

Conducted Out of band emission measurement

Test Mode: 802.11b



Mode:802.11b Frequency:2412MHz Ant:Chain0

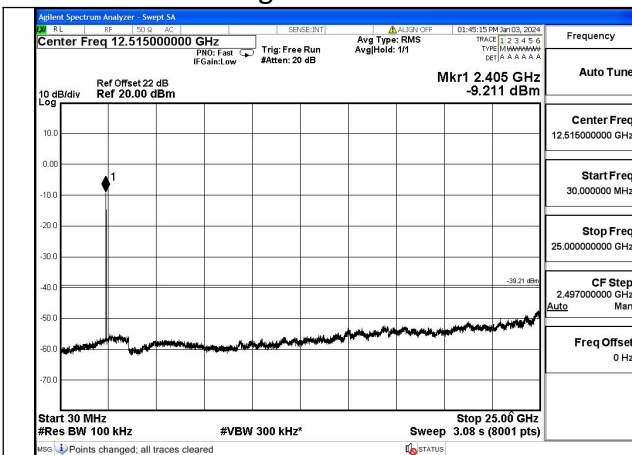


Mode:802.11b Frequency:2437MHz Ant:Chain0

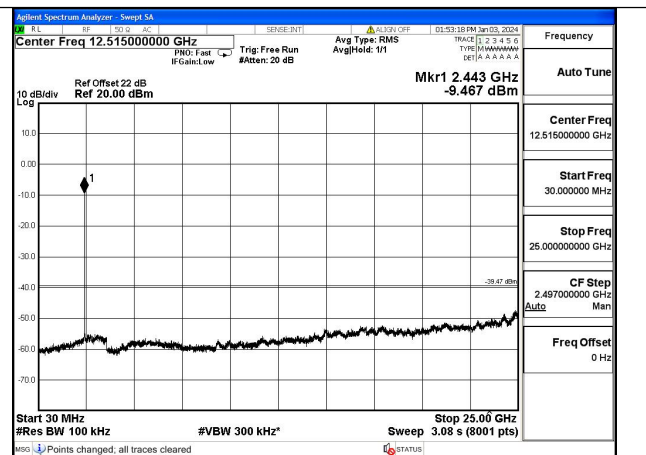


Mode:802.11b Frequency:2462MHz Ant:Chain0

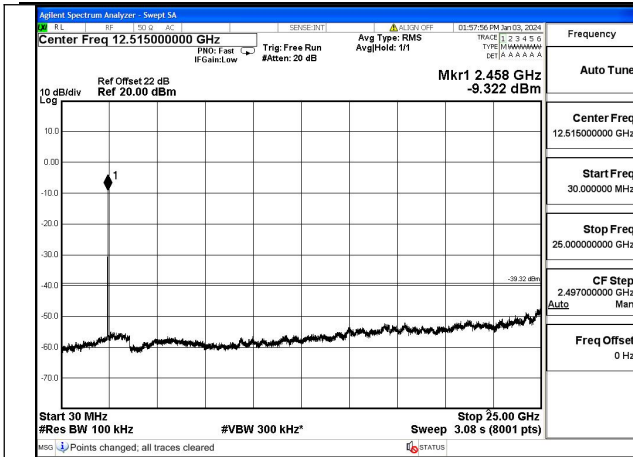
Test Mode: 802.11g



Mode:802.11g Frequency:2412MHz Ant:Chain0



Mode:802.11g Frequency:2437MHz Ant:Chain0



Mode:802.11g Frequency:2462MHz Ant:Chain0

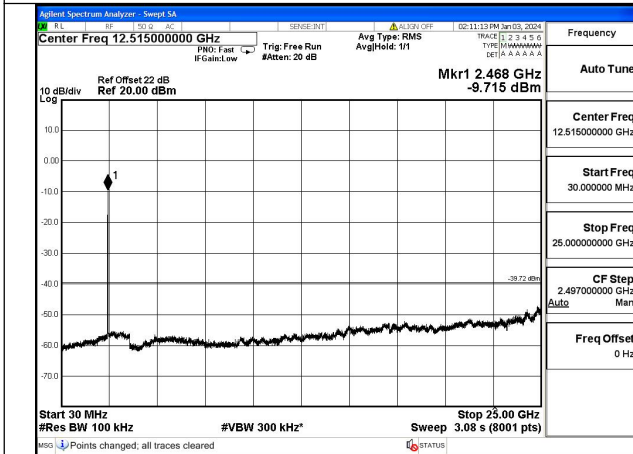
Test Mode: 802.11n HT20



Mode:802.11n HT20 Frequency:2412MHz Ant:Chain0

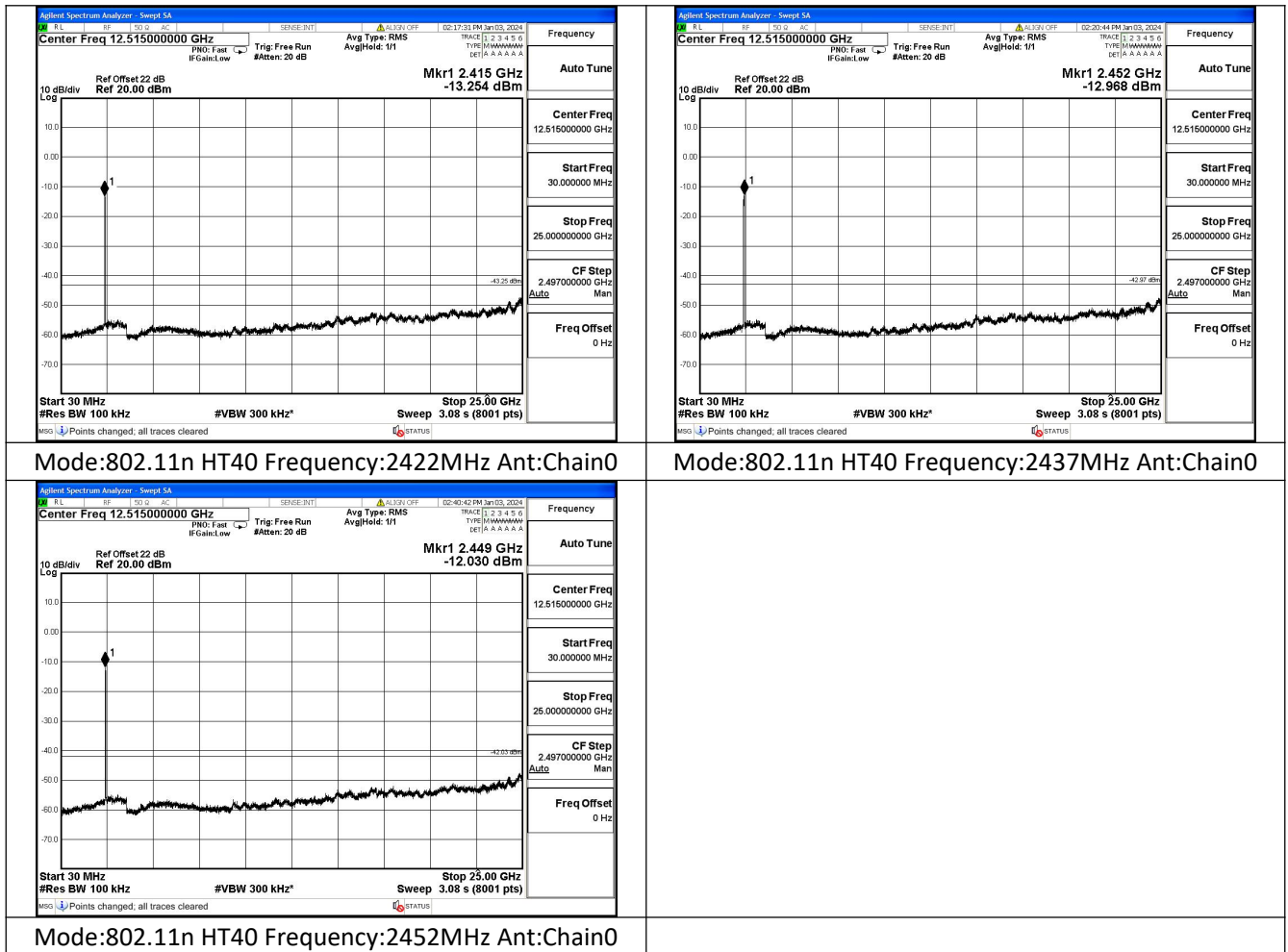


Mode:802.11n HT20 Frequency:2437MHz Ant:Chain0



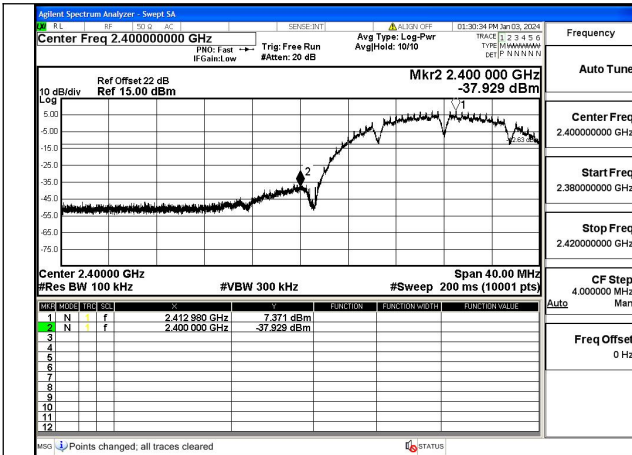
Mode:802.11n HT20 Frequency:2462MHz Ant:Chain0

