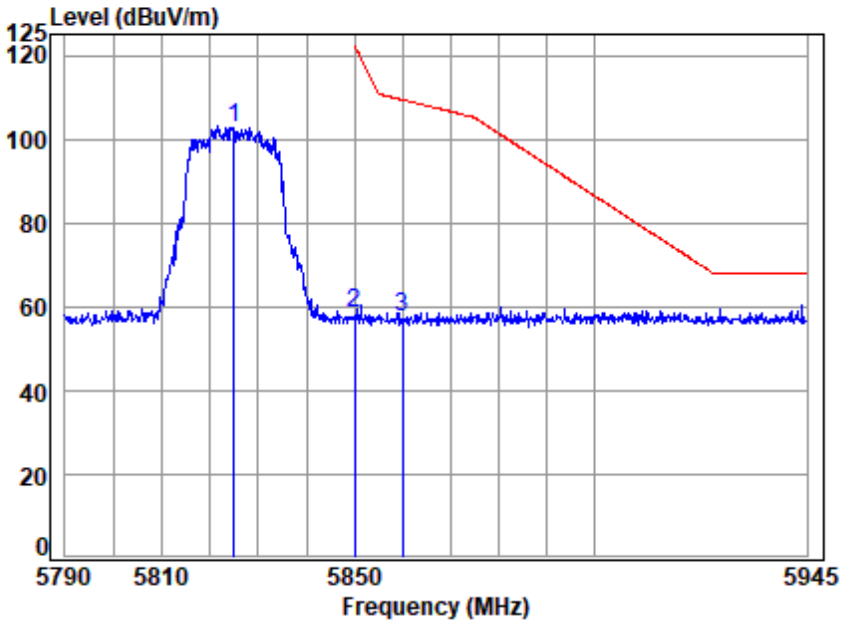
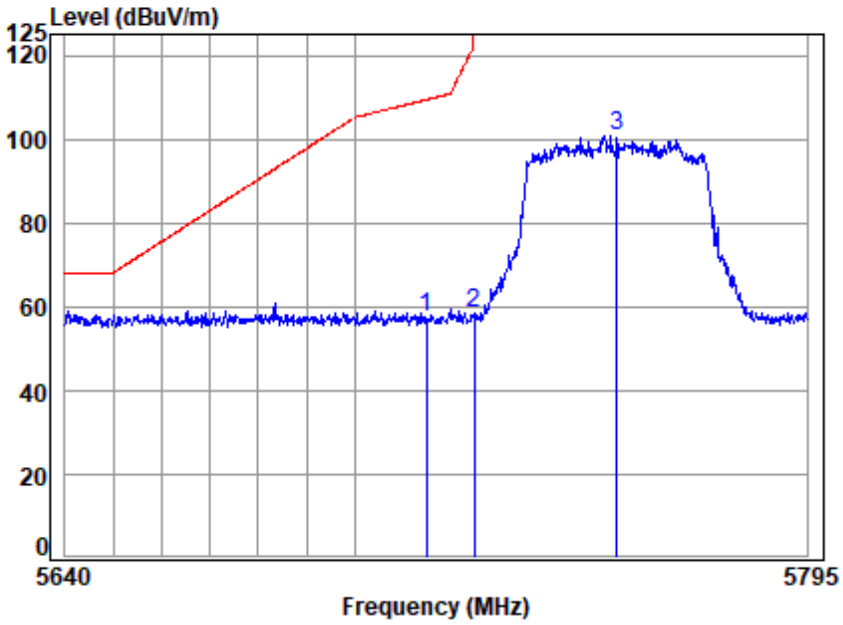
Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 11613CR
Mode : 5825 Band edge
: 5G WIFI 11N20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5825.000	8.23	34.93	42.35	102.02	102.83	------	------	peak
2	5850.000	8.24	34.95	42.33	57.37	58.23	122.20	-63.97	peak
3	5860.000	8.24	34.96	42.33	56.55	57.42	109.40	-51.98	peak

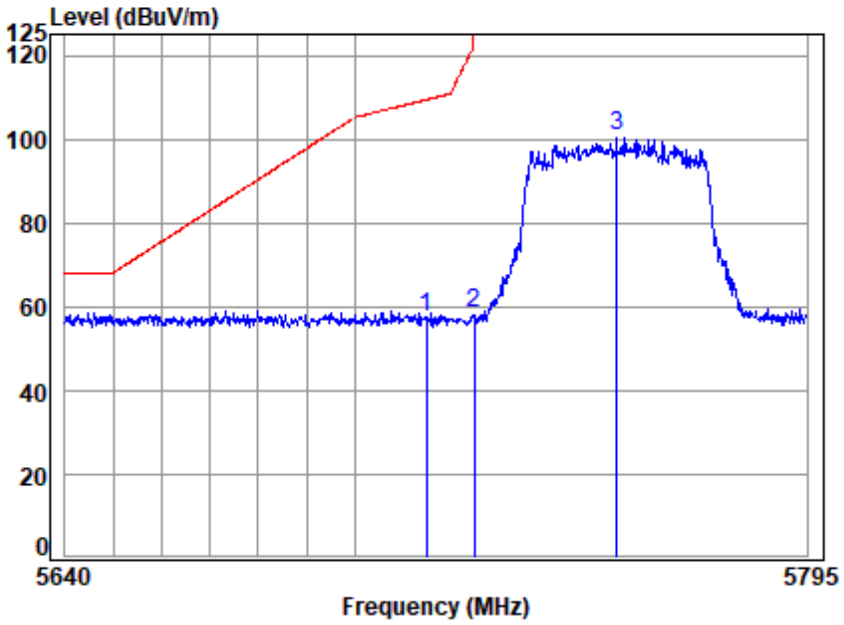
Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 11613CR
Mode : 5755 Band edge
: 5G WIFI 11N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5715.000	8.22	34.82	42.42	57.12	57.74	109.40	-51.66	peak
2	5725.000	8.22	34.83	42.41	57.99	58.63	122.20	-63.57	peak
3	5755.000	8.22	34.86	42.39	100.17	100.86	------	------	peak

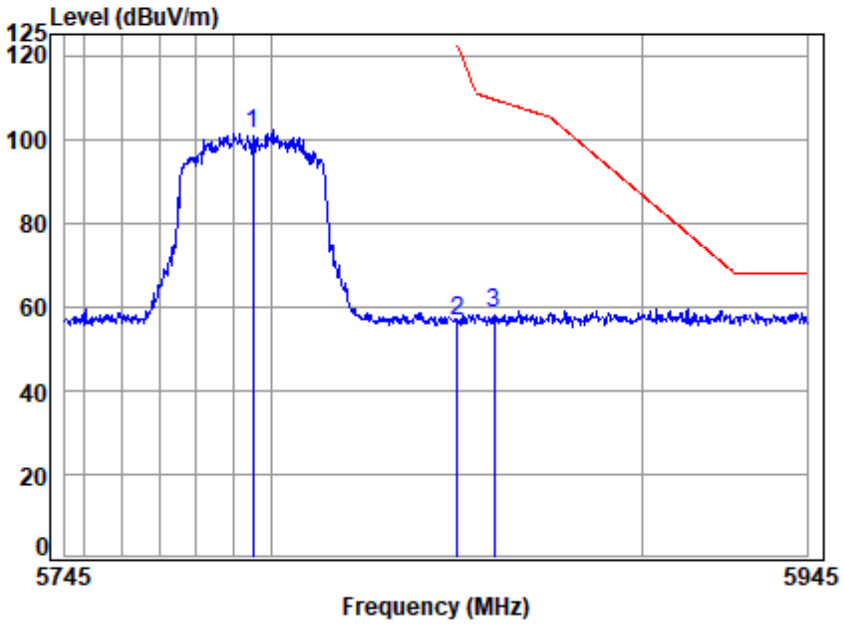
Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No : 11613CR
Mode : 5755 Band edge
: 5G WIFI 11N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5715.000	8.22	34.82	42.42	56.92	57.54	109.40	-51.86	peak
2	5725.000	8.22	34.83	42.41	57.74	58.38	122.20	-63.82	peak
3	5755.000	8.22	34.86	42.39	99.90	100.59	------	------	peak

