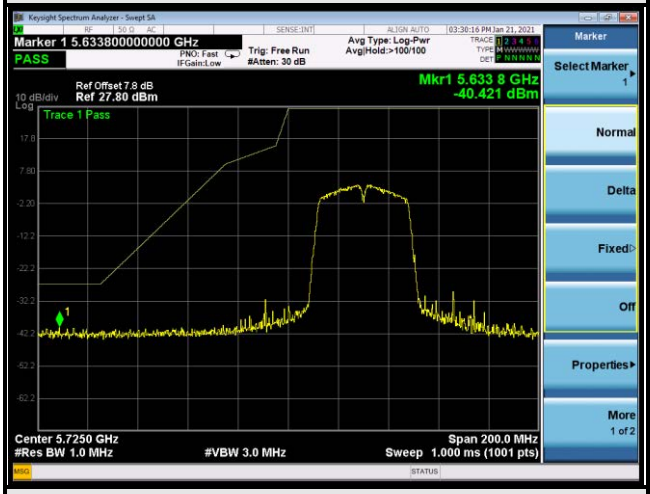
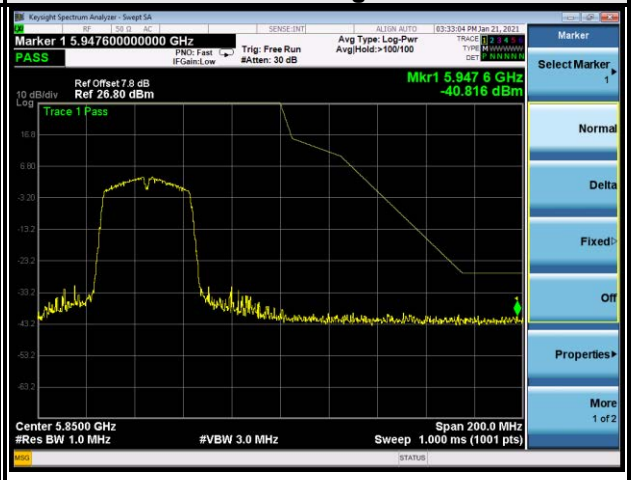
802.11ac40 Left Side	802.11ac40 Right Side
	
802.11ac80 Left Side	**802.11ac80 Right Side**
	

3.3 CONDUCTED EMISSION MEASUREMENT

3.3.1 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.

3.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR3	101900	Feb. 26,20	Feb. 25,21
EMC32 test software	Rohde&Schwarz	EMC32	NA	NA	NA
LISN network	Rohde&Schwarz	ENV216	101922	Feb. 26,20	Feb. 25,21

NOTE:

1. The test was performed in CE shielded room.
2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

3.3.3 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.

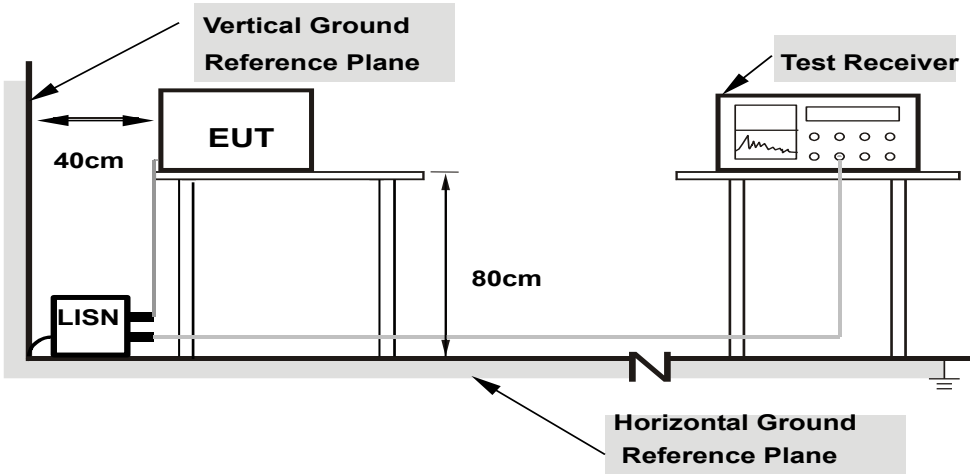
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

3.3.4 DEVIATION FROM TEST STANDARD

No deviation.

3.3.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

3.3.6 EUT OPERATING CONDITIONS

Same as 3.1.6.

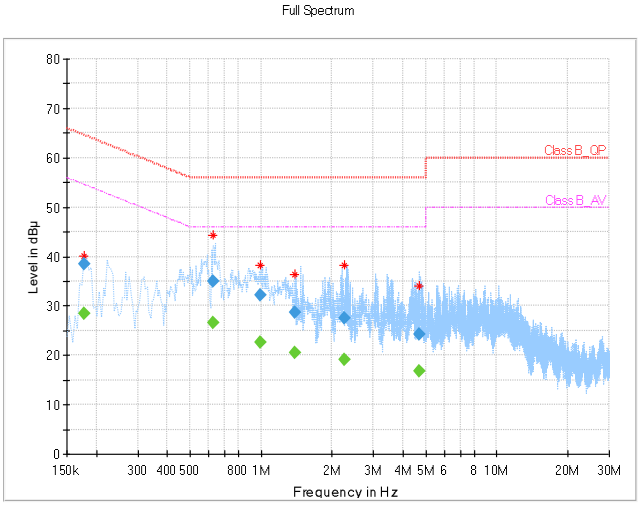
3.3.7 TEST RESULTS

CONDUCTED WORST-CASE DATA :

Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	24deg. C, 55%RH
Tested By	Carl xie		

Frequency (MHz)	QuasiPeak (dB¦ÌV)	CAverage (dB¦ÌV)	Limit (dB¦ÌV)	Margin (dB)	Line	Filter	Corr. (dB)
0.178000	---	28.39	54.58	-26.19	L	ON	9.7
0.178000	38.57	---	64.58	-26.01	L	ON	9.7
0.624000	---	26.61	46.00	-19.39	L	ON	9.7
0.624000	34.87	---	56.00	-21.13	L	ON	9.7
0.996000	---	22.71	46.00	-23.29	L	ON	9.7
0.996000	32.17	---	56.00	-23.83	L	ON	9.7
1.384000	---	20.44	46.00	-25.56	L	ON	9.7
1.384000	28.75	---	56.00	-27.25	L	ON	9.7
2.260000	---	19.05	46.00	-26.95	L	ON	9.8
2.260000	27.49	---	56.00	-28.51	L	ON	9.8
4.696000	---	16.91	46.00	-29.09	L	ON	9.8
4.696000	24.25	---	56.00	-31.75	L	ON	9.8

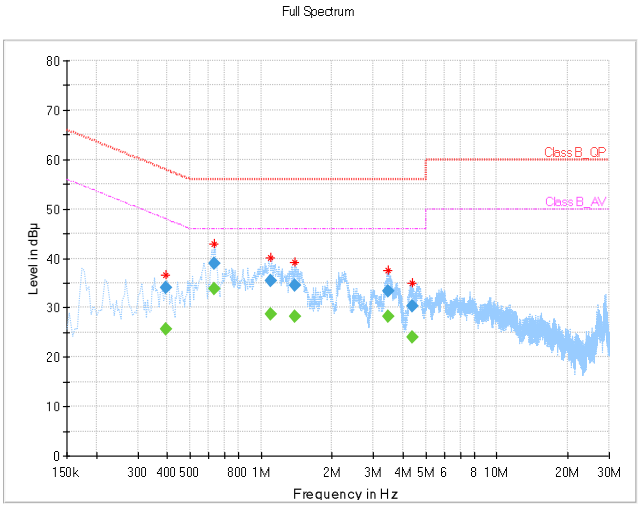
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



Frequency Range	150KHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120Vac, 60Hz	Environmental Conditions	24deg. C, 55%RH
Tested By	Carl xie		

Frequency (MHz)	QuasiPeak (dB¦ìV)	CAverage (dB¦ìV)	Limit (dB¦ìV)	Margin (dB)	Line	Filter	Corr. (dB)
0.396000	---	25.54	47.94	-22.40	N	ON	9.8
0.396000	33.96	---	57.94	-23.98	N	ON	9.8
0.636000	**---**	**33.84**	**46.00**	**-12.16**	**N**	**ON**	**9.8**
0.636000	39.05	---	56.00	-16.95	N	ON	9.8
1.100000	---	28.77	46.00	-17.23	N	ON	9.8
1.100000	35.47	---	56.00	-20.53	N	ON	9.8
1.392000	---	28.25	46.00	-17.75	N	ON	9.8
1.392000	34.42	---	56.00	-21.58	N	ON	9.8
3.476000	---	28.25	46.00	-17.75	N	ON	9.9
3.476000	33.42	---	56.00	-22.58	N	ON	9.9
4.364000	---	24.06	46.00	-21.94	N	ON	9.9
4.364000	30.31	---	56.00	-25.69	N	ON	9.9

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



3.4 MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

3.4.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

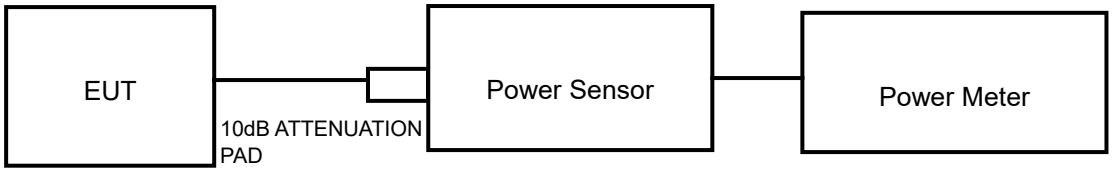
Operation Band	EUT Category		LIMIT
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	√	Client devices	250mW (24 dBm)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

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

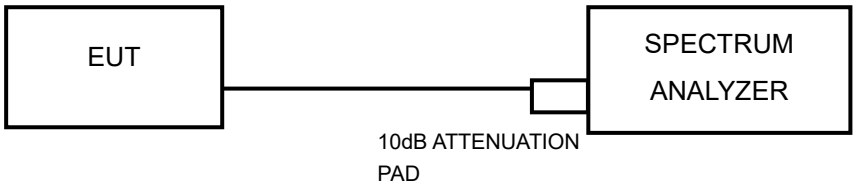
3.4.2 TEST SETUP

FOR POWER OUTPUT MEASUREMENT

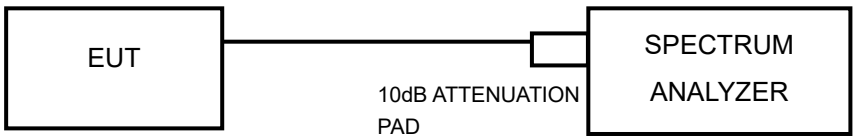
802.11a, 802.11n (20MHz), 802.11n (40MHz) TEST CONFIGURATION



11ac TEST CONFIGURATION



FOR 26dB BANDWIDTH



3.4.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Meter	ANRITSU	ML2495A	1506002	Feb. 26,20	Feb. 25,21
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 26,20	Feb. 25,21
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 02,20	Jun. 03,21
Power Sensor	ANRITSU	MA2411B	1339352	Feb. 26,20	Feb. 25,21

NOTE:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in RF Oven room.

3.4.4 TEST PROCEDURE

FOR POWER MEASUREMENT

For 802.11a, 802.11n (20MHz), 802.11n (40MHz)

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.

For 802.11ac (80MHz)

1. Measure the duty cycle, x, of the transmitter output signal as described in II.B.
2. Set span to encompass the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
3. Set RBW = 1 MHz.
4. Set VBW ≥ 3 MHz.
5. Number of points in sweep ≥ 2 × span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
6. Sweep time = auto.
7. Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
8. Do not use sweep triggering. Allow the sweep to “free run.”
9. Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.
10. Add 10 log (1/x), where x is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add 10 log (1/0.25) = 6 dB if the duty cycle is 25%.

