APPENDIX B – TEST DATA OF RADIATED EMISSION

Radiated Emission Band Edge

The worst case attitude: The mobile lay down.
The measurement results are obtained as described below:
Measure Level = Reading Level + cable loss + antenna factor

Sample calculation: (103.92 dBuV/m) = (69.92 dBμV) + (8.90 dB) + (25.10 dB), the corresponding frequency is 2412MHz.

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b
Polarity:Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2412	103.92	69.92	N/A	N/A	8.90	25.10
2	2390	49.87	15.87	-24.13	74.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2412	96.43	62.43	N/A	N/A	8.90	25.10
2	2390	45.84	11.84	-28.16	74.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b
Polarity:Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2412	87.95	53.95	N/A	N/A	8.90	25.10
2	2390	37.12	3.12	-16.88	54.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11b
Polarity:Horizontal
Detector: Average

No	Frequency （MHz）	Measure Level （dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2412	84.12	50.12	N/A	N/A	8.90	25.10
2	2390	37.08	3.08	-16.92	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b
Polarity:Vertical
Detector: Peak

No	Frequency （MHz）	Measure Level （dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2462	103.30	69.30	N/A	N/A	8.90	25.10
2	2483.5	49.88	15.88	-24.12	74.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b
Polarity:Horizontal
Detector: Peak

No	Frequency （MHz）	Measure Level （dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2462	96.76	62.76	N/A	N/A	8.90	25.10
2	2483.5	47.44	13.44	-26.56	74.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b
Polarity:Vertical
Detector: Average

No	Frequency （MHz）	Measure Level （dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2462	90.28	56.28	N/A	N/A	8.90	25.10
2	2483.5	37.91	3.91	-16.09	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11b
Polarity:Horizontal
Detector: Average

No	Frequency （MHz）	Measure Level （dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2462	85.37	51.37	N/A	N/A	8.90	25.10
2	2483.5	37.64	3.64	-16.36	54.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g
Polarity: Vertical
Detector: Peak

No	Frequency （MHz）	Measure Level （dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2412	102.74	68.74	N/A	N/A	8.90	25.10
2	2390	49.08	15.08	-24.92	74.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g
Polarity:Horizontal
Detector: Peak

No	Frequency （MHz）	Measure Level （dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2412	97.59	63.59	N/A	N/A	8.90	25.10
2	2390	45.92	11.92	-28.08	74.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g
Polarity: Vertical
Detector: Average

No	Frequency （MHz）	Measure Level （dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2412	91.10	57.10	N/A	N/A	8.90	25.10
2	2390	38.48	4.48	-15.52	54.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11g
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2412	87.77	53.77	N/A	N/A	8.90	25.10
2	2390	36.81	2.81	-17.19	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g
Polarity: Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2462	103.82	69.82	N/A	N/A	8.90	25.10
2	2483.5	48.87	14.87	-25.13	74.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2462	96.08	62.08	N/A	N/A	8.90	25.10
2	2483.5	44.74	10.74	-29.26	74.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g
Polarity: Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2462	87.76	53.76	N/A	N/A	8.90	25.10
2	2483.5	38.50	4.50	-15.50	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11g
Polarity:Horizontal
Detector: Average

No	Frequency （MHz）	Measure Level （dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2462	85.36	51.36	N/A	N/A	8.90	25.10
2	2483.5	36.29	2.29	-17.71	54.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)
Polarity: Vertical
Detector: Peak

No	Frequency （MHz）	Measure Level （dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2412	101.66	67.66	N/A	N/A	8.90	25.10
2	2390	49.52	15.52	-24.48	74.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)
Polarity:Horizontal
Detector: Peak

No	Frequency （MHz）	Measure Level （dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2412	97.68	63.68	N/A	N/A	8.90	25.10
2	2390	44.13	10.13	-29.87	74.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)
Polarity: Vertical
Detector: Average

No	Frequency （MHz）	Measure Level （dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2412	89.50	55.50	N/A	N/A	8.90	25.10
2	2390	38.56	4.56	-15.44	54.00	8.90	25.10

Carrier frequency (MHz): 2412
Channel No.:1
Test Mode: 802.11n(HT20)
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2412	85.95	51.95	N/A	N/A	8.90	25.10
2	2390	36.29	2.29	-17.71	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)
Polarity: Vertical
Detector: Peak

No	Frequency（MHz）	Measure Level（dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2462	104.66	70.66	N/A	N/A	8.90	25.10
2	2483.5	48.54	14.54	-25.46	74.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)
Polarity:Horizontal
Detector: Peak

No	Frequency（MHz）	Measure Level（dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2462	97.59	63.59	N/A	N/A	8.90	25.10
2	2483.5	45.29	11.29	-28.71	74.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)
Polarity: Vertical
Detector: Average

No	Frequency（MHz）	Measure Level（dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2462	88.15	54.15	N/A	N/A	8.90	25.10
2	2483.5	38.22	4.22	-15.78	54.00	8.90	25.10

Carrier frequency (MHz): 2462
Channel No.:11
Test Mode: 802.11n(HT20)
Polarity:Horizontal
Detector: Average

No	Frequency（MHz）	Measure Level（dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuv/m)	cable loss (dB)	antenna factor (dB)
1	2462	87.84	53.84	N/A	N/A	8.90	25.10
2	2483.5	36.36	2.36	-17.64	54.00	8.90	25.10

Sample Calculations

Determining Spurious Emissions Levels

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.
The measurement results are obtained as described below:
Result= P_{mea} + A_{Rpl}
Sample calculation: (30.07 dBμV/m) = (43.67 dBμV) + (-13.6 dB/m), the corresponding frequency is 30.404167MHz.
The worst case attitude: The mobile lay down.

For 802.11b Channel No.:1

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
30.390000	21.12	-13.6	34.72	Vertical	40.00
34.850000	17.97	-15.7	33.67	Vertical	40.00
48.732083	26.59	-23.4	49.99	Vertical	40.00
66.397083	20.09	-25.2	45.29	Vertical	40.00
360.684583	24.21	-16.2	40.41	Vertical	46.00
364.008333	25.29	-16.2	41.49	Vertical	46.00

For 802.11g Channel No.:1

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
30.300000	21.34	-13.5	34.84	Vertical	40.00
36.225417	16.61	-16.3	32.91	Vertical	40.00
48.312500	26.52	-23.1	49.62	Vertical	40.00
62.307083	18.23	-26.1	44.33	Vertical	40.00
66.435417	19.60	-25.2	44.8	Vertical	40.00
361.414167	22.91	-16.2	39.11	Vertical	46.00

For 802.11n(HT20) Channel No.:1

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
30.260000	21.31	-13.5	34.81	Vertical	40.00
34.621667	17.27	-15.6	32.87	Vertical	40.00
35.129583	17.92	-15.8	33.72	Vertical	40.00
48.769167	26.42	-23.4	49.82	Vertical	40.00
66.494167	20.24	-25.2	45.44	Vertical	40.00
364.043333	24.25	-16.2	40.45	Vertical	46.00

For 802.11b Channel No.:6

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
30.100000	21.15	-13.5	34.65	Vertical	40.00
30.300000	21.49	-13.5	34.99	Vertical	40.00
36.145000	16.69	-16.3	32.99	Vertical	40.00
36.262083	16.83	-16.3	33.13	Vertical	40.00
48.225833	27.09	-23.0	50.09	Vertical	40.00
66.373333	19.42	-25.2	44.62	Vertical	40.00

For 802.11g Channel No.:6

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
30.976250	17.75	-13.9	31.65	Vertical	40.00
34.079167	17.27	-15.3	32.57	Vertical	40.00
35.016250	18.63	-15.7	34.33	Vertical	40.00
37.539167	16.87	-16.9	33.77	Vertical	40.00
48.273750	26.59	-23.1	49.69	Vertical	40.00
66.207083	19.45	-25.3	44.75	Vertical	40.00

For 802.11n(HT20) Channel No.:6

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
30.260000	21.51	-13.5	35.01	Vertical	40.00
30.480000	21.03	-13.6	34.63	Vertical	40.00
35.006250	18.68	-15.7	34.38	Vertical	40.00
36.265833	17.46	-16.3	33.76	Vertical	40.00
48.347500	26.78	-23.1	49.88	Vertical	40.00
64.372500	18.62	-25.7	44.32	Vertical	40.00

For 802.11b Channel No.:11

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
30.320000	21.79	-13.6	35.39	Vertical	40.00
35.170417	18.55	-15.8	34.35	Vertical	40.00
36.284583	17.52	-16.3	33.82	Vertical	40.00
36.530417	17.17	-16.4	33.57	Vertical	40.00
48.792500	27.13	-23.4	50.53	Vertical	40.00
66.393333	18.86	-25.2	44.06	Vertical	40.00

