

Fig. 19 Band Edges (802.11ac-HT40 Ch102, 5510MHz)

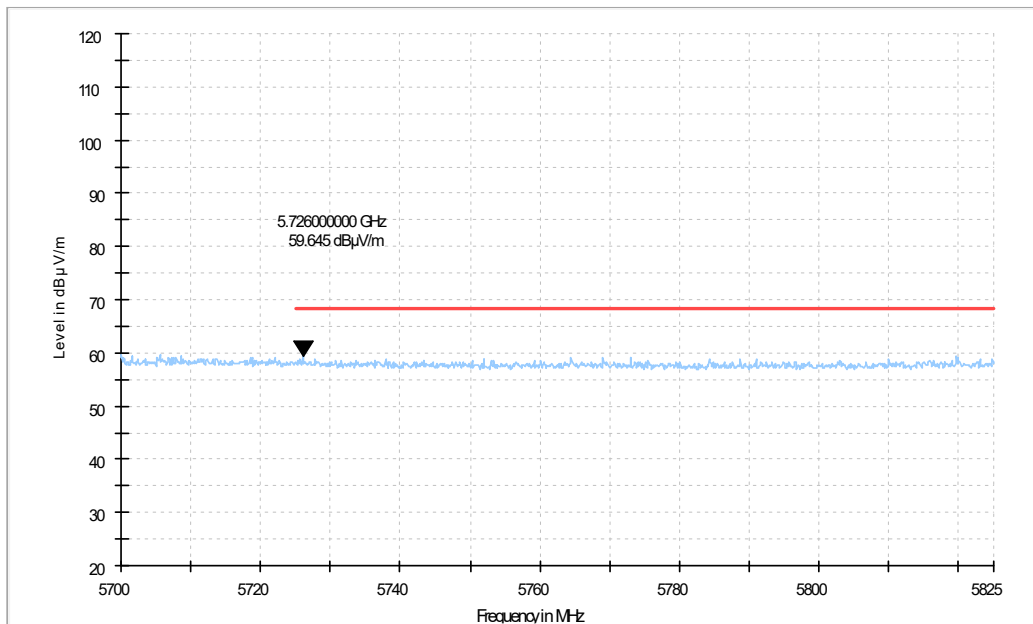


Fig. 20 Band Edges (802.11ac-HT40 Ch134, 5670MHz)

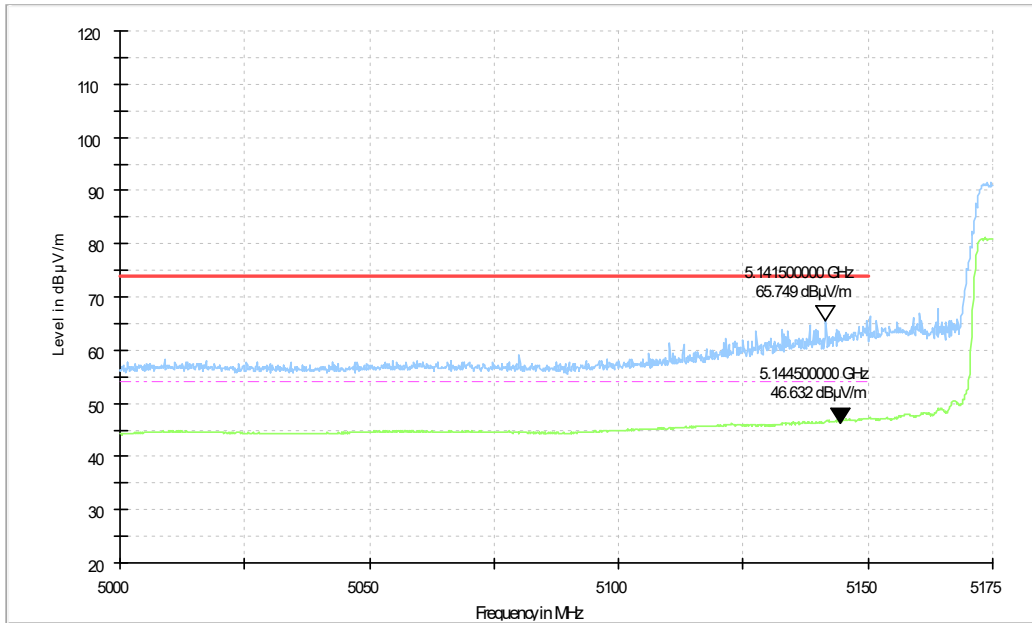


Fig. 21 Band Edges (802.11ac-HT80 Ch42 , 5210MHz)