Test Mode: 802.11n HT40

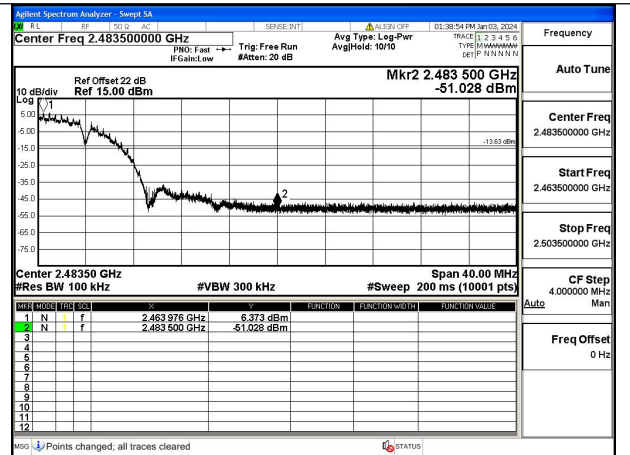


Band edge measurement

Test Mode: 802.11b

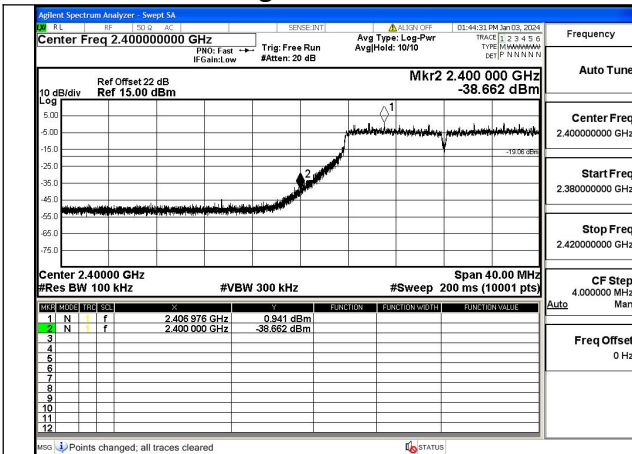


Mode:802.11b Frequency:2412MHz Ant:Chain0

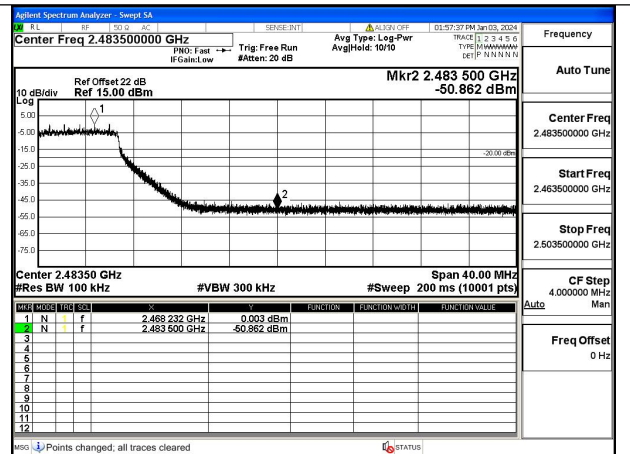


Mode:802.11b Frequency:2462MHz Ant:Chain0

Test Mode: 802.11g

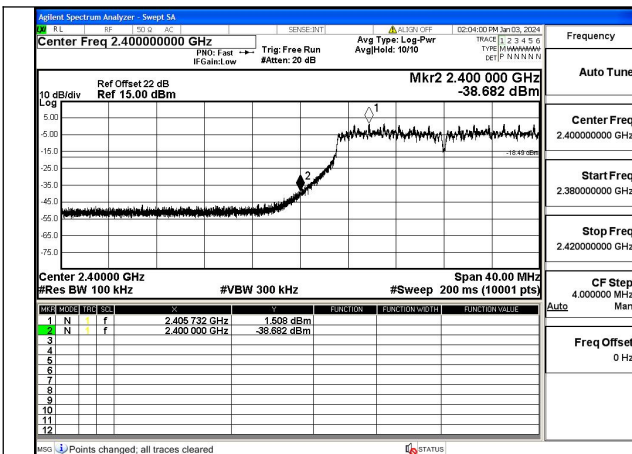


Mode:802.11g Frequency:2412MHz Ant:Chain0

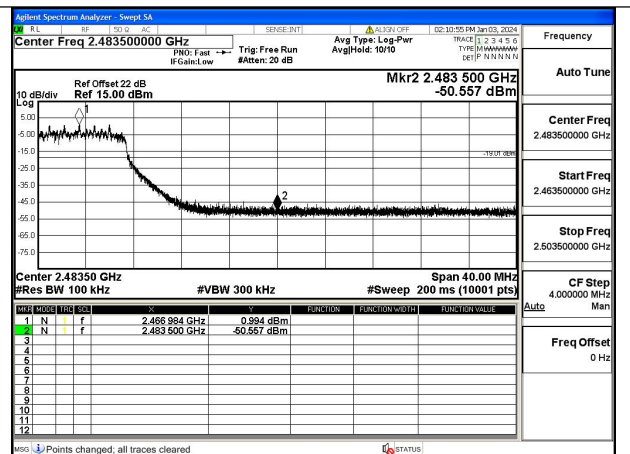


Mode:802.11g Frequency:2462MHz Ant:Chain0

Test Mode: 802.11n HT20

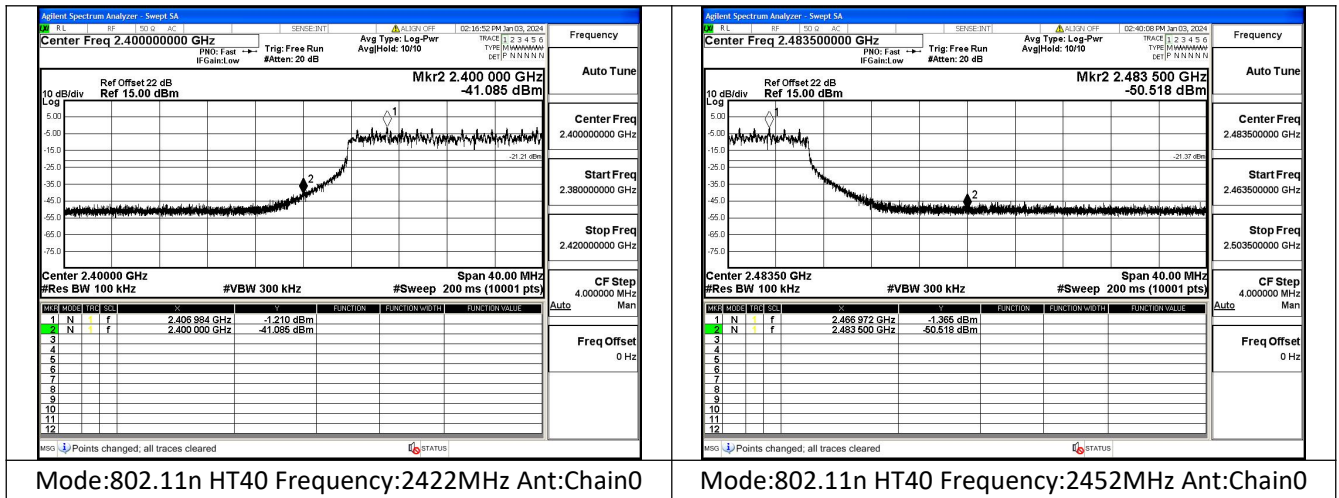


Mode:802.11n HT20 Frequency:2412MHz Ant:Chain0



Mode:802.11n HT20 Frequency:2462MHz Ant:Chain0

Test Mode: 802.11n HT40

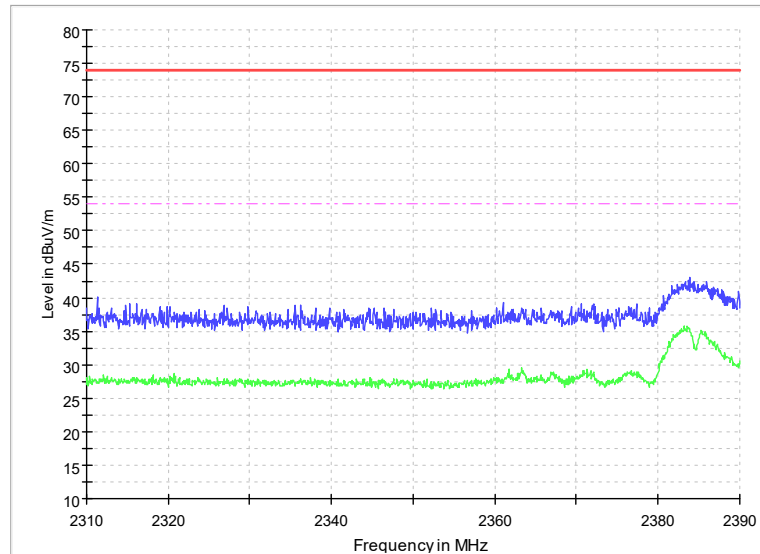


APPENDIX B – TEST DATA OF RADIATED EMISSION

Note: The worst channel results are reflected in the report.

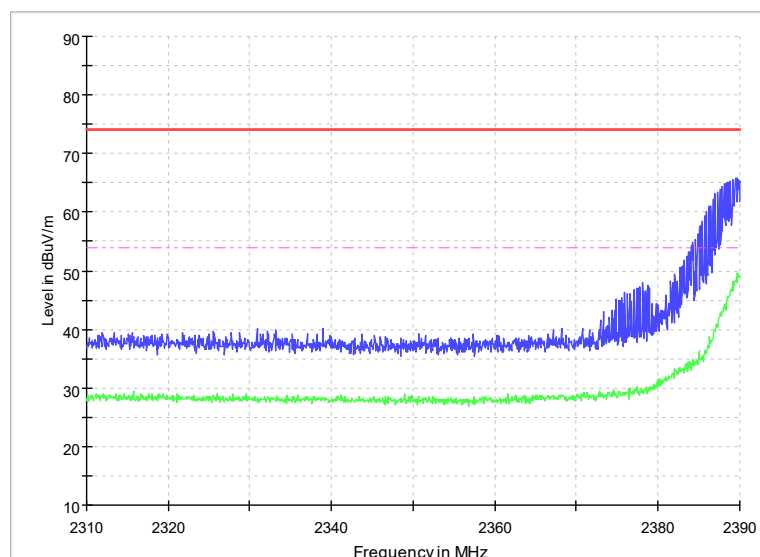
Note: The scanned graph represents the maximum of both horizontal and vertical polarizations and is not a single horizontal or vertical polarization scan

Radiated Emission Band Edge

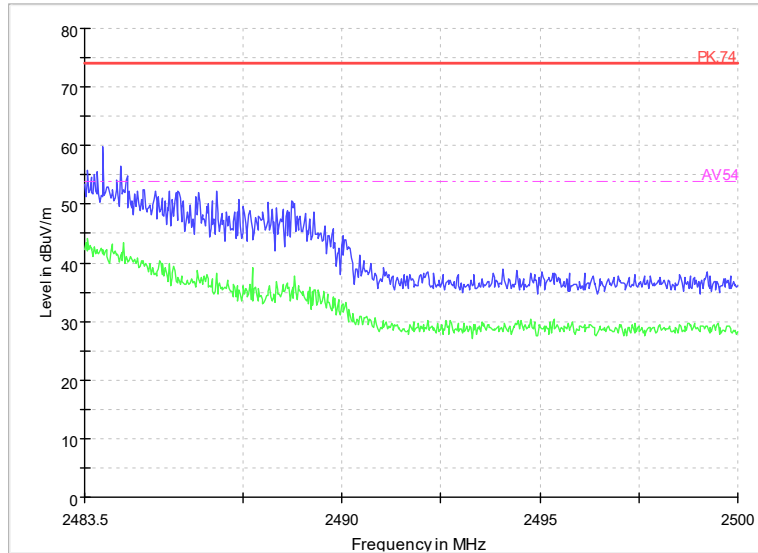


Radiated Emission Band Edge

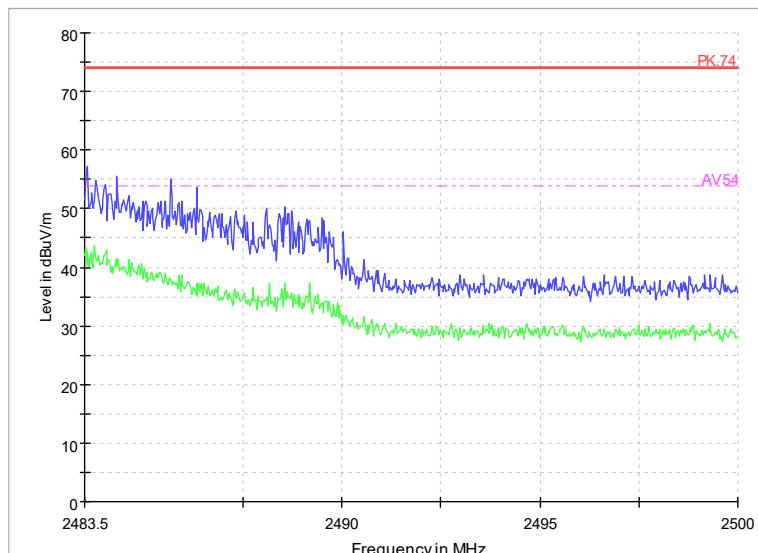
Channel No.:1
Test Mode: 802.11b
Polarization: V