FOR 99 PERCENT OCCUPIED BANDWIDTH

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.
2. Set span = 1.5 times to 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW ≥ 3 · RBW
5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
6. Use the 99 % power bandwidth function of the instrument (if available).
7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

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%.

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.

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

3.4.7 TEST RESULTS

OUTPUT POWER:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	Duty Factor	FINAL AVERAGE POWER (dBm)	FINAL AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	15.09	0.14	15.23	33.34	24	PASS
40	5200	15.22	0.14	15.36	34.36	24	PASS
48	5240	15.10	0.14	15.24	33.42	24	PASS
52	5260	15.27	0.14	15.41	34.75	24	PASS
60	5300	15.22	0.14	15.36	34.36	24	PASS
64	5320	15.19	0.14	15.33	34.12	24	PASS
100	5500	15.03	0.14	15.17	32.89	24	PASS
116	5580	15.13	0.14	15.27	33.65	24	PASS
140	5700	15.09	0.14	15.23	33.34	24	PASS
149	5745	15.25	0.14	15.39	34.59	30	PASS
157	5785	15.28	0.14	15.42	34.83	30	PASS
165	5825	15.26	0.14	15.40	34.67	30	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	Duty Factor	FINAL AVERAGE POWER (dBm)	FINAL AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	14.09	0.15	14.24	26.55	24	PASS
40	5200	13.99	0.15	14.14	25.94	24	PASS
48	5240	14.02	0.15	14.17	26.12	24	PASS
52	5260	14.04	0.15	14.19	26.24	24	PASS
60	5300	14.00	0.15	14.15	26.00	24	PASS
64	5320	14.07	0.15	14.22	26.42	24	PASS
100	5500	14.19	0.15	14.34	27.16	24	PASS
116	5580	14.05	0.15	14.20	26.30	24	PASS
140	5700	14.25	0.15	14.40	27.54	24	PASS
149	5745	14.06	0.15	14.21	26.36	30	PASS
157	5785	14.23	0.15	14.38	27.42	30	PASS
165	5825	14.06	0.15	14.21	26.36	30	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	Duty Factor	FINAL AVERAGE POWER (dBm)	FINAL AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	14.13	0.29	14.42	27.67	24	PASS
46	5230	14.14	0.29	14.43	27.73	24	PASS
54	5270	13.96	0.29	14.25	26.61	24	PASS
62	5310	14.04	0.29	14.33	27.10	24	PASS
102	5510	14.12	0.29	14.41	27.61	24	PASS
110	5550	14.06	0.29	14.35	27.23	24	PASS
134	5670	14.15	0.29	14.44	27.80	24	PASS
151	5755	14.32	0.29	14.61	28.91	30	PASS
159	5798	14.09	0.29	14.38	27.42	30	PASS

802.11ac (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	Duty Factor	FINAL AVERAGE POWER (dBm)	FINAL AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
36	5180	14.56	0.15	14.71	29.58	24	PASS
40	5200	14.53	0.15	14.68	29.38	24	PASS
48	5240	14.48	0.15	14.63	29.04	24	PASS
52	5260	14.51	0.15	14.66	29.24	24	PASS
60	5300	14.58	0.15	14.73	29.72	24	PASS
64	5320	14.64	0.15	14.79	30.13	24	PASS
100	5500	14.42	0.15	14.57	28.64	24	PASS
116	5580	14.66	0.15	14.81	30.27	24	PASS
140	5700	14.70	0.15	14.85	30.55	24	PASS
149	5745	14.59	0.15	14.74	29.79	30	PASS
157	5785	14.73	0.15	14.88	30.76	30	PASS
165	5825	14.54	0.15	14.69	29.44	30	PASS

802.11ac (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	Duty Factor	FINAL AVERAGE POWER (dBm)	FINAL AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
38	5190	12.59	0.29	12.88	19.41	24	PASS
46	5230	12.61	0.29	12.90	19.50	24	PASS
54	5270	12.64	0.29	12.93	19.63	24	PASS
62	5310	12.63	0.29	12.92	19.59	24	PASS
102	5510	12.48	0.29	12.77	18.92	24	PASS
110	5550	12.43	0.29	12.72	18.71	24	PASS
134	5670	12.50	0.29	12.79	19.01	24	PASS
151	5755	12.57	0.29	12.86	19.32	30	PASS
159	5798	12.52	0.29	12.81	19.10	30	PASS

802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	AVERAGE POWER (dBm)	Duty Factor	FINAL AVERAGE POWER (dBm)	FINAL AVERAGE POWER (mW)	POWER LIMIT (dBm)	PASS/FAIL
42	5210	12.43	0.57	13.00	19.95	24	PASS
58	5290	12.69	0.57	13.26	21.18	24	PASS
106	5530	12.70	0.57	13.27	21.23	24	PASS
122	5610	12.65	0.57	13.22	20.99	24	PASS
155	5775	12.65	0.57	13.22	20.99	30	PASS

99% OCCUPIED BANDWIDTH & 26dB BANDWIDTH/6dB BANDWIDTH DATA FROM:

802.11a

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	16.56	19.90	PASS
40	5200	16.68	20.26	PASS
48	5240	16.62	19.93	PASS
52	5260	16.62	19.89	PASS
60	5300	16.50	19.98	PASS
64	5320	16.68	19.96	PASS
100	5500	16.56	20.00	PASS
116	5580	16.68	20.46	PASS
140	5700	16.56	20.02	PASS
CHANNEL	**CHANNEL FREQUENCY**	**99% OCCUPIED BANDWIDTH**	**6dB BANDWIDTH**	**PASS/FAIL**
149	5745	16.62	15.45	PASS
157	5785	16.56	15.08	PASS
165	5825	16.74	13.96	PASS

802.11n (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	17.58	20.06	PASS
40	5200	17.58	20.38	PASS
48	5240	17.70	20.42	PASS
52	5260	17.64	20.47	PASS
60	5300	17.70	20.24	PASS
64	5320	17.70	20.18	PASS
100	5500	17.64	20.23	PASS
116	5580	17.70	20.21	PASS
140	5700	17.70	20.32	PASS
CHANNEL	**CHANNEL FREQUENCY**	**99% OCCUPIED BANDWIDTH**	**6dB BANDWIDTH**	**PASS/FAIL**
149	5745	17.70	15.05	PASS
157	5785	17.64	14.06	PASS
165	5825	17.70	15.01	PASS

802.11n (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.10	65.61	PASS
46	5230	36.10	53.55	PASS
54	5270	36.00	41.24	PASS
62	5310	36.50	40.98	PASS
102	5510	36.10	41.31	PASS
110	5550	36.10	41.34	PASS
134	5670	36.20	41.31	PASS
CHANNEL	**CHANNEL FREQUENCY**	**99% OCCUPIED BANDWIDTH**	**6dB BANDWIDTH**	**PASS/FAIL**
151	5755	36.00	35.09	151
159	5795	36.00	35.02	159

802.11ac (20MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
36	5180	17.64	20.21	PASS
40	5200	17.70	20.47	PASS
48	5240	17.70	20.16	PASS
52	5260	17.58	20.24	PASS
60	5300	17.70	20.45	PASS
64	5320	17.58	20.40	PASS
100	5500	17.64	20.29	PASS
116	5580	17.64	20.45	PASS
140	5700	17.70	20.24	PASS
CHANNEL	**CHANNEL FREQUENCY**	**99% OCCUPIED BANDWIDTH**	**6dB BANDWIDTH**	**PASS/FAIL**
149	5745	17.70	15.10	PASS
157	5785	17.70	15.07	PASS
165	5825	17.64	15.06	PASS

802.11ac (40MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
38	5190	36.10	41.17	PASS
46	5230	36.00	41.63	PASS
54	5270	36.10	41.56	PASS
62	5310	36.00	41.14	PASS
102	5510	36.10	41.34	PASS
110	5550	36.20	40.70	PASS
134	5670	35.90	41.04	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
151	5755	36.00	33.67	PASS
159	5795	36.10	33.84	PASS

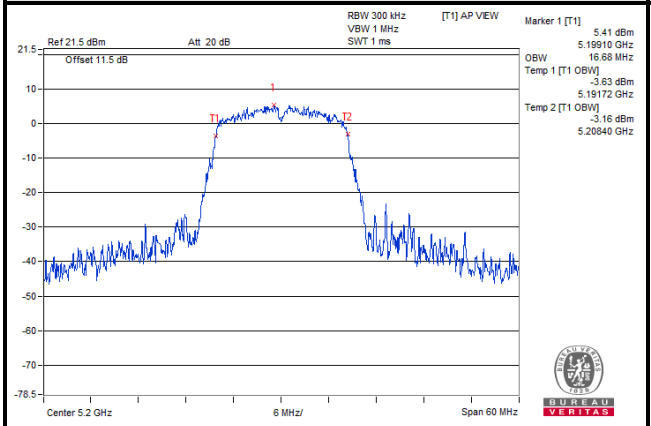
802.11ac (80MHz)

CHANNEL	CHANNEL FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH	26dB BANDWIDTH (MHz)	PASS/FAIL
42	5210	75.12	81.07	PASS
58	5290	75.24	80.85	PASS
106	5530	75.24	80.93	PASS
122	5610	75.24	95.29	PASS
CHANNEL	CHANNEL FREQUENCY	99% OCCUPIED BANDWIDTH	6dB BANDWIDTH	PASS/FAIL
155	5775	75.00	75.13	PASS

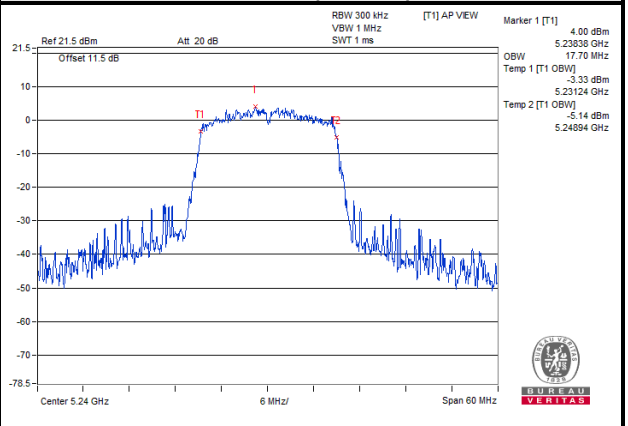
For U-NII-1:

SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH

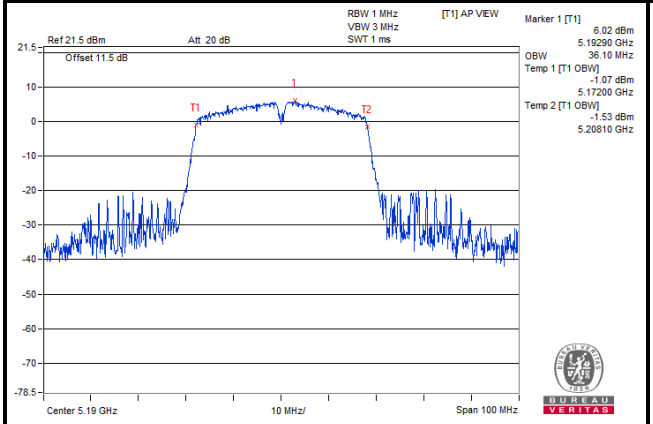
802.11a



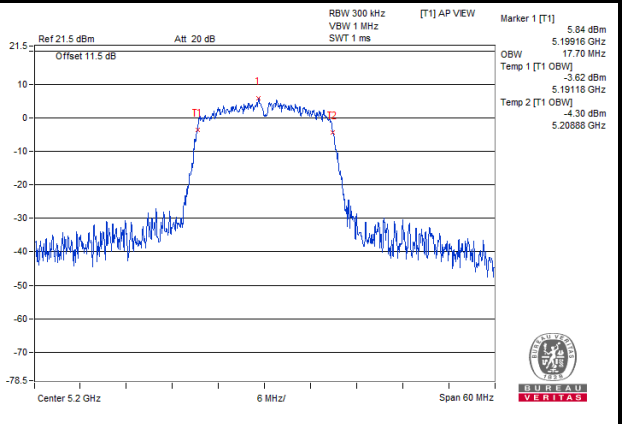
802.11n (20MHz)



