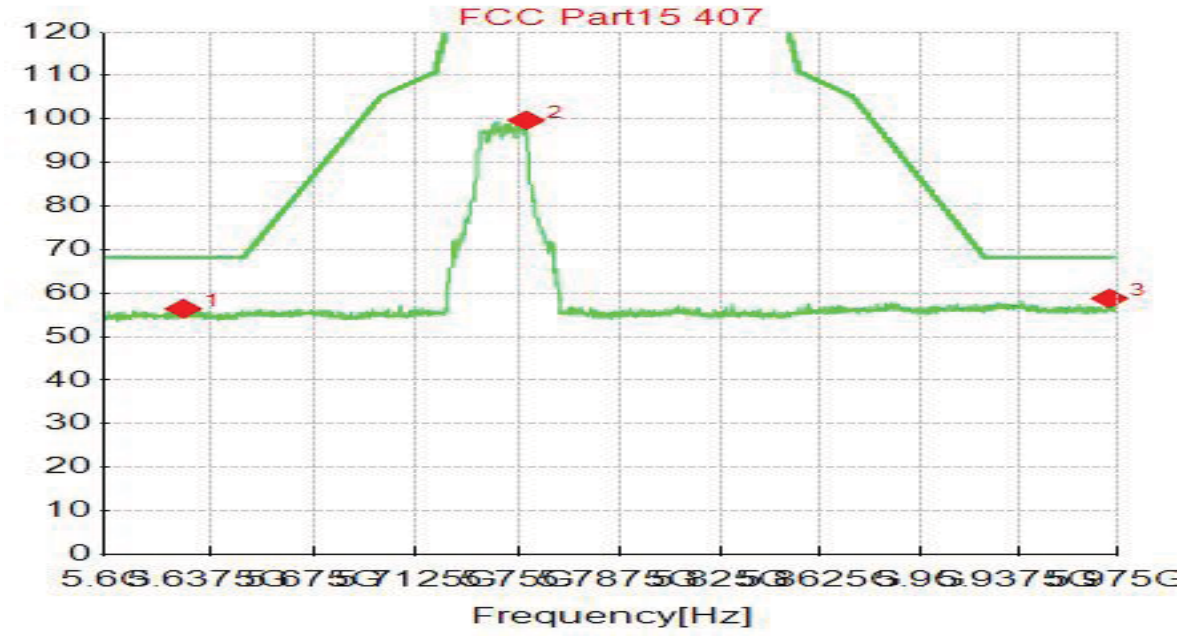
Channel	**802.11n20 CH149**	**Frequency**	5745 MHz
Frequency Range	Above 1G	**Detector Function**	PK/AV

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	5628.1391	47.35	9.04	56.39	68.20	11.81	270	93	PK
2	5753.0765	90.63	9.06	99.69			260	292	PK
3	5971.9985	48.79	10.00	58.79	68.20	9.41	200	292	PK
4	11490.0000	26.64	15.04	41.68	74.00	32.32	392	359	PK
5	11490.0000	19.33	15.04	34.37	54.00	19.63	336	284	AV
6	17235.0000	19.83	25.53	45.36	68.20	22.84	322	43	PK
7	17235.0000	12.49	25.53	38.02	54.00	15.98	365	40	AV



Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	802.11n20 CH 157	Frequency	5785MHz
Frequency Range	Above 1G	Detector Function	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	11570.0000	24.89	15.34	40.23	74.00	33.77	194	336	PK
2	11570.0000	17.07	15.34	32.41	54.00	21.59	272	1	AV
3	17355.0000	19.33	26.30	45.63	68.20	22.57	126	299	PK
4	17355.0000	12.30	26.30	38.60	54.00	15.40	302	276	AV

Vertical

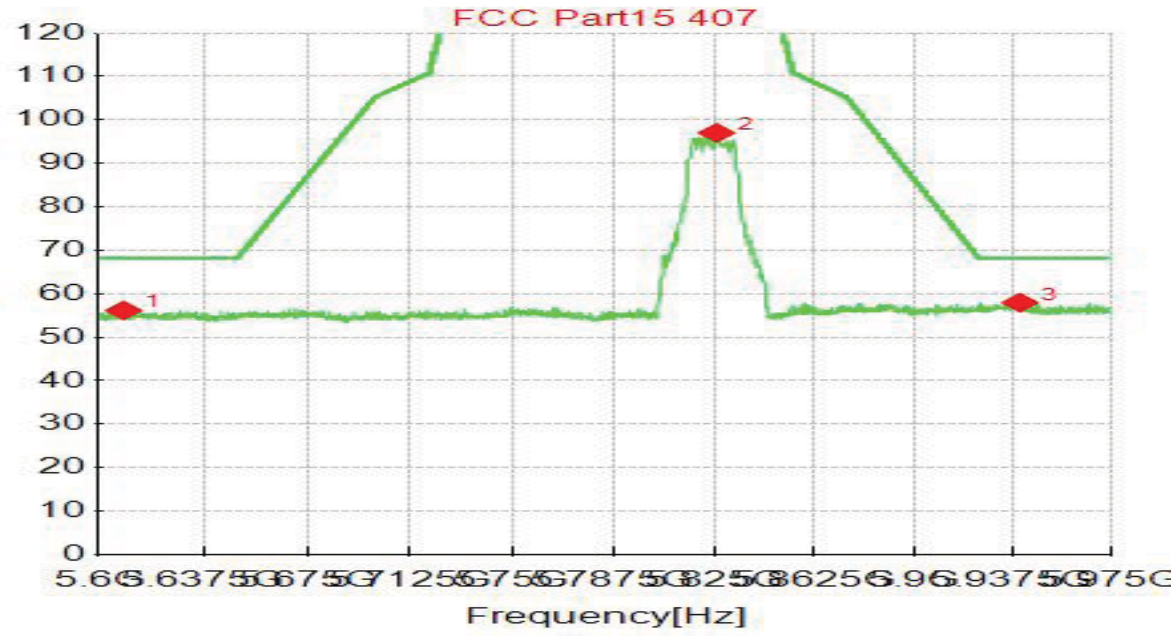
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Remark
1	11570.0000	26.09	15.34	41.43	74.00	32.57	396	172	PK
2	11570.0000	19.12	15.34	34.46	54.00	19.54	344	222	AV
3	17355.0000	19.71	26.30	46.01	68.20	22.19	196	3	PK
4	17355.0000	12.66	26.30	38.96	54.00	15.04	166	86	AV

Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBμV/m] - Level [dBμV/m]

Channel	802.11n20 CH165	Frequency	5825 MHz
Frequency Range	Above 1G	Detector Function	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	5608.8169	47.13	9.01	56.14	68.20	12.06	186	41	PK
2	5825.8629	88.21	8.78	96.99			304	238	PK
3	5940.1076	47.14	10.80	57.94	68.20	10.26	147	185	PK
4	11650.0000	25.09	15.21	40.30	74.00	33.70	230	148	PK
5	11650.0000	18.06	15.21	33.27	54.00	20.73	344	164	AV
6	17475.0000	20.11	26.05	46.16	68.20	22.04	199	107	PK
7	17475.0000	10.99	26.05	37.04	54.00	16.96	157	360	AV

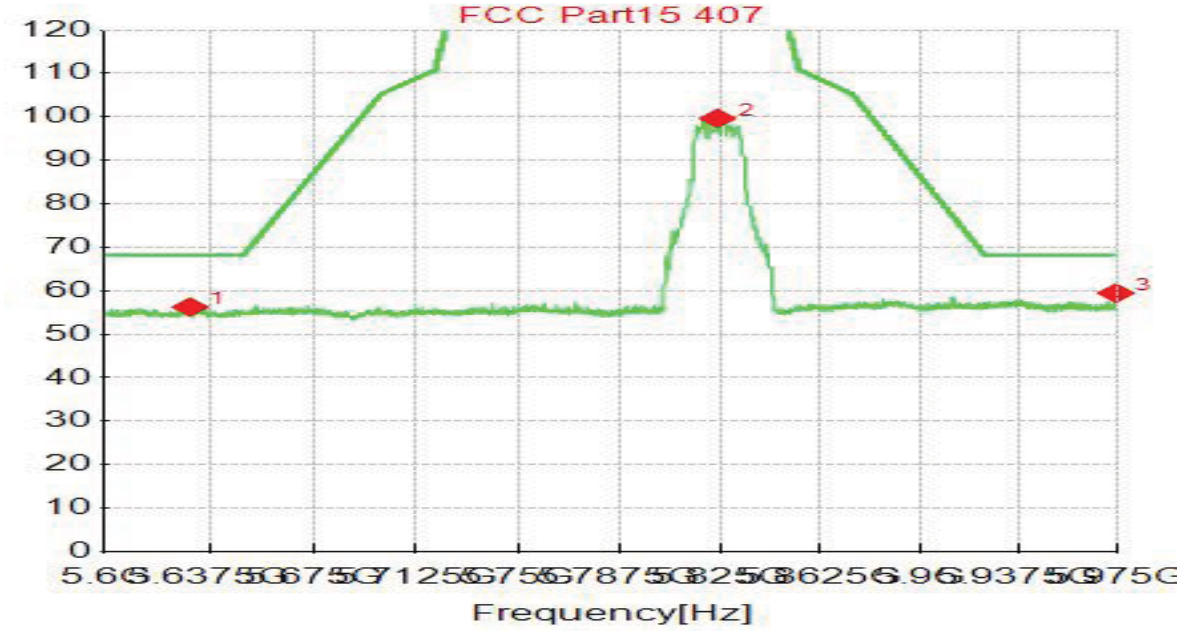


Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	**802.11n20 CH165**	**Frequency**	5825 MHz
Frequency Range	Above 1G	**Detector Function**	PK/AV

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	5630.5778	47.22	9.01	56.23	68.20	11.97	126	301	PK
2	5823.9870	90.82	8.81	99.63			116	288	PK
3	5974.4372	49.47	9.98	59.45	68.20	8.75	217	200	PK
4	11650.0000	26.47	15.21	41.68	74.00	32.32	154	352	PK
5	11650.0000	18.45	15.21	33.66	54.00	20.34	378	205	AV
6	17475.0000	18.48	26.05	44.53	68.20	23.67	397	30	PK
7	17475.0000	11.60	26.05	37.65	54.00	16.35	153	1	AV

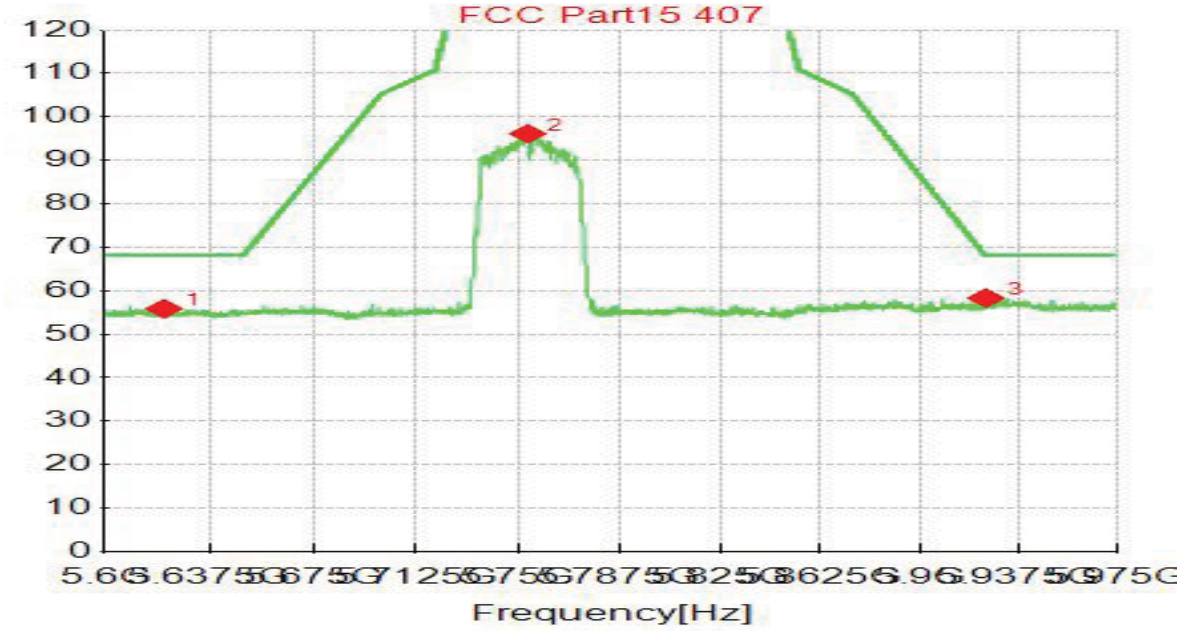


Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	**802.11n40 CH151**	**Frequency**	5755 MHz
Frequency Range	Above 1G	**Detector Function**	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	5621.1981	46.85	8.99	55.84	68.20	12.36	217	197	PK
2	5753.6393	87.02	9.09	96.11			171	338	PK
3	5924.9125	47.93	10.39	58.32	68.26	9.94	290	86	PK
4	11510.0000	24.75	15.12	39.87	74.00	34.13	194	325	PK
5	11510.0000	17.97	15.12	33.09	54.00	20.91	371	117	AV
6	17265.0000	19.75	25.62	45.37	68.20	22.83	215	66	PK
7	17265.0000	12.73	25.62	38.35	54.00	15.65	236	120	AV