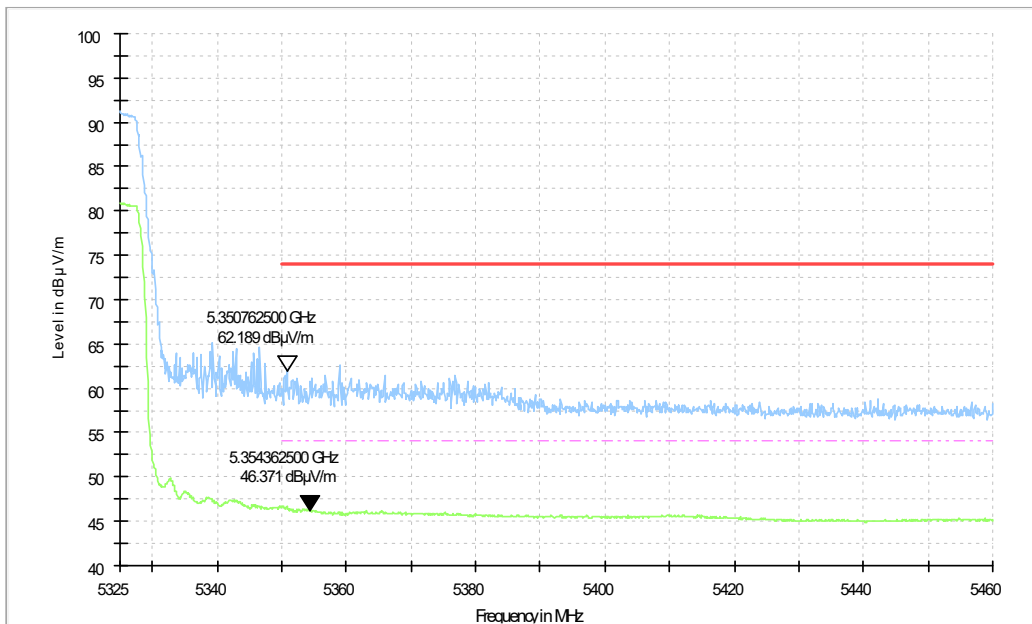


Fig. 22 Band Edges (802.11ac-HT80 Ch58, 5290MHz)

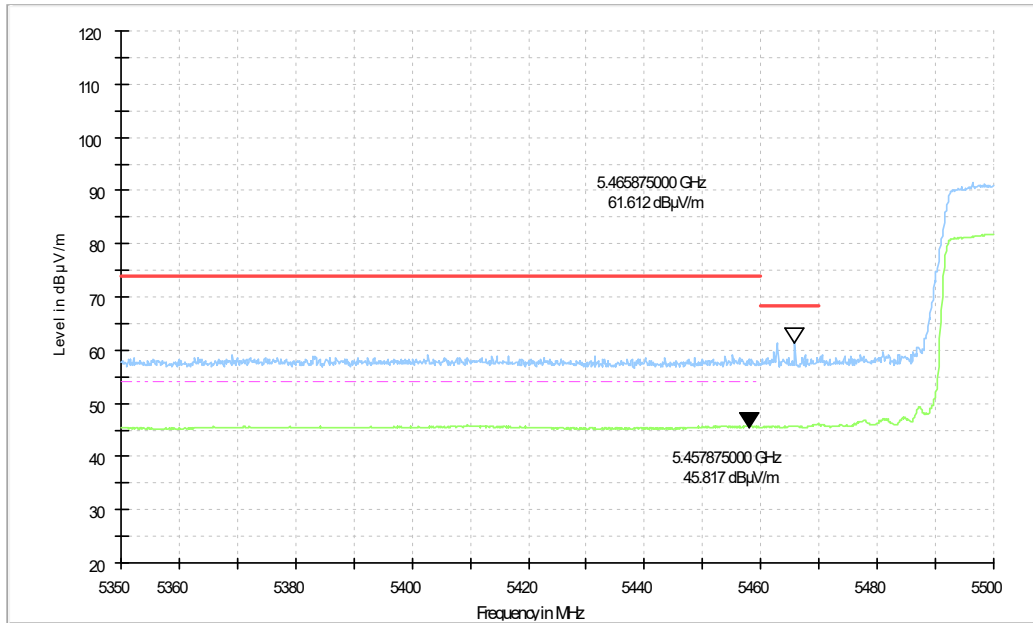


Fig. 23 Band Edges (802.11ac-HT80 Ch106, 5530MHz)

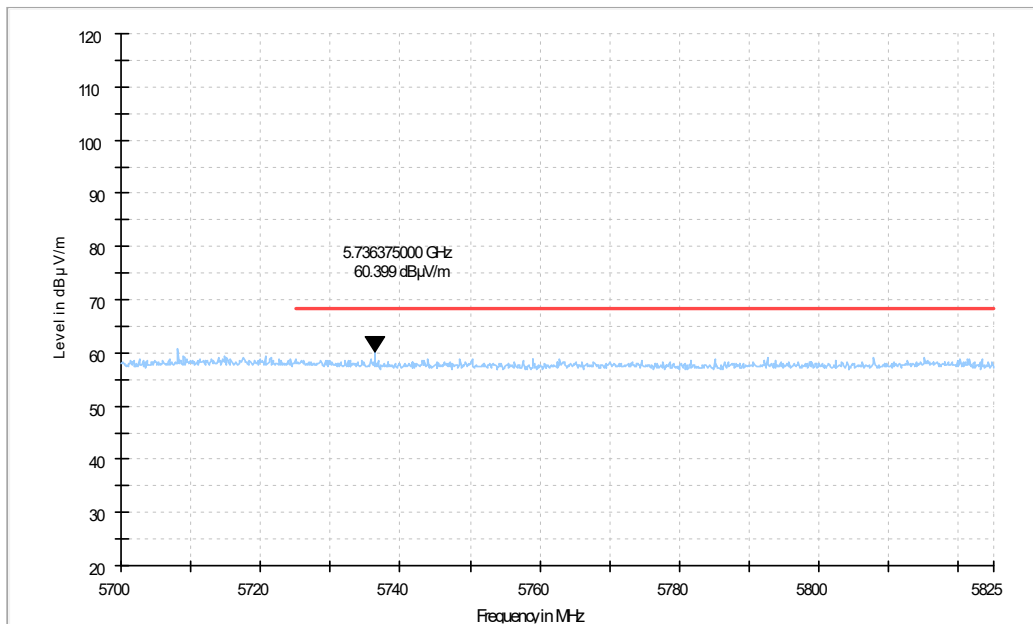


Fig. 24 Band Edges (802.11ac-HT80 Ch122, 5610MHz)

