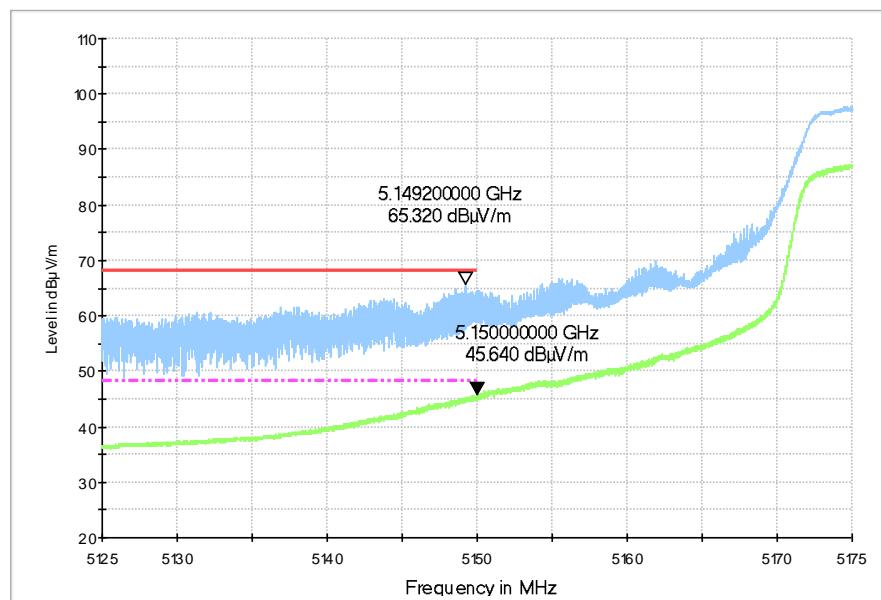
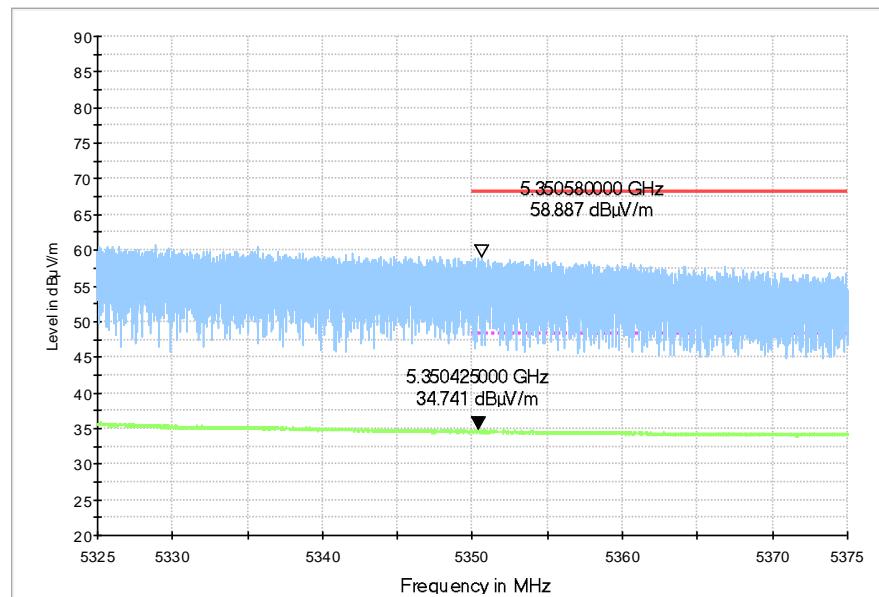


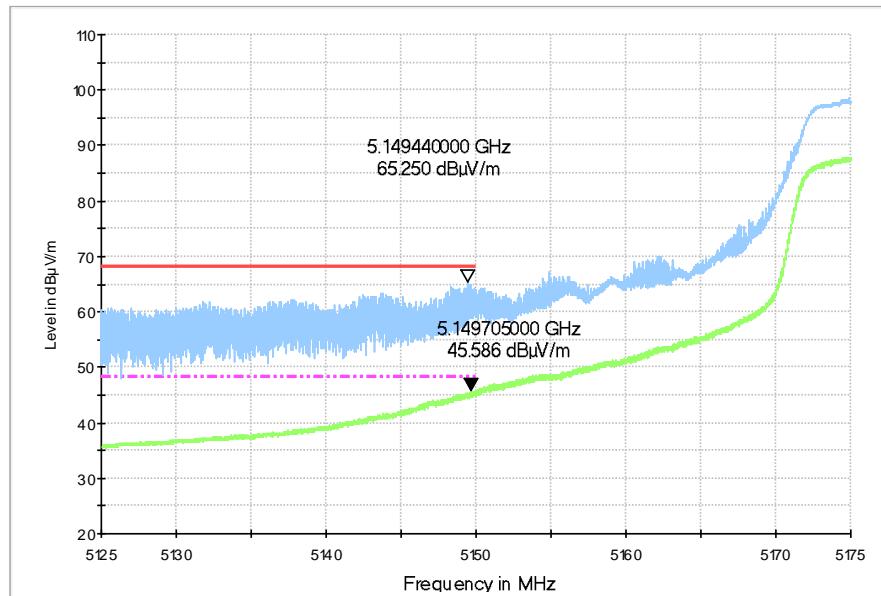
RE - Power-5.125GHz-5.175GHz


Fig.21 Band Edges (802.11n-HT40, 5190MHz)

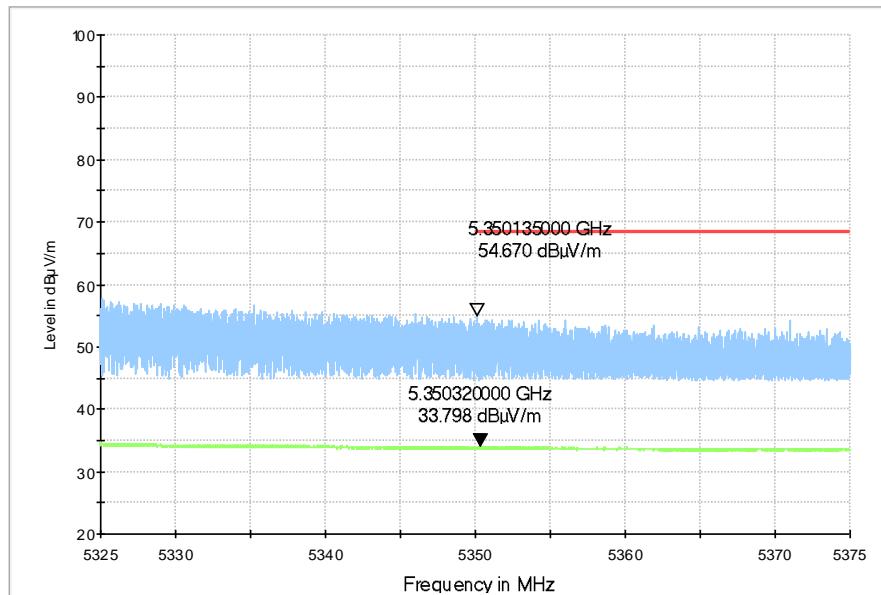
RE - Power-5.325GHz-5.375GHz


Fig.22 Band Edges (802.11n-HT40, 5310MHz)

RE - Power-5.125GHz-5.175GHz

**Fig.23 Band Edges (802.11ac-HT40, 5190MHz)**

RE - Power-5.325GHz-5.375GHz

**Fig.24 Band Edges (802.11ac-HT40, 5310MHz)**

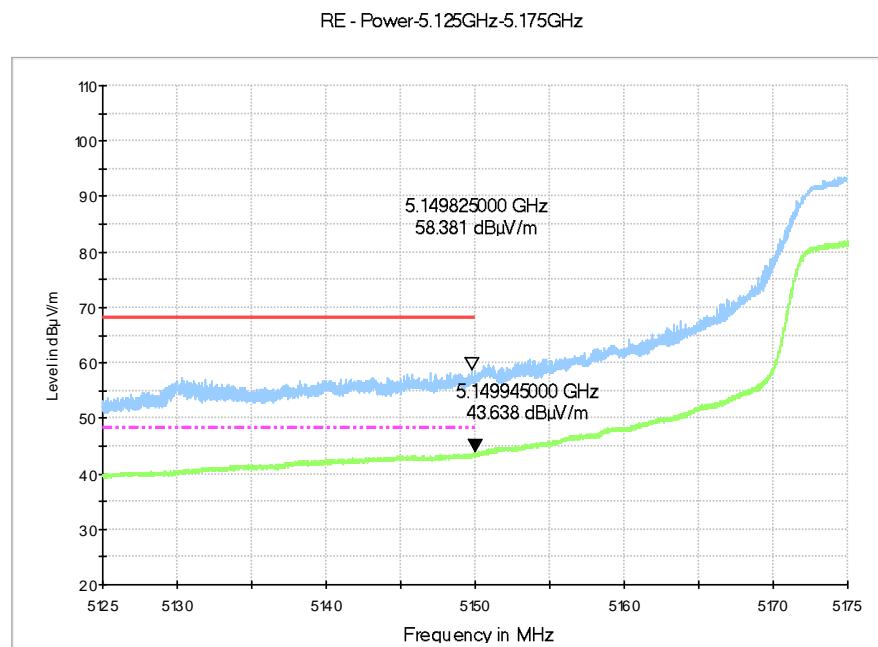


Fig.25 Band Edges (802.11ac-HT80, 5210MHz)

A.6. Transmitter Spurious Emission

Measurement Limit:

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

The measurement is made according to KDB 789033

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(dB μ V/m)	Measurement distance(m)
30-88	40.0	3
88-216	43.5	3
216-960	46.0	3
Above 960	54.0	3

Note: for frequency range below 960MHz, the limit in 15.209 is defined in 10m test distance. The limit used above is calculated from 10m to 3m

Measurement uncertainty:

Expanded measurement uncertainty for this test item is $U = 3.9\text{dB}$, $k=2$.