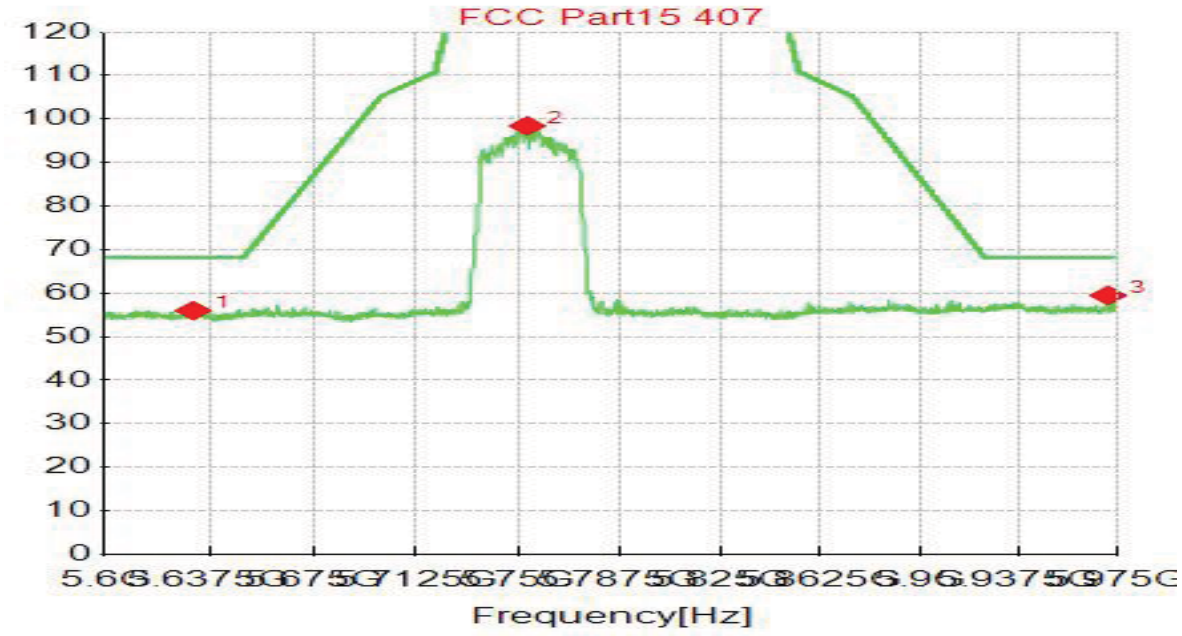


Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	**802.11n40 CH151**	**Frequency**	5755 MHz
Frequency Range	Above 1G	**Detector Function**	PK/AV

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	5631.7034	47.03	8.95	55.98	68.20	12.22	176	72	PK
2	5753.4517	89.33	9.08	98.41			322	293	PK
3	5971.4357	49.46	10.01	59.47	68.20	8.73	320	159	PK
4	11510.0000	25.00	15.12	40.12	74.00	33.88	284	190	PK
5	11510.0000	18.96	15.12	34.08	54.00	19.92	215	20	AV
6	17265.0000	21.05	25.62	46.67	68.20	21.53	368	17	PK
7	17265.0000	11.93	25.62	37.55	54.00	16.45	215	17	AV

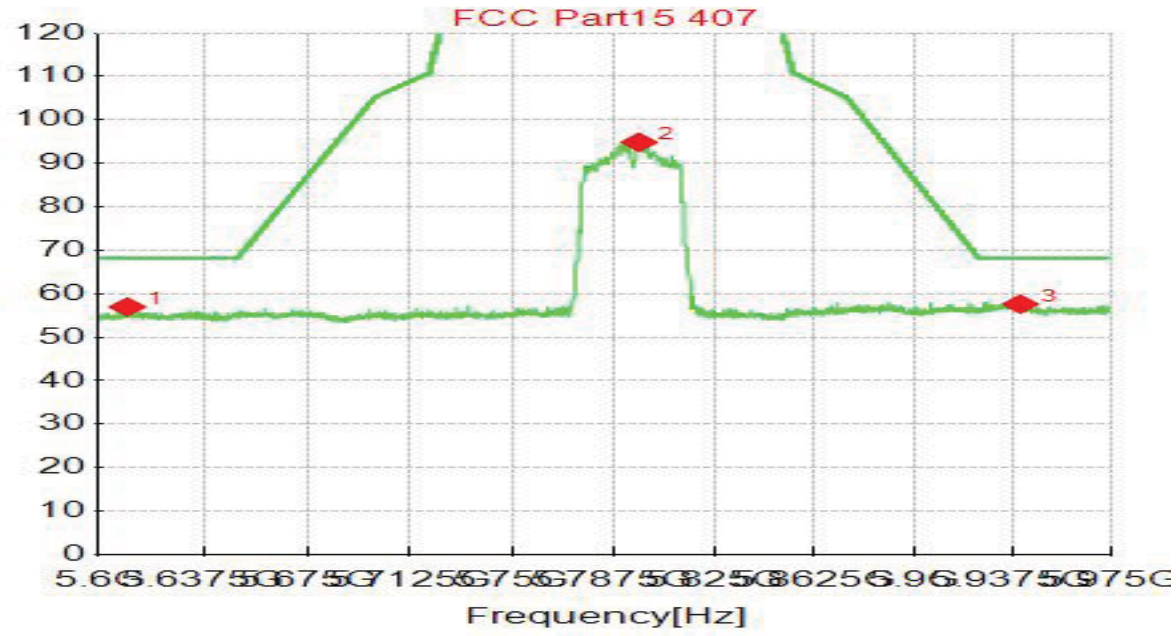


Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	802.11n40 CH159	Frequency	5795 MHz
Frequency Range	Above 1G	Detector Function	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	5610.1301	47.92	9.03	56.95	68.20	11.25	203	137	PK
2	5796.9735	86.21	8.60	94.81			326	238	PK
3	5940.2951	46.82	10.78	57.60	68.20	10.60	305	56	PK
4	11590.0000	26.86	15.17	42.03	74.00	31.97	293	215	PK
5	11590.0000	17.47	15.17	32.64	54.00	21.36	259	235	AV
6	17385.0000	20.67	26.14	46.81	68.20	21.39	398	265	PK
7	17385.0000	12.36	26.14	38.50	54.00	15.50	205	311	AV

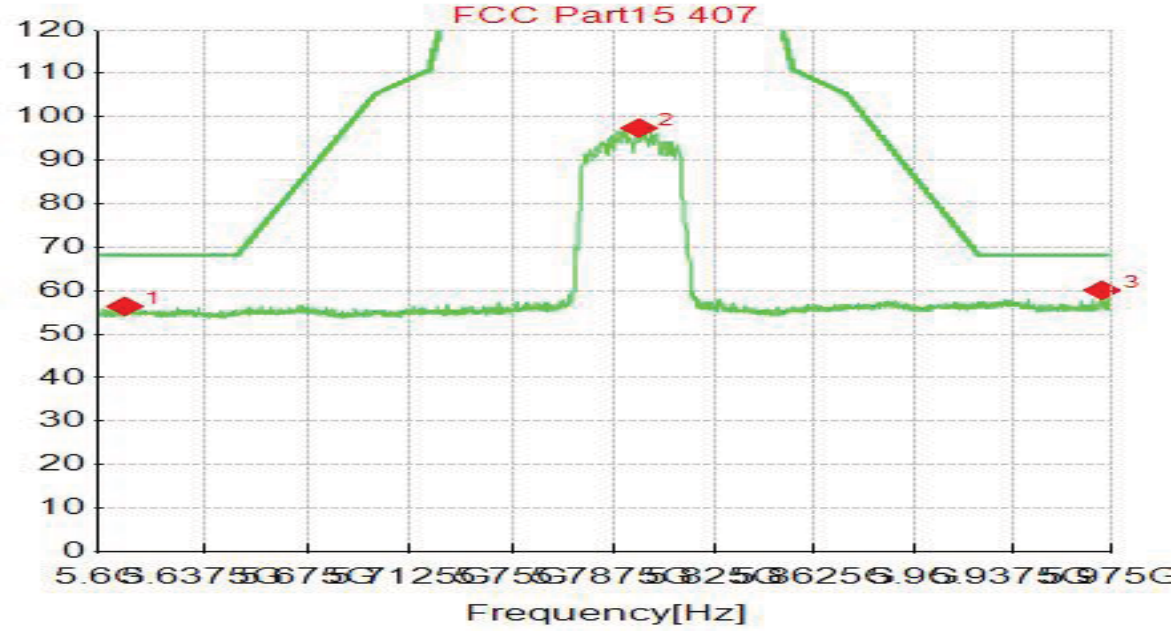


Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	**802.11n40 CH159**	**Frequency**	5795 MHz
Frequency Range	Above 1G	**Detector Function**	PK/AV

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	5609.1921	47.37	9.02	56.39	68.20	11.81	117	170	PK
2	5796.9735	88.80	8.60	97.40			333	292	PK
3	5971.4357	50.08	10.01	60.09	68.20	8.11	107	199	PK
4	11590.0000	26.24	15.17	41.41	74.00	32.59	293	270	PK
5	11590.0000	19.79	15.17	34.96	54.00	19.04	259	360	AV
6	17385.0000	18.98	26.14	45.12	68.20	23.08	398	360	PK
7	17385.0000	12.42	26.14	38.56	54.00	15.44	205	125	AV

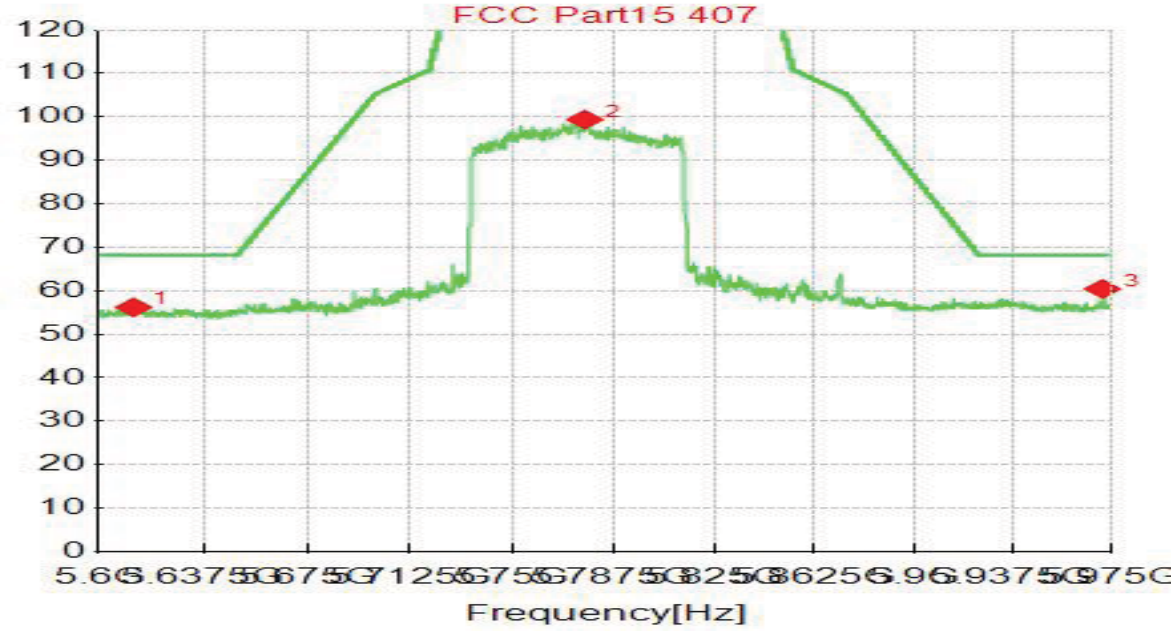


Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	802.11ac80 CH155	**Frequency**	5775 MHz
Frequency Range	Above 1G	**Detector Function**	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	5612.3812	47.15	9.02	56.17	68.20	12.03	323	220	PK
2	5776.9010	90.99	8.38	99.37			264	292	PK
3	5971.6233	50.41	10.01	60.42	68.20	7.78	192	282	PK
4	11550.0000	25.24	15.40	40.64	74.00	33.36	274	1	PK
5	11550.0000	18.02	15.40	33.42	54.00	20.58	145	360	AV
6	17325.0000	18.66	26.20	44.86	68.20	23.34	324	13	PK
7	17325.0000	11.51	26.20	37.71	54.00	16.29	397	1	AV

