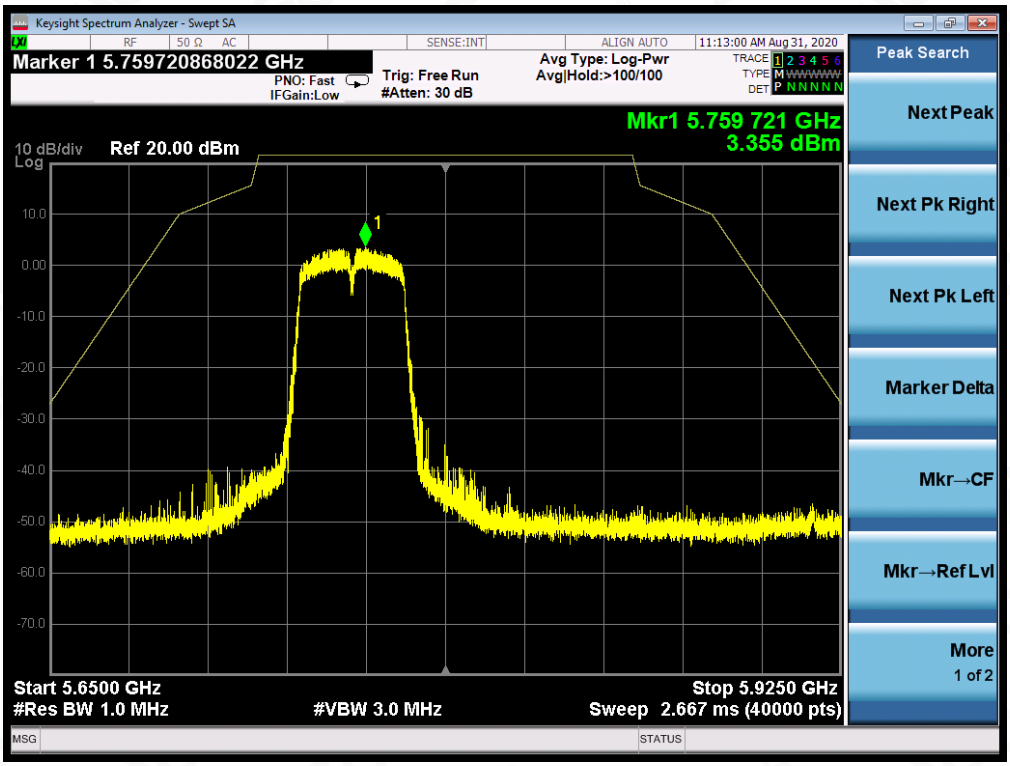
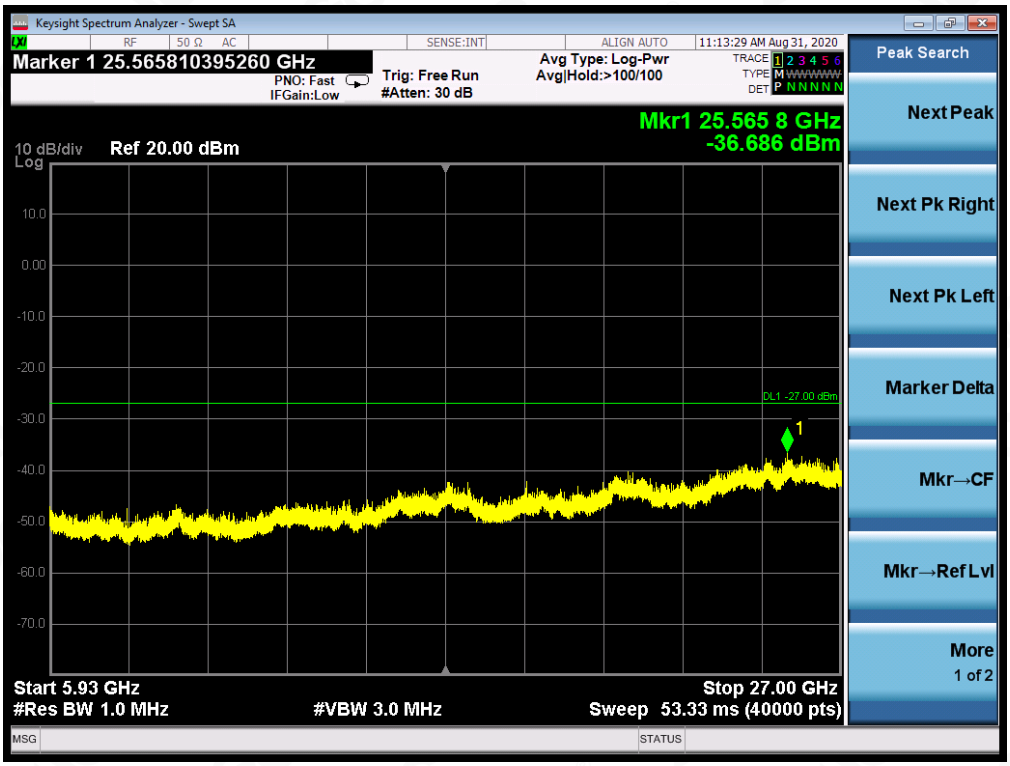
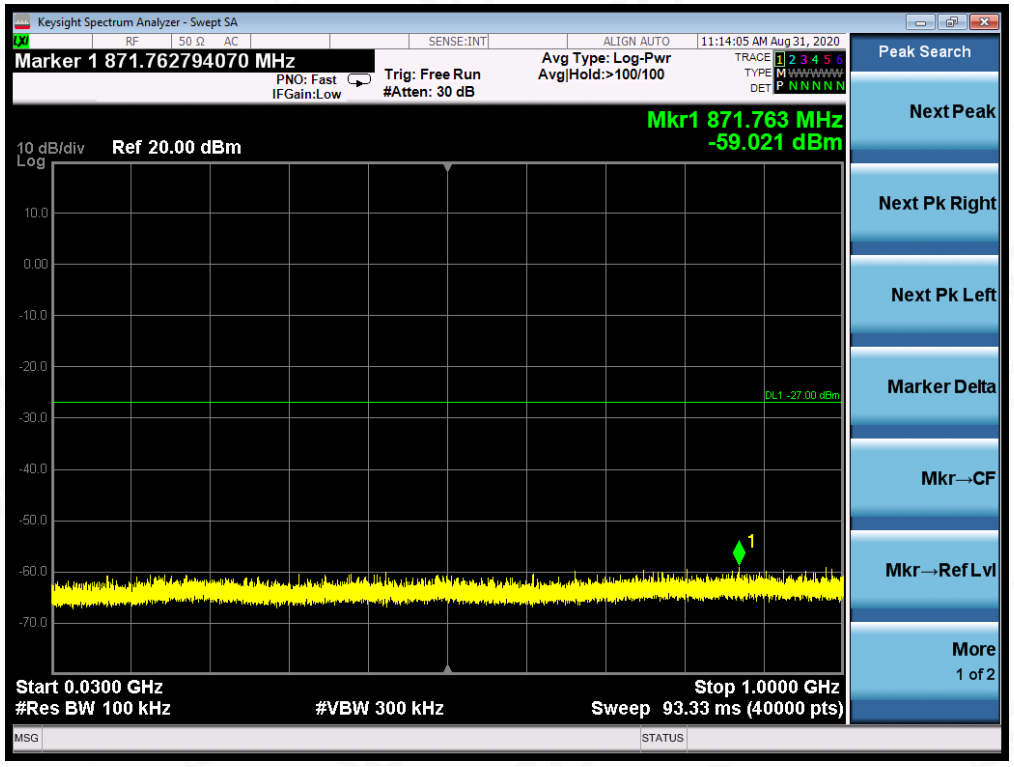
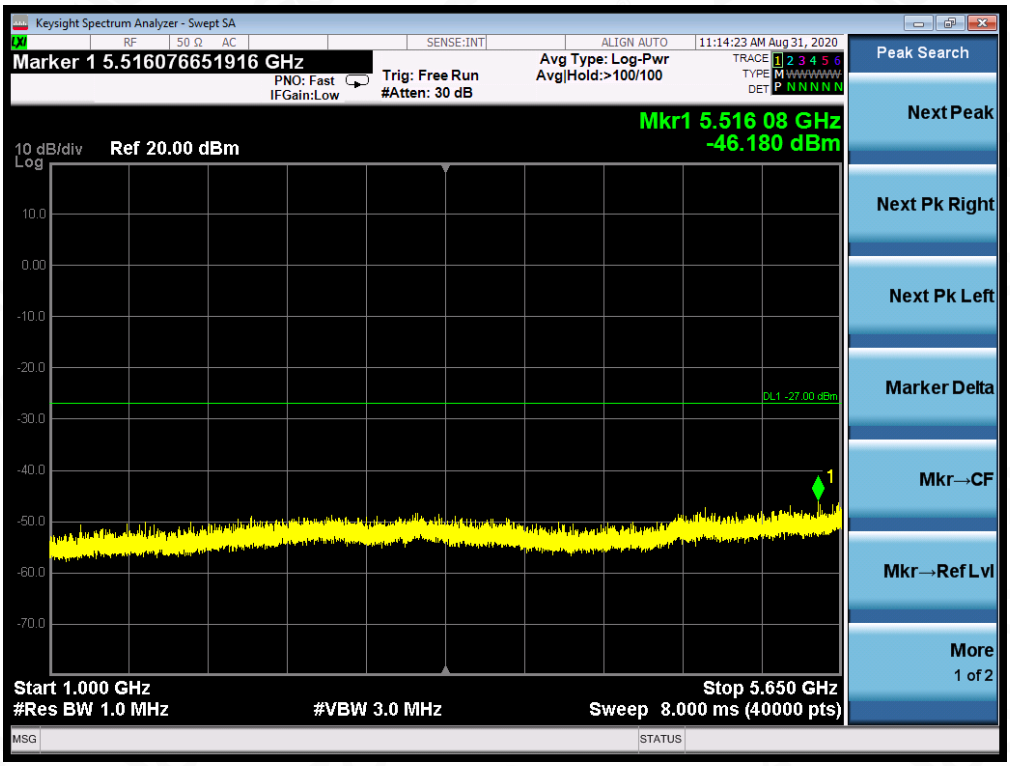
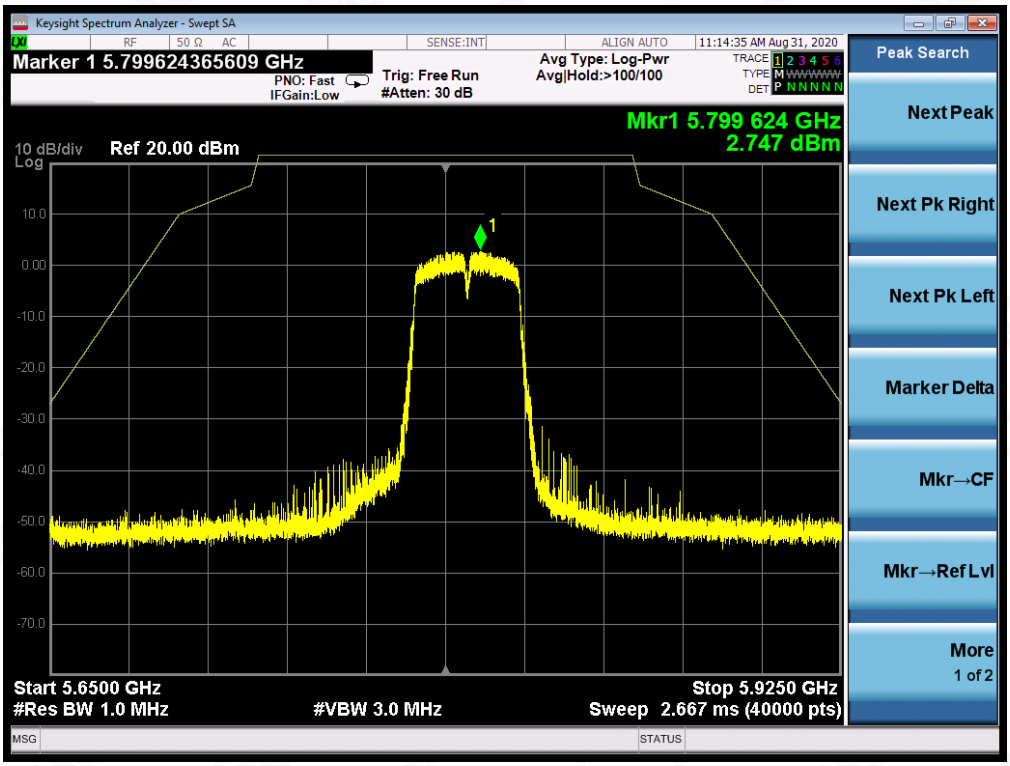


