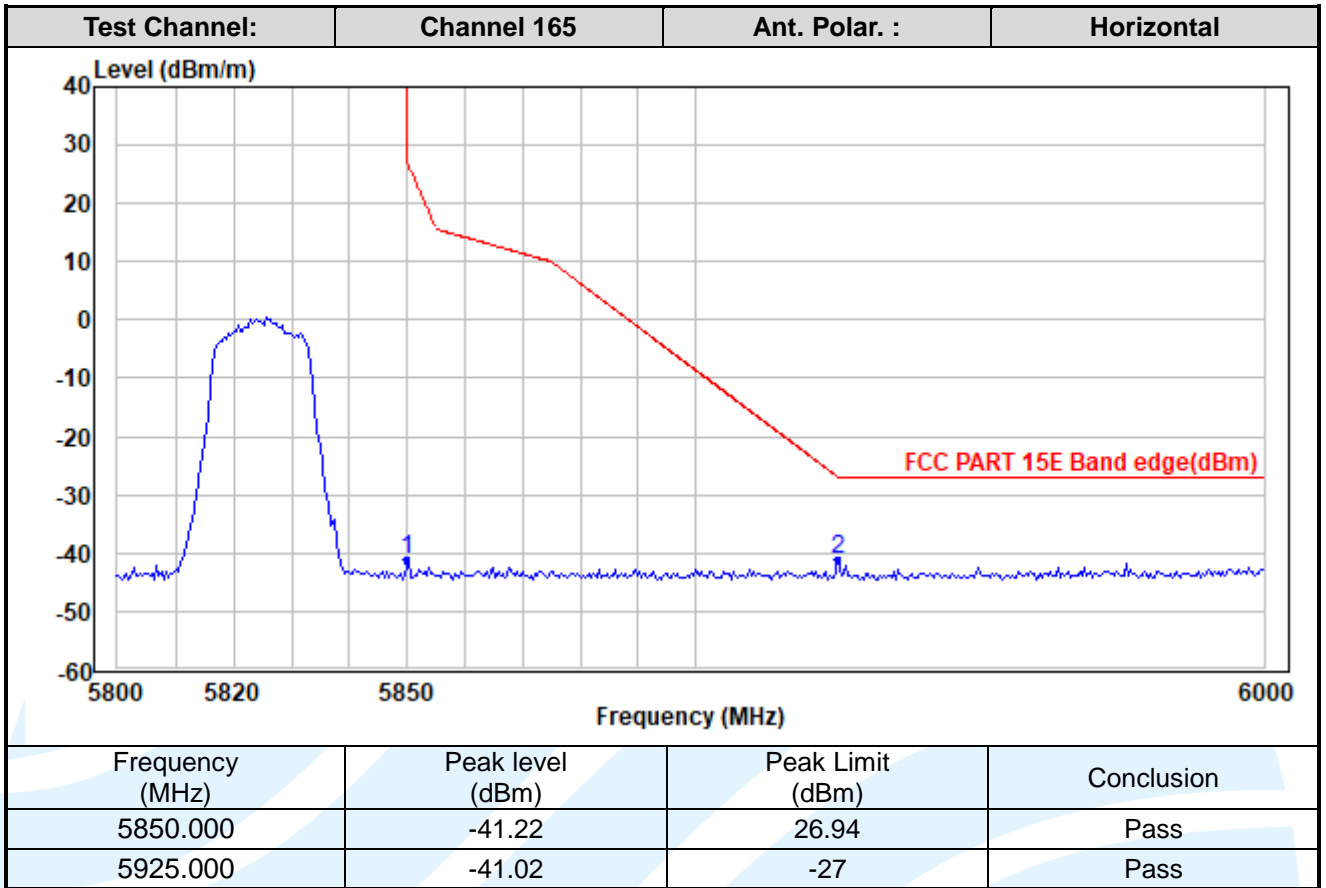
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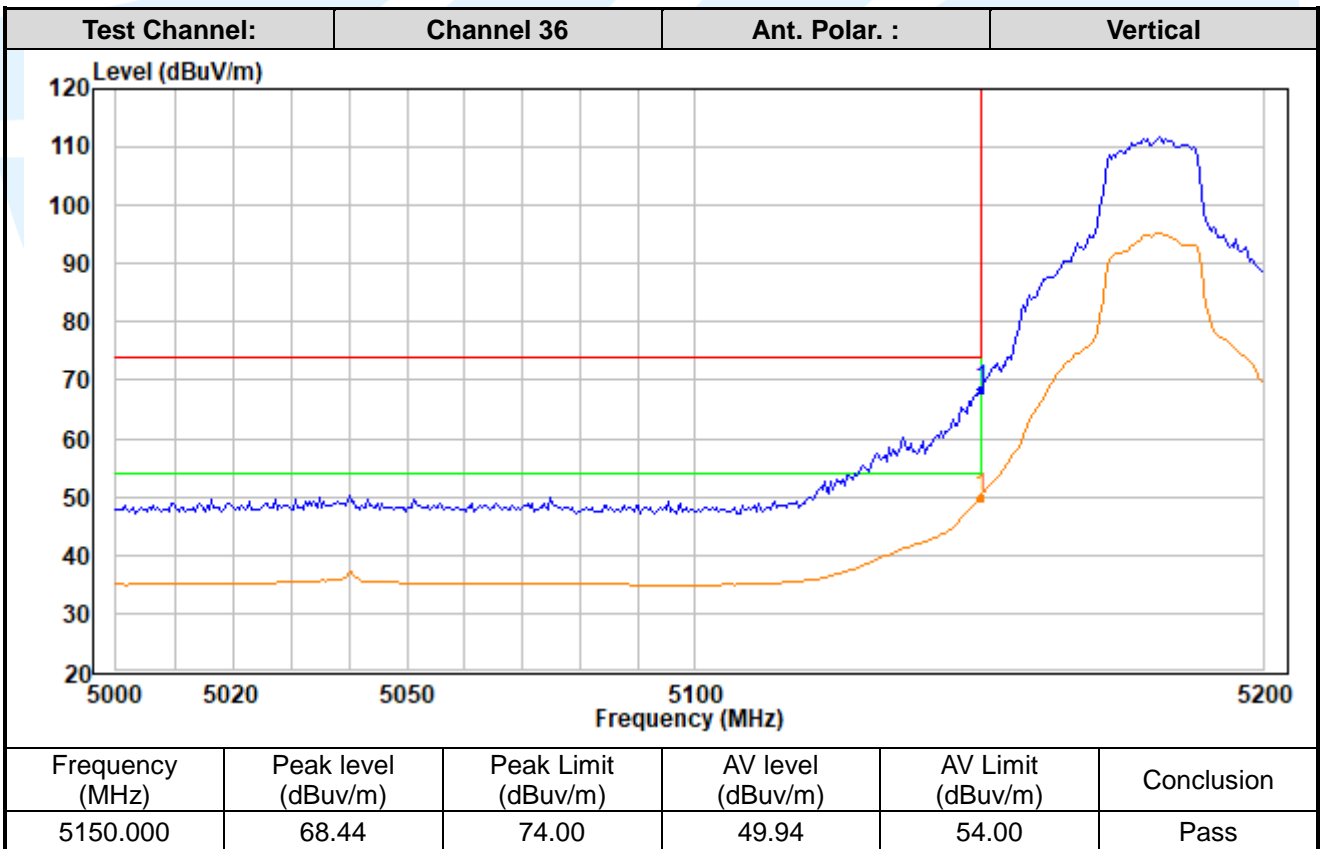
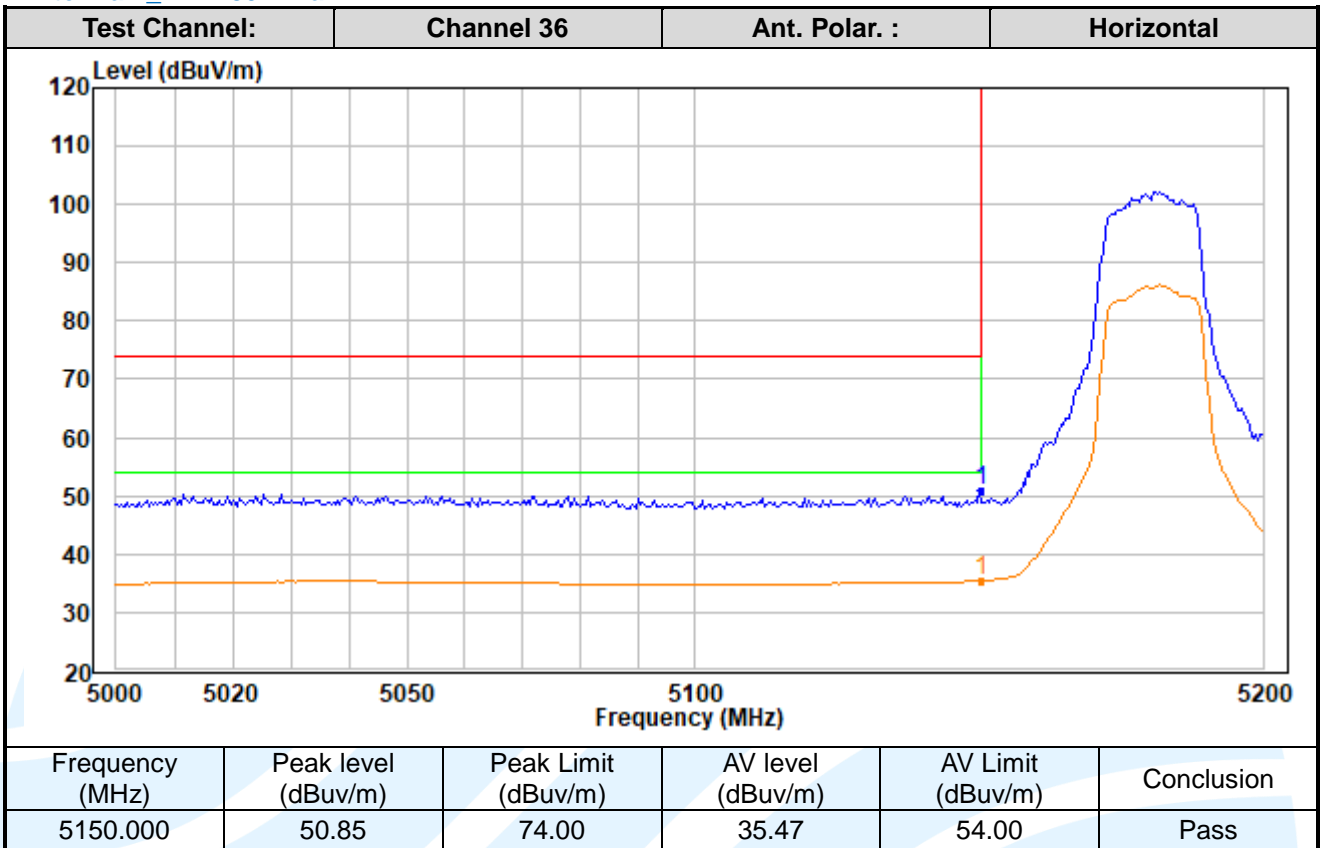
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Antenna 1_ IEEE 802.11a



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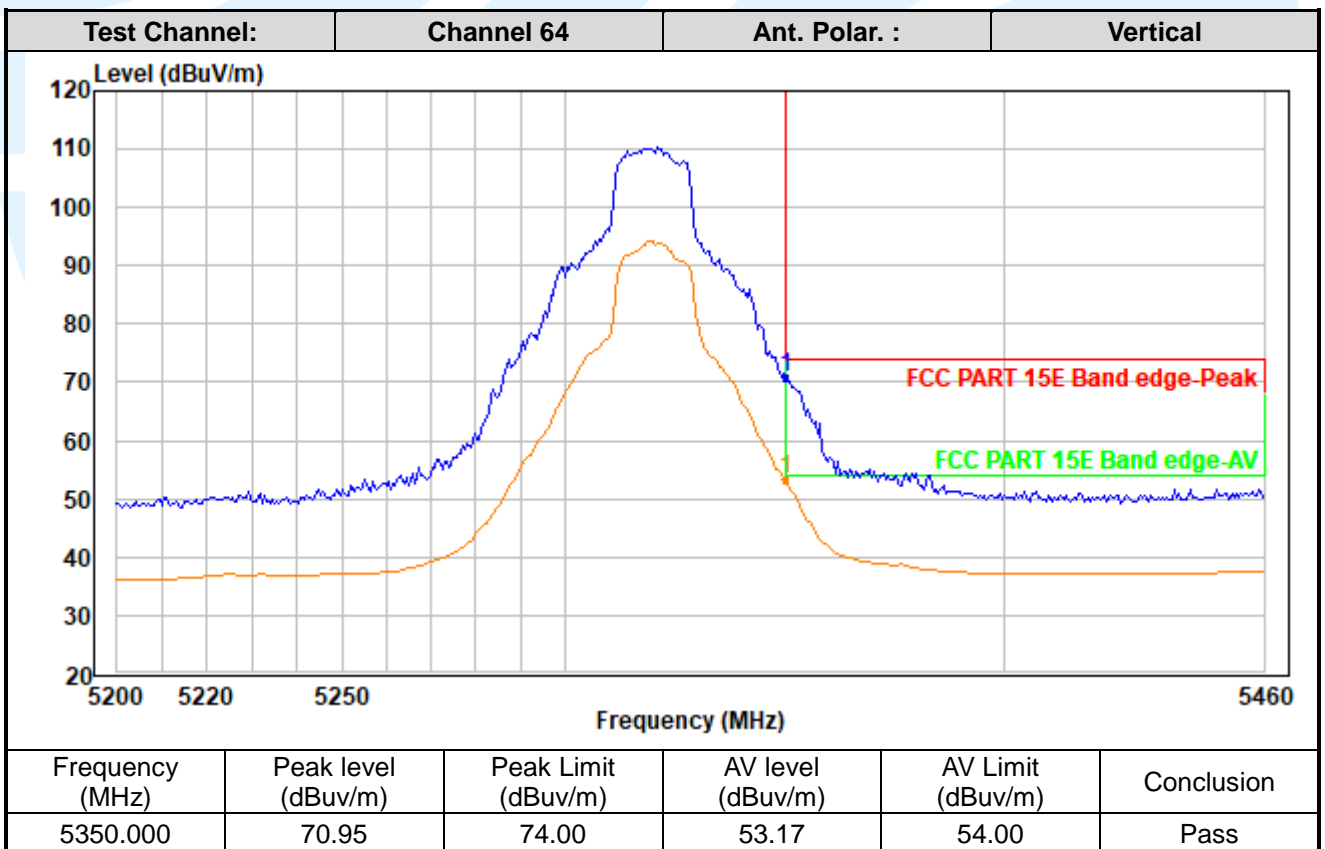
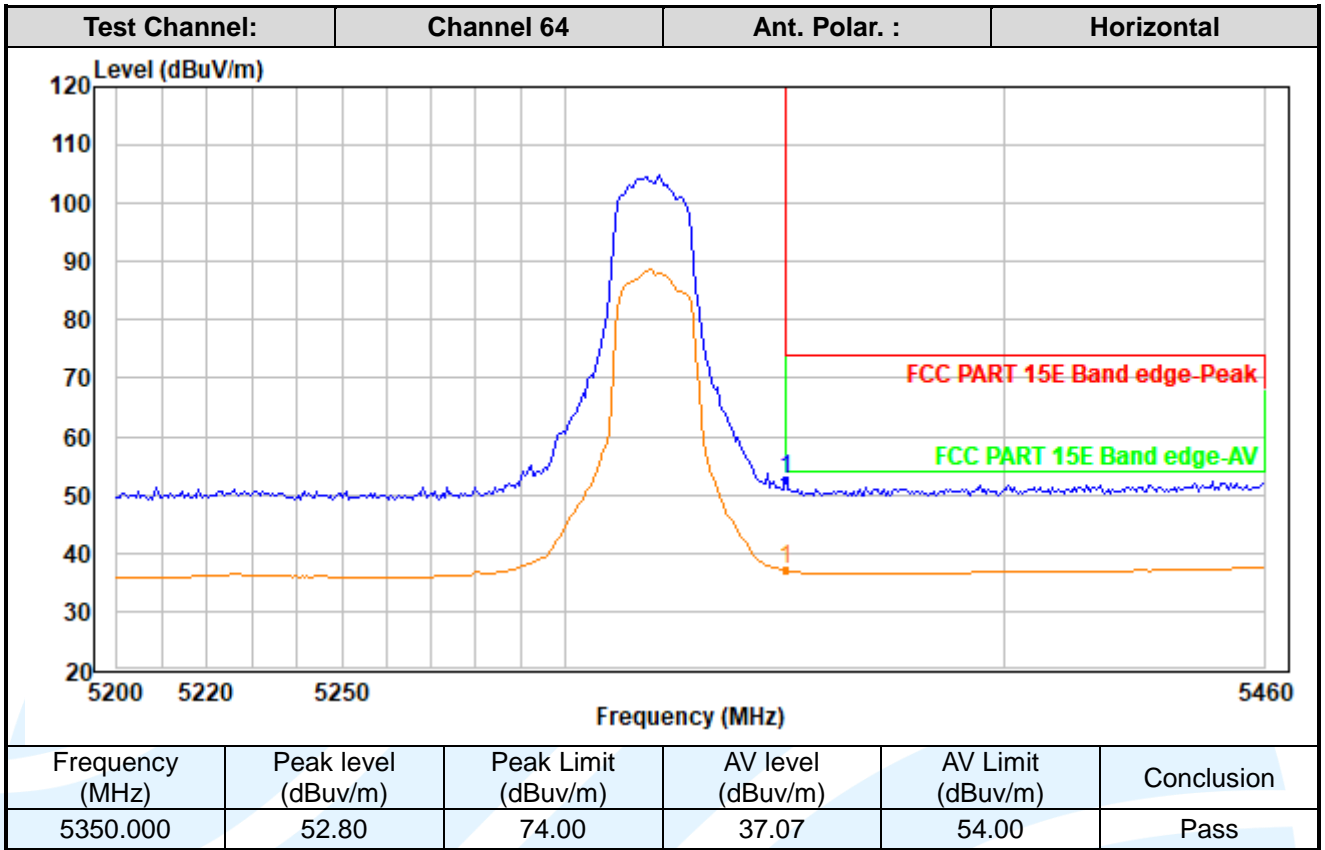
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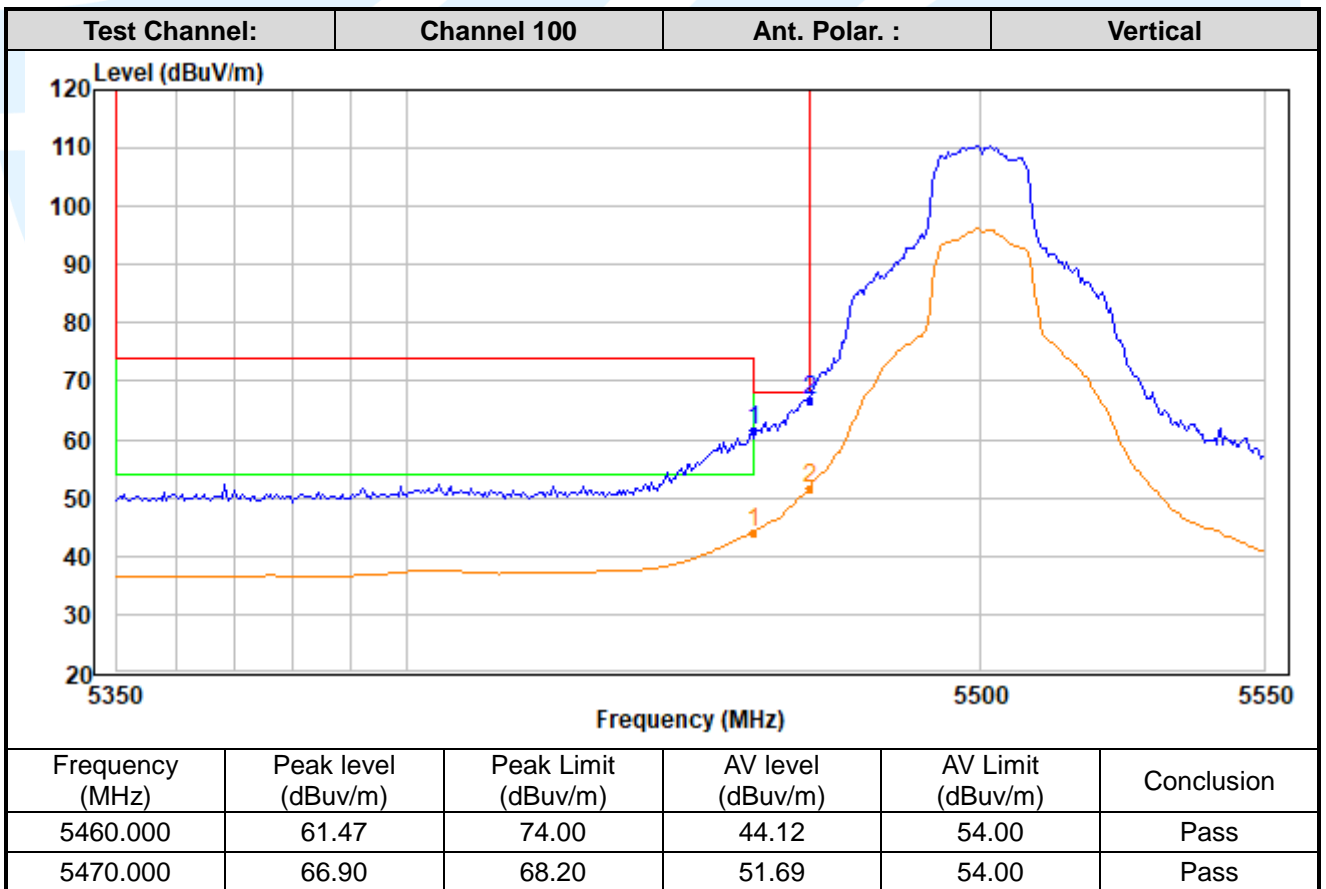
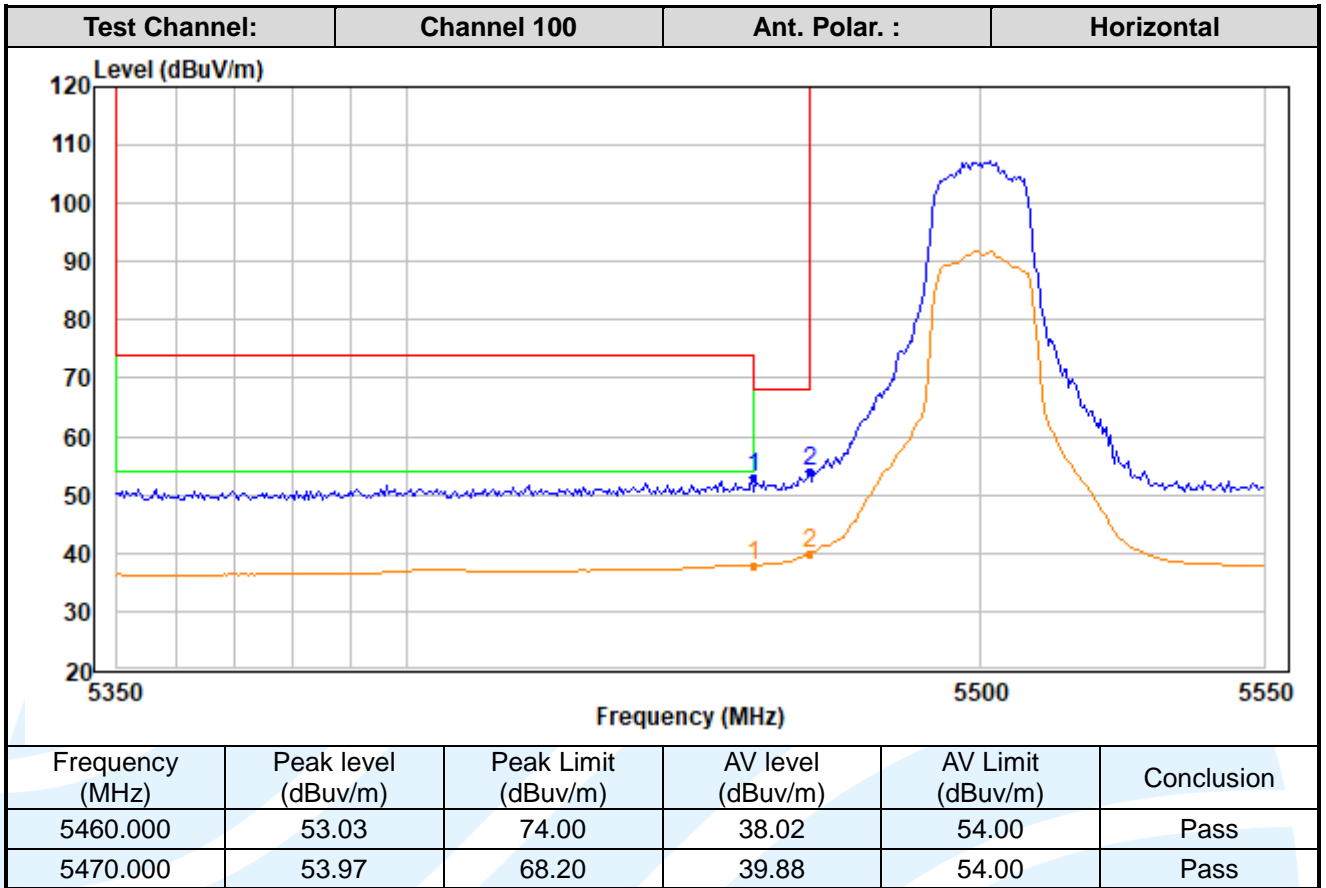
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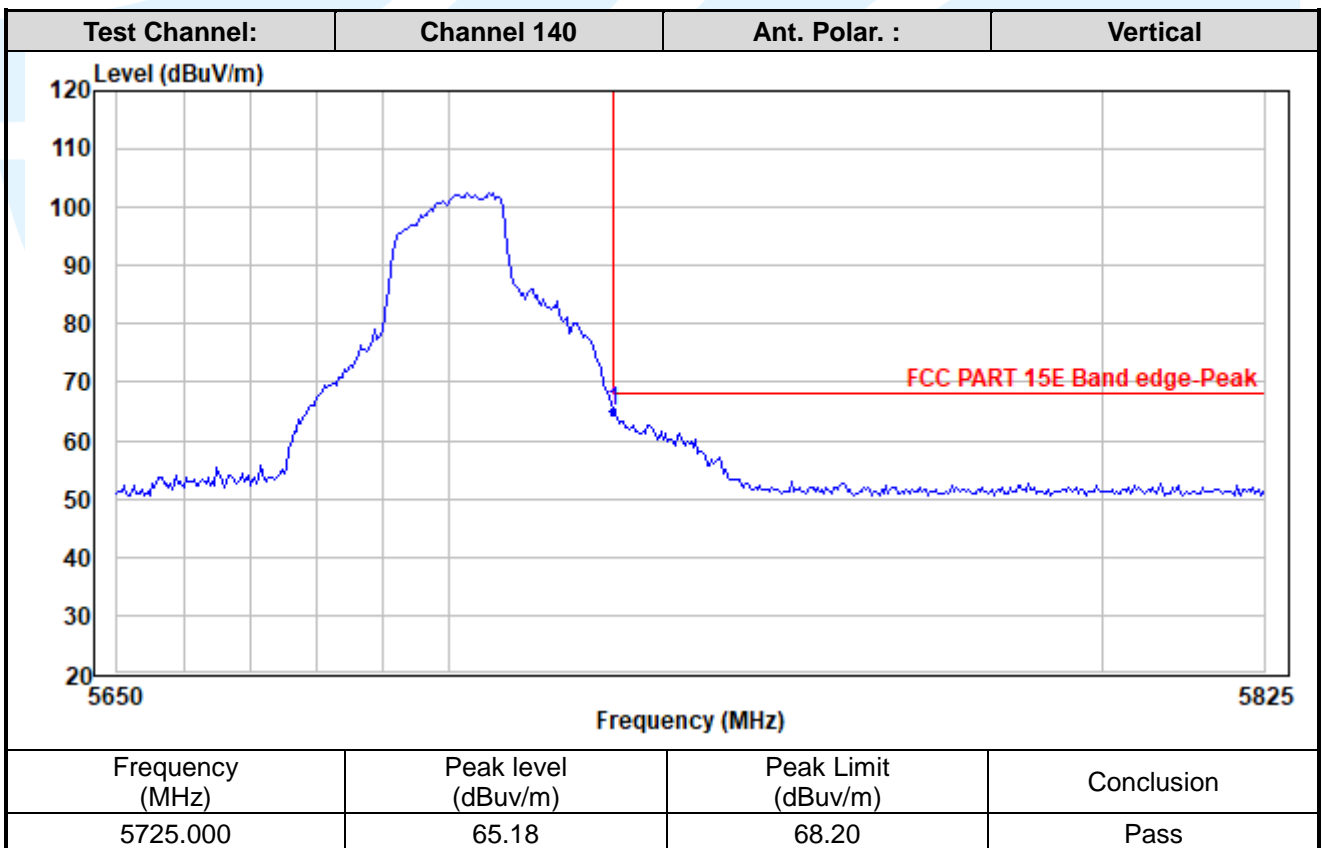
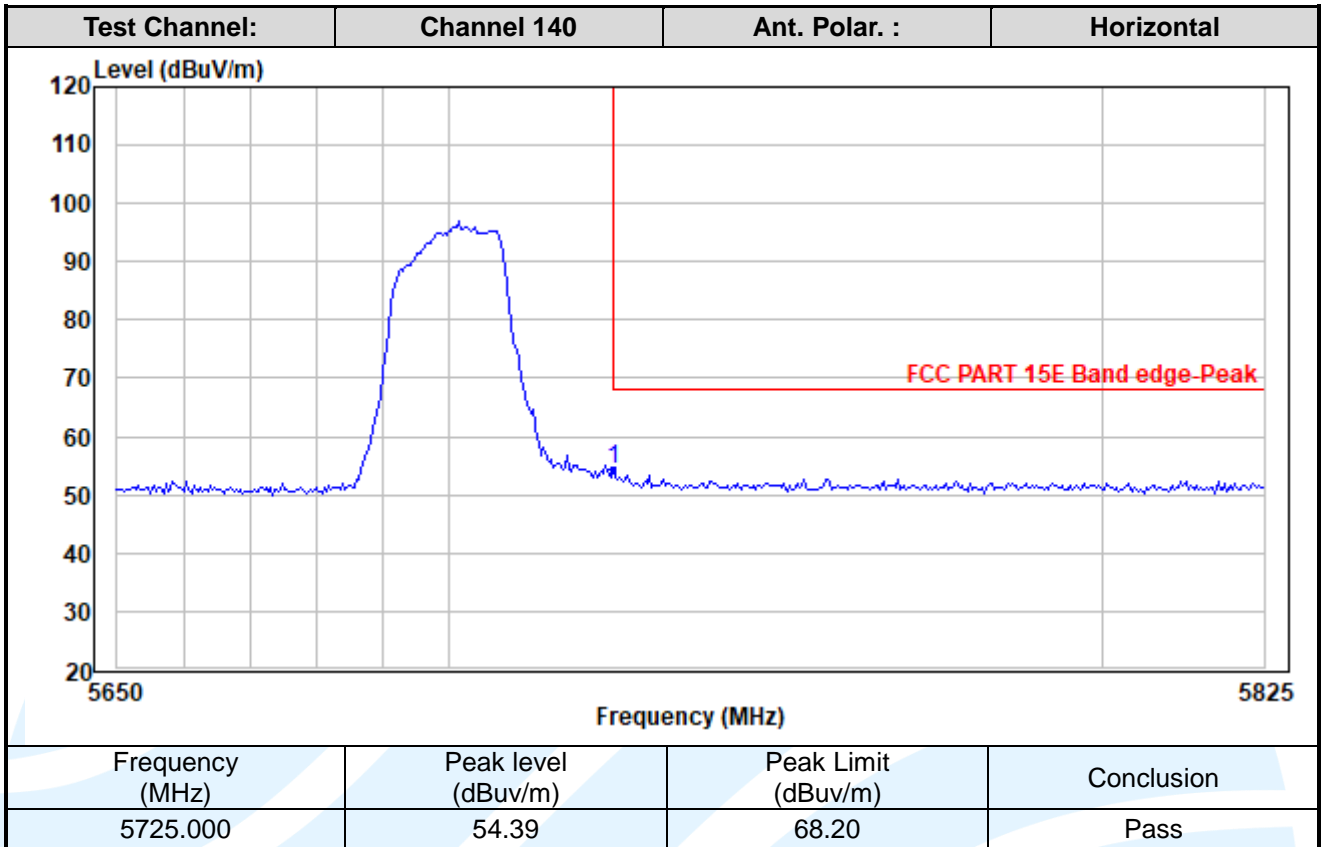
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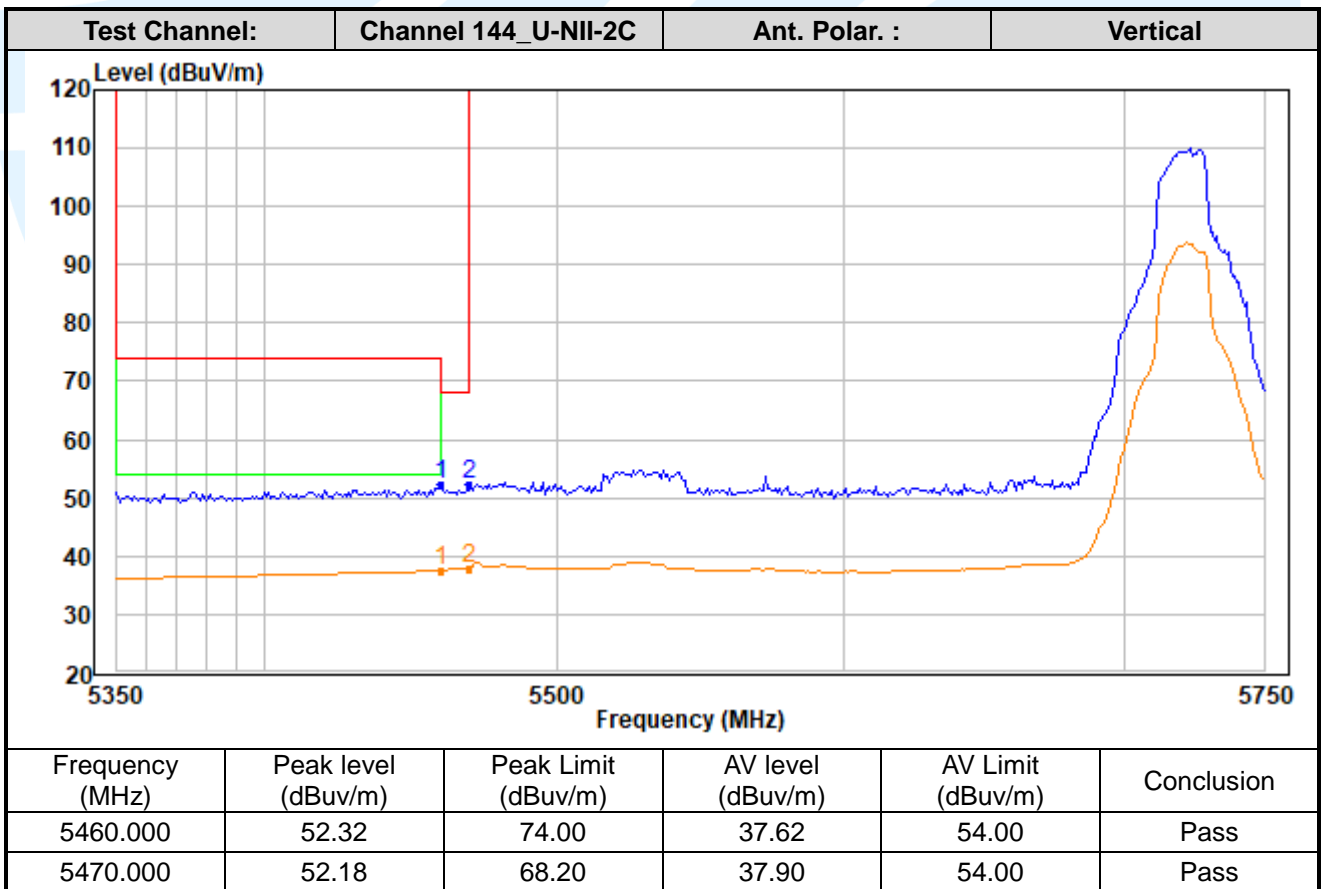
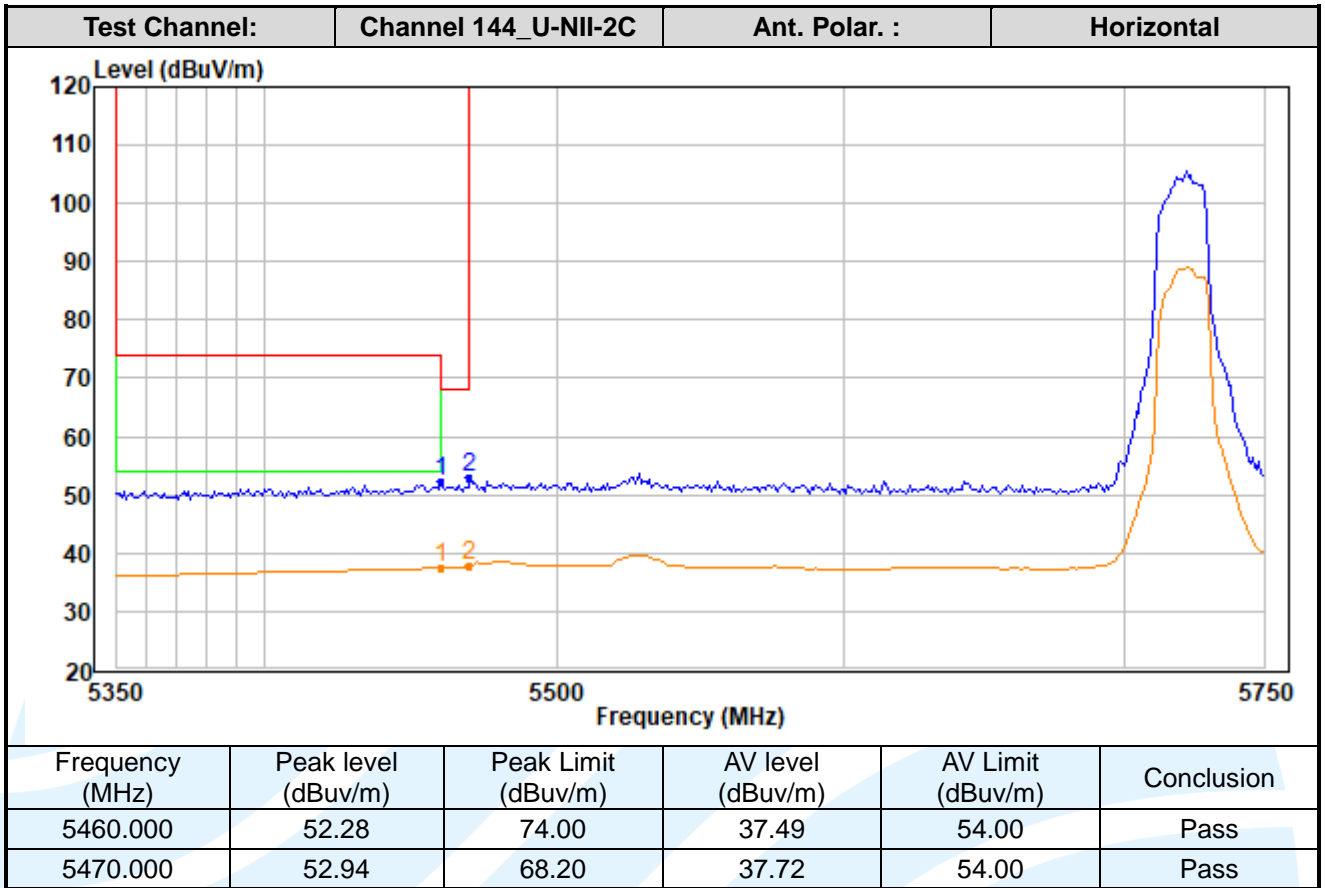
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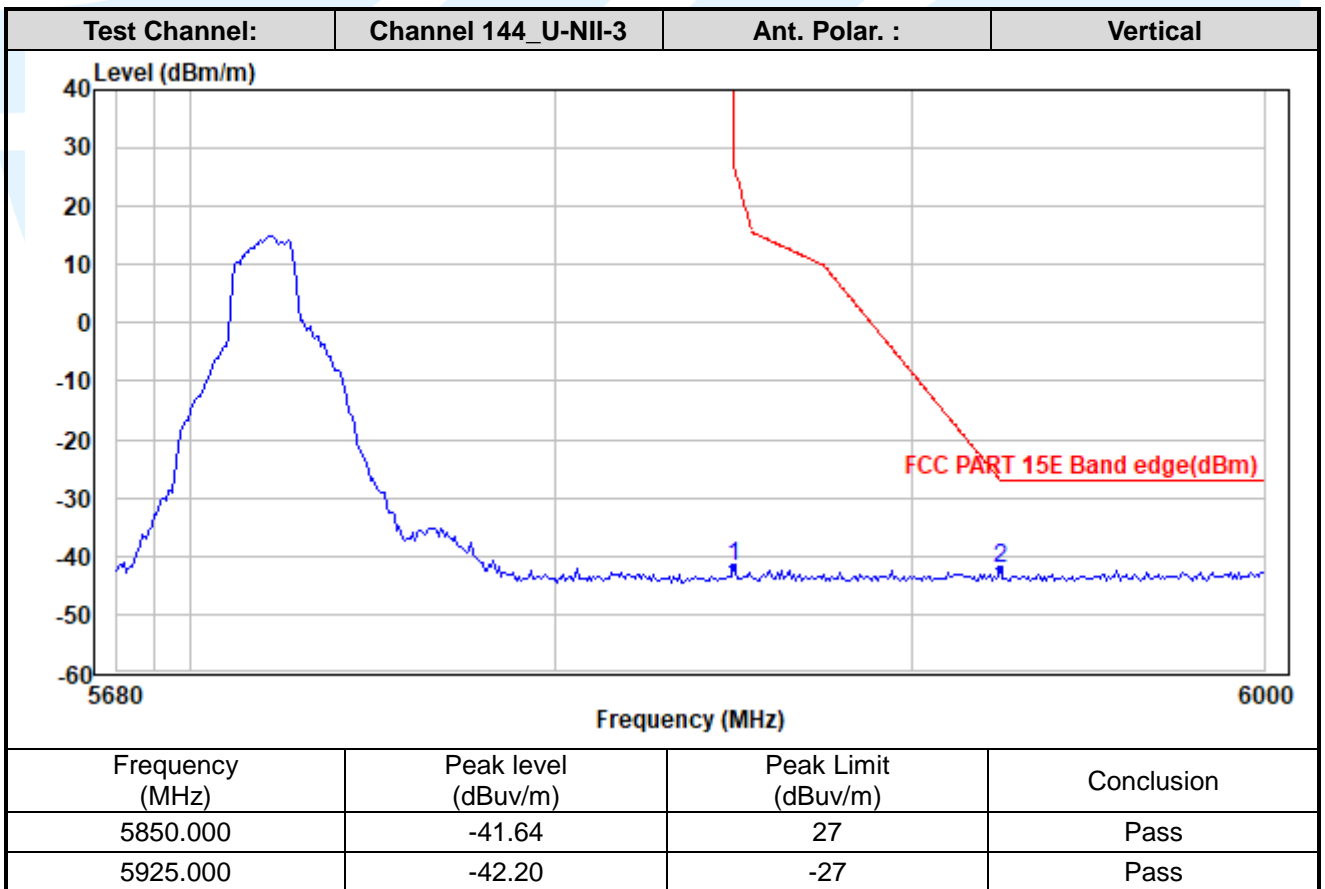
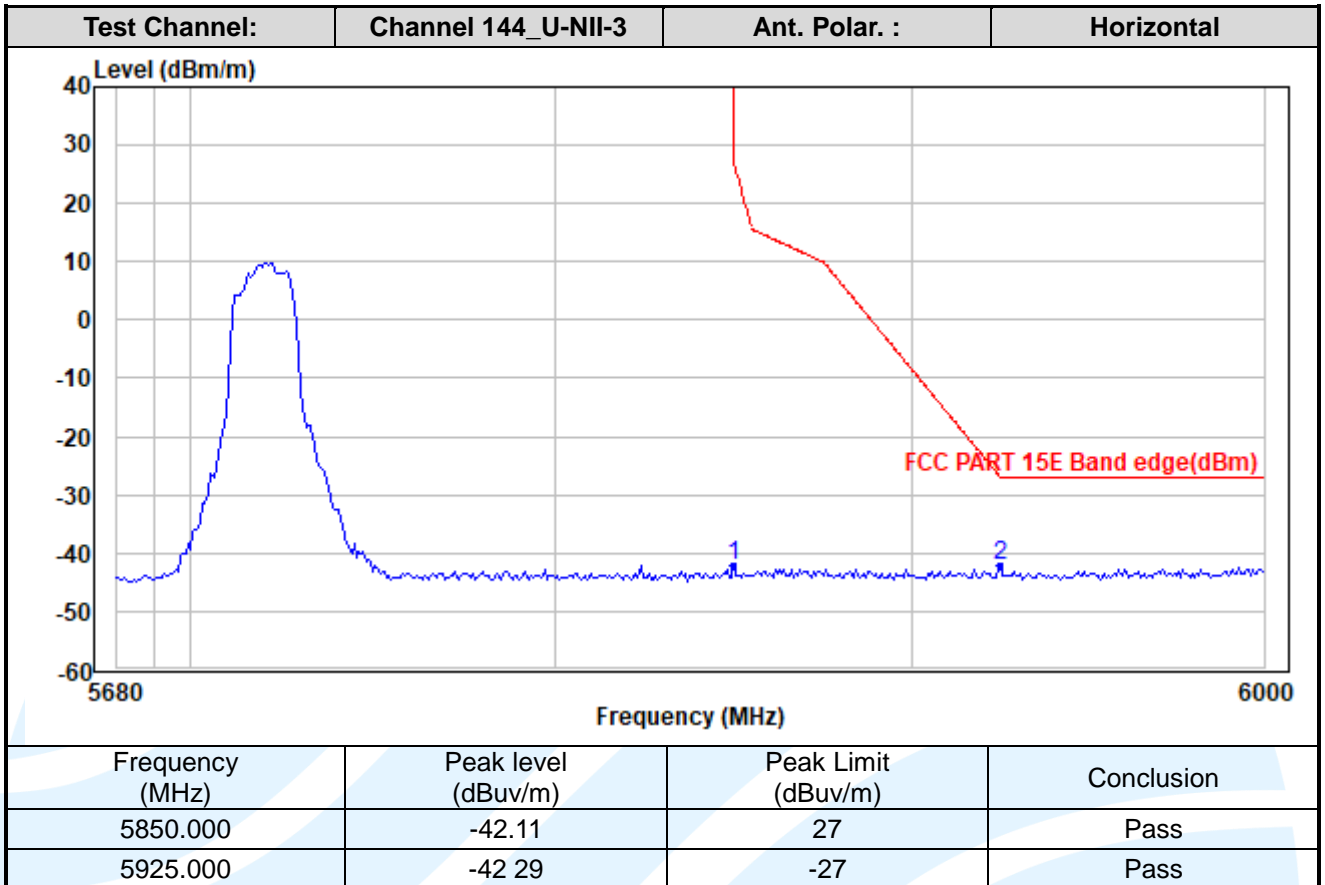
