

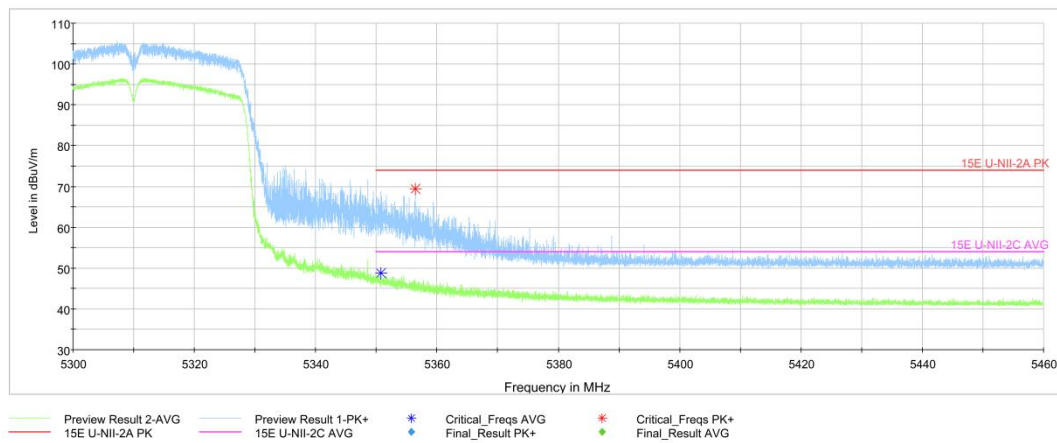


Fig.10 Band Edges (802.11n-HT40 Ch62, 5310MHz)

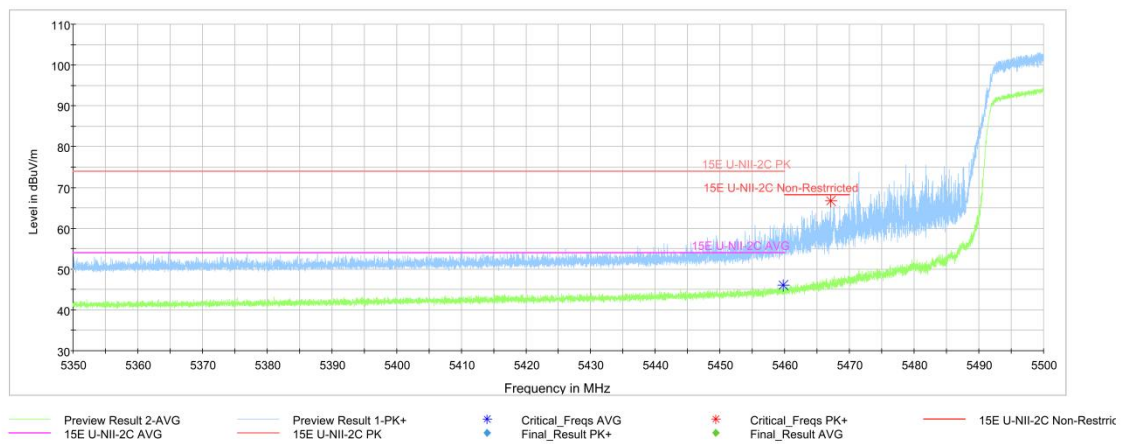


Fig.11 Band Edges (802.11n-HT40 Ch102, 5510MHz)

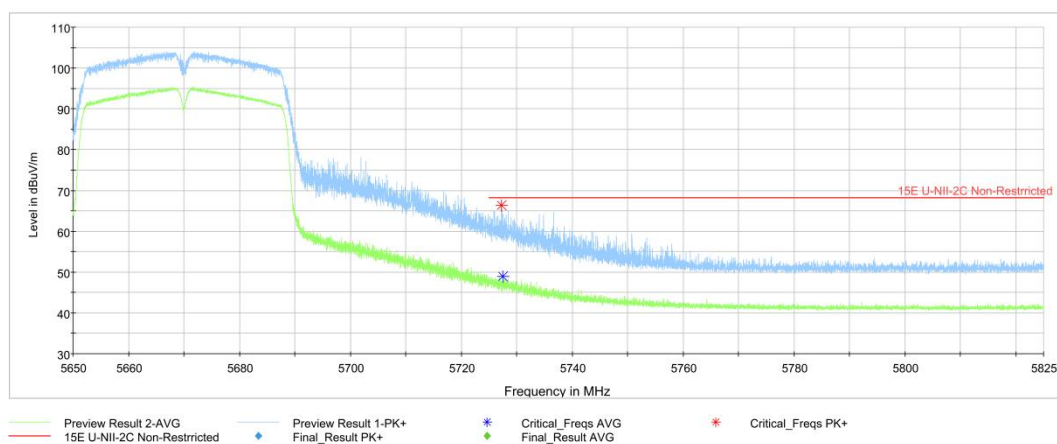


Fig.12 Band Edges (802.11n-HT40 Ch134, 5670MHz)

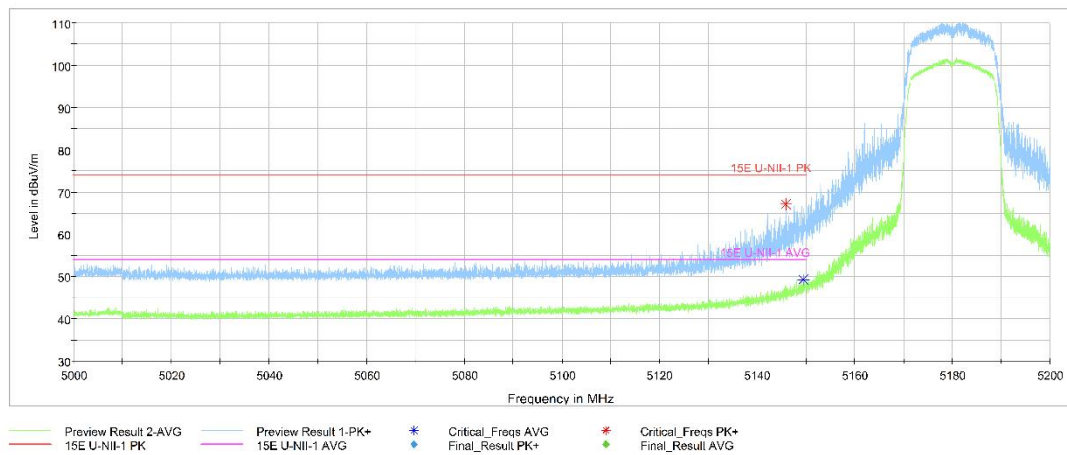


Fig.13 Band Edges (802.11ac-HT20 Ch36, 5180MHz)

