

TEST REPORT

Report No.: BCTC2509281447-4E

Applicant: MICRO COMPUTER (HK) TECH LIMITED

Product Name: Mini PC

Test Model: MS-S1 MAX

Tested Date: 2025-09-01 to 2025-11-26

Issued Date: 2025-11-26

Shenzhen **BCTC** Testing Co., Ltd.



FCC ID: 2A49R-SHWAS

Product Name: Mini PC

Trademark: N/A

Model/Type reference: MS-S1 MAX
MXXXXXXX (where * = "0-9 ","A-Z ","-","space", The difference between models is only due to the different sales areas, but the naming methods of models are different. Other circuit principles, safety structures and key components are the same, and the differences do not affect the safety and electromagnetic compatibility of products.)

Prepared For: MICRO COMPUTER (HK) TECH LIMITED

Address: RM 18, 28/F, Shui On Centre, 6-8 Harbour Road, WaterfRont, Wan Chai, HK

Manufacturer: MICRO COMPUTER (HK) TECH LIMITED

Address: RM 18, 28/F, Shui On Centre, 6-8 Harbour Road, WaterfRont, Wan Chai, HK

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Sample Received Date: 2025-09-01

Sample tested Date: 2025-09-01 to 2025-11-26

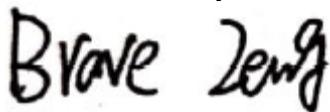
Issue Date: 2025-11-26

Report No.: BCTC2509281447-4E

Test Standards: FCC Part15 15.407
ANSI C63.10-2020
KDB 789033 D02 v02r01
KDB 987594 D02 v02r01

Test Results: PASS

Tested by:



Brave Zeng/ Project Handler

Approved by:



Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

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(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2509281447-4E	2025-11-26	Original	Valid

2. Test Summary

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No.	Results
1	Spurious Radiated Emissions	15.209(a), 15.407 (b)	PASS
2	Conducted Emission	15.207	PASS
3	26 dB and 99% Emission Bandwidth	15.407 (a)	PASS
4	Maximum Conducted Output Power	15.407 (a)	PASS
5	In-band Emission	15.407(b)	PASS
6	Power Spectral Density	15.407 (a)	PASS
7	Spurious Emissions at Antenna Terminals	15.407(b)	PASS
8	Frequency Stability	15.407(g)	PASS
9	Contention Based Protocol	15.407(d)	PASS
10	Antenna Requirement	15.203	PASS
NOTE: N/A (Not Applicable)			

3. 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	Uncertainty
1	3m chamber Radiated spurious emission(9kHz-30MHz)	U=3.7dB
2	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
5	Conducted Emission(150kHz-30MHz)	U=3.20dB
6	Conducted Adjacent channel power	U=1.38dB
7	Conducted output power uncertainty Above 1G	U=1.576dB
8	Conducted output power uncertainty below 1G	U=1.28dB
9	humidity uncertainty	U=5.3%
10	Temperature uncertainty	U=0.59°C

4. Product Information and Test Setup

4.1 Product Information

Model/Type reference:	MS-S1 MAX MXXXXXXX (where * = "0-9 ", "A-Z ", "-", "space", The difference between models is only due to the different sales areas, but the naming methods of models are different. Other circuit principles, safety structures and key components are the same, and the differences do not affect the safety and electromagnetic compatibility of products.)
Model differences:	All models are identical except for the model name, the test model is MS-S1 MAX.
Hardware Version:	N/A
Software Version:	N/A
IEEE 802.11 WLAN Mode Supported	802.11ax20: 20MHz 802.11ax40: 40MHz 802.11ax80: 80MHz 802.11ax160: 160MHz
Operation Frequency:	U-NII-5: 5955-6415MHz U-NII-6: 6435-6515MHz U-NII-7: 6535-6855MHz U-NII-8: 6875-7115MHz
Type of Modulation:	OFDMA
Transmit Power:	U-NII-5: Antenna A: 14.03 dBm, Antenna B: 14.9 dBm, MIMO: 17.45 dBm U-NII-6: Antenna A: 14.9 dBm, Antenna B: 14.52 dBm, MIMO: 17.42 dBm U-NII-7: Antenna A: 14.78 dBm, Antenna B: 14.44 dBm, MIMO: 17.58 dBm U-NII-8: Antenna A: 14.35 dBm, Antenna B: 14.56 dBm, MIMO: 17.42 dBm
Antenna installation:	Internal antenna Antenna A: 3.85 dBi, Antenna B: 3.94 dBi
Antenna Gain:	Remark: ☒ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☐ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.
Ratings:	DC 19V from adapter

4.2 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	Mini PC	N/A	MS-S1 MAX	N/A	EUT
E-2	ADAPTER	Hoco.	HKA12019063-0 D6	N/A	Auxiliary
E-3	Display	AOC	U27V5C	N/A	Auxiliary
E-4	Router	ASUS	GT-AX11000	N/A	Auxiliary
E-5	Keyboard	Logitech	M-U0026	N/A	Auxiliary
E-6	Mouse	Logitech	YU0036	N/A	Auxiliary
E-7	U disk	SanDisk	32G	N/A	Auxiliary
E-8	Earphone	IHIP	SBGE1	N/A	Auxiliary
E-9	PC	Lenovo	ThinkPad E15 Gen4	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	1M	DC cable unshielded

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

U-NII-5: 5955-6415MHz

802.11ax20 Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5955	25	6075	49	6195	73	6315
5	5975	29	6095	53	6215	77	6335
9	5995	33	6115	57	6235	81	6355
13	6015	37	6135	61	6255	85	6375
17	6035	41	6155	65	6275	89	6395
21	6055	45	6175	69	6295	93	6415

802.11ax40 Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	5965	27	6085	51	6205	75	6325
11	6005	35	6125	59	6245	83	6365
19	6045	43	6165	67	6285	91	6405

802.11ax80 Carrier Frequency Channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
7	5985	39	6145	71	6305
23	6065	55	6225	87	6385

802.11ax160 Carrier Frequency Channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
15	6025	47	6185	79	6345

U-NII-6: 6435-6515MHz

802.11ax20 Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
97	6435	105	6475	113	6515		
101	6455	109	6495				

802.11ax40 Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
99	6445	107	6485	115	6525(Straddle)		

802.11ax80 Carrier Frequency Channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
103	6465	119	6545(Straddle)		

802.11ax160 Carrier Frequency Channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
111	6505(Straddle)				

U-NII-7: 6535-6855MHz

802.11ax20 Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
117	6535	137	6635	157	6735	177	6835
121	6555	141	6655	161	6755	181	6855
125	6575	145	6675	165	6775		
129	6595	149	6695	169	6795		
133	6615	153	6715	173	6815		

802.11ax40 Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
123	6565	147	6685	171	6805		
131	6605	155	6725	179	6845		
139	6645	163	6765	187			

802.11ax80 Carrier Frequency Channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
135	6625	167	6785		
151	6705	183			

802.11ax160 Carrier Frequency Channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
143	6665	175	6825(Straddle)		

U-NII-8: 6875-7115MHz

802.11ax20 Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
189	6895	201	6955	213	7015	225	7075
193	6915	205	6975	217	7035	229	7095
197	6935	209	6995	221	7055	233	7115

802.11ax40 Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
195	6925	211	7005	227	7085		
203	6965	219	7045				

802.11ax80 Carrier Frequency Channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
199	6945	215	7025		

802.11ax160 Carrier Frequency Channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
207	6985				

4.5 Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	802.11ax20 CH1/ CH45/ CH 93 802.11ax20 CH97/ CH105/ CH113 802.11ax20 CH117/ CH149/ CH181 802.11ax20 CH189/ CH209/ CH233
Mode 2	802.11ax40 CH3/ CH 43/ CH 91 802.11ax40 CH99/ CH 107/ CH115 (Straddle) 802.11ax40 CH123/ CH 147/ CH 179 802.11ax40 CH195/ CH 203/ CH 227
Mode 3	802.11ax80 CH 7/CH 39/ CH 87 802.11ax80 CH 103/CH 119 (Straddle) 802.11ax80 CH 135/CH 151/ CH 167 802.11ax80 CH 199/CH 215
Mode 4	802.11ax160 CH 15/CH 47/ CH 79 802.11ax160 CH 111 802.11ax160 CH 143 802.11ax160 CH 207
Mode 5	Transmitting (Conducted emission & Radiated emission)

Note: The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

4.6 Test Environment

1. Normal Test Conditions:

Humidity (%):	54
Atmospheric Pressure(kPa):	101
Temperature(°C):	26
Test Voltage(DC):	19V

2. Extreme Test Conditions:

For tests at extreme voltages, measurements shall be made over the extremes of the power source voltage range as declared by the manufacturer.

Test Conditions	LV	NV	HV
Test Voltage (DC)	17.1	19	20.9

4.7 Table Of Parameters Of Text Software Setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters

5955MHz-7115MHz							
Test Software Version	QRCT						
Frequency (MHz)	5955	6175	6415	6435	6475	6515	6535
802.11ax20 Mode	8	8	7	7	7	7	7
Frequency (MHz)	6695	6855	6875	6895	6695	7115	
802.11ax20 Mode	8	7	7	7	8	8	
Frequency (MHz)	5965	6165	6405	6445	6485	6525	6565
802.11ax40 Mode	8	8	8	8	8	8	8
Frequency (MHz)	6685	6845	6885	6925	6965	7085	
802.11ax40 Mode	8	7	8	8	8	8	
Frequency (MHz)	5985	6145	6385	6465	6545	6625	6705
802.11ax80 Mode	10	10	10	10	10	10	10
Frequency (MHz)	6785	6865	6945	7025			
802.11ax80 Mode	10	10	10	10			
Frequency (MHz)	6025	6185	6345	6505	6665	6825	6985
802.11ax160 Mode	12	12	12	12	12	10	12

5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd.
Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China.
The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

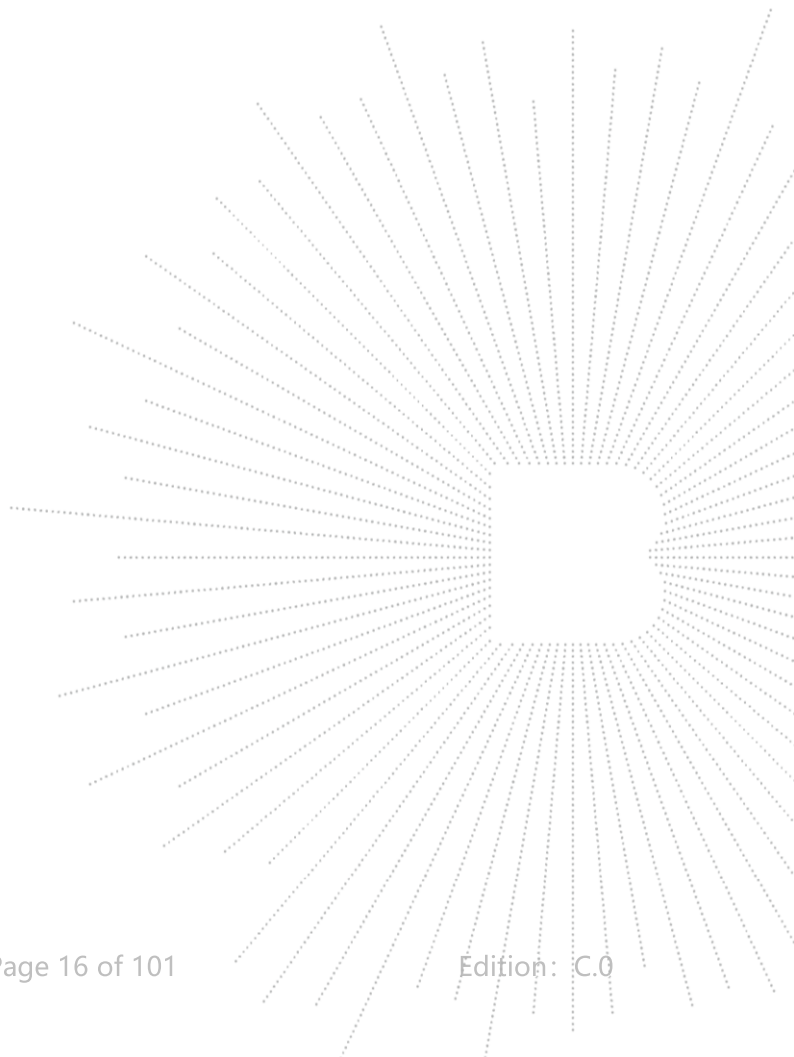
5.2 Test Instrument Used

Conducted Emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR	102075	May 08, 2025	May 07, 2026
LISN	R&S	ENV216	101375	May 14, 2025	May 13, 2026
LISN	Schwarzbeck	NSLK8127	8127739	Sep. 16, 2025	Sep. 15, 2026
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Pulse limiter	Schwarzbeck	VTSD 9561-F	01323	May 14, 2025	May 13, 2026

RF Conducted Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power meter	Keysight	E4419	\	May 14, 2025	May 13, 2026
Power Sensor (AV)	Keysight	E9300A	\	May 14, 2025	May 13, 2026
Signal Analyzer 20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 14, 2025	May 13, 2026
Spectrum Analyzer 9kHz-40GHz	R&S	FSP40	100363	May 14, 2025	May 13, 2026
Radio frequency control box	MAIWEI	MW100-RFC B	\	\	\
Software	MAIWEI	MTS 8310	\	\	\
Router	ASUS	GT-AXE11000	/	/	/
Signal Generator	Keysight	N5182B	MY56200519	May 14, 2025	May 13, 2026
Signal Generator	Keysight	83711B	US37100131	May 14, 2025	May 13, 2026

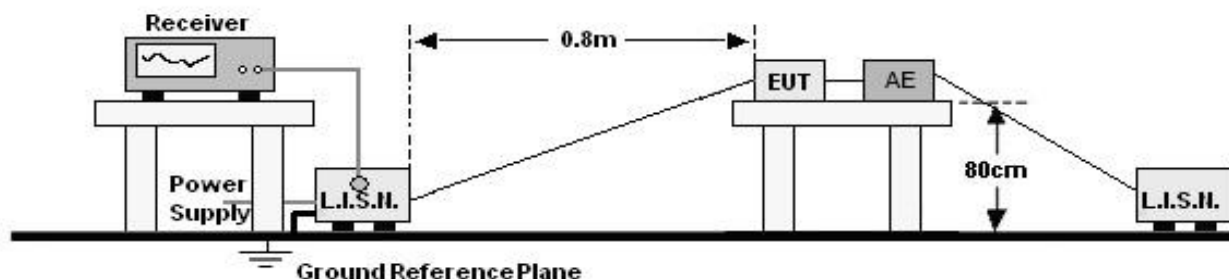
FCC ID: MSQ-RTAXJF00
IC:3568A-RTAXJF00

Radiated Emissions Test (966 Chamber02)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	SKET	966 Room	966	Oct. 31, 2024	Oct. 30, 2027
Receiver	R&S	ESR3	102075	May 08, 2025	May 07, 2026
Receiver	R&S	ESR317	100010	Oct. 31, 2024	Oct. 30, 2025
Amplifier	SKET	LNPA-30M01 G-30	SK2021082004	Oct. 31, 2024	Oct. 30, 2025
TRILOG Broadband Antenna	Schwarzbeck	VULB9168	1323	May 24, 2025	May 23, 2026
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 24, 2025	May 23, 2026
Amplifier	SKET	LAPA_01G18 G-45dB	SK202104090 1	May 14, 2025	May 13, 2026
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 24, 2025	May 23, 2026
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 14, 2025	May 13, 2026
Horn Antenna(18G Hz-40GHz)	Schwarzbeck	BBHA9170	00822	May 24, 2025	May 23, 2026
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	May 14, 2025	May 13, 2026
Software	Frad	EZ-EMC	FA-03A2 RE	\	\



6. Conducted Emissions

6.1 Block Diagram Of Test Setup



6.2 Limit

Frequency (MHz)	Limit (dBuV)	
	Quas-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Notes:

- *Decreasing linearly with logarithm of frequency.
- The lower limit shall apply at the transition frequencies.

6.3 Test Procedure

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

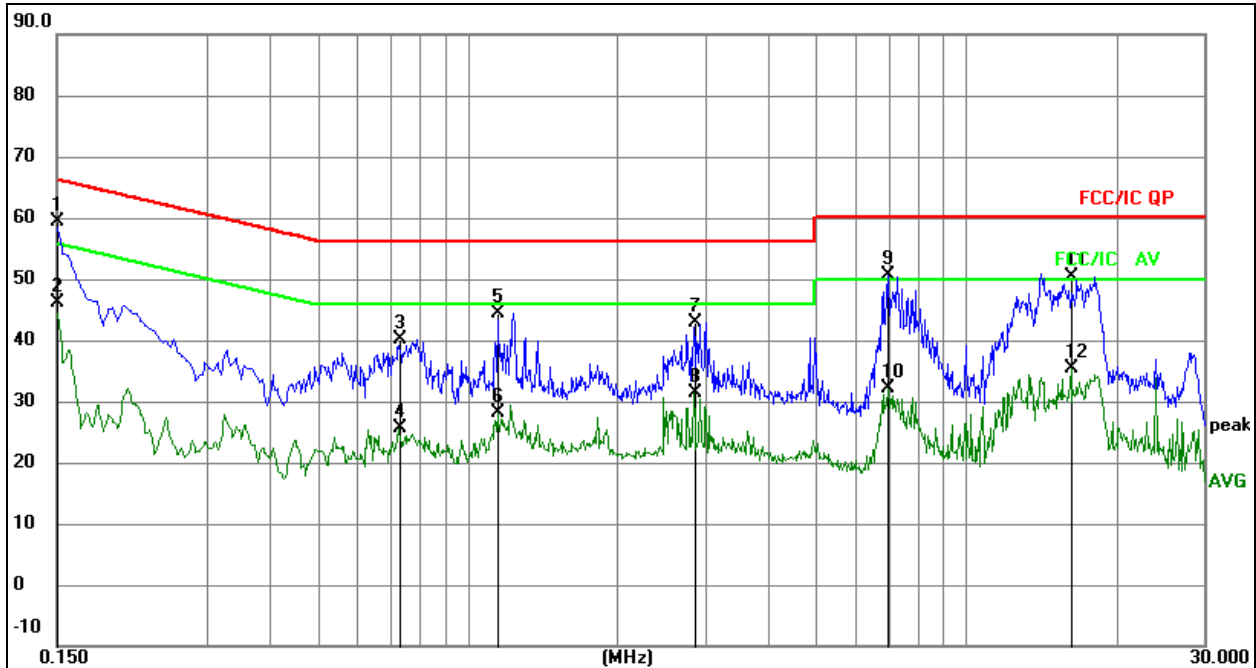
- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

6.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

6.5 Test Result

Temperature:	26 °C	Relative Humidity:	54 %
Pressure:	101KPa	Phase :	L
Test Mode:	Mode 5	Test Voltage :	AC 120V/60Hz

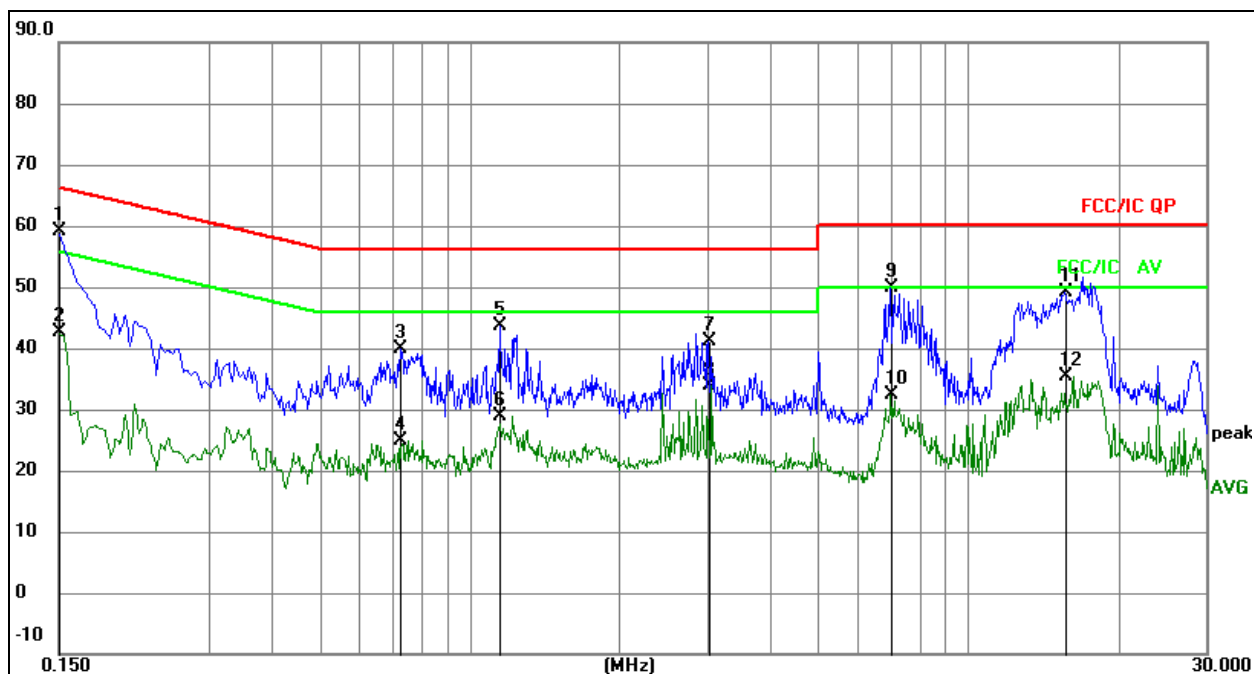


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+ Correct Factor
4. Over=Measurement-Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz		dB	dBuV	dBuV	dB	
1	*	0.1500	39.32	20.04	59.36	66.00	-6.64	QP
2		0.1500	26.00	20.04	46.04	56.00	-9.96	AVG
3		0.7304	19.79	20.26	40.05	56.00	-15.95	QP
4		0.7304	5.34	20.26	25.60	46.00	-20.40	AVG
5		1.1490	24.06	20.26	44.32	56.00	-11.68	QP
6		1.1490	7.83	20.26	28.09	46.00	-17.91	AVG
7		2.8500	22.54	20.36	42.90	56.00	-13.10	QP
8		2.8500	10.93	20.36	31.29	46.00	-14.71	AVG
9		6.9855	29.73	20.93	50.66	60.00	-9.34	QP
10		6.9855	11.11	20.93	32.04	50.00	-17.96	AVG
11		16.2285	27.65	22.75	50.40	60.00	-9.60	QP
12		16.2285	12.72	22.75	35.47	50.00	-14.53	AVG

Temperature:	26 °C	Relative Humidity:	54 %
Pressure:	101KPa	Phase :	N
Test Mode:	Mode 5	Test Voltage :	AC 120V/60Hz



Remark:

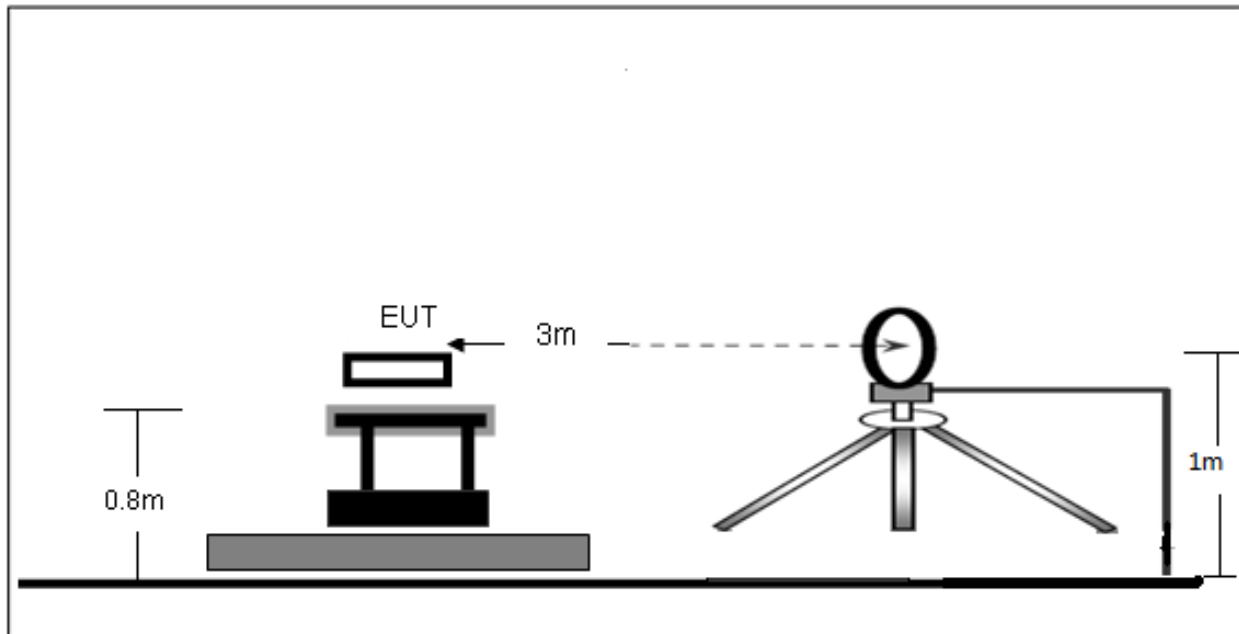
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+ Correct Factor
4. Over=Measurement-Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz		dB	dBuV	dBuV	dB	
1	*	0.1500	39.06	20.04	59.10	66.00	-6.90	QP
2		0.1500	22.49	20.04	42.53	56.00	-13.47	AVG
3		0.7273	19.52	20.26	39.78	56.00	-16.22	QP
4		0.7273	4.54	20.26	24.80	46.00	-21.20	AVG
5		1.1473	23.44	20.26	43.70	56.00	-12.30	QP
6		1.1473	8.61	20.26	28.87	46.00	-17.13	AVG
7		3.0094	20.80	20.40	41.20	56.00	-14.80	QP
8		3.0094	13.52	20.40	33.92	46.00	-12.08	AVG
9		6.9878	28.91	20.93	49.84	60.00	-10.16	QP
10		6.9878	11.33	20.93	32.26	50.00	-17.74	AVG
11		15.6349	26.49	22.62	49.11	60.00	-10.89	QP
12		15.6349	12.69	22.62	35.31	50.00	-14.69	AVG

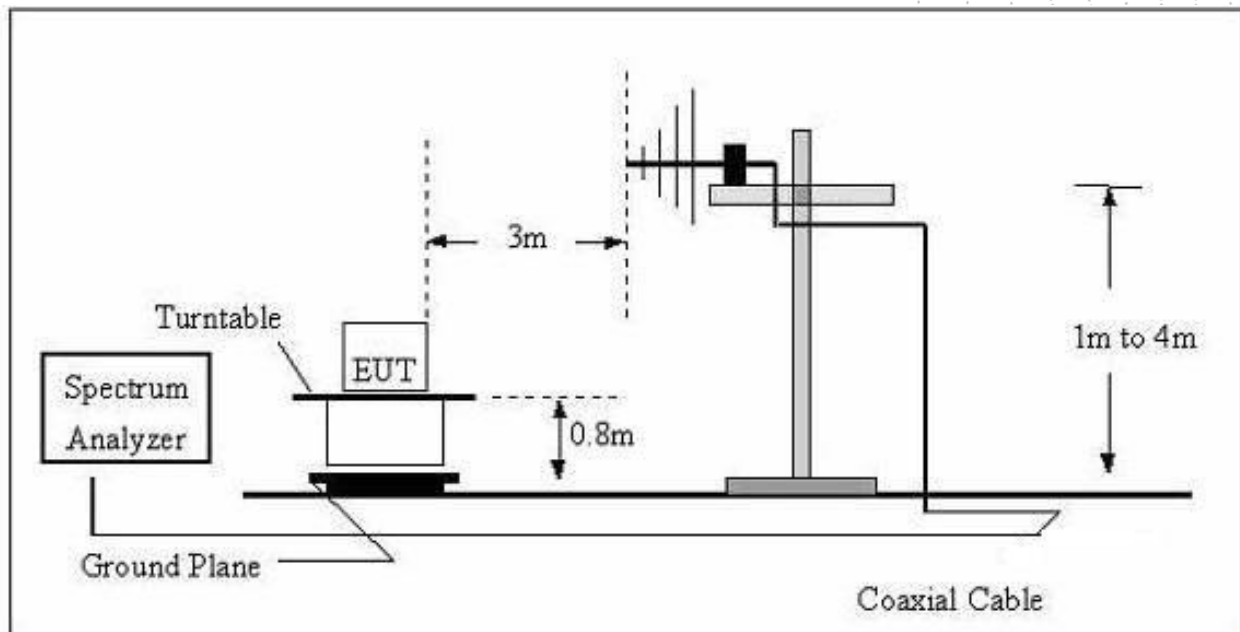
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

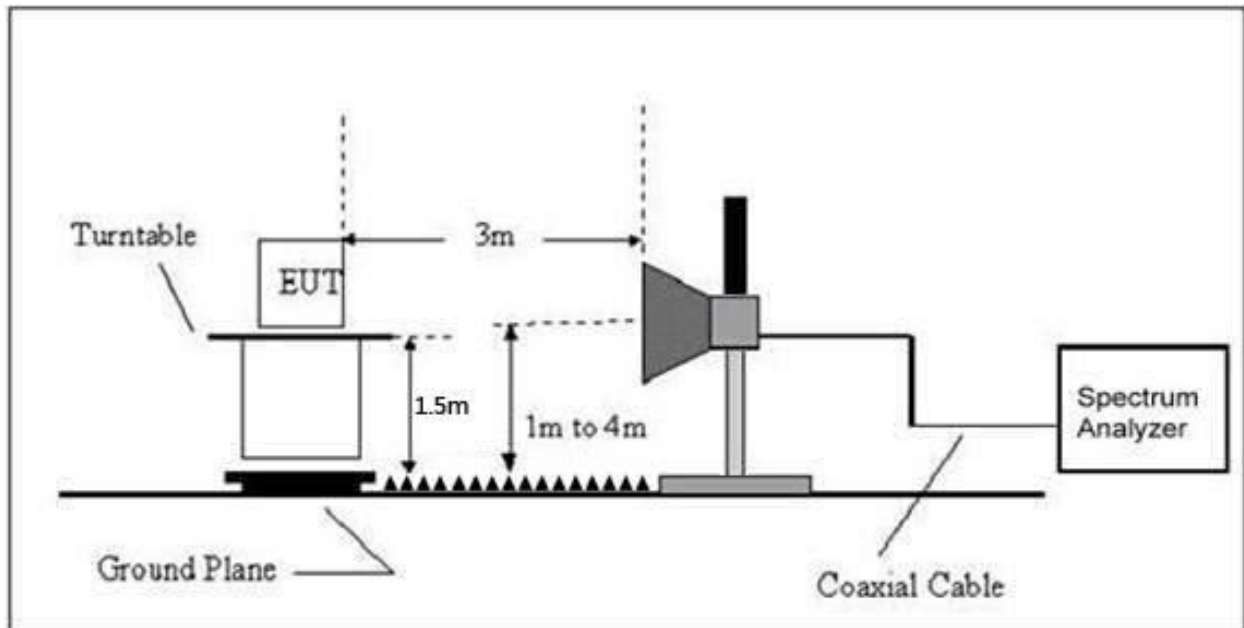
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



7.2 Limit

FCC Part15 C Section 15.209 and 15.205

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency	Field Strength	Distance	Field Strength Limit at 3m Distance	
(MHz)	uV/m	(m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	$10000 * 2400/F(kHz)$	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	$100 * 24000/F(kHz)$	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	$100 * 30$	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

For transmitters operating within the 5.925–7.125 GHz band: Any emissions outside of the 5.925–7.125 GHz band must not exceed an e.i.r.p. of –27 dBm/MHz.