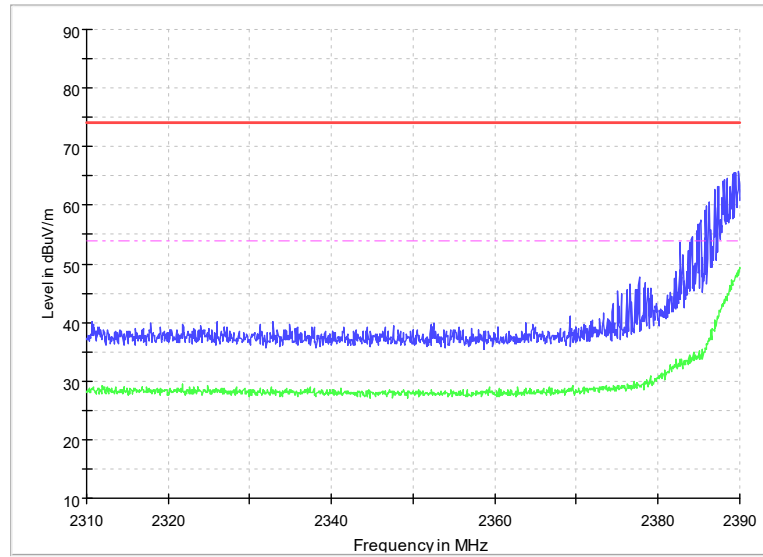
Radiated Emission Band Edge
Channel No.:1
Test Mode: 802.11b
Polarization: H



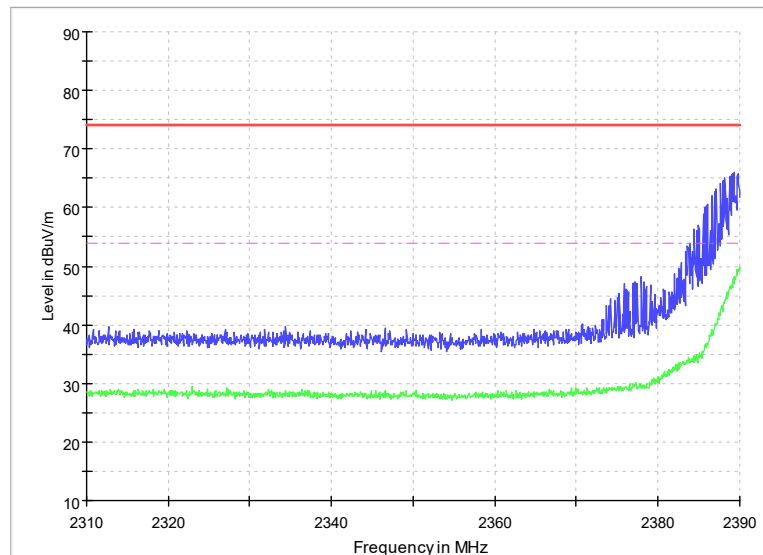
Radiated Emission Band Edge
Channel No.:11
Test Mode: 802.11b
Polarization: V



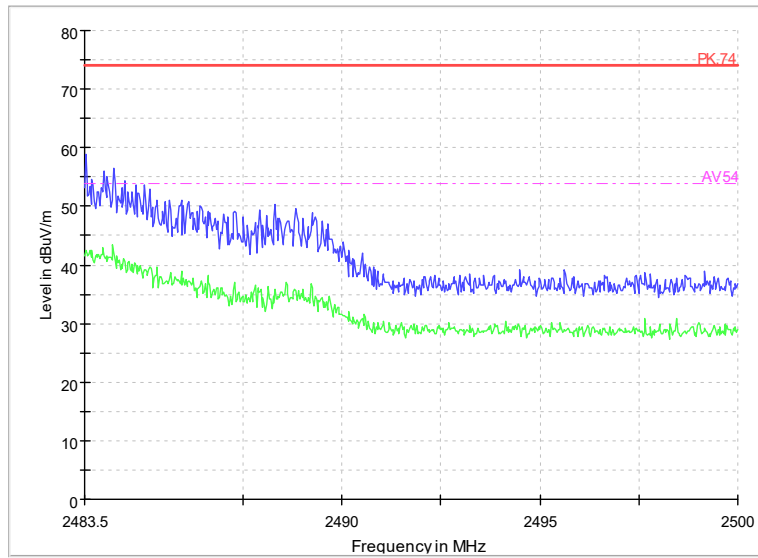
Radiated Emission Band Edge
Channel No.:11
Test Mode: 802.11b
Polarization: H



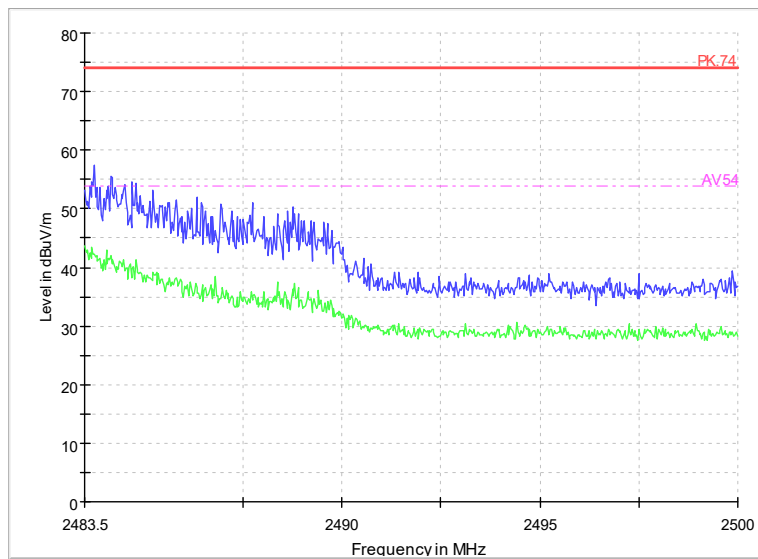
Radiated Emission Band Edge
Channel No.:1
Test Mode: 802.11g
Polarization: V



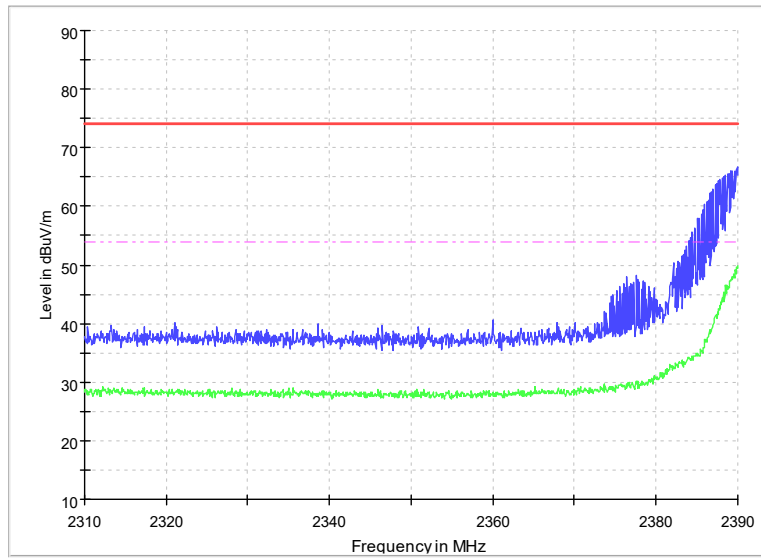
Radiated Emission Band Edge
Channel No.:1
Test Mode: 802.11g
Polarization: H



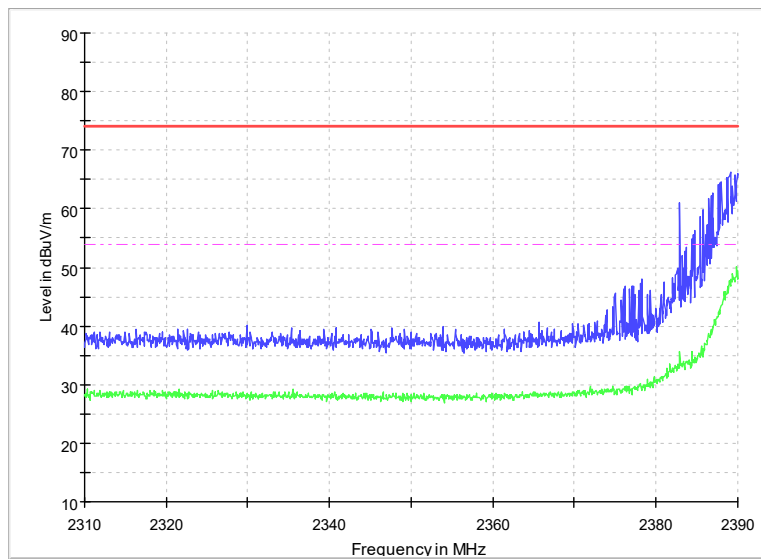
Radiated Emission Band Edge
Channel No.:11
Test Mode: 802.11g
Polarization: V