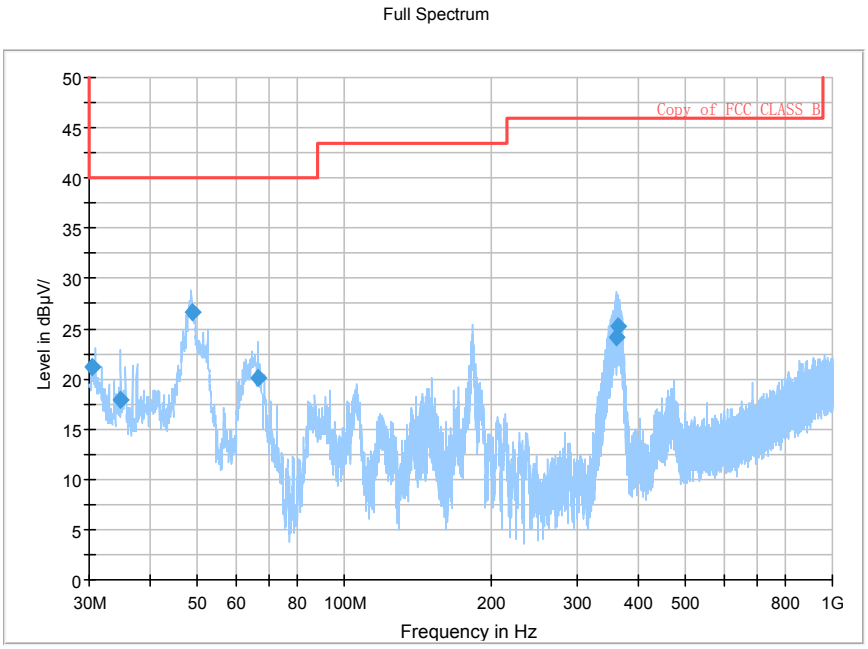
For 802.11g Channel No.:11

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
30.407917	21.42	-13.6	35.02	Vertical	40.00
34.935833	18.21	-15.7	33.91	Vertical	40.00
34.947500	18.26	-15.7	33.96	Vertical	40.00
36.287917	17.16	-16.3	33.46	Vertical	40.00
37.535833	17.05	-16.9	33.95	Vertical	40.00
48.369583	26.73	-23.1	49.83	Vertical	40.00

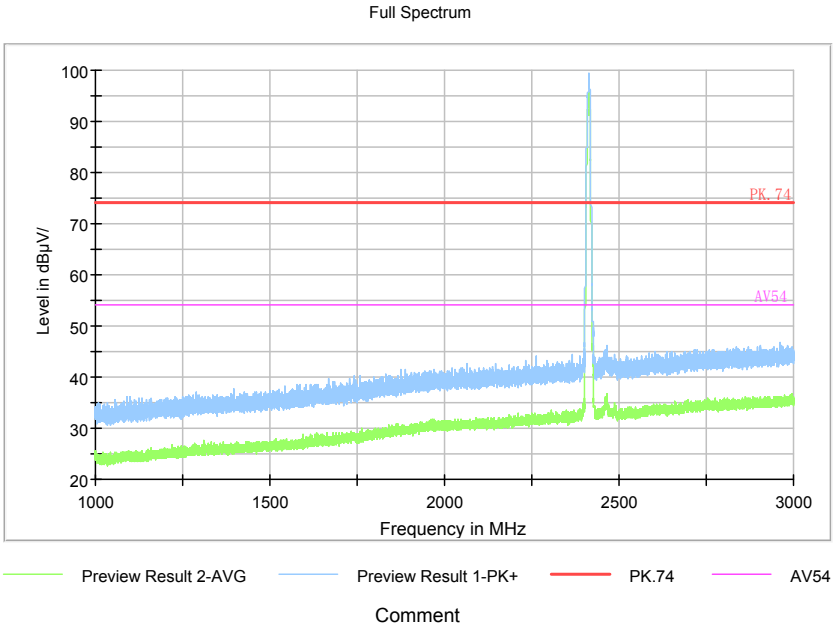
For 802.11n(HT20) Channel No.:11

Frequency(MHz)	Result(dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
30.652917	21.24	-13.7	34.94	Vertical	40.00
31.379583	17.98	-14.1	32.08	Vertical	40.00
34.179583	18.77	-15.4	34.17	Vertical	40.00
35.052917	19.65	-15.8	35.45	Vertical	40.00
48.772500	27.17	-23.4	50.57	Vertical	40.00
65.806250	19.06	-25.4	44.46	Vertical	40.00

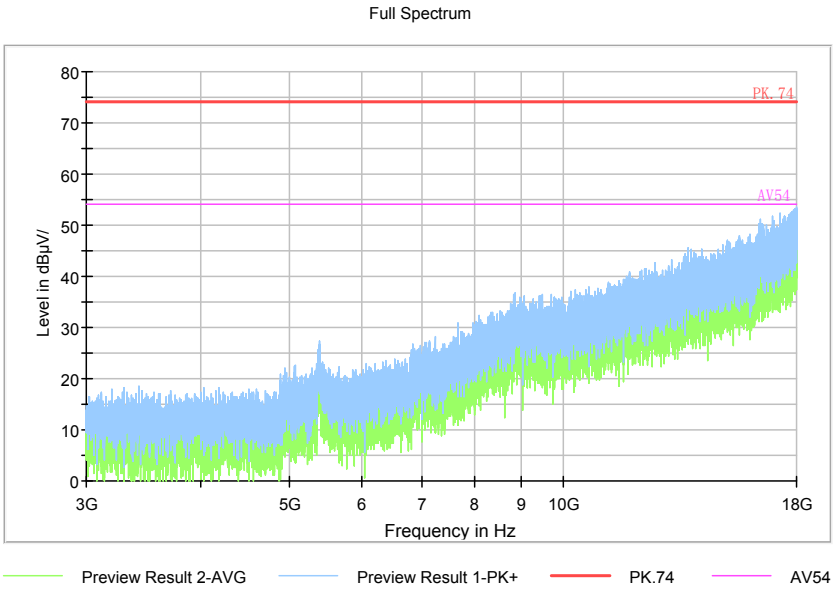
Carrier frequency (MHz): 2412
Channel No.:1



Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11b



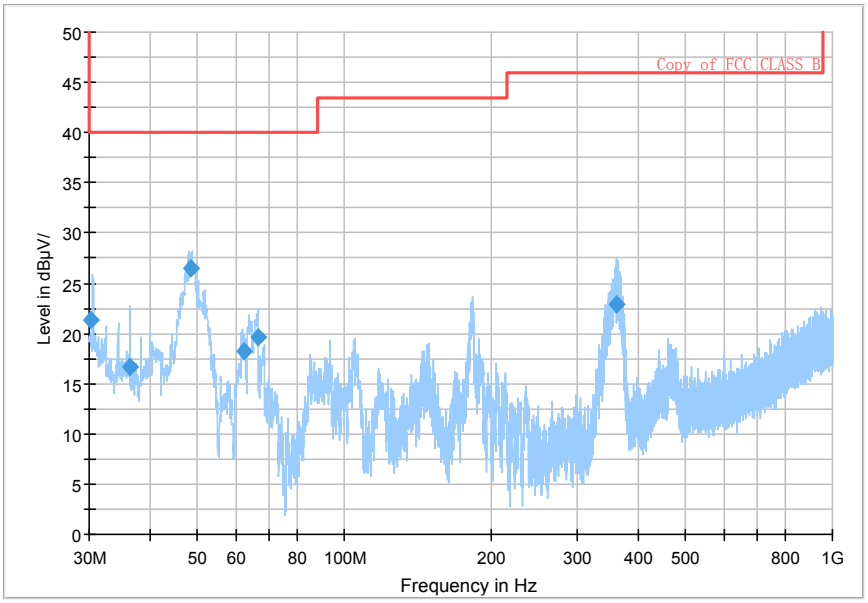
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11b



Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

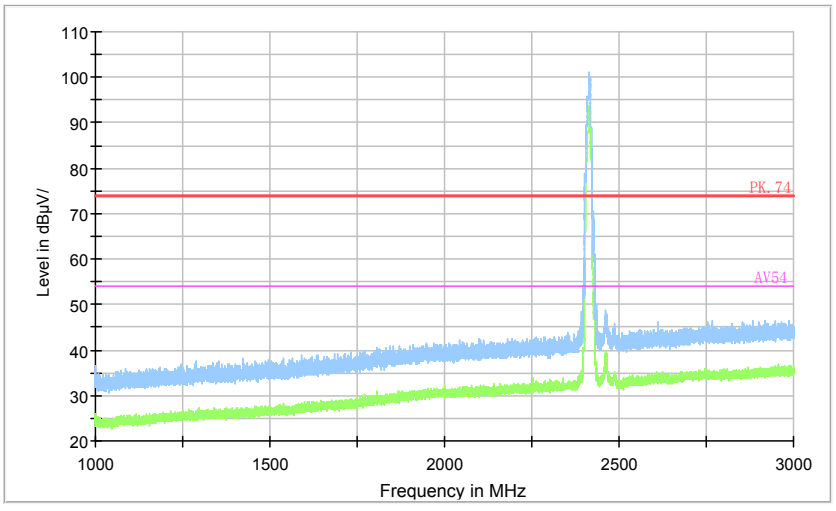
Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