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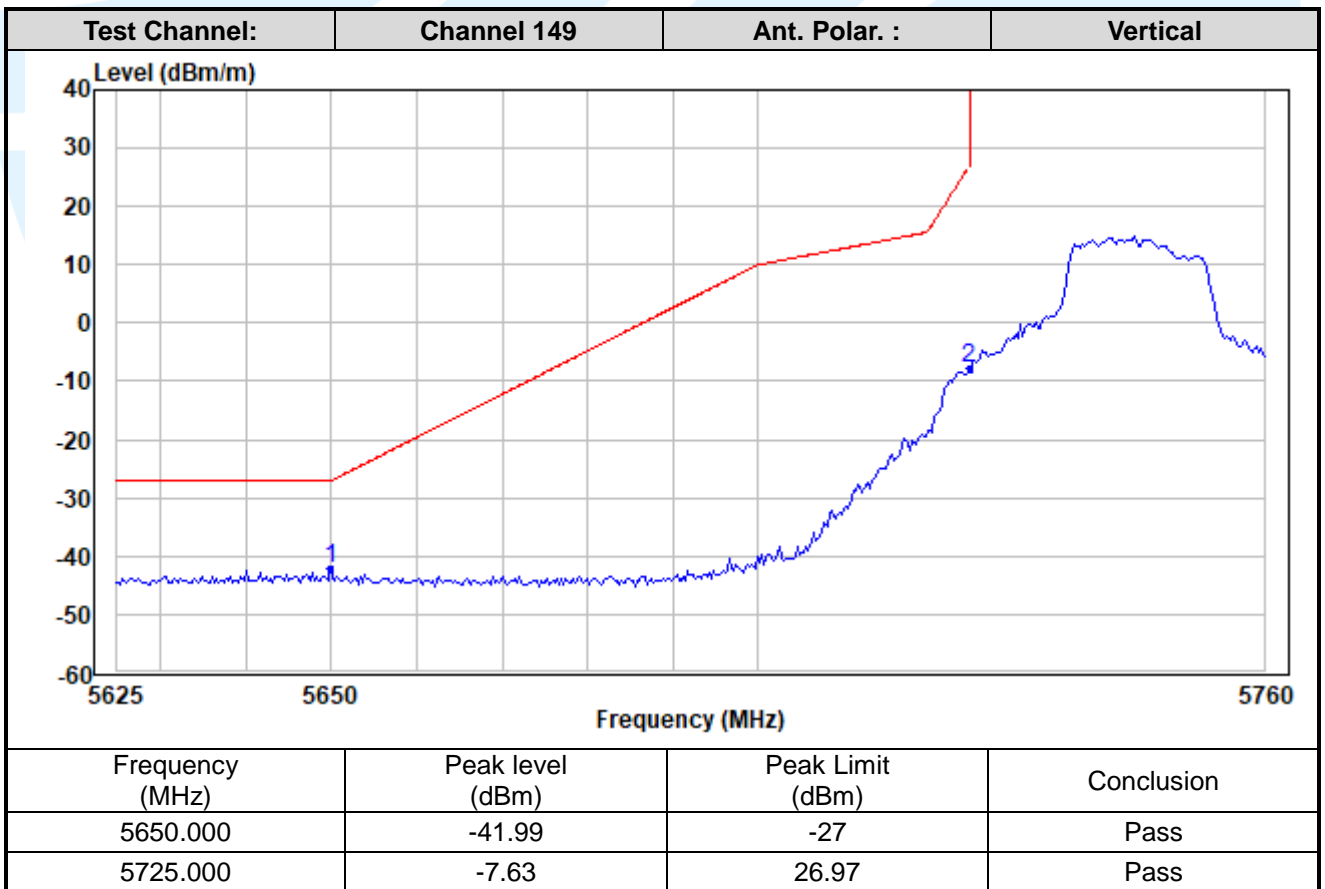
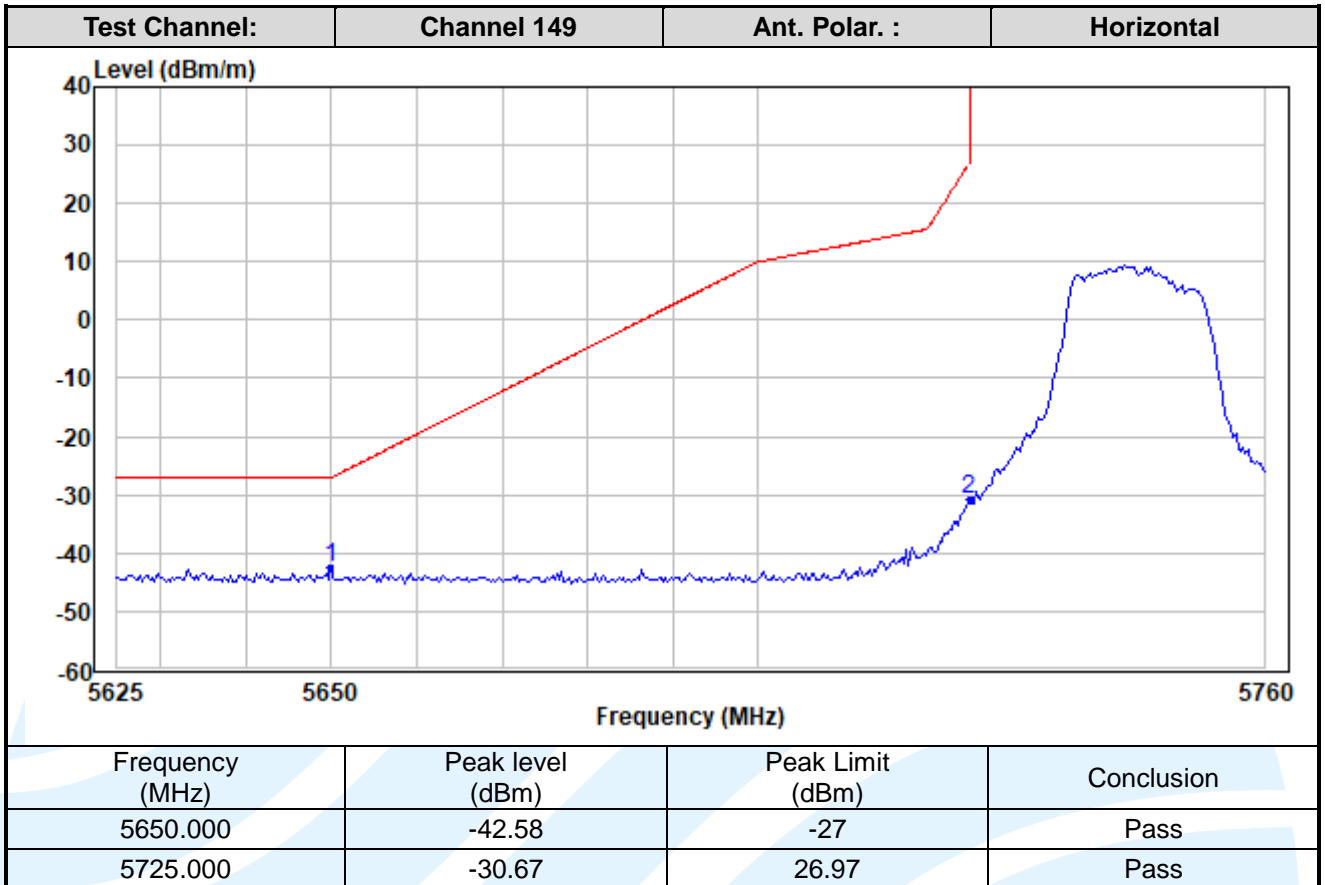
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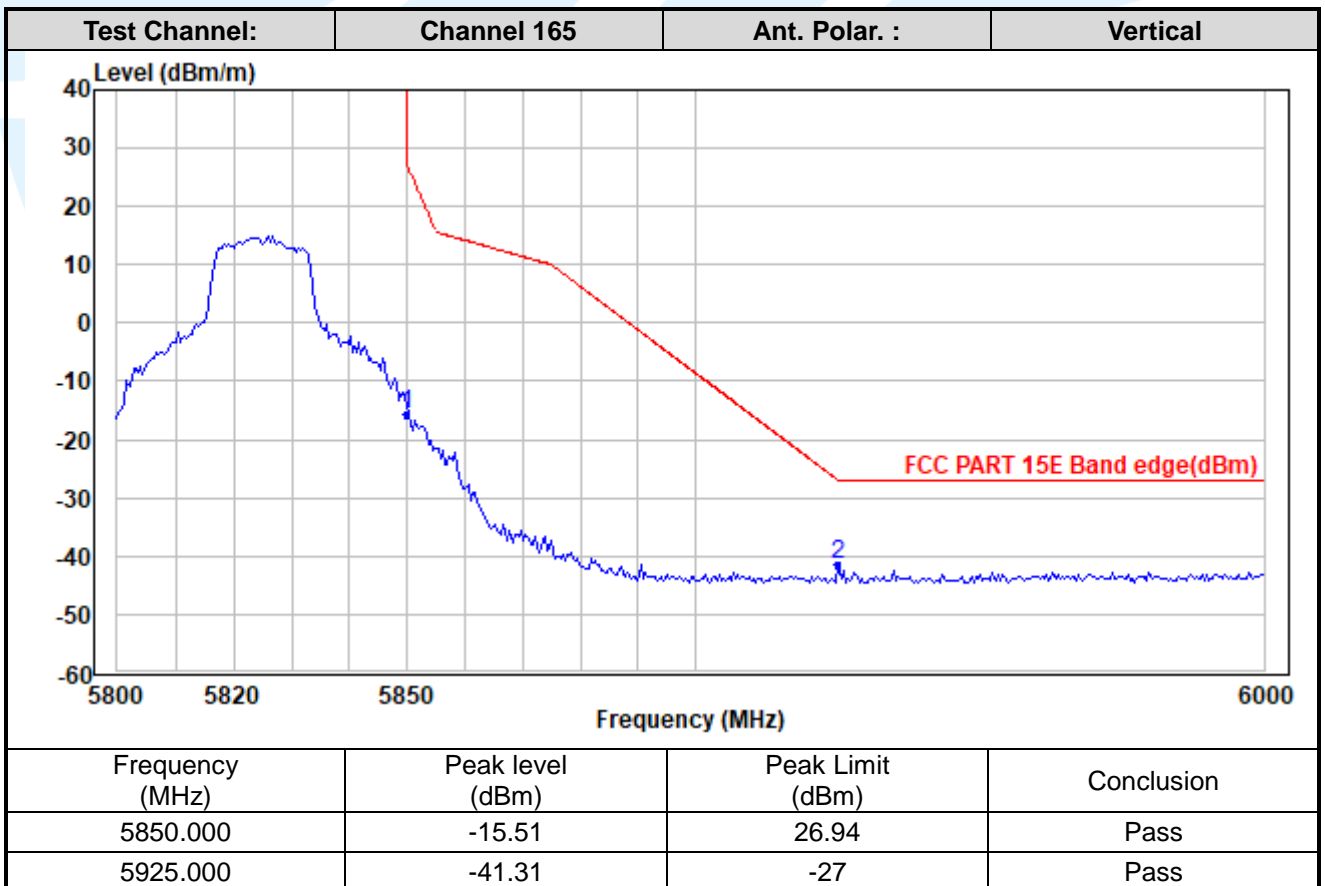
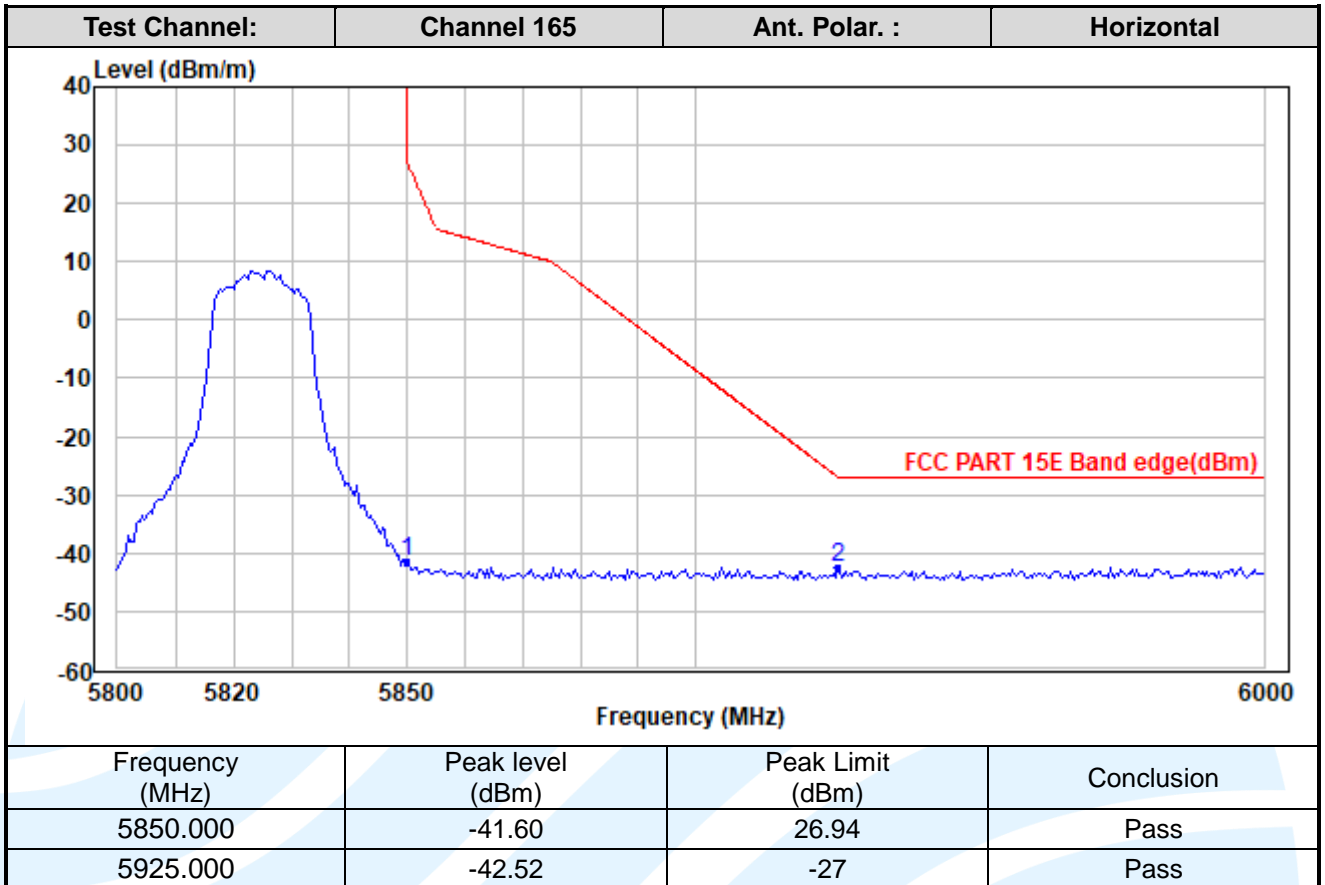
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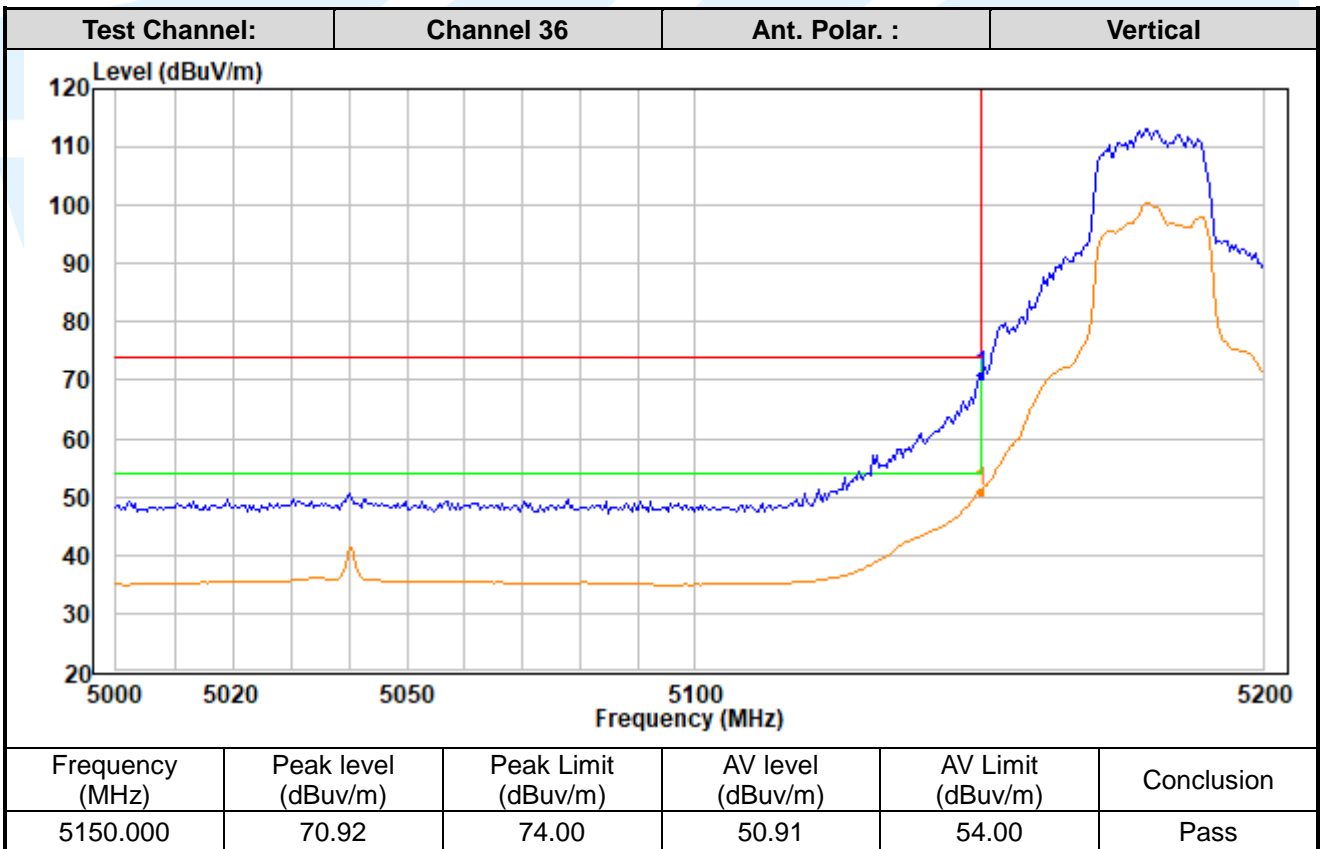
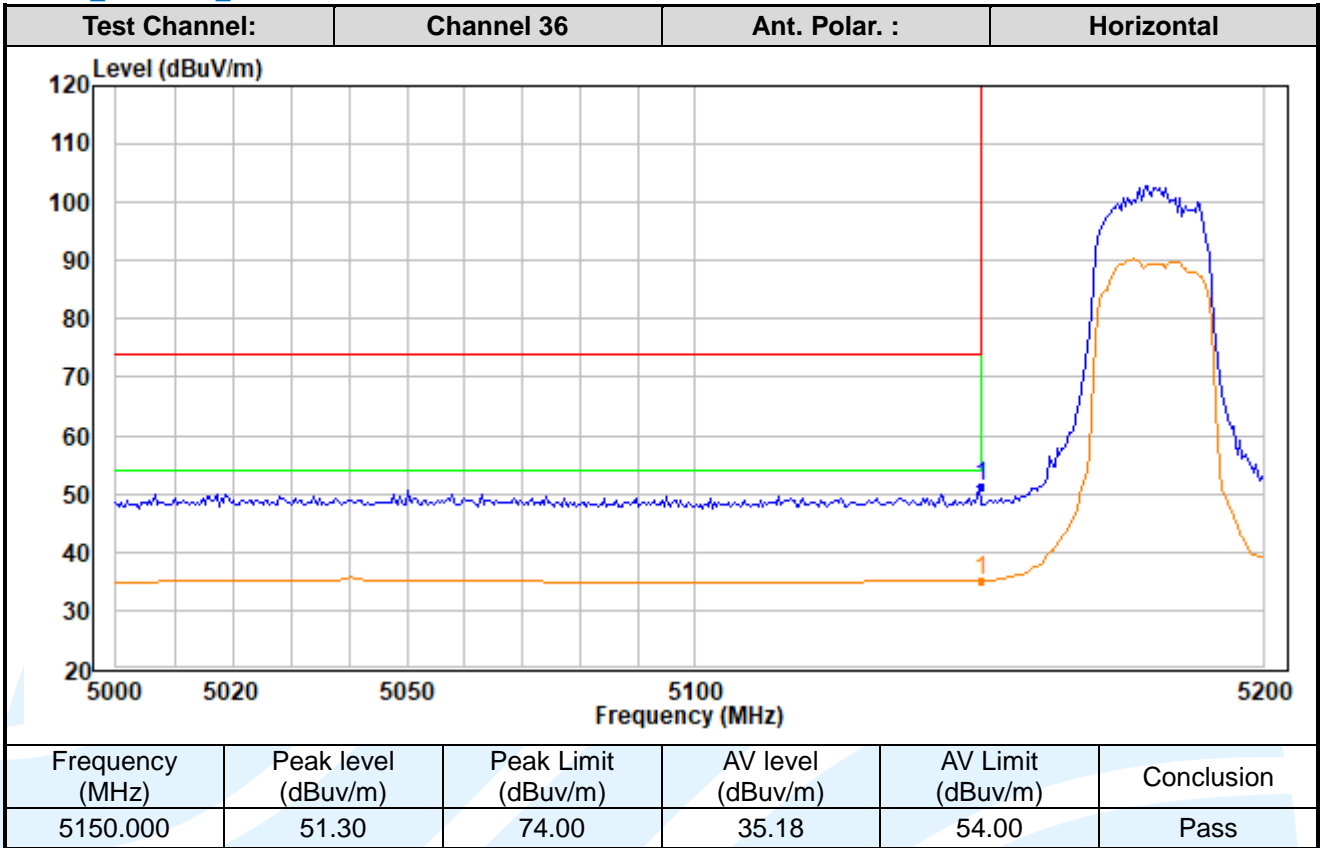
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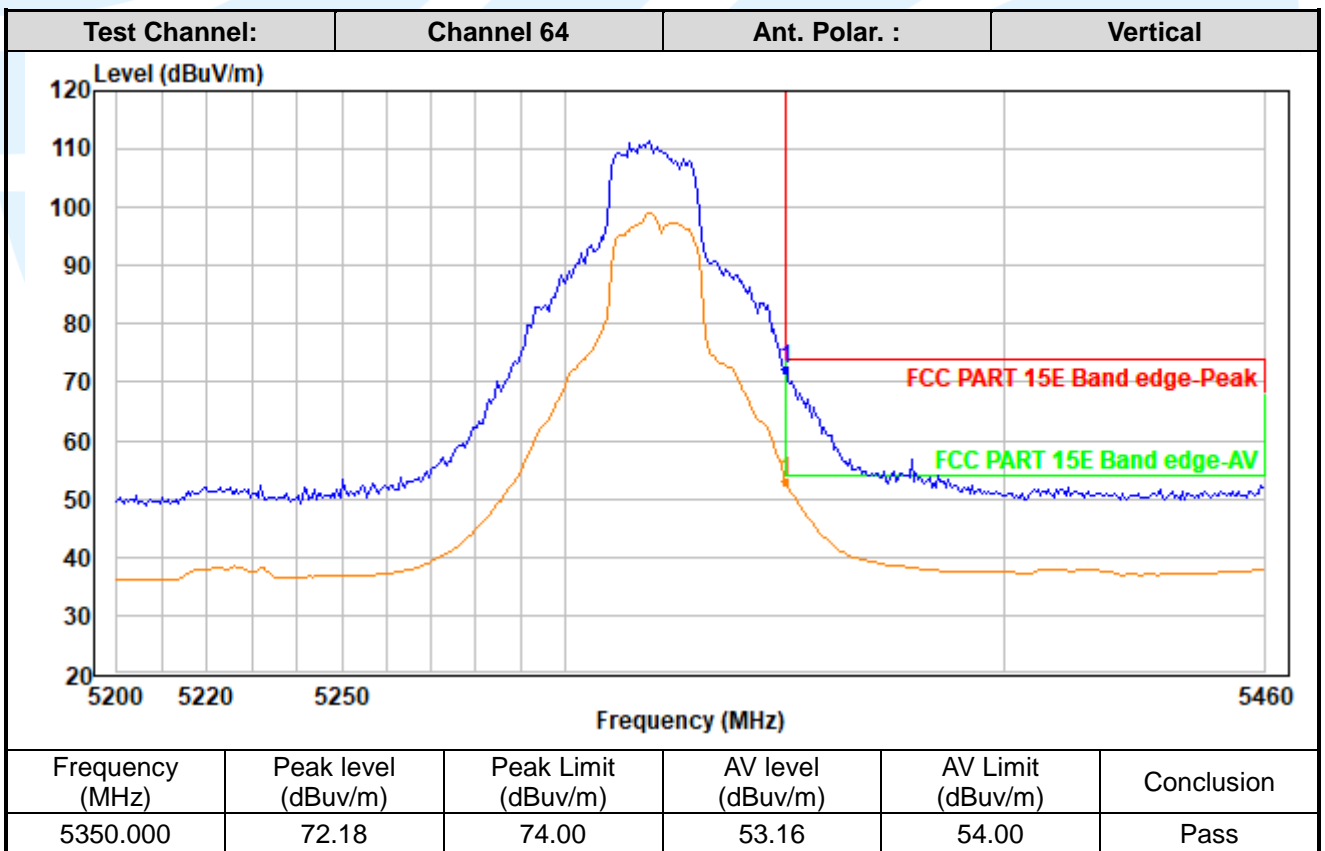
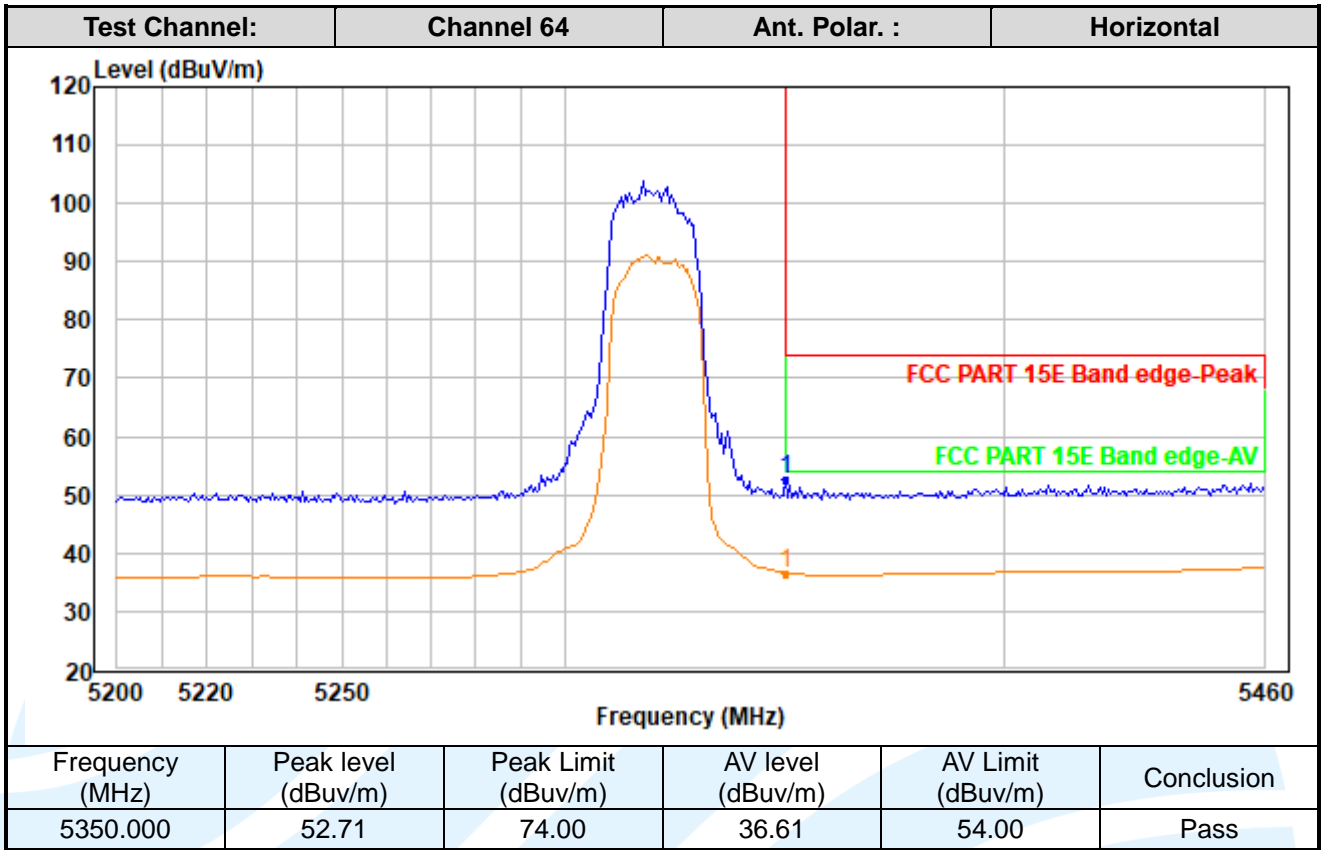
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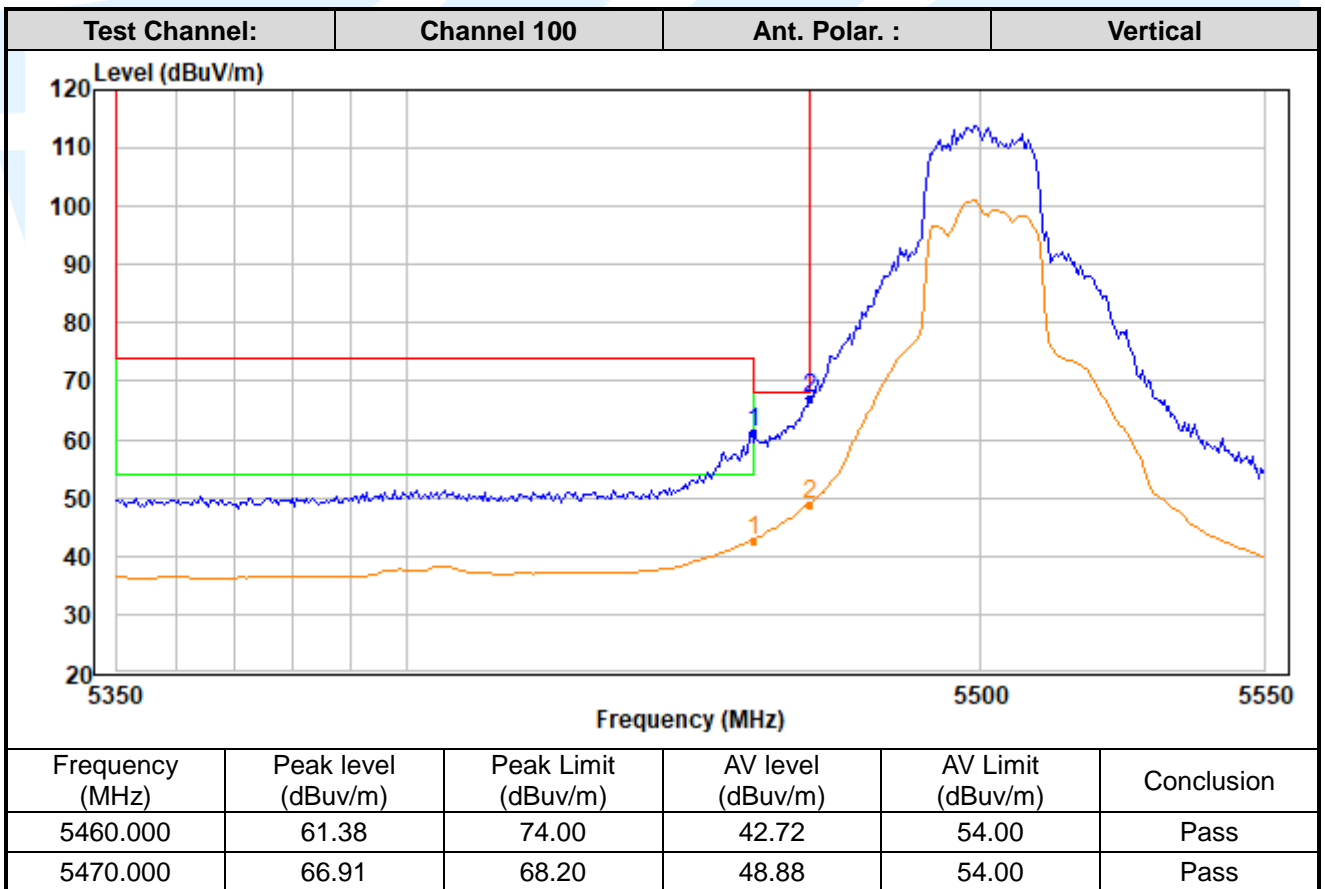
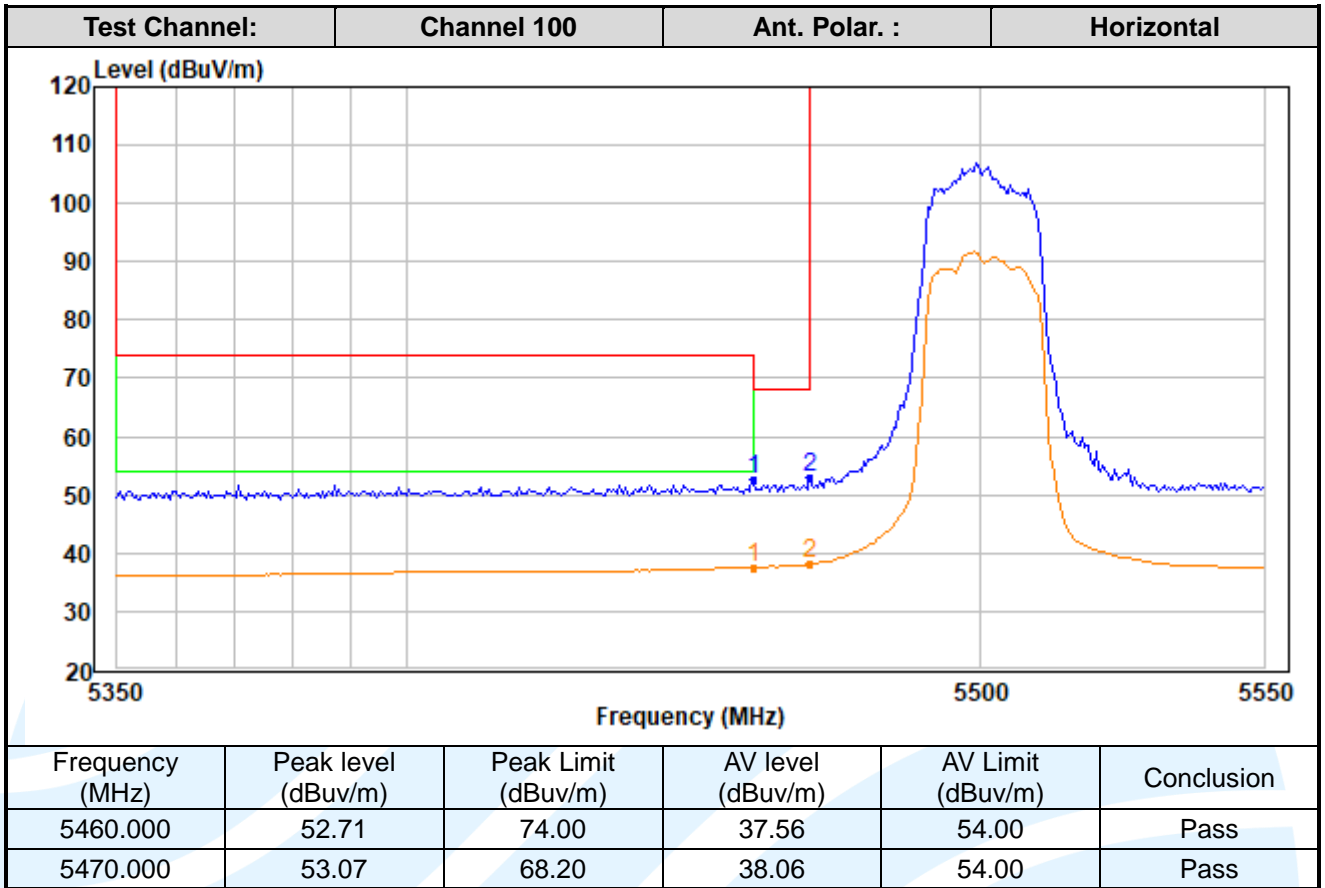
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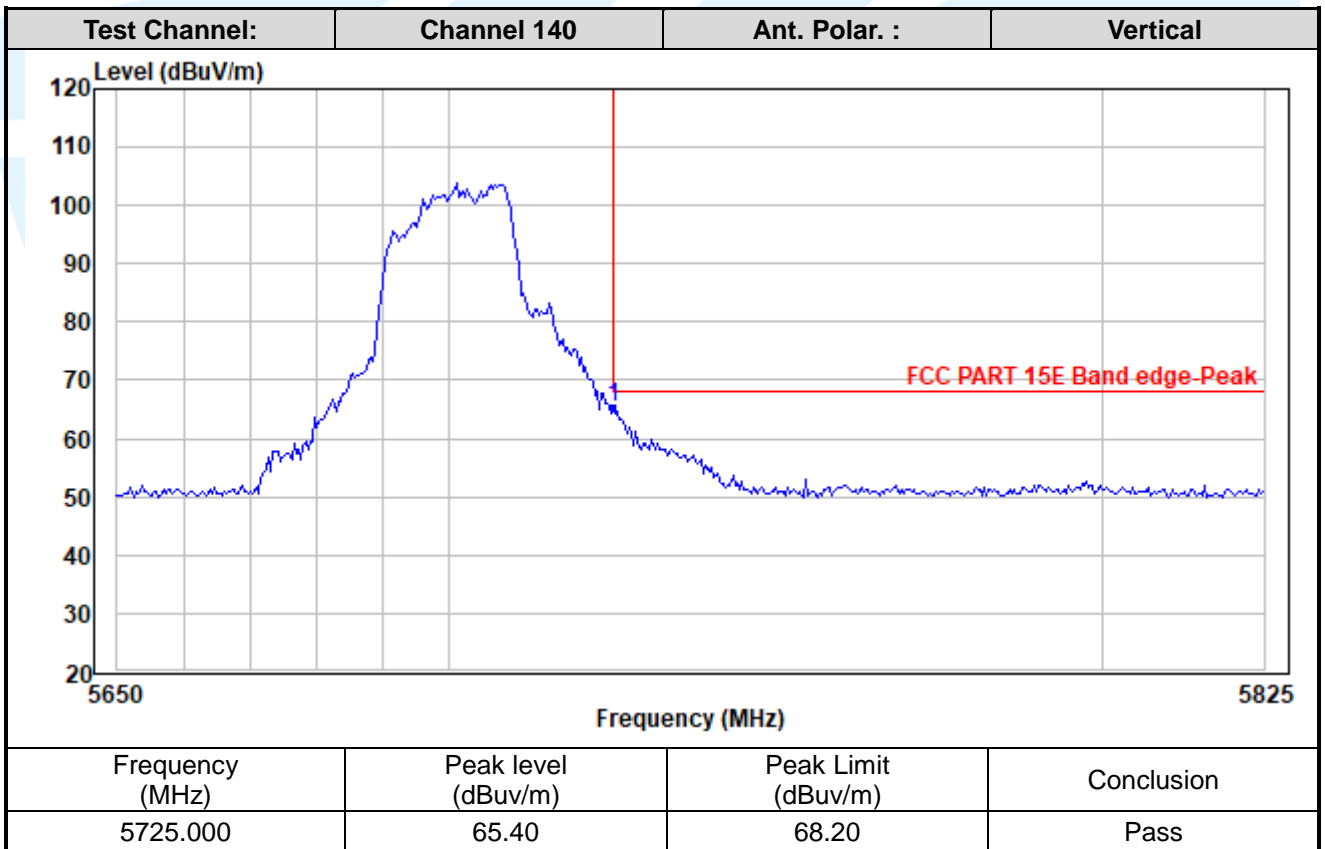
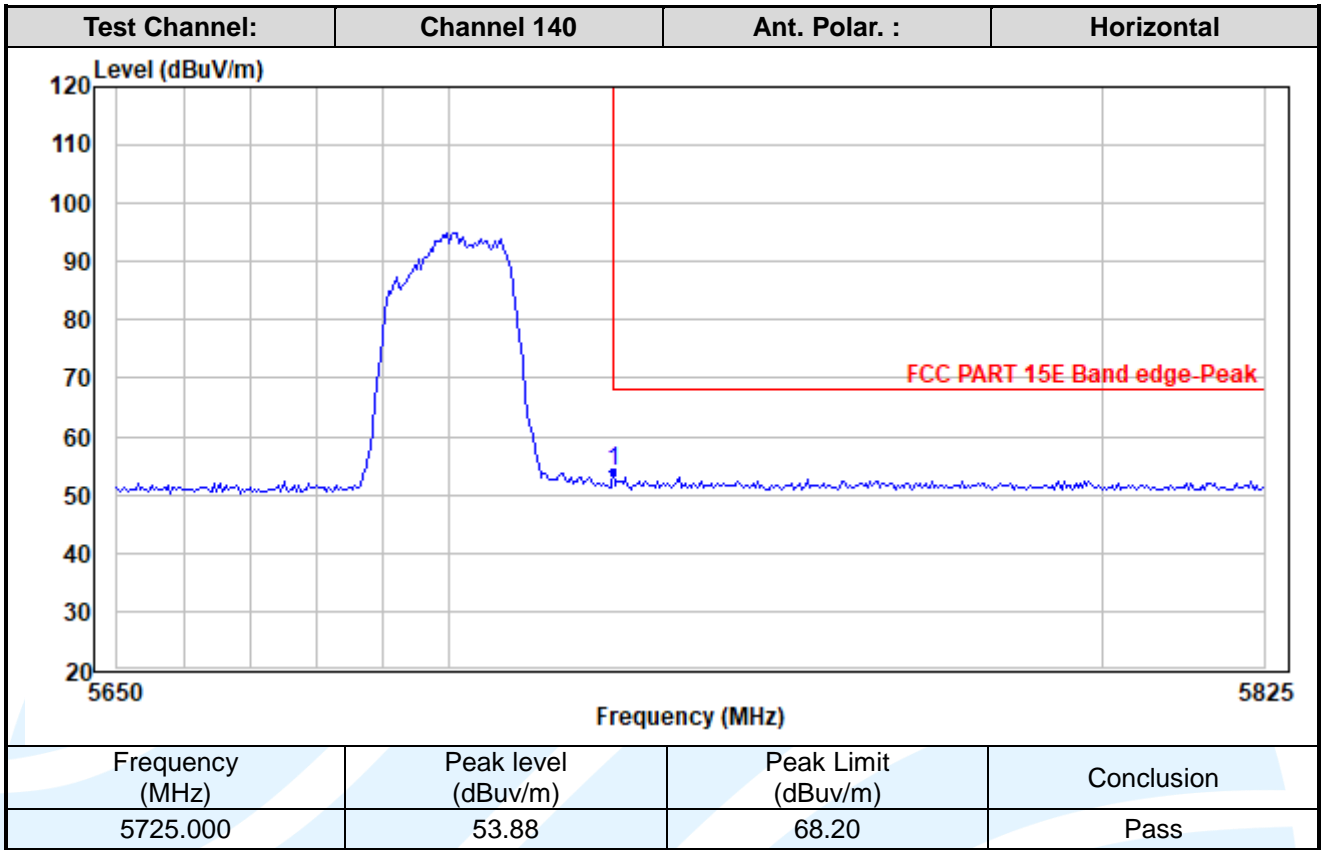
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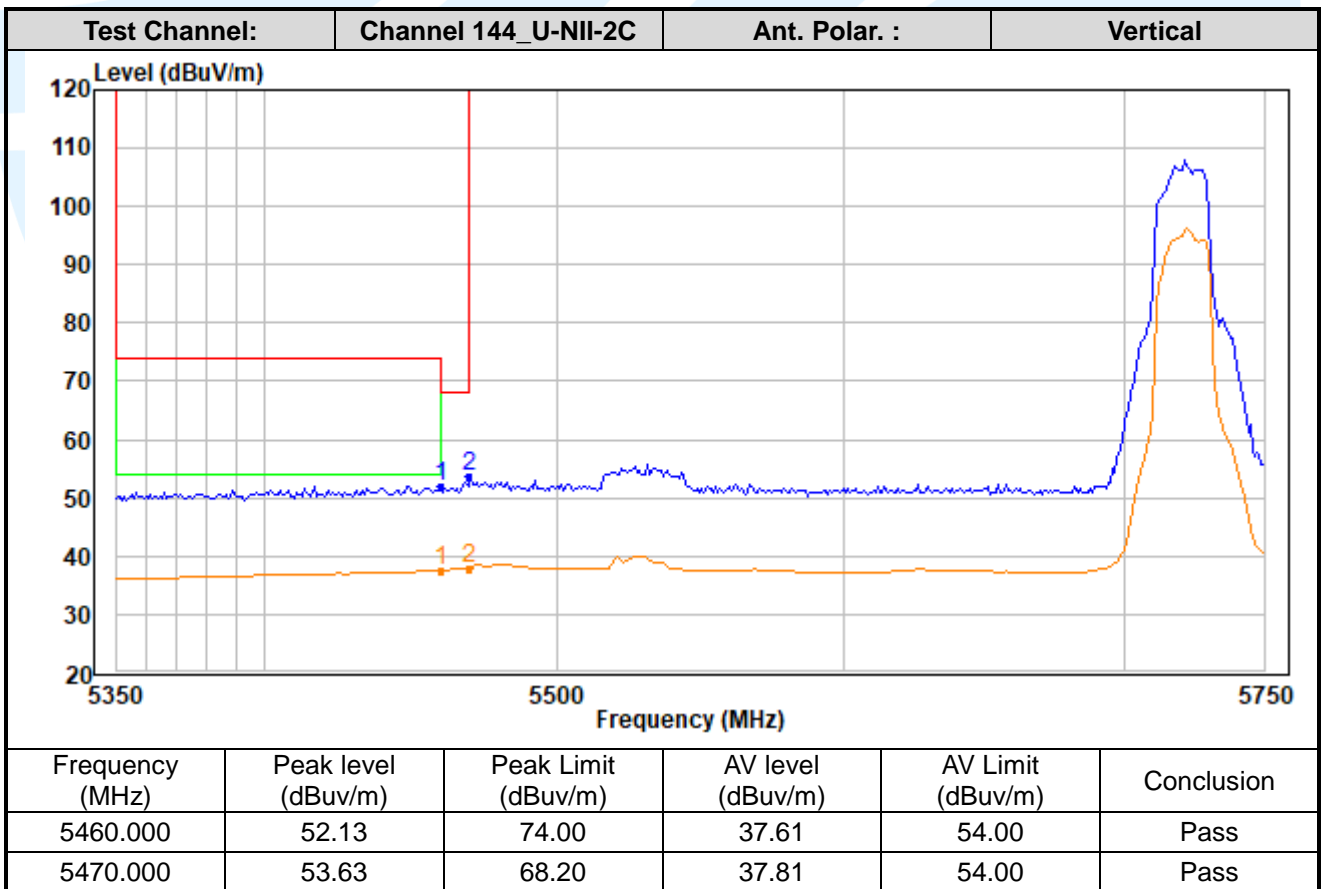
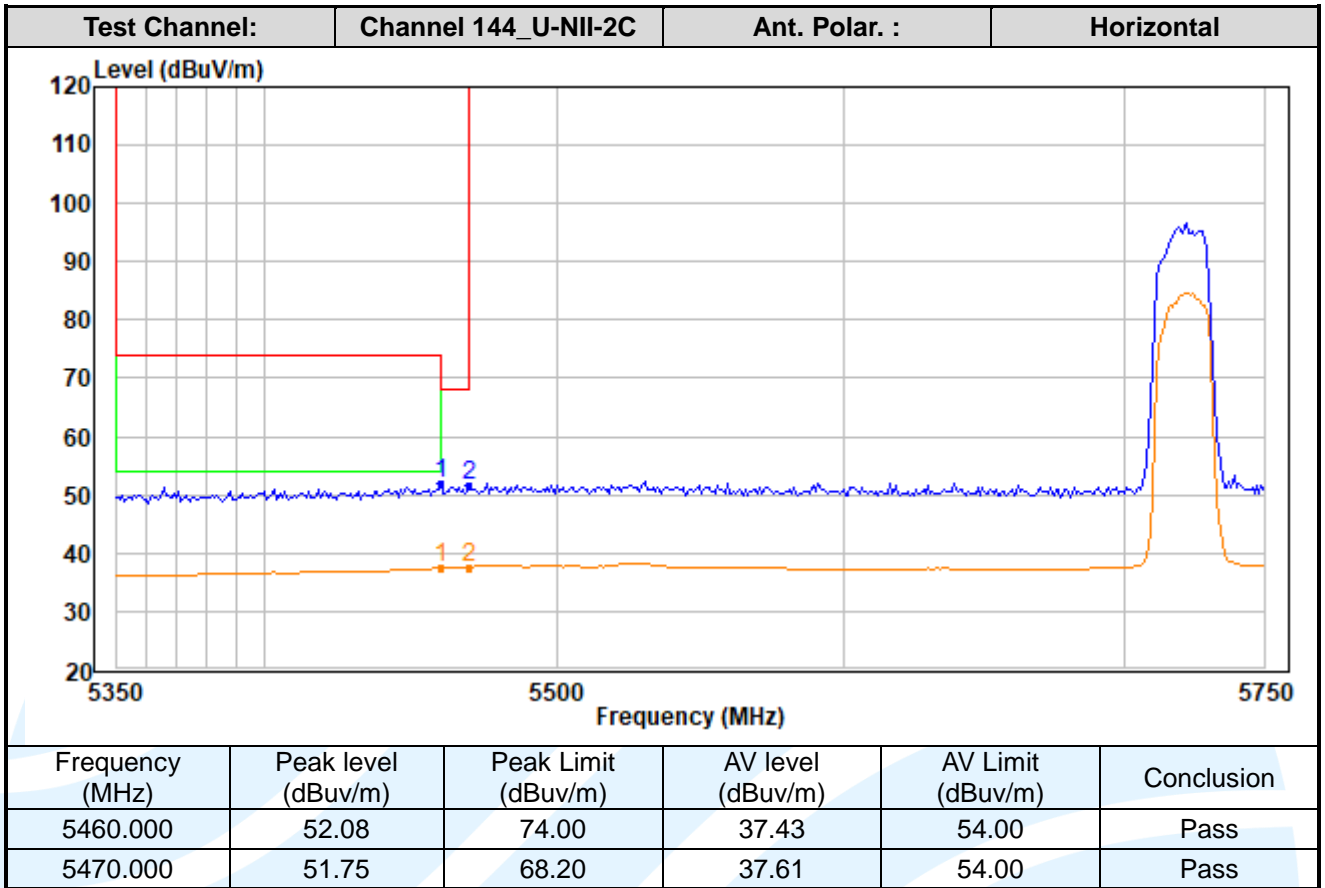
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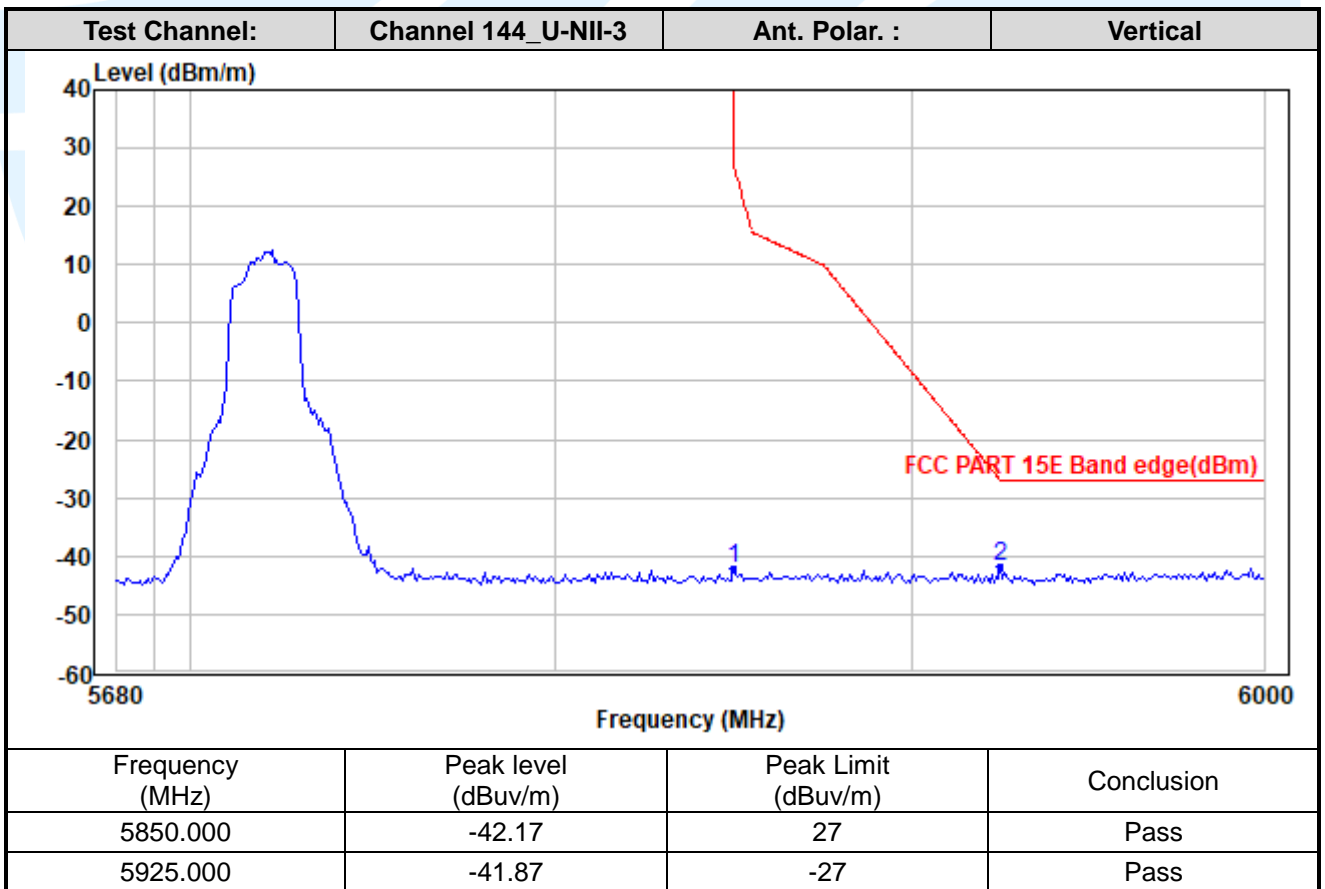