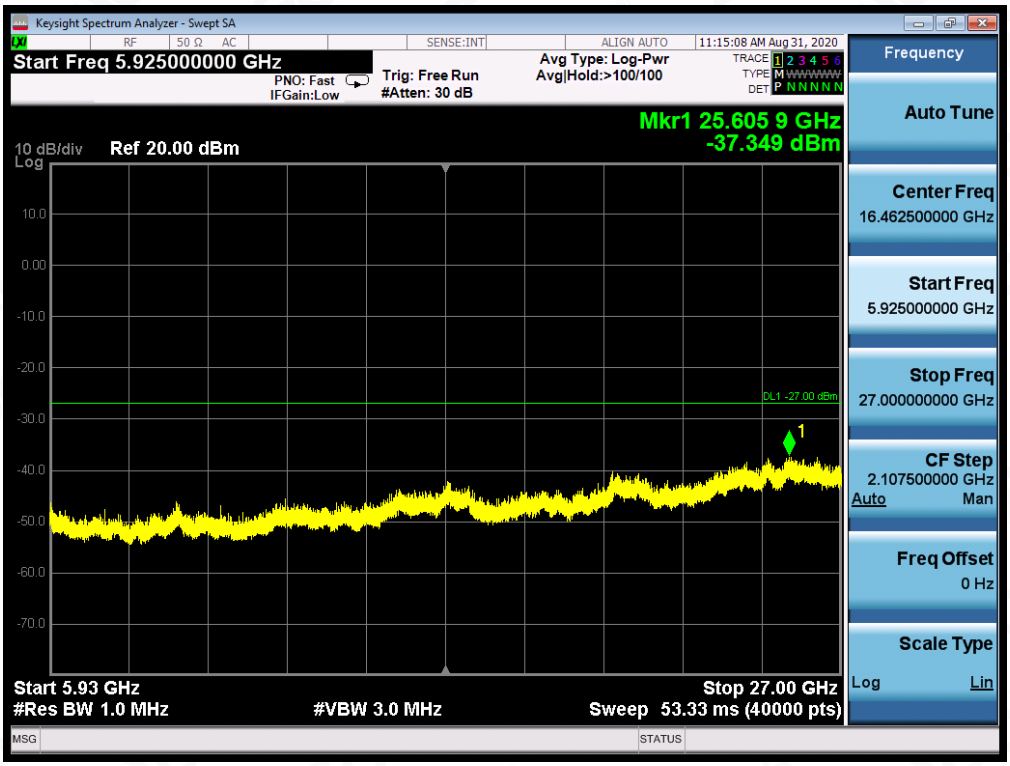


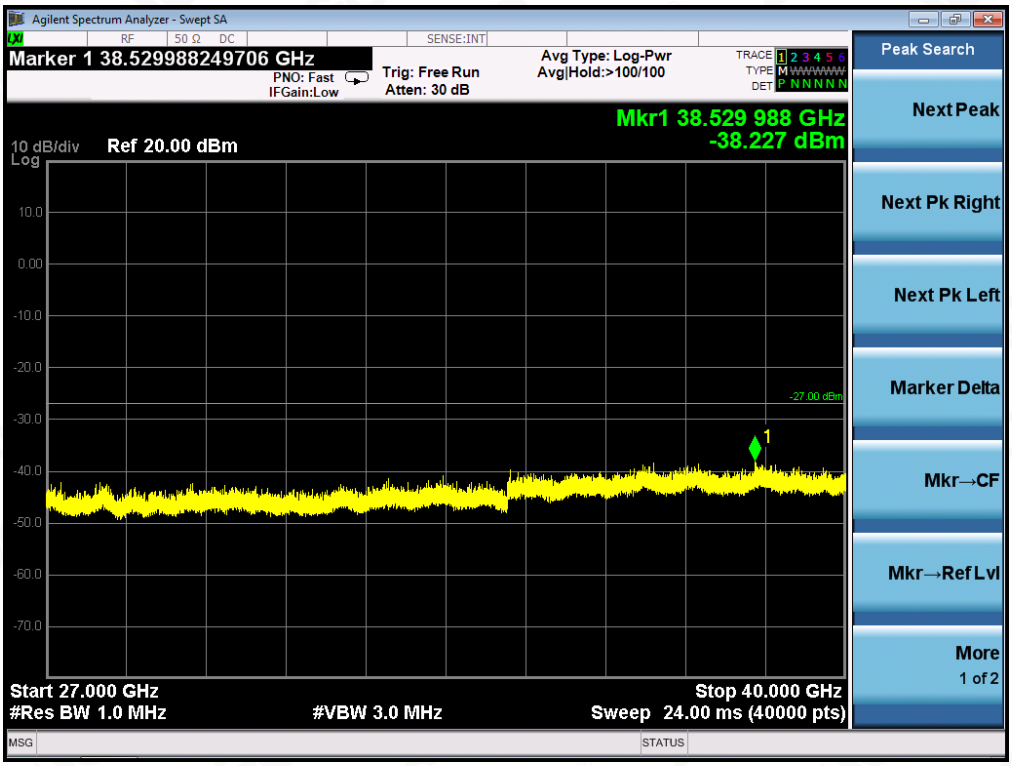
TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5795M





