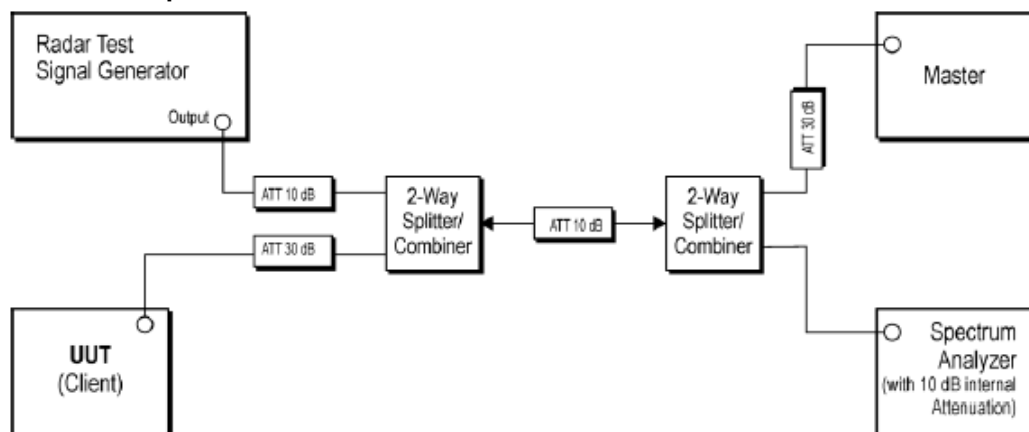


Conducted test setup**Setup for Client with injection at the Master**

Equipment Used: Refer to section 3 for details.

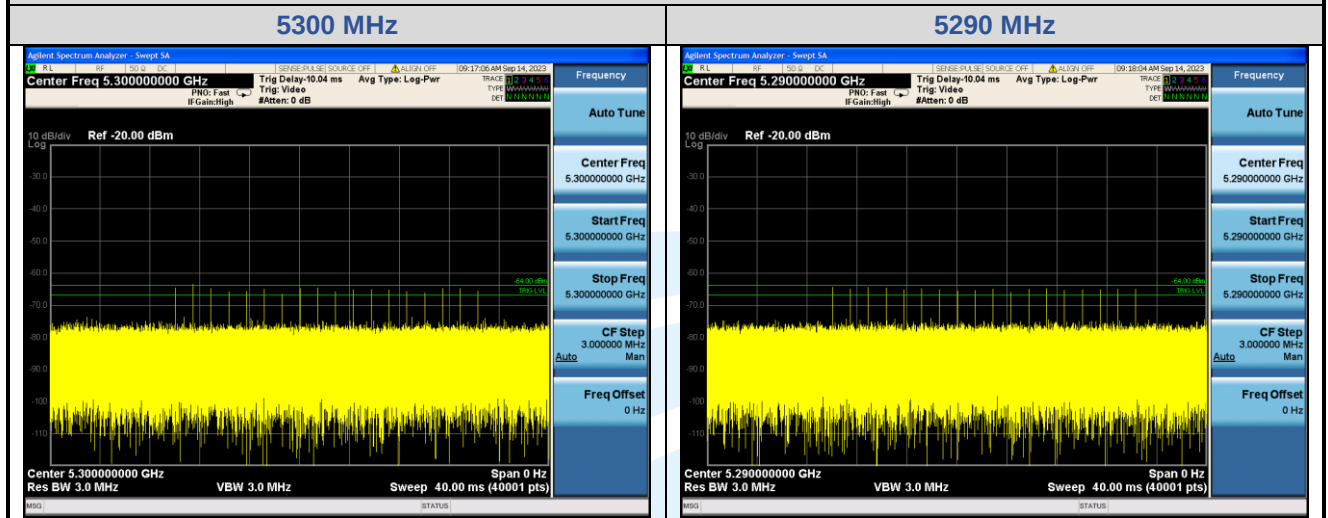
Test Result: Result of Channel Move Time, Channel Closing Transmission Time and Non-Occupancy Period for Client Beacon Test

The measurement data as follows:

BW / Channel	Test Item	Test Result	Limit	Pass/Fail
20 MHz / 5300 MHz	Channel Move Time	0.8142 s	< 10s	Pass
	Channel Closing Transmission Time	8.4 ms	< 200+60ms	Pass
	Non-Occupancy Period	No transmission	30 minutes	Pass
80 MHz / 5290 MHz	Channel Move Time	0.794 s	< 10s	Pass
	Channel Closing Transmission Time	6.6 ms	< 200+60ms	Pass
	Non-Occupancy Period	No transmission	30 minutes	Pass

Radars Waveform calibration Plot

Reference DFS test signal



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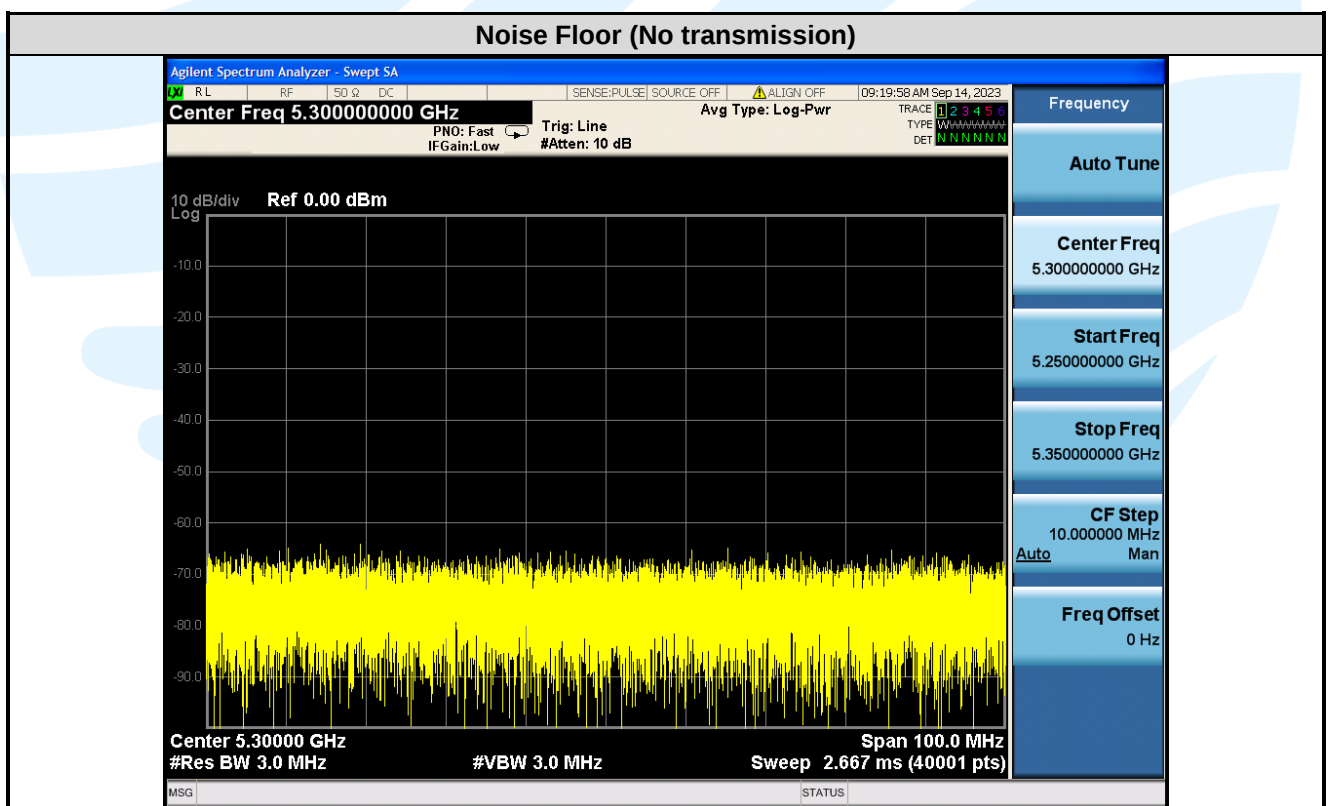
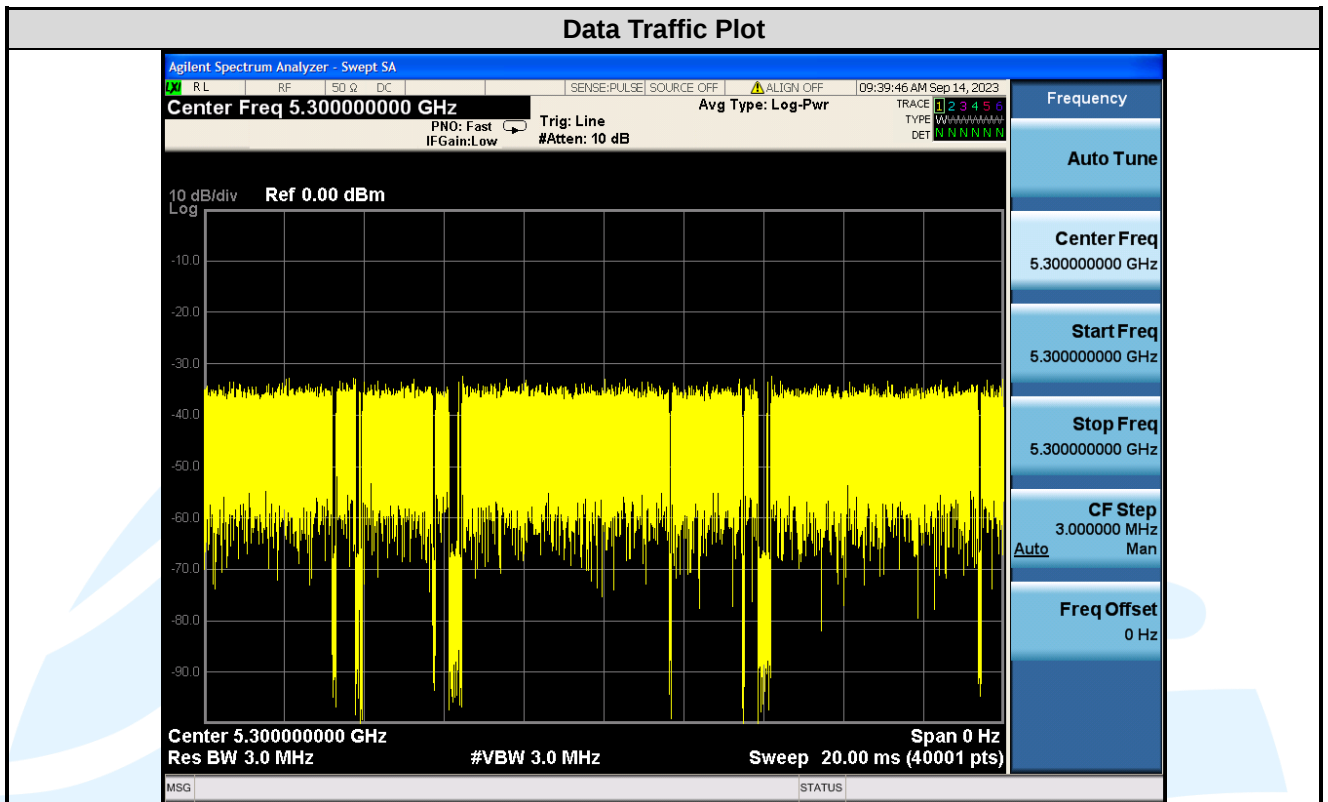
Tel: +86-755-28230888