Full Spectrum



Frequency Range: 30MHz -1GHz
Detector: QP mode
Modulation type: 802.11g

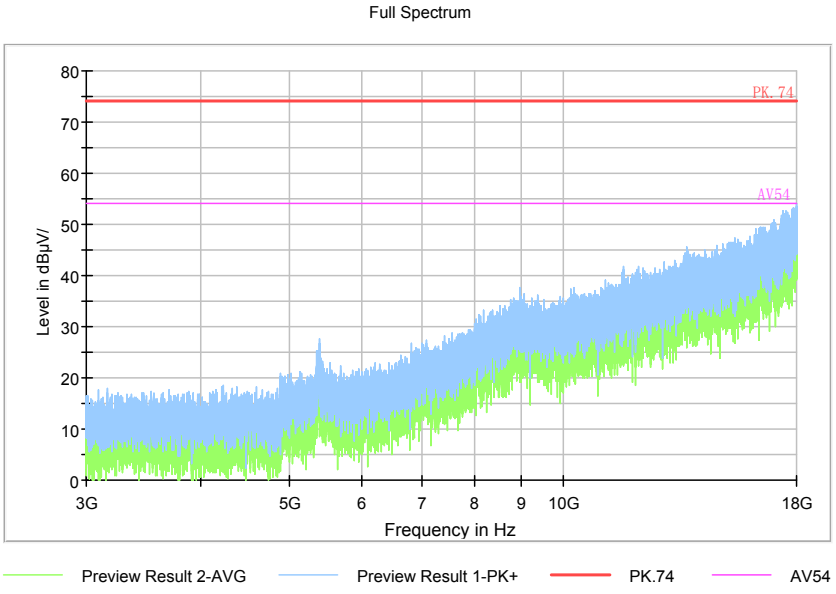
Full Spectrum



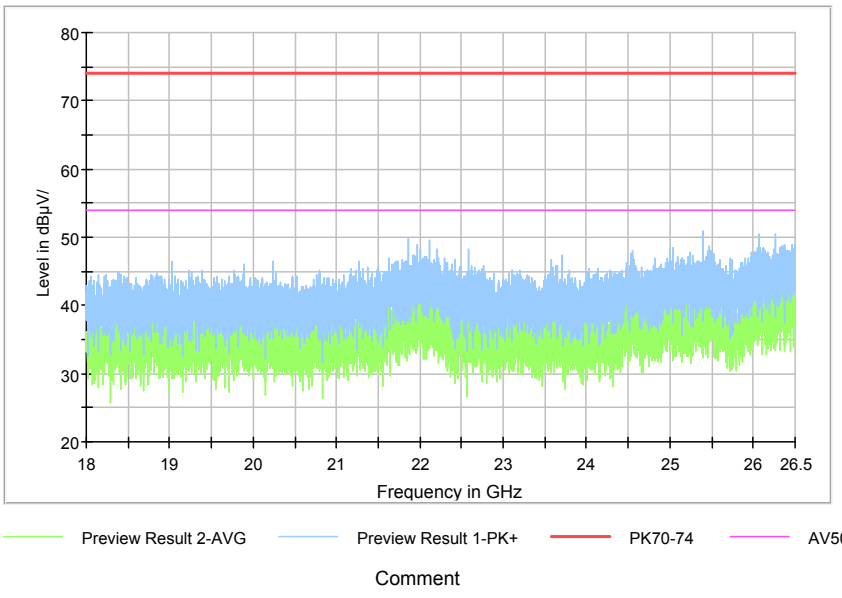
Preview Result 2-AVG Preview Result 1-PK+ PK.74 AV54

Comment

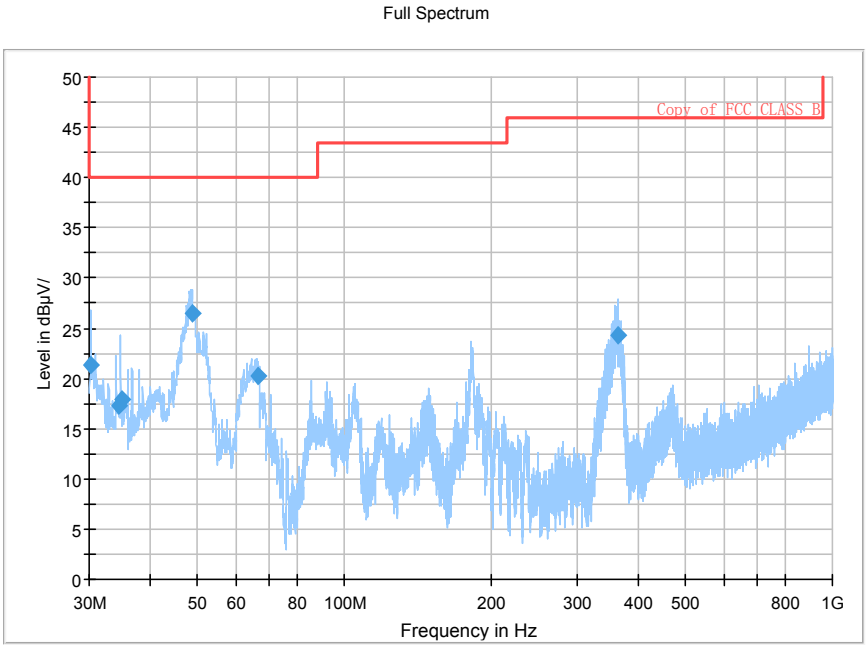
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11g



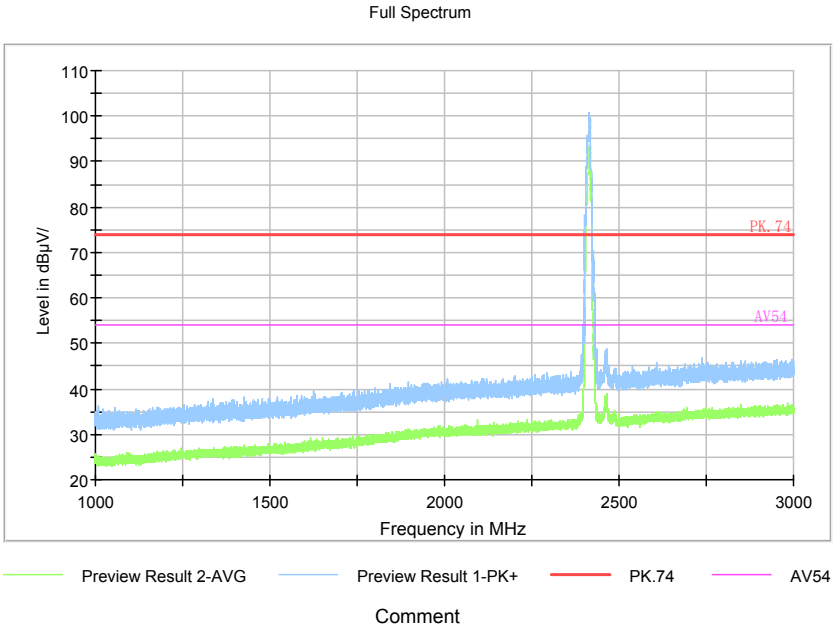
Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11g



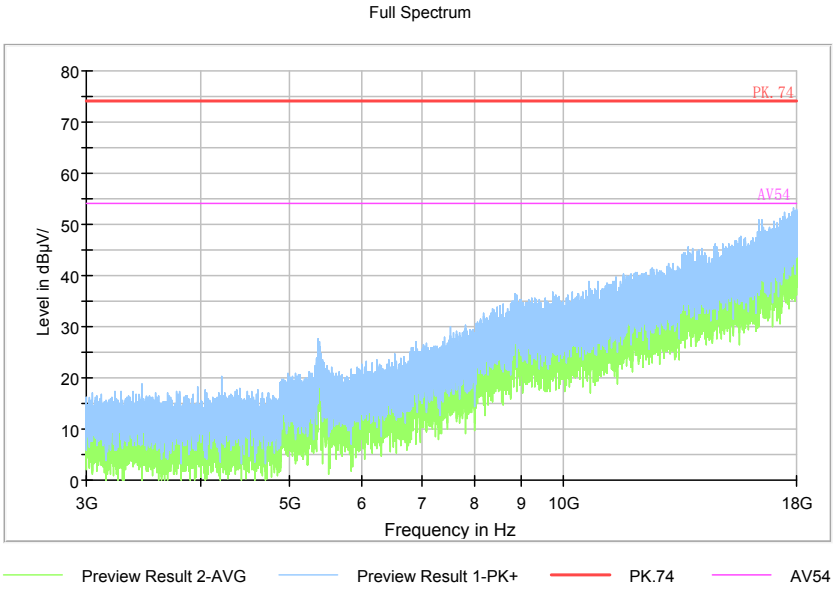
Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11g