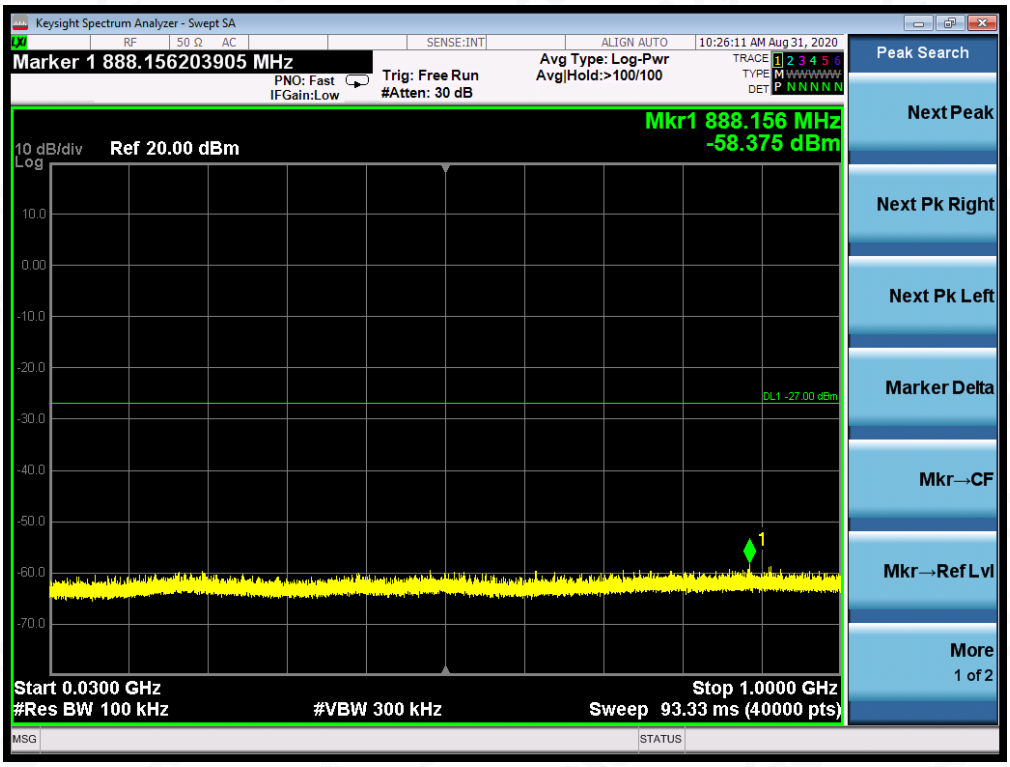


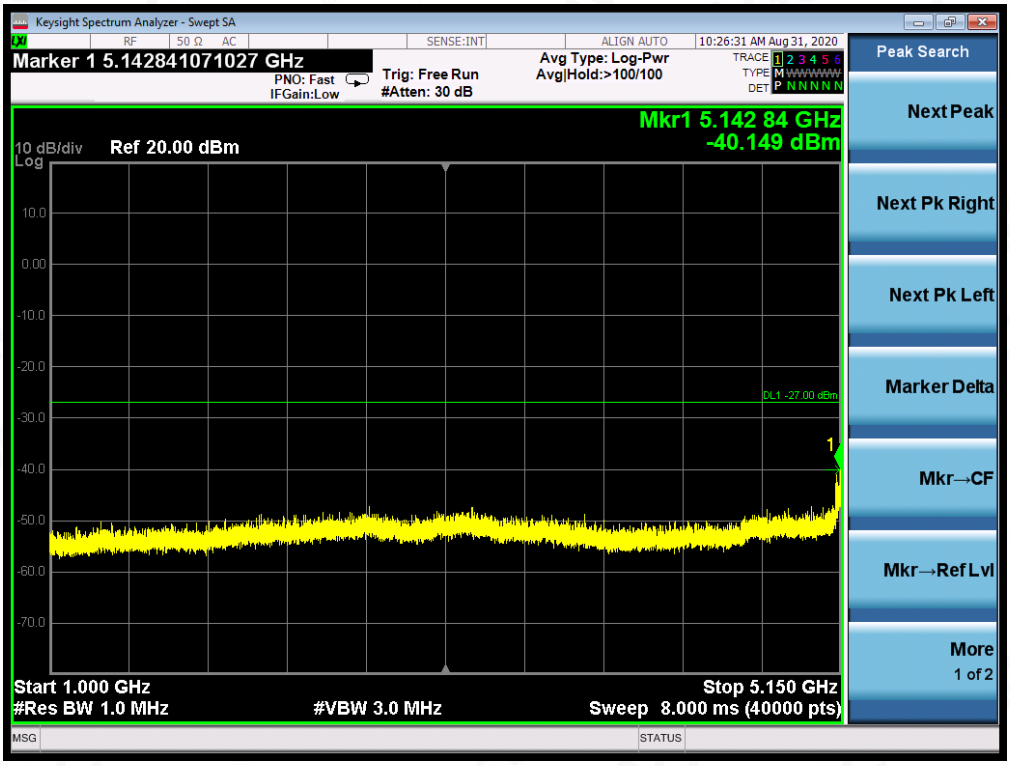


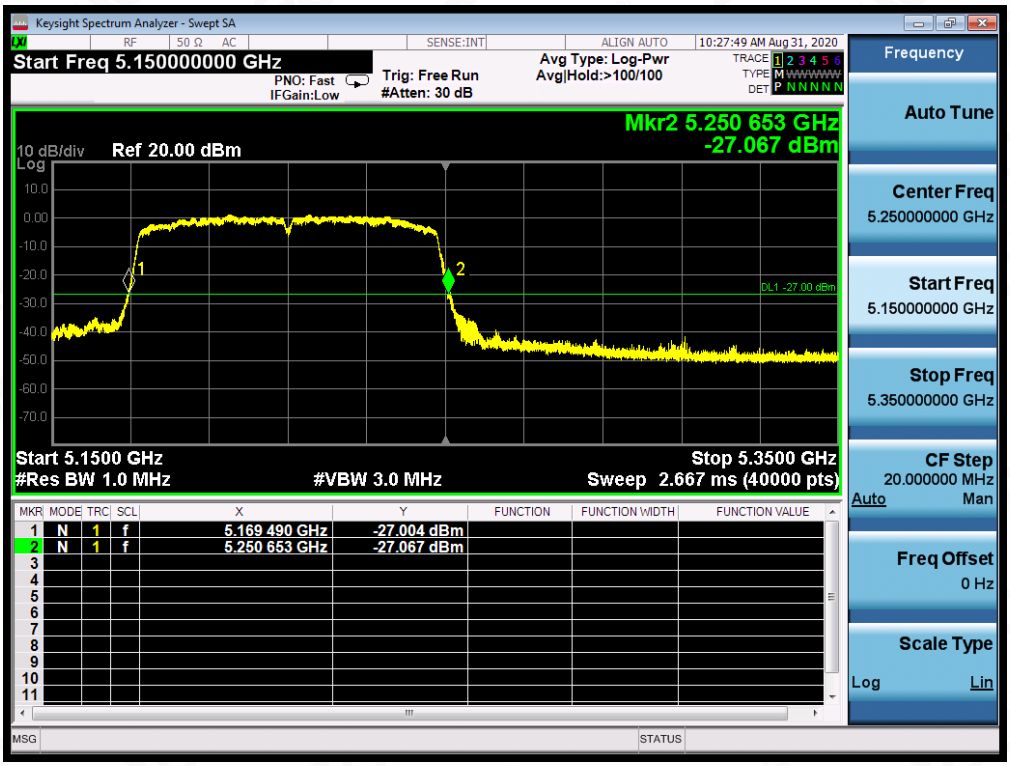


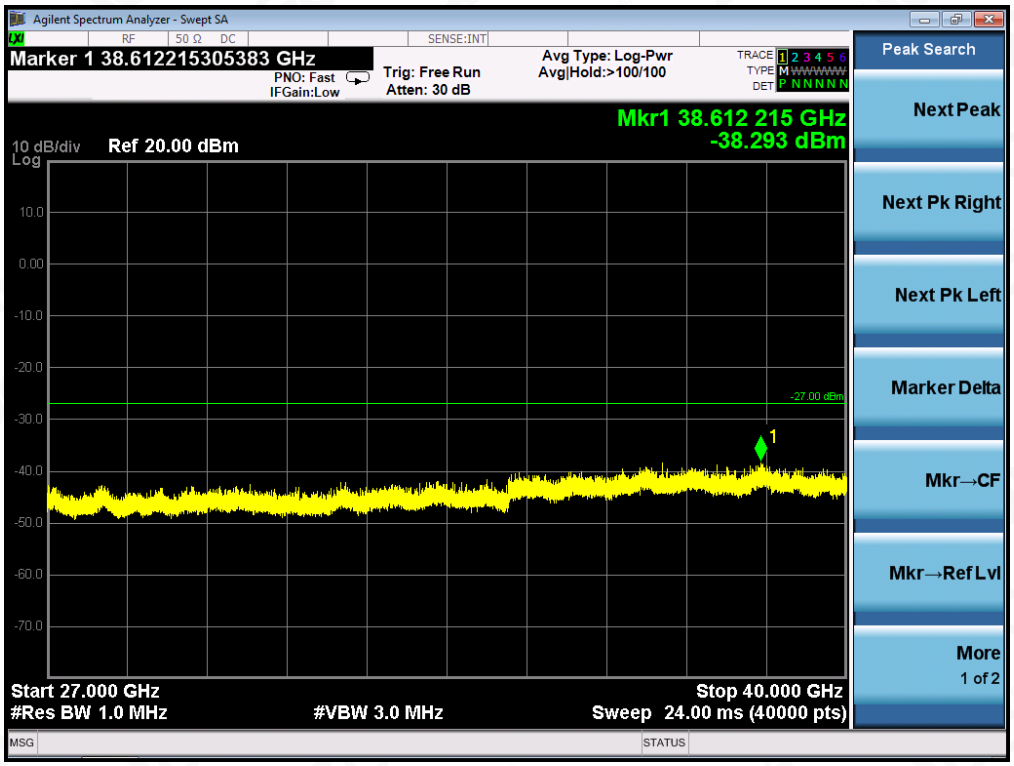
FOR 802.11AC80 MODULATION

TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5210MHz

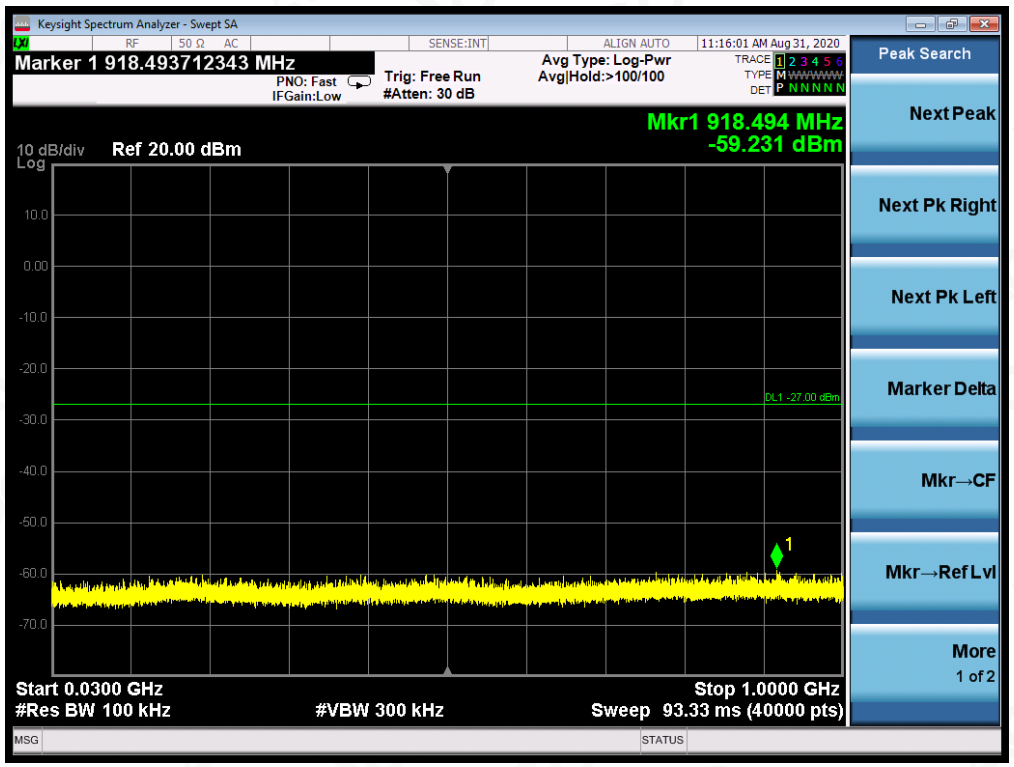


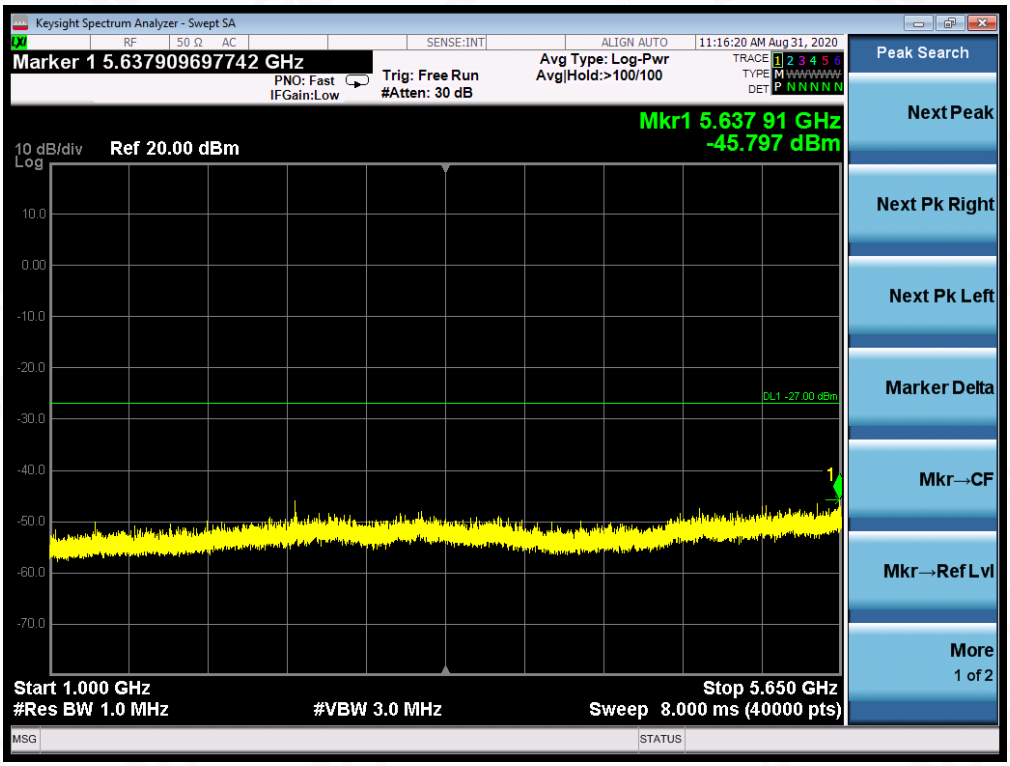


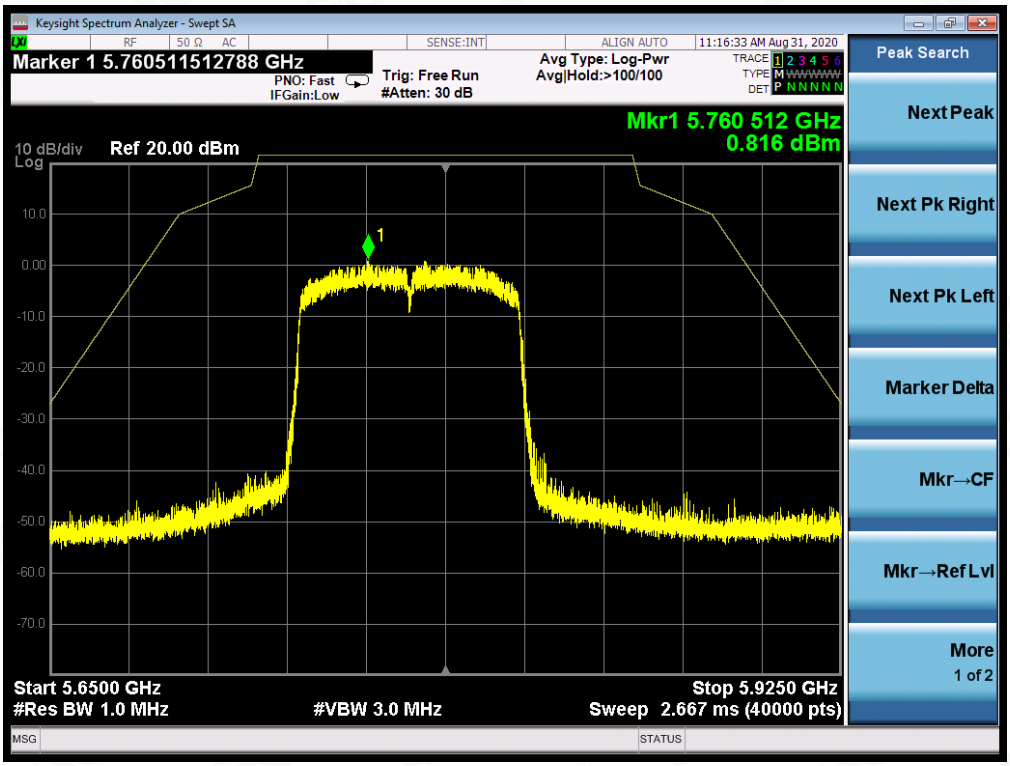


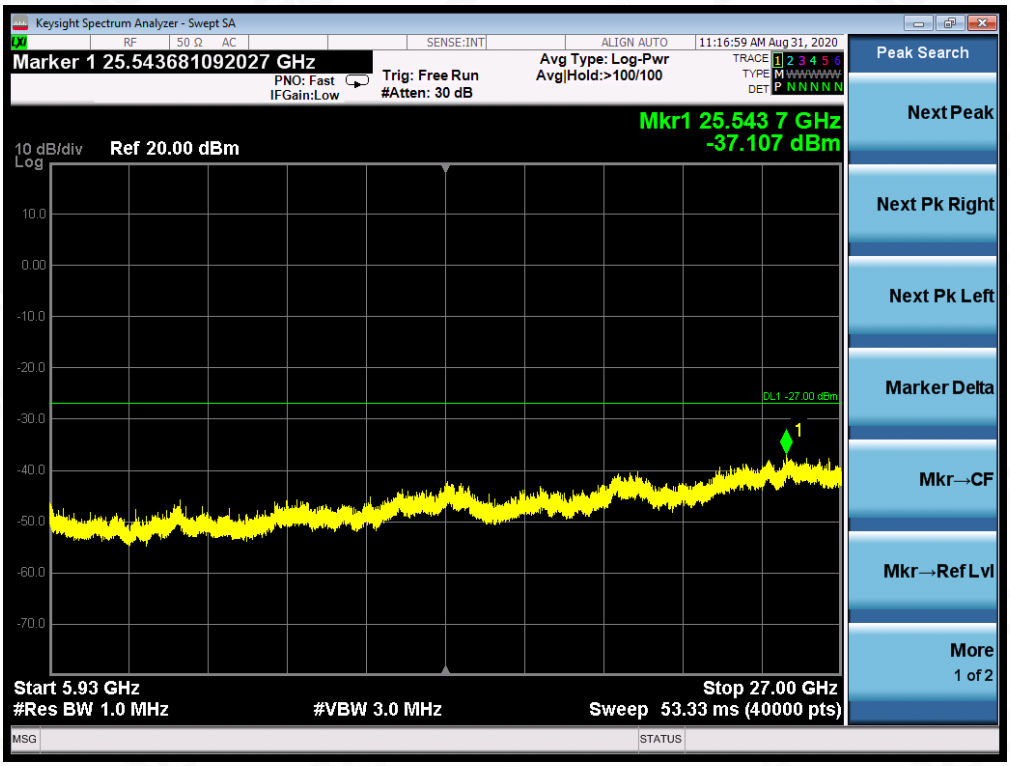


TEST PLOT OF OUT OF BAND EMISSIONS FOR MODULATION IN 5750MHz









Note: All the 20MHz bandwidth modulation had been tested, the 802.11a20 was the worst case and record in his test report. All the 40MHz bandwidth modulation had been tested, the 802.11N40 was the worst case and record in his test report.