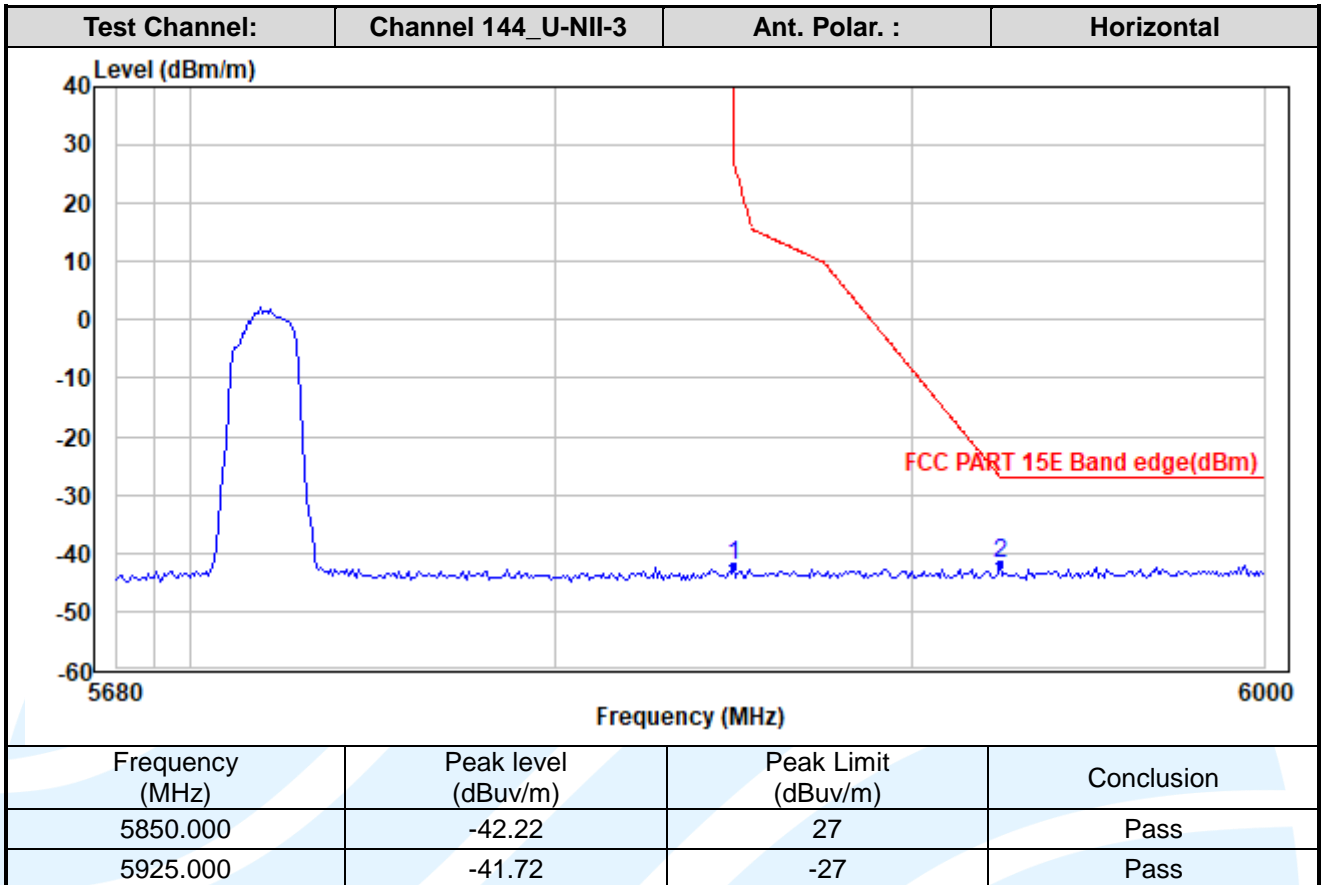
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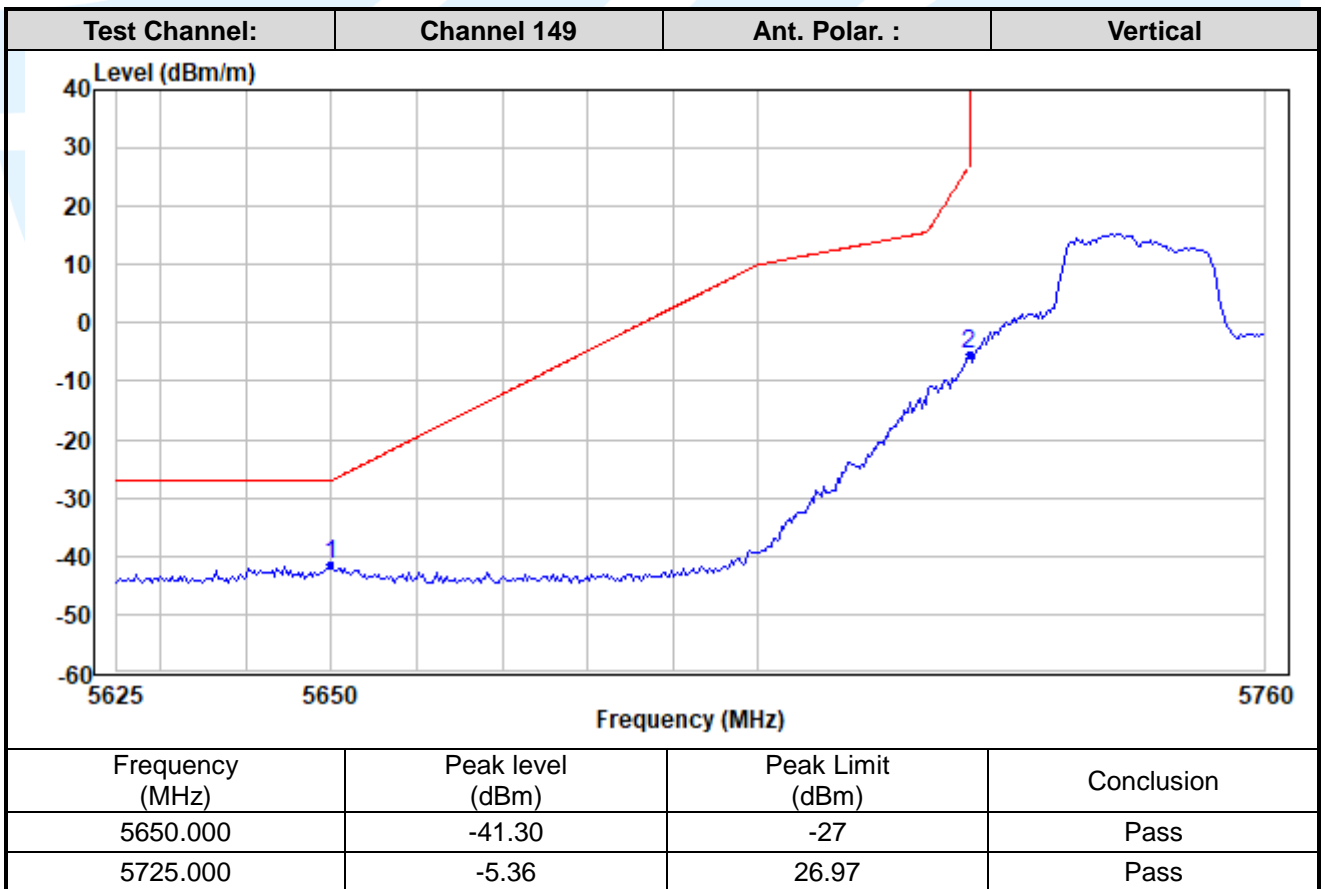
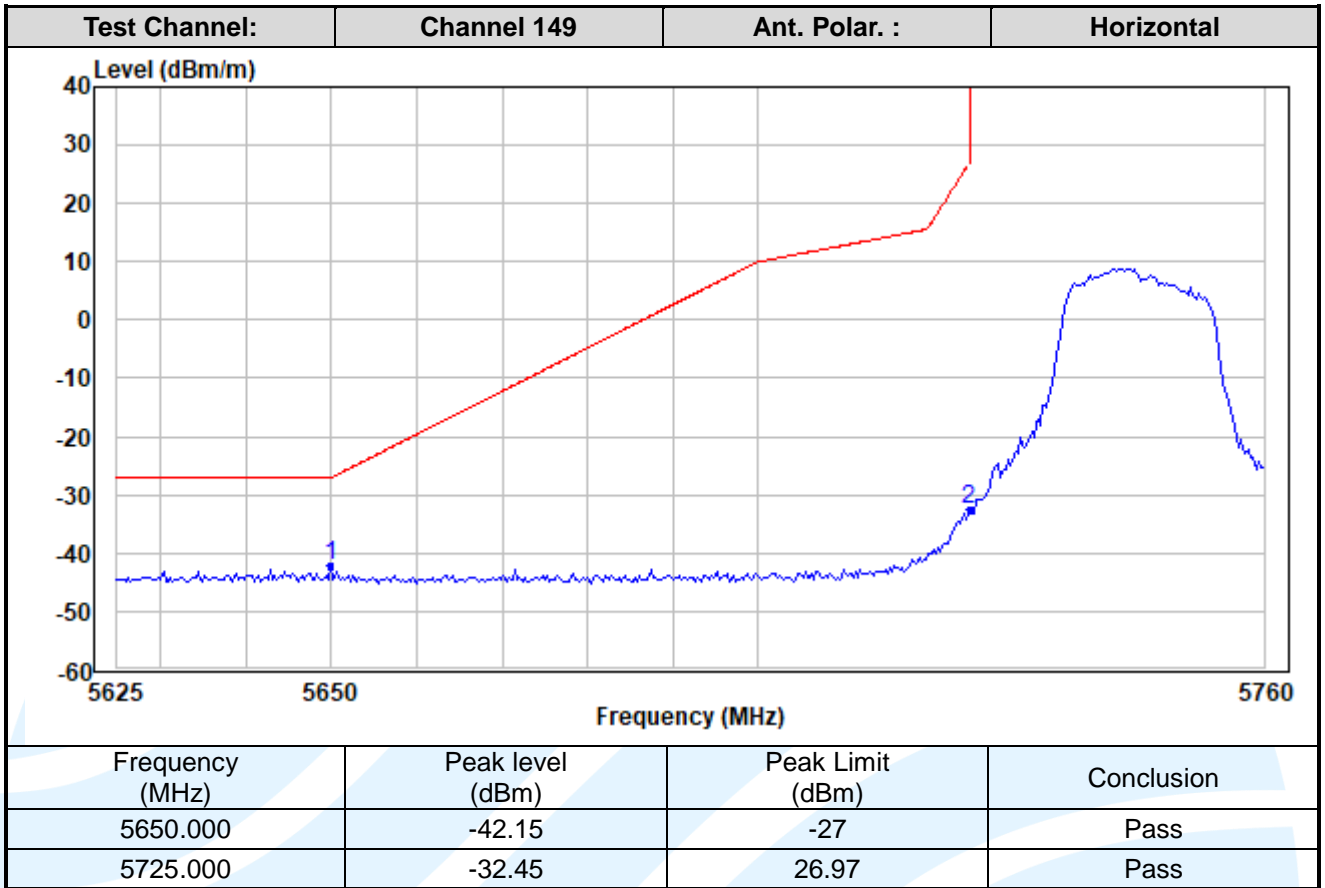
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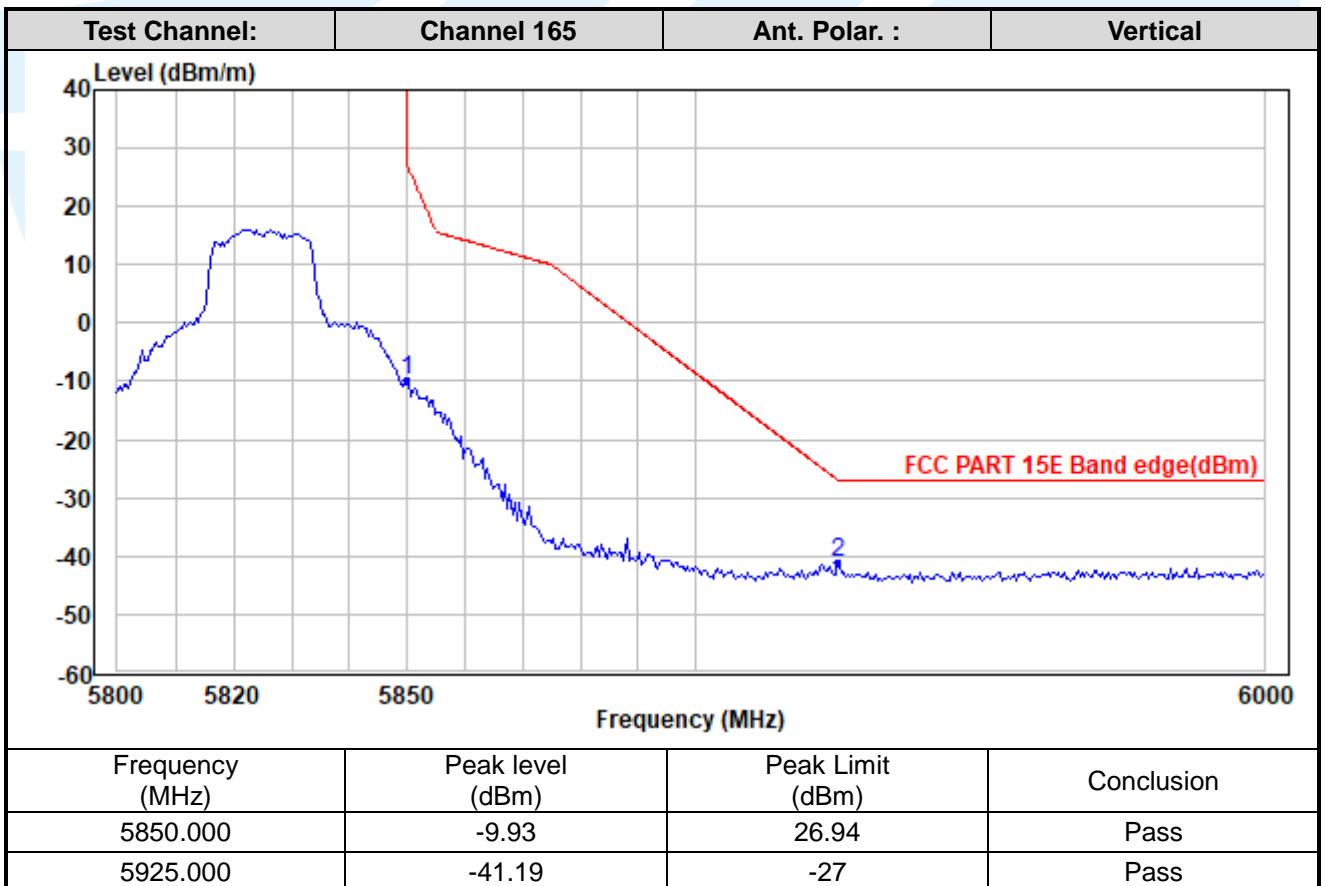
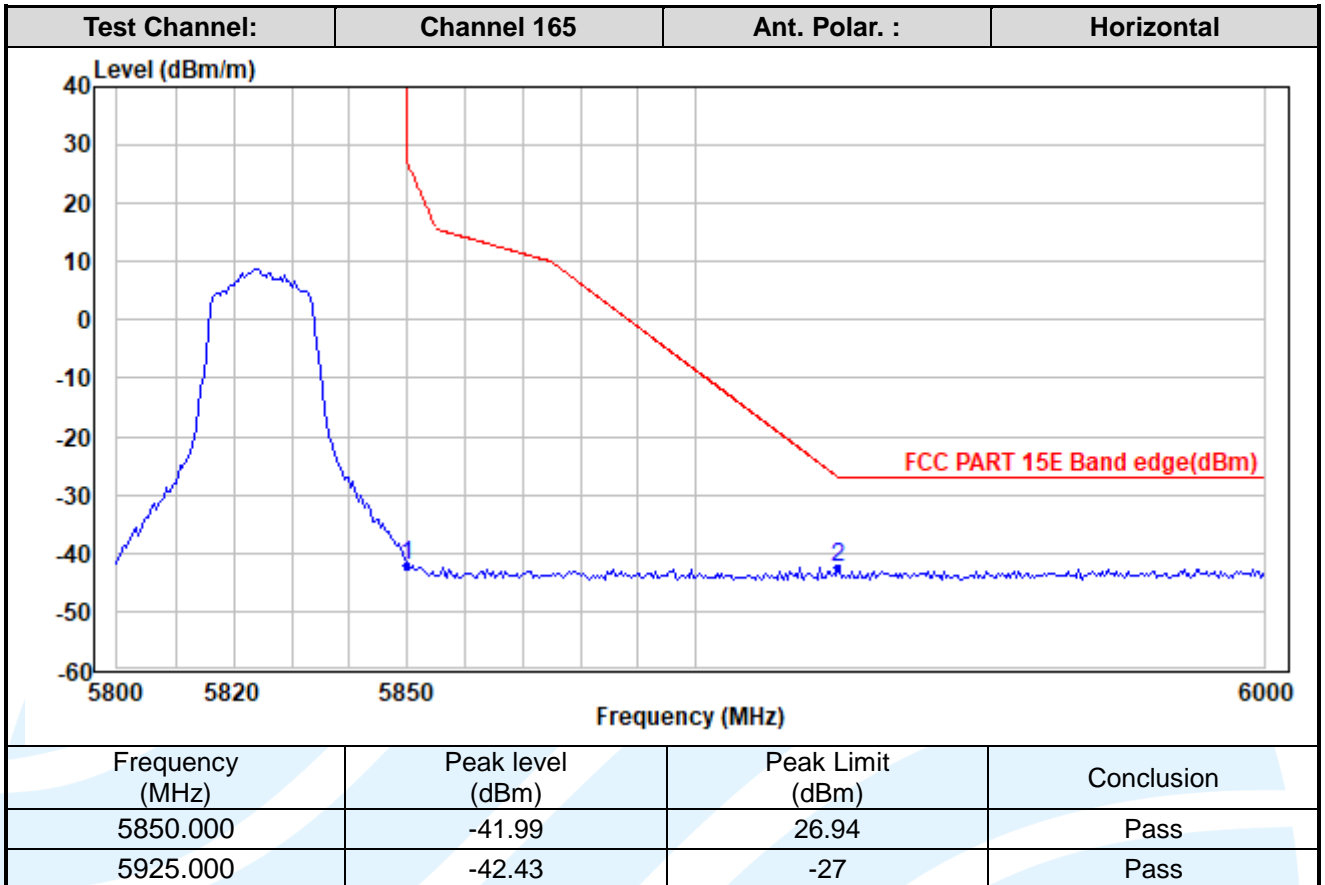
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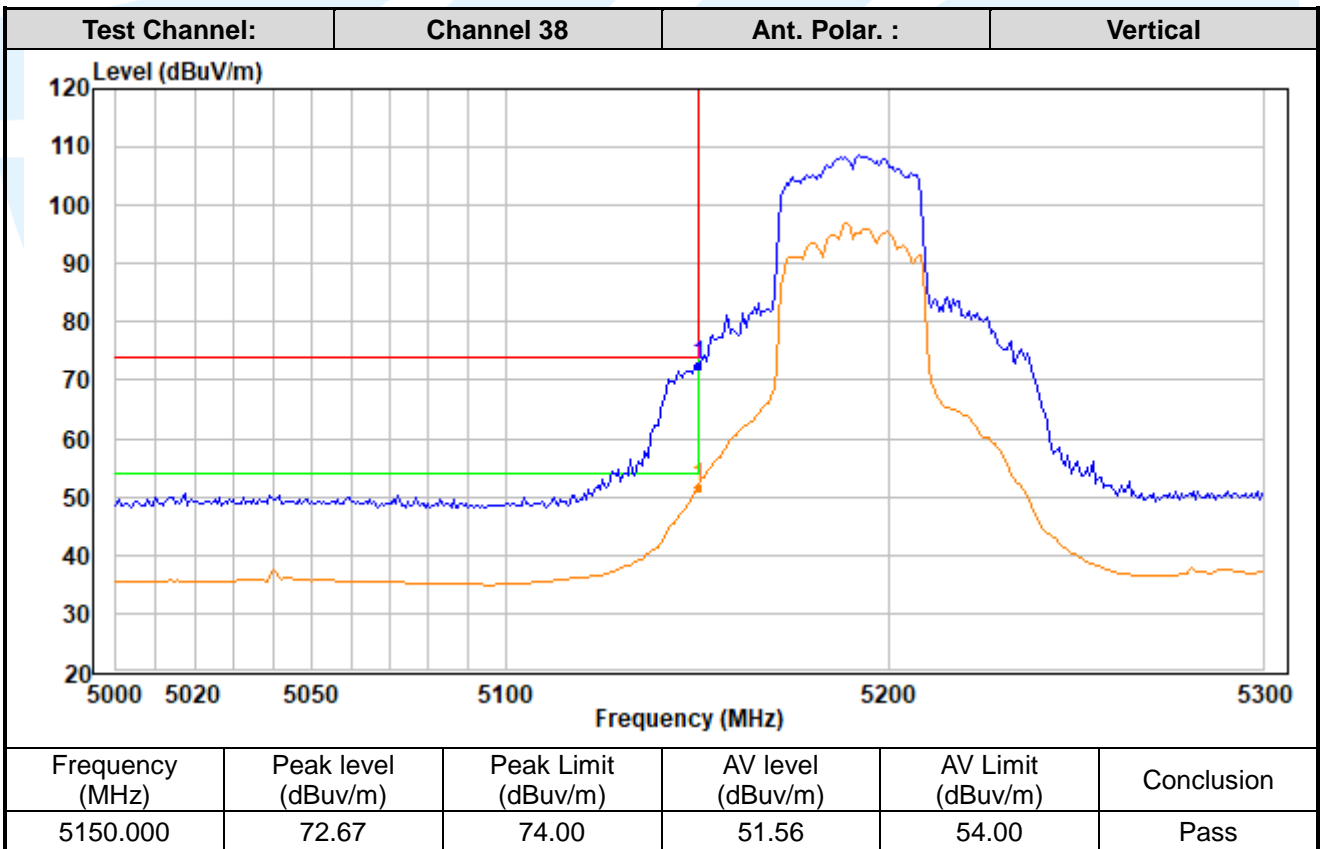
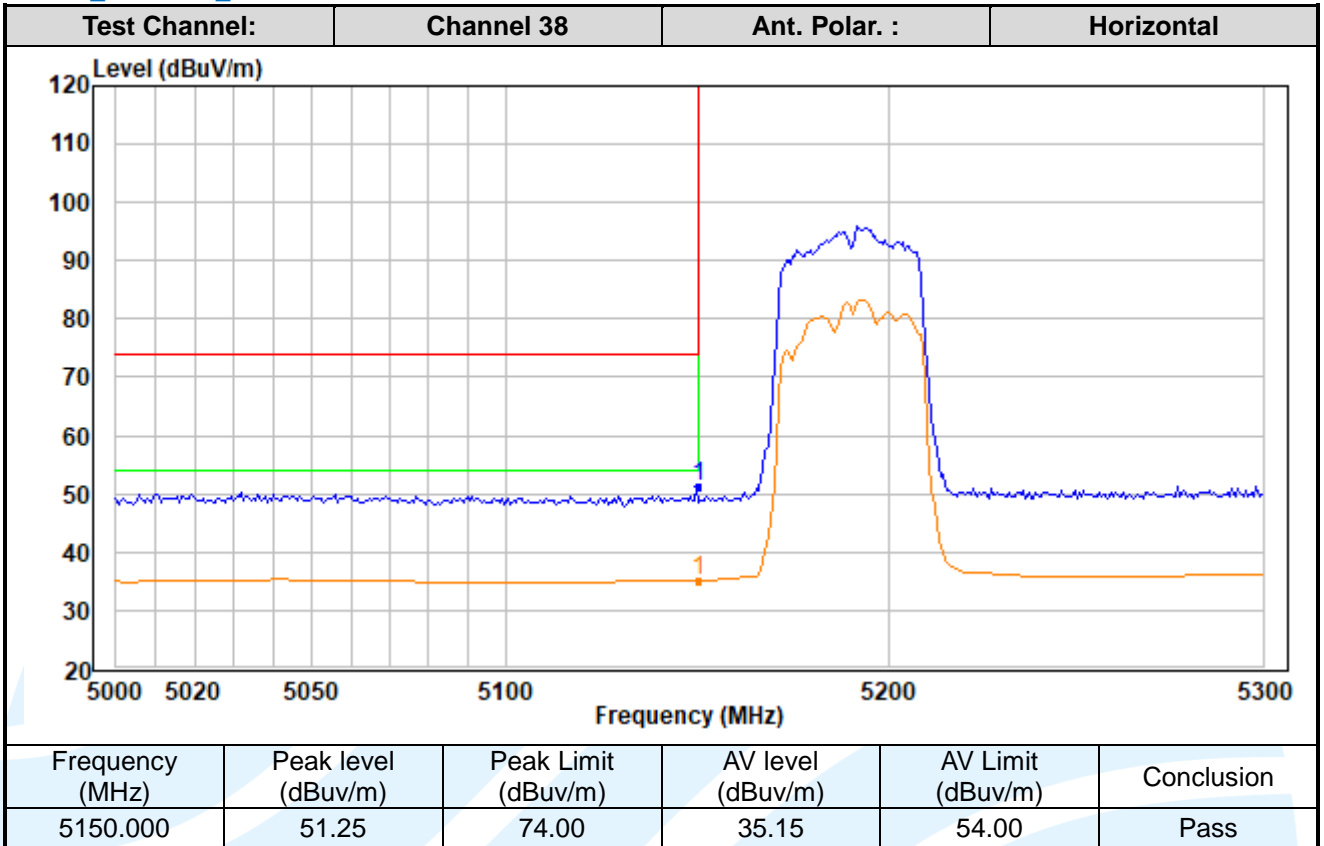
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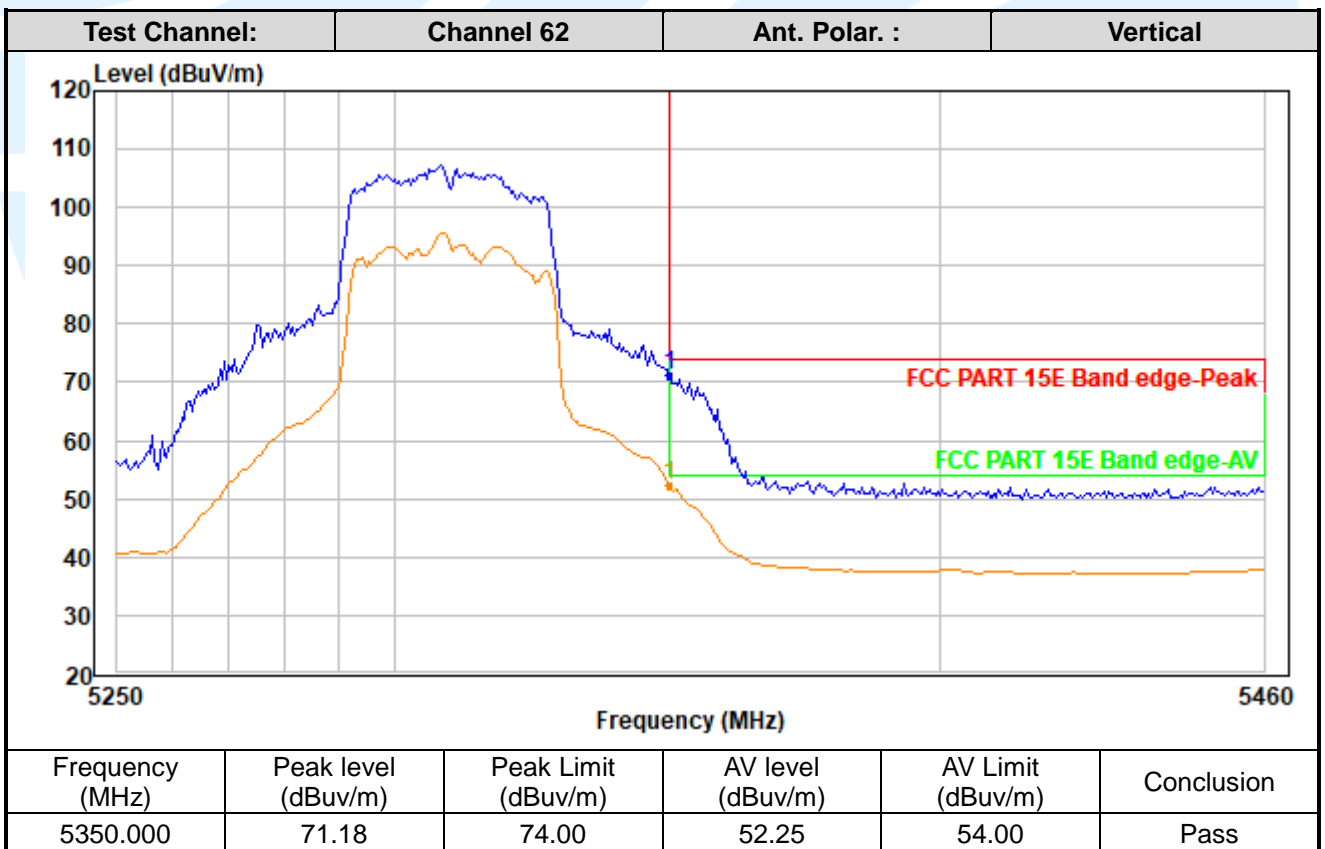
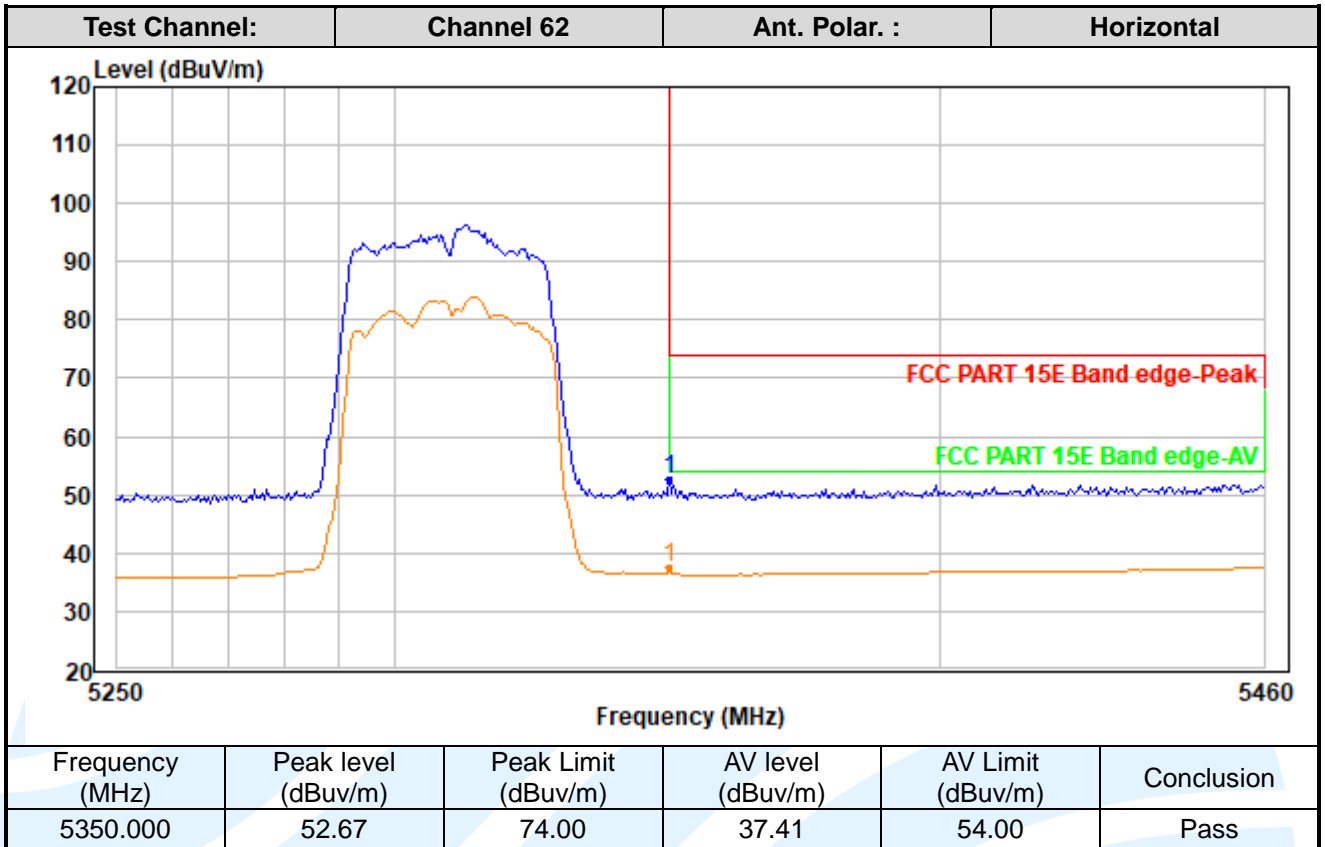
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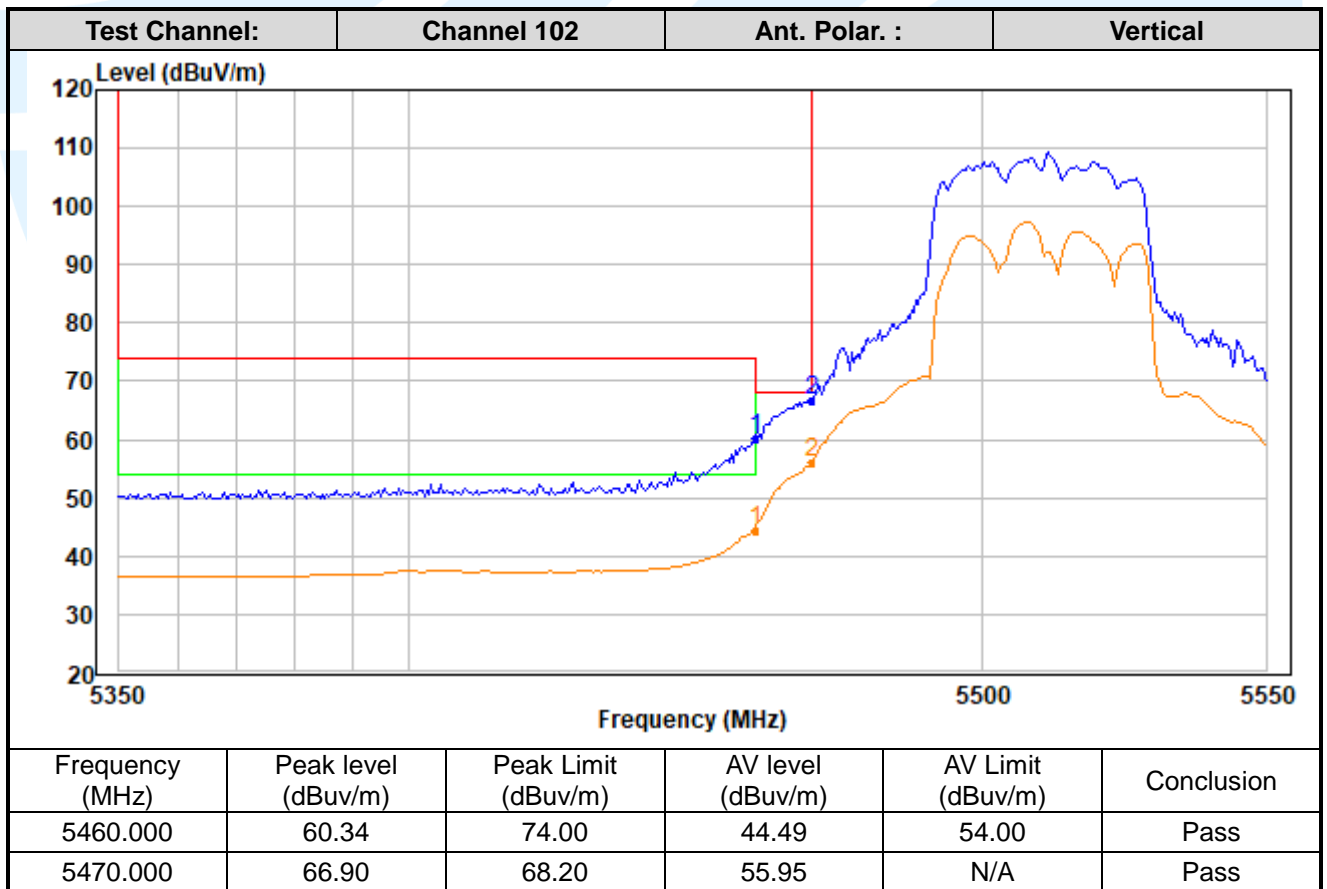
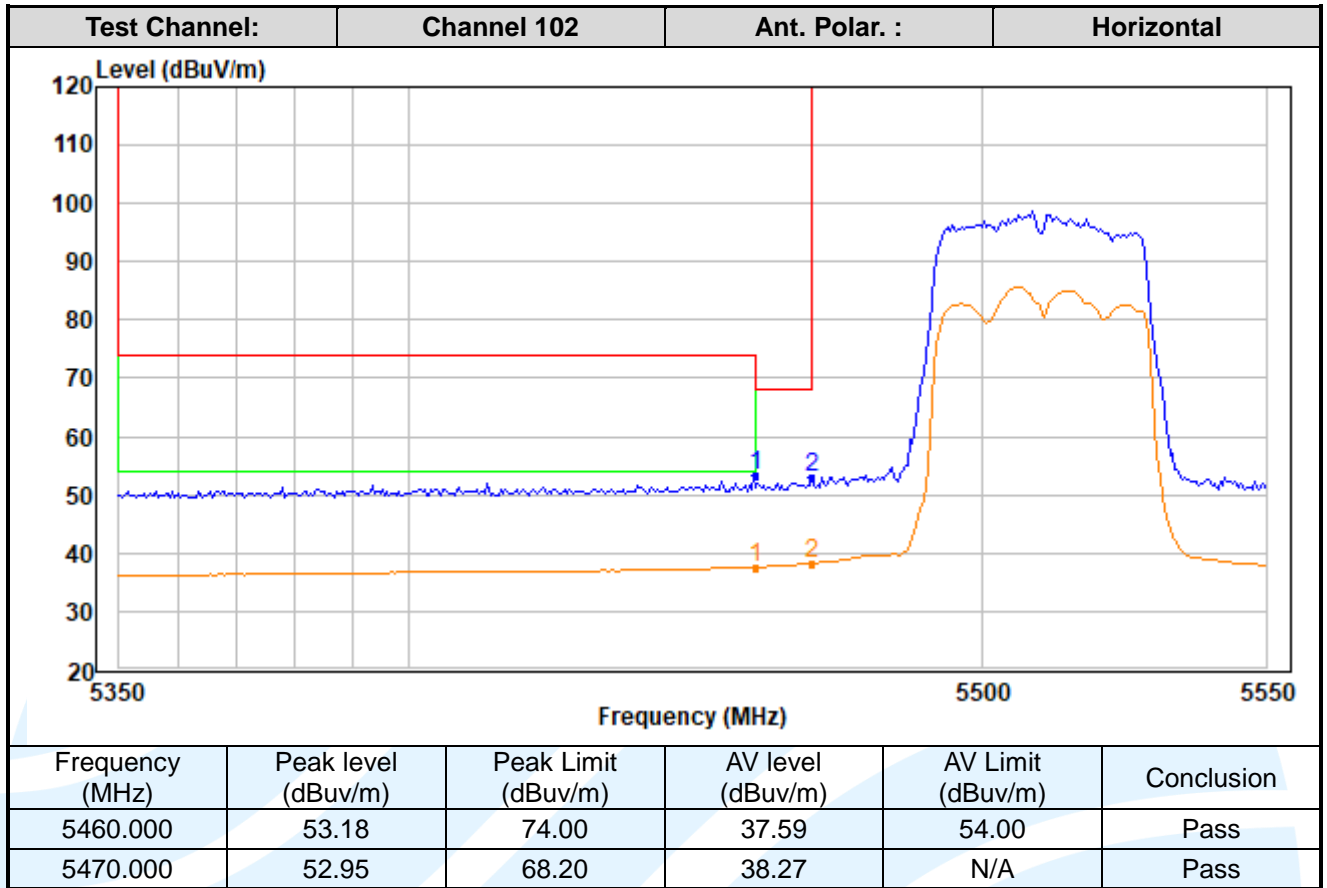
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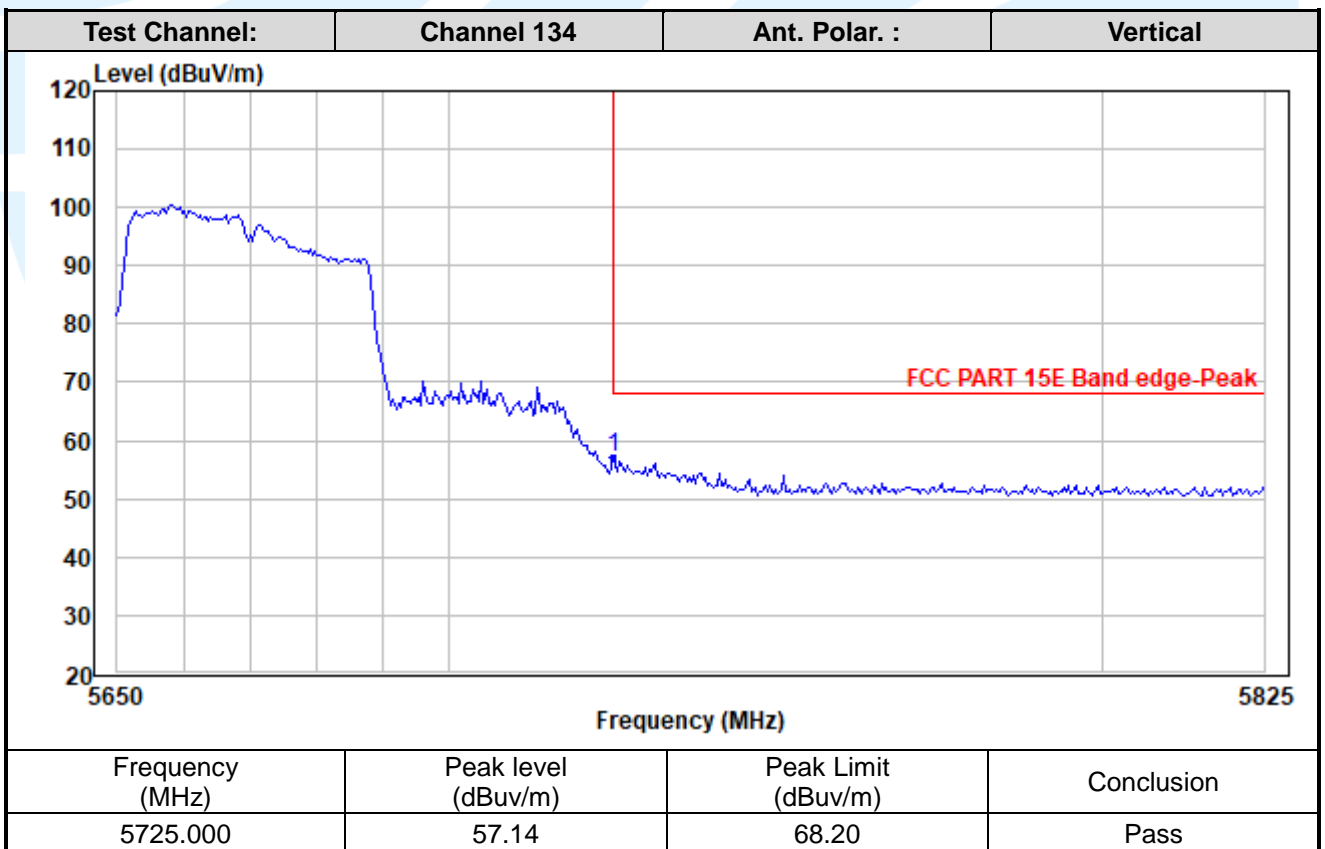
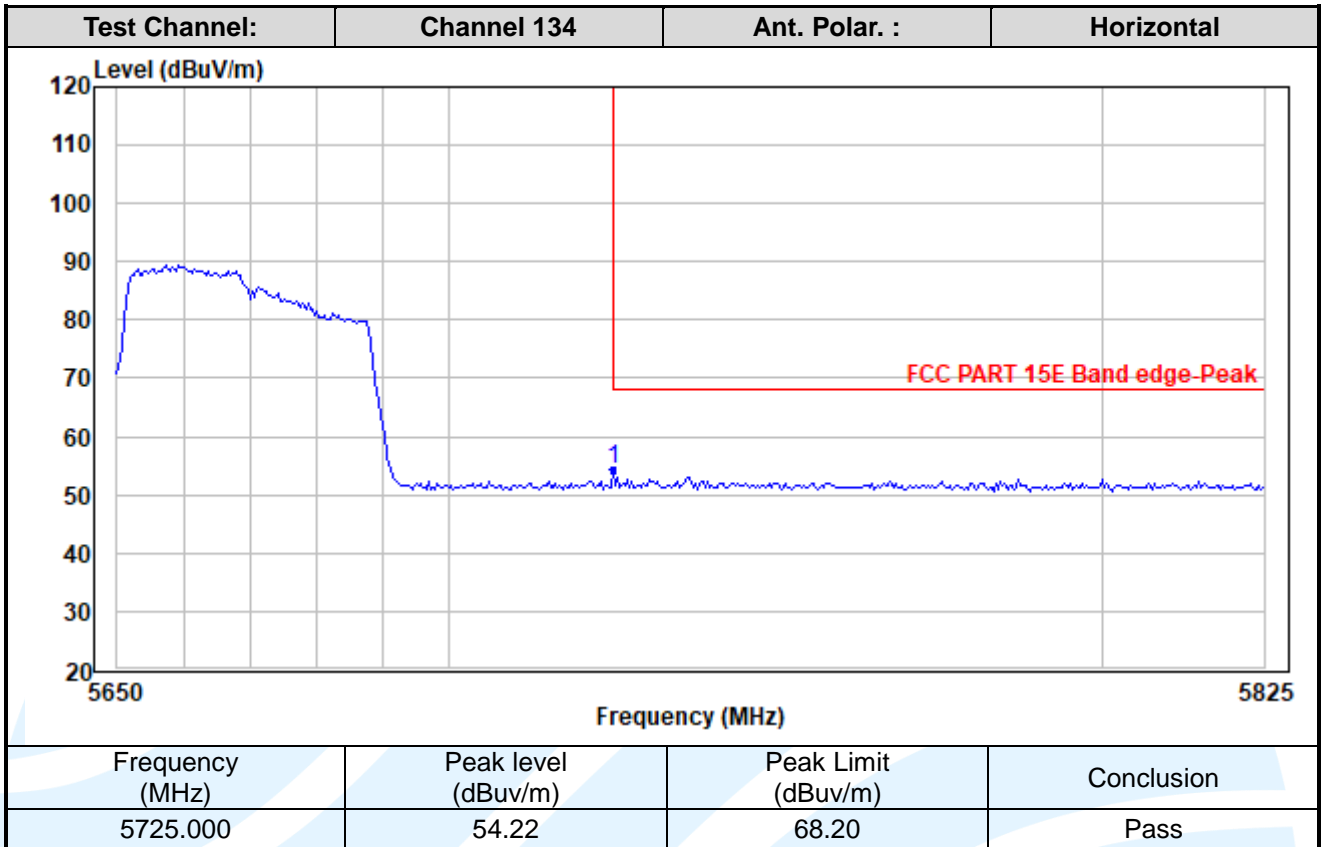
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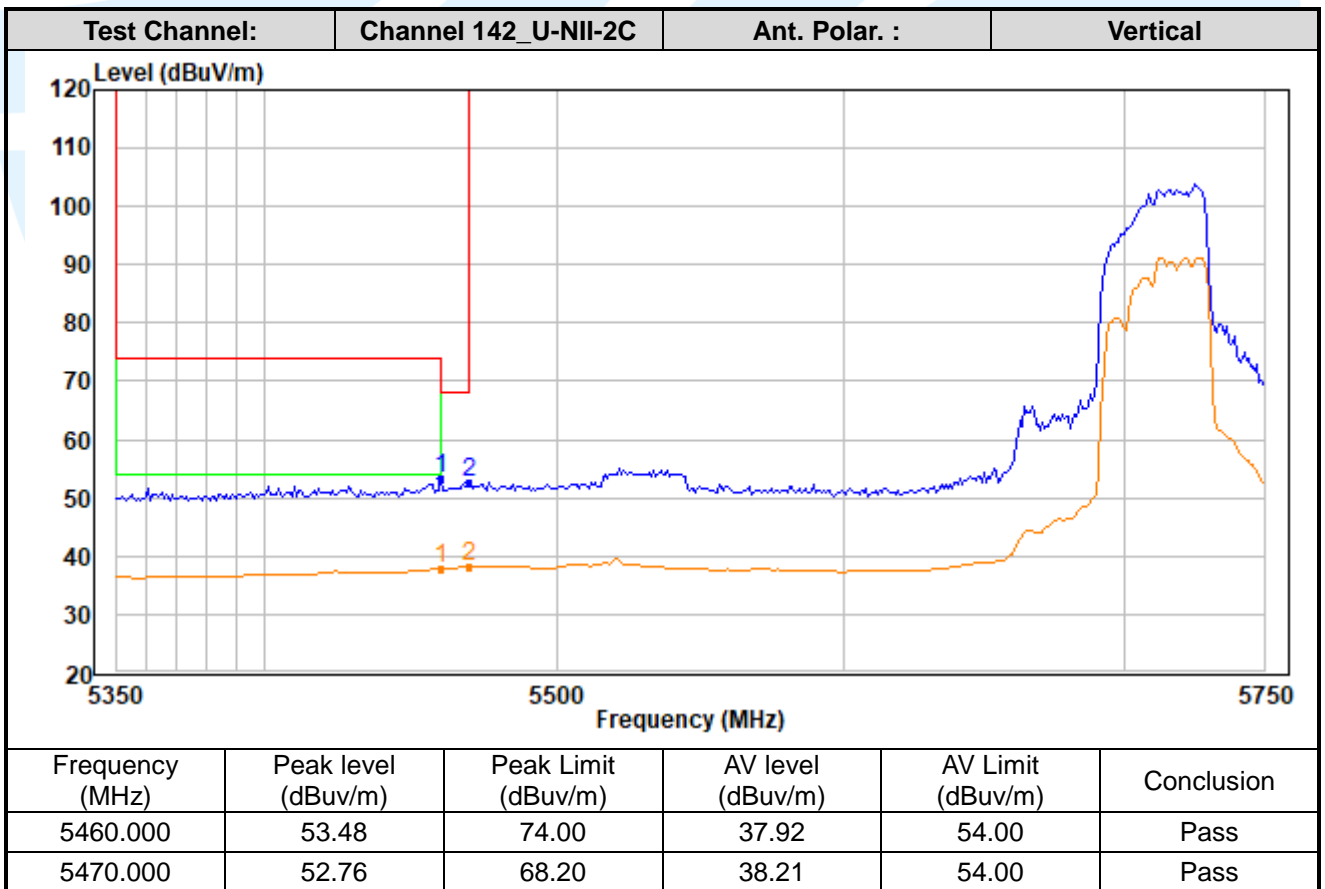
