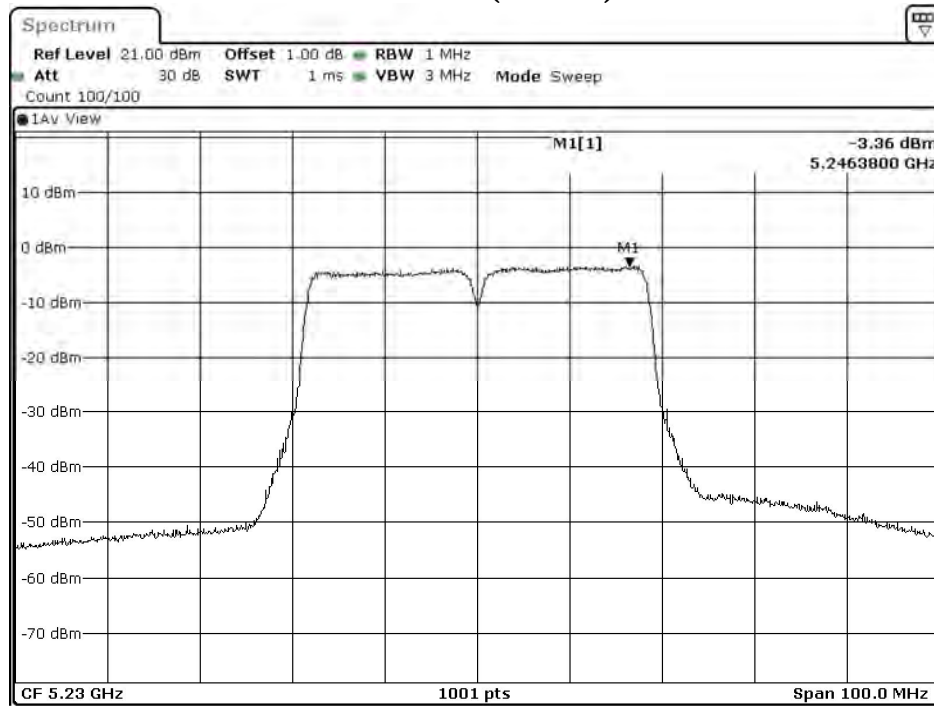
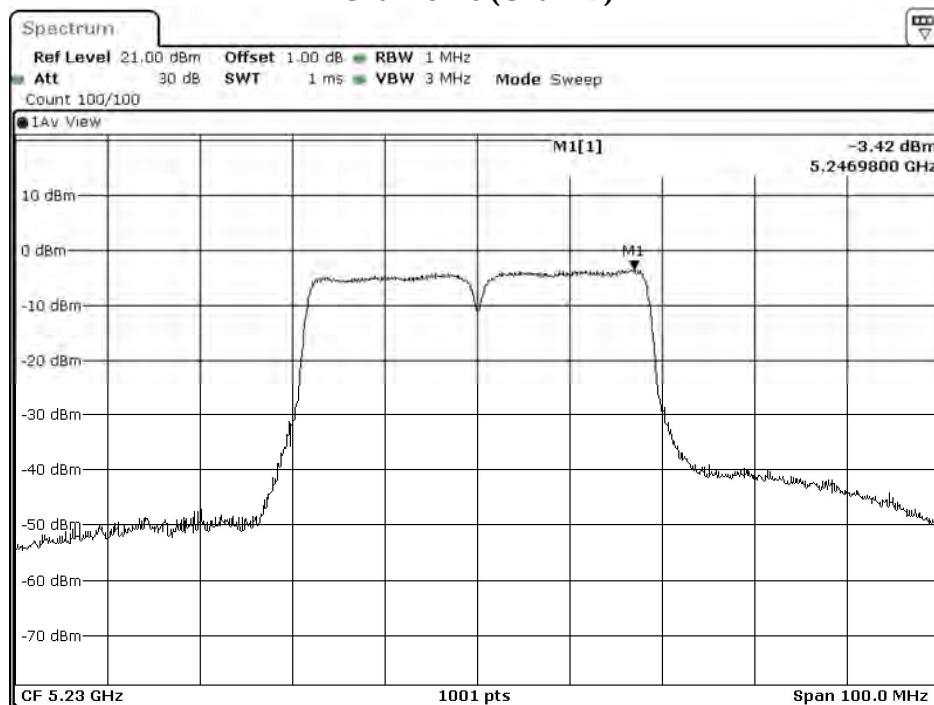
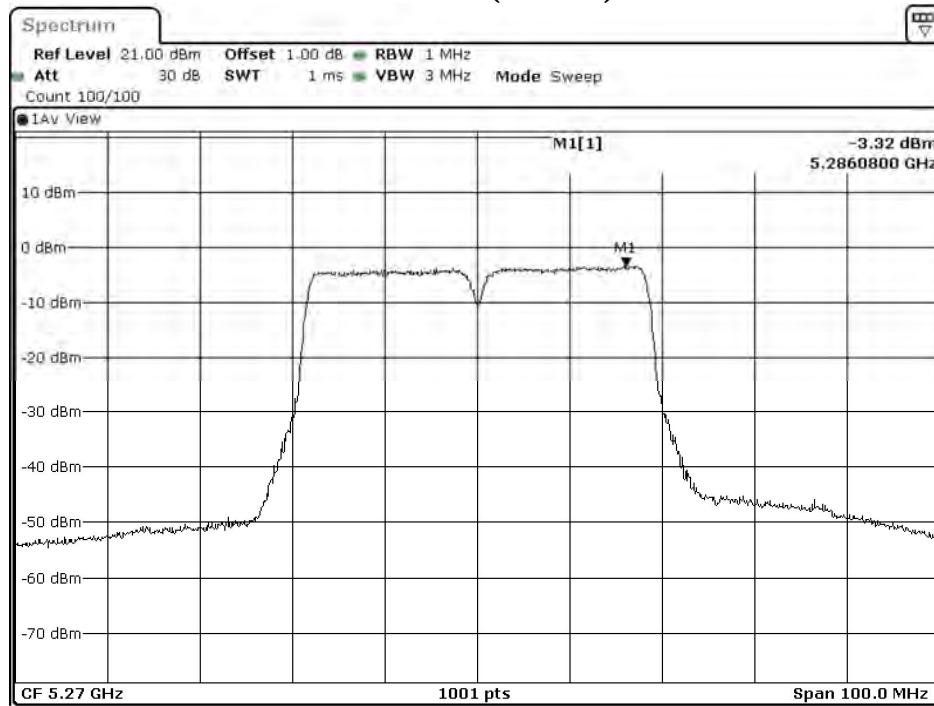


Channel 46 (Chain A)

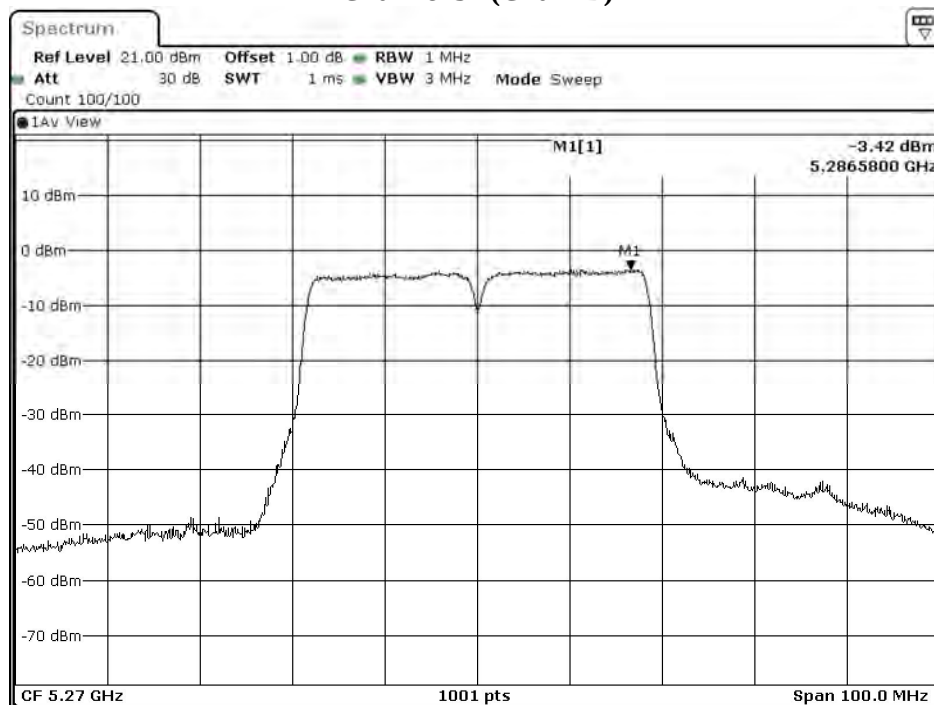
Date: 17.AUG.2021 04:43:46

Channel 46 (Chain B)

Date: 17.AUG.2021 09:24:20

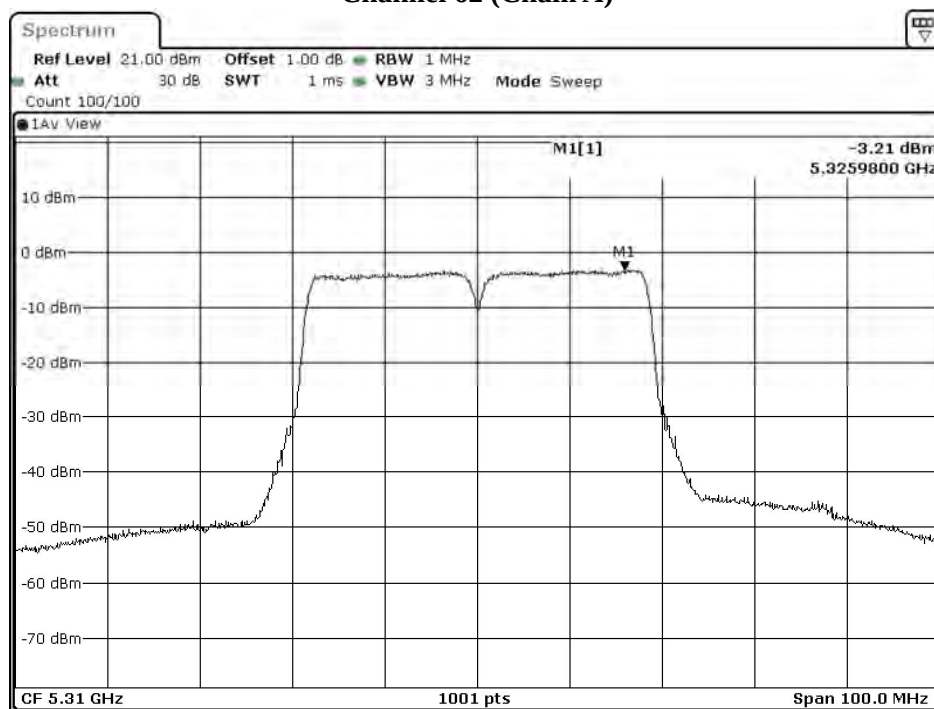
Channel 54 (Chain A)

Date: 17.AUG.2021 04:47:00

Channel 54 (Chain B)

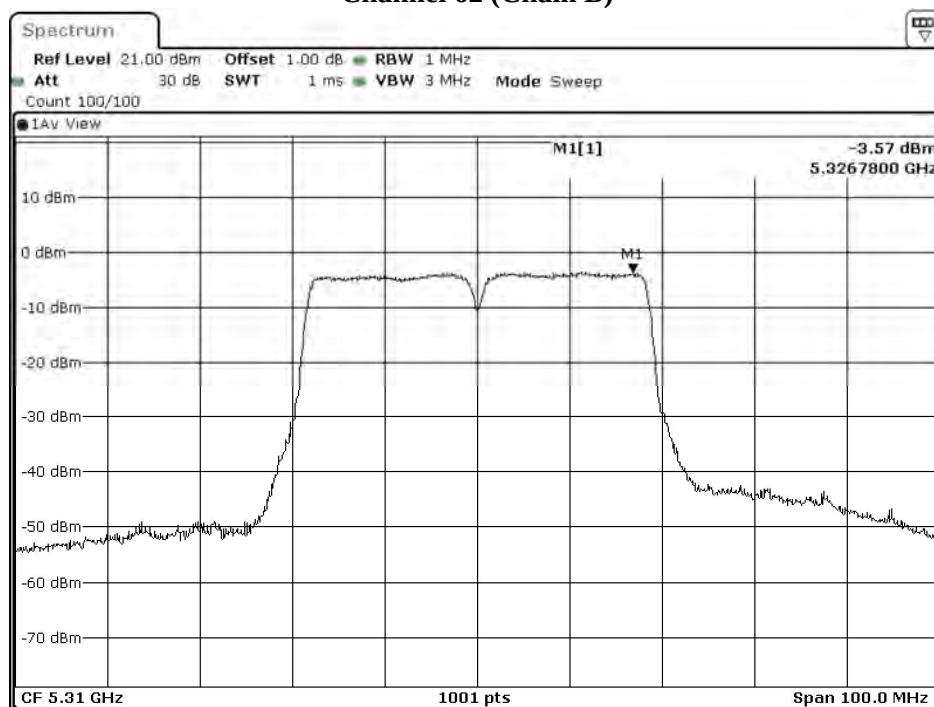
Date: 17.AUG.2021 09:27:34

Channel 62 (Chain A)



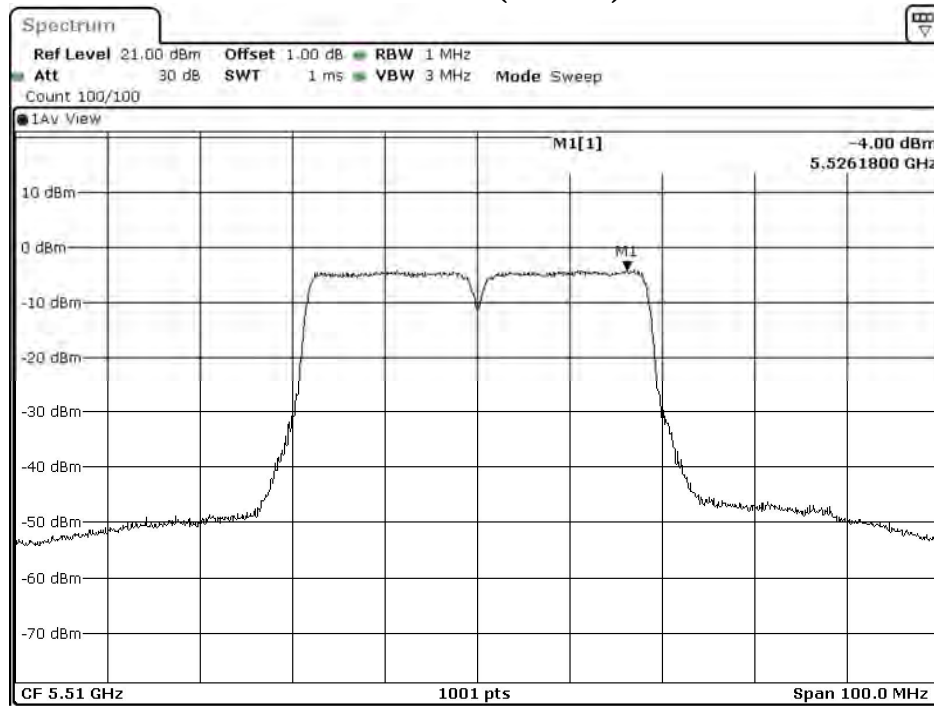
Date: 17.AUG.2021 04:49:24

Channel 62 (Chain B)



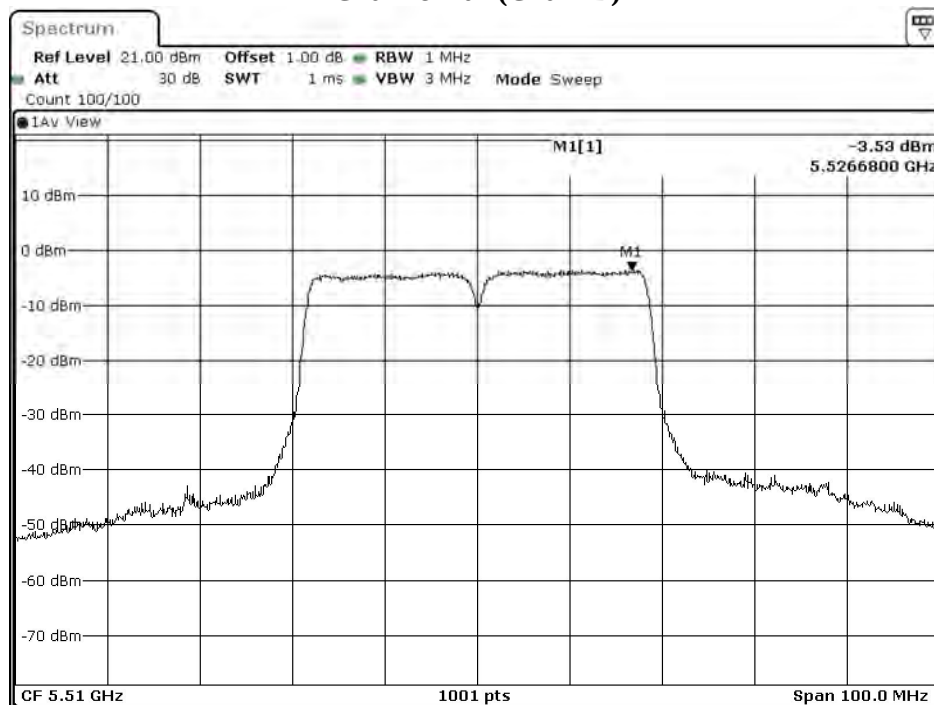
Date: 17.AUG.2021 09:29:58

Channel 102 (Chain A)



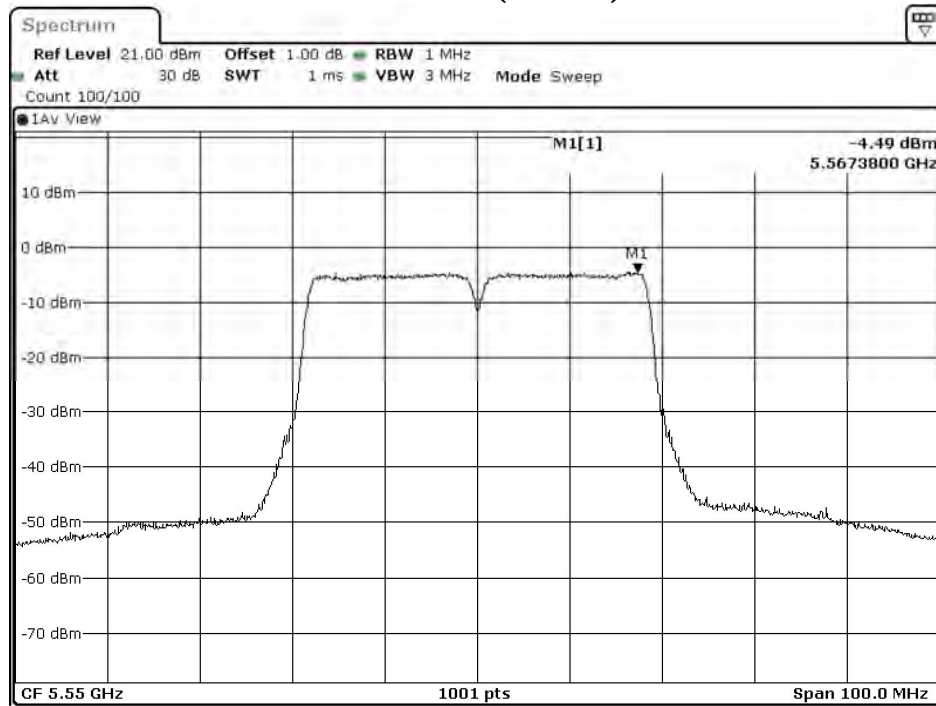
Date: 17.AUG.2021 04:53:41

Channel 102 (Chain B)



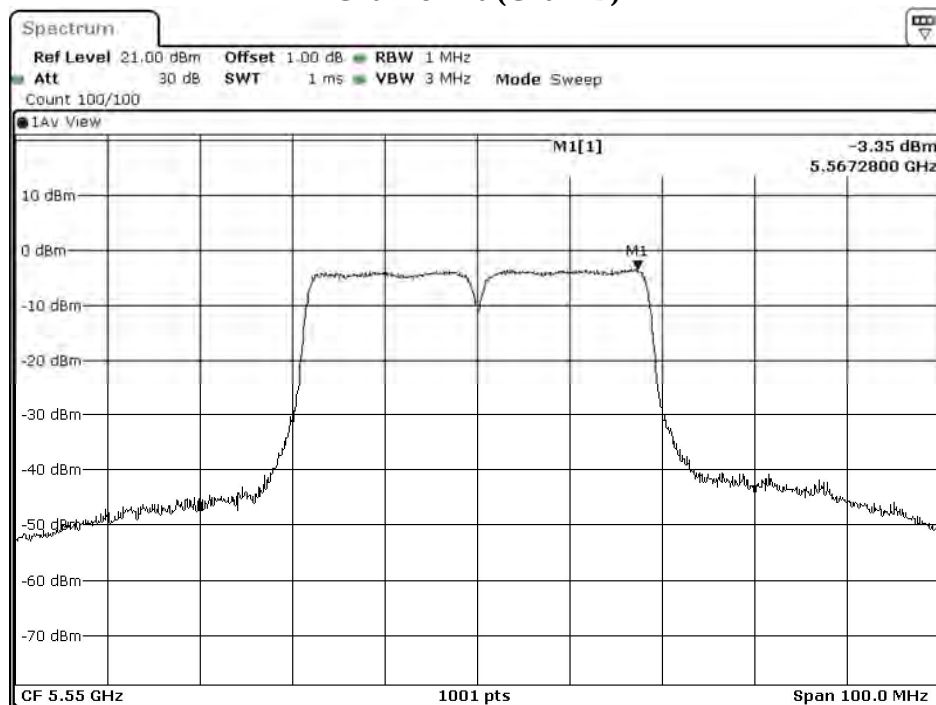
Date: 17.AUG.2021 09:34:14

Channel 110 (Chain A)



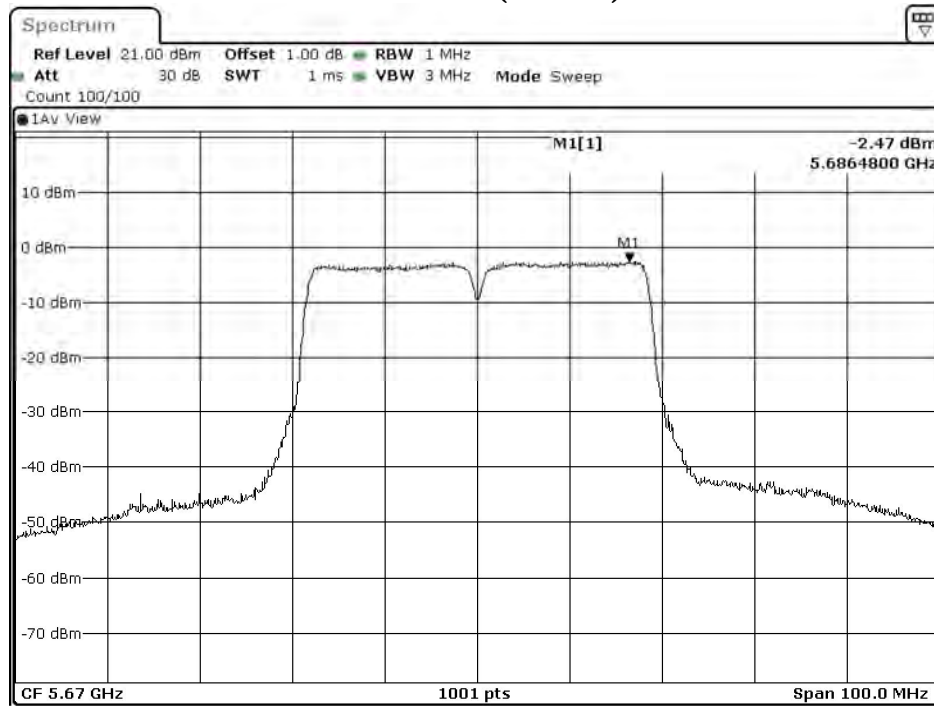
Date: 17.AUG.2021 04:56:38

Channel 110 (Chain B)



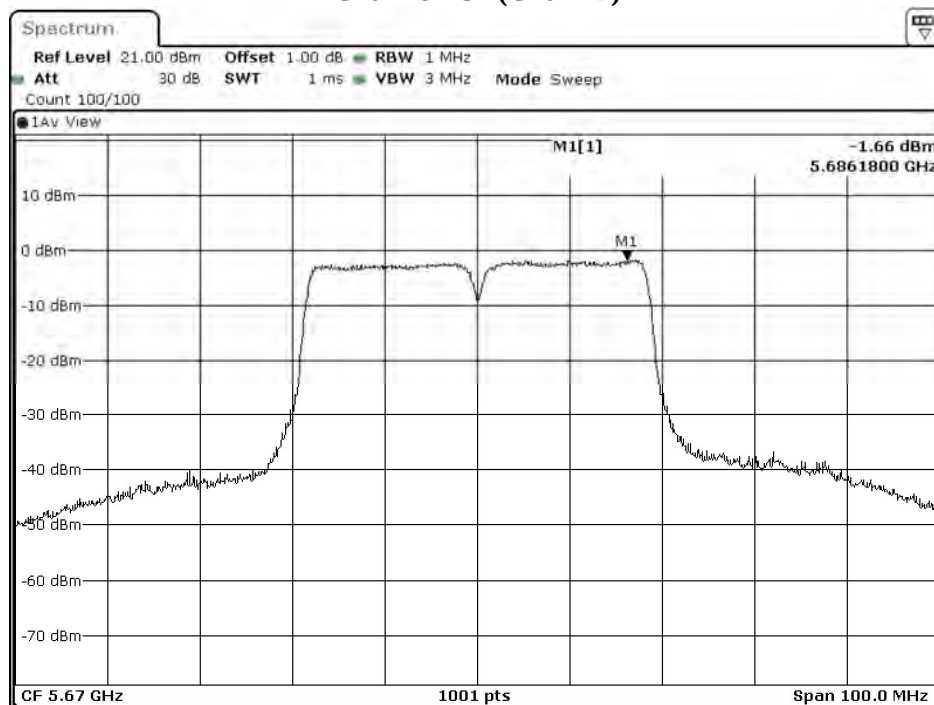
Date: 17.AUG.2021 09:37:12

Channel 134 (Chain A)



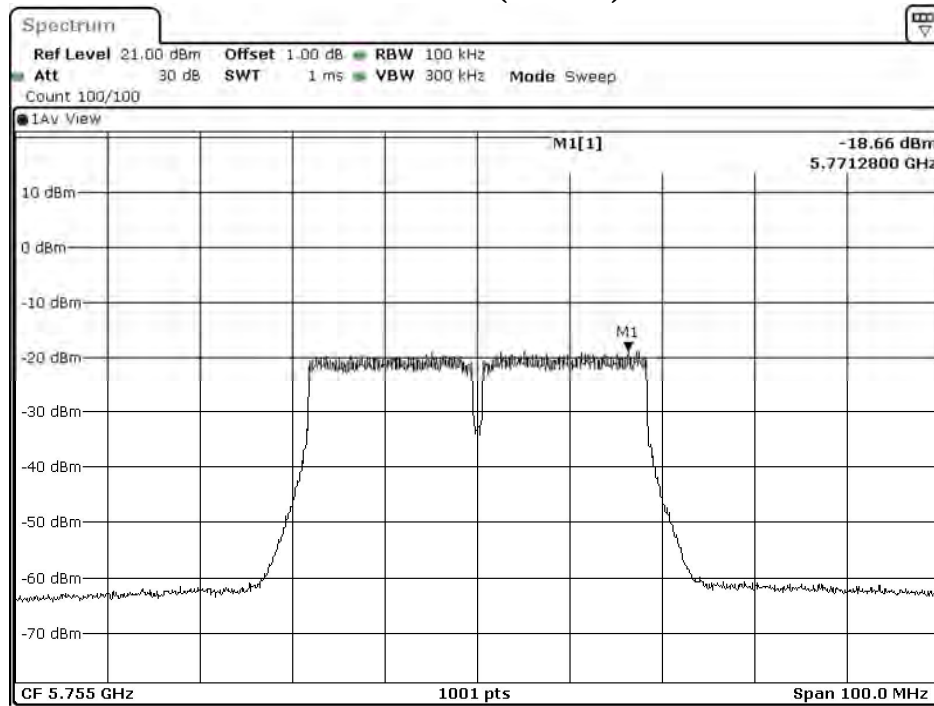
Date: 17.AUG.2021 05:00:03

Channel 134 (Chain B)



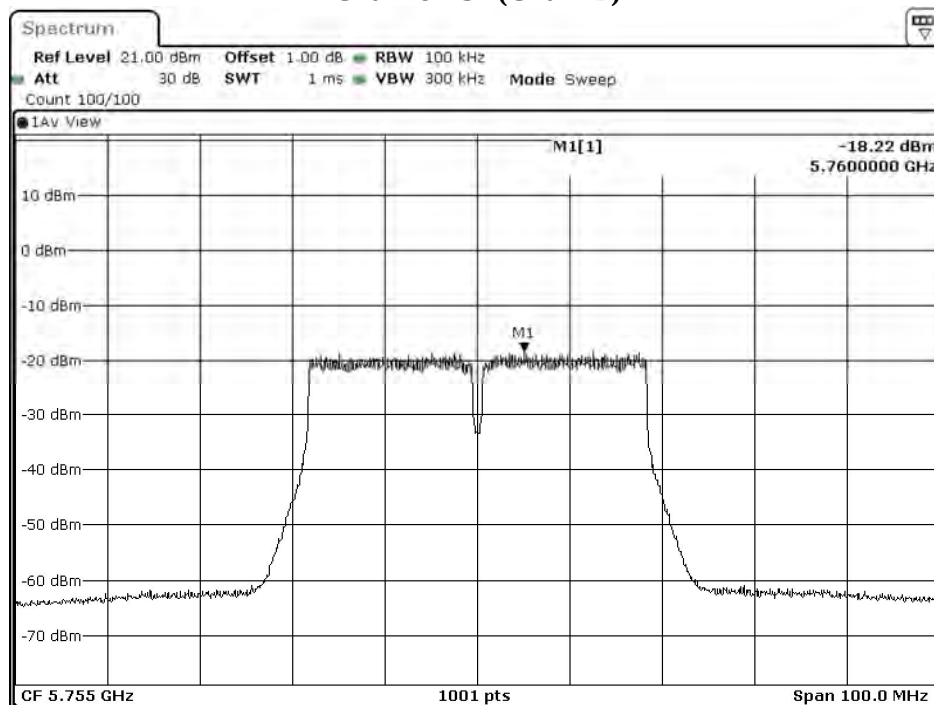
Date: 17.AUG.2021 09:40:37

Channel 151 (Chain A)



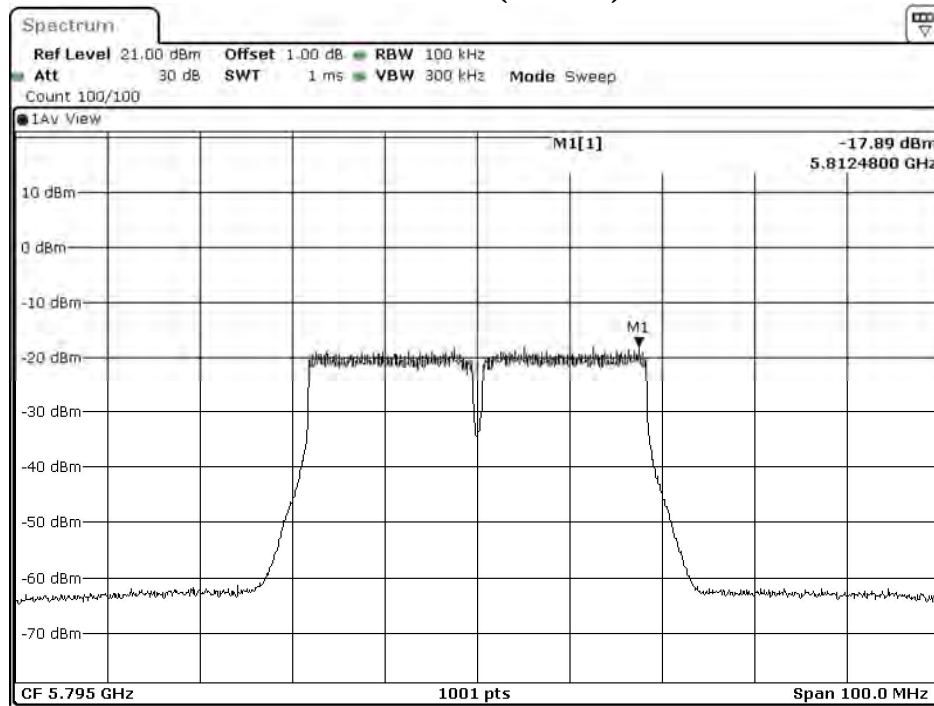
Date: 17.AUG.2021 05:55:51

Channel 151 (Chain B)



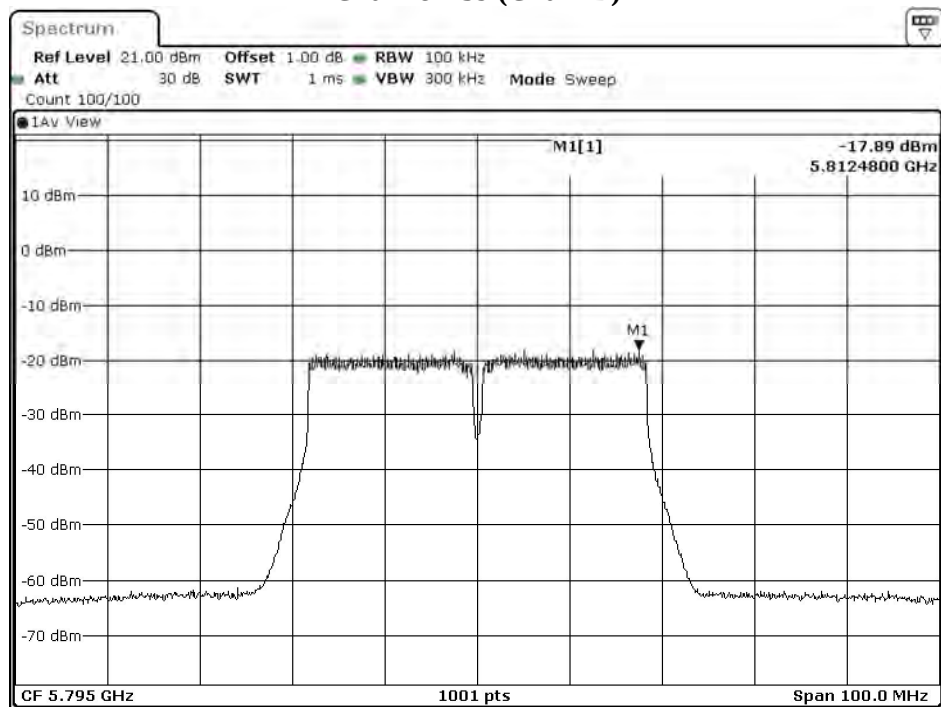
Date: 17.AUG.2021 10:36:25

Channel 159 (Chain A)



Date: 17.AUG.2021 10:39:15

Channel 159 (Chain B)