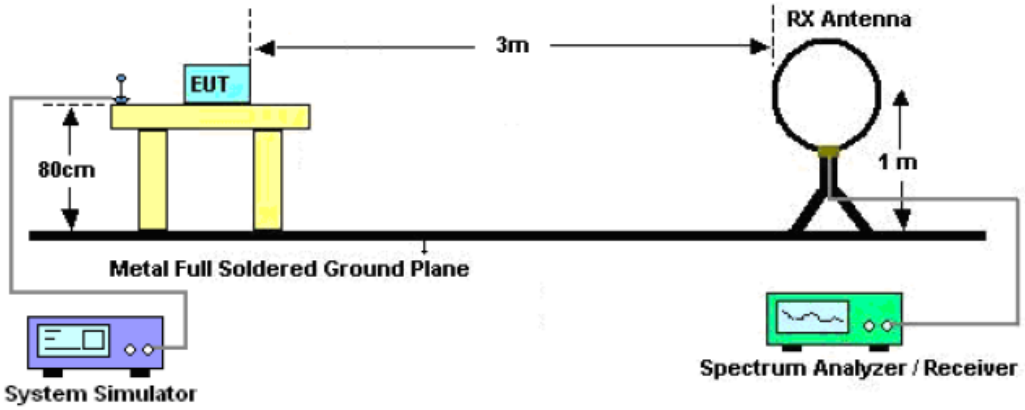
12. RADIATED EMISSION

12.1. MEASUREMENT PROCEDURE

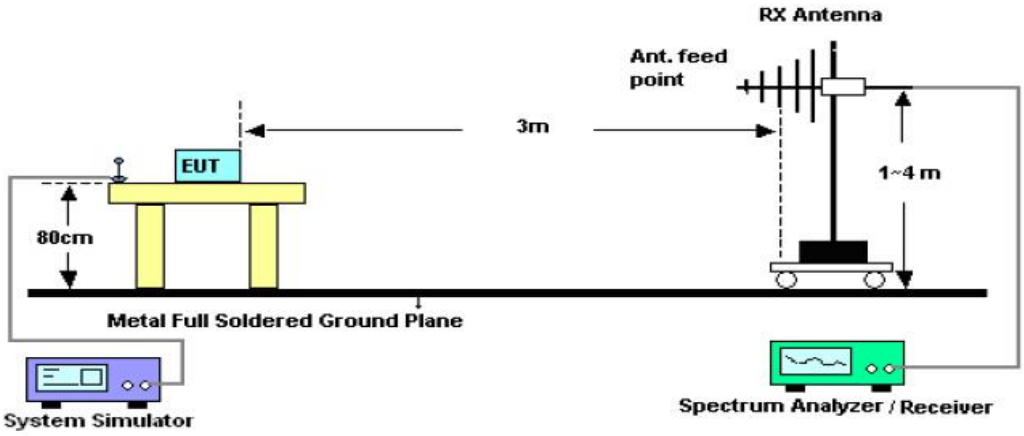
1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz RBW and 3M VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

12.2. TEST SETUP

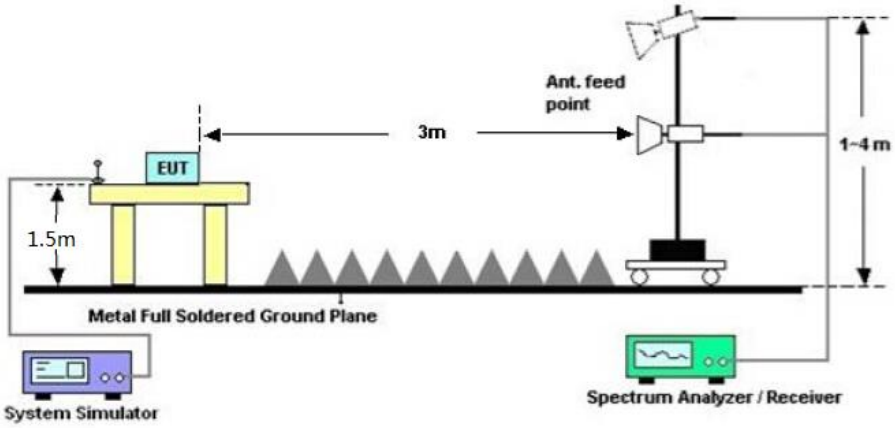
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



12.3. LIMITS AND MEASUREMENT RESULT

15.209(a) Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note: All modes were tested For restricted band radiated emission,
the test records reported below are the worst result compared to other modes.