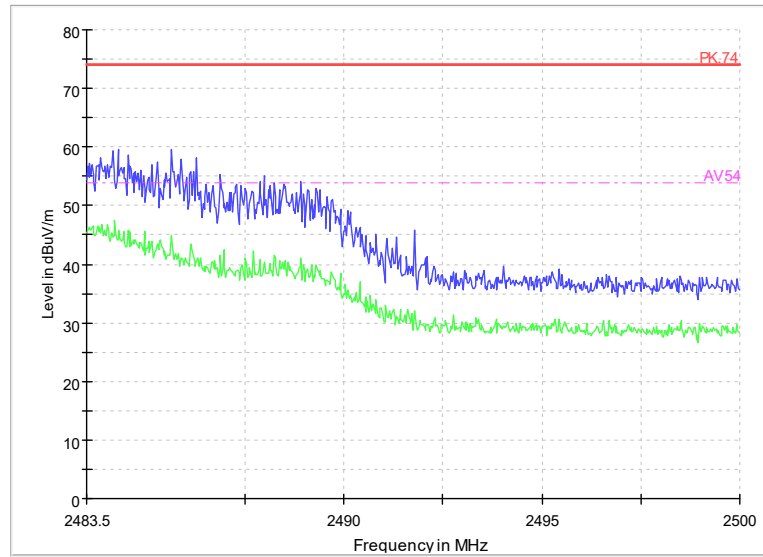
Radiated Emission Band Edge
Channel No.:11
Test Mode: 802.11g
Polarization: H



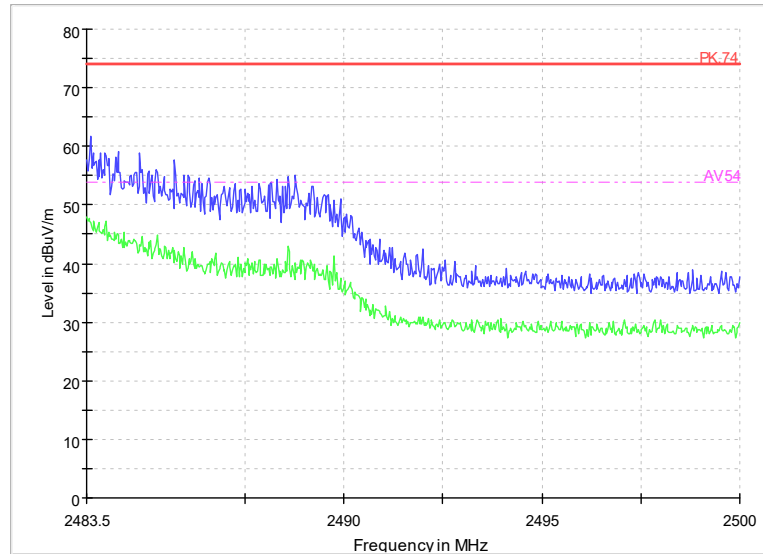
Radiated Emission Band Edge
Channel No.:1
Test Mode: 802.11n
Polarization: V



Radiated Emission Band Edge
Channel No.:1
Test Mode: 802.11n
Polarization: H



Radiated Emission Band Edge
Channel No.:11
Test Mode: 802.11n
Polarization: V



Radiated Emission Band Edge
Channel No.:11
Test Mode: 802.11n
Polarization: H

Sample Calculations

After comparison, the worst case attitude is EUT lay down.

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:

$$\text{Result} = P_{\text{mea}} + A_{Rpl}$$

Sample calculation: $(8.58 \text{ dB}\mu\text{V/m}) = (44.11 \text{ dB}\mu\text{V}) + (-19.3 \text{ dB/m})$, the corresponding frequency is 36.014 MHz.

For 802.11b Channel No.:1

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
39.312000	24.58	40.00	15.42	-18.7	43.28	Vertical
59.682000	28.71	40.00	11.29	-19.2	47.91	Vertical
151.250000	29.35	43.50	14.15	-21.7	51.05	Vertical
176.227500	23.54	43.50	19.96	-20.5	44.04	Vertical
549.968500	31.07	46.00	14.93	-9.4	40.47	Vertical
649.975500	30.67	46.00	15.33	-7.6	38.27	Vertical

For 802.11g Channel No.:1

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
48.818000	24.79	40.00	15.21	-18.3	43.09	Vertical
59.779000	29.02	40.00	10.98	-19.2	48.22	Vertical
145.284500	28.97	43.50	14.53	-21.6	50.57	Vertical
174.869500	23.39	43.50	20.11	-20.5	43.89	Vertical
549.968500	30.68	46.00	15.32	-9.4	40.08	Vertical
649.975500	30.50	46.00	15.50	-7.6	38.10	Vertical

For 802.11n(HT20) Channel No.:1

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
46.781000	28.58	40.00	11.42	-18.3	46.88	Vertical
59.391000	31.21	40.00	8.79	-19.2	50.41	Vertical
154.645000	29.65	43.50	13.85	-21.5	51.15	Vertical
176.470000	26.19	43.50	17.31	-20.5	46.69	Vertical
549.968500	30.78	46.00	15.22	-9.4	40.18	Vertical
649.975500	30.49	46.00	15.52	-7.6	38.09	Vertical

For 802.11b Channel No.:6

Frequency	Result	Limit	Margin	ARpl	Pmea	Polarity
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(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dB/m)	(dBuV)	
47.896500	26.59	40.00	13.41	-18.3	44.89	Vertical
59.051500	28.61	40.00	11.39	-19.1	47.71	Vertical
160.368000	27.86	43.50	15.64	-21.2	49.06	Vertical
178.410000	23.17	43.50	20.33	-20.4	43.57	Vertical
549.968500	30.90	46.00	15.10	-9.4	40.30	Vertical
649.975500	30.51	46.00	15.49	-7.6	38.11	Vertical

For 802.11g Channel No.:6

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
47.217500	27.01	40.00	12.99	-18.3	45.31	Vertical
60.070000	29.05	40.00	10.95	-19.3	48.35	Vertical
149.698000	28.85	43.50	14.65	-21.7	50.55	Vertical
179.816500	22.40	43.50	21.10	-20.3	42.70	Vertical
549.968500	30.85	46.00	15.15	-9.4	40.25	Vertical
649.975500	30.11	46.00	15.89	-7.6	37.71	Vertical

For 802.11n(HT20) Channel No.:6

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
48.818000	25.38	40.00	14.62	-18.3	43.68	Vertical
59.439500	28.90	40.00	11.10	-19.2	48.10	Vertical
159.301000	28.38	43.50	15.12	-21.3	49.68	Vertical
176.809500	23.45	43.50	20.05	-20.5	43.95	Vertical
549.968500	30.68	46.00	15.32	-9.4	40.08	Vertical
649.975500	30.22	46.00	15.78	-7.6	37.82	Vertical

For 802.11b Channel No.:11

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
47.072000	27.10	40.00	12.90	-18.3	45.40	Vertical
58.954500	28.48	40.00	11.52	-19.1	47.58	Vertical
147.515500	28.57	43.50	14.93	-21.6	50.17	Vertical
175.015000	23.20	43.50	20.30	-20.5	43.70	Vertical
549.968500	30.75	46.00	15.25	-9.4	40.15	Vertical
649.975500	29.97	46.00	16.03	-7.6	37.57	Vertical

For 802.11g Channel No.:11

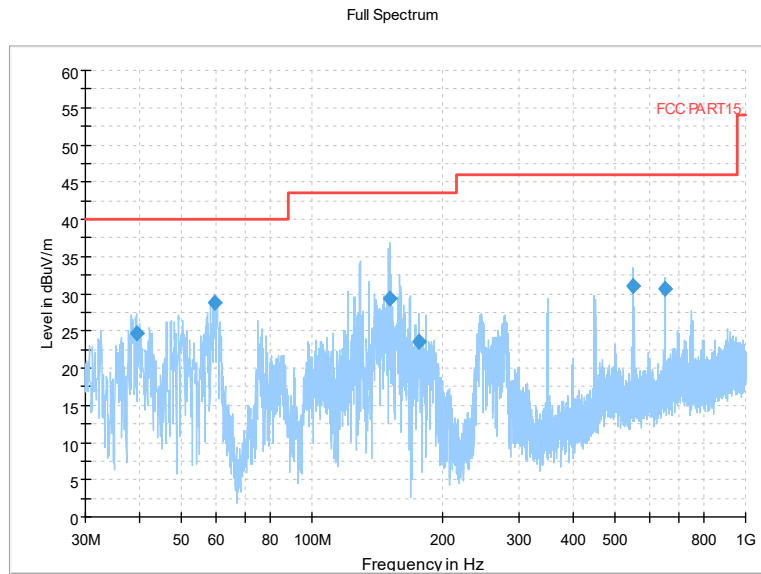
Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
46.781000	26.64	40.00	13.36	-18.3	44.94	Vertical
61.185500	26.93	40.00	13.07	-19.5	46.43	Vertical

157.409500	27.86	43.50	15.64	-21.4	49.26	Vertical
177.003500	23.34	43.50	20.16	-20.5	43.84	Vertical
549.968500	31.26	46.00	14.74	-9.4	40.66	Vertical
649.975500	30.37	46.00	15.63	-7.6	37.97	Vertical

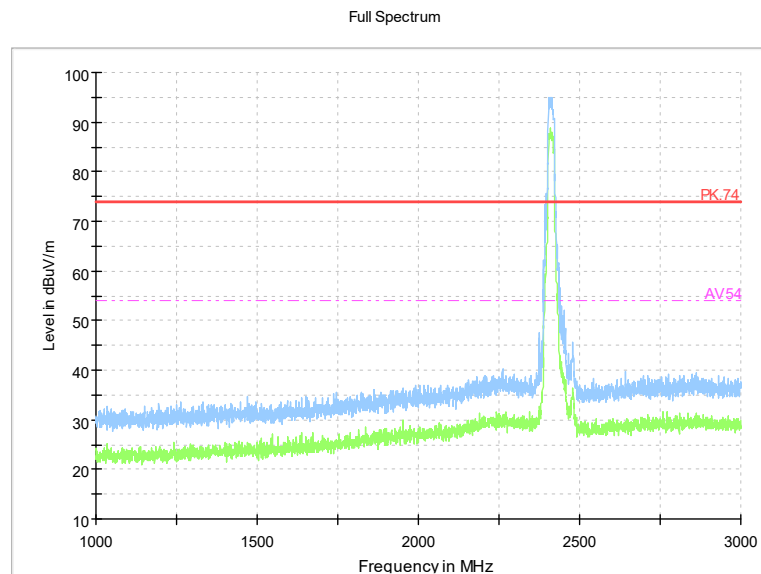
For 802.11n(HT20) Channel No.:11

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
47.266000	27.09	40.00	12.91	-18.3	45.39	Vertical
59.633500	28.72	40.00	11.28	-19.2	47.92	Vertical
145.187500	28.66	43.50	14.84	-21.6	50.26	Vertical
174.045000	22.97	43.50	20.53	-20.6	43.57	Vertical
549.968500	30.87	46.00	15.13	-9.4	40.27	Vertical
649.975500	30.40	46.00	15.60	-7.6	38.00	Vertical