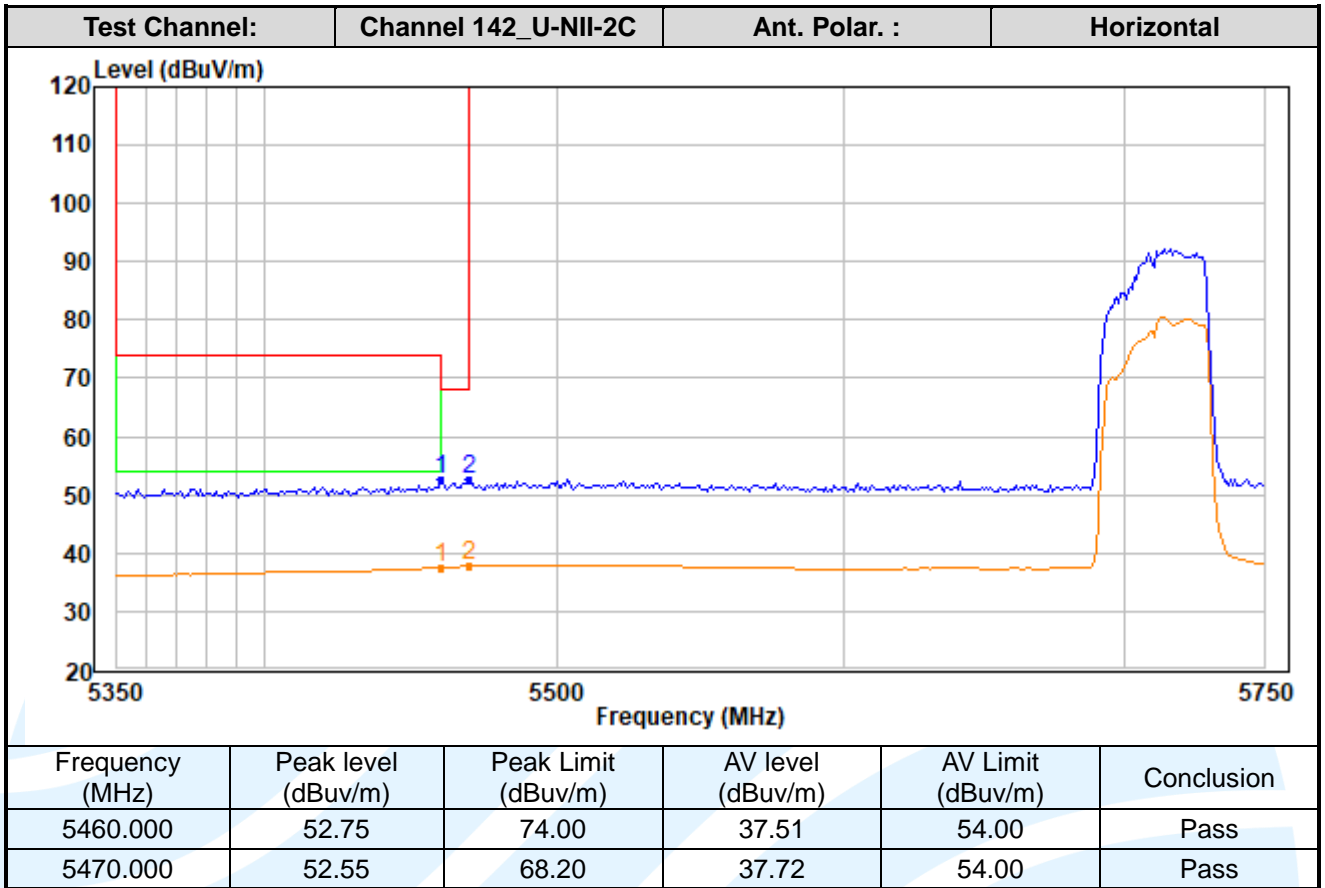
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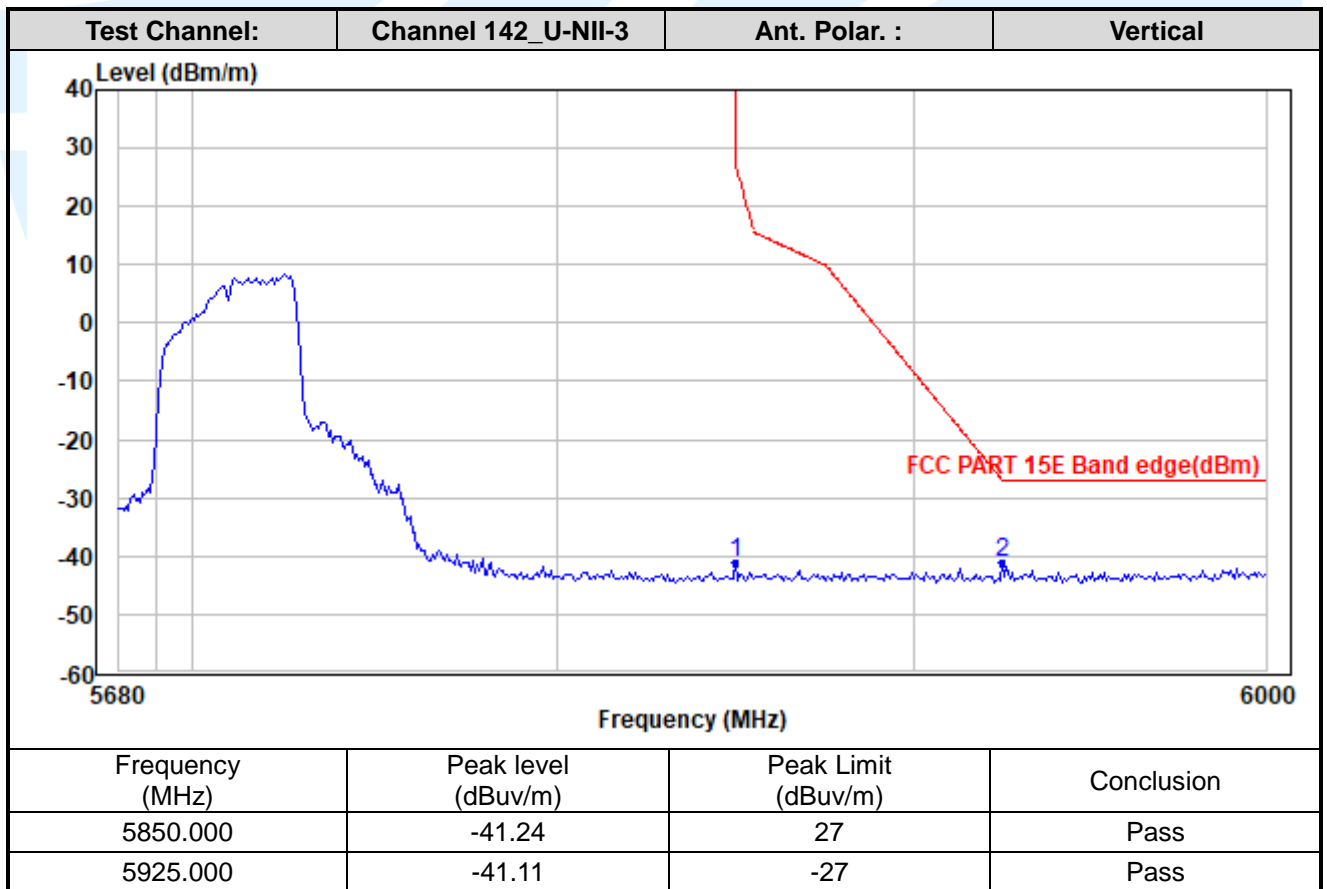
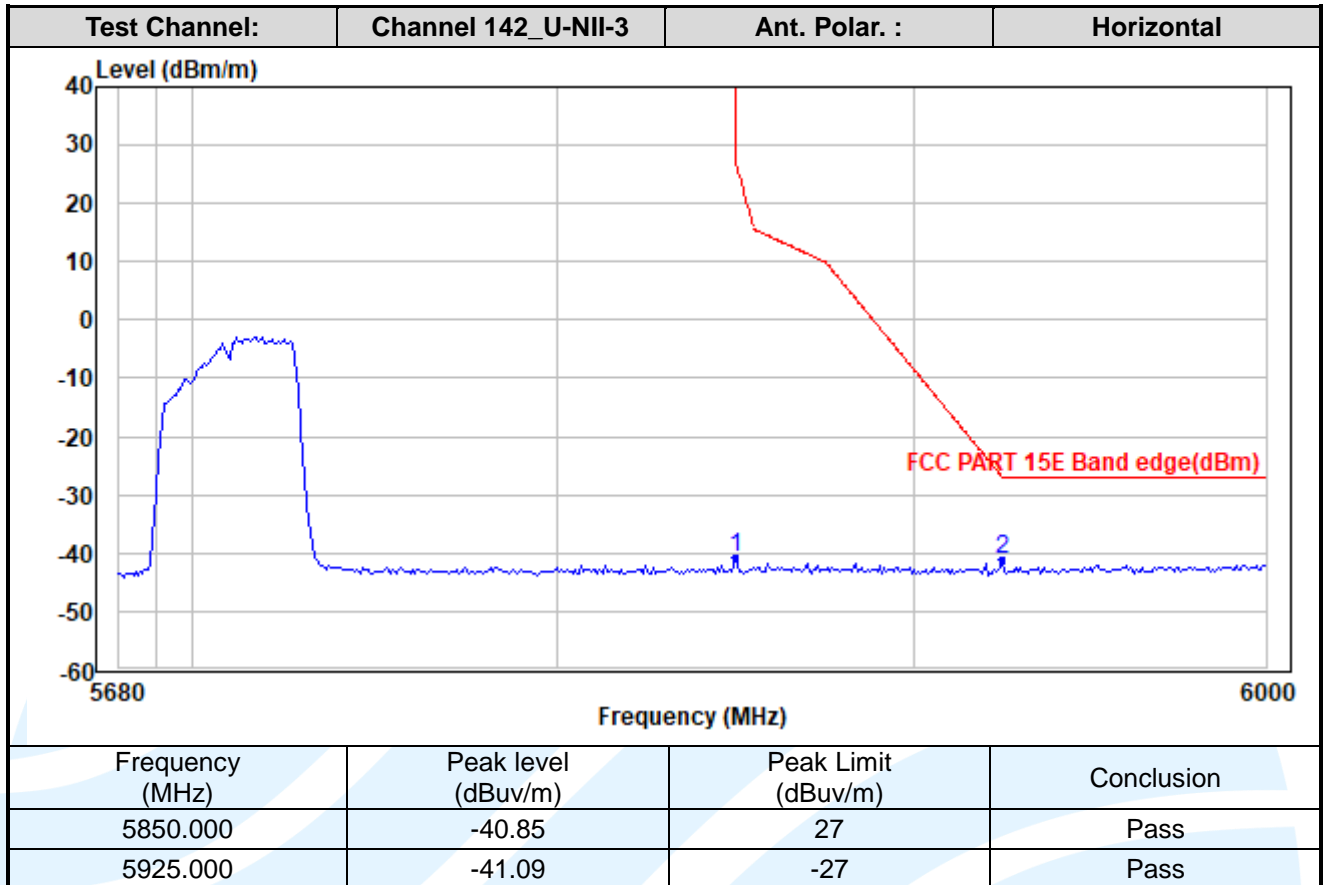
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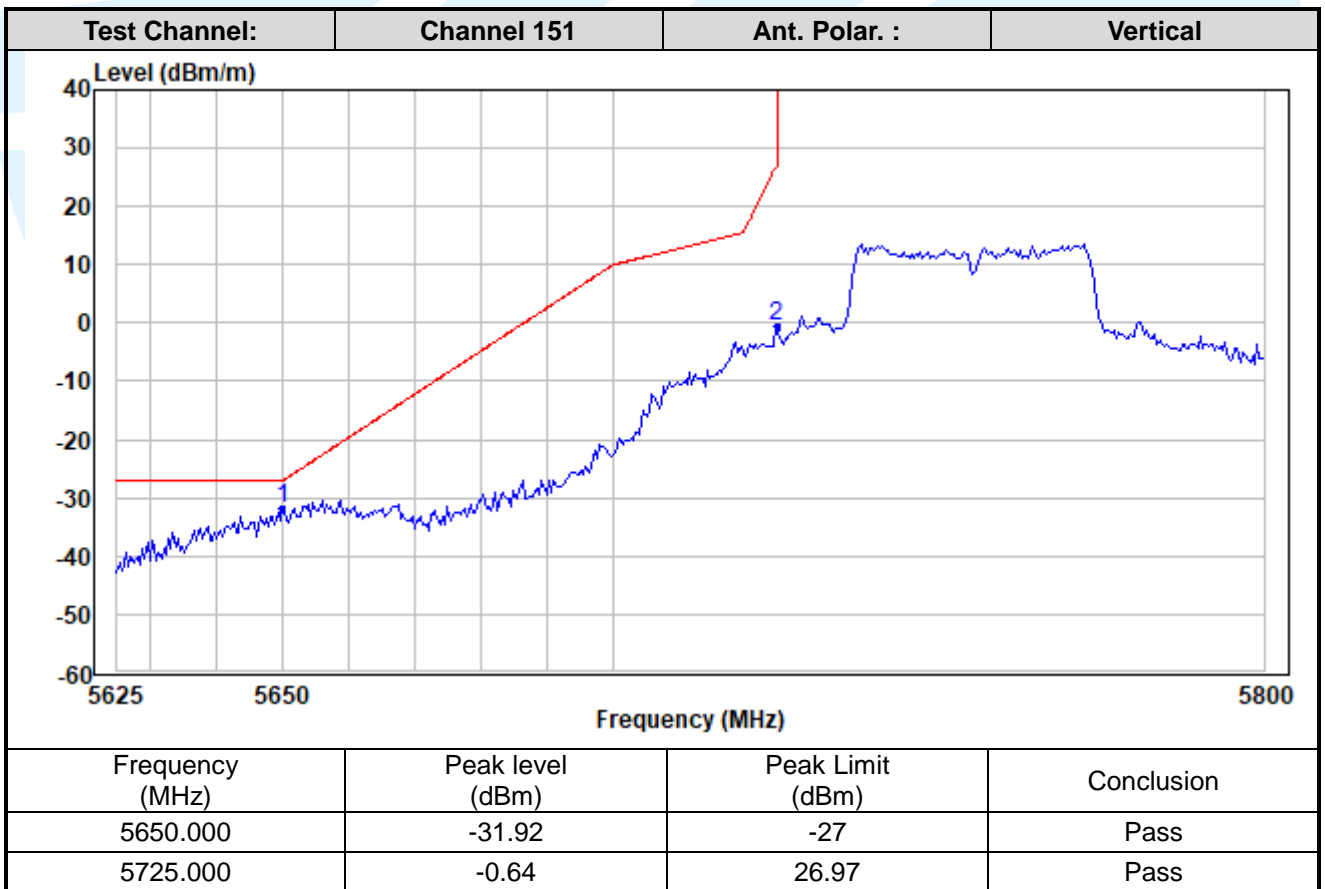
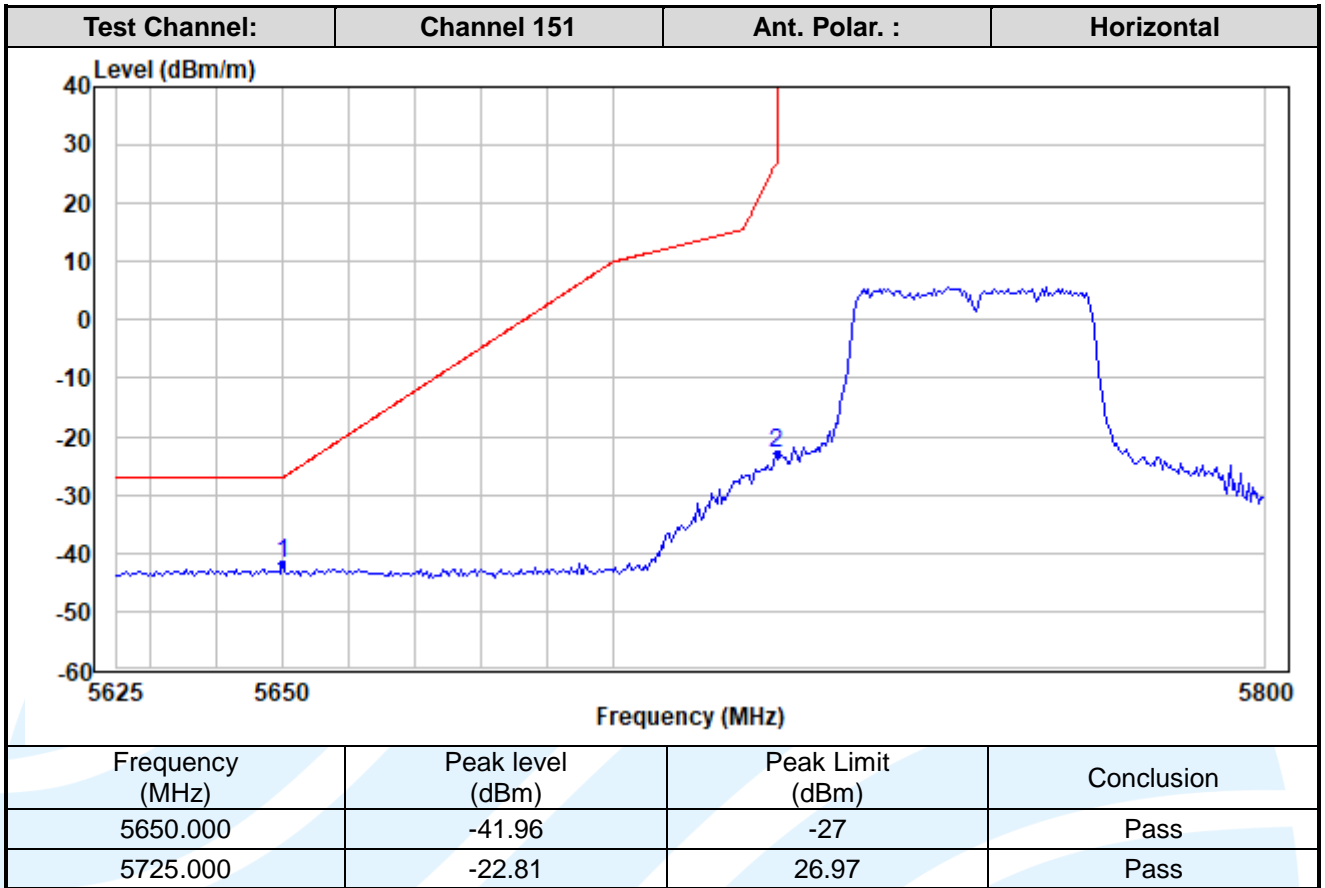
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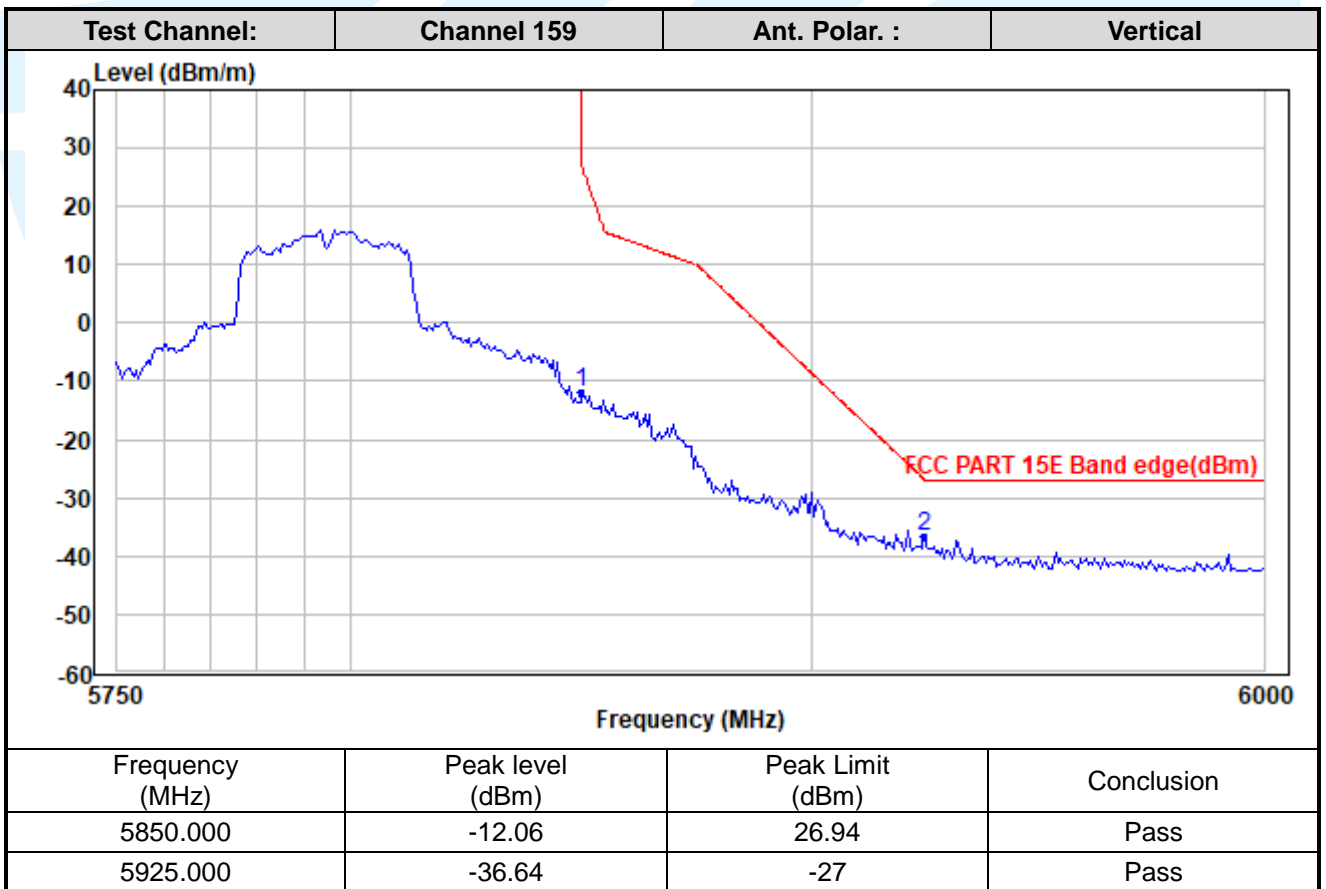
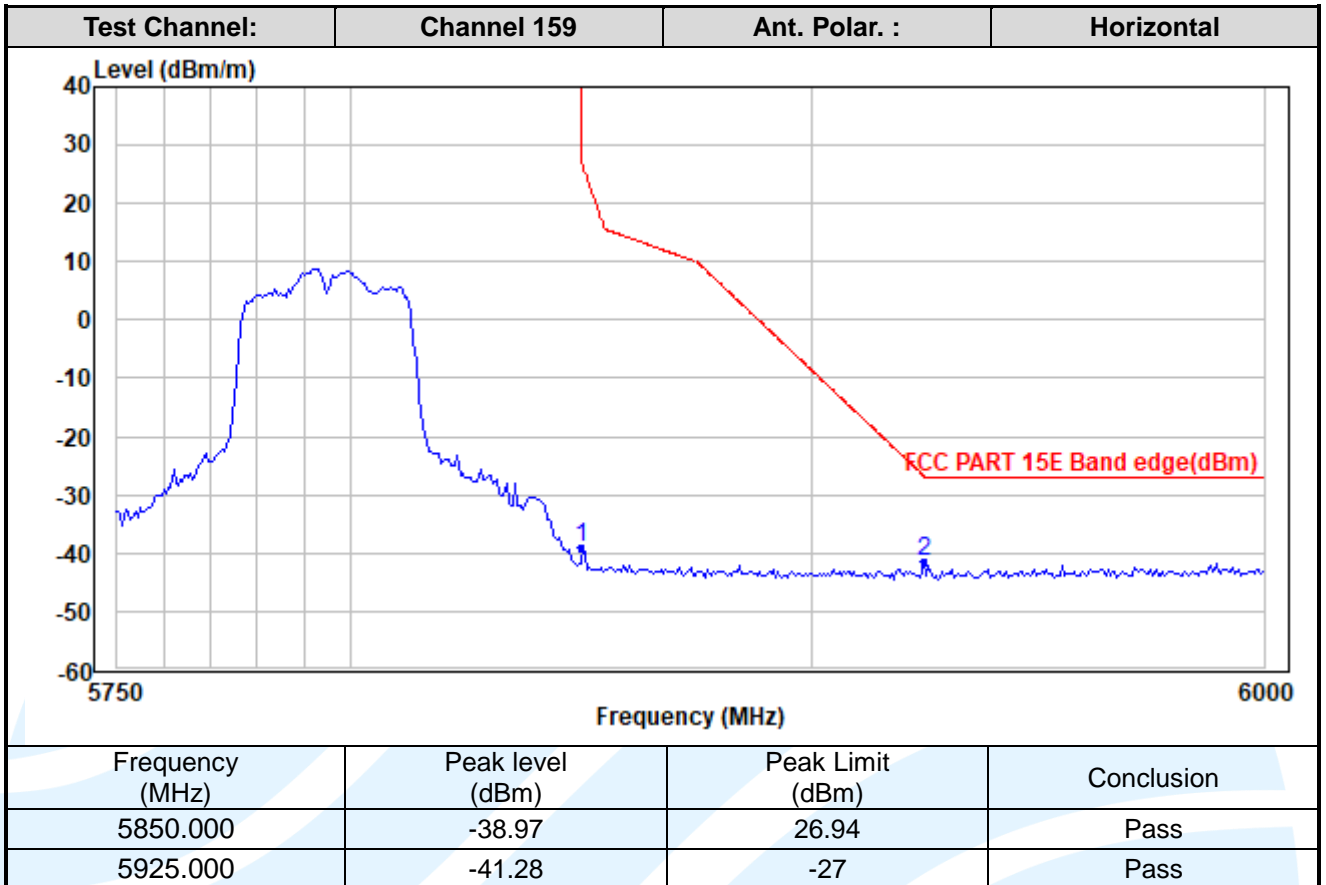
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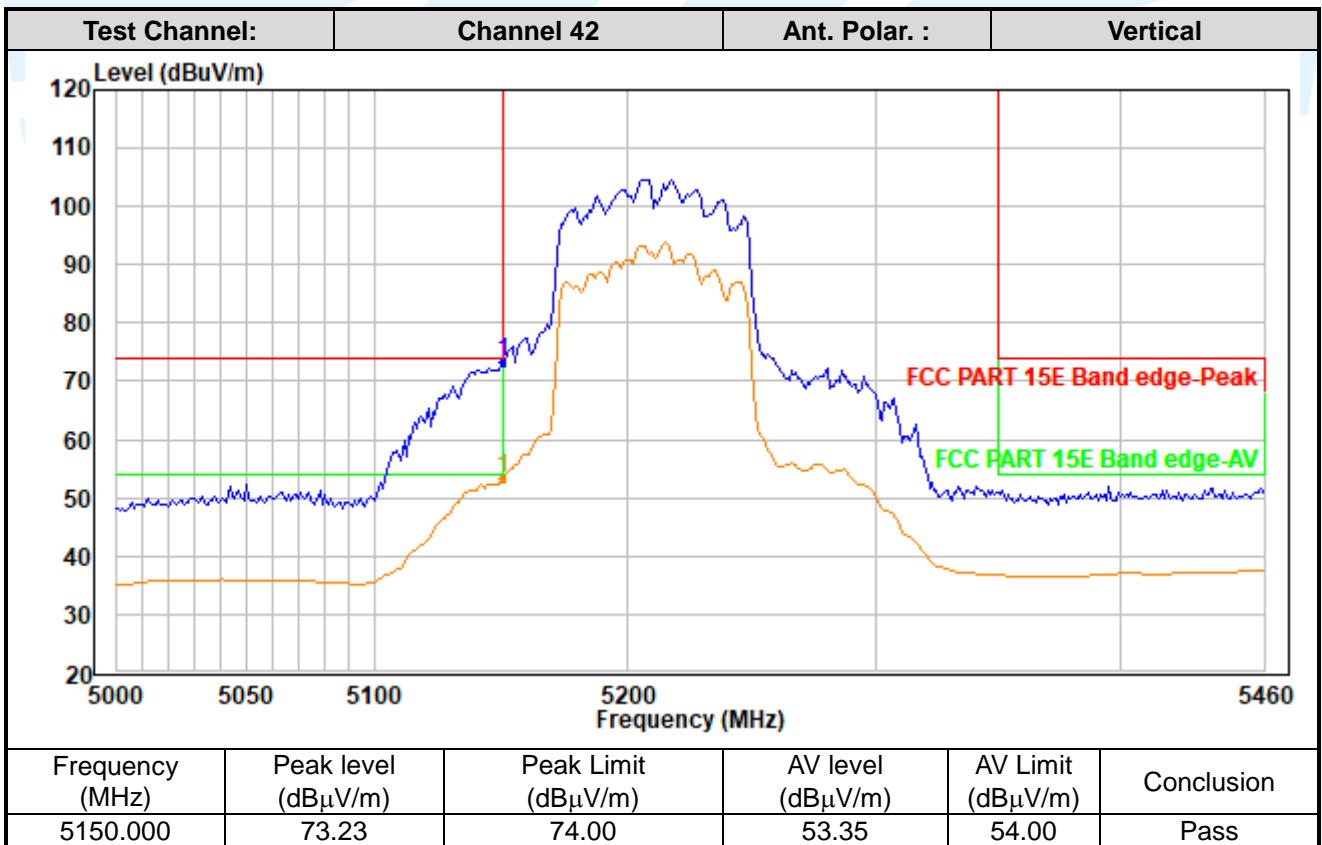
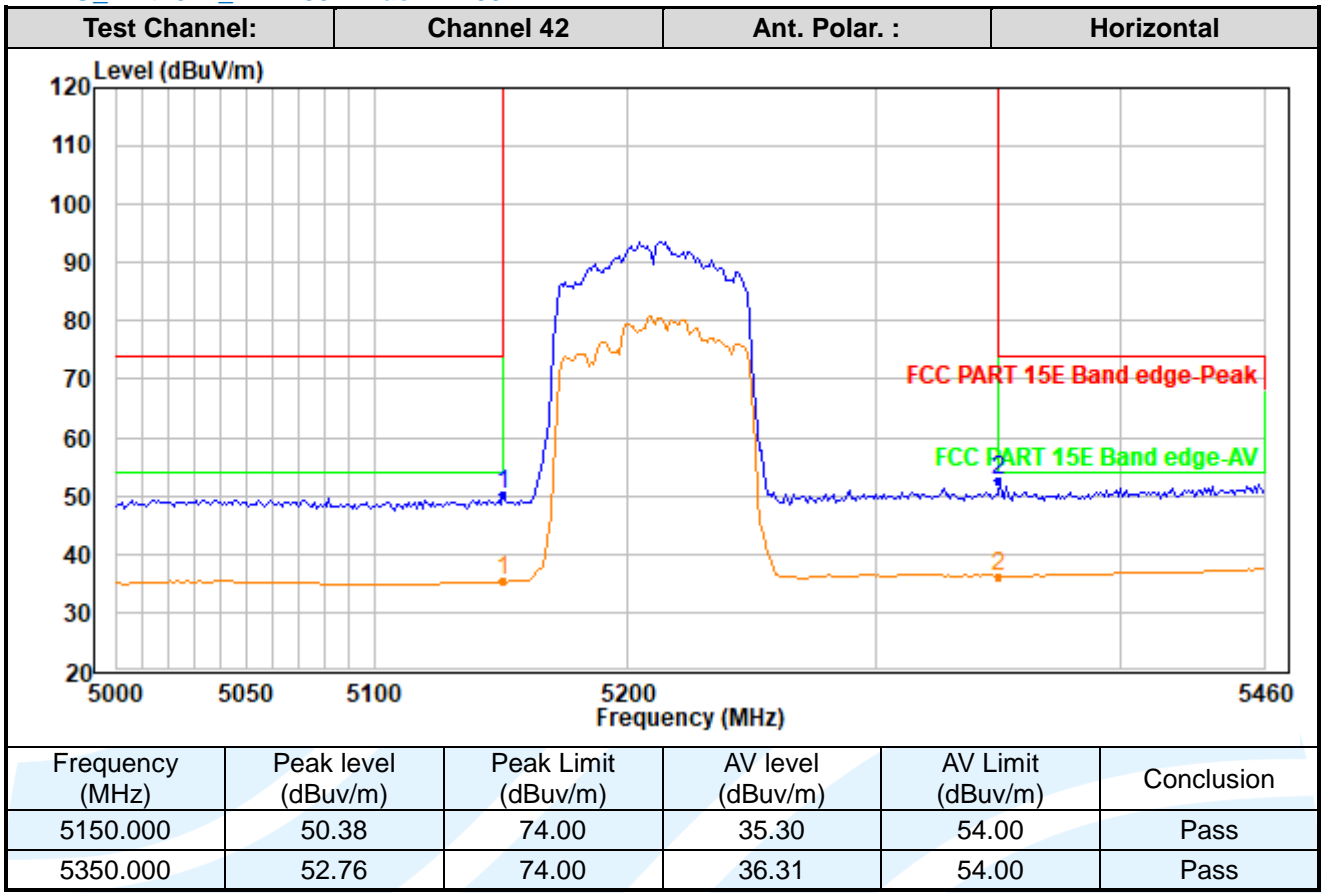
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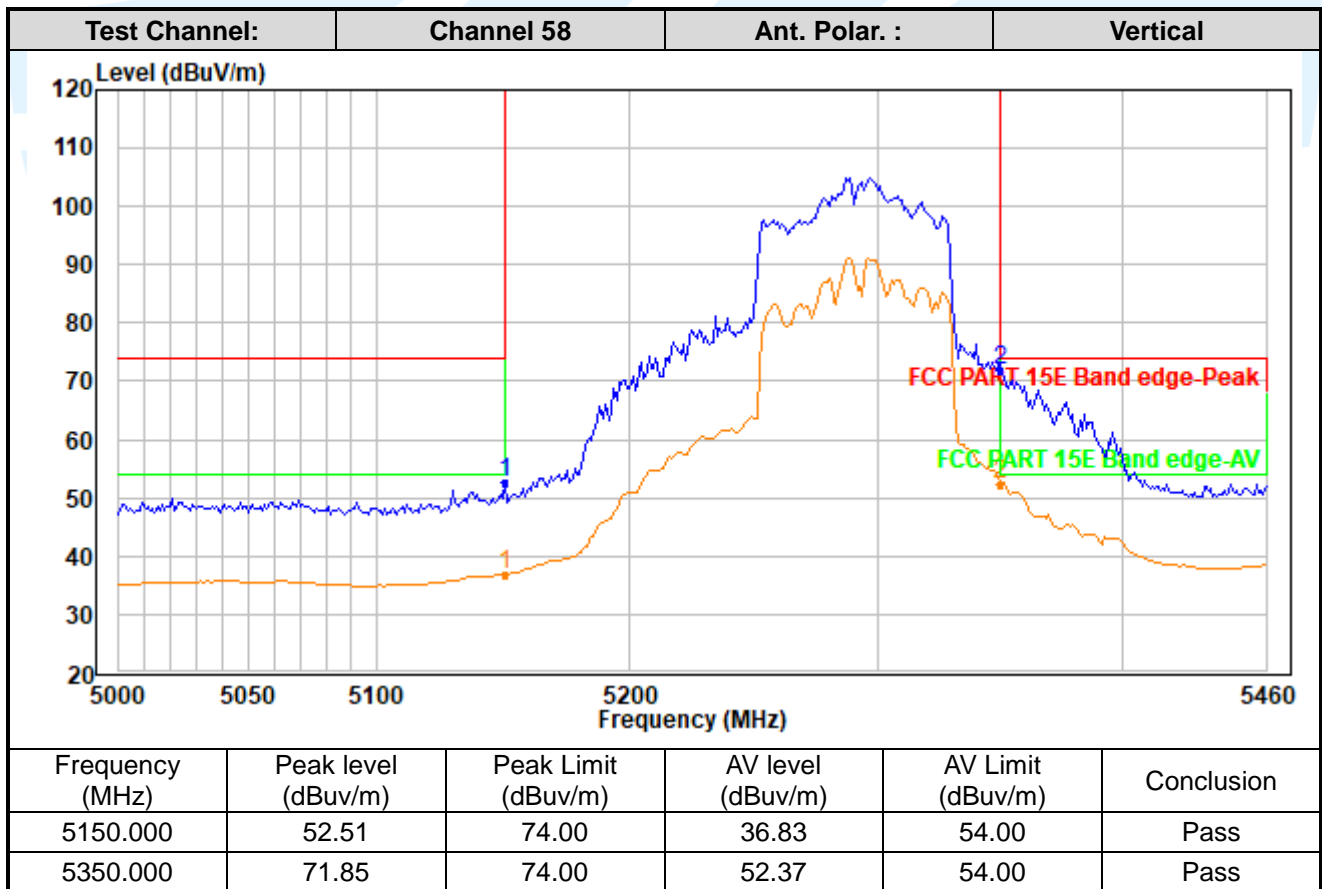
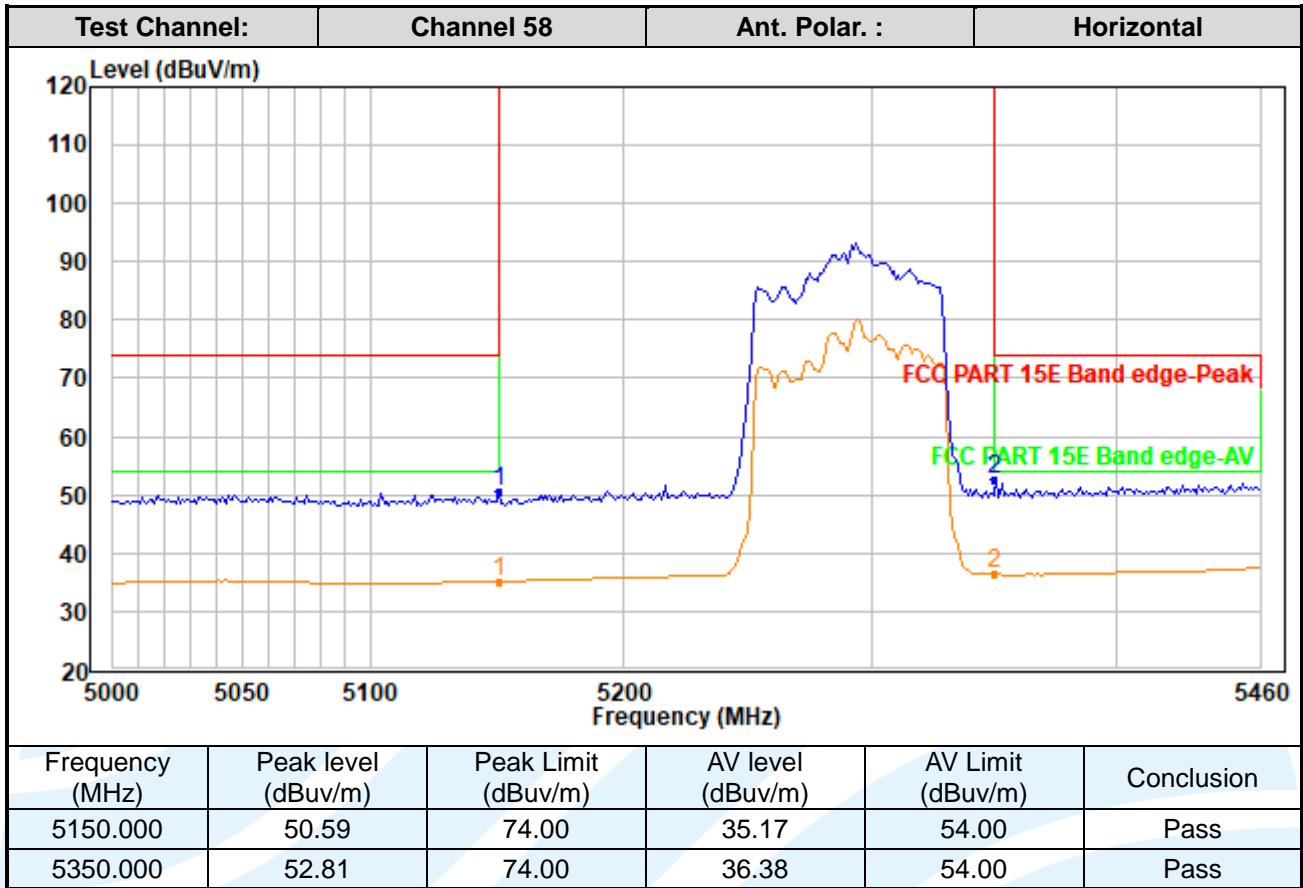
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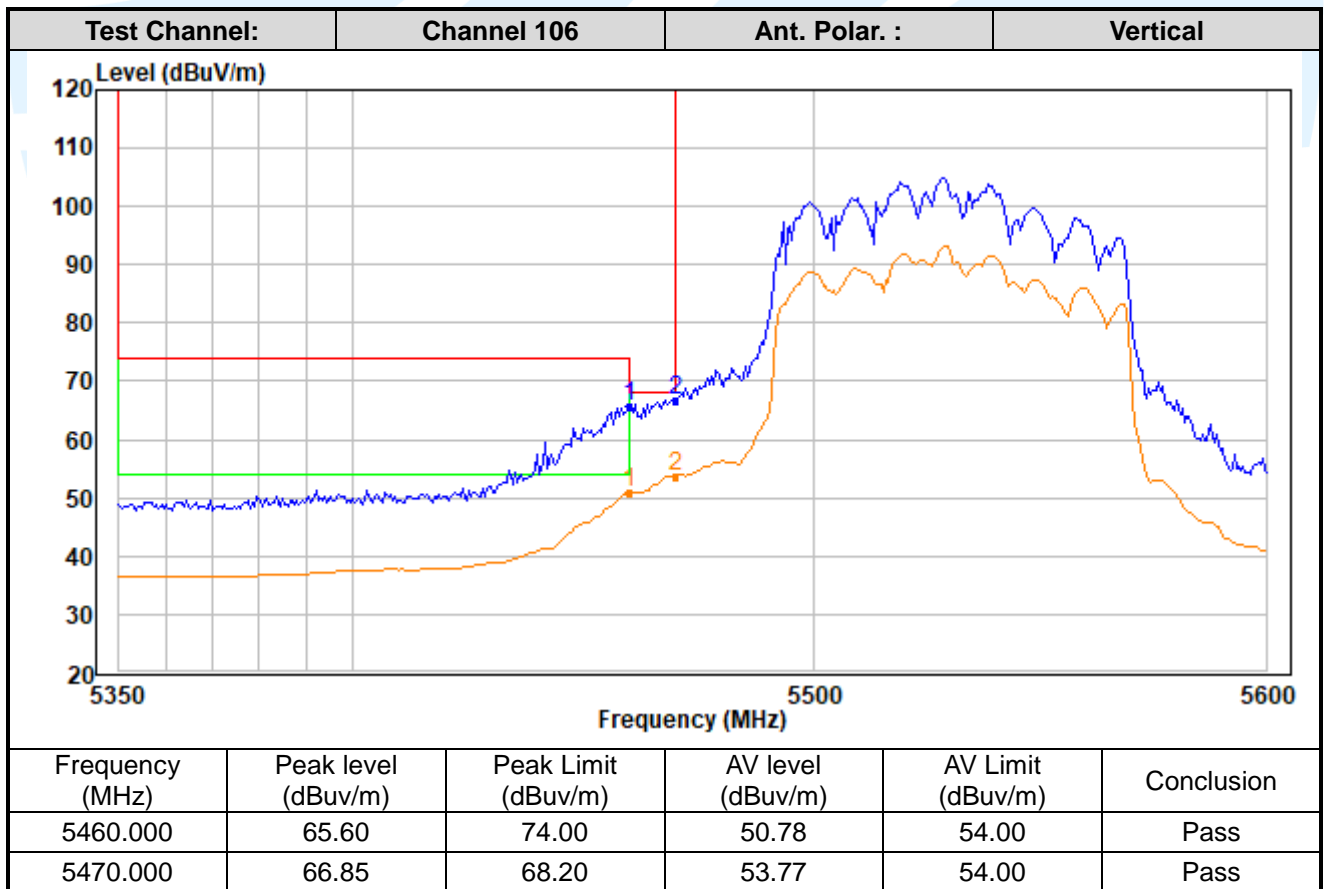
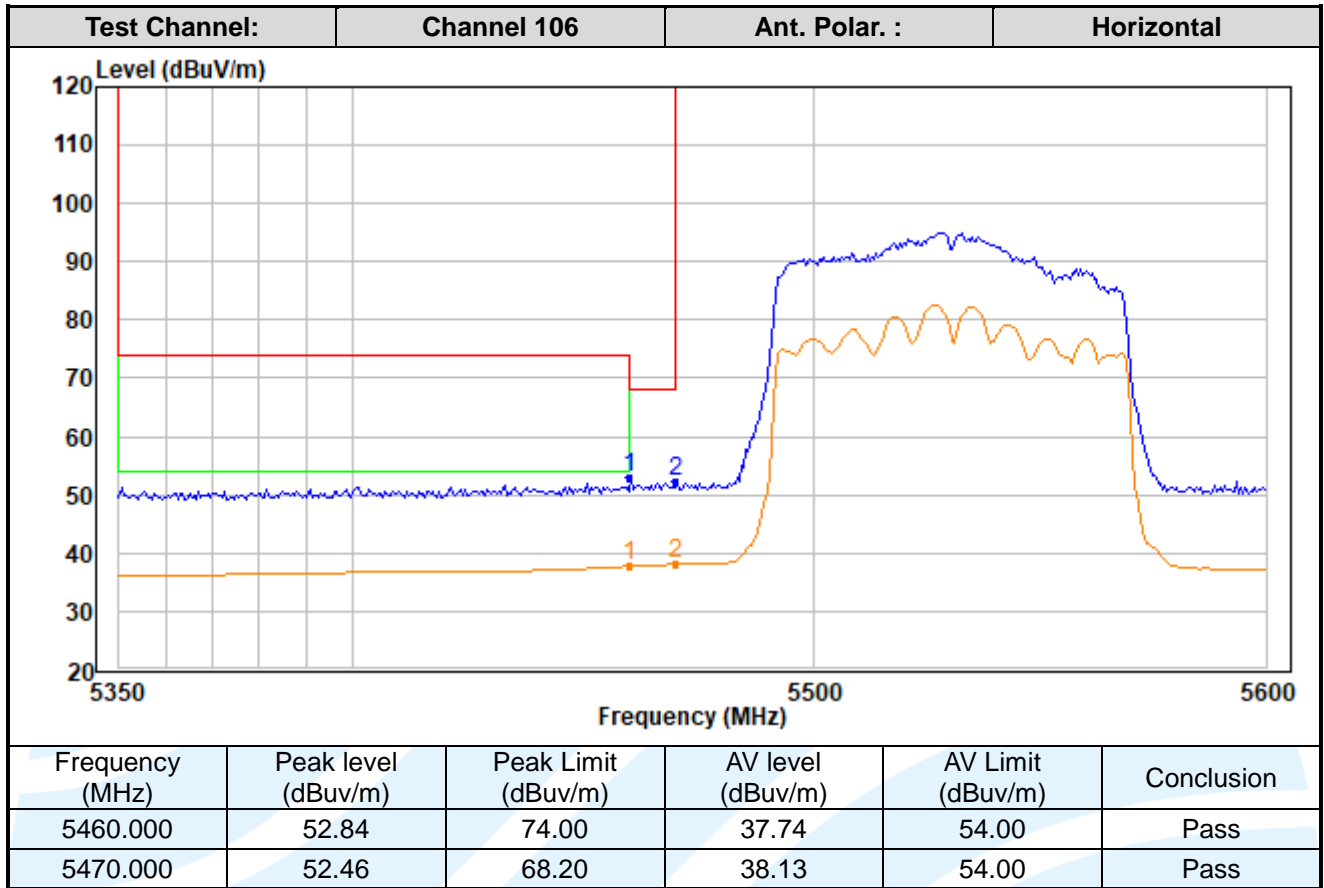
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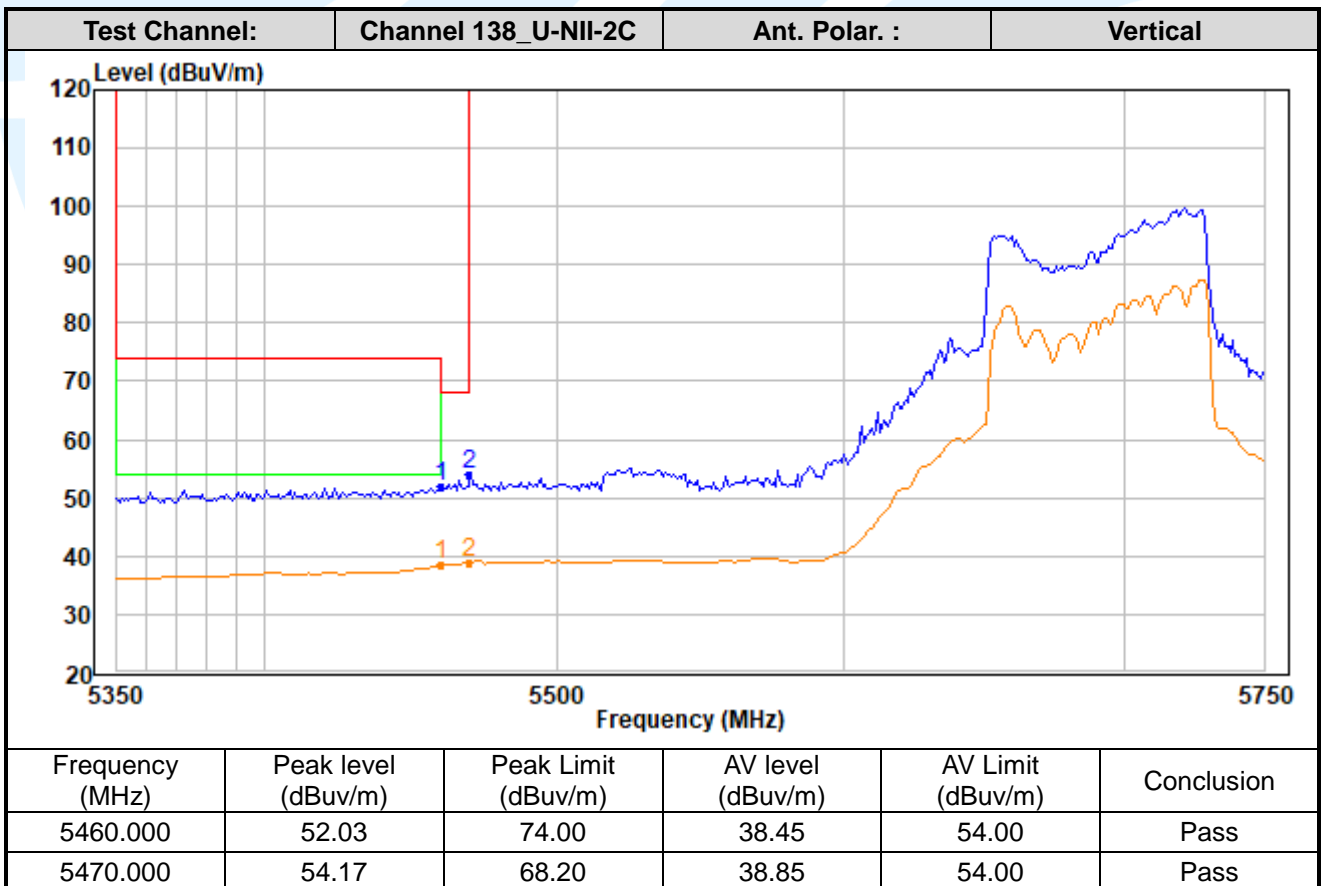