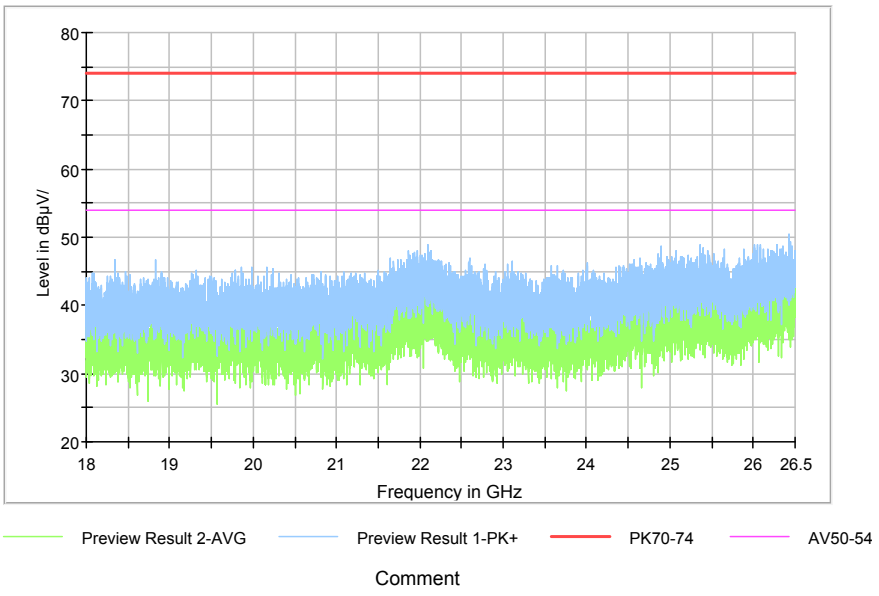
Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11n(HT20)



Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

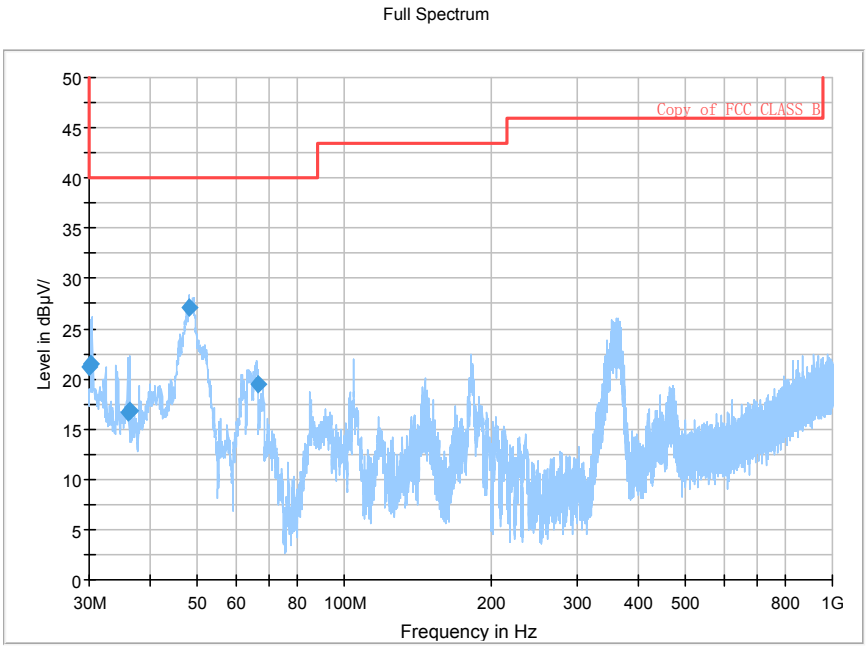


Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

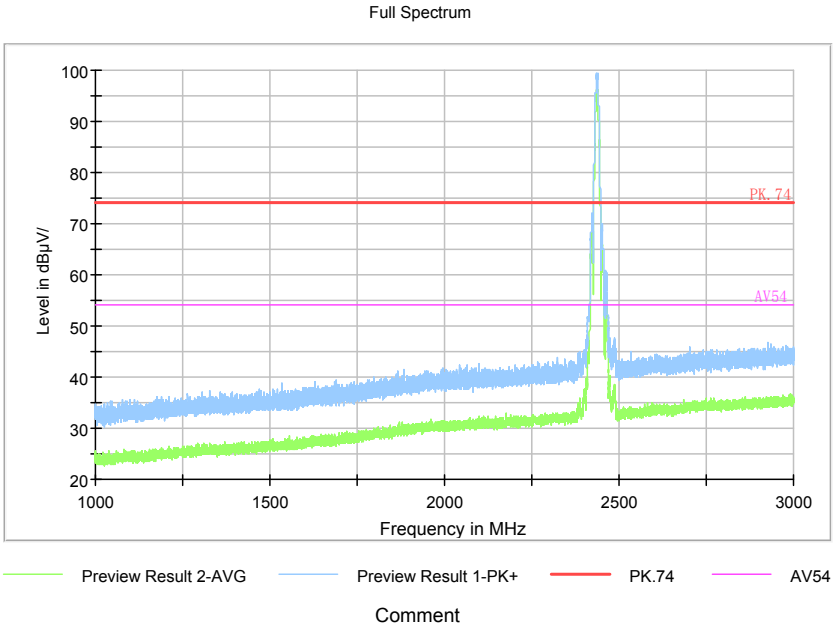


Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

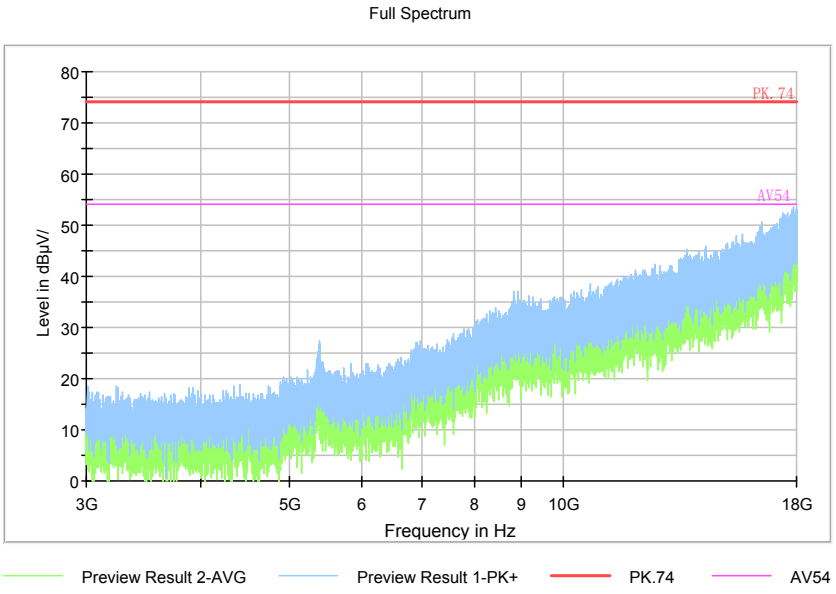
Carrier frequency (MHz): 2437
Channel No.:6



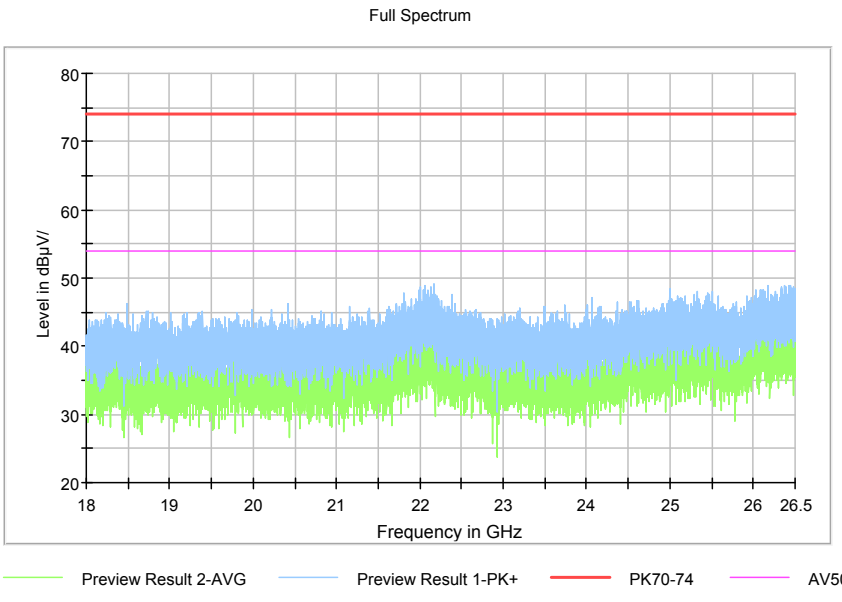
Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11b



Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

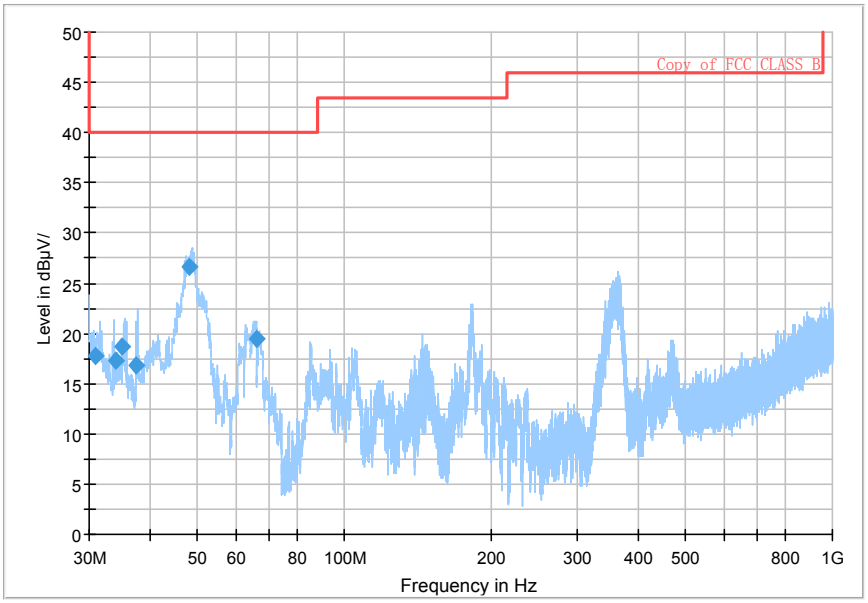


Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11b



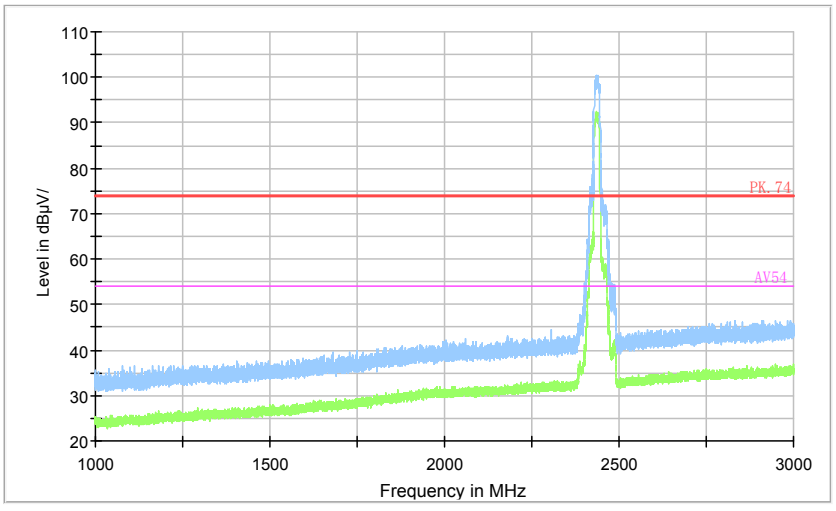
Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

Full Spectrum



Frequency Range: 30MHz -1GHz
Detector: QP mode
Modulation type: 802.11g

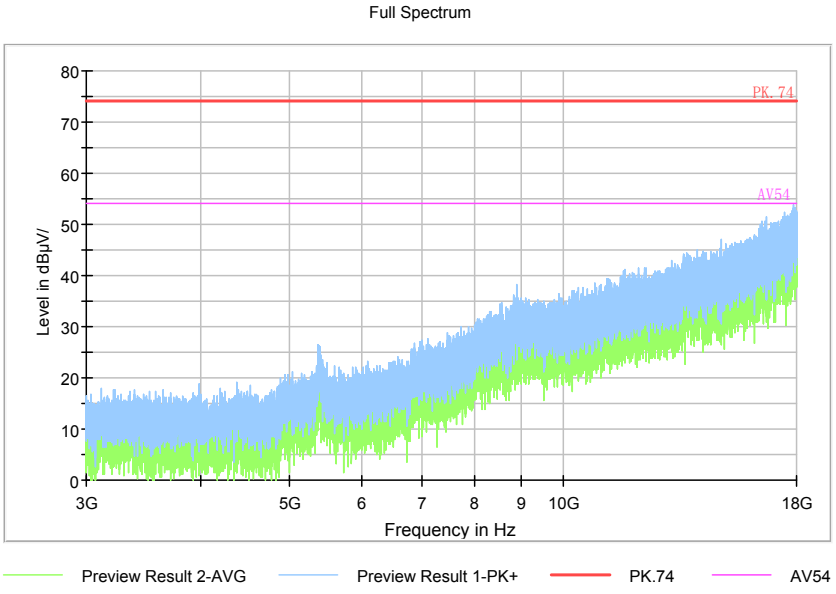
Full Spectrum



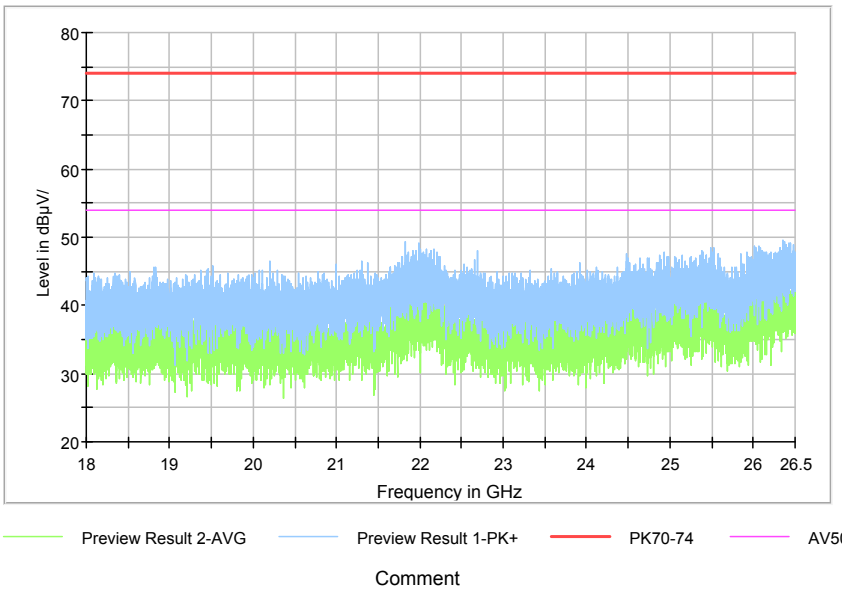
Preview Result 2-AVG Preview Result 1-PK+ PK.74 AV54

Comment

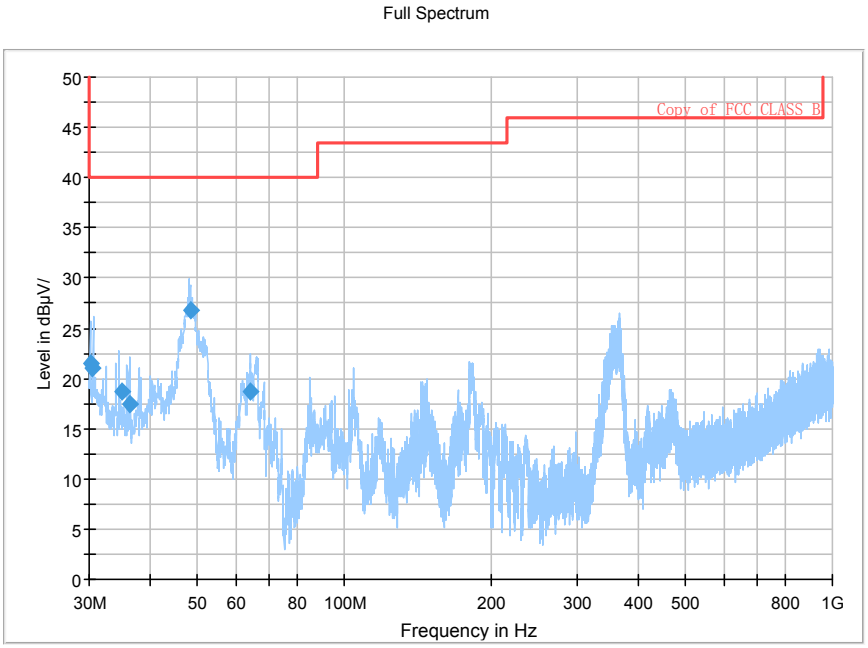
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11g