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

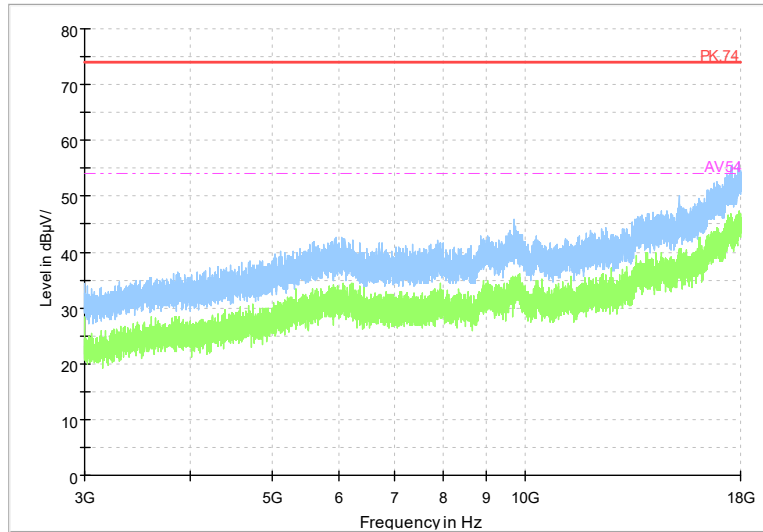


Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11b



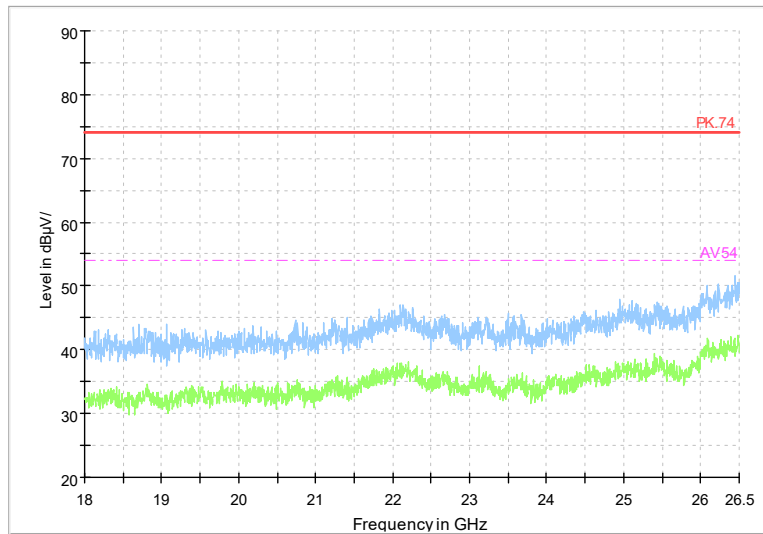
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

Full Spectrum



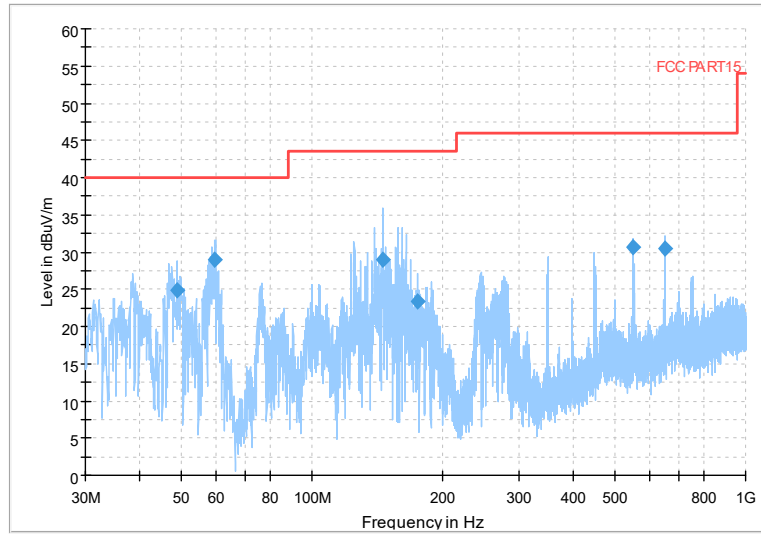
Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

Full Spectrum



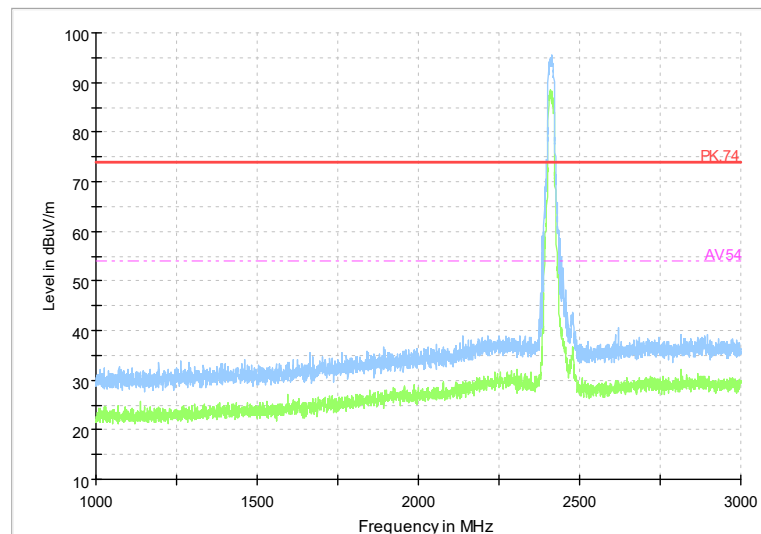
Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

Full Spectrum



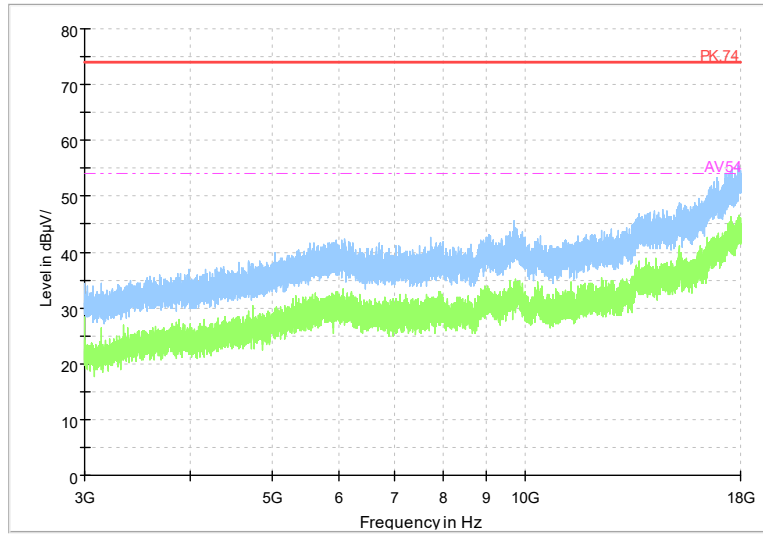
Frequency Range: 30MHz -1GHz
Detector: QP mode
Modulation type: 802.11g

Full Spectrum



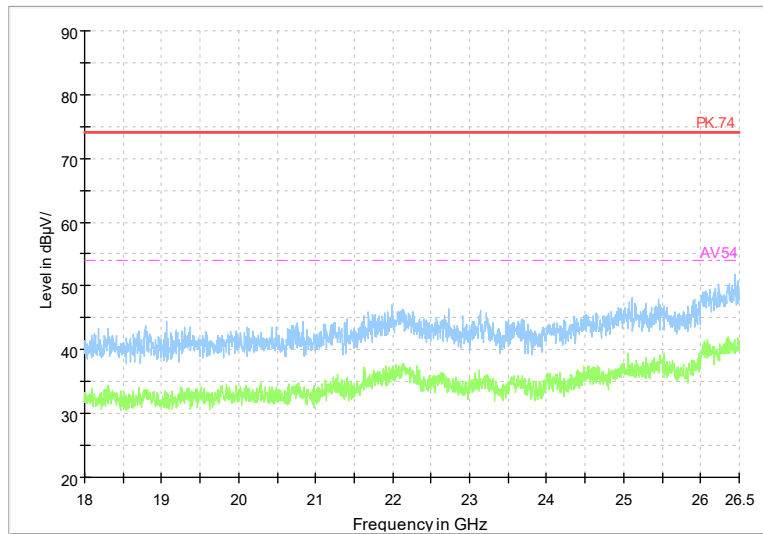
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11g

Full Spectrum



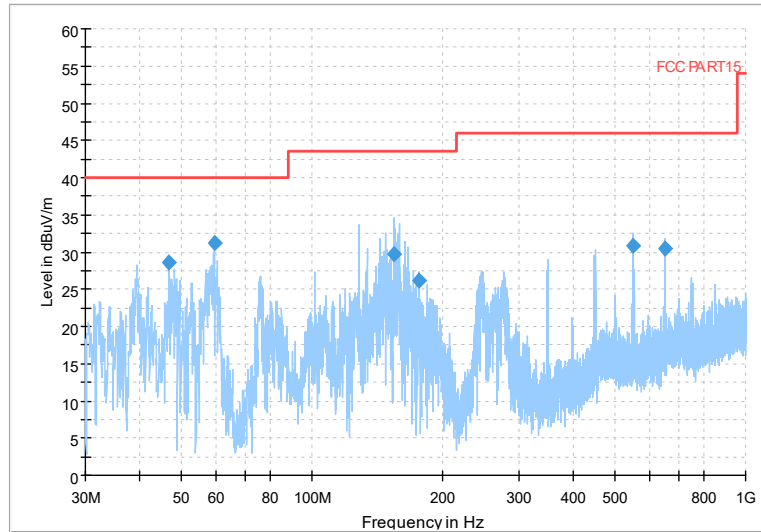
Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11g

Full Spectrum



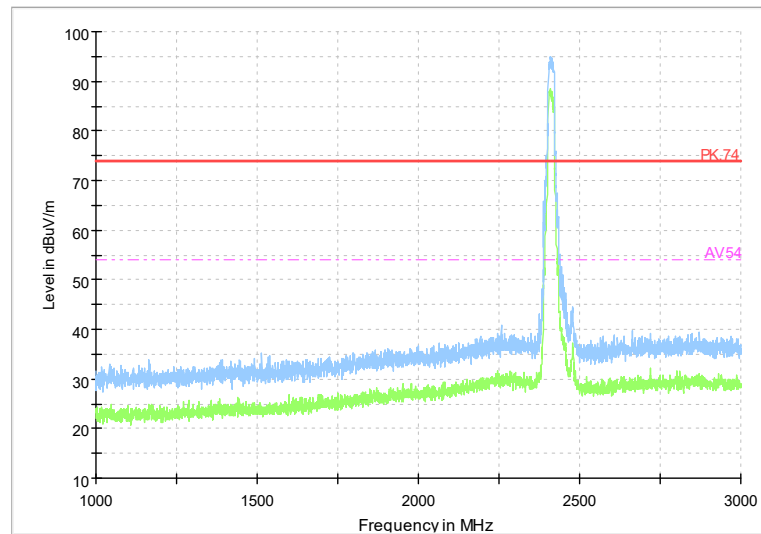
Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11g