Date: 17.AUG.2021 10:39:15

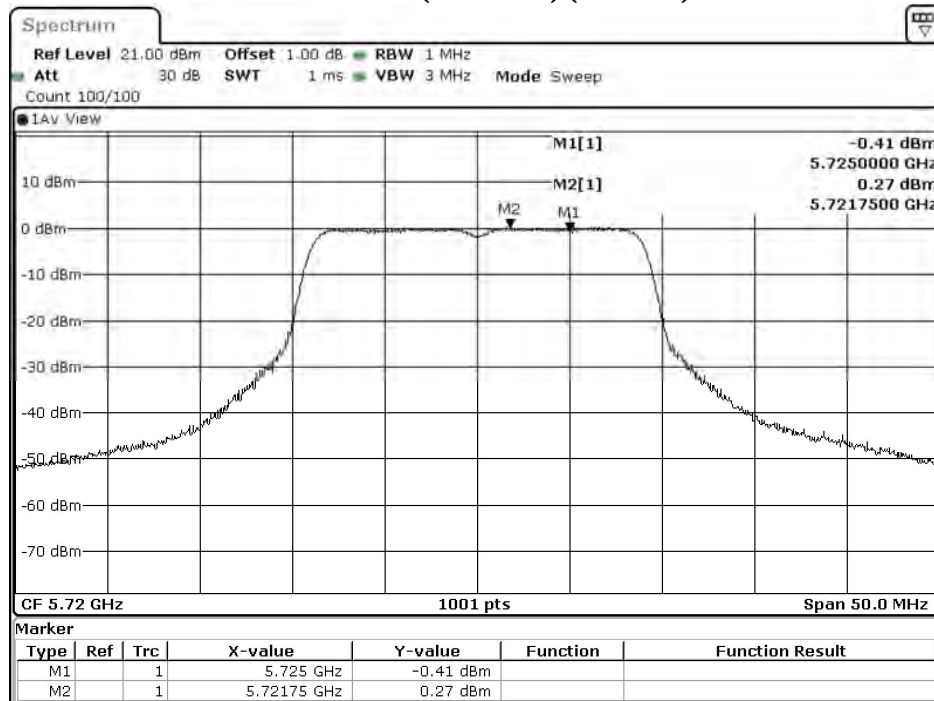
Product : Speech Generating Device
 Test Item : Peak Power Spectral Density
 Test Mode : Mode 4: Transmit (802.11ac-20BW 7.2Mbps)
 Test Date : 2021/08/19

Channel Number	Frequency	Data Rate	Chain	PPSD	BWCF	10*log(2)	Duty factor	Total PPSPD	Limit	Result
	(MHz)	(Mbps)	(dBm)	(dBm)	(dB)	(dB)	(dB)	(dBm)	(dBm)	
144(U-NII-2C)	5720	HT8	A	0.27	--	3.01	0.15	3.43	<11	Pass
			B	1.15	--	3.01	0.15	4.31		Pass
144(U-NII-2C)	5720	HT8	A	-8.00	6.98	3.01	0.15	2.14	<30	Pass
			B	-6.95	6.98	3.01	0.15	3.19		Pass

Note:

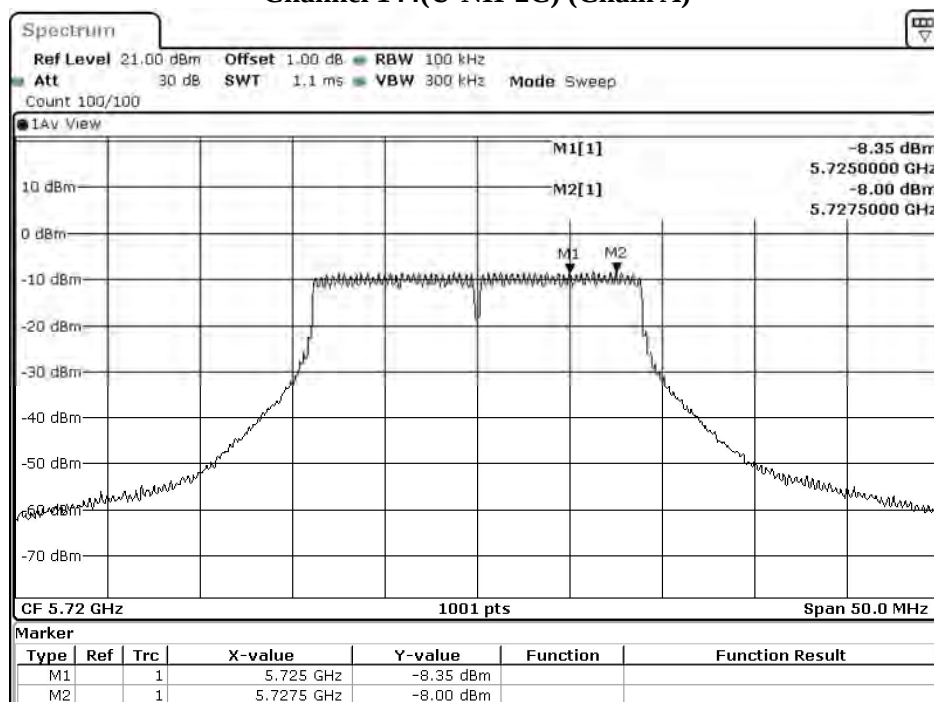
The quantity 10*log 2 (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 144(U-NII-2C) (Chain A)



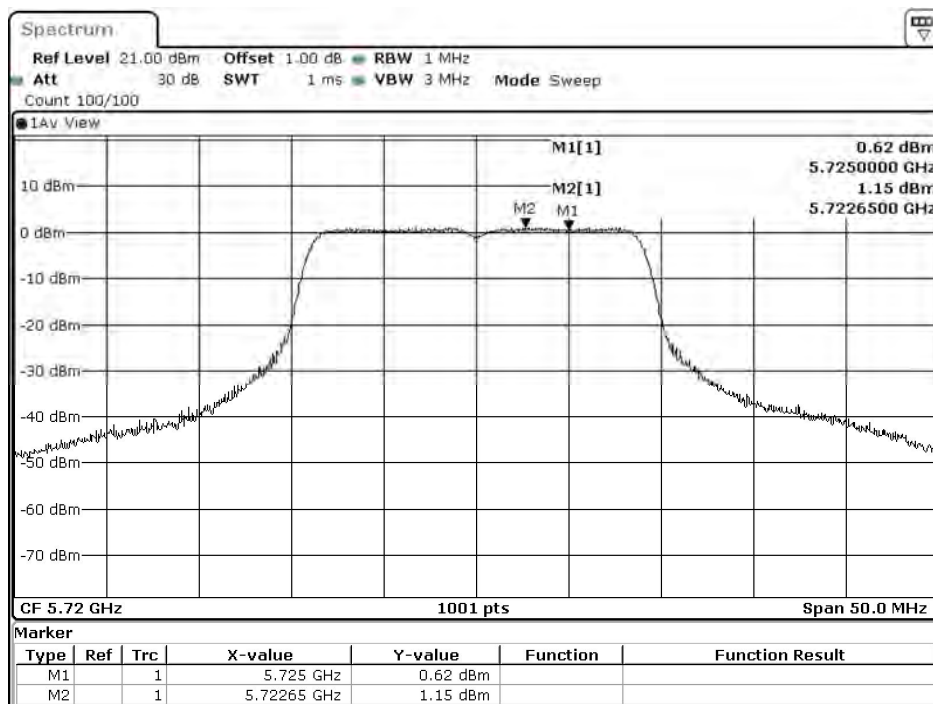
Date: 17.AUG.2021 03:43:48

Channel 144(U-NII-2C) (Chain A)



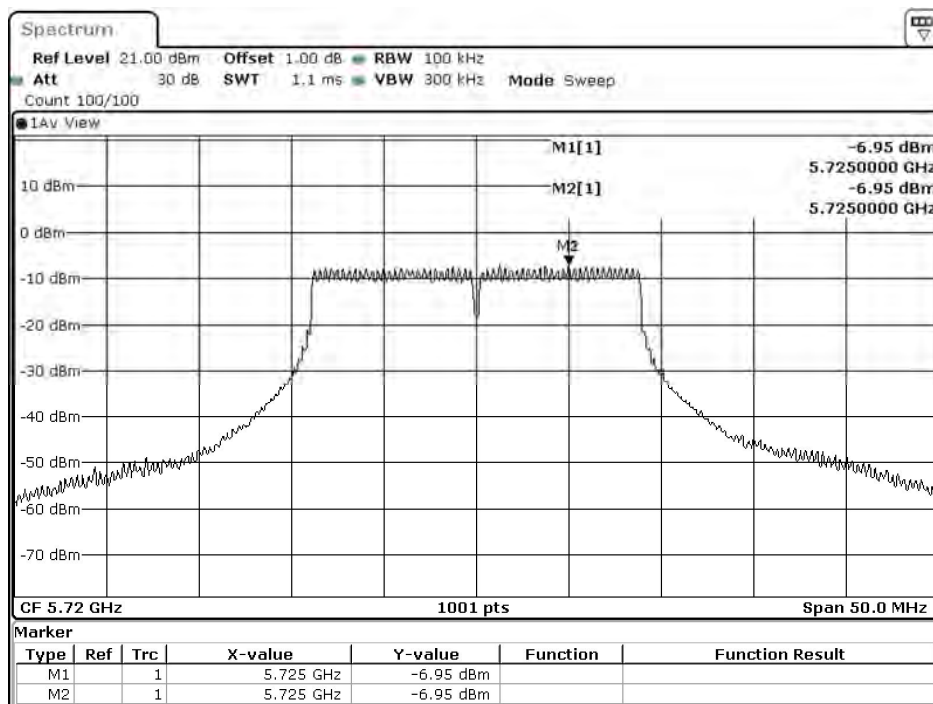
Date: 17.AUG.2021 03:44:25

Channel 144(U-NII-2C) (Chain B)



Date: 17.AUG.2021 08:24:05

Channel 144(U-NII-2C) (Chain B)



Date: 17.AUG.2021 08:24:26

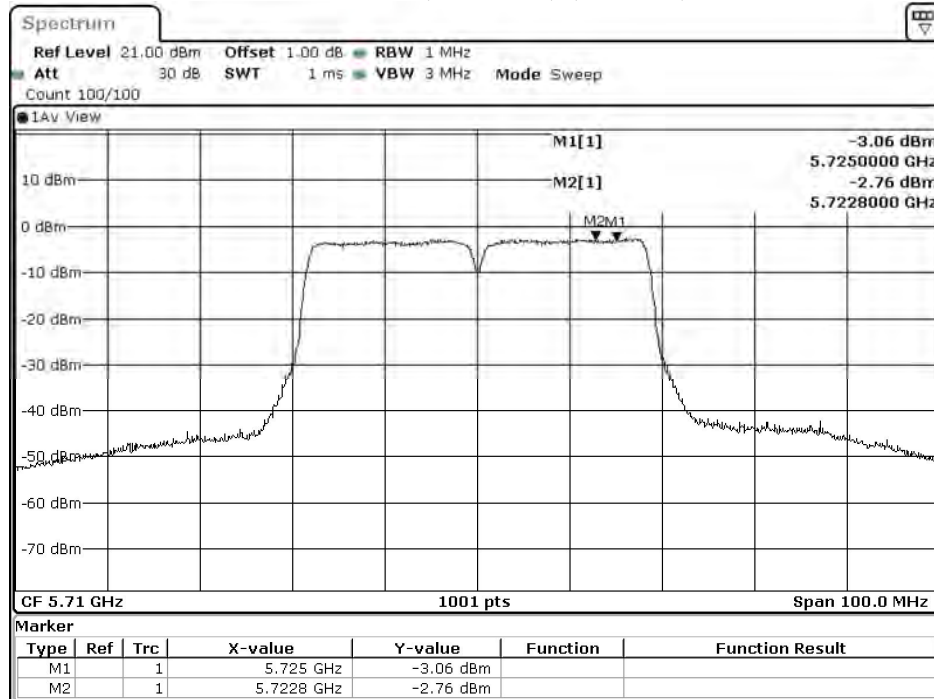
Product : Speech Generating Device
 Test Item : Peak Power Spectral Density
 Test Mode : Mode 5: Transmit (802.11ac-40BW 15Mbps)
 Test Date : 2021/08/19

Channel Number	Frequency (MHz)	Data Rate (Mbps)	Chain (dBm)	PPSD (dBm)	BWCF (dB)	$10 \cdot \log(2)$ (dB)	Duty factor (dB)	Total PPSSD (dBm)	Limit (dBm)	Result
142(U-NII-2C)	5710	HT8	A	-2.76	--	3.01	0.30	0.55	<11	Pass
			B	-1.49	--	3.01	0.30	1.82		Pass
142(U-NII-3)	5710	HT8	A	-10.82	6.98	3.01	0.30	-0.53	<30	Pass
			B	-9.68	6.98	3.01	0.30	0.61		Pass

Note:

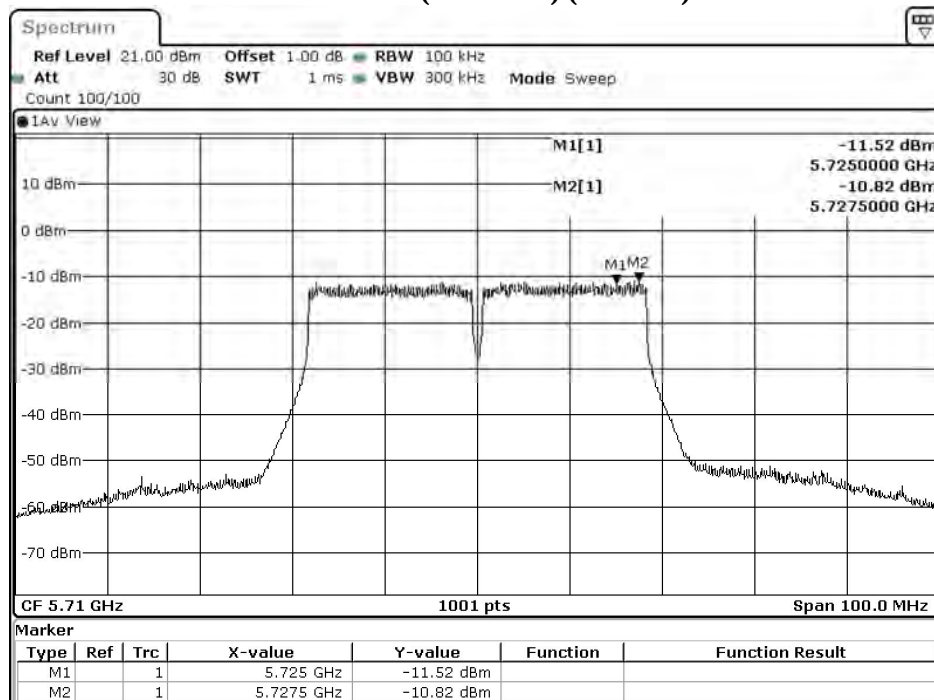
The quantity $10 \cdot \log 2$ (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 142(U-NII-2C) (Chain A)



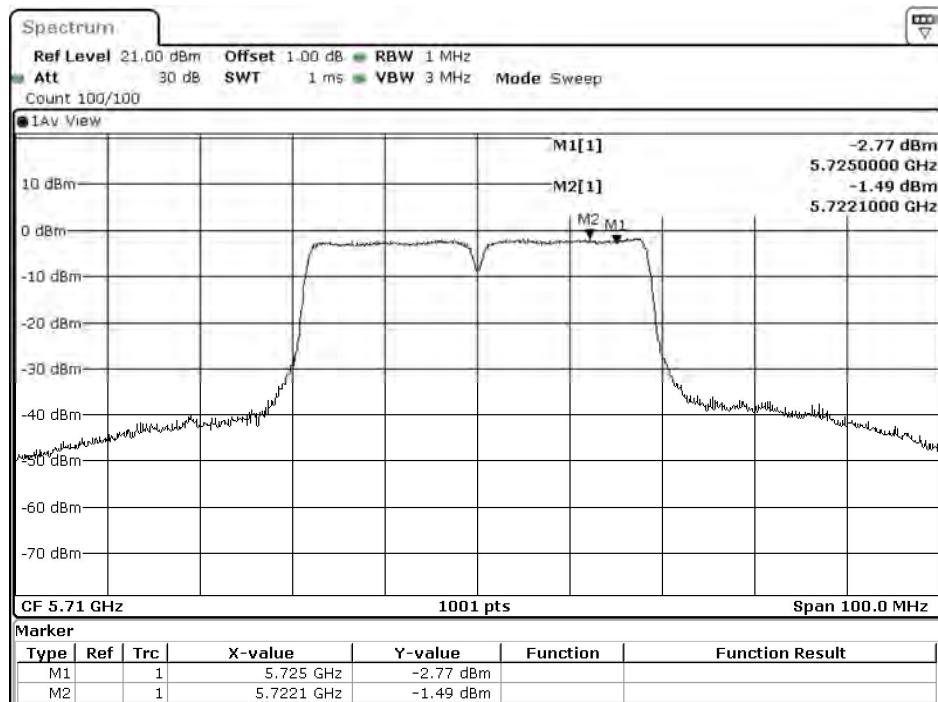
Date: 17.AUG.2021 03:48:19

Channel 142(U-NII-2C) (Chain A)



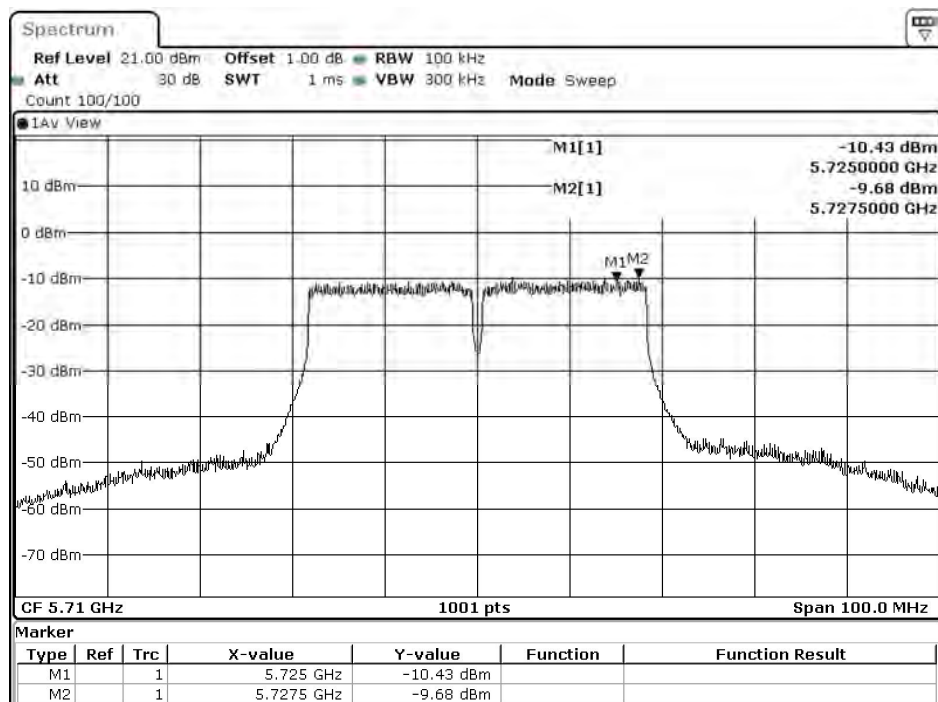
Date: 17.AUG.2021 03:48:57

Channel 142(U-NII-3) (Chain B)



Date: 17.AUG.2021 08:28:36

Channel 142(U-NII-3) (Chain B)



Date: 17.AUG.2021 08:28:57

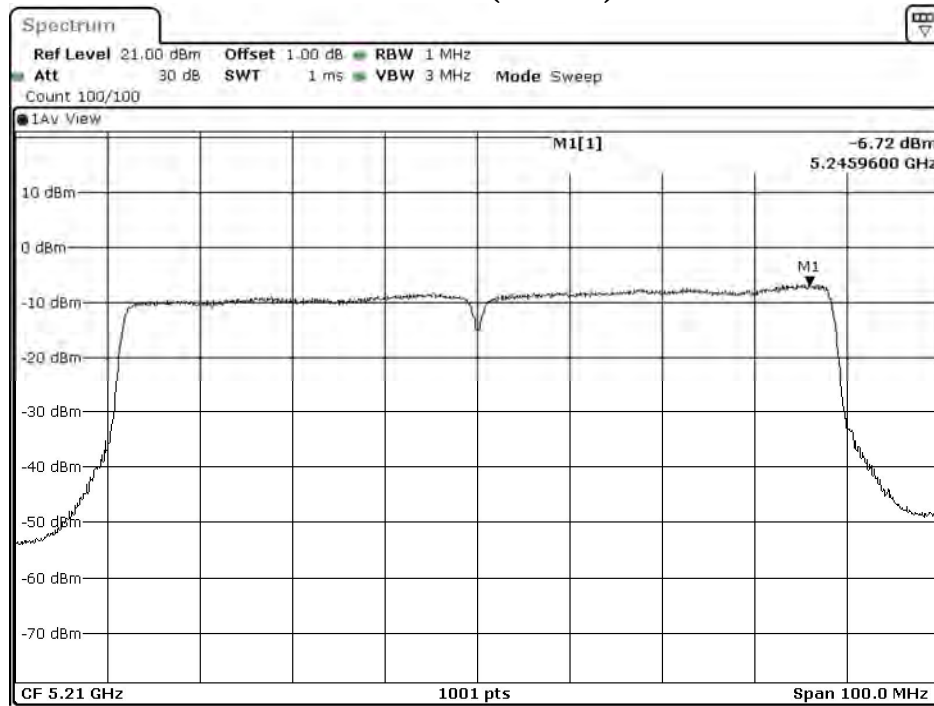
Product : Speech Generating Device
 Test Item : Peak Power Spectral Density
 Test Mode : Mode 6: Transmit (802.11ac-80BW 32.5Mbps)
 Test Date : 2021/08/19

Channel Number	Frequency (MHz)	Data Rate (Mbps)	Chain (dBm)	PPSD (dBm)	BWCF (dB)	10*log(2) (dB)	Duty factor (dB)	Total PPSSD (dBm)	Limit (dBm)	Result
42	5210	VHTO	A	-6.72	--	3.01	0.37	-3.34	<11	Pass
			B	-7.09	--	3.01	0.37	-3.71		Pass
58	5290	VHTO	A	-6.64	--	3.01	0.37	-3.26	<11	Pass
			B	-7.34	--	3.01	0.37	-3.96		Pass
106	5530	VHTO	A	-6.88	--	3.01	0.37	-3.50	<11	Pass
			B	-6.41	--	3.01	0.37	-3.03		Pass
122	5610	VHTO	A	-6.87	--	3.01	0.37	-3.49	<11	Pass
			B	-6.32	--	3.01	0.37	-2.94		Pass
138(U-NII-2C)	5690	VHTO	A	-6.71	--	3.01	0.37	-3.33	<11	Pass
			B	-5.66	--	3.01	0.37	-2.28		Pass
138(U-NII-3)	5690	HT8	A	-15.11	6.98	3.01	0.37	-4.75	<30	Pass
			B	-13.95	6.98	3.01	0.37	-3.59		Pass
155	5775	HT8	A	-21.83	6.98	3.01	0.37	-11.47	<30	Pass
			B	-21.54	6.98	3.01	0.37	-11.18		Pass

Note:

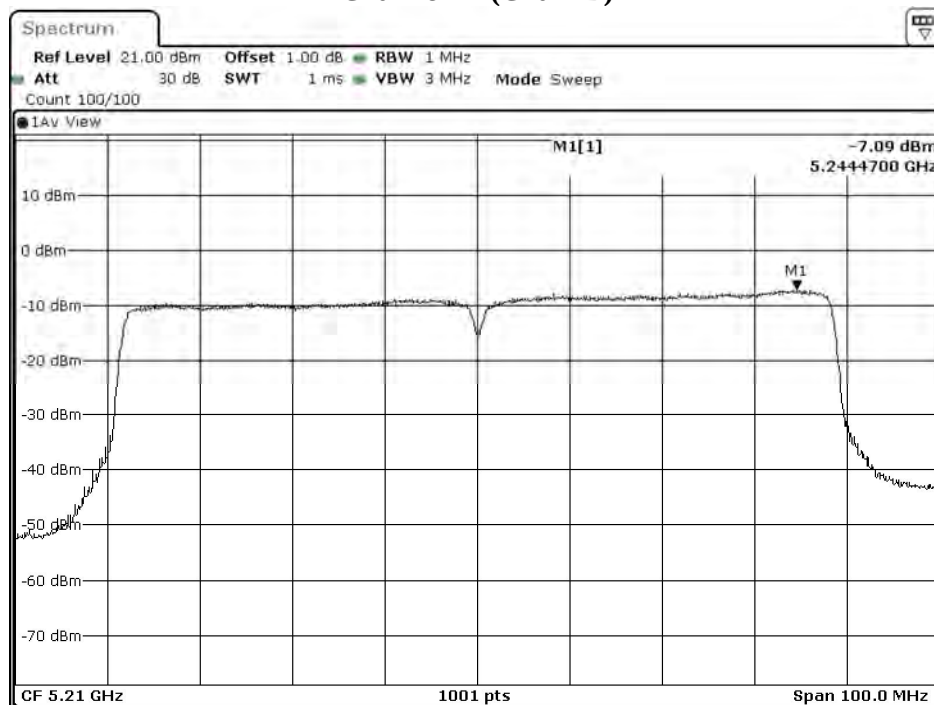
The quantity $10 \cdot \log 2$ (two antennas) is added to the spectrum peak value according to document 662911 D01.

Channel 42 (Chain A)

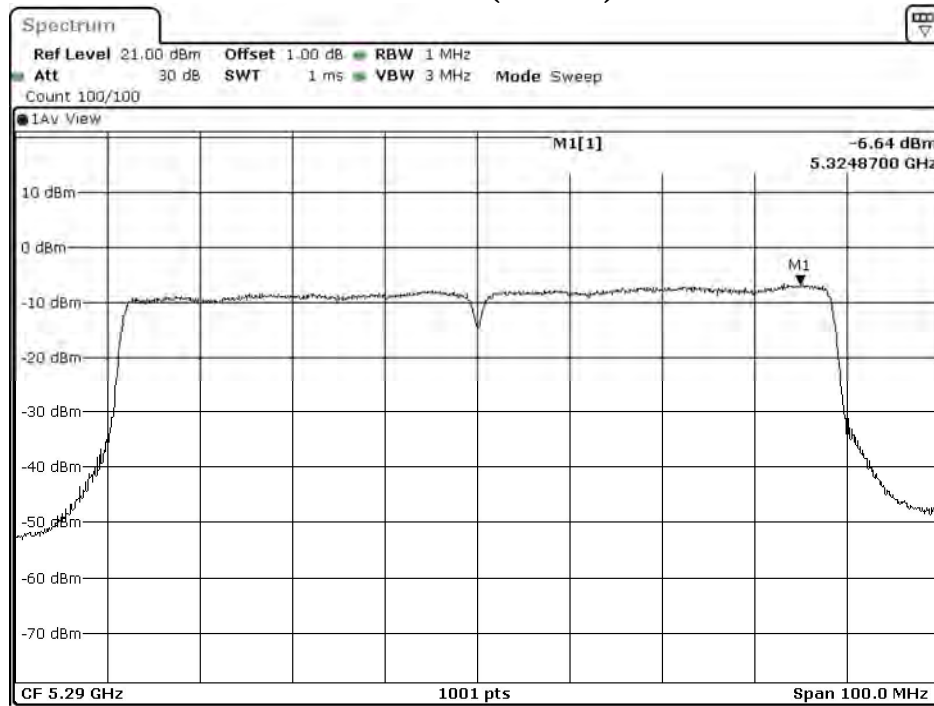


Date: 17.AUG.2021 03:53:06

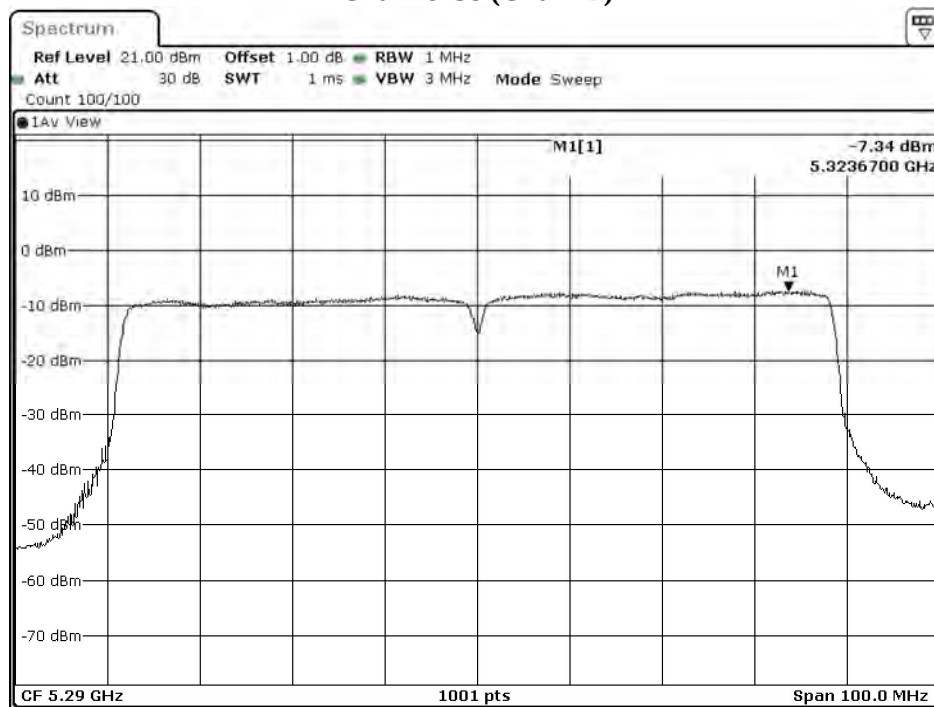
Channel 42 (Chain B)



Date: 17.AUG.2021 08:33:39

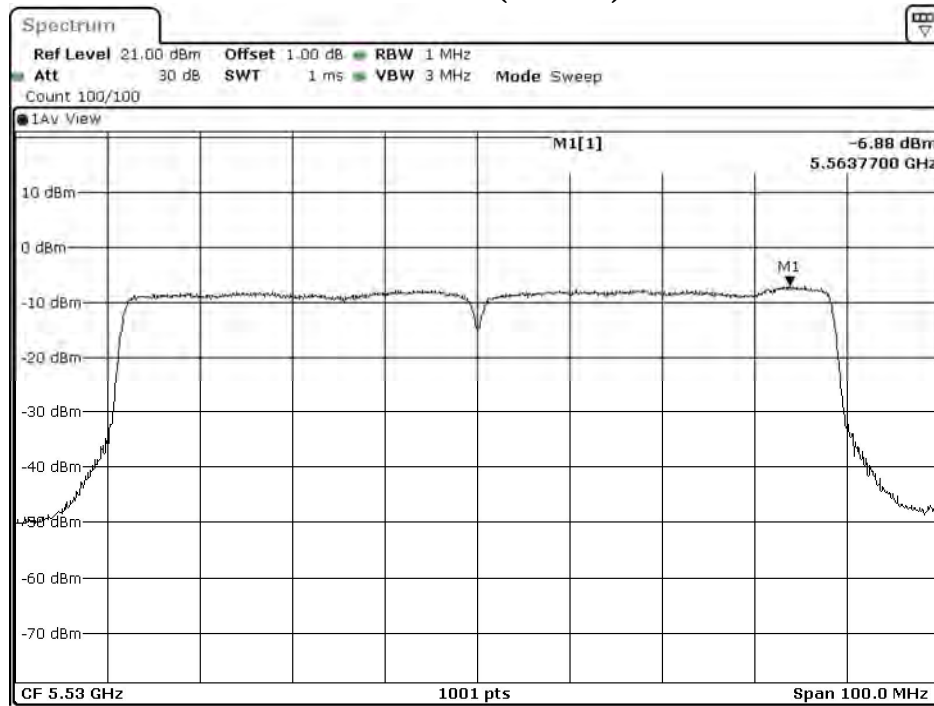
Channel 58 (Chain A)

Date: 17.AUG.2021 03:56:28

Channel 58 (Chain B)

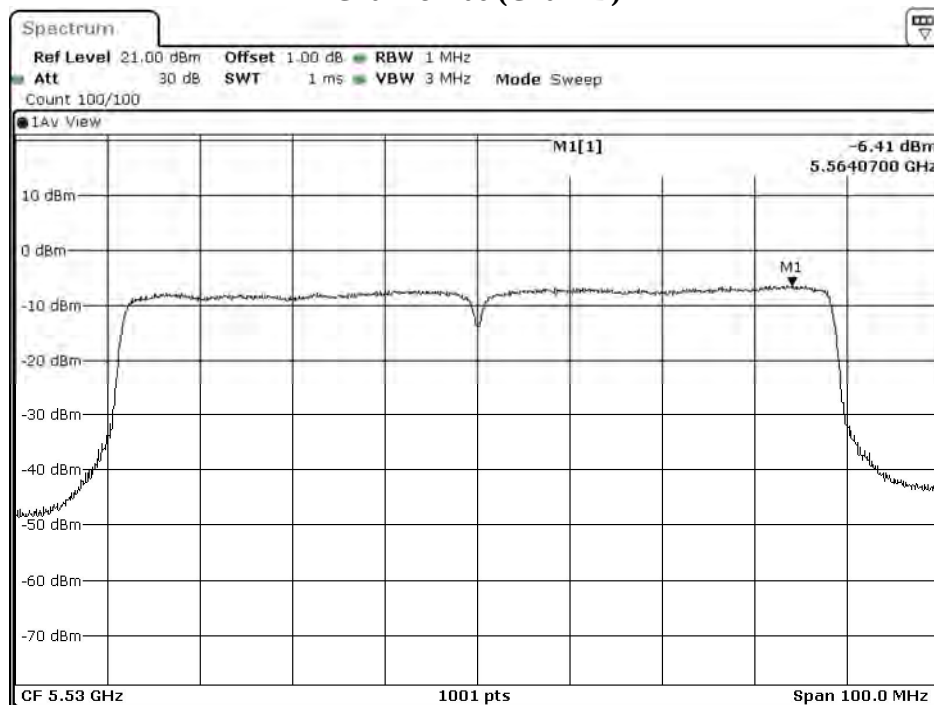
Date: 17.AUG.2021 08:37:01

Channel 106 (Chain A)



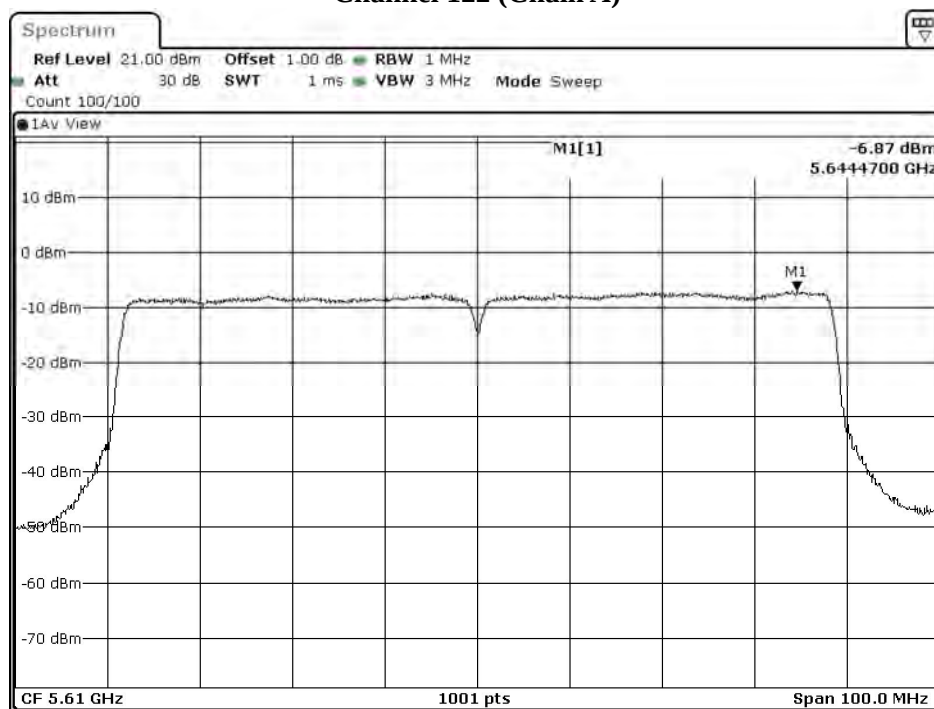
Date: 17.AUG.2021 03:59:58

Channel 106 (Chain B)