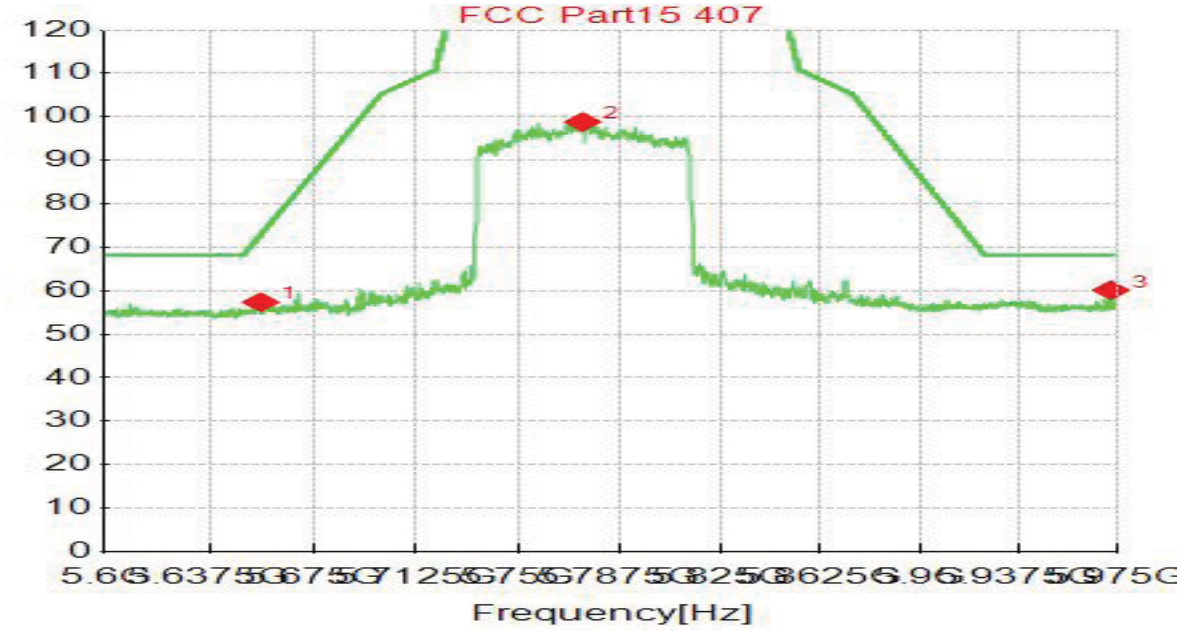


Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	**802.11ac80 CH155**	**Frequency**	5775 MHz
Frequency Range	Above 1G	**Detector Function**	PK/AV

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	5656.0905	48.24	9.11	57.35	72.72	15.37	360	5	PK
2	5773.8995	90.22	8.60	98.82			215	90	PK
3	5972.5613	50.11	10.00	60.11	68.20	8.09	207	282	PK
4	11510.0000	25.27	15.12	40.39	74.00	33.61	317	349	PK
5	11550.0000	18.20	15.40	33.60	54.00	20.40	262	136	AV
6	17265.0000	18.72	25.62	44.34	68.20	23.86	272	279	PK
7	17325.0000	12.23	26.20	38.43	54.00	15.57	248	176	AV

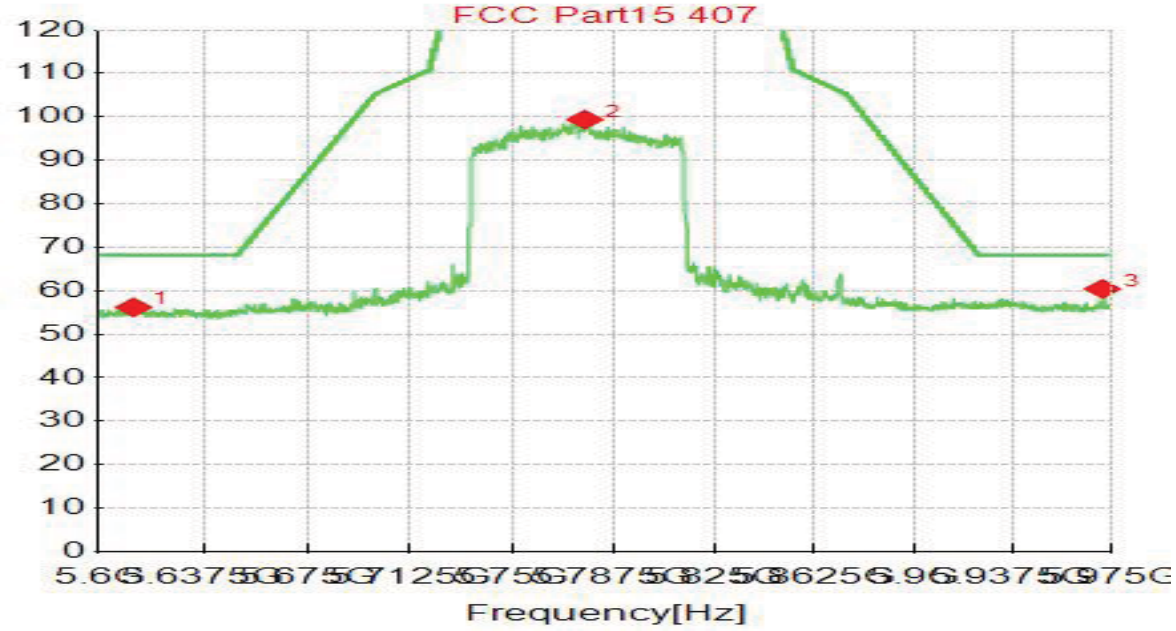


Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	**802.11ax80 CH155**	**Frequency**	5775 MHz
Frequency Range	Above 1G	**Detector Function**	PK/AV

Horizontal

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	5612.3812	47.15	9.02	56.17	68.20	12.03	323	220	PK
2	5776.9010	90.99	8.38	99.37			264	292	PK
3	5971.6233	50.41	10.01	60.42	68.20	7.78	192	282	PK
4	11550.0000	25.24	15.40	40.64	74.00	33.36	105	300	PK
5	11550.0000	17.52	15.40	32.92	54.00	21.08	171	73	AV
6	17325.0000	19.90	26.20	46.10	68.20	22.10	281	126	PK
7	17325.0000	11.93	26.20	38.13	54.00	15.87	214	130	AV

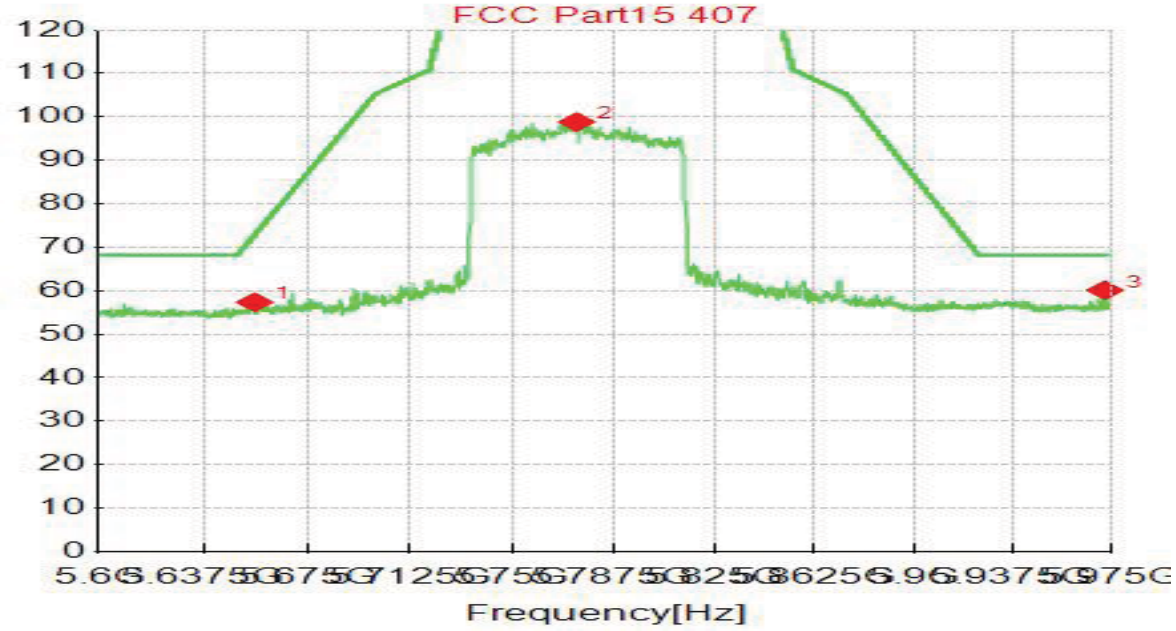


Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

Channel	802.11ax80 CH155	**Frequency**	5775 MHz
Frequency Range	Above 1G	**Detector Function**	PK/AV

Vertical

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Detector
1	5656.0905	48.24	9.11	57.35	72.72	15.37	360	5	PK
2	5773.8995	90.22	8.60	98.82			215	90	PK
3	5972.5613	50.11	10.00	60.11	68.20	8.09	207	282	PK
4	11550.0000	24.54	15.40	39.94	74.00	34.06	333	290	PK
5	11550.0000	17.98	15.40	33.38	54.00	20.62	336	290	AV
6	17325.0000	20.23	26.20	46.43	68.20	21.77	181	246	PK
7	17325.0000	12.45	26.20	38.65	54.00	15.35	288	310	AV



Remark: 1. The emission levels of other frequencies were greater than 20dB margin.
2. Level (dBuV/m) = Reading (dBuV/m) + Factor (dB).
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
4. Margin(dB) = Limit[dBµV/m] - Level [dBµV/m]

3.2 CONDUCTED EMISSION MEASUREMENT

3.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

3.2.2 TEST PROCEDURES

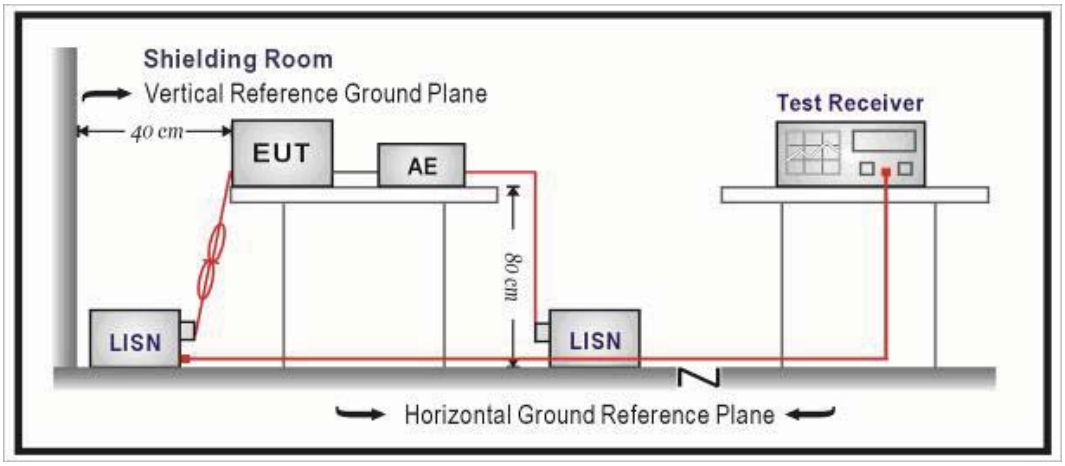
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