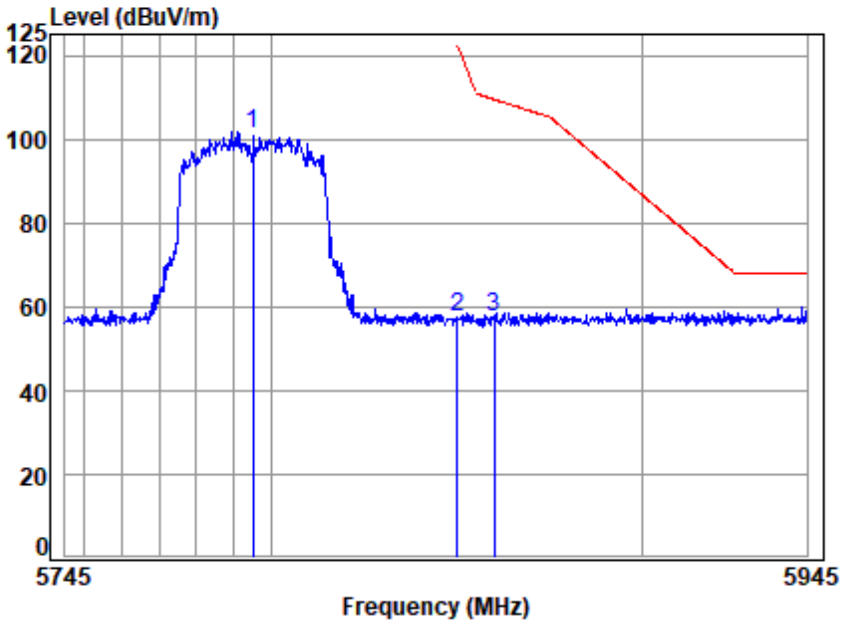
Test Mode: 07; Polarity: Horizontal; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 11613CR
Mode : 5795 Band edge
: 5G WIFI 11N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5795.000	8.23	34.90	42.37	100.70	101.46	------	------	peak
2	5850.000	8.24	34.95	42.33	55.90	56.76	122.20	-65.44	peak
3	5860.000	8.24	34.96	42.33	57.47	58.34	109.40	-51.06	peak

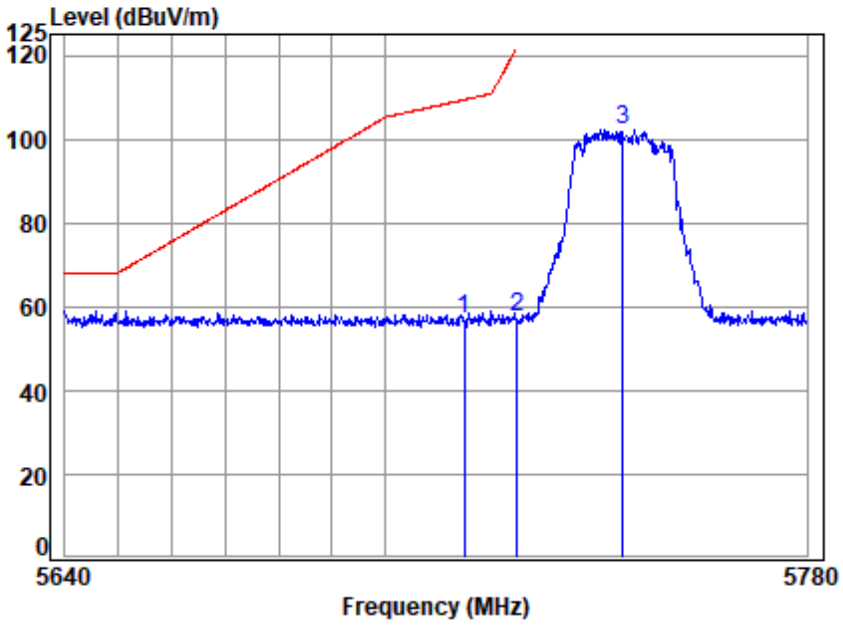
Test Mode: 07; Polarity: Vertical; Modulation:802.11n; Bandwidth:40MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 11613CR
Mode : 5795 Band edge
: 5G WIFI 11N40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5795.000	8.23	34.90	42.37	100.35	101.11	------	------	peak
2	5850.000	8.24	34.95	42.33	56.49	57.35	122.20	-64.85	peak
3	5860.000	8.24	34.96	42.33	56.54	57.41	109.40	-51.99	peak

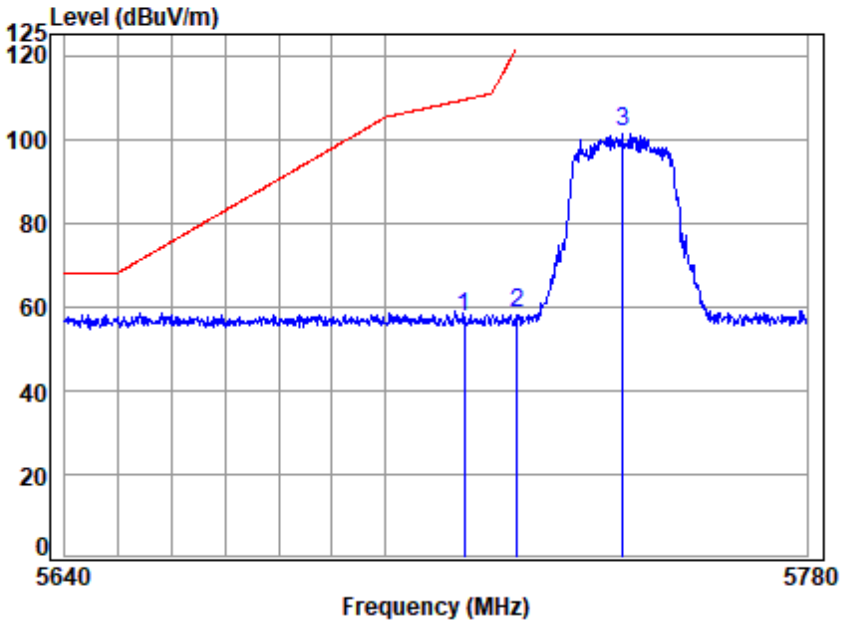
Test Mode: 07; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 11613CR
Mode : 5745 Band edge
: 5G WIFI 11AC20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5715.000	8.22	34.82	42.42	56.60	57.22	109.40	-52.18	peak
2	5725.000	8.22	34.83	42.41	56.80	57.44	122.20	-64.76	peak
3	5745.000	8.22	34.85	42.40	101.65	102.32	------	------	peak