Full Spectrum



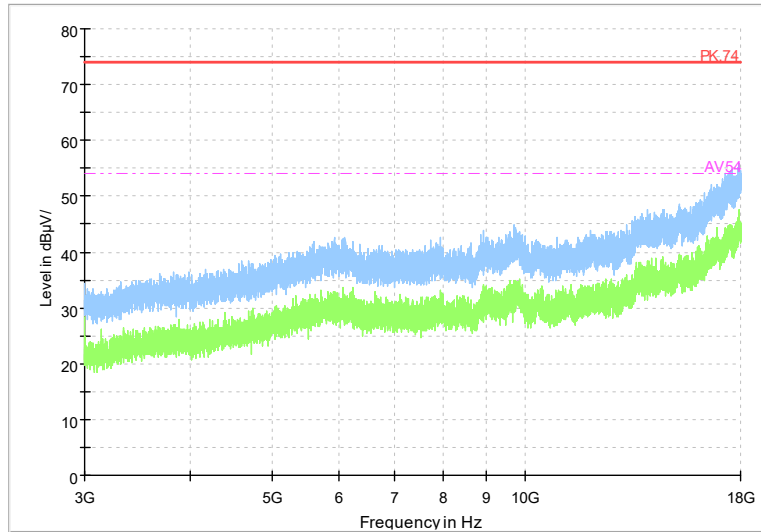
Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11n(HT20)

Full Spectrum



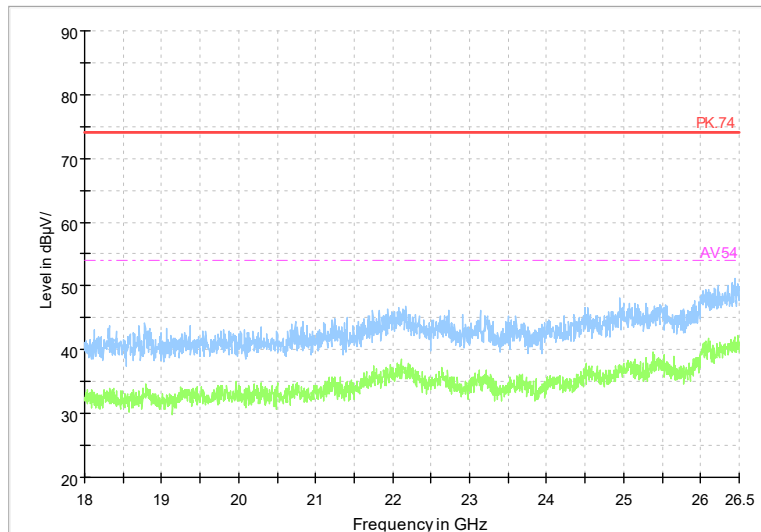
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

Full Spectrum



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

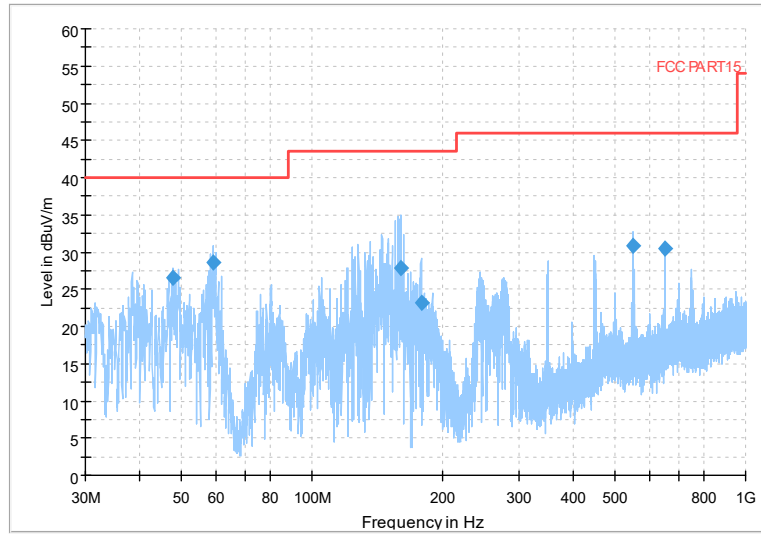
Full Spectrum



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

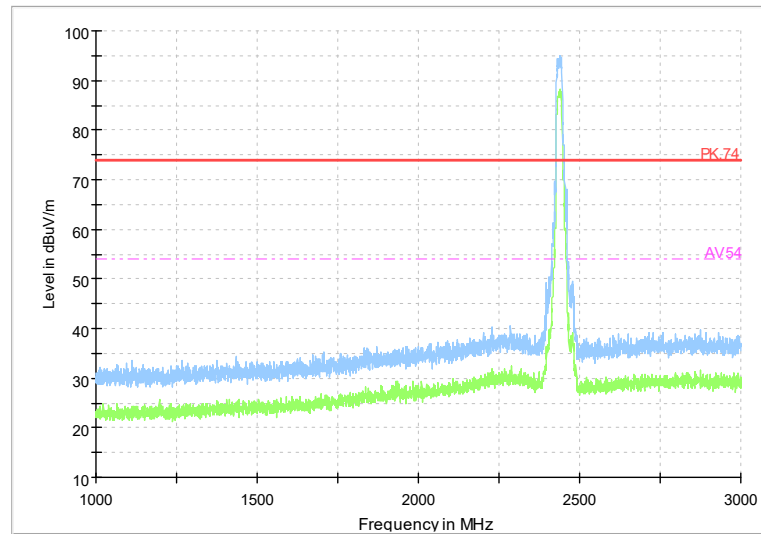
Carrier frequency (MHz): 2437
Channel No.:6

Full Spectrum



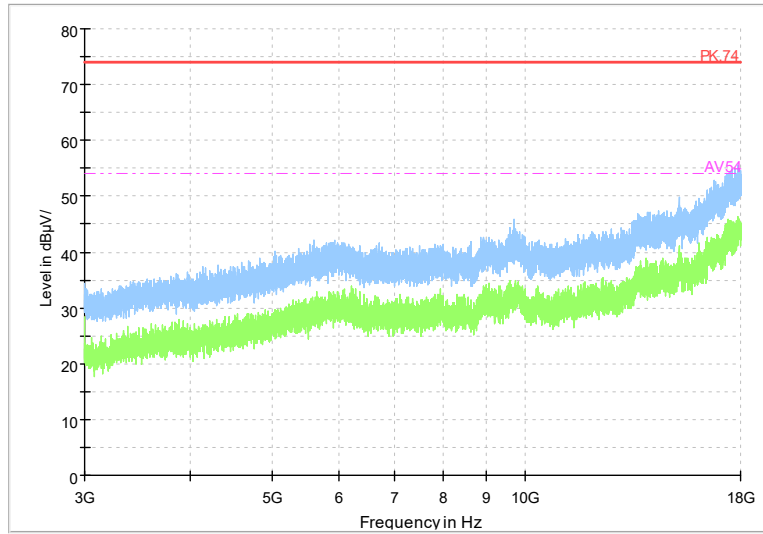
Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11b

Full Spectrum



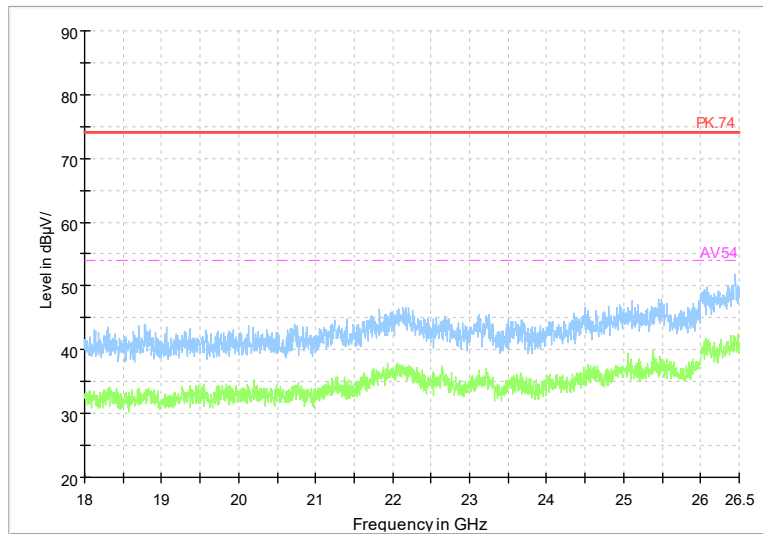
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

Full Spectrum



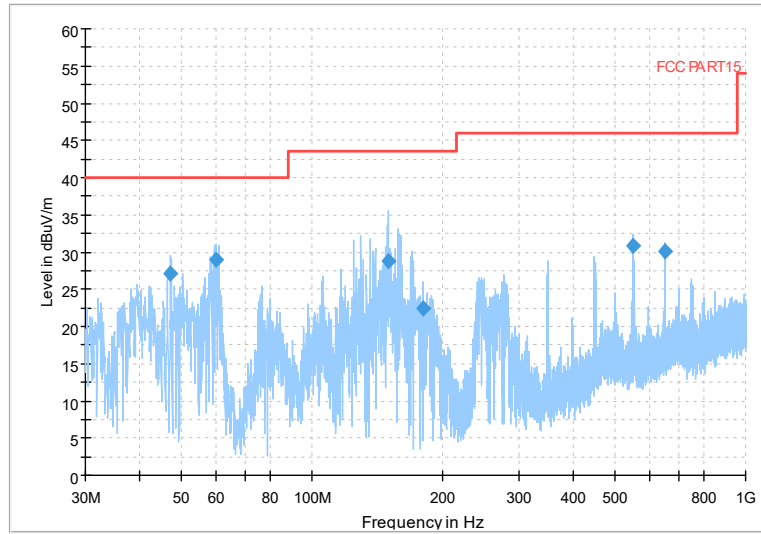
Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

Full Spectrum



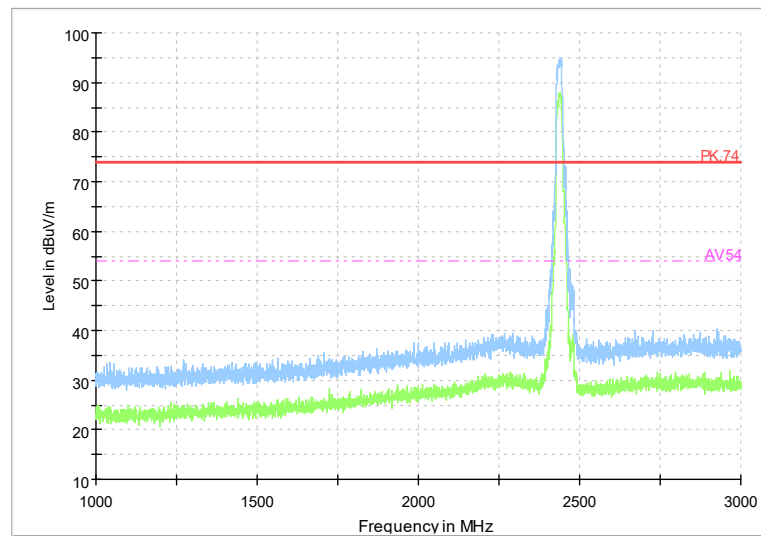
Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