Fax: +86-755-28230886

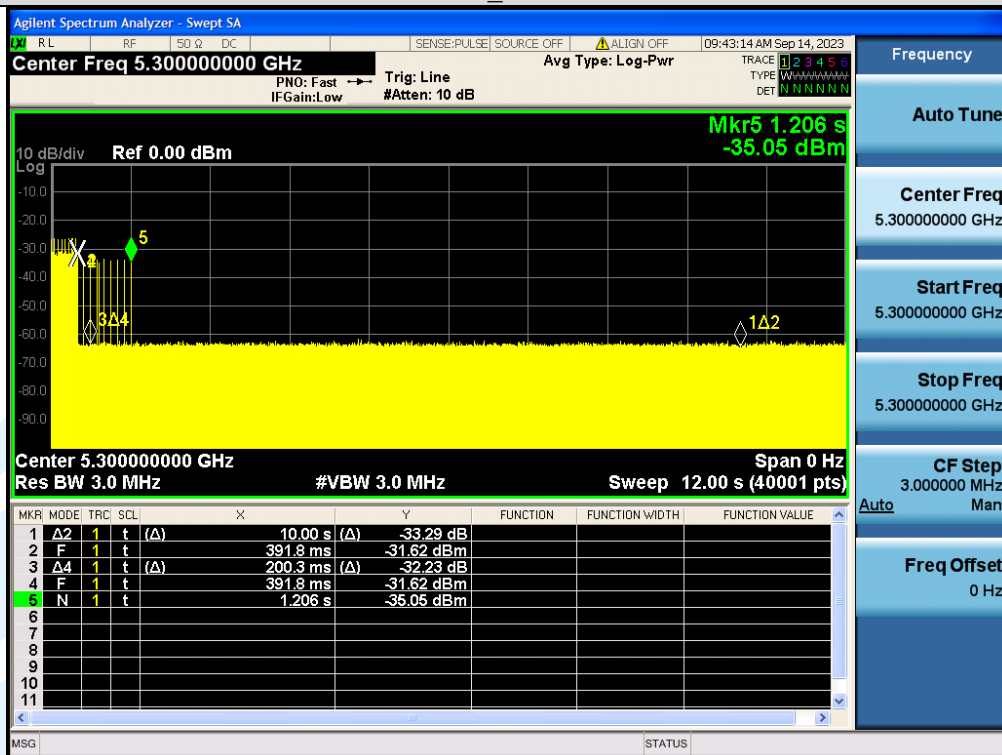
E-mail: info@uttlab.com

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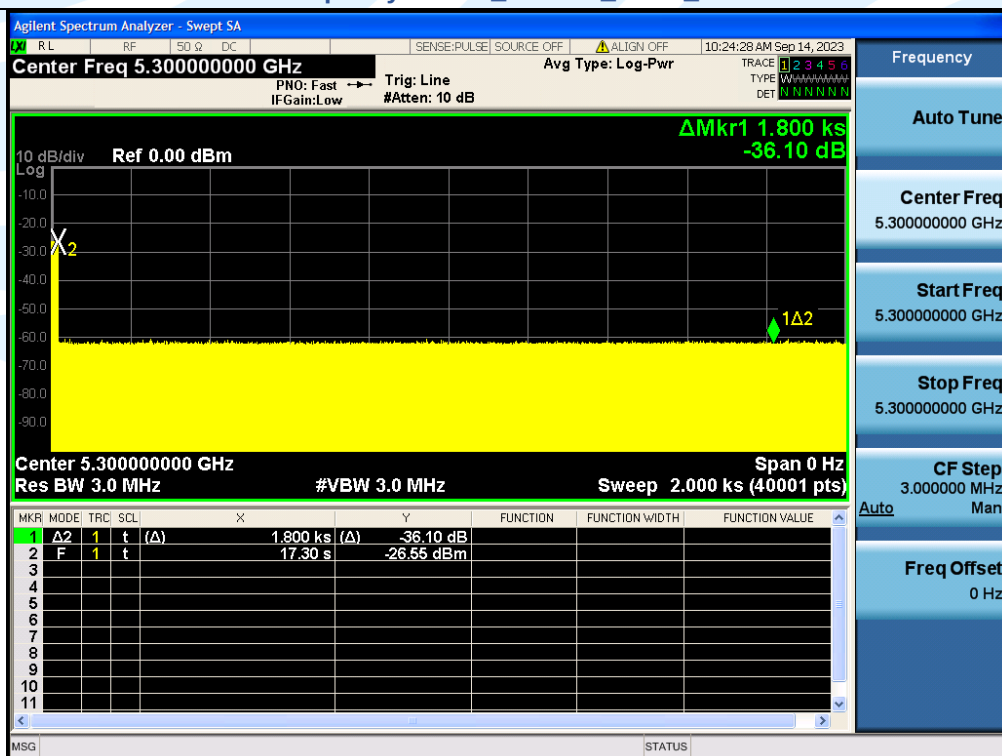
Channel Move Time & Channel Closing Transmission Time 802.11a_5300 MHz



Note:

- 1) Mark1 Time: 391.8 ms, Mark2 Time: 10000 ms, Ontime Points: 28
- 2) Dwell = S/B = 12000ms/40001 = 0.3 ms, C = N x Dwell = 28 x 0.3 = 8.4 ms
- 3) CMT = 1.206 s - 0.3918 s = 0.8142 s