A.6. AC Powerline Conducted Emission (150kHz- 30MHz)

A.6.1 Summary

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section

A.6.2 Method of Measurement

See Clause 6.2 of ANSI C63.10 specifically.

See Clause 4 and Clause 5 of ANSI C63.10 generally.

The conducted emissions from the AC port of the EUT are measured in a shielding room. The EUT is connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection was performed. The measurements were performed with a quasi-peak detector and if required, an average detector.

The conducted emission measurements were made with the following detector of the test receiver: Quasi-Peak / Average Detector.

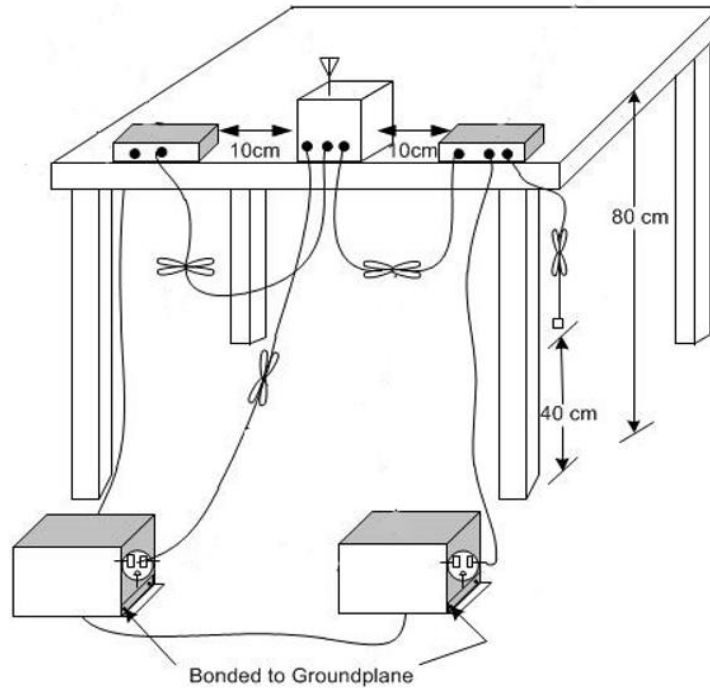
The measurement bandwidth is:

Frequency of Emission (MHz)	RBW/IF bandwidth
0.15-30	9kHz

A.6.3 Test Condition

Voltage (V)	Frequency (Hz)
120	60

A.6.4 Test setup



Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	66 to 56	Fig.25	Fig.26	P
0.5 to 5	56			
5 to 30	60			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	56 to 46	Fig.27	Fig.28	P
0.5 to 5	46			
5 to 30	50			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

Conclusion: PASS

Test graphs as below:

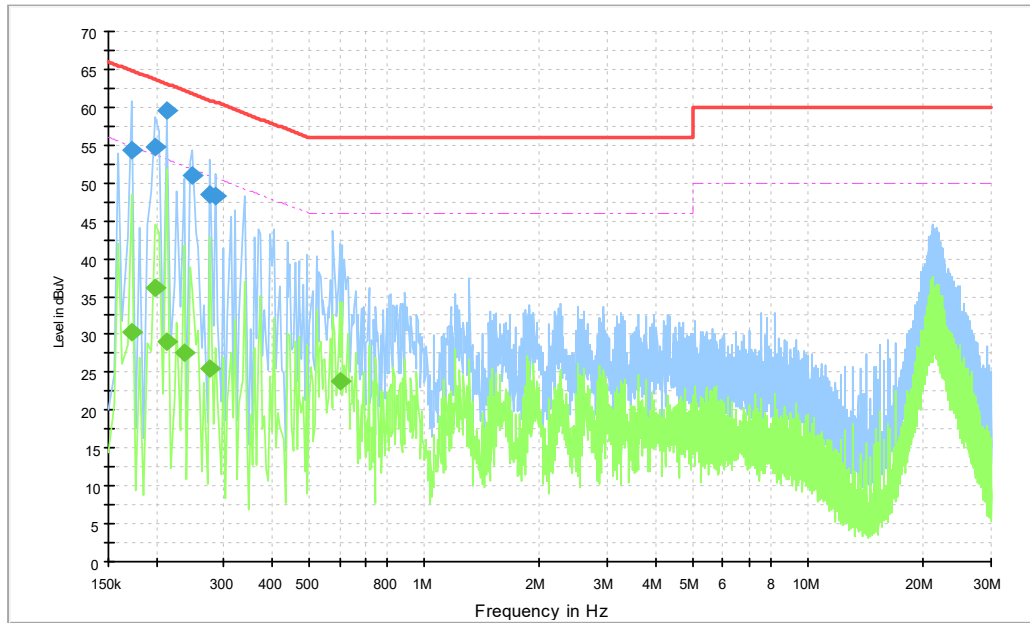


Fig.25 Conducted Emission (802.11a, TX)