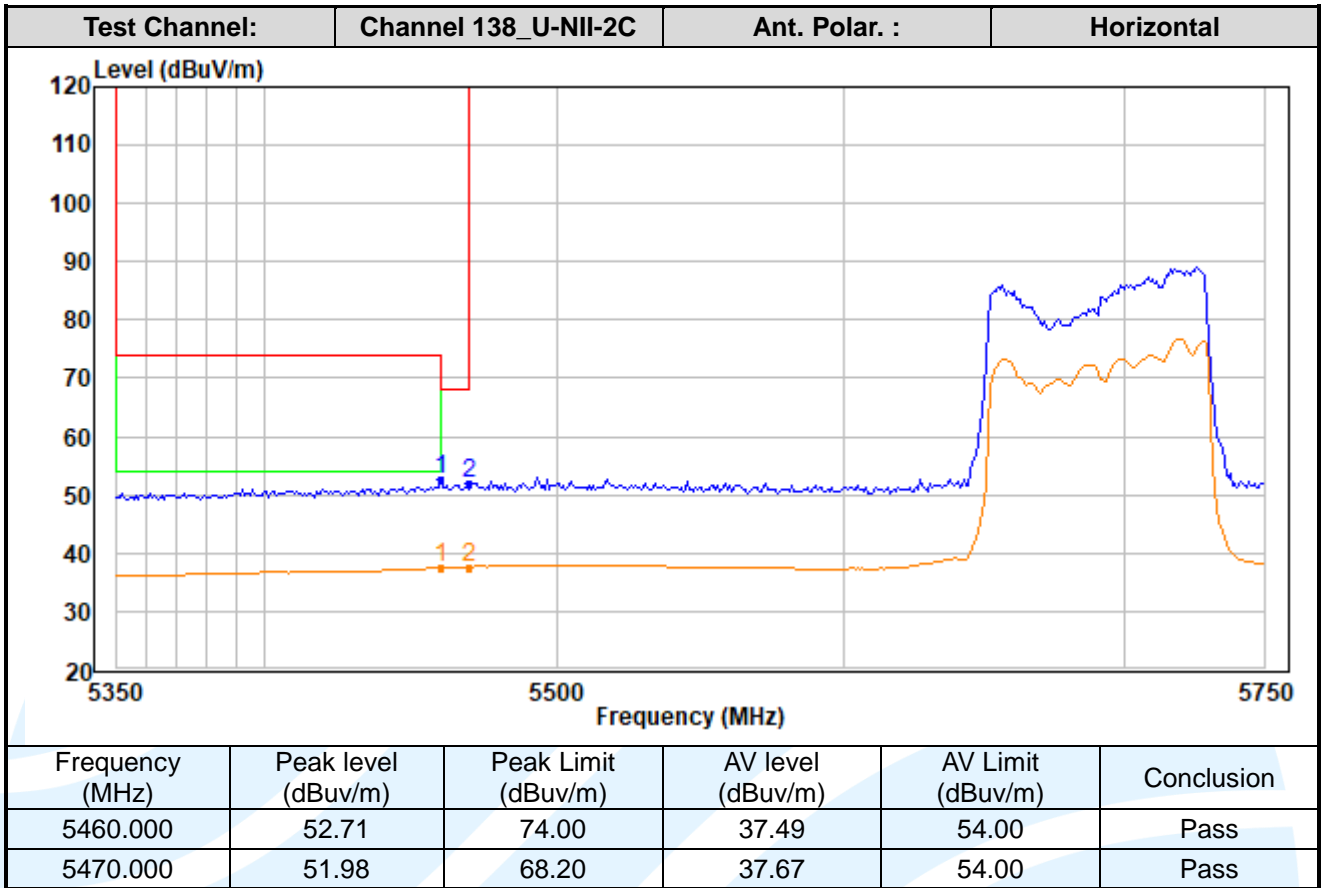
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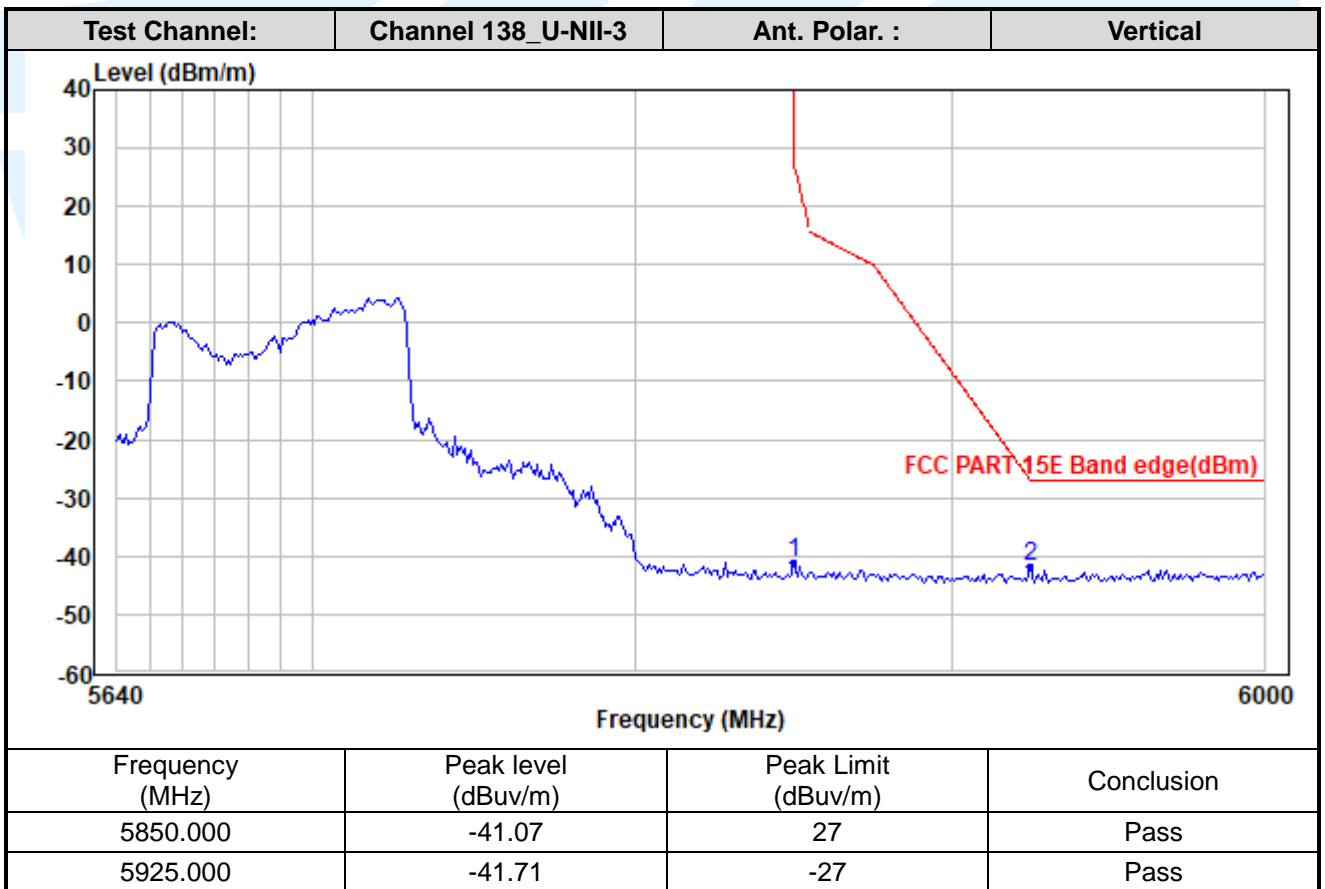
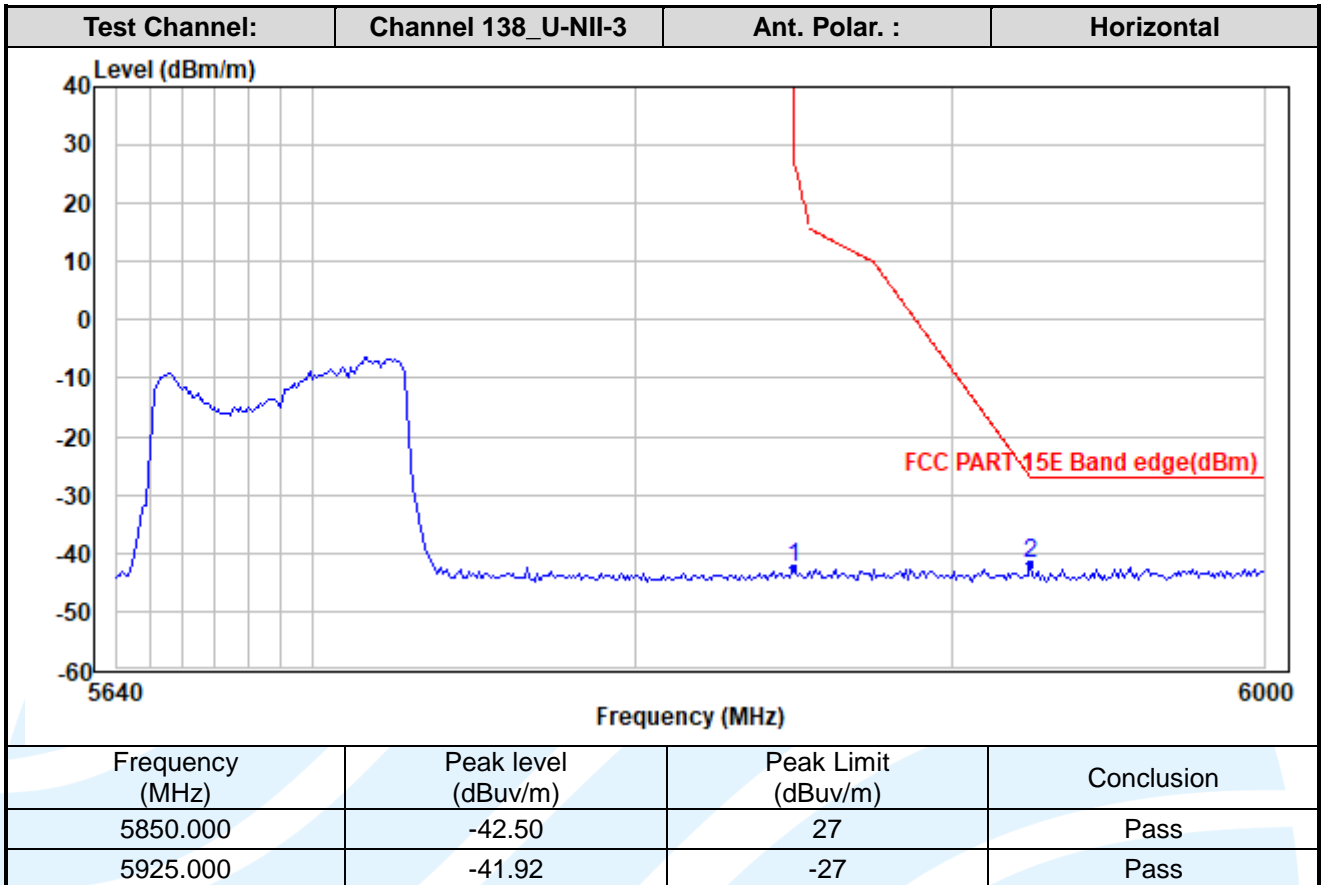
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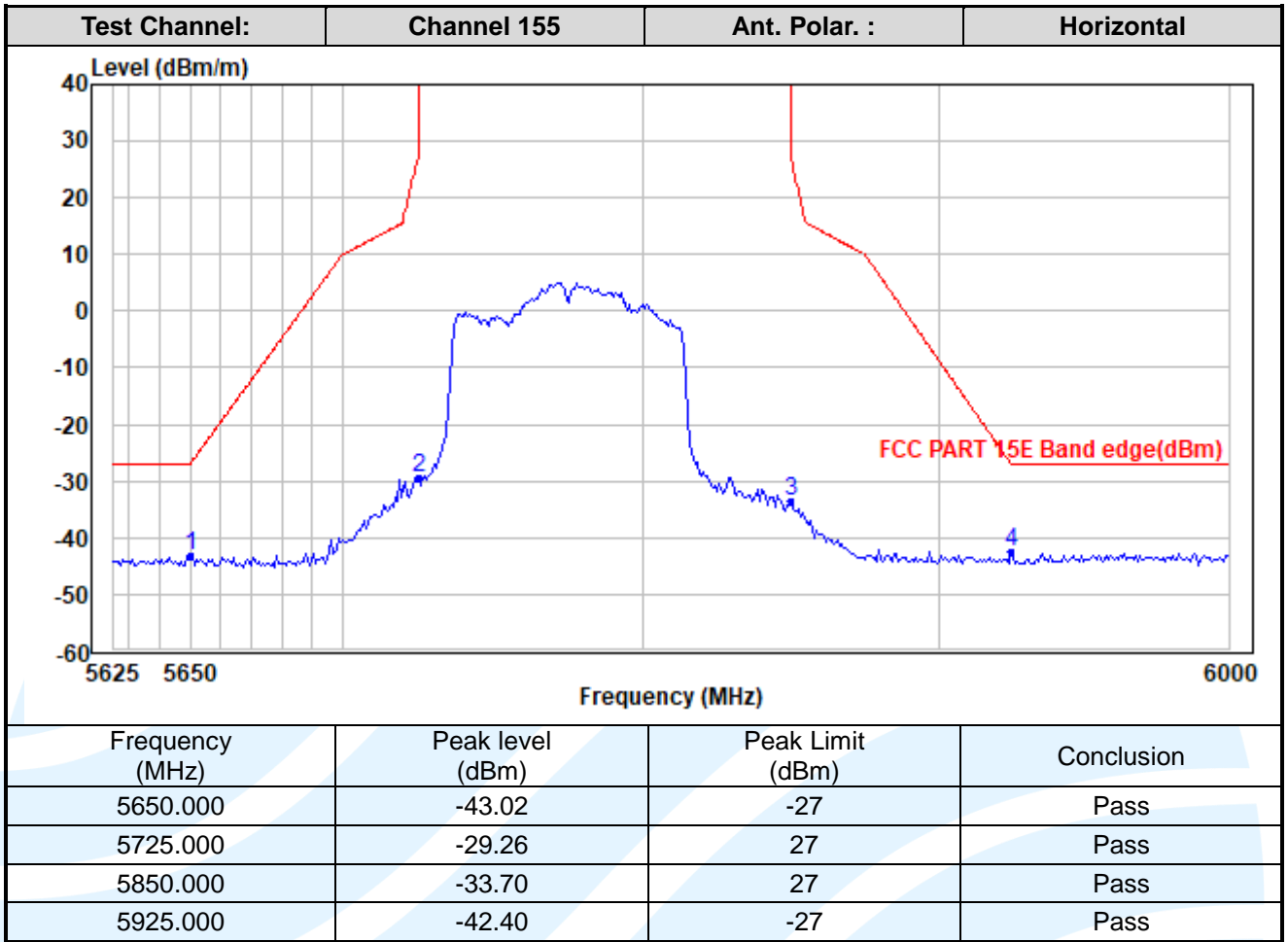
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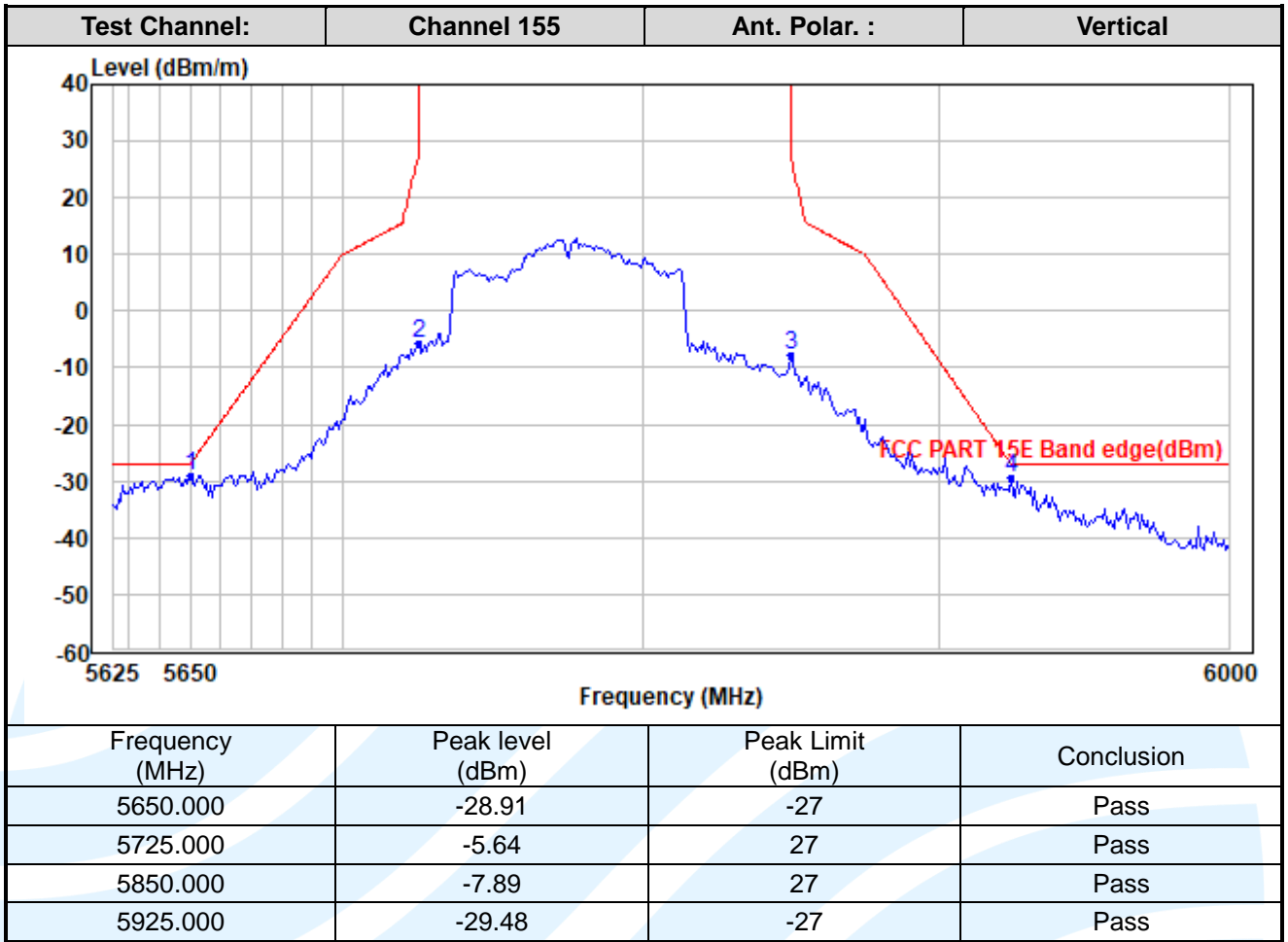
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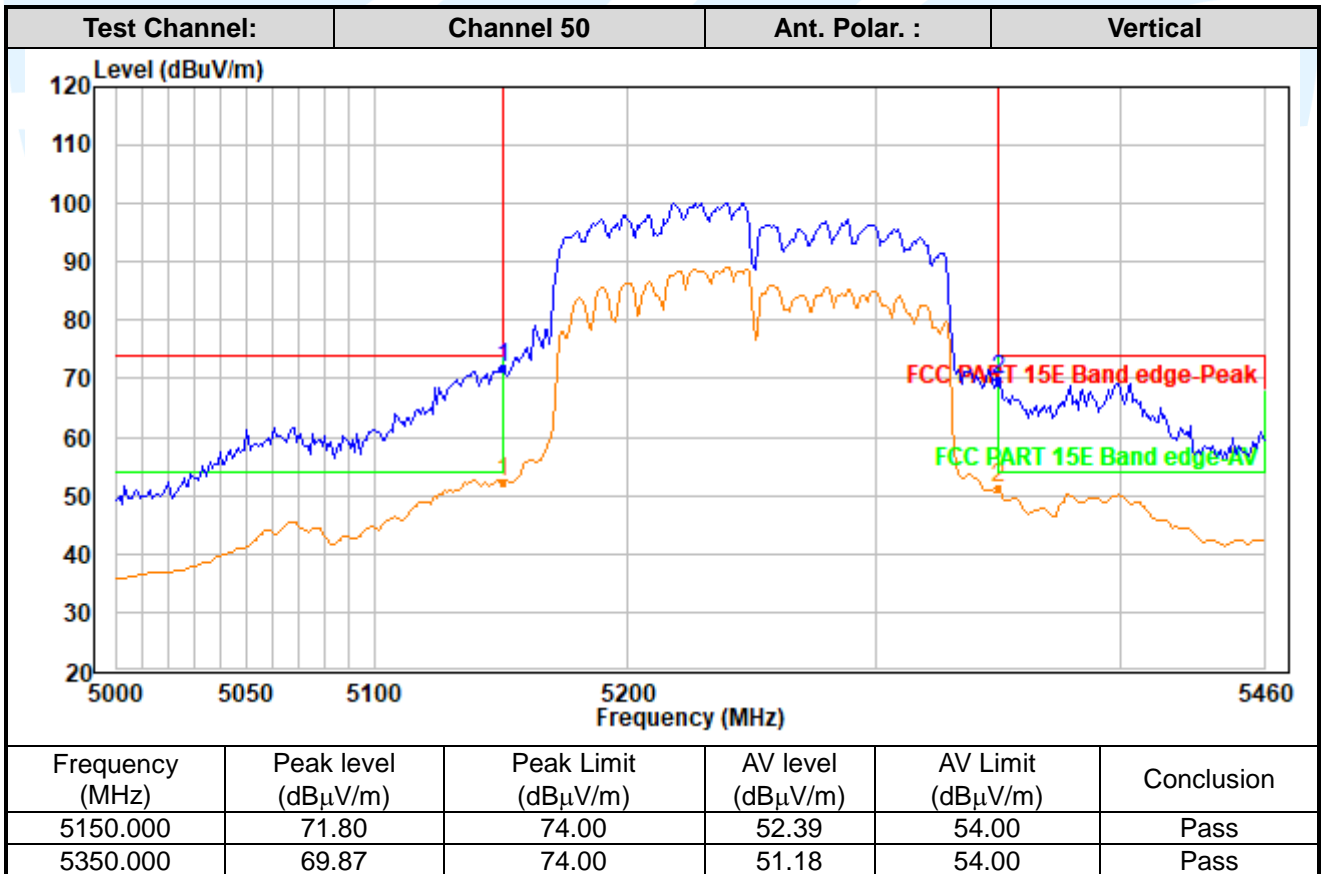
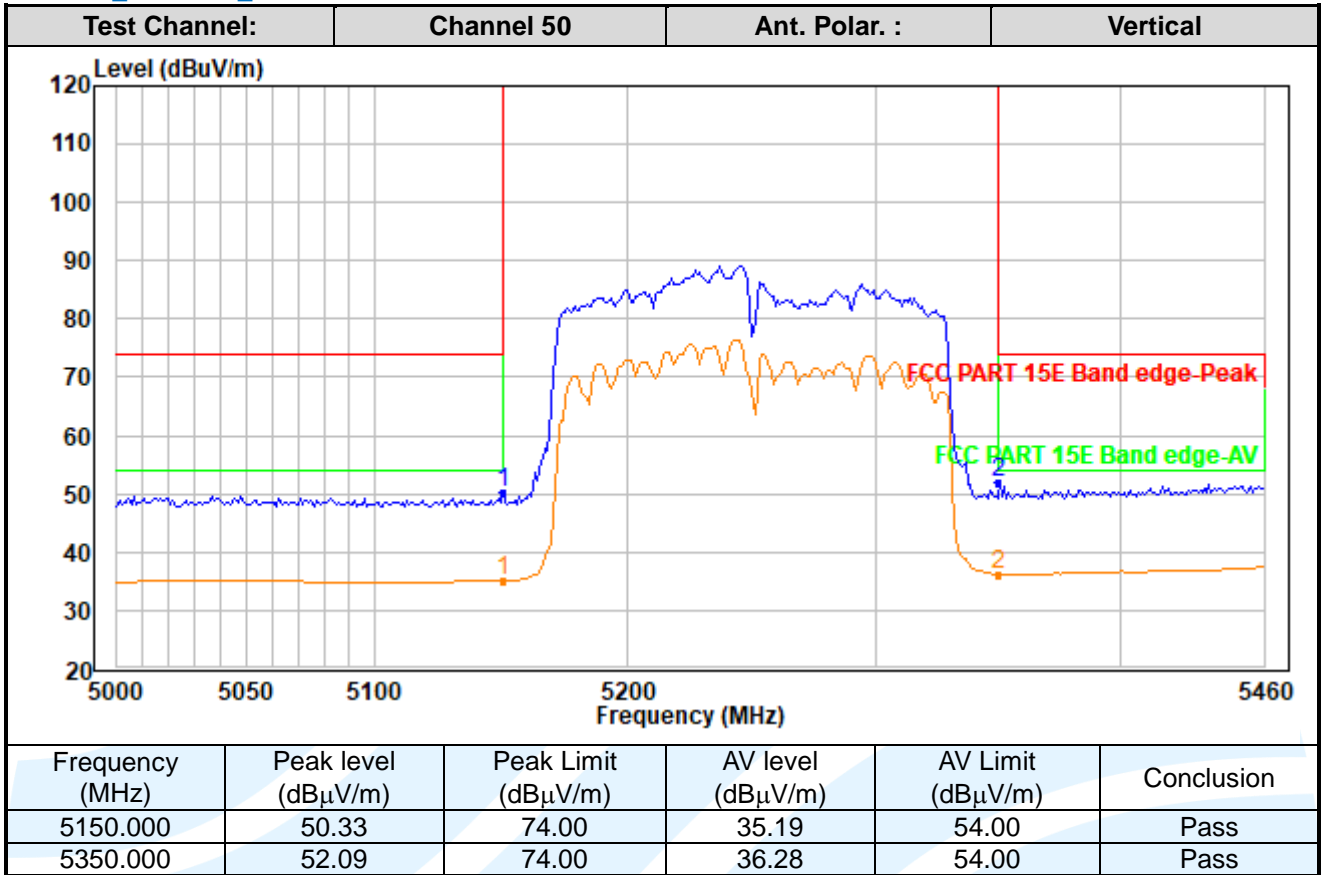
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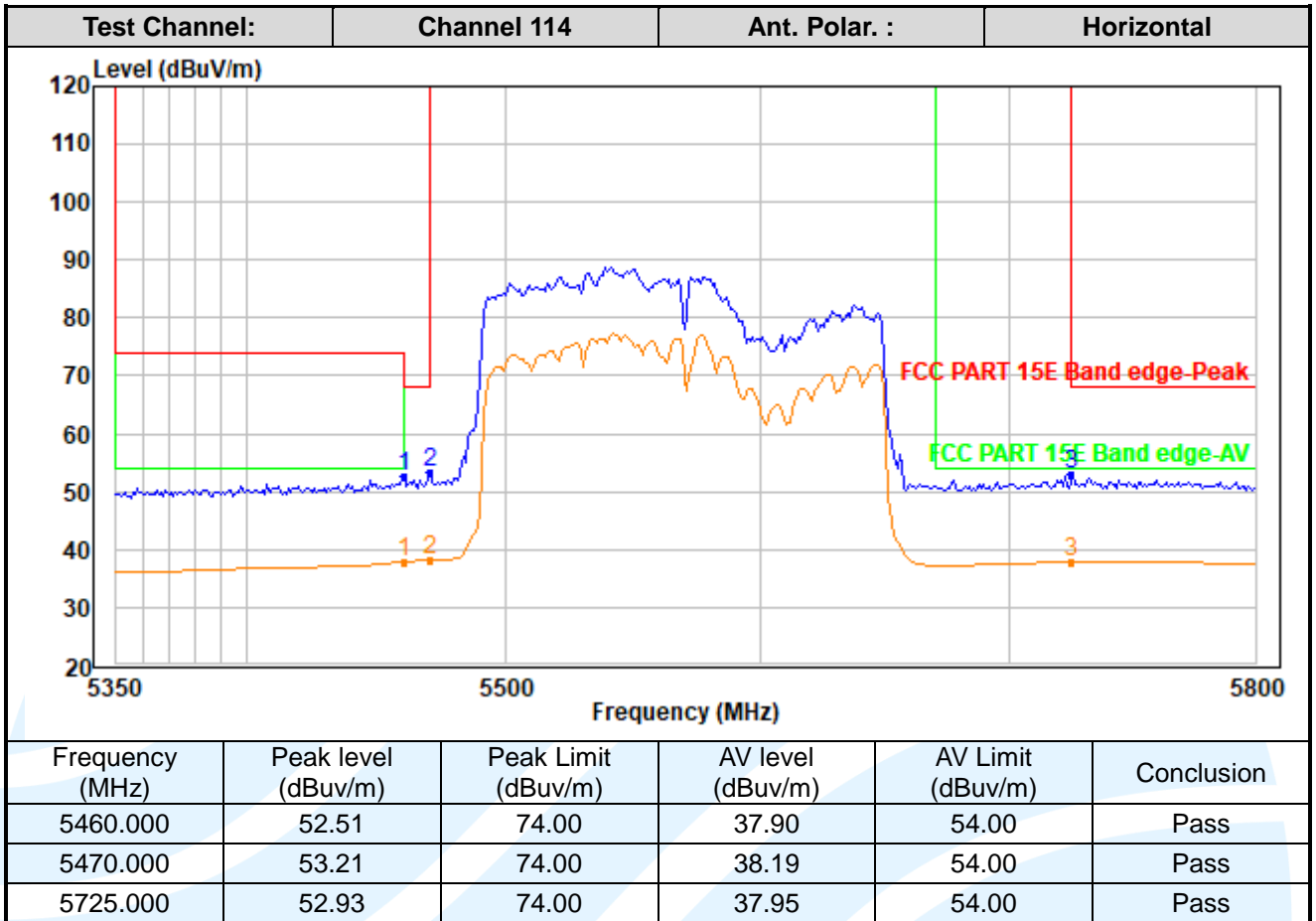
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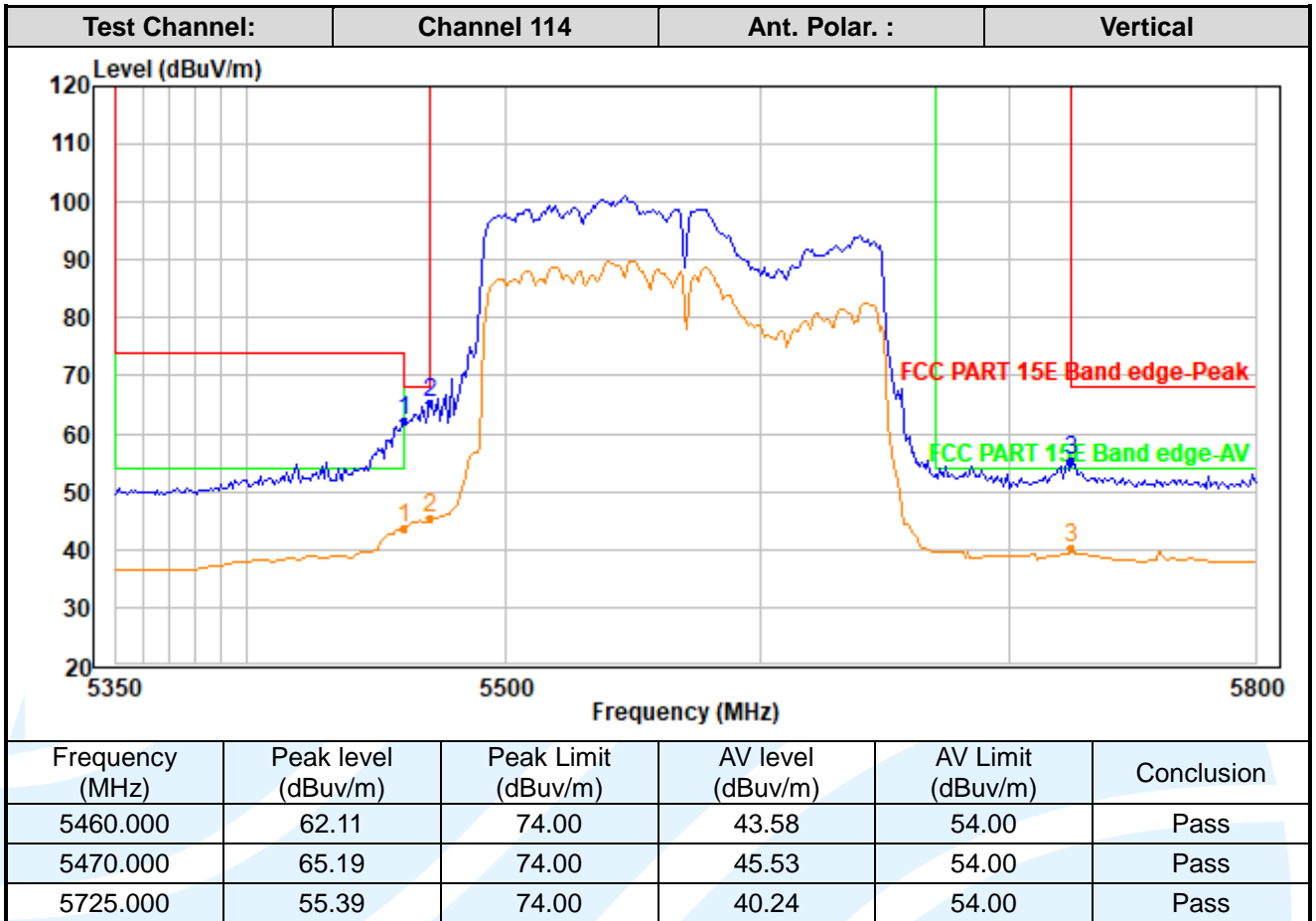
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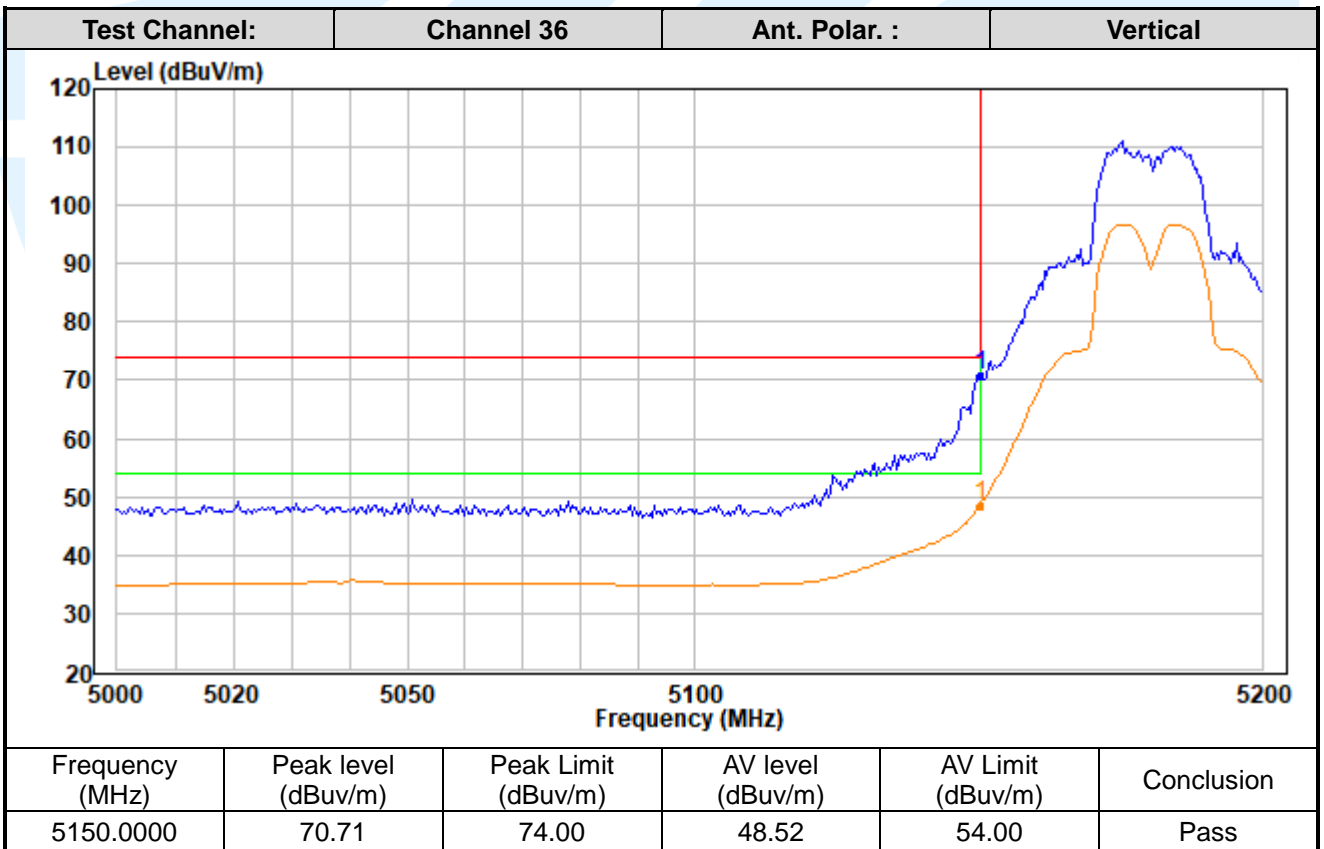
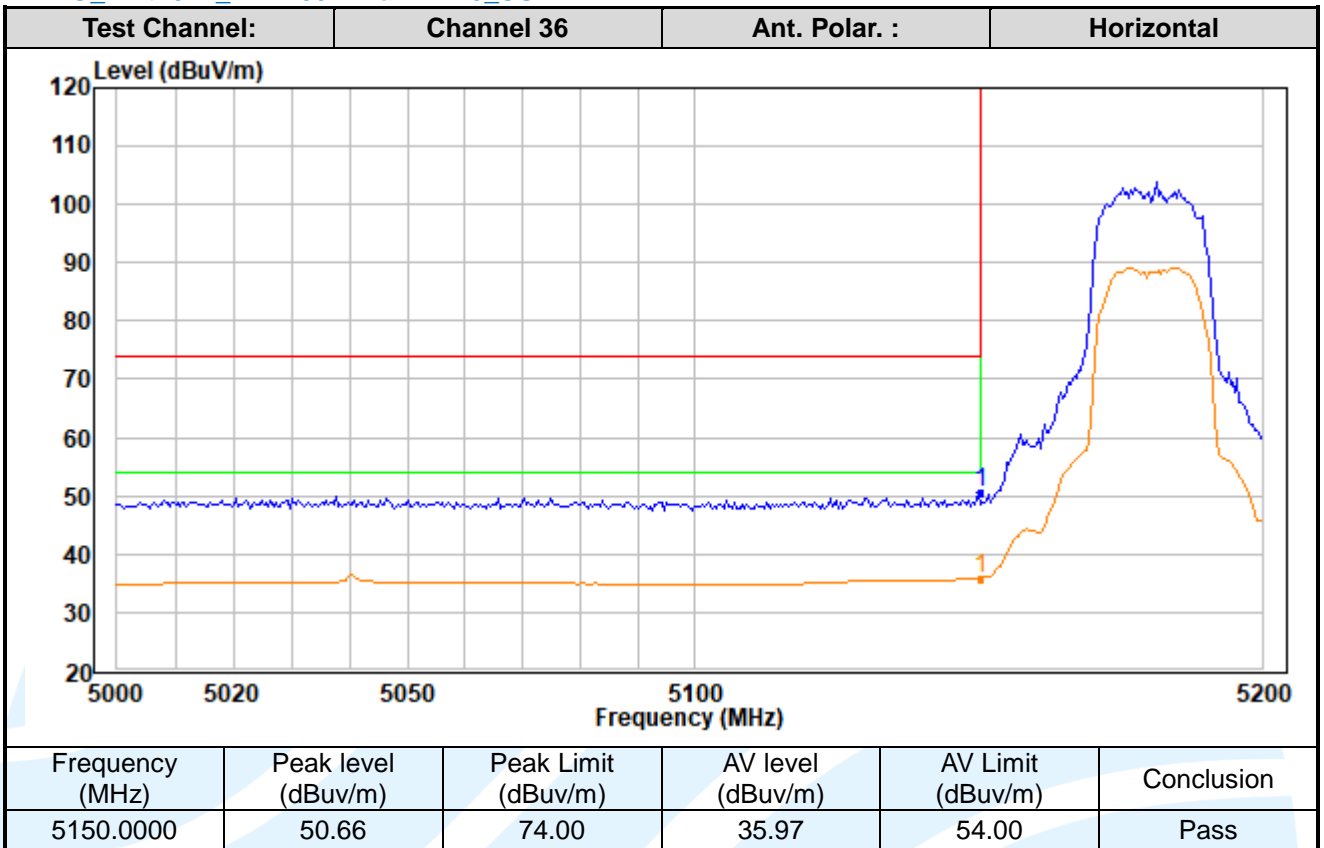
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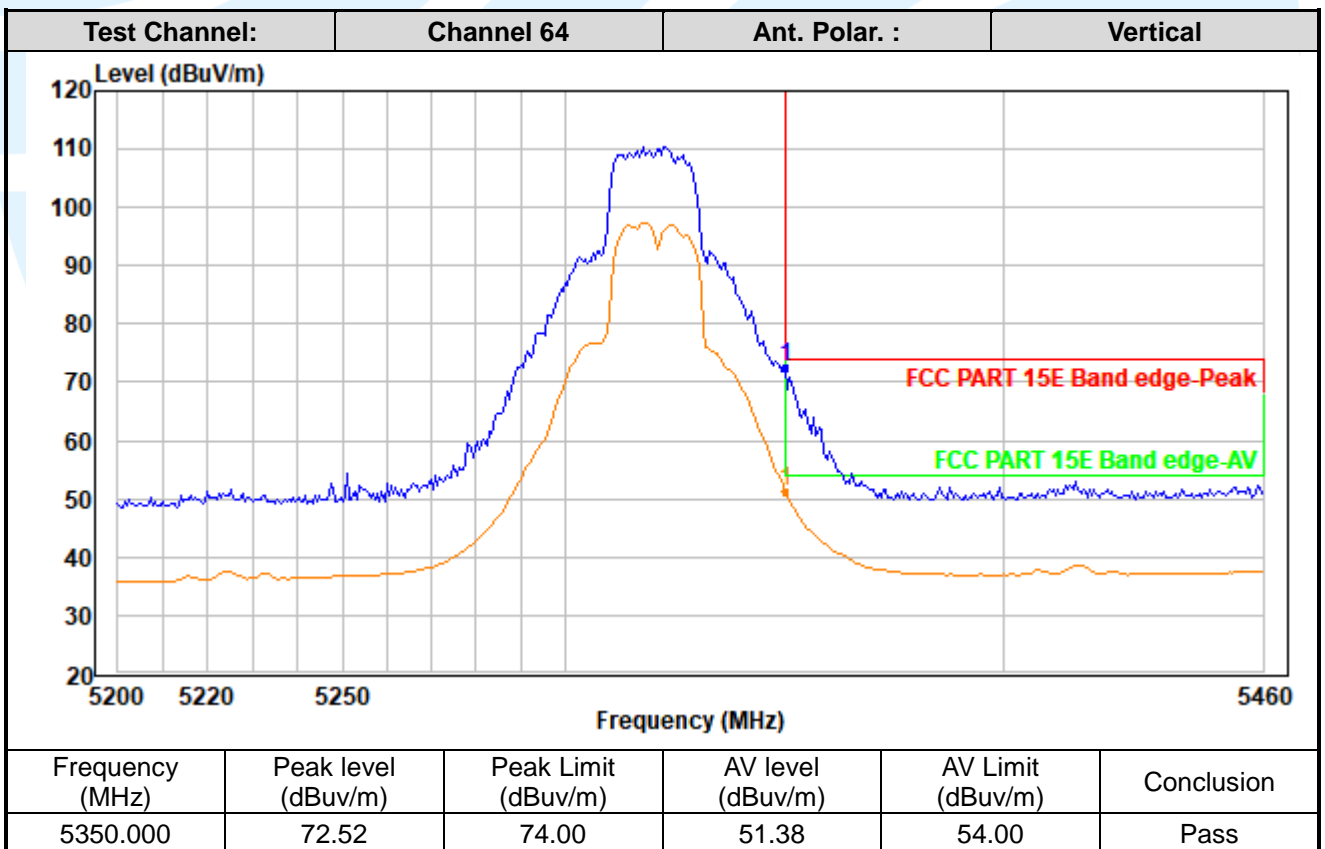
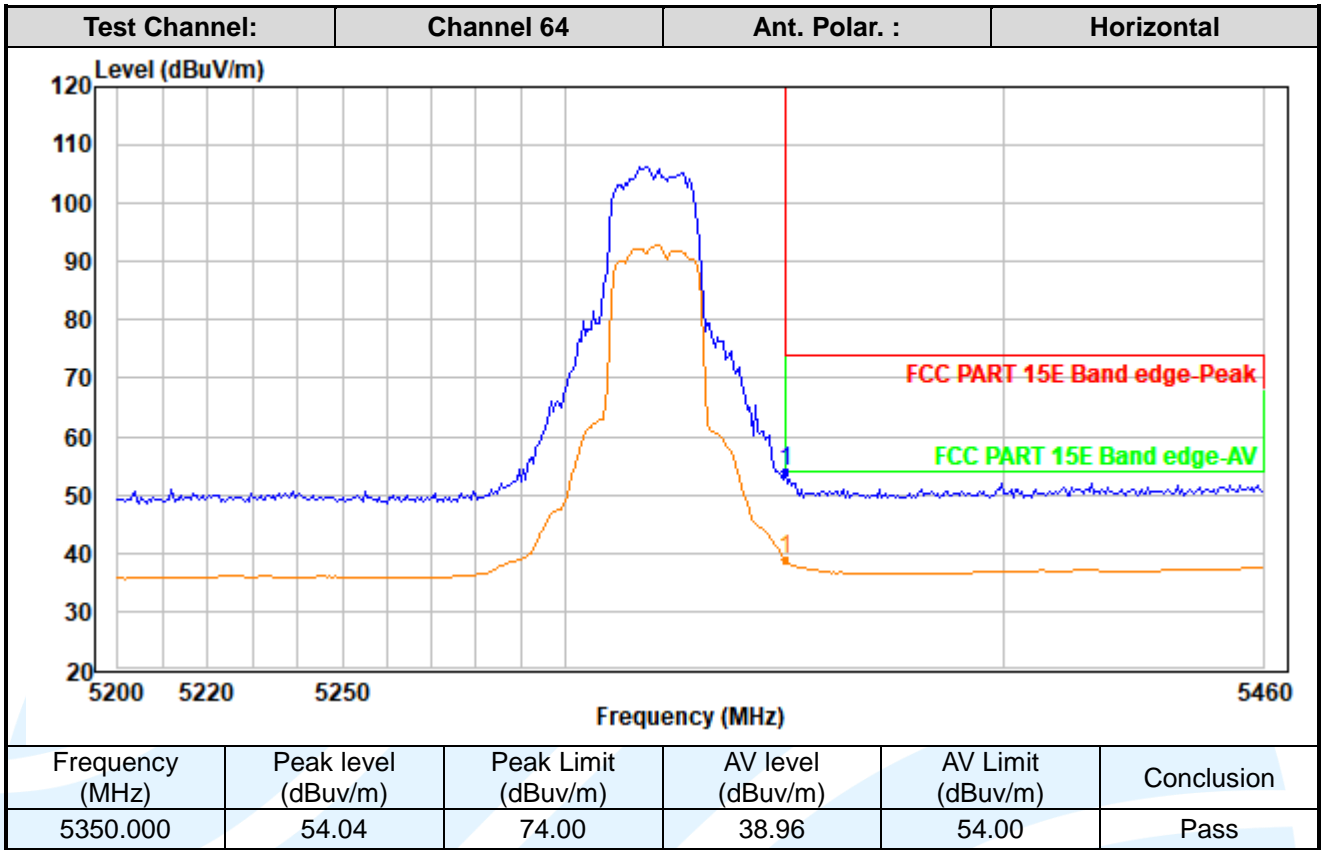