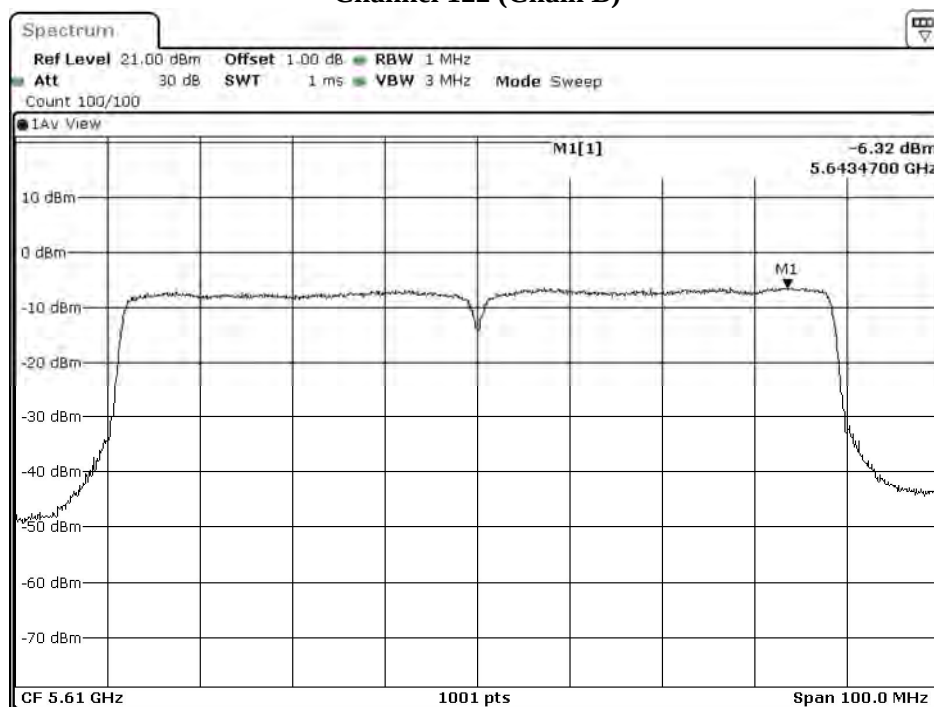
Date: 17.AUG.2021 08:40:32

Channel 122 (Chain A)



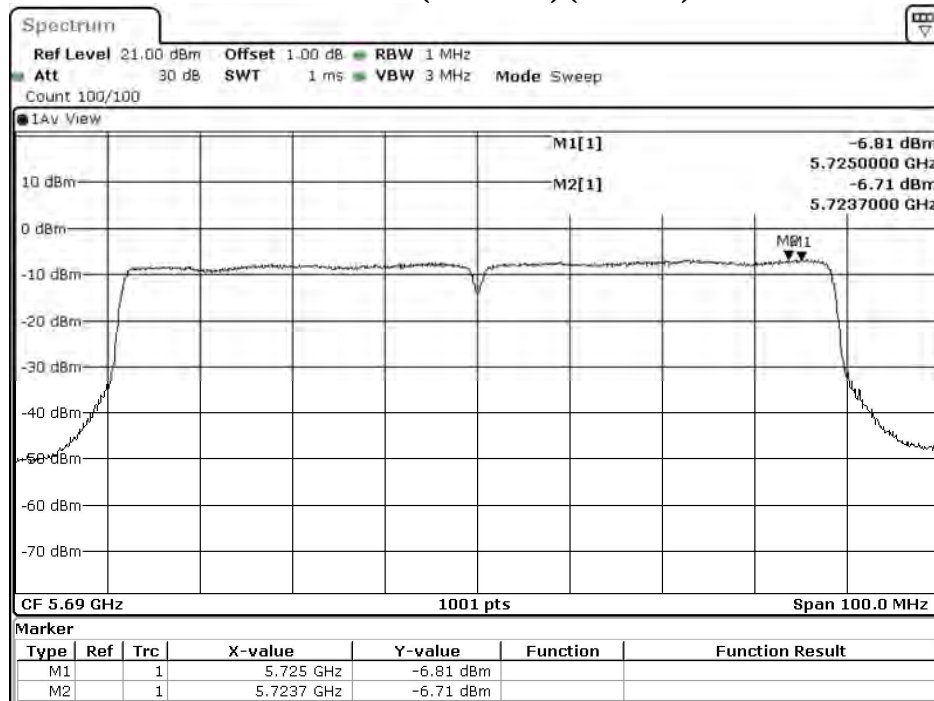
Date: 17.AUG.2021 04:02:31

Channel 122 (Chain B)



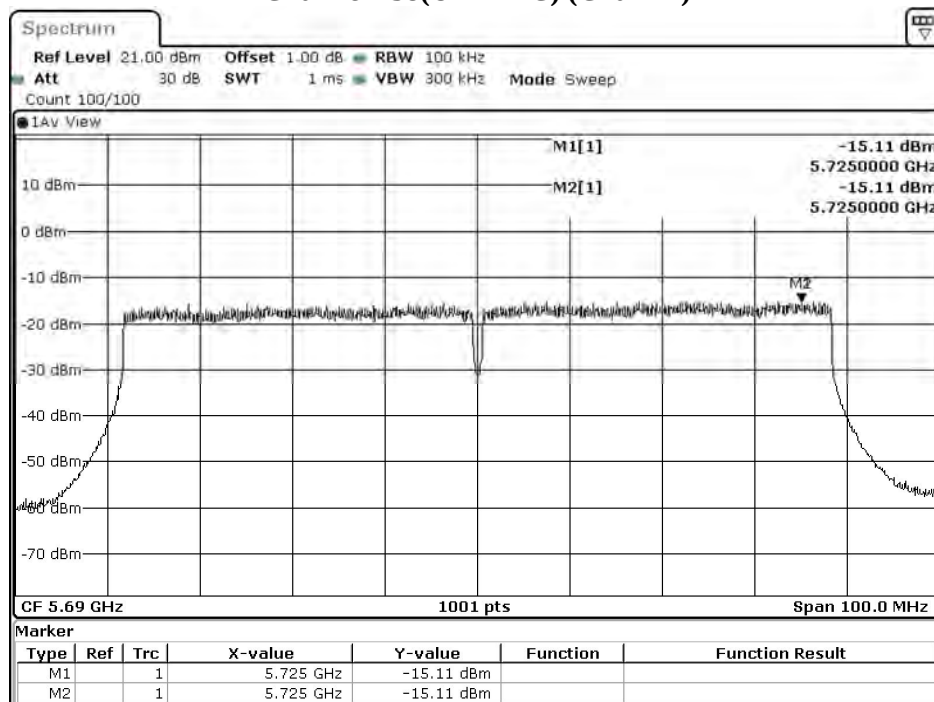
Date: 17.AUG.2021 08:43:05

Channel 138(U-NII-2C) (Chain A)



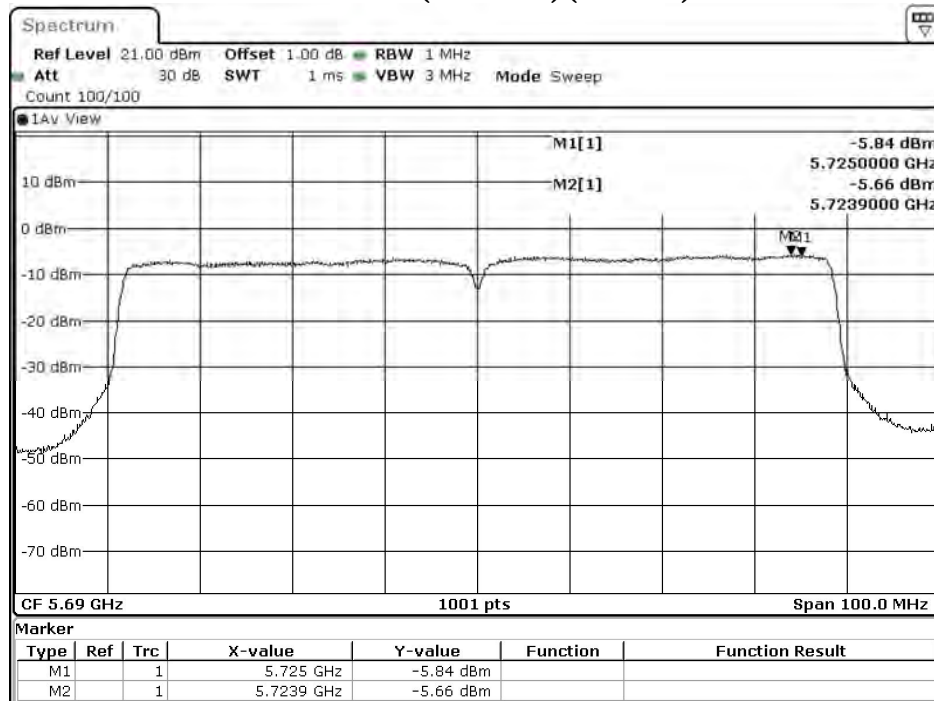
Date: 17.AUG.2021 04:05:30

Channel 138(U-NII-2C) (Chain A)



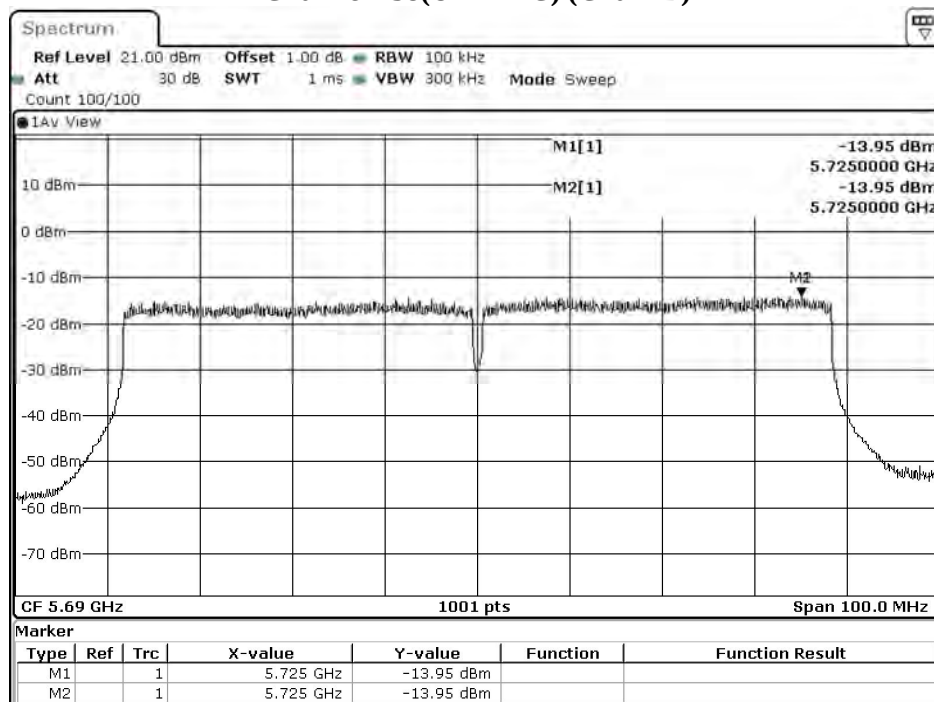
Date: 17.AUG.2021 04:06:07

Channel 138(U-NII-2C) (Chain B)



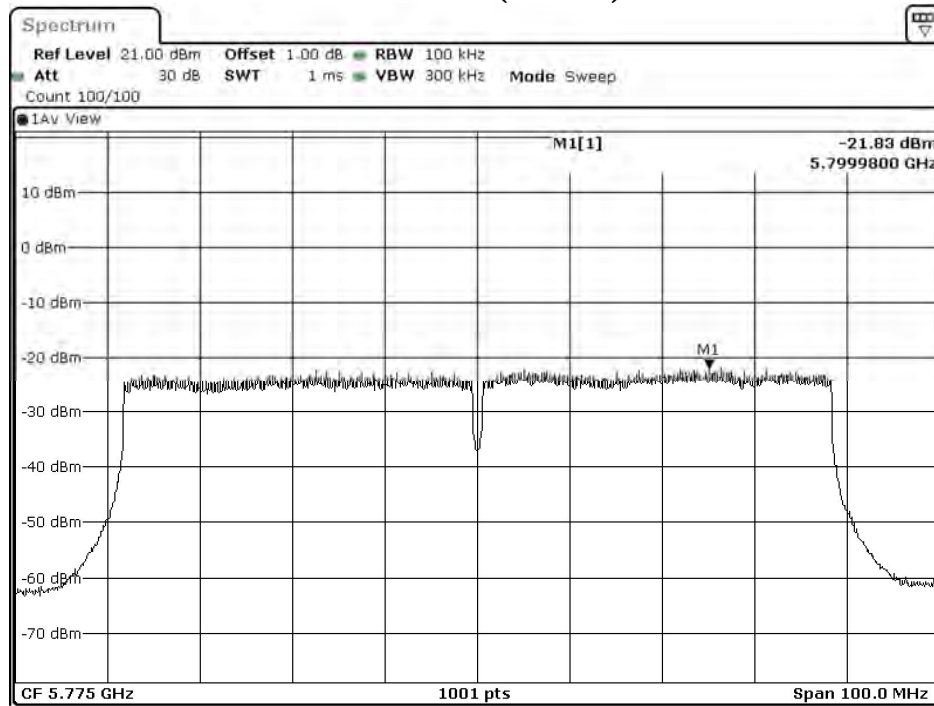
Date: 17.AUG.2021 08:45:47

Channel 138(U-NII-2C) (Chain B)



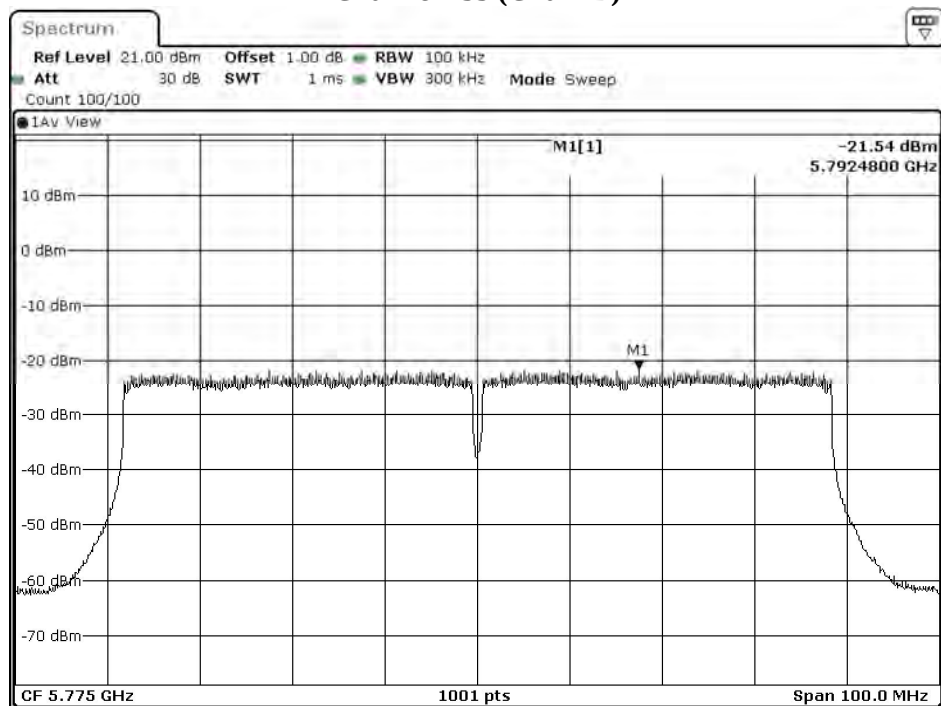
Date: 17.AUG.2021 08:46:08

Channel 155 (Chain A)



Date: 17.AUG.2021 05:37:46

Channel 155 (Chain B)

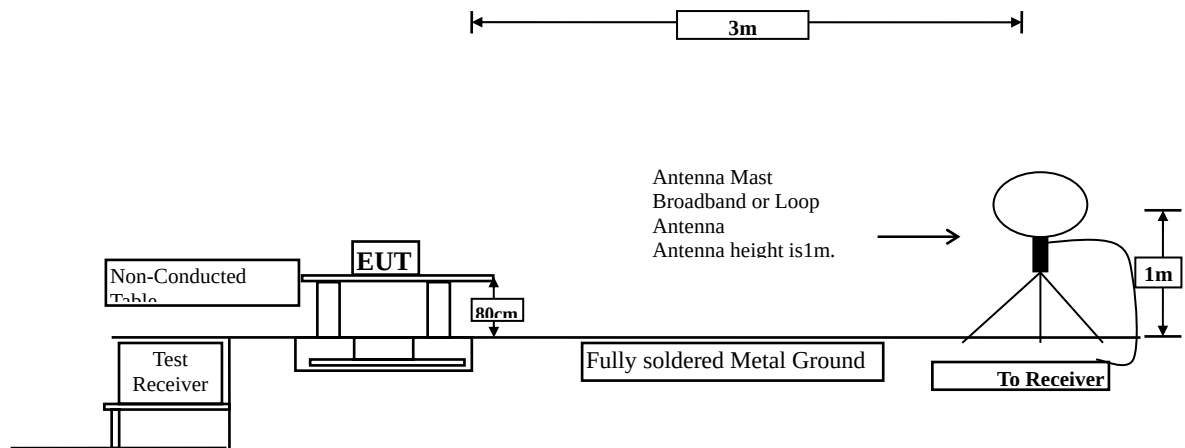


Date: 17.AUG.2021 10:18:20

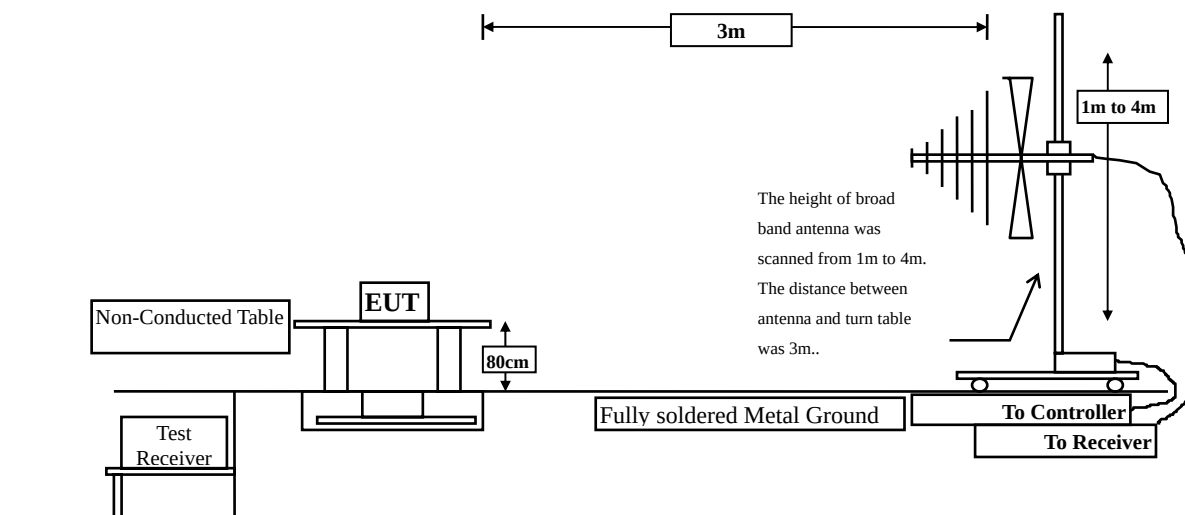
5. Radiated Emission

5.1. Test Setup

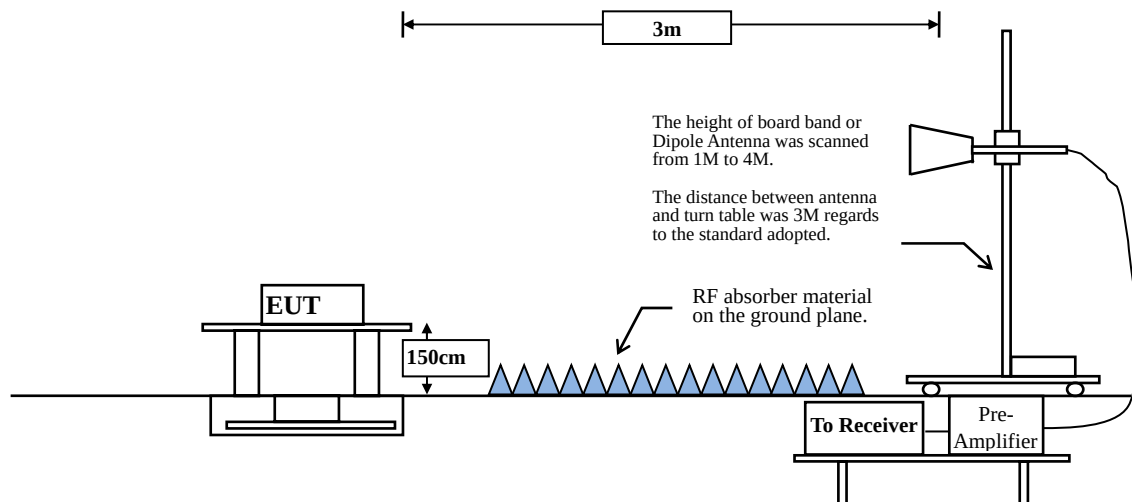
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



5.2. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: E field strength (dB μ V/m) = 20 log E field strength (uV/m)

- For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- For transmitters operating in the 5.725-5.85 GHz band:
All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
- 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.

Based on ANSI C63.10-2013 Section 12.7.3 d) provides the conversion formula between field strength and EIRP, if distance is 3m, -27dBm is equivalent to 68.22dBuV/m.

5.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15. 407 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground, when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 30MHz setting on the field strength meter is 9kHz and 30MHz~1GHz is 120kHz and above 1GHz is 1MHz.

Radiated emission measurements below 30MHz are made using Loop Antenna and 30MHz~1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna. The measurement frequency range from 9kHz - 10th Harmonic of fundamental was investigated.

RBW and VBW Parameter setting:

According to KDB 789033 section II.G.5 Procedure for Unwanted Maximum Emissions
Measurements above 1000 MHz.

RBW = 1MHz.

VBW $\geq$ 3MHz.

According to KDB 789033 section II.G.6 Procedures for Average Unwanted Emissions
Measurements above 1000 MHz.

RBW = 1MHz.

VBW = 10Hz, when duty cycle $\geq$ 98 %

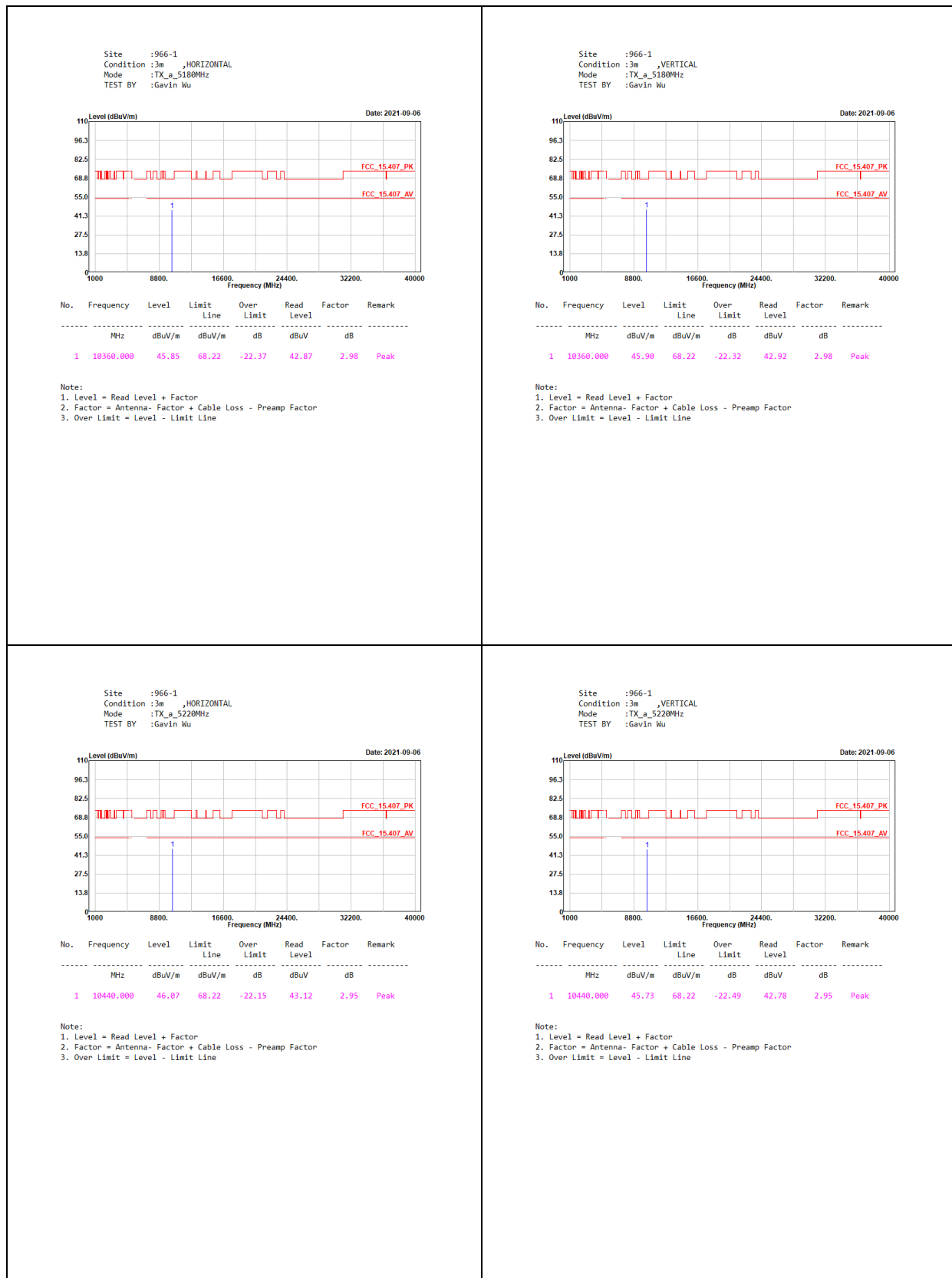
VBW $\geq$ 1/T, when duty cycle < 98 %

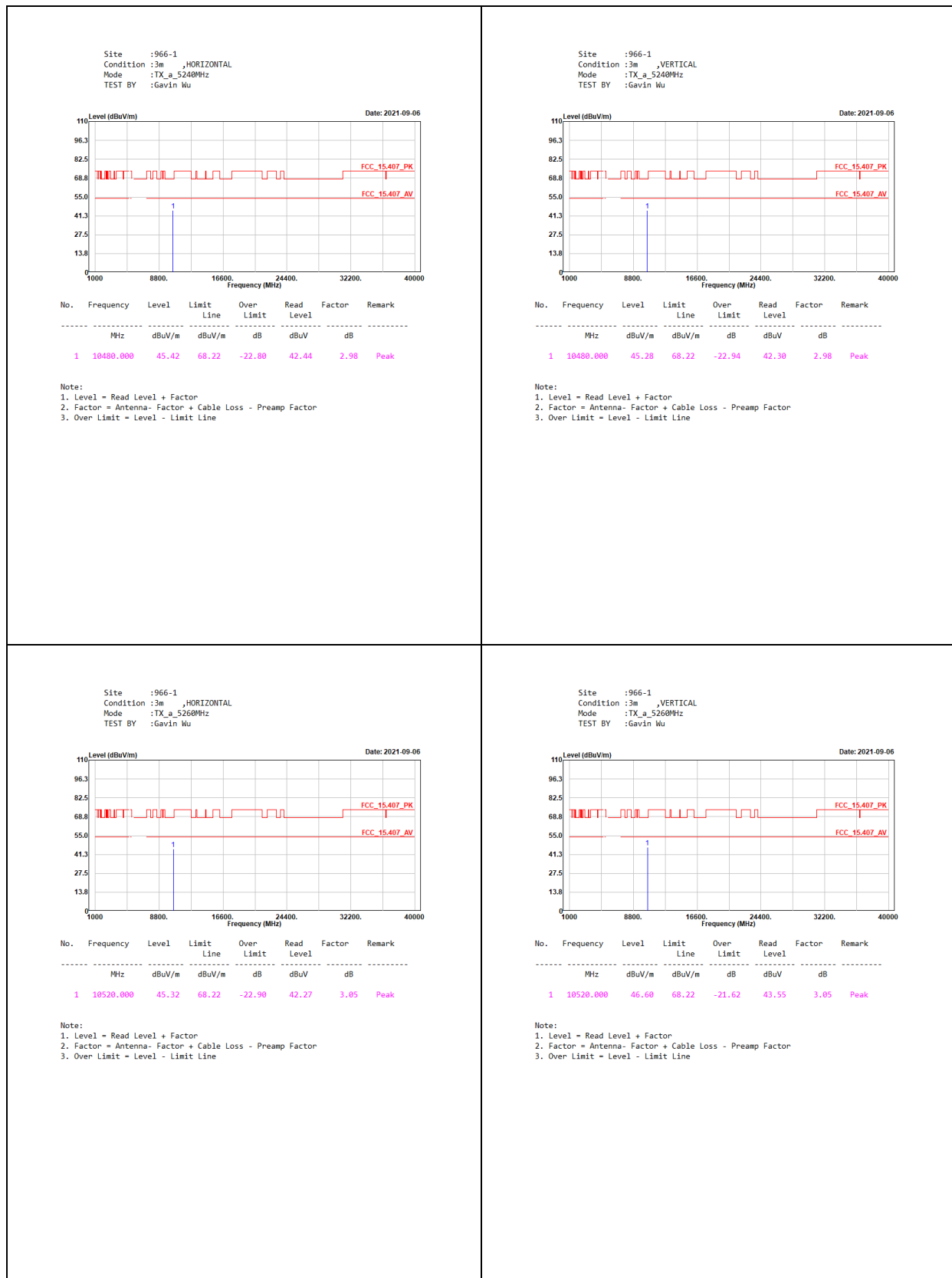
(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

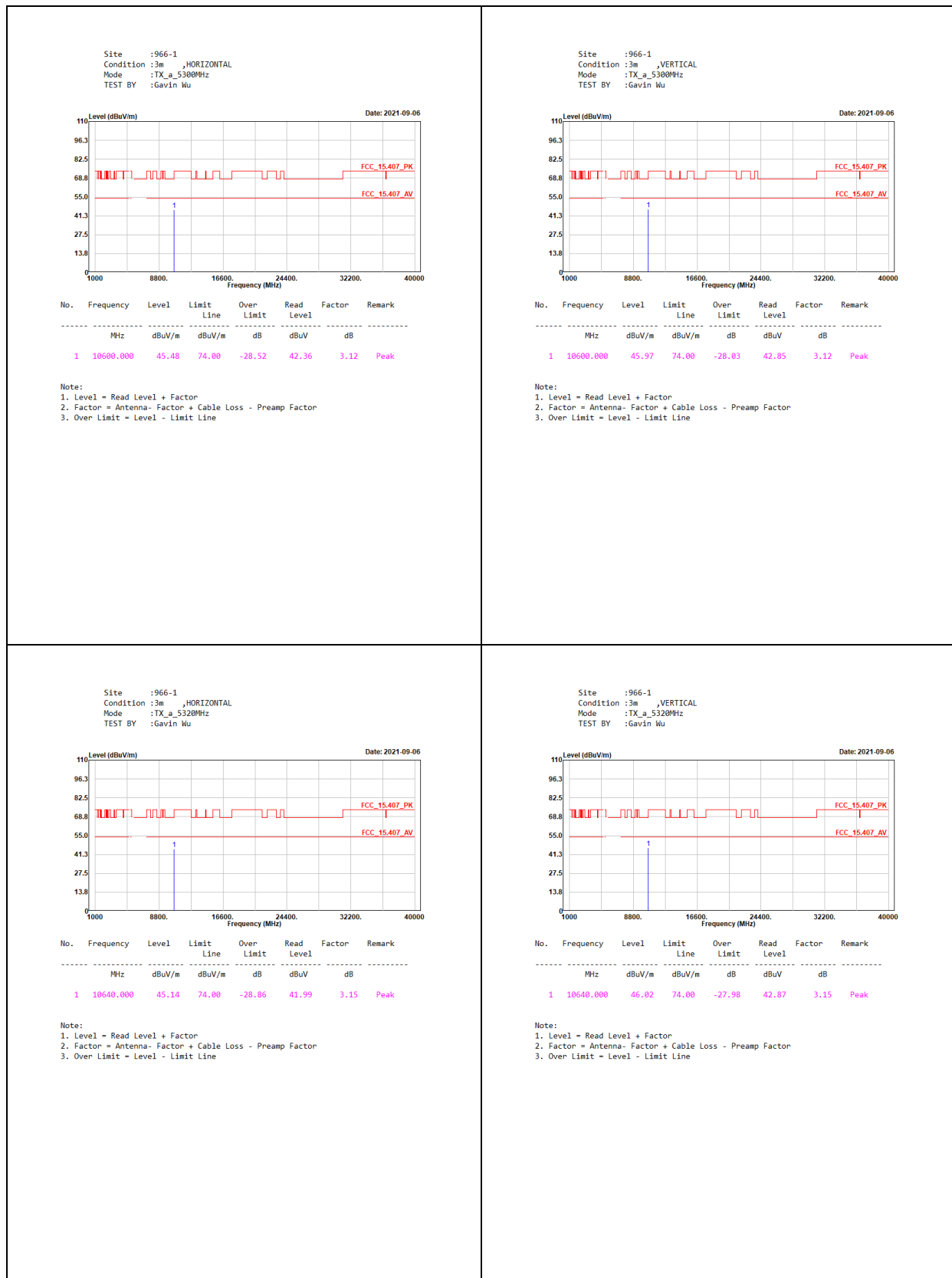
5GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11a	97.60	2.0300	493	500
802.11n20	96.52	0.9700	1031	2k
802.11n40	93.33	0.4900	2041	3k
802.11ac80	91.92	0.4550	2198	3k