Measurement Result:

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.172500	54.3	2000.0	9.000	On	N	20.1	10.6	64.8
0.199500	54.8	2000.0	9.000	On	N	20.0	8.9	63.6
0.213000	59.5	2000.0	9.000	On	L1	20.0	3.6	63.1
0.249000	51.0	2000.0	9.000	On	L1	20.0	10.8	61.8
0.276000	48.4	2000.0	9.000	On	L1	20.1	12.5	60.9
0.285000	48.3	2000.0	9.000	On	L1	20.0	12.4	60.7

Measurement Result:

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.172500	30.3	2000.0	9.000	On	N	20.1	24.6	54.8
0.199500	36.2	2000.0	9.000	On	L1	20.0	17.5	53.6
0.213000	29.0	2000.0	9.000	On	N	20.0	24.1	53.1
0.235500	27.7	2000.0	9.000	On	N	20.0	24.6	52.3
0.276000	25.6	2000.0	9.000	On	L1	20.1	25.4	50.9
0.600000	23.7	2000.0	9.000	On	N	20.1	22.3	46.0

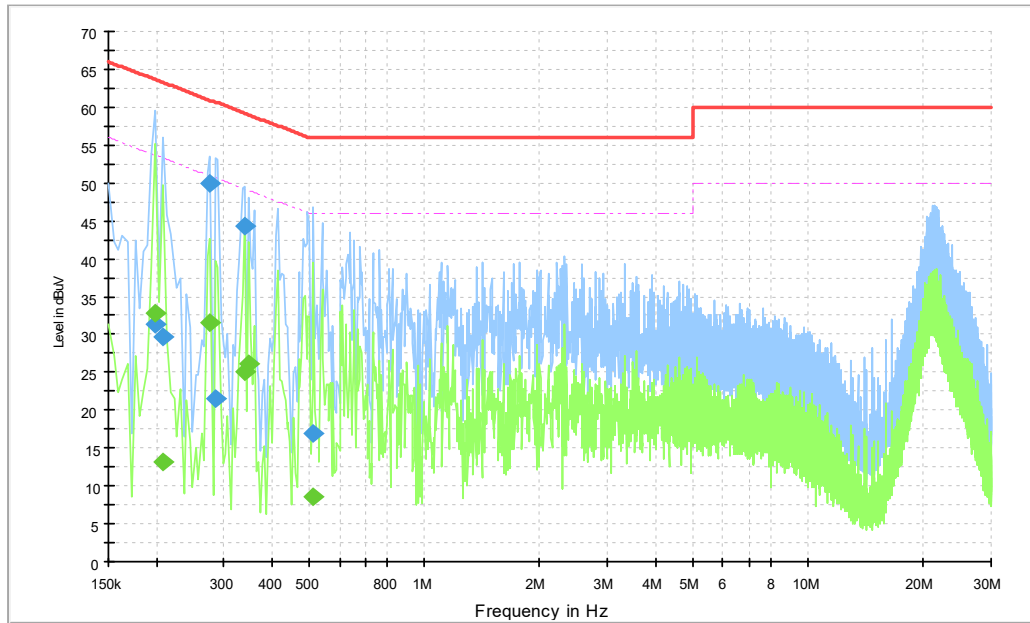


Fig.26 Conducted Emission (802.11a, IDLE)

Measurement Result:

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.199500	31.3	2000.0	9.000	On	N	20.0	32.3	63.6
0.208500	29.7	2000.0	9.000	On	N	20.0	33.6	63.3
0.276000	50.0	2000.0	9.000	On	L1	20.1	11.0	60.9
0.285000	21.6	2000.0	9.000	On	N	20.1	39.1	60.7
0.339000	44.4	2000.0	9.000	On	L1	20.1	14.9	59.2
0.514500	16.9	2000.0	9.000	On	N	20.2	39.1	56.0

Measurement Result:

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.199500	32.8	2000.0	9.000	On	L1	20.0	20.8	53.6
0.208500	13.1	2000.0	9.000	On	N	20.0	40.2	53.3
0.276000	31.6	2000.0	9.000	On	L1	20.1	19.3	50.9
0.339000	25.1	2000.0	9.000	On	L1	20.1	24.1	49.2
0.348000	26.2	2000.0	9.000	On	L1	20.0	22.8	49.0
0.514500	8.5	2000.0	9.000	On	L1	20.1	37.5	46.0

A.7. 99% Occupied bandwidth

Method of Measurement: See ANSI C63.10-2013-clause 12.4.2.