According 987594 D02 U-NII 6GHz EMC Measurement section G:

Use guidance in KDB 789033 for measurements below 1000 MHz and above 1000 MHz. Unwanted emissions outside of restricted bands are measured with a RMS detector. In addition, 15.35(b) applies where the peak emissions must be limited to no more than 20 dB above the average limit

Limits Of Radiated Emission Measurement (Above 1000MHz)

Frequency (MHz)	Limit (dBuV/m) (at 3M)	
	Peak	Average
Above 1000	74	54

Notes:

- (1)The limit for radiated test was performed according to FCC PART 15C.
- (2)The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

7.3 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2020. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2020 and CAN/CSA-CEI/IEC CISPR 22.

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT.

Use the following spectrum analyzer settings:

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Average	1 MHz	10 Hz

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where $RBWCF [dB] = 10 \cdot \lg(100 [kHz] / \text{narrower RBW [kHz]})$. , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

7.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

7.5 Test Result

Below 30MHz

Temperature:	26 °C	Relative Humidity:	54 %
Pressure:	101 kPa	Test Voltage :	AC 120V/60Hz
Test Mode:	Mode 5	Polarization:	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance/test distance})$ (dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

Between 30MHz – 1GHz

Temperature:	26 °C	Relative Humidity:	54 %
Pressure:	101KPa	Phase :	Horizontal
Test Mode:	Mode 5	Test Voltage:	AC 120V/60Hz

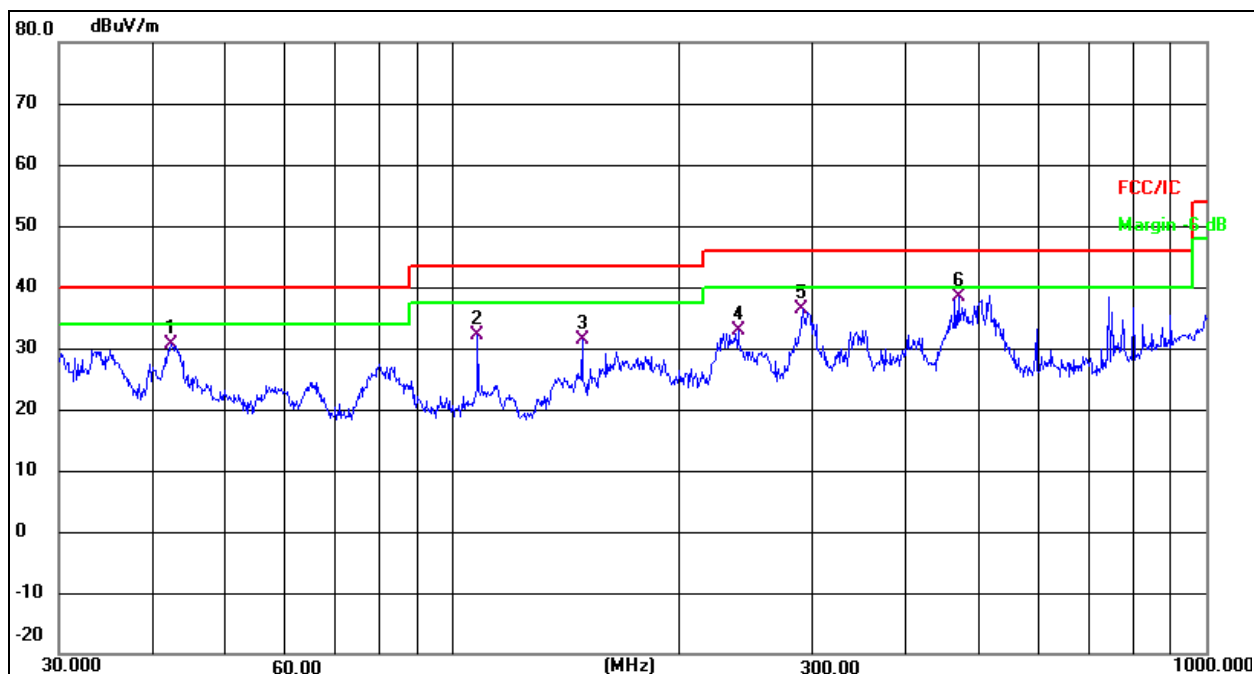


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement=Reading Level+ Correct Factor
3. Over=Measurement-Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 !	223.8943	48.91	-13.55	35.36	40.00	-4.64	QP
2 *	258.3263	54.71	-12.12	42.59	47.00	-4.41	QP
3	296.1836	49.42	-10.83	38.59	47.00	-8.41	QP
4	344.3854	40.62	-9.55	31.07	47.00	-15.93	QP
5	595.1326	38.73	-3.24	35.49	47.00	-11.51	QP
6	742.2586	38.62	-0.68	37.94	47.00	-9.06	QP

Temperature:	26 °C	Relative Humidity:	54 %
Pressure:	101KPa	Phase :	Vertical
Test Mode:	Mode 5	Test Voltage:	AC 120V/60Hz



Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement=Reading Level+ Correct Factor
3. Over=Measurement-Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	42.3021	42.66	-12.01	30.65	40.00	-9.35	QP
2	107.8876	46.66	-14.47	32.19	43.50	-11.31	QP
3	148.4410	42.46	-11.00	31.46	43.50	-12.04	QP
4	239.1470	45.85	-12.88	32.97	46.00	-13.03	QP
5	291.0358	47.32	-11.00	36.32	46.00	-9.68	QP
6 *	468.8761	43.55	-5.28	38.27	46.00	-7.73	QP

Between 1GHz – 40GHz

U-NII-5: 5955-6415MHz

Test Mode:	TX(U-NII-5: 5955-6415MHz) - 802.11ax20
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5955 MHz)-Above 1G							
Vertical	4681.068	74.91	-20.24	54.67	74.00	-19.33	PK
Vertical	4681.068	59.15	-20.24	38.91	54.00	-15.09	AV
Vertical	11910.184	61.24	-8.63	52.61	68.20	-15.59	PK
Vertical	11910.184	49.21	-8.63	40.58	54.00	-13.42	AV
Vertical	17865.147	57.58	-1.57	56.01	68.20	-12.19	PK
Vertical	17865.147	44.46	-1.57	42.89	54.00	-11.11	AV
Horizontal	4679.067	70.97	-20.73	50.24	74.00	-23.76	PK
Horizontal	4679.067	59.76	-20.73	39.03	54.00	-14.97	AV
Horizontal	11910.036	60.33	-8.63	51.70	68.20	-16.50	PK
Horizontal	11910.036	49.66	-8.63	41.03	54.00	-12.97	AV
Horizontal	17865.185	58.74	-1.57	57.17	68.20	-11.03	PK
Horizontal	17865.185	44.11	-1.57	42.54	54.00	-11.46	AV
middle Channel (6175 MHz)-Above 1G							
Vertical	4592.119	70.28	-20.42	49.86	74.00	-24.14	PK
Vertical	4592.119	59.39	-20.42	38.97	54.00	-15.03	AV
Vertical	12350.076	61.70	-9.16	52.54	68.20	-15.66	PK
Vertical	12350.076	49.81	-9.16	40.65	54.00	-13.35	AV
Vertical	18525.127	47.63	6.65	54.28	68.20	-13.92	PK
Vertical	18525.127	34.82	6.65	41.47	54.00	-12.53	AV
Horizontal	4592.127	71.72	-20.42	51.30	74.00	-22.70	PK
Horizontal	4592.127	59.67	-20.42	39.25	54.00	-14.75	AV
Horizontal	12350.186	64.92	-9.16	55.76	68.20	-12.44	PK
Horizontal	12350.186	49.48	-9.16	40.32	54.00	-13.68	AV
Horizontal	18525.157	47.57	6.65	54.22	68.20	-13.98	PK
Horizontal	18525.157	34.88	6.65	41.53	54.00	-12.47	AV
High Channel (6415 MHz)-Above 1G							
Vertical	6039.008	73.65	-18.93	54.72	68.20	-13.48	PK
Vertical	6039.008	59.10	-18.93	40.17	54.00	-13.83	AV
Vertical	12830.066	63.74	-8.92	54.82	74.00	-19.18	PK
Vertical	12830.066	49.88	-8.92	40.96	54.00	-13.04	AV
Vertical	19245.098	47.09	7.78	54.87	68.20	-13.33	PK
Vertical	19245.098	34.94	7.78	42.72	54.00	-11.28	AV
Horizontal	6039.031	74.31	-18.93	55.38	68.20	-12.82	PK
Horizontal	6039.031	59.34	-18.93	40.41	54.00	-13.59	AV
Horizontal	12830.063	61.48	-8.92	52.56	74.00	-21.44	PK
Horizontal	12830.063	49.14	-8.92	40.22	54.00	-13.78	AV
Horizontal	19245.196	49.80	7.78	57.58	68.20	-10.62	PK
Horizontal	19245.196	34.29	7.78	42.07	54.00	-11.93	AV

Note: The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

Test Mode:	TX(U-NII-5: 5955-6415MHz) - 802.11ax40
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5965 MHz)-Above 1G							
Vertical	4679.158	73.72	-20.24	53.48	74.00	-20.52	PK
Vertical	4679.158	59.54	-20.24	39.30	54.00	-14.70	AV
Vertical	11930.125	63.09	-8.51	54.58	74.00	-19.42	PK
Vertical	11930.125	49.42	-8.51	40.91	54.00	-13.09	AV
Vertical	17895.132	57.16	-1.43	55.73	68.20	-12.47	PK
Vertical	17895.132	44.89	-1.43	43.46	54.00	-10.54	AV
Horizontal	4679.016	73.21	-20.24	52.96	74.00	-21.04	PK
Horizontal	4679.016	59.49	-20.24	39.25	54.00	-14.75	AV
Horizontal	11930.013	62.74	-8.51	54.23	74.00	-19.77	PK
Horizontal	11930.013	49.49	-8.51	40.98	54.00	-13.02	AV
Horizontal	17895.140	58.18	-1.43	56.75	68.20	-11.45	PK
Horizontal	17895.140	44.39	-1.43	42.96	54.00	-11.04	AV
middle Channel (6165 MHz)-Above 1G							
Vertical	6039.080	70.42	-18.93	51.49	68.20	-16.71	PK
Vertical	6039.080	59.79	-18.93	40.86	54.00	-13.14	AV
Vertical	12330.200	64.85	-9.16	55.69	74.00	-18.31	PK
Vertical	12330.200	49.20	-9.16	40.04	54.00	-13.96	AV
Vertical	18495.129	45.33	6.65	51.98	68.20	-16.22	PK
Vertical	18495.129	34.63	6.65	41.28	54.00	-12.72	AV
Horizontal	6039.002	71.24	-18.93	52.31	68.20	-15.89	PK
Horizontal	6039.002	59.76	-18.93	40.83	54.00	-13.17	AV
Horizontal	12330.077	61.77	-9.16	52.61	74.00	-21.39	PK
Horizontal	12330.077	49.04	-9.16	39.88	54.00	-14.12	AV
Horizontal	18495.145	47.78	6.65	54.43	68.20	-13.77	PK
Horizontal	18495.145	34.36	6.65	41.01	54.00	-12.99	AV
High Channel (6405 MHz)-Above 1G							
Vertical	6039.120	73.07	-18.93	54.14	68.20	-14.06	PK
Vertical	6039.120	59.59	-18.93	40.66	54.00	-13.34	AV
Vertical	12810.055	62.65	-8.92	53.73	74.00	-20.27	PK
Vertical	12810.055	50.00	-8.92	41.08	54.00	-12.92	AV
Vertical	19215.019	47.10	7.78	54.88	68.20	-13.32	PK
Vertical	19215.019	34.15	7.78	41.93	54.00	-12.07	AV
Horizontal	6039.078	70.58	-18.93	51.65	68.20	-16.55	PK
Horizontal	6039.078	59.71	-18.93	40.78	54.00	-13.22	AV
Horizontal	12810.007	64.12	-8.92	55.20	74.00	-18.80	PK
Horizontal	12810.007	50.00	-8.92	41.08	54.00	-12.92	AV
Horizontal	19215.102	48.74	7.78	56.52	68.20	-11.68	PK
Horizontal	19215.102	34.46	7.78	42.24	54.00	-11.76	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

Test Mode:	TX(U-NII-5: 5955-6415MHz)- 802.11ax80
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5985 MHz)-Above 1G							
Vertical	4679.095	72.68	-20.24	52.44	74.00	-21.56	PK
Vertical	4679.095	59.40	-20.24	39.16	54.00	-14.84	AV
Vertical	11970.132	62.83	-8.51	54.32	74.00	-19.68	PK
Vertical	11970.132	49.17	-8.51	40.66	54.00	-13.34	AV
Vertical	17955.110	58.37	-1.41	56.96	68.20	-11.24	PK
Vertical	17955.110	44.60	-1.41	43.19	54.00	-10.81	AV
Horizontal	4679.055	74.16	-20.24	53.92	74.00	-20.08	PK
Horizontal	4679.055	59.07	-20.24	38.83	54.00	-15.17	AV
Horizontal	11970.148	63.46	-8.51	54.95	74.00	-19.05	PK
Horizontal	11970.148	49.17	-8.51	40.66	54.00	-13.34	AV
Horizontal	17955.072	58.46	-1.41	57.05	68.20	-11.15	PK
Horizontal	17955.072	44.11	-1.41	42.70	54.00	-11.30	AV
Middle Channel (6145 MHz)-Above 1G							
Vertical	6039.088	74.35	-18.93	55.42	68.20	-12.78	PK
Vertical	6039.088	59.89	-18.93	40.96	54.00	-13.04	AV
Vertical	12290.007	63.31	-9.21	54.10	74.00	-19.90	PK
Vertical	12290.007	49.92	-9.21	40.71	54.00	-13.29	AV
Vertical	18435.089	46.00	6.57	52.57	68.20	-15.63	PK
Vertical	18435.089	34.84	6.57	41.41	54.00	-12.59	AV
Horizontal	6039.016	74.24	-18.93	55.31	68.20	-12.89	PK
Horizontal	6039.016	59.42	-18.93	40.49	54.00	-13.51	AV
Horizontal	12290.087	64.98	-9.21	55.77	74.00	-18.23	PK
Horizontal	12290.087	49.03	-9.21	39.82	54.00	-14.18	AV
Horizontal	18435.194	46.45	6.57	53.02	68.20	-15.18	PK
Horizontal	18435.194	34.74	6.57	41.31	54.00	-12.69	AV
High Channel (6385 MHz)-Above 1G							
Vertical	6039.121	74.53	-18.93	55.60	68.20	-12.60	PK
Vertical	6039.121	59.71	-18.93	40.77	54.00	-13.23	AV
Vertical	12770.186	64.02	-8.97	55.05	74.00	-18.95	PK
Vertical	12770.186	49.23	-8.97	40.26	54.00	-13.74	AV
Vertical	19155.101	49.91	7.83	57.74	68.20	-10.46	PK
Vertical	19155.101	34.00	7.83	41.83	54.00	-12.17	AV
Horizontal	6039.086	70.39	-18.93	51.46	68.20	-16.74	PK
Horizontal	6039.086	59.04	-18.93	40.11	54.00	-13.89	AV
Horizontal	12770.152	60.99	-8.97	52.02	74.00	-21.98	PK
Horizontal	12770.152	49.67	-8.97	40.70	54.00	-13.30	AV
Horizontal	19155.133	45.68	7.83	53.51	68.20	-14.69	PK
Horizontal	19155.133	34.87	7.83	42.70	54.00	-11.30	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

Test Mode:	TX(U-NII-5: 5955-6415MHz) - 802.11ax160
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (6025 MHz)-Above 1G							
Vertical	4679.134	71.13	-20.24	50.89	74.00	-23.11	PK
Vertical	4679.134	59.80	-20.24	39.55	54.00	-14.45	AV
Vertical	12050.083	62.96	-8.45	54.51	74.00	-19.49	PK
Vertical	12050.083	49.24	-8.45	40.79	54.00	-13.21	AV
Vertical	18075.149	59.33	-1.31	58.02	68.20	-10.18	PK
Vertical	18075.149	44.03	-1.31	42.72	54.00	-11.28	AV
Horizontal	4679.096	71.46	-20.24	51.22	74.00	-22.78	PK
Horizontal	4679.096	59.18	-20.24	38.94	54.00	-15.06	AV
Horizontal	12050.169	62.24	-8.45	53.79	74.00	-20.21	PK
Horizontal	12050.169	49.46	-8.45	41.01	54.00	-12.99	AV
Horizontal	18075.156	59.34	-1.31	58.03	68.20	-10.17	PK
Horizontal	18075.156	44.02	-1.31	42.71	54.00	-11.29	AV
middle Channel (6185 MHz)-Above 1G							
Vertical	6039.065	72.85	-18.93	53.92	68.20	-14.28	PK
Vertical	6039.065	59.76	-18.93	40.82	54.00	-13.18	AV
Vertical	12370.110	64.32	-9.03	55.29	74.00	-18.71	PK
Vertical	12370.110	49.50	-9.03	40.47	54.00	-13.53	AV
Vertical	18555.093	48.59	6.68	55.27	68.20	-12.93	PK
Vertical	18555.093	34.37	6.68	41.05	54.00	-12.95	AV
Horizontal	6039.110	72.73	-18.93	53.80	68.20	-14.40	PK
Horizontal	6039.110	59.87	-18.93	40.94	54.00	-13.06	AV
Horizontal	12370.113	64.61	-9.03	55.58	74.00	-18.42	PK
Horizontal	12370.113	49.78	-9.03	40.75	54.00	-13.25	AV
Horizontal	18555.155	46.13	6.68	52.81	68.20	-15.39	PK
Horizontal	18555.155	34.85	6.68	41.53	54.00	-12.47	AV
High Channel (6345 MHz)-Above 1G							
Vertical	6039.081	70.12	-18.93	51.18	68.20	-17.02	PK
Vertical	6039.081	59.14	-18.93	40.20	54.00	-13.80	AV
Vertical	12690.117	64.24	-8.97	55.27	74.00	-18.73	PK
Vertical	12690.117	49.63	-8.97	40.66	54.00	-13.34	AV
Vertical	19035.027	46.84	7.68	54.52	68.20	-13.68	PK
Vertical	19035.027	34.83	7.68	42.51	54.00	-11.49	AV
Horizontal	6039.135	72.71	-18.93	53.78	68.20	-14.42	PK
Horizontal	6039.135	59.01	-18.93	40.08	54.00	-13.92	AV
Horizontal	12690.097	63.09	-8.97	54.12	74.00	-19.88	PK
Horizontal	12690.097	49.90	-8.97	40.93	54.00	-13.07	AV
Horizontal	19035.072	48.97	7.68	56.65	68.20	-11.55	PK
Horizontal	19035.072	34.42	7.68	42.10	54.00	-11.90	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

U-NII-6: 6435-6515MHz

Test Mode:	TX(U-NII-6: 6435-6515MHz) - 802.11ax20
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBUV/m)	(dB)	(dBUV/m)	(dBUV/m)	(dB)	
Low Channel (6435 MHz)-Above 1G							
Vertical	4683.463	74.17	-20.23	53.94	74.00	-20.06	PK
Vertical	4683.463	59.35	-20.23	39.11	54.00	-14.89	AV
Vertical	12870.119	61.60	-7.95	53.65	68.20	-14.55	PK
Vertical	12870.119	49.10	-7.95	41.15	54.00	-12.85	AV
Vertical	19305.159	47.93	7.76	55.69	68.20	-12.51	PK
Vertical	19305.159	34.24	7.76	42.00	54.00	-12.00	AV
Horizontal	4679.022	72.71	-20.73	51.98	74.00	-22.02	PK
Horizontal	4679.022	59.16	-20.73	38.43	54.00	-15.57	AV
Horizontal	12870.082	63.21	-7.95	55.26	68.20	-12.94	PK
Horizontal	12870.082	49.50	-7.95	41.55	54.00	-12.45	AV
Horizontal	19305.024	48.88	7.76	56.64	68.20	-11.56	PK
Horizontal	19305.024	34.33	7.76	42.09	54.00	-11.91	AV
middle Channel (6475 MHz)-Above 1G							
Vertical	4592.073	73.57	-20.42	53.15	74.00	-20.85	PK
Vertical	4592.073	59.57	-20.42	39.16	54.00	-14.84	AV
Vertical	12950.114	61.51	-7.89	53.62	68.20	-14.58	PK
Vertical	12950.114	49.27	-7.89	41.38	54.00	-12.62	AV
Vertical	19425.060	45.84	7.78	53.62	68.20	-14.58	PK
Vertical	19425.060	34.45	7.78	42.23	54.00	-11.77	AV
Horizontal	4592.163	73.64	-20.42	53.23	74.00	-20.77	PK
Horizontal	4592.163	59.89	-20.42	39.47	54.00	-14.53	AV
Horizontal	12950.184	63.34	-7.89	55.45	68.20	-12.75	PK
Horizontal	12950.184	49.79	-7.89	41.90	54.00	-12.10	AV
Horizontal	19425.029	46.21	7.78	53.99	68.20	-14.21	PK
Horizontal	19425.029	34.81	7.78	42.59	54.00	-11.41	AV
High Channel (6515 MHz)-Above 1G							
Vertical	6039.070	73.39	-18.93	54.46	68.20	-13.74	PK
Vertical	6039.070	59.43	-18.93	40.50	54.00	-13.50	AV
Vertical	13030.106	62.47	-7.80	54.67	74.00	-19.33	PK
Vertical	13030.106	49.54	-7.80	41.74	54.00	-12.26	AV
Vertical	19545.061	47.87	7.78	55.65	68.20	-12.55	PK
Vertical	19545.061	34.64	7.78	42.42	54.00	-11.58	AV
Horizontal	6039.110	70.94	-18.93	52.01	68.20	-16.19	PK
Horizontal	6039.110	59.05	-18.93	40.12	54.00	-13.88	AV
Horizontal	13030.040	64.26	-7.80	56.46	74.00	-17.54	PK
Horizontal	13030.040	49.77	-7.80	41.97	54.00	-12.03	AV
Horizontal	19545.051	47.37	7.78	55.15	68.20	-13.05	PK
Horizontal	19545.051	34.15	7.78	41.93	54.00	-12.07	AV

Note: The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBUV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

Test Mode:	TX(U-NII-6: 6435-6515MHz) - 802.11ax40
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (6445 MHz)-Above 1G							
Vertical	4679.134	71.34	-20.24	51.10	74.00	-22.90	PK
Vertical	4679.134	59.20	-20.24	38.95	54.00	-15.05	AV
Vertical	12890.113	60.76	-7.95	52.81	74.00	-21.19	PK
Vertical	12890.113	49.05	-7.95	41.10	54.00	-12.90	AV
Vertical	19335.081	47.13	7.76	54.89	68.20	-13.31	PK
Vertical	19335.081	34.65	7.76	42.41	54.00	-11.59	AV
Horizontal	4679.065	72.02	-20.24	51.78	74.00	-22.22	PK
Horizontal	4679.065	59.02	-20.24	38.77	54.00	-15.23	AV
Horizontal	12890.070	63.85	-7.95	55.90	74.00	-18.10	PK
Horizontal	12890.070	49.12	-7.95	41.17	54.00	-12.83	AV
Horizontal	19335.075	48.65	7.76	56.41	68.20	-11.79	PK
Horizontal	19335.075	34.87	7.76	42.63	54.00	-11.37	AV
middle Channel (6485 MHz)-Above 1G							
Vertical	6039.056	71.17	-18.93	52.24	68.20	-15.96	PK
Vertical	6039.056	59.51	-18.93	40.58	54.00	-13.42	AV
Vertical	12970.103	62.04	-7.85	54.19	74.00	-19.81	PK
Vertical	12970.103	49.49	-7.85	41.64	54.00	-12.36	AV
Vertical	19455.131	45.22	7.78	53.00	68.20	-15.20	PK
Vertical	19455.131	34.14	7.78	41.92	54.00	-12.08	AV
Horizontal	6039.104	71.30	-18.93	52.37	68.20	-15.83	PK
Horizontal	6039.104	59.06	-18.93	40.13	54.00	-13.87	AV
Horizontal	12970.196	62.49	-7.85	54.64	74.00	-19.36	PK
Horizontal	12970.196	49.25	-7.85	41.40	54.00	-12.60	AV
Horizontal	19455.032	47.06	7.78	54.84	68.20	-13.36	PK
Horizontal	19455.032	34.37	7.78	42.15	54.00	-11.85	AV
High Channel (6525 MHz)-Above 1G							
Vertical	6039.075	73.87	-18.93	54.93	68.20	-13.27	PK
Vertical	6039.075	59.48	-18.93	40.55	54.00	-13.45	AV
Vertical	13050.084	61.31	-7.80	53.51	74.00	-20.49	PK
Vertical	13050.084	49.47	-7.80	41.67	54.00	-12.33	AV
Vertical	19575.193	47.32	7.78	55.10	68.20	-13.10	PK
Vertical	19575.193	34.88	7.78	42.66	54.00	-11.34	AV
Horizontal	6039.022	74.06	-18.93	55.13	68.20	-13.07	PK
Horizontal	6039.022	59.40	-18.93	40.47	54.00	-13.53	AV
Horizontal	13050.003	61.37	-7.80	53.57	74.00	-20.43	PK
Horizontal	13050.003	49.33	-7.80	41.53	54.00	-12.47	AV
Horizontal	19575.199	46.72	7.78	54.50	68.20	-13.70	PK
Horizontal	19575.199	34.97	7.78	42.75	54.00	-11.25	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

Test Mode:	TX(U-NII-6: 6435-6515MHz)- 802.11ax80
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (6465 MHz)-Above 1G							
Vertical	4679.113	74.00	-20.24	53.76	74.00	-20.24	PK
Vertical	4679.113	59.05	-20.24	38.81	54.00	-15.19	AV
Vertical	12930.103	61.60	-7.85	53.75	74.00	-20.25	PK
Vertical	12930.103	49.35	-7.85	41.50	54.00	-12.50	AV
Vertical	19395.037	45.97	7.76	53.73	68.20	-14.47	PK
Vertical	19395.037	34.66	7.76	42.42	54.00	-11.58	AV
Horizontal	4679.111	70.29	-20.24	50.05	74.00	-23.95	PK
Horizontal	4679.111	59.31	-20.24	39.06	54.00	-14.94	AV
Horizontal	12930.134	60.34	-7.85	52.49	74.00	-21.51	PK
Horizontal	12930.134	49.65	-7.85	41.80	54.00	-12.20	AV
Horizontal	19395.188	48.88	7.76	56.64	68.20	-11.56	PK
Horizontal	19395.188	34.69	7.76	42.45	54.00	-11.55	AV
High Channel (6545 MHz)-Above 1G							
Vertical	6039.169	73.35	-18.93	54.42	68.20	-13.78	PK
Vertical	6039.169	59.73	-18.93	40.79	54.00	-13.21	AV
Vertical	13090.136	62.97	-7.80	55.17	74.00	-18.83	PK
Vertical	13090.136	49.53	-7.80	41.73	54.00	-12.27	AV
Vertical	19635.181	48.90	7.78	56.68	68.20	-11.52	PK
Vertical	19635.181	34.77	7.78	42.55	54.00	-11.45	AV
Horizontal	6039.175	71.60	-18.93	52.67	68.20	-15.53	PK
Horizontal	6039.175	59.64	-18.93	40.70	54.00	-13.30	AV
Horizontal	13090.133	61.05	-7.80	53.25	74.00	-20.75	PK
Horizontal	13090.133	49.58	-7.80	41.78	54.00	-12.22	AV
Horizontal	19635.107	45.85	7.78	53.63	68.20	-14.57	PK
Horizontal	19635.107	34.78	7.78	42.56	54.00	-11.44	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

Test Mode:	TX(U-NII-6: 6435-6515MHz)- 802.11ax160
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (6505 MHz)-Above 1G							
Vertical	4679.030	74.43	-20.24	54.18	74.00	-19.82	PK
Vertical	4679.030	59.31	-20.24	39.07	54.00	-14.93	AV
Vertical	13010.119	60.02	-7.80	52.22	74.00	-21.78	PK
Vertical	13010.119	49.37	-7.80	41.57	54.00	-12.43	AV
Vertical	19515.037	48.71	7.78	56.49	68.20	-11.71	PK
Vertical	19515.037	34.85	7.78	42.63	54.00	-11.37	AV
Horizontal	4679.015	72.21	-20.24	51.97	74.00	-22.03	PK
Horizontal	4679.015	59.60	-20.24	39.36	54.00	-14.64	AV
Horizontal	13010.036	62.80	-7.80	55.00	74.00	-19.00	PK
Horizontal	13010.036	49.79	-7.80	41.99	54.00	-12.01	AV
Horizontal	19515.165	49.39	7.78	57.17	68.20	-11.03	PK
Horizontal	19515.165	34.24	7.78	42.02	54.00	-11.98	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

U-NII-7: 6535-6865MHz

Test Mode:	TX(U-NII-7: 6535-6865MHz) - 802.11ax20
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (6535 MHz)-Above 1G							
Vertical	4681.751	70.52	-20.24	50.28	74.00	-23.72	PK
Vertical	4681.751	59.52	-20.24	39.29	54.00	-14.71	AV
Vertical	13070.062	60.81	-7.80	53.01	68.20	-15.19	PK
Vertical	13070.062	49.59	-7.80	41.79	54.00	-12.21	AV
Vertical	19605.098	49.24	7.78	57.02	68.20	-11.18	PK
Vertical	19605.098	34.76	7.78	42.54	54.00	-11.46	AV
Horizontal	4679.009	70.42	-20.73	49.69	74.00	-24.31	PK
Horizontal	4679.009	59.33	-20.73	38.60	54.00	-15.40	AV
Horizontal	13070.072	62.02	-7.80	54.22	68.20	-13.98	PK
Horizontal	13070.072	49.52	-7.80	41.72	54.00	-12.28	AV
Horizontal	19605.135	45.04	7.78	52.82	68.20	-15.38	PK
Horizontal	19605.135	34.20	7.78	41.98	54.00	-12.02	AV
Middle Channel (6695 MHz)-Above 1G							
Vertical	4592.053	70.05	-20.42	49.64	74.00	-24.36	PK
Vertical	4592.053	59.93	-20.42	39.51	54.00	-14.49	AV
Vertical	13390.054	64.55	-7.53	57.02	68.20	-11.18	PK
Vertical	13390.054	49.34	-7.53	41.81	54.00	-12.19	AV
Vertical	20085.110	46.33	8.00	54.33	68.20	-13.87	PK
Vertical	20085.110	34.80	8.00	42.80	54.00	-11.20	AV
Horizontal	4592.065	74.26	-20.42	53.85	74.00	-20.15	PK
Horizontal	4592.065	59.83	-20.42	39.41	54.00	-14.59	AV
Horizontal	13390.159	60.18	-7.53	52.65	68.20	-15.55	PK
Horizontal	13390.159	49.17	-7.53	41.64	54.00	-12.36	AV
Horizontal	20085.103	47.51	8.00	55.51	68.20	-12.69	PK
Horizontal	20085.103	34.75	8.00	42.75	54.00	-11.25	AV
High Channel (6855 MHz)-Above 1G							
Vertical	6039.029	73.67	-18.93	54.74	68.20	-13.46	PK
Vertical	6039.029	59.25	-18.93	40.32	54.00	-13.68	AV
Vertical	13710.158	62.57	-7.31	55.26	74.00	-18.74	PK
Vertical	13710.158	49.82	-7.31	42.51	54.00	-11.49	AV
Vertical	20565.179	49.28	3.72	53.00	68.20	-15.20	PK
Vertical	20565.179	34.70	3.72	38.42	54.00	-15.58	AV
Horizontal	6039.175	73.93	-18.93	55.00	68.20	-13.20	PK
Horizontal	6039.175	59.97	-18.93	41.04	54.00	-12.96	AV
Horizontal	13710.121	60.53	-7.31	53.22	74.00	-20.78	PK
Horizontal	13710.121	49.10	-7.31	41.79	54.00	-12.21	AV
Horizontal	20565.052	47.17	3.72	50.89	68.20	-17.31	PK
Horizontal	20565.052	34.75	3.72	38.47	54.00	-15.53	AV
High Channel (6875 MHz)-Above 1G							
Vertical	6039.082	71.50	-18.93	52.57	68.20	-15.63	PK
Vertical	6039.082	59.67	-18.93	40.73	54.00	-13.27	AV
Vertical	13750.003	63.09	-7.31	55.78	74.00	-18.22	PK
Vertical	13750.003	49.07	-7.31	41.76	54.00	-12.24	AV
Vertical	20625.121	45.21	3.71	48.92	68.20	-19.28	PK
Vertical	20625.121	34.19	3.71	37.90	54.00	-16.10	AV
Horizontal	6039.030	72.93	-18.93	53.99	68.20	-14.21	PK