Note: Duty Cycle Refer to Section 8

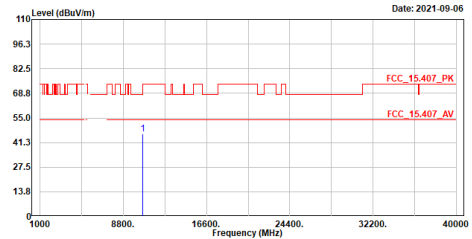
5.4. Test Result of Radiated Emission



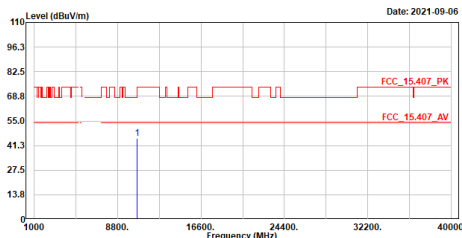




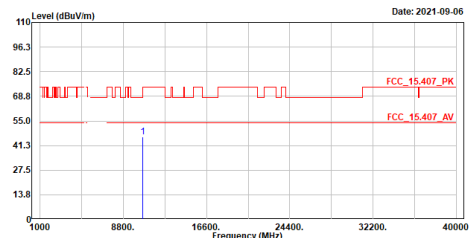
Site	Condition	Mode	TEST BY	Date
:966-1	:3m ,VERTICAL	:TX @ 5380MHz	:Gavin Wu	2021-09-06

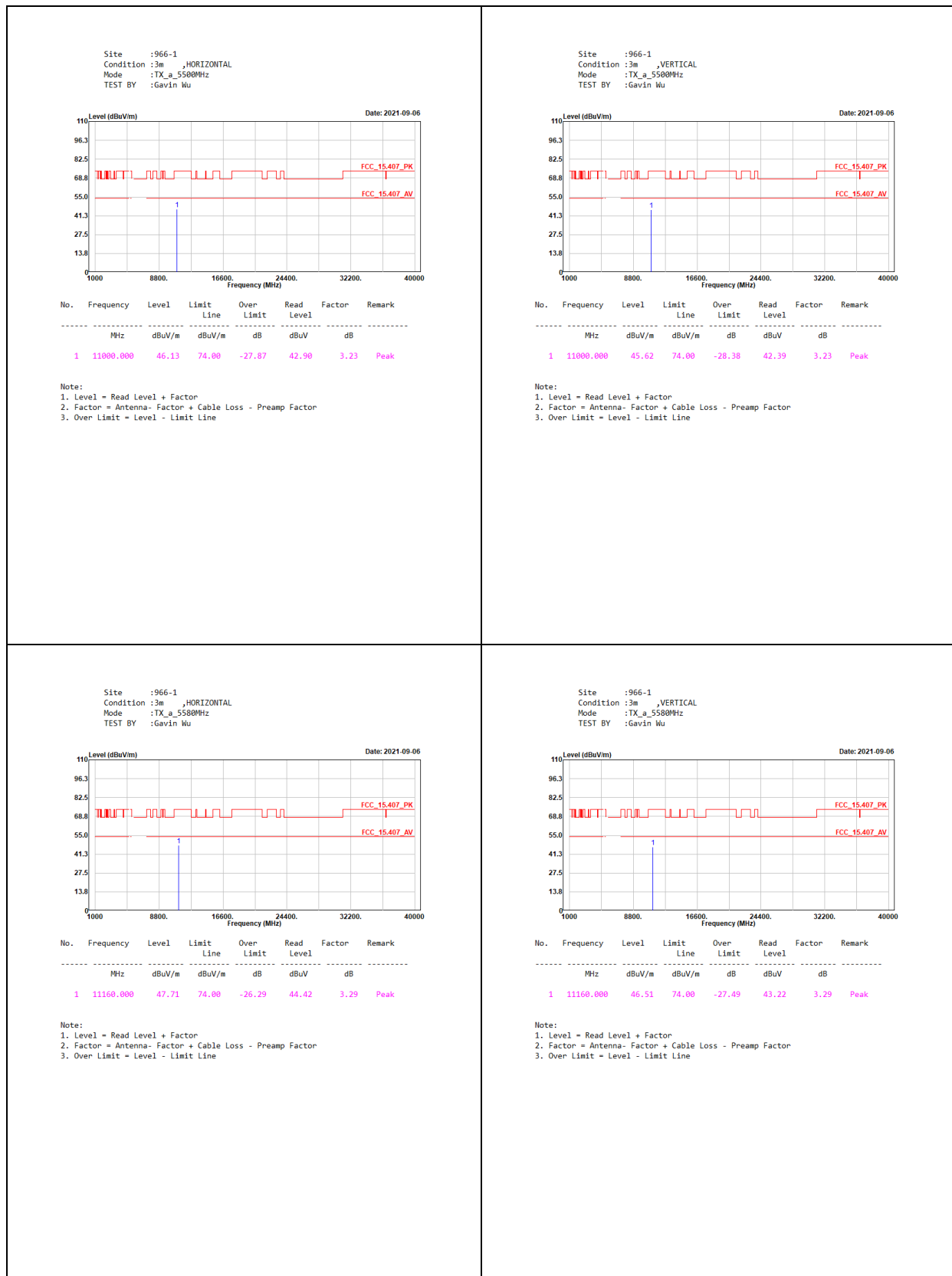


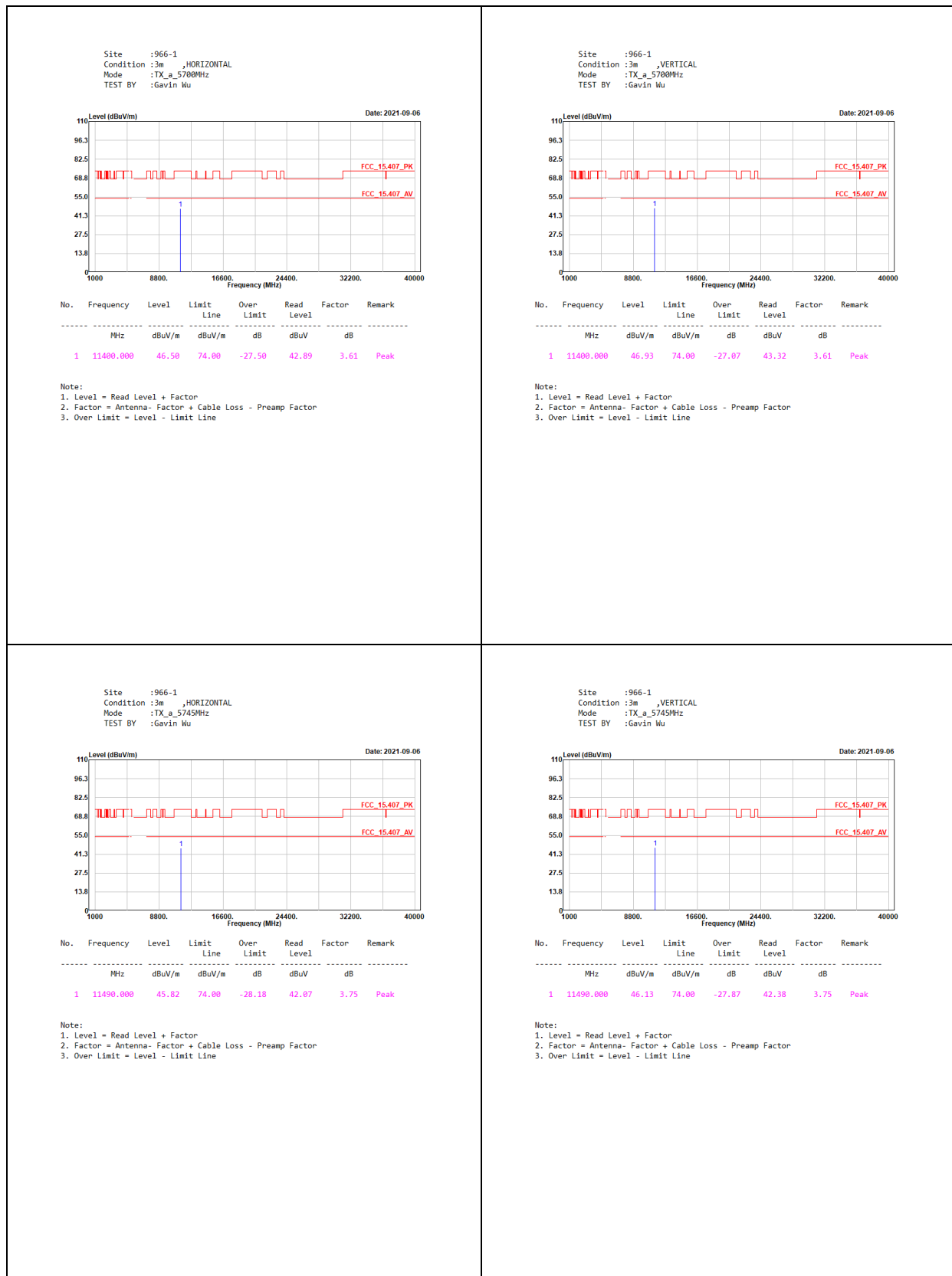
Site	Condition	Mode	TEST BY	Date
:966-1	:3m ,HORIZONTAL	:TX @ 5320MHz	:Gavin Wu	2021-09-06

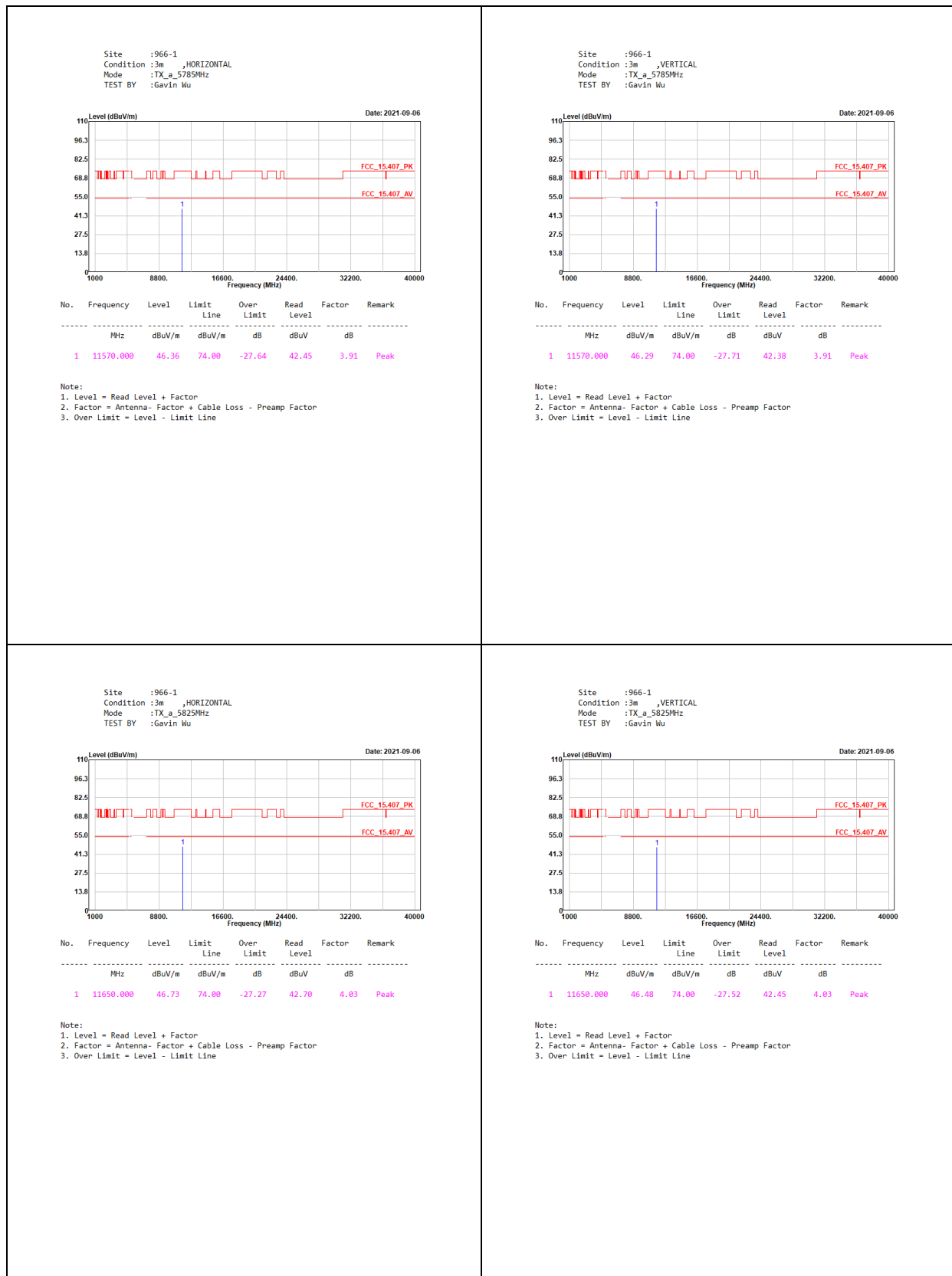


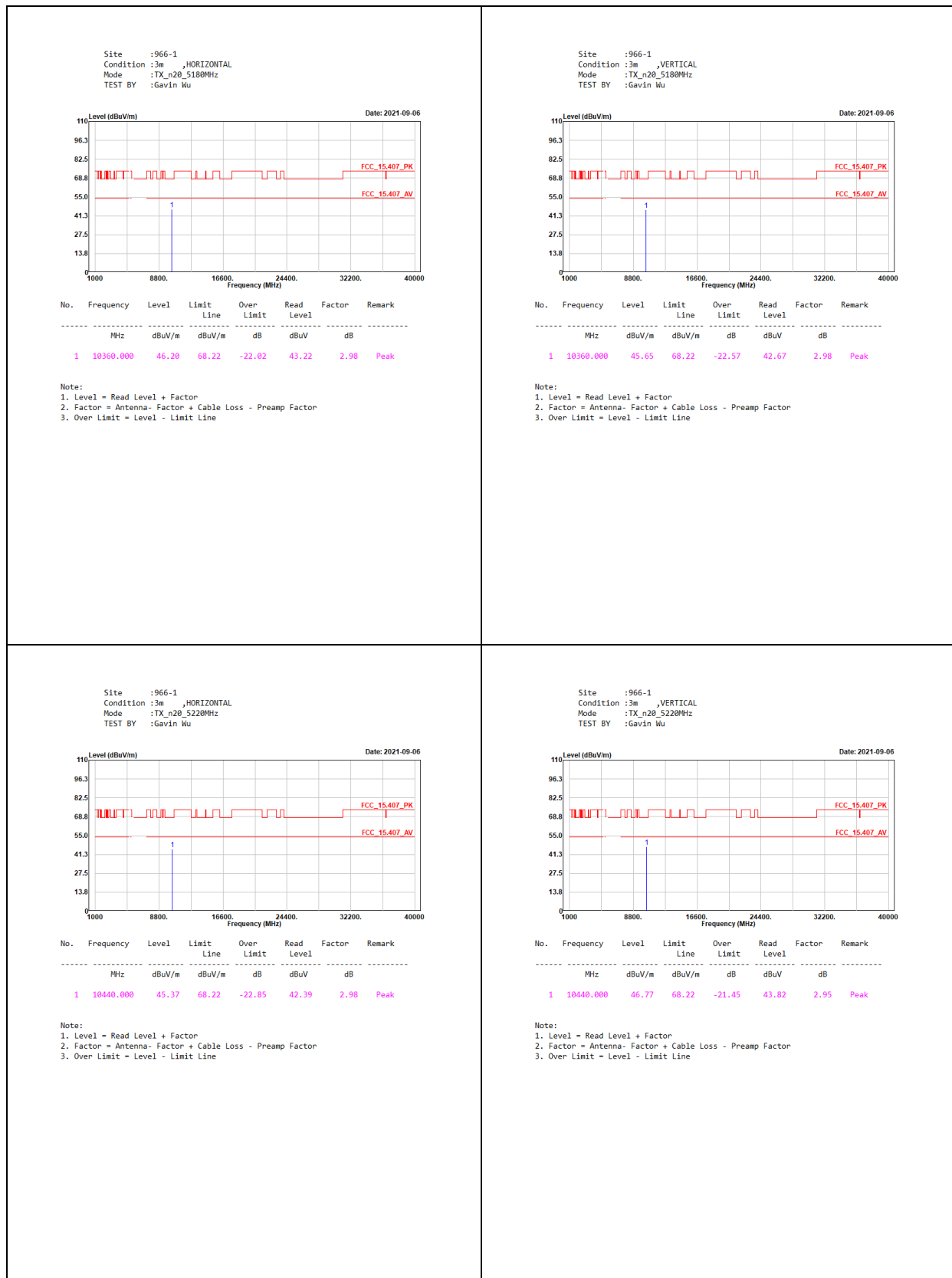
Site	Condition	Mode	TEST BY	Date
:966-1	:3m ,VERTICAL	:TX @ 5320MHz	:Gavin Wu	2021-09-06