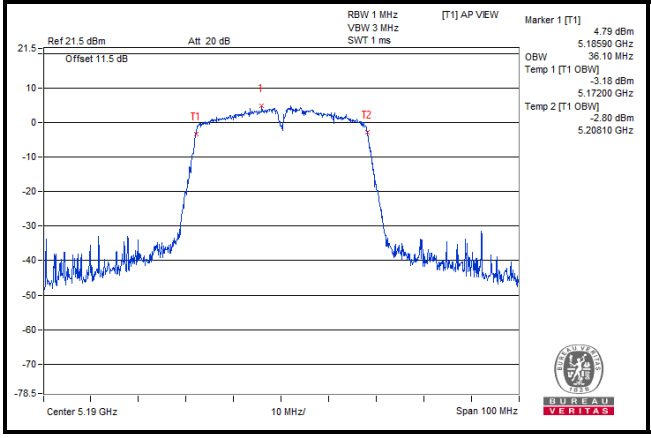
802.11n (40MHz)



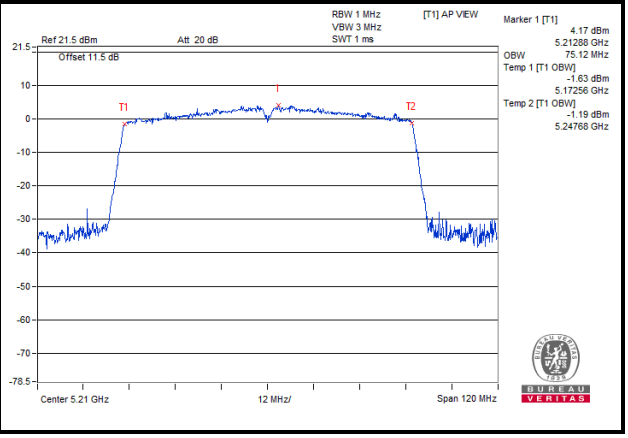
802.11ac (20MHz)



802.11ac (40MHz)

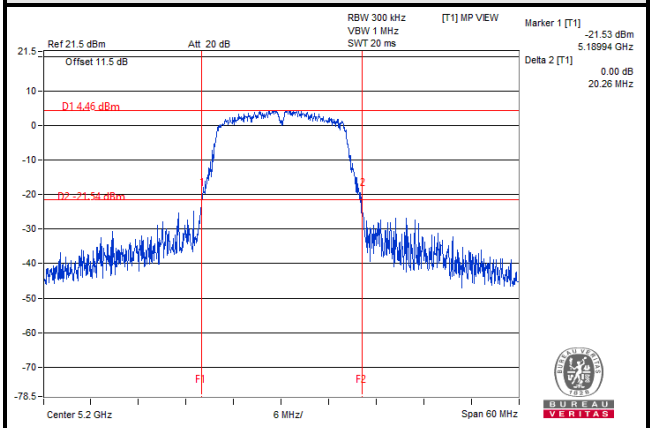


802.11ac (80MHz)

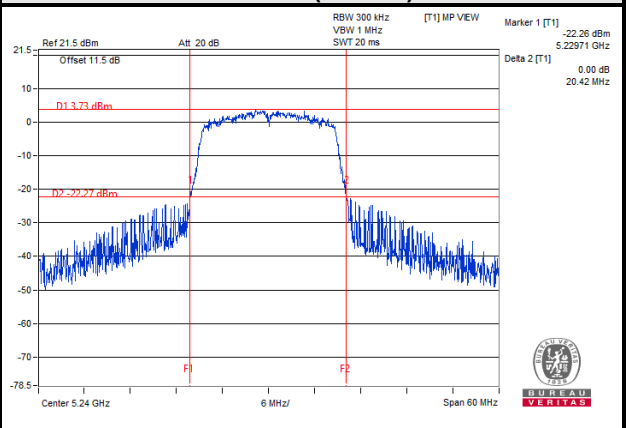


SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

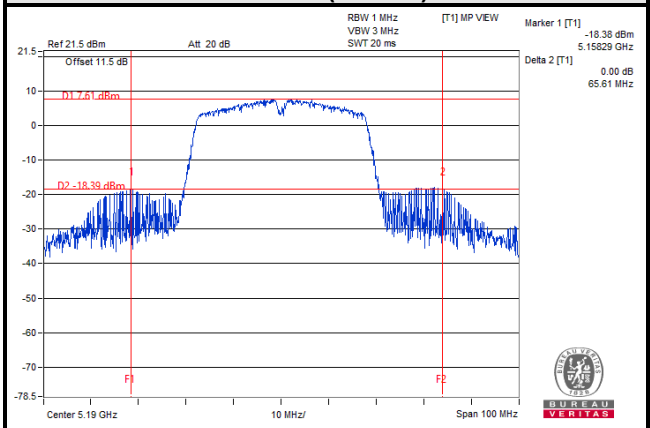
802.11a



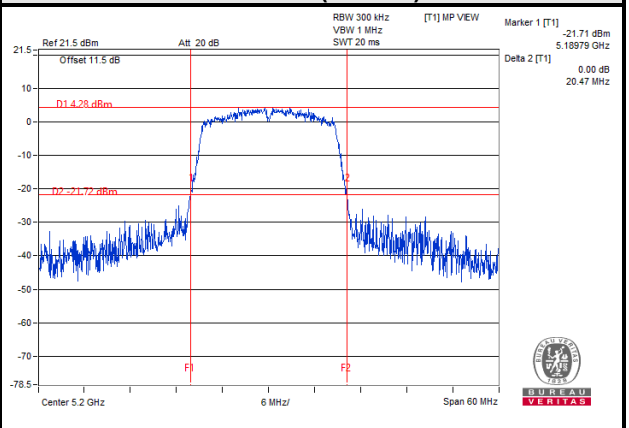
802.11n (20MHz)



802.11n (40MHz)



802.11ac (20MHz)



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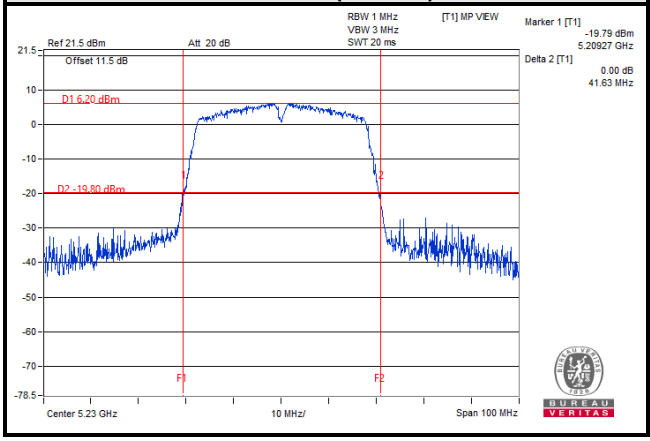

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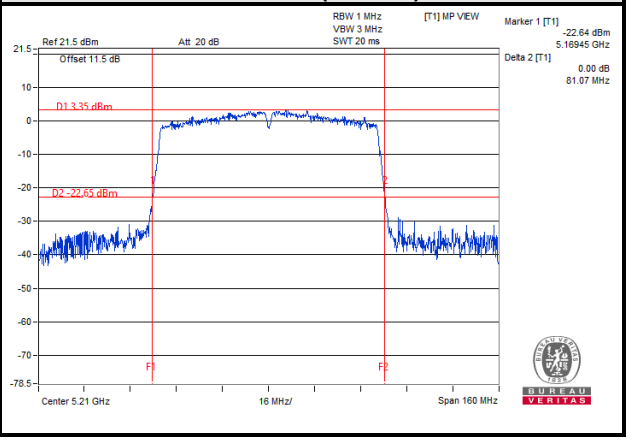
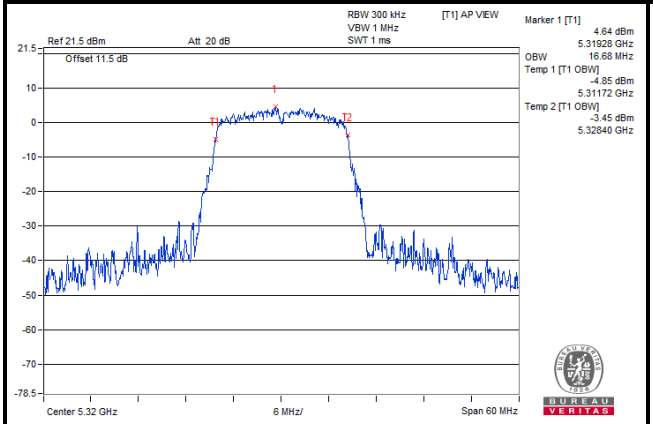


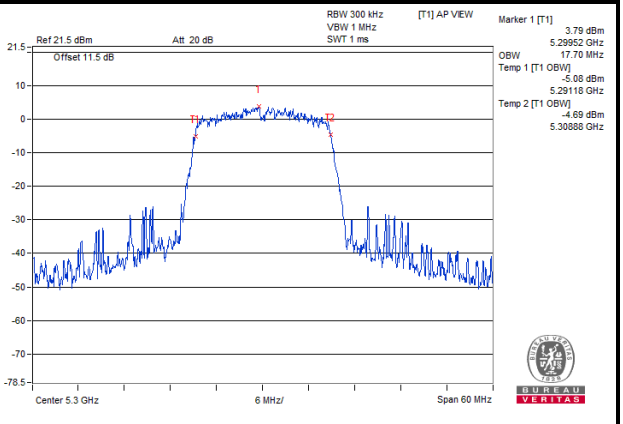
For U-NII-2A:

SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH

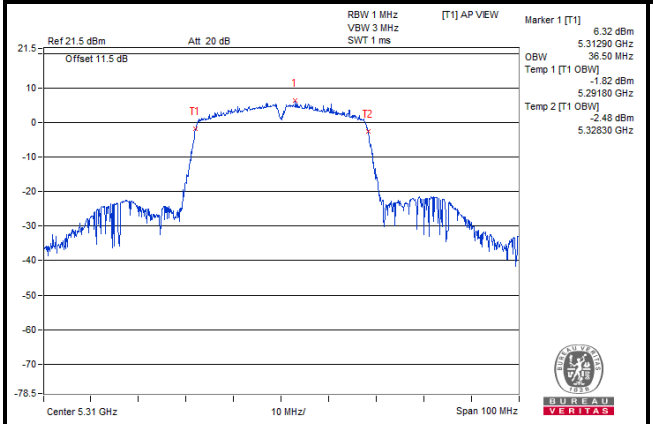
802.11a



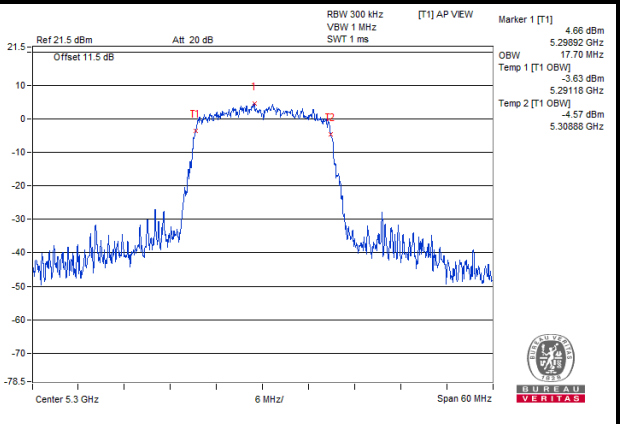
802.11n (20MHz)