Non-Occupancy Period_802.11a_CH60_5300 MHz



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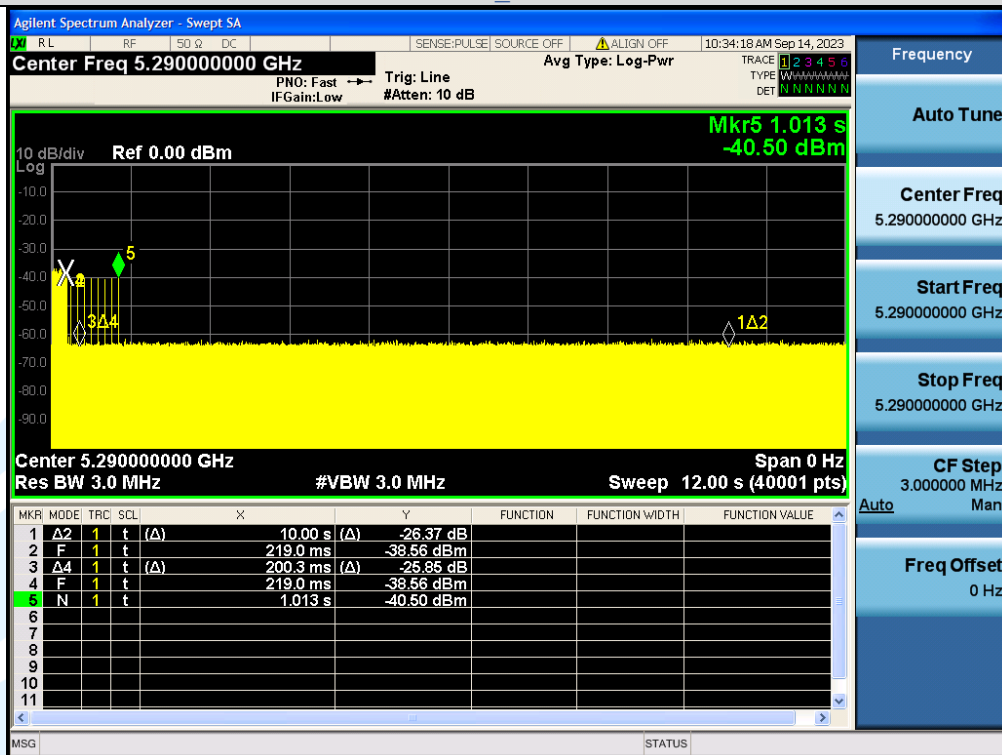
Fax: +86-755-28230886

E-mail: info@uttlab.com

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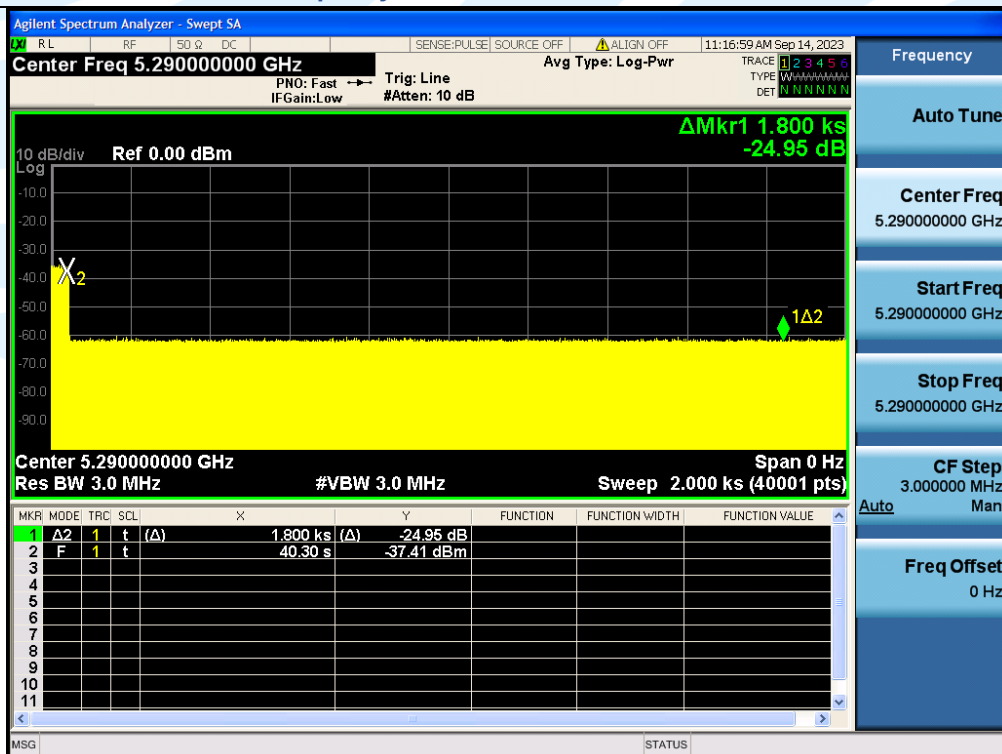
Channel Move Time & Channel Closing Transmission Time 802.11ac_5290 MHz



Note:

- 4) Mark1 Time: 219.0 ms, Mark2 Time: 10000 ms, Ontime Points: 22
- 5) Dwell = S/B = 12000ms/40000 = 0.3 ms, C = N x Dwell = 22 x 0.3 = 6.6 ms
- 6) CMT = 1.013 s – 0.219 s = 0.794 s

Non-Occupancy Period_802.11ac_CH58_5290 MHz



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5.9 AC POWER LINE CONDUCTED EMISSION

Test Requirement: FCC 47 CFR Part 15 Subpart C Section 15.207

Test Method: ANSI C63.10-2013 Section 6.2

Limits:

Frequency range (MHz)	Limits (dB(μV))	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to	5	46
5 to 30	60	50

Remark:

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

Test Setup: Refer to section 4.4.2 for details.

Test Procedures:

Test frequency range :150KHz-30MHz

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

Equipment Used: Refer to section 3 for details.

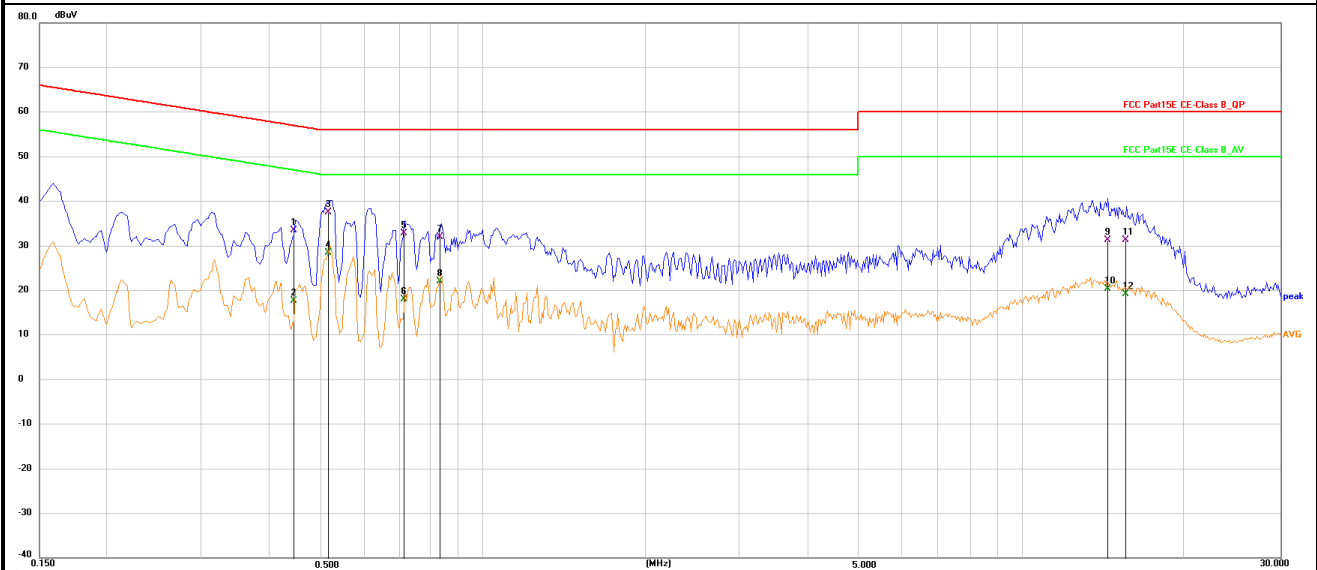
Test Result: Pass

The worst measurement data as follows:

Quasi Peak and Average:

Test Mode: WIFI Link

Live Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.4454	23.41	10.02	33.43	56.96	-23.53	QP
2	0.4454	7.66	10.02	17.68	46.96	-29.28	Average
3	0.5162	27.44	10.02	37.46	56.00	-18.54	QP
4	0.5162	18.34	10.02	28.36	46.00	-17.64	Average
5	0.7164	22.83	10.03	32.86	56.00	-23.14	QP
6	0.7164	7.96	10.03	17.99	46.00	-28.01	Average
7	0.8379	21.97	10.03	32.00	56.00	-24.00	QP
8	0.8379	12.07	10.03	22.10	46.00	-23.90	Average
9	14.3857	20.71	10.62	31.33	60.00	-28.67	QP
10	14.3857	9.73	10.62	20.35	50.00	-29.65	Average
11	15.5616	20.56	10.69	31.25	60.00	-28.75	QP
12	15.5616	8.45	10.69	19.14	50.00	-30.86	Average