Horizontal	6039.030	59.50	-18.93	40.57	54.00	-13.43	AV
Horizontal	13750.035	62.30	-7.31	54.99	74.00	-19.01	PK
Horizontal	13750.035	49.60	-7.31	42.29	54.00	-11.71	AV
Horizontal	20625.162	46.02	3.71	49.73	68.20	-18.47	PK
Horizontal	20625.162	34.47	3.71	38.18	54.00	-15.82	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

Test Mode:	TX(U-NII-7: 6535-6865MHz) - 802.11ax40
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (6565 MHz)-Above 1G							
Vertical	4679.046	70.90	-20.24	50.66	74.00	-23.34	PK
Vertical	4679.046	59.50	-20.24	39.26	54.00	-14.74	AV
Vertical	13130.062	62.72	-7.65	55.07	74.00	-18.93	PK
Vertical	13130.062	49.64	-7.65	41.99	54.00	-12.01	AV
Vertical	19695.085	46.74	7.78	54.52	68.20	-13.68	PK
Vertical	19695.085	34.34	7.78	42.12	54.00	-11.88	AV
Horizontal	4679.009	71.08	-20.24	50.84	74.00	-23.16	PK
Horizontal	4679.009	59.02	-20.24	38.78	54.00	-15.22	AV
Horizontal	13130.180	62.47	-7.65	54.82	74.00	-19.18	PK
Horizontal	13130.180	49.08	-7.65	41.43	54.00	-12.57	AV
Horizontal	19695.057	48.61	7.78	56.39	68.20	-11.81	PK
Horizontal	19695.057	34.99	7.78	42.77	54.00	-11.23	AV
middle Channel (6685 MHz)-Above 1G							
Vertical	6039.122	72.62	-18.93	53.69	68.20	-14.51	PK
Vertical	6039.122	59.40	-18.93	40.47	54.00	-13.53	AV
Vertical	13370.051	64.02	-7.53	56.49	74.00	-17.51	PK
Vertical	13370.051	49.67	-7.53	42.14	54.00	-11.86	AV
Vertical	20055.197	45.88	8.00	53.88	68.20	-14.32	PK
Vertical	20055.197	34.85	8.00	42.85	54.00	-11.15	AV
Horizontal	6039.173	73.63	-18.93	54.69	68.20	-13.51	PK
Horizontal	6039.173	59.20	-18.93	40.27	54.00	-13.73	AV
Horizontal	13370.018	61.92	-7.53	54.39	74.00	-19.61	PK
Horizontal	13370.018	49.47	-7.53	41.94	54.00	-12.06	AV
Horizontal	20055.108	49.97	8.00	57.97	68.20	-10.23	PK
Horizontal	20055.108	34.45	8.00	42.45	54.00	-11.55	AV
High Channel (6845 MHz)-Above 1G							
Vertical	6039.185	74.30	-18.93	55.37	68.20	-12.83	PK
Vertical	6039.185	59.05	-18.93	40.11	54.00	-13.89	AV
Vertical	13690.109	64.99	-7.31	57.68	74.00	-16.32	PK
Vertical	13690.109	49.95	-7.31	42.64	54.00	-11.36	AV
Vertical	20535.199	48.57	3.72	52.29	68.20	-15.91	PK
Vertical	20535.199	34.85	3.72	38.57	54.00	-15.43	AV
Horizontal	6039.106	72.99	-18.93	54.06	68.20	-14.14	PK
Horizontal	6039.106	59.49	-18.93	40.56	54.00	-13.44	AV
Horizontal	13690.086	60.58	-7.31	53.27	74.00	-20.73	PK
Horizontal	13690.086	49.83	-7.31	42.52	54.00	-11.48	AV
Horizontal	20535.101	46.84	3.72	50.56	68.20	-17.64	PK
Horizontal	20535.101	34.34	3.72	38.06	54.00	-15.94	AV
High Channel (6885 MHz)-Above 1G							
Vertical	6039.015	72.58	-18.93	53.64	68.20	-14.56	PK
Vertical	6039.015	59.21	-18.93	40.28	54.00	-13.72	AV
Vertical	13770.064	64.32	-7.31	57.01	74.00	-16.99	PK
Vertical	13770.064	49.01	-7.31	41.70	54.00	-12.30	AV
Vertical	20655.109	49.14	3.71	52.85	68.20	-15.35	PK
Vertical	20655.109	34.05	3.71	37.76	54.00	-16.24	AV
Horizontal	6039.074	72.95	-18.93	54.02	68.20	-14.18	PK
Horizontal	6039.074	59.09	-18.93	40.16	54.00	-13.84	AV

Horizontal	13770.140	61.74	-7.31	54.43	74.00	-19.57	PK
Horizontal	13770.140	49.49	-7.31	42.18	54.00	-11.82	AV
Horizontal	20655.178	49.62	3.71	53.33	68.20	-14.87	PK
Horizontal	20655.178	34.65	3.71	38.36	54.00	-15.64	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

Test Mode:	TX(U-NII-7: 6535-6865MHz)- 802.11ax80
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (6625 MHz)-Above 1G							
Vertical	4679.189	74.36	-20.24	54.12	74.00	-19.88	PK
Vertical	4679.189	59.68	-20.24	39.44	54.00	-14.56	AV
Vertical	13250.085	63.27	-7.61	55.66	74.00	-18.34	PK
Vertical	13250.085	49.04	-7.61	41.43	54.00	-12.57	AV
Vertical	19875.155	49.59	7.78	57.37	68.20	-10.83	PK
Vertical	19875.155	34.02	7.78	41.80	54.00	-12.20	AV
Horizontal	4679.161	71.15	-20.24	50.91	74.00	-23.09	PK
Horizontal	4679.161	59.66	-20.24	39.42	54.00	-14.58	AV
Horizontal	13250.087	62.83	-7.61	55.22	74.00	-18.78	PK
Horizontal	13250.087	49.30	-7.61	41.69	54.00	-12.31	AV
Horizontal	19875.063	47.27	7.78	55.05	68.20	-13.15	PK
Horizontal	19875.063	34.32	7.78	42.10	54.00	-11.90	AV
Middle Channel (6705 MHz)-Above 1G							
Vertical	6039.167	70.98	-18.93	52.04	68.20	-16.16	PK
Vertical	6039.167	59.46	-18.93	40.53	54.00	-13.47	AV
Vertical	13410.023	62.66	-7.40	55.26	74.00	-18.74	PK
Vertical	13410.023	49.12	-7.40	41.72	54.00	-12.28	AV
Vertical	20115.128	45.84	6.35	52.19	68.20	-16.01	PK
Vertical	20115.128	34.27	6.35	40.62	54.00	-13.38	AV
Horizontal	6039.061	72.15	-18.93	53.22	68.20	-14.98	PK
Horizontal	6039.061	59.55	-18.93	40.62	54.00	-13.38	AV
Horizontal	13410.118	64.96	-7.40	57.56	74.00	-16.44	PK
Horizontal	13410.118	49.58	-7.40	42.18	54.00	-11.82	AV
Horizontal	20115.118	45.34	6.35	51.69	68.20	-16.51	PK
Horizontal	20115.118	34.45	6.35	40.80	54.00	-13.20	AV
High Channel (6785 MHz)-Above 1G							
Vertical	6039.085	73.45	-18.93	54.52	68.20	-13.68	PK
Vertical	6039.085	59.82	-18.93	40.89	54.00	-13.11	AV
Vertical	13570.007	63.65	-7.39	56.26	74.00	-17.74	PK
Vertical	13570.007	49.52	-7.39	42.13	54.00	-11.87	AV
Vertical	20355.162	49.22	5.82	55.04	68.20	-13.16	PK
Vertical	20355.162	34.90	5.82	40.72	54.00	-13.28	AV
Horizontal	6039.091	70.23	-18.93	51.30	68.20	-16.90	PK
Horizontal	6039.091	59.64	-18.93	40.70	54.00	-13.30	AV
Horizontal	13570.151	60.27	-7.39	52.88	74.00	-21.12	PK
Horizontal	13570.151	49.26	-7.39	41.87	54.00	-12.13	AV
Horizontal	20355.032	49.25	5.82	55.07	68.20	-13.13	PK
Horizontal	20355.032	34.99	5.82	40.81	54.00	-13.19	AV
High Channel (6865 MHz)-Above 1G							
Vertical	6039.097	72.16	-18.93	53.23	68.20	-14.97	PK
Vertical	6039.097	59.14	-18.93	40.21	54.00	-13.79	AV
Vertical	13730.082	60.76	-7.23	53.53	74.00	-20.47	PK
Vertical	13730.082	49.20	-7.23	41.97	54.00	-12.03	AV
Vertical	20595.142	47.70	3.51	51.21	68.20	-16.99	PK
Vertical	20595.142	34.57	3.51	38.08	54.00	-15.92	AV
Horizontal	6039.071	72.34	-18.93	53.41	68.20	-14.79	PK
Horizontal	6039.071	59.34	-18.93	40.41	54.00	-13.59	AV
Horizontal	13730.195	61.62	-7.23	54.39	74.00	-19.61	PK

Horizontal	13730.195	49.63	-7.23	42.40	54.00	-11.60	AV
Horizontal	20595.088	45.15	3.51	48.66	68.20	-19.54	PK
Horizontal	20595.088	34.34	3.51	37.85	54.00	-16.15	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

Test Mode:	TX(U-NII-7: 6535-6865MHz)- 802.11ax160
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (6665 MHz)-Above 1G							
Vertical	4679.119	73.68	-20.24	53.43	74.00	-20.57	PK
Vertical	4679.119	59.27	-20.24	39.03	54.00	-14.97	AV
Vertical	13330.129	61.68	-7.50	54.18	74.00	-19.82	PK
Vertical	13330.129	49.48	-7.50	41.98	54.00	-12.02	AV
Vertical	19995.024	47.02	8.00	55.02	68.20	-13.18	PK
Vertical	19995.024	34.32	8.00	42.32	54.00	-11.68	AV
Horizontal	4679.153	70.18	-20.24	49.94	74.00	-24.06	PK
Horizontal	4679.153	59.76	-20.24	39.52	54.00	-14.48	AV
Horizontal	13330.124	64.90	-7.50	57.40	74.00	-16.60	PK
Horizontal	13330.124	49.96	-7.50	42.46	54.00	-11.54	AV
Horizontal	19995.018	47.02	8.00	55.02	68.20	-13.18	PK
Horizontal	19995.018	34.36	8.00	42.36	54.00	-11.64	AV
High Channel (6825 MHz)-Above 1G							
Vertical	6039.171	74.69	-18.93	55.76	68.20	-12.44	PK
Vertical	6039.171	59.48	-18.93	40.55	54.00	-13.45	AV
Vertical	13650.095	60.41	-7.30	53.11	74.00	-20.89	PK
Vertical	13650.095	49.27	-7.30	41.97	54.00	-12.03	AV
Vertical	20475.035	45.09	4.27	49.36	68.20	-18.84	PK
Vertical	20475.035	34.33	4.27	38.60	54.00	-15.40	AV
Horizontal	6039.001	71.71	-18.93	52.78	68.20	-15.42	PK
Horizontal	6039.001	59.02	-18.93	40.08	54.00	-13.92	AV
Horizontal	13650.114	64.29	-7.30	56.99	74.00	-17.01	PK
Horizontal	13650.114	49.01	-7.30	41.71	54.00	-12.29	AV
Horizontal	20475.111	49.20	4.27	53.47	68.20	-14.73	PK
Horizontal	20475.111	34.33	4.27	38.60	54.00	-15.40	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

U-NII-8: 6885-7115MHz

Test Mode:	TX(U-NII-8: 6885-7115MHz) - 802.11ax20
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (6895 MHz)-Above 1G							
Vertical	4683.678	70.62	-20.23	50.39	74.00	-23.61	PK
Vertical	4683.678	59.14	-20.23	38.90	54.00	-15.10	AV
Vertical	13790.004	61.11	-7.23	53.88	68.20	-14.32	PK
Vertical	13790.004	49.82	-7.23	42.59	54.00	-11.41	AV
Vertical	20685.026	47.63	3.51	51.14	68.20	-17.06	PK
Vertical	20685.026	34.77	3.51	38.28	54.00	-15.72	AV
Horizontal	4679.196	72.78	-20.73	52.05	74.00	-21.95	PK
Horizontal	4679.196	59.11	-20.73	38.38	54.00	-15.62	AV
Horizontal	13790.197	63.20	-7.23	55.97	68.20	-12.23	PK
Horizontal	13790.197	49.00	-7.23	41.77	54.00	-12.23	AV
Horizontal	20685.177	48.59	3.51	52.10	68.20	-16.10	PK
Horizontal	20685.177	34.07	3.51	37.58	54.00	-16.42	AV
middle Channel (6995 MHz)-Above 1G							
Vertical	4592.150	74.04	-20.42	53.62	74.00	-20.38	PK
Vertical	4592.150	59.72	-20.42	39.30	54.00	-14.70	AV
Vertical	13990.101	61.85	-6.83	55.02	68.20	-13.18	PK
Vertical	13990.101	49.93	-6.83	43.10	54.00	-10.90	AV
Vertical	20985.055	58.16	-1.95	56.21	68.20	-11.99	PK
Vertical	20985.055	44.94	-1.95	42.99	54.00	-11.01	AV
Horizontal	4592.142	74.87	-20.42	54.45	74.00	-19.55	PK
Horizontal	4592.142	59.59	-20.42	39.17	54.00	-14.83	AV
Horizontal	13990.152	61.25	-6.83	54.42	68.20	-13.78	PK
Horizontal	13990.152	49.01	-6.83	42.18	54.00	-11.82	AV
Horizontal	20985.064	57.75	-1.95	55.80	68.20	-12.40	PK
Horizontal	20985.064	44.60	-1.95	42.65	54.00	-11.35	AV
High Channel (7115 MHz)-Above 1G							
Vertical	4592.139	74.33	-20.42	53.91	68.20	-14.29	PK
Vertical	4592.139	59.00	-20.42	38.59	54.00	-15.41	AV
Vertical	14230.100	63.59	-7.12	56.47	74.00	-17.53	PK
Vertical	14230.100	49.30	-7.12	42.18	54.00	-11.82	AV
Vertical	21345.092	58.29	-1.91	56.38	68.20	-11.82	PK
Vertical	21345.092	44.03	-1.91	42.12	54.00	-11.88	AV
Horizontal	6039.029	70.60	-18.93	51.66	68.20	-16.54	PK
Horizontal	6039.029	59.09	-18.93	40.16	54.00	-13.84	AV
Horizontal	14230.006	63.42	-7.12	56.30	74.00	-17.70	PK
Horizontal	14230.006	49.45	-7.12	42.33	54.00	-11.67	AV
Horizontal	21345.142	58.07	-1.91	56.16	68.20	-12.04	PK
Horizontal	21345.142	44.72	-1.91	42.81	54.00	-11.19	AV

Note: The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

Test Mode:	TX(U-NII-8: 6885-7115MHz) - 802.11ax40
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (6925 MHz)-Above 1G							
Vertical	4679.013	73.98	-20.24	53.73	74.00	-20.27	PK
Vertical	4679.013	59.30	-20.24	39.06	54.00	-14.94	AV
Vertical	13850.075	63.91	-7.23	56.68	74.00	-17.32	PK
Vertical	13850.075	49.86	-7.23	42.63	54.00	-11.37	AV
Vertical	20775.157	48.35	3.51	51.86	68.20	-16.34	PK
Vertical	20775.157	34.64	3.51	38.15	54.00	-15.85	AV
Horizontal	4679.082	70.24	-20.24	50.00	74.00	-24.00	PK
Horizontal	4679.082	59.45	-20.24	39.20	54.00	-14.80	AV
Horizontal	13850.048	60.30	-7.23	53.07	74.00	-20.93	PK
Horizontal	13850.048	49.63	-7.23	42.40	54.00	-11.60	AV
Horizontal	20775.127	49.51	3.51	53.02	68.20	-15.18	PK
Horizontal	20775.127	34.84	3.51	38.35	54.00	-15.65	AV
middle Channel (6965 MHz)-Above 1G							
Vertical	6039.072	72.26	-18.93	53.33	68.20	-14.87	PK
Vertical	6039.072	59.40	-18.93	40.47	54.00	-13.53	AV
Vertical	13930.196	61.65	-6.83	54.82	74.00	-19.18	PK
Vertical	13930.196	49.59	-6.83	42.76	54.00	-11.24	AV
Vertical	20895.035	57.02	-1.95	55.07	68.20	-13.13	PK
Vertical	20895.035	44.14	-1.95	42.19	54.00	-11.81	AV
Horizontal	6039.104	70.11	-18.93	51.18	68.20	-17.02	PK
Horizontal	6039.104	59.69	-18.93	40.76	54.00	-13.24	AV
Horizontal	13930.180	64.28	-6.83	57.45	74.00	-16.55	PK
Horizontal	13930.180	49.19	-6.83	42.36	54.00	-11.64	AV
Horizontal	20895.099	58.24	-1.95	56.29	68.20	-11.91	PK
Horizontal	20895.099	44.36	-1.95	42.41	54.00	-11.59	AV
High Channel (7085 MHz)-Above 1G							
Vertical	6039.068	73.00	-18.93	54.06	68.20	-14.14	PK
Vertical	6039.068	59.35	-18.93	40.42	54.00	-13.58	AV
Vertical	14170.193	61.63	-7.12	54.51	74.00	-19.49	PK
Vertical	14170.193	49.55	-7.12	42.43	54.00	-11.57	AV
Vertical	21255.012	57.76	-1.91	55.85	68.20	-12.35	PK
Vertical	21255.012	44.41	-1.91	42.50	54.00	-11.50	AV
Horizontal	6039.022	73.24	-18.93	54.31	68.20	-13.89	PK
Horizontal	6039.022	59.40	-18.93	40.47	54.00	-13.53	AV
Horizontal	14170.099	64.72	-7.12	57.60	74.00	-16.40	PK
Horizontal	14170.099	49.81	-7.12	42.69	54.00	-11.31	AV
Horizontal	21255.096	56.17	-1.91	54.26	68.20	-13.94	PK
Horizontal	21255.096	44.28	-1.91	42.37	54.00	-11.63	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

Test Mode:	TX(U-NII-8: 6885-7115MHz) - 802.11ax80
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (6945 MHz)-Above 1G							
Vertical	4679.034	72.79	-20.24	52.54	74.00	-21.46	PK
Vertical	4679.034	59.33	-20.24	39.09	54.00	-14.91	AV
Vertical	13890.148	63.92	-7.23	56.69	74.00	-17.31	PK
Vertical	13890.148	49.52	-7.23	42.29	54.00	-11.71	AV
Vertical	20835.196	46.06	3.51	49.57	68.20	-18.63	PK
Vertical	20835.196	34.78	3.51	38.29	54.00	-15.71	AV
Horizontal	4679.115	72.10	-20.24	51.86	74.00	-22.14	PK
Horizontal	4679.115	59.66	-20.24	39.42	54.00	-14.58	AV
Horizontal	13890.016	60.67	-7.23	53.44	74.00	-20.56	PK
Horizontal	13890.016	49.40	-7.23	42.17	54.00	-11.83	AV
Horizontal	20835.060	46.04	3.51	49.55	68.20	-18.65	PK
Horizontal	20835.060	34.52	3.51	38.03	54.00	-15.97	AV
High Channel (7025 MHz)-Above 1G							
Vertical	6039.037	73.04	-18.93	54.11	68.20	-14.09	PK
Vertical	6039.037	59.89	-18.93	40.96	54.00	-13.04	AV
Vertical	14050.192	64.84	-6.83	58.01	74.00	-15.99	PK
Vertical	14050.192	49.51	-6.83	42.68	54.00	-11.32	AV
Vertical	21075.066	56.14	-1.95	54.19	68.20	-14.01	PK
Vertical	21075.066	44.10	-1.95	42.15	54.00	-11.85	AV
Horizontal	6039.179	73.85	-18.93	54.92	68.20	-13.28	PK
Horizontal	6039.179	59.50	-18.93	40.57	54.00	-13.43	AV
Horizontal	14050.060	60.72	-6.83	53.89	74.00	-20.11	PK
Horizontal	14050.060	49.99	-6.83	43.16	54.00	-10.84	AV
Horizontal	21075.154	56.34	-1.95	54.39	68.20	-13.81	PK
Horizontal	21075.154	44.76	-1.95	42.81	54.00	-11.19	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

Test Mode:	TX(U-NII-8: 6885-7115MHz) - 802.11ax160
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (6985 MHz)-Above 1G							
Vertical	4679.102	74.11	-20.24	53.87	74.00	-20.13	PK
Vertical	4679.102	59.17	-20.24	38.93	54.00	-15.07	AV
Vertical	13970.078	62.63	-6.83	55.80	74.00	-18.20	PK
Vertical	13970.078	49.53	-6.83	42.70	54.00	-11.30	AV
Vertical	20955.116	56.40	-1.95	54.45	68.20	-13.75	PK
Vertical	20955.116	44.01	-1.95	42.06	54.00	-11.94	AV
Horizontal	4679.149	74.34	-20.24	54.10	74.00	-19.90	PK
Horizontal	4679.149	59.47	-20.24	39.23	54.00	-14.77	AV
Horizontal	13970.112	64.48	-6.83	57.65	74.00	-16.35	PK
Horizontal	13970.112	49.24	-6.83	42.41	54.00	-11.59	AV
Horizontal	20955.119	59.72	-1.95	57.77	68.20	-10.43	PK
Horizontal	20955.119	44.03	-1.95	42.08	54.00	-11.92	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode is MIMO Mode.

- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11AX 20

Frequency(MHz): 5955

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
5892.753	V	47.99	68.20
5925.025	V	44.96	68.20

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
5902.375	H	47.28	68.20
5925.001	H	46.24	68.20

Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor.
(3) Correct Factor= Ant_F + Cab_L – Preamp
(4) Test Mode is MIMO Mode.

U-NII - 5

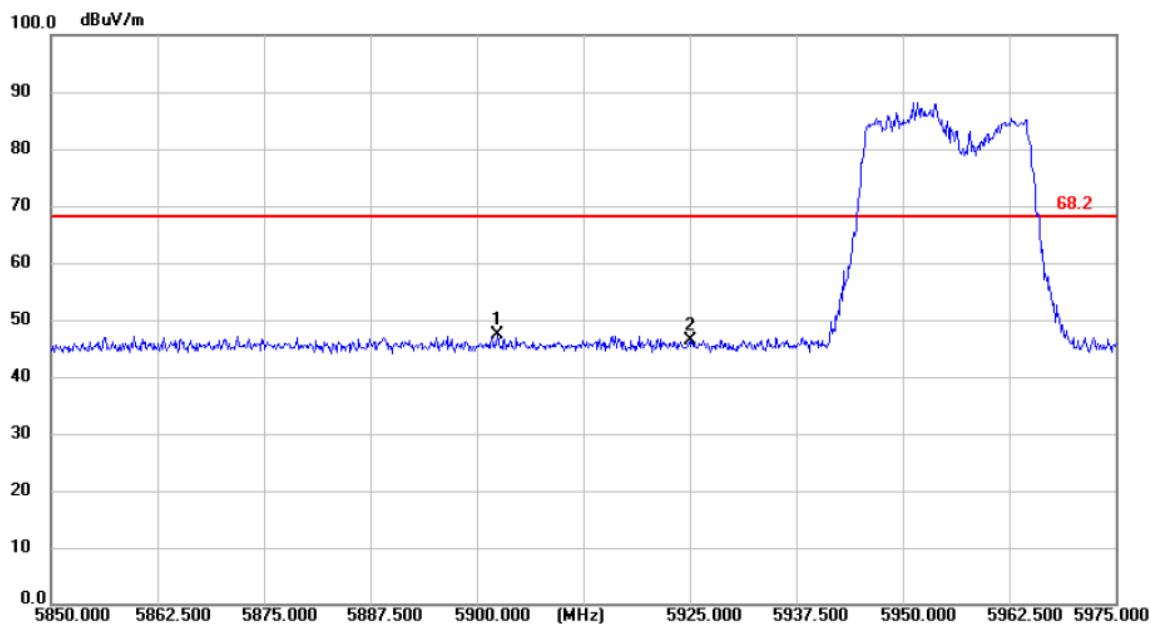
Test Model Undesirable radiated Spurious Emission in Restricted Band (5925-6425MHz)

☒ 802.11AX 20

☒ 5955

Ant.Pol

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U-NII - 5

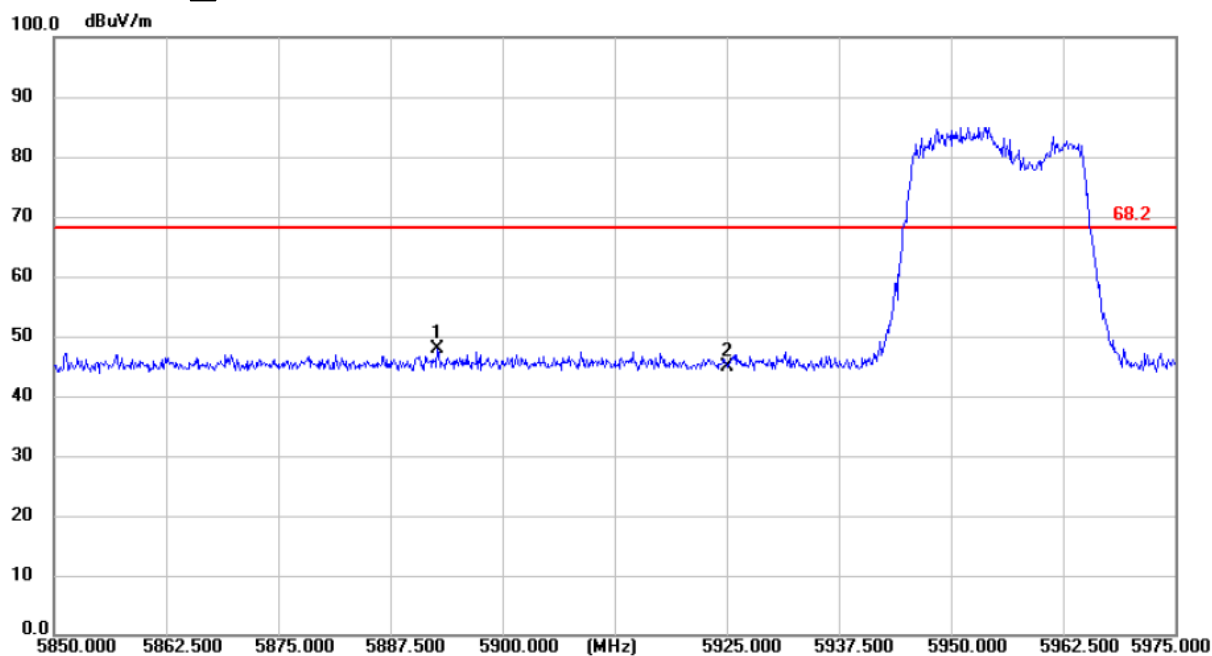
Test Model Undesirable radiated Spurious Emission in Restricted Band (5925-6425MHz)

☒ 802.11AX 20

☒ 5955

Ant.Pol

V



- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11AX 40 Frequency(MHz): 5965

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
5876.708	V	51.05	68.20
5925.004	V	45.26	68.20

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
5911.803	H	47.63	68.20
5925.009	H	45.18	68.20

Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) Test Mode is MIMO Mode.

U-NII - 5

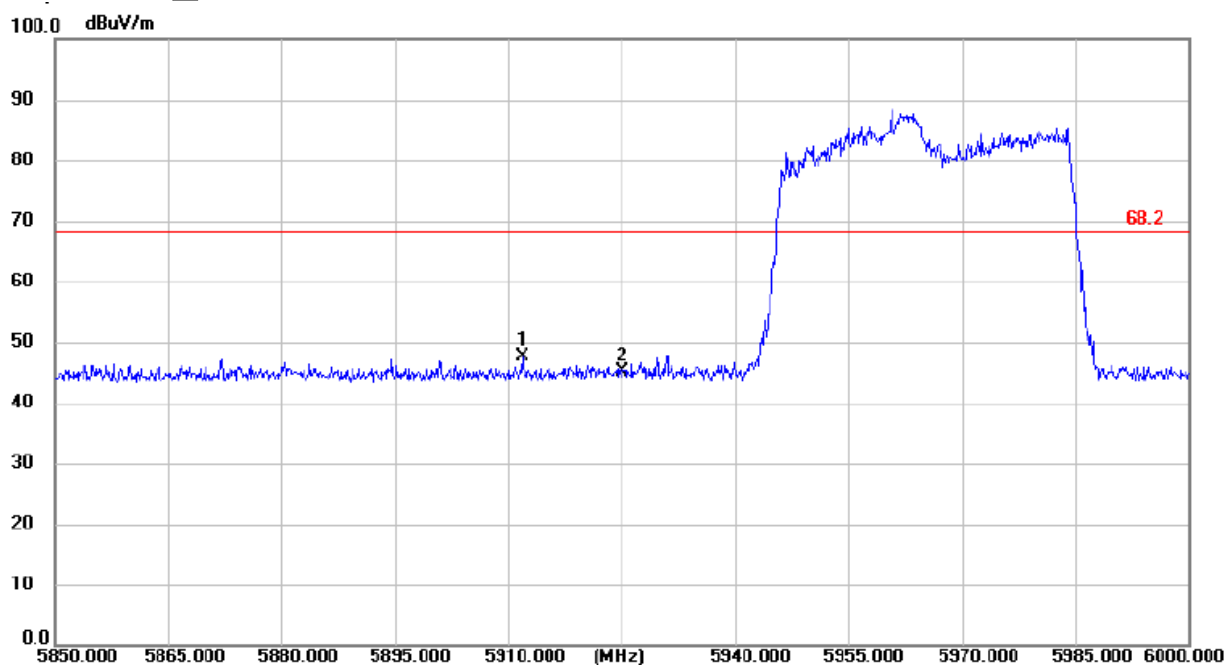
Test Model Undesirable radiated Spurious Emission in Restricted Band (5925-6425MHz)

☒ 802.11AX 40

☒ 5965

Ant.Pol

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U-NII - 5

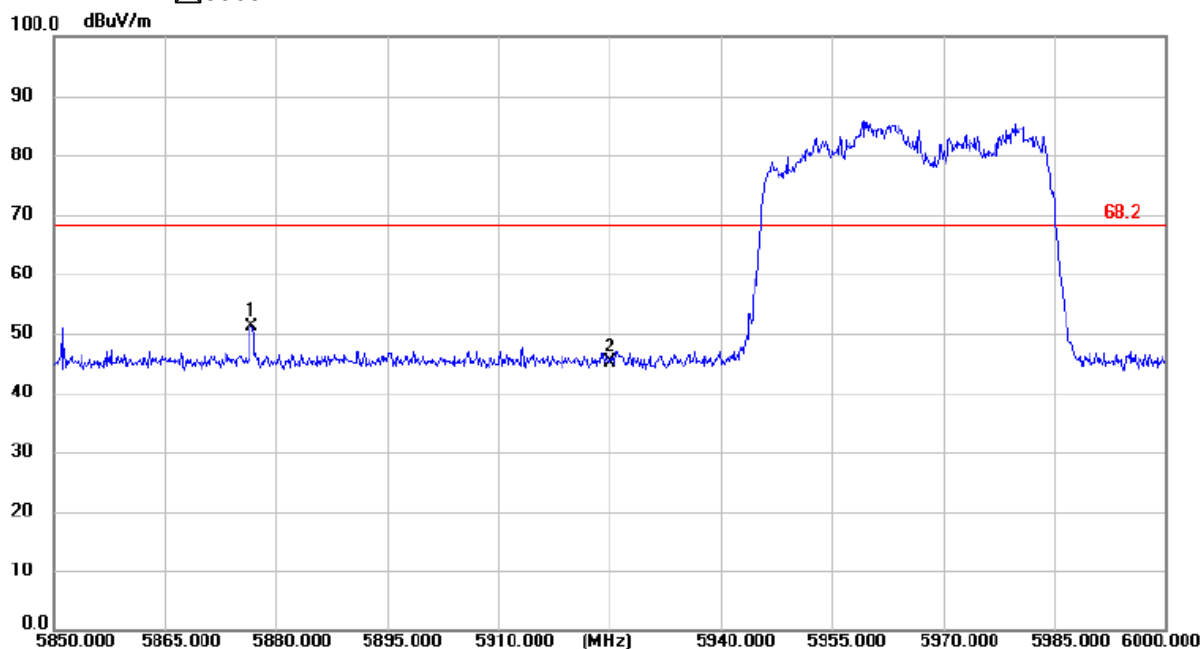
Test Model Undesirable radiated Spurious Emission in Restricted Band (5925-6425MHz)

☒ 802.11AX 40

☒ 5965

Ant.Pol

V



- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11AX 80 Frequency(MHz): 5985

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
5856.202	V	47.24	68.20
5925.006	V	45.01	68.20

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
5862.205	H	47.17	68.20
5925.003	H	45.28	68.20

Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) Test Mode is MIMO Mode.