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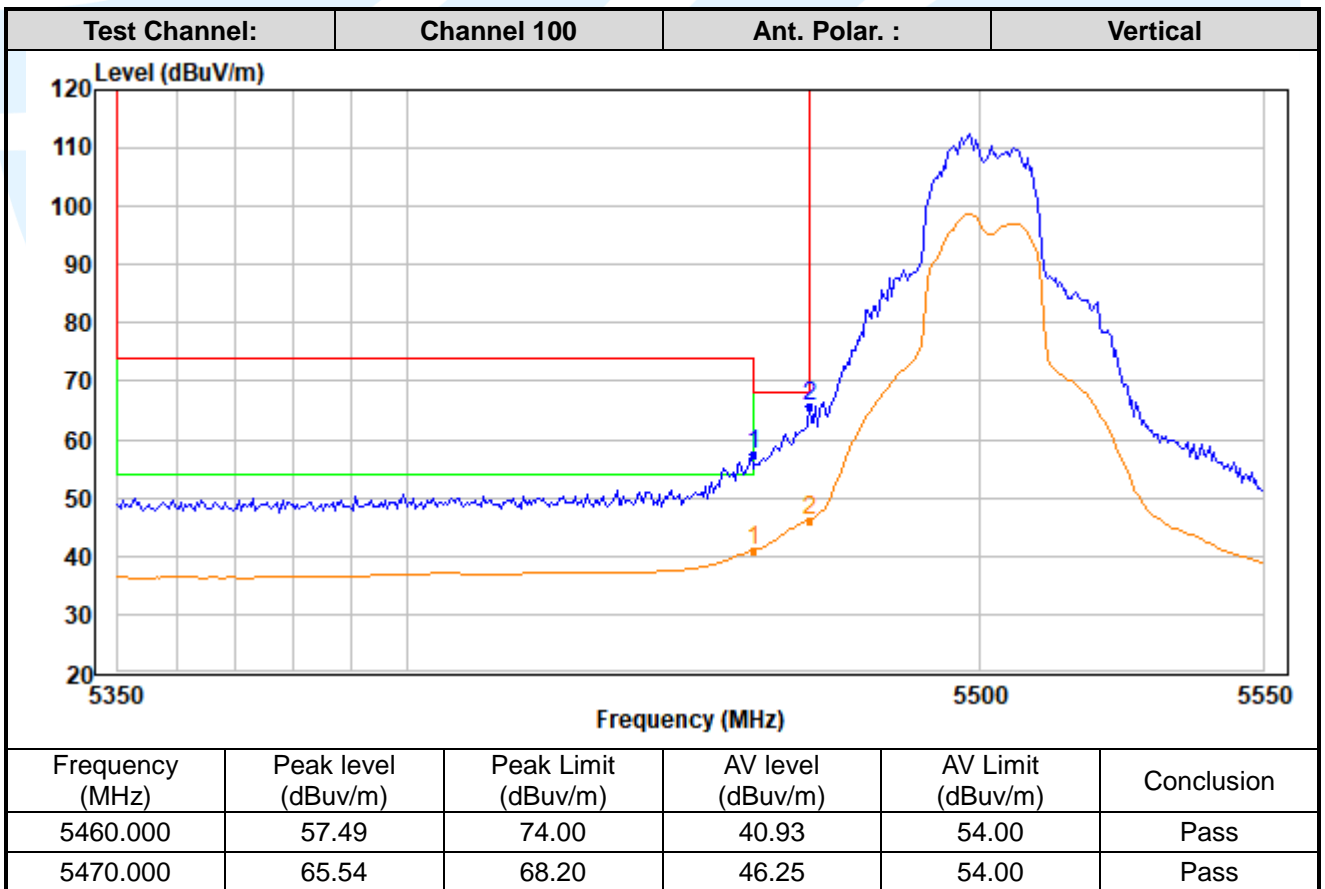
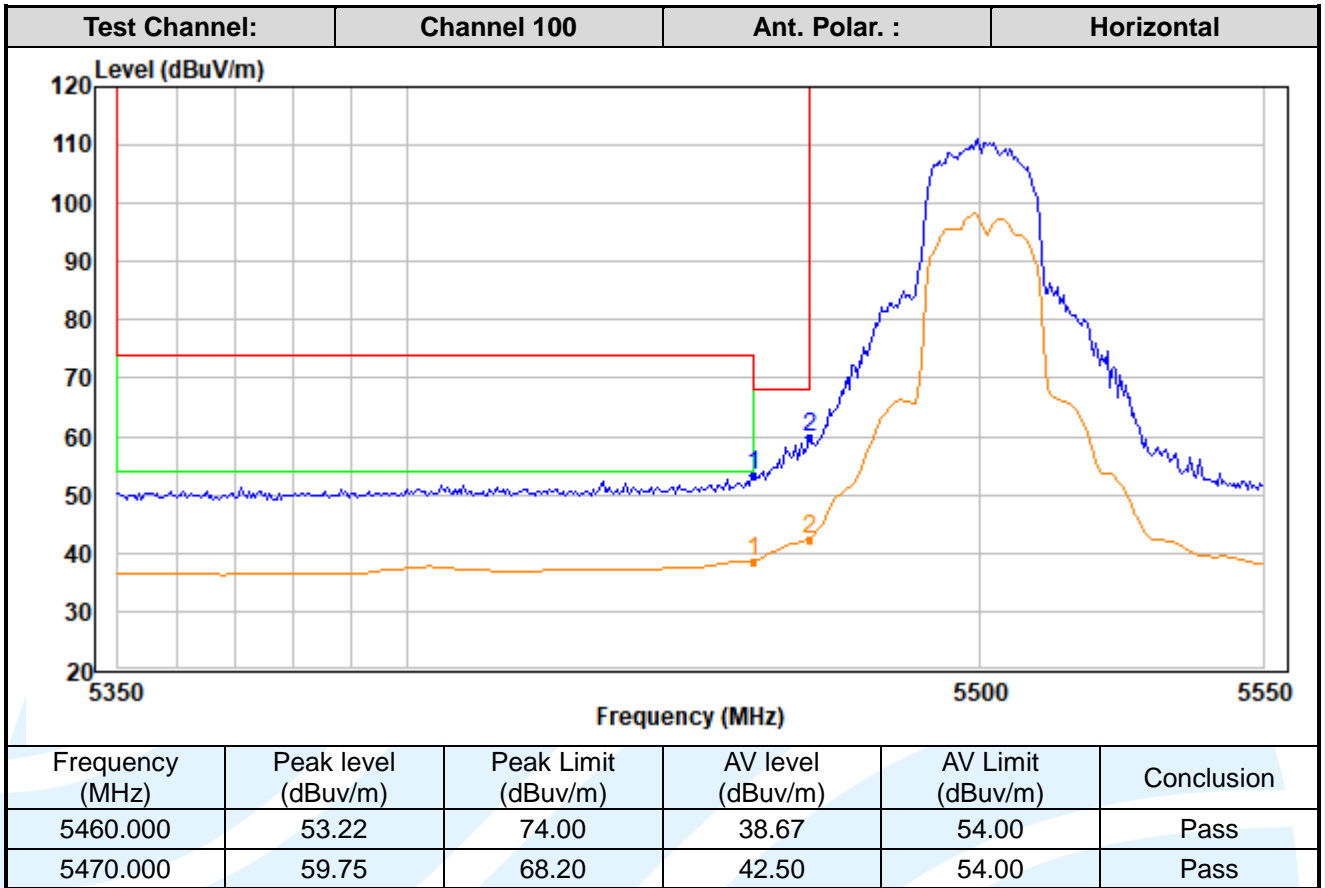
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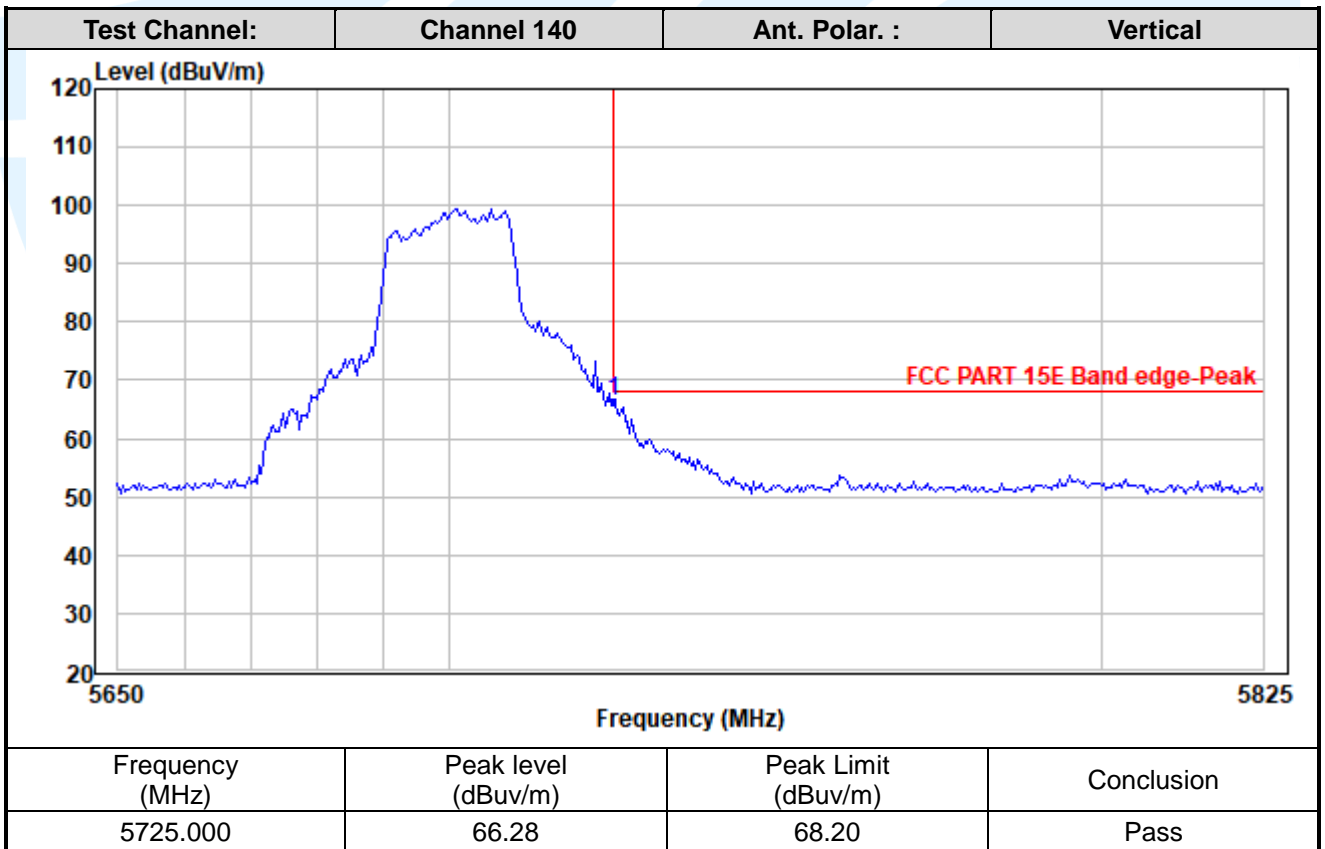
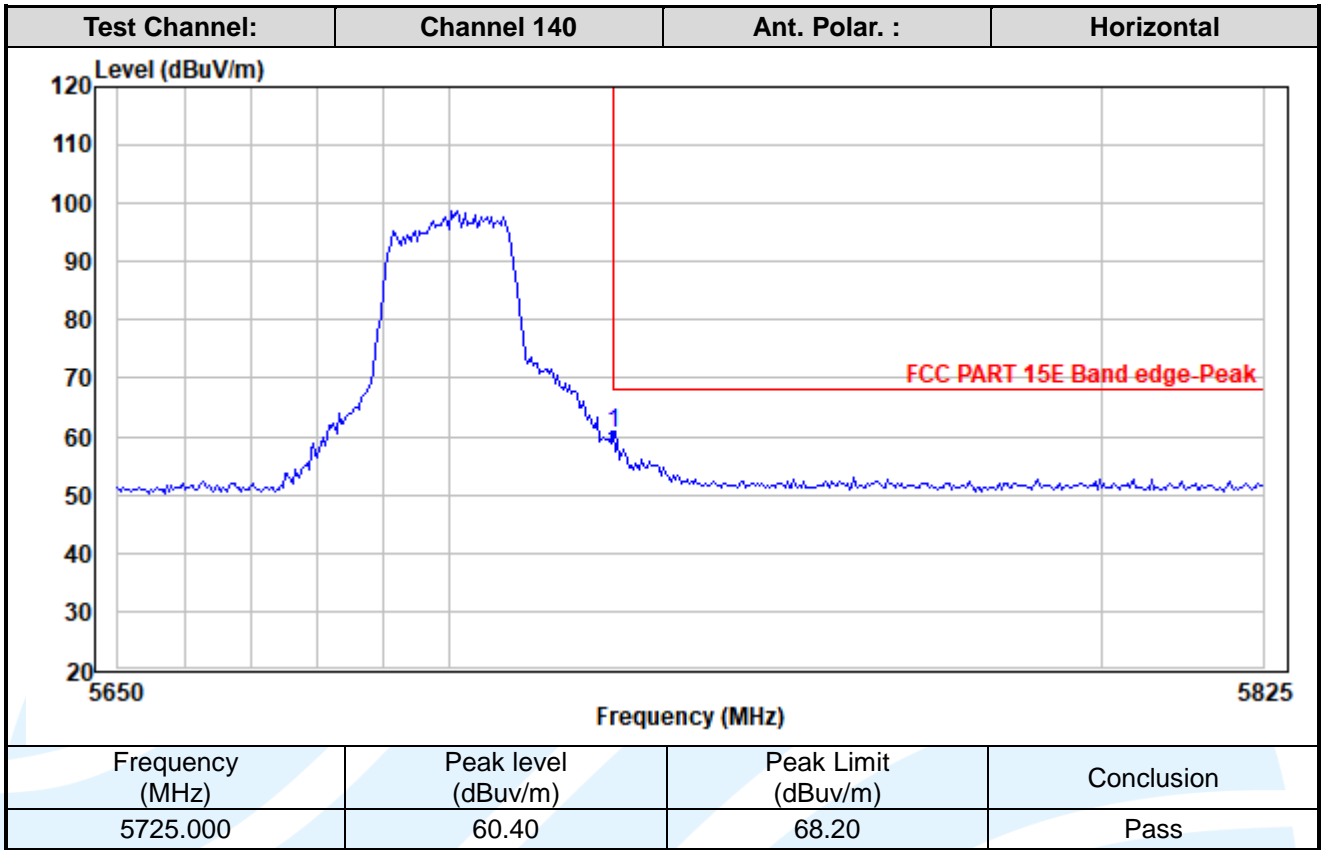
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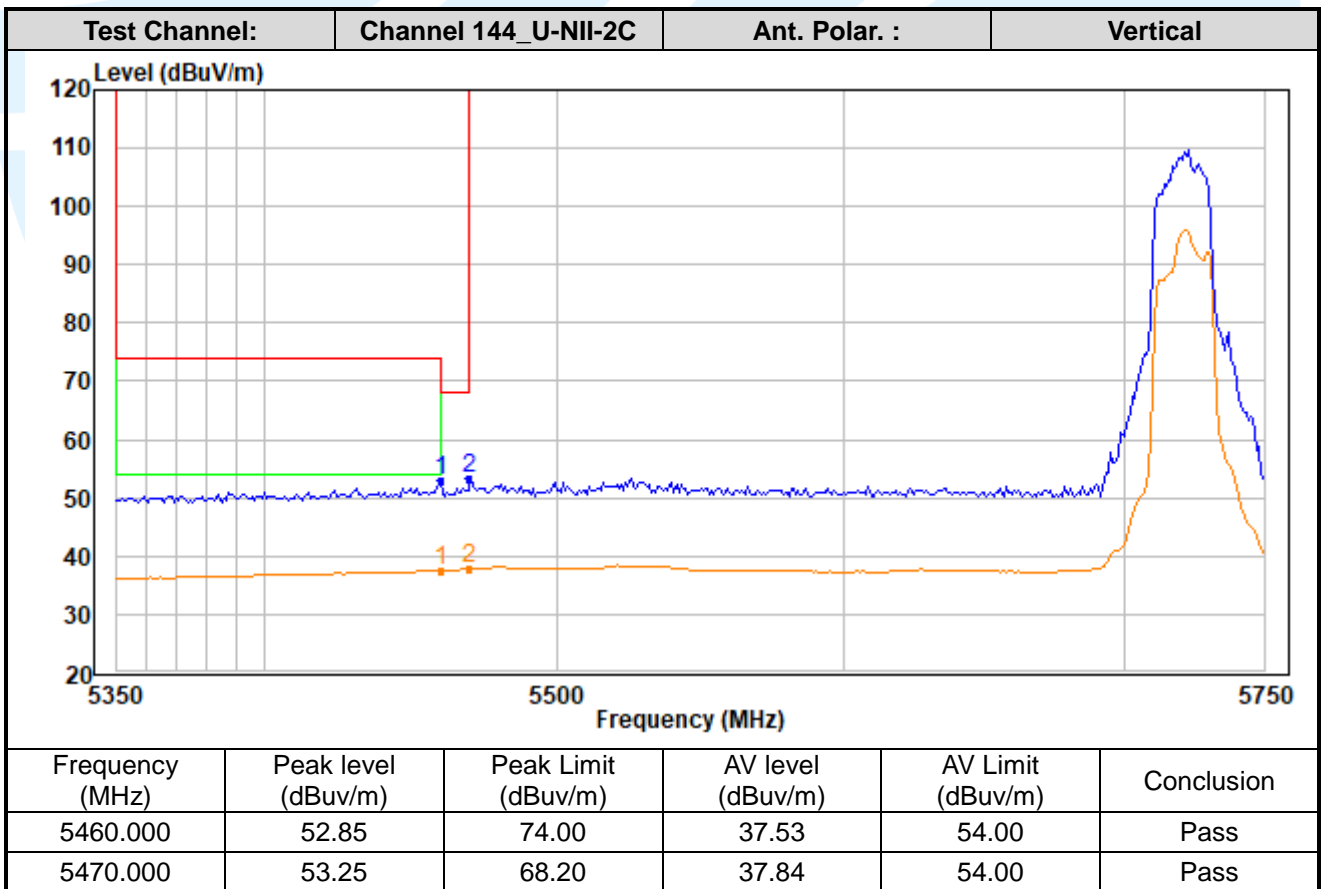
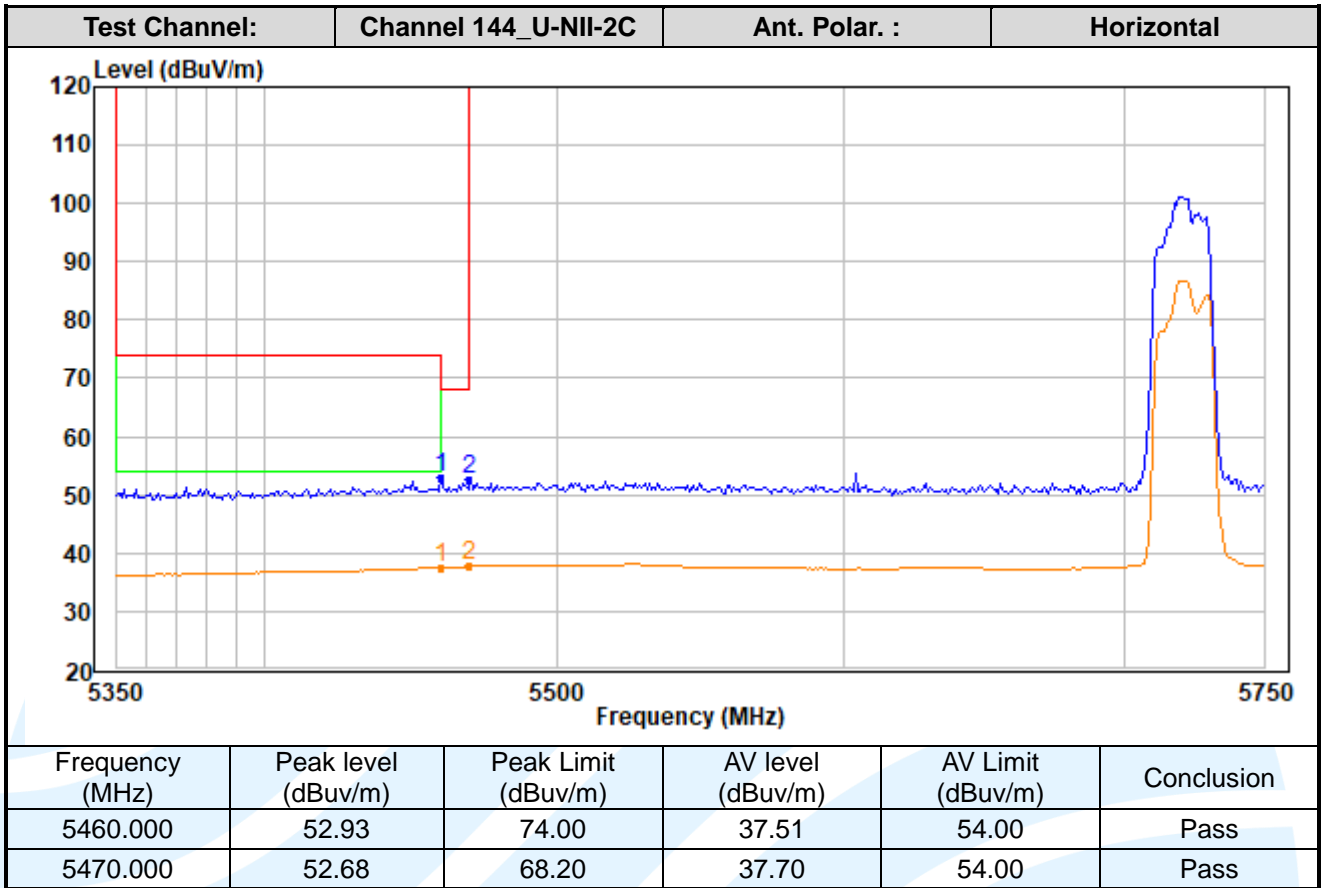
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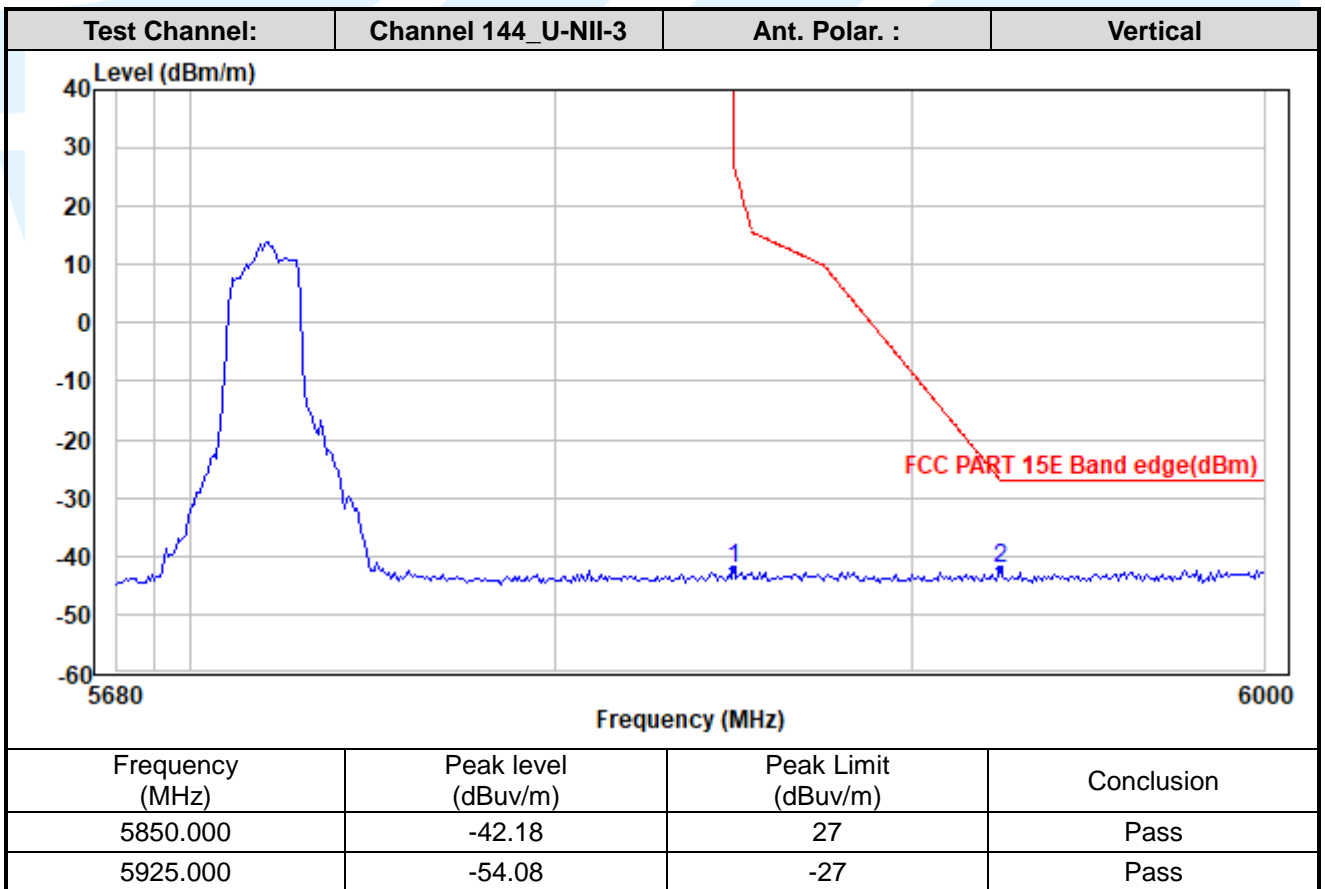
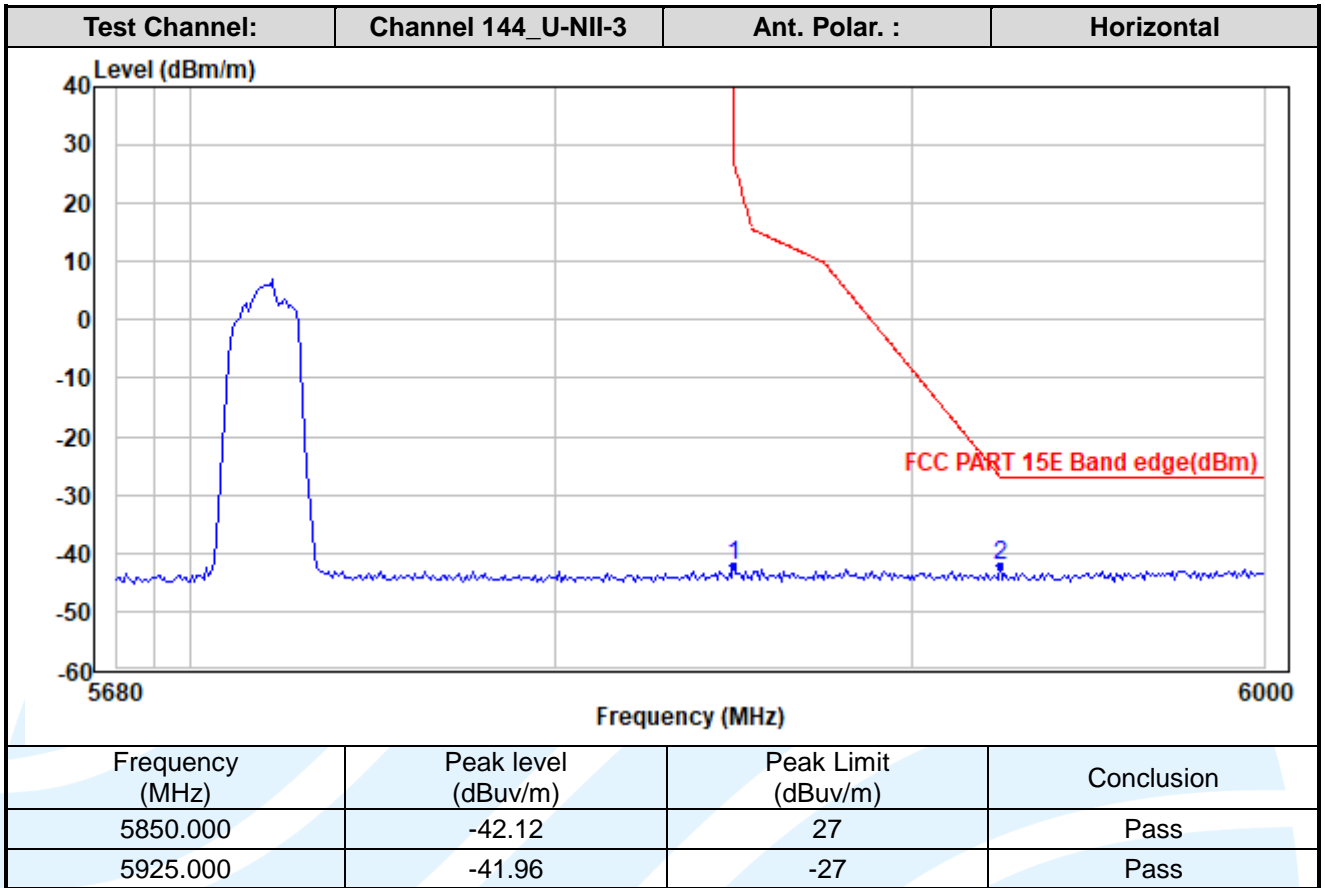
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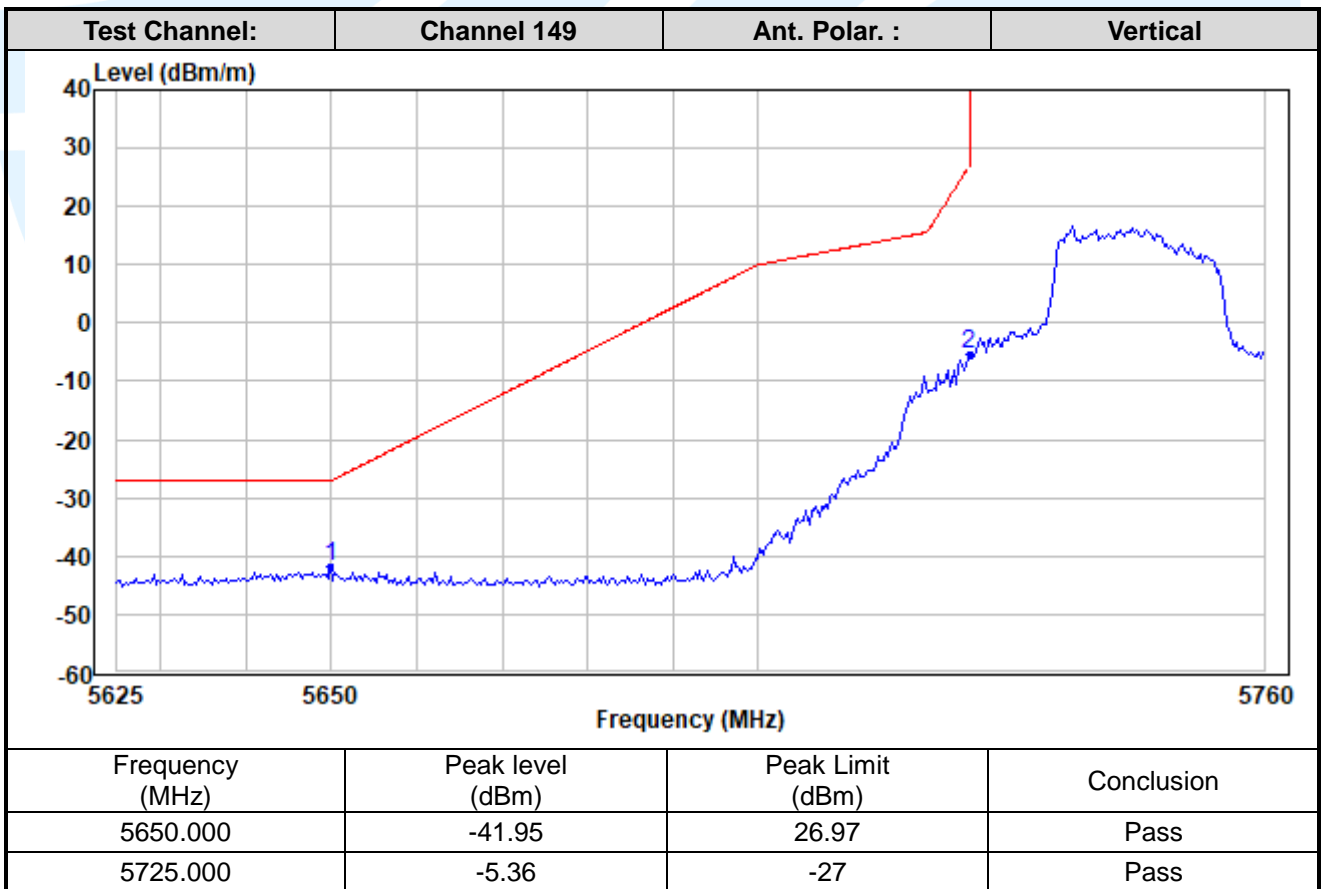
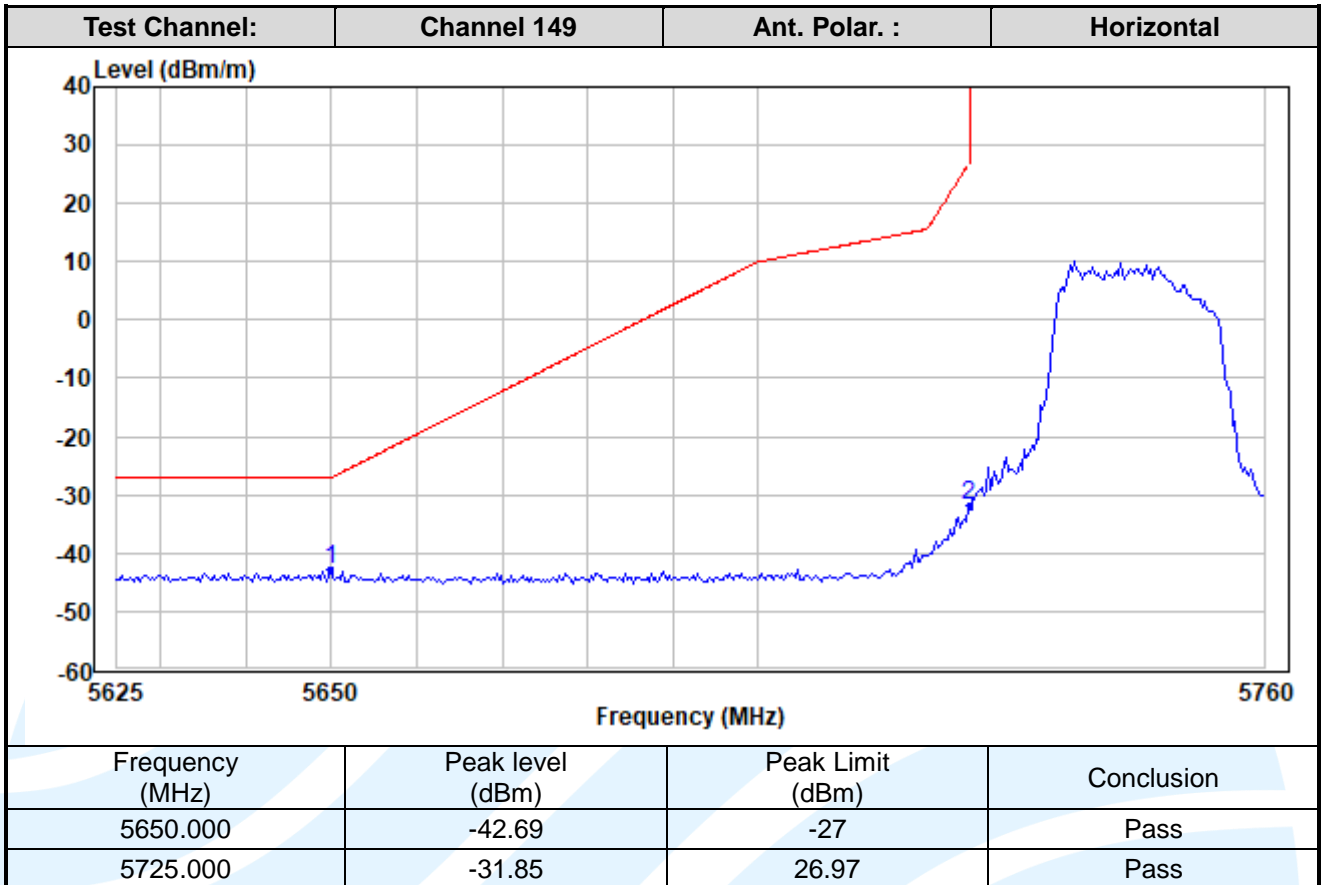
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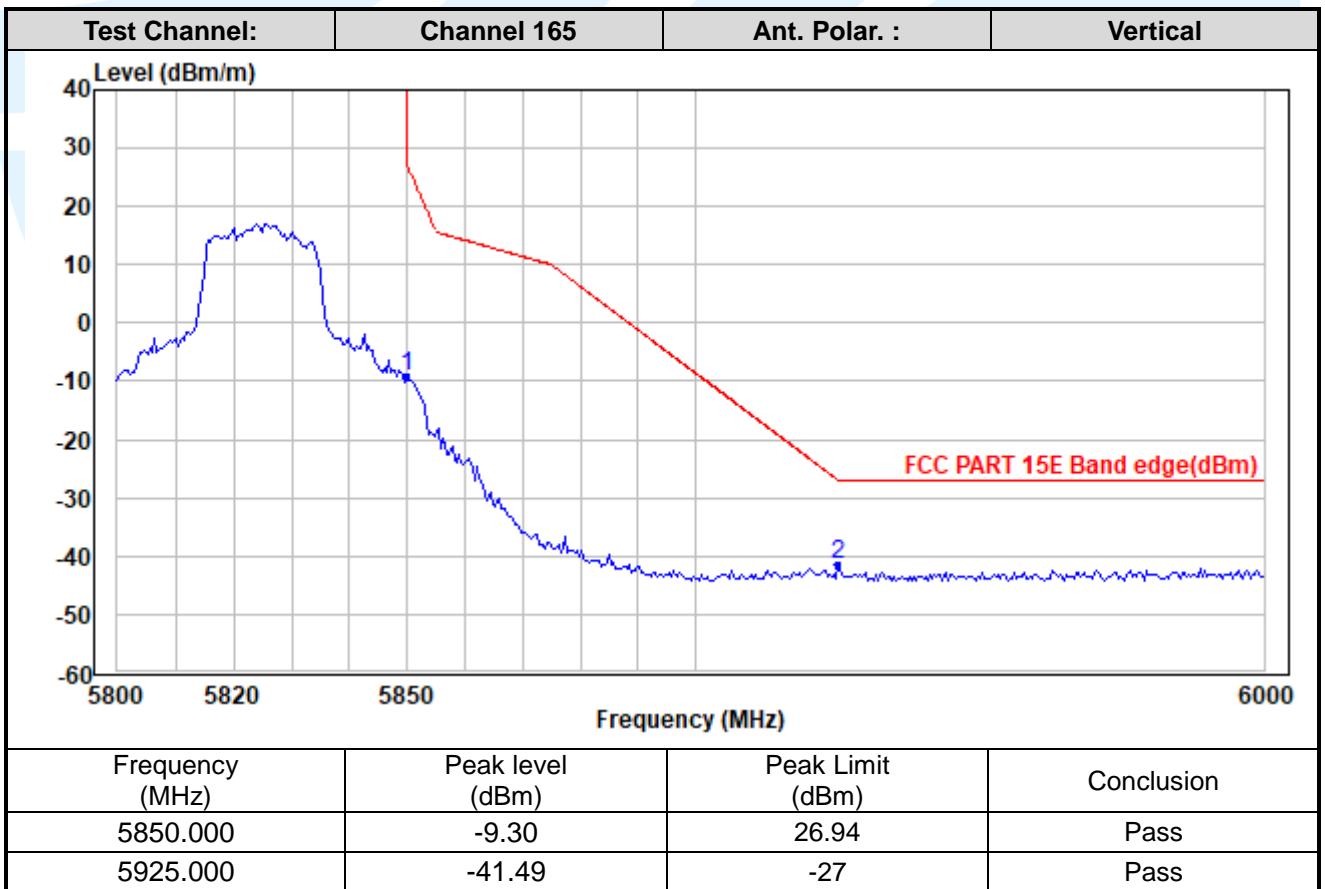
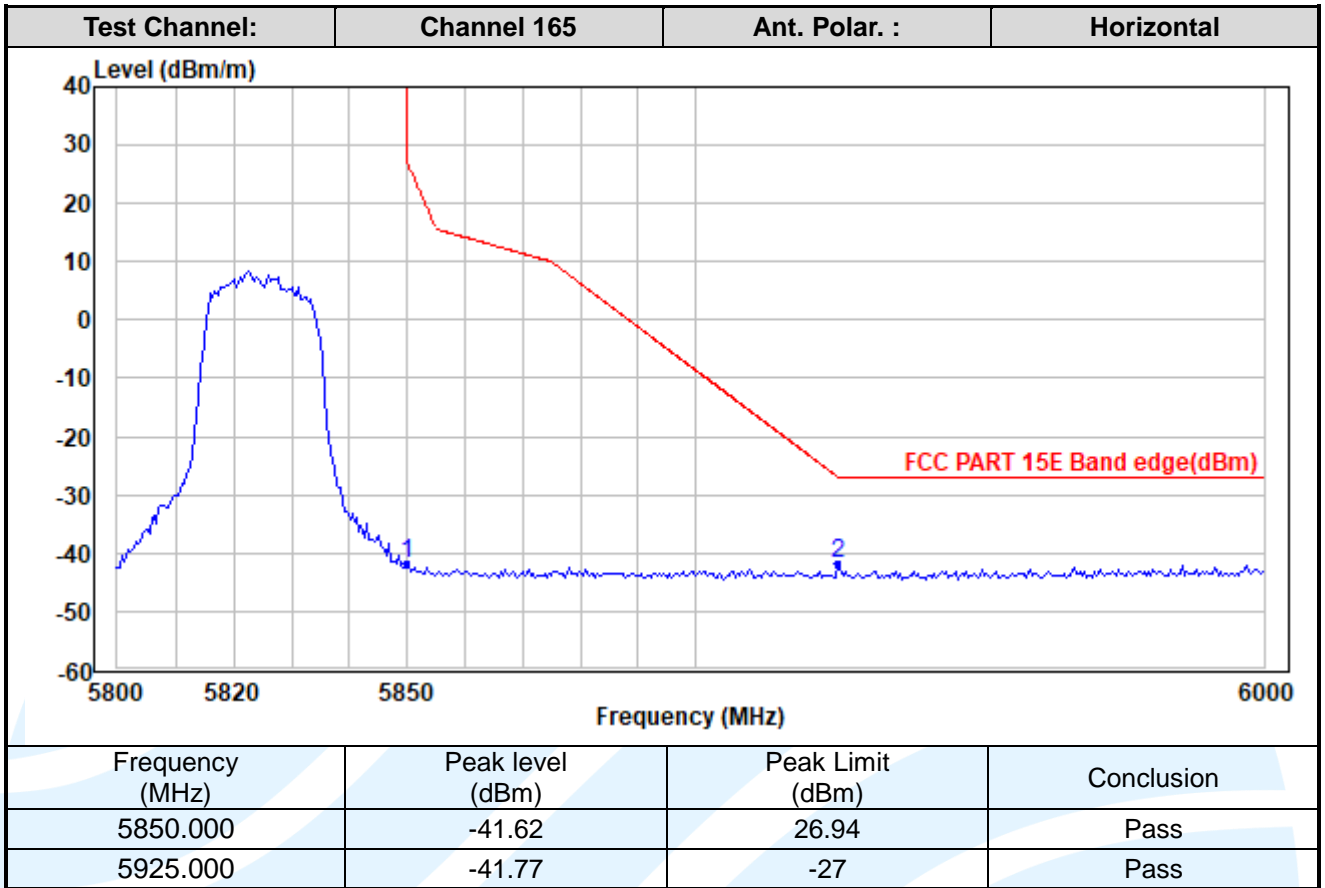
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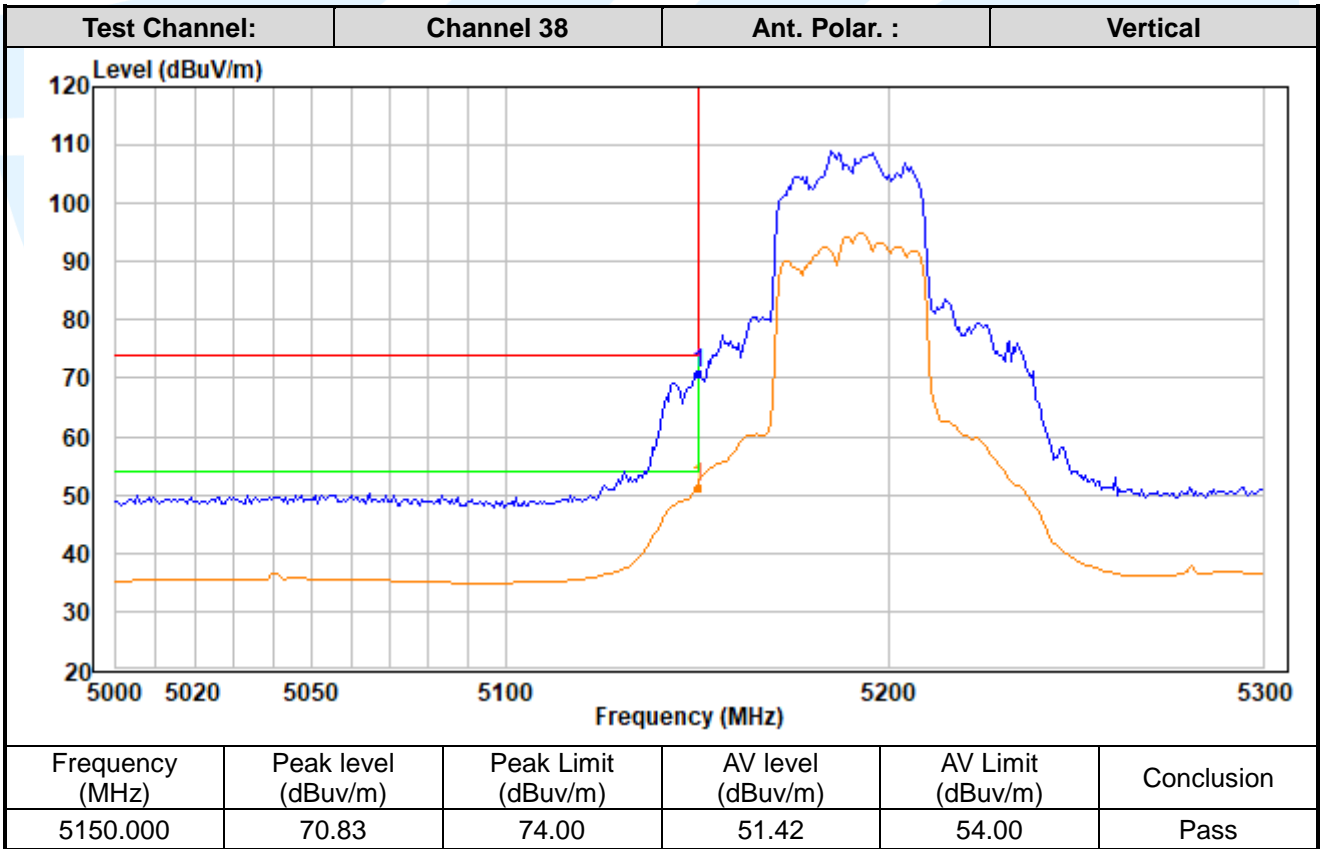
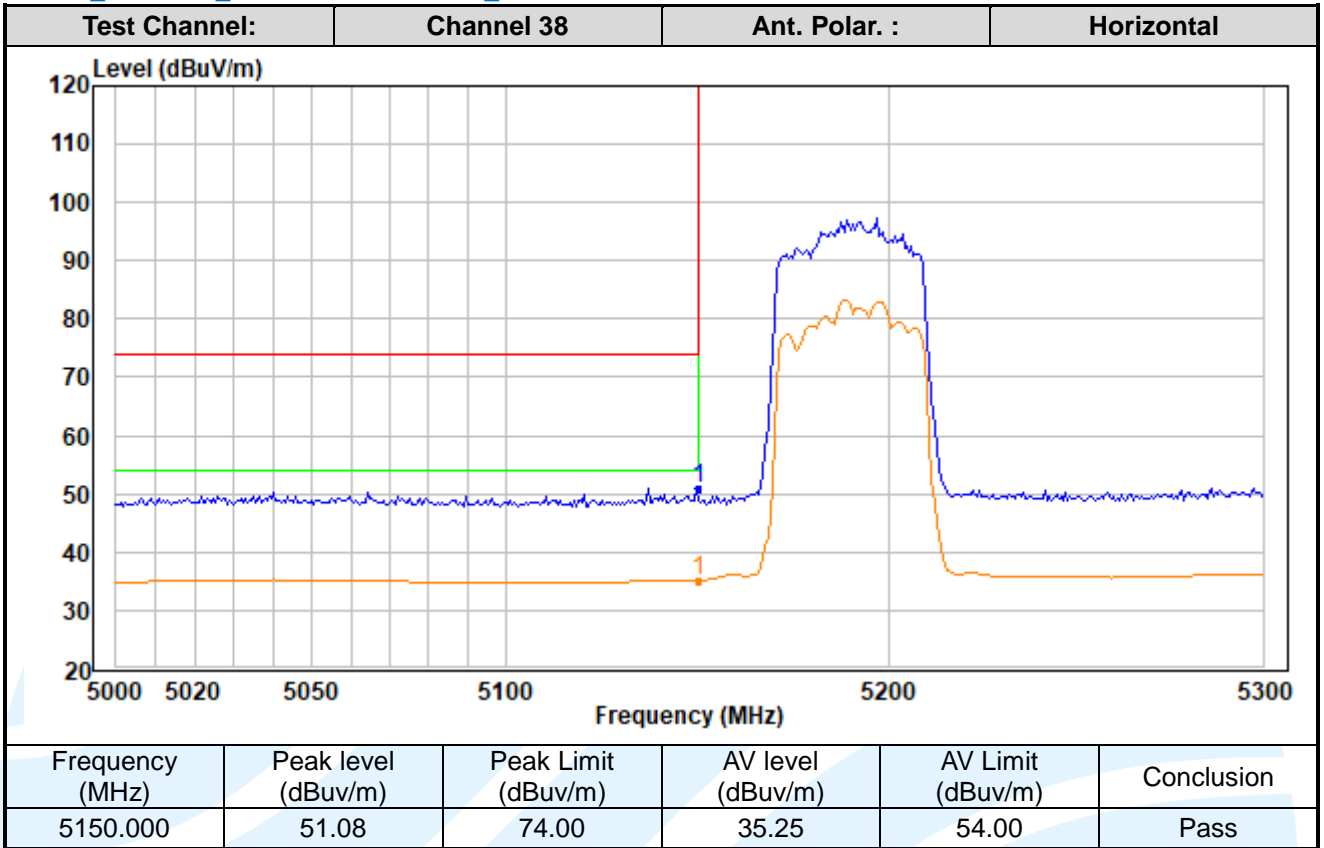
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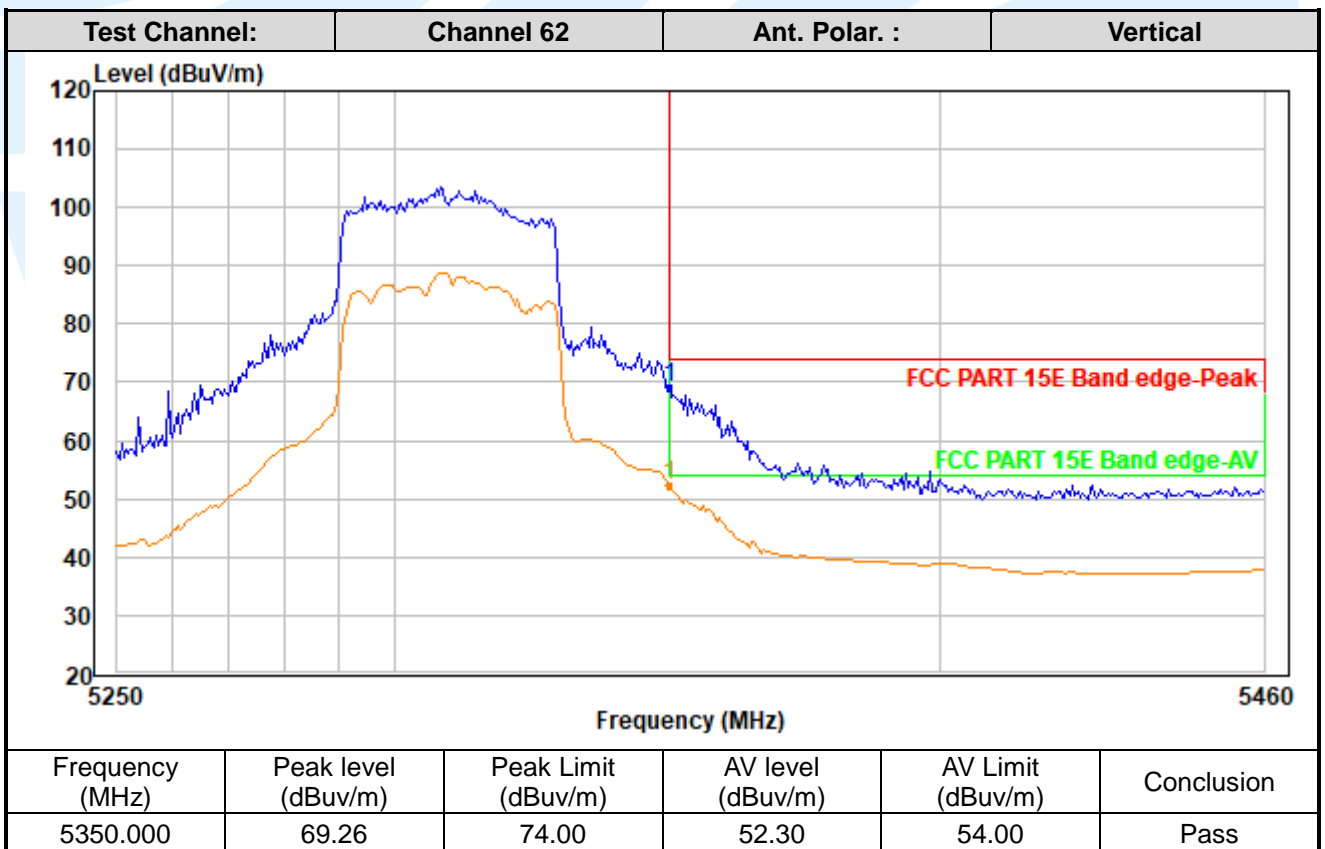