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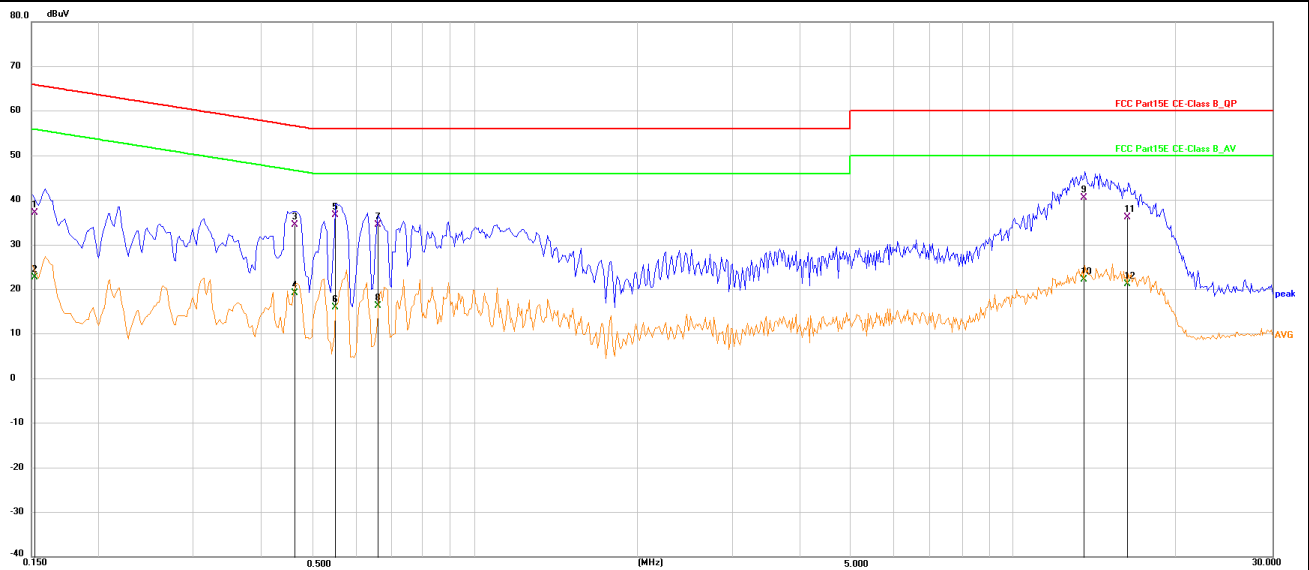
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Neutral Line



No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1531	27.13	10.02	37.15	65.83	-28.68	QP
2	0.1531	12.65	10.02	22.67	55.83	-33.16	Average
3	0.4617	24.47	10.02	34.49	56.66	-22.17	QP
4	0.4617	9.19	10.02	19.21	46.66	-27.45	Average
5	0.5520	26.72	10.01	36.73	56.00	-19.27	QP
6	0.5520	5.88	10.01	15.89	46.00	-30.11	Average
7	0.6597	24.37	10.02	34.39	56.00	-21.61	QP
8	0.6597	6.23	10.02	16.25	46.00	-29.75	Average
9	13.4796	29.97	10.60	40.57	60.00	-19.43	QP
10	13.4796	11.61	10.60	22.21	50.00	-27.79	Average
11	16.2260	25.37	10.79	36.16	60.00	-23.84	QP
12	16.2260	10.36	10.79	21.15	50.00	-28.85	Average

Remark:

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit
4. An initial pre-scan was performed on the Phase and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.
5. All possible modes of operation were investigated, and testing at two nominal voltages of 240V/50Hz and 120V/60Hz, only the worst case emissions reported.

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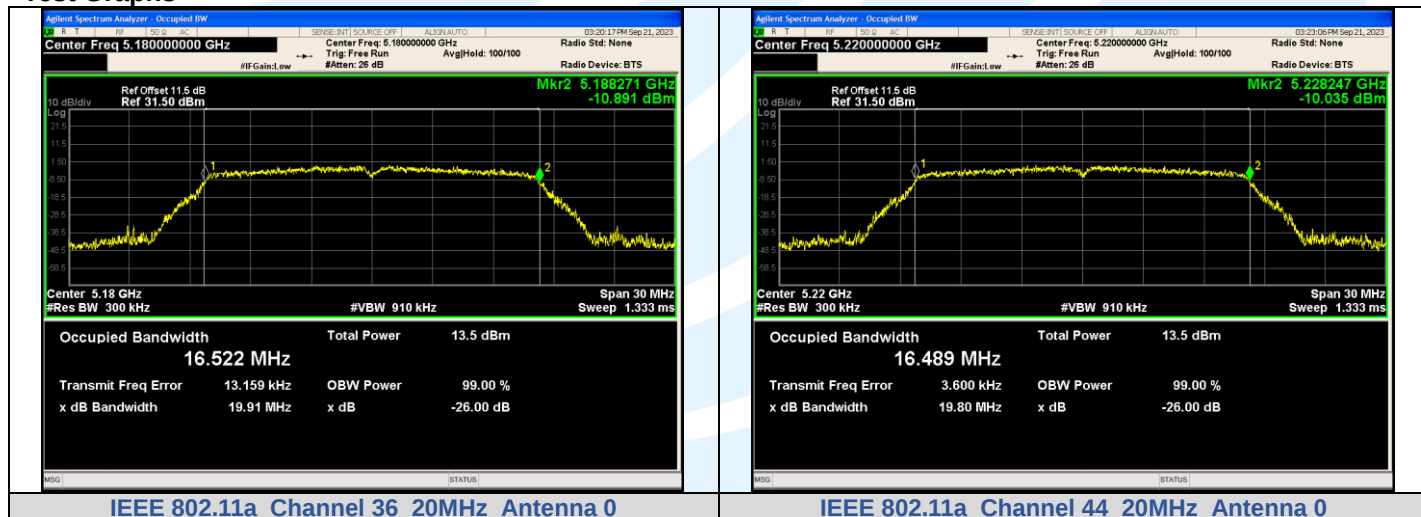
APPENDIX A RF TEST DATA