U-NII - 5

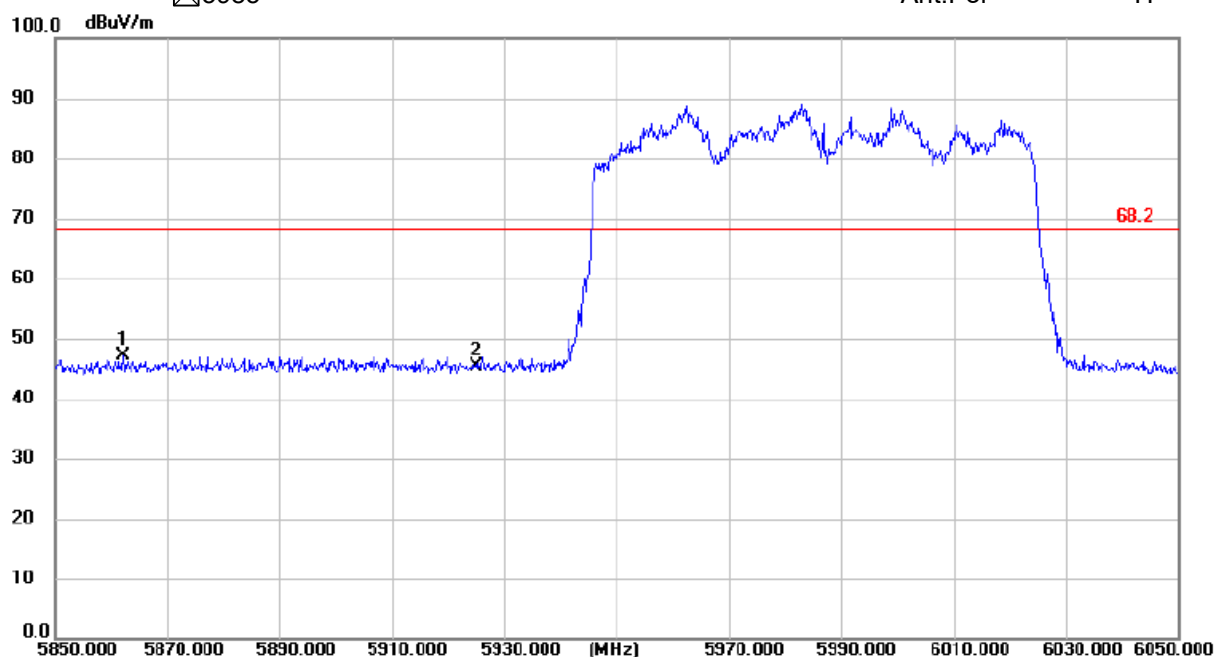
Test Model Undesirable radiated Spurious Emission in Restricted Band (5925-6425MHz)

☒ 802.11AX 80

☒ 5985

Ant.Pol

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U-NII - 5

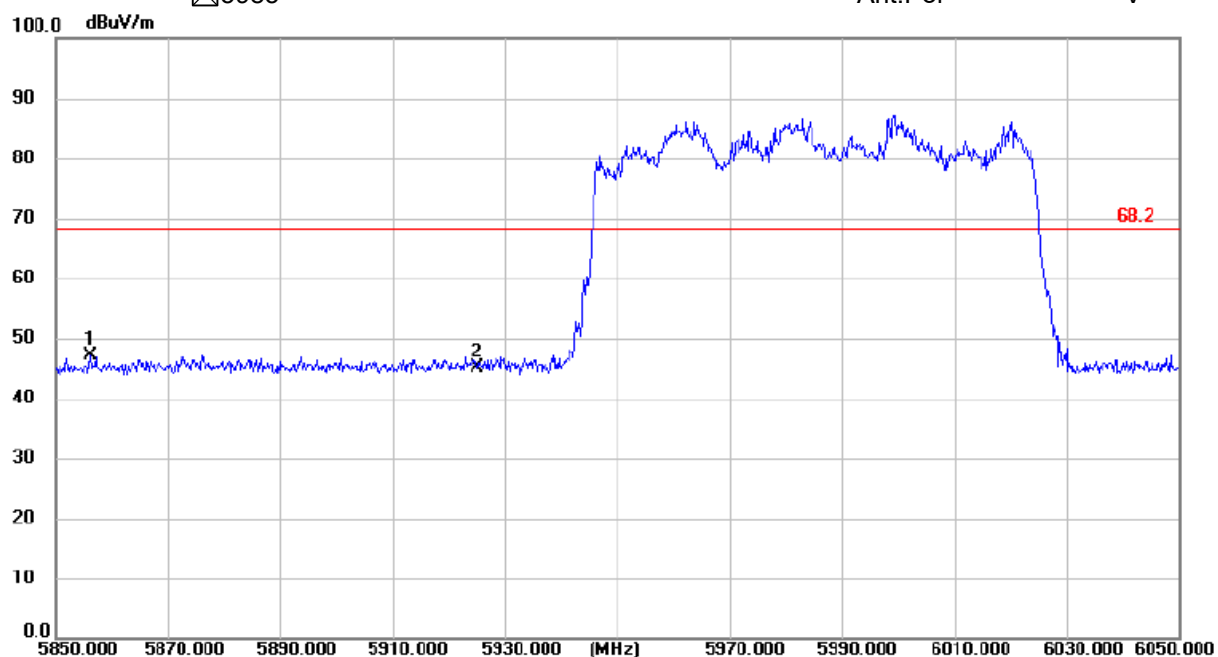
Test Model Undesirable radiated Spurious Emission in Restricted Band (5925-6425MHz)

☒ 802.11AX 80

☒ 5985

Ant.Pol

V



- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11AX 160 Frequency(MHz): 6025

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
5907.007	V	47.08	68.20
5925.005	V	44.65	68.20

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
5864.403	H	46.81	68.20
5925.009	H	44.30	68.20

Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) Test Mode is MIMO Mode.

U-NII - 5

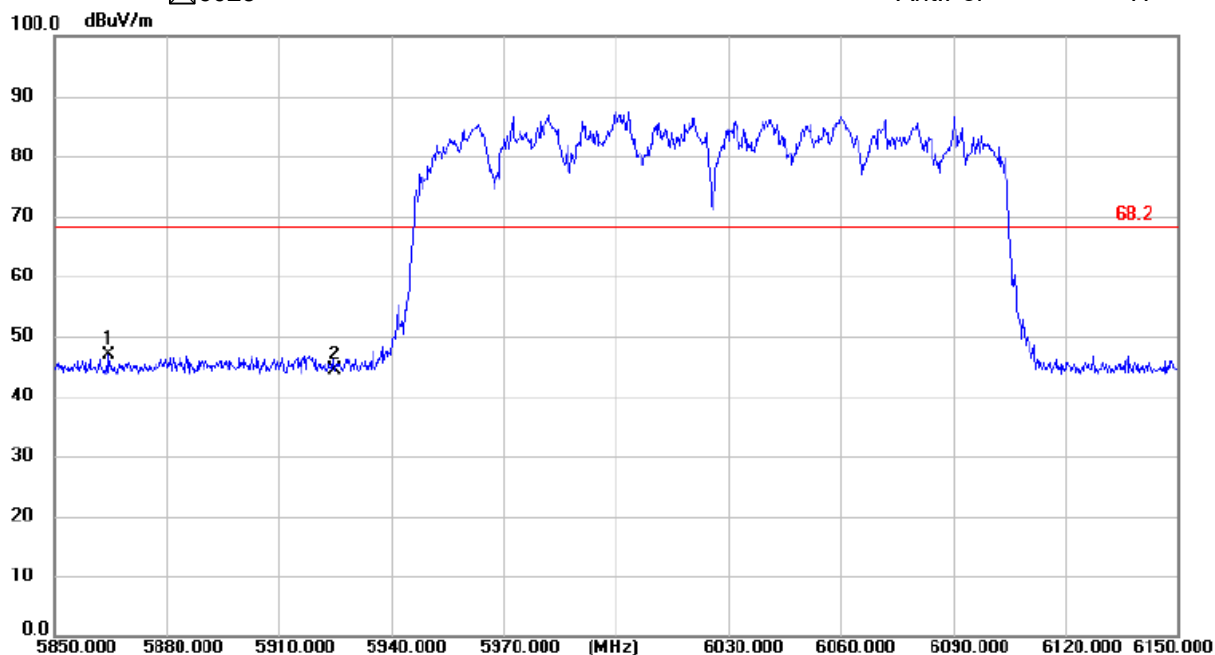
Test Model Undesirable radiated Spurious Emission in Restricted Band (5925-6425MHz)

☒ 802.11AX 160

☒ 6025

Ant.Pol

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U-NII - 5

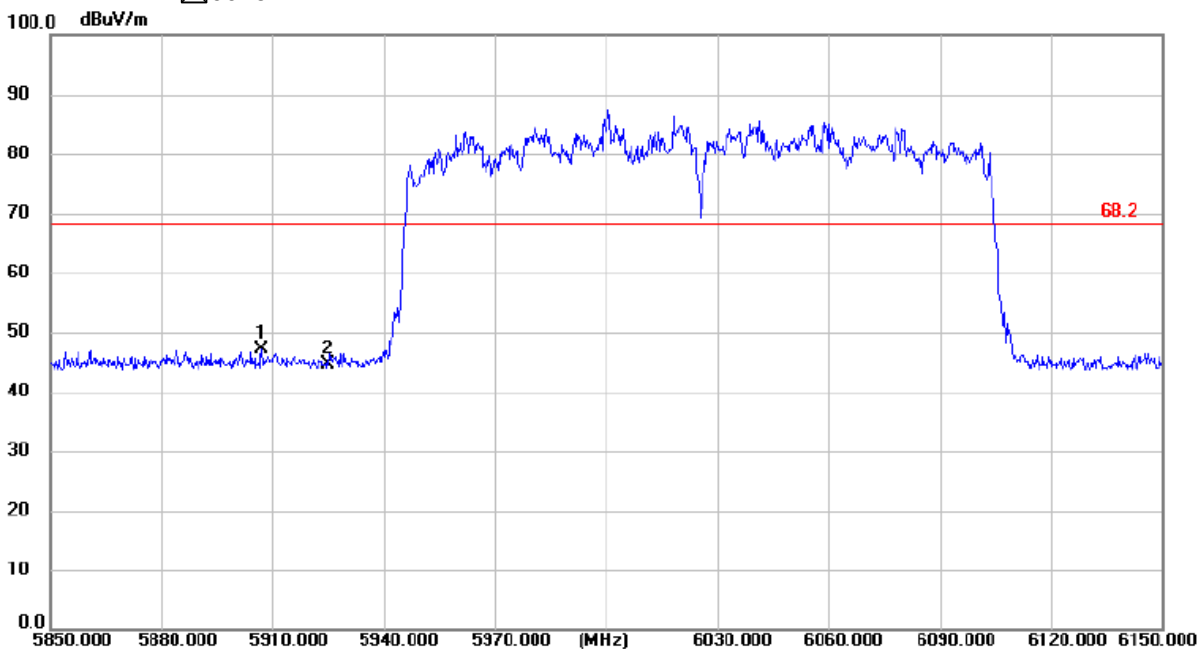
Test Model Undesirable radiated Spurious Emission in Restricted Band (5925-6425MHz)

☒ 802.11AX 160

☒ 6025

Ant.Pol

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- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11AX 20 Frequency(MHz): 7115

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
7125.006	V	67.65	68.20
7160.003	V	49.77	68.20

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
7125.008	H	67.23	68.20
7228.405	H	49.26	68.20

Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) Test Mode is MIMO Mode.

U-NII - 8

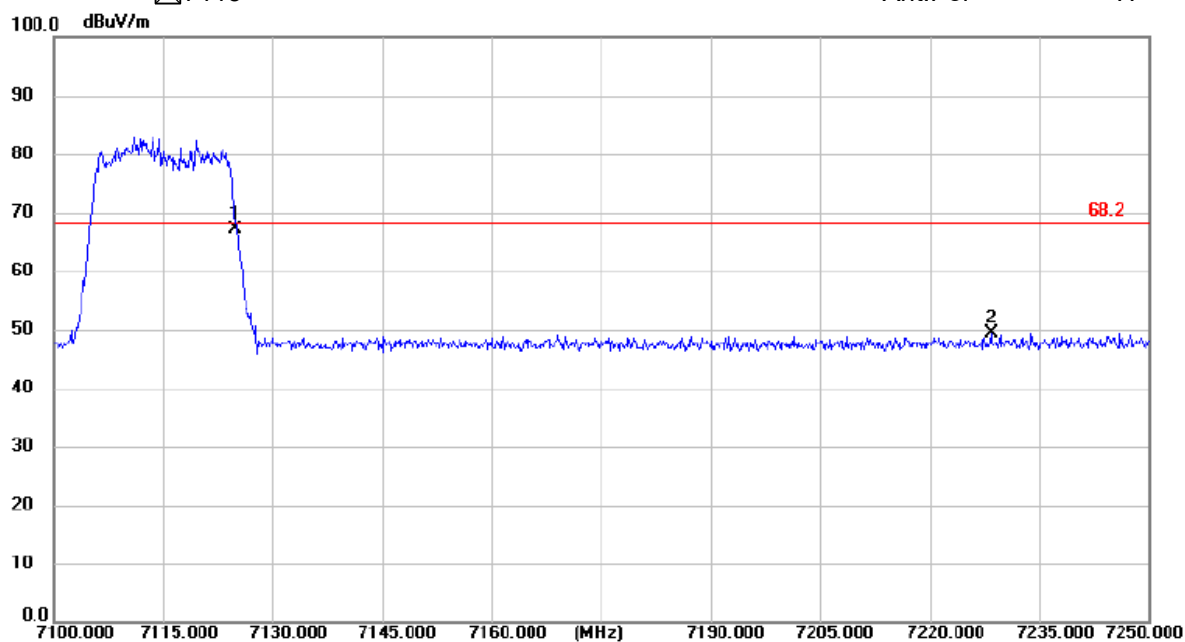
Test Model Undesirable radiated Spurious Emission in Restricted Band (6885-7115MHz)

☒ 802.11AX 20

☒ 7115

Ant.Pol

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U-NII - 8

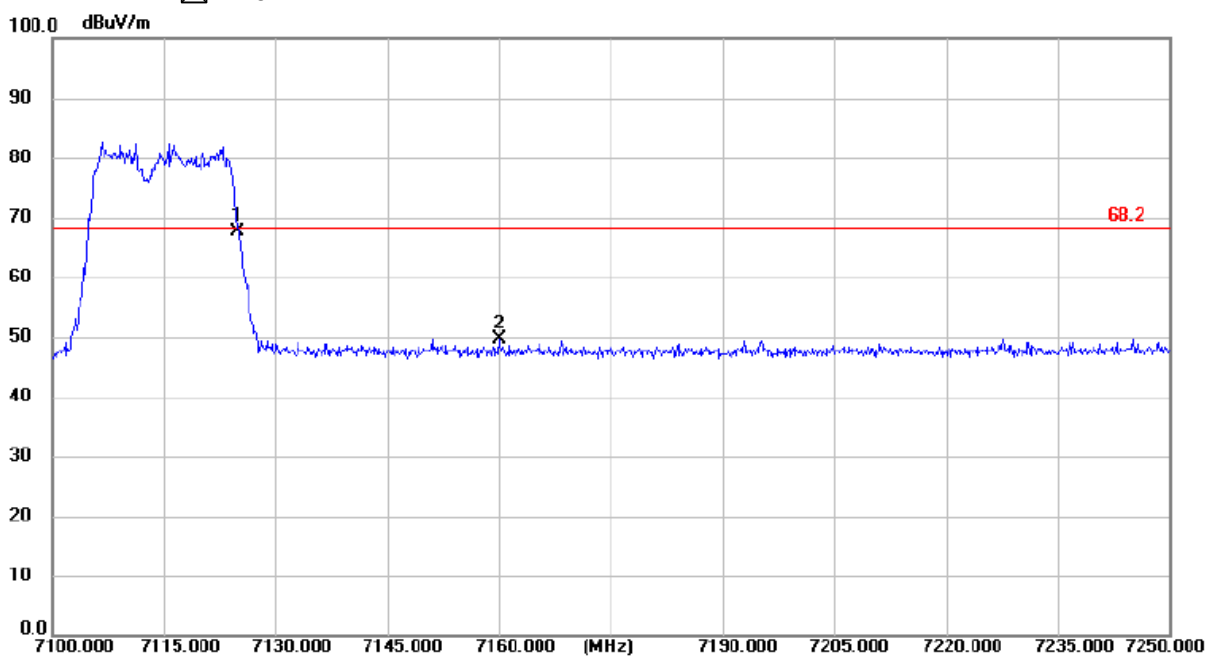
Test Model Undesirable radiated Spurious Emission in Restricted Band (6885-7115MHz)

☒ 802.11AX 20

☒ 7115

Ant.Pol

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- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11AX 40

Frequency(MHz): 7085

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
7125.007	V	47.46	68.20
7212.406	V	49.69	68.20

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
7125.003	H	47.24	68.20
7199.007	H	49.61	68.20

Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4)Test Mode is MIMO Mode.

U-NII - 8

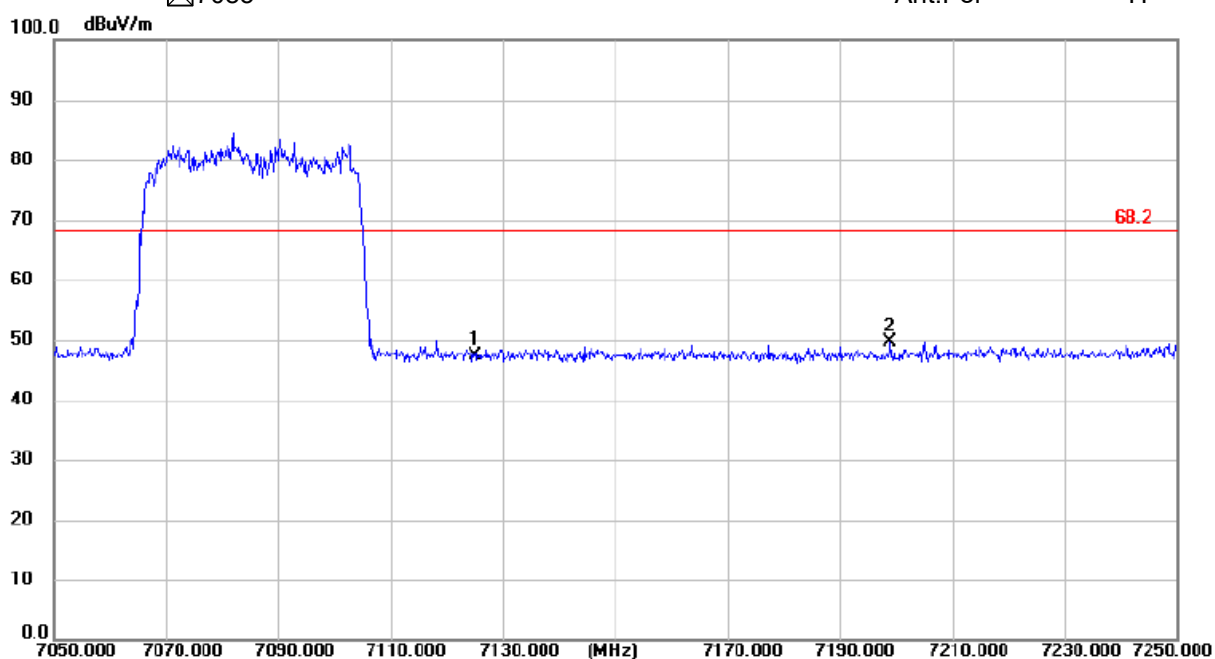
Test Model Undesirable radiated Spurious Emission in Restricted Band (6885-7115MHz)

☒ 802.11AX 40

☒ 7085

Ant.Pol

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U-NII - 8

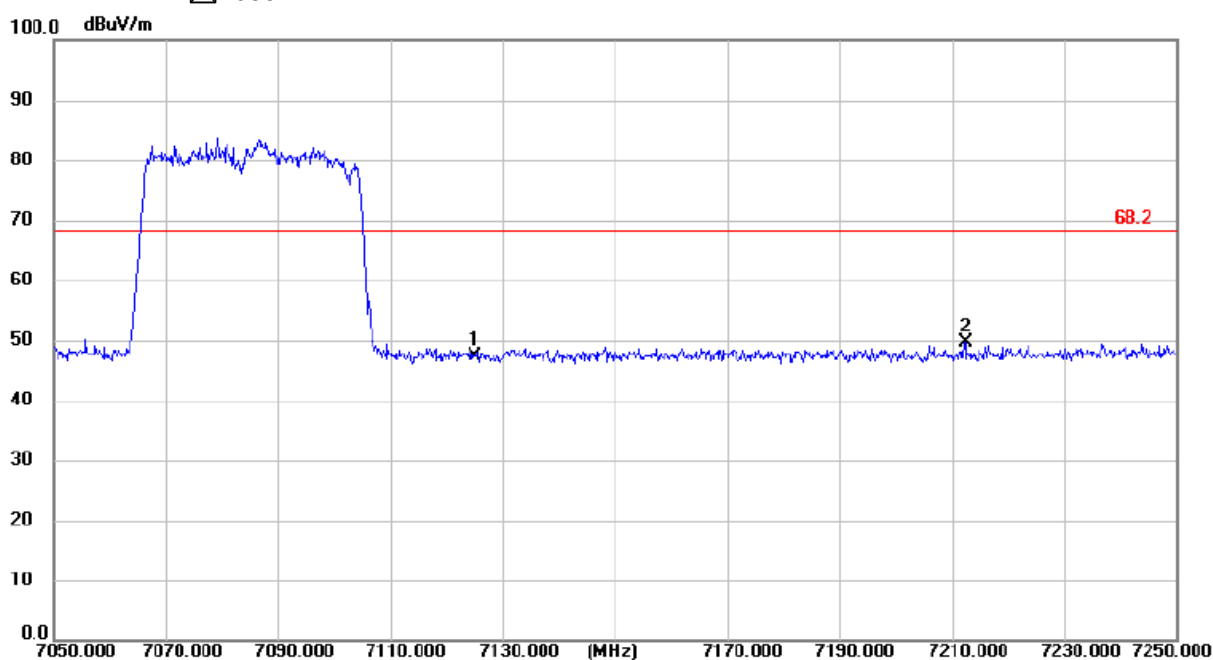
Test Model Undesirable radiated Spurious Emission in Restricted Band (6885-7115MHz)

☒ 802.11AX 40

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Ant.Pol

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- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11AX 80

Frequency(MHz): 7025

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
7085.008	V	48.06	68.20
7153.205	V	49.09	68.20

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
7085.007	H	47.60	68.20
7135.203	H	49.67	68.20

Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) Test Mode is MIMO Mode.

U-NII - 8

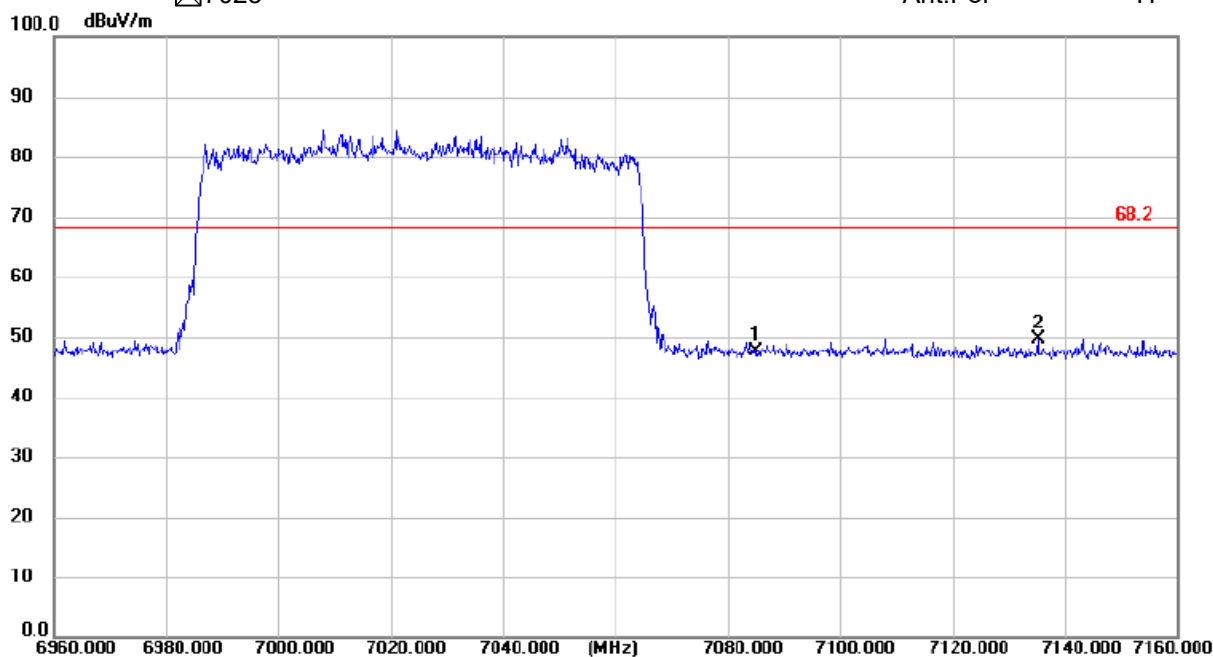
Test Model Undesirable radiated Spurious Emission in Restricted Band (6885-7115MHz)

☒ 802.11AX 80

☒ 7025

Ant.Pol

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U-NII - 8

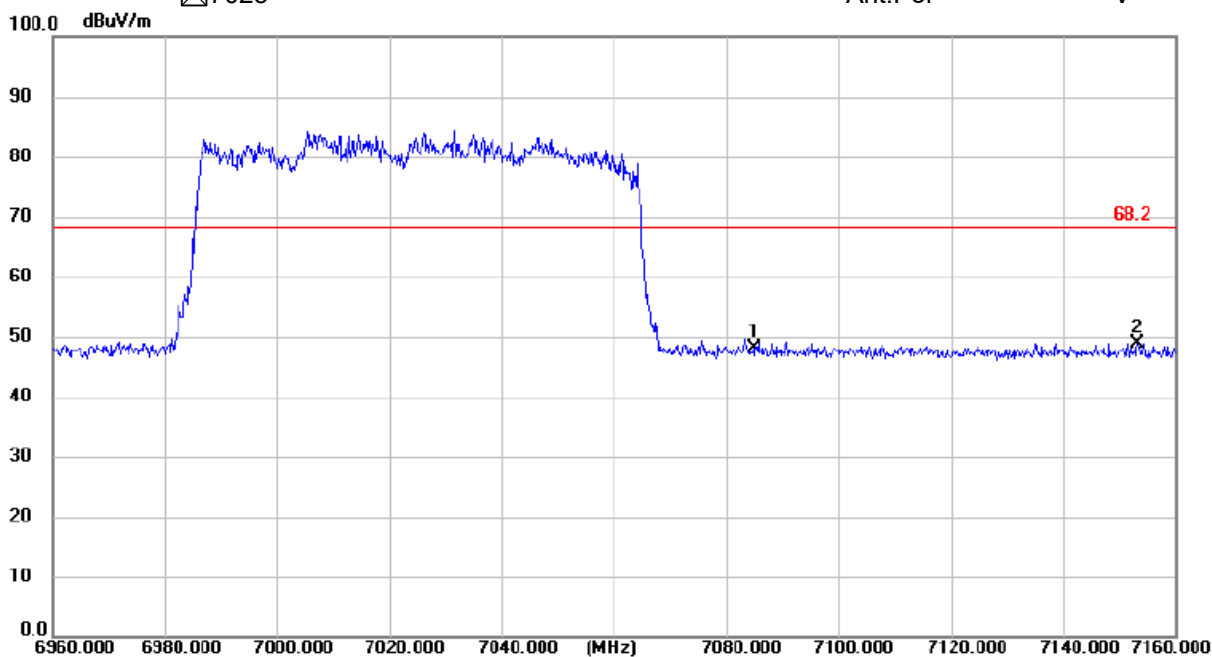
Test Model Undesirable radiated Spurious Emission in Restricted Band (6885-7115MHz)

☒ 802.11AX 80

☒ 7025

Ant.Pol

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- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge

Test mode: 802.11AX 160 Frequency(MHz): 6985

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
7125.003	V	46.47	68.20
7172.861	V	48.92	68.20

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)
7125.004	H	46.26	68.20
7188.828	H	48.54	68.20

Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor.
(3) Correct Factor= Ant_F + Cab_L - Preamp
(4) Test Mode is MIMO Mode.