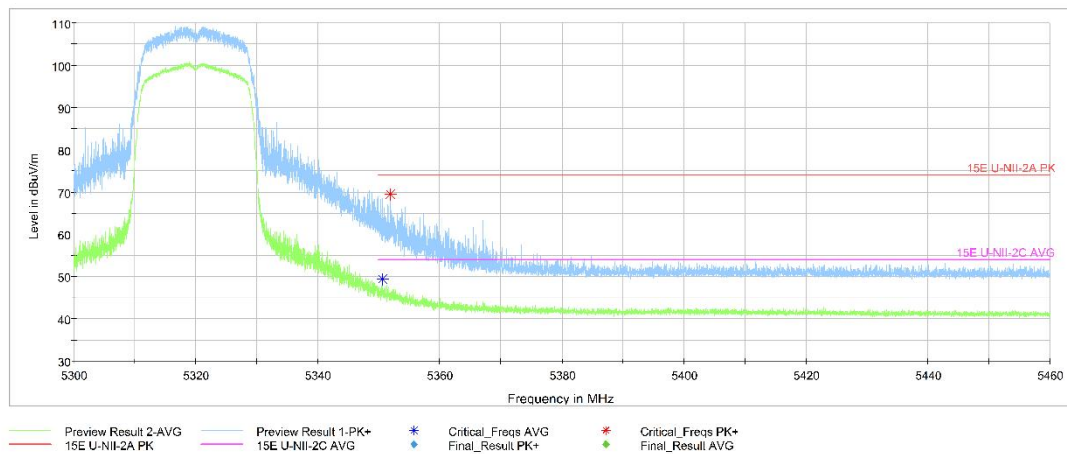


Fig.14 Band Edges (802.11ac-HT20 Ch64, 5320MHz)

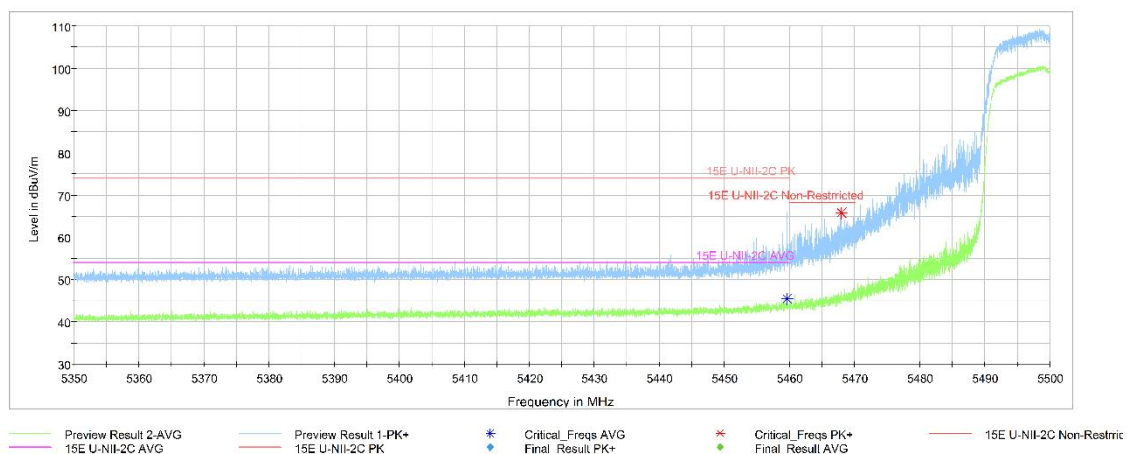


Fig.15 Band Edges (802.11ac-HT20 Ch100, 5500MHz)

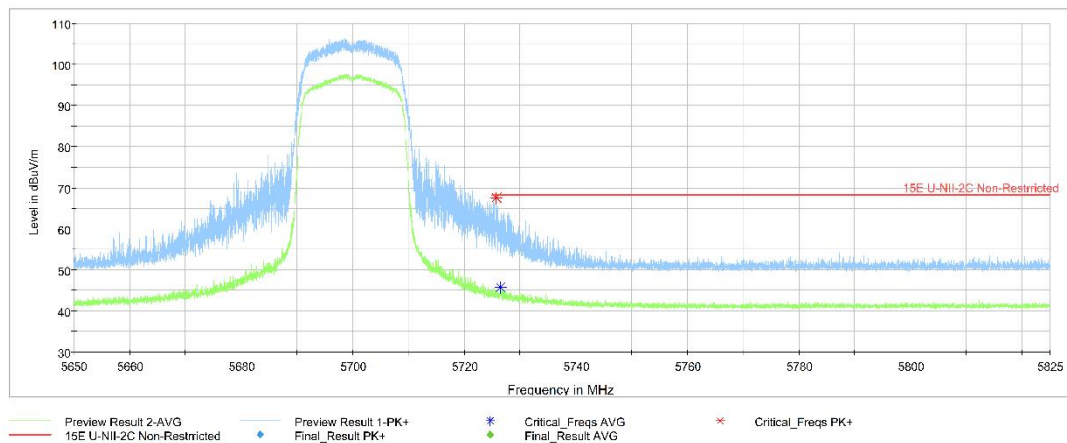


Fig.16 Band Edges (802.11ac-HT20 Ch140, 5700MHz)

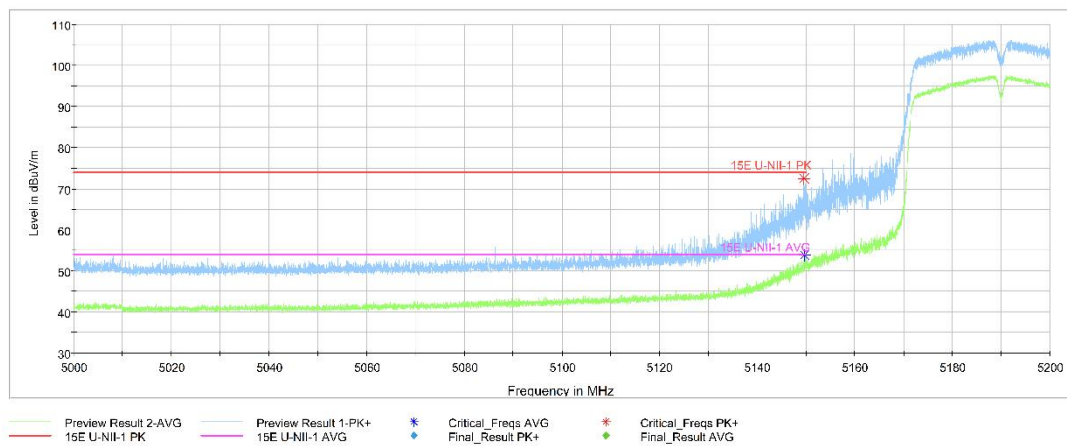


Fig.17 Band Edges (802.11ac-HT40 Ch38, 5190MHz)

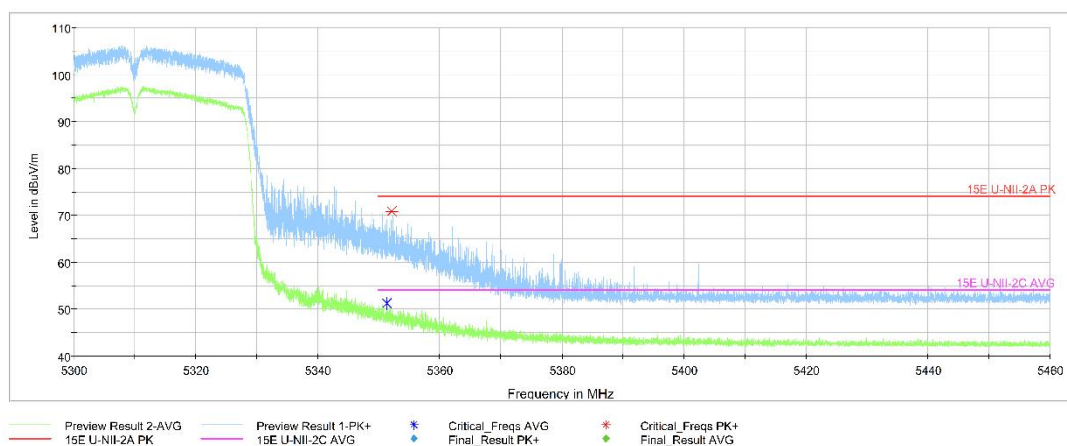


Fig.18 Band Edges (802.11ac-HT40 Ch62, 5310MHz)