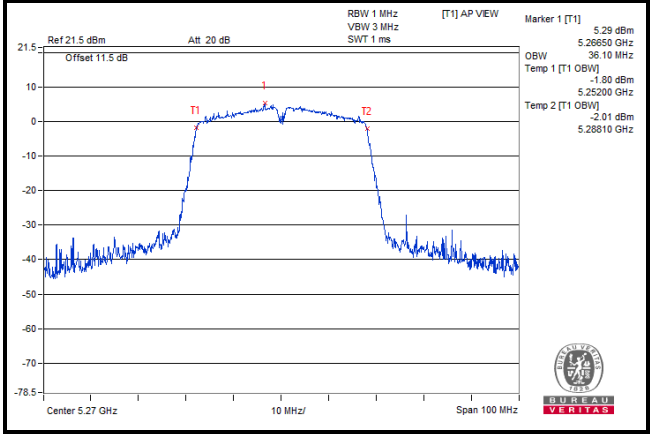
802.11n (40MHz)



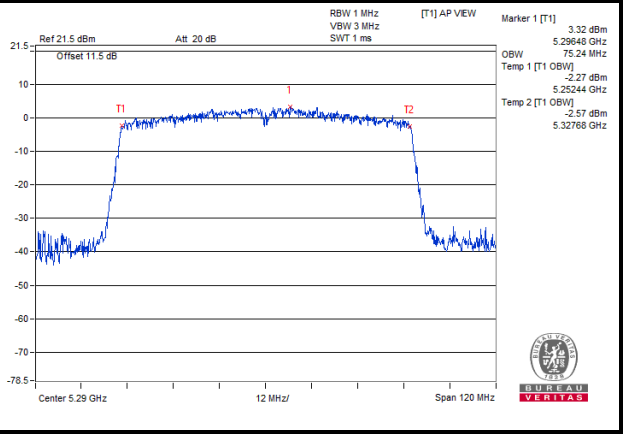
802.11ac (20MHz)



802.11ac (40MHz)

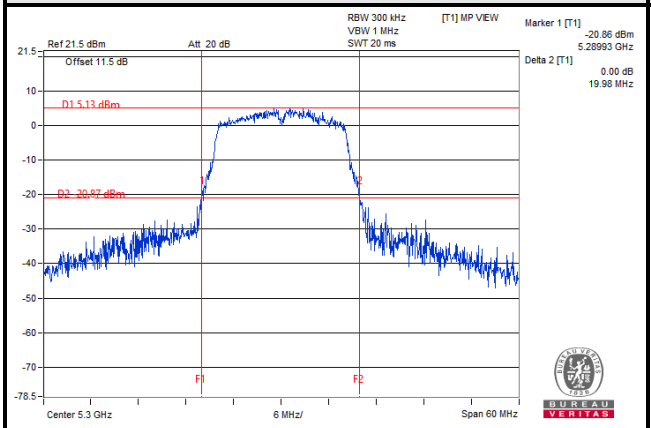


802.11ac (80MHz)

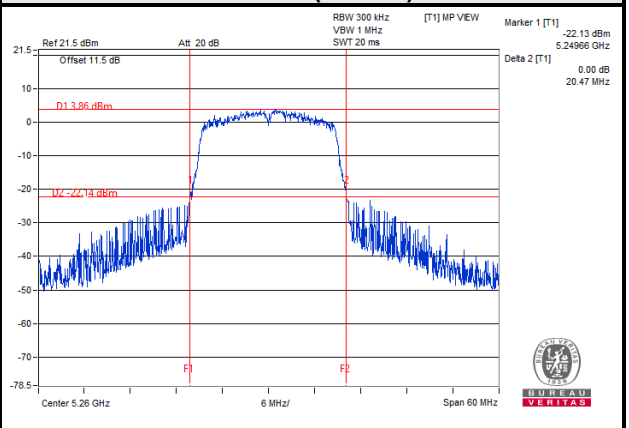


SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

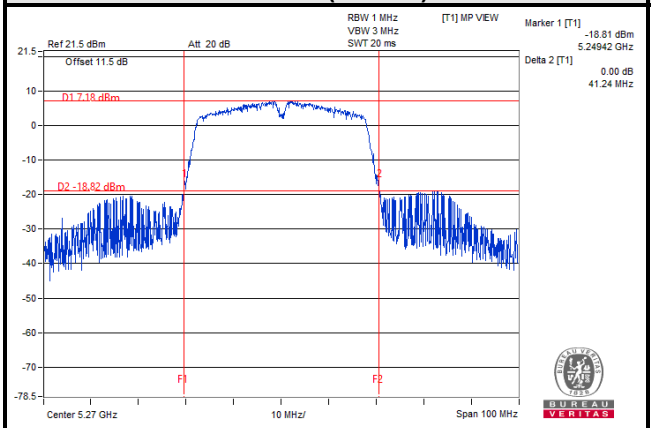
802.11a



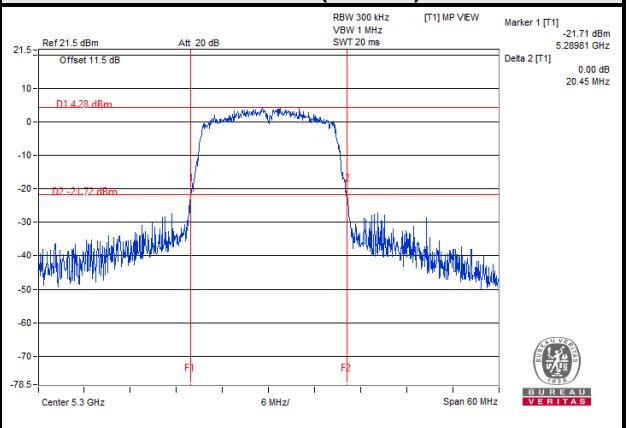
802.11n (20MHz)



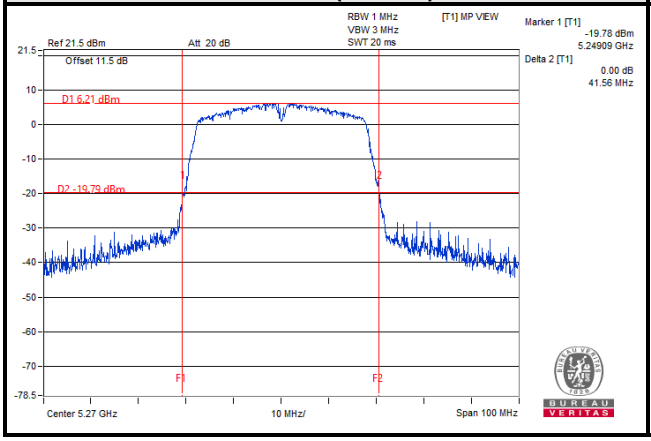
802.11n (40MHz)



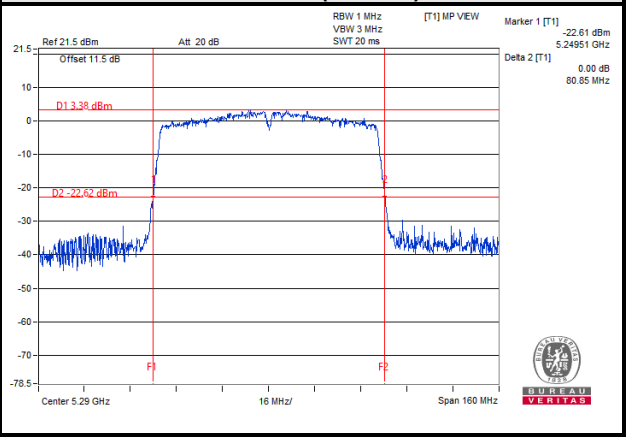
802.11ac (20MHz)



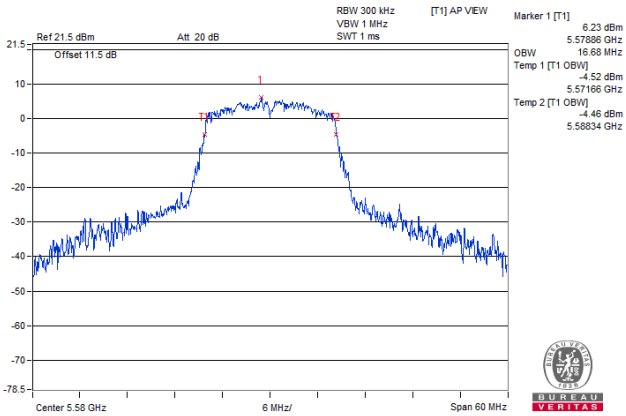
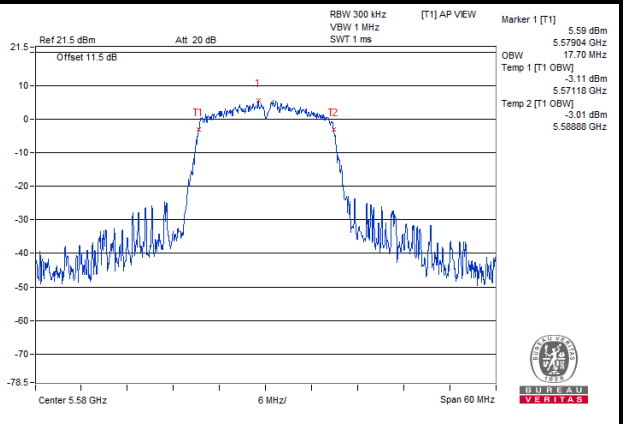
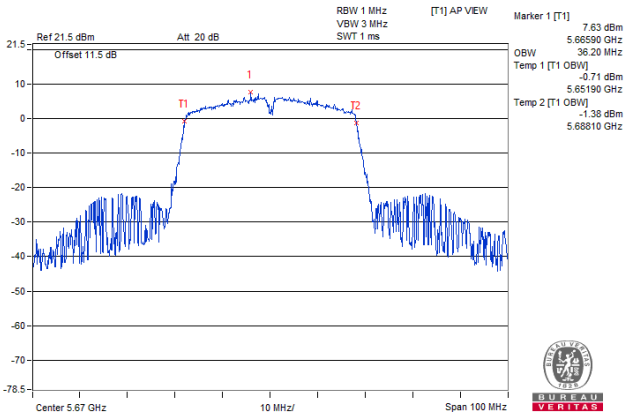
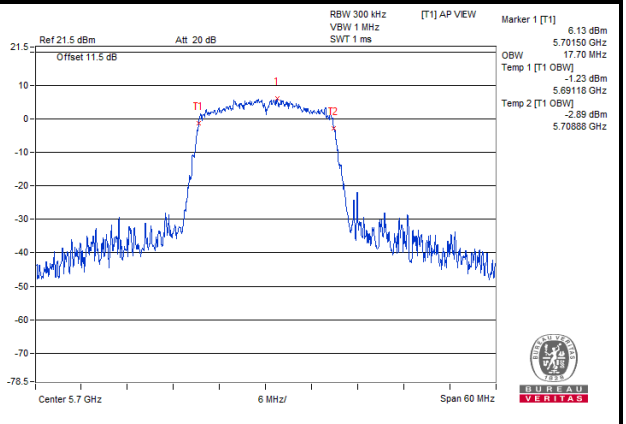
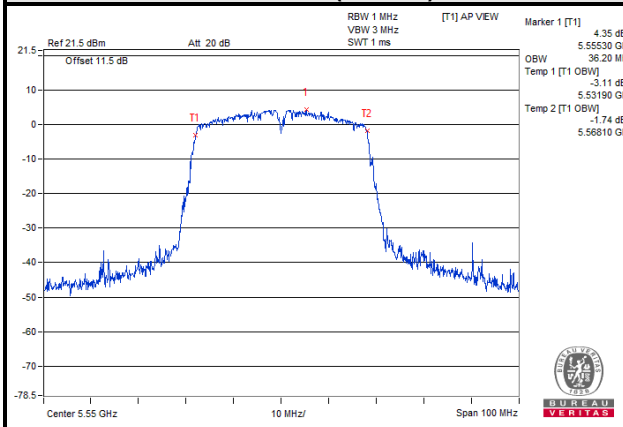
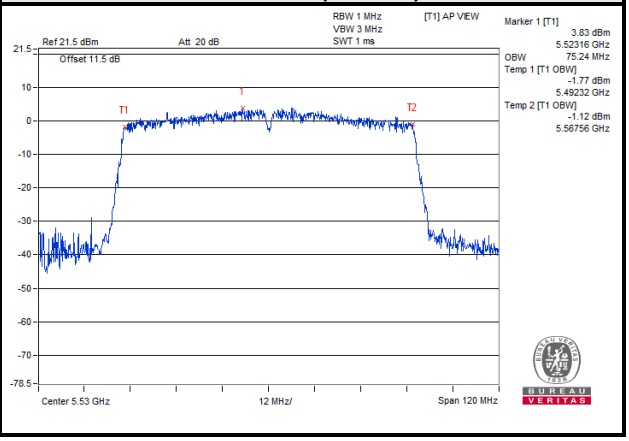
802.11ac (40MHz)