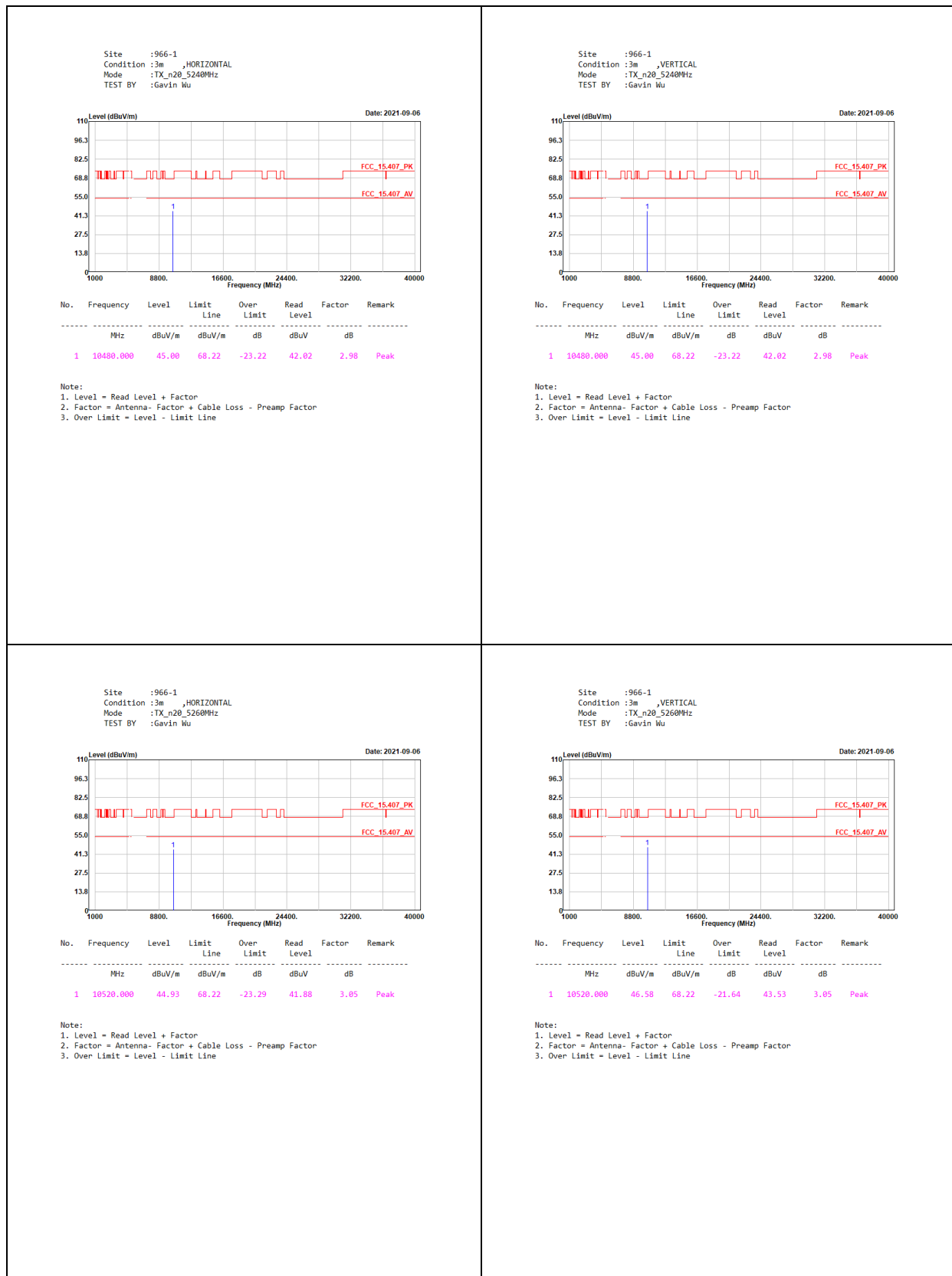


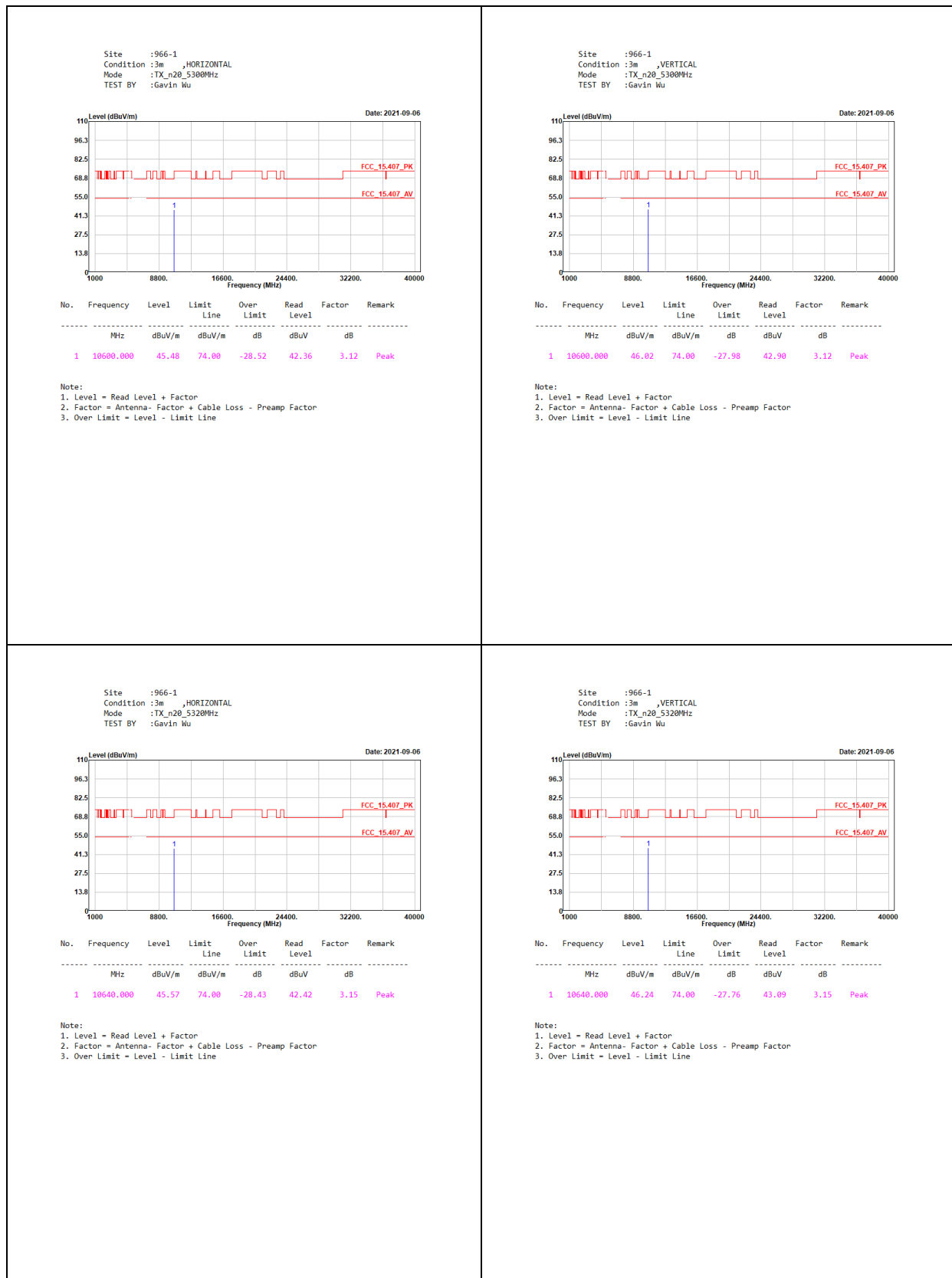


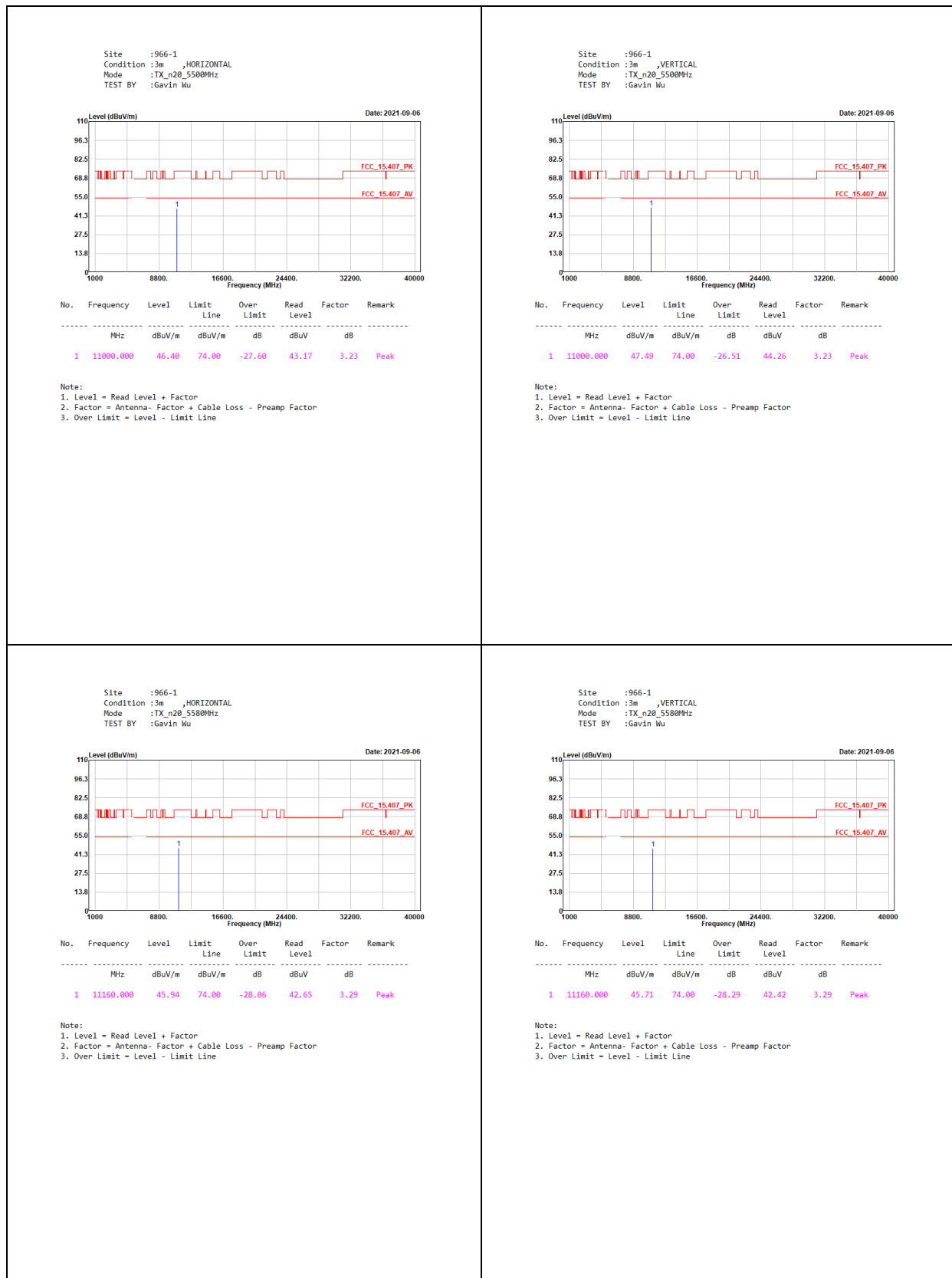


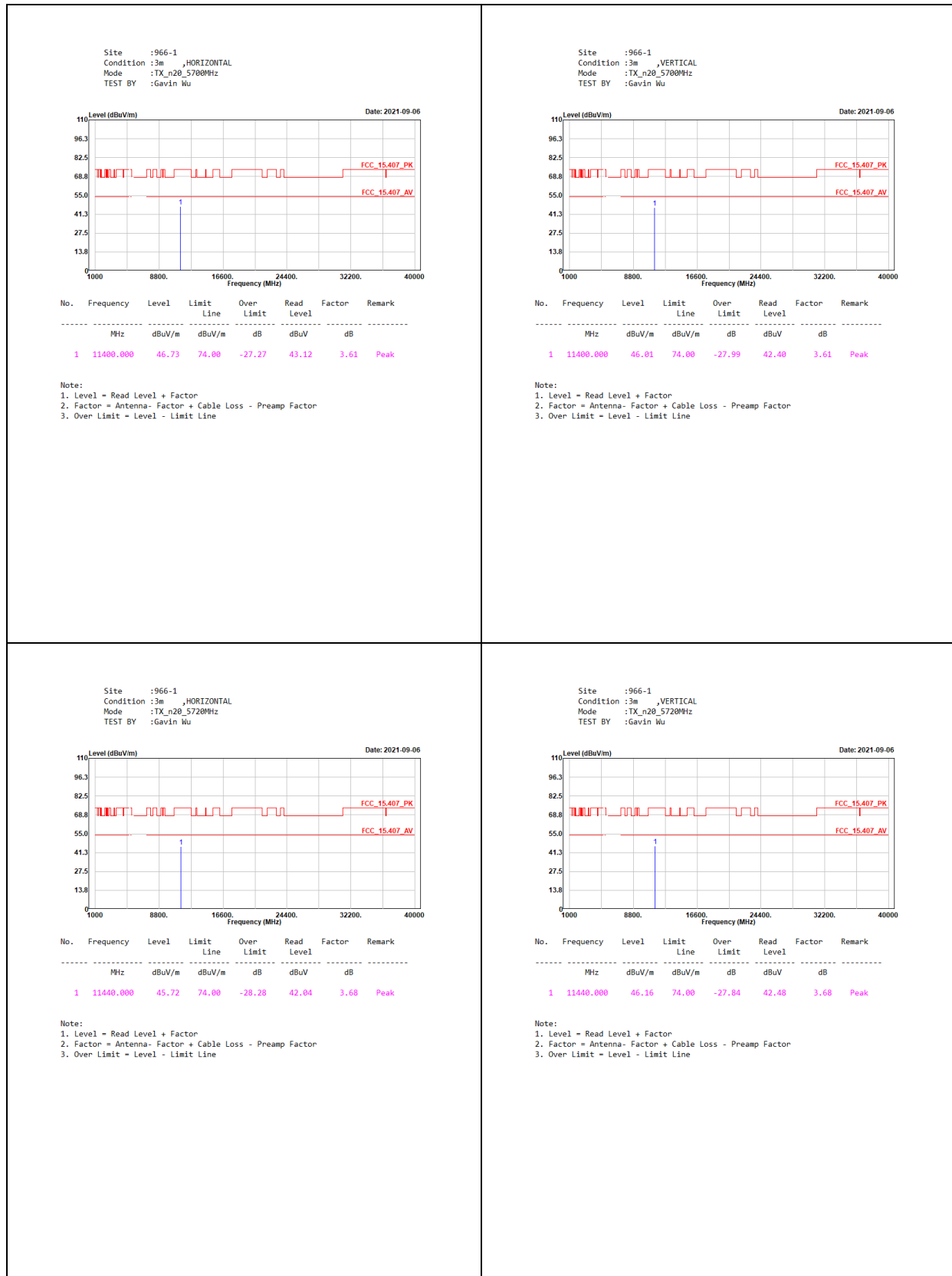


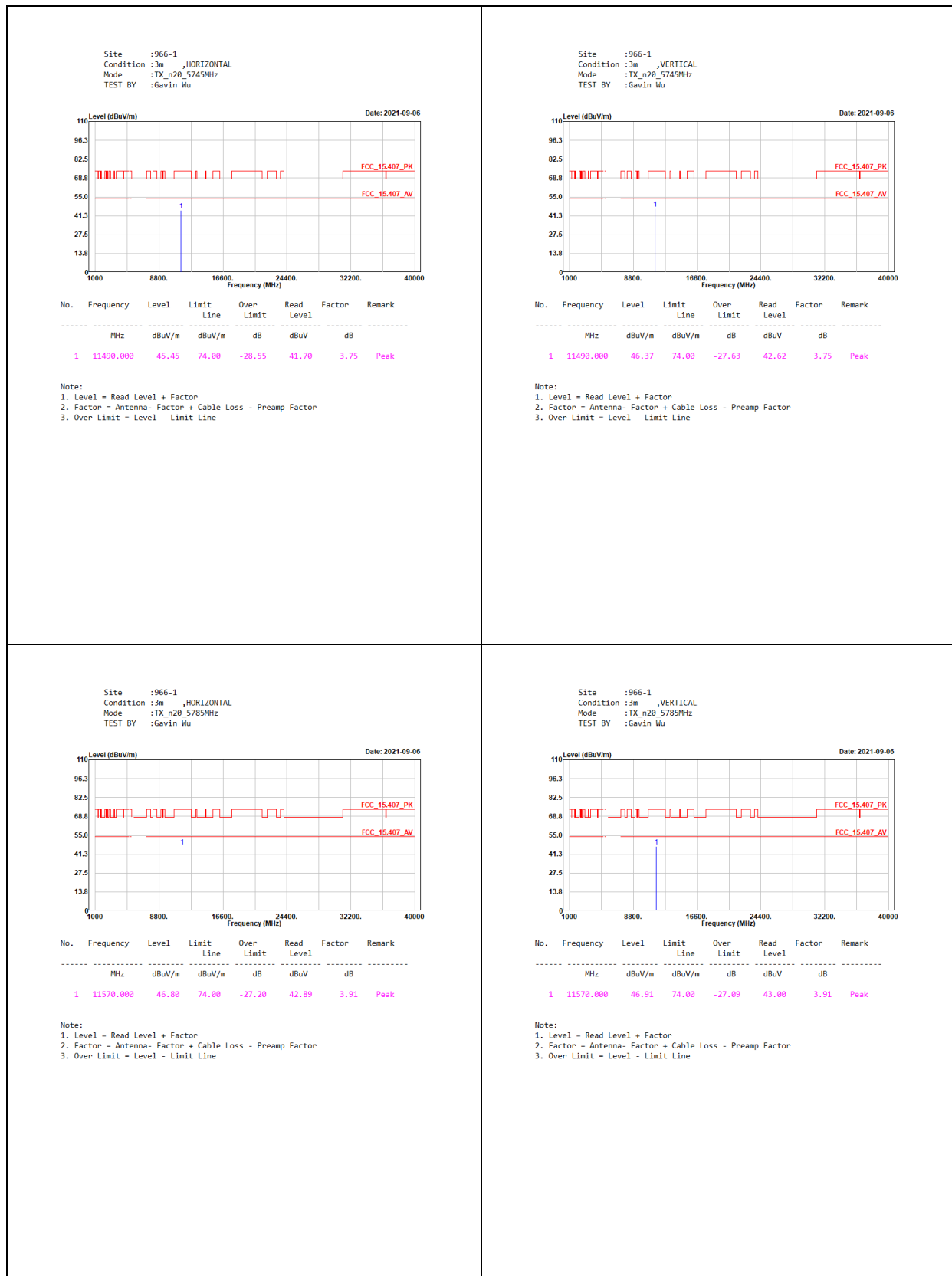


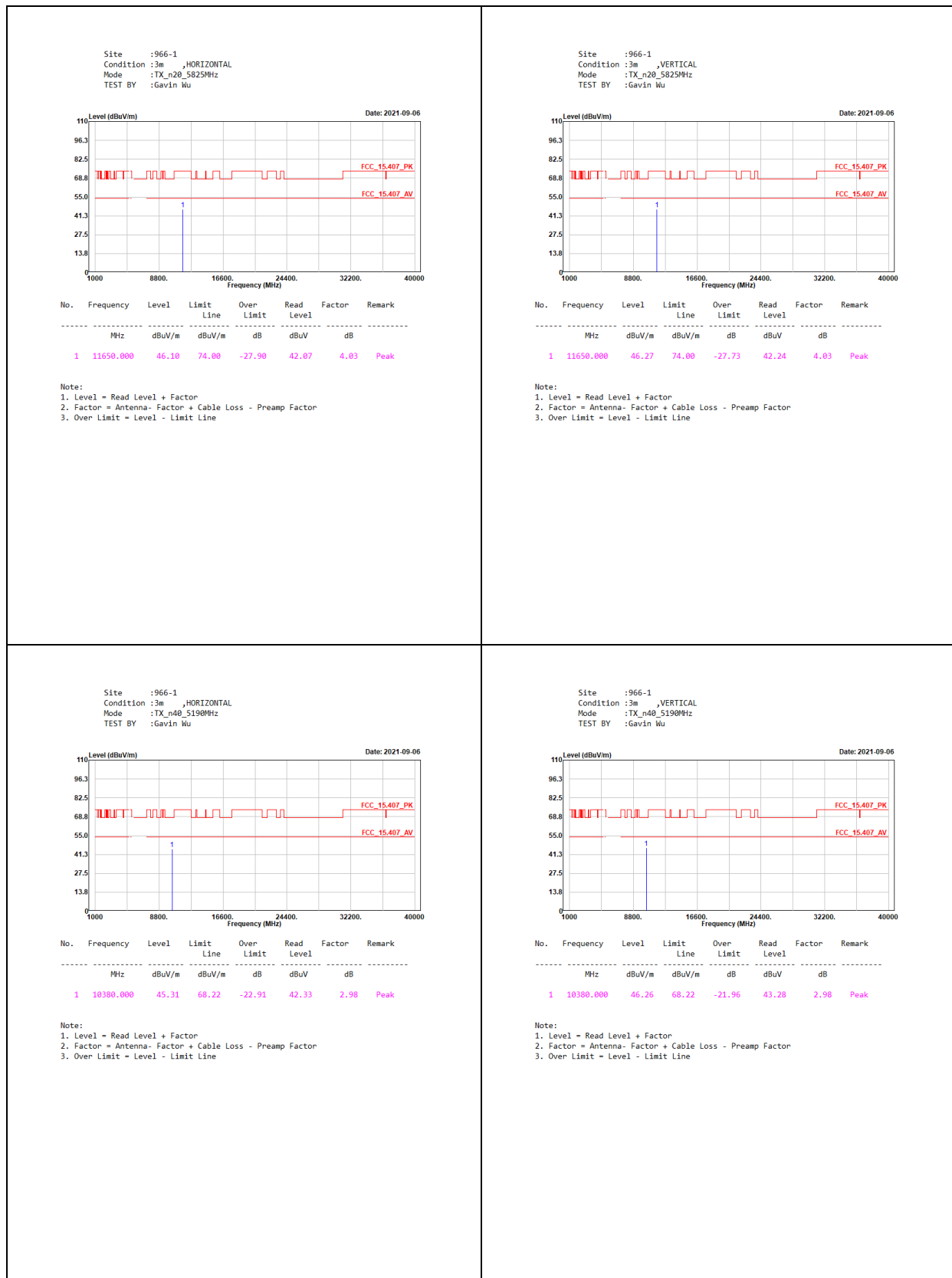


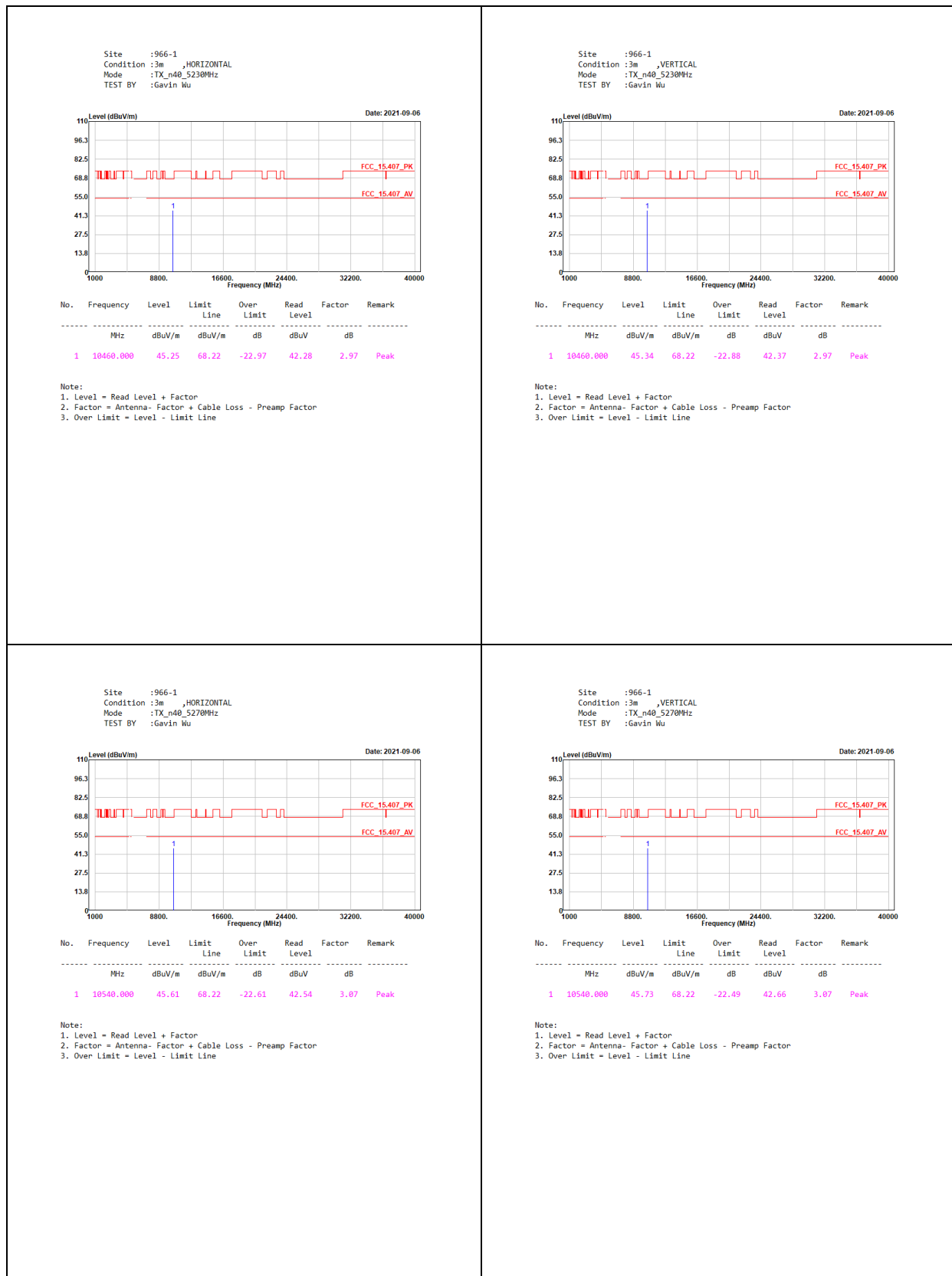


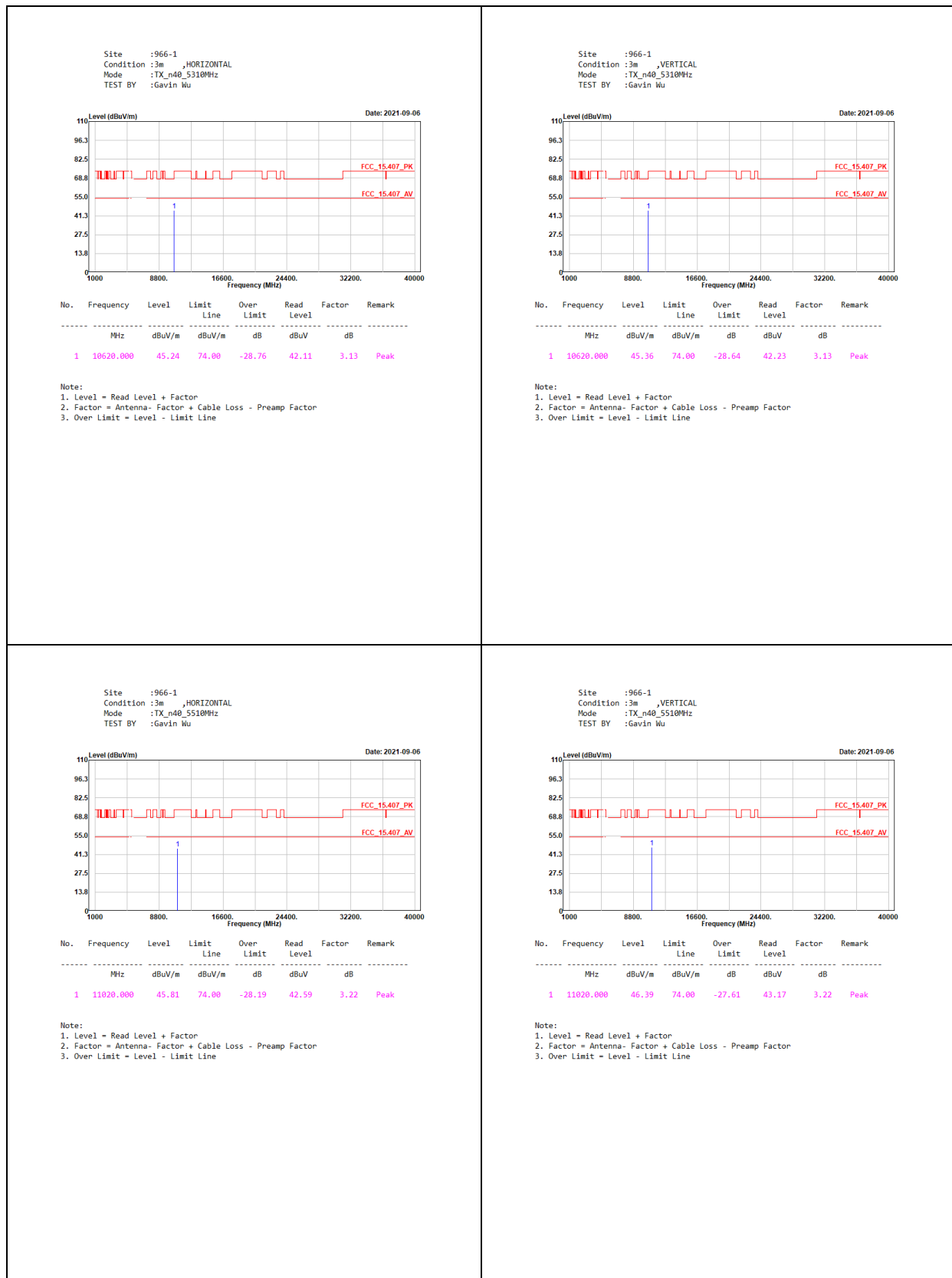


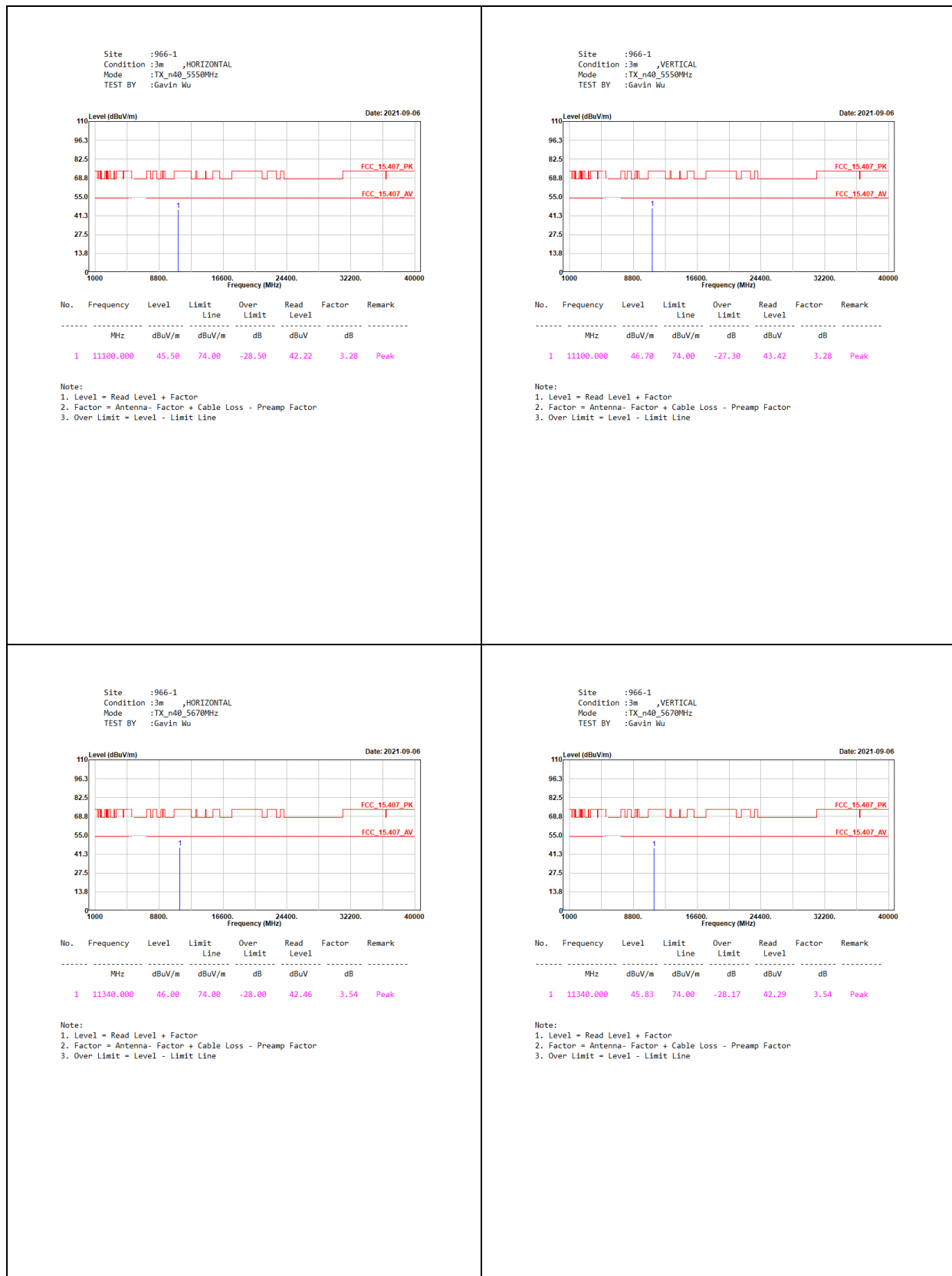


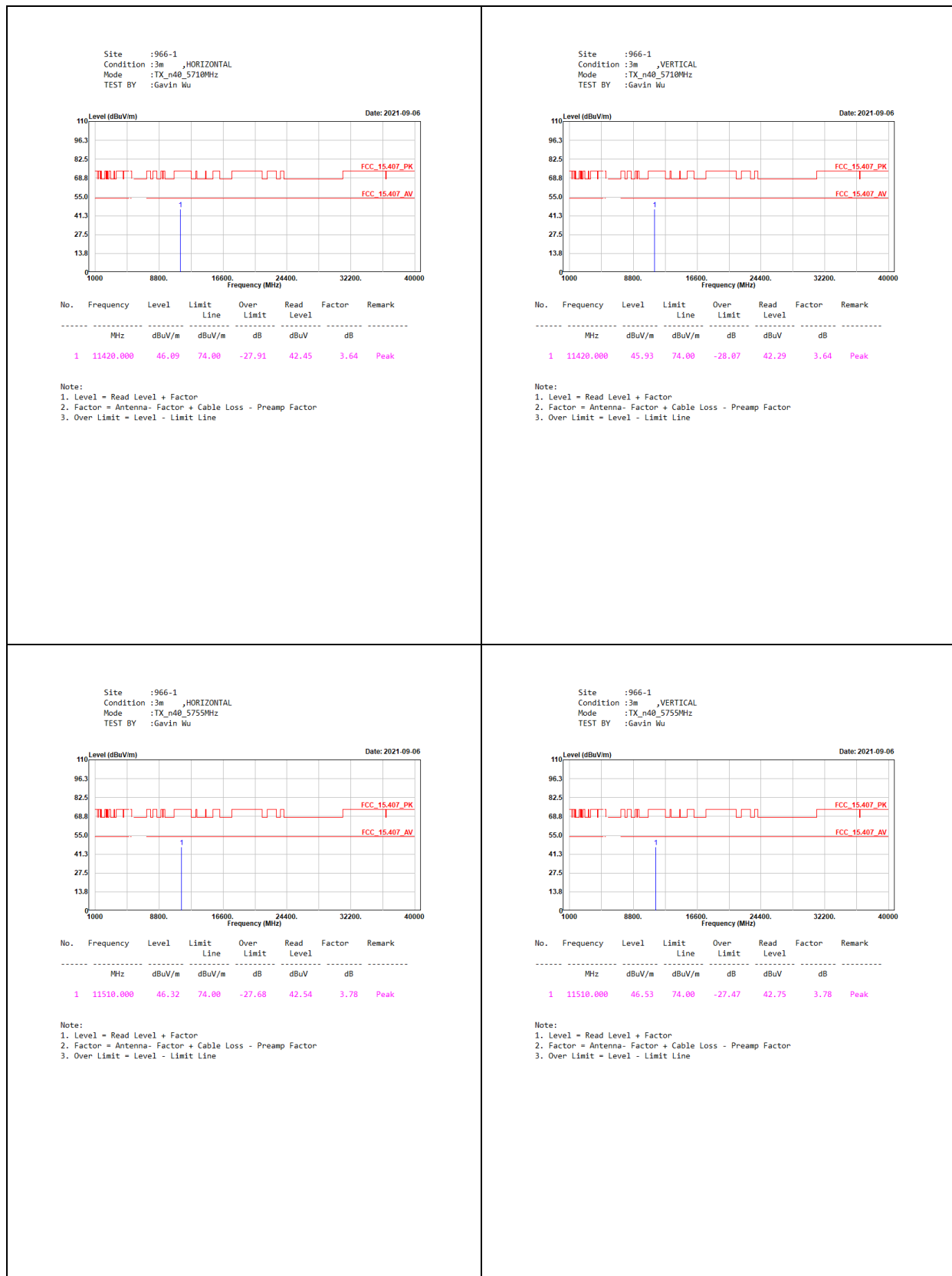


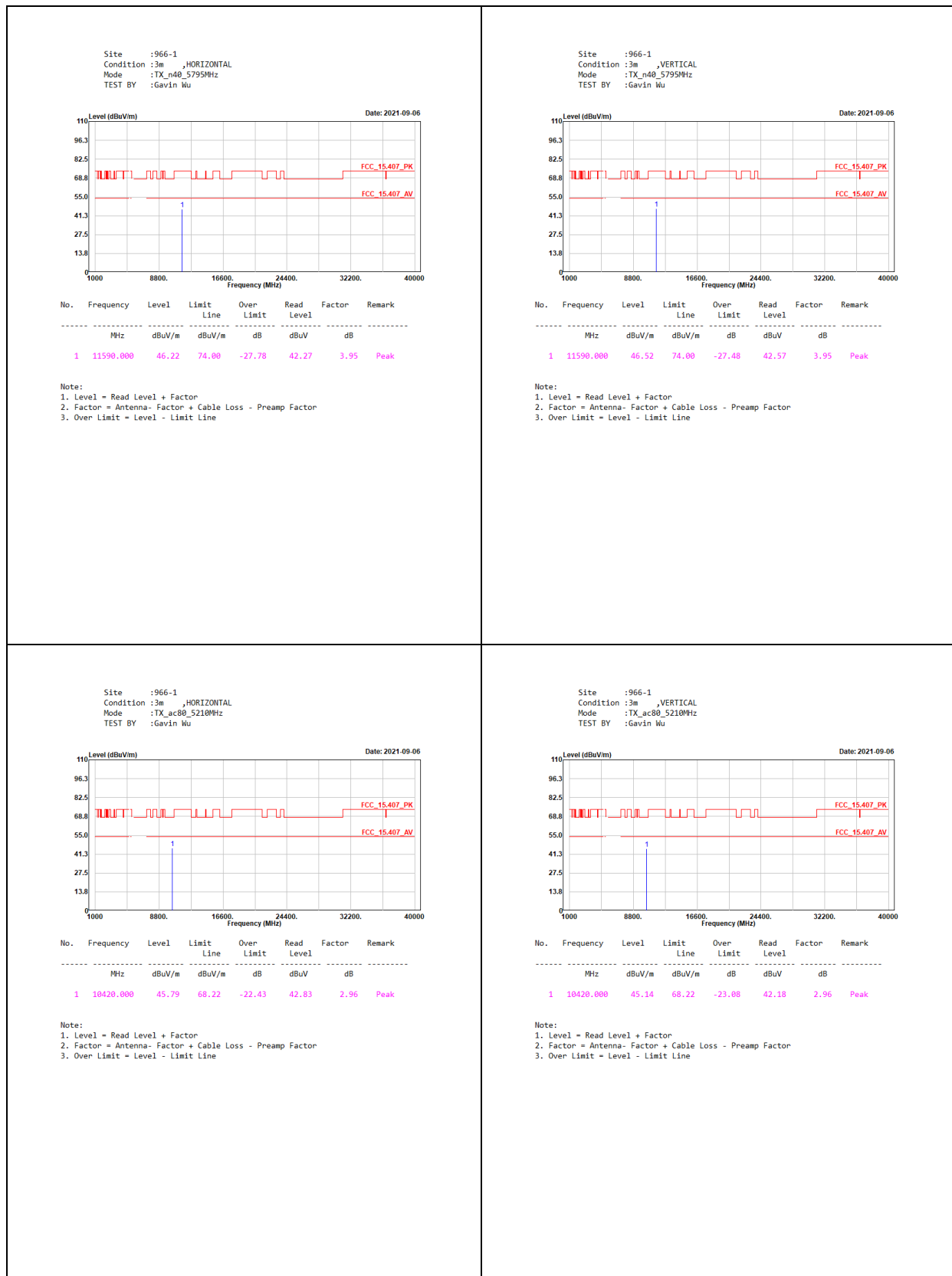


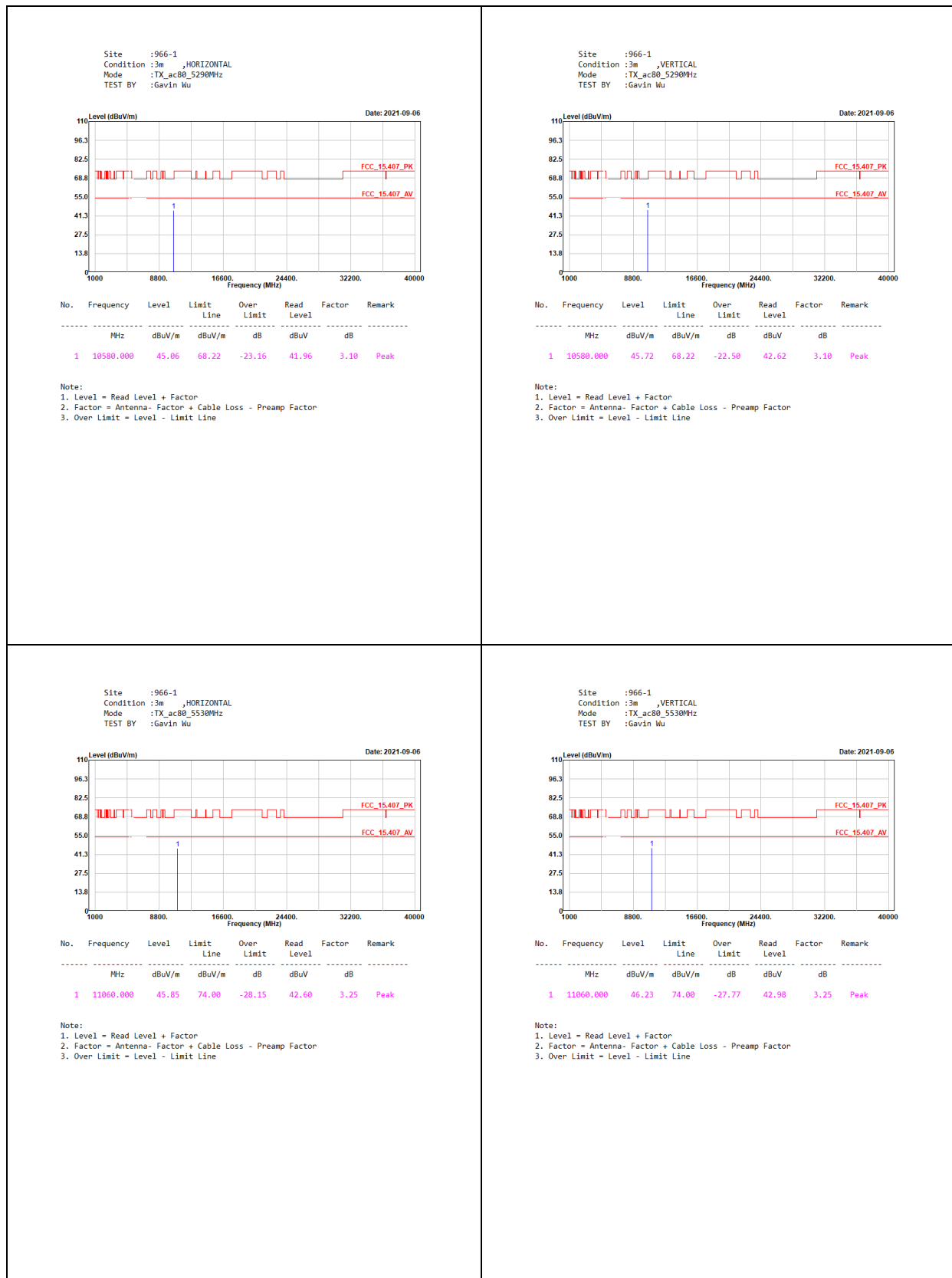


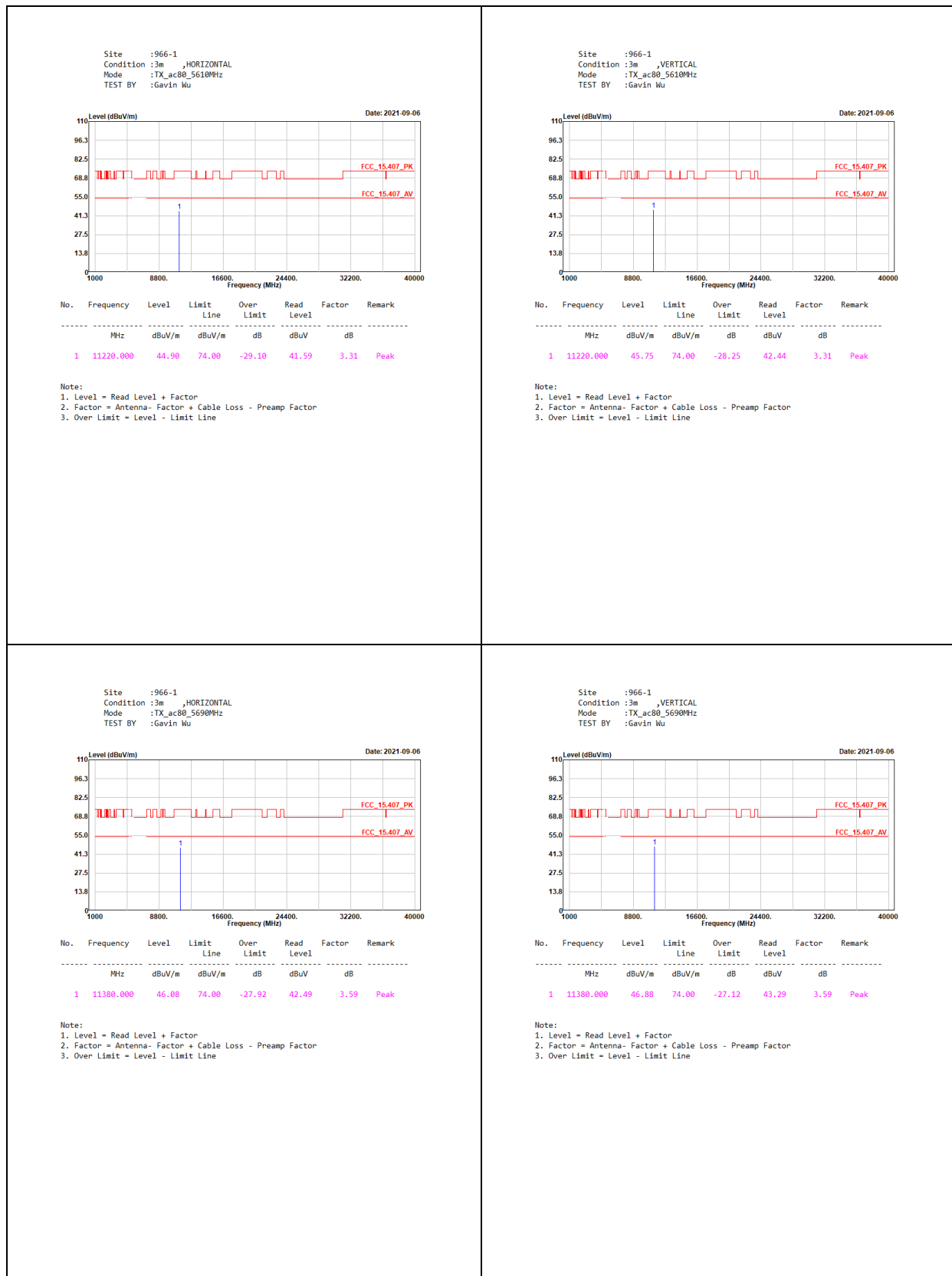


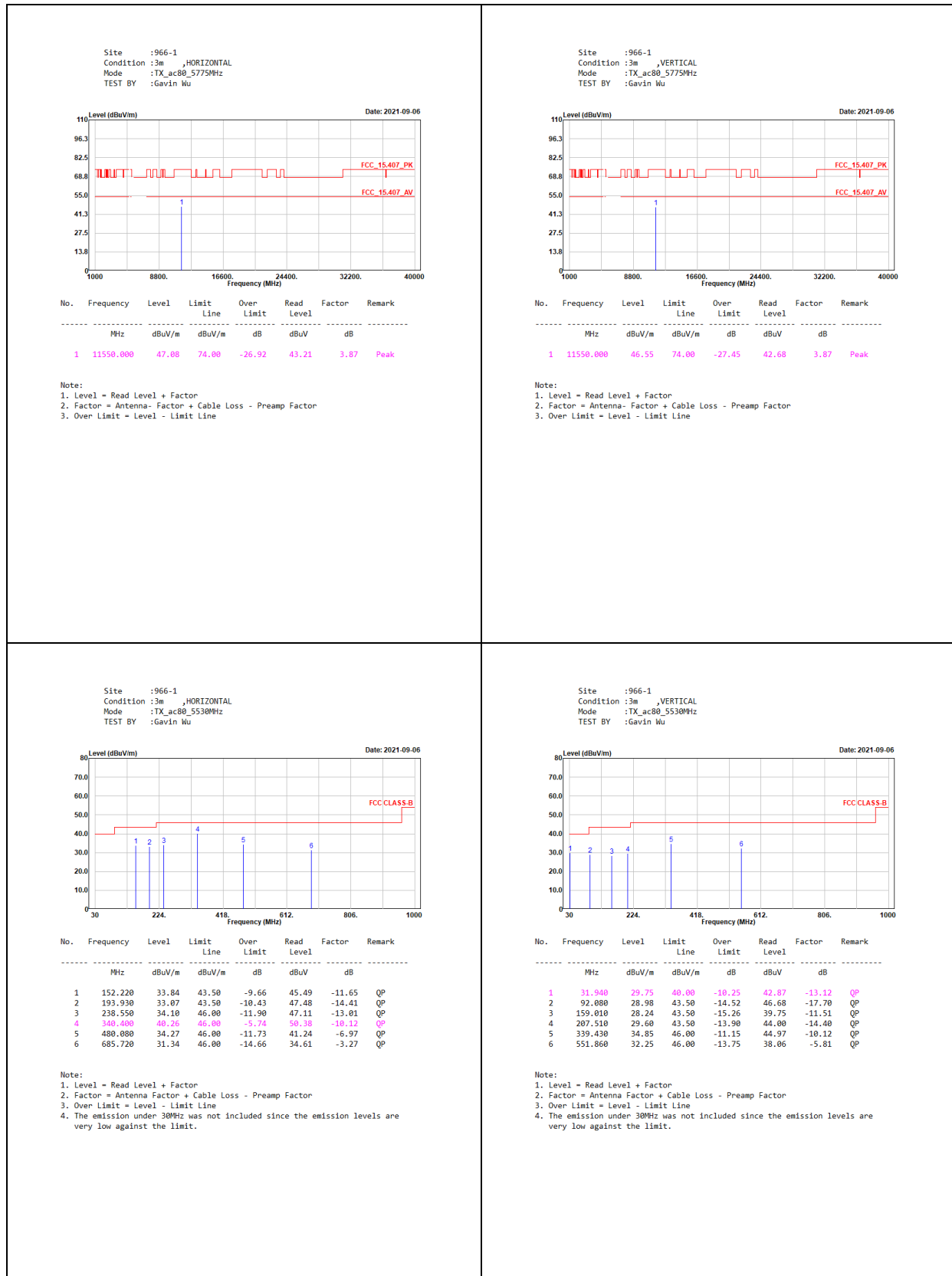








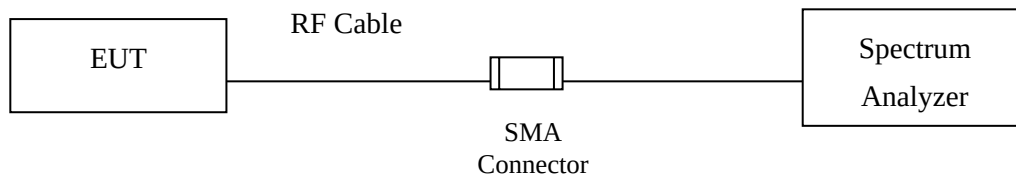




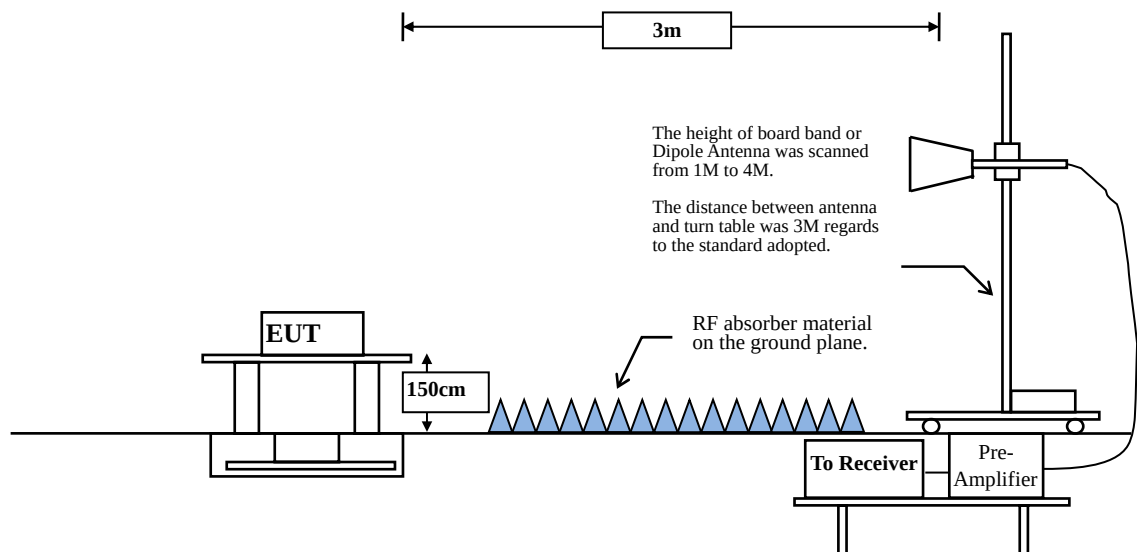
6. Band Edge

6.1. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



6.2. Limits

The provisions of Section 15.205 of this part apply to intentional radiators operating under this section. Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209:

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m @3m	dBμV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

- Remarks :
1. RF Voltage (dBμV) = 20 log RF Voltage (uV)
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
 - For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
 - For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
 - For transmitters operating in the 5.725-5.85 GHz band:
All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
 - 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.