U-NII - 8

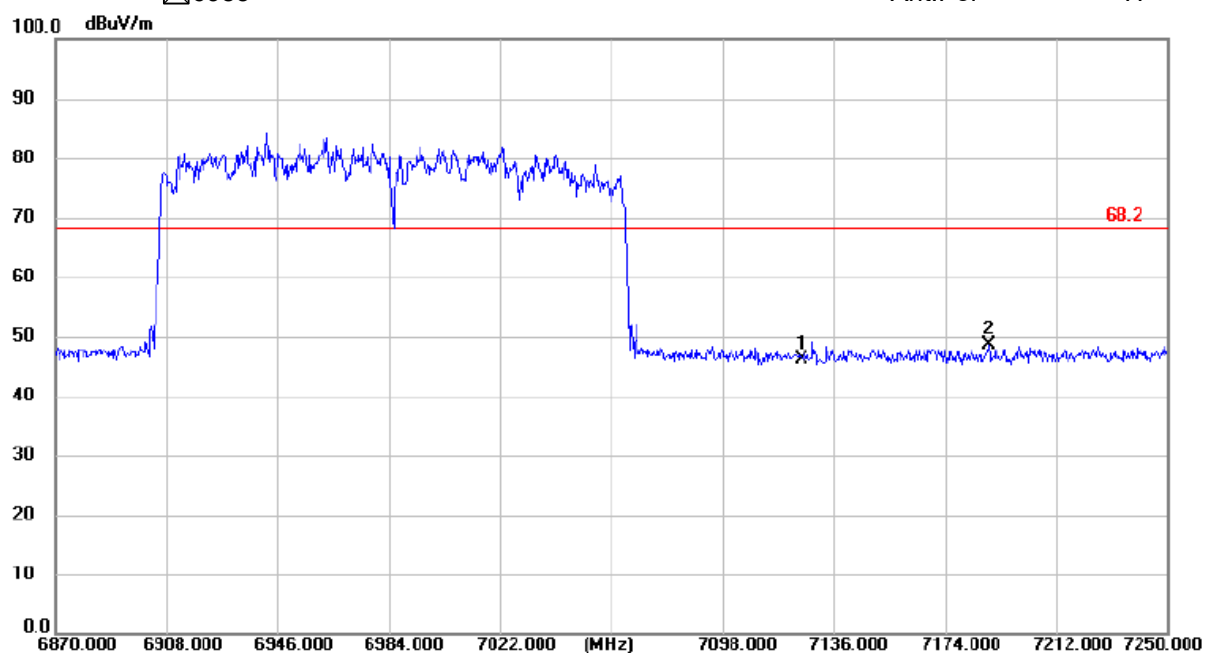
Test Model Undesirable radiated Spurious Emission in Restricted Band (6885-7115MHz)

☒ 802.11AX 160

☒ 6985

Ant.Pol

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U-NII - 8

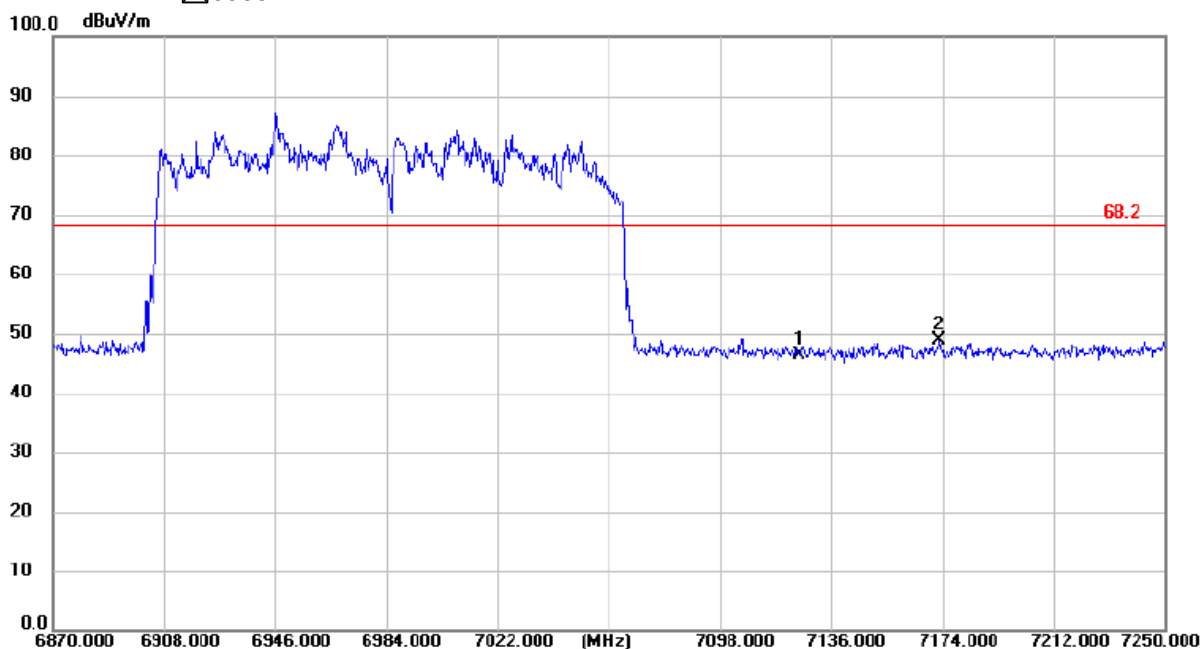
Test Model Undesirable radiated Spurious Emission in Restricted Band (6885-7115MHz)

☒ 802.11AX 160

☒ 6985

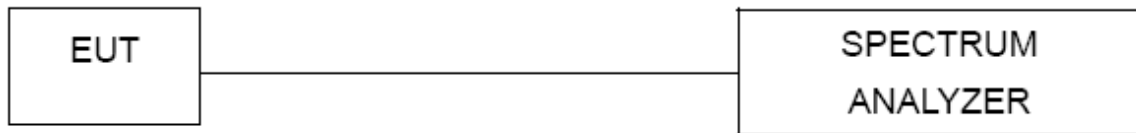
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8. Power Spectral Density Test

8.1 Block Diagram Of Test Setup



8.2 Limit

For a standard power access point (6SD) and fixed client (6FC) device operating in the 5.925–6.425 GHz and 6.525–6.875 GHz bands, the maximum power spectral density must not exceed 23 dBm e.i.r.p in any 1-megahertz band. In addition, the maximum e.i.r.p. over the frequency band of operation must not exceed 36 dBm. For outdoor devices, 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).

For an indoor access point (6ID) operating in the 5.925–7.125 GHz band, the maximum power spectral density must not exceed 5 dBm e.i.r.p. in any 1-megahertz band. In addition, the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm.

For a subordinate device (6PP) operating under the control of an indoor access point in the 5.925–7.125 GHz band, the maximum power spectral density must not exceed 5 dBm e.i.r.p in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm.

For client devices(6FX), except for fixed client devices as defined in this subpart, operating under the control of a standard power access point in 5.925–6.425 GHz and 6.525–6.875 GHz bands, the maximum power spectral density must not exceed 17 dBm e.i.r.p. in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm and the device must limit its power to no more than 6 dB below its associated standard power access point's authorized transmit power.

For client devices(6XD) operating under the control of an indoor access point in the 5.925–7.125 GHz bands, the maximum power spectral density must not exceed –1 dBm e.i.r.p. in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 24 dBm.

8.3 Test Procedure

For devices operating in the bands 5.925–7.125 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725–5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

- a) Set $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3$ RBW.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10\log(1\text{MHz}/RBW)$ to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

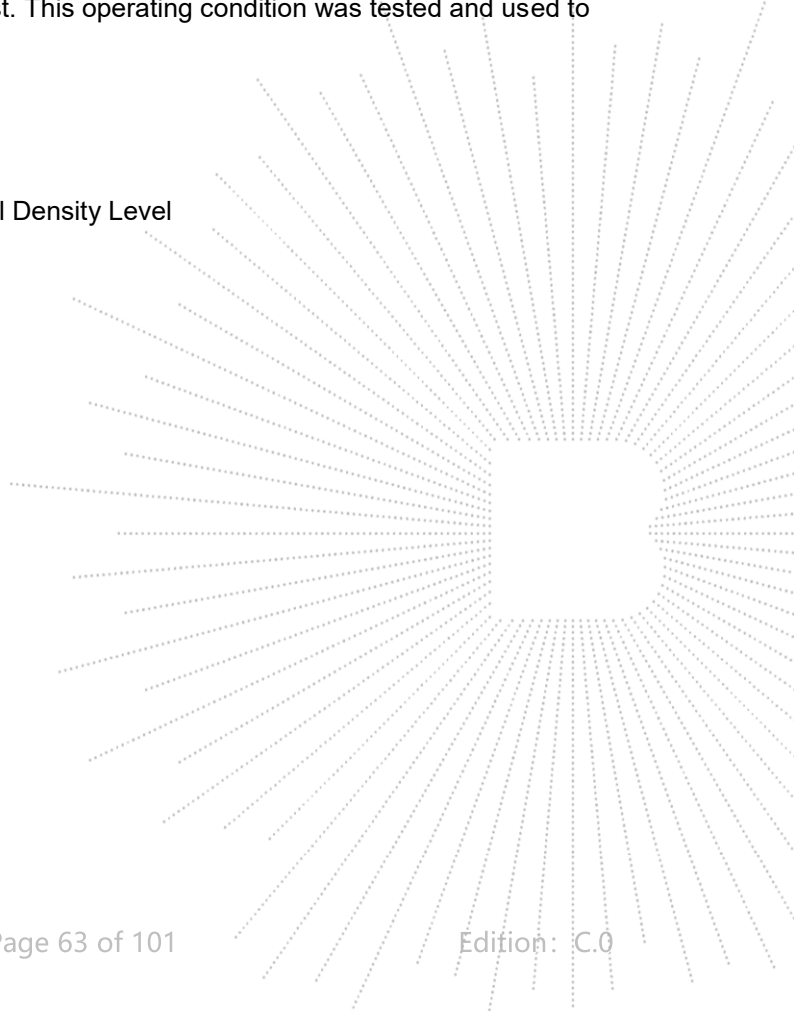
Note: As a practical matter, it is recommended to use reduced RBW of 100 KHz for the sections 5.c) and 5.d) above, since RBW=100 KHz is available on nearly all spectrum analyzers.

8.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

8.5 Test Result

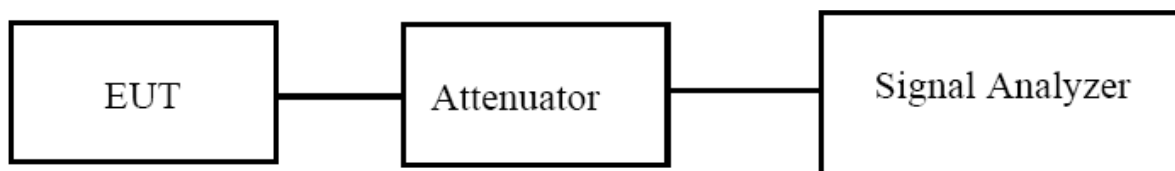
Please refer to Appendix 5: Maximum Power Spectral Density Level
Test Result: Pass



Condition	Mode	Frequency (MHz)	eirp PSD (dBm)			Limit (dBm)	Verdict
			ANT A	ANT B	Total		
NVNT	ax20	5955	-5.51	-7.22	-3.27	-1	Pass
NVNT	ax20	6175	-5.45	-6.16	-2.78	-1	Pass
NVNT	ax20	6415	-5.22	-6.43	-2.77	-1	Pass
NVNT	ax20	6435	-6.17	-6.55	-3.35	-1	Pass
NVNT	ax20	6475	-6.33	-6.65	-3.48	-1	Pass
NVNT	ax20	6515	-5.83	-6.28	-3.04	-1	Pass
NVNT	ax20	6535	-5.59	-6.68	-3.09	-1	Pass
NVNT	ax20	6695	-5.28	-6.93	-3.02	-1	Pass
NVNT	ax20	6855	-6.24	-7.19	-3.68	-1	Pass
NVNT	ax20	6875	-5.83	-6.86	-3.30	-1	Pass
NVNT	ax20	6895	-5.99	-6.52	-3.24	-1	Pass
NVNT	ax20	6995	-5.8	-6.63	-3.18	-1	Pass
NVNT	ax20	7115	-6.26	-7.08	-3.64	-1	Pass
NVNT	ax40	5965	-7.15	-7.13	-4.13	-1	Pass
NVNT	ax40	6165	-5.26	-6.18	-2.69	-1	Pass
NVNT	ax40	6405	-5.89	-6.83	-3.32	-1	Pass
NVNT	ax40	6445	-5.49	-6.3	-2.87	-1	Pass
NVNT	ax40	6485	-5.64	-6.03	-2.82	-1	Pass
NVNT	ax40	6525	-5.95	-6.34	-3.13	-1	Pass
NVNT	ax40	6565	-5.79	-5.55	-2.66	-1	Pass
NVNT	ax40	6685	-5.24	-6.46	-2.80	-1	Pass
NVNT	ax40	6845	-6.47	-6.27	-3.36	-1	Pass
NVNT	ax40	6885	-5.91	-7.45	-3.60	-1	Pass
NVNT	ax40	6925	-6.33	-6.43	-3.37	-1	Pass
NVNT	ax40	6965	-6.24	-6.56	-3.39	-1	Pass
NVNT	ax40	7085	-5.97	-6.02	-2.98	-1	Pass
NVNT	ax80	5985	-7.44	-7.22	-4.32	-1	Pass
NVNT	ax80	6145	-5.16	-6.49	-2.76	-1	Pass
NVNT	ax80	6385	-6.64	-7.06	-3.83	-1	Pass
NVNT	ax80	6465	-6.1	-6.51	-3.29	-1	Pass
NVNT	ax80	6545	-6.5	-6.31	-3.39	-1	Pass
NVNT	ax80	6625	-6.47	-6.54	-3.49	-1	Pass
NVNT	ax80	6705	-6.1	-6.86	-3.45	-1	Pass
NVNT	ax80	6785	-7.61	-6.08	-3.77	-1	Pass
NVNT	ax80	6865	-6.54	-6.49	-3.50	-1	Pass
NVNT	ax80	6945	-7.28	-5.77	-3.45	-1	Pass
NVNT	ax80	7025	-6.53	-7.01	-3.75	-1	Pass
NVNT	ax160	6025	-7.39	-7.46	-4.41	-1	Pass
NVNT	ax160	6185	-5.38	-6.97	-3.09	-1	Pass
NVNT	ax160	6345	-5.29	-7.95	-3.41	-1	Pass
NVNT	ax160	6505	-5.89	-6.2	-3.03	-1	Pass
NVNT	ax160	6665	-6.33	-6.55	-3.43	-1	Pass
NVNT	ax160	6825	-6.72	-7.06	-3.88	-1	Pass
NVNT	ax160	6985	-7.33	-6.34	-3.80	-1	Pass

9. 26dB & 99% Emission Bandwidth

9.1 Block Diagram Of Test Setup



9.2 Limit

The maximum transmitter channel bandwidth for U–NII devices in the 5.925–7.125 GHz band is 320 megahertz.

9.3 Test Procedure

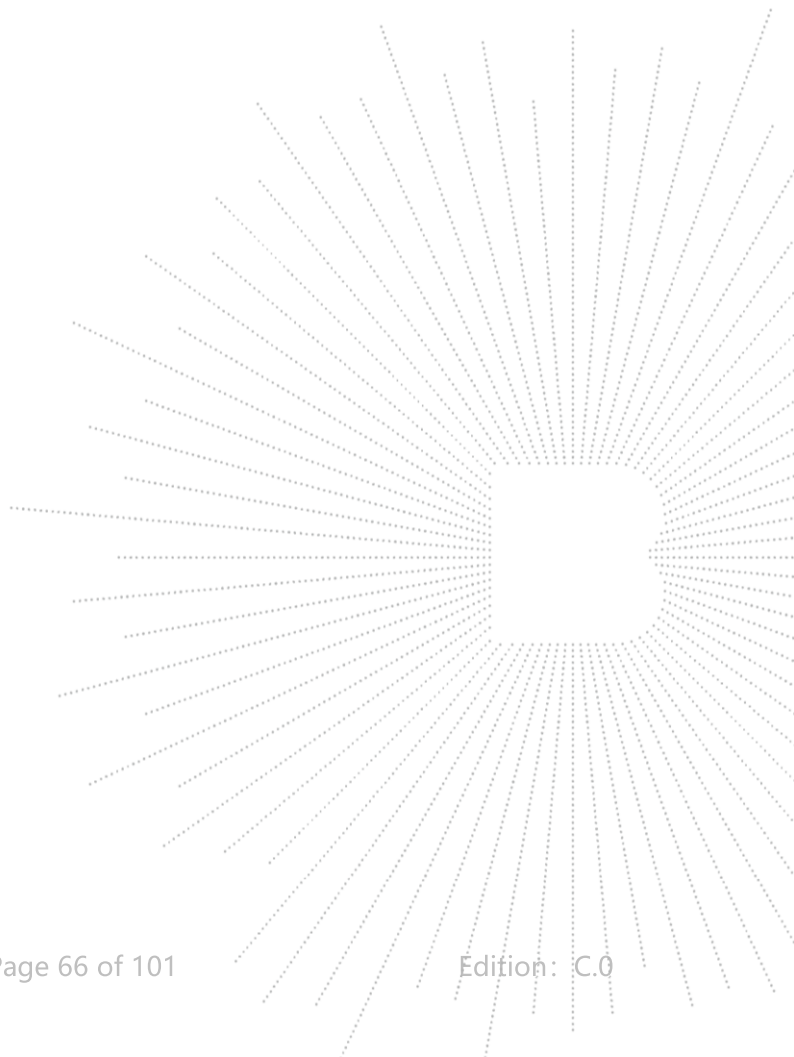
- a) Set RBW = approximately 1% of the emission bandwidth.
 - b) Set the VBW > RBW.
 - c) Detector = Peak.
 - d) Trace mode = max hold.
 - e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
- The following procedure shall be used for measuring (99 %) power bandwidth:
1. Set center frequency to the nominal EUT channel center frequency.
 2. Set span = 1.5 times to 5.0 times the OBW.
 3. Set RBW = 1 % to 5 % of the OBW
 4. Set VBW $\geq 3 \cdot$ RBW
 5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
 6. Use the 99 % power bandwidth function of the instrument (if available).
 7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

9.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

9.5 Test Result

Please refer to Appendix 3: Occupied Channel Bandwidth & Appendix 4: -26dB Bandwidth.
Test Result: Pass



10. Maximum Conducted Output Power and Maximum EIRP

10.1 Block Diagram Of Test Setup



10.2 Limit

According to FCC §15.407

For a standard power access point (6SD) and fixed client (6FC) device operating in the 5.925–6.425 GHz and 6.525–6.875 GHz bands, the maximum power spectral density must not exceed 23 dBm e.i.r.p. in any 1-megahertz band. In addition, the maximum e.i.r.p. over the frequency band of operation must not exceed 36 dBm. For outdoor devices, 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).

For an indoor access point (6ID) operating in the 5.925–7.125 GHz band, the maximum power spectral density must not exceed 5 dBm e.i.r.p. in any 1-megahertz band. In addition, the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm.

For a subordinate device (6PP) operating under the control of an indoor access point in the 5.925–7.125 GHz band, the maximum power spectral density must not exceed 5 dBm e.i.r.p. in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm.

For client devices(6FX), except for fixed client devices as defined in this subpart, operating under the control of a standard power access point in 5.925–6.425 GHz and 6.525–6.875 GHz bands, the maximum power spectral density must not exceed 17 dBm e.i.r.p. in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm and the device must limit its power to no more than 6 dB below its associated standard power access point's authorized transmit power.

For client devices(6XD) operating under the control of an indoor access point in the 5.925–7.125 GHz bands, the maximum power spectral density must not exceed –1 dBm e.i.r.p. in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 24 dBm.

10.3 Test Procedure

Maximum conducted output power may be measured using a spectrum analyzer/EMI receiver or an RF power meter.

1. Device Configuration

If possible, configure or modify the operation of the EUT so that it transmits continuously at its maximum power control level (see section II.B.).

a) The intent is to test at 100 percent duty cycle; however a small reduction in duty cycle (to no lower than 98 percent) is permitted if required by the EUT for amplitude control purposes. Manufacturers are expected to provide software to the test lab to permit such continuous operation.

b) If continuous transmission (or at least 98 percent duty cycle) cannot be achieved due to hardware limitations (e.g., overheating), the EUT shall be operated at its maximum power control level with the transmit duration as long as possible and the duty cycle as high as possible.

2. Measurement using a Spectrum Analyzer or EMI Receiver (SA)

Measurement of maximum conducted output power using a spectrum analyzer requires integrating the spectrum across a frequency span that encompasses, at a minimum, either the EBW or the 99-percent occupied bandwidth of the signal.¹ However, the EBW must be used to determine bandwidth dependent limits on maximum conducted output power in accordance with § 15.407(a).

a) The test method shall be selected as follows: (i) Method SA-1 or SA-1 Alternative (averaging with the EUT transmitting at full power throughout each sweep) shall be applied if either of the following conditions can be satisfied:

- The EUT transmits continuously (or with a duty cycle ≥ 98 percent).
- Sweep triggering or gating can be implemented in a way that the device transmits at the maximum power control level throughout the duration of each of the instrument sweeps to be averaged. This condition can generally be achieved by triggering the instrument's sweep if the duration of the sweep (with the analyzer configured as in Method SA-1, below) is equal to or shorter than the duration T of each transmission from the EUT and if those transmissions exhibit full power throughout their durations.

(ii) Method SA-2 or SA-2 Alternative (averaging across on and off times of the EUT transmissions, followed by duty cycle correction) shall be applied if the conditions of (i) cannot be achieved and the transmissions exhibit a constant duty cycle during the measurement duration. Duty cycle will be considered to be constant if variations are less than ± 2 percent.

(iii) Method SA-3 (RMS detection with max hold) or SA-3 Alternative (reduced VBW with max hold) shall be applied if the conditions of (i) and (ii) cannot be achieved.

b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep): (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.

(ii) Set RBW = 1 MHz.

(iii) Set VBW ≥ 3 MHz.

(iv) Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is $\leq$ RBW/2, so that narrowband signals are not lost between frequency bins.)

(v) Sweep time = auto.

(vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.

(vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run".

(viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.

(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum

10.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

10.5 Test Result

Please refer to Appendix 2: Maximum Conducted Output Power
Test Result: Pass

Condition	Mode	Frequency (MHz)	EIRP Power (dBm)			Limit (dBm)	Verdict
			ANT A	ANT B	Total		
NVNT	ax20	5955	12.98	12.83	15.92	24	Pass
NVNT	ax20	6175	12.57	12.82	15.71	24	Pass
NVNT	ax20	6415	12.87	12.78	15.84	24	Pass
NVNT	ax20	6435	12.87	13.54	16.23	24	Pass
NVNT	ax20	6475	12.73	12.97	15.86	24	Pass
NVNT	ax20	6515	12.65	13.1	15.89	24	Pass
NVNT	ax20	6535	13.21	12.61	15.93	24	Pass
NVNT	ax20	6695	13.3	12.78	16.06	24	Pass
NVNT	ax20	6855	12.35	13.14	15.77	24	Pass
NVNT	ax20	6875	13.19	12.94	16.08	24	Pass
NVNT	ax20	6895	12.95	13.18	16.08	24	Pass
NVNT	ax20	6995	12.28	13.6	16.00	24	Pass
NVNT	ax20	7115	12.6	13.04	15.84	24	Pass
NVNT	ax40	5965	12.77	13.33	16.07	24	Pass
NVNT	ax40	6165	12.98	14.06	16.56	24	Pass
NVNT	ax40	6405	12.8	13.6	16.23	24	Pass
NVNT	ax40	6445	13.97	13.08	16.56	24	Pass
NVNT	ax40	6485	13.55	13.2	16.39	24	Pass
NVNT	ax40	6525	14	13.5	16.77	24	Pass
NVNT	ax40	6565	14.21	13.46	16.86	24	Pass
NVNT	ax40	6685	13.58	13.55	16.58	24	Pass
NVNT	ax40	6845	12.96	13.1	16.04	24	Pass
NVNT	ax40	6885	13.44	13.36	16.41	24	Pass
NVNT	ax40	6925	13.04	14.14	16.64	24	Pass
NVNT	ax40	6965	13.43	13.85	16.66	24	Pass
NVNT	ax40	7085	13.7	14.42	17.09	24	Pass
NVNT	ax80	5985	13.05	14.18	16.66	24	Pass
NVNT	ax80	6145	13.25	14.9	17.16	24	Pass
NVNT	ax80	6385	13.95	14.1	17.04	24	Pass
NVNT	ax80	6465	13.41	13.58	16.51	24	Pass
NVNT	ax80	6545	13.65	14.52	17.12	24	Pass
NVNT	ax80	6625	14.23	14.44	17.35	24	Pass
NVNT	ax80	6705	13.92	13.47	16.71	24	Pass
NVNT	ax80	6785	13.39	13.64	16.53	24	Pass
NVNT	ax80	6865	13.16	14.03	16.63	24	Pass
NVNT	ax80	6945	14.35	14.46	17.42	24	Pass
NVNT	ax80	7025	14.06	14.02	17.05	24	Pass
NVNT	ax160	6025	13.46	14.36	16.94	24	Pass
NVNT	ax160	6185	13.25	14.63	17.00	24	Pass
NVNT	ax160	6345	14.03	14.82	17.45	24	Pass
NVNT	ax160	6505	14.9	13.85	17.42	24	Pass
NVNT	ax160	6665	14.78	14.35	17.58	24	Pass
NVNT	ax160	6825	14.27	13.75	17.03	24	Pass
NVNT	ax160	6985	13.78	14.56	17.20	24	Pass

11. In-Band Emission (Emission Mask)

11.1 Block Diagram Of Test Setup



11.2 Limit

According to FCC §15.407(b)

For transmitters operating within the 5.925–7.125 GHz band: Any emissions outside of the 5.925–7.125 GHz band must not exceed an e.i.r.p. of –27 dBm/MHz.

(7) For transmitters operating within the 5.925–7.125 GHz bands: Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.

11.3 Test Procedure

1. Connect output of the antenna port to a spectrum analyzer or EMI receiver, with appropriate attenuation, as to not damage the instrumentation.
2. Set the reference level of the measuring equipment in accordance with procedure 4.1.5.2 of ANSI C63.10-2020.
3. Measure the 26 dB EBW using the test procedure 12.4.1 of ANSI C63.10-2020. (This will be used to determine the channel edge.)
4. Measure the power spectral density (which will be used for emissions mask reference) using the following procedure:
 - a) Set the span to encompass the entire 26 dB EBW of the signal.
 - b) Set RBW = same RBW used for 26 dB EBW measurement.
 - c) Set VBW $\geq 3 \times$ RBW
 - d) Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$.
 - e) Sweep time = auto.
 - f) Detector = RMS (i.e., power averaging)
 - g) Trace average at least 100 traces in power averaging (rms) mode.
 - h) Use the peak search function on the instrument to find the peak of the spectrum.
5. For the purposes of developing the emission mask, the channel bandwidth is defined as the 26 dB EBW or 99% of the occupied bandwidth.
6. Using the measuring equipment limit line function, develop the emissions mask based on the following requirements. The emissions power spectral density must be reduced below the peak power spectral density (in dB) as follows:

- a) Suppressed by 20 dB at 1 MHz outside of the channel edge. (The channel edge is defined as the 26-dB point on either side of the carrier center frequency.)
- b) Suppressed by 28 dB at one channel bandwidth from the channel center.
- c) Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.

7. Adjust the span to encompass the entire mask as necessary.
8. Clear trace.
9. Trace average at least 100 traces in power averaging (rms) mode.
10. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask

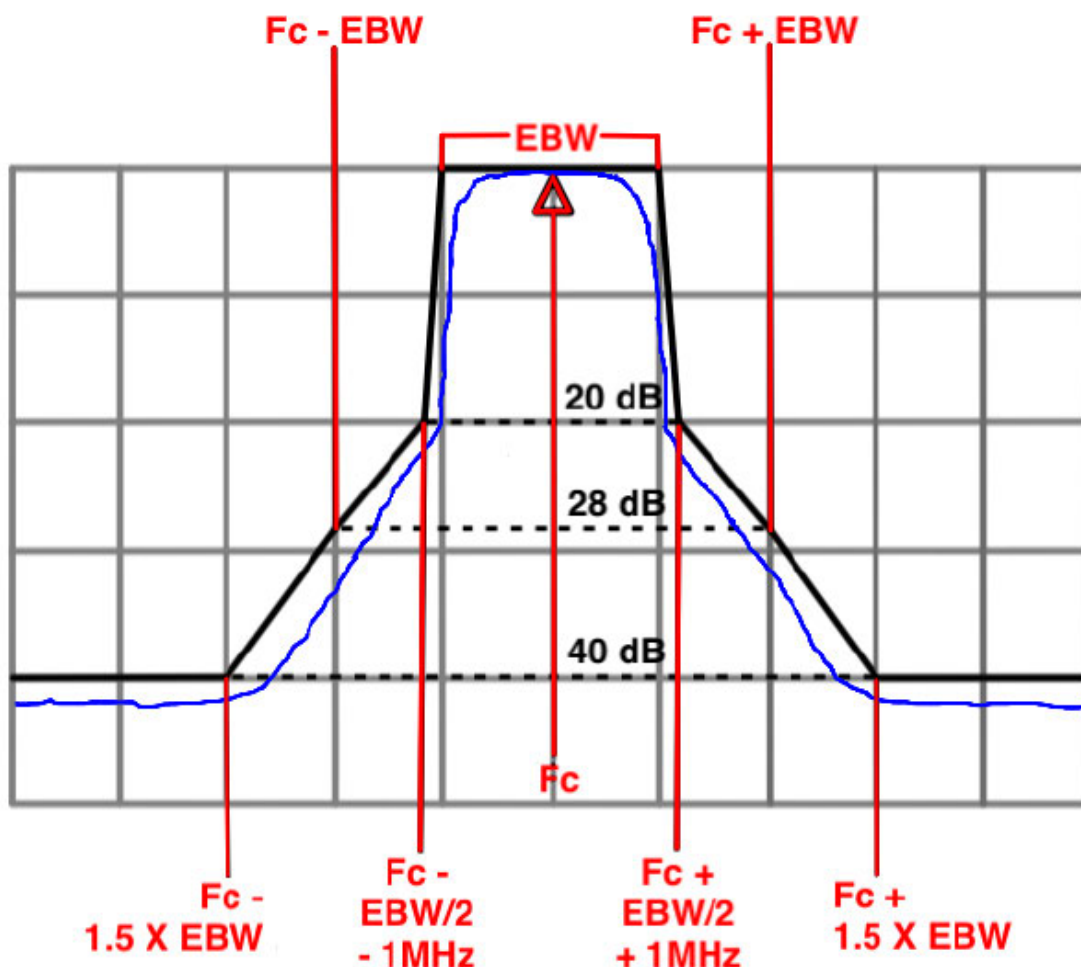


Figure 5. Generic Emission Mask

If a device utilizes channel puncturing the following additional requirements shall be met.

1. Standard Power Devices:

- a. The device shall meet the FCC mask for the full nominal bandwidth regardless of whether the punctured channel portion is at the channel edge or internal to the channel. As an example, if a 40 megahertz sub-channel is punctured from a 160 megahertz channel, this new configuration shall still meet the FCC mask based on a 160 megahertz nominal bandwidth; i.e., at the edges of the nominal channel. Nominal bandwidth as defined here refers to 20, 40, 80, 160 & 320 megahertz bandwidths. Test data shall be provided for each nominal bandwidth capable of puncturing with at least one configuration where the puncturing is at the outer edge of the nominal bandwidth and several configurations where the puncturing is internal to the nominal bandwidth (puncturing using $20 \times N$ subchannels, where N is an integer). The mask is constructed based on 26 dB bandwidth; and

b. The device, when deployed must comply with all the AFC requirements; i.e., the power transmitted within the punctured region must be at or below the power that an AFC would permit for transmitting across the punctured channels' bandwidth.