802.11ac (80MHz)

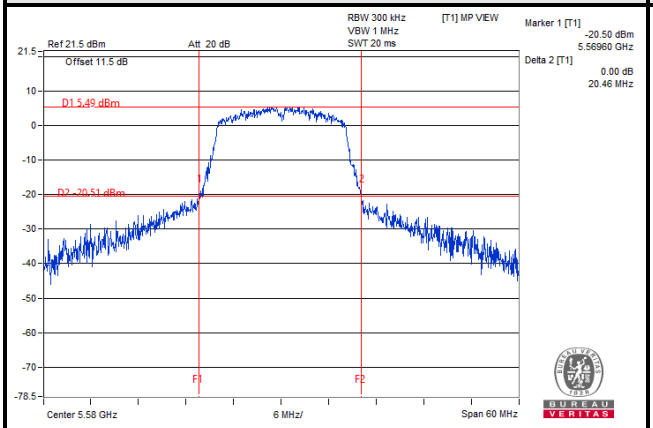


For U-NII-2C:

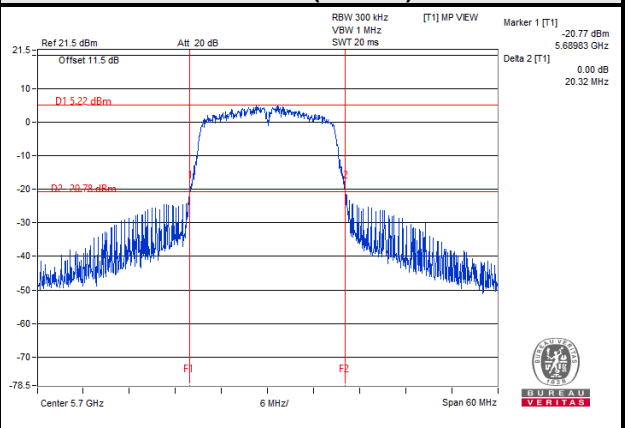
SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	802.11ac (20MHz)
	
802.11ac (40MHz)	802.11ac (80MHz)
	

SPECTRUM PLOT OF WORST VALUE of 26dB Bandwidth

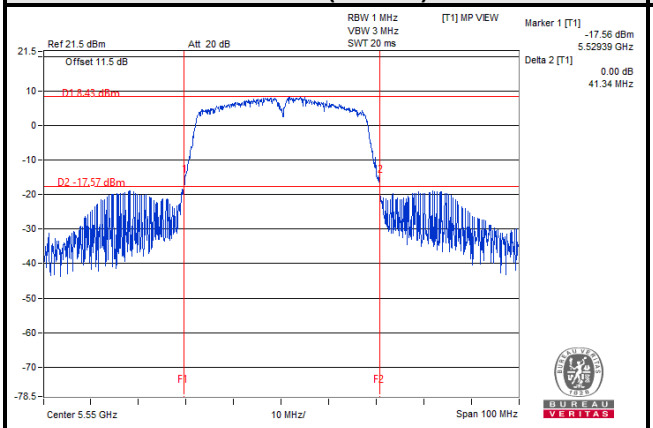
802.11a



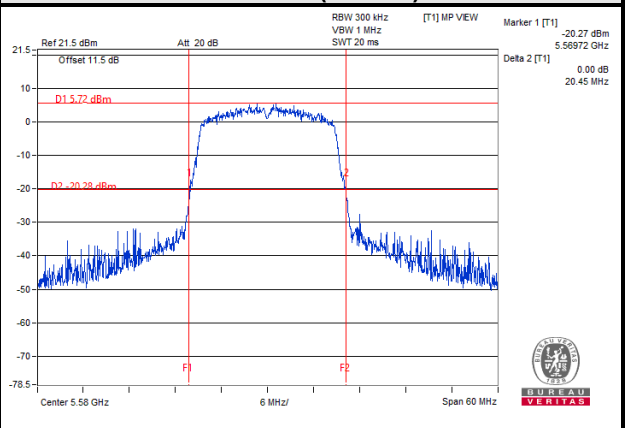
802.11n (20MHz)



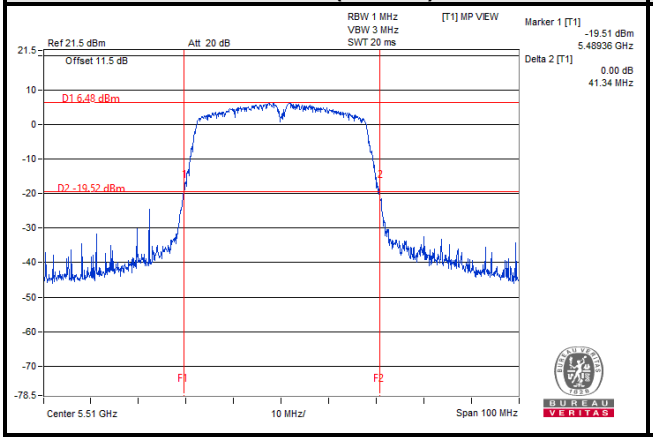
802.11n (40MHz)



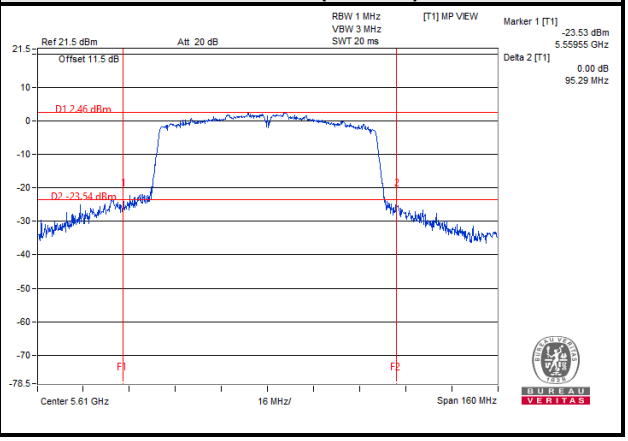
802.11ac (20MHz)



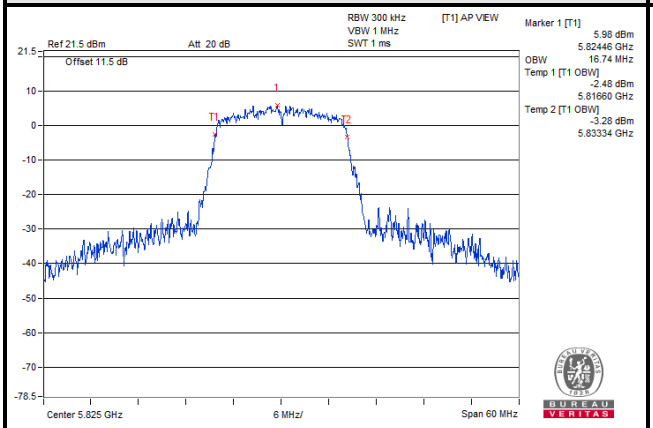
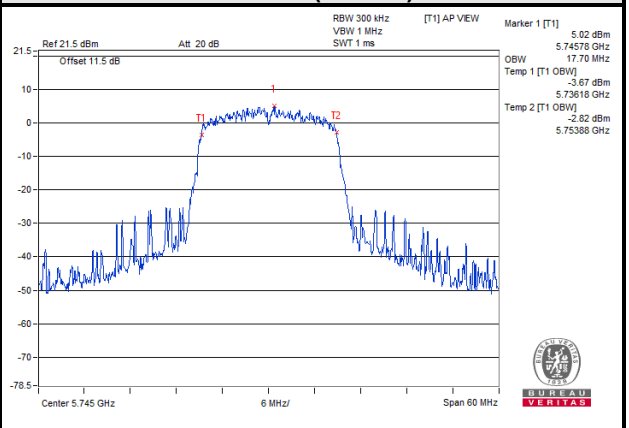
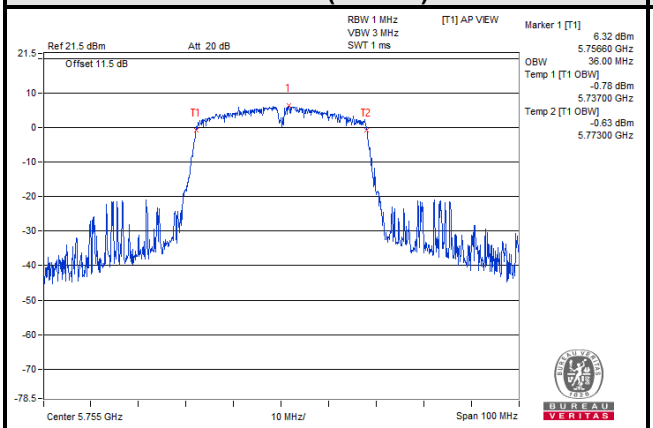
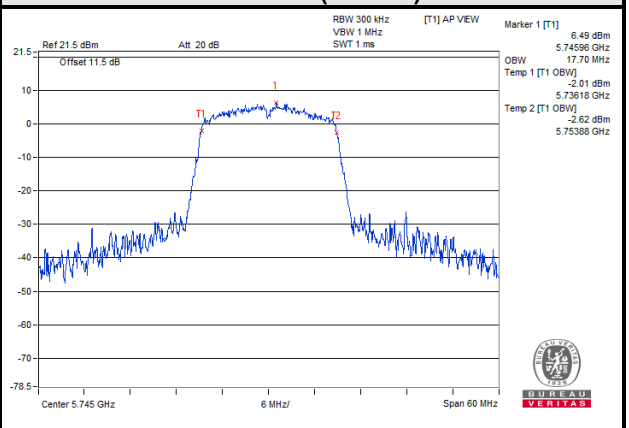
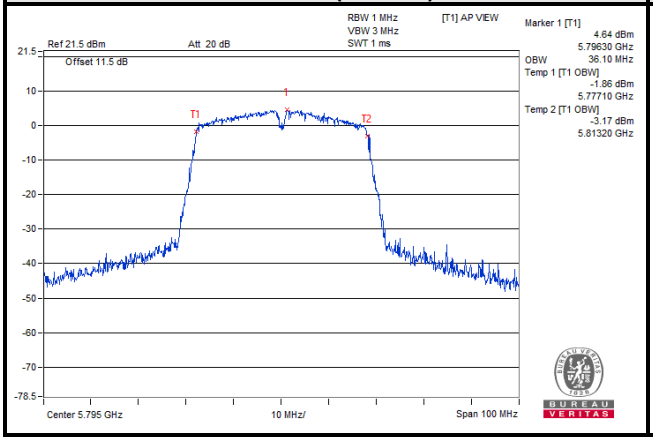
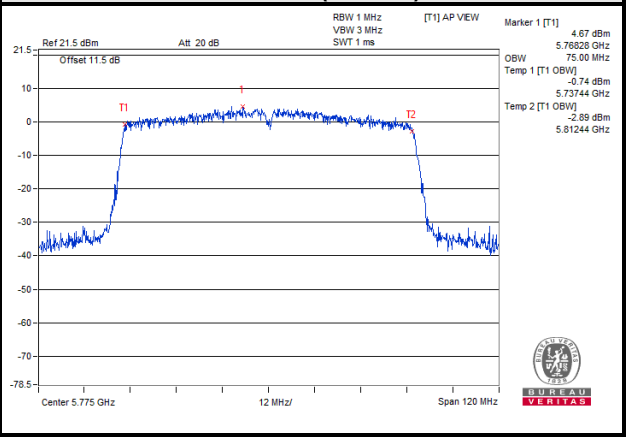
802.11ac (40MHz)