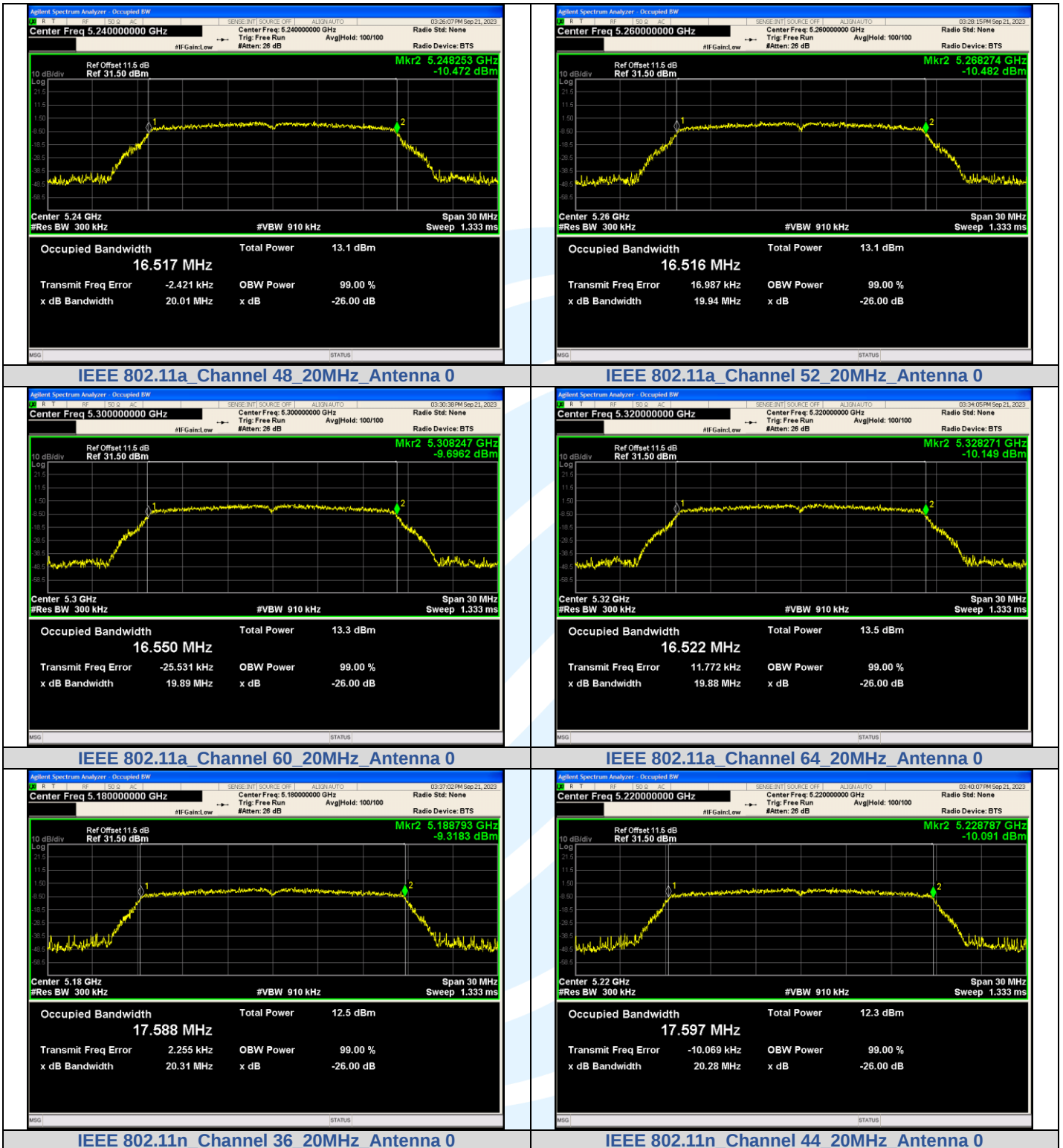
A.1 99% BANDWIDTH

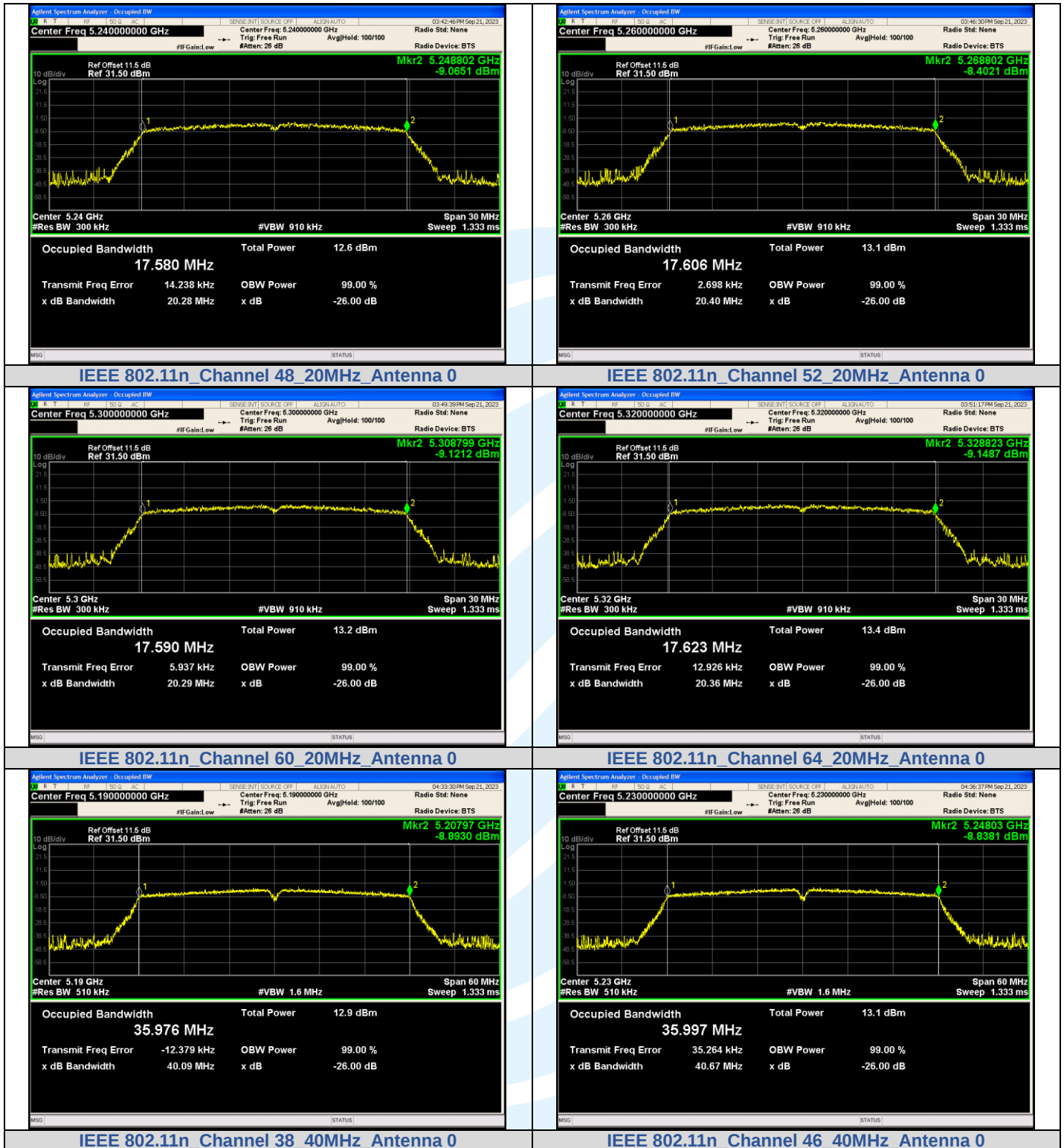
For U-NII-1 and U-NII-2A band

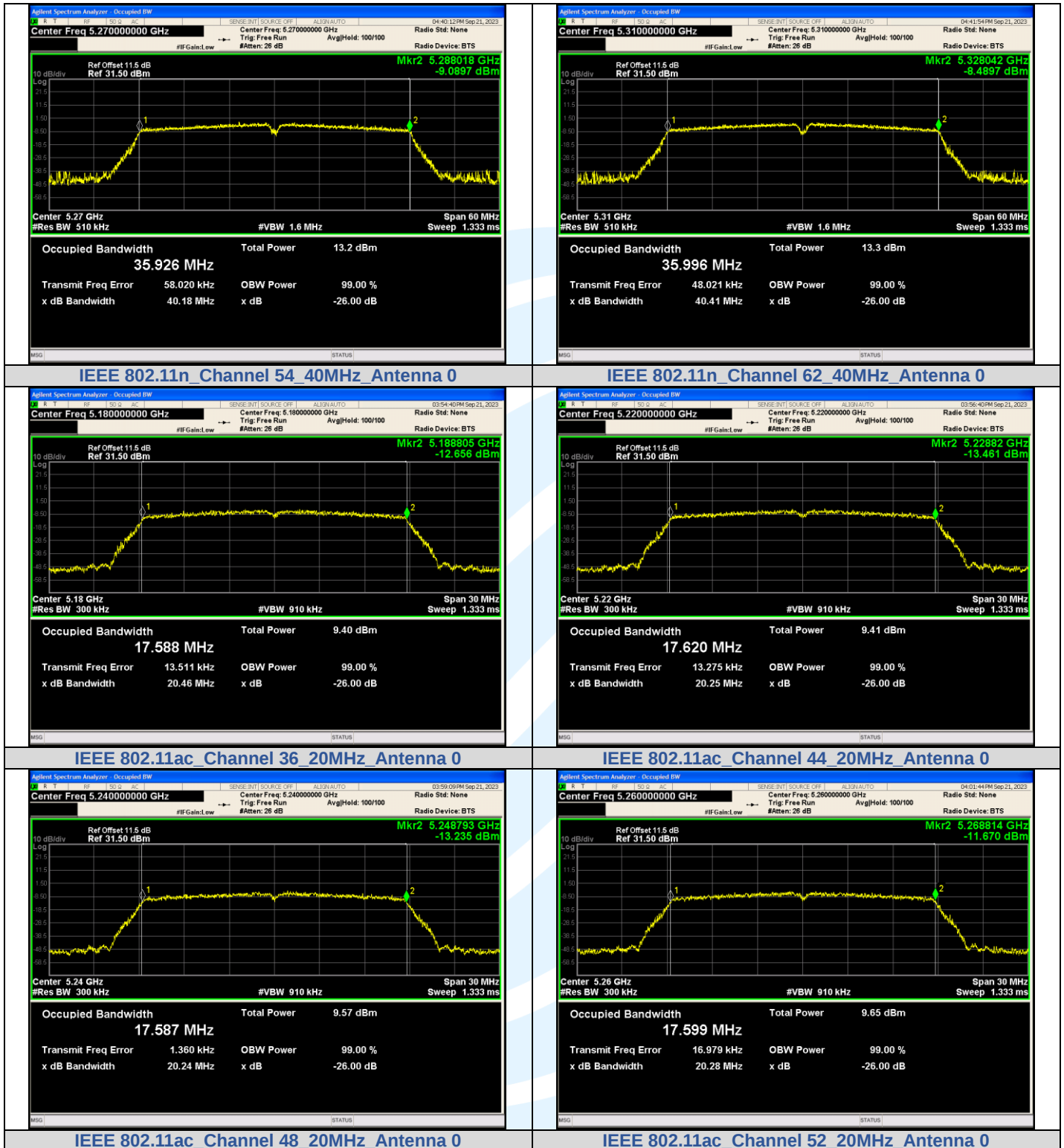
Mode	Channel	Ant.	99% BW (MHz)
IEEE 802.11a	36	0	16.522
	44		16.489
	48		16.517
	52		16.516
	60		16.550
	64		16.522
IEEE 802.11n_20	36		17.588
	44		17.597
	48		17.580
	52		17.606
	60		17.590
	64		17.623
IEEE 802.11n_40	38		35.976
	46		35.997
	54		35.926
	62		35.996
IEEE 802.11ac_20	36		17.588
	44		17.620
	48		17.587
	52		17.599
	60		17.608
	64		17.588
IEEE 802.11ac_40	38		35.957
	46		35.932
	54		35.923
	62		35.972
IEEE 802.11ac_80	42		75.252
	58		75.303