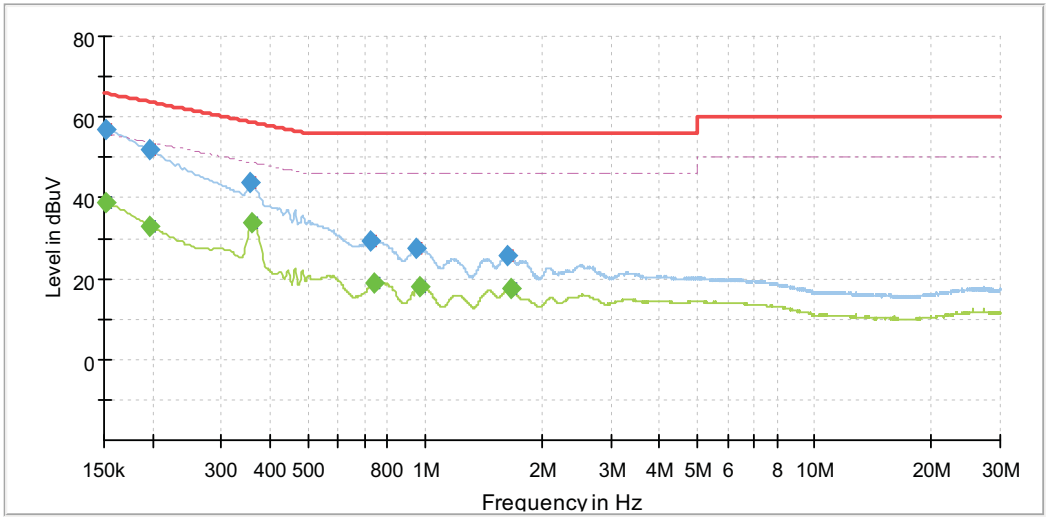
3.2.3 TEST SETUP



NOTE: For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.2.4 TEST RESULTS

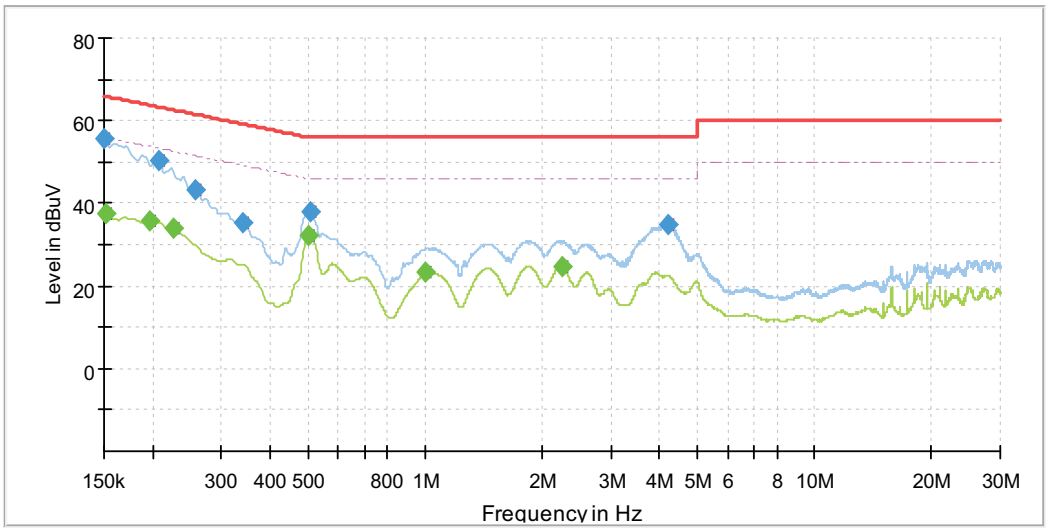
Test Mode	5G WIFI Link		
PHASE	Line (L)	Frequency Range	150KHz ~ 30MHz



NO	Frequency (MHz)	QuasiPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr.Factor (dB)
1	**0.152**	**57.1**	**---**	**65.9**	**8.8**	**L1**	**19.5**
2	0.152	---	38.6	55.9	17.2	L1	19.5
3	0.197	51.8	---	63.7	11.9	L1	19.5
4	0.197	---	33.2	53.7	20.6	L1	19.5
5	0.357	43.6	---	58.8	15.2	L1	19.5
6	0.359	---	33.9	48.7	14.8	L1	19.5
7	0.728	29.5	---	56.0	26.5	L1	19.6
8	0.737	---	18.7	46.0	27.3	L1	19.6
9	0.949	27.6	---	56.0	28.4	L1	19.6
10	0.969	---	17.9	46.0	28.1	L1	19.6
11	1.624	25.8	---	56.0	30.2	L1	19.6
12	1.662	---	17.7	46.0	28.3	L1	19.6

Remark: The emission levels of other frequencies were very low against the limit.

Test Mode	5G WIFI Link		
PHASE	Line (N)	Frequency Range	150KHz ~ 30MHz



NO	Frequency (MHz)	QuasiPeak (dBuV)	Average (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr.Factor (dB)
1	0.150	55.7	---	66.0	10.3	N	19.5
2	0.152	---	37.5	55.9	18.4	N	19.5
3	0.197	---	35.8	53.7	17.9	N	19.5
4	0.206	50.5	---	63.4	12.8	N	19.5
5	0.227	---	34.0	52.6	18.6	N	19.5
6	0.258	43.4	---	61.5	18.1	N	19.6
7	0.341	35.3	---	59.2	23.8	N	19.5
8	0.503	---	32.2	46.0	13.8	N	19.6
9	0.506	37.8	---	56.0	18.2	N	19.6
10	1.007	---	23.2	46.0	22.8	N	19.6
11	2.256	---	24.5	46.0	21.5	N	19.6
12	4.218	34.9	---	56.0	21.1	N	19.7

Remark: The emission levels of other frequencies were very low against the limit.

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 Measurement procedure

The transmitter antenna output was connected to the spectrum analyzer through an attenuator. The resolution bandwidth shall be set to the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth.
below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

3.3.2 TEST SETUP

3.3.3 Test result

Please refer Annex C.

3.4 26DB EMISSION BANDWIDTH

3.4.1 LIMITS OF 26DB EMISSION BANDWIDTH

This section is for reporting purpose only, there is on restriction limit of bandwidth

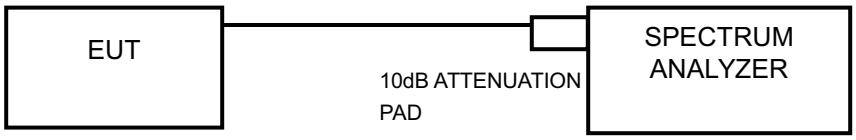
3.4.2 TEST PROCEDURES

FOR 26dB BANDWIDTH

1) Set RBW = approximately 1% of the emission bandwidth.
2) Set the VBW > RBW.
3) Detector = Peak
4) Trace mode = max hold.
5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

3.4.3 TEST SETUP

FOR 26dB BANDWIDTH



3.4.4 TEST RESULTS

Refer to Appendix A

3.5 6DB EMISSION BANDWIDTH

3.5.1 LIMITS OF 6DB EMISSION BANDWIDTH

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

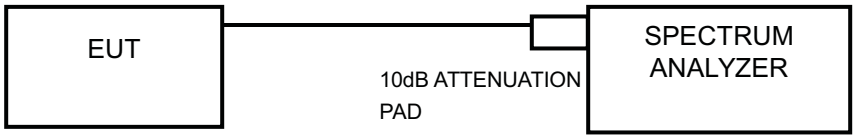
3.5.2 TEST PROCEDURES

FOR 6dB BANDWIDTH

1) Set RBW = 100 kHz.
2) Set the video bandwidth (VBW) ≥ 3 RBW.
3) Detector = Peak.
4) Trace mode = max hold.
5) Sweep = auto couple.
6) Allow the trace to stabilize.
7) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.5.3 TEST SETUP

FOR 6dB BANDWIDTH



3.5.4 TEST RESULTS

Refer to Appendix B

3.6 TRANSMIT POWER MEASUREMENT

3.6.1 LIMITS OF TRANSMIT POWER MEASUREMENT(FCC)

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Mobile and Portable client device	250mW (24 dBm)
U-NII-2A	√		250mW(24dBm) or 11 dBm+10LogB*
U-NII-2C	√		250mW(24dBm) or 11 dBm+10LogB*
U-NII-3	√		1 Watt (30 dBm)

NOTE: 1. Where B is the 26dB emission bandwidth in MHz.

Directional gain and the maximum output power limit:

Operation Band	Chain 0 Antenna Gain(dBi)	Chain 1 Antenna Gain(dBi)	DG For Power (dBi)	Power Limit Reduction
U-NII-1	5.3	5.3	8.31	2.31
U-NII-2A	4.4	4.4	7.41	1.41
U-NII-2C	3.0	3.0	6	0
U-NII-3	3.2	3.2	6.21	0.21

MIMO mode:
FCC KDB 662911 D01 Mutiple Transmitter Output V02r01
For CDD transmissions, directional gain is calculateed as
Dirctional Gain= GANT+ Array Gain, where Array Gain is as follows.
For power spectral desity(PSD) measurements on all devices.
Array Gain=10 log(N_{ANT}/N_{SS}=1)
For power measurements on IEEE802.11 devices,
Array Gain=0 dB (i.e, no array gain) for NANT<=4.
The EUT support CDD mode, for Power and PSD, the directional gain is following F)2)f)i)
The directional gain "DG" is calculated as following table.

3.6.2 LIMITS OF TRANSMIT POWER MEASUREMENT(IC)

FREQUENCY BAND	LIMIT
5.150 ~ 5.250GHz	EIRP shall not exceed 200mW or 10+ 10logB, dBm
5.250 ~ 5.350GHz 5.470 ~ 5.600GHz 5.650 ~ 5.725GHz	Conducted output power shall not exceed 250mW or 11+ 10logB, dBm EIRP shall not exceed 1.0W or 17+ 10logB, dBm
5.725 ~ 5.825GHz	Conducted output power shall not exceed 1 W.

NOTE: Where B is the 99% emission bandwidth in MHz

Directional gain and the maximum output power limit:

Operation Band	Chain 0 Antenna Gain(dBi)	Chain 1 Antenna Gain(dBi)	DG For Power (dBi)	Power Limit Reduction
U-NII-1	5.3	5.3	8.31	2.31
U-NII-2A	4.4	4.4	7.41	1.41
U-NII-2C	3.0	3.0	6	0
U-NII-3	3.2	3.2	6.21	0.21

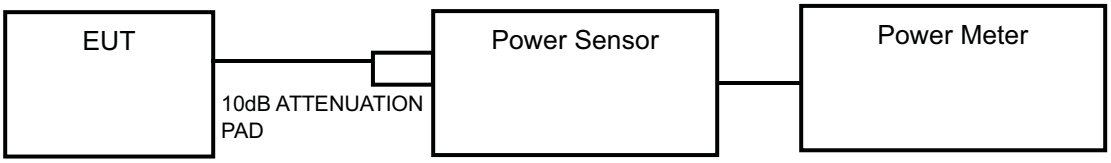
MIMO mode:
FCC KDB 662911 D01 Mutiple Transmitter Output V02r01
For CDD transmissions, directional gain is calculateed as
Dirctional Gain= GANT+ Array Gain, where Array Gain is as follows.
For power spectral desity(PSD) measurements on all devices.
Array Gain=10 log(N_{ANT}/N_{SS}=1)
For power measurements on IEEE802.11 devices,
Array Gain=0 dB (i.e, no array gain) for NANT<=4.
The EUT support CDD mode, for Power and PSD, the directional gain is following F)2)f)i)
The directional gain "DG" is calculated as following table.