802.11ac (80MHz)

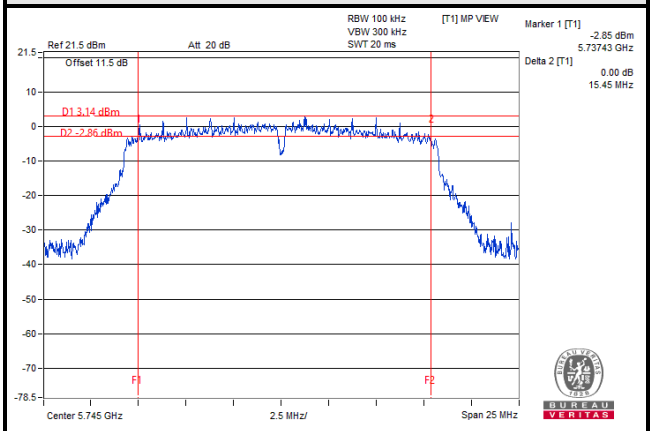


For U-NII-3:

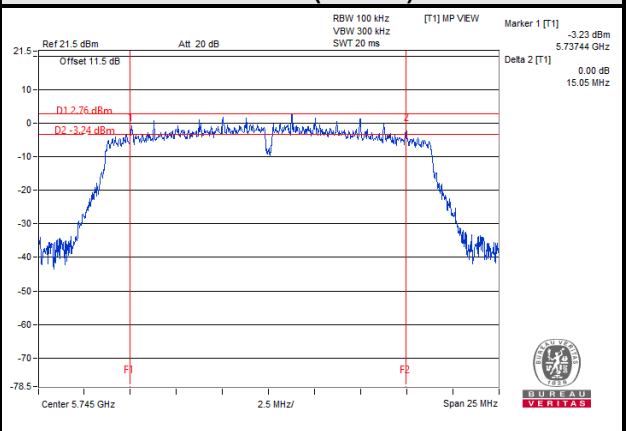
SPECTRUM PLOT OF WORST VALUE of 99% OCCUPIED BANDWIDTH	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	802.11ac (20MHz)
	
802.11ac (40MHz)	802.11ac (80MHz)
	

SPECTRUM PLOT OF WORST VALUE of 6dB Bandwidth

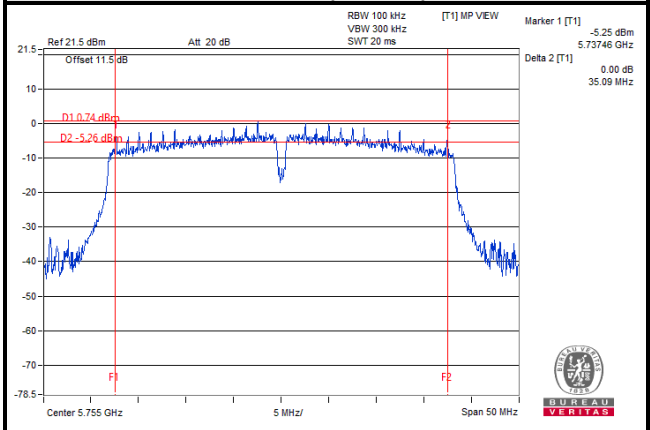
802.11a



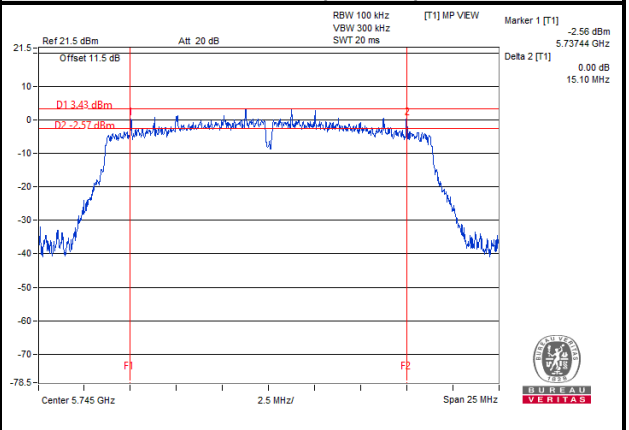
802.11n (20MHz)



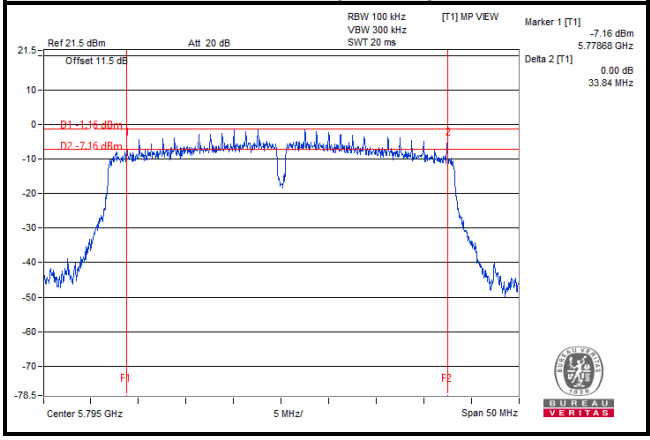
802.11n (40MHz)



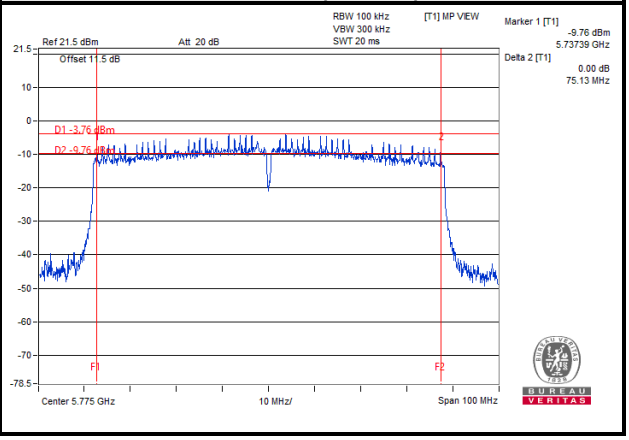
802.11ac (20MHz)



802.11ac (40MHz)



802.11ac (80MHz)

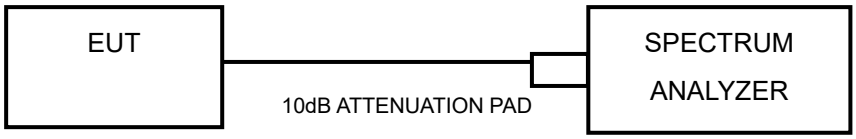


3.5 MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

3.5.1 LIMITS OF MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

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

3.5.2 TEST SETUP



3.5.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.5.4 TEST PROCEDURES

Using method SA-2

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
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) Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).
7) Record the max value

3.5.5 DEVIATION FROM TEST STANDARD

No deviation.

3.5.6 EUT OPERATING CONDITIONS

Same as 3.1.6.

3.5.7 TEST RESULTS

For U-NII-1 & U-NII-2A& U-NII-2C:
802.11a

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
36	5180	3.01	0.14	3.15	11	PASS
40	5200	2.85	0.14	2.99	11	PASS
48	5240	2.65	0.14	2.79	11	PASS
52	5260	2.87	0.14	3.01	11	PASS
60	5300	3.11	0.14	3.25	11	PASS
64	5320	2.42	0.14	2.56	11	PASS
100	5500	3.05	0.14	3.19	11	PASS
116	5580	2.93	0.14	3.07	11	PASS
140	5700	3.76	0.14	3.90	11	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
36	5180	1.25	0.15	1.40	11	PASS
40	5200	1.64	0.15	1.79	11	PASS
48	5240	1.49	0.15	1.64	11	PASS
52	5260	1.37	0.15	1.52	11	PASS
60	5300	0.93	0.15	1.08	11	PASS
64	5320	1.15	0.15	1.30	11	PASS
100	5500	1.66	0.15	1.81	11	PASS
116	5580	2.08	0.15	2.23	11	PASS
140	5700	2.31	0.15	2.46	11	PASS

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
38	5190	-1.14	0.29	-0.85	11	PASS
46	5230	-1.32	0.29	-1.03	11	PASS
54	5270	-1.98	0.29	-1.69	11	PASS
62	5310	-1.78	0.29	-1.49	11	PASS
102	5510	-1.62	0.29	-1.33	11	PASS
110	5550	-0.75	0.29	-0.46	11	PASS
134	5670	-0.89	0.29	-0.60	11	PASS

802.11 ac (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
36	5180	1.77	0.15	1.92	11	PASS
40	5200	2.09	0.15	2.24	11	PASS
48	5240	1.86	0.15	2.01	11	PASS
52	5260	1.74	0.15	1.89	11	PASS
60	5300	1.56	0.15	1.71	11	PASS
64	5320	1.55	0.15	1.70	11	PASS
100	5500	1.19	0.15	1.34	11	PASS
116	5580	1.81	0.15	1.96	11	PASS
140	5700	3.07	0.15	3.22	11	PASS

802.11ac (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
38	5190	-3.02	0.29	-2.73	11	PASS
46	5230	-2.70	0.29	-2.41	11	PASS
54	5270	-2.63	0.29	-2.34	11	PASS
62	5310	-2.70	0.29	-2.41	11	PASS
102	5510	-3.13	0.29	-2.84	11	PASS
110	5550	-2.43	0.29	-2.14	11	PASS
134	5670	-1.81	0.29	-1.52	11	PASS

802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor	PSD with Duty Factor (dBm/MHz)	MAXIMUM LIMIT (dBm/MHz)	PASS/FAIL
42	5210	-5.82	0.57	-5.25	11	PASS
58	5290	-6.26	0.57	-5.69	11	PASS
106	5530	-5.73	0.57	-5.16	11	PASS
122	5610	-7.45	0.57	-6.88	11	PASS

For U-NII-3:

Note: dBm/500kHz= dBm/MHz+10*log(0.5/1)= dBm/MHz-3.01

802.11a

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	-2.17	0.05	0.14	0.19	30	PASS
157	5785	-2.64	-0.42	0.14	-0.28	30	PASS
165	5825	-2.42	-0.20	0.14	-0.06	30	PASS

802.11n (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	-3.75	-1.53	0.15	-1.38	30	PASS
157	5785	-3.50	-1.28	0.15	-1.13	30	PASS
165	5825	-3.99	-1.77	0.15	-1.62	30	PASS

802.11n (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
151	5755	-6.50	-4.28	0.29	-3.99	30	PASS
159	5795	-6.94	-4.72	0.29	-4.43	30	PASS