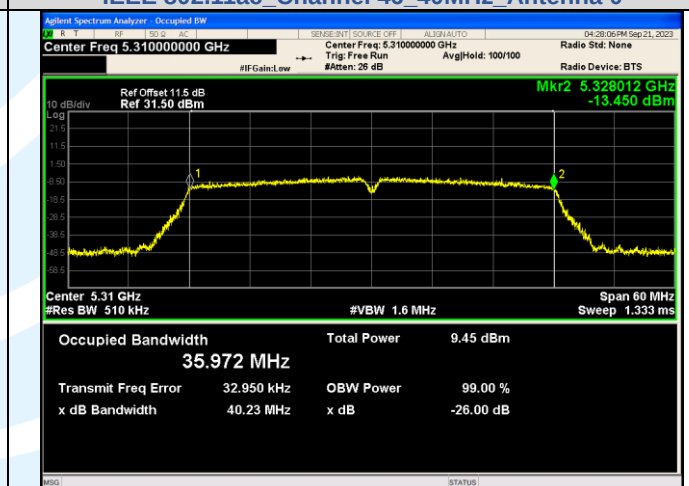
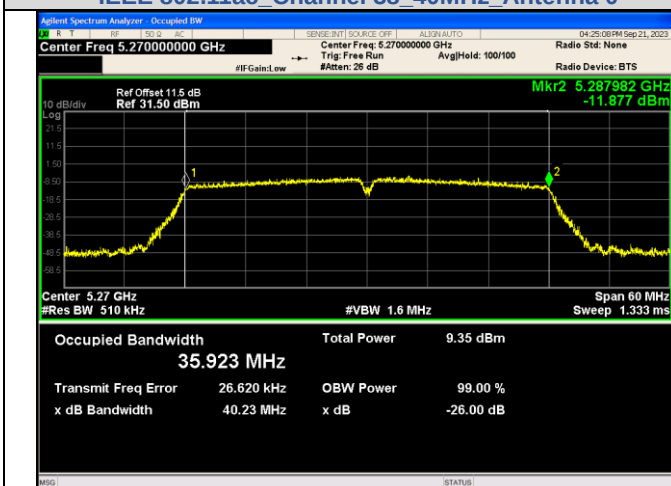
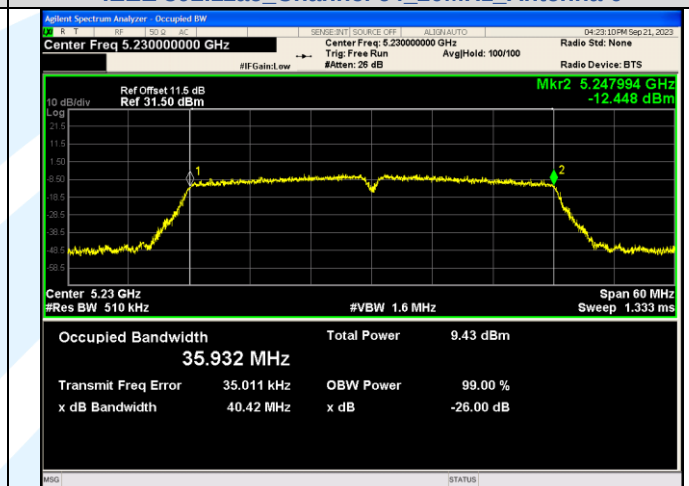
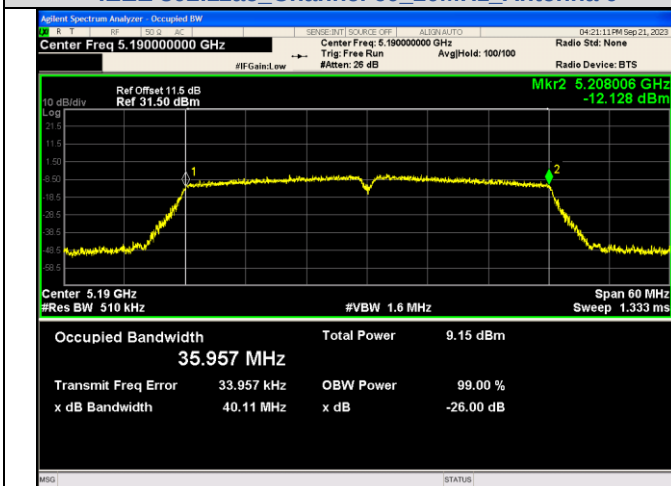
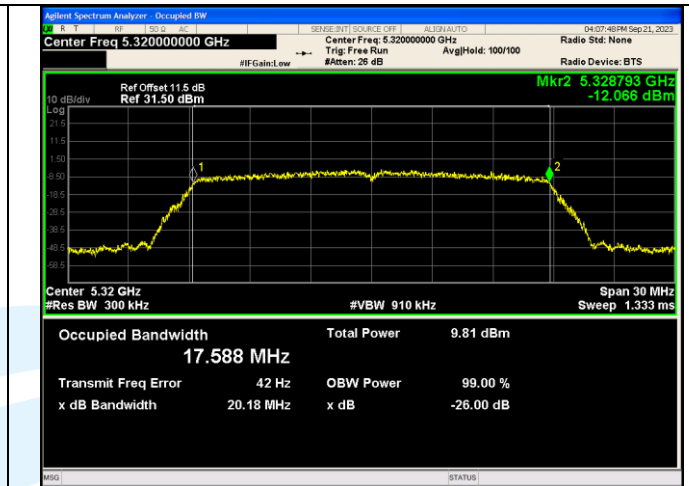
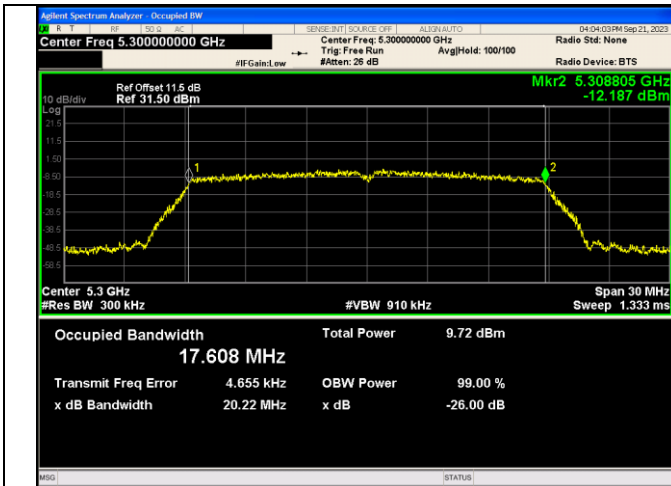
Test Graphs