Measurement Results:

Conclusion: PASS

Note:

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

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
802.11a

Channel 36

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5143.500	40.9	-34.9	34.2	41.52	48.3	7.4	H	155	8
5149.500	39.9	-34.8	34.2	40.47	48.3	8.4	H	155	46
10360.500	36.0	-30.0	37.5	28.42	48.3	12.3	H	155	20
15540.400	37.5	-27.6	40.1	24.97	48.3	10.8	H	155	118
17005.600	39.3	-26.7	41.7	24.29	48.3	9.0	H	155	82
17887.800	39.5	-26.2	41.3	24.48	48.3	8.8	H	155	46

Channel 40

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5148.560	37.3	-34.8	34.2	37.84	48.3	11.0	H	155	8
6933.400	43.5	-33.1	35.8	40.90	48.3	4.8	H	155	52
10400.100	35.5	-29.4	37.5	27.46	48.3	12.8	H	155	18
15599.800	37.3	-27.5	40.2	24.58	48.3	11.0	H	155	6
16994.600	39.2	-26.7	41.7	24.21	48.3	9.1	H	155	48
17899.900	39.5	-26.2	41.3	24.36	48.3	8.8	H	155	128

Channel 48

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5350.500	33.5	-34.6	34.4	33.63	48.3	14.8	H	155	20
5362.500	33.4	-34.3	34.4	33.35	48.3	14.9	H	155	248
10480.400	34.9	-31.5	37.6	28.80	48.3	13.4	H	155	49
15719.700	36.9	-27.5	40.4	24.00	48.3	11.4	H	155	82
16942.900	39.3	-27.1	41.7	24.69	48.3	9.0	H	155	168
17887.800	39.4	-26.2	41.3	24.37	48.3	8.9	H	155	8

802.11n-HT20

Channel 36

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5144.400	40.9	-34.8	34.2	41.51	48.3	7.4	H	155	4
5149.930	39.9	-34.8	34.2	40.42	48.3	8.4	H	155	26
10360.500	36.0	-30.0	37.5	28.42	48.3	12.3	H	155	356
15540.400	37.4	-27.6	40.1	24.93	48.3	10.9	H	155	348
16971.500	39.2	-26.9	41.7	24.40	48.3	9.1	H	155	174
17892.200	39.4	-26.2	41.3	24.35	48.3	8.9	H	155	112

Channel 40

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5125.250	37.2	-35.0	34.2	37.99	48.3	11.1	H	155	8
6933.250	44.2	-33.1	35.8	41.52	48.3	4.1	H	155	28
10400.100	35.5	-29.4	37.5	27.47	48.3	12.8	H	155	6
15599.800	37.4	-27.5	40.2	24.66	48.3	10.9	H	155	278
17003.400	39.3	-26.7	41.7	24.27	48.3	9.0	H	155	122
17892.200	39.5	-26.2	41.3	24.45	48.3	8.8	H	155	245

Channel 48

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5350.550	33.9	-34.6	34.4	34.12	48.3	14.4	H	155	86
5355.750	33.5	-34.5	34.4	33.59	48.3	14.8	H	155	107
10480.400	34.9	-31.5	37.6	28.80	48.3	13.4	H	155	130
15719.700	37.1	-27.5	40.4	24.19	48.3	11.2	H	155	152
16955.000	39.3	-27.0	41.7	24.68	48.3	9.0	H	155	174
17894.400	39.5	-26.2	41.3	24.46	48.3	8.8	H	155	195

802.11n-HT40

Channel 38

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5150.000	42.9	-34.7	34.2	43.46	48.3	5.4	H	155	28
5148.800	42.7	-34.8	34.2	43.20	48.3	5.6	H	155	49
10380.300	35.7	-29.7	37.5	27.91	48.3	12.6	H	155	246
15570.100	37.6	-27.6	40.2	24.97	48.3	10.7	H	155	182
16948.400	39.4	-27.0	41.7	24.78	48.3	8.9	H	155	94
17886.700	39.5	-26.2	41.3	24.48	48.3	8.8	H	155	42

Channel 46

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5350.425	34.7	-34.6	34.4	34.92	48.3	13.6	H	155	98
5351.380	34.3	-34.5	34.4	34.49	48.3	14.0	H	155	135
10459.500	35.0	-30.9	37.6	28.31	48.3	13.3	H	155	4
15690.000	37.0	-27.4	40.3	24.16	48.3	11.3	H	155	74
16946.200	39.4	-27.1	41.7	24.79	48.3	8.9	H	155	48
17890.000	39.6	-26.2	41.3	24.51	48.3	8.7	H	155	246

802.11ac-HT20

Channel 36

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5149.935	39.5	-34.8	34.2	40.01	48.3	8.8	H	155	175
5148.750	38.6	-34.8	34.2	39.14	48.3	9.7	H	155	194
10360.500	35.9	-30.0	37.5	28.37	48.3	12.4	H	155	215
15540.400	37.6	-27.6	40.1	25.10	48.3	10.7	H	155	196
17005.600	39.4	-26.7	41.7	24.40	48.3	8.9	H	155	241
17894.400	39.6	-26.2	41.3	24.51	48.3	8.7	H	155	259

Channel 40

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5123.600	38.1	-35.0	34.2	38.90	48.3	10.2	H	155	28
6933.400	44.9	-33.1	35.8	42.31	48.3	3.4	H	155	49

10400.100	35.7	-29.4	37.5	27.66	48.3	12.6	H	155	226
15599.800	37.5	-27.5	40.2	24.74	48.3	10.8	H	155	248
17006.700	39.4	-26.7	41.7	24.40	48.3	8.9	H	155	268
17894.400	39.6	-26.2	41.3	24.50	48.3	8.7	H	155	298

Channel 48

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5350.300	34.3	-34.6	34.4	34.49	48.3	14.0	H	155	28
5352.105	34.2	-34.5	34.4	34.34	48.3	14.1	H	155	48
10480.400	35.2	-31.5	37.6	29.06	48.3	13.1	H	155	8
15719.700	37.1	-27.5	40.4	24.26	48.3	11.2	H	155	16
16946.200	39.6	-27.1	41.7	24.97	48.3	8.7	H	155	228
17894.400	39.5	-26.2	41.3	24.47	48.3	8.8	H	155	92

802.11ac-HT40

Channel 38

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5149.450	43.7	-34.8	34.2	44.20	48.3	4.6	H	155	135
5148.530	43.2	-34.8	34.2	43.79	48.3	5.1	H	155	160
10380.300	35.8	-29.7	37.5	27.98	48.3	12.5	H	155	92
15570.100	37.7	-27.6	40.2	25.07	48.3	10.6	H	155	115
16946.200	39.5	-27.1	41.7	24.87	48.3	8.8	H	155	112
17894.400	39.6	-26.2	41.3	24.54	48.3	8.7	H	155	85

Channel 46

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5350.320	33.8	-34.6	34.4	33.98	48.3	14.5	H	155	202
5352.500	33.6	-34.5	34.4	33.77	48.3	14.7	H	155	225
10459.500	35.2	-30.9	37.6	28.51	48.3	13.1	H	155	174
15690.000	37.0	-27.4	40.3	24.16	48.3	11.3	H	155	4
16950.600	39.4	-27.0	41.7	24.77	48.3	8.9	H	155	172
17898.800	39.7	-26.2	41.3	24.58	48.3	8.6	H	155	194

802.11ac-HT80

Channel 42

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5150.000	43.5	-34.7	34.2	44.06	48.3	4.8	H	155	18
5146.400	43.4	-34.8	34.2	43.99	48.3	4.9	H	155	56
10420.000	36.2	-29.8	37.5	28.42	48.3	12.1	H	155	139
15630.000	37.8	-27.4	40.3	25.00	48.3	10.5	H	155	108
17008.750	39.5	-26.7	41.7	24.41	48.3	8.8	H	155	78
17086.500	39.7	-26.2	41.6	24.25	48.3	8.6	H	155	36

Peak
802.11a

Channel 36

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5149.385	59.3	-34.8	34.2	59.85	68.3	9.0	H	155	0
5149.075	58.4	-34.8	34.2	58.98	68.3	9.9	H	155	44
10359.950	49.1	-30.0	37.5	41.55	68.3	19.2	V	155	22
15539.850	52.7	-27.6	40.1	40.20	68.3	15.6	H	155	110
17067.200	56.9	-26.3	41.6	41.51	68.3	11.4	H	155	88
17725.550	56.9	-26.5	41.2	42.13	68.3	11.4	H	155	44