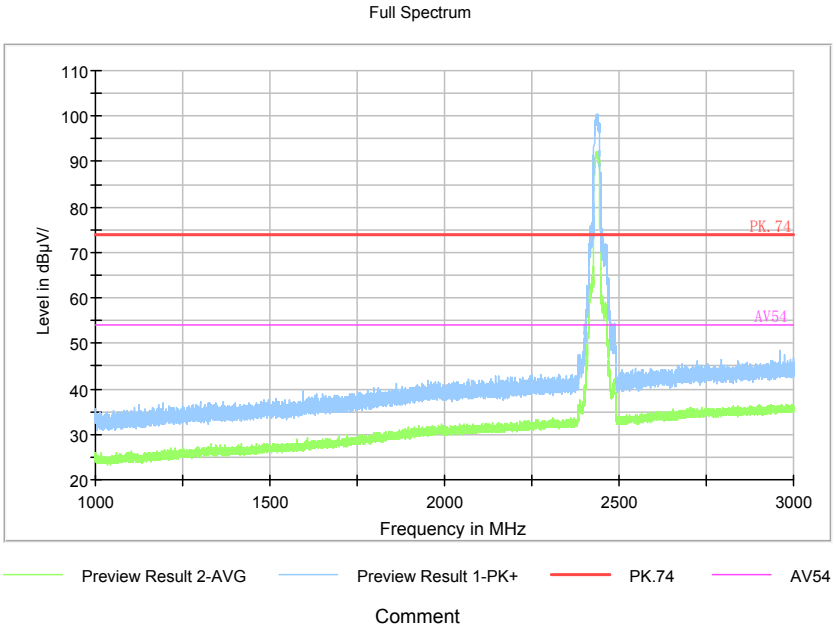
Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11g



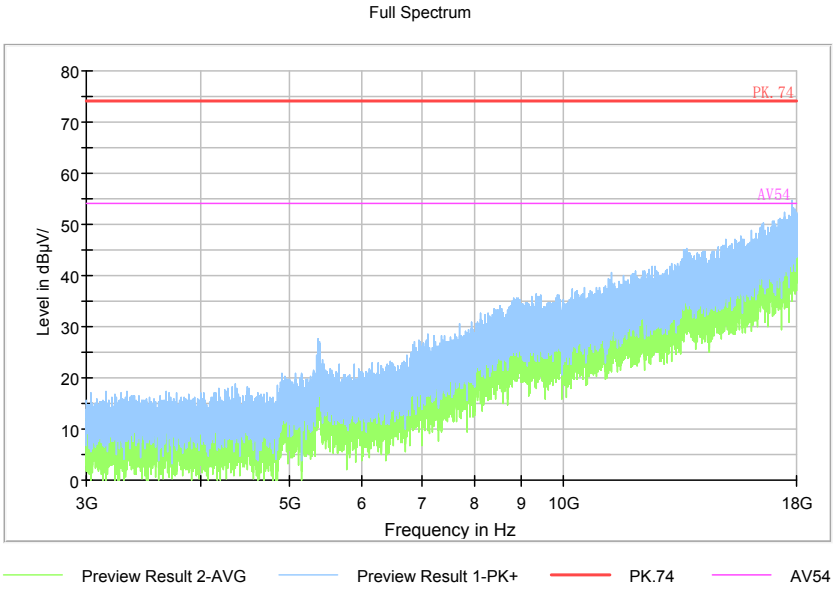
Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11g



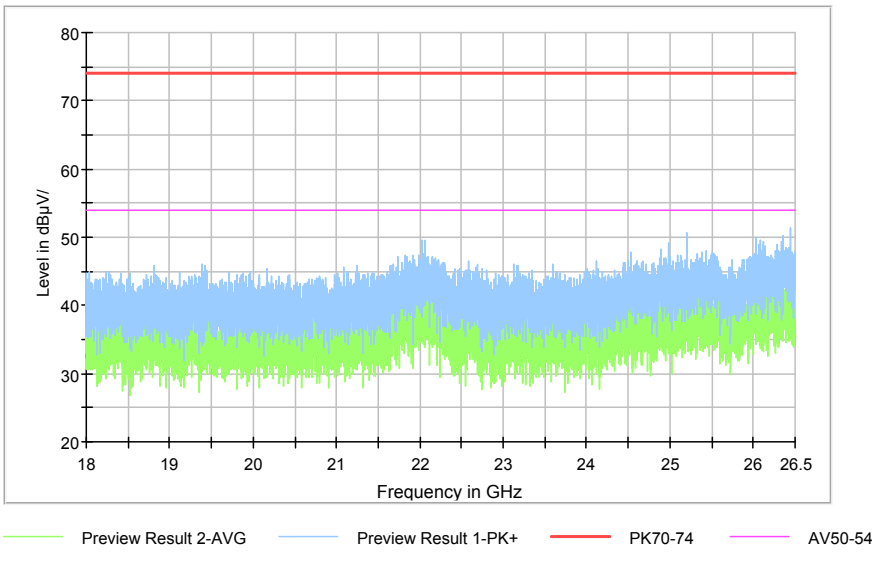
Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11n(HT20)



Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

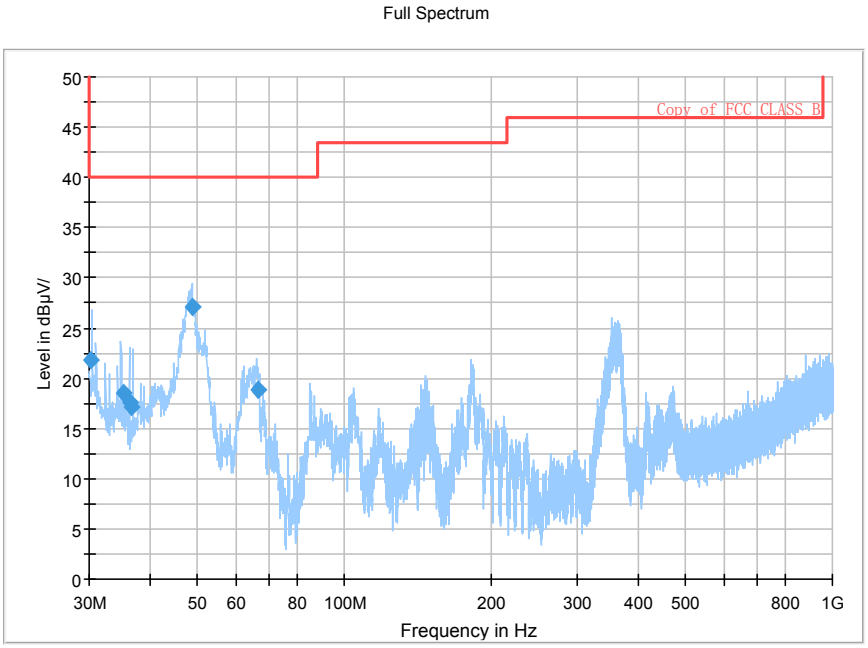


Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

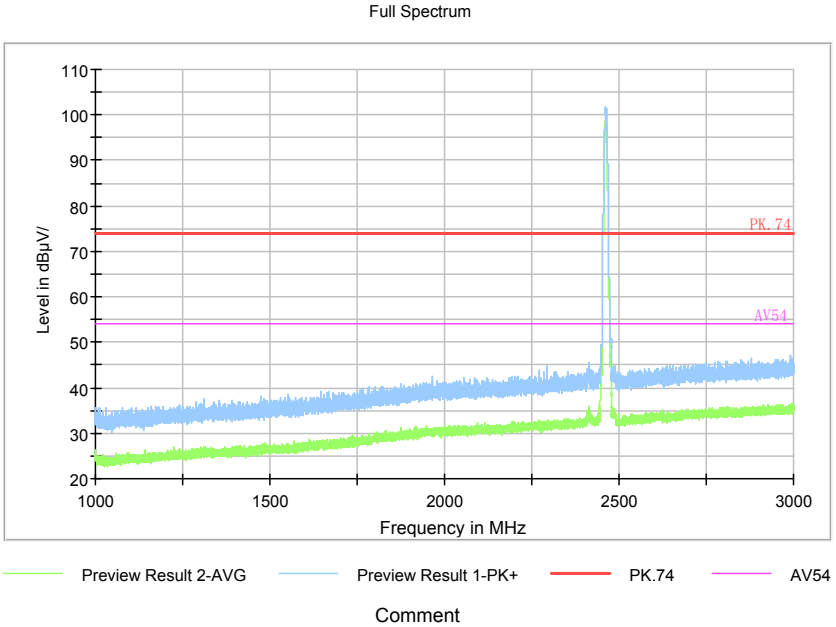


Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

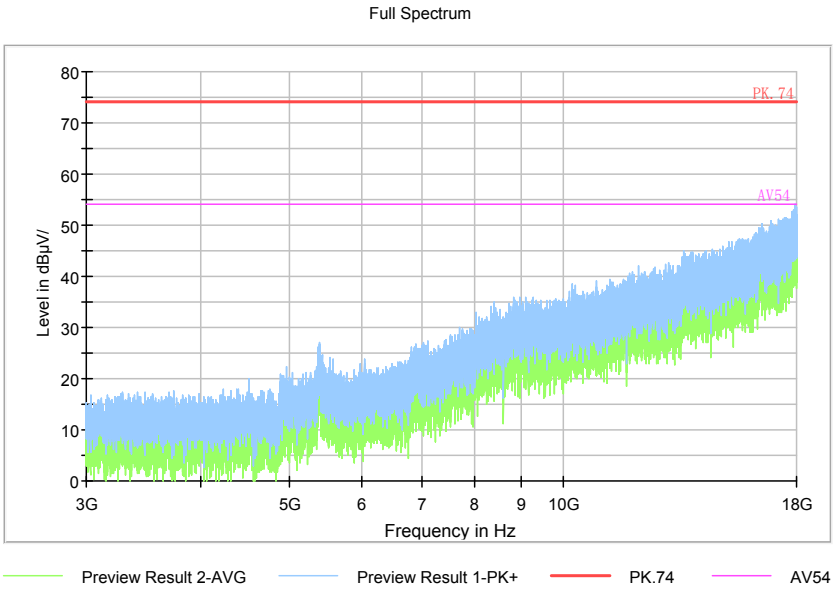
Carrier frequency (MHz): 2462
Channel No.:11



Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11b



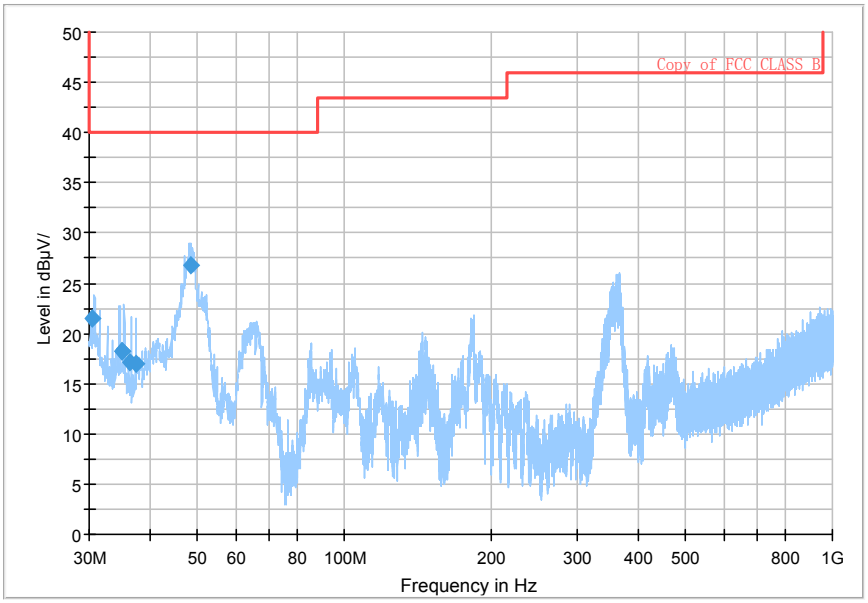
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11b



Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

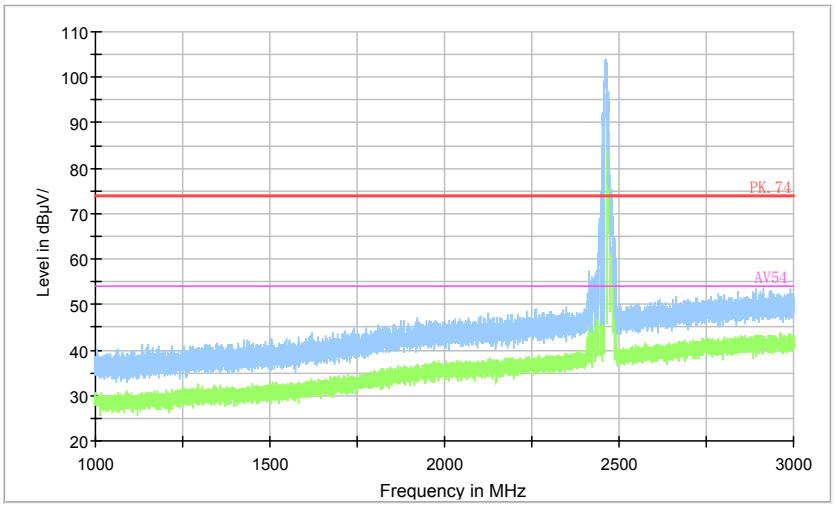
Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

Full Spectrum



Frequency Range: 30MHz -1GHz
Detector: QP mode
Modulation type: 802.11g

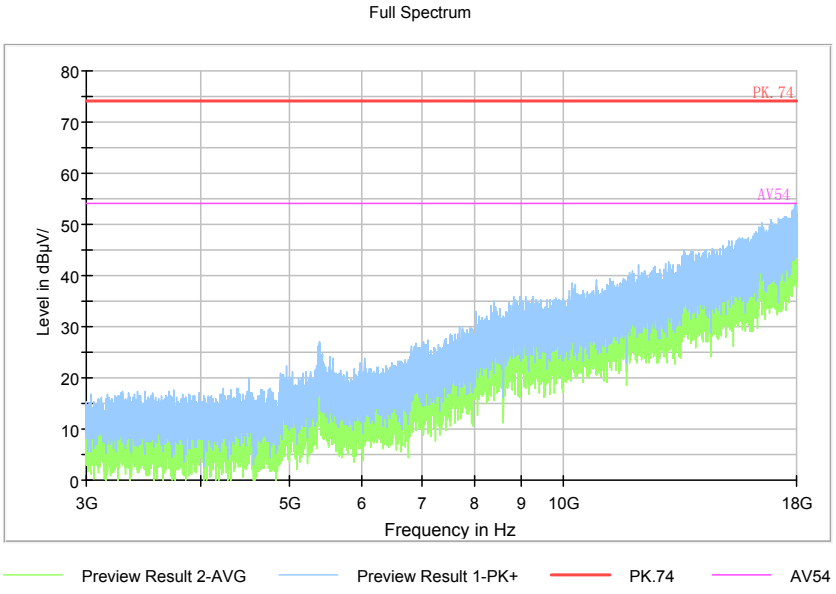
Full Spectrum



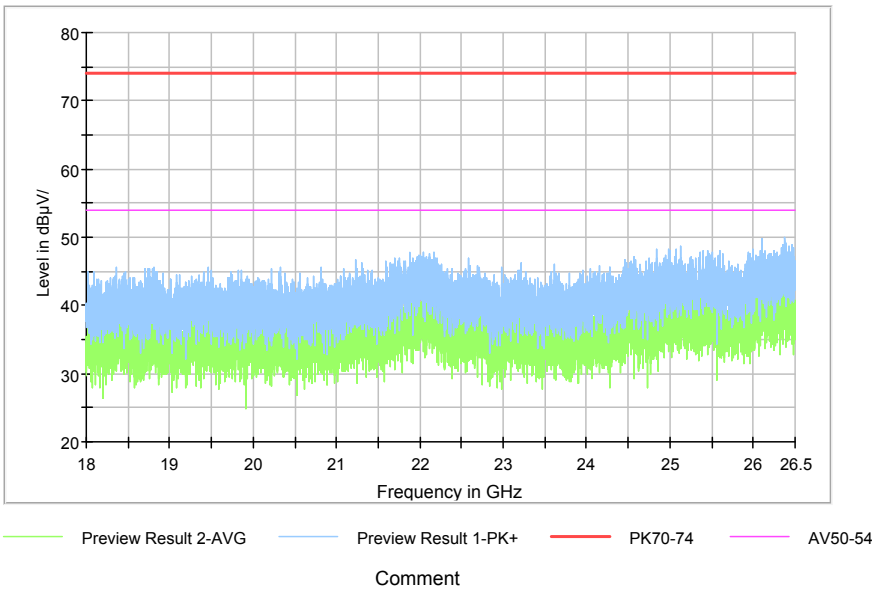
Preview Result 2-AVG Preview Result 1-PK+ PK.74 AV54