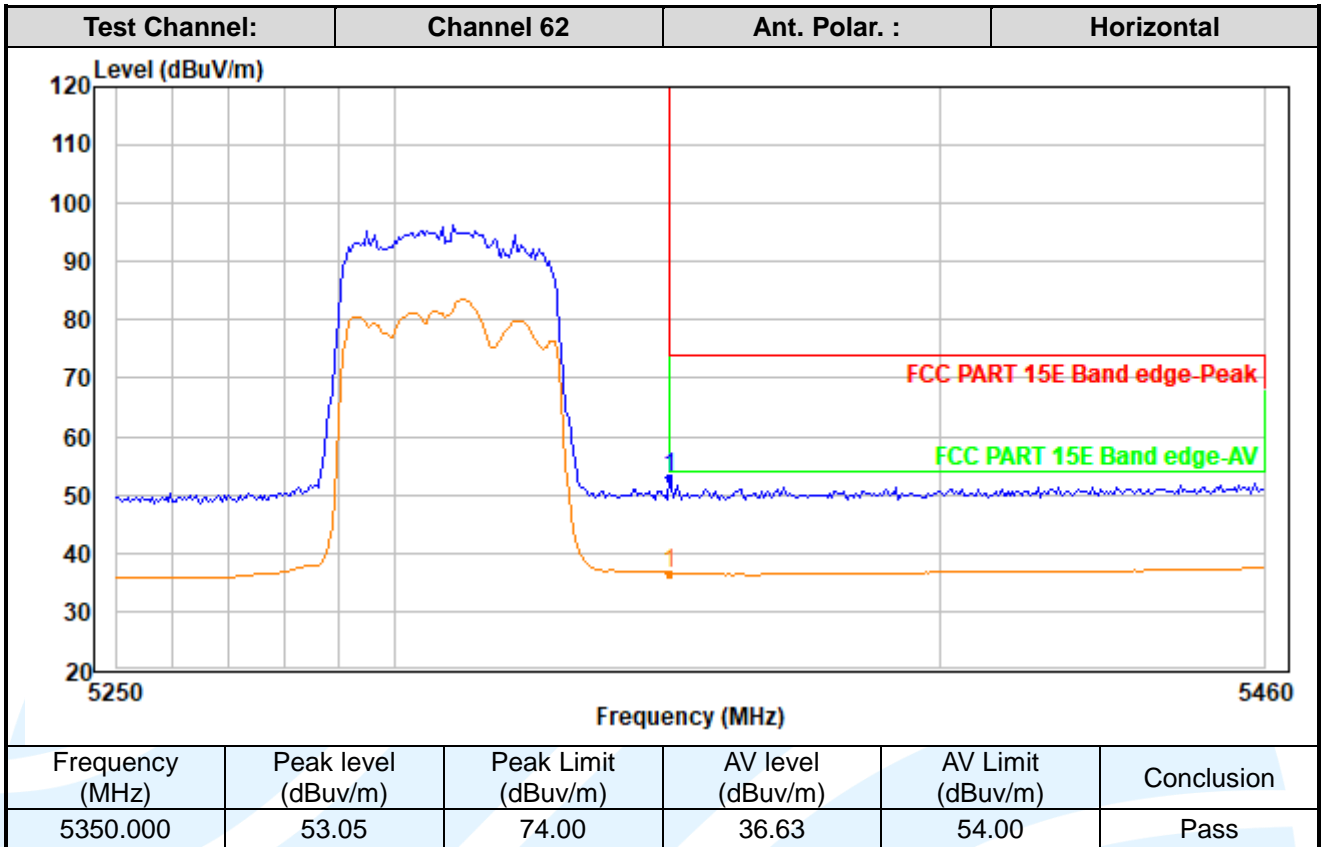
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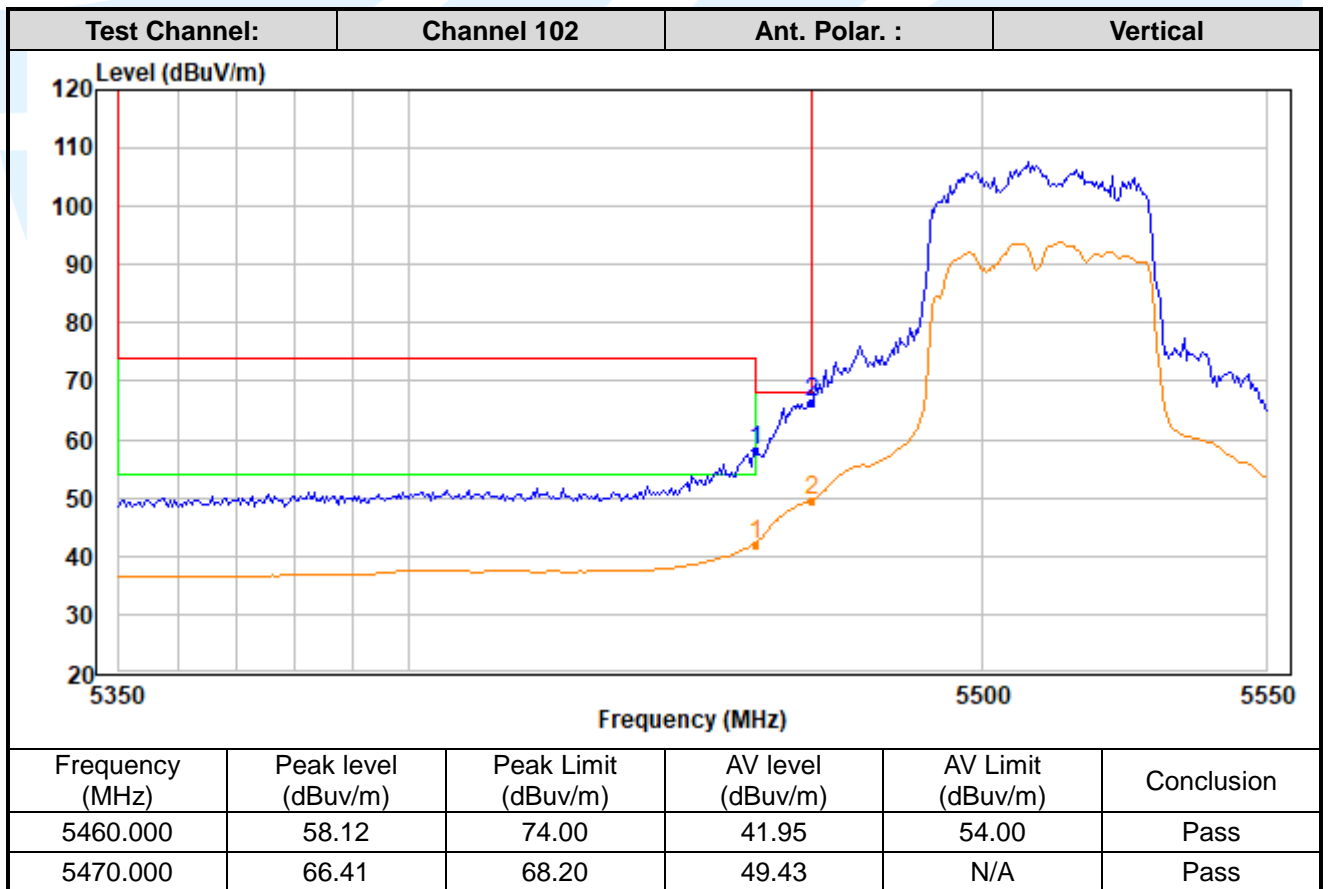
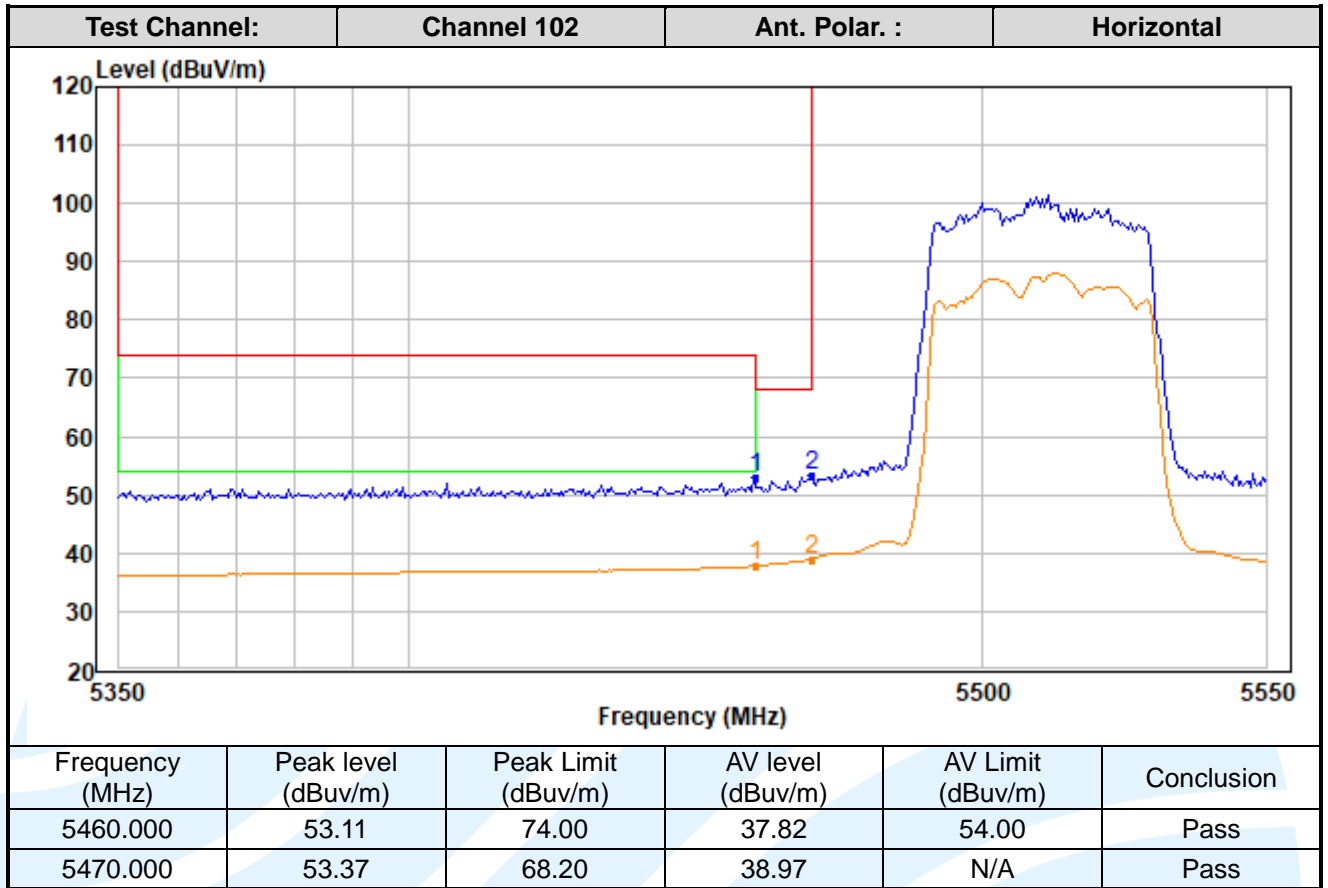
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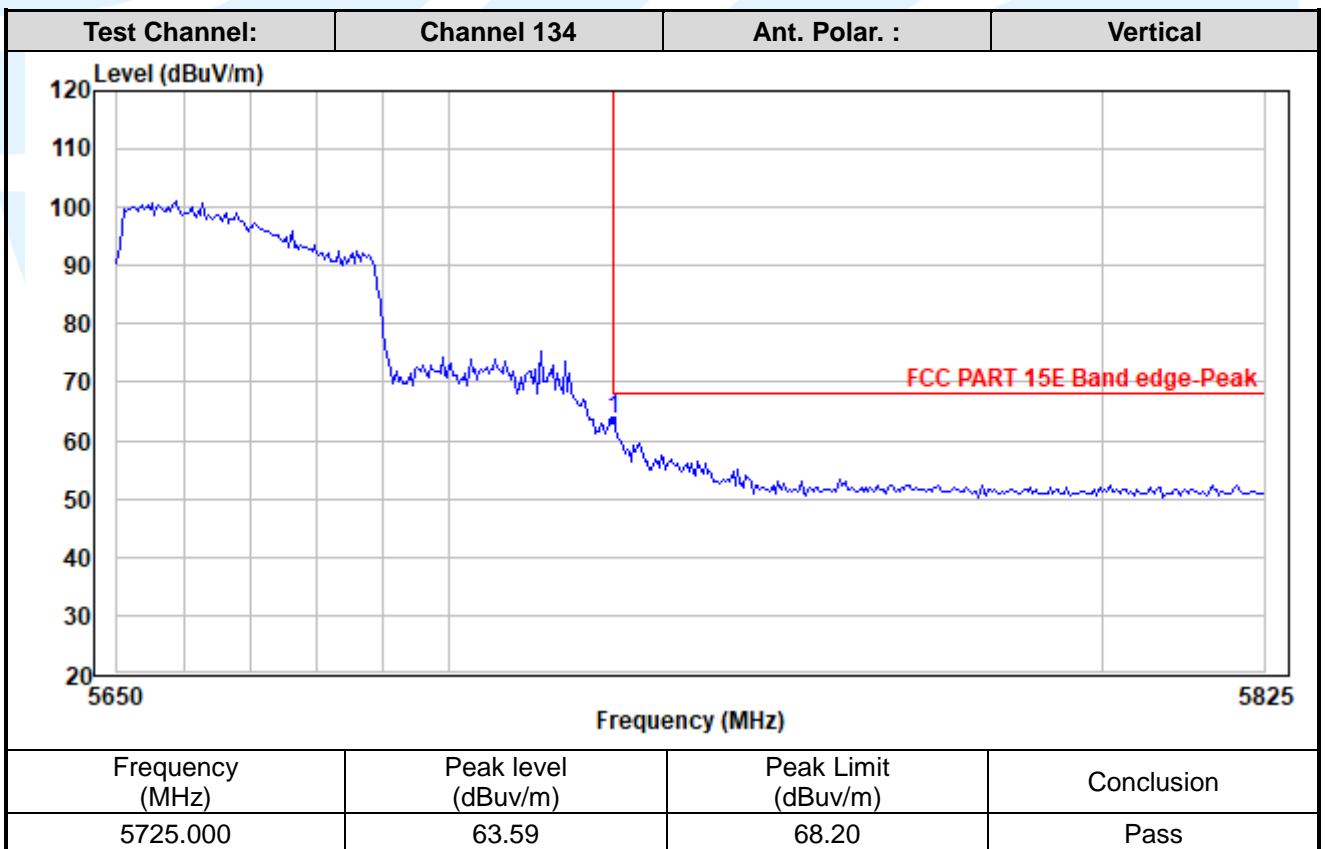
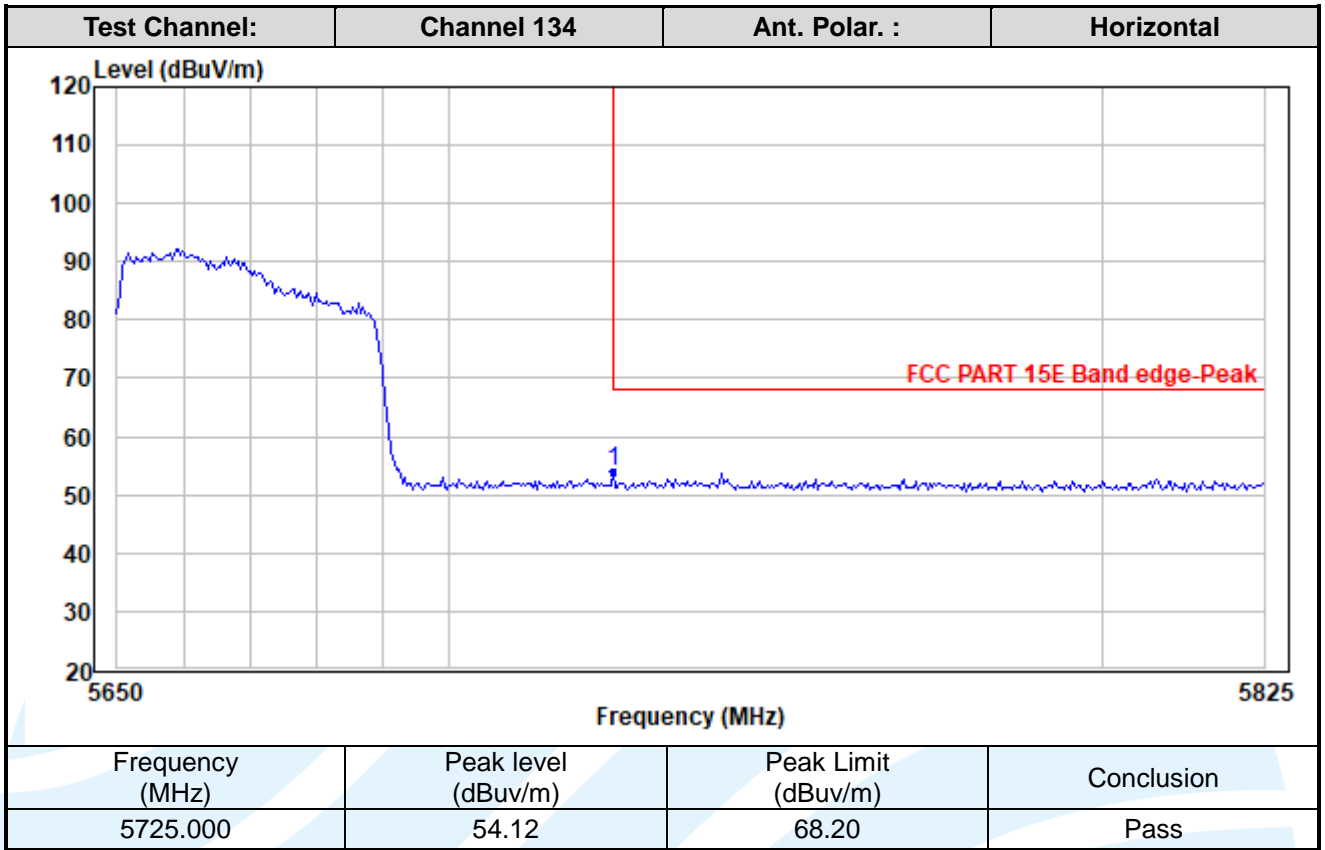
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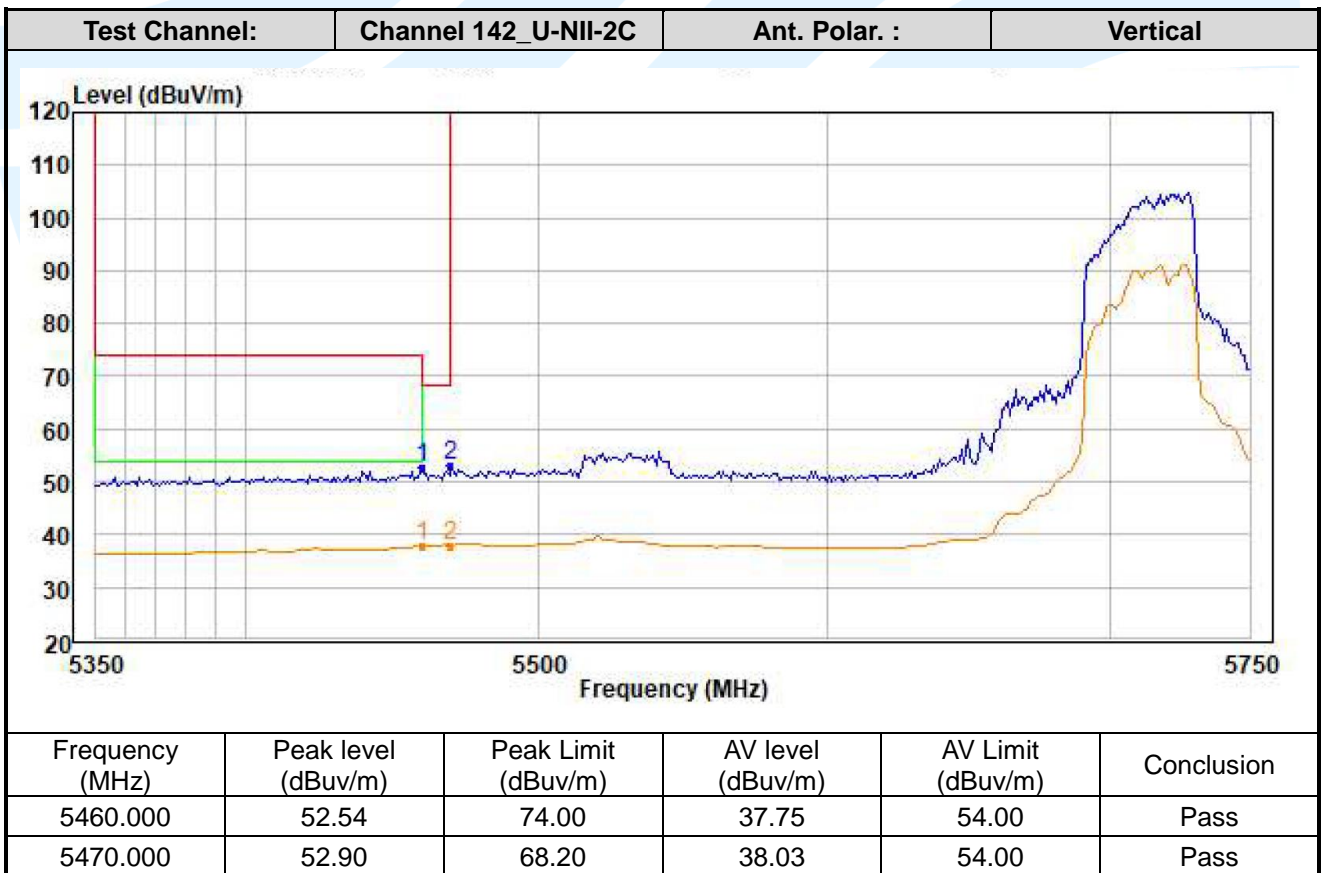
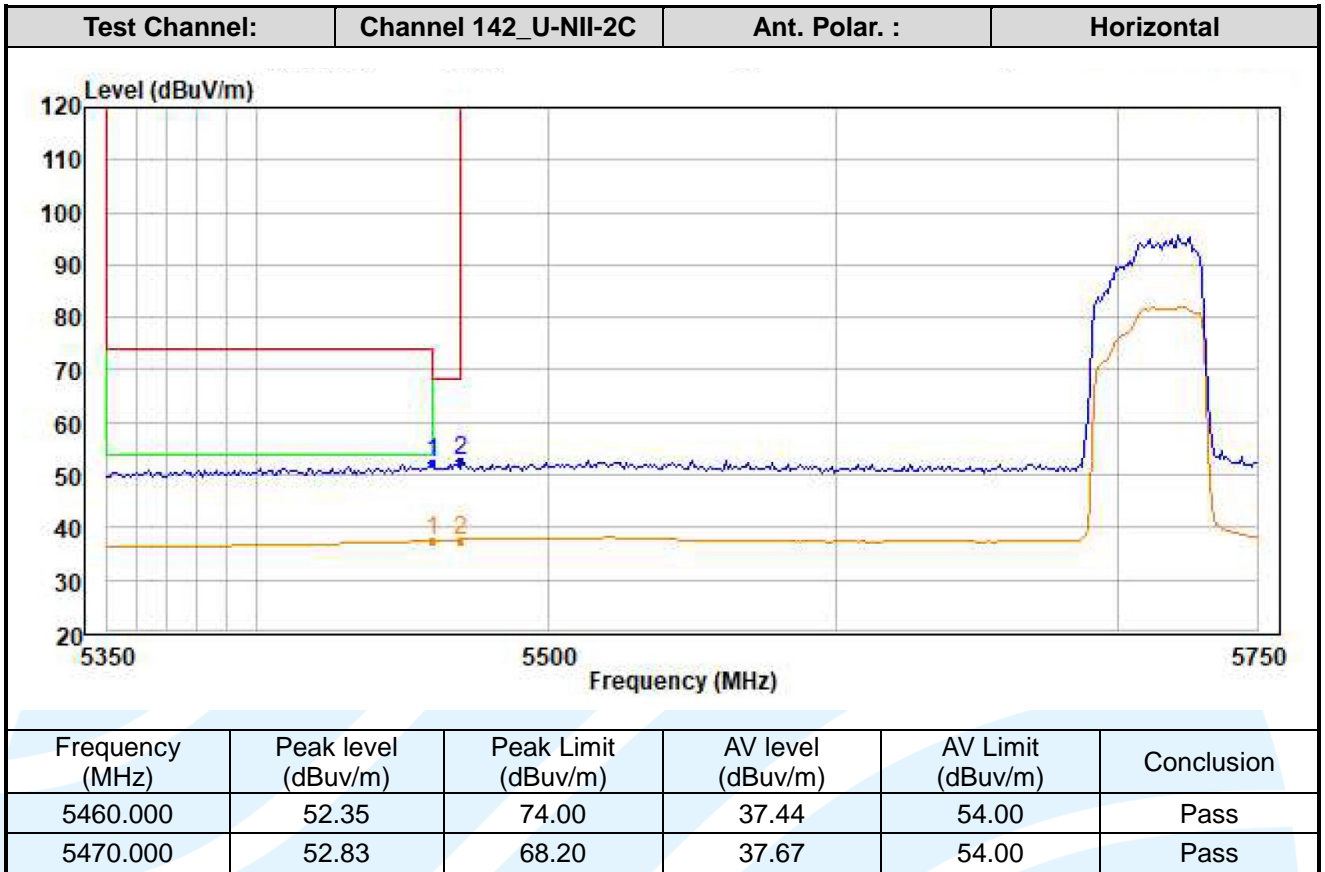
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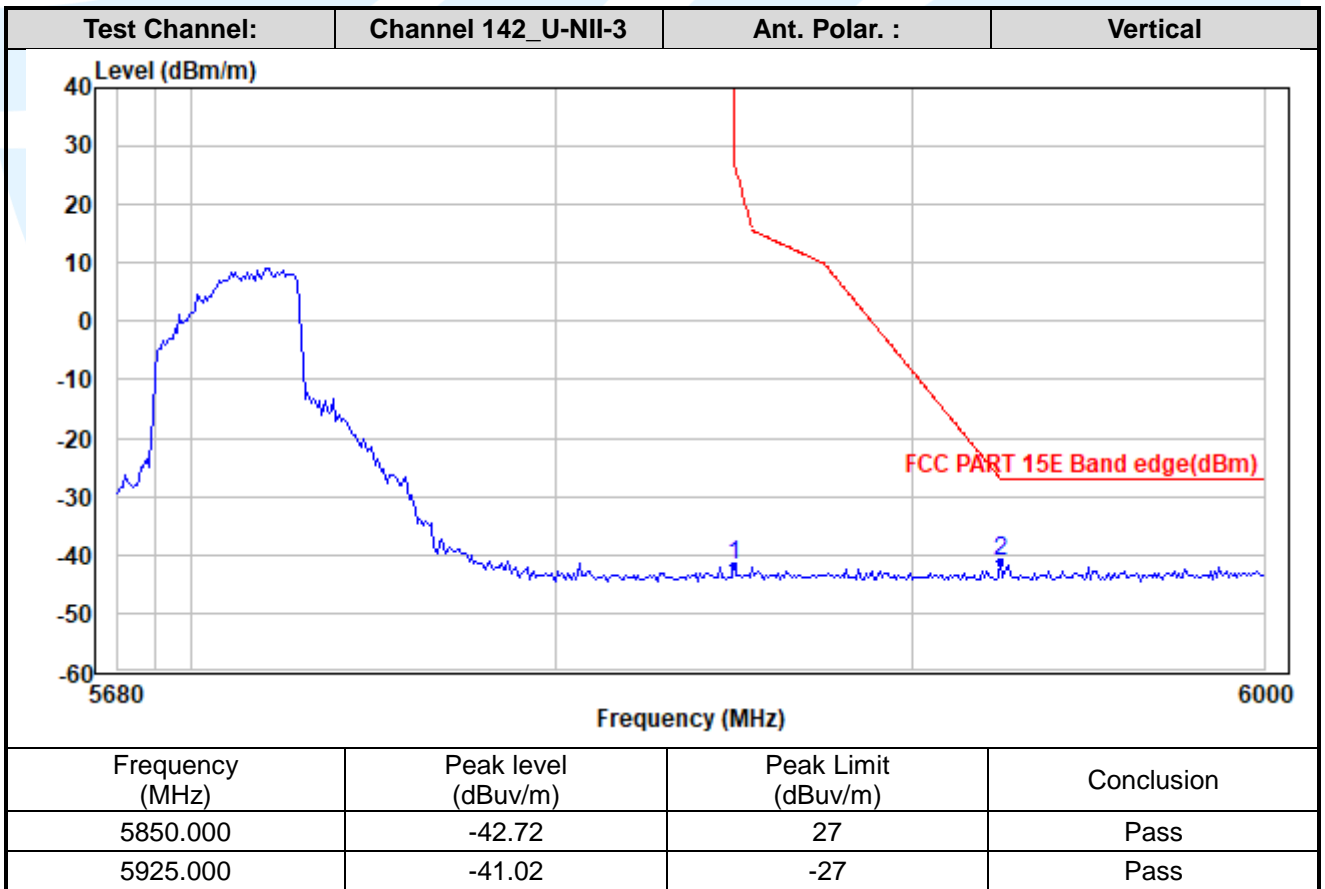
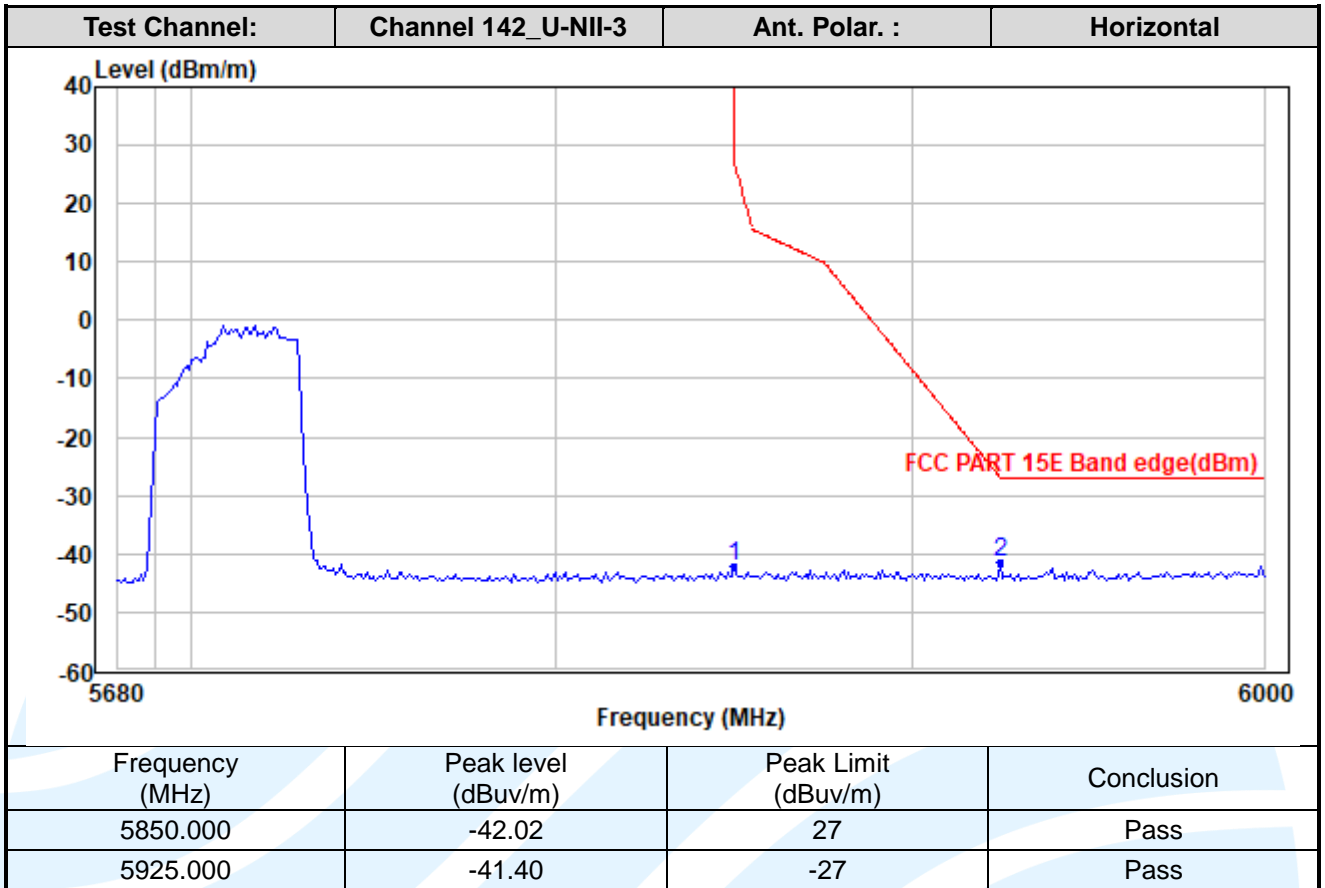
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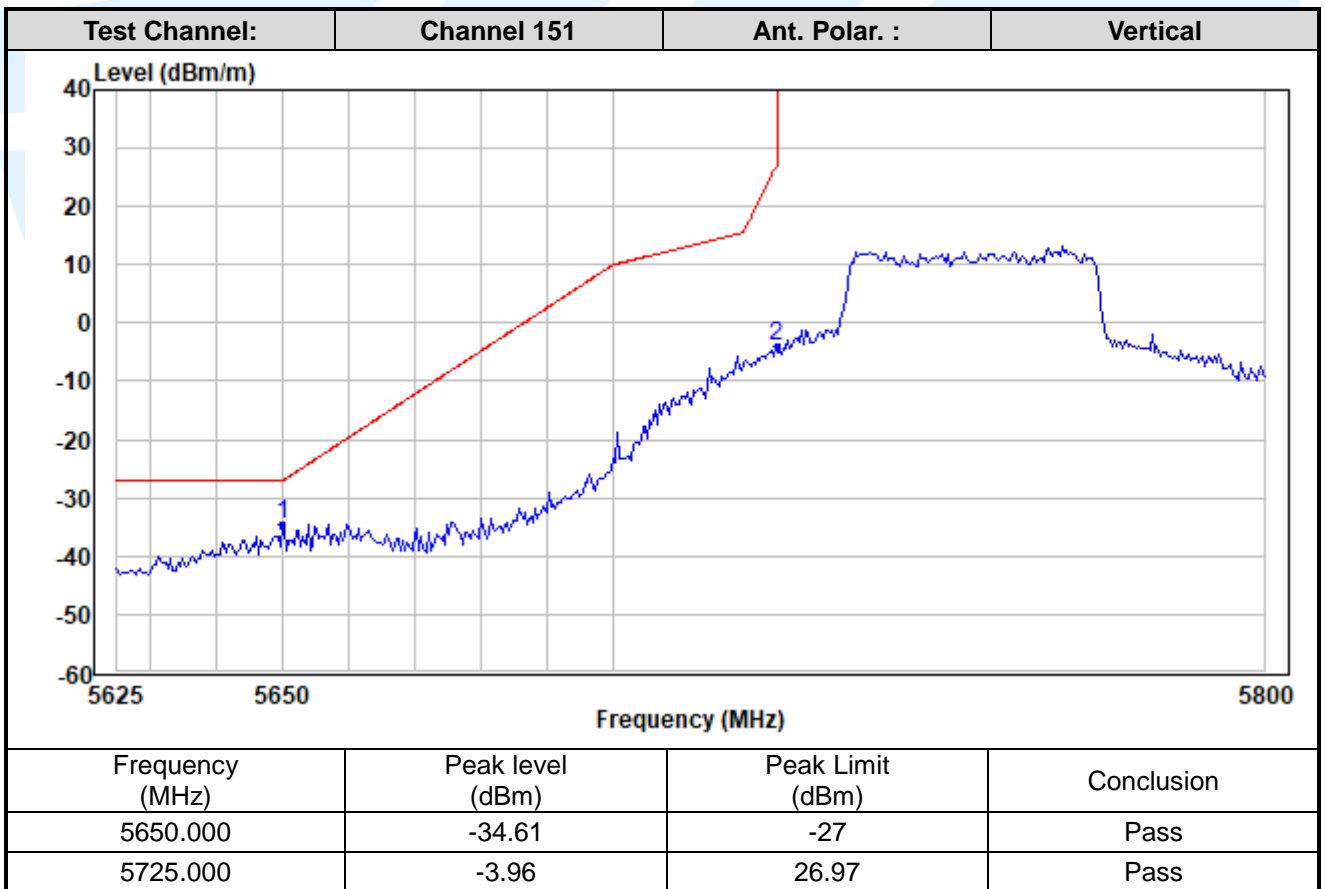
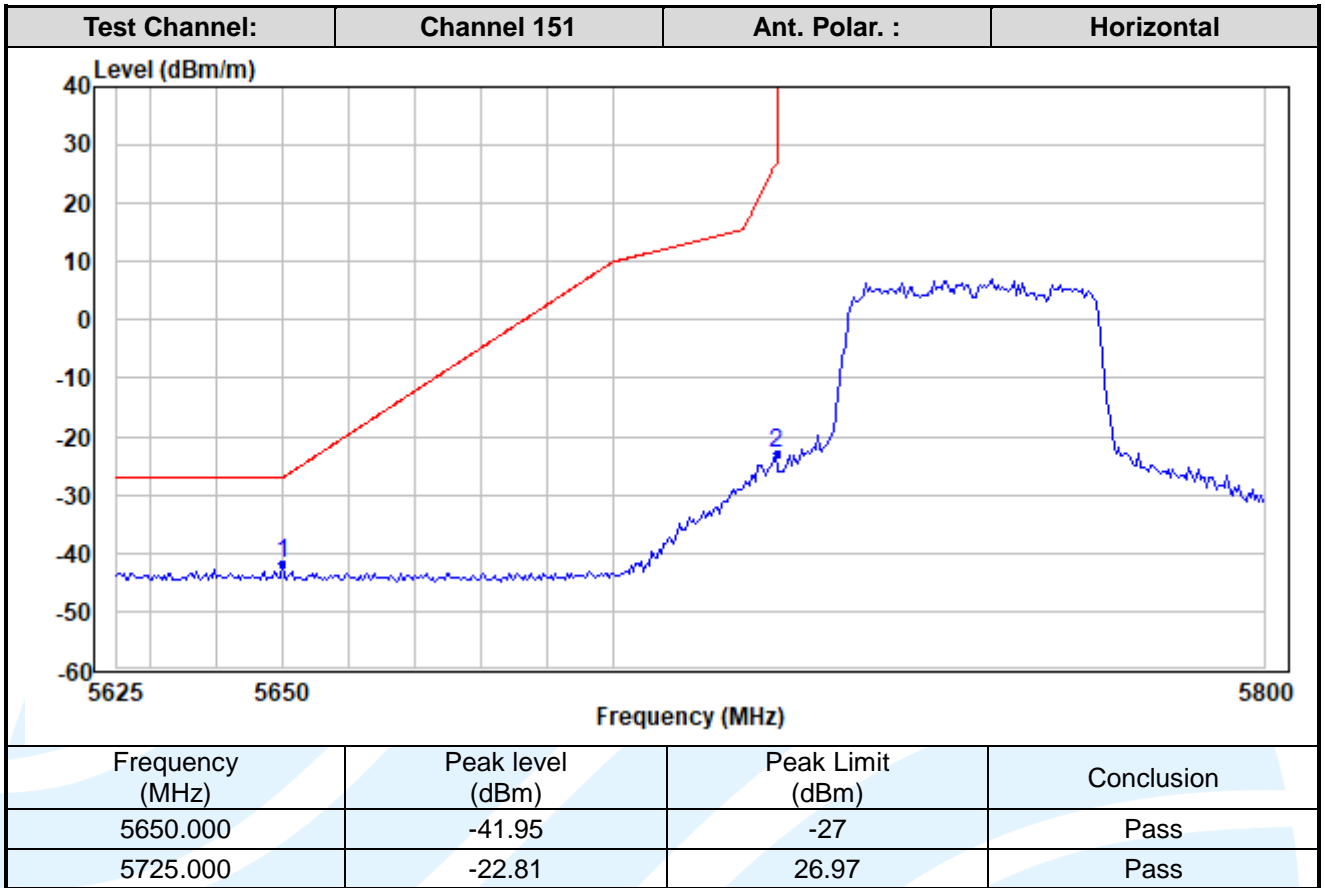
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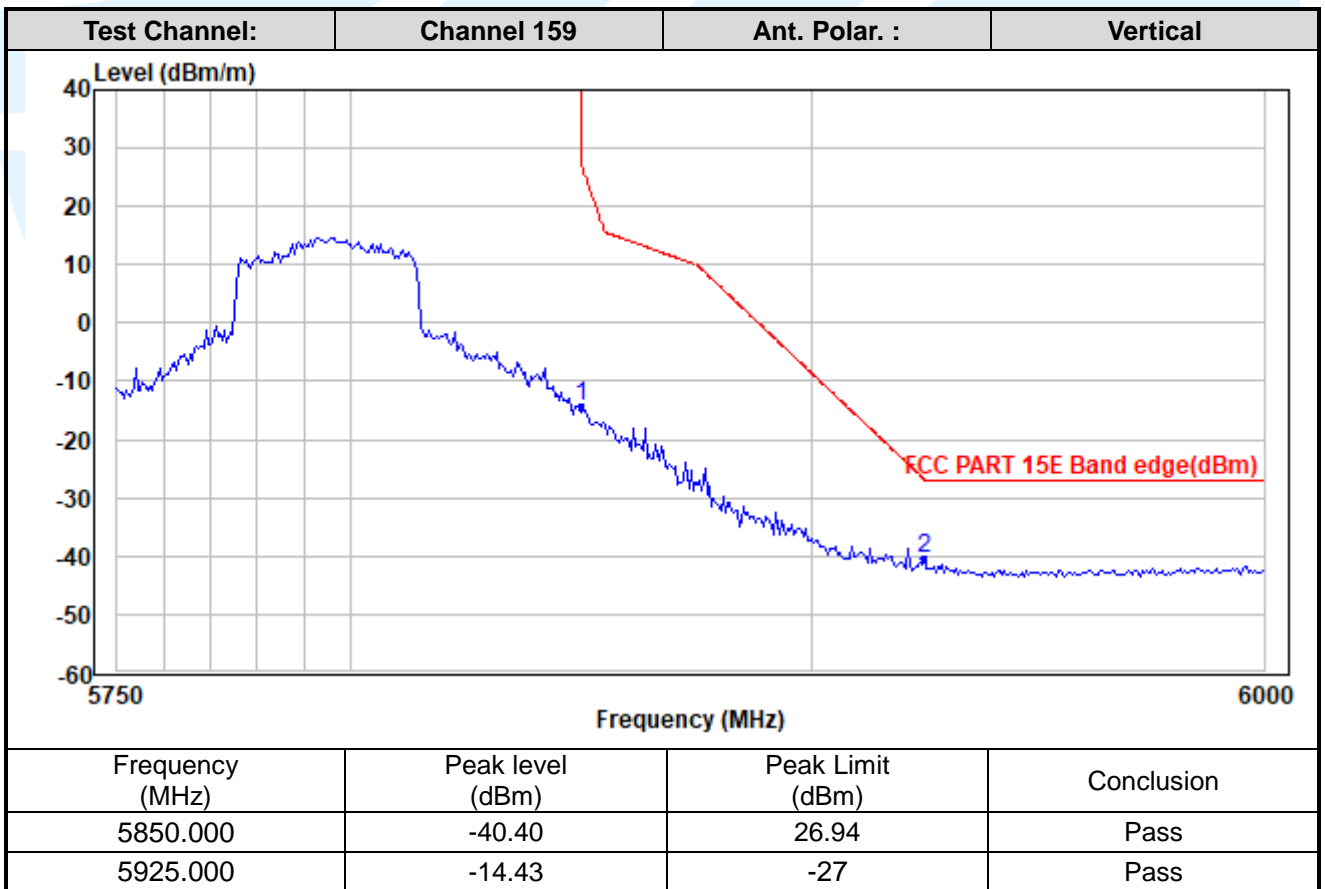
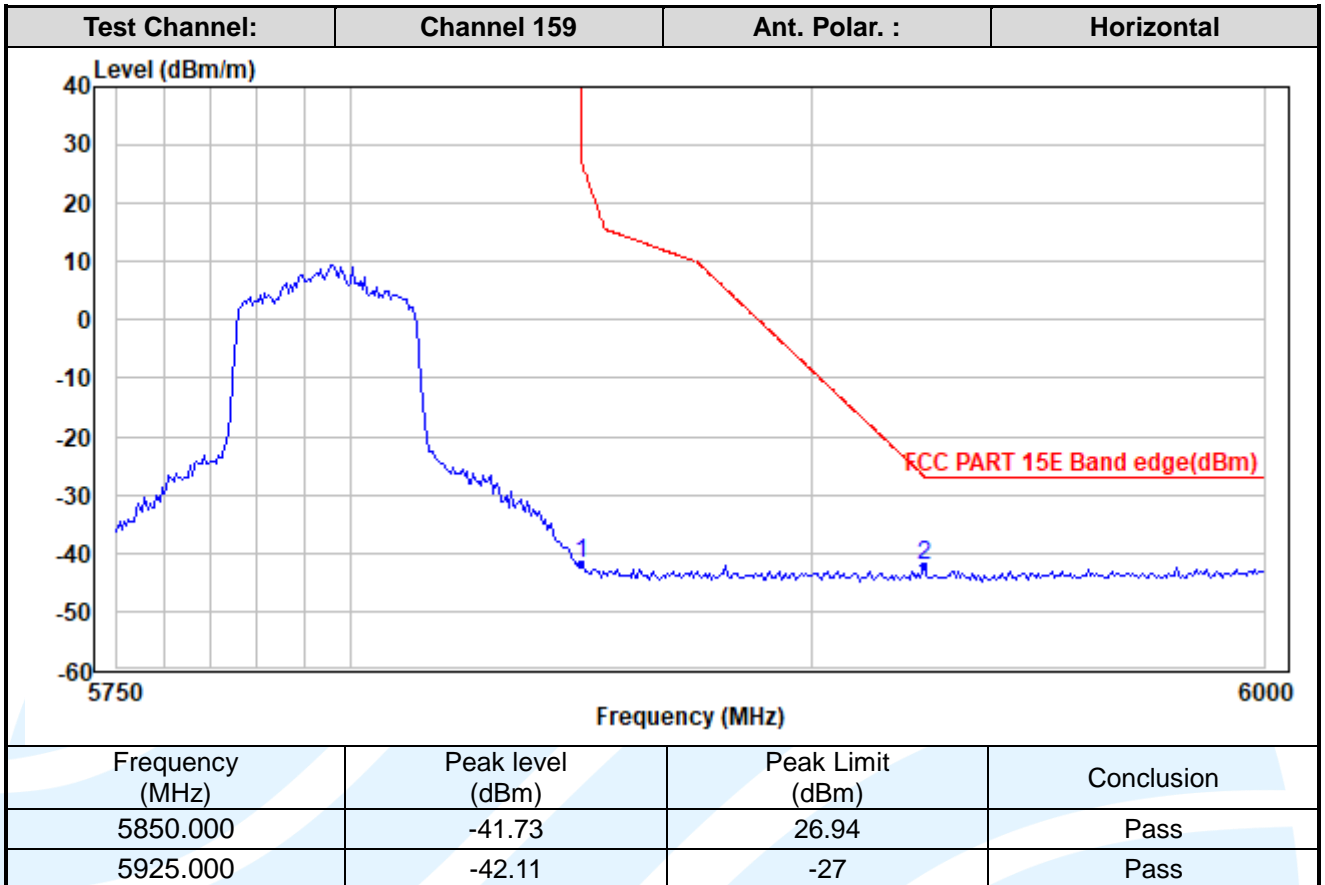
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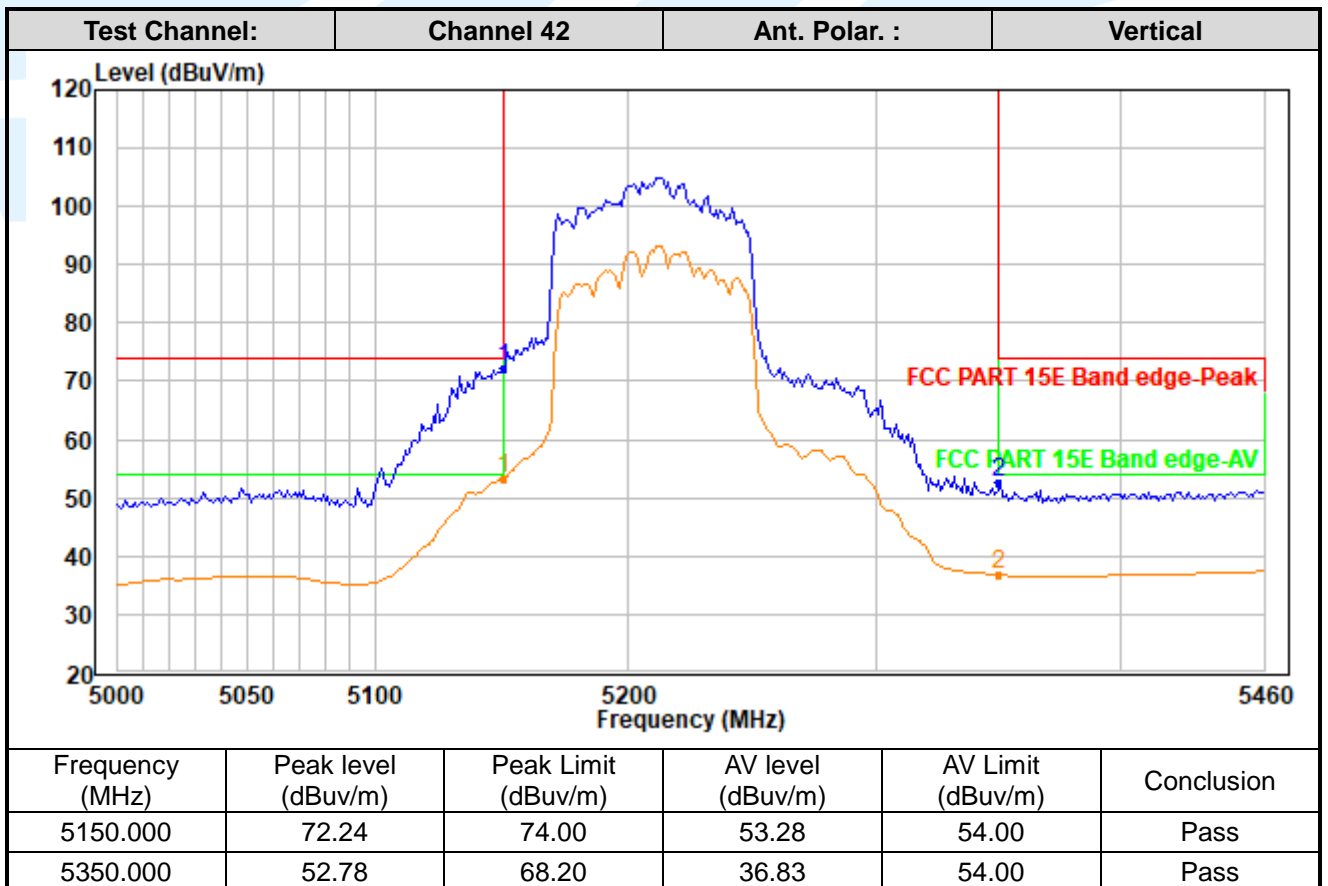