Channel 40

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
4528.690	48.4	-35.1	34.0	49.50	68.3	19.9	V	155	0
6933.400	52.1	-33.1	35.8	49.44	68.3	16.2	H	155	44
10400.100	48.9	-29.4	37.5	40.81	68.3	19.4	V	155	22
15599.800	52.2	-27.5	40.2	39.47	68.3	16.1	H	155	0
17043.000	57.5	-26.4	41.7	42.23	68.3	10.8	H	155	44
17775.600	56.9	-26.5	41.3	42.24	68.3	11.4	V	155	132

Channel 48

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5358.720	47.8	-34.4	34.4	47.79	68.3	20.5	H	155	22
5371.845	47.4	-34.1	34.4	47.14	68.3	20.9	V	155	242
10479.850	48.1	-31.5	37.6	42.02	68.3	20.2	H	155	44
15720.250	52.5	-27.5	40.4	39.66	68.3	15.8	V	155	88
17236.050	57.4	-26.6	41.5	42.51	68.3	10.9	V	155	176
17949.400	57.9	-26.0	41.3	42.56	68.3	10.4	V	155	0

802.11n-HT20

Channel 36

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5147.040	57.8	-34.8	34.2	58.38	68.3	10.5	H	155	0
5148.405	58.4	-34.8	34.2	58.91	68.3	9.9	V	155	22
10359.950	49.7	-30.0	37.5	42.14	68.3	18.6	V	155	352
15539.850	52.3	-27.6	40.1	39.75	68.3	16.0	V	155	352
16925.850	57.2	-27.0	41.6	42.61	68.3	11.1	V	155	176
17109.000	56.7	-26.0	41.6	41.13	68.3	11.6	V	155	110

Channel 40

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
4897.050	46.8	-35.4	34.1	48.15	68.3	21.5	V	155	0
6933.600	51.7	-33.1	35.8	49.11	68.3	16.6	V	155	22
10400.100	48.3	-29.4	37.5	40.23	68.3	20.0	H	155	0
15599.800	52.5	-27.5	40.2	39.77	68.3	15.8	H	155	264
16903.850	57.6	-27.0	41.6	42.99	68.3	10.7	H	155	110
17673.850	57.3	-26.5	41.2	42.58	68.3	11.0	H	155	242

Channel 48

Frequency (MHz)	Meas. Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5350.550	47.2	-34.6	34.4	47.42	68.3	21.1	V	155	88
5385.850	47.5	-33.8	34.4	46.95	68.3	20.8	H	155	110

10479.850	48.4	-31.5	37.6	42.23	68.3	19.9	V	155	132
15720.250	52.5	-27.5	40.4	39.65	68.3	15.8	H	155	154
16891.200	56.9	-27.0	41.6	42.29	68.3	11.4	V	155	176
17911.450	57.0	-26.1	41.3	41.87	68.3	11.3	V	155	198

802.11n-HT40

Channel 38

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5149.250	65.3	-34.8	34.2	65.86	68.3	3.0	H	155	22
5148.515	64.8	-34.8	34.2	65.40	68.3	3.5	H	155	44
10379.750	48.6	-29.7	37.5	40.79	68.3	19.7	V	155	242
15570.100	52.1	-27.6	40.2	39.49	68.3	16.2	H	155	176
17116.700	57.6	-26.0	41.6	42.02	68.3	10.7	V	155	88
17905.400	57.1	-26.2	41.3	41.96	68.3	11.2	V	155	22

Channel 46

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5350.345	58.8	-34.6	34.4	58.98	68.3	9.5	H	155	88
5350.580	58.9	-34.6	34.4	59.06	68.3	9.4	H	155	132
10460.050	49.8	-30.9	37.6	43.13	68.3	18.5	H	155	0
15690.000	51.9	-27.4	40.3	38.99	68.3	16.4	V	155	66
17036.400	57.1	-26.5	41.7	41.90	68.3	11.2	V	155	44
17904.300	57.0	-26.2	41.3	41.87	68.3	11.3	H	155	242

802.11ac-HT20

Channel 36

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5149.825	54.1	-34.8	34.2	54.63	68.3	14.2	V	155	176
5148.840	54.0	-34.8	34.2	54.52	68.3	14.3	H	155	198
10359.950	49.2	-30.0	37.5	41.69	68.3	19.1	V	155	220
15539.850	52.6	-27.6	40.1	40.11	68.3	15.7	H	155	198
16920.900	57.2	-27.0	41.6	42.60	68.3	11.1	H	155	242
17640.300	57.0	-26.5	41.2	42.30	68.3	11.3	V	155	264

Channel 40

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5099.450	48.5	-35.1	34.2	49.40	68.3	19.8	H	155	22
6933.200	51.9	-33.1	35.8	49.23	68.3	16.4	H	155	44
10400.100	49.3	-29.4	37.5	41.21	68.3	19.0	V	155	220
15599.800	52.5	-27.5	40.2	39.76	68.3	15.8	V	155	242
16750.400	58.1	-26.7	41.5	43.31	68.3	10.2	H	155	264
17018.800	57.6	-26.6	41.7	42.47	68.3	10.7	H	155	286

Channel 48

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5352.360	47.8	-34.5	34.4	47.98	68.3	20.5	H	155	22
5353.935	47.8	-34.5	34.4	47.88	68.3	20.5	H	155	44
10479.850	48.3	-31.5	37.6	42.20	68.3	20.0	V	155	0
15720.250	52.1	-27.5	40.4	39.20	68.3	16.2	H	155	22
17022.650	57.7	-26.6	41.7	42.59	68.3	10.6	H	155	242
17194.250	57.6	-26.4	41.5	42.44	68.3	10.7	H	155	88

802.11ac-HT40
Channel 38

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5149.440	65.3	-34.8	34.2	65.78	68.3	3.1	H	155	132
5148.355	64.5	-34.8	34.2	65.05	68.3	3.8	H	155	154
10379.750	50.6	-29.7	37.5	42.85	68.3	17.7	V	155	88
15570.100	52.1	-27.6	40.2	39.47	68.3	16.2	H	155	110
17010.550	57.2	-26.6	41.7	42.17	68.3	11.1	V	155	110
17099.650	57.2	-26.1	41.6	41.70	68.3	11.1	V	155	88

Channel 46

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5350.740	54.3	-34.6	34.4	54.51	68.3	14.0	H	155	198
5350.135	54.7	-34.6	34.4	54.86	68.3	13.6	H	155	220
10460.050	48.3	-30.9	37.6	41.63	68.3	20.0	V	155	176

15690.000	52.6	-27.4	40.3	39.75	68.3	15.7	V	155	0
17052.350	57.4	-26.4	41.6	42.14	68.3	10.9	H	155	176
17186.000	57.4	-26.3	41.5	42.23	68.3	10.9	V	155	198

802.11ac-HT80

Channel 42

Frequency (MHz)	Meas. Result (dB μ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB μ V)	Limit (dB μ V/m)	Margin (dB)	Antenna Pol. (H/V)	Antenna Height (cm)	Turntable angle (deg)
5148.290	58.2	-34.8	34.2	58.77	68.3	10.1	H	155	22
5149.825	58.4	-34.8	34.2	58.91	68.3	9.9	H	155	44
10420.000	50.1	-29.8	37.5	42.37	68.3	18.2	H	155	132
15630.000	53.2	-27.4	40.3	40.40	68.3	15.1	V	155	110
17008.750	57.3	-26.7	41.7	42.29	68.3	11.0	H	155	88
17086.500	57.3	-26.2	41.6	41.86	68.3	11.0	H	155	44

Sample calculation: 802.11ac 80MHz CH142–Peak, 5148.290MHz

$$\text{Peak ERP(dBm)} = P_{\text{Mea}}(58.77) + \text{Cable Loss}(-34.8) + \text{Antenna Factor}(34.2) = 58.2 \text{ dBuV/m}$$

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

Test Condition:

Voltage (V)	Frequency (Hz)
110	60

Measurement uncertainty:

Expanded measurement uncertainty for this test item is U =3.08dB, 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			
		11a mode	Idle		
0.15 to 0.5	66 to 56	Fig.26	Fig.27	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.26	Fig.27	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:

Result for Traffic:

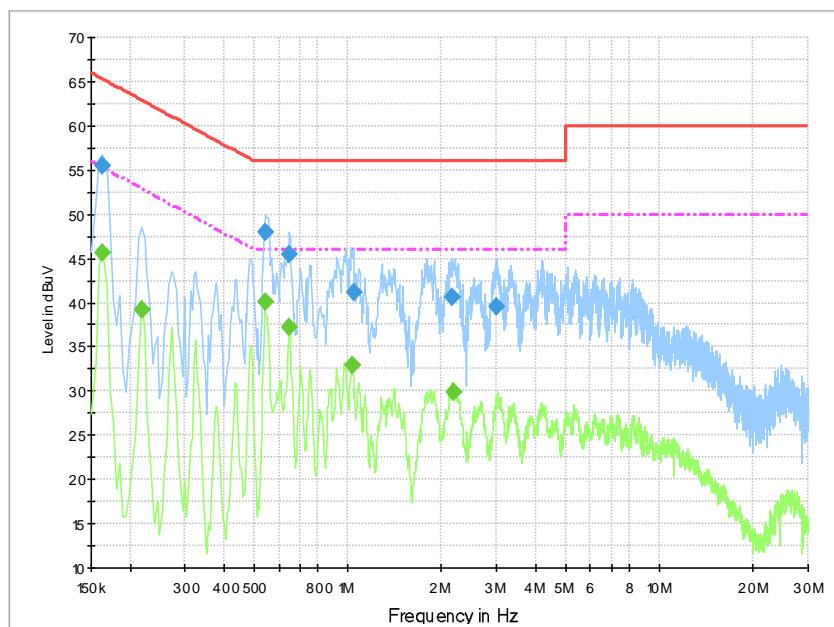


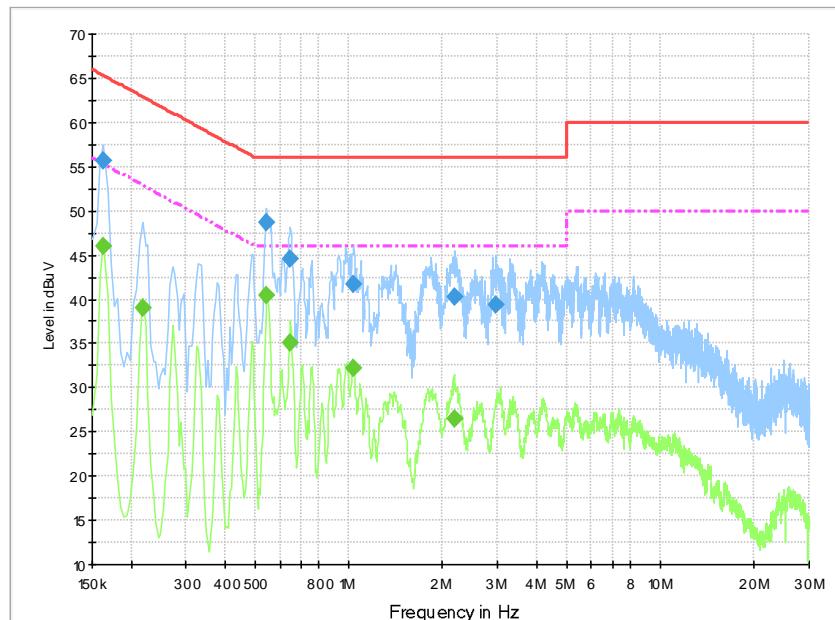
Fig.26 Conducted Emission (802.11a, Ch40, TX)

Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.163500	55.4	10000.	9.000	On	N	26.3	9.9	65.3	
0.546000	48.0	10000.	9.000	On	L1	20.0	8.0	56.0	
0.649500	45.6	10000.	9.000	On	L1	19.9	10.4	56.0	
1.041000	41.2	10000.	9.000	On	L1	19.9	14.8	56.0	
2.166000	40.6	10000.	9.000	On	L1	19.8	15.4	56.0	
3.012000	39.5	10000.	9.000	On	L1	19.8	16.5	56.0	

Final Result 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.163500	45.6	10000.	9.000	On	N	26.3	9.7	55.3	
0.217500	39.2	10000.	9.000	On	N	19.9	13.7	52.9	
0.541500	40.1	10000.	9.000	On	N	20.0	5.9	46.0	
0.649500	37.2	10000.	9.000	On	N	19.9	8.8	46.0	
1.027500	32.9	10000.	9.000	On	L1	19.9	13.1	46.0	
2.188500	29.9	10000.	9.000	On	L1	19.8	16.1	46.0	

Result for Idle:

Fig.27 Conducted Emission (802.11a, IDLE)
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.163500	55.8	10000.	9.000	On	N	26.3	9.5	65.3	
0.546000	48.7	10000.	9.000	On	L1	20.0	7.3	56.0	
0.649500	44.5	10000.	9.000	On	L1	19.9	11.5	56.0	
1.036500	41.6	10000.	9.000	On	L1	19.9	14.4	56.0	
2.188500	40.2	10000.	9.000	On	L1	19.8	15.8	56.0	
2.971500	39.3	10000.	9.000	On	L1	19.8	16.7	56.0	

Final Result 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.163500	46.1	10000.	9.000	On	N	26.3	9.2	55.3	
0.217500	39.0	10000.	9.000	On	N	19.9	13.9	52.9	
0.546000	40.4	10000.	9.000	On	N	20.0	5.6	46.0	
0.649500	35.1	10000.	9.000	On	N	19.9	10.9	46.0	
1.027500	32.2	10000.	9.000	On	L1	19.9	13.8	46.0	
2.175000	26.5	10000.	9.000	On	L1	19.8	19.5	46.0	

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
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Measurement Result:

Mode	Frequency	99% Occupied bandwidth (MHz)		conclusion
802.11a	5180 MHz	Fig.28	18.28	P
	5200 MHz	Fig.29	18.08	P
	5240 MHz	Fig.30	18.40	P
802.11n HT20	5180 MHz	Fig.31	17.60	P
	5200 MHz	Fig.32	17.56	P
	5240 MHz	Fig.33	17.60	P
802.11ac HT20	5180 MHz	Fig.34	17.56	P
	5200 MHz	Fig.35	17.52	P
	5240 MHz	Fig.36	17.56	P
802.11n HT40	5190 MHz	Fig.37	35.76	P
	5230 MHz	Fig.38	35.76	P
802.11ac	5190 MHz	Fig.39	35.76	P

HT40	5230 MHz	Fig.40	35.76	P
802.11ac HT80	5210 MHz	Fig.41	75.04	P

Conclusion: PASS

Test graphs as below:

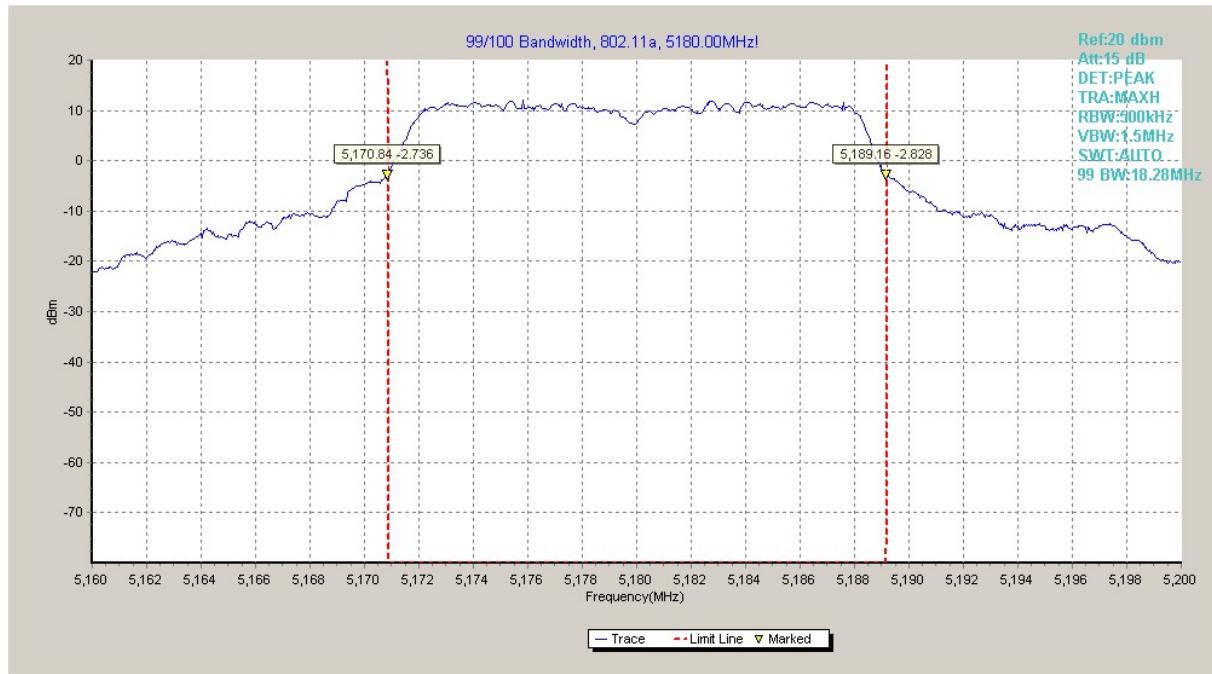


Fig.28 99% Occupied bandwidth (802.11a, 5180MHz)