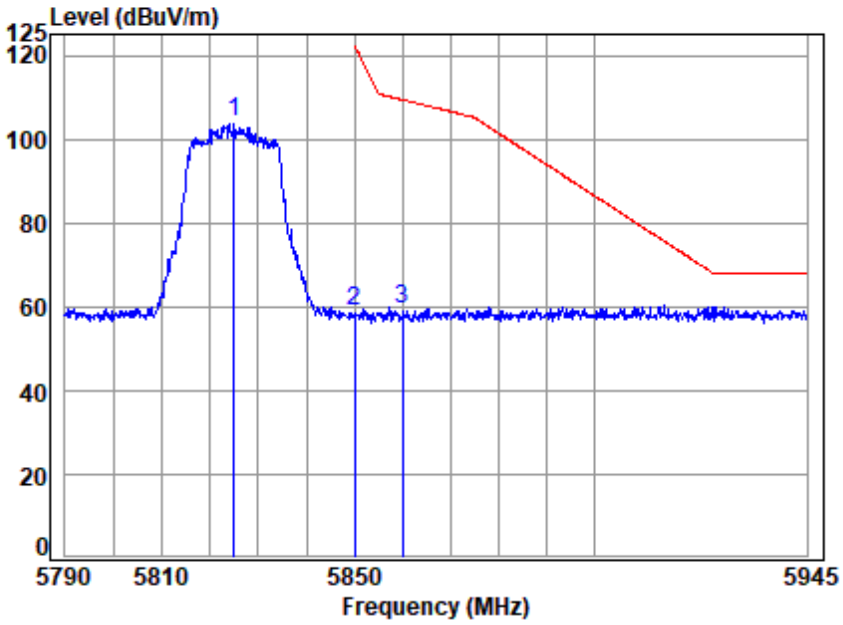
Test Mode: 07; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No : 11613CR
Mode : 5745 Band edge
: 5G WIFI 11AC20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5715.000	8.22	34.82	42.42	57.04	57.66	109.40	-51.74	peak
2	5725.000	8.22	34.83	42.41	57.79	58.43	122.20	-63.77	peak
3	5745.000	8.22	34.85	42.40	101.06	101.73	------	------	peak

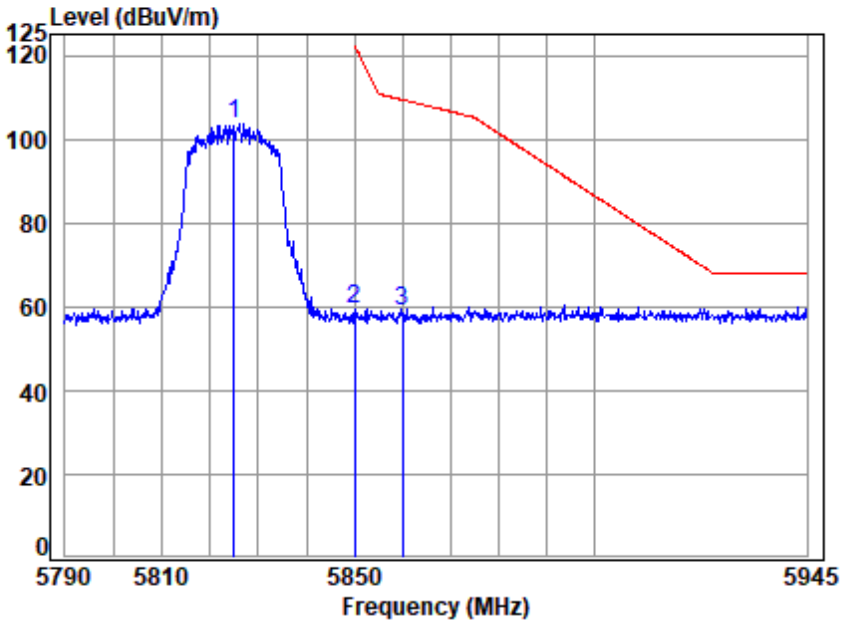
Test Mode: 07; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 11613CR
Mode : 5825 Band edge
: 5G WIFI 11AC20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5825.000	8.23	34.93	42.35	103.09	103.90	------	------	peak
2	5850.000	8.24	34.95	42.33	58.21	59.07	122.20	-63.13	peak
3	5860.000	8.24	34.96	42.33	58.58	59.45	109.40	-49.95	peak

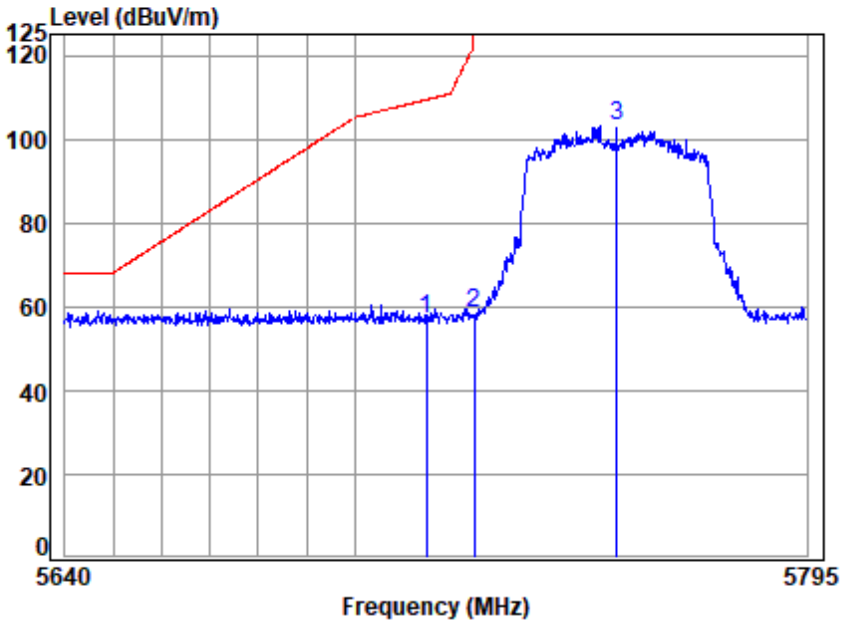
Test Mode: 07; Polarity: Vertical; Modulation:802.11ac; Bandwidth:20MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 11613CR
Mode : 5825 Band edge
: 5G WIFI 11AC20

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5825.000	8.23	34.93	42.35	102.82	103.63	------	------	peak
2	5850.000	8.24	34.95	42.33	58.53	59.39	122.20	-62.81	peak
3	5860.000	8.24	34.96	42.33	58.27	59.14	109.40	-50.26	peak

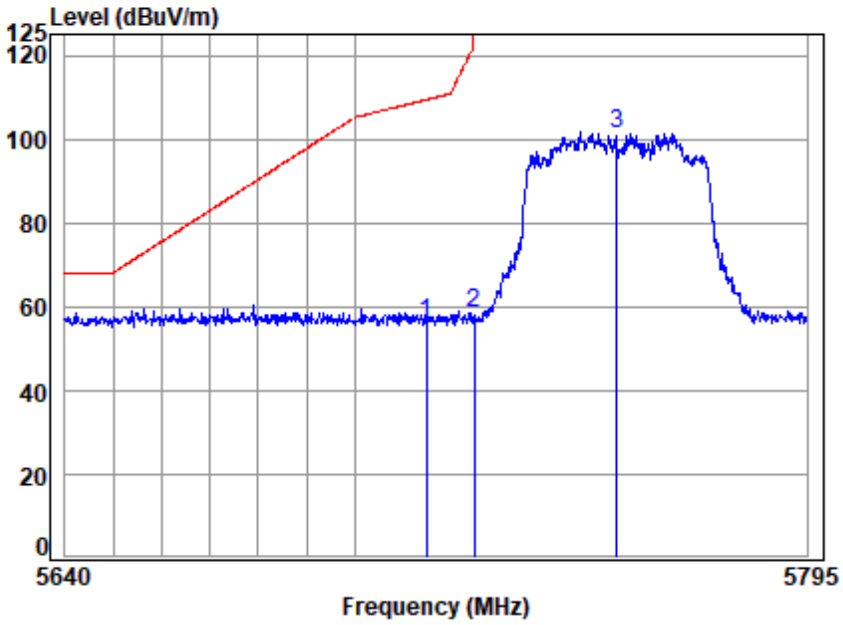
Test Mode: 07; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:40MHz; Channel:Low



Site : chamber
Condition: 3m HORIZONTAL
Job No : 11613CR
Mode : 5755 Band edge
: 5G WIFI 11AC40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5715.000	8.22	34.82	42.42	56.20	56.82	109.40	-52.58	peak
2	5725.000	8.22	34.83	42.41	57.72	58.36	122.20	-63.84	peak
3	5755.000	8.22	34.86	42.39	102.25	102.94	------	------	peak