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.5.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) 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.
- f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. 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% power bandwidth is the difference between these two frequencies.
- h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

Measurement Uncertainty:

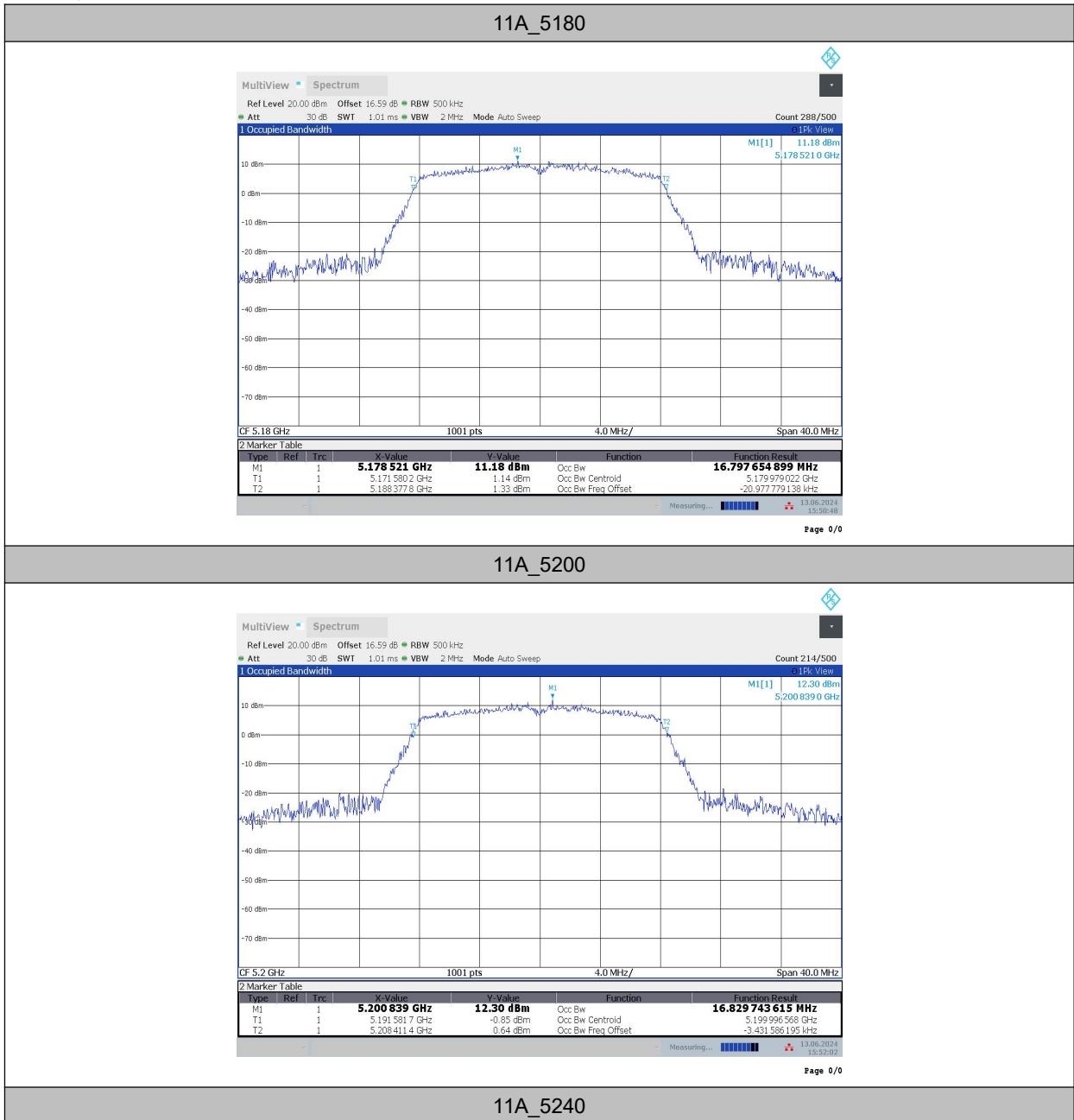
Measurement Uncertainty	60.80Hz
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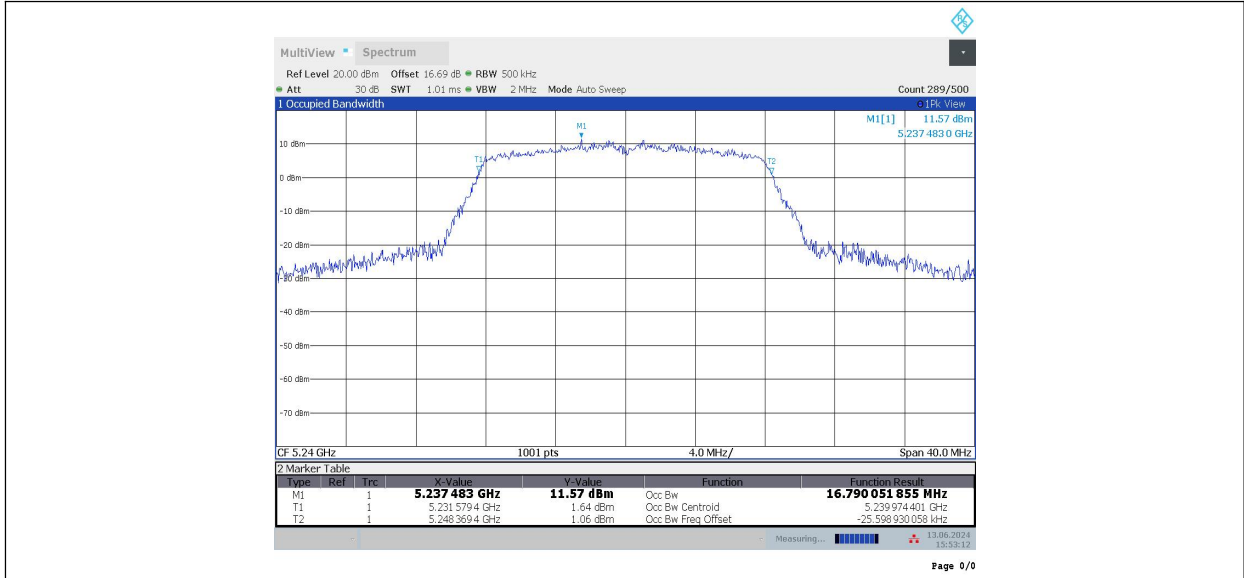
EUT ID: UT12a