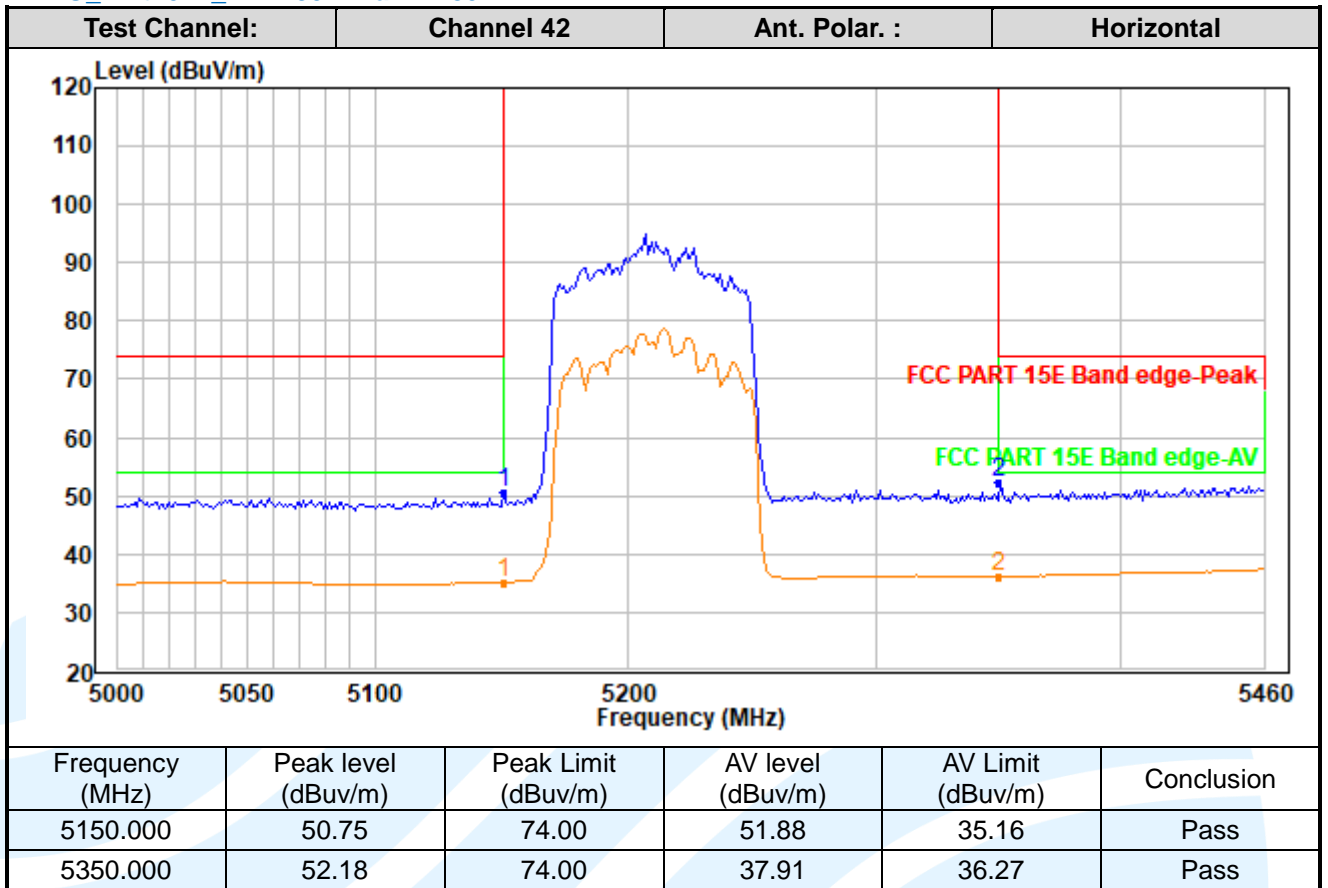
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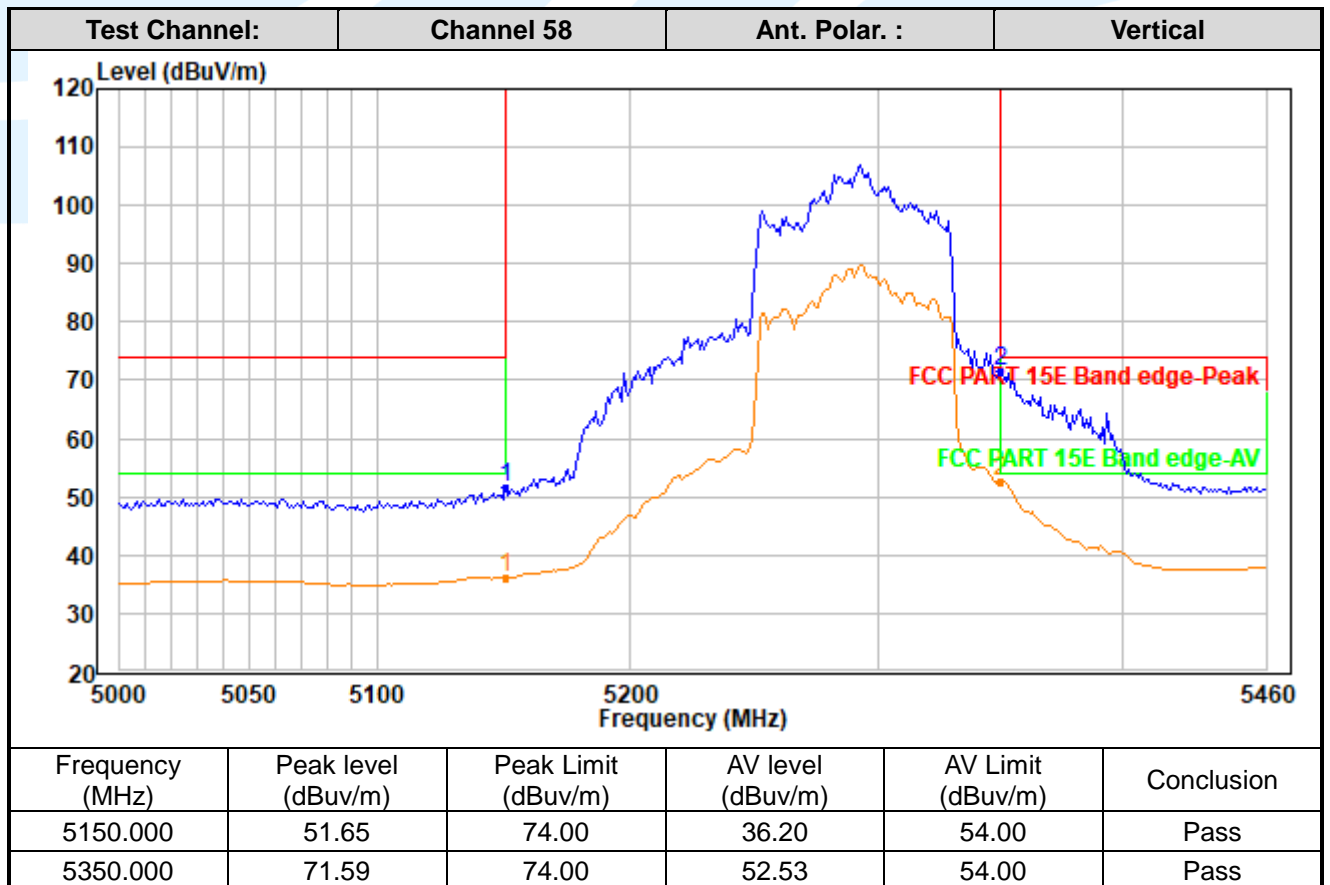
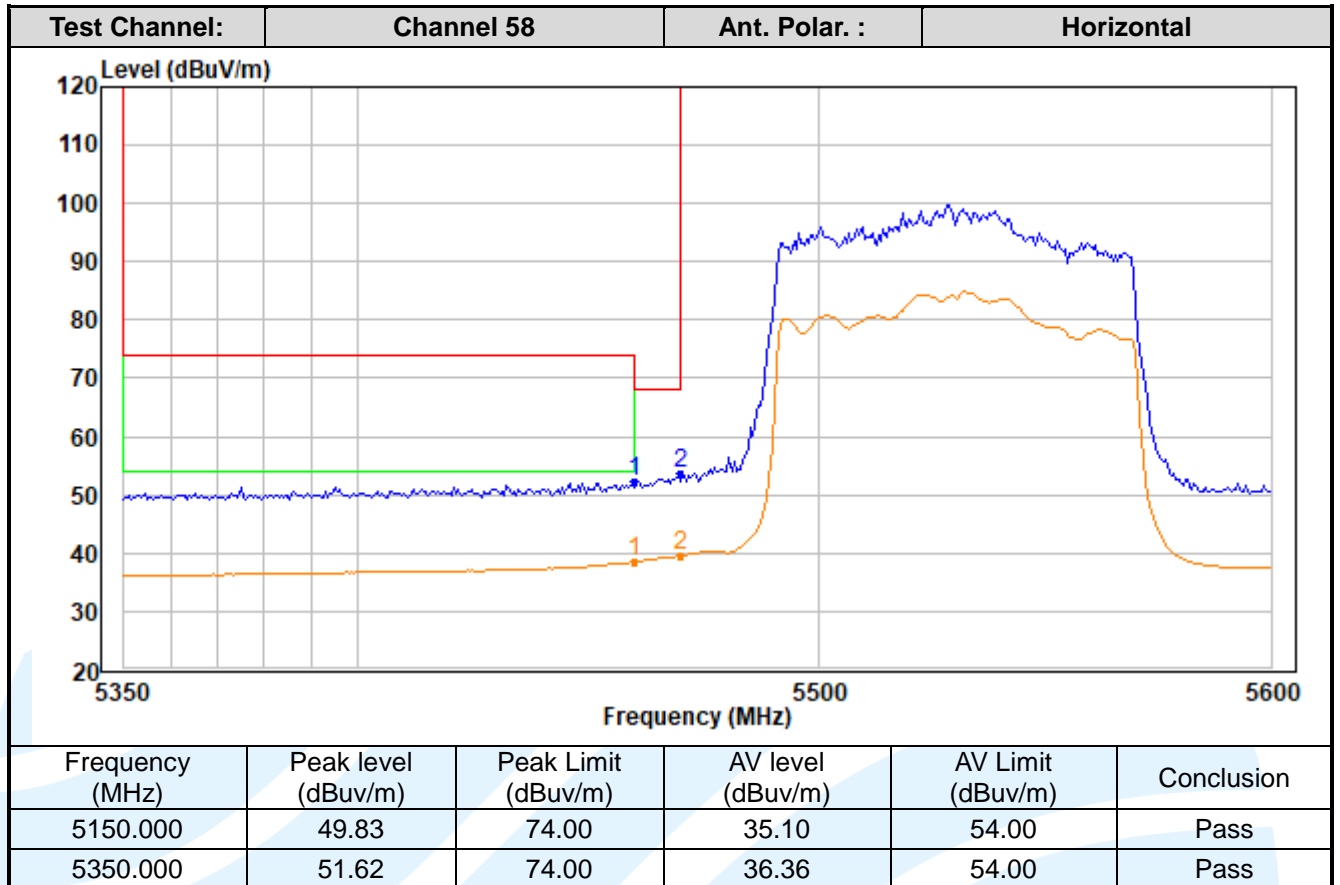
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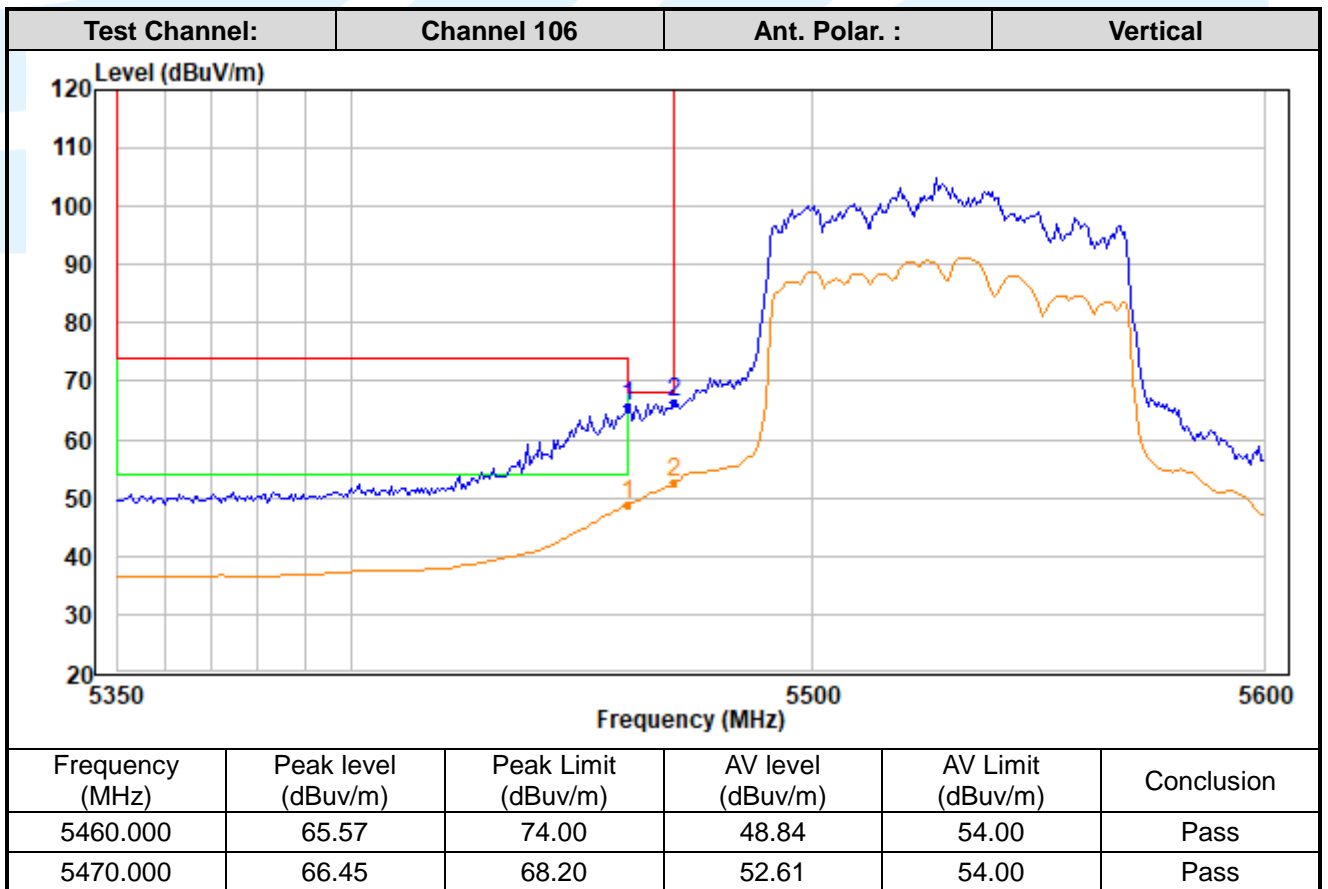
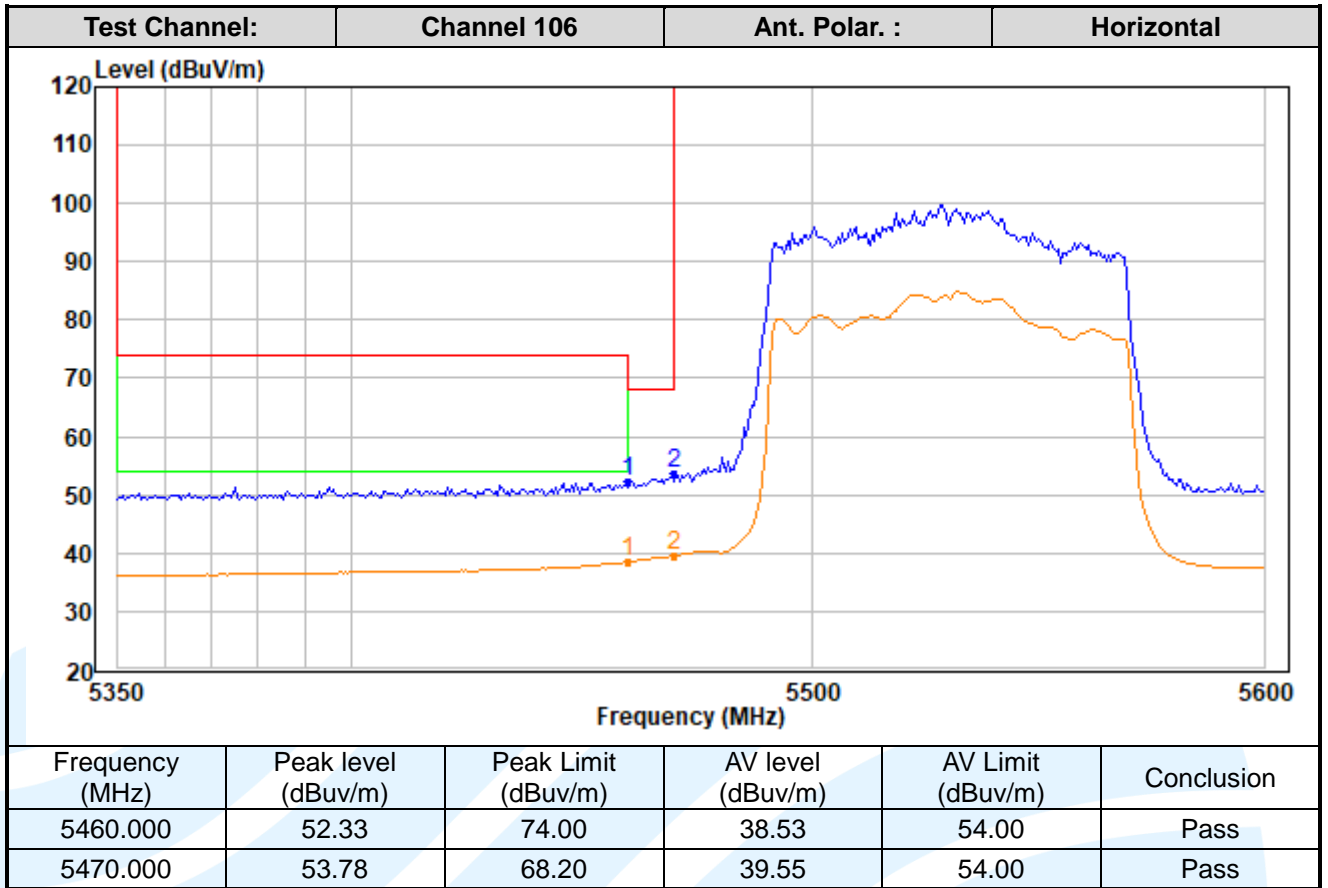
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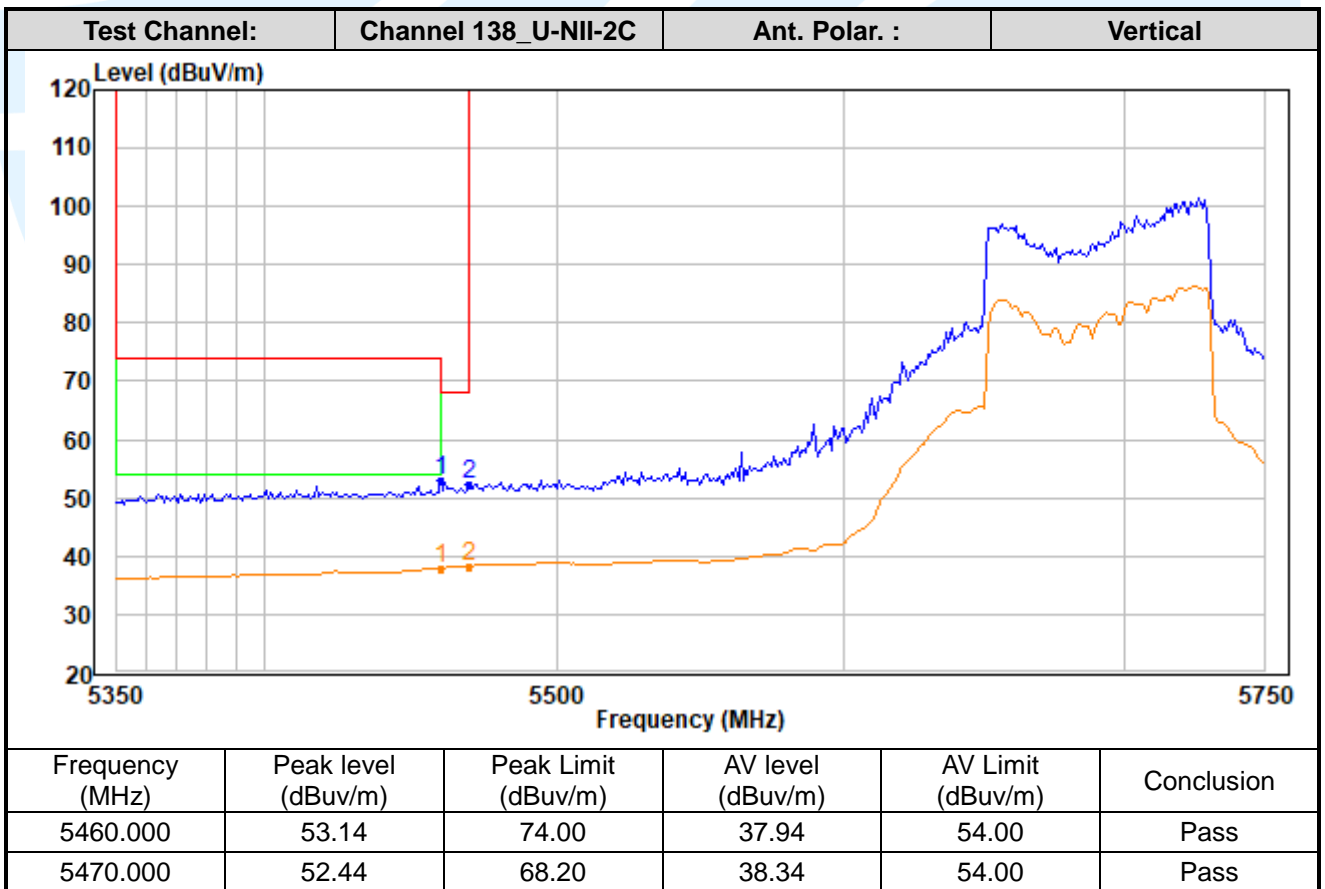
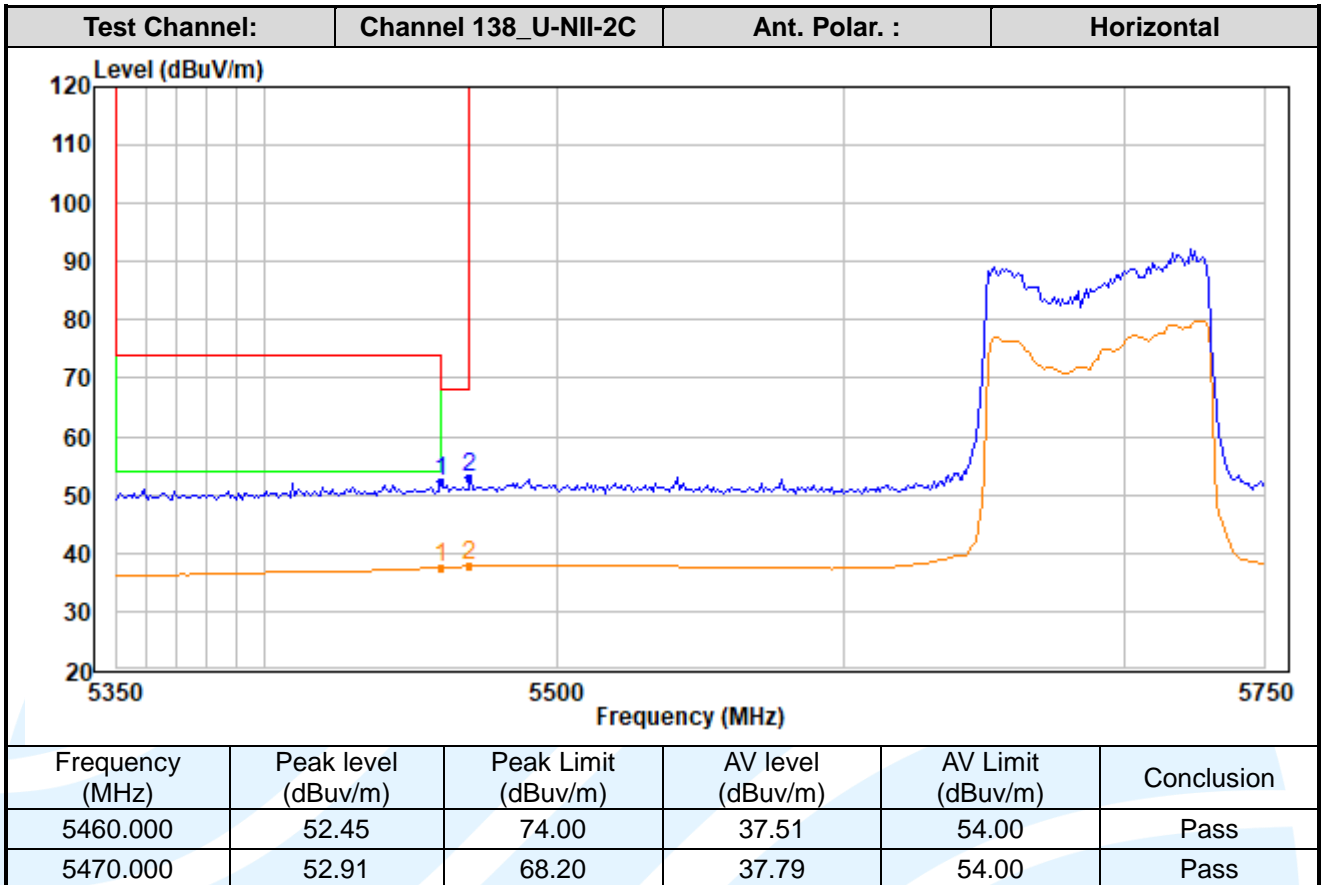
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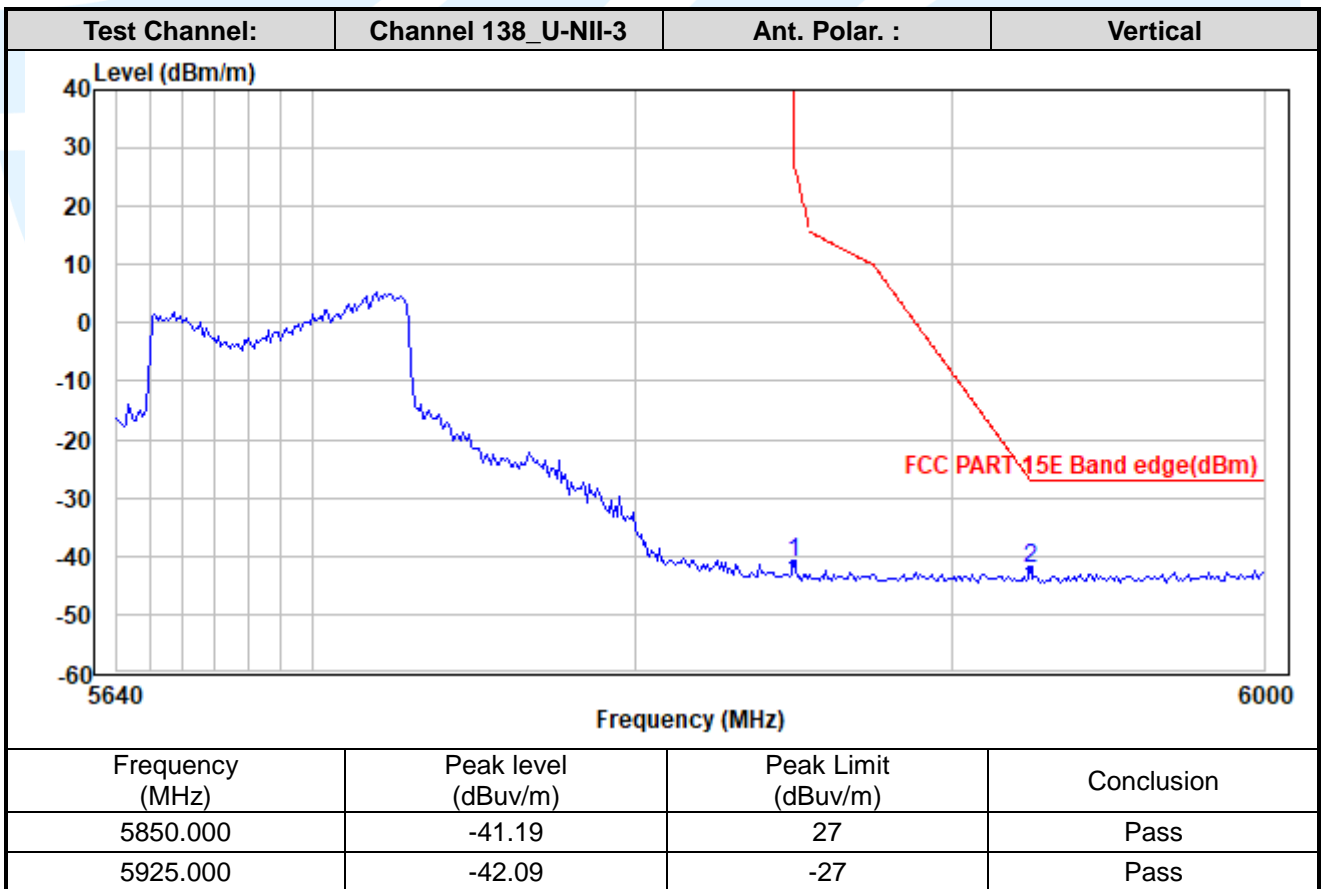
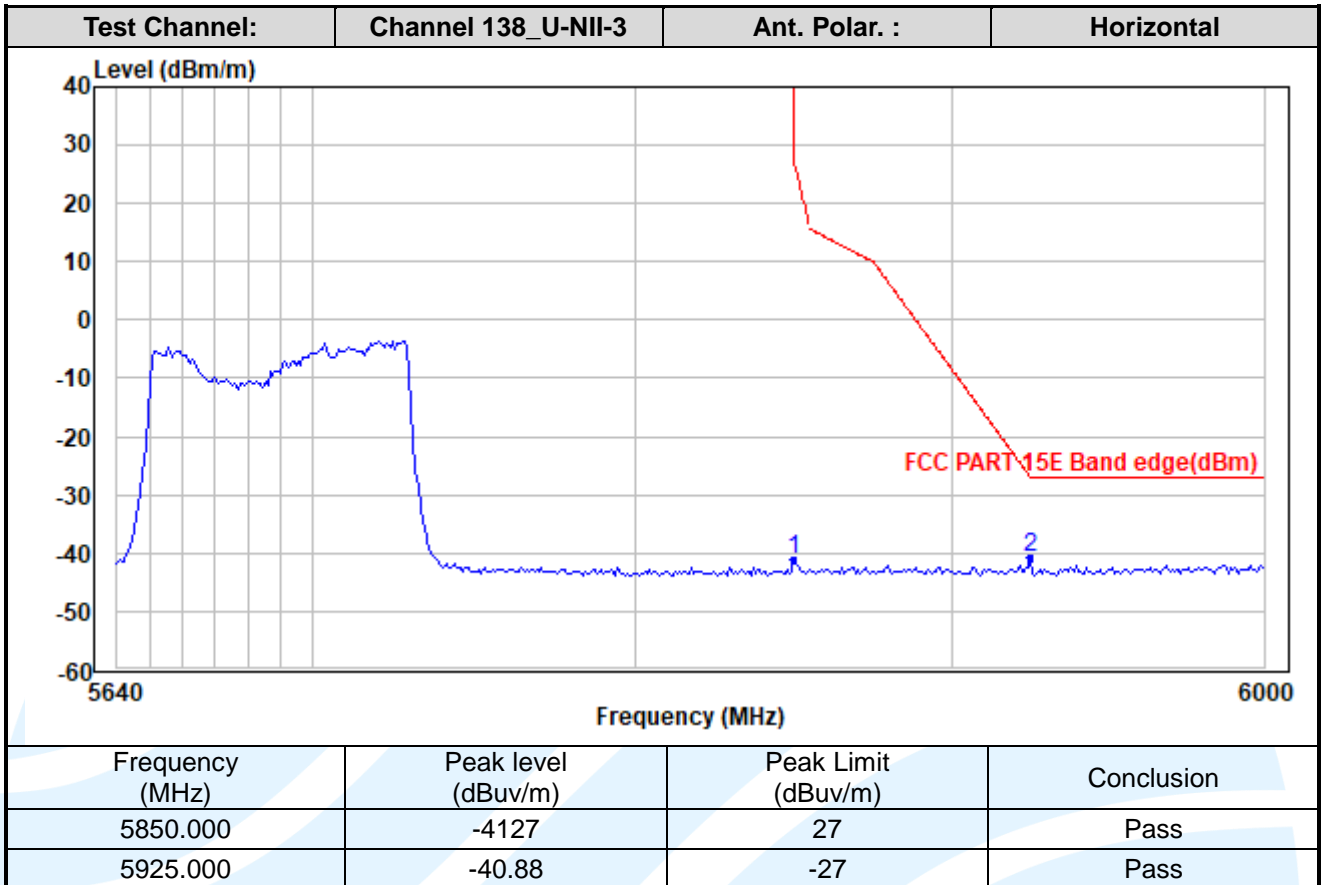
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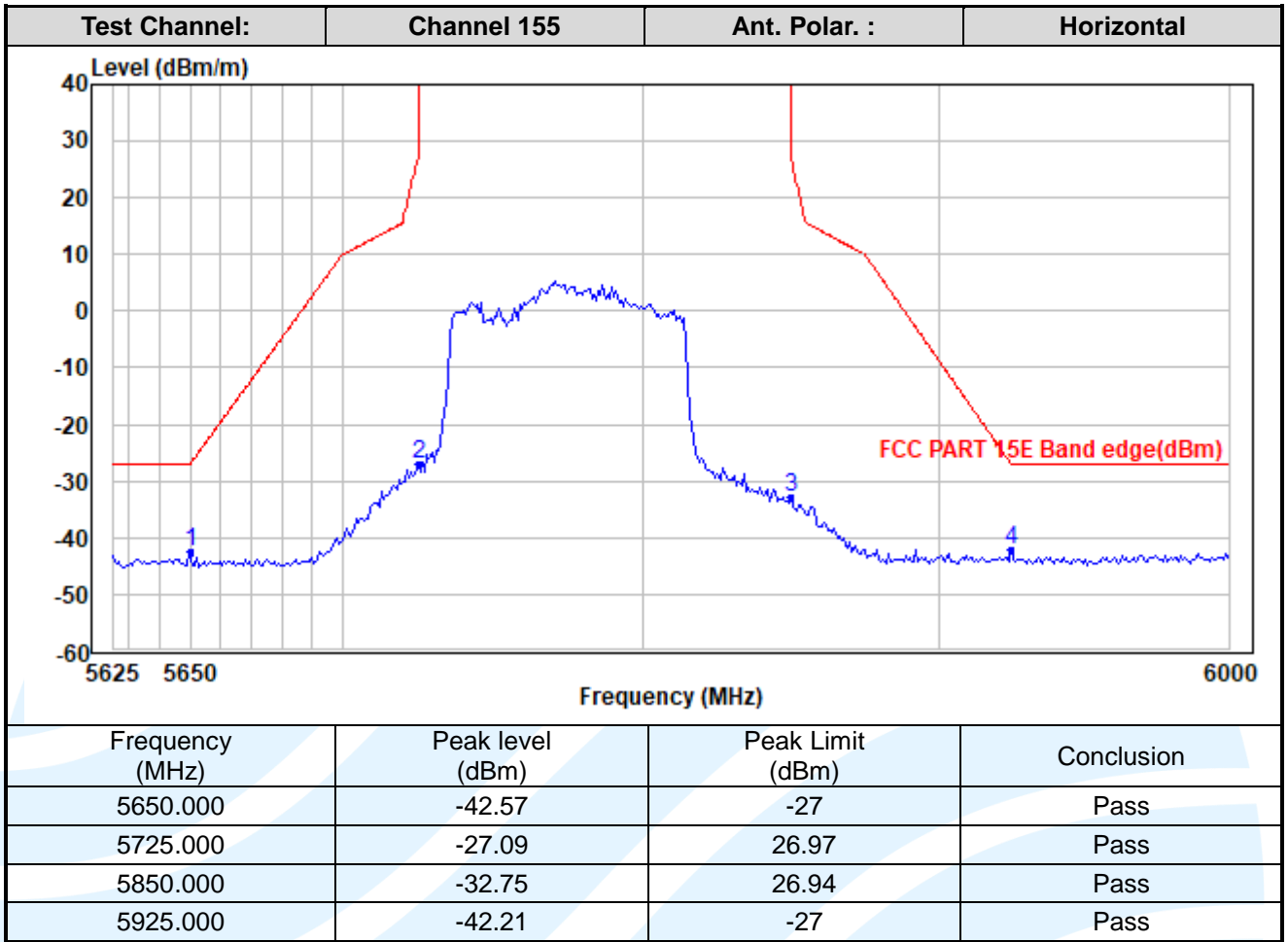
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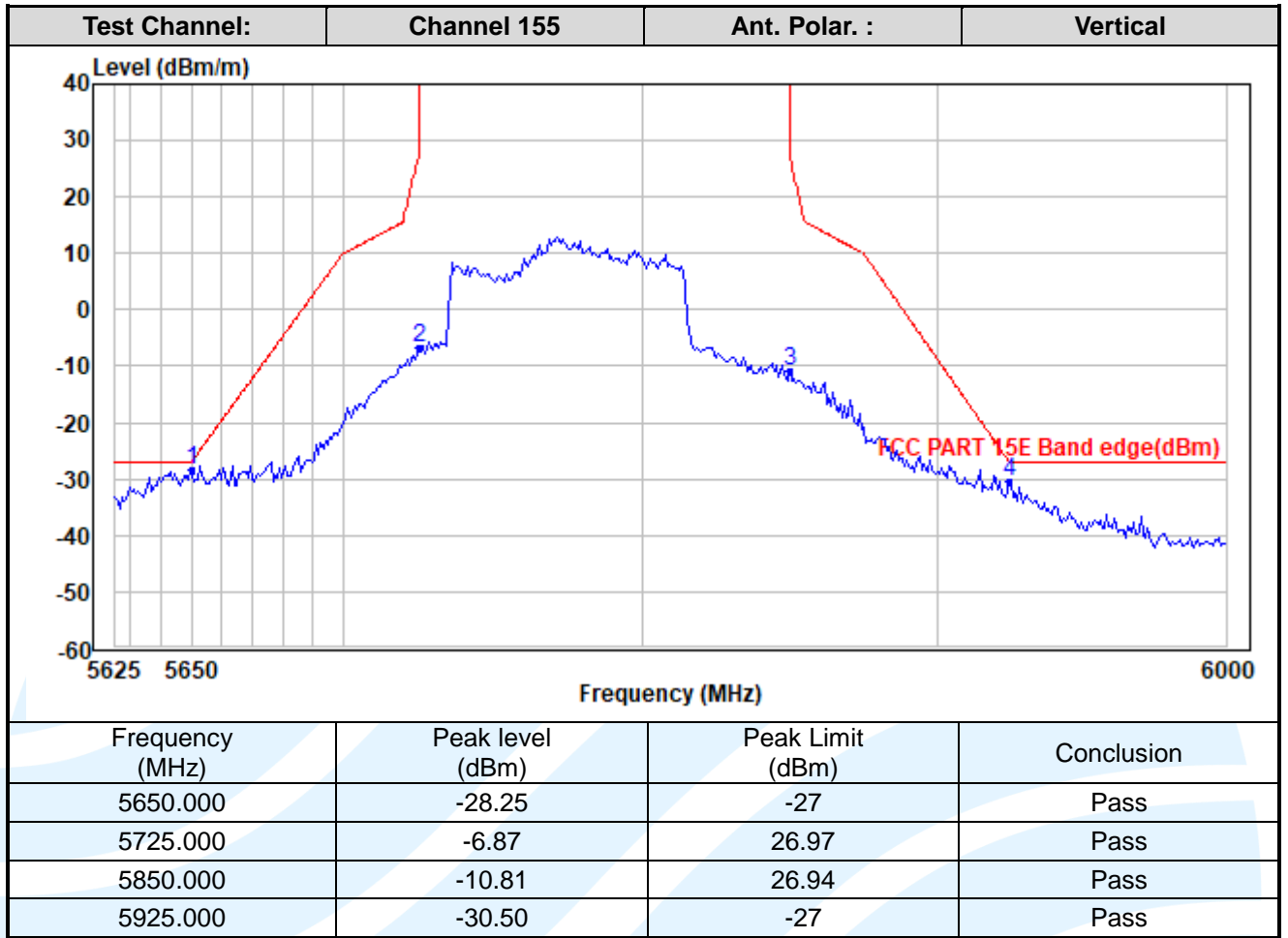
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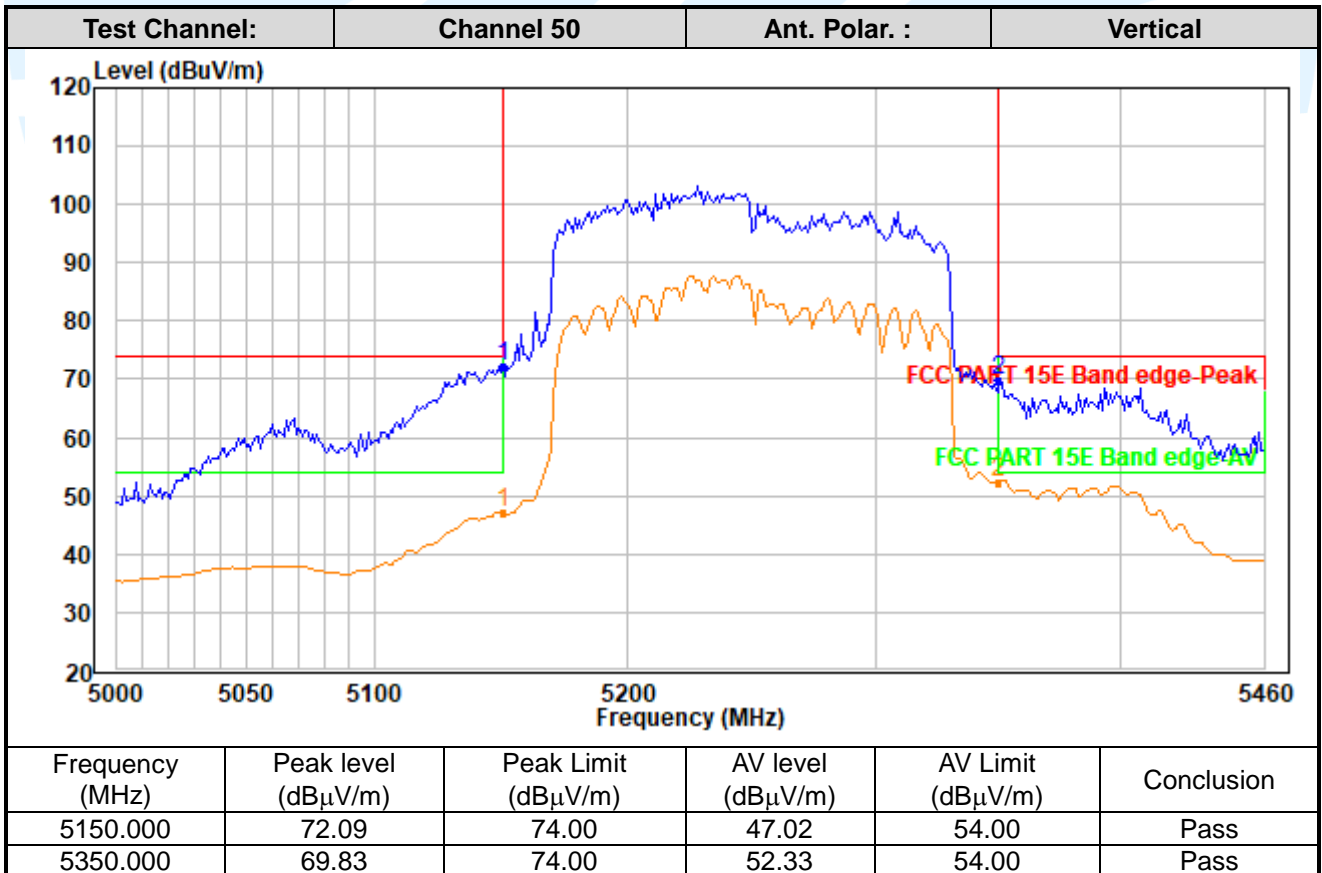
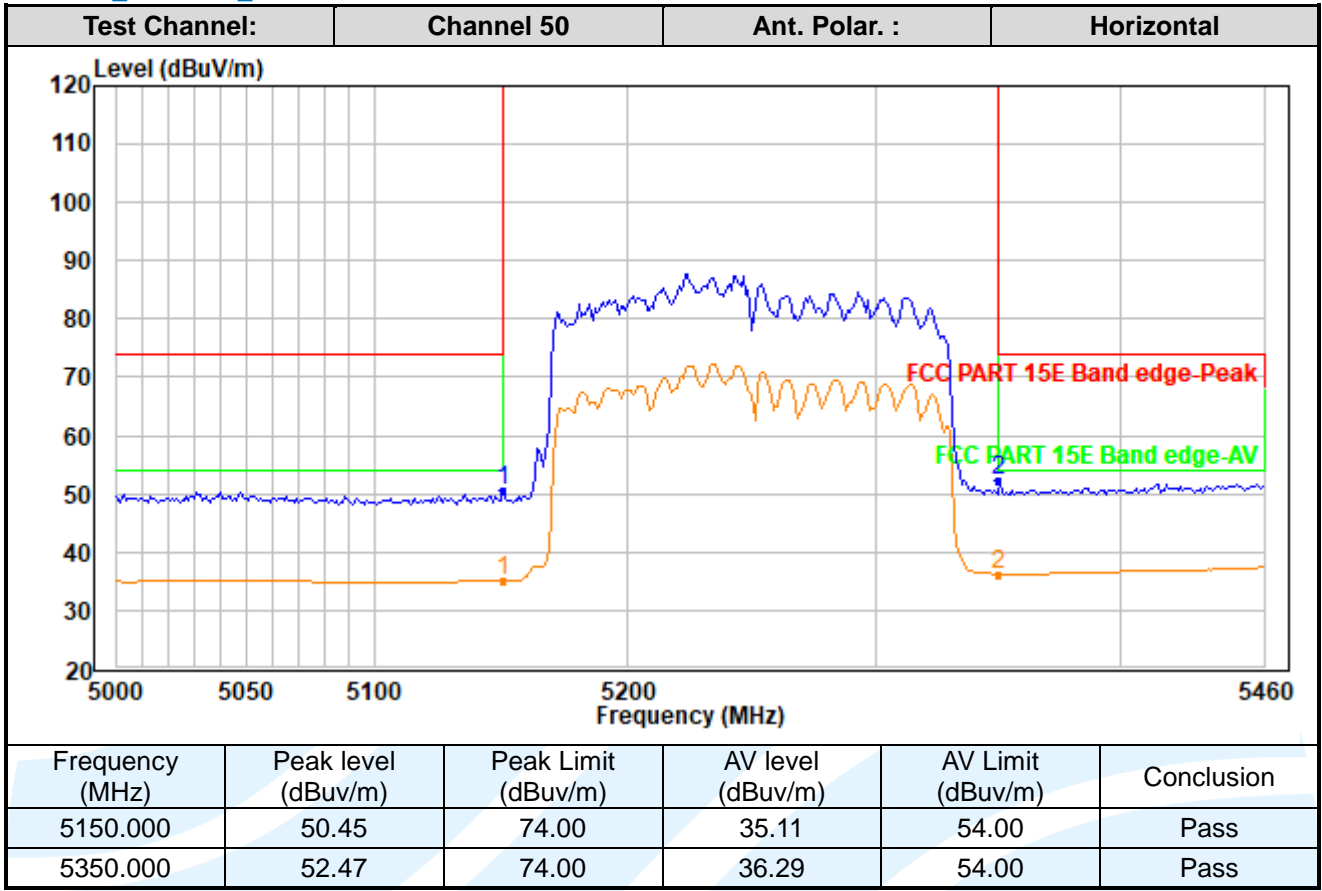
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