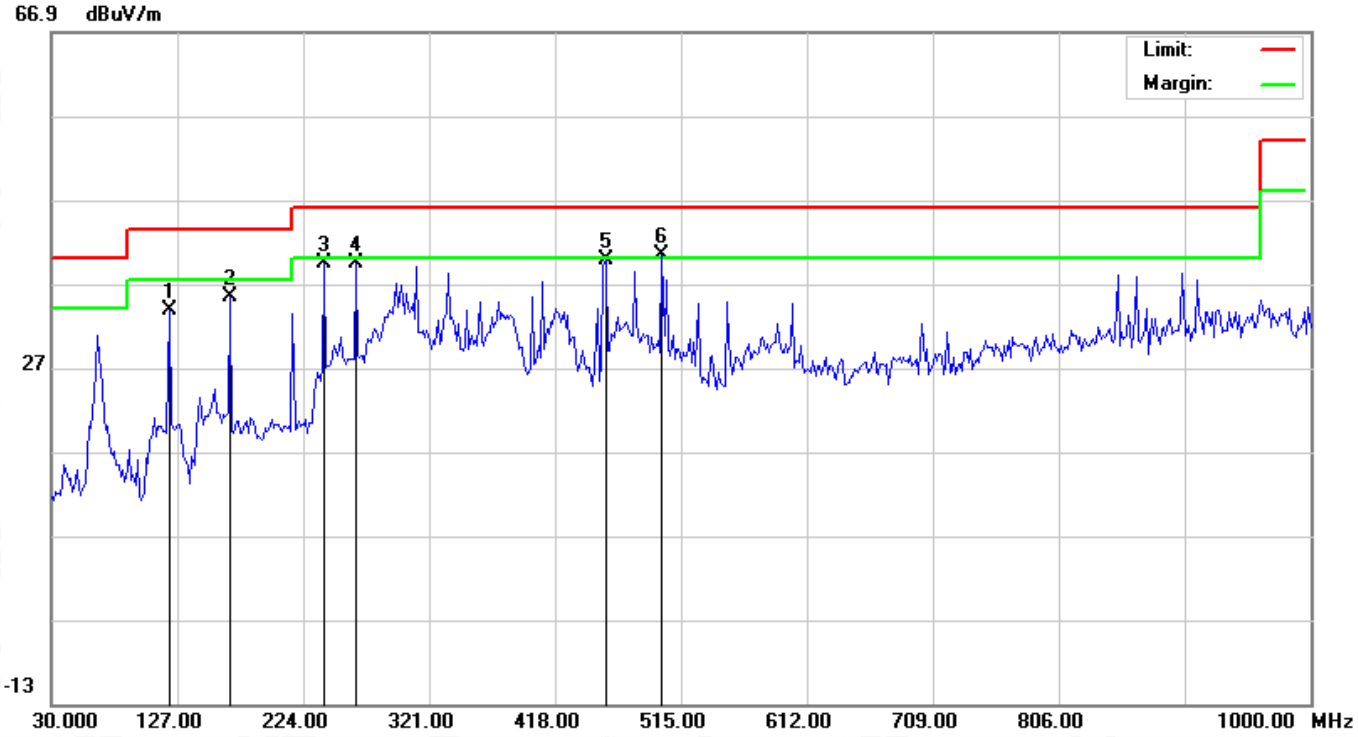
12.4. TEST RESULT

RADIATED EMISSION BELOW 30MHZ

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

RADIATED EMISSION BELOW 1GHZ

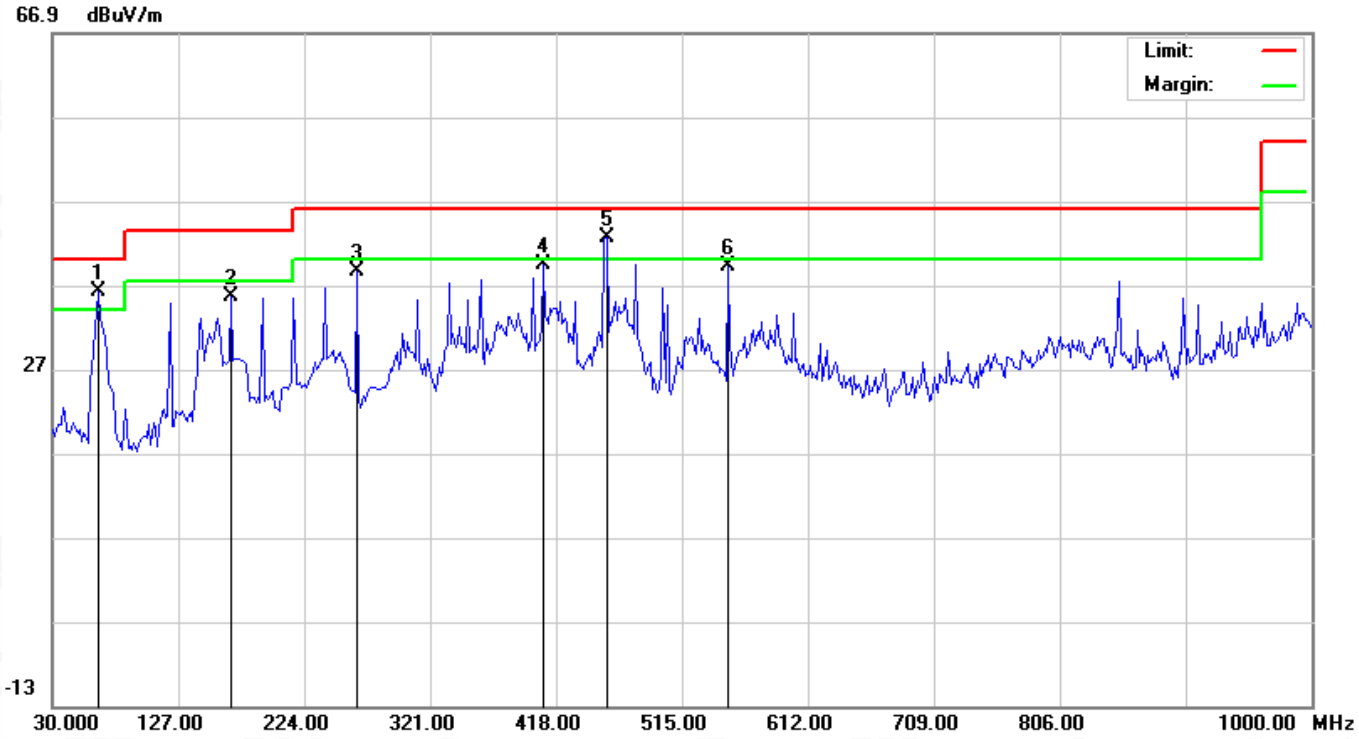
EUT	Wifi Doorbell	Model Name	PRAET
Temperature	21.8℃	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a20 5180MHz	Antenna	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		120.5332	15.85	17.87	33.72	43.50	-9.78	peak
2		167.4166	19.13	16.20	35.33	43.50	-8.17	peak
3		240.1666	20.70	18.66	39.36	46.00	-6.64	peak
4		264.4166	20.79	18.67	39.46	46.00	-6.54	peak
5		456.8000	16.57	23.26	39.83	46.00	-6.17	peak
6	*	500.4499	15.48	25.00	40.48	46.00	-5.52	peak

RESULT: PASS

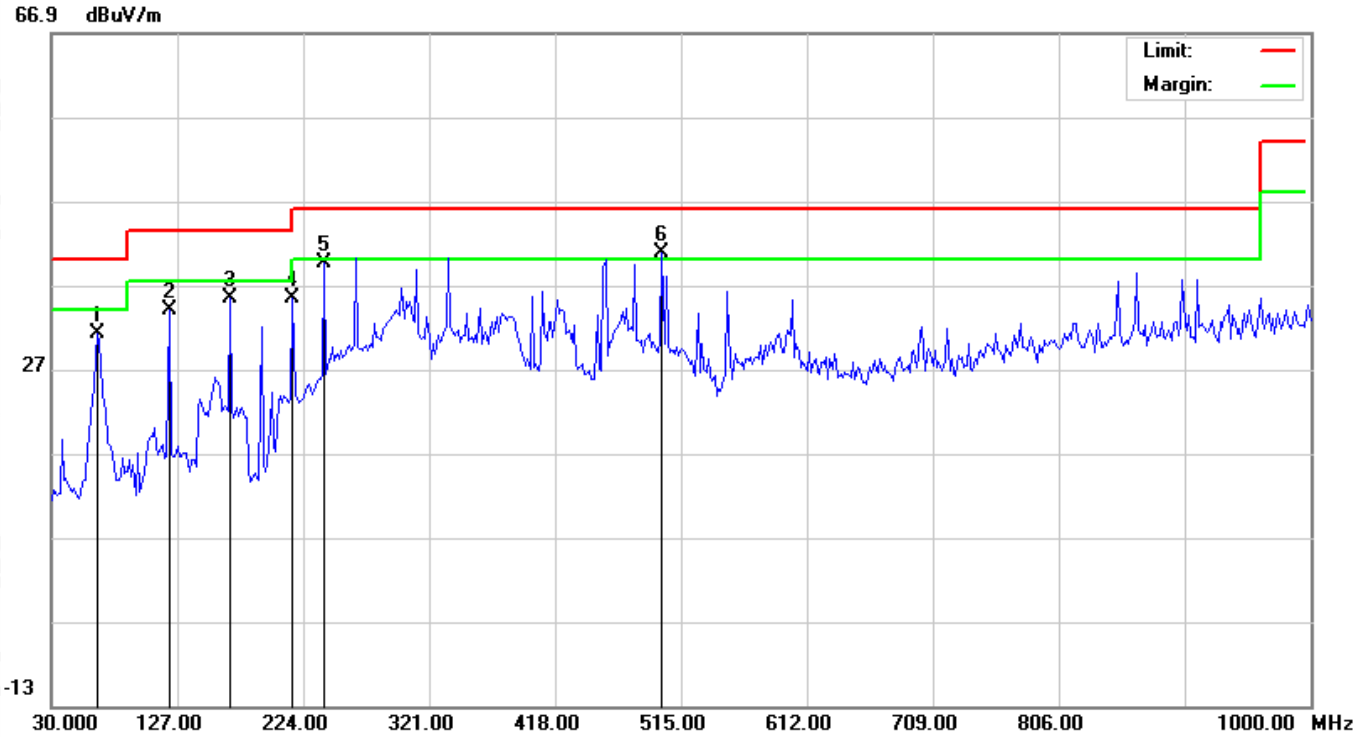
EUT	Wifi Doorbell	Model Name	PRAET
Temperature	21.8℃	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a20 5180MHz	Antenna	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	!	65.5666	19.61	16.56	36.17	40.00	-3.83	peak
2		167.4166	17.10	18.43	35.53	43.50	-7.97	peak
3		264.4166	20.03	18.67	38.70	46.00	-7.30	peak
4		408.3000	16.33	23.15	39.48	46.00	-6.52	peak
5	*	456.8000	18.41	24.12	42.53	46.00	-3.47	peak
6		550.5665	13.16	25.98	39.14	46.00	-6.86	peak

RESULT: PASS

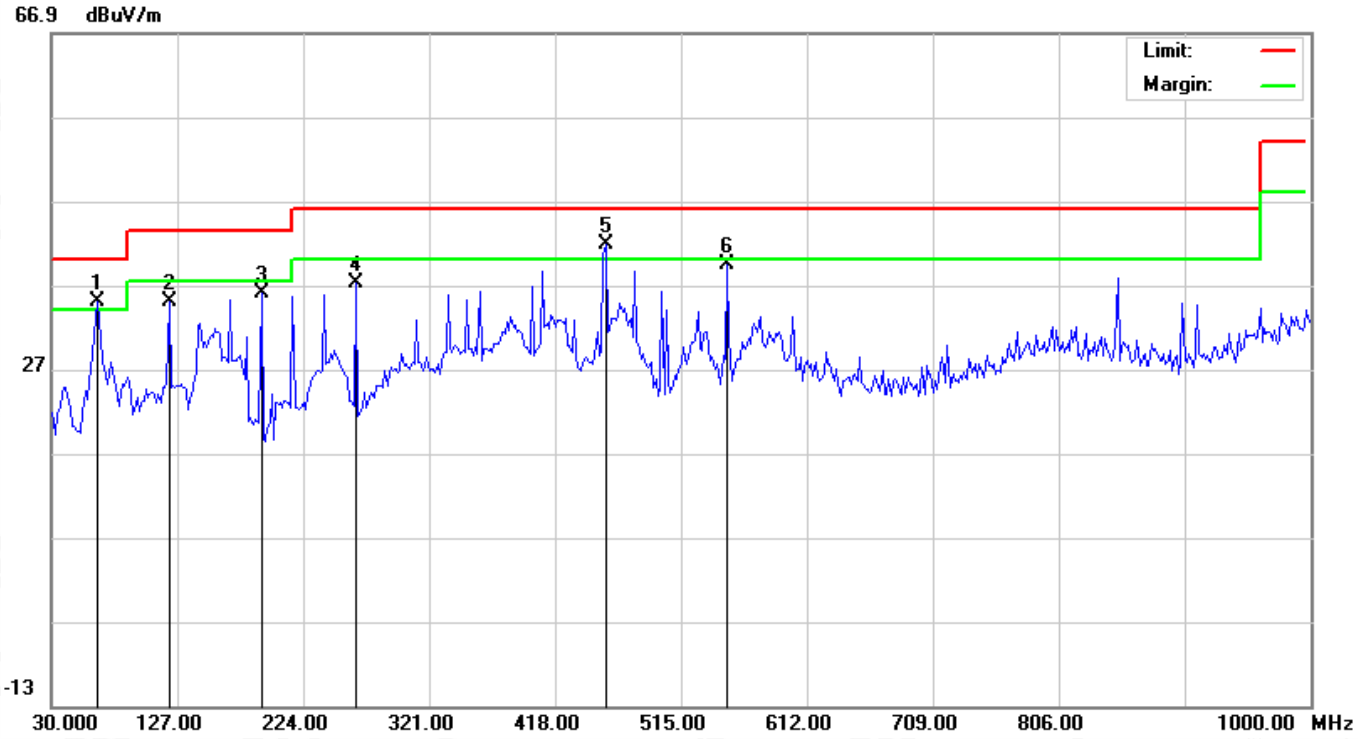
EUT	Wifi Doorbell	Model Name	PRAET
Temperature	21.8℃	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a20 5745MHz	Antenna	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		65.5666	14.64	16.56	31.20	40.00	-8.80	peak
2		120.5332	16.21	17.87	34.08	43.50	-9.42	peak
3		167.4166	19.16	16.20	35.36	43.50	-8.14	peak
4		215.9166	20.59	14.79	35.38	43.50	-8.12	peak
5		240.1666	20.87	18.66	39.53	46.00	-6.47	peak
6	*	500.4499	15.73	25.00	40.73	46.00	-5.27	peak

RESULT: PASS

EUT	Wifi Doorbell	Model Name	PRAET
Temperature	21.8℃	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a20 5745MHz	Antenna	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	!	65.5666	18.35	16.56	34.91	40.00	-5.09	peak
2		120.5332	17.04	18.00	35.04	43.50	-8.46	peak
3		191.6666	21.24	14.76	36.00	43.50	-7.50	peak
4		264.4166	18.58	18.67	37.25	46.00	-8.75	peak
5	*	456.8000	17.73	24.12	41.85	46.00	-4.15	peak
6		550.5665	13.33	25.98	39.31	46.00	-6.69	peak

RESULT: PASS

Note: All test channels had been tested. The 802.11a20 is the worst case and recorded in the test report.
Factor = Antenna Factor + Cable loss - Amplifier gain, Margin= Level-Limit.
The “Factor” value can be calculated automatically by software of measurement system.