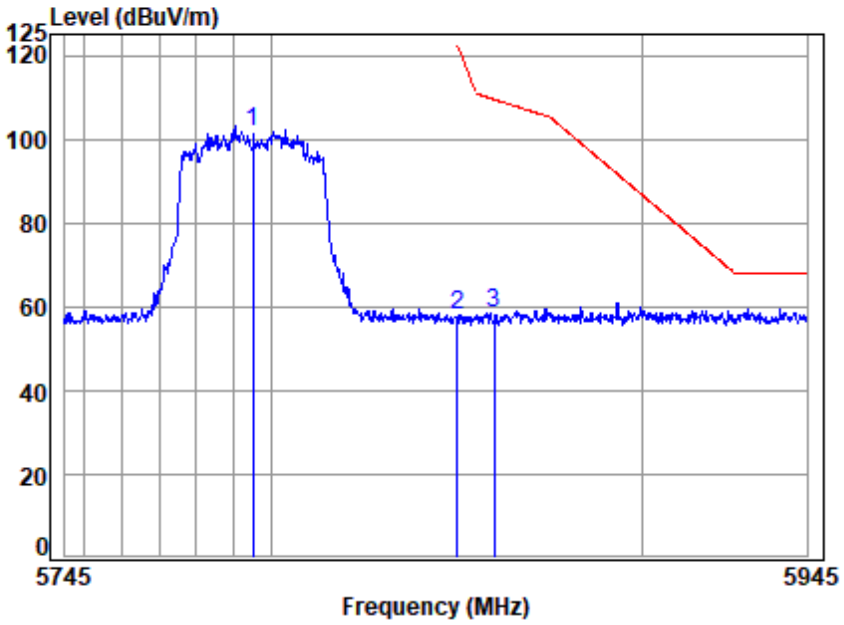
Test Mode: 07; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:Low



Site : chamber
Condition: 3m VERTICAL
Job No : 11613CR
Mode : 5755 Band edge
: 5G WIFI 11AC40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5715.000	8.22	34.82	42.42	55.55	56.17	109.40	-53.23	peak
2	5725.000	8.22	34.83	42.41	57.70	58.34	122.20	-63.86	peak
3	5755.000	8.22	34.86	42.39	100.39	101.08	------	------	peak

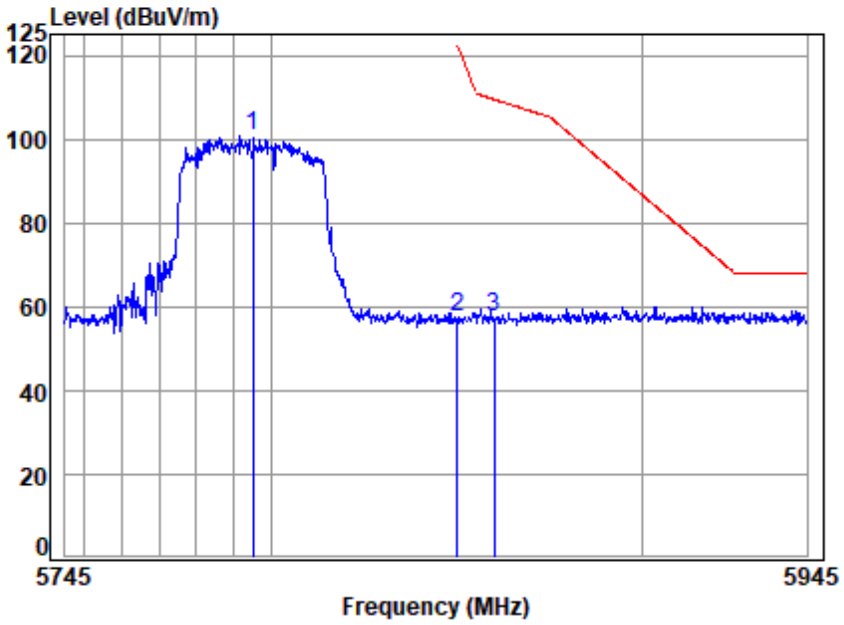
Test Mode: 07; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:40MHz; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 11613CR
Mode : 5795 Band edge
: 5G WIFI 11AC40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5795.000	8.23	34.90	42.37	100.81	101.57	------	------	peak
2	5850.000	8.24	34.95	42.33	57.27	58.13	122.20	-64.07	peak
3	5860.000	8.24	34.96	42.33	57.52	58.39	109.40	-51.01	peak

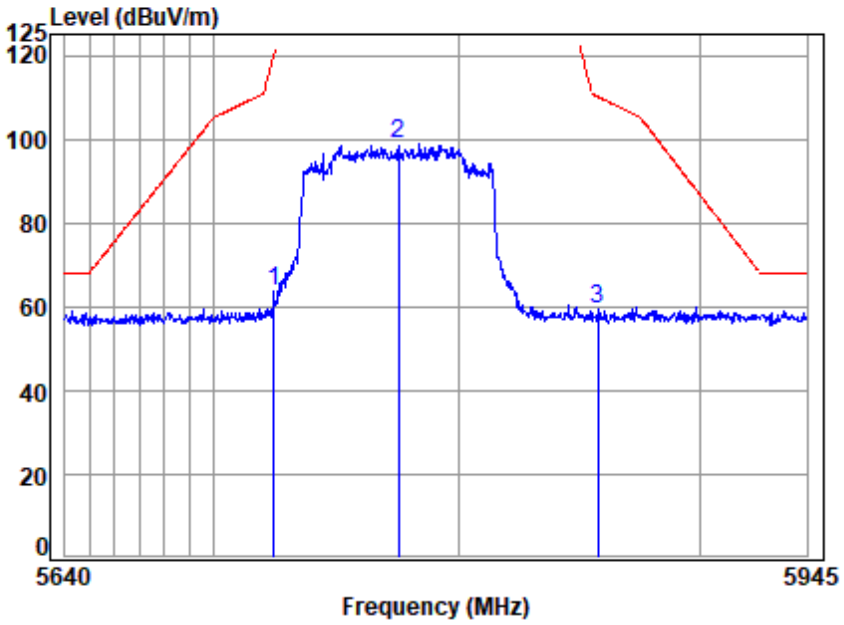
Test Mode: 07; Polarity: Vertical; Modulation:802.11ac; Bandwidth:40MHz; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 11613CR
Mode : 5795 Band edge
: 5G WIFI 11AC40

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5795.000	8.23	34.90	42.37	99.87	100.63	------	------	peak
2	5850.000	8.24	34.95	42.33	56.50	57.36	122.20	-64.84	peak
3	5860.000	8.24	34.96	42.33	56.49	57.36	109.40	-52.04	peak

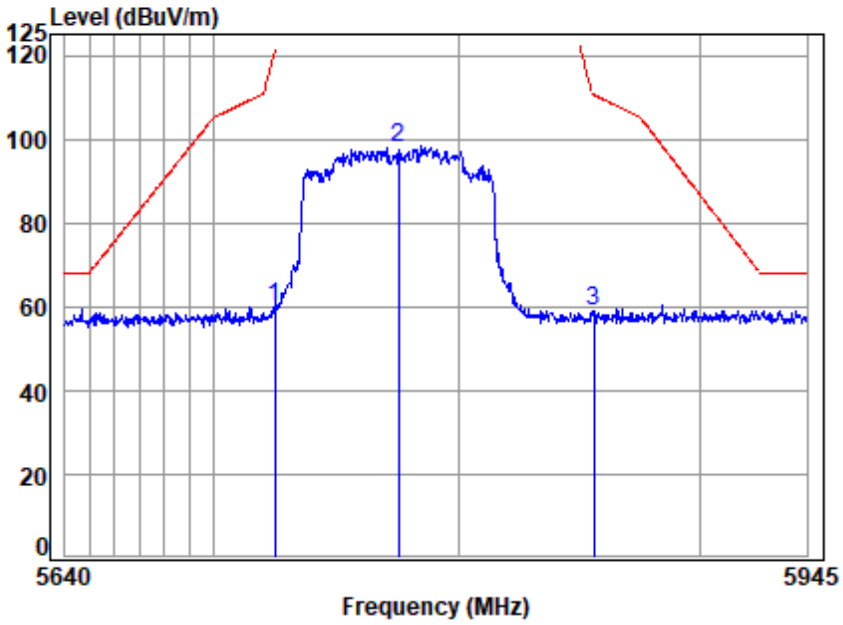
Test Mode: 07; Polarity: Horizontal; Modulation:802.11ac; Bandwidth:80MHz; Channel:middle