Based on ANSI C63.10-2013 Section 12.7.3 d) provides the conversion formula between field strength and EIRP, if distance is 3m, -27dBm is equivalent to 68.22dBuV/m.

6.3. Test Procedure

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2013 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz. The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

RBW and VBW Parameter setting:

According to KDB 789033 section II.G.5 Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz.

RBW = 1MHz.

VBW $\geq$ 3MHz.

According to KDB 789033 section II.G.6 Procedures for Average Unwanted Emissions Measurements above 1000 MHz.

RBW = 1MHz.

VBW = 10Hz, when duty cycle $\geq$ 98 %

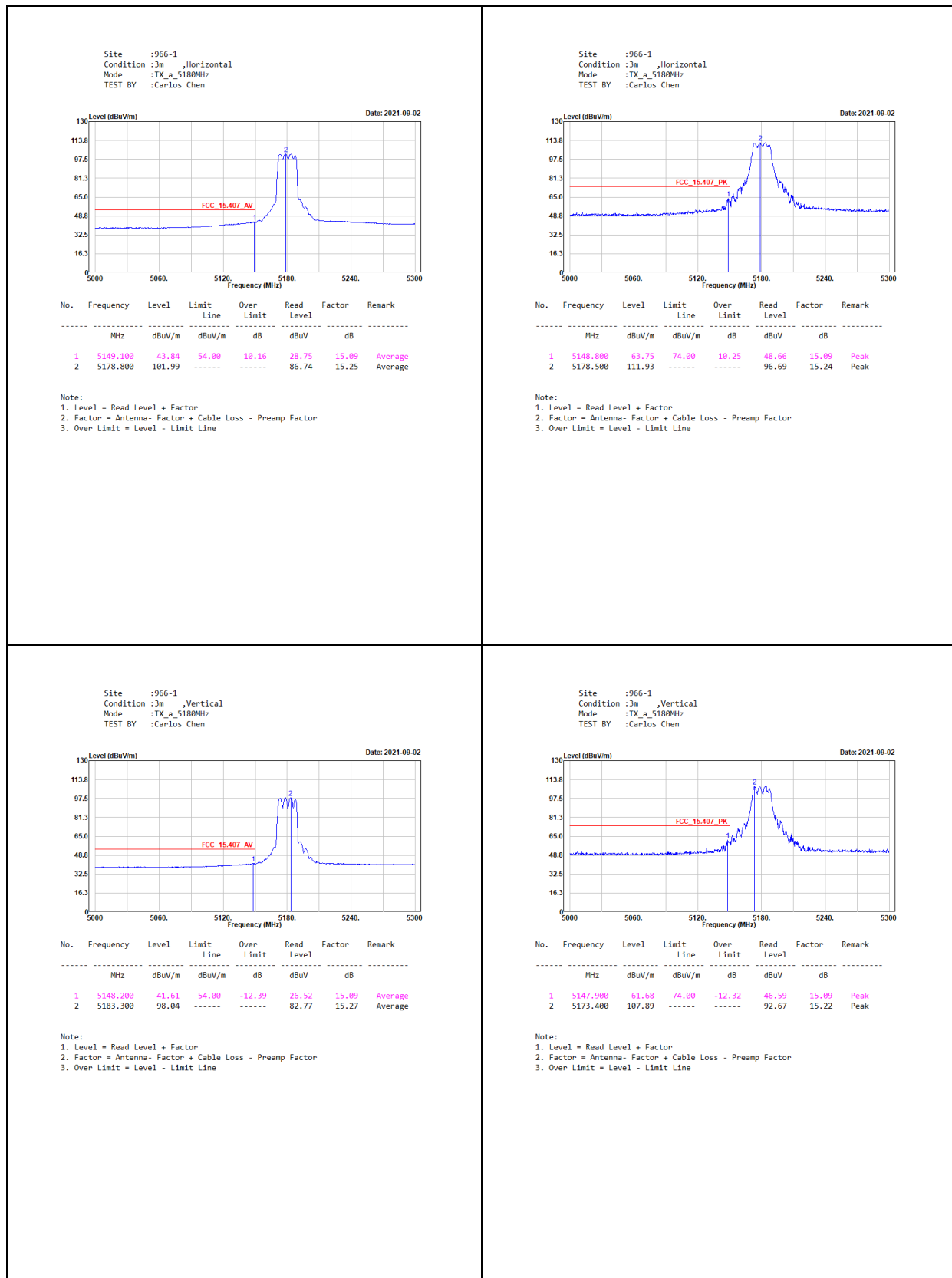
VBW $\geq$ 1/T, when duty cycle < 98 %

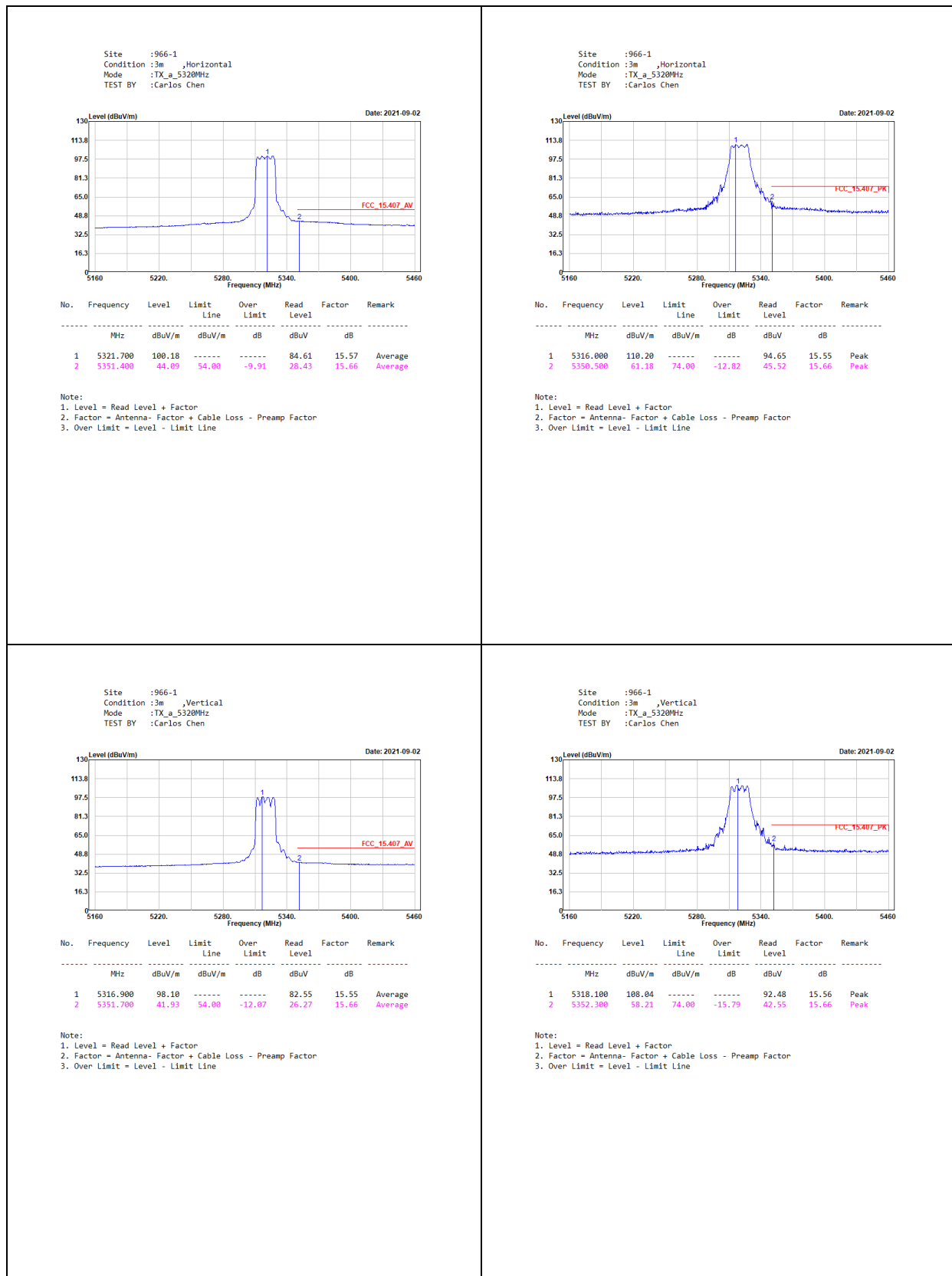
(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

5GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11a	97.60	2.0300	493	500
802.11n20	96.52	0.9700	1031	2k
802.11n40	93.33	0.4900	2041	3k
802.11ac80	91.92	0.4550	2198	3k

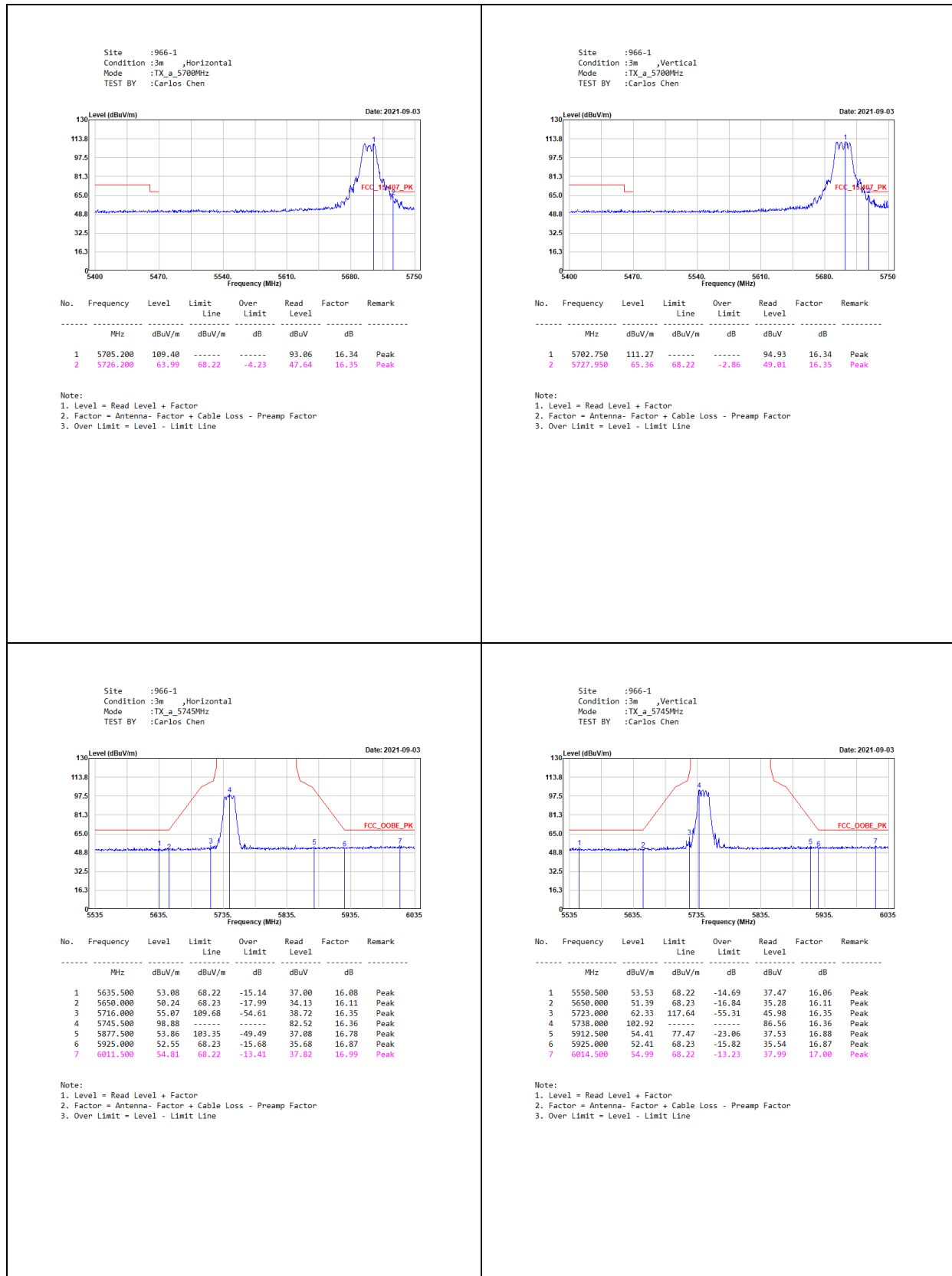
Note: Duty Cycle Refer to Section 8

6.4. Test Result of Band Edge

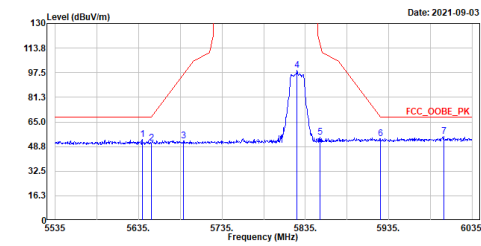








Site :966-1
Condition :3m ,Horizontal
Mode :TX_a_5825MHz
TEST BY :Carlos Chen

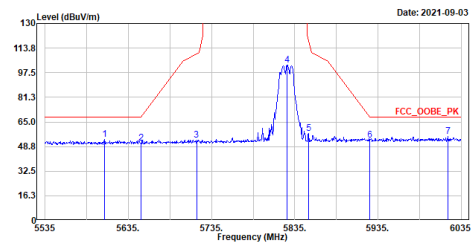


No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	5639.500	53.34	68.22	-14.88	37.25	16.09	Peak
2	5650.000	50.99	68.23	-17.24	34.88	16.11	Peak
3	5689.000	52.68	97.07	-44.39	36.38	16.30	Peak
4	5825.000	99.04	-----	-----	82.46	16.58	Peak
5	5853.000	54.88	115.36	-60.48	38.22	16.66	Peak
6	5925.000	54.07	68.23	-14.16	37.20	16.07	Peak
7	6001.000	55.21	68.22	-13.01	38.23	16.98	Peak

Note:

1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Site :966-1
Condition :3m ,Vertical
Mode :TX_a_5825MHz
TEST BY :Carlos Chen

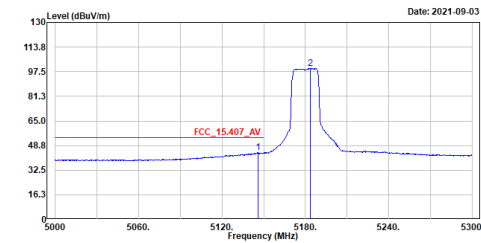


No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	5606.500	53.61	68.22	-14.61	37.60	16.01	Peak
2	5650.000	51.21	68.23	-17.02	35.10	16.11	Peak
3	5717.000	53.20	109.96	-56.76	36.85	16.35	Peak
4	5825.500	102.62	-----	-----	86.04	16.58	Peak
5	5851.500	57.38	118.78	-61.40	40.72	16.66	Peak
6	5925.000	53.14	68.23	-15.09	36.27	16.07	Peak
7	6019.000	55.36	68.22	-12.86	38.36	17.00	Peak

Note:

1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Site :966-1
Condition :3m ,Horizontal
Mode :TX_n20_5180MHz
TEST BY :Gavin Wu

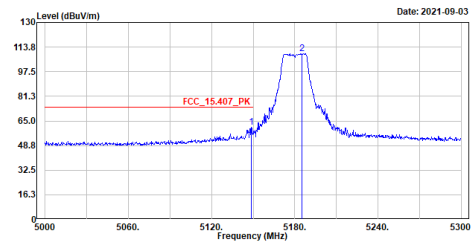


No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	5146.100	44.26	54.00	-9.74	29.19	15.07	Average
2	5183.600	99.62	-----	-----	84.35	15.27	Average

Note:

1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

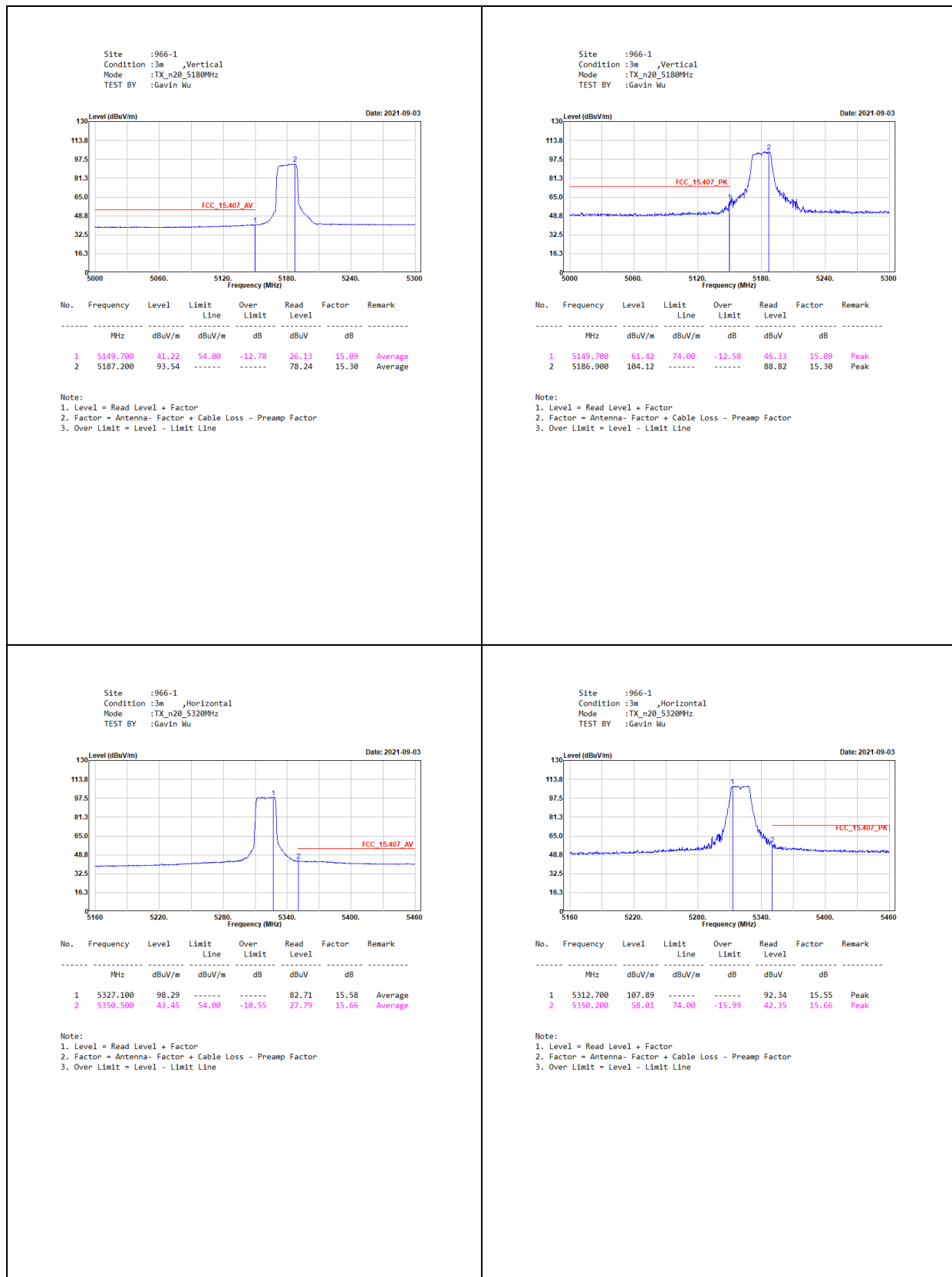
Site :966-1
Condition :3m ,Horizontal
Mode :TX_n20_5180MHz
TEST BY :Gavin Wu



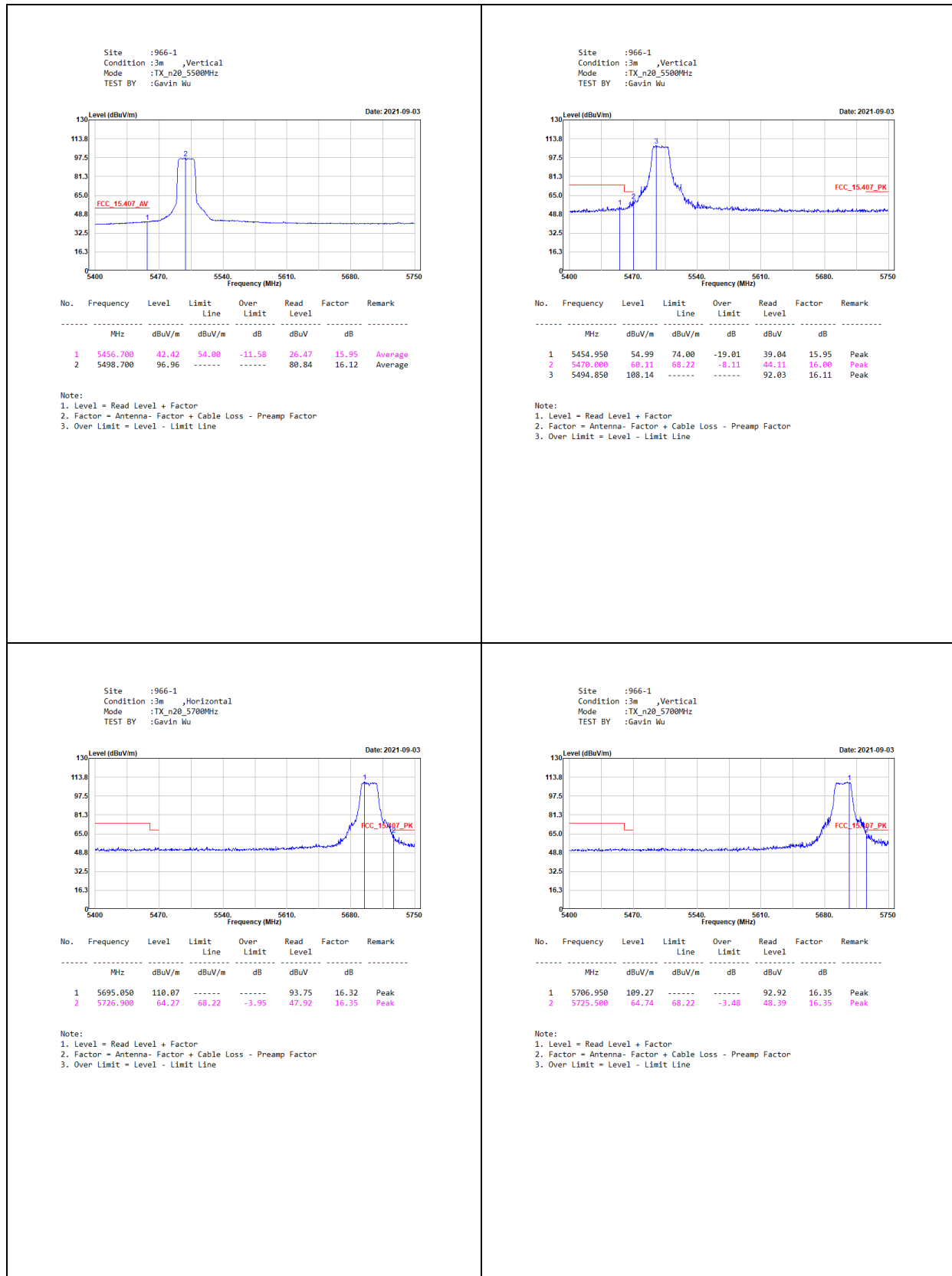
No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	5148.800	68.82	74.00	-13.18	45.73	15.09	Peak
2	5185.400	109.63	-----	-----	94.35	15.28	Peak

Note:

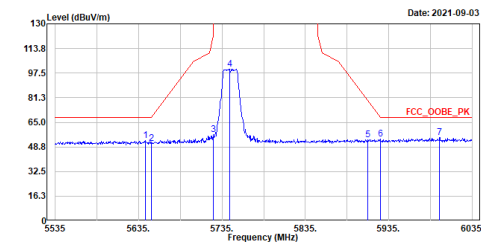
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line







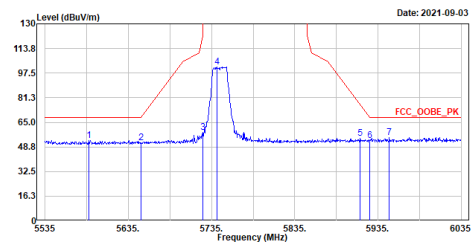
Site :966-1
Condition :3m ,Horizontal
Mode :TX_n20_5745MHz
TEST BY :Gavin Wu



No.	Frequency MHz	Level dBuV/m	Limit dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark
1	5643.000	52.80	68.22	-15.42	36.70	16.10	Peak
2	5650.000	51.00	68.23	-17.23	34.89	16.11	Peak
3	5724.500	56.73	121.06	-64.33	40.38	16.35	Peak
4	5744.000	100.12	-----	-----	83.76	16.36	Peak
5	5909.500	53.71	79.69	-25.98	36.82	16.89	Peak
6	5925.000	54.11	68.23	-14.12	37.24	16.87	Peak
7	5995.000	54.87	68.22	-13.35	37.90	16.97	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

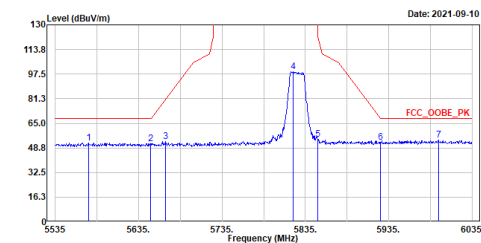
Site :966-1
Condition :3m ,Vertical
Mode :TX_n20_5745MHz
TEST BY :Gavin Wu



No.	Frequency MHz	Level dBuV/m	Limit dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark
1	5588.000	53.03	68.22	-15.19	37.01	16.02	Peak
2	5650.000	51.39	68.23	-16.84	35.28	16.11	Peak
3	5724.500	58.23	121.06	-62.83	41.88	16.35	Peak
4	5741.500	101.52	-----	-----	85.16	16.36	Peak
5	5913.500	54.58	76.73	-22.15	37.70	16.08	Peak
6	5925.000	53.21	68.23	-15.02	36.34	16.87	Peak
7	5948.500	54.94	68.22	-13.28	38.09	16.85	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

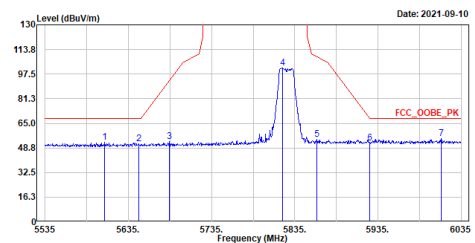
Site :966-1
Condition :3m ,Horizontal
Mode :TX_n20_5825MHz
TEST BY :Gavin Wu



No.	Frequency MHz	Level dBuV/m	Limit dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark
1	5575.000	52.13	68.22	-16.09	36.09	16.04	Peak
2	5649.000	51.65	68.22	-16.57	35.54	16.11	Peak
3	5667.000	53.22	80.80	-27.58	37.03	16.19	Peak
4	5820.000	99.31	-----	-----	82.75	16.56	Peak
5	5850.000	54.53	122.20	-67.67	37.88	16.65	Peak
6	5925.000	52.39	68.23	-15.84	35.52	16.87	Peak
7	5994.500	53.75	68.22	-14.47	36.78	16.97	Peak

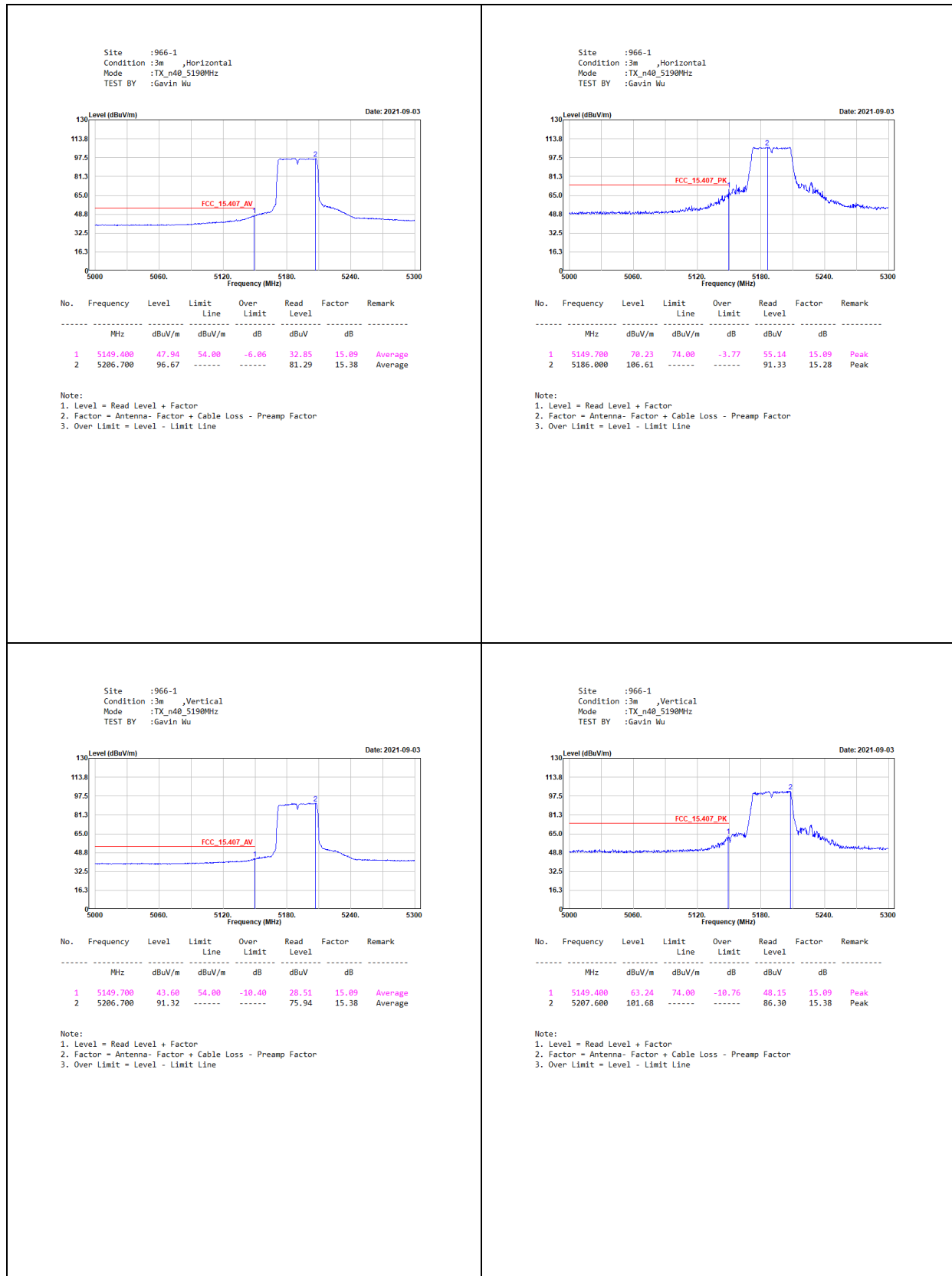
Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

Site :966-1
Condition :3m ,Vertical
Mode :TX_n20_5825MHz
TEST BY :Gavin Wu

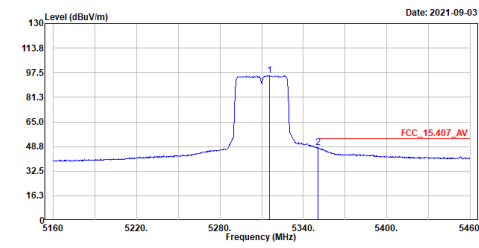


No.	Frequency MHz	Level dBuV/m	Limit dBuV/m	Over Limit dB	Read Level dBuV	Factor dB	Remark
1	5606.500	52.61	68.22	-15.61	36.60	16.01	Peak
2	5647.500	51.28	68.22	-16.94	35.17	16.11	Peak
3	5684.500	52.94	93.74	-40.80	36.68	16.26	Peak
4	5820.500	101.34	-----	-----	84.78	16.56	Peak
5	5861.500	54.68	108.98	-54.30	37.97	16.71	Peak
6	5925.000	51.80	68.23	-16.43	34.93	16.87	Peak
7	6011.000	54.97	68.22	-13.25	37.98	16.99	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line



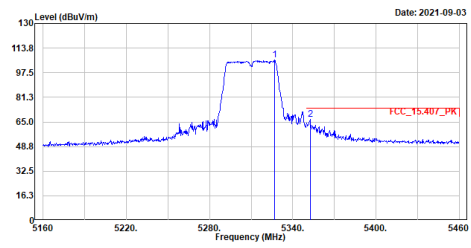
Site :966-1
Condition :3m ,Horizontal
Mode :TX_m40_5310MHz
TEST BY :Gavin Wu



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	5315.400	95.65	-----	-----	80.10	15.55	Average
2	5350.800	48.04	54.00	-5.96	32.38	15.66	Average

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

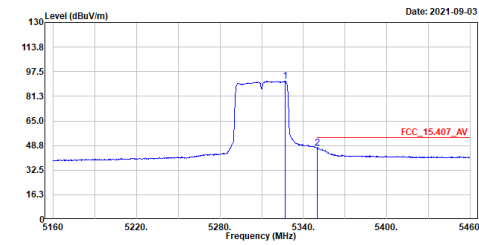
Site :966-1
Condition :3m ,Horizontal
Mode :TX_m40_5310MHz
TEST BY :Gavin Wu



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	5327.100	105.91	-----	-----	90.33	15.58	Peak
2	5352.600	66.81	74.00	-7.19	51.15	15.66	Peak

Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

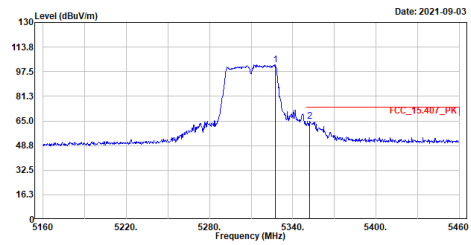
Site :966-1
Condition :3m ,Vertical
Mode :TX_m40_5310MHz
TEST BY :Gavin Wu



No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	5327.100	91.35	-----	-----	75.77	15.58	Average
2	5350.200	46.93	54.00	-7.07	31.27	15.66	Average