RADIATED EMISSION ABOVE 1GHZ

EUT	Wifi Doorbell	Model Name	PRAET
Temperature	25℃	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a20 5180MHz	Antenna	Horizontal/Vertical

RADIATED EMISSION ABOVE 1GHZ–Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
10360.044	40.26	9.14	49.40	68.20	-18.80	peak
15540.066	42.18	10.22	52.40	74.00	-21.60	peak
15540.066	31.22	10.22	41.44	54.00	-12.56	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RADIATED EMISSION ABOVE 1GHZ–Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
10360.044	40.26	9.14	49.40	68.20	-18.80	peak
15540.066	41.46	10.22	51.68	74.00	-22.32	peak
15540.066	30.71	10.22	40.93	54.00	-13.07	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Wifi Doorbell	Model Name	PRAET
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a20 5240MHz	Antenna	Horizontal/Vertical

RADIATED EMISSION ABOVE 1GHZ–Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
10480.044	36.12	9.27	45.39	68.20	-22.81	peak
15720.066	40.23	10.38	50.61	74.00	-23.39	peak
15720.066	30.29	10.38	40.67	54.00	-13.33	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RADIATED EMISSION ABOVE 1GHZ–Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
10480.044	36.25	9.27	45.52	68.20	-22.68	peak
15720.066	39.47	10.38	49.85	74.00	-24.15	peak
15720.066	31.46	10.38	41.84	54.00	-12.16	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Wifi Doorbell	Model Name	PRAET
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a20 5745MHz	Antenna	Horizontal/Vertical

RADIATED EMISSION ABOVE 1GHZ–Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
11490.042	50.39	9.42	59.81	74.00	-14.19	peak
11490.042	38.64	9.42	48.06	54.00	-5.94	AVG
17235.063	41.23	10.51	51.74	68.20	-16.46	peak
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RADIATED EMISSION ABOVE 1GHZ–Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
11490.042	47.34	9.42	56.76	74.00	-17.24	peak
11490.042	38.15	9.42	47.57	54.00	-6.43	AVG
17235.063	40.55	10.51	51.06	68.20	-17.14	peak
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	Wifi Doorbell	Model Name	PRAET
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a20 5825MHz	Antenna	Horizontal/Vertical

RADIATED EMISSION ABOVE 1GHZ–Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
11650.042	49.35	9.62	58.97	74.00	-15.03	peak
11650.042	40.12	9.62	49.74	54.00	-4.26	AVG
17475.063	42.36	10.75	53.11	68.20	-15.09	peak
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RADIATED EMISSION ABOVE 1GHZ–Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
11650.042	46.28	9.62	55.90	74.00	-18.10	peak
11650.042	35.14	9.62	44.76	54.00	-9.24	AVG
17475.063	40.23	10.75	50.98	68.20	-17.22	peak
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Note: All test channels had been tested. The 802.11a20 is the worst case and recorded in the test report.
Other frequencies radiation emission from 1GHz to 40GHz at least have 20dB margin and not recorded in the test report.
Factor = Antenna Factor + Cable loss - Amplifier gain, Margin= Limit-Level.
The “Factor” value can be calculated automatically by software of measurement system.

13. BAND EDGE EMISSION

13.1. MEASUREMENT PROCEDURE

1. The EUT operates at transmitting mode. The operate channel is tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.

2. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission: (a) PEAK: RBW=1MHz, VBW=3MHz / Sweep=AUTO

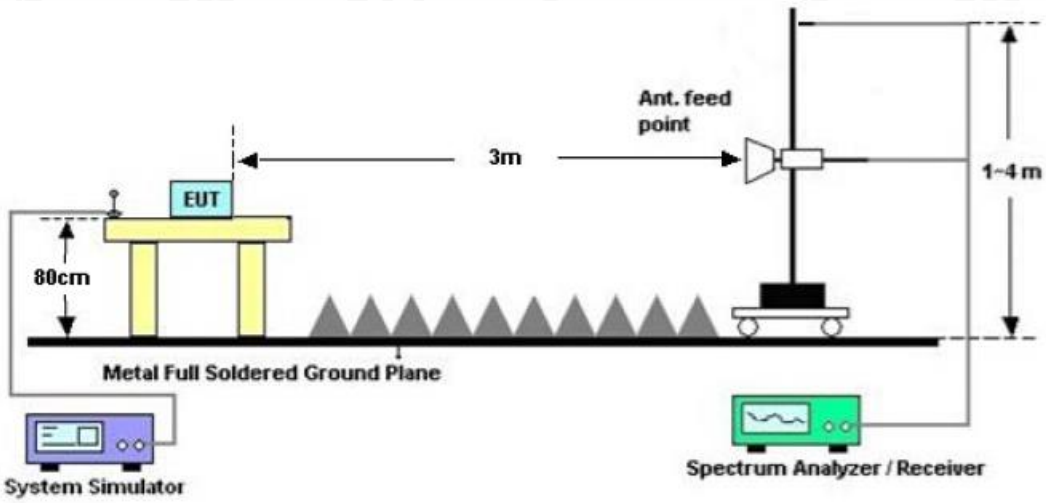
(b) AVERAGE: RBW=1MHz ; VBW=1/on time(1KHz) / Sweep=AUTO

3. Other procedures refer to clause 11.2.

Note:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level
2. The factor had been edited in the “Input Correction” of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μV) to represent the Amplitude. Use the F dB(μV/m) to represent the Field Strength. So A=F.
3. Only the data of band edge emission at the restricted band 4.5GHz-5.15GHz and 5.35GHz-5.46GHz record in the report. Other restricted band 7.25GHz-7.77GHz were considered as ambient noise. No recording in the test report.

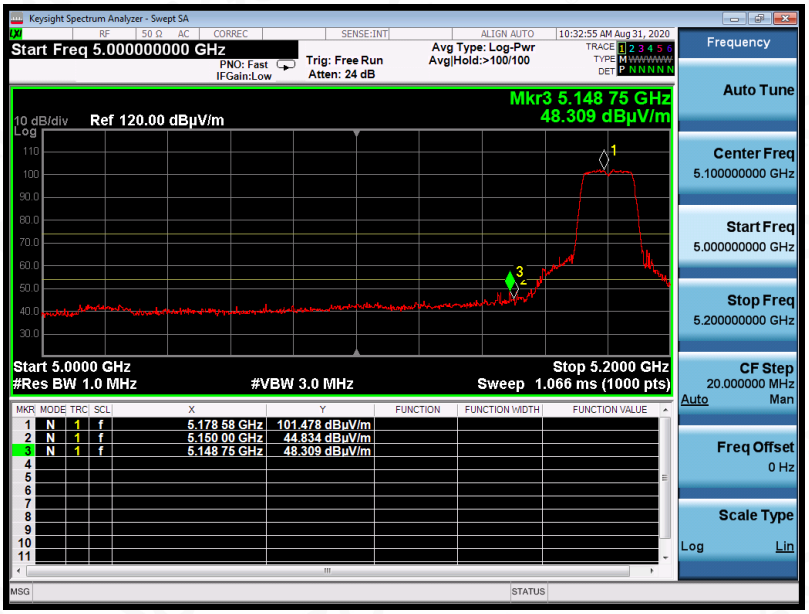
13.2. TEST SET-UP



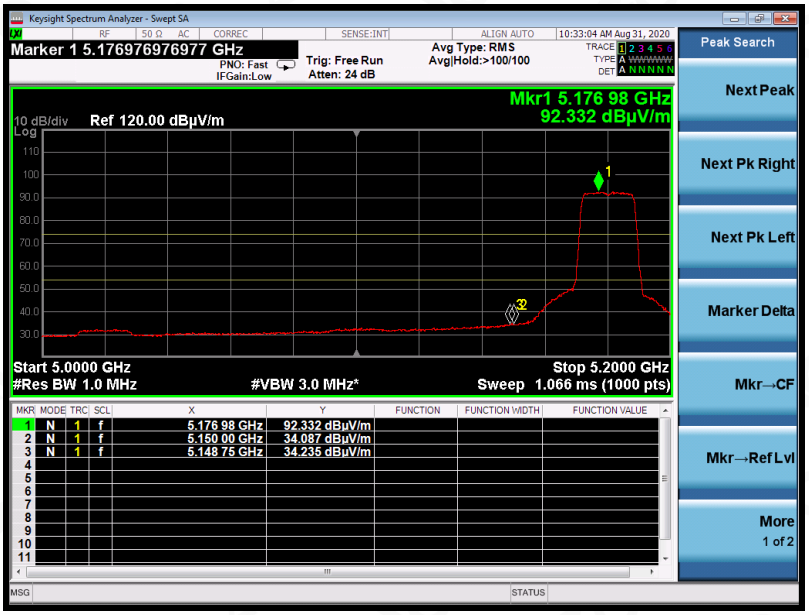
13.3. TEST RESULT

EUT	Wifi Doorbell	Model Name	PRAET
Temperature	25℃	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a20 5180MHz	Antenna	Horizontal

PK Value

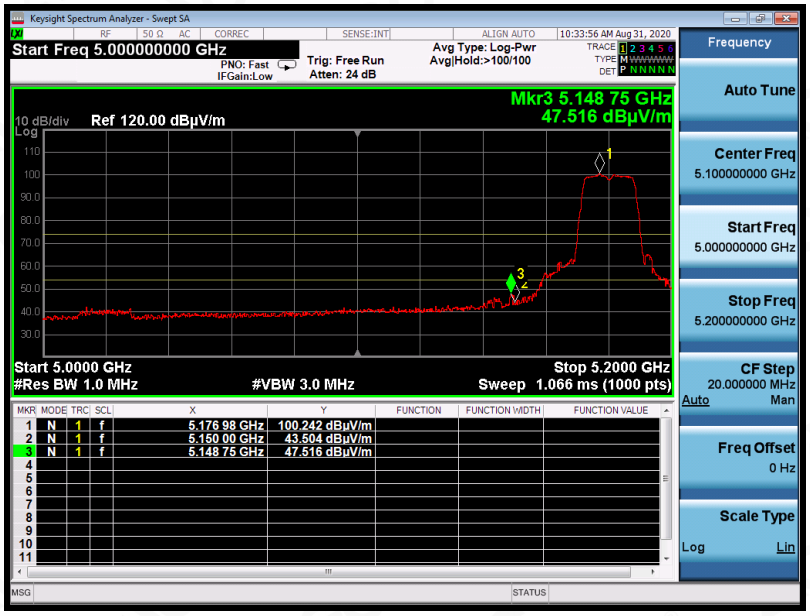


AV Value

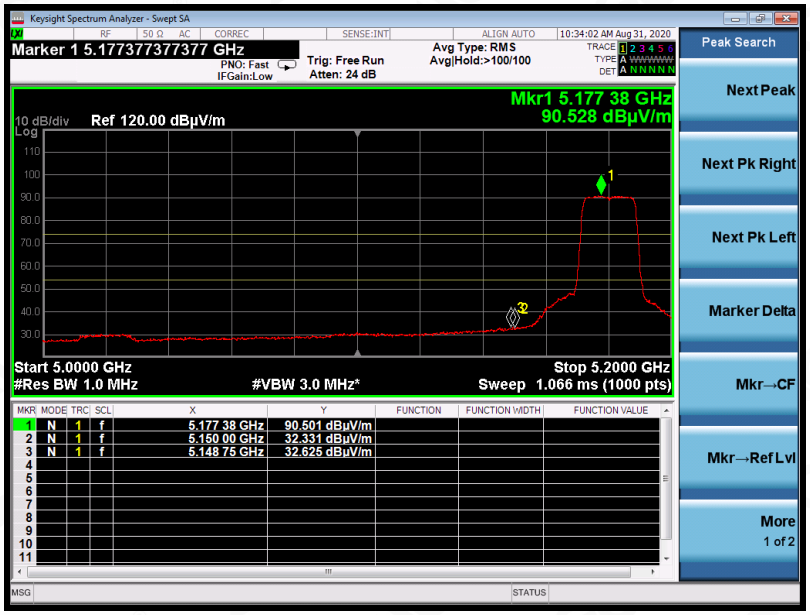


EUT	Wifi Doorbell	Model Name	PRAET
Temperature	25℃	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11a20 5180MHz	Antenna	Vertical