3.6.3 TEST PROCEDURES

FOR AVERAGE POWER MEASUREMENT

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

3.6.4 TEST SETUP



3.6.5 TEST RESULTS

Refer to Appendix D

3.7 POWER SPECTRAL DENSITY MEASUREMENT

3.7.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT(FCC)

Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11dBm/ MHz
U-NII-2A	√		11dBm/ MHz
U-NII-2C	√		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

Note:

Directional gain and the maximum output power limit:

Operation Band	Chain 0 Antenna Gain(dBi)	Chain 1 Antenna Gain(dBi)	DG For Power (dBi)	Power Limit Reduction
U-NII-1	5.3	5.3	8.31	2.31
U-NII-2A	4.4	4.4	7.41	1.41
U-NII-2C	3.0	3.0	6	0
U-NII-3	3.2	3.2	6.21	0.21

MIMO mode:
FCC KDB 662911 D01 Mutiple Transmitter Output V02r01
For CDD transmissions, directional gain is calculateed as
Dirctional Gain= GANT+ Array Gain, where Array Gain is as follows.
For power spectral desity(PSD) measurements on all devices.
Array Gain=10 log(N_{ANT}/N_{SS}=1)
For power measurements on IEEE802.11 devices,
Array Gain=0 dB (i.e, no array gain) for NANT<=4.
The directional gain "DG" is calculated as following table.

3.7.2 . LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT(IC)

FREQUENCY BAND	LIMIT(dBm)
5.15 ~ 5.25GHz	EIRP spectral density shall not exceed 10 dBm in any 1.0 MHz band.
5.25 ~ 5.35GHz and 5.470 ~ 5.725GHz	Power spectral density shall not exceed 11 dBm in any 1.0 MHz band.
5.725~5825GHz	Power spectral density shall not exceed 30 dBm in any 500 kHz band.

Note:

Directional gain and the maximum output power limit:

Operation Band	Chain 0 Antenna Gain(dBi)	Chain 1 Antenna Gain(dBi)	DG For Power (dBi)	Power Limit Reduction
U-NII-1	5.3	5.3	8.31	2.31
U-NII-2A	4.4	4.4	7.41	1.41
U-NII-2C	3.0	3.0	6	0
U-NII-3	3.2	3.2	6.21	0.21

MIMO mode:
FCC KDB 662911 D01 Mutiple Transmitter Output V02r01
For CDD transmissions, directional gain is calculateed as
Dirctional Gain= GANT+ Array Gain, where Array Gain is as follows.
For power spectral desity(PSD) measurements on all devices.
Array Gain=10 log(N_{ANT}/N_{SS}=1)
For power measurements on IEEE802.11 devices,
Array Gain=0 dB (i.e, no array gain) for NANT<=4.
The directional gain "DG" is calculated as following table.

3.7.3 TEST PROCEDURE

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

Using method SA-2

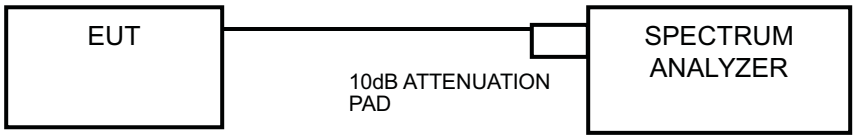
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1MHz, Set VBW =3 MHz, Detector = AV
3) Set Channel power measure = 1MHz
4) Sweep time = auto, trigger set to “free run”.
5) Trace average at least 100 traces in power averaging mode.
6) Record the max value and add 10 log (1/duty cycle)

For U-NII-3 band:

Using method SA-2

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 300 kHz, Set VBW =1 MHz, Detector = AV
3) Set Channel power measure = 1MHz
4) Sweep time = auto, trigger set to “free run”.
5) Trace average at least 100 traces in power averaging mode.
6) Record the max value and add 10 log (1/duty cycle)

3.7.4 TEST SETUP



3.7.5 TEST RESULT

Refer to Appendix E

3.8 FREQUENCY STABILITY

3.8.1 LIMITS OF FREQUENCY STABILITY

The frequency of the carrier signal shall be maintained within band of operation.

3.8.2 TEST PROCEDURES

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.

b. Turn the EUT on and couple its output to a spectrum analyzer.

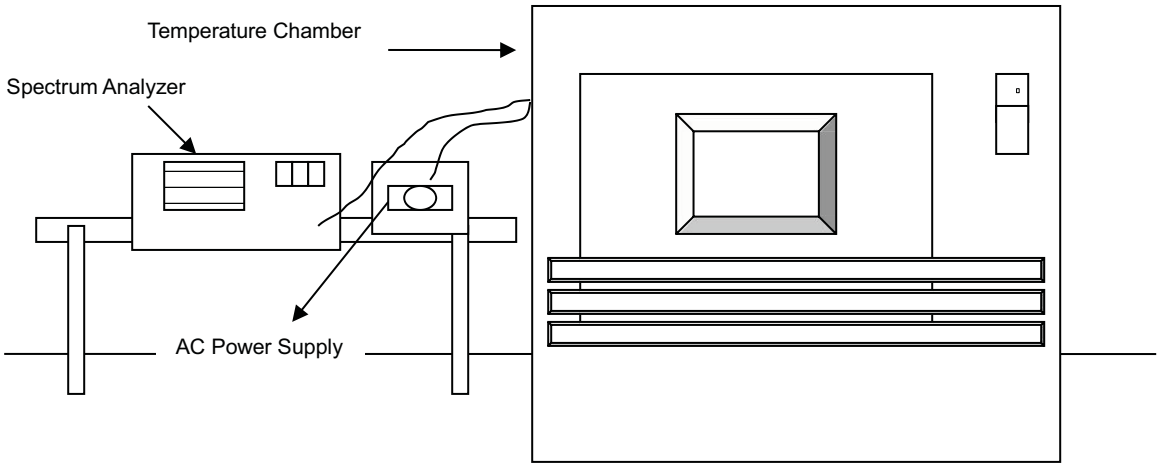
c. Turn the EUT off and set the chamber to the highest temperature specified.

d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.

e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.

f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

3.8.3 TEST SETUP



3.8.4 TEST RESULTS

Refer to Appendix F

4 PHOTOGRAPHS OF TEST SETUP

Please refer to the attached file (Test Setup Photo).

5 Appendix

5.1 Appendix A: 26DB EMISSION BANDWIDTH

5.1.1 Test Result

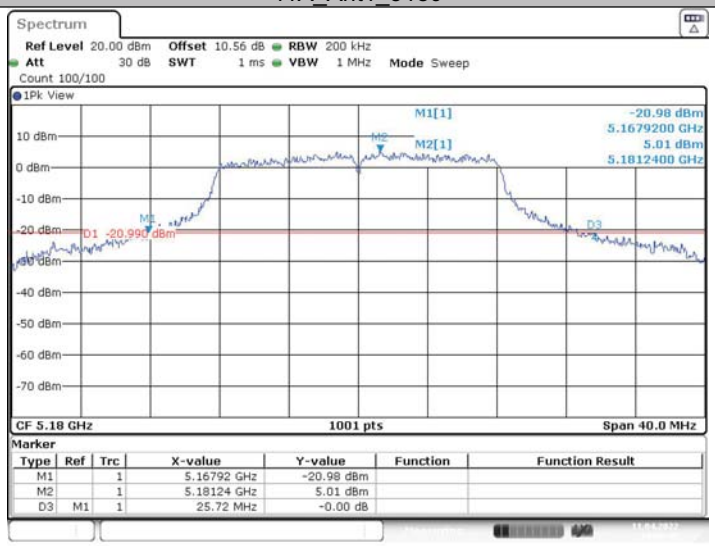
TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	25.72	5167.92	5193.64	---	---
	Ant2	5180	24.28	5168.44	5192.72	---	---
	Ant1	5200	25.04	5187.12	5212.16	---	---
	Ant2	5200	24.56	5187.88	5212.44	---	---
	Ant1	5240	19.88	5230.08	5249.96	---	---
	Ant2	5240	19.68	5230.12	5249.80	---	---
	Ant1	5260	23.80	5248.16	5271.96	---	---
	Ant2	5260	23.92	5247.96	5271.88	---	---
	Ant1	5280	24.00	5268.24	5292.24	---	---
	Ant2	5280	23.68	5268.04	5291.72	---	---
	Ant1	5320	24.36	5307.56	5331.92	---	---
	Ant2	5320	23.80	5308.00	5331.80	---	---
	Ant1	5500	24.44	5487.72	5512.16	---	---
	Ant2	5500	25.08	5487.76	5512.84	---	---
	Ant1	5600	23.56	5588.20	5611.76	---	---
	Ant2	5600	23.56	5588.32	5611.88	---	---
	Ant1	5700	23.84	5687.84	5711.68	---	---
	Ant2	5700	23.76	5688.12	5711.88	---	---
	Ant1	5720	24.32	5707.76	5732.08	---	---
	Ant2	5720	23.72	5707.80	5731.52	---	---
	Ant1	5720_UNII-2C	17.24	5707.76	5725	---	---
	Ant2	5720_UNII-2C	17.2	5707.80	5725	---	---
	Ant1	5720_UNII-3	7.08	5725	5732.08	---	---
	Ant2	5720_UNII-3	6.52	5725	5731.52	---	---
	Ant1	5745	24.04	5733.12	5757.16	---	---
	Ant2	5745	22.92	5733.60	5756.52	---	---
	Ant1	5785	24.04	5773.12	5797.16	---	---
	Ant2	5785	23.52	5773.44	5796.96	---	---
	Ant1	5825	23.72	5813.08	5836.80	---	---
	Ant2	5825	24.40	5812.84	5837.24	---	---
11N20MIMO	Ant1	5180	24.64	5167.08	5191.72	---	---
	Ant2	5180	24.24	5168.04	5192.28	---	---
	Ant1	5200	24.44	5187.68	5212.12	---	---
	Ant2	5200	25.32	5186.40	5211.72	---	---
	Ant1	5240	20.08	5229.88	5249.96	---	---
	Ant2	5240	19.96	5229.96	5249.92	---	---
	Ant1	5260	24.08	5248.16	5272.24	---	---
	Ant2	5260	23.64	5248.04	5271.68	---	---
	Ant1	5280	23.96	5267.80	5291.76	---	---
	Ant2	5280	33.12	5262.92	5296.04	---	---
	Ant1	5320	25.96	5307.60	5333.56	---	---
	Ant2	5320	23.56	5308.92	5332.48	---	---
	Ant1	5500	25.24	5487.96	5513.20	---	---
	Ant2	5500	26.08	5488.56	5514.64	---	---
	Ant1	5600	24.64	5587.68	5612.32	---	---
	Ant2	5600	29.80	5585.60	5615.40	---	---
	Ant1	5700	26.16	5686.08	5712.24	---	---

	Ant2	5700	24.12	5687.52	5711.64	---	---
	Ant1	5720	24.80	5707.52	5732.32	---	---
	Ant2	5720	23.68	5708.12	5731.80	---	---
	Ant1	5720_UNII-2C	17.48	5707.52	5725	---	---
	Ant2	5720_UNII-2C	16.88	5708.12	5725	---	---
	Ant1	5720_UNII-3	7.32	5725	5732.32	---	---
	Ant2	5720_UNII-3	6.8	5725	5731.80	---	---
	Ant1	5745	24.16	5732.72	5756.88	---	---
	Ant2	5745	23.20	5733.72	5756.92	---	---
	Ant1	5785	25.08	5772.20	5797.28	---	---
	Ant2	5785	25.12	5771.84	5796.96	---	---
	Ant1	5825	25.36	5811.96	5837.32	---	---
	Ant2	5825	24.52	5813.00	5837.52	---	---
11N40MIMO	Ant1	5190	40.64	5169.76	5210.40	---	---
	Ant2	5190	40.00	5170.08	5210.08	---	---
	Ant1	5230	40.96	5209.76	5250.72	---	---
	Ant2	5230	39.92	5210.08	5250.00	---	---
	Ant1	5270	40.72	5249.68	5290.40	---	---
	Ant2	5270	40.00	5249.84	5289.84	---	---
	Ant1	5310	40.64	5289.68	5330.32	---	---
	Ant2	5310	40.48	5290.08	5330.56	---	---
	Ant1	5510	40.56	5489.76	5530.32	---	---
	Ant2	5510	39.92	5490.48	5530.40	---	---
	Ant1	5630	40.88	5609.68	5650.56	---	---
	Ant2	5630	40.24	5610.00	5650.24	---	---
	Ant1	5670	40.80	5649.60	5690.40	---	---
	Ant2	5670	40.16	5649.84	5690.00	---	---
	Ant1	5710	40.56	5689.68	5730.24	---	---
	Ant2	5710	40.00	5690.00	5730.00	---	---
	Ant1	5710_UNII-2C	35.32	5689.68	5725	---	---
	Ant2	5710_UNII-2C	35	5690.00	5725	---	---
	Ant1	5710_UNII-3	5.24	5725	5730.24	---	---
	Ant2	5710_UNII-3	5	5725	5730.00	---	---
	Ant1	5755	40.56	5734.76	5775.32	---	---
	Ant2	5755	40.08	5734.84	5774.92	---	---
	Ant1	5795	40.16	5774.84	5815.00	---	---
	Ant2	5795	40.72	5774.60	5815.32	---	---
11AC80MIMO	Ant1	5210	80.16	5170.00	5250.16	---	---
	Ant2	5210	79.68	5170.16	5249.84	---	---
	Ant1	5290	80.16	5250.00	5330.16	---	---
	Ant2	5290	80.32	5250.00	5330.32	---	---
	Ant1	5530	80.00	5490.16	5570.16	---	---
	Ant2	5530	78.72	5490.80	5569.52	---	---
	Ant1	5610	80.16	5570.00	5650.16	---	---
	Ant2	5610	79.84	5570.32	5650.16	---	---
	Ant1	5690	79.84	5650.16	5730.00	---	---
	Ant2	5690	79.68	5650.32	5730.00	---	---
	Ant1	5690_UNII-2C	74.84	5650.16	5725	---	---
	Ant2	5690_UNII-2C	74.68	5650.32	5725	---	---
	Ant1	5690_UNII-3	5	5725	5730.00	---	---
	Ant2	5690_UNII-3	5	5725	5730.00	---	---
	Ant1	5775	80.00	5735.00	5815.00	---	---
	Ant2	5775	79.84	5735.16	5815.00	---	---
11AX80MIMO	Ant1	5210	80.32	5170.00	5250.32	---	---