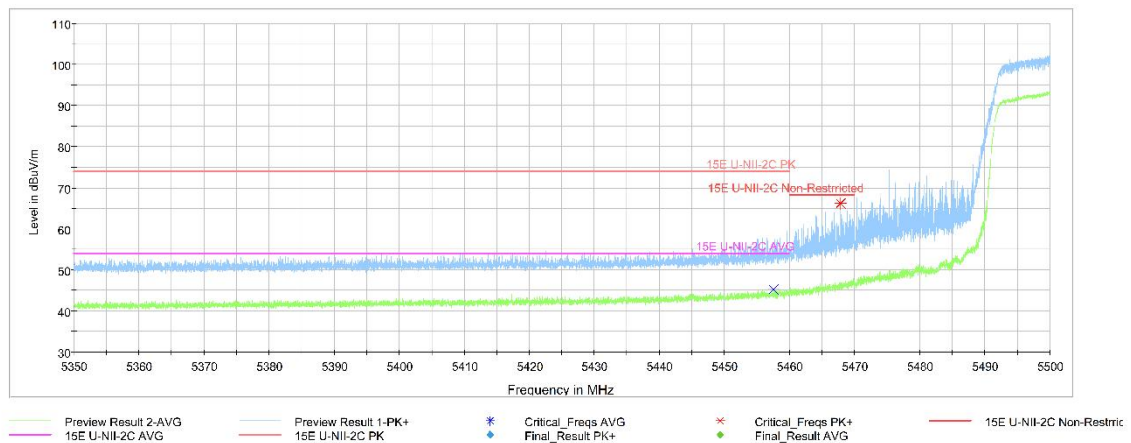


Fig.19 Band Edges (802.11ac-HT40 Ch102, 5510MHz)

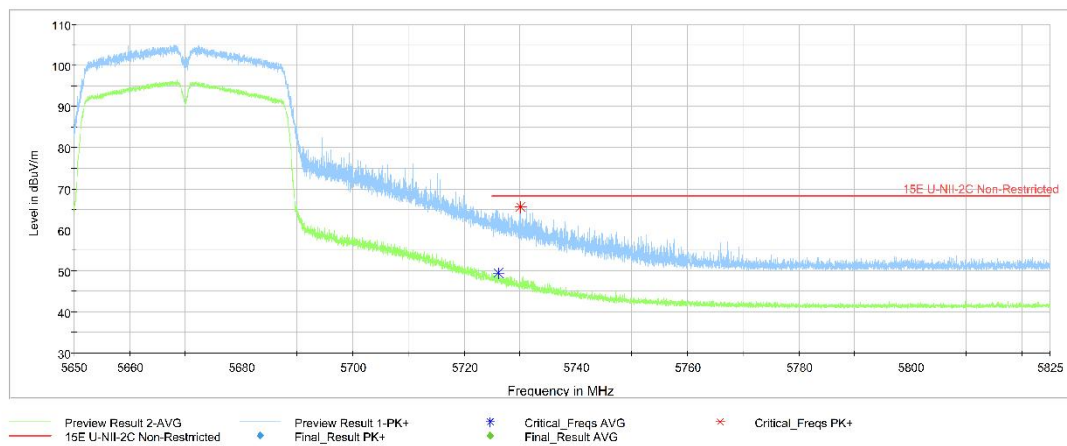


Fig.20 Band Edges (802.11ac-HT40 Ch134, 5670MHz)

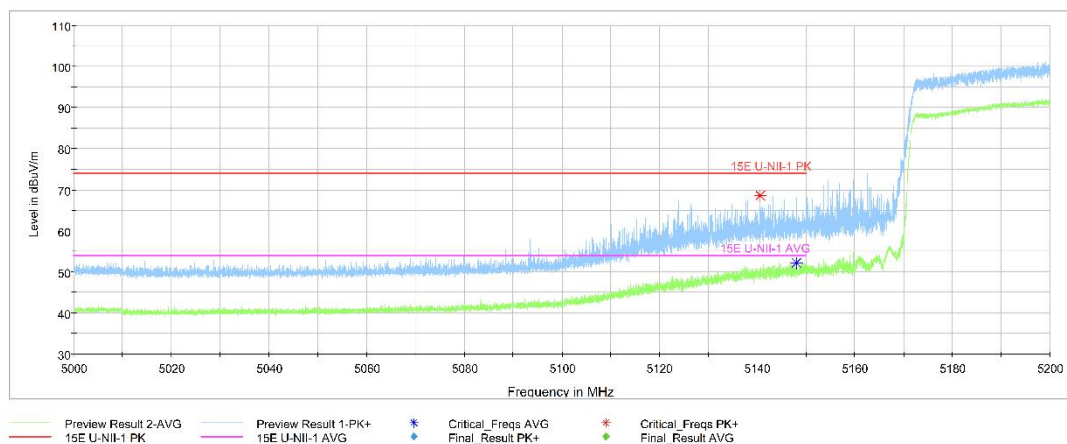


Fig.21 Band Edges (802.11ac-HT80 Ch42, 5210MHz)

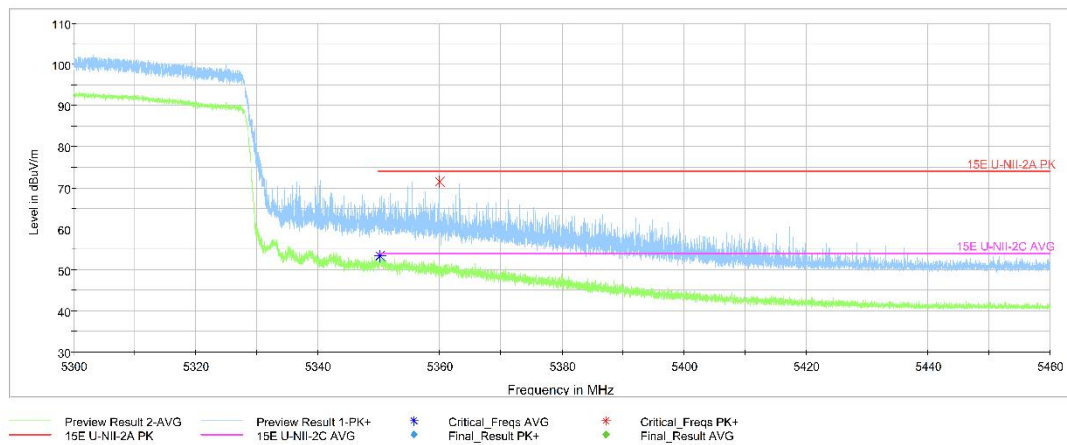


Fig.22 Band Edges (802.11ac-HT80 Ch58, 5290MHz)