Comment

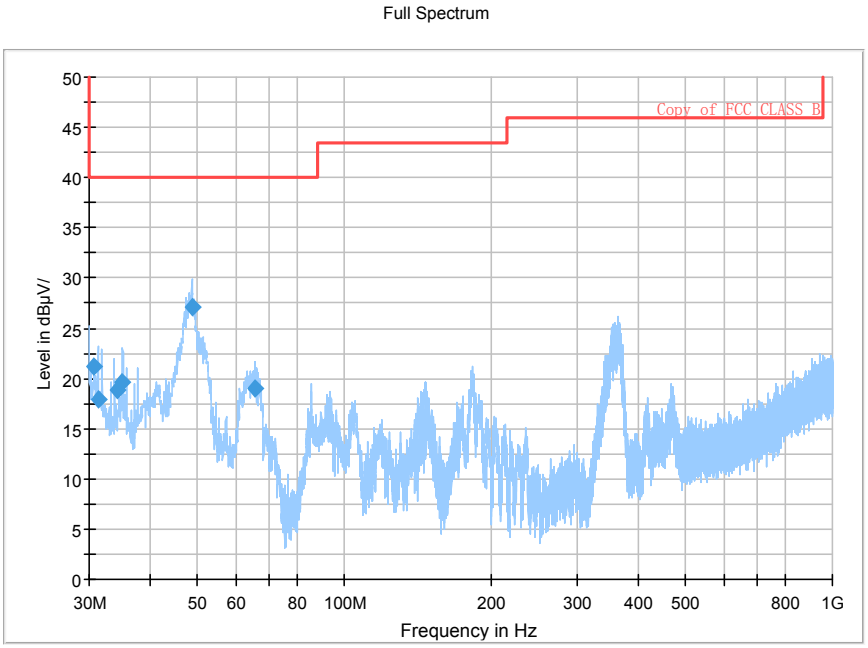
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11g



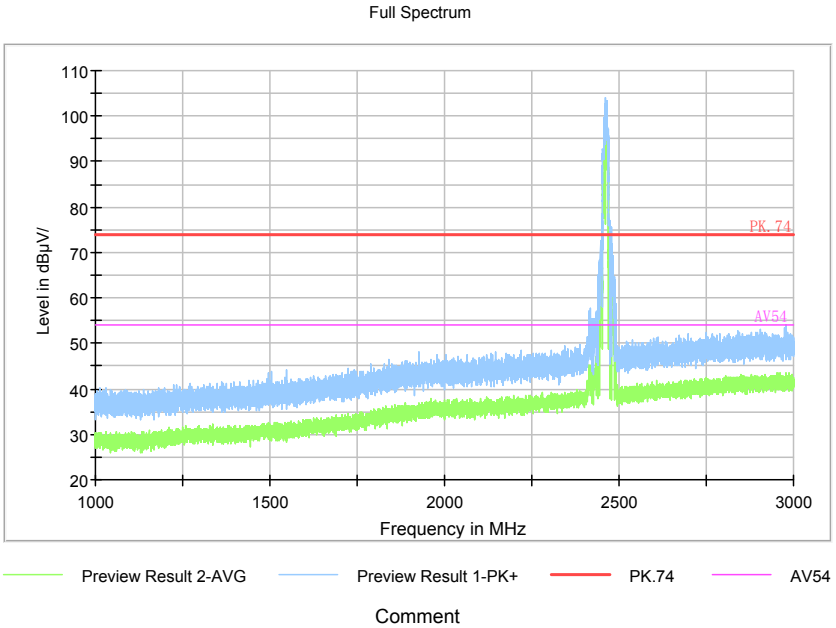
Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11g



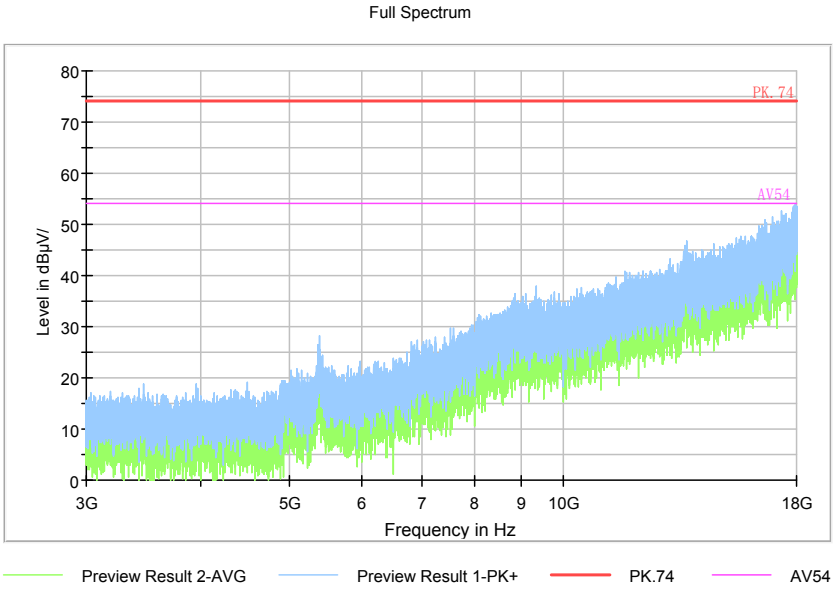
Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11g



Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11n(HT20)



Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)



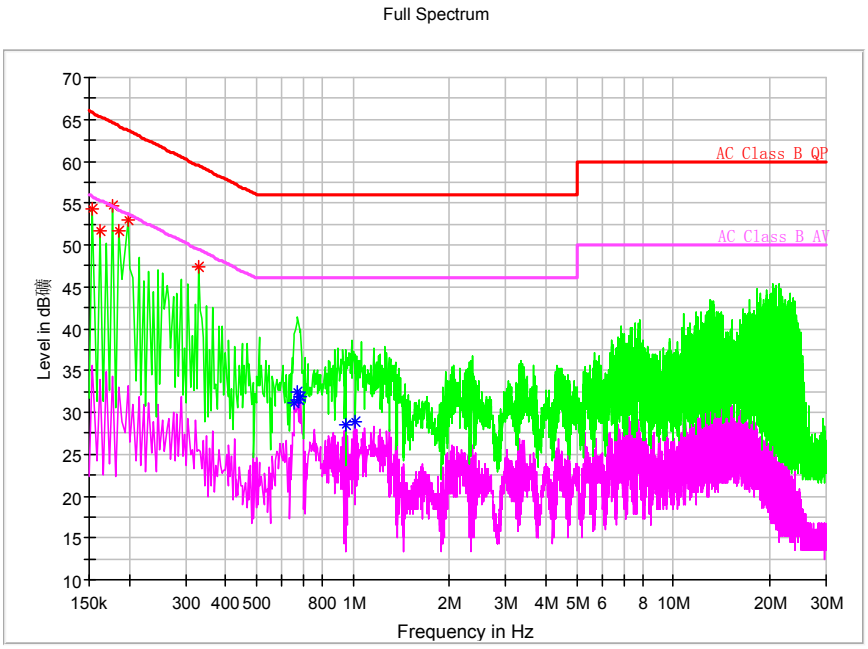
Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

AC Power line Conducted Emission

A “reference path loss” Corr.(dB) is established and the L_{cable}+ATT+VDF is the attenuation of ” reference path loss”, and including the cable loss, the attenuation of the attenuator, the voltage division factor of AMN.
The measurement results are obtained as described below:
$P_{result}=P_{mea}$+ Corr.(dB)

Sample calculation: (54.28 dBμV) = (24.38 dBμV) + (29.9 dB), the corresponding frequency is 0.154000MHz.



L+N Line

MEASUREMENT RESULT:

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)	Pmea Quasi Peak (dBµV)	Pmea Average (dBµV)
0.154000	54.28	---	65.78	11.50	L	29.9	24.38	---
0.162000	51.74	---	65.36	13.62	L	29.9	21.84	---
0.178000	54.67	---	64.58	9.91	L	29.9	24.77	---
0.186000	51.75	---	64.21	12.46	L	29.9	21.85	---
0.198000	53.02	---	63.69	10.67	L	29.9	23.12	---
0.330000	47.32	---	59.45	12.13	L	30.0	17.32	---
0.658000	---	31.04	46.00	14.96	L	30.0	---	1.04
0.670000	---	32.35	46.00	13.65	L	30.0	---	2.35
0.678000	---	31.54	46.00	14.46	L	30.0	---	1.54
0.686000	---	31.89	46.00	14.11	N	29.9	---	1.99
0.954000	---	28.47	46.00	17.53	N	29.9	---	-1.43
1.014000	---	28.96	46.00	17.04	L1	29.9	---	-0.94

---End of Test Report---