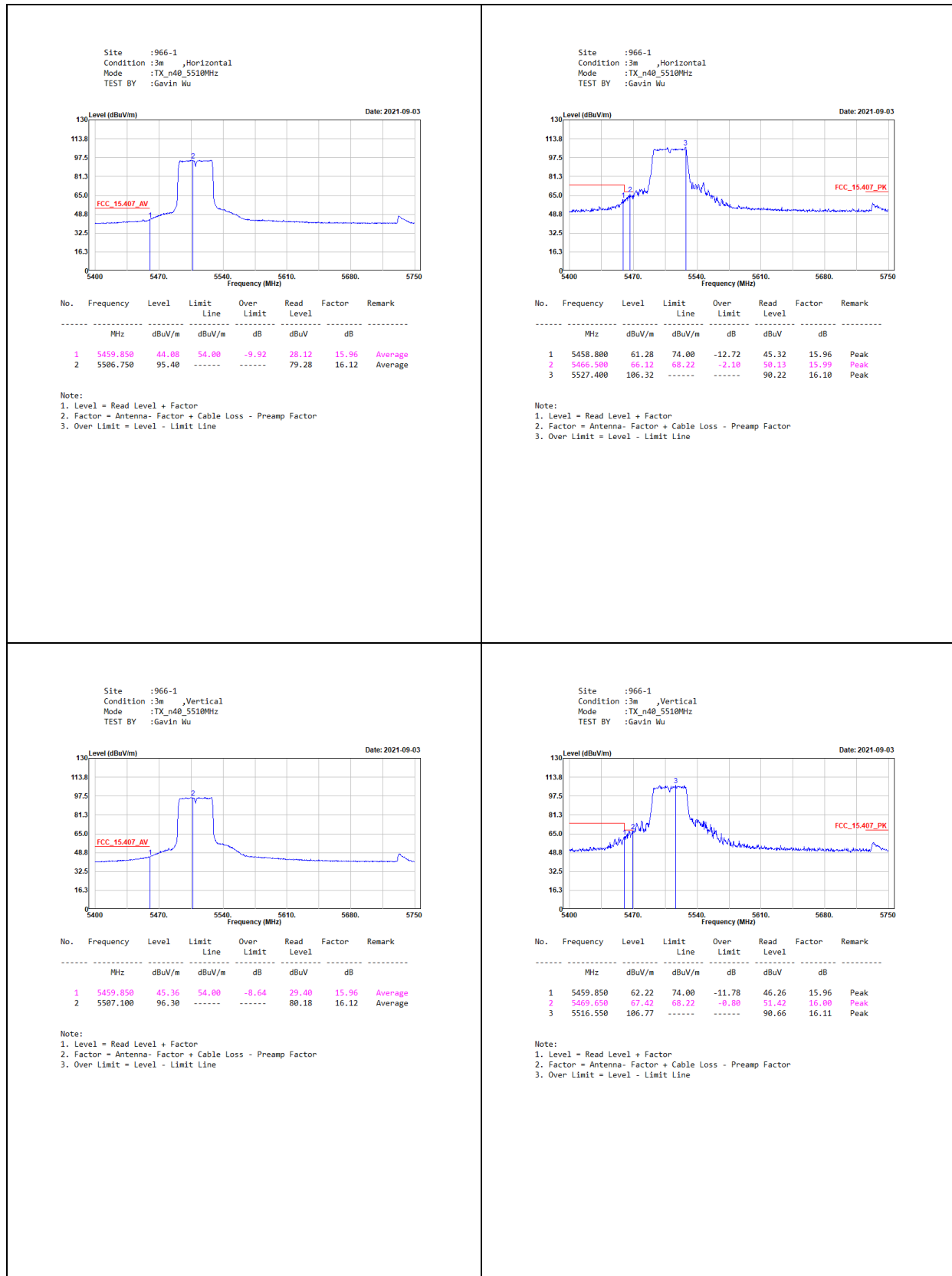
Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

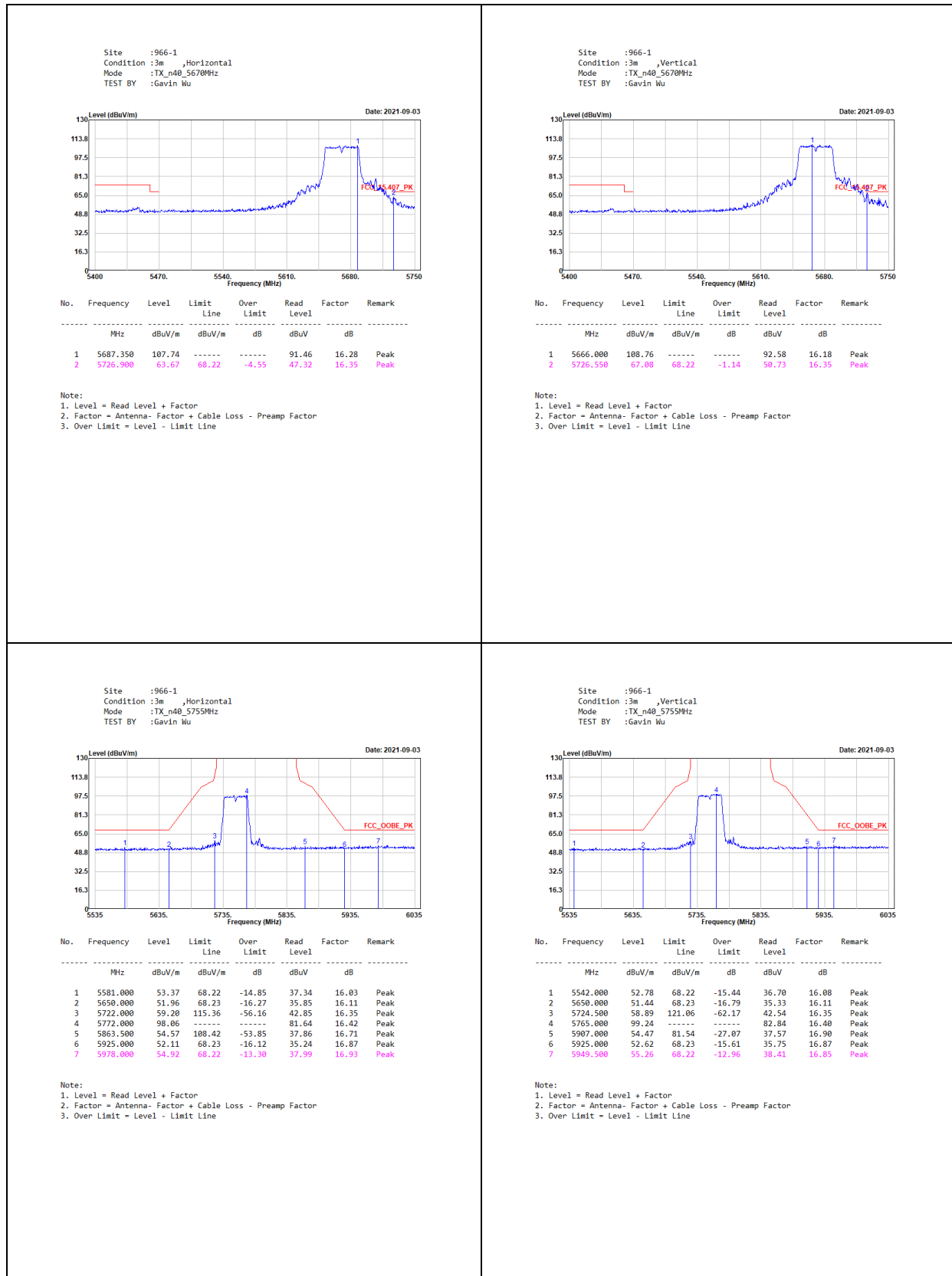
Site :966-1
Condition :3m ,Vertical
Mode :TX_m40_5310MHz
TEST BY :Gavin Wu

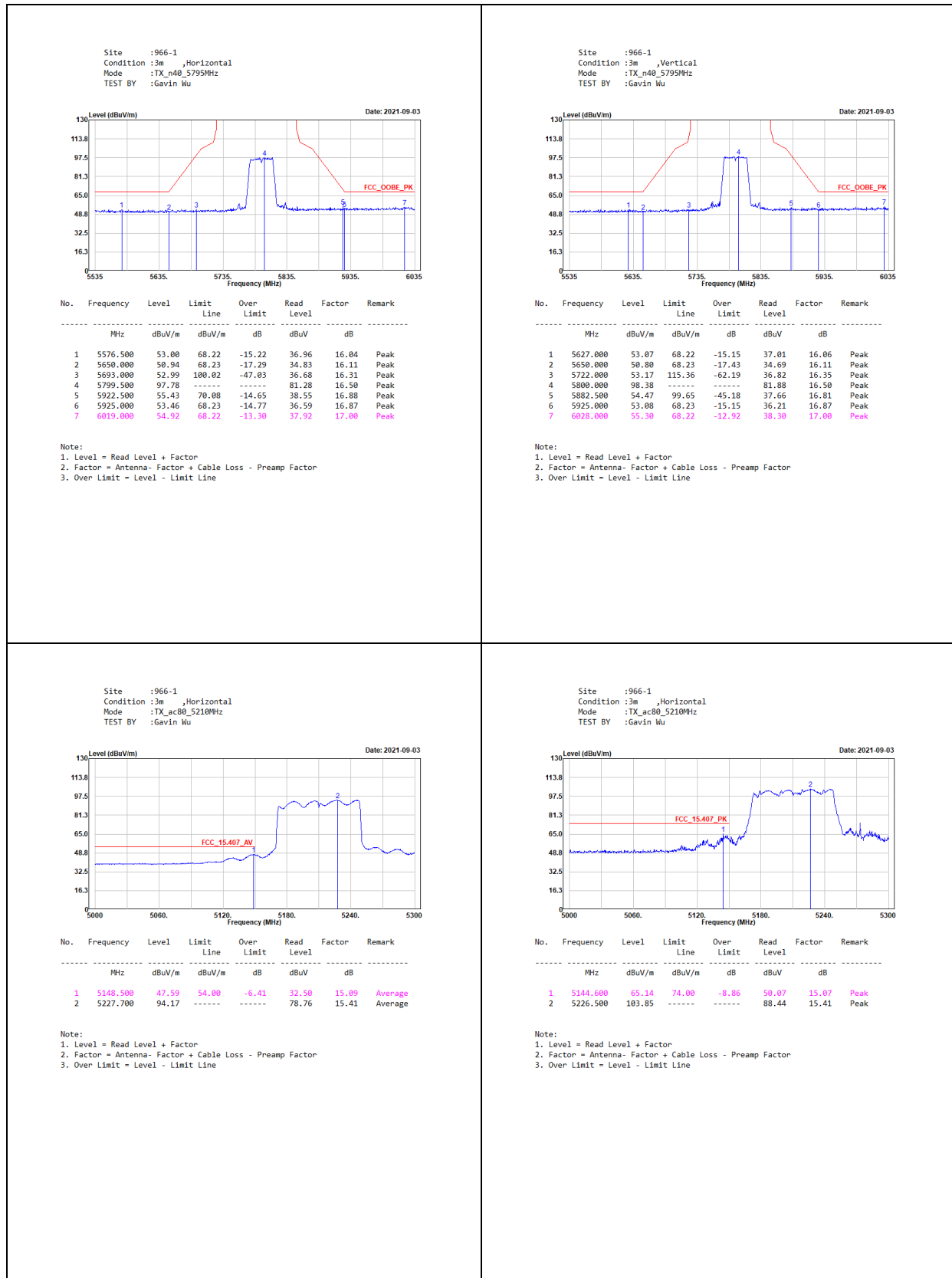


No.	Frequency	Level	Limit	Over	Read	Factor	Remark
	MHz	dBuV/m	Line	Limit	Level	dB	
1	5327.400	102.09	-----	-----	86.51	15.58	Peak
2	5352.300	64.59	74.00	-9.41	48.93	15.66	Peak

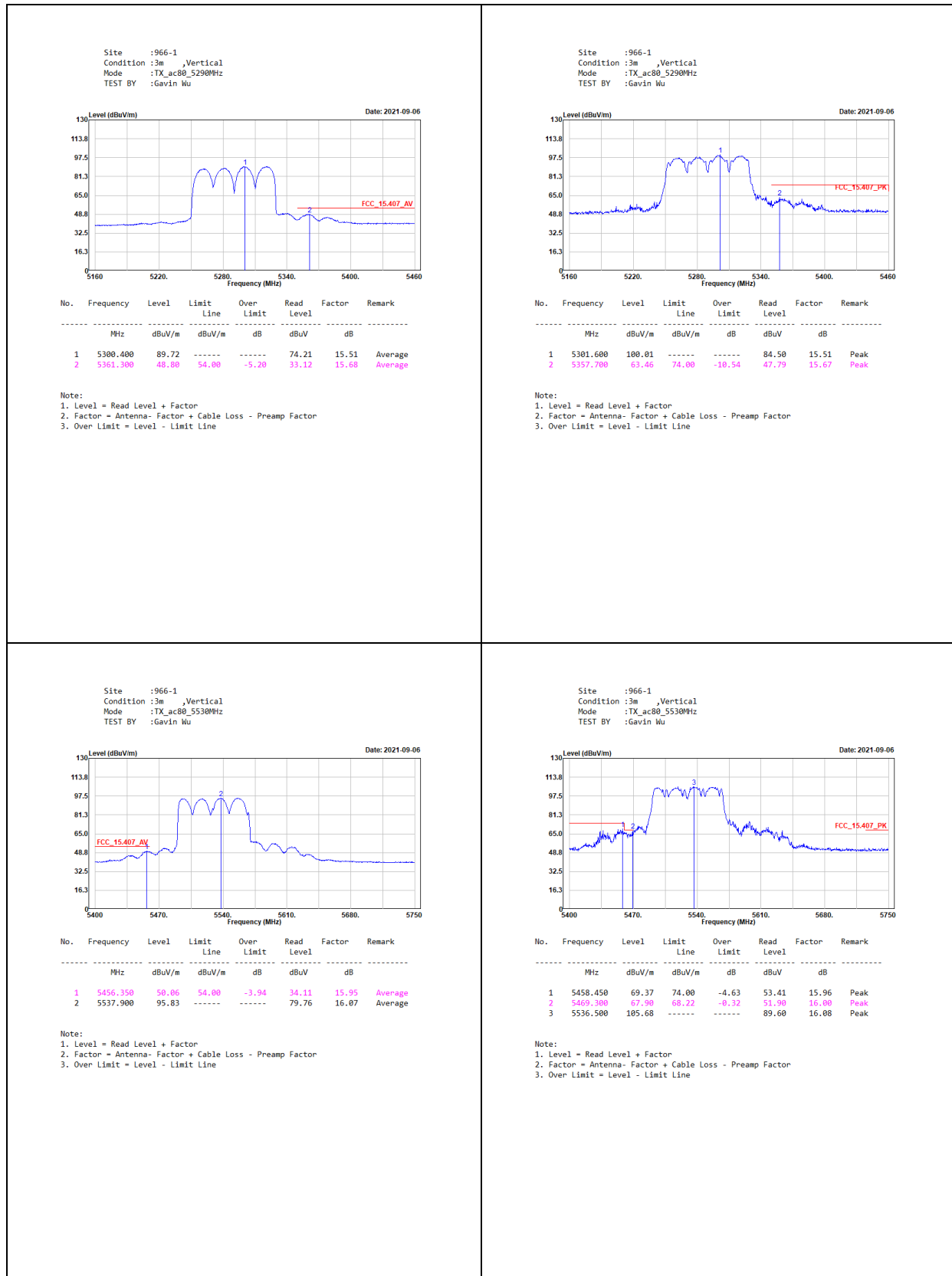
Note:
1. Level = Read Level + Factor
2. Factor = Antenna- Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line

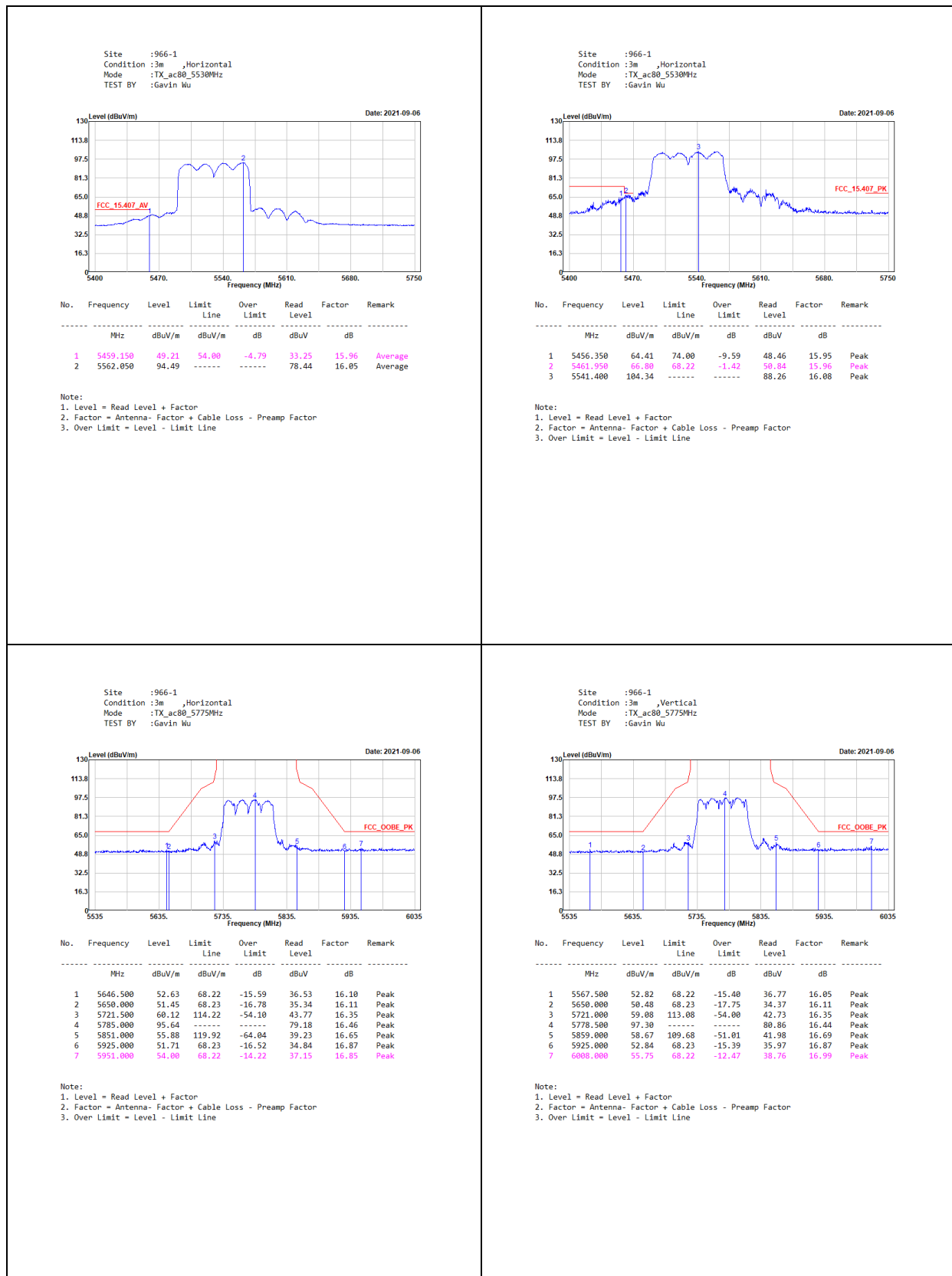






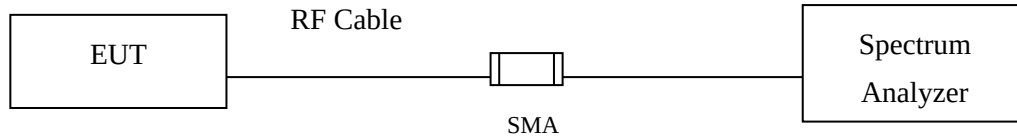






7. Occupied Bandwidth

7.1. Test Setup



7.2. Limits

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

7.3. .Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

7.4. Test Result of Occupied Bandwidth

Product : Speech Generating Device
Test Item : Occupied Bandwidth Data
Test Mode : Mode 1: Transmit (802.11a 6Mbps)
Test Date : 2021/08/19

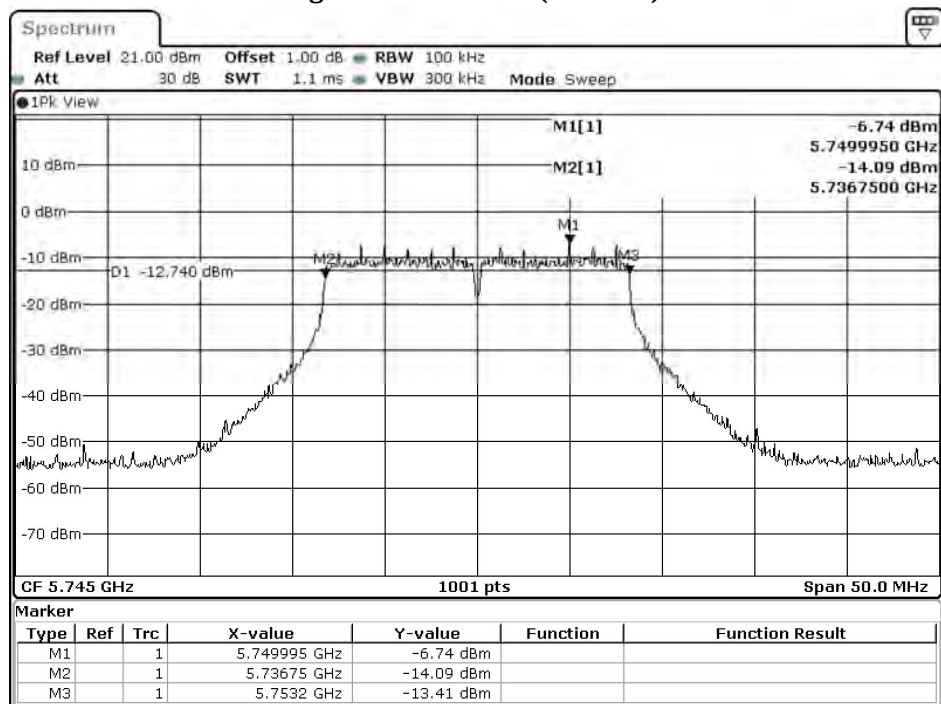
Chain A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	16450	>500	Pass
157	5785	16450	>500	Pass
165	5825	16450	>500	Pass

Chain B

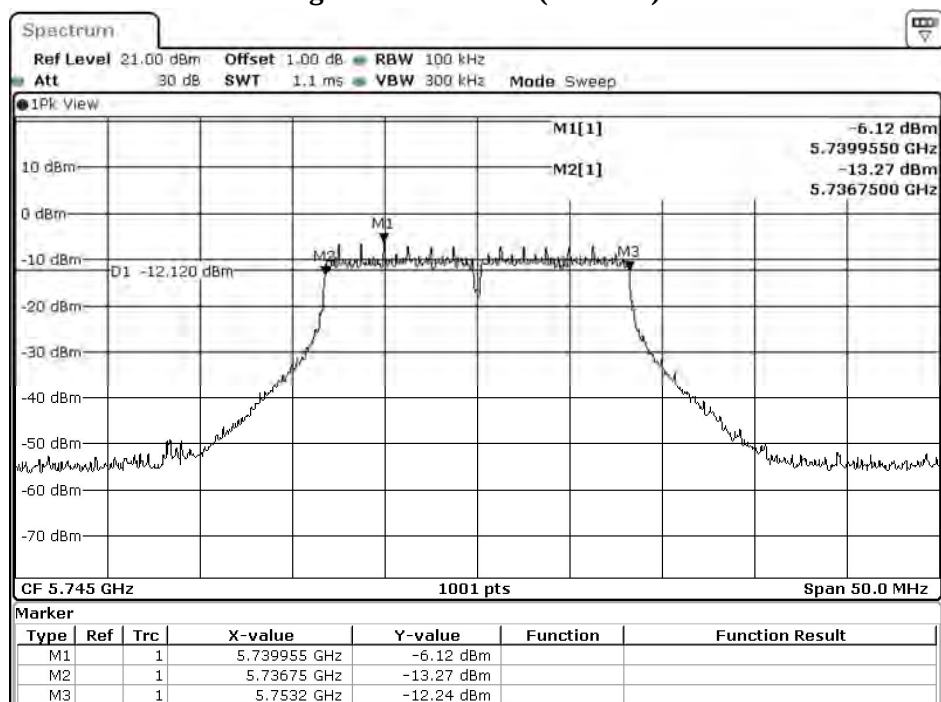
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	16450	>500	Pass
157	5785	16500	>500	Pass
165	5825	16500	>500	Pass

Figure Channel 149 (Chain A):



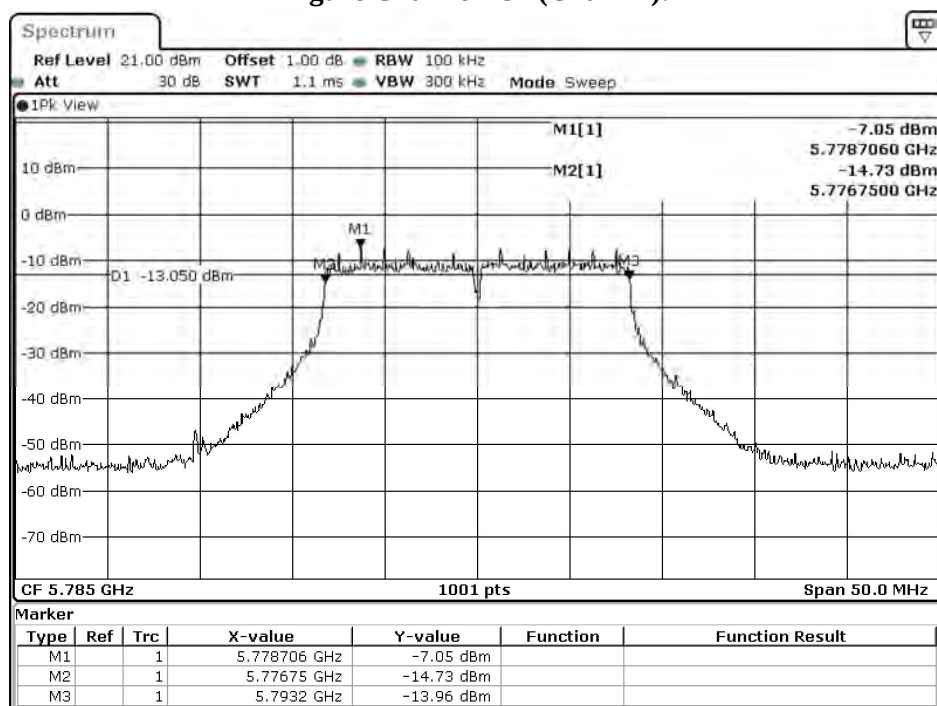
Date: 17.AUG.2021 05:01:55

Figure Channel 149 (Chain B):



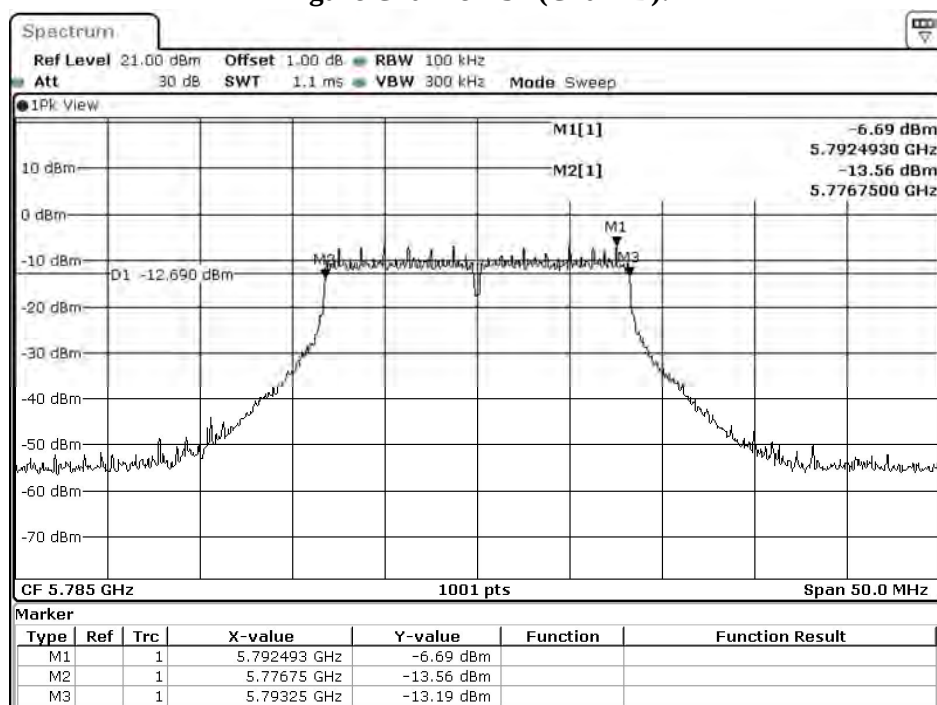
Date: 17.AUG.2021 09:42:11

Figure Channel 157 (Chain A):



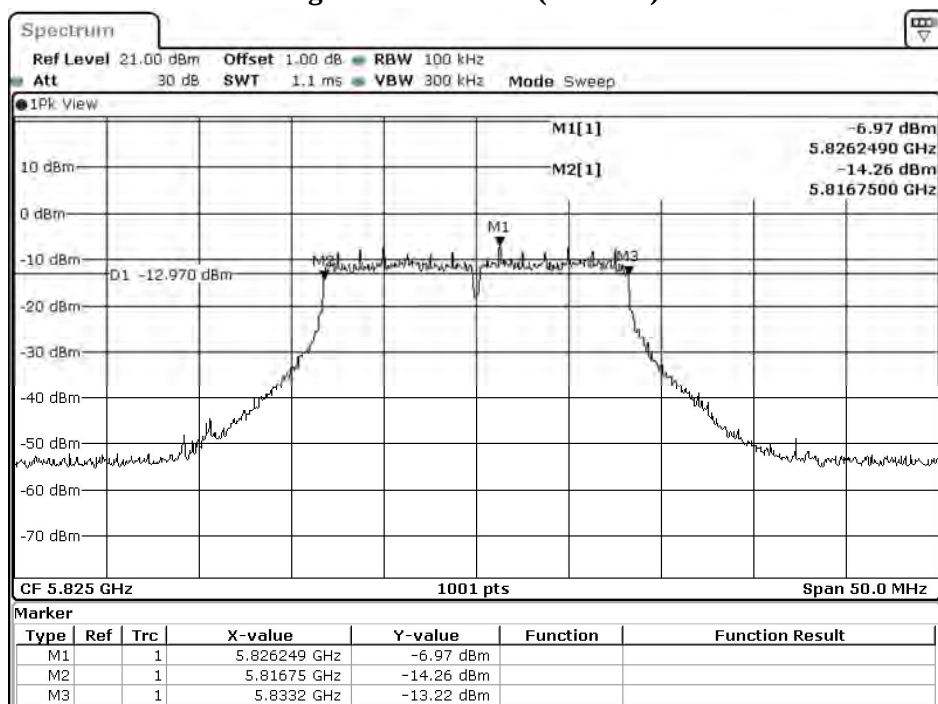
Date: 17.AUG.2021 05:04:40

Figure Channel 157 (Chain B):



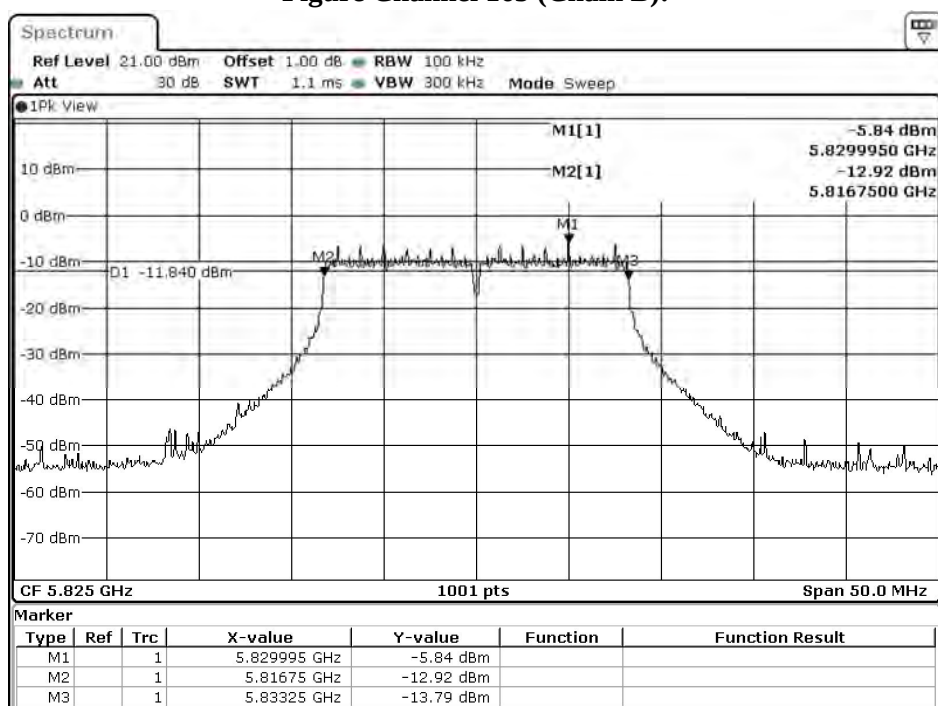
Date: 17.AUG.2021 09:44:57

Figure Channel 165 (Chain A):



Date: 17.AUG.2021 05:07:04

Figure Channel 165 (Chain B):



Date: 17.AUG.2021 09:47:21

Product : Speech Generating Device
Test Item : Occupied Bandwidth Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)
Test Date : 2021/08/19

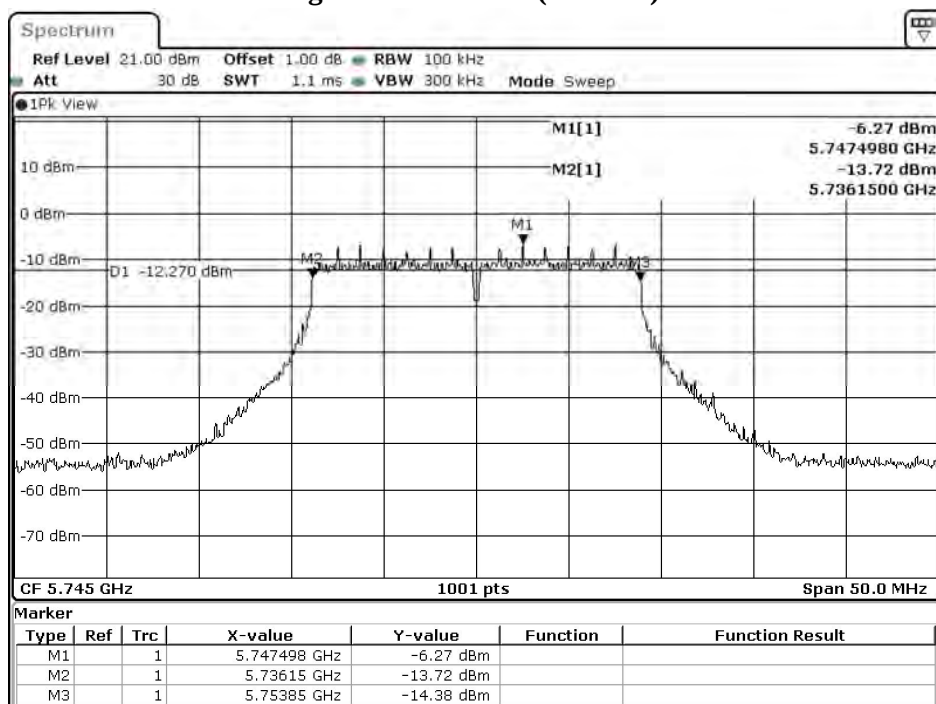
Chain A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	17700	>500	Pass
157	5785	17700	>500	Pass
165	5825	17700	>500	Pass