Full Spectrum



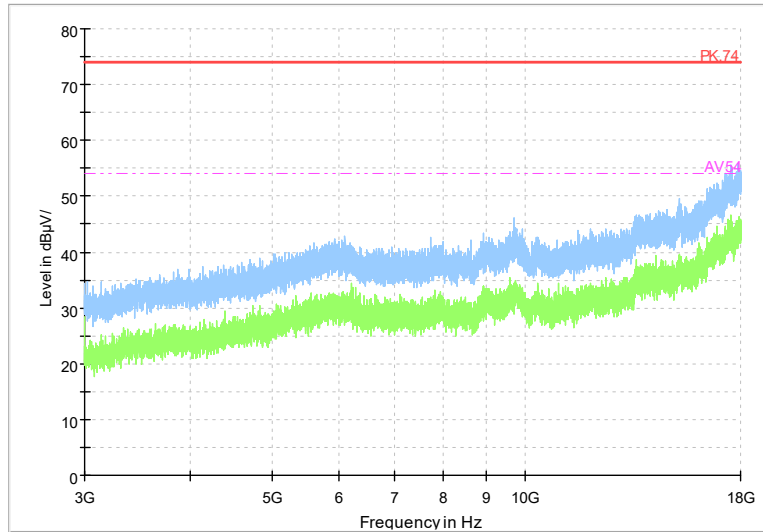
Frequency Range: 30MHz -1GHz
Detector: QP mode
Modulation type: 802.11g

Full Spectrum



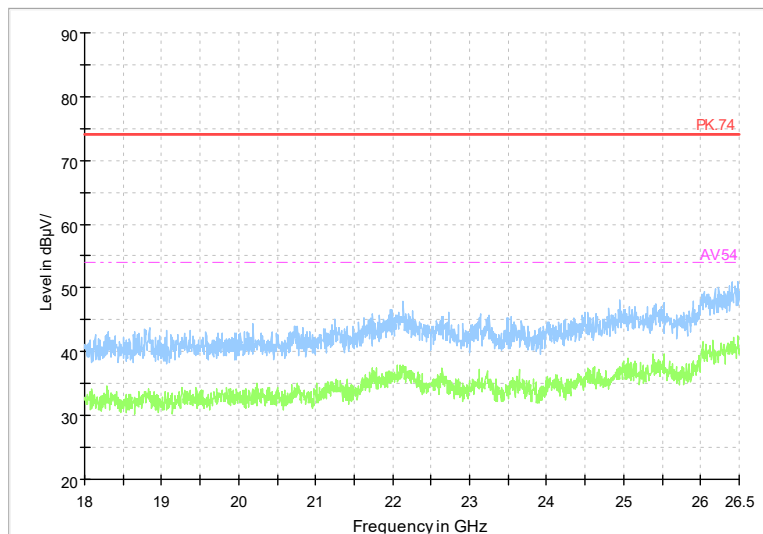
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11g

Full Spectrum



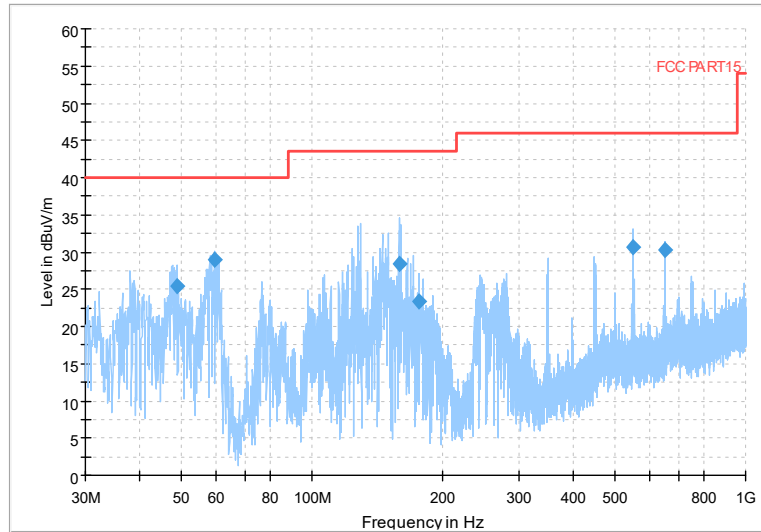
Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11g

Full Spectrum



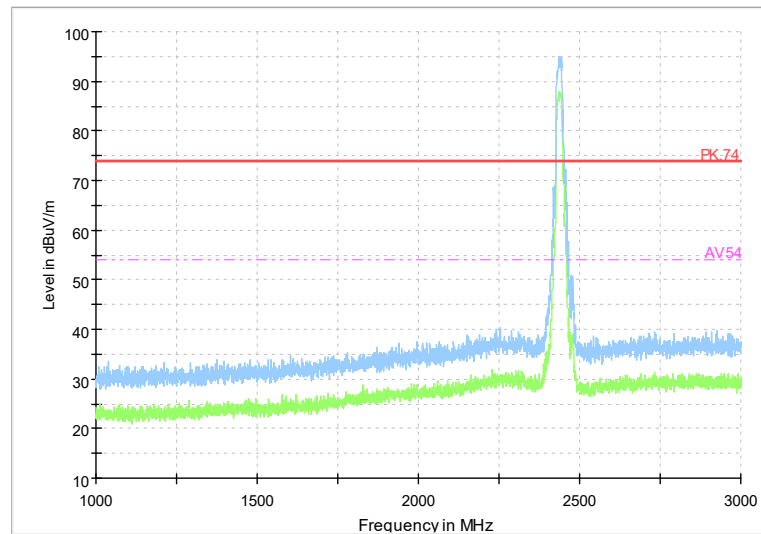
Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11g

Full Spectrum



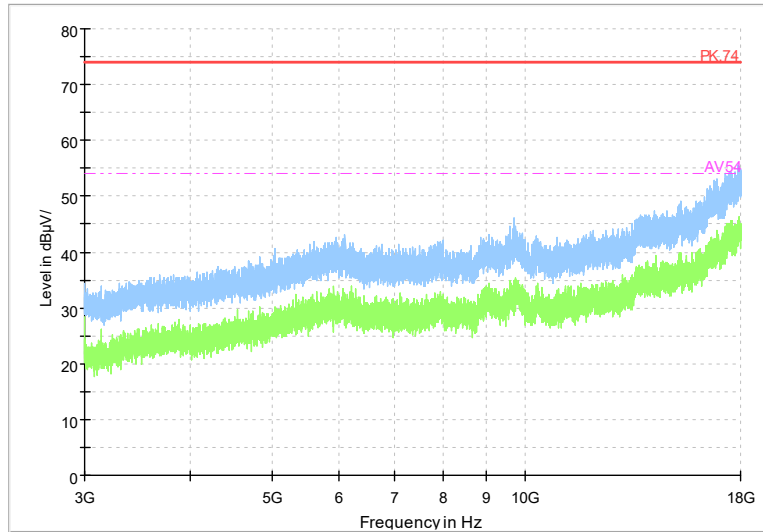
Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11n(HT20)

Full Spectrum



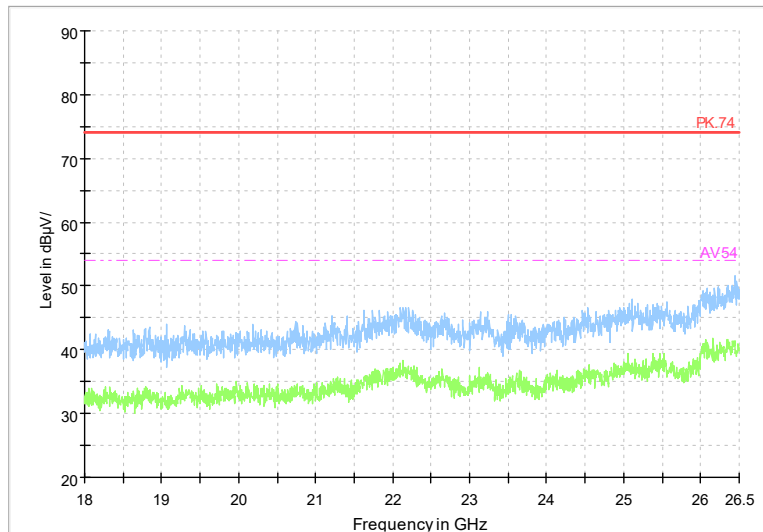
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

Full Spectrum



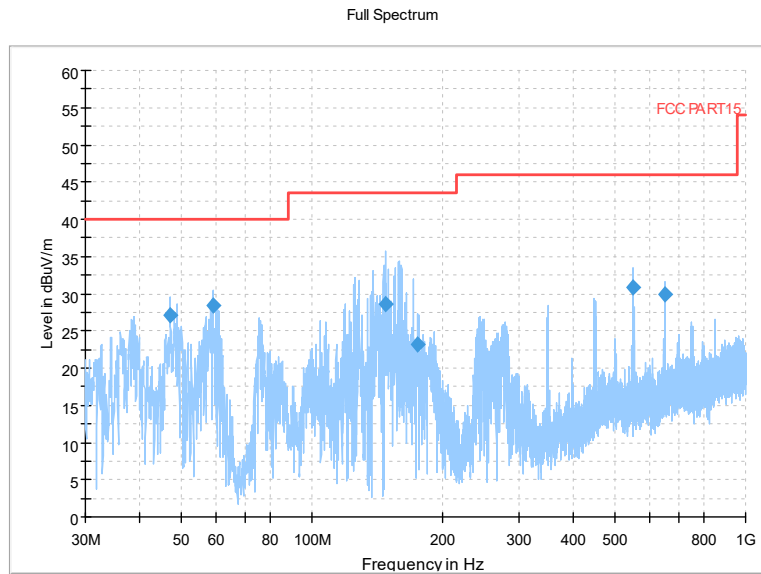
Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