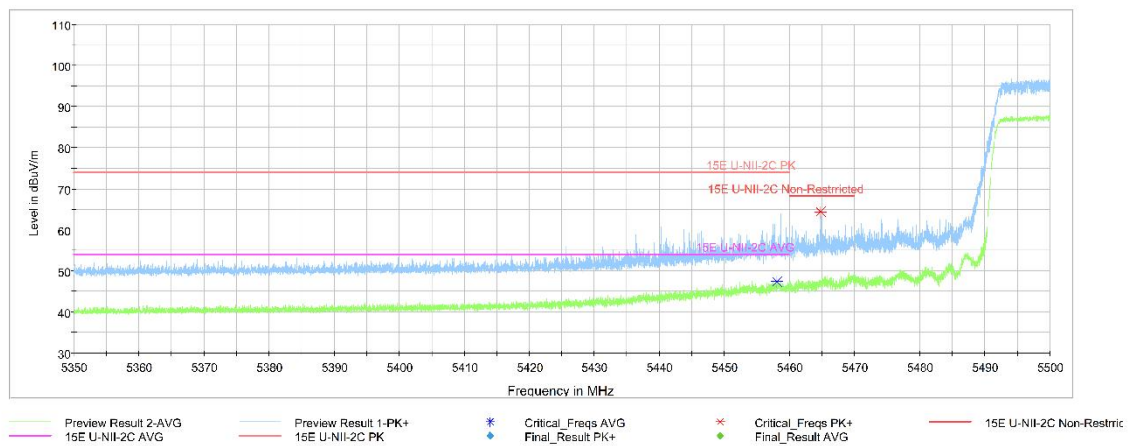


Fig.23 Band Edges (802.11ac-HT80 Ch106, 5530MHz)

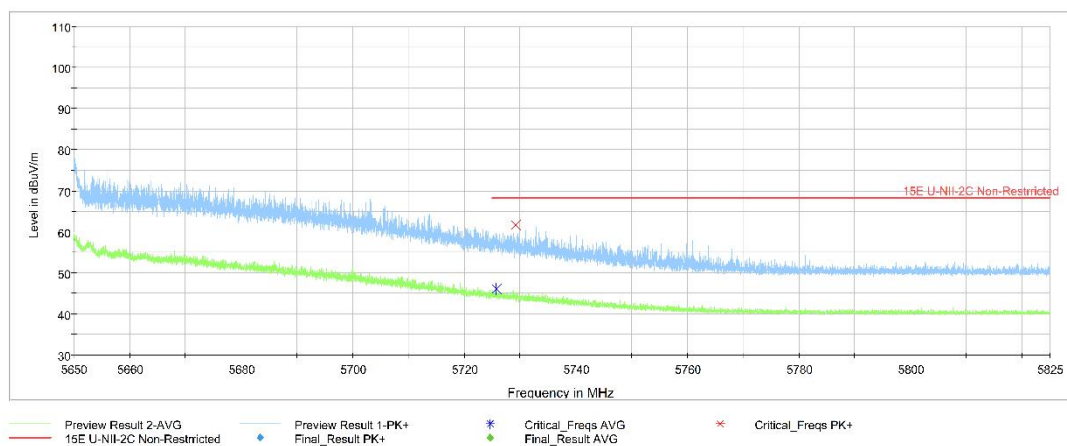


Fig.24 Band Edges (802.11ac-HT80 Ch122, 5610MHz)

A.6. Transmitter Spurious Emission

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.407	-27 dBm/MHz

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Limit in restricted band:

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)	Measurement distance(m)
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

The measurement is made according to ANSI C63.10-2013 and KDB 789033

Measurement Results:

802.11a mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11a	36(5180MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	40(5200MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	48(5240MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	52(5260MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	56(5280MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	64(5320MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	100(5500MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	120(5600MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	140(5700MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n -HT20	36(5180MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	40(5200MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	48(5240MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	52(5260MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	56(5280MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	64(5320MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	100(5500MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	120(5600MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	140(5700MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

802.11n-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n HT40	38(5190MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	46(5230MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	54(5270MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	62(5310MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	102(5510MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	118(5590MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	134(5670MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P

802.11ac-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac -HT20	36(5180MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	40(5200MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	48(5240MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	52(5260MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	56(5280MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	64(5320MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	100(5500MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	120(5600MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	140(5700MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

802.11ac-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac HT40	38(5190MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	46(5230MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	54(5270MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	62(5310MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	102(5510MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	118(5590MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	134(5670MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P

802.11ac-HT80 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac -HT80	42(5210MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	58(5290MHz)	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz ~ 40 GHz	---	P
	106(5530MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	122(5610MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

Conclusion: PASS

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

$$\text{Result} = P_{Mea} + A_{Rpl} = P_{Mea} + \text{Cable Loss} + \text{Antenna Factor}$$

AVERAGE Results:
802.11a
Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17909.25	45.4	-25.55	45.4	25.55	54	8.6	H
17912.55	45.25	-25.55	45.4	25.4	54	8.75	V
13371.2	39.48	-30.08	40.7	28.86	54	14.52	H
13273.85	39.24	-29.75	40.4	28.59	54	14.76	V
5148.44	51.91	-27.34	33.9	45.35	54	2.09	H
5149.18	51.84	-27.27	34	45.11	54	2.16	H

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17912.550	44.79	-25.55	45.40	24.94	54.00	9.21	H
17921.900	44.56	-25.55	45.40	24.71	54.00	9.44	V
14483.850	38.57	-28.78	41.80	25.55	54.00	15.43	V
14489.900	38.54	-28.78	41.80	25.52	54.00	15.46	H
5350.672	52.90	-27.08	34.20	45.78	54.00	1.10	H
5350.512	52.80	-27.08	34.20	45.68	54.00	1.20	H

Channel 100

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17855.350	44.45	-25.55	45.40	24.60	54.00	9.55	V
17913.100	44.27	-25.55	45.40	24.42	54.00	9.73	H
14490.450	38.56	-28.78	41.80	25.54	54.00	15.44	V
14497.600	38.50	-28.78	41.80	25.48	54.00	15.50	V
5457.565	45.52	-27.06	34.30	38.28	54.00	8.48	H
5459.020	45.48	-27.06	34.30	38.24	54.00	8.52	H

802.11n-HT20

Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17905.950	44.46	-25.55	45.40	24.61	54.00	9.54	V
17907.050	44.33	-25.55	45.40	24.48	54.00	9.67	H
14494.300	38.54	-28.78	41.80	25.52	54.00	15.46	H
14476.700	38.47	-28.78	41.80	25.45	54.00	15.53	H
5148.080	49.81	-27.34	33.90	43.25	54.00	4.19	H
5149.200	49.42	-27.27	34.00	42.69	54.00	4.58	H

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17919.150	44.46	-25.55	45.40	24.61	54.00	9.54	H
17938.950	44.44	-25.55	45.40	24.59	54.00	9.56	V
14484.950	38.49	-28.78	41.80	25.47	54.00	15.51	V
14487.150	38.44	-28.78	41.80	25.42	54.00	15.56	H
5350.208	49.57	-27.08	34.20	42.45	54.00	4.43	H
5350.416	49.38	-27.08	34.20	42.26	54.00	4.62	H