Measurement Result:

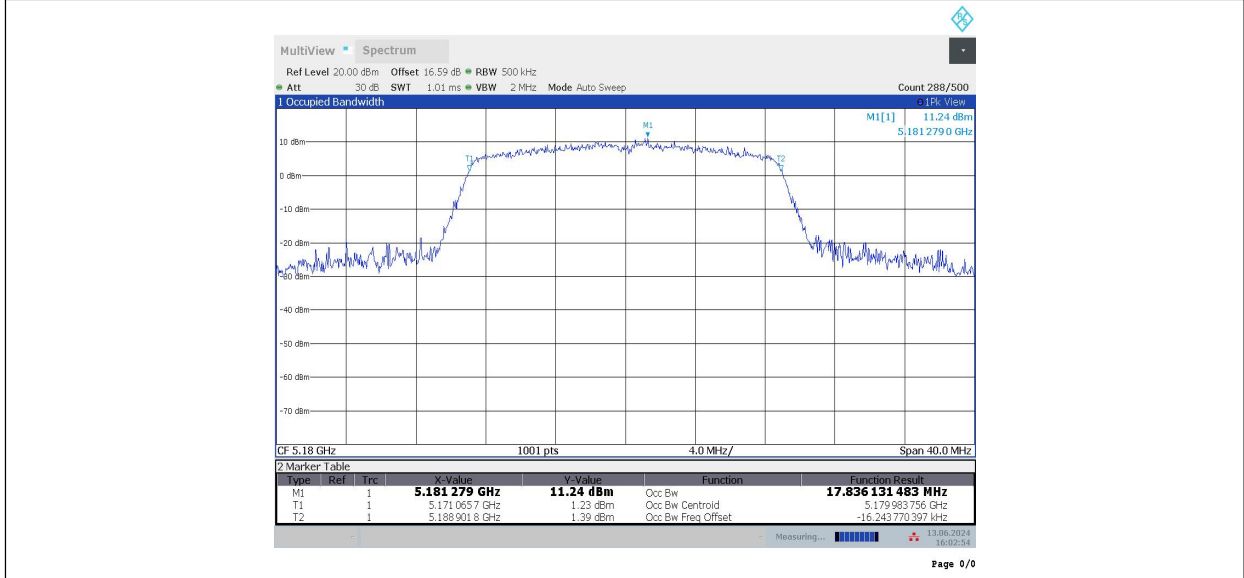
Mode	Frequency	99% Occupied bandwidth (MHz)	conclusion
802.11a	5180 MHz	16.79	P
	5200 MHz	16.83	P
	5240 MHz	16.79	P
802.11n HT20	5180 MHz	17.84	P
	5200 MHz	17.86	P
	5240 MHz	17.91	P
802.11n HT40	5190 MHz	36.34	P
	5230 MHz	36.25	P
802.11ac VHT80	5210 MHz	75.46	P

Test graphs as below:

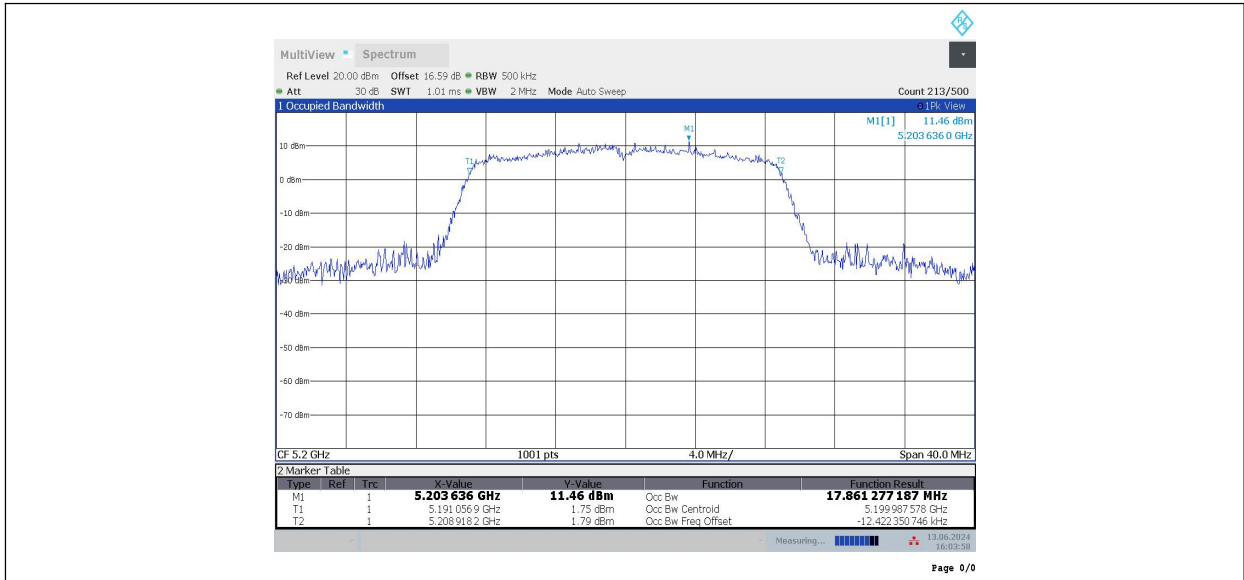




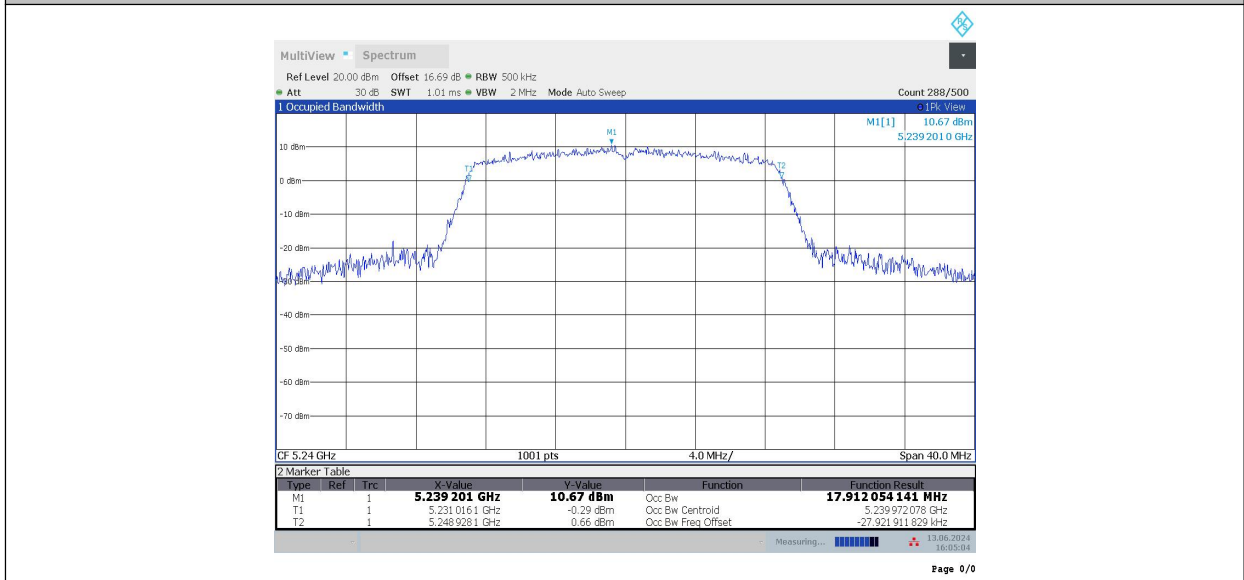
11N20SISO_5180



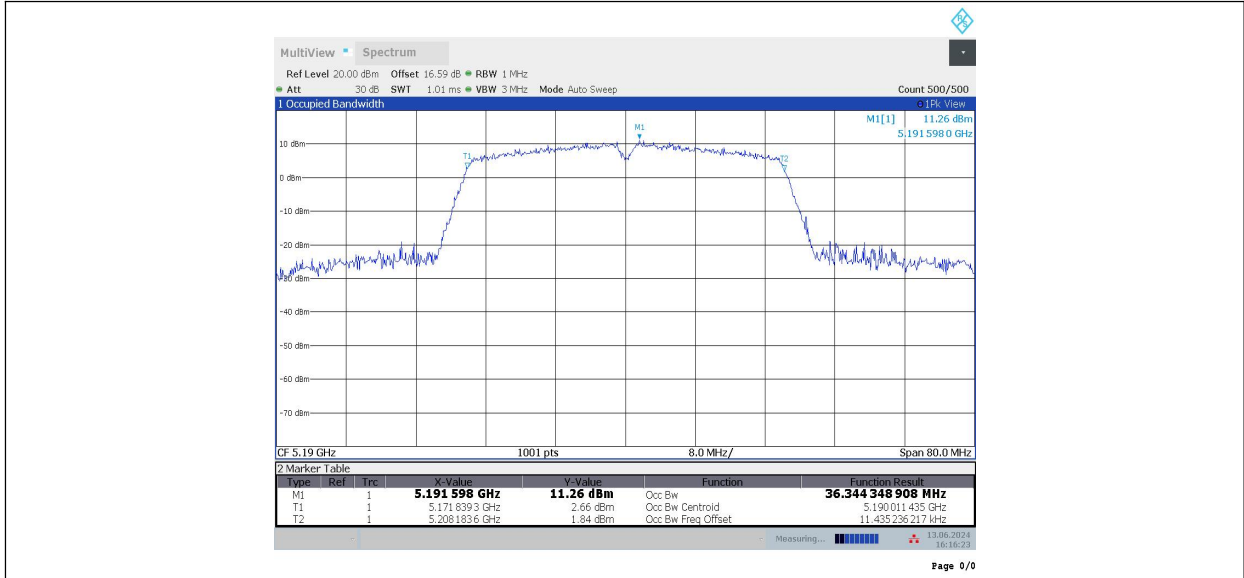
11N20SISO_5200



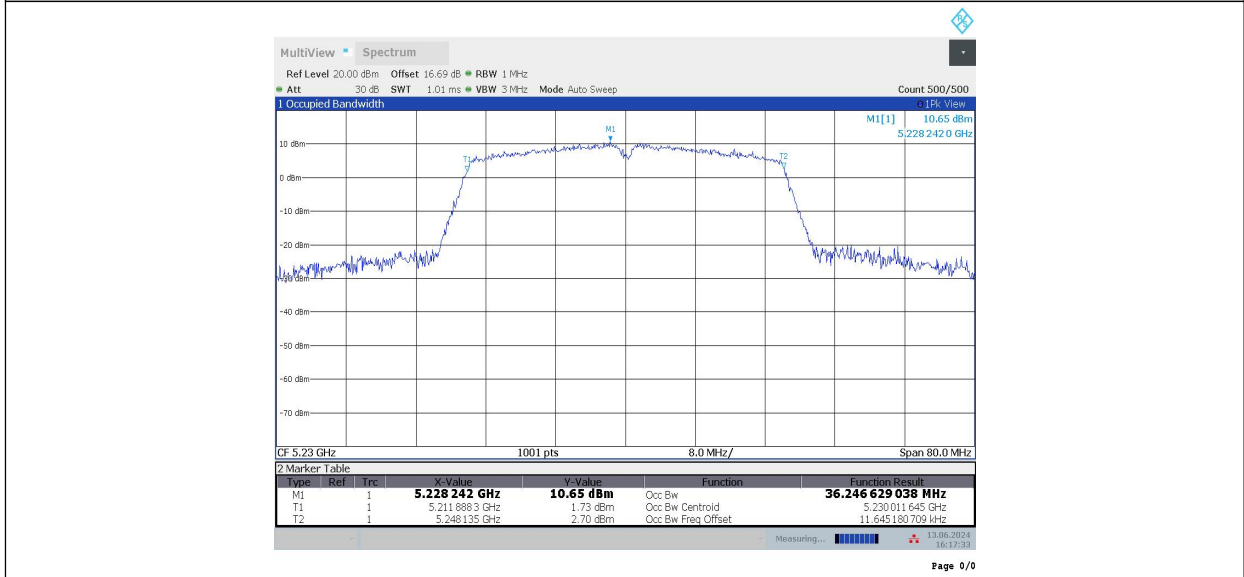
11N20SISO_5240



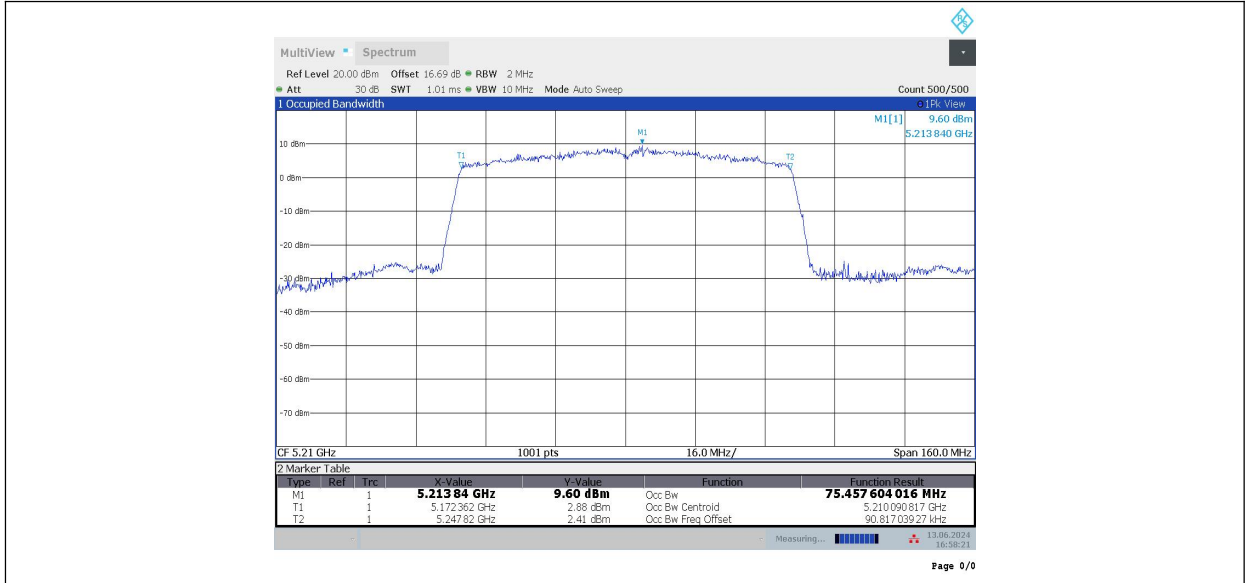
11N40SISO_5190



11N40SISO_5230



11AC80SISO_5210



Conclusion: PASS

A.8. Power control

A Transmission Power Control mechanism is not required for systems with an e.i.r.p. of less than 27dBm (500 mW).

ANNEX B: EUT parameters

Disclaimer: The antenna gain and worse case provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

ANNEX C: Accreditation Certificate



*** END OF REPORT BODY ***