Chain B

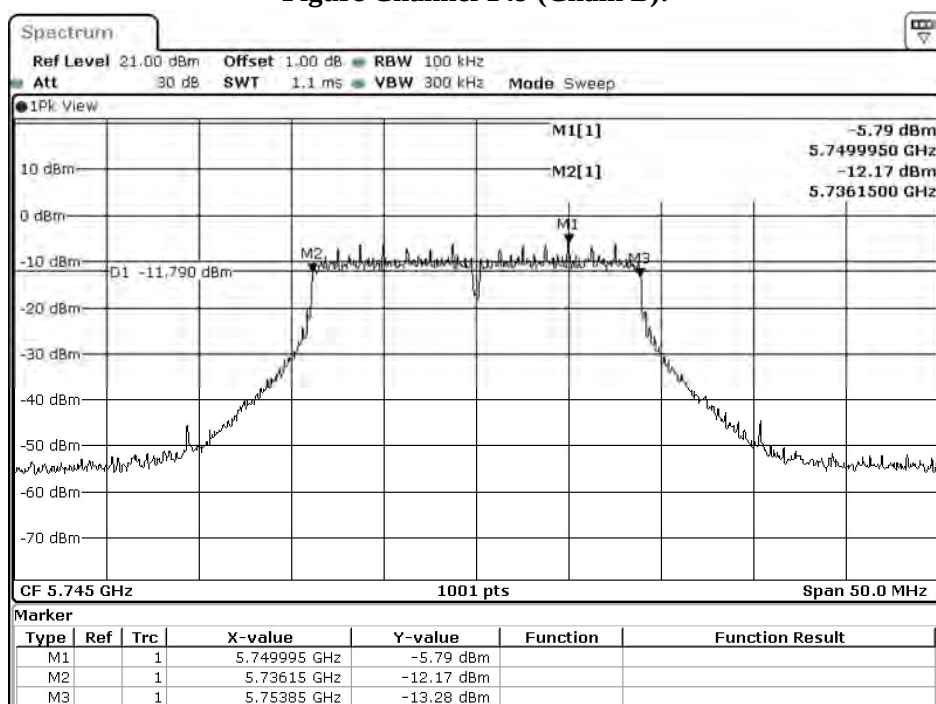
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	17700	>500	Pass
157	5785	17700	>500	Pass
165	5825	17700	>500	Pass

Figure Channel 149 (Chain A):



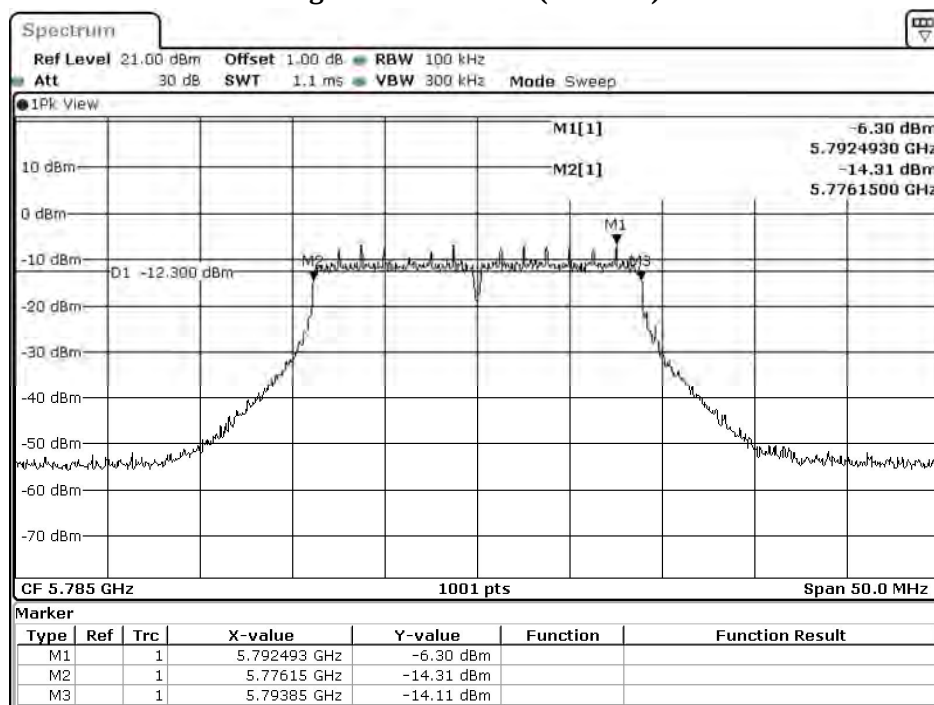
Date: 17.AUG.2021 05:40:14

Figure Channel 149 (Chain B):



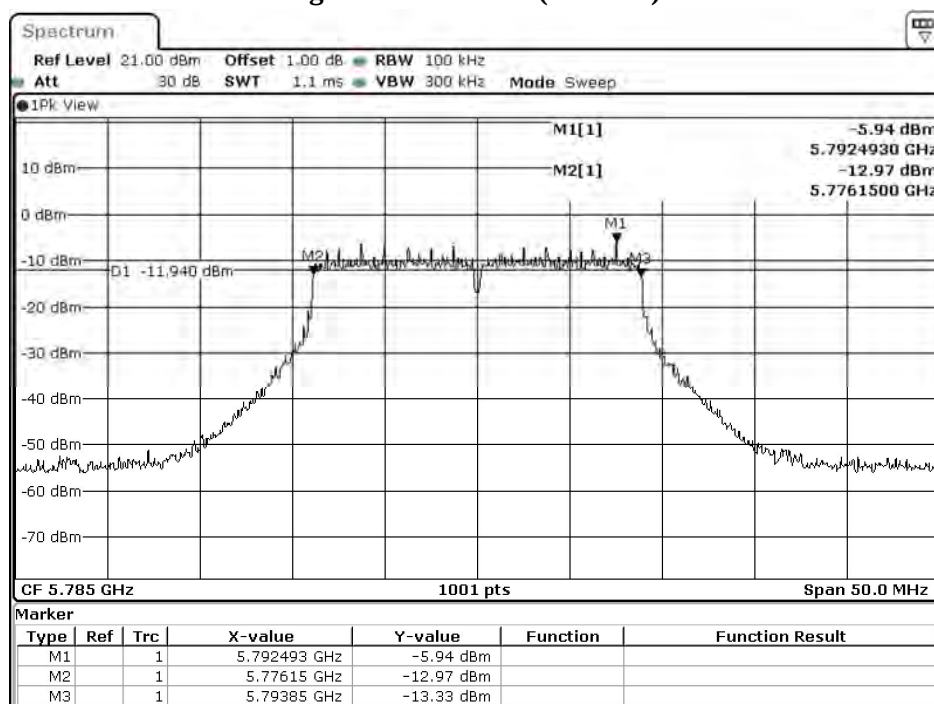
Date: 17.AUG.2021 10:20:30

Figure Channel 157 (Chain A):



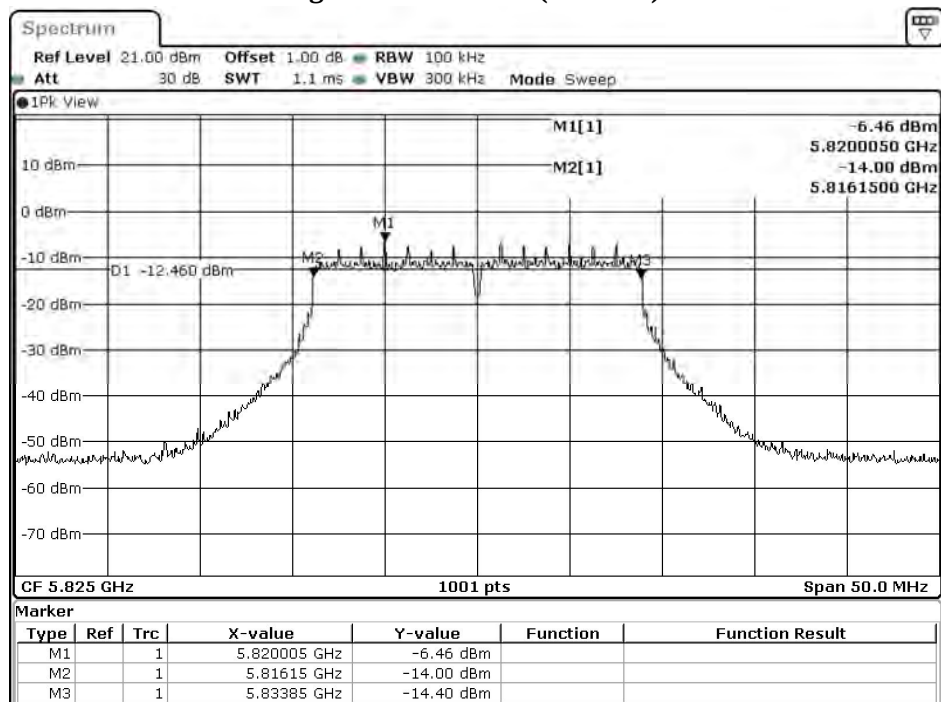
Date: 17.AUG.2021 05:47:43

Figure Channel 157 (Chain B):



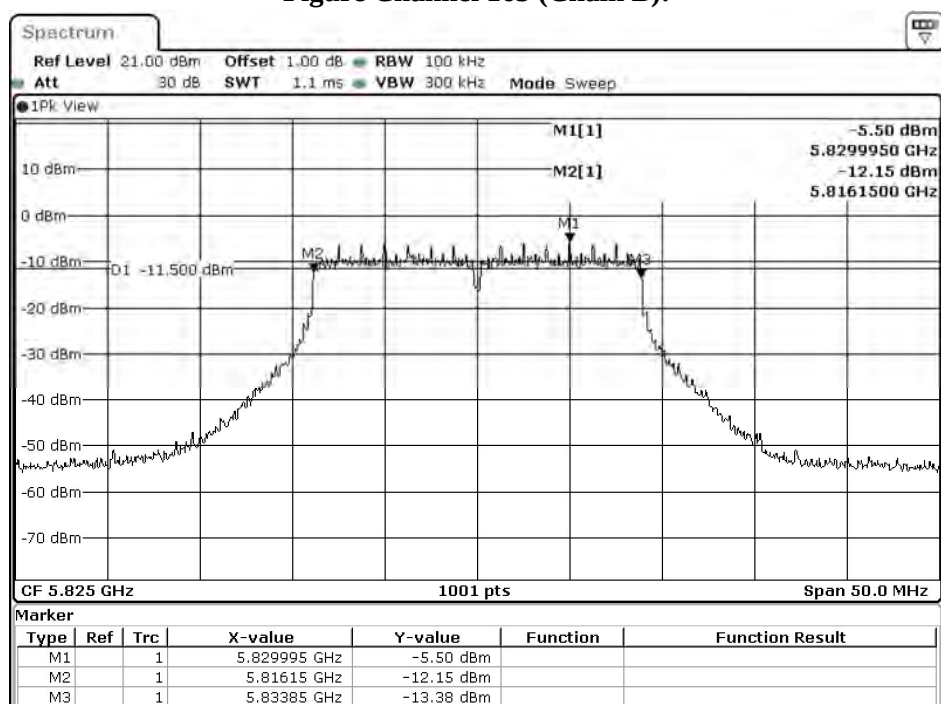
Date: 17.AUG.2021 10:28:00

Figure Channel 165 (Chain A):



Date: 17.AUG.2021 05:52:41

Figure Channel 165 (Chain B):



Date: 17.AUG.2021 10:32:57

Product : Speech Generating Device
Test Item : Occupied Bandwidth Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)
Test Date : 2021/08/19

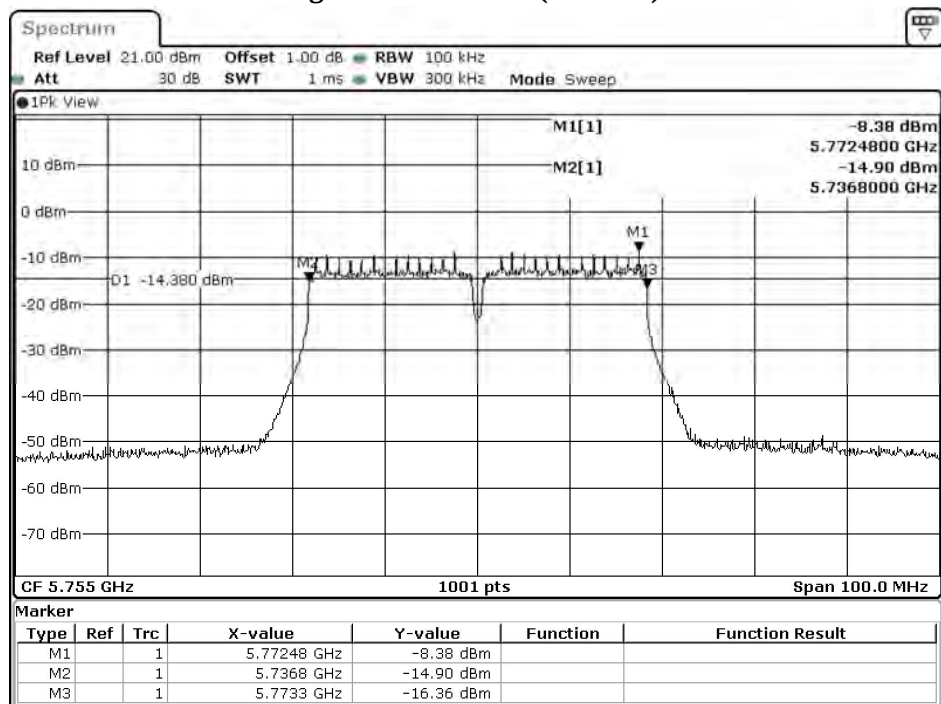
Chain A

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755	36500	>500	Pass
159	5795	36600	>500	Pass

Chain B

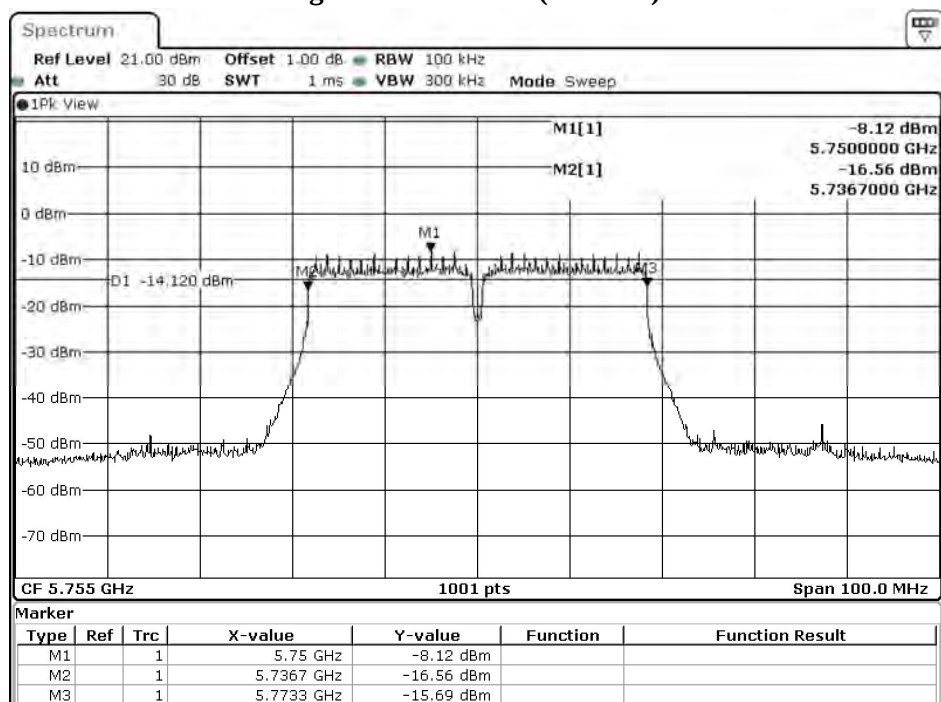
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755	36600	>500	Pass
159	5795	36600	>500	Pass

Figure Channel 151 (Chain A):



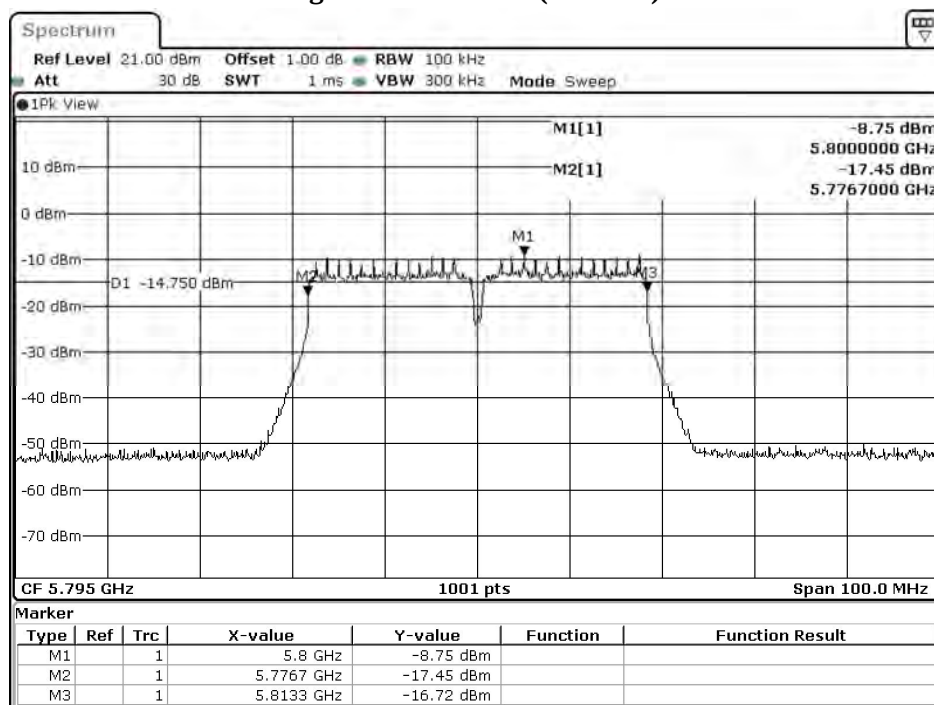
Date: 17.AUG.2021 05:55:29

Figure Channel 151 (Chain B):



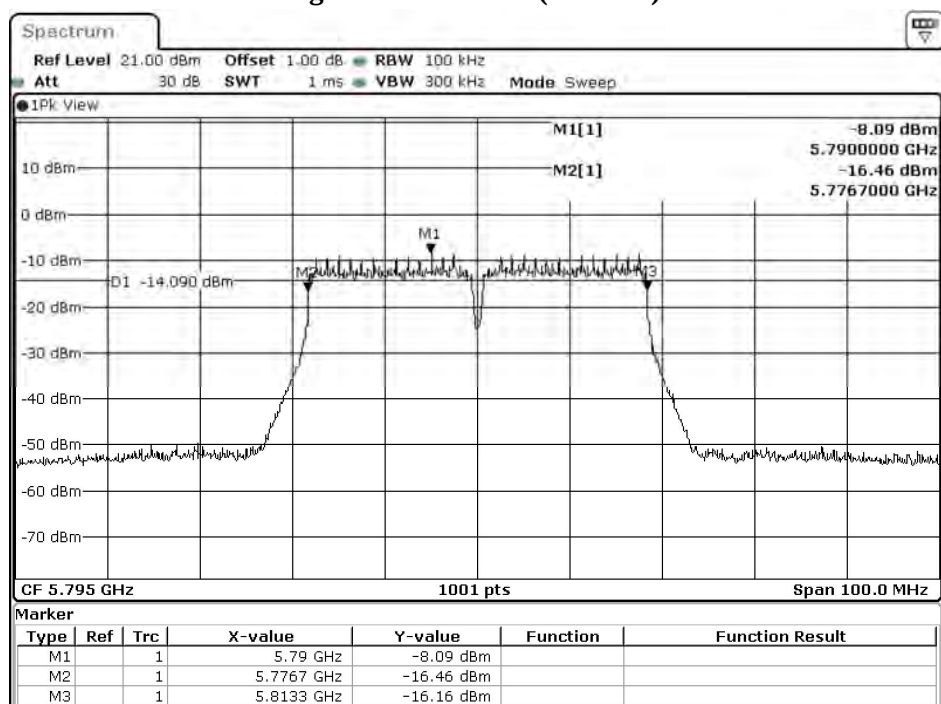
Date: 17.AUG.2021 10:35:45

Figure Channel 159 (Chain A):



Date: 17.AUG.2021 05:58:20

Figure Channel 159 (Chain B):



Date: 17.AUG.2021 10:38:36

Product : Speech Generating Device
Test Item : Occupied Bandwidth Data
Test Mode : Mode 6: Transmit (802.11ac-80BW 32.5Mbps)
Test Date : 2021/08/19

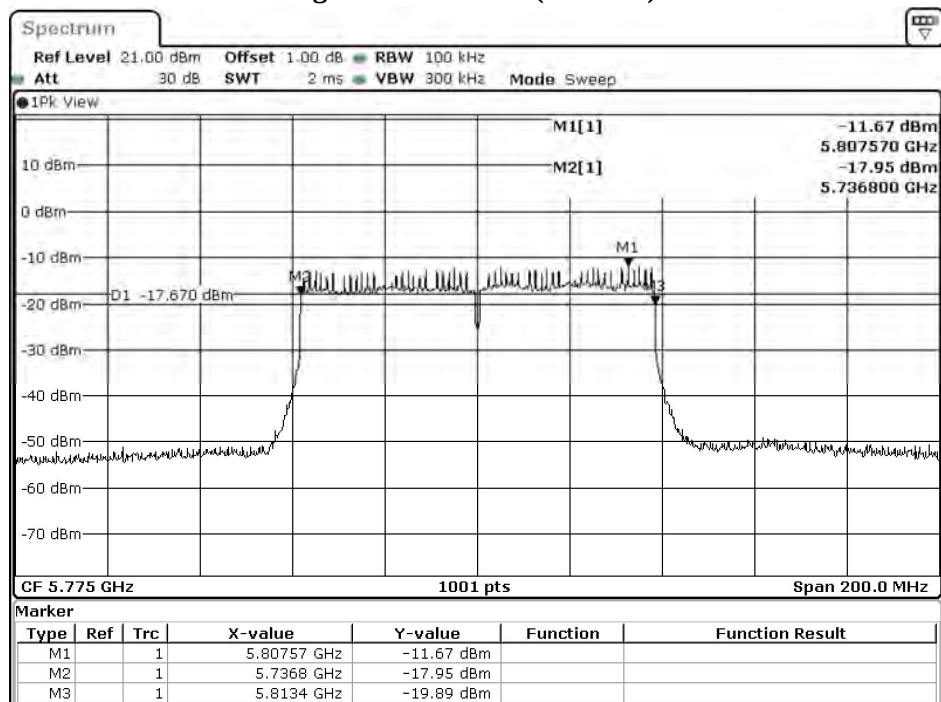
ChainA

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
155	5775	76600	>500	Pass

ChainB

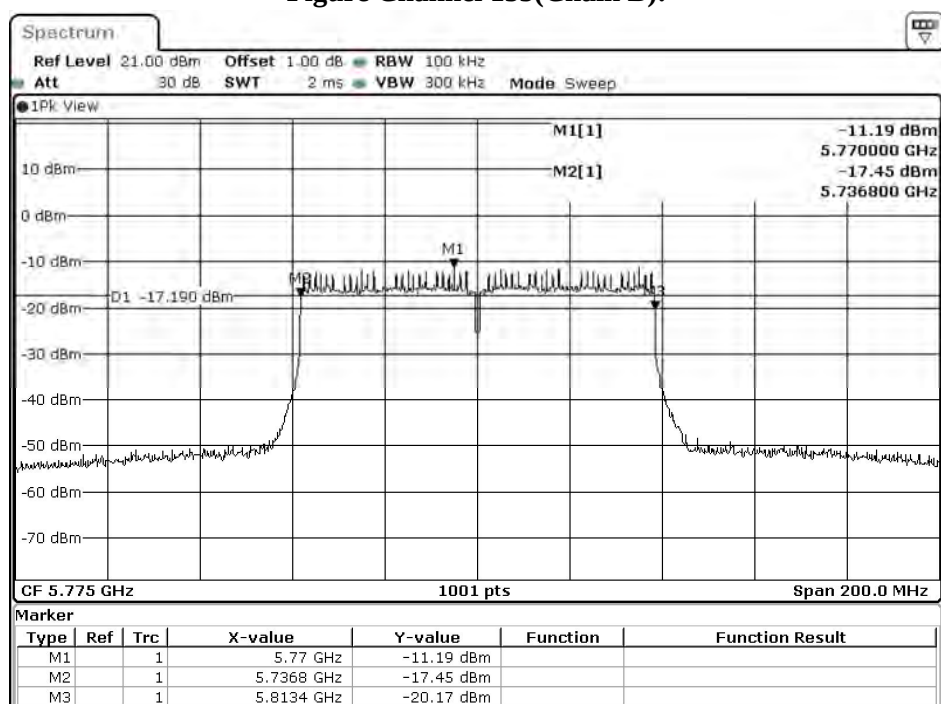
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
155	5775	76600	>500	Pass

Figure Channel 155(Chain A):



Date: 17.AUG.2021 05:37:24

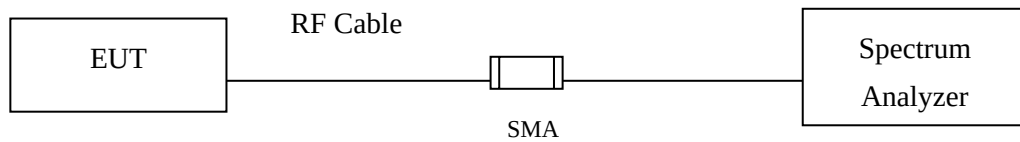
Figure Channel 155(Chain B):



Date: 17.AUG.2021 10:17:41

8. Duty Cycle

8.1. Test Setup



8.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to U-NII test procedure of KDB789033 for compliance to FCC 47CFR 15.407 requirements.

8.3. Test Result of Duty Cycle

Product : Speech Generating Device
Test Item : Duty Cycle
Test Mode : Transmit

Duty Cycle Formula:

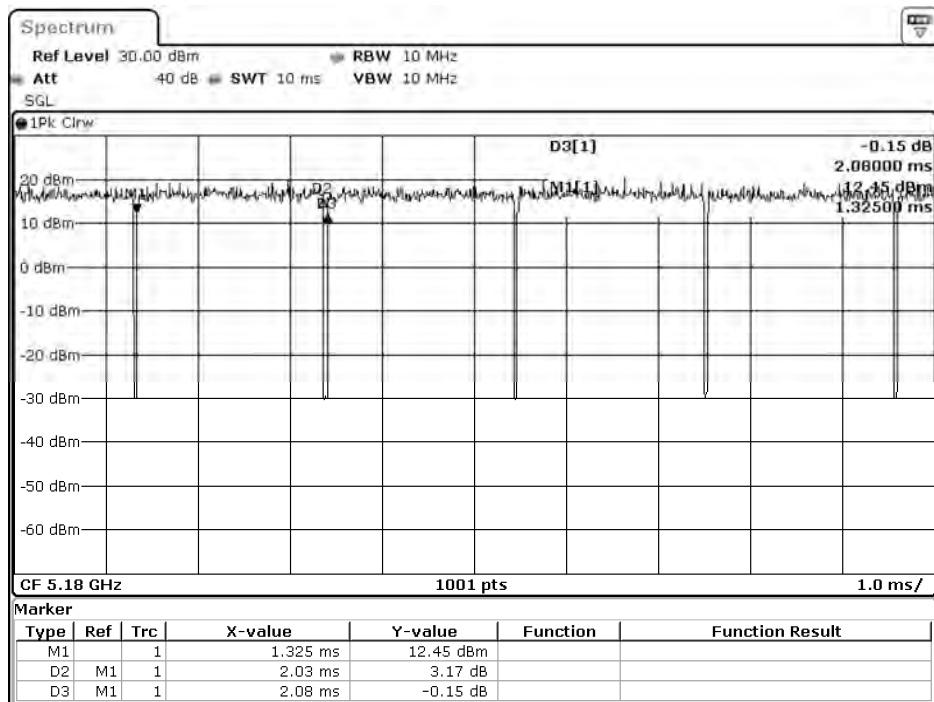
Duty Cycle = $Ton / (Ton + Toff)$

Duty Factor = $10 \text{ Log } (1/\text{Duty Cycle})$

Results:

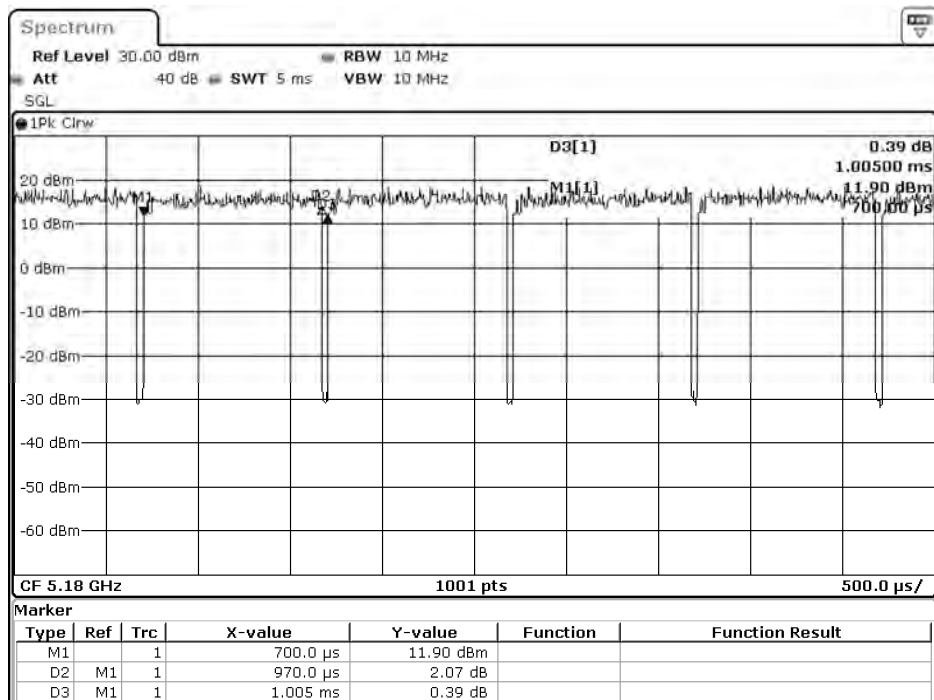
5GHz band	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11a	2.0300	2.0800	97.60	0.11
802.11n20	0.9700	1.0050	96.52	0.15
802.11n40	0.4900	0.5250	93.33	0.30
802.11ac80	0.4550	0.4950	91.92	0.37

802.11a



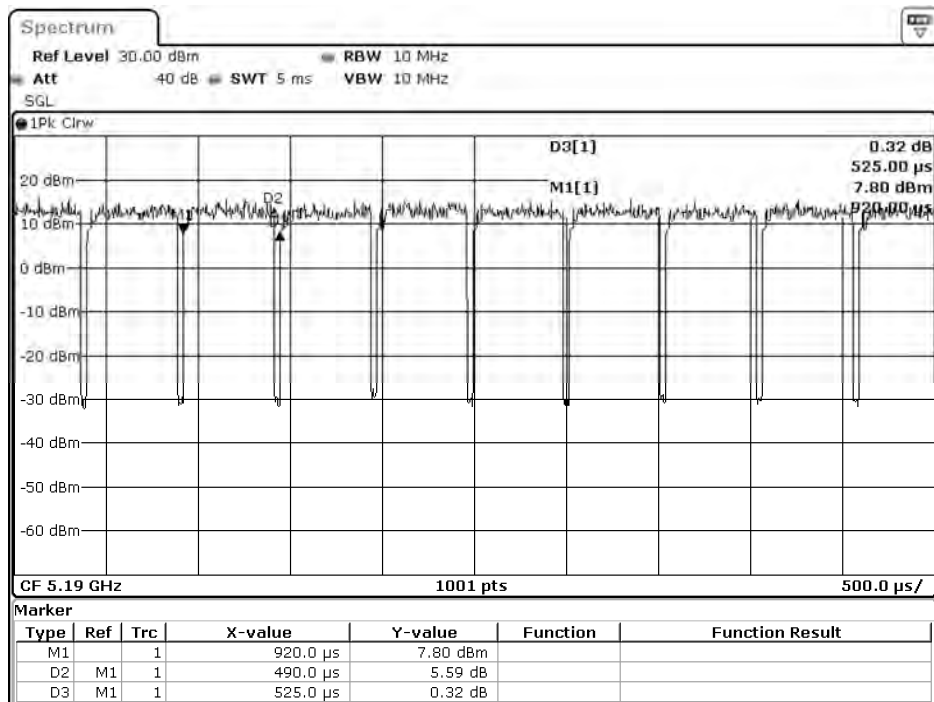
Date: 18.AUG.2021 07:31:32

802.11n20



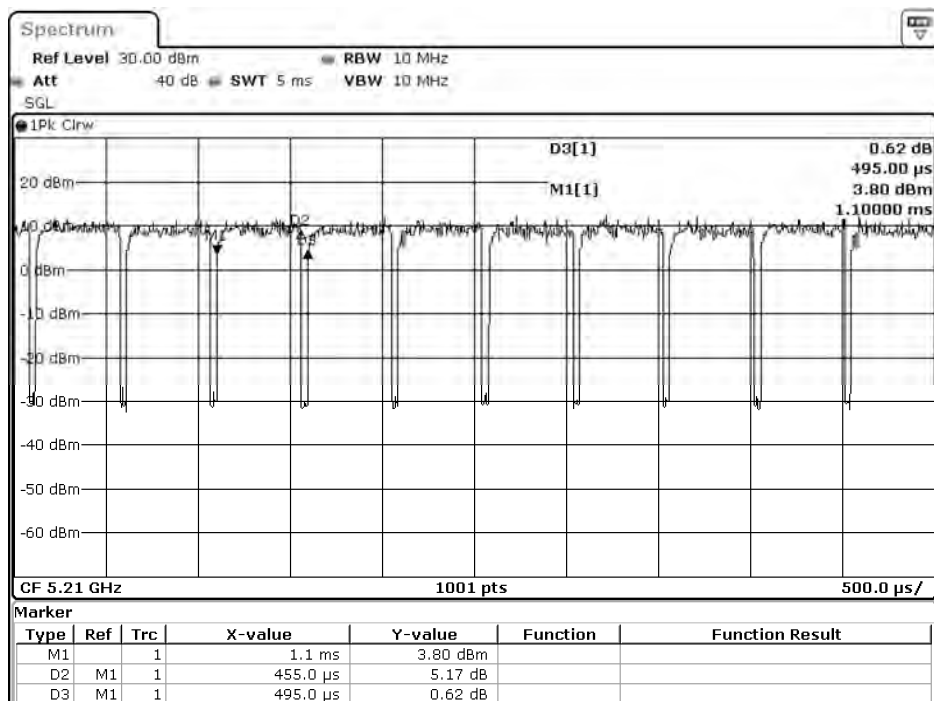
Date: 18.AUG.2021 07:33:26

802.11n40



Date: 18.AUG.2021 07:40:49

802.11ac80



Date: 18.AUG.2021 07:43:07

9. EMI Reduction Method During Compliance Testing

No modification was made during testing.