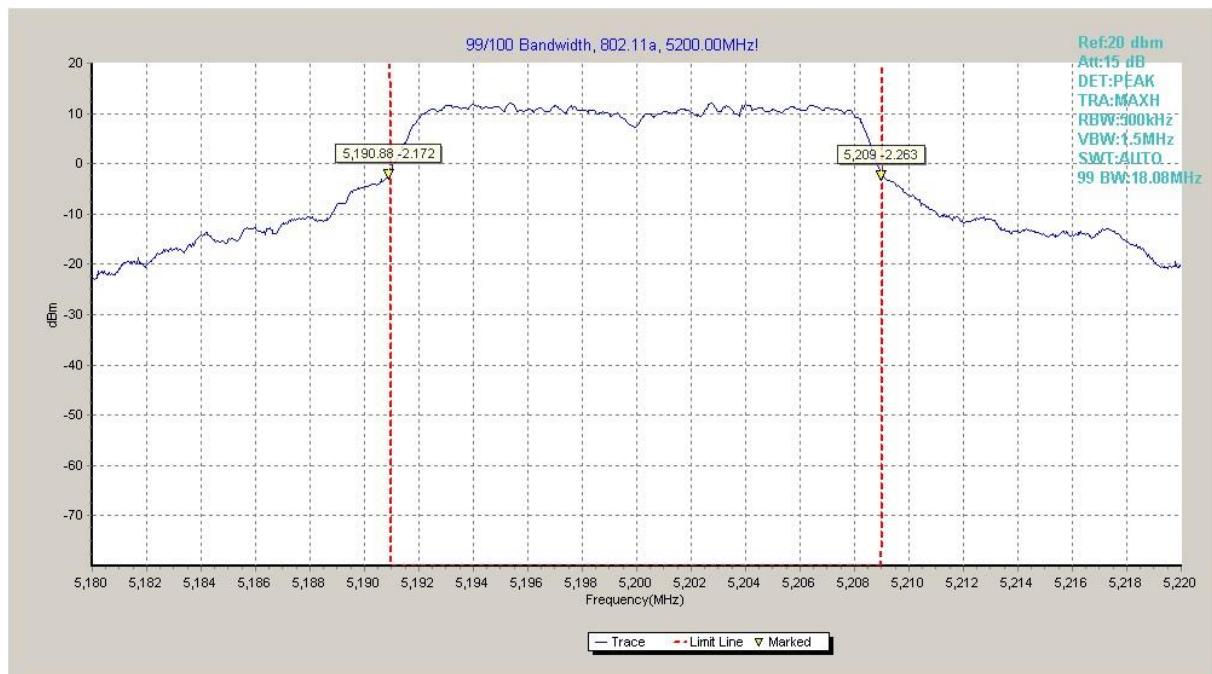


Fig.29 99% Occupied bandwidth (802.11a, 5200MHz)

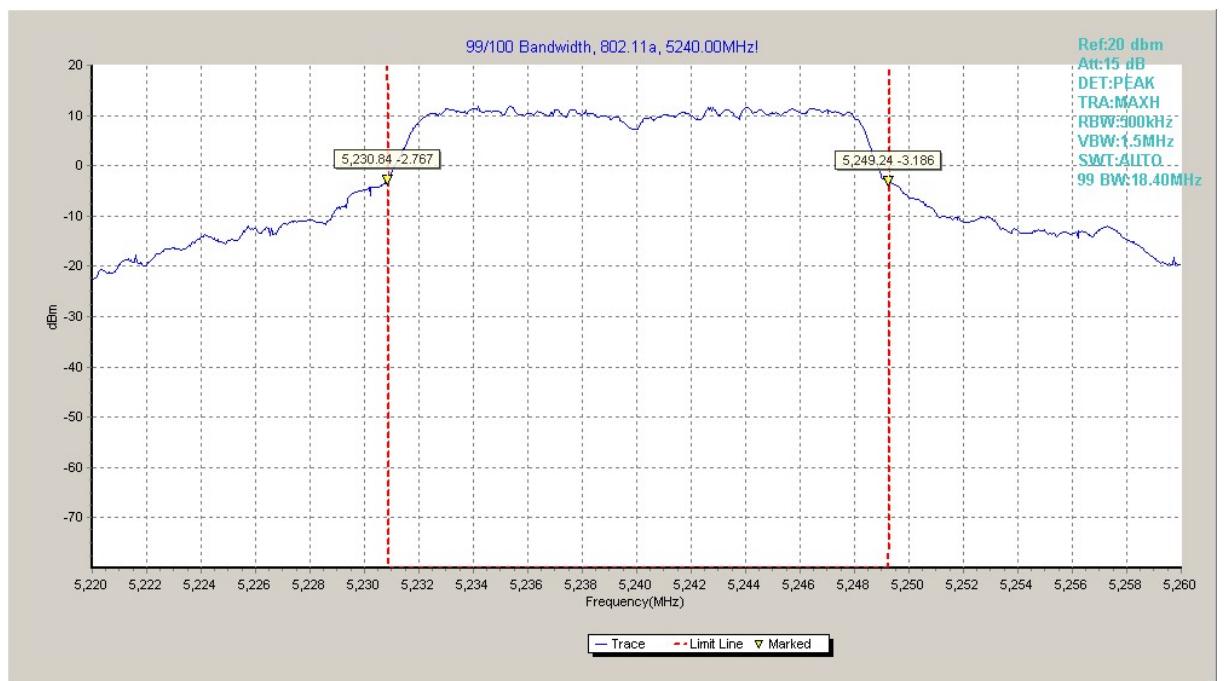


Fig.30 99% Occupied bandwidth (802.11a, 5240MHz)

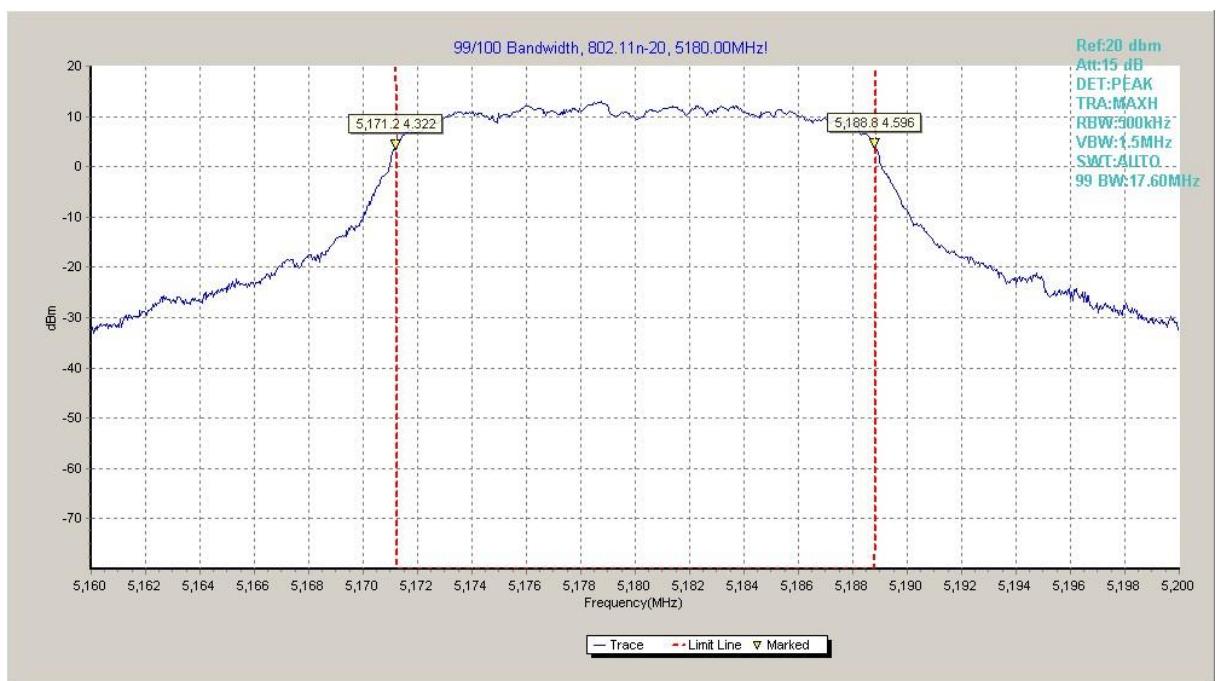


Fig.31 99% Occupied bandwidth (802.11n-HT20, 5180MHz)