Channel 100

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17932.900	44.76	-25.55	45.40	24.91	54.00	9.24	H
17898.250	44.75	-25.55	45.40	24.90	54.00	9.25	V
14492.100	38.61	-28.78	41.80	25.59	54.00	15.39	H
14499.800	38.58	-28.78	41.80	25.56	54.00	15.42	H
5459.920	45.32	-27.06	34.30	38.08	54.00	8.68	H
5457.130	45.22	-27.06	34.30	37.98	54.00	8.78	H

802.11n-HT40

Channel 38

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17916.950	44.47	-25.55	45.40	24.62	54.00	9.53	H
17919.700	44.42	-25.55	45.40	24.57	54.00	9.58	H
14492.650	38.53	-28.78	41.80	25.51	54.00	15.47	H
14499.800	38.50	-28.78	41.80	25.48	54.00	15.50	H
5149.240	49.69	-27.27	34.00	42.96	54.00	4.31	H
5148.040	49.68	-27.34	33.90	43.12	54.00	4.32	H

Channel 62

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17899.900	44.83	-25.55	45.40	24.98	54.00	9.17	V
17934.000	44.52	-25.55	45.40	24.67	54.00	9.48	V
14499.800	38.90	-28.78	41.80	25.88	54.00	15.10	V
14478.350	38.64	-28.78	41.80	25.62	54.00	15.36	V
5350.752	48.69	-27.08	34.20	41.57	54.00	5.31	H
5350.416	48.62	-27.08	34.20	41.50	54.00	5.38	H

Channel 102

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17964.800	44.62	-25.55	45.40	24.77	54.00	9.38	V
17904.300	44.50	-25.55	45.40	24.65	54.00	9.50	V
14497.600	38.48	-28.78	41.80	25.46	54.00	15.52	V
13300.800	38.47	-29.75	40.40	27.82	54.00	15.53	H
5459.800	46.13	-27.06	34.30	38.89	54.00	7.87	H
5458.885	45.74	-27.06	34.30	38.50	54.00	8.26	H

802.11ac-HT20

Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17916.400	44.70	-25.55	45.40	24.85	54.00	9.30	H
17915.300	44.50	-25.55	45.40	24.65	54.00	9.50	V
14487.700	38.50	-28.78	41.80	25.48	54.00	15.50	V
14495.400	38.42	-28.78	41.80	25.40	54.00	15.58	H
5149.440	49.20	-27.27	34.00	42.47	54.00	4.80	H
5148.040	49.10	-27.34	33.90	42.54	54.00	4.90	H

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17924.650	44.63	-25.55	45.40	24.78	54.00	9.37	V
17893.850	44.44	-25.55	45.40	24.59	54.00	9.56	H
14485.500	38.59	-28.78	41.80	25.57	54.00	15.41	H
14486.600	38.57	-28.78	41.80	25.55	54.00	15.43	V
5350.672	49.39	-27.08	34.20	42.27	54.00	4.61	H
5350.560	48.12	-27.08	34.20	41.00	54.00	5.88	H

Channel 100

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17902.650	44.50	-25.55	45.40	24.65	54.00	9.50	V
17908.700	44.45	-25.55	45.40	24.60	54.00	9.55	V
14487.150	38.39	-28.78	41.80	25.37	54.00	15.61	H
14492.650	38.34	-28.78	41.80	25.32	54.00	15.66	V
5459.635	45.52	-27.06	34.30	38.28	54.00	8.48	H
5458.780	45.15	-27.06	34.30	37.91	54.00	8.85	H

802.11ac-HT40

Channel 38

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17914.750	44.52	-25.55	45.40	24.67	54.00	9.48	V
17950.500	44.49	-25.55	45.40	24.64	54.00	9.51	H
14497.050	38.94	-28.78	41.80	25.92	54.00	15.06	H
14493.200	38.38	-28.78	41.80	25.36	54.00	15.62	H

5149.740	53.80	-27.27	34.00	47.07	54.00	0.20	H
5149.840	53.66	-27.27	34.00	46.93	54.00	0.34	H

Channel 62

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17928.500	44.54	-25.55	45.40	24.69	54.00	9.46	H
17904.850	44.48	-25.55	45.40	24.63	54.00	9.52	H
14499.800	38.62	-28.78	41.80	25.60	54.00	15.38	V
14486.600	38.41	-28.78	41.80	25.39	54.00	15.59	V
5351.376	51.20	-27.08	34.20	44.08	54.00	2.80	H
5350.608	50.96	-27.08	34.20	43.84	54.00	3.04	H

Channel 102

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17905.400	44.79	-25.55	45.40	24.94	54.00	9.21	V
17904.300	44.46	-25.55	45.40	24.61	54.00	9.54	V
14495.950	38.81	-28.78	41.80	25.79	54.00	15.19	V
14493.750	38.62	-28.78	41.80	25.60	54.00	15.38	H
5457.565	45.23	-27.06	34.30	37.99	54.00	8.77	H
5458.075	45.22	-27.06	34.30	37.98	54.00	8.78	H

802.11ac-HT80

Channel 42

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17913.100	44.71	-25.55	45.40	24.86	54.00	9.29	V
17924.100	44.49	-25.55	45.40	24.64	54.00	9.51	V
14496.500	38.59	-28.78	41.80	25.57	54.00	15.41	H
14491.550	38.44	-28.78	41.80	25.42	54.00	15.56	V
5147.980	52.12	-27.34	33.90	45.56	54.00	1.88	H
5144.540	52.10	-27.34	33.90	45.54	54.00	1.90	H

Channel 58

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17909.800	44.73	-25.55	45.40	24.88	54.00	9.27	H
17890.000	44.57	-25.55	45.40	24.72	54.00	9.43	V
14470.100	38.60	-28.78	41.80	25.58	54.00	15.40	V
14498.150	38.55	-28.78	41.80	25.53	54.00	15.45	H
5350.176	53.33	-27.08	34.20	46.21	54.00	0.67	H
5350.240	52.97	-27.08	34.20	45.85	54.00	1.03	H

Channel 106

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17899.900	44.77	-25.55	45.40	24.92	54.00	9.23	V
17913.100	44.77	-25.55	45.40	24.92	54.00	9.23	H
14492.100	38.55	-28.78	41.80	25.53	54.00	15.45	H
14481.650	38.54	-28.78	41.80	25.52	54.00	15.46	H
5458.090	47.42	-27.06	34.30	40.18	54.00	6.58	H
5457.415	47.39	-27.06	34.30	40.15	54.00	6.61	H

PEAK Results:

802.11a

Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17931.25	56.57	-25.55	45.4	36.72	74	17.43	V
17876.25	56.29	-25.55	45.4	36.44	74	17.71	H
14078.5	52.25	-28.98	41.8	39.43	68.2	15.95	H
13611.55	51.75	-29.88	40.7	40.93	68.2	16.45	V
5146.92	69.71	-27.34	33.9	63.15	74	4.29	H
5149.66	69.41	-27.27	34	62.68	74	4.59	H