802.11ac (20MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/300kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
149	5745	-2.95	-0.73	0.15	-0.58	30	PASS
157	5785	-3.24	-1.02	0.15	-0.87	30	PASS
165	5825	-3.34	-1.12	0.15	-0.97	30	PASS

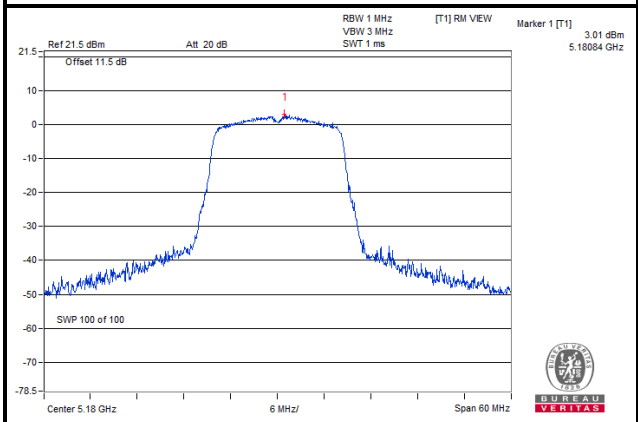
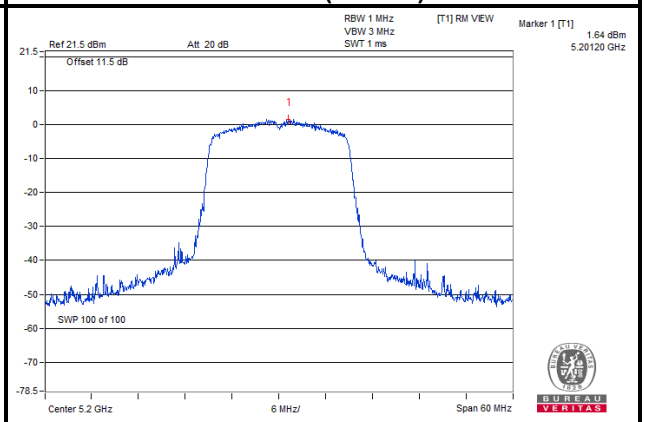
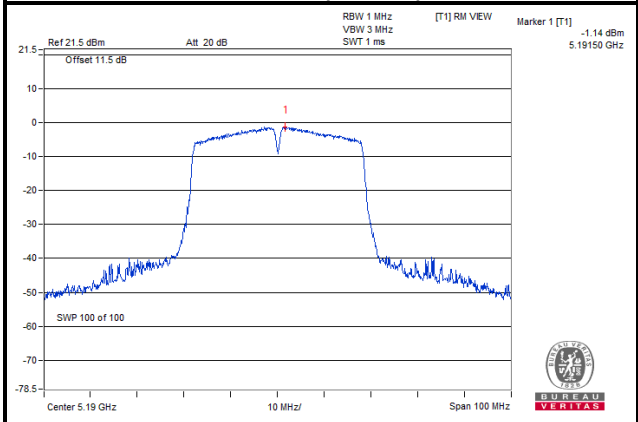
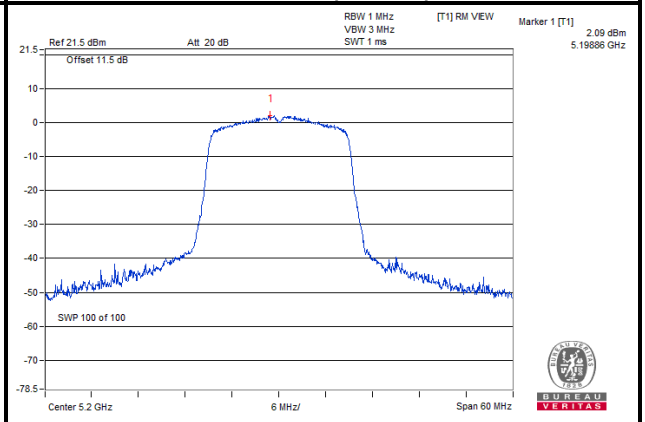
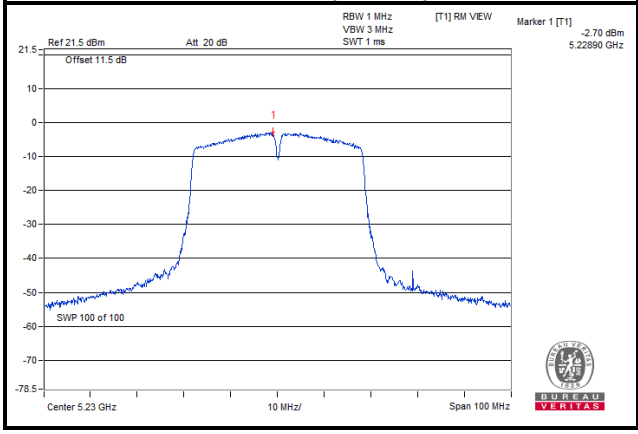
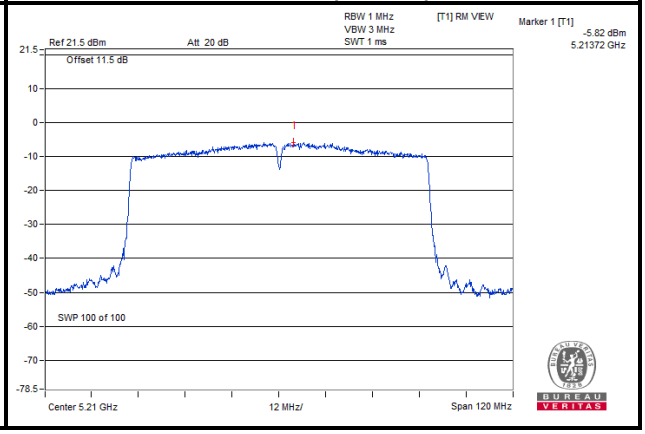
802.11ac (40MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/300kHz)	PSD w/o Duty Factor (dBm/300kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
151	5755	-8.14	-5.92	0.29	-5.63	30	PASS
159	5795	-8.31	-6.09	0.29	-5.80	30	PASS

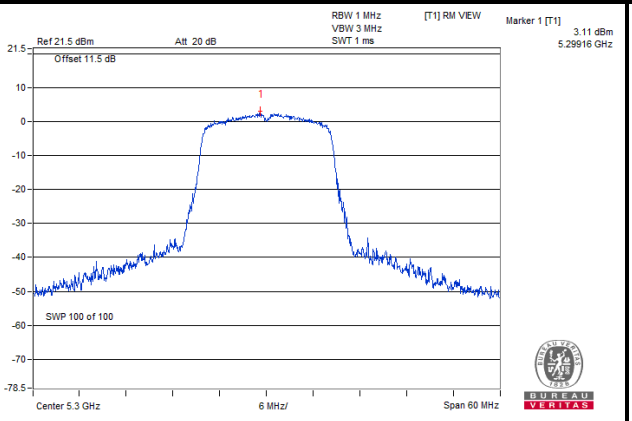
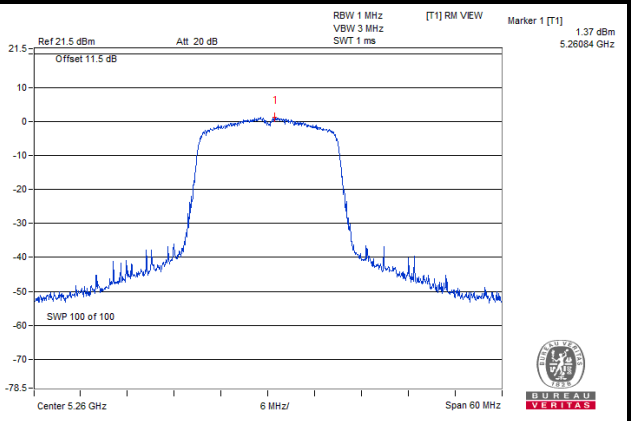
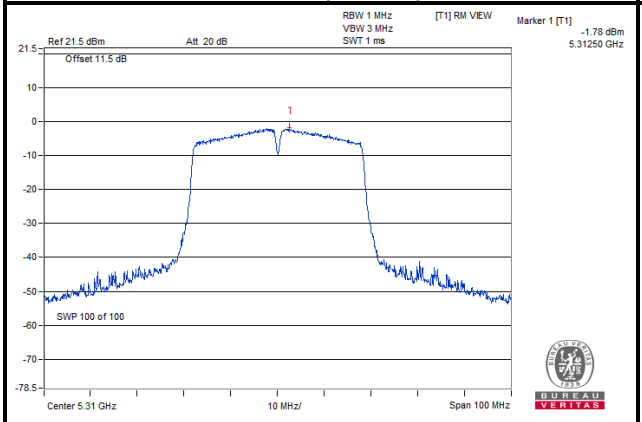
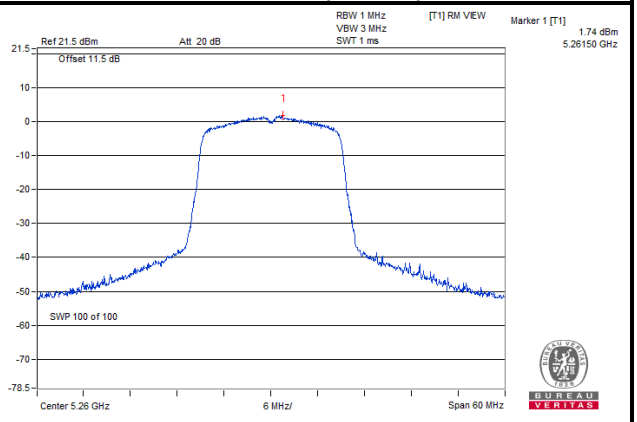
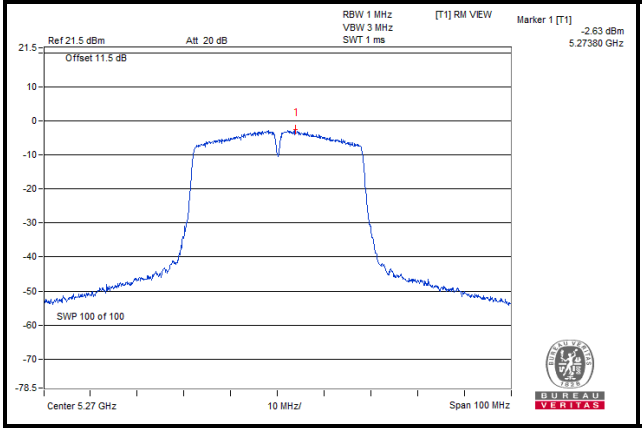
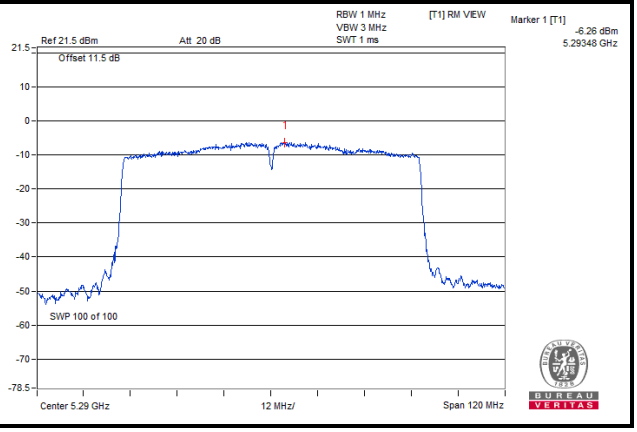
802.11ac (80MHz)