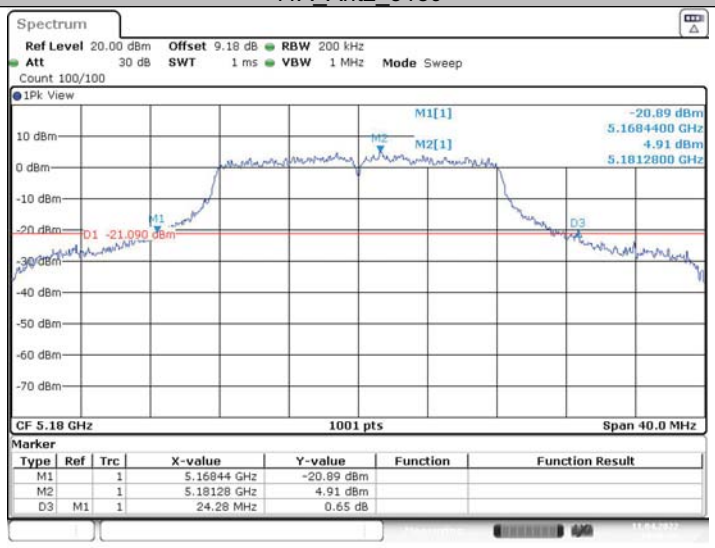
	Ant2	5210	80.32	5169.84	5250.16	---	---
	Ant1	5290	80.48	5249.84	5330.32	---	---
	Ant2	5290	80.64	5249.84	5330.48	---	---
	Ant1	5530	80.32	5490.00	5570.32	---	---
	Ant2	5530	79.84	5490.16	5570.00	---	---
	Ant1	5610	80.16	5570.00	5650.16	---	---
	Ant2	5610	80.48	5570.00	5650.48	---	---
	Ant1	5690	80.32	5649.84	5730.16	---	---
	Ant2	5690	80.32	5649.84	5730.16	---	---
	Ant1	5690_UNII-2C	75.16	5649.84	5725	---	---
	Ant2	5690_UNII-2C	75.16	5649.84	5725	---	---
	Ant1	5690_UNII-3	5.16	5725	5730.16	---	---
	Ant2	5690_UNII-3	5.16	5725	5730.16	---	---
	Ant1	5775	80.48	5734.84	5815.32	---	---
	Ant2	5775	80.48	5734.84	5815.32	---	---

5.1.2 Test Graphs

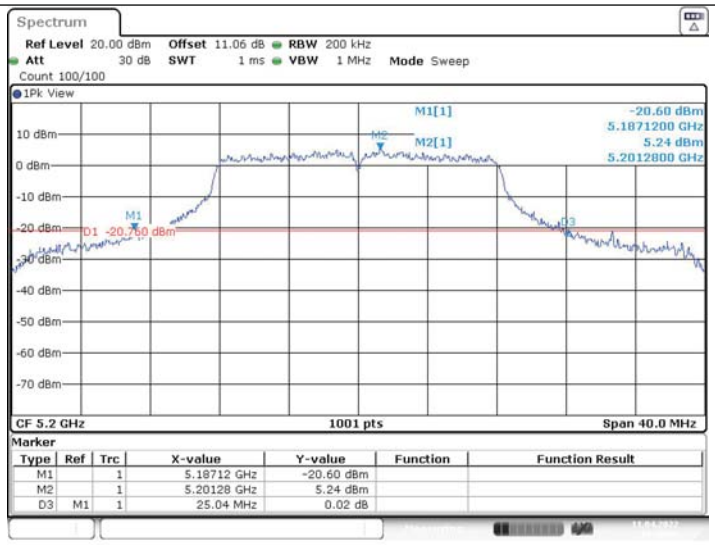
11A_Ant1_5180



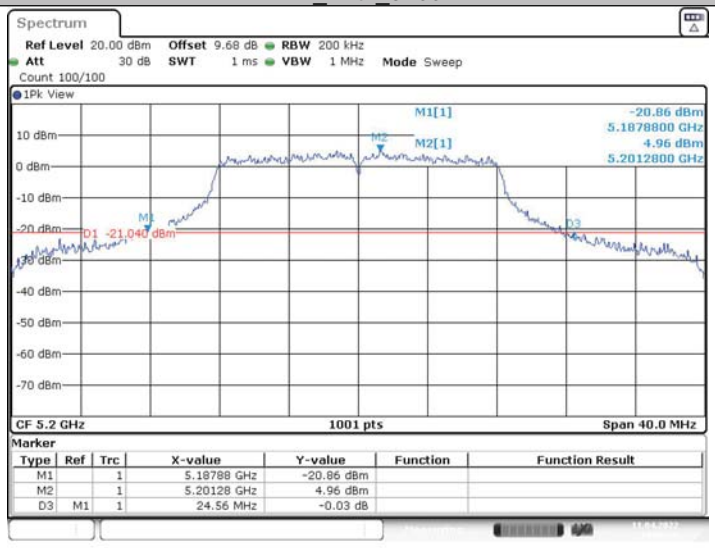
11A_Ant2_5180



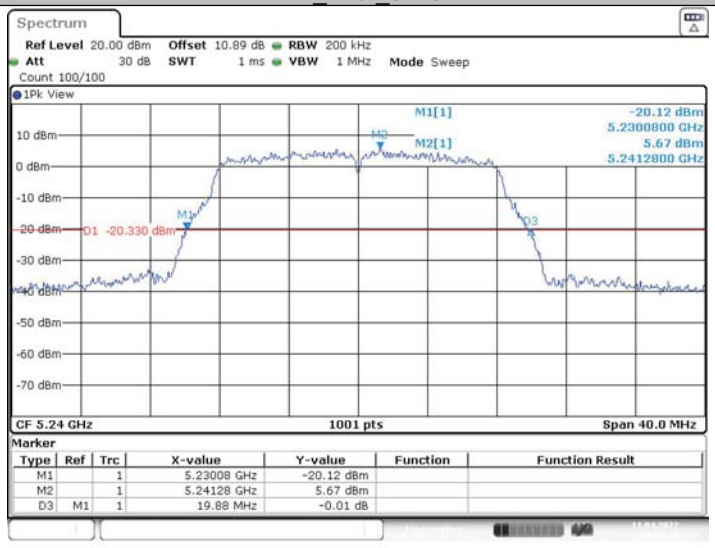
11A_Ant1_5200



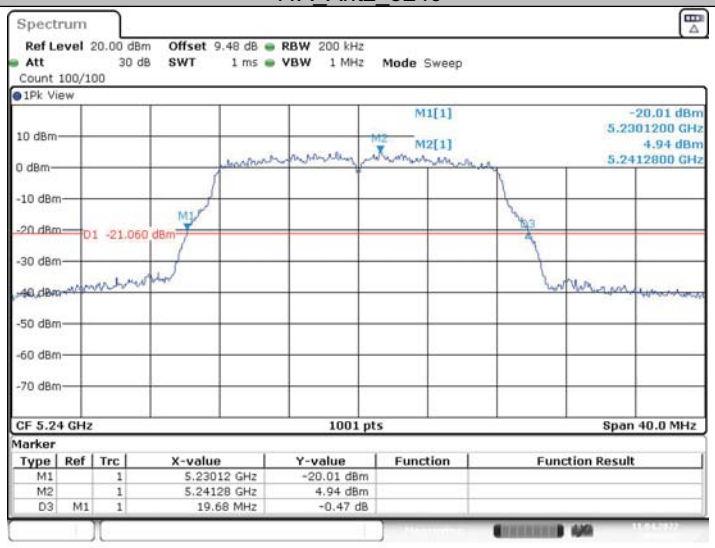
11A_Ant2_5200



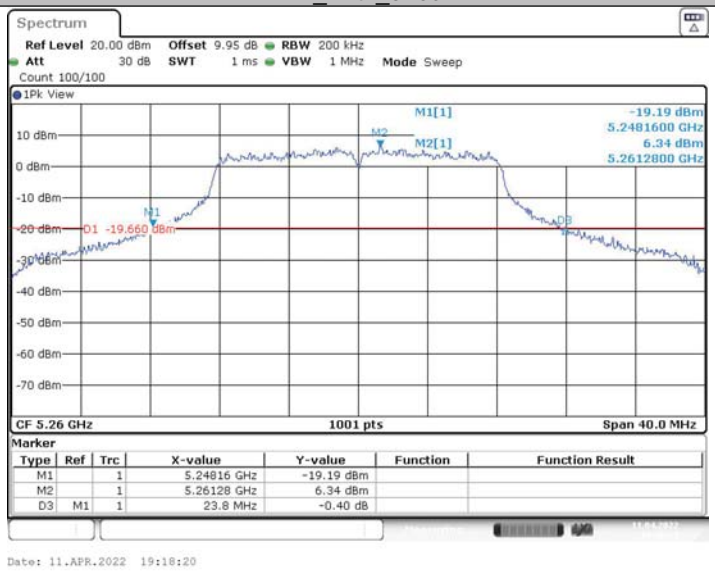
11A_Ant1_5240



11A_Ant2_5240



11A_Ant1_5260



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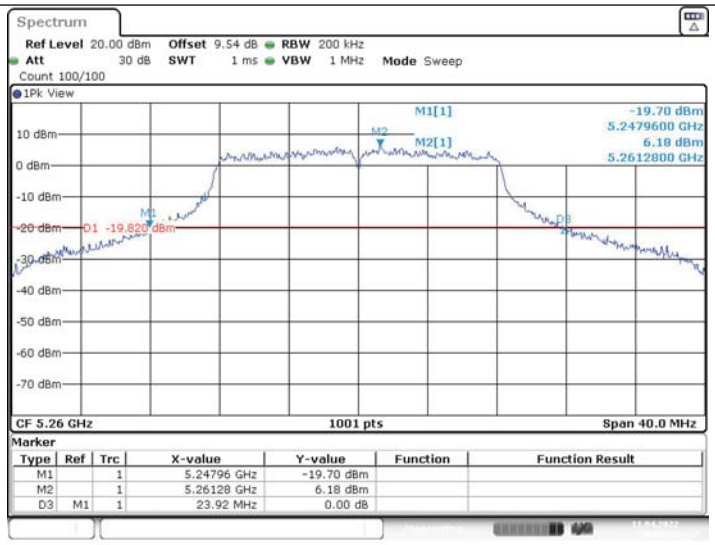