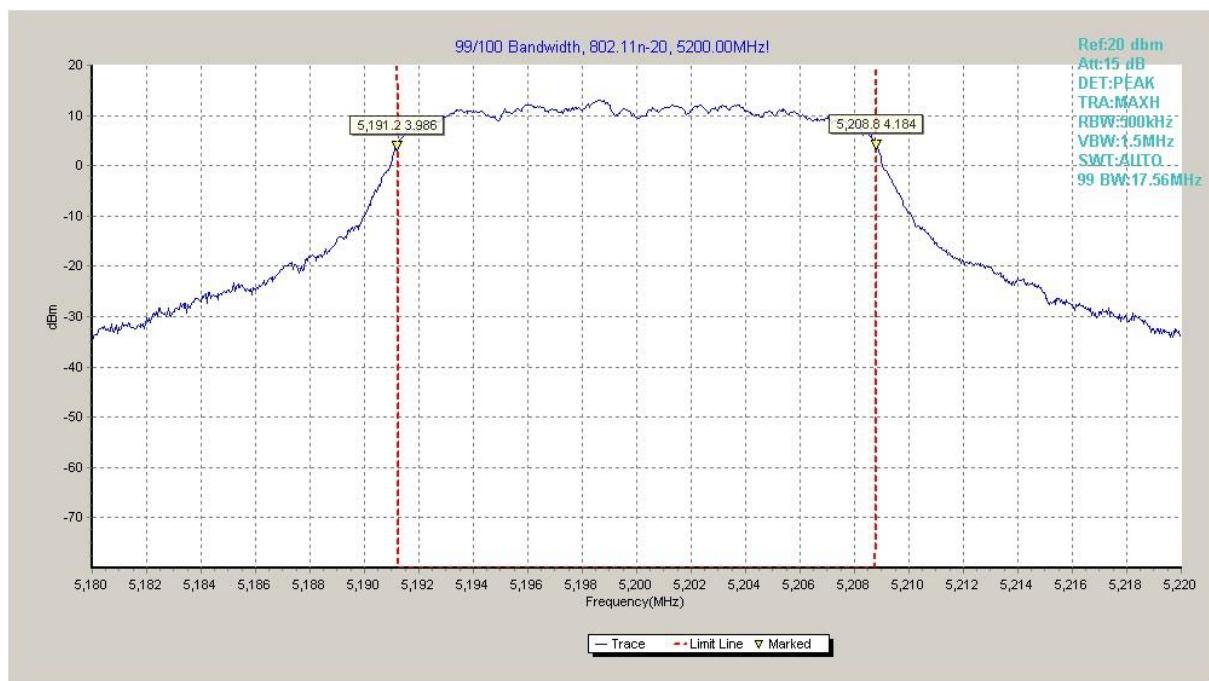


Fig.32 99% Occupied bandwidth (802.11n-HT20, 5200MHz)

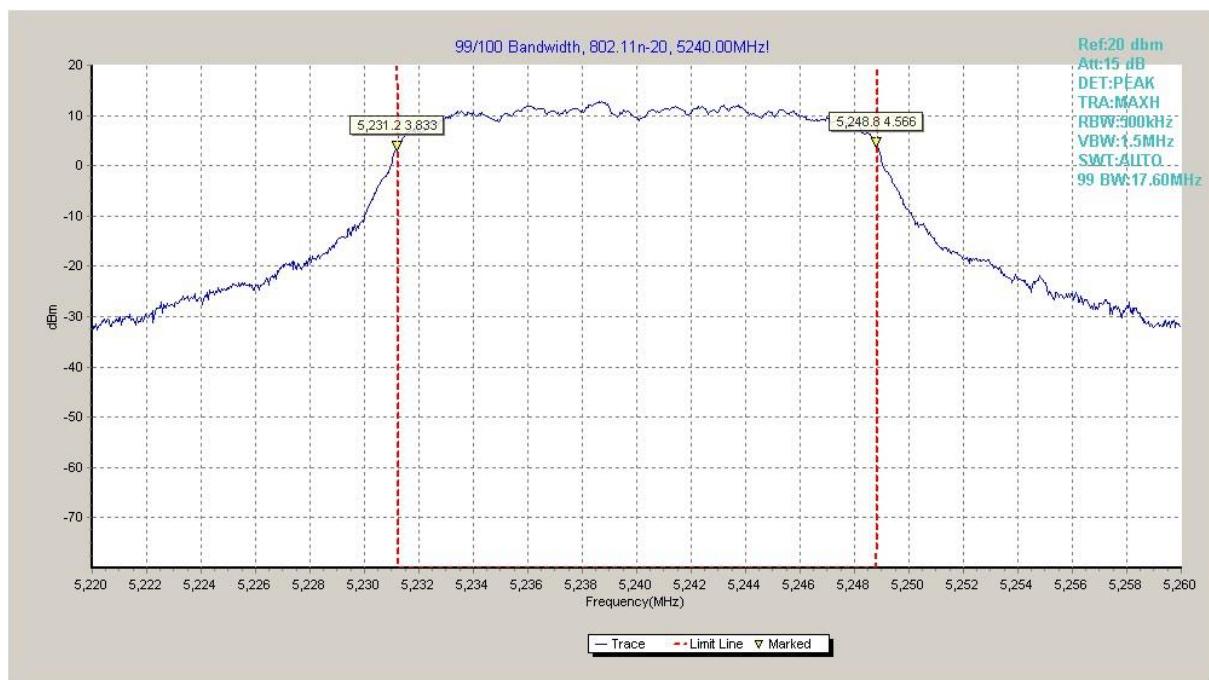


Fig.33 99% Occupied bandwidth (802.11n-HT20, 5240MHz)

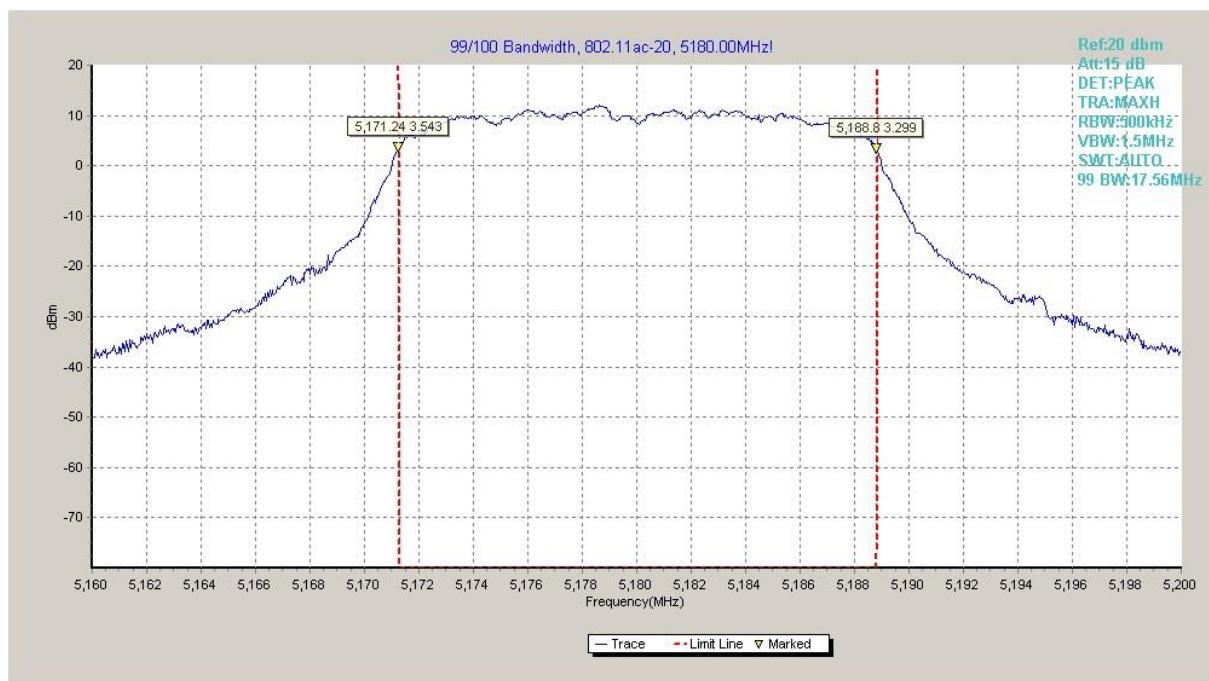


Fig.34 99% Occupied bandwidth (802.11ac-HT20, 5180MHz)

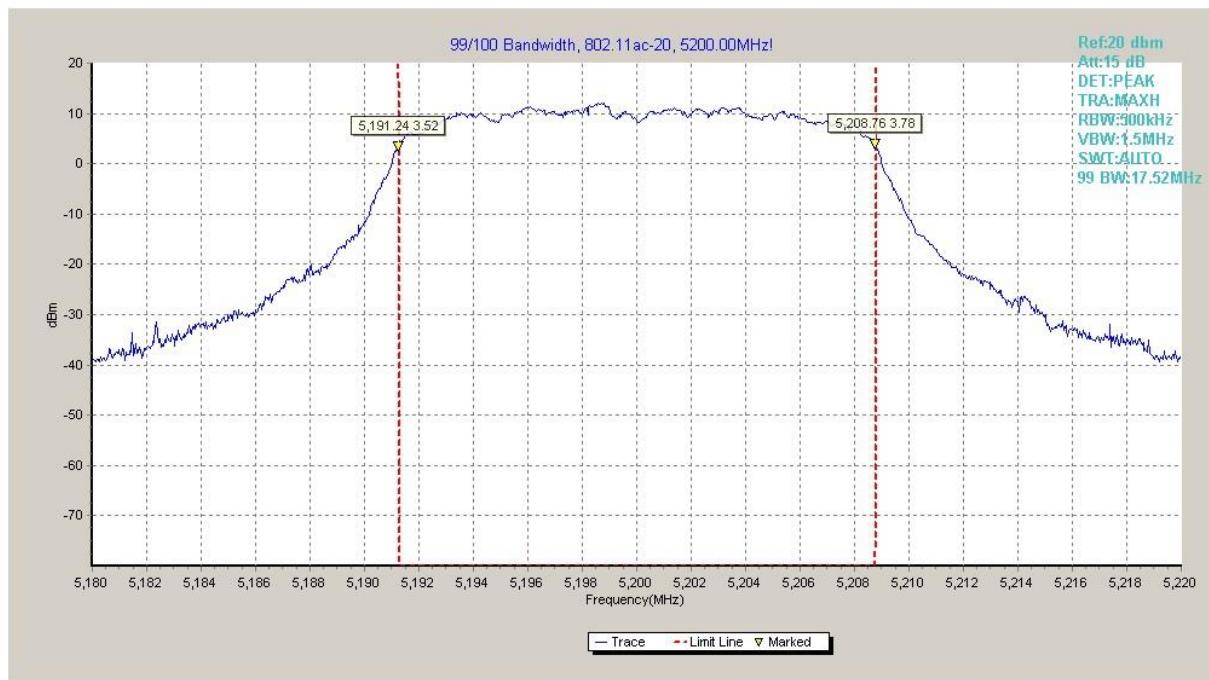


Fig.35 99% Occupied bandwidth (802.11ac-HT20, 5200MHz)