Site : chamber
Condition: 3m HORIZONTAL
Job No : 11613CR
Mode : 5775 Band edge
: 5G WIFI 11AC80

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5724.088	8.22	34.83	42.41	62.87	63.51	120.12	-56.61	peak
2	5775.000	8.22	34.88	42.38	98.22	98.94	------	------	peak
3	5857.666	8.24	34.96	42.33	58.39	59.26	110.05	-50.79	peak

Test Mode: 07; Polarity: Vertical; Modulation:802.11ac; Bandwidth:80MHz; Channel:middle



Site : chamber
Condition: 3m VERTICAL
Job No : 11613CR
Mode : 5775 Band edge
: 5G WIFI 11AC80

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5724.691	8.22	34.83	42.41	59.27	59.91	121.50	-61.59	peak
2	5775.000	8.22	34.88	42.38	97.14	97.86	------	------	peak
3	5855.815	8.24	34.96	42.33	58.24	59.11	110.57	-51.46	peak

7.9 Minimum 6 dB bandwidth (5.725-5.85 GHz band)

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

Test Method: KDB 789033 D02 II C 2

Limit:

Frequency band(MHz)	Limit
5725-5850	≥500 kHz

7.9.1 E.U.T. Operation

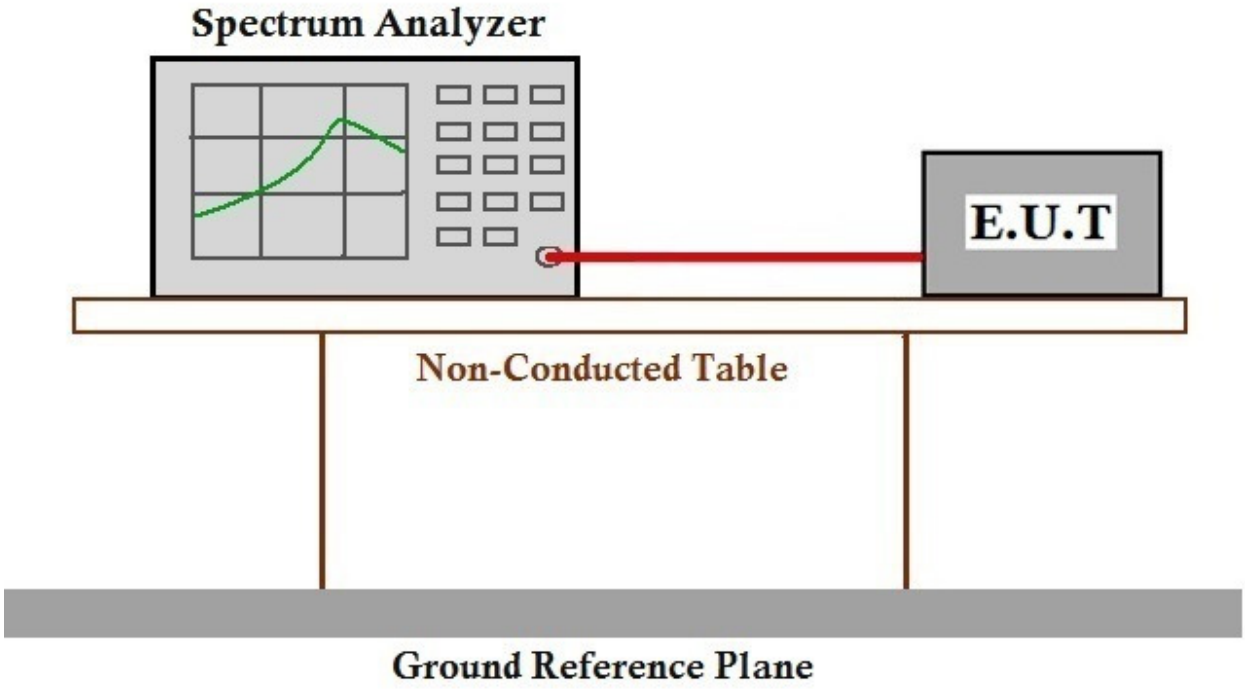
Operating Environment:

Temperature: 22.8 °C Humidity: 56.9 % RH Atmospheric Pressure: 1010 mbar

7.9.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80). Only the data of worst case is recorded in the report.

7.9.3 Test Setup Diagram



7.9.4 Measurement Procedure and Data

Please Refer To Appendix For Details

7.1 Frequency Stability

Test Requirement 47 CFR Part 15, Subpart C 15.407 (g)
Test Method: ANSI C63.10 (2013) Section 6.8

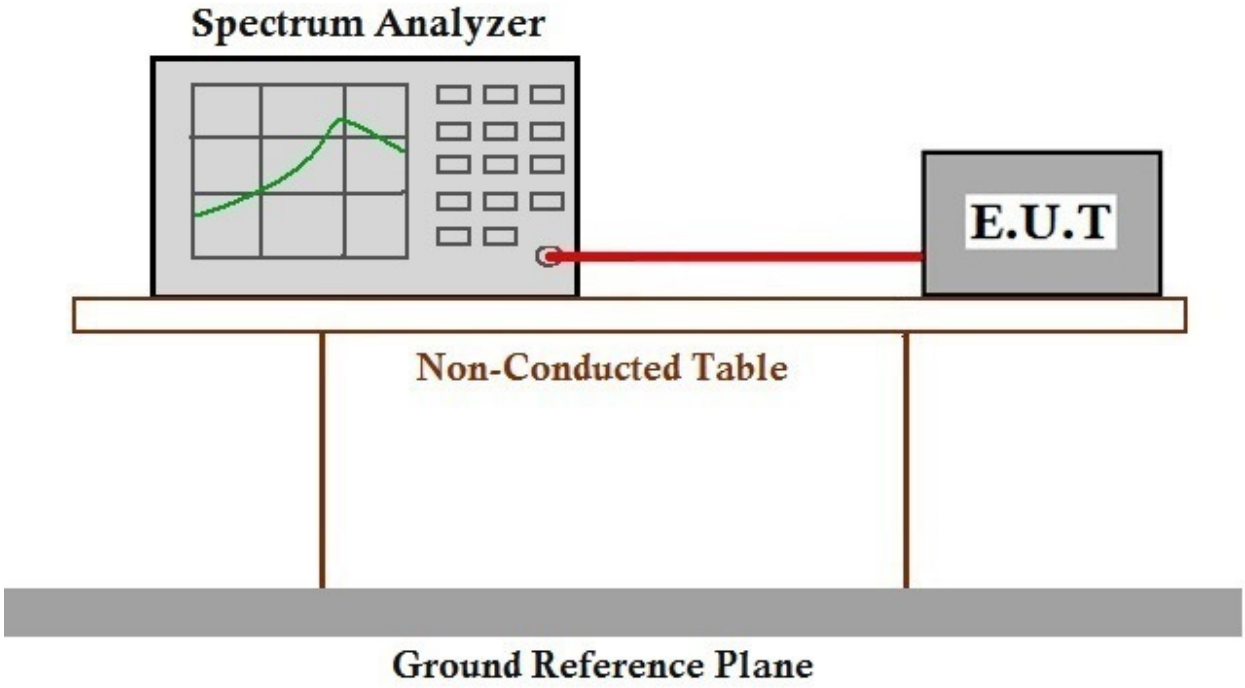
7.1.1 E.U.T. Operation

Operating Environment:
Temperature: 23.2 °C Humidity: 56.9 % RH Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	06	TX mode (U-NII-1)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80). Only the data of worst case is recorded in the report.
Final test	07	TX mode (U-NII-3)_Keep the EUT in continuously transmitting mode with all modulation types. All data rates for each modulation type have been tested and found the data rate @ 6Mbps is the worst case of IEEE 802.11a; data rate @ MCS0 is the worst case of IEEE 802.11n(HT20); data rate @ MCS0 is the worst case of IEEE 802.11n(HT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT20); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT40); data rate @ MCS0 is the worst case of IEEE 802.11ac(VHT80). Only the data of worst case is recorded in the report.