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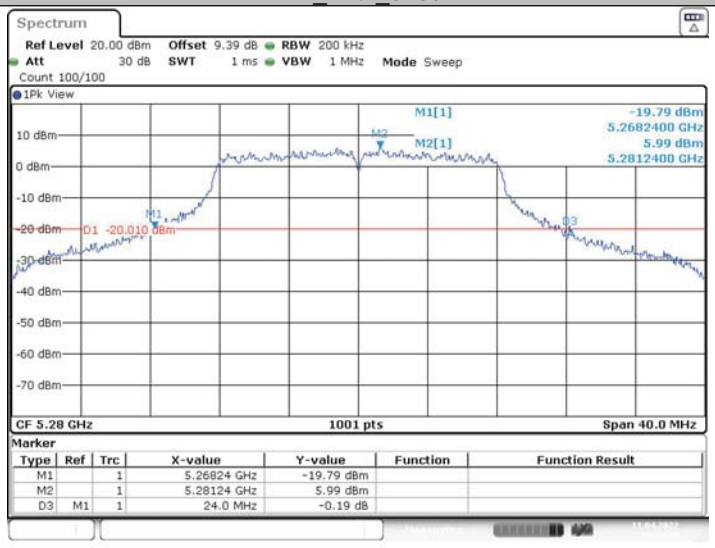

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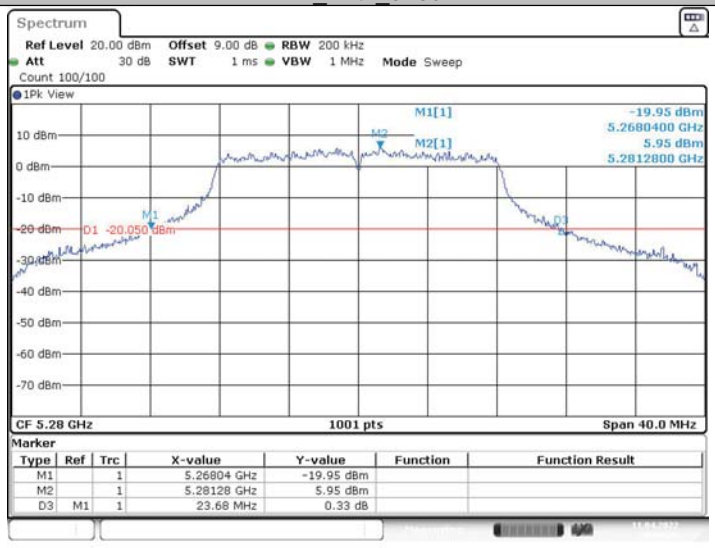

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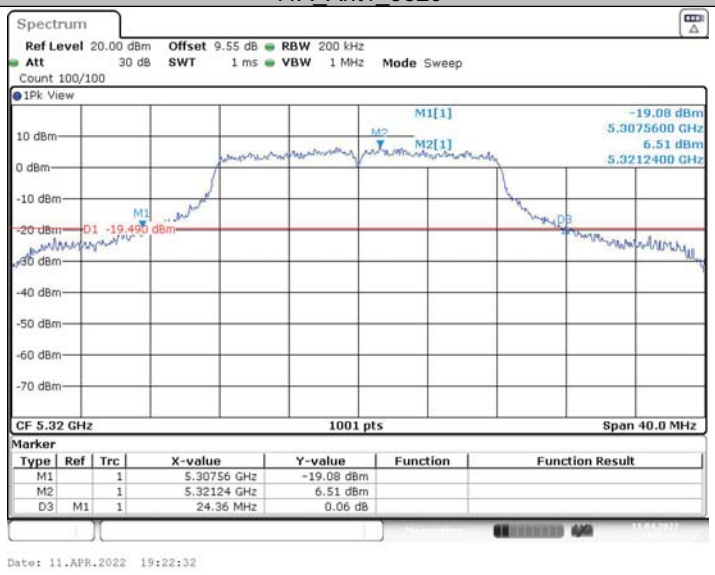

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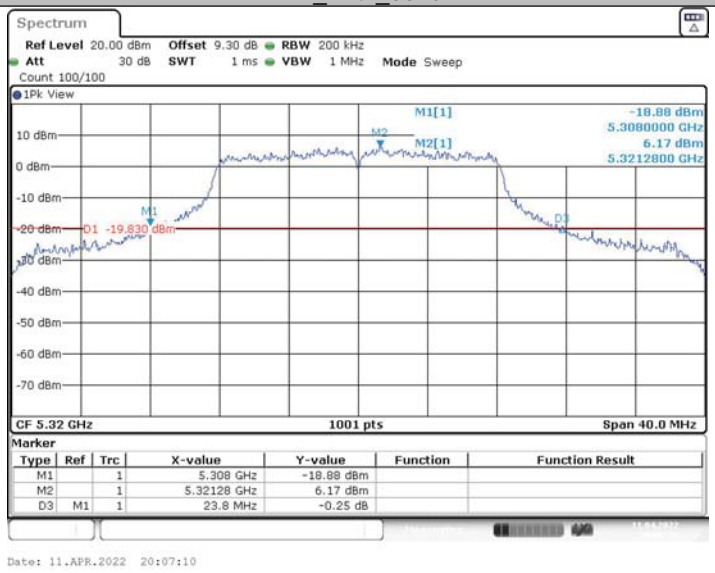

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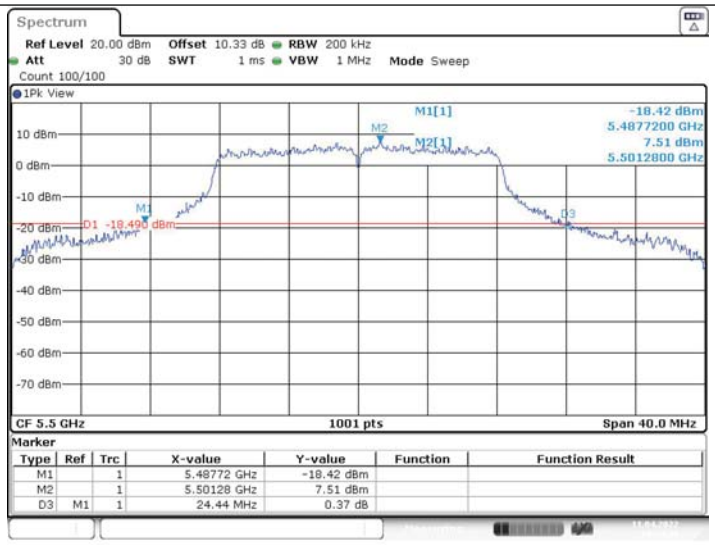

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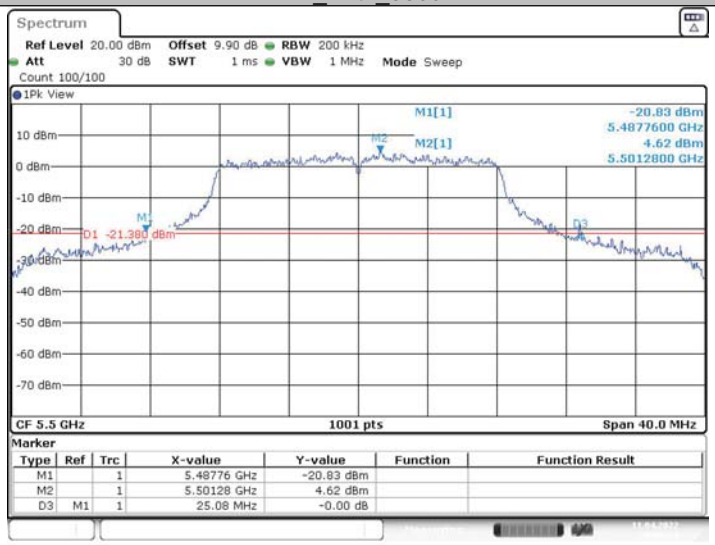

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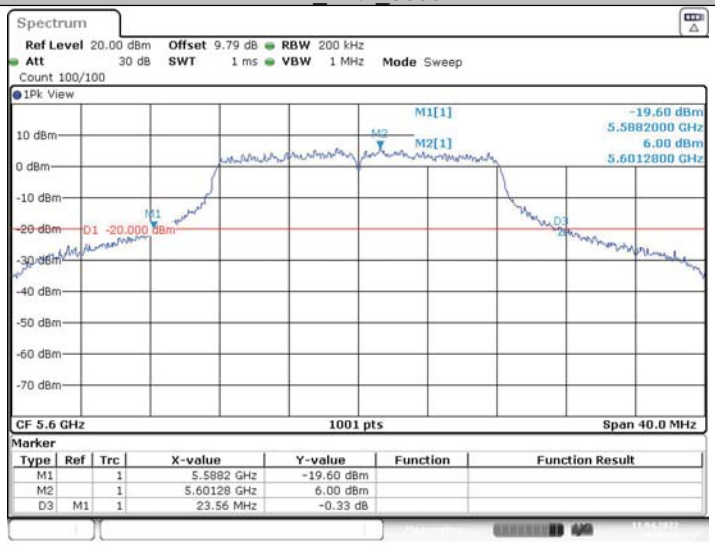

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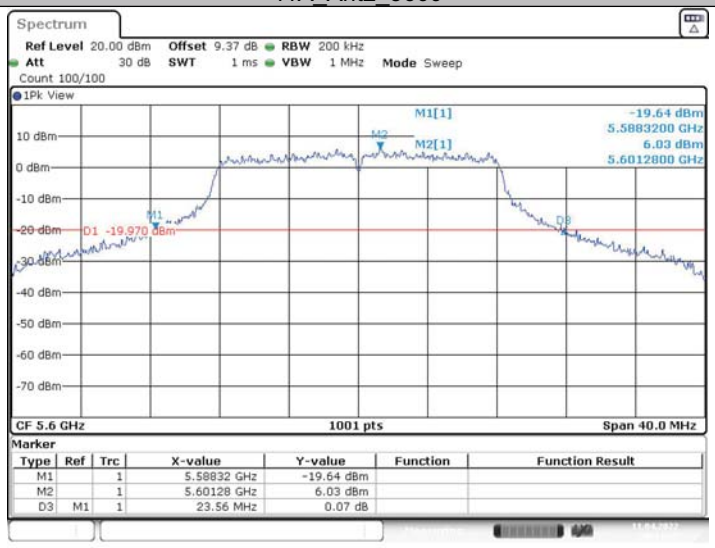

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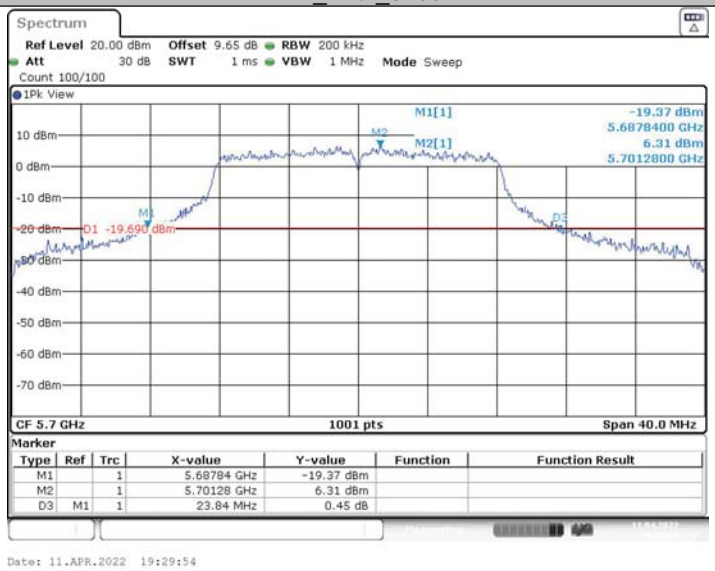

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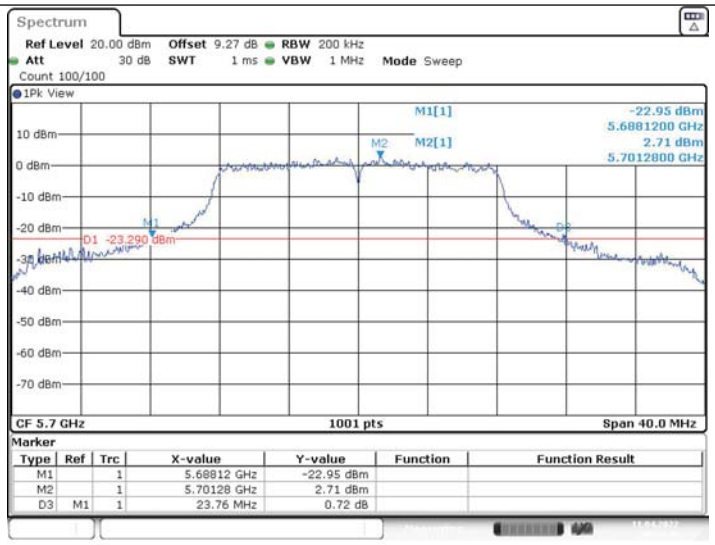