PK Value



AV Value



EUT	Wifi Doorbell	Model Name	PRAET
Temperature	25℃	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n40 5190MHz	Antenna	Horizontal

PK Value

AV Value

EUT	Wifi Doorbell	Model Name	PRAET
Temperature	25℃	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n40 5190MHz	Antenna	Vertical

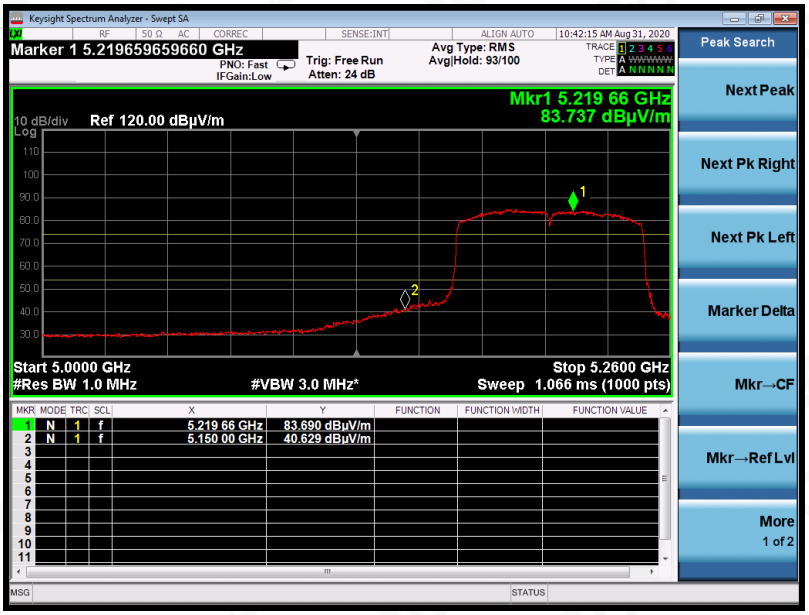
PK Value

AV Value

EUT	Wifi Doorbell	Model Name	PRAET
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11ac80 5210MHz	Antenna	Horizontal

PK Value

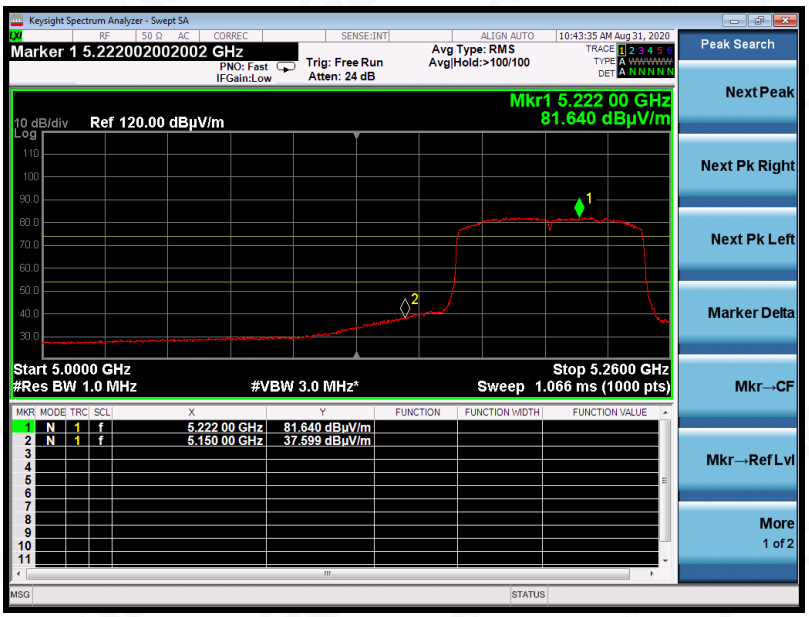
AV Value



EUT	Wifi Doorbell	Model Name	PRAET
Temperature	25℃	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11ac80 5210MHz	Antenna	Vertical

PK Value

AV Value



RESULT: PASS

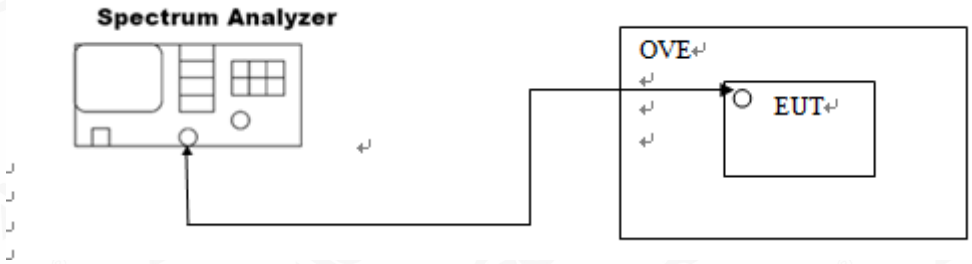
Note: All the 20MHz bandwidth modulation had been tested, the 802.11a20 at 5180MHz was the worst case and record in his test report. All the 40MHz at 5190MHz bandwidth modulation had been tested, the 802.11N40 at 5210MHz was the worst case and record in his test report.

14. FREQUENCY STABILITY

14.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the operation frequency.
3. Set SPA Centre Frequency = Operation Frequency. SPAN=enough to measure the emission is maintained within the band
4. Set SPA Trace 1 Max hold, then View.
5. Extreme temperature rule is -10°C~60°C.

14.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



14.3. MEASUREMENT RESULTS

Test Mode	Temperature	Measurement Frequency (MHz)	Result	Conclusion
802.11a	- 10℃	5180	5180.024	PASS
	0℃	5180	5180.028	PASS
	10℃	5180	5180.025	PASS
	20℃	5180	5180.025	PASS
	30℃	5180	5180.022	PASS
	40℃	5180	5180.024	PASS
	50℃	5180	5180.026	PASS
	60℃	5180	5180.028	PASS
	- 10℃	5240	5240.059	PASS
	0℃	5240	5240.055	PASS
	10℃	5240	5240.056	PASS
	20℃	5240	5240.057	PASS
	30℃	5240	5240.052	PASS
	40℃	5240	5240.055	PASS
	50℃	5240	5240.053	PASS
	60℃	5240	5240.054	PASS
	- 10℃	5745	5745.042	PASS
	0℃	5745	5745.044	PASS
	10℃	5745	5745.045	PASS
	20℃	5745	5745.046	PASS
	30℃	5745	5745.044	PASS
	40℃	5745	5745.045	PASS
	50℃	5745	5745.042	PASS
	60℃	5745	5745.042	PASS
	- 10℃	5825	5825.053	PASS
	0℃	5825	5825.055	PASS
	10℃	5825	5825.056	PASS
	20℃	5825	5825.054	PASS
	30℃	5825	5825.055	PASS
	40℃	5825	5825.056	PASS
	50℃	5825	5825.051	PASS
	60℃	5825	5825.052	PASS

Test Mode	Temperature	Measurement Frequency (MHz)	Result	Conclusion
802.11n20	- 10℃	5180	5180.034	PASS
	0℃	5180	5180.035	PASS
	10℃	5180	5180.038	PASS
	20℃	5180	5180.037	PASS
	30℃	5180	5180.036	PASS
	40℃	5180	5180.031	PASS
	50℃	5180	5180.034	PASS
	60℃	5180	5180.035	PASS
	- 10℃	5240	5240.056	PASS
	0℃	5240	5240.054	PASS
	10℃	5240	5240.057	PASS
	20℃	5240	5240.055	PASS
	30℃	5240	5240.052	PASS
	40℃	5240	5240.053	PASS
	50℃	5240	5240.055	PASS
	60℃	5240	5240.056	PASS
	- 10℃	5700	5700.055	PASS
	60℃	5700	5700.056	PASS
	- 10℃	5745	5745.044	PASS
	0℃	5745	5745.048	PASS
	10℃	5745	5745.045	PASS
	20℃	5745	5745.041	PASS
	30℃	5745	5745.042	PASS
	40℃	5745	5745.043	PASS
	50℃	5745	5745.045	PASS
	60℃	5745	5745.045	PASS
	- 10℃	5825	5825.055	PASS
	0℃	5825	5825.055	PASS
	10℃	5825	5825.045	PASS
	20℃	5825	5825.045	PASS
	30℃	5825	5825.041	PASS
	40℃	5825	5825.045	PASS
	50℃	5825	5825.046	PASS
	60℃	5825	5825.041	PASS

Test Mode	Temperature	Measurement Frequency (MHz)	Result	Conclusion
802.11n40	- 10℃	5190	5190.054	PASS
	0℃	5190	5190.058	PASS
	10℃	5190	5190.056	PASS
	20℃	5190	5190.054	PASS
	30℃	5190	5190.055	PASS
	40℃	5190	5190.053	PASS
	50℃	5190	5190.054	PASS
	60℃	5190	5190.056	PASS
	- 10℃	5230	5230.044	PASS
	0℃	5230	5230.042	PASS
	10℃	5230	5230.046	PASS
	20℃	5230	5230.044	PASS
	30℃	5230	5230.045	PASS
	40℃	5230	5230.046	PASS
	50℃	5230	5230.047	PASS
	60℃	5230	5230.045	PASS
	- 10℃	5755	5755.041	PASS
	0℃	5755	5755.042	PASS
	10℃	5755	5755.049	PASS
	20℃	5755	5755.044	PASS
	30℃	5755	5755.042	PASS
	40℃	5755	5755.041	PASS
	50℃	5755	5755.045	PASS
	60℃	5755	5755.047	PASS
	- 10℃	5795	5795.062	PASS
	0℃	5795	5795.063	PASS
	10℃	5795	5795.066	PASS
	20℃	5795	5795.064	PASS
	30℃	5795	5795.061	PASS
	40℃	5795	5795.063	PASS
	50℃	5795	5795.064	PASS
	60℃	5795	5795.065	PASS