7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

Please Refer To Appendix For Details

8 Test Setup Photo

Refer to Setup Photos

9 EUT Constructional Details (EUT Photos)

Refer to EUT External and Internal photos

10 Appendix

Appendix for 15.407

1. Duty Cycle

1.1 Test Result

Test Mode	Channel Frequency (MHz)	TX Type	ANT No.	T_on (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
802.11a	5180	SISO	1	2.061	2.294	89.84	0.47
	5200	SISO	1	2.064	2.278	90.61	0.43
	5240	SISO	1	2.064	2.284	90.37	0.44
	5745	SISO	1	2.064	2.295	89.93	0.46
	5785	SISO	1	2.064	2.268	91.01	0.41
	5825	SISO	1	2.064	2.277	90.65	0.43
802.11n(HT20)	5180	MIMO	1	1.893	2.121	89.25	0.49
	5200	MIMO	1	1.893	2.104	89.97	0.46
	5240	MIMO	1	1.891	2.103	89.92	0.46
	5745	MIMO	1	1.891	2.111	89.58	0.48
	5785	MIMO	1	1.890	2.120	89.15	0.50
	5825	MIMO	1	1.892	2.120	89.25	0.49
802.11n(HT40)	5190	MIMO	1	0.945	1.175	80.43	0.95
	5230	MIMO	1	0.945	1.167	80.98	0.92
	5755	MIMO	1	0.943	1.264	74.60	1.27
	5795	MIMO	1	0.943	1.157	81.50	0.89
802.11ac(VHT20)	5180	MIMO	1	1.905	2.155	88.40	0.54
	5200	MIMO	1	1.904	2.148	88.64	0.52
	5240	MIMO	1	1.932	2.133	90.58	0.43
	5745	MIMO	1	1.905	2.158	88.28	0.54
	5785	MIMO	1	1.904	2.148	88.64	0.52
	5825	MIMO	1	1.902	2.155	88.26	0.54
802.11ac(VHT40)	5190	MIMO	1	0.951	1.171	81.21	0.90
	5230	MIMO	1	0.952	1.208	78.81	1.03
	5755	MIMO	1	0.952	1.207	78.87	1.03
	5795	MIMO	1	0.952	1.206	78.94	1.03
802.11ac(VHT80)	5210	MIMO	1	0.439	0.665	66.02	1.80
	5775	MIMO	1	0.440	0.657	66.97	1.74

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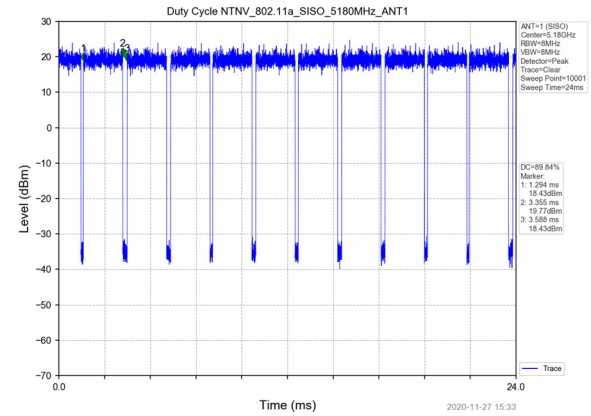
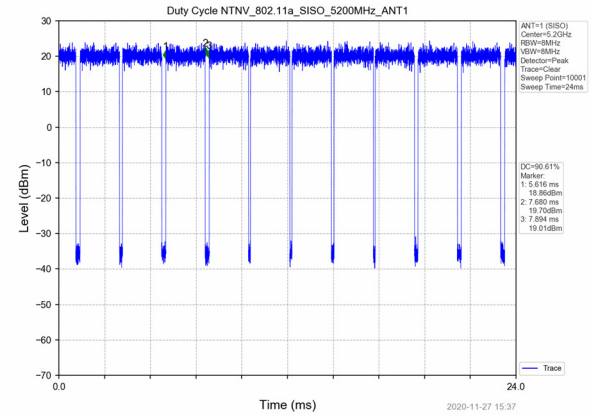
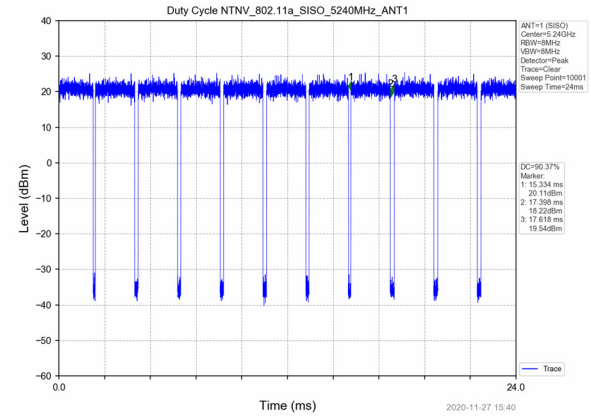
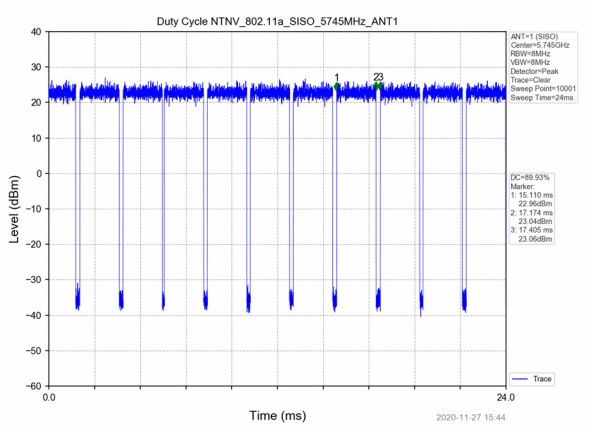
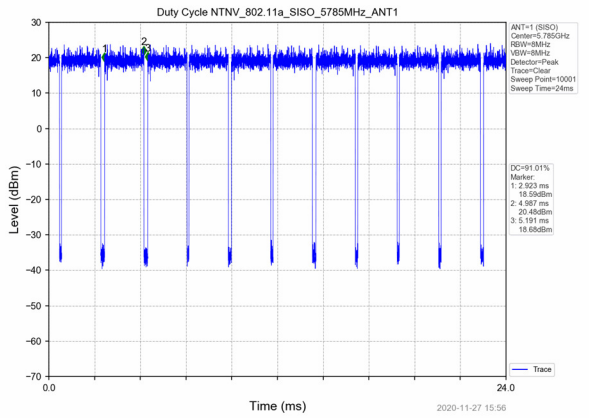
1.2 Test Graph