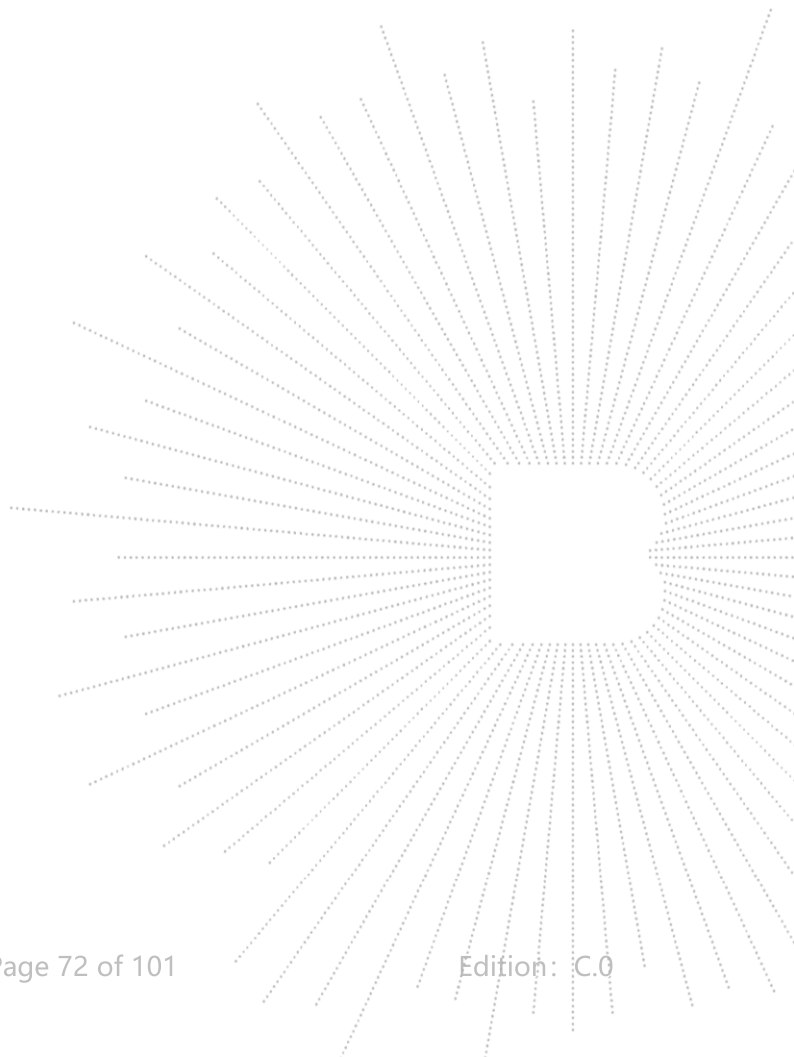
2. Low Power Indoor Devices: Channel puncturing is not permitted because, unlike standard power devices which receive channel/power information from the AFC, LPI devices have no such mechanism for ascertaining the level of suppression needed in the punctured region to protect incumbent operations

11.4 EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data

11.5 Test Result

Please refer to Appendix 7
Test Result: Pass



12. Spurious RF Conducted Emissions

12.1 Block Diagram Of Test Setup



12.2 Limit

For transmitters operating within the 5.925–7.125 GHz band: Any emissions outside of the 5.925–7.125 GHz band must not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating within the 5.925–7.125 GHz bands: Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.

12.3 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

12.4 Test Result

Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandedge measurement data.

About: 26.5GHz-40GHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Please refer to Appendix 6: Conducted RF Spurious Emission
Test Result: Pass

13. Frequency Stability Measurement

13.1 Block Diagram Of Test Setup



13.2 Limit

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification)..

13.3 Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 10^6$ ppm and he limit is less than ± 20 ppm (IEEE 802.11n specification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$.

13.4 Test Result

Please refer to Appendix 8: Frequency Stability
Test Result: Pass

14. Contention Based Protocol

14.1 Block Diagram Of Test Setup

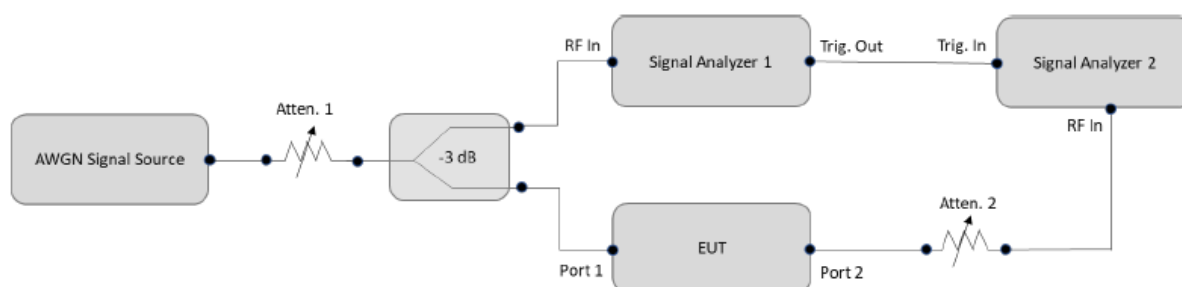


Figure 2. Contention-based protocol test setup, conducted method

14.2 Limit

Unlicensed low-power indoor devices must detect co-channel radio frequency power that is at least -62 dBm or lower. Upon detection of energy in the band, unlicensed low power indoor devices must vacate the channel (in which incumbent signal is transmitted) and stay off the incumbent channel as long as detected radio frequency power is equal to or greater than the threshold (-62 dBm)¹. The -62 dBm (or lower) threshold is referenced to a 0 dBi antenna gain.

To ensure incumbent operations are reliably detected in the band, low power indoor devices must detect RF

energy throughout their intended operating channel. For example, an 802.11 device that plans to transmit a 40 MHz- wide signal (on a primary 20 MHz channel and a secondary 20 MHz channel) must detect energy throughout the entire 40 MHz channel. Additionally, low-power indoor devices must detect co-channel energy with 90% or greater certainty.

Required number of tests

Incumbent and EUT (access point, subordinate or client) signals may occupy different portions of the channel. Depending on the EUT transmission bandwidth and incumbent signal center frequency (simulated by a 10 MHz wide AWGN signal), the center frequency of the EUT signal F_{C1} may fall within the incumbent's occupied bandwidth (Figure 1.a), or outside of it (Figure 1.b).

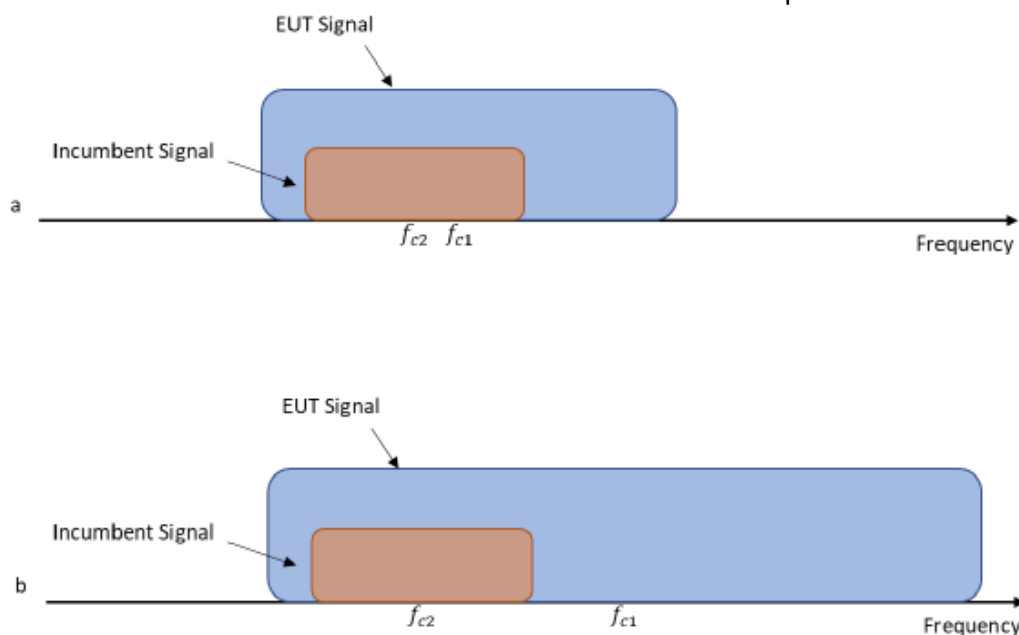


Figure 1. Two possible scenarios where a) center frequency of EUT transmission falls within incumbent's bandwidth, or b) outside of it

To ensure EUT reliably detects an incumbent signal in both scenarios shown in Figure 1, the detection threshold test may be repeated more than once with the incumbent signal (having center frequency F_{c2}) tuned to different center frequencies within the UT transmission bandwidth. The criteria specified in Table 1 determines how many times the detection threshold test must be performed;

Table 1. Criteria to determine number of times detection threshold test may be performed

If	Number of Tests	Placement of Incumbent Transmission
$BW_{EUT} \leq BW_{Inc}$	Once	Tune incumbent and EUT transmissions ($f_{c1} = f_{c2}$)
$BW_{Inc} < BW_{EUT} \leq 2BW_{Inc}$	Once	Incumbent transmission is contained within BW_{EUT}
$2BW_{Inc} < BW_{EUT} \leq 4BW_{Inc}$	Twice. Incumbent transmission is contained within BW_{EUT}	Incumbent transmission is located as closely as possible to the lower edge and upper edge, respectively, of the EUT channel
$BW_{EUT} > 4BW_{Inc}$	Three times	Incumbent transmission is located as closely as possible to the lower edge of the EUT channel, in the middle of EUT channel, and as closely as possible to the upper edge of the EUT channel

where:

BW_{EUT} : Transmission bandwidth of EUT signal

BW_{Inc} : Transmission bandwidth of the simulated incumbent signal (10 MHz wide AWGN signal)

F_{c1} : Center frequency of EUT transmission

F_{c2} : Center frequency of simulated incumbent signal

14.3 Test Procedure

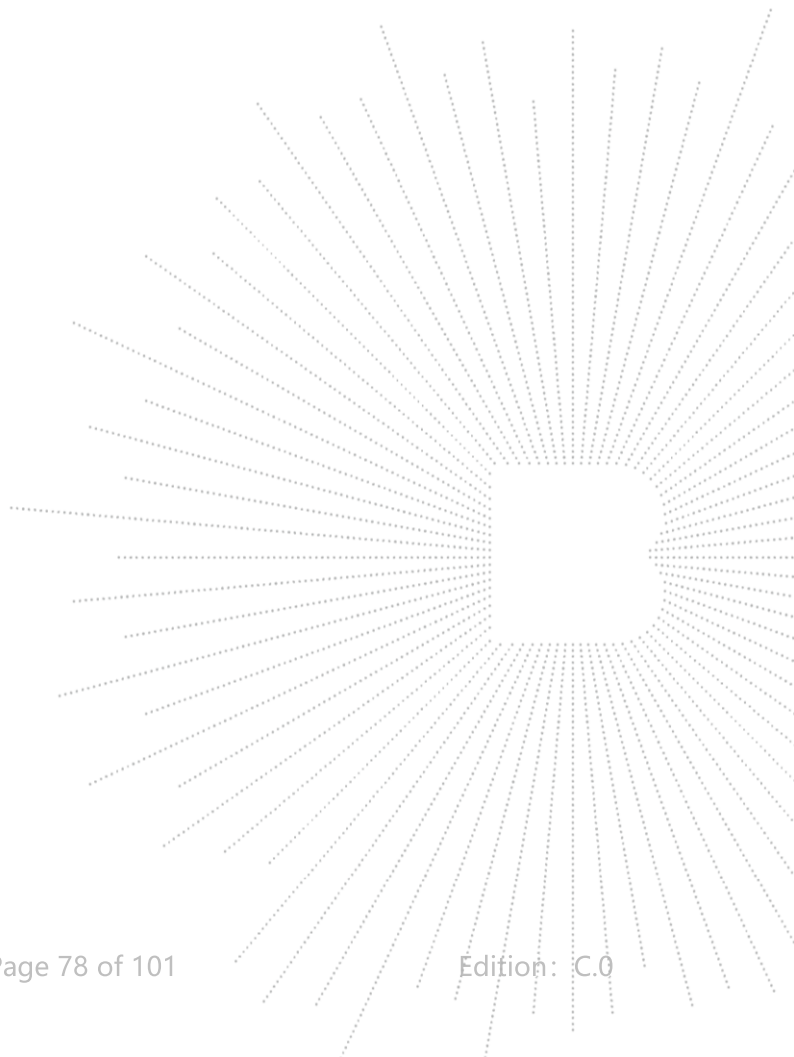
To ensure the EUT is capable of detecting co-channel energy, the first step is to configure the EUT to transmit with a constant duty cycle.² To simulate an incumbent signal, a signal generator (or similar source) that is capable of generating band-limited additive white Gaussian noise (AWGN) is required. Depending on the EUT antenna configuration, the AWGN signal can be provided to the EUT receiver via a conducted method (Figure 2) or a radiated method (Figure 3). Figure 2 shows the conducted test setup where a band-limited AWGN signal is generated at a very low power level and injected into the EUT's antenna port. The AWGN signal power level is then incrementally increased while the EUT transmission is monitored on a signal analyzer ² to verify if the EUT can sense the AWGN signal and can subsequently cease its transmission. A triggered measurement, as shown in Figure 2, is optional, and assists with determining the time it takes the EUT to cease transmission (or vacate the channel) upon detecting RF energy. If the EUT has only one antenna port, then an AWGN signal source can be connected to the same antenna port.

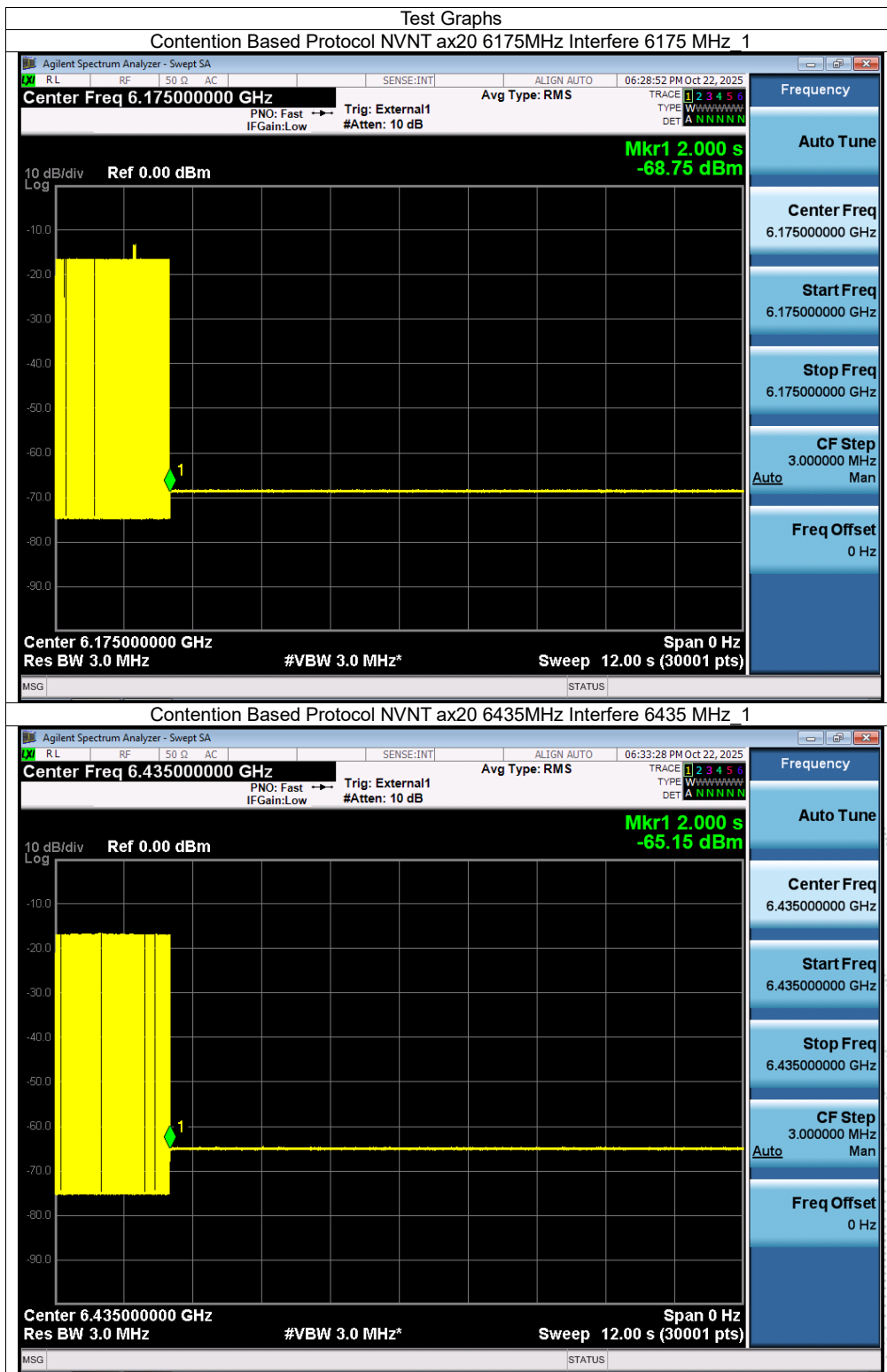
1. Configure the EUT to transmit with a constant duty cycle.
2. Set the operating parameters of the EUT including power level, operating frequency, modulation and bandwidth.
3. Set the signal analyzer center frequency to the nominal EUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT. Connect the output port of the EUT to the signal analyzer ², as shown in Figure 2. Ensure that the attenuator ² provides enough attenuation to not overload the signal analyzer ² receiver.
4. Monitoring the signal analyzer ², verify the EUT is operating and transmitting with the parameters set at step two.
5. Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal.
Use Table 1 to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.
6. Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 dBm threshold). Connect the AWGN signal source, via a 3-dB splitter, to the signal analyzer ¹ and the EUT as shown in Figure 2.
7. Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer ¹.
8. Monitor the signal analyzer ² to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.
9. (Including all losses in the RF paths) Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.
10. Refer to Table 1 to determine number of times the detection threshold testing needs to be repeated. If testing is required more than once, then go back to step 5, choose a different center frequency for the AWGN signal and repeat the process.

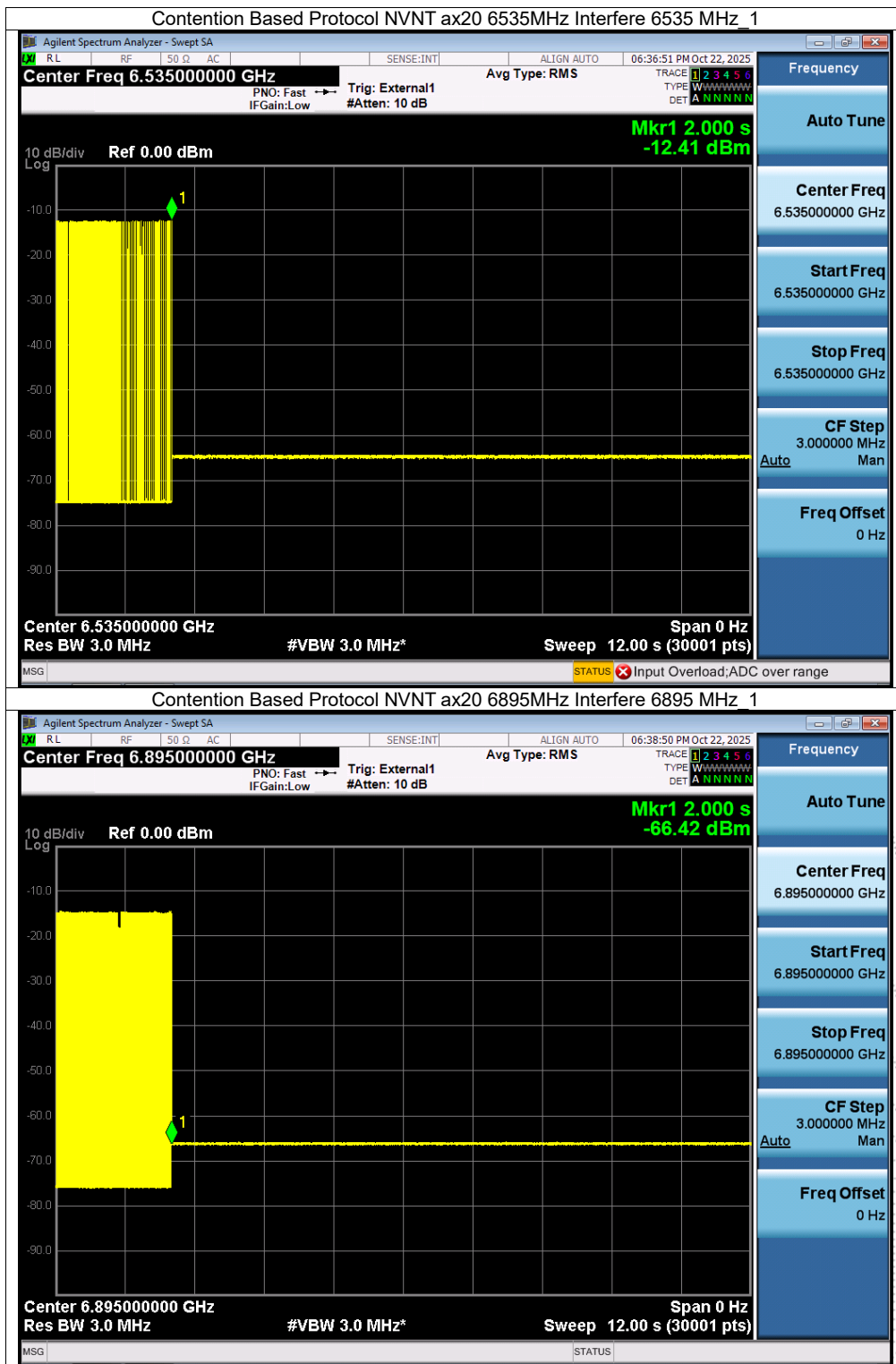
14.4 Test Result

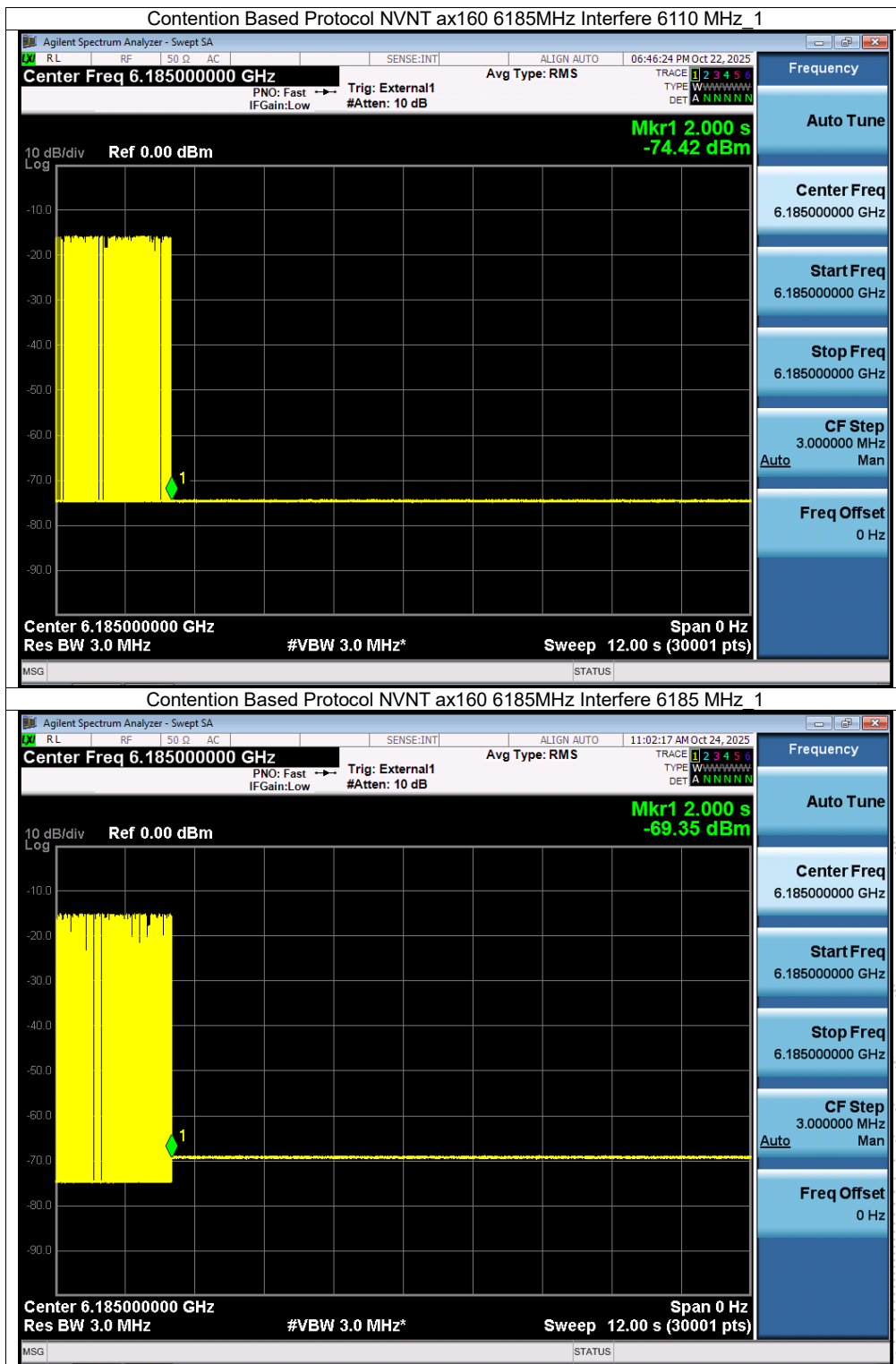
Contention Based Protocol

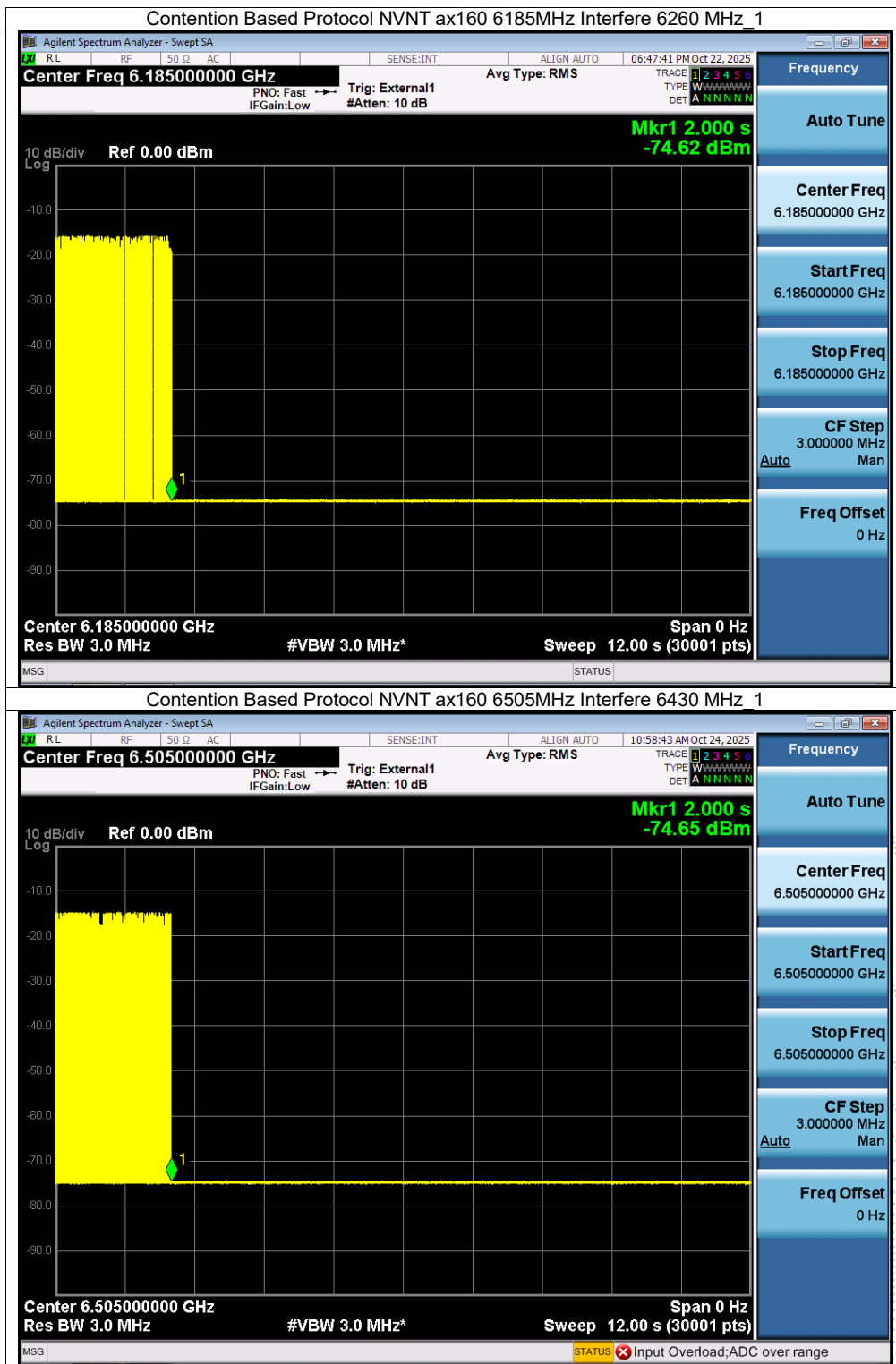
Condition	Mode	Frequency (MHz)	Antenna	AWGN Location	AWGN Frequency (MHz)	Test Time	Is Detected	Verdict
NVNT	ax20	6175	MIMO	Center	6175	1	Yes	Pass
		6435		Center	6435	1	Yes	Pass
		6535		Center	6535	1	Yes	Pass
		6895		Center	6895	1	Yes	Pass
	ax160	6185		Low	6110	1	Yes	Pass
				Center	6185	1	Yes	Pass
		6505		High	6260	1	Yes	Pass
				Low	6430	1	Yes	Pass
				Center	6505	1	Yes	Pass
				High	6580	1	Yes	Pass
		6665		Low	6590	1	Yes	Pass
				Center	6665	1	Yes	Pass
				High	6740	1	Yes	Pass
				6985	Low	6910	1	Yes
		Center			6985	1	Yes	Pass
		High			7060	1	Yes	Pass