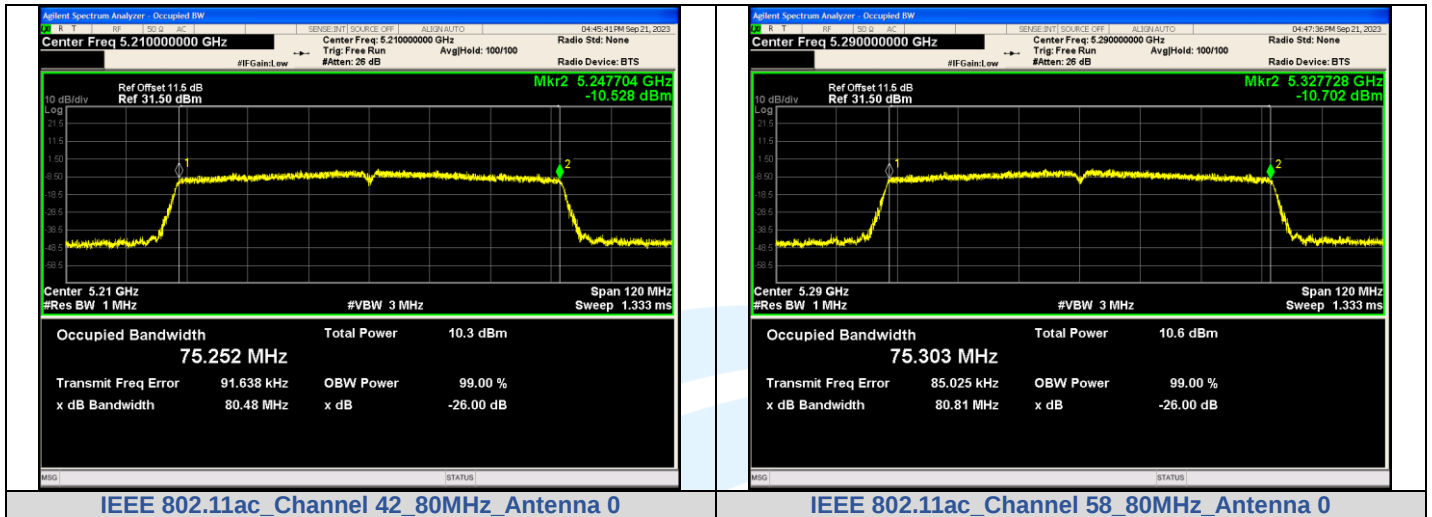








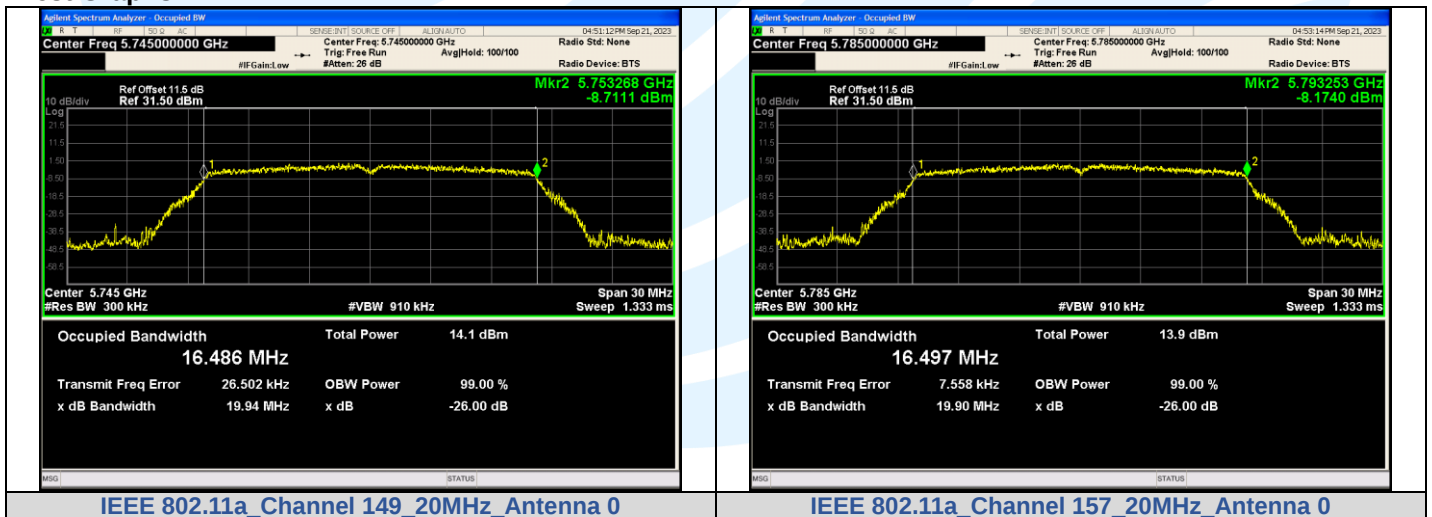




For U-NII-3 band

Mode	Channel	Ant.	99% BW (MHz)
IEEE 802.11a	149	0	16.486
	157		16.497
	165		16.496
IEEE 802.11n_20	149		17.584
	157		17.629
	165		17.625
IEEE 802.11n_40	151		35.964
	159		35.944
IEEE 802.11ac_20	149		17.592
	157		17.616
	165		17.594
IEEE 802.11ac_40	151		35.942
	159		35.988
IEEE 802.11ac_80	155		75.220

Test Graphs



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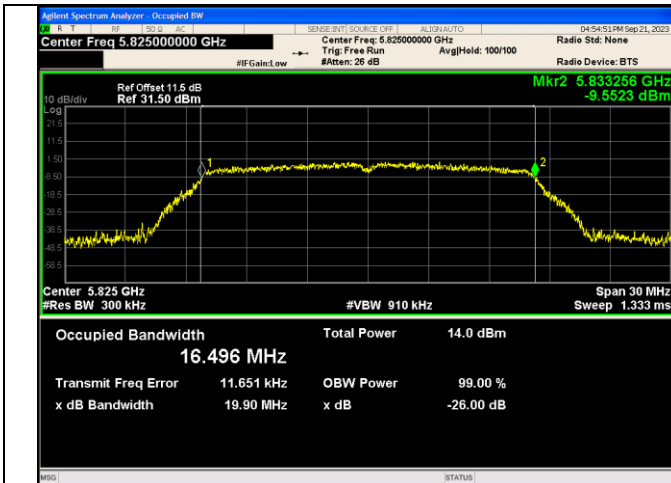
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Fax: +86-755-28230886

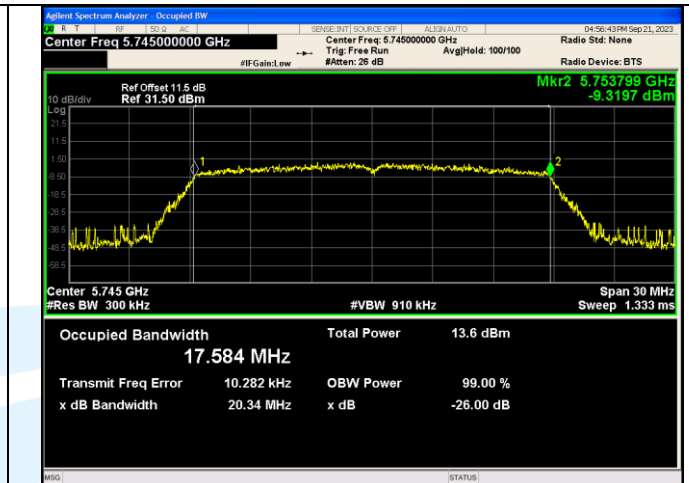
E-mail: info@uttlab.com

<http://www.uttlab.com>

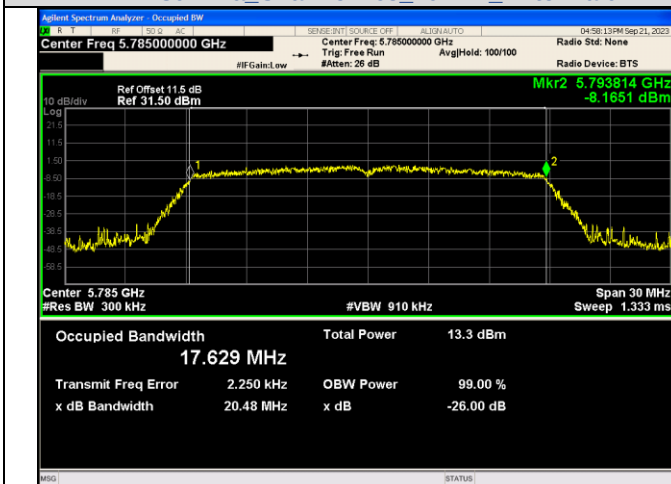
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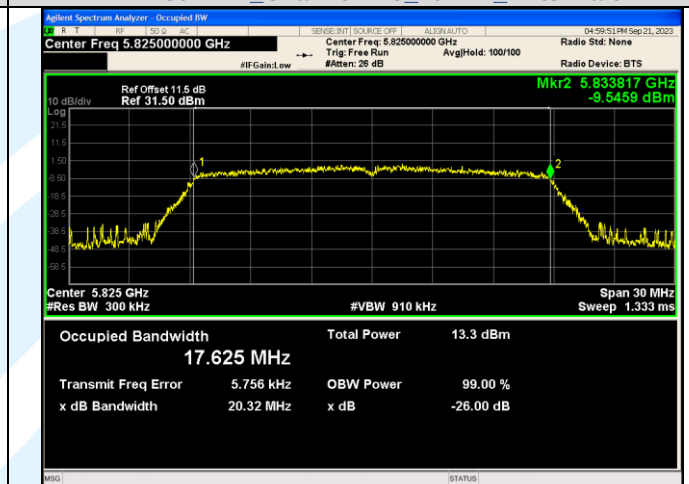
IEEE 802.11a Channel 165_20MHz_Antenna 0



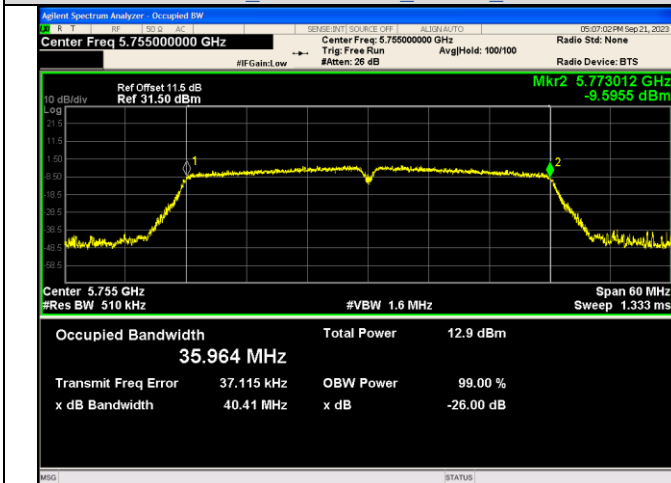
IEEE 802.11n Channel 149_20MHz_Antenna 0



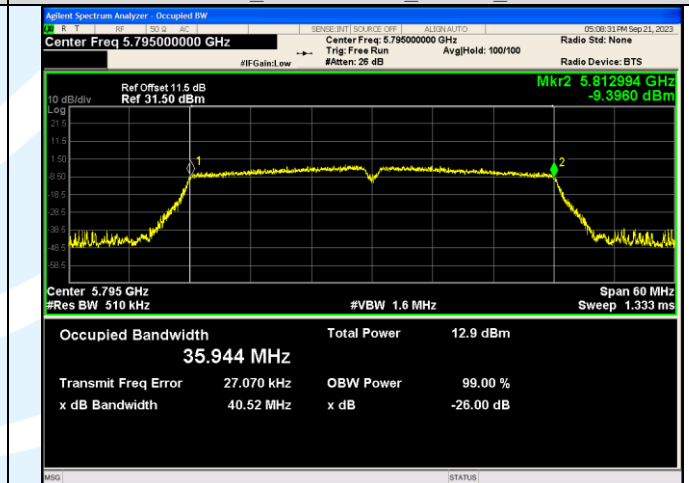
IEEE 802.11n Channel 157_20MHz_Antenna 0