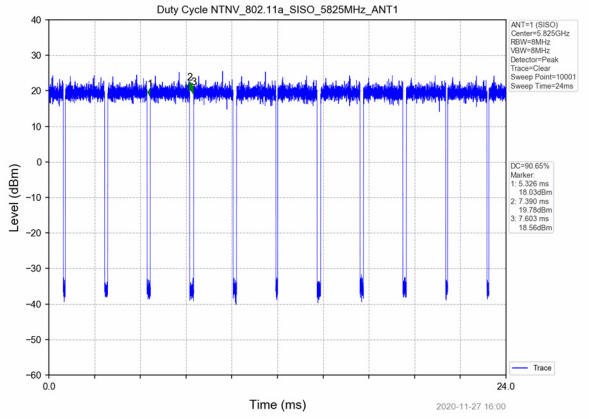


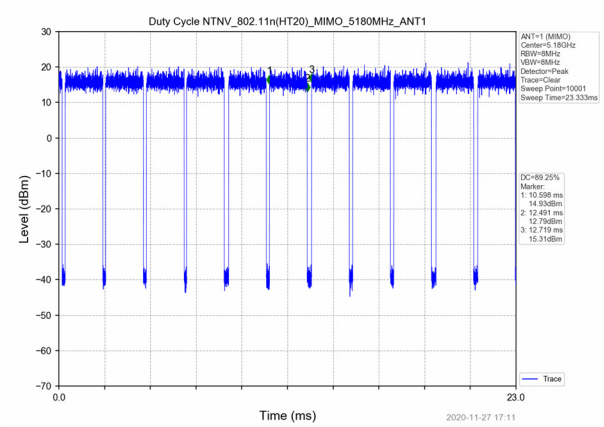


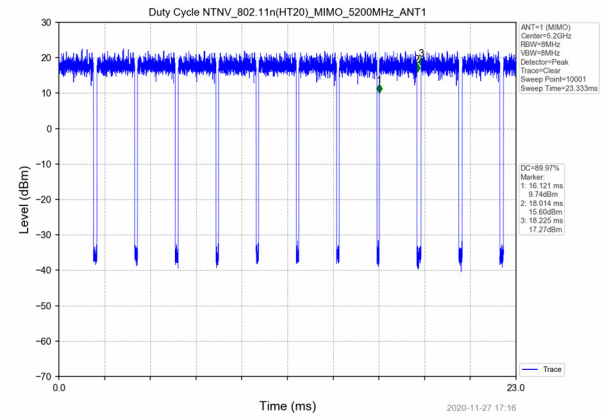


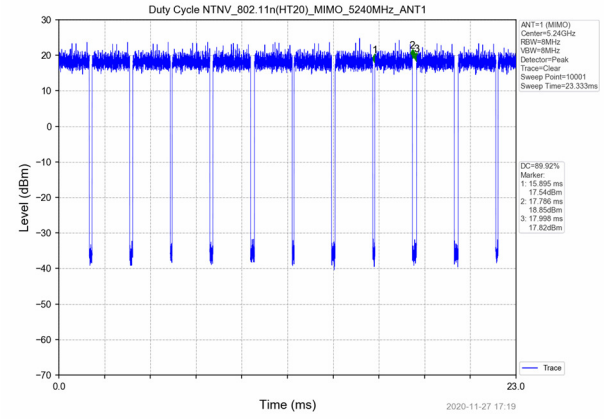












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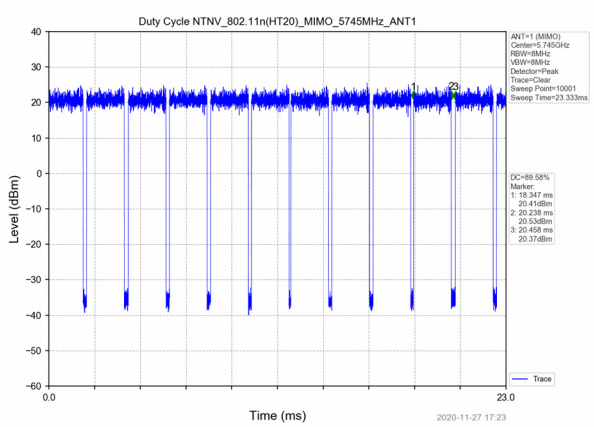