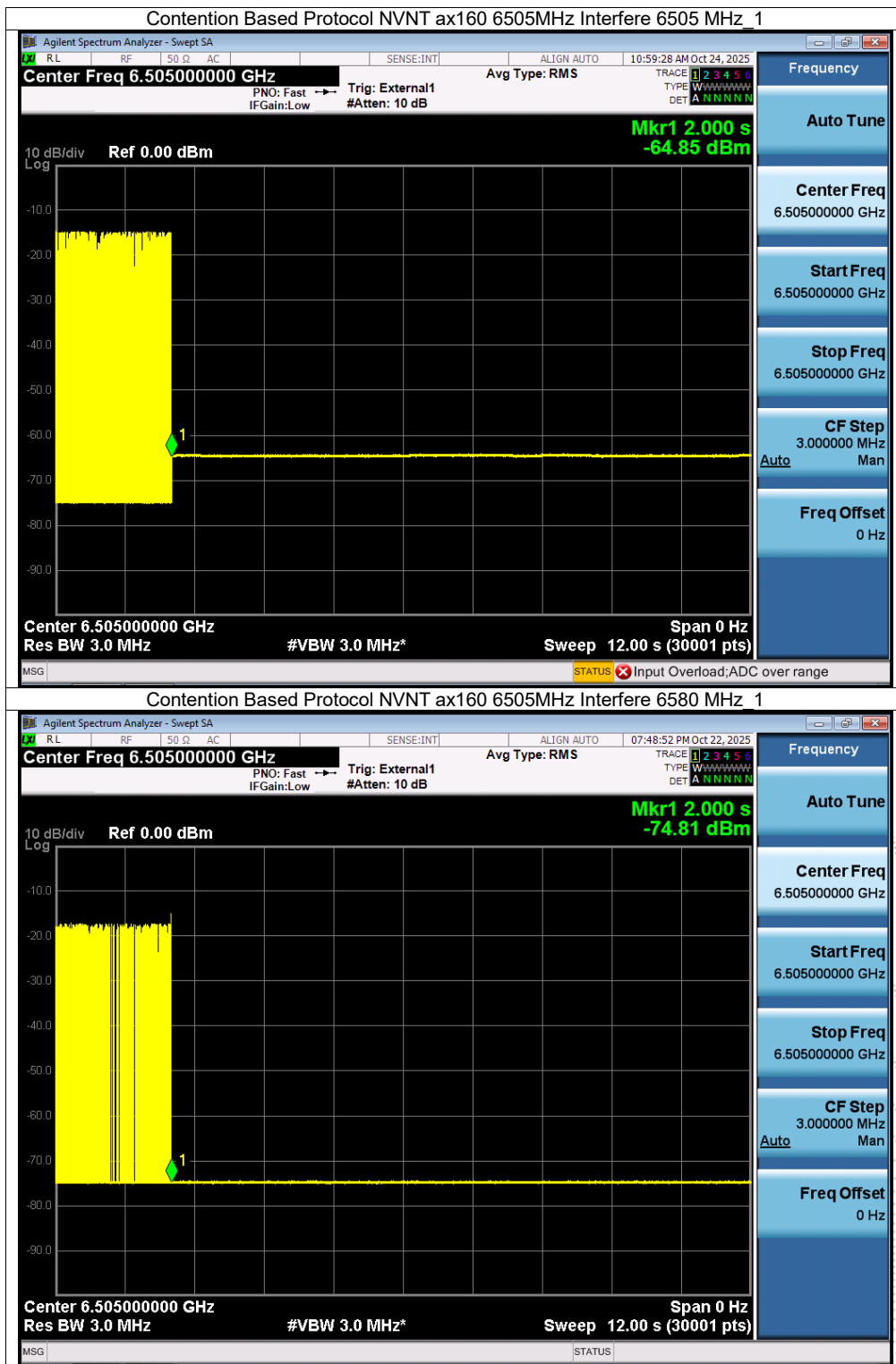


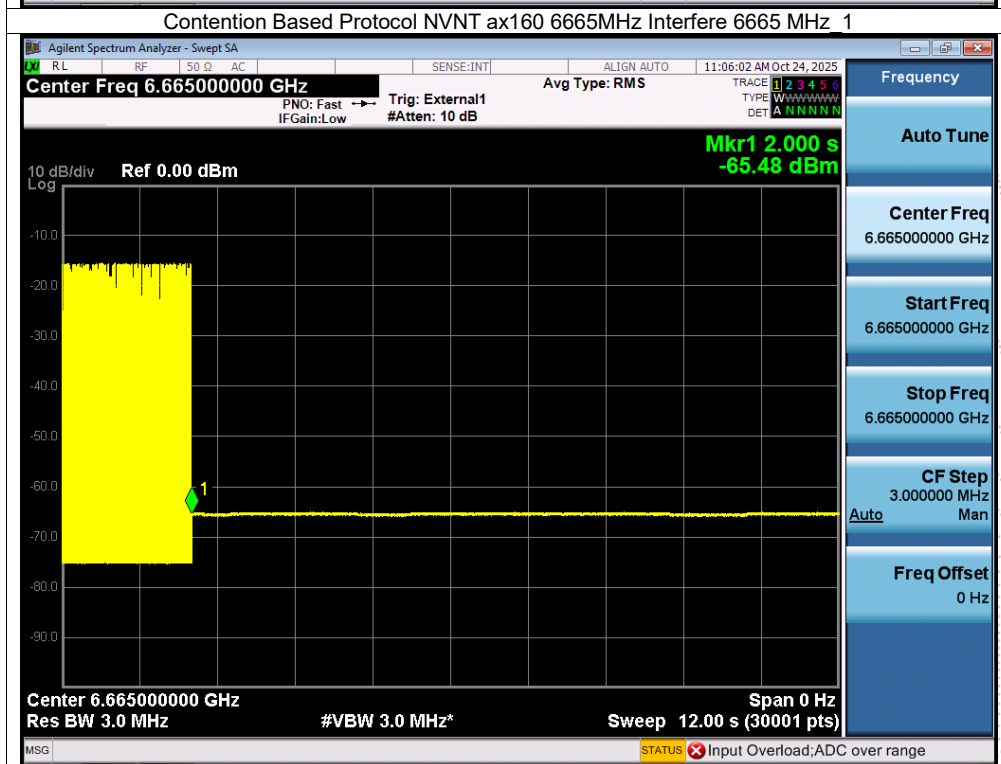
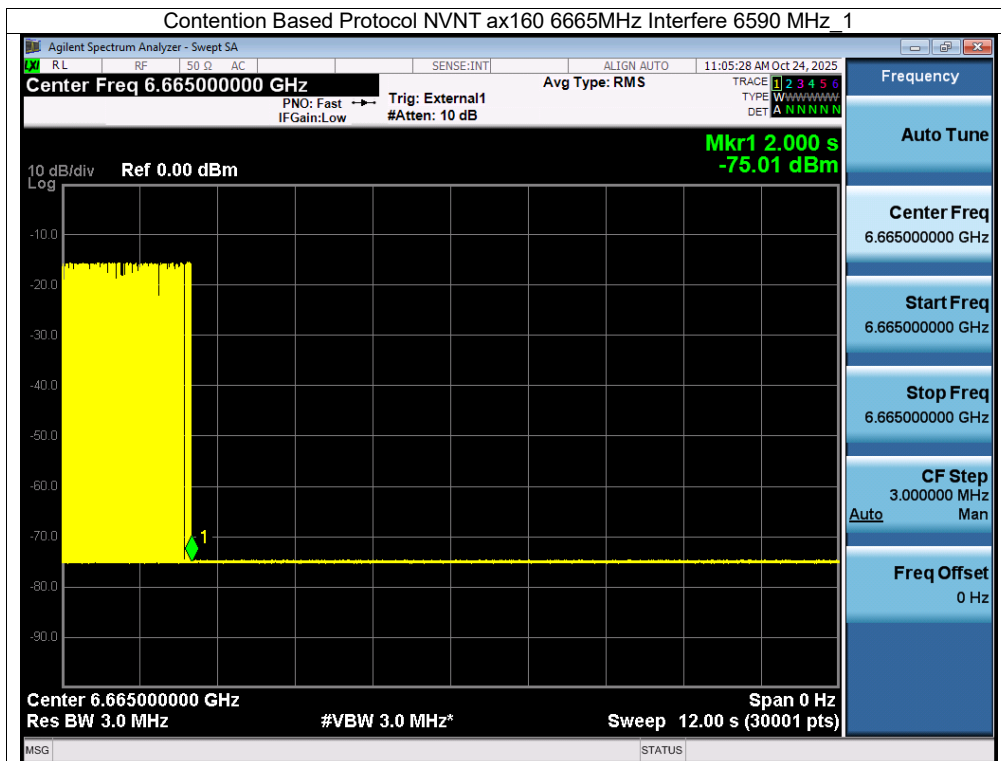


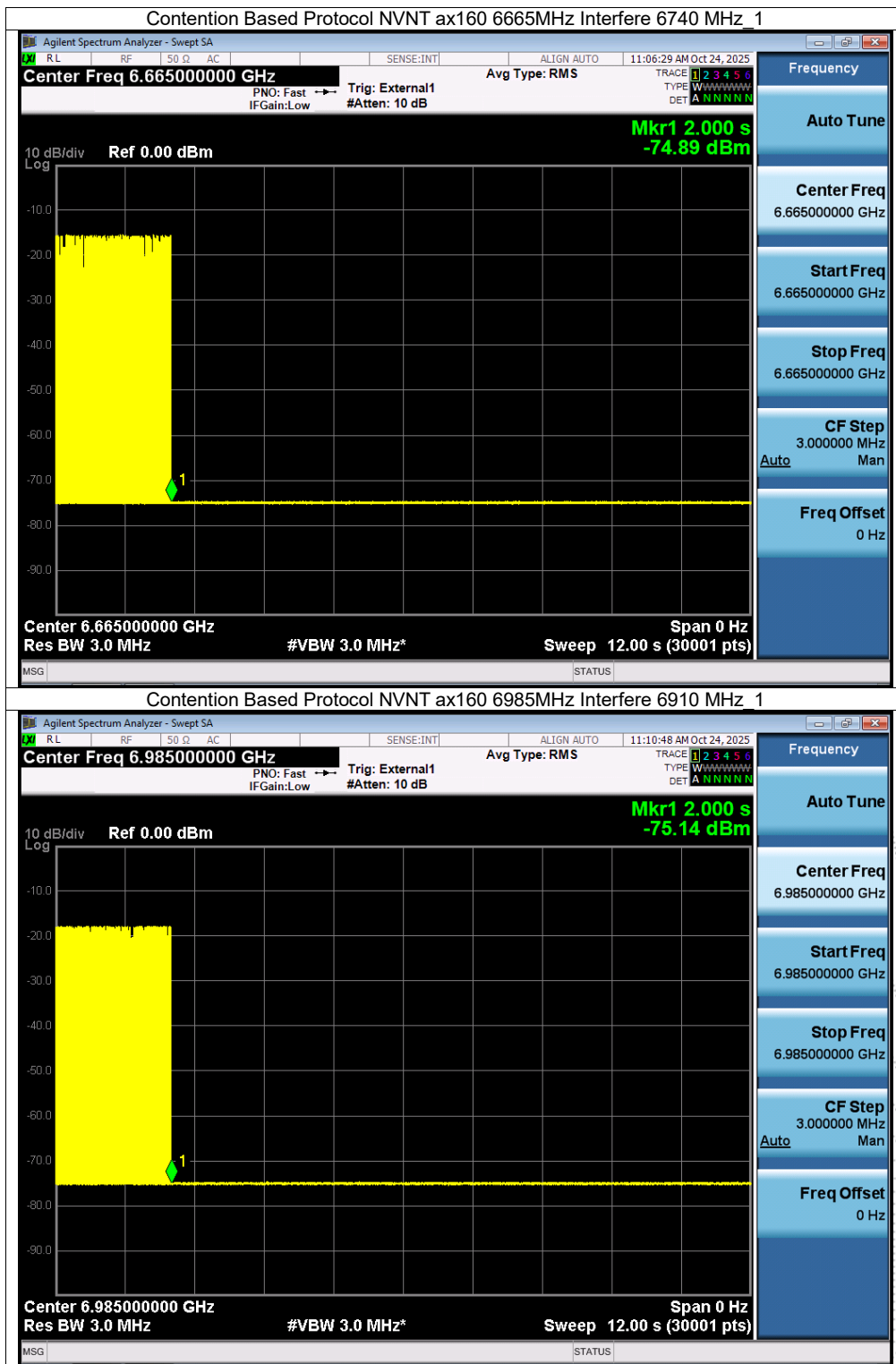










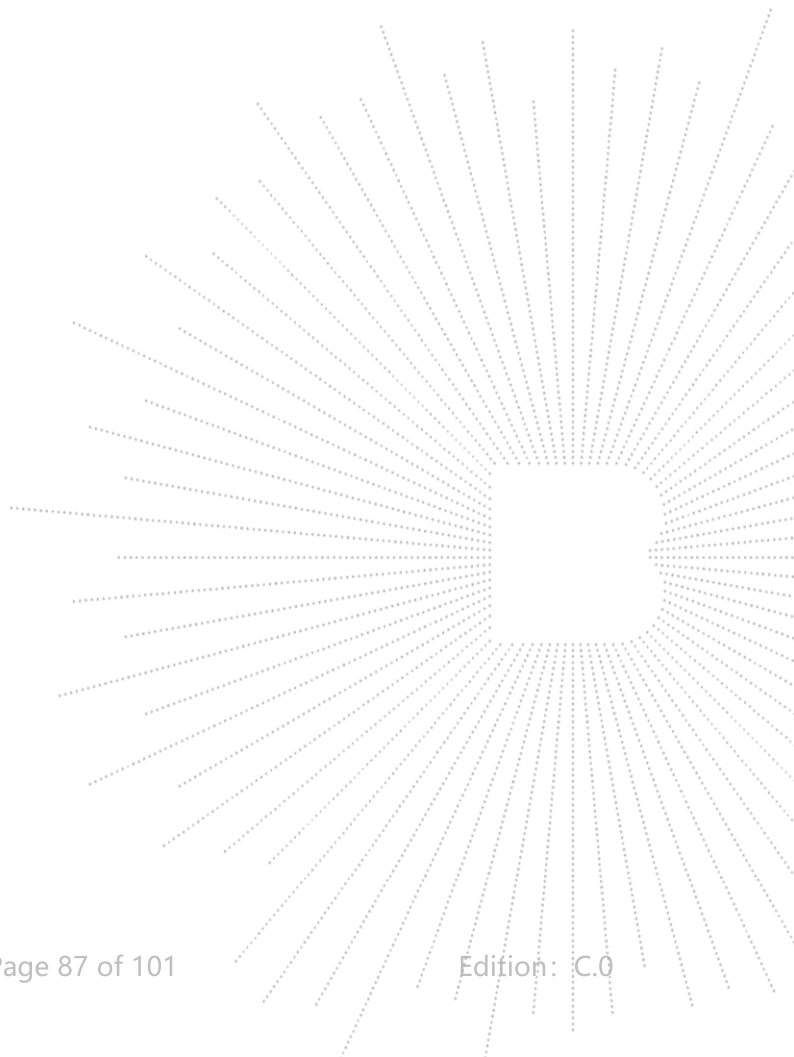


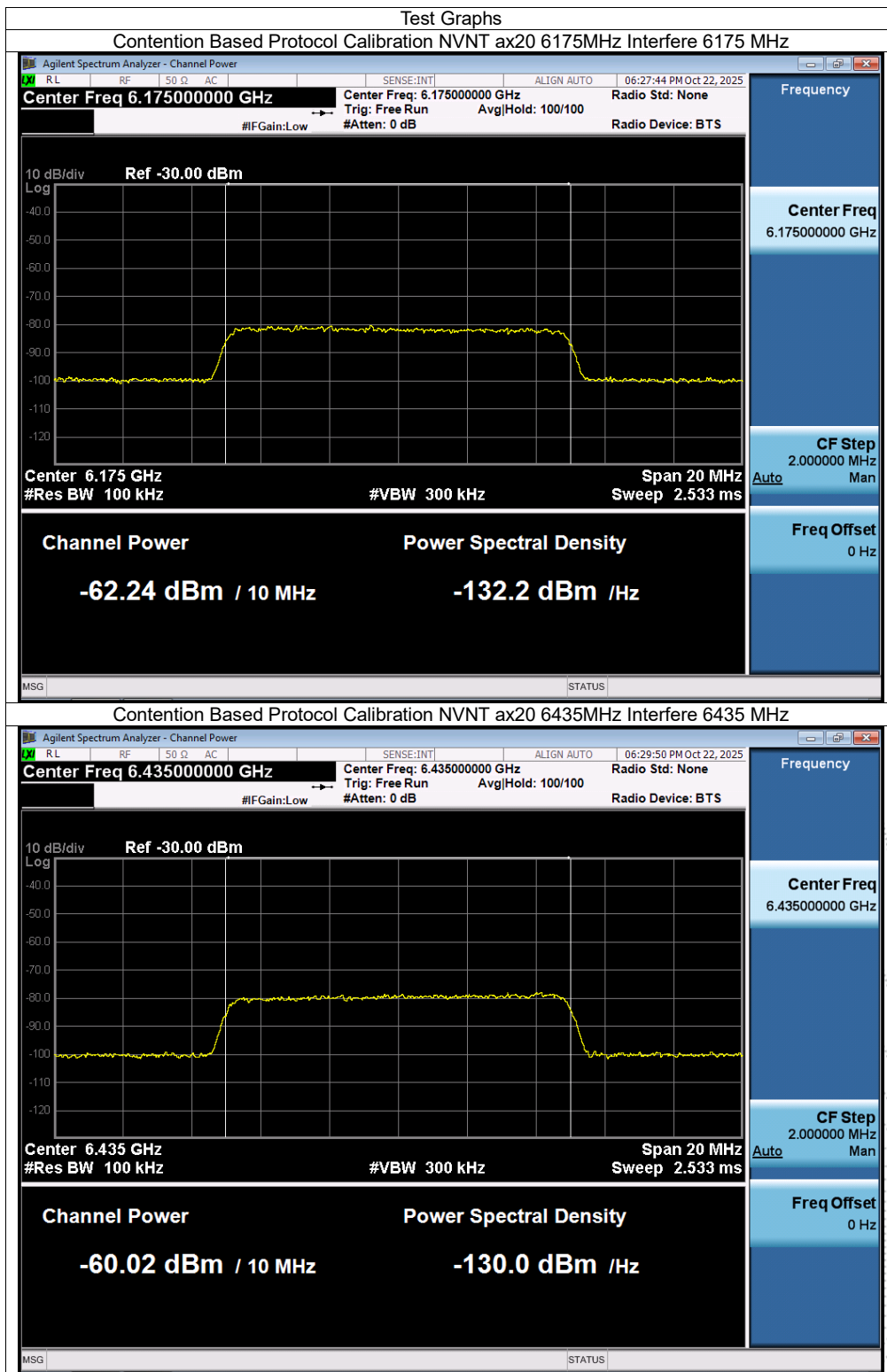


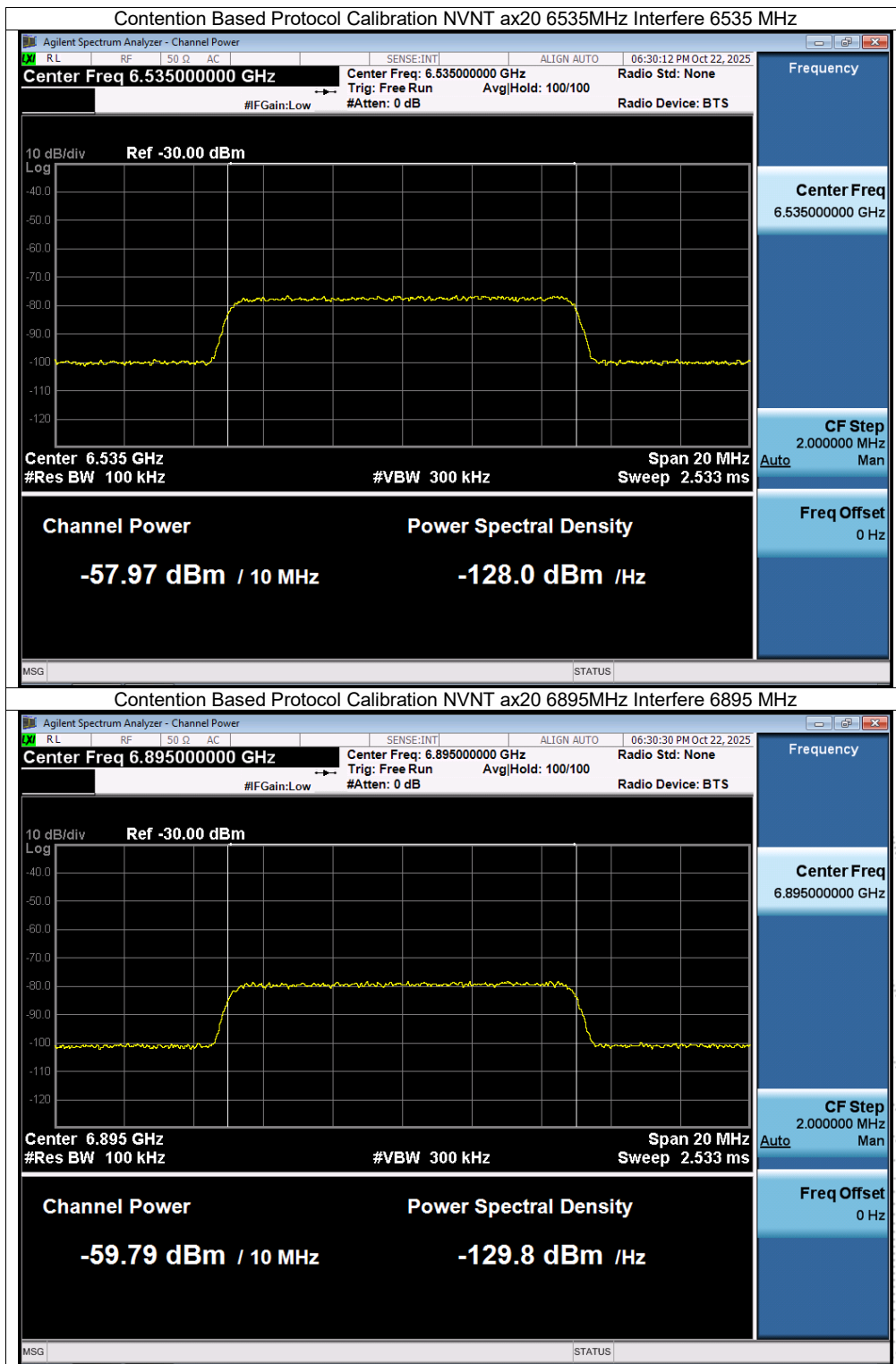
Contention Based Protocol Calibration

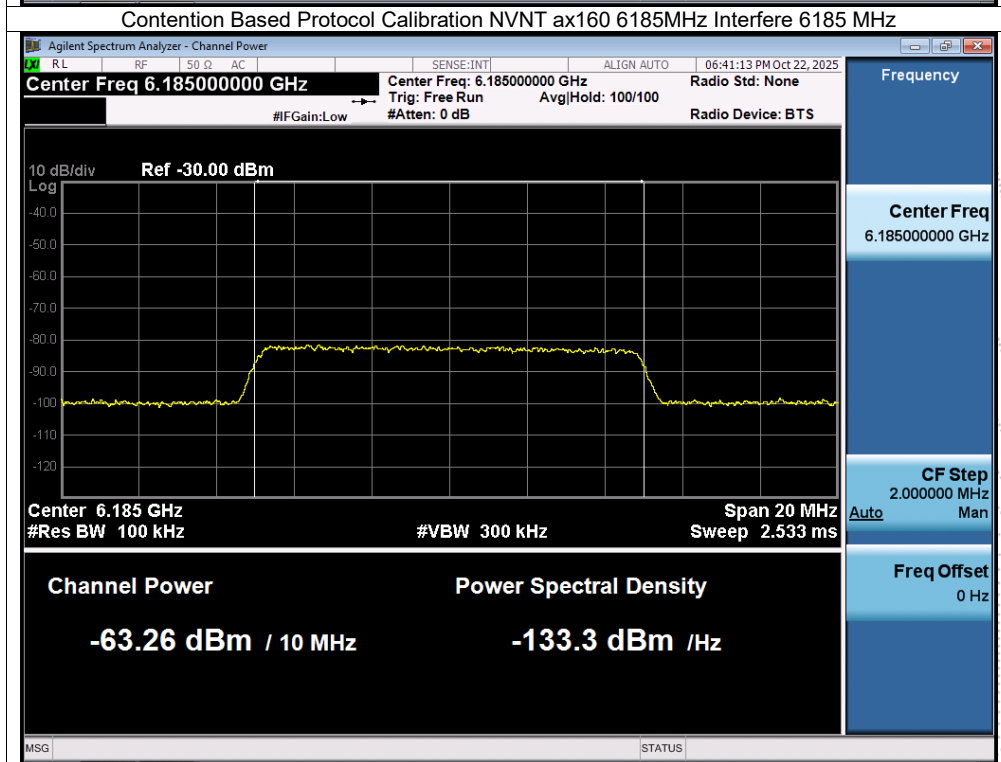
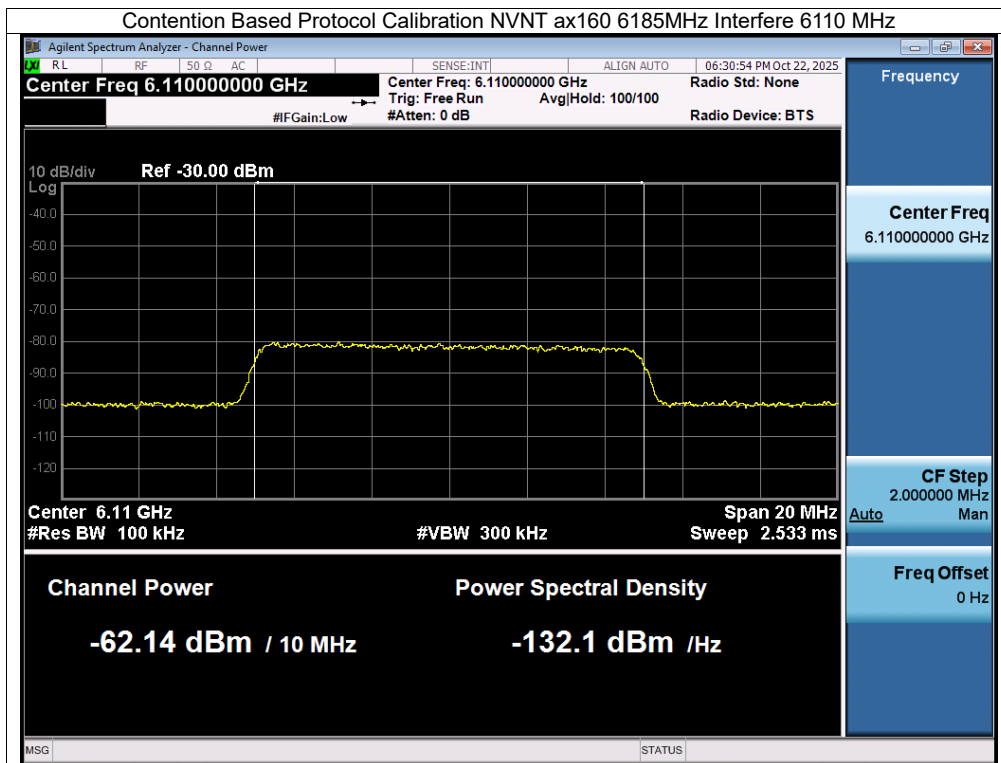
Test Mode	Frequency [MHz]	AWGN Frequency [MHz]	AWGN Level (dBm)	Ant Gain (dBi)	Path loss (dB)	Injection Level(dBm)	Threshold (dBm)
11AX20	6175	6175	-62.24	3.94	8	-66.3	-62
11AX20	6435	6435	-60.02	3.94	8	-64.08	-62
11AX20	6535	6535	-57.97	3.94	8	-62.03	-62
11AX20	6895	6895	-59.79	3.94	8	-63.85	-62
11AX160	6185	6110	-62.14	3.94	8	-66.2	-62
11AX160	6185	6185	-63.26	3.94	8	-67.32	-62
11AX160	6185	6260	-61.09	3.94	8	-65.15	-62
11AX160	6505	6430	-60.13	3.94	8	-64.19	-62
11AX160	6505	6505	-64.16	3.94	8	-68.22	-62
11AX160	6505	6580	-64.15	3.94	8	-68.21	-62
11AX160	6665	6590	-64.76	3.94	8	-68.82	-62
11AX160	6665	6665	-63.1	3.94	8	-67.16	-62
11AX160	6665	6740	-62.07	3.94	8	-66.13	-62
11AX160	6985	6910	-59.72	3.94	8	-63.78	-62
11AX160	6985	6985	-59.77	3.94	8	-63.83	-62
11AX160	6985	7060	-62	3.94	8	-66.06	-62

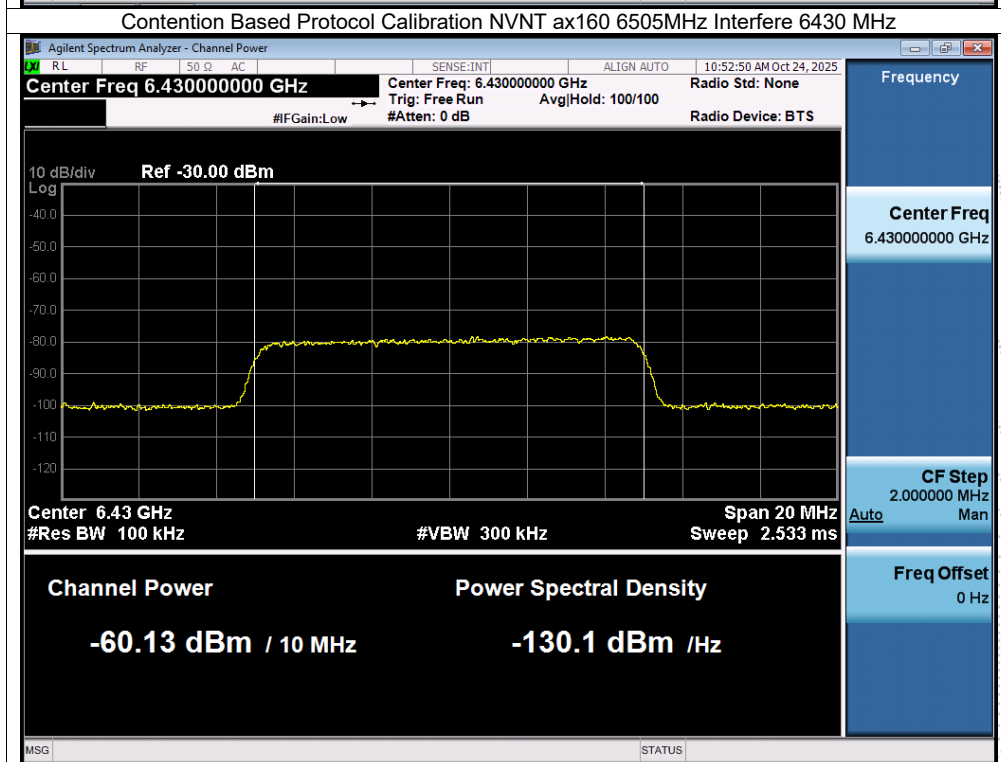
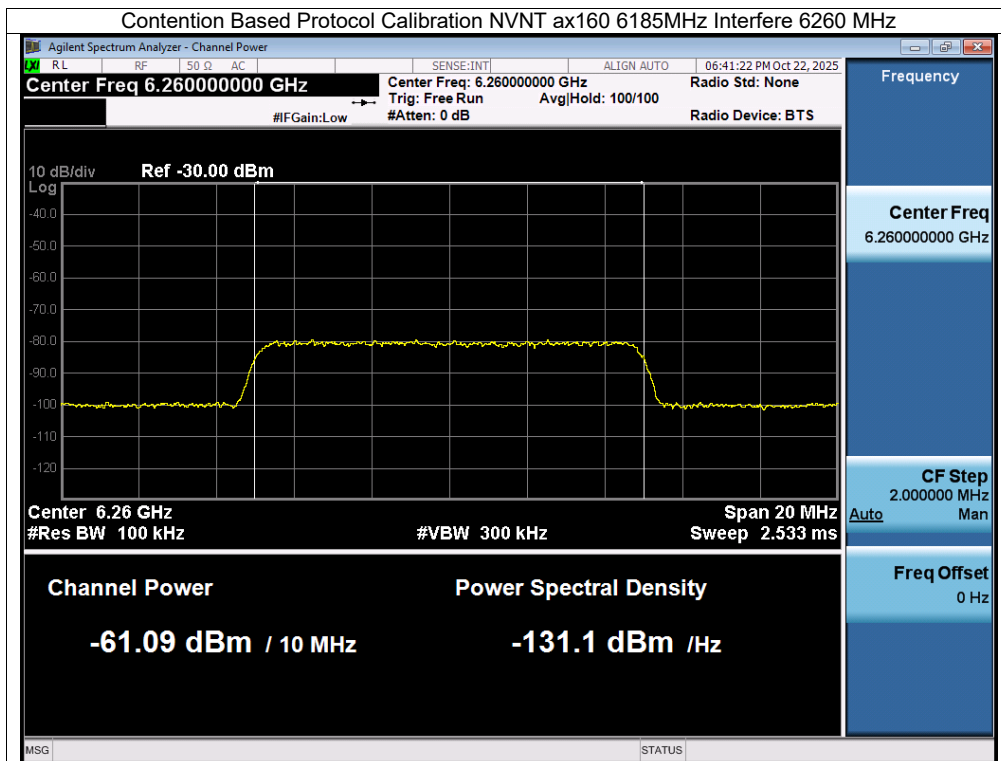
Note 1: Injection Level(dBm) = AWGN Level(dBm)+Antenna Gain -Path Loss