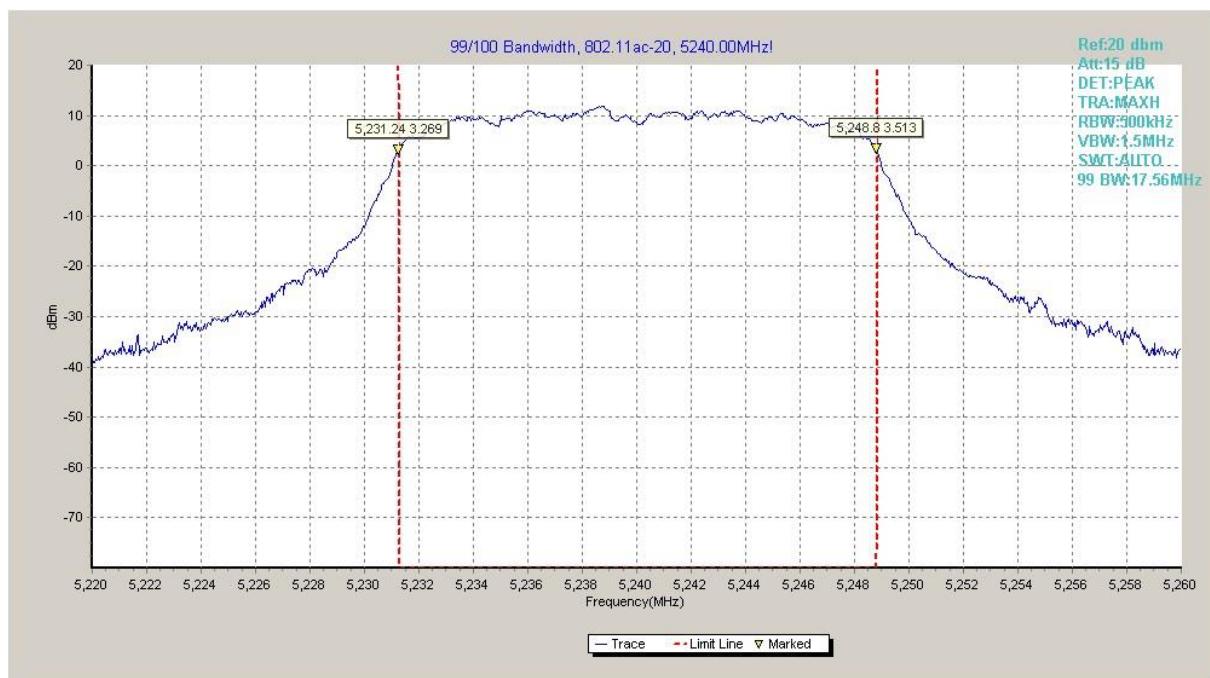


Fig.36 99% Occupied bandwidth (802.11ac-HT20, 5240MHz)

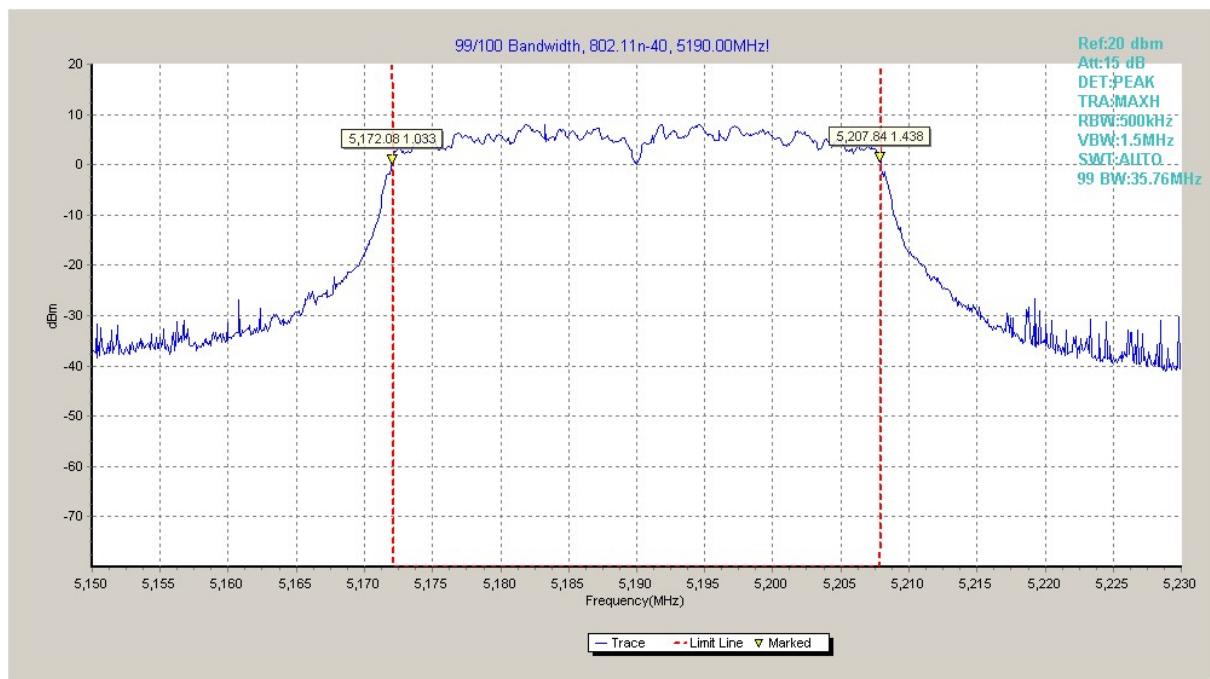


Fig.37 99% Occupied bandwidth (802.11n-HT40, 5190MHz)

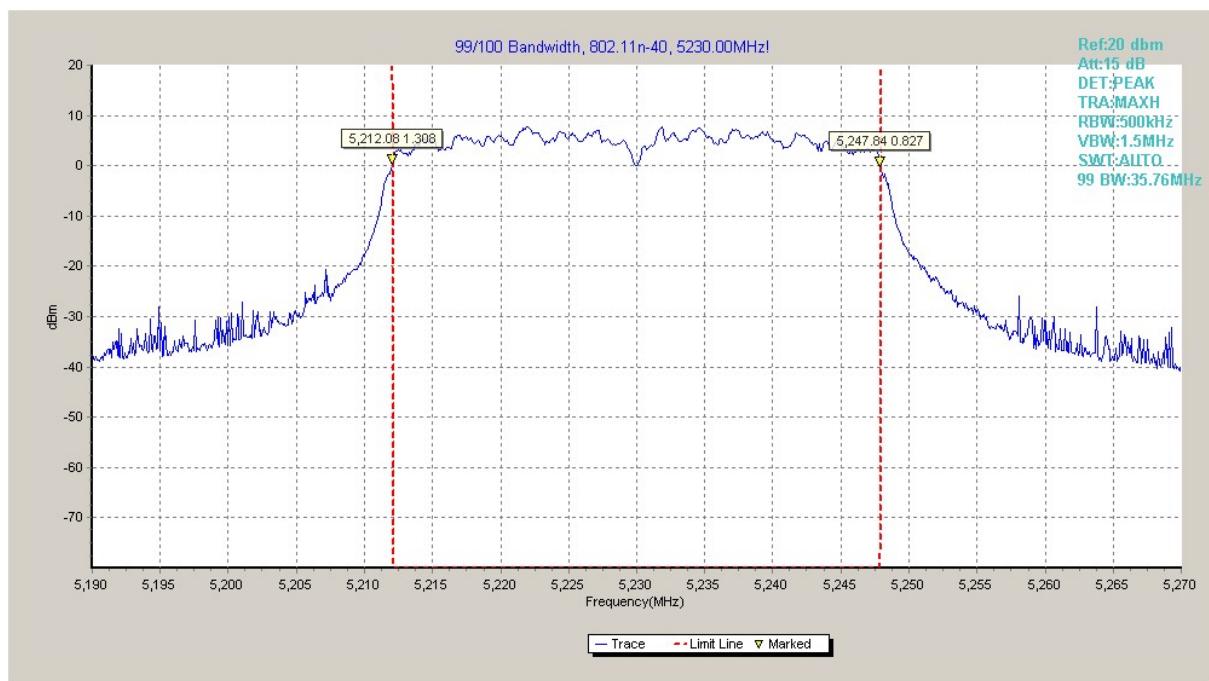


Fig.38 99% Occupied bandwidth (802.11n-HT40, 5230MHz)