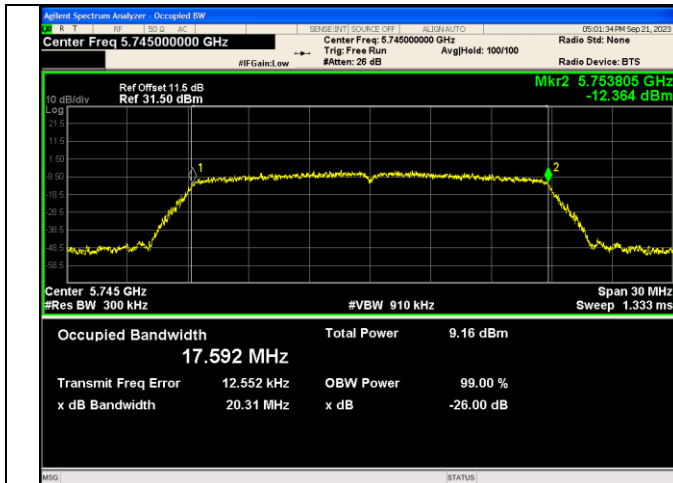
IEEE 802.11n Channel 165_20MHz_Antenna 0



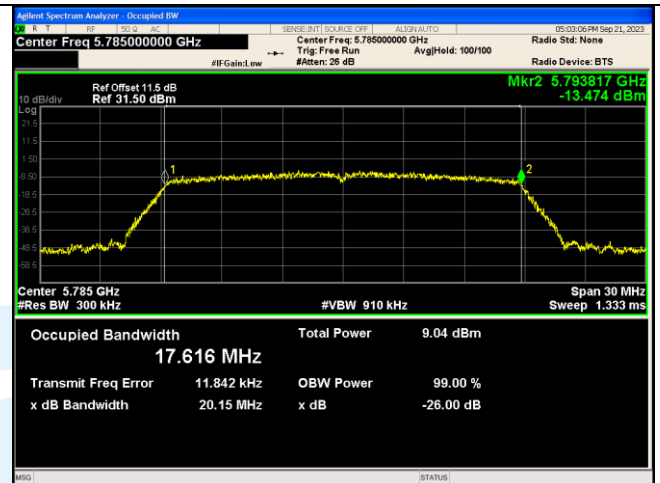
IEEE 802.11n Channel 151_40MHz_Antenna 0



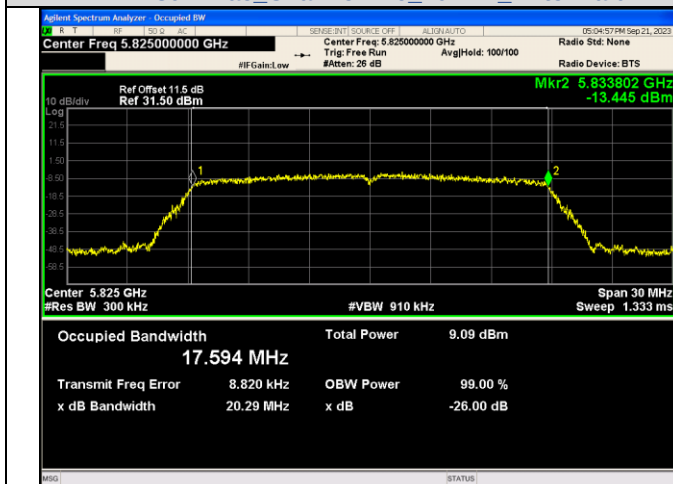
IEEE 802.11n Channel 159_40MHz_Antenna 0



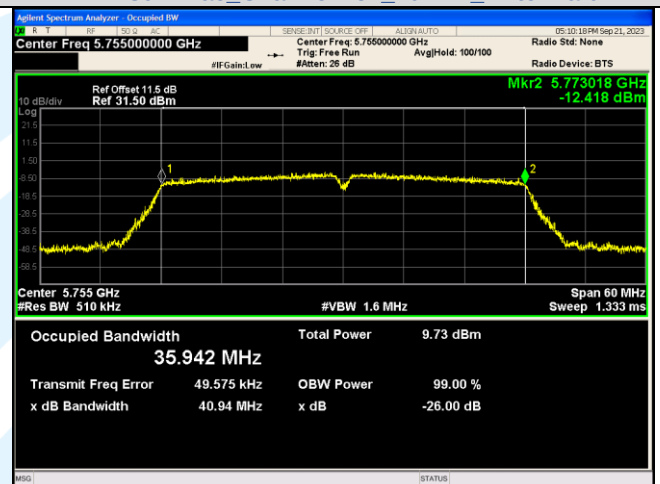
IEEE 802.11ac_Channel 149_20MHz_Antenna 0



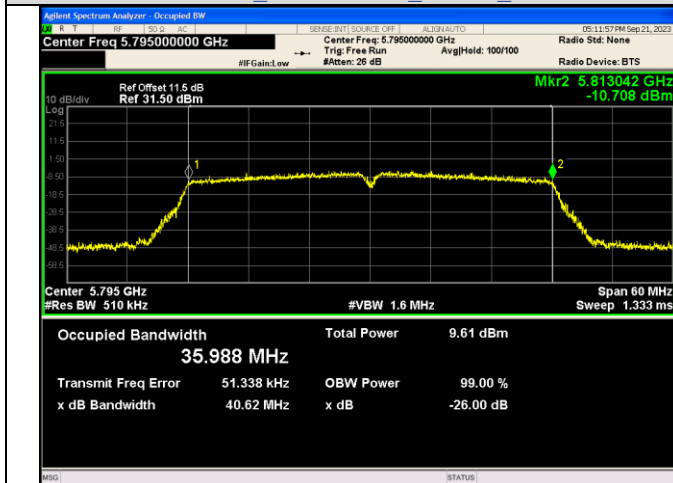
IEEE 802.11ac_Channel 157_20MHz_Antenna 0



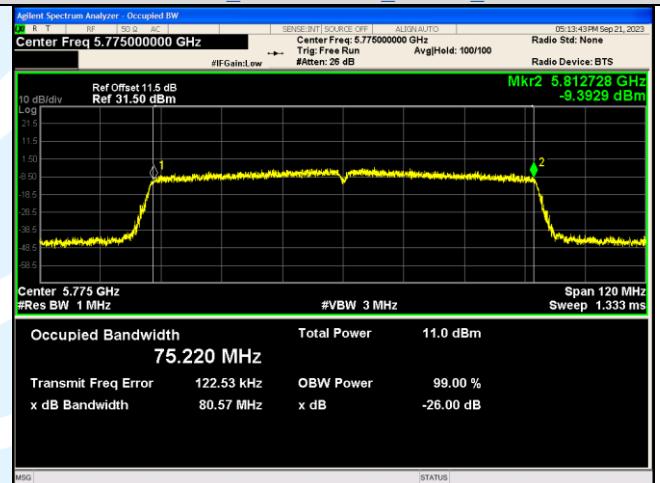
IEEE 802.11ac_Channel 165_20MHz_Antenna 0



IEEE 802.11ac_Channel 151_40MHz_Antenna 0



IEEE 802.11ac_Channel 159_40MHz_Antenna 0



IEEE 802.11ac_Channel 155_80MHz_Antenna 0

A.2 26DB BANDWIDTH

For U-NII-1 and U-NII-2A band

Mode	Channel	Ant.	Center Frequency (MHz)	26 dB Bandwidth (MHz)	RBW/EBW
IEEE 802.11a	36	0	5180	19.66	1.11
	44		5220	19.84	1.11
	48		5240	19.73	1.11
	52		5260	19.67	1.11
	60		5300	19.92	1.09
	64		5320	19.80	1.12
IEEE 802.11n_20	36		5180	20.23	1.1
	44		5220	20.12	1.11
	48		5240	20.06	1.12
	52		5260	20.11	1.12
	60		5300	20.10	1.11
	64		5320	20.11	1.1
IEEE 802.11n_40	38		5190	40.43	1.05
	46		5230	40.25	1.06
	54		5270	40.90	1.03
	62		5310	40.14	1.06
IEEE 802.11ac_20	36		5180	20.03	1.11
	44		5220	20.01	1.12
	48		5240	19.95	1.12
	52		5260	20.36	1.09
	60		5300	19.96	1.11
	64		5320	20.06	1.11
IEEE 802.11ac_40	38		5190	40.38	1.05
	46		5230	40.25	1.06
	54		5270	40.43	1.05
	62		5310	40.35	1.06
IEEE 802.11ac_80	42		5210	80.50	1.03
	58		5290	81.17	1.02

Test Graphs