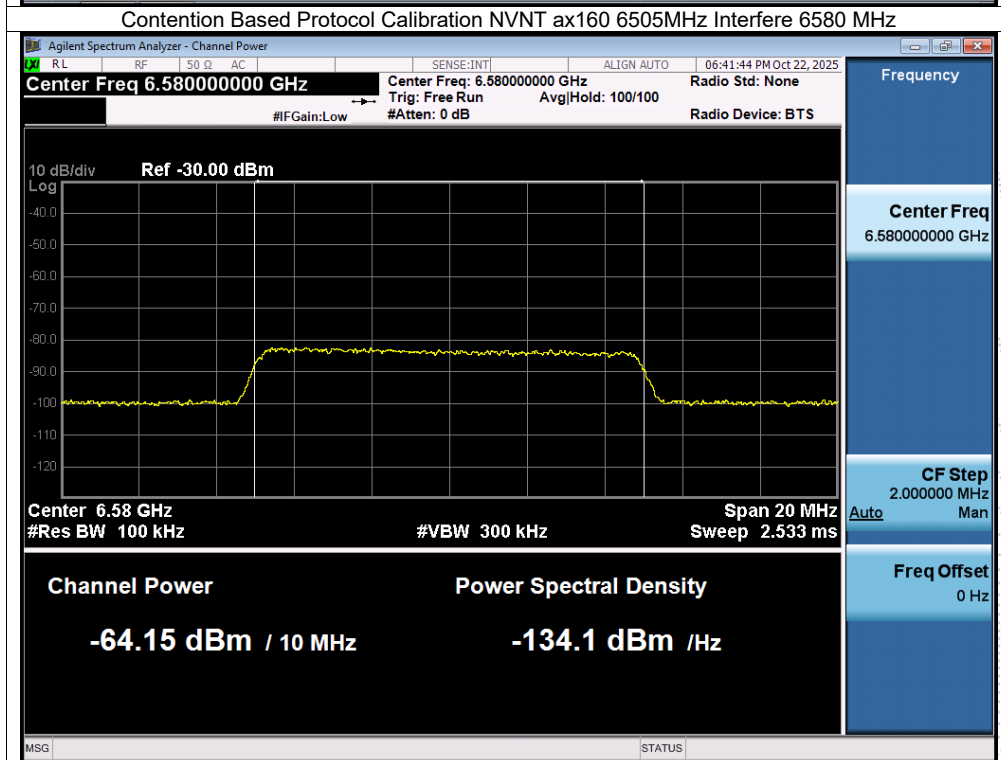
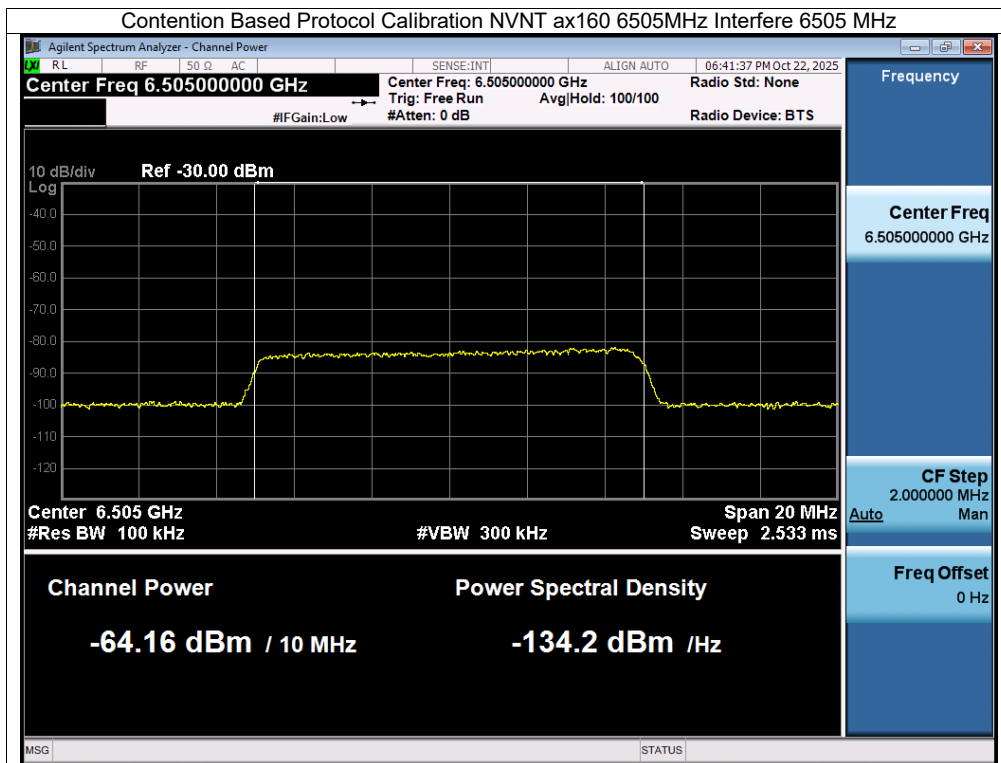


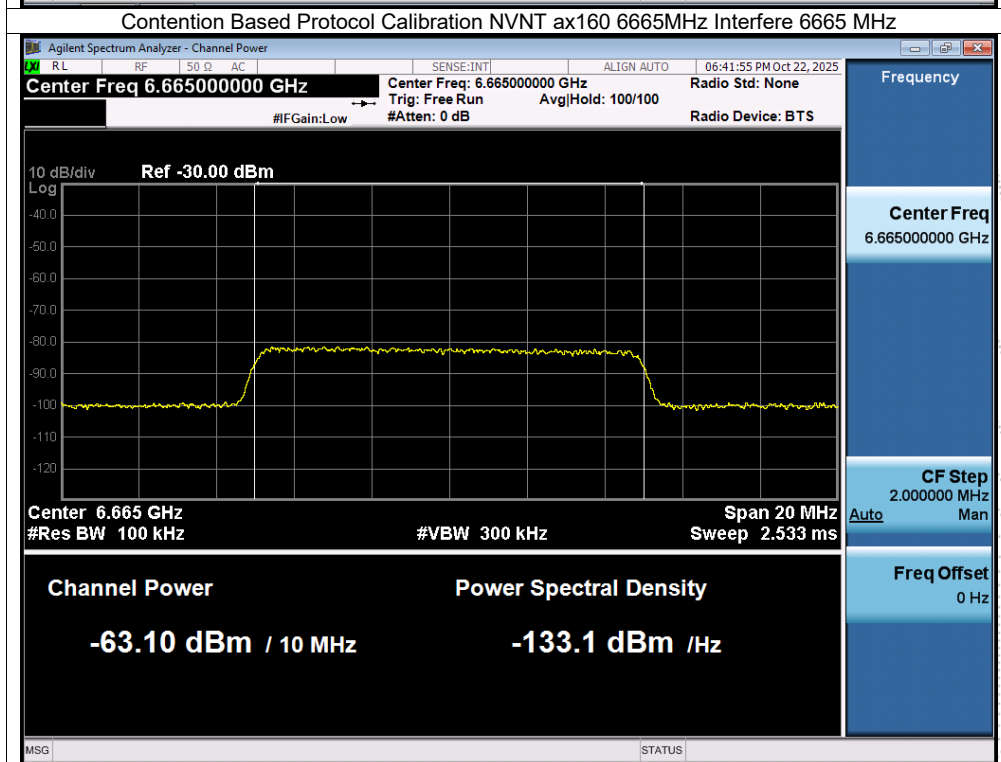
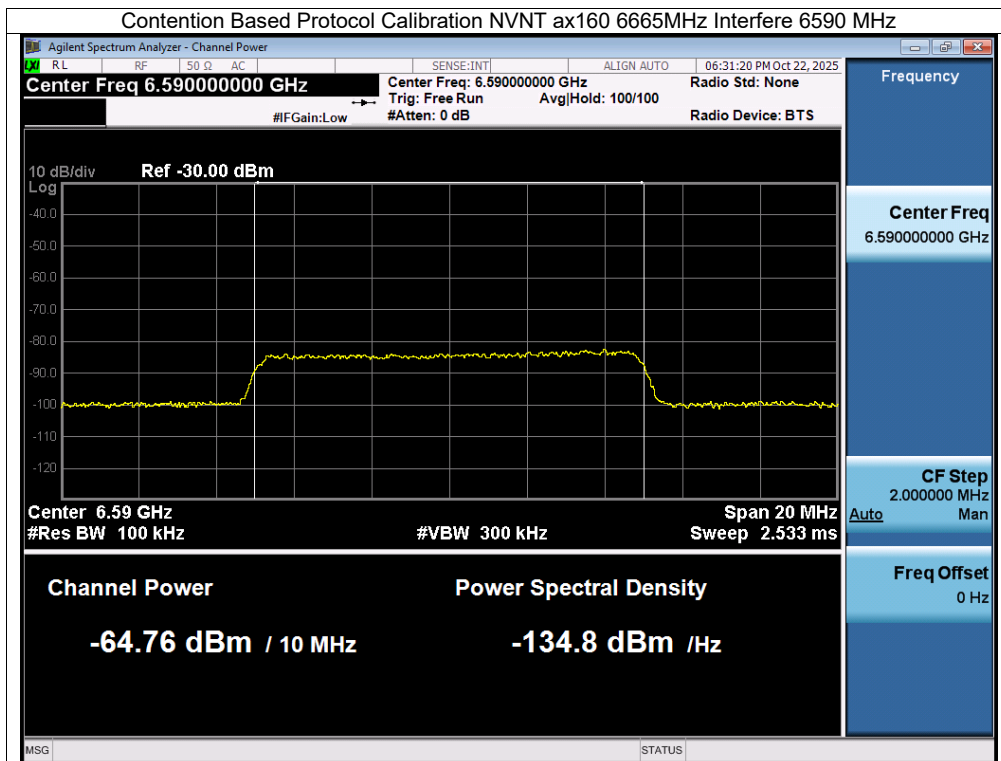


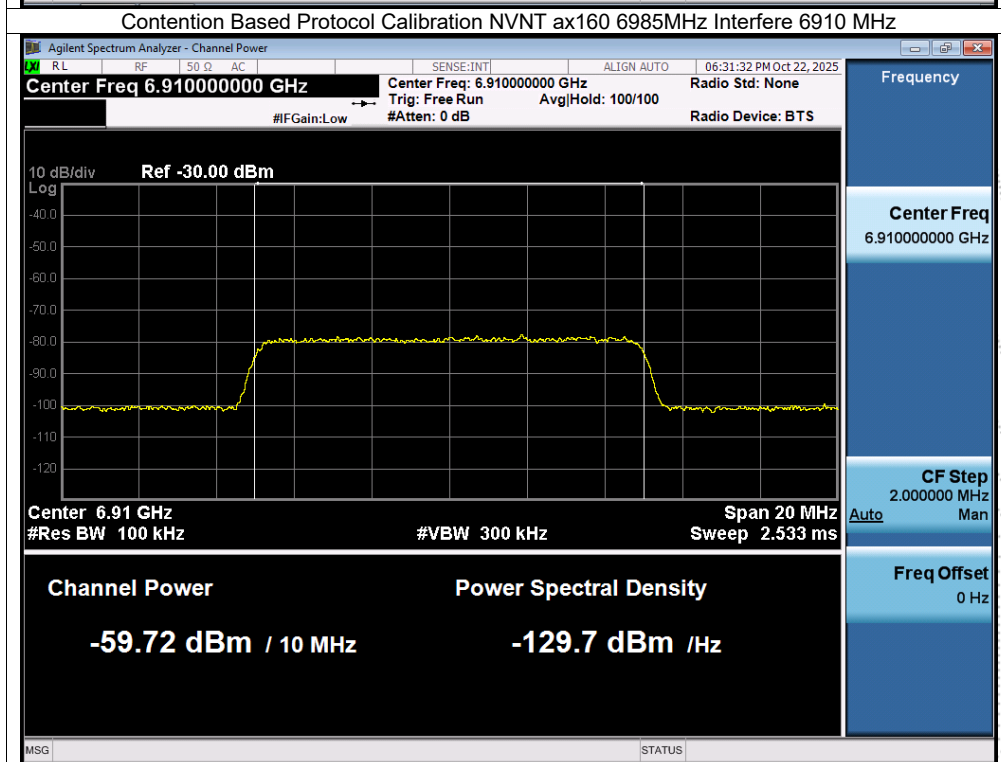
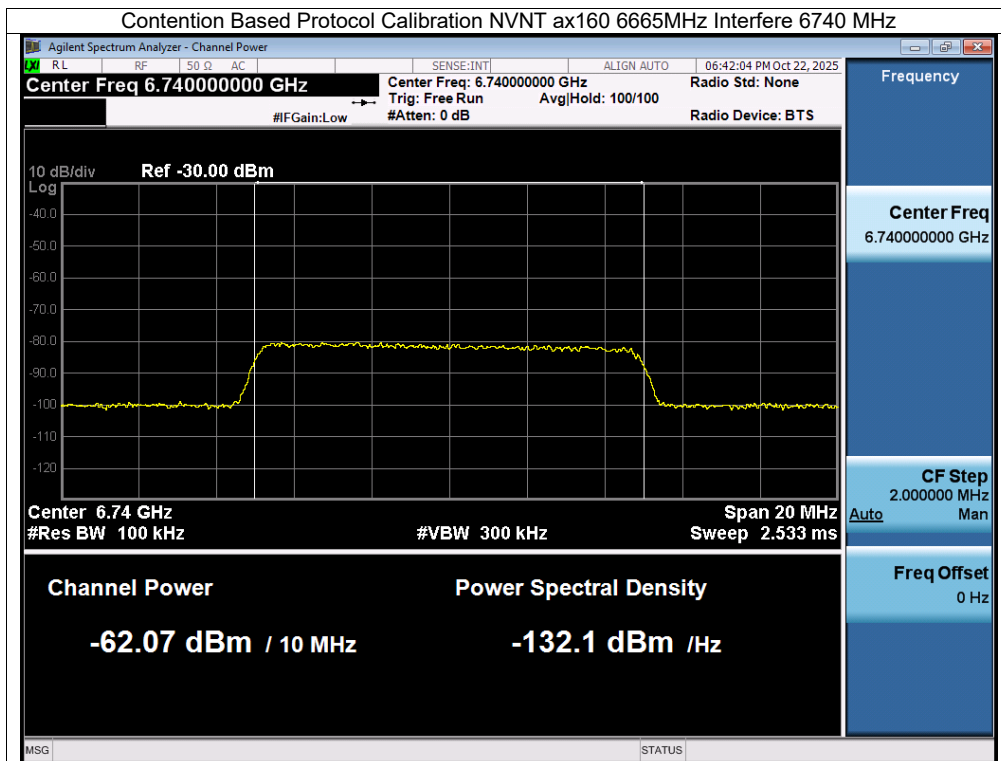


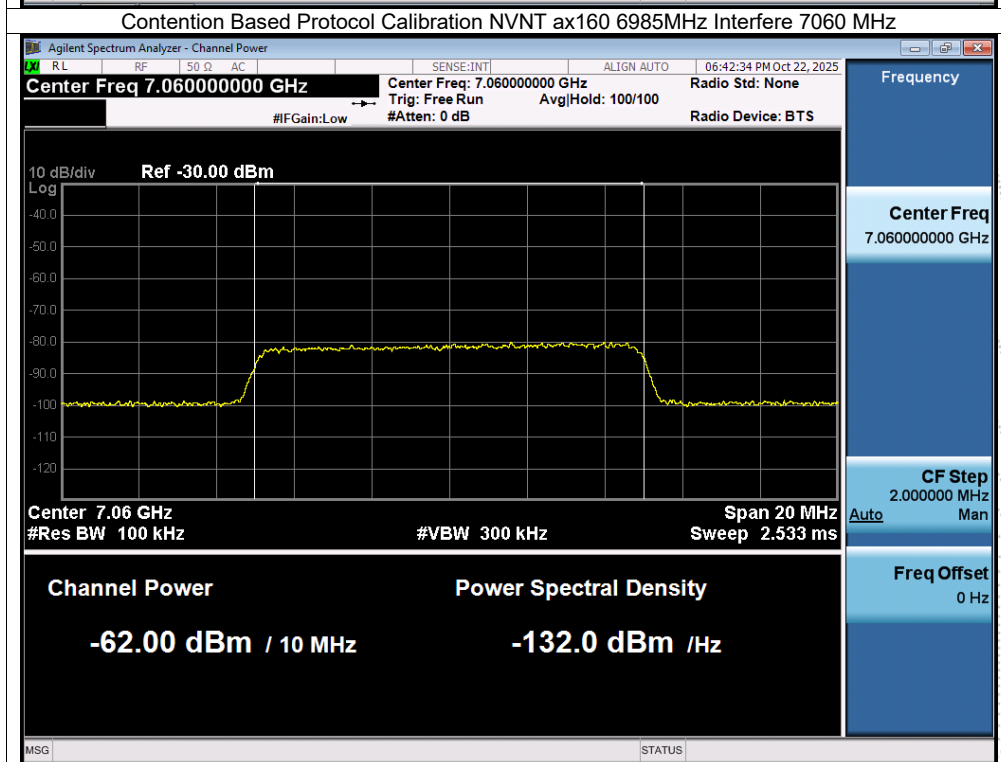
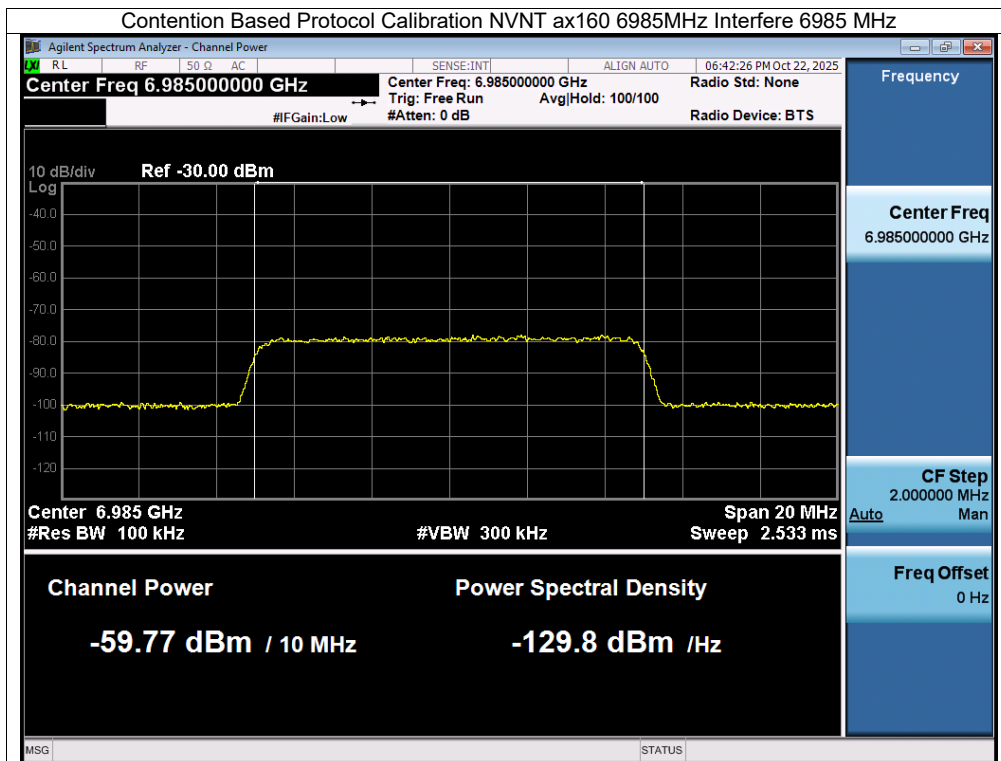












15. Duty Cycle Of Test Signal

15.1 Standard Requirement

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle. All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

15.2 Formula

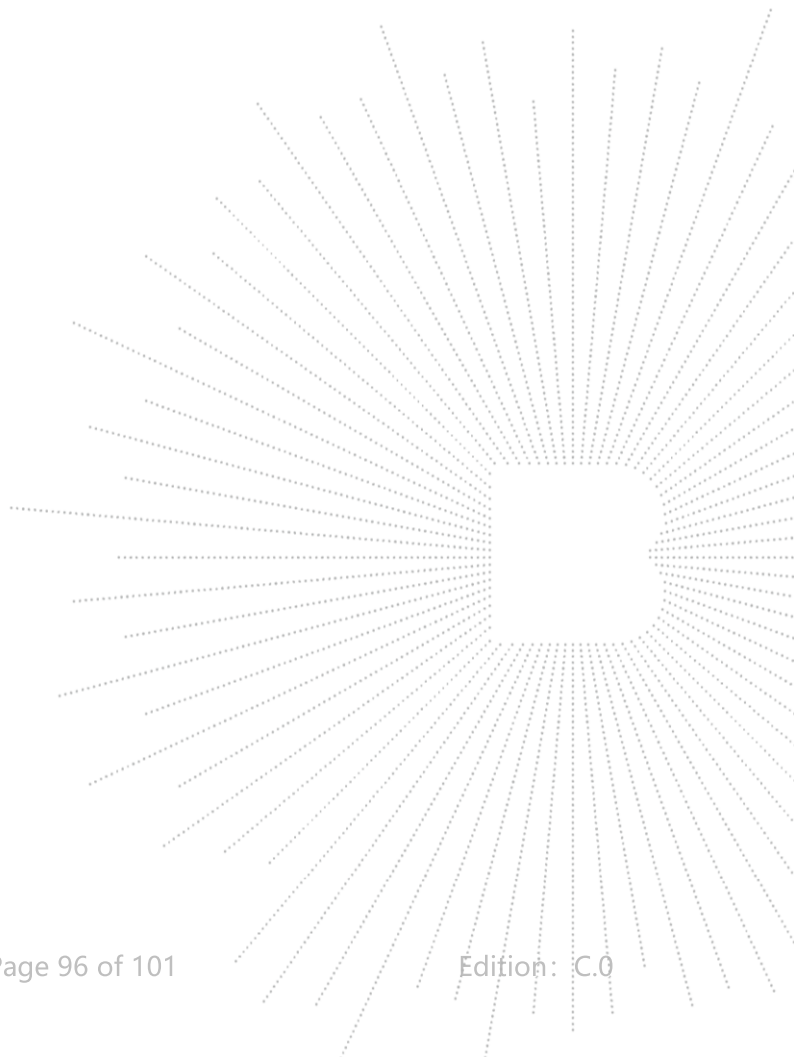
Duty Cycle = $T_{on} / (T_{on} + T_{off})$

15.3 Test Procedure

1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

15.4 Test Result

Please refer to Appendix 1: Duty Cycle
Test Result: Pass



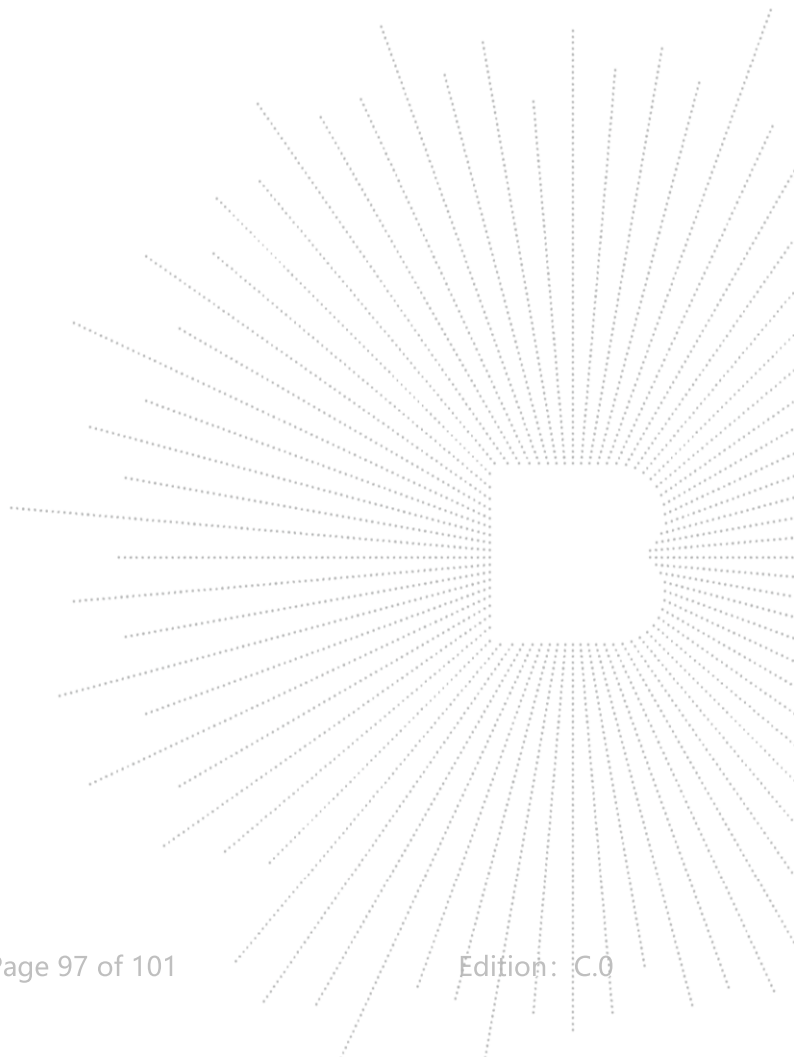
16. Antenna Requirement

16.1 Limit

15.203 requirement: For intentional device, according to 15.203: 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.

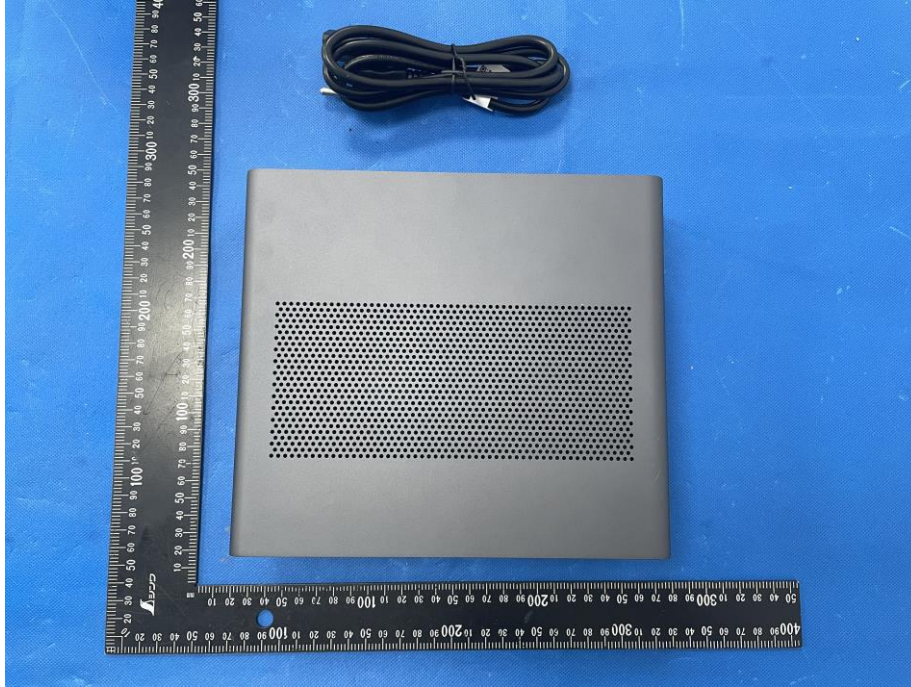
16.2 Test Result

The EUT antenna is internal antenna, fulfill the requirement of this section.

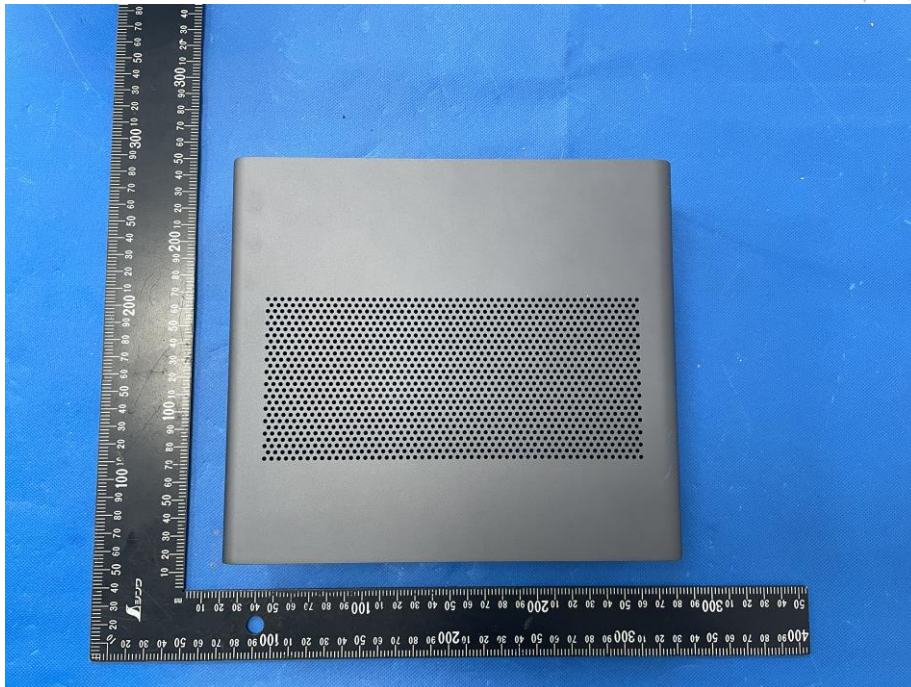


17. EUT Photographs

EUT Photo 1



EUT Photo 2



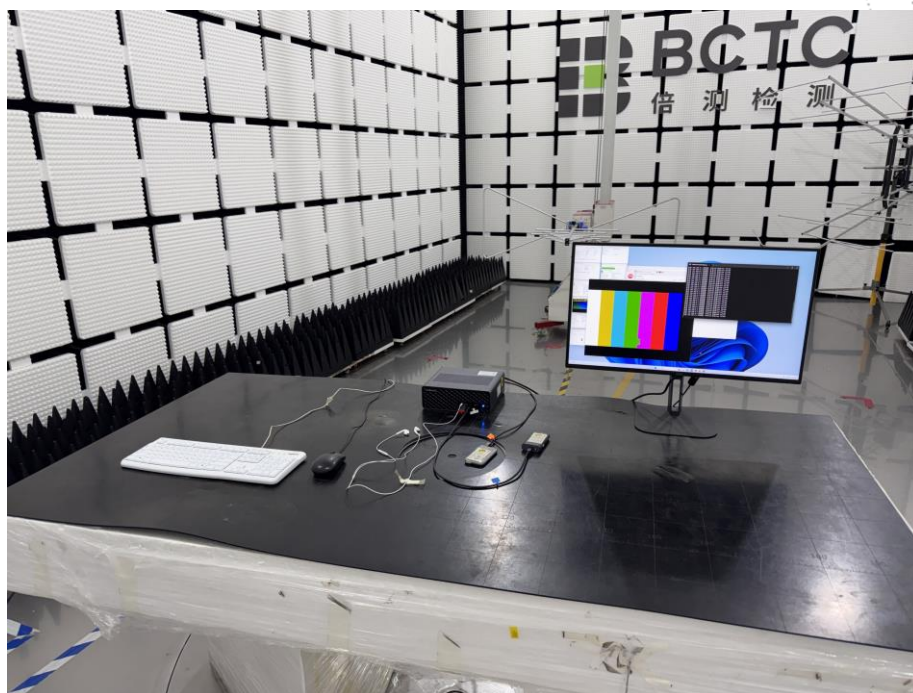
NOTE: Appendix-Photographs Of EUT Constructional Details.

18. EUT Test Setup Photographs

Conducted emissions Photo



Radiated Measurement Photos





STATEMENT

1. The equipment lists are traceable to the national reference standards.
2. The test report can not be partially copied unless prior written approval is issued from our lab.
3. The test report is invalid without the "special seal for inspection and testing".
4. The test report is invalid without the signature of the approver.
5. The test process and test result is only related to the Unit Under Test.
6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.
7. The quality system of our laboratory is in accordance with ISO/IEC17025.
8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

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***** END *****