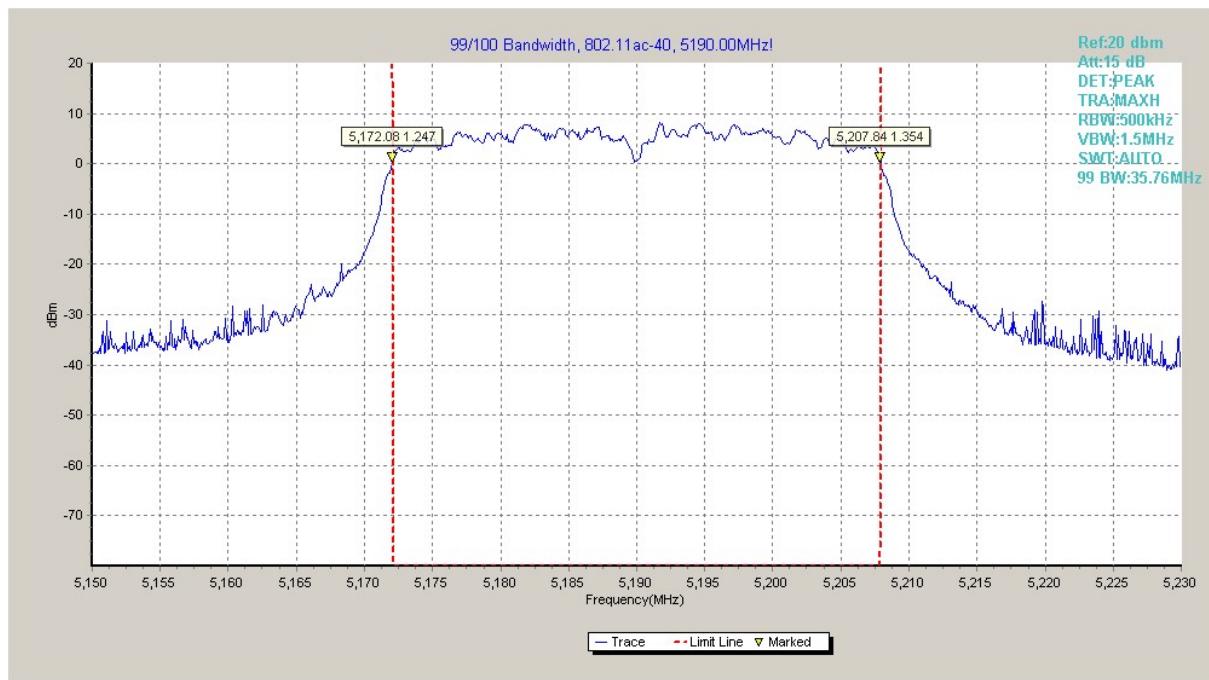


Fig.39 99% Occupied bandwidth (802.11ac-HT40, 5190MHz)

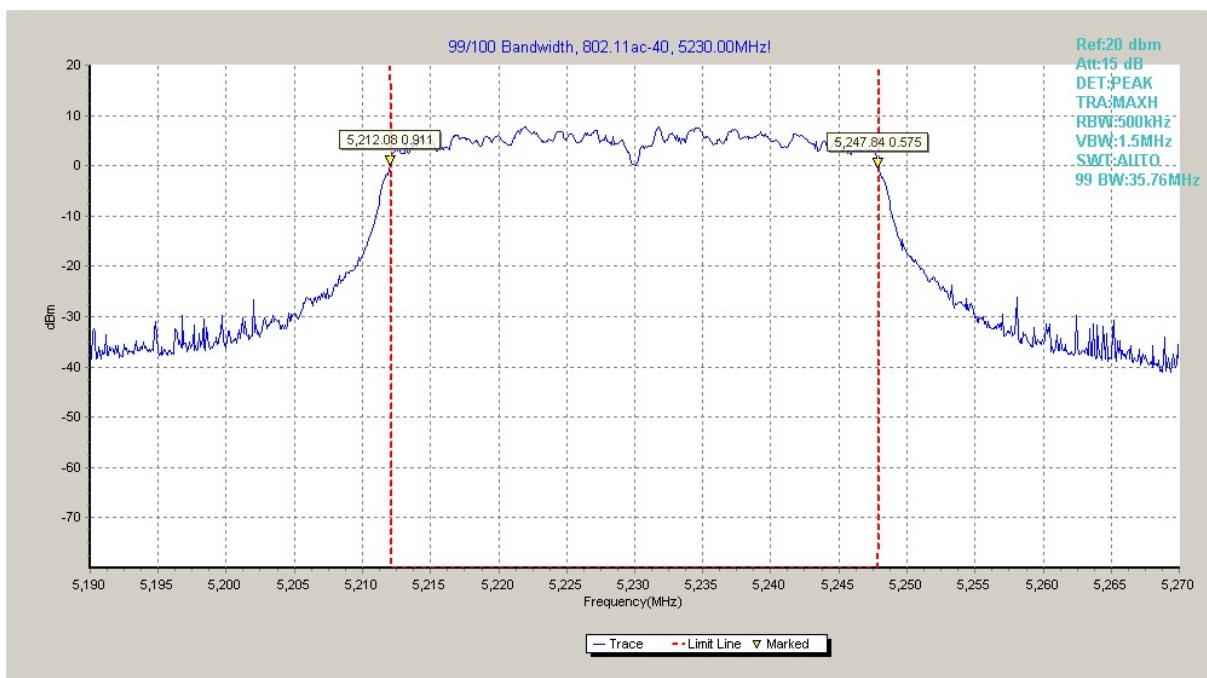


Fig.40 99% Occupied bandwidth (802.11ac-HT40, 5230MHz)

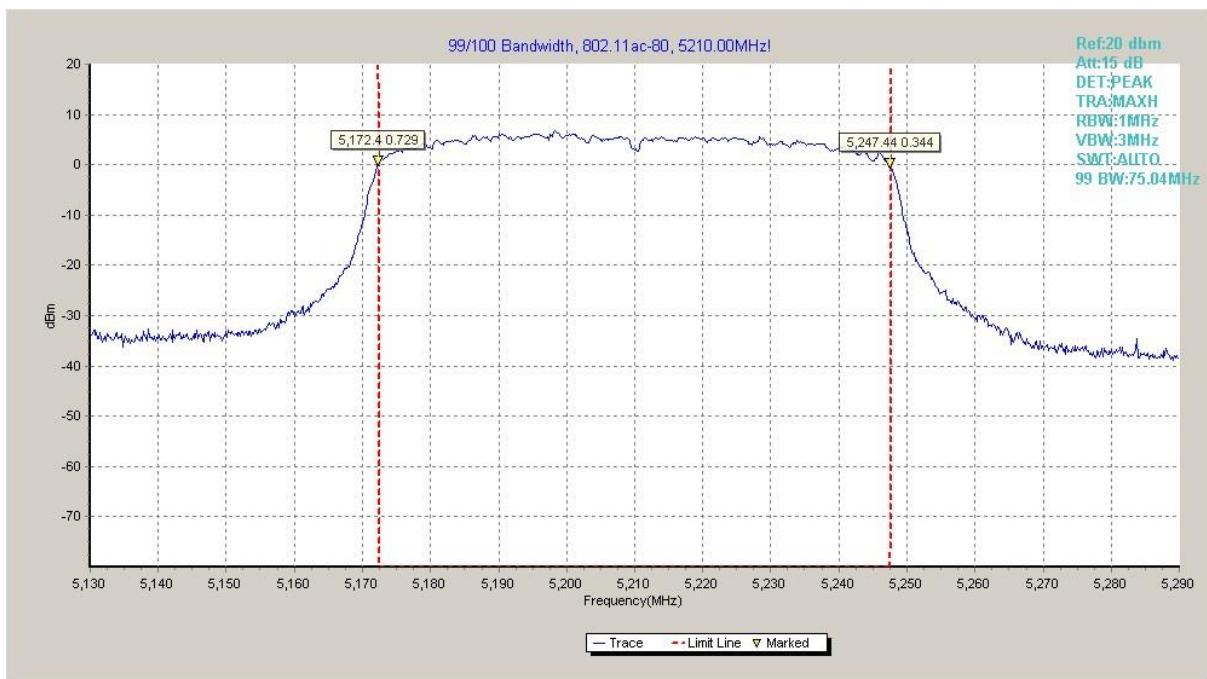


Fig.41 99% Occupied bandwidth (802.11ac-HT80, 5210MHz)

A.9. Frequency Stability

Manufacturers ensured the EUT meet the requirement of frequency stability, such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

Measurement Result:

Mode	Frequency	Test Condition		Result(MHz)
802.11a	5180MHz	Tnom	Vnom	0.03
		Tmax	Vnom	
		Tmin	Vnom	
		Vmax	Tnom	
		Vmin	Tnom	

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: Accreditation Certificate

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 600118-0

Telecommunication Technology Labs, CAICT

Beijing
China

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

Electromagnetic Compatibility & Telecommunications

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
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 January 2009).*

2019-09-26 through 2020-09-30

Effective Dates



For the National Voluntary Laboratory Accreditation Program



*** END OF REPORT BODY ***