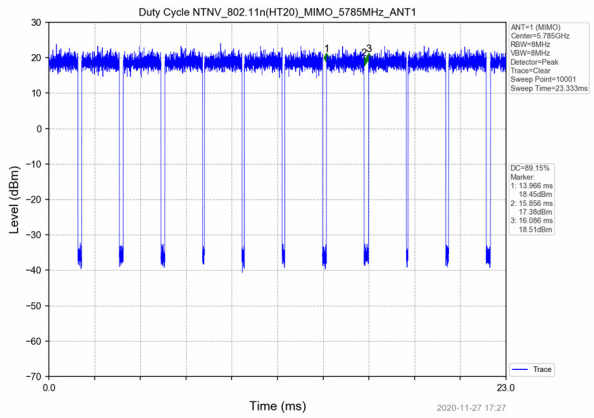

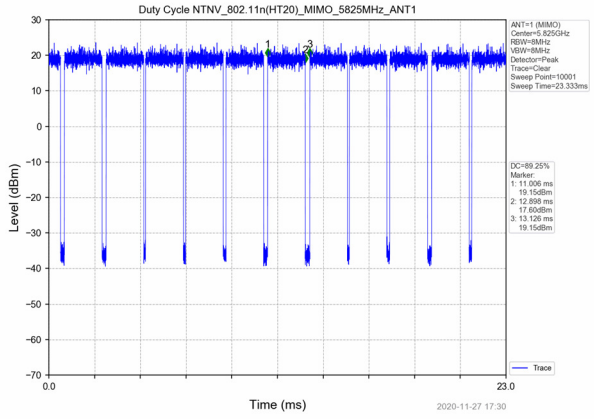

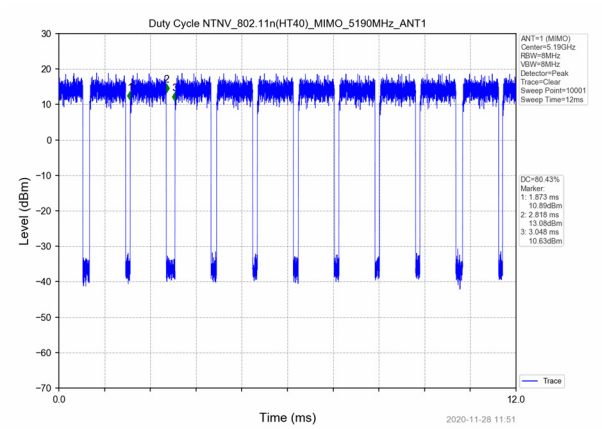

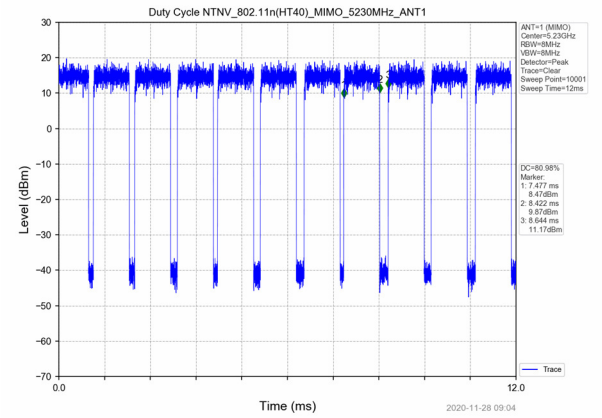

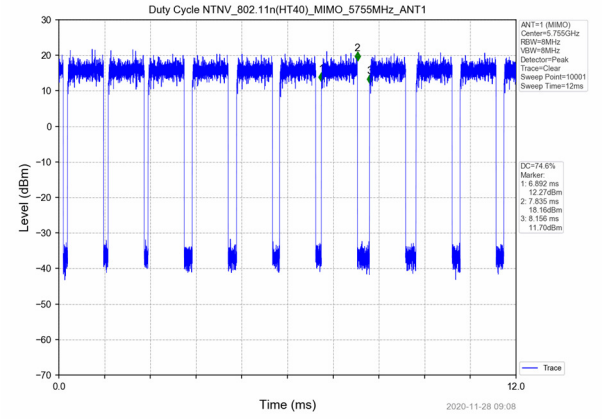

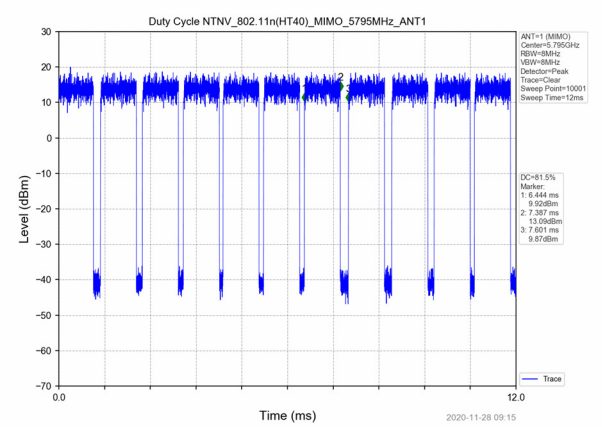

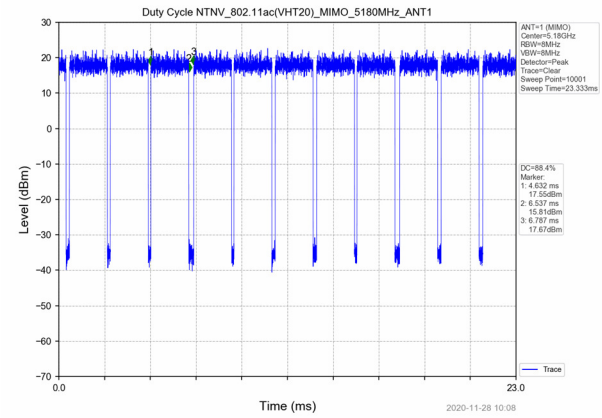

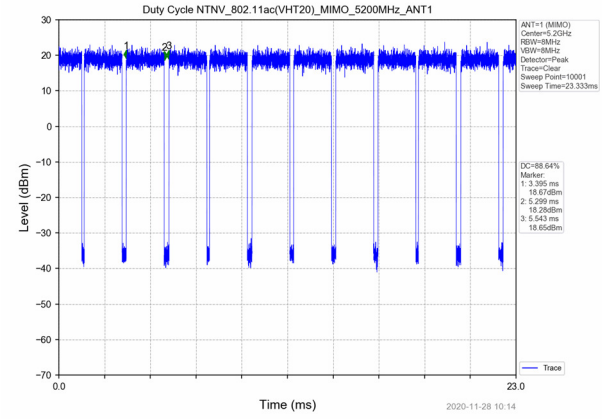

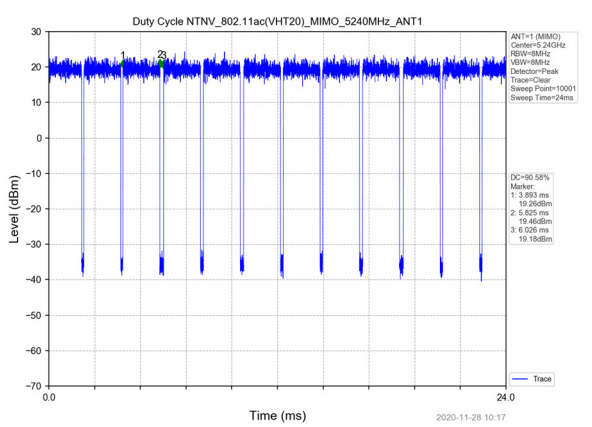

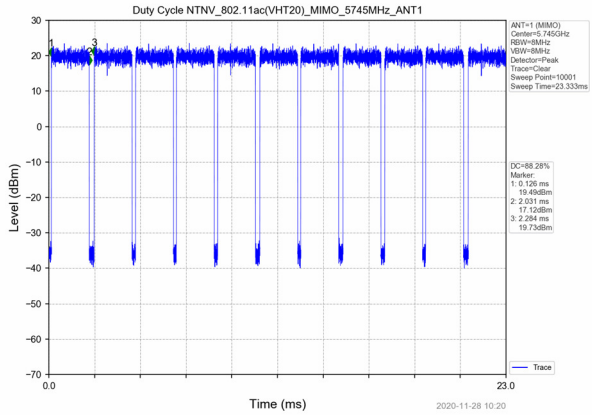

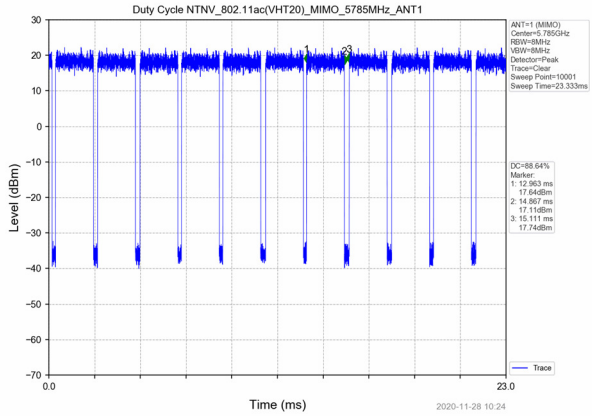

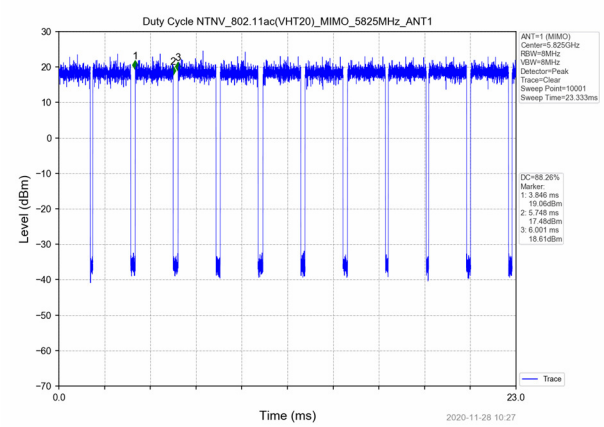

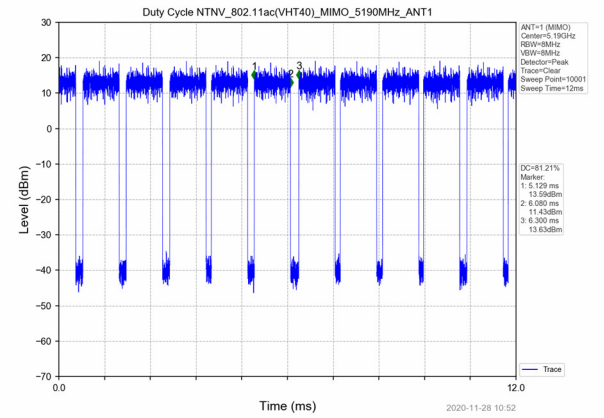

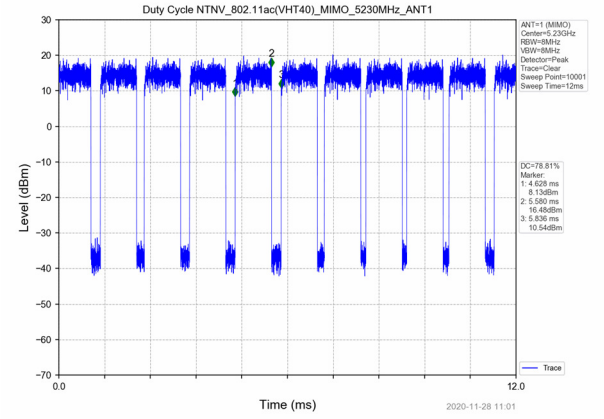

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