Test Mode	Temperature	Measurement Frequency (MHz)	Result	Conclusion
802.11ac20	- 10℃	5180	5180.035	PASS
	0℃	5180	5180.031	PASS
	10℃	5180	5180.034	PASS
	20℃	5180	5180.037	PASS
	30℃	5180	5180.038	PASS
	40℃	5180	5180.036	PASS
	50℃	5180	5180.032	PASS
	60℃	5180	5180.034	PASS
	- 10℃	5240	5240.055	PASS
	0℃	5240	5240.056	PASS
	10℃	5240	5240.054	PASS
	20℃	5240	5240.055	PASS
	30℃	5240	5240.052	PASS
	40℃	5240	5240.054	PASS
	50℃	5240	5240.058	PASS
	60℃	5240	5240.053	PASS
	60℃	5500	5500.064	PASS
	- 10℃	5745	5745.045	PASS
	0℃	5745	5745.046	PASS
	10℃	5745	5745.047	PASS
	20℃	5745	5745.045	PASS
	30℃	5745	5745.049	PASS
	40℃	5745	5745.044	PASS
	50℃	5745	5745.045	PASS
	60℃	5745	5745.042	PASS
	- 10℃	5825	5825.054	PASS
	0℃	5825	5825.055	PASS
	10℃	5825	5825.046	PASS
	20℃	5825	5825.044	PASS
	30℃	5825	5825.047	PASS
	40℃	5825	5825.048	PASS
	50℃	5825	5825.042	PASS
	60℃	5825	5825.043	PASS

Test Mode	Temperature	Measurement Frequency (MHz)	Result	Conclusion
802.11ac40	- 10℃	5190	5190.052	PASS
	0℃	5190	5190.055	PASS
	10℃	5190	5190.057	PASS
	20℃	5190	5190.058	PASS
	30℃	5190	5190.059	PASS
	40℃	5190	5190.054	PASS
	50℃	5190	5190.052	PASS
	60℃	5190	5190.053	PASS
	- 10℃	5230	5230.044	PASS
	0℃	5230	5230.045	PASS
	10℃	5230	5230.046	PASS
	20℃	5230	5230.041	PASS
	30℃	5230	5230.042	PASS
	40℃	5230	5230.049	PASS
	50℃	5230	5230.041	PASS
	60℃	5230	5230.045	PASS
	- 10℃	5755	5755.044	PASS
	0℃	5755	5755.047	PASS
	10℃	5755	5755.046	PASS
	20℃	5755	5755.045	PASS
	30℃	5755	5755.042	PASS
	40℃	5755	5755.043	PASS
	50℃	5755	5755.044	PASS
	60℃	5755	5755.047	PASS
	- 10℃	5795	5795.068	PASS
	0℃	5795	5795.066	PASS
	10℃	5795	5795.064	PASS
	20℃	5795	5795.061	PASS
	30℃	5795	5795.063	PASS
	40℃	5795	5795.061	PASS
	50℃	5795	5795.065	PASS
	60℃	5795	5795.062	PASS

Test Mode	Temperature	Measurement Frequency (MHz)	Result	Conclusion
802.11ac80	- 10℃	5210	5210.045	PASS
	0℃	5210	5210.044	PASS
	10℃	5210	5210.046	PASS
	20℃	5210	5210.047	PASS
	30℃	5210	5210.048	PASS
	40℃	5210	5210.049	PASS
	50℃	5210	5210.042	PASS
	60℃	5210	5210.045	PASS
	- 10℃	5290	5290.074	PASS
	0℃	5290	5290.076	PASS
	10℃	5290	5290.071	PASS
	20℃	5290	5290.072	PASS
	30℃	5290	5290.075	PASS
	40℃	5290	5290.078	PASS
	50℃	5290	5290.074	PASS
	60℃	5290	5290.076	PASS
	- 10℃	5775	5775.053	PASS
	0℃	5775	5775.057	PASS
	10℃	5775	5775.053	PASS
	20℃	5775	5775.055	PASS
	30℃	5775	5775.054	PASS
	40℃	5775	5775.056	PASS
	50℃	5775	5775.054	PASS
	60℃	5775	5775.053	PASS

15. FCC LINE CONDUCTED EMISSION TEST

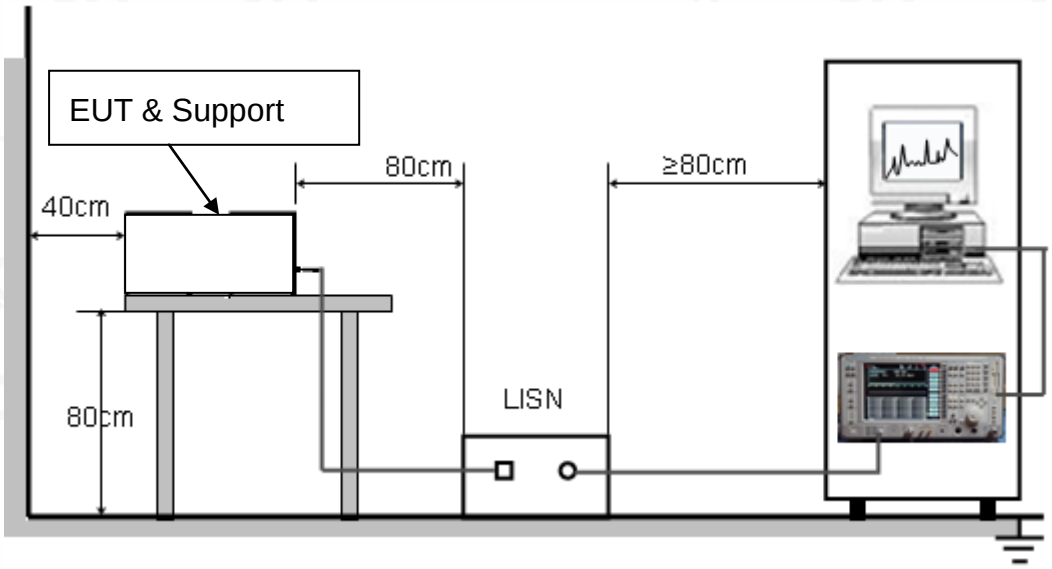
15.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

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

15.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



15.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received charging voltage by adapter which received 120V/60Hzpower by a LISN.
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

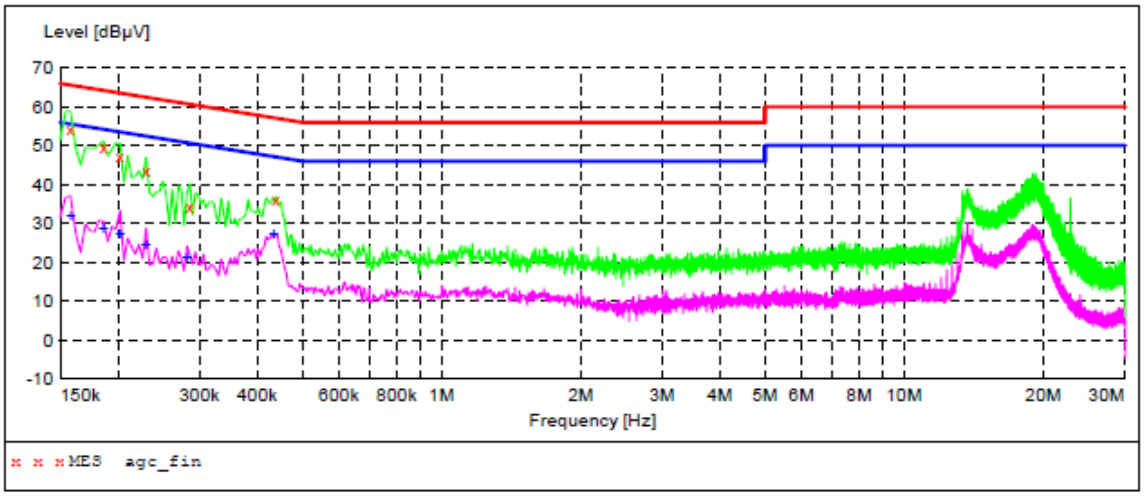
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

15.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

15.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

LINE CONDUCTED EMISSION TEST-L



MEASUREMENT RESULT: "agc_fin"

2020/8/26 11:06

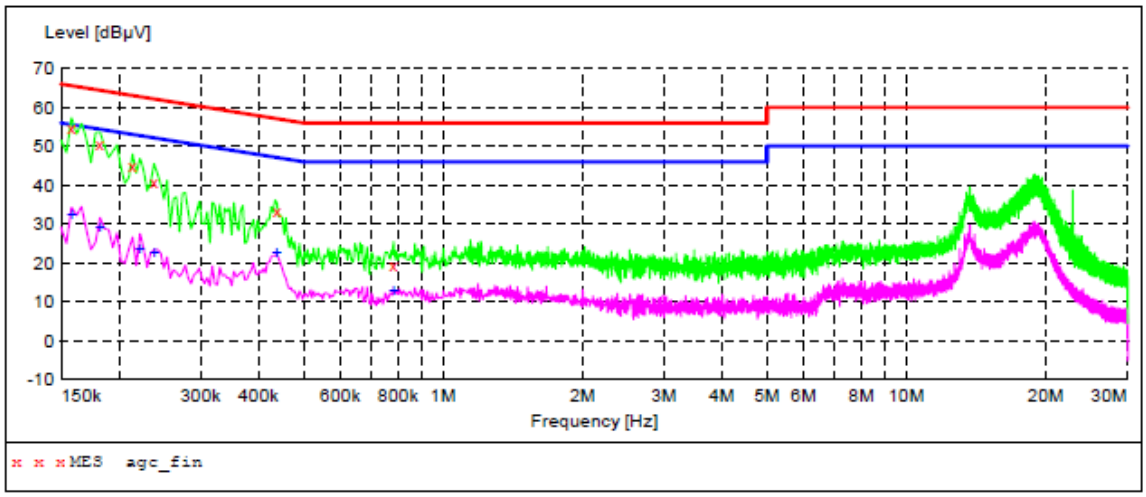
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.158000	54.40	9.3	66	11.2	QP	L1
0.186000	49.70	9.3	64	14.5	QP	L1
0.202000	47.30	9.3	64	16.2	QP	L1
0.230000	43.50	9.3	62	18.9	QP	L1
0.286000	34.30	9.3	61	26.3	QP	L1
0.438000	36.00	9.3	57	21.1	QP	L1

MEASUREMENT RESULT: "agc_fin2"

2020/8/26 11:06

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.158000	32.00	9.3	56	23.6	AV	L1
0.186000	28.70	9.3	54	25.5	AV	L1
0.202000	27.30	9.3	54	26.2	AV	L1
0.230000	24.70	9.3	52	27.7	AV	L1
0.282000	21.00	9.3	51	29.8	AV	L1
0.434000	27.40	9.3	47	19.8	AV	L1

LINE CONDUCTED EMISSION TEST-N



MEASUREMENT RESULT: "agc_fin"

2020/8/26 11:11

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.158000	54.70	9.3	66	10.9	QP	N
0.182000	50.70	9.3	64	13.7	QP	N
0.214000	45.10	9.3	63	17.9	QP	N
0.238000	41.00	9.3	62	21.2	QP	N
0.438000	33.10	9.3	57	24.0	QP	N
0.782000	19.60	9.3	56	36.4	QP	N

MEASUREMENT RESULT: "agc_fin2"

2020/8/26 11:11

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.158000	32.20	9.3	56	23.4	AV	N
0.182000	29.10	9.3	54	25.3	AV	N
0.222000	23.70	9.3	53	29.0	AV	N
0.238000	22.40	9.3	52	29.8	AV	N
0.438000	22.50	9.3	47	24.6	AV	N
0.782000	12.60	9.3	46	33.4	AV	N

RESULT: PASS

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC LINE CONDUCTED EMISSION TEST SETUP

FCC RADIATED EMISSION TEST SETUP BELOW 1GHZ