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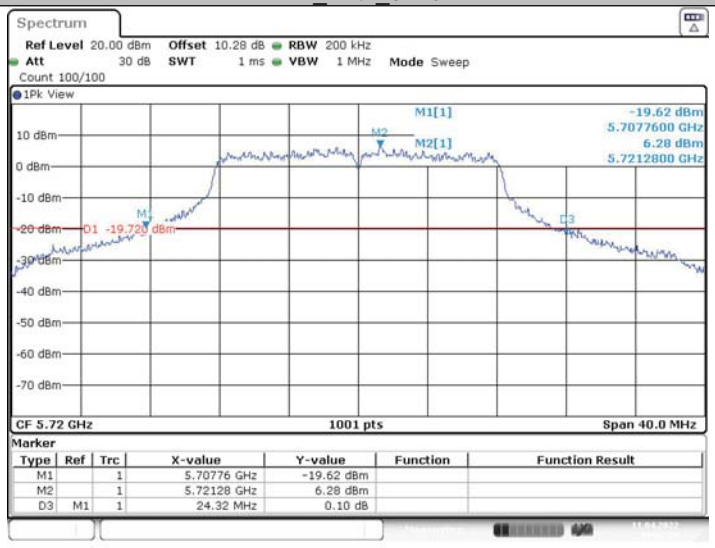

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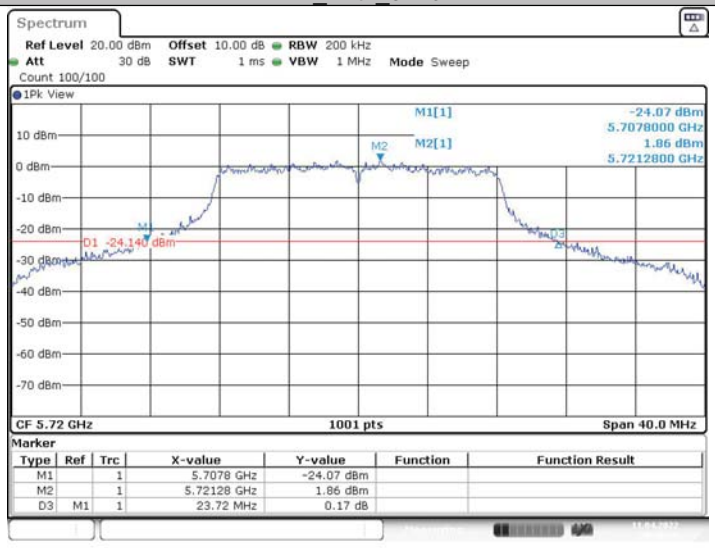

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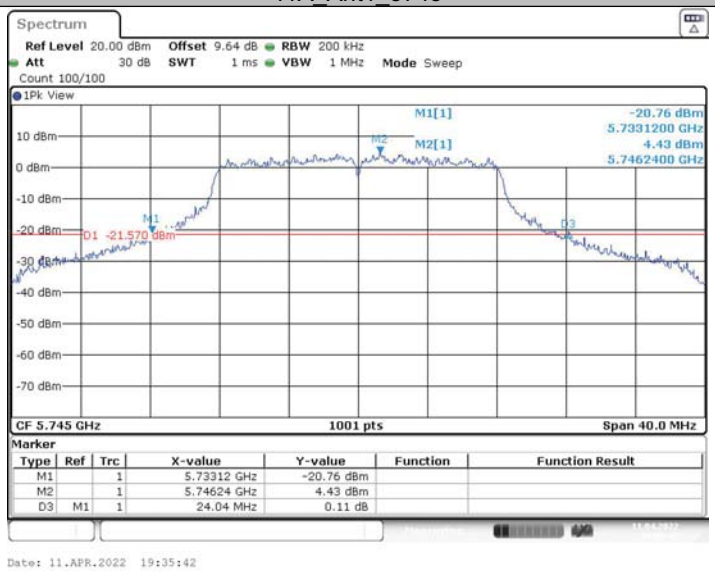

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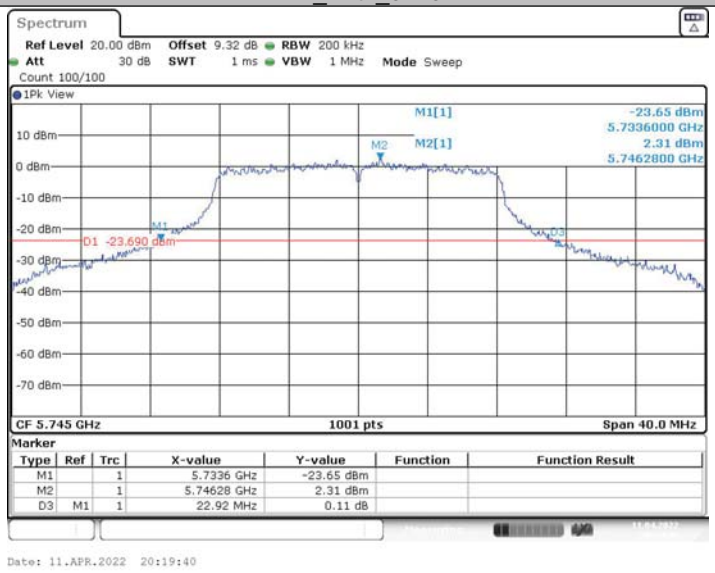

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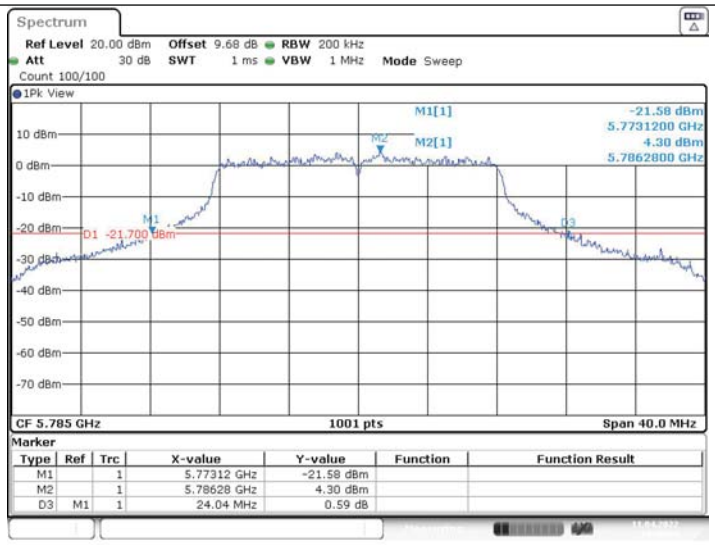

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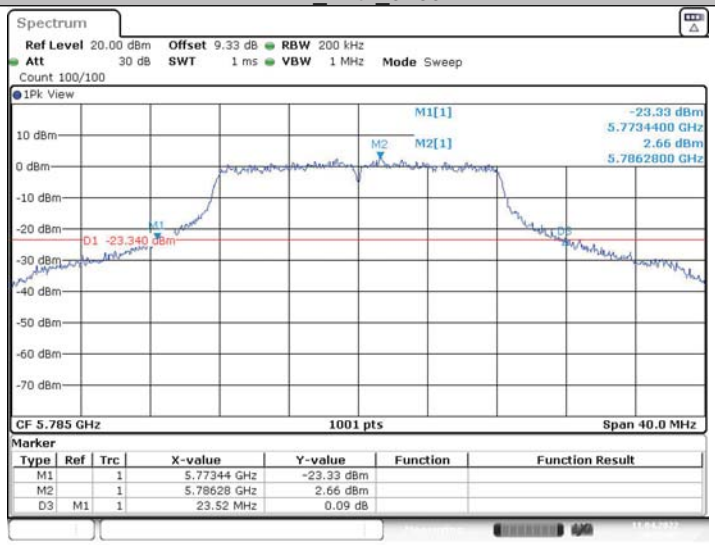

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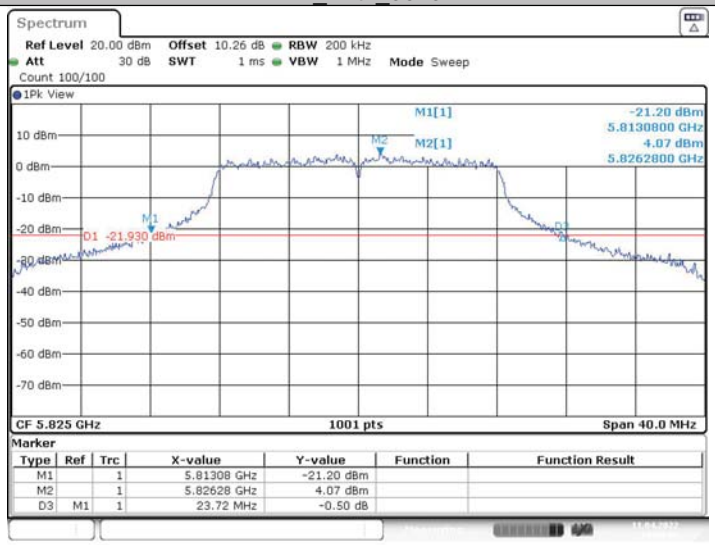

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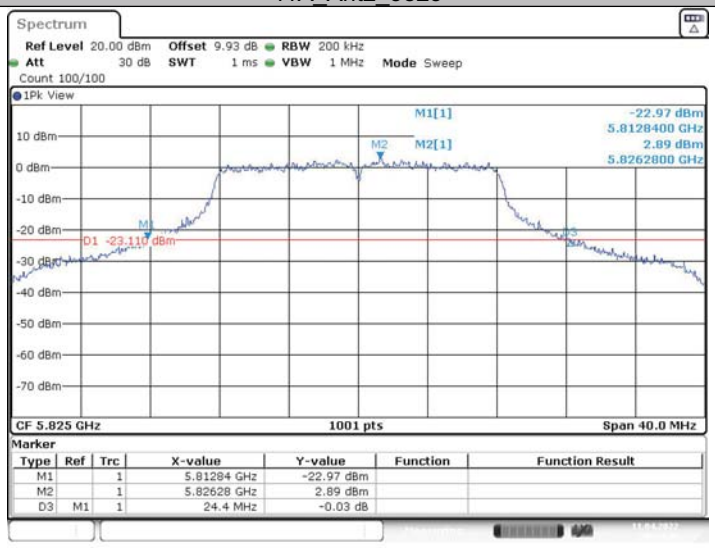

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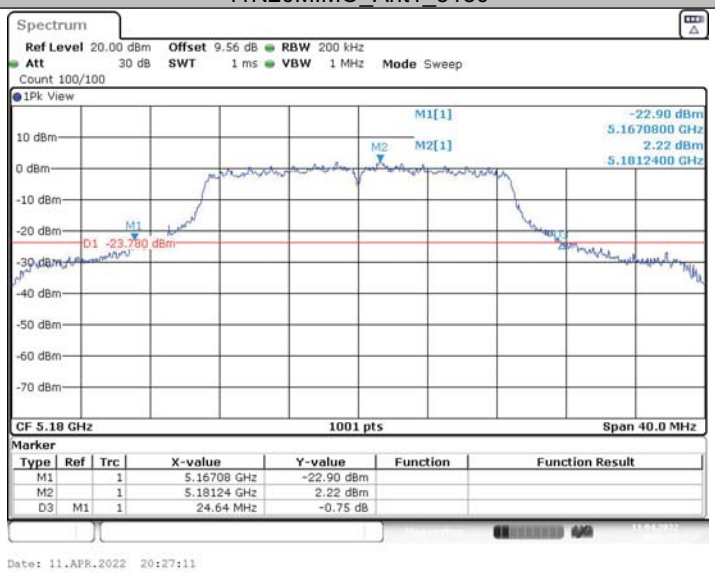

11N20MIMO_Ant2_5180