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17910.350	55.28	-25.55	45.40	35.43	74.00	18.72	V
17826.200	54.92	-25.55	45.40	35.07	74.00	19.08	H
14198.400	51.59	-28.86	41.70	38.75	68.20	16.61	H
14000.400	51.11	-29.33	41.50	38.94	68.20	17.09	H
5351.152	71.48	-27.08	34.20	64.36	74.00	2.52	H
5350.160	70.85	-27.08	34.20	63.73	74.00	3.15	H

Channel 100

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17960.400	54.95	-25.55	45.40	35.10	74.00	19.05	H
17919.700	54.79	-25.55	45.40	34.94	74.00	19.21	V
13740.800	50.86	-29.41	40.80	39.47	68.20	17.34	V
14092.800	50.66	-28.98	41.80	37.84	68.20	17.54	H
5454.955	64.36	-27.06	34.30	57.12	74.00	9.64	H
5469.130	67.57	-27.06	34.30	60.33	68.20	0.63	H

802.11n-HT20

Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17958.750	55.14	-25.55	45.40	35.29	74.00	18.86	V
17909.800	54.91	-25.55	45.40	35.06	74.00	19.09	V
13708.350	50.80	-29.88	40.80	39.88	68.20	17.40	V
14112.600	50.59	-28.86	41.80	37.65	68.20	17.61	V
5148.640	69.26	-27.27	34.00	62.53	74.00	4.74	H
5145.860	67.51	-27.34	33.90	60.95	74.00	6.49	H

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17942.800	54.88	-25.55	45.40	35.03	74.00	19.12	V
17951.600	54.68	-25.55	45.40	34.83	74.00	19.32	H
13732.000	50.77	-29.41	40.80	39.38	68.20	17.43	H
13718.800	50.69	-29.41	40.80	39.30	68.20	17.51	H
5350.016	68.47	-27.08	34.20	61.35	74.00	5.53	H
5351.696	68.46	-27.08	34.20	61.34	74.00	5.54	H

Channel 100

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17920.250	55.49	-25.55	45.40	35.64	74.00	18.51	V
17925.750	55.02	-25.55	45.40	35.17	74.00	18.98	V
13683.050	51.99	-29.88	40.80	41.07	68.20	16.21	H
13653.900	51.30	-29.88	40.70	40.48	68.20	16.90	H
5457.880	63.06	-27.06	34.30	55.82	74.00	10.94	H
5467.135	67.07	-27.06	34.30	59.83	68.20	1.13	H

802.11n-HT40

Channel 38

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17926.850	55.57	-25.55	45.40	35.72	74.00	18.43	V
17928.500	55.15	-25.55	45.40	35.30	74.00	18.85	V
14197.300	50.98	-28.86	41.70	38.14	68.20	17.22	V
13733.650	50.67	-29.41	40.80	39.28	68.20	17.53	H
5147.740	71.79	-27.34	33.90	65.23	74.00	2.21	H
5149.240	70.27	-27.27	34.00	63.54	74.00	3.73	H

Channel 62

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17938.400	55.40	-25.55	45.40	35.55	74.00	18.60	V
17883.950	55.07	-25.55	45.40	35.22	74.00	18.93	H
13789.750	50.85	-29.41	41.10	39.16	68.20	17.35	V
13726.500	50.58	-29.41	40.80	39.19	68.20	17.62	V
5356.432	69.41	-27.08	34.20	62.29	74.00	4.59	H
5350.752	68.81	-27.08	34.20	61.69	74.00	5.19	H

Channel 102

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17948.300	56.18	-25.55	45.40	36.33	74.00	17.82	H
17866.900	54.79	-25.55	45.40	34.94	74.00	19.21	V
13746.850	50.79	-29.41	40.80	39.40	68.20	17.41	V
14108.750	50.47	-28.98	41.80	37.65	68.20	17.73	V
5459.830	61.34	-27.06	34.30	54.10	74.00	12.66	H
5467.060	66.70	-27.06	34.30	59.46	68.20	1.50	H

802.11ac-HT20
Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17920.250	56.34	-25.55	45.40	36.49	74.00	17.66	V
17915.300	55.59	-25.55	45.40	35.74	74.00	18.41	V
14207.200	51.28	-28.86	41.70	38.44	68.20	16.92	H
13743.000	50.89	-29.41	40.80	39.50	68.20	17.31	V
5145.900	67.09	-27.34	33.90	60.53	74.00	6.91	H
5149.240	66.68	-27.27	34.00	59.95	74.00	7.32	H

Channel 64

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17898.250	55.93	-25.55	45.40	36.08	74.00	18.07	V
17916.400	55.61	-25.55	45.40	35.76	74.00	18.39	H
14200.600	51.00	-28.86	41.70	38.16	68.20	17.20	H
13712.200	50.96	-29.88	40.80	40.04	68.20	17.24	H
5351.856	69.34	-27.08	34.20	62.22	74.00	4.66	H
5350.672	68.65	-27.08	34.20	61.53	74.00	5.35	H

Channel 100

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17975.800	54.75	-25.55	45.40	34.90	74.00	19.25	H
17933.450	54.55	-25.55	45.40	34.70	74.00	19.45	V
14146.700	50.87	-28.86	41.80	37.93	68.20	17.33	H
13785.350	50.83	-29.41	41.10	39.14	68.20	17.37	H
5459.635	66.03	-27.06	34.30	58.79	74.00	7.97	H
5467.930	65.80	-27.06	34.30	58.56	68.20	2.40	H

802.11ac-HT40

Channel 38

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17929.600	55.69	-25.55	45.40	35.84	74.00	18.31	H
17931.250	55.00	-25.55	45.40	35.15	74.00	19.00	H
14091.700	50.95	-28.98	41.80	38.13	68.20	17.25	H
13759.500	50.75	-29.41	40.80	39.36	68.20	17.45	H
5149.660	72.40	-27.27	34.00	65.67	74.00	1.60	H
5149.540	72.21	-27.27	34.00	65.48	74.00	1.79	H

Channel 62

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17930.700	56.47	-25.55	45.40	36.62	74.00	17.53	V
17931.800	55.23	-25.55	45.40	35.38	74.00	18.77	H
14145.050	51.26	-28.86	41.80	38.32	68.20	16.94	V
14086.750	50.69	-28.98	41.80	37.87	68.20	17.51	V
5352.144	70.76	-27.08	34.20	63.64	74.00	3.24	H
5350.608	70.27	-27.08	34.20	63.15	74.00	3.73	H

Channel 102

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17899.350	56.02	-25.55	45.40	36.17	74.00	17.98	V
17888.900	55.51	-25.55	45.40	35.66	74.00	18.49	H
13636.300	50.67	-29.88	40.70	39.85	68.20	17.53	V
14202.800	50.61	-28.86	41.70	37.77	68.20	17.59	H
5459.650	59.44	-27.06	34.30	52.20	74.00	14.56	H
5467.855	66.22	-27.06	34.30	58.98	68.20	1.98	H

802.11ac-HT80

Channel 42

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17947.200	55.89	-25.55	45.40	36.04	74.00	18.11	H
17934.000	55.88	-25.55	45.40	36.03	74.00	18.12	H
14186.850	51.04	-28.86	41.70	38.20	68.20	17.16	V
13745.200	50.89	-29.41	40.80	39.50	68.20	17.31	H
5140.700	68.52	-27.34	33.90	61.96	74.00	5.48	H
5143.200	68.43	-27.34	33.90	61.87	74.00	5.57	H