CHANNEL	FREQUENCY (MHz)	PSD w/o Duty Factor (dBm/MHz)	PSD w/o Duty Factor (dBm/500kHz)	Duty Factor	PSD with Duty Factor (dBm/500kHz)	LIMIT (dBm/500kHz)	PASS /FAIL
155	5775	-10.98	-8.76	0.57	-8.19	30	PASS

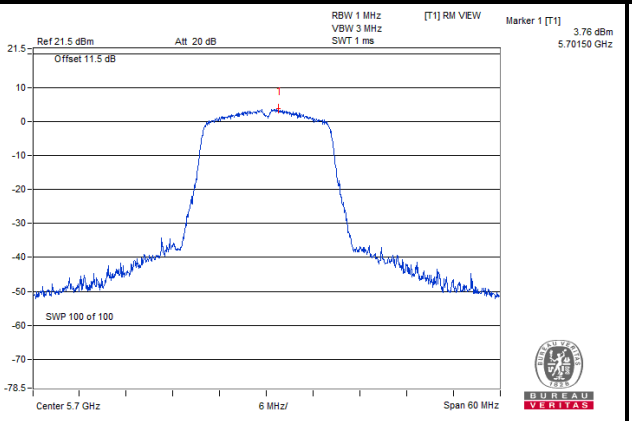
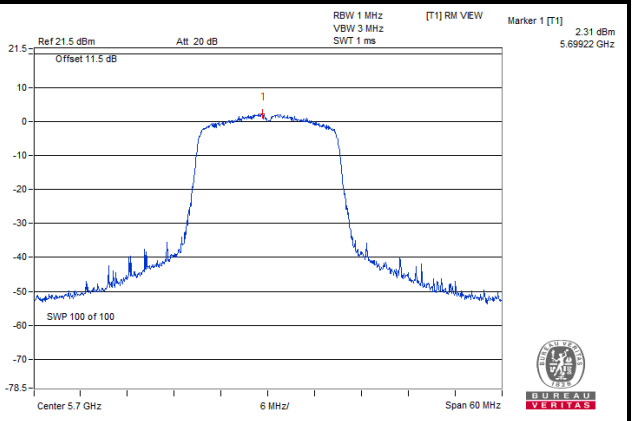
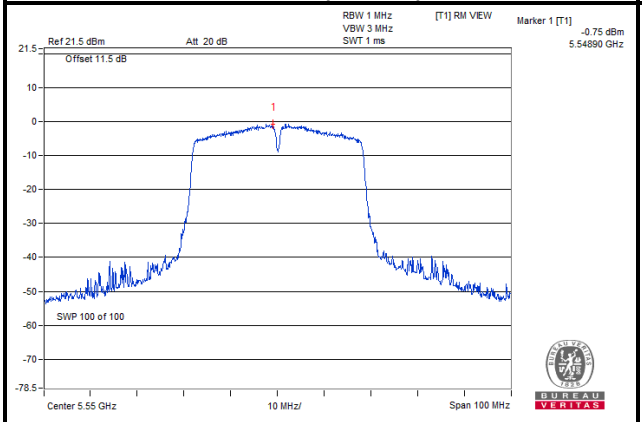
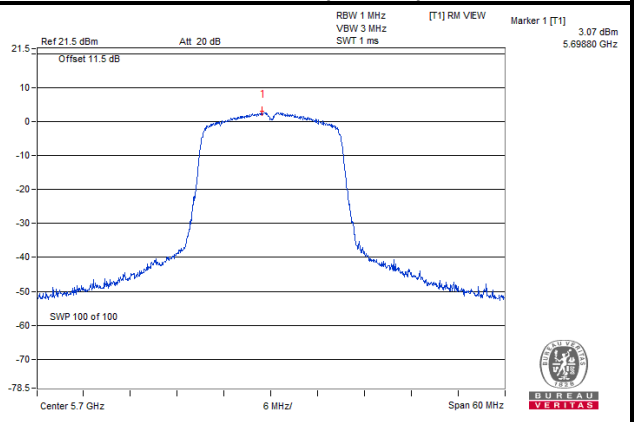
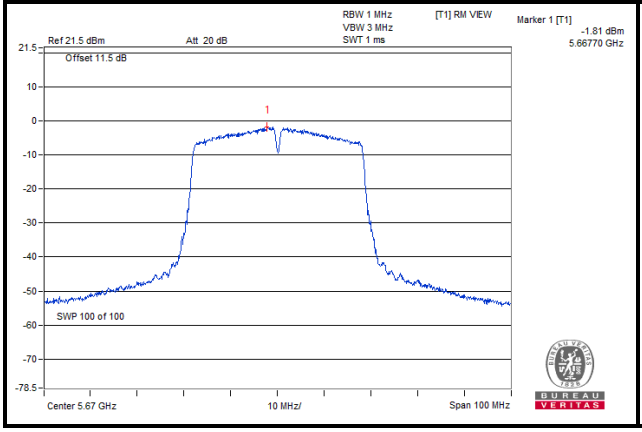
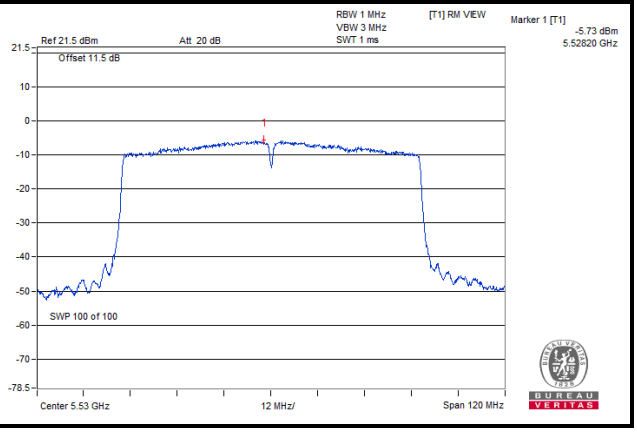
For 5180~5240MHz

PSD w/o Duty Factor	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	802.11ac (20MHz)
	
802.11ac (40MHz)	802.11ac (80MHz)
	

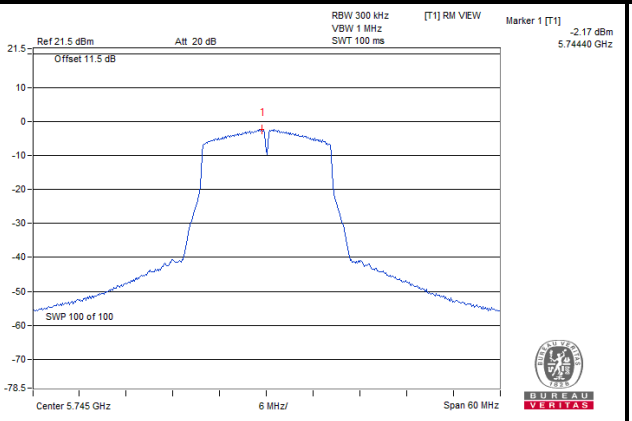
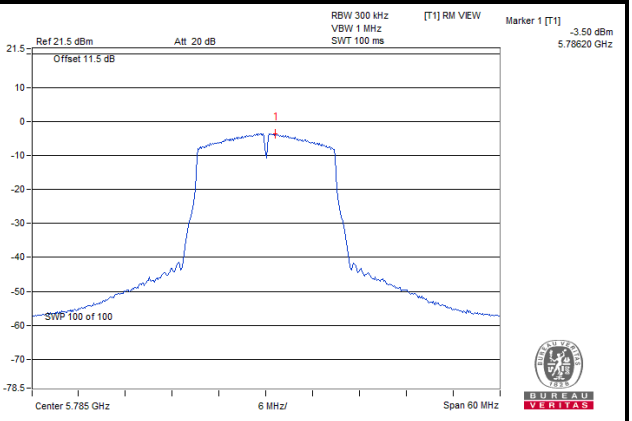
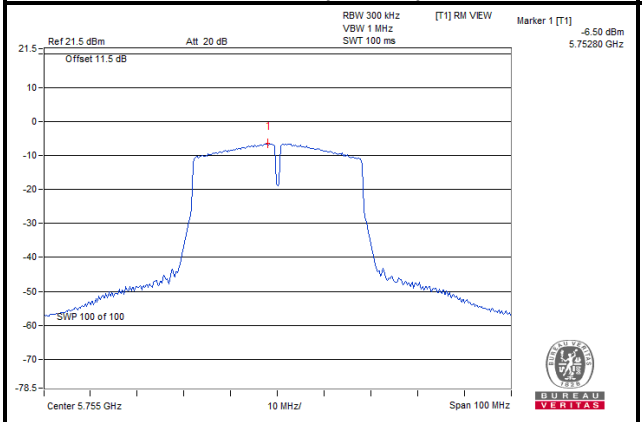
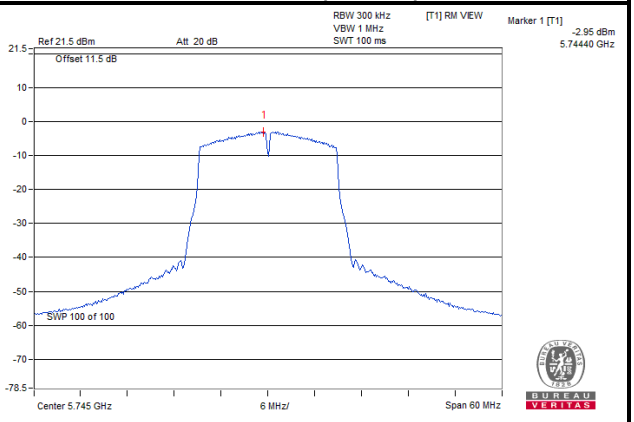
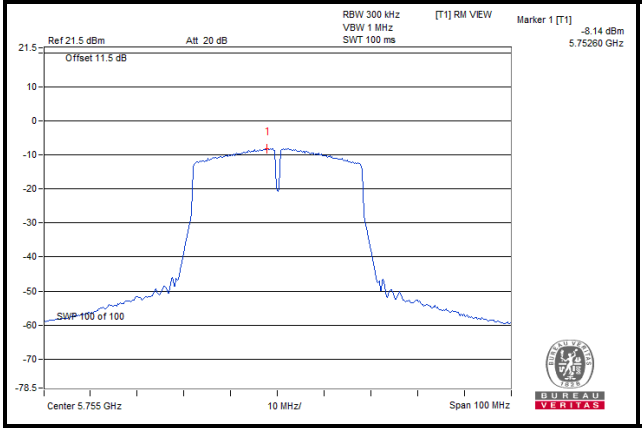
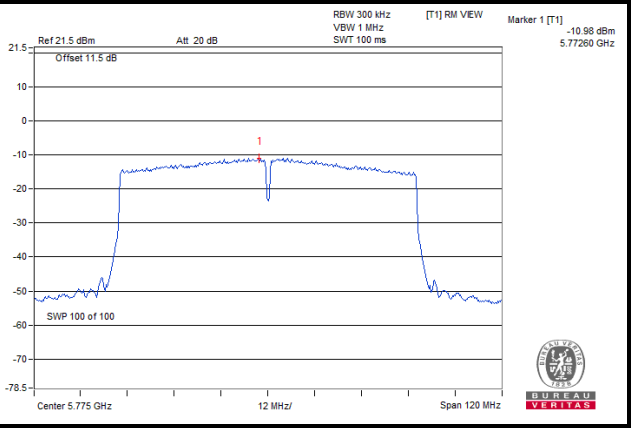
For 5260~5320MHz

PSD w/o Duty Factor	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	802.11ac (20MHz)
	
802.11ac (40MHz)	802.11ac (80MHz)
	

For 5500~5700MHz

PSD w/o Duty Factor	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	802.11ac (20MHz)
	
802.11ac (40MHz)	802.11ac (80MHz)
	

For 5745~5825MHz

PSD w/o Duty Factor	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	802.11ac (20MHz)
	
802.11ac (40MHz)	802.11ac (80MHz)
	

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---