Channel 58

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17924.650	54.78	-25.55	45.40	34.93	74.00	19.22	V
17876.250	54.75	-25.55	45.40	34.90	74.00	19.25	H
14155.500	51.18	-28.86	41.80	38.24	68.20	17.02	H
14106.000	50.79	-28.98	41.80	37.97	68.20	17.41	V
5359.936	71.48	-27.08	34.20	64.36	74.00	2.52	H
5355.488	71.35	-27.08	34.20	64.23	74.00	2.65	H

Channel 106

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17905.400	55.45	-25.55	45.40	35.60	74.00	18.55	H
17441.200	55.03	-27.43	43.70	38.76	68.20	13.17	H
13694.600	51.05	-29.88	40.80	40.13	68.20	17.15	V
14306.750	50.60	-28.97	41.70	37.87	68.20	17.60	H
5458.705	63.84	-27.06	34.30	56.60	74.00	10.16	H
5464.810	64.26	-27.06	34.30	57.02	68.20	3.94	H

Channel 122

A.7. AC Power line Conducted Emission (150kHz- 30MHz)

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Measurement uncertainty:

Expanded measurement uncertainty for this test item is $U = 3.10\text{dB}$, $k=2$.

Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)	Conclusion
		With charger AE5	
		802.11a	
0.15 to 0.5	66 to 56	Fig.25	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 AE5	
		802.11a	
0.15 to 0.5	67 56 to 46	Fig.25	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:

Traffic:

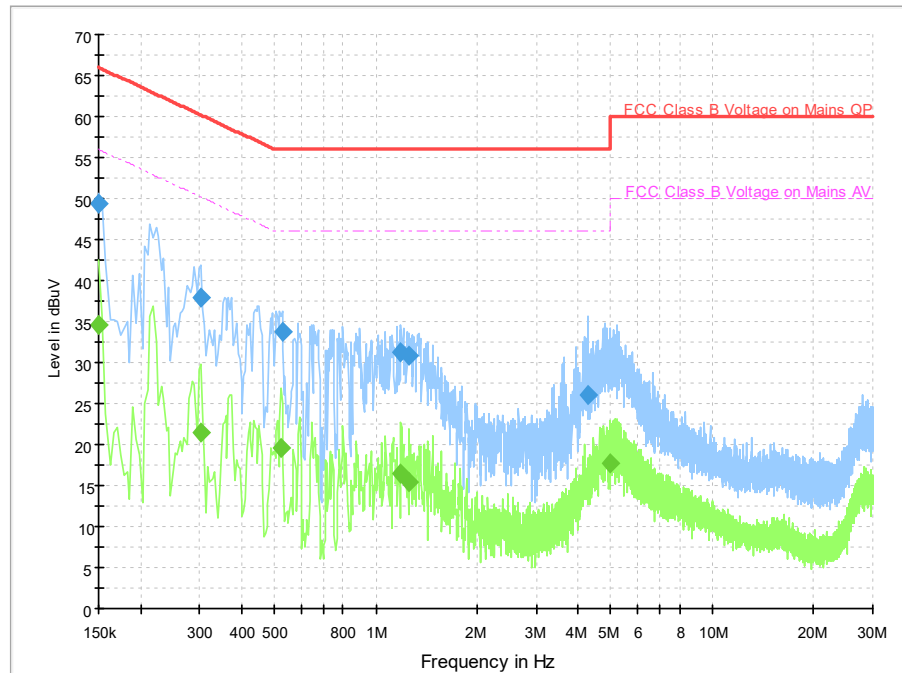


Fig.25 Conducted Emission (802.11a, Ch36, TX)

Note1: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	49.4	2000.0	9.000	On	L1	20.1	16.6	66.0
0.302000	37.9	2000.0	9.000	On	L1	19.9	22.2	60.2
0.526000	33.8	2000.0	9.000	On	L1	20.0	22.2	56.0
1.190000	31.3	2000.0	9.000	On	L1	19.9	24.7	56.0
1.258000	30.8	2000.0	9.000	On	L1	19.9	25.2	56.0
4.270000	26.0	2000.0	9.000	On	N	19.6	30.0	56.0

Final Result 2

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	34.5	2000.0	9.000	On	L1	20.1	21.5	56.0
0.302000	21.4	2000.0	9.000	On	L1	19.9	28.8	50.2
0.522000	19.5	2000.0	9.000	On	N	19.9	26.5	46.0
1.190000	16.5	2000.0	9.000	On	L1	19.9	29.5	46.0
1.258000	15.5	2000.0	9.000	On	L1	19.9	30.5	46.0
4.954000	17.6	2000.0	9.000	On	L1	19.8	28.4	46.0

Note2: The measurement results showed here are worst cases of the combinations of different cables and chargers

A.8. 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:

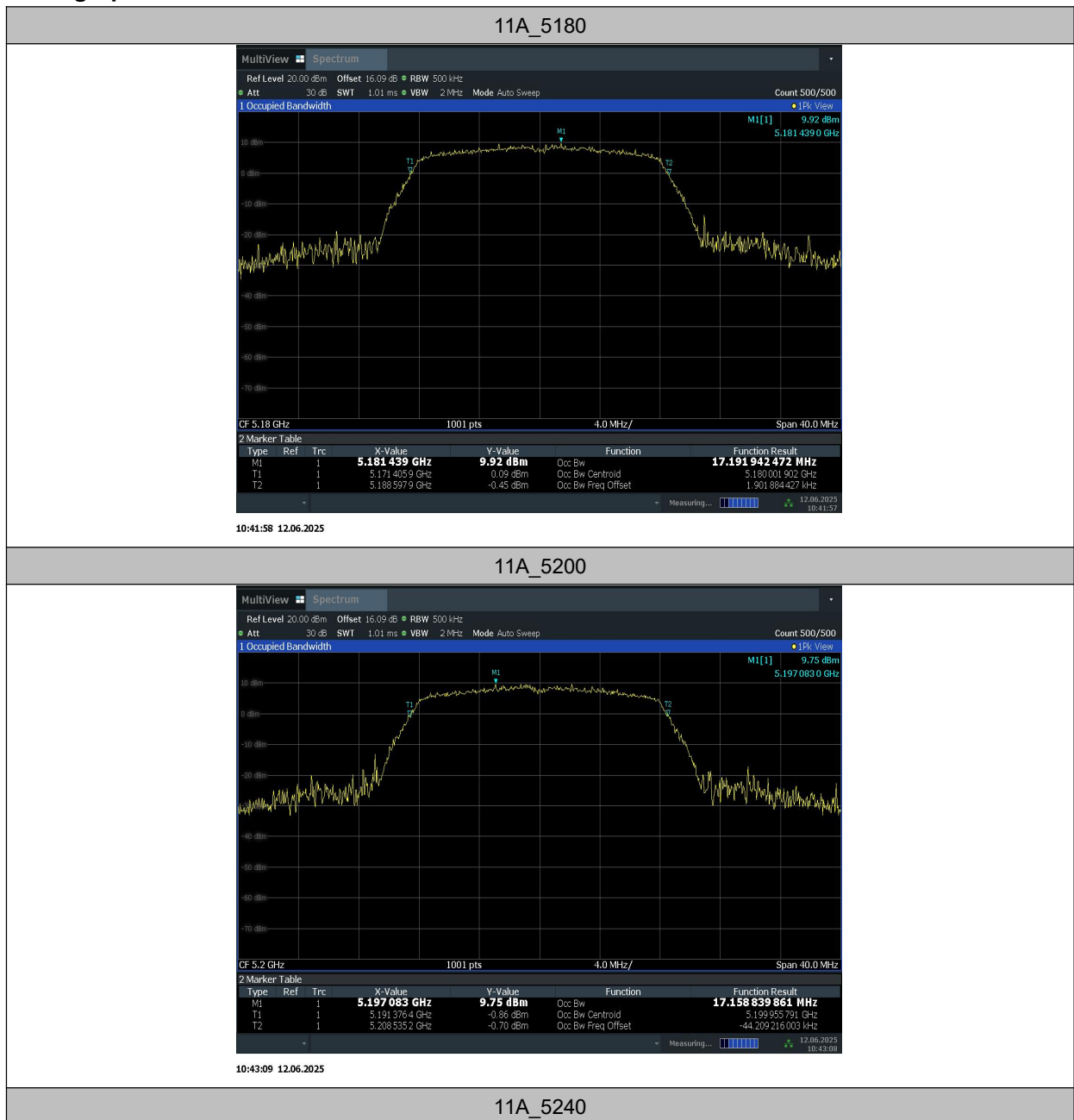
Measurement Uncertainty	60.80Hz
-------------------------	---------

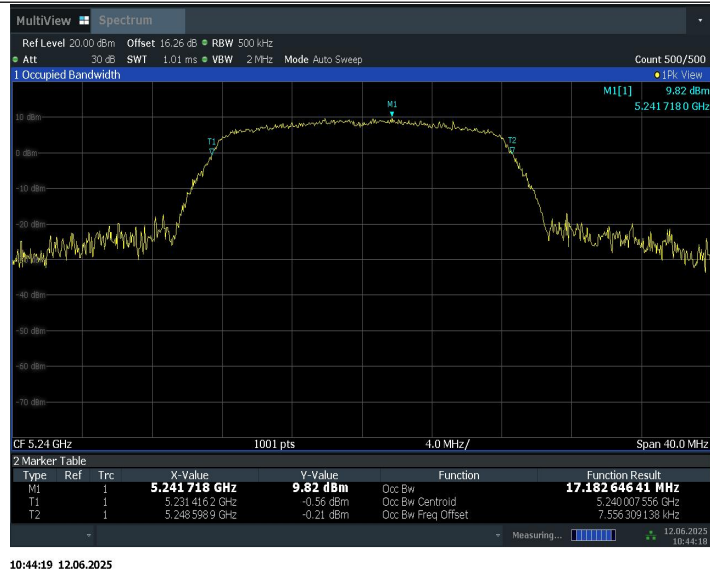
EUT ID: UT30a

Measurement Result:

TestMode	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	5180	17.192	5171.4059	5188.5979	---	---
	5200	17.159	5191.3764	5208.5352	---	---
	5240	17.183	5231.4162	5248.5989	---	---
11N20SISO	5180	17.205	5171.3854	5188.5902	---	---
	5200	17.101	5191.4429	5208.5442	---	---
	5240	18.191	5230.8878	5249.0792	---	---
11N40SISO	5190	36.574	5171.7165	5208.2910	---	---
	5230	36.662	5211.6171	5248.2787	---	---
11AC80SISO	5210	75.299	5172.3379	5247.6373	---	---

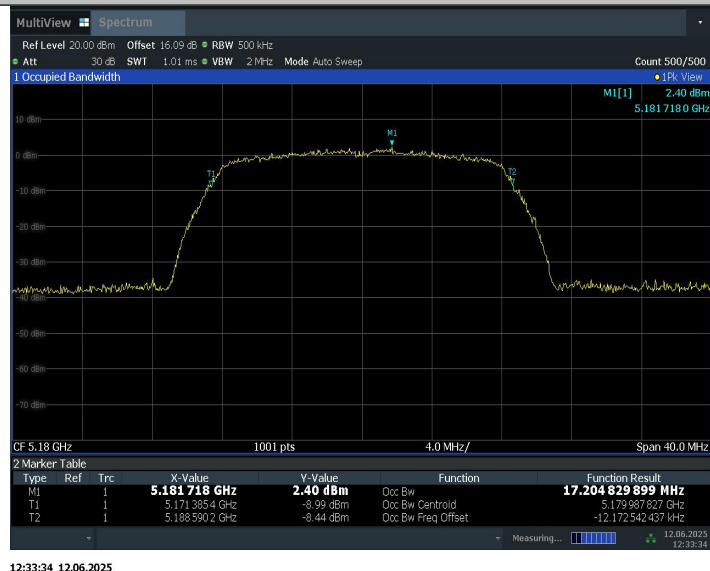
Test graphs as below:





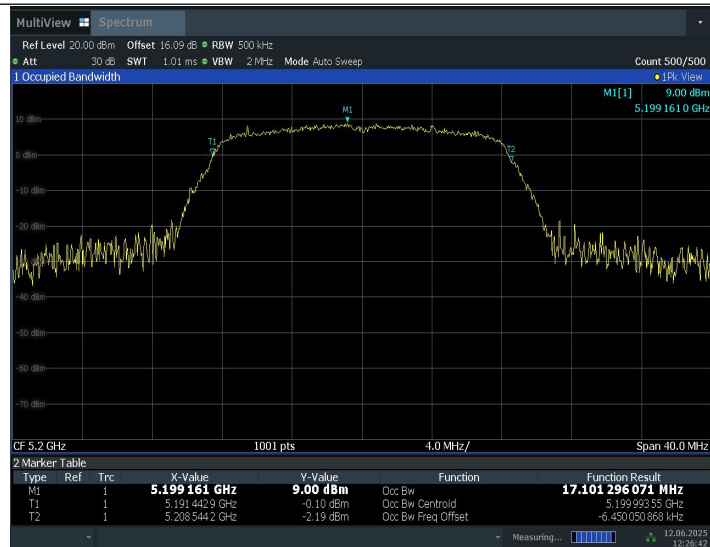
10:44:19 12.06.2025

11N20SISO_5180



12:33:34 12.06.2025

11N20SISO_5200



12:26:42 12.06.2025

11N20SISO_5240



10:59:58 12.06.2025

11N40SISO_5190



11N40SISO_5230



11AC80SISO_5210



Conclusion: PASS

A.9. Antenna Requirement

The antenna of the device is permanently attached. There are no provisions for connection to an external antenna.

The unit complies with the requirement of FCC Part 15.203.

A.10. 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



Accredited Laboratory

A2LA has accredited

TELECOMMUNICATION TECHNOLOGY LABS, CAICT

Beijing, People's Republic of China

for technical competence in the field of

Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 23rd day of July 2024.



Mr. Trace McInturf, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 7049.01
Valid to July 31, 2026

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

***** END OF REPORT BODY *****