Full Spectrum

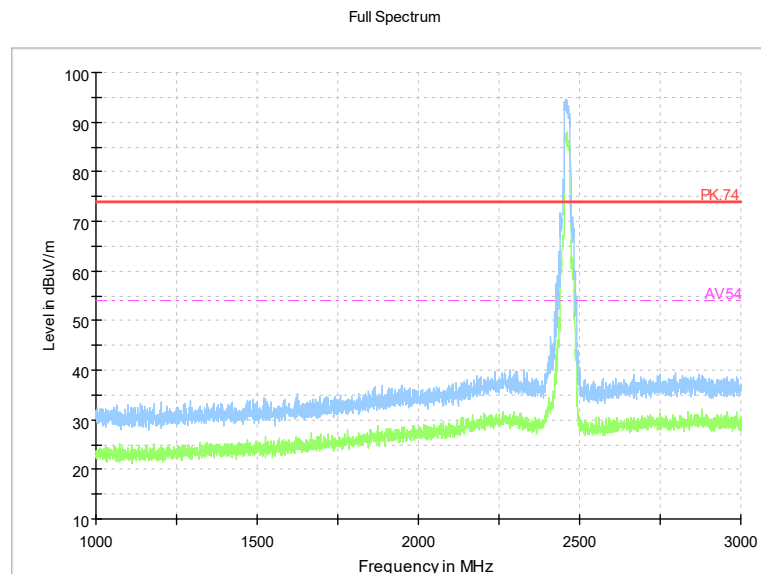


Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

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

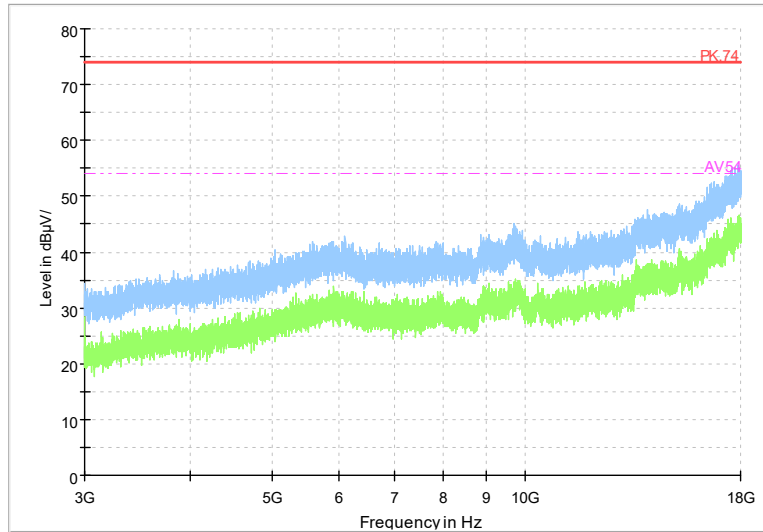


Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11b



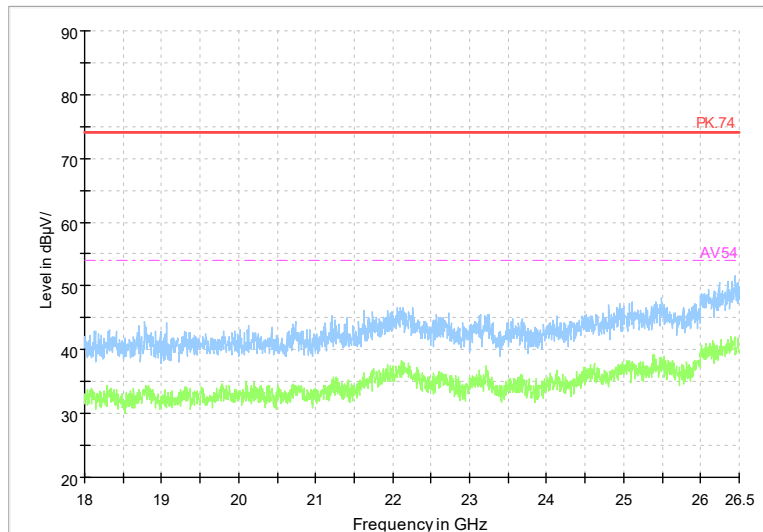
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

Full Spectrum



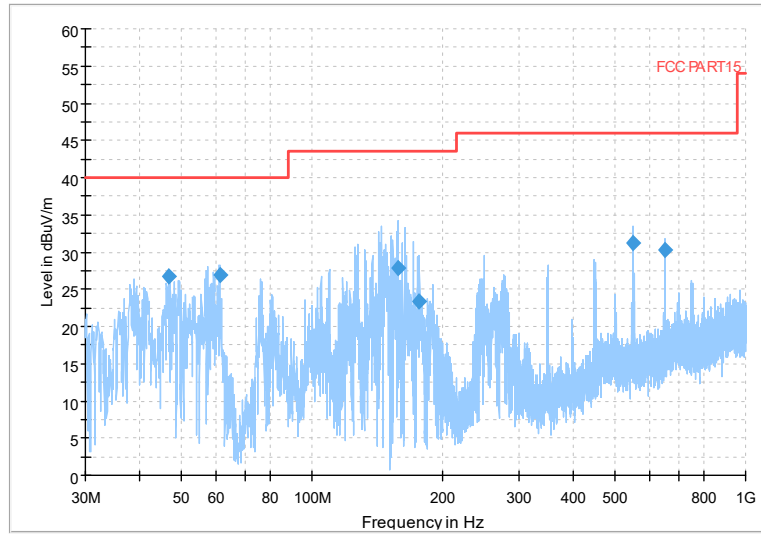
Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

Full Spectrum



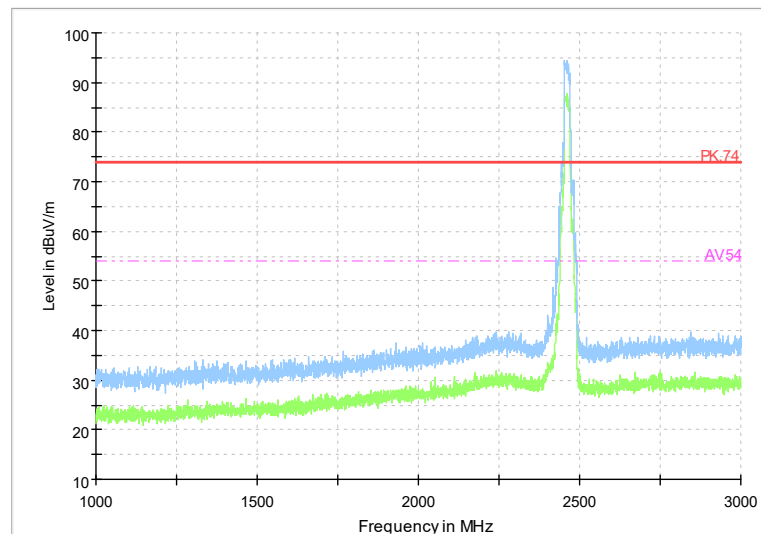
Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11b

Full Spectrum



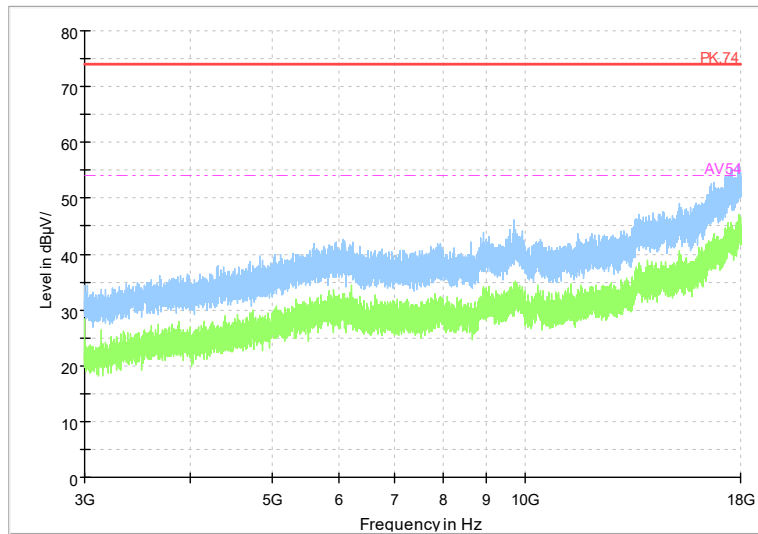
Frequency Range: 30MHz -1GHz
Detector: QP mode
Modulation type: 802.11g

Full Spectrum



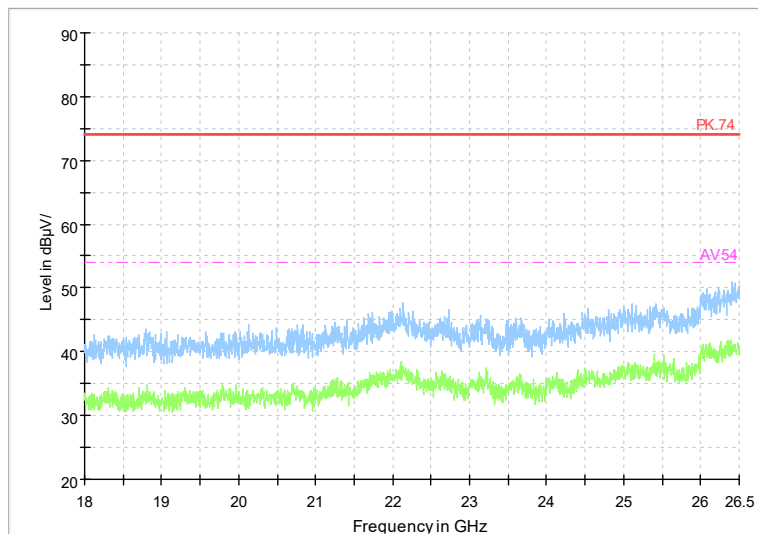
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11g

Full Spectrum



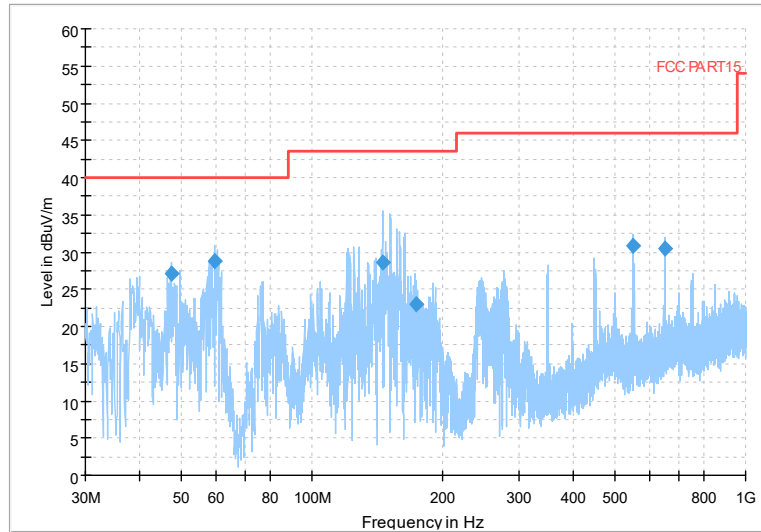
Frequency Range: 3GHz -18GHz
Detector: Av mode and PK mode
Modulation type: 802.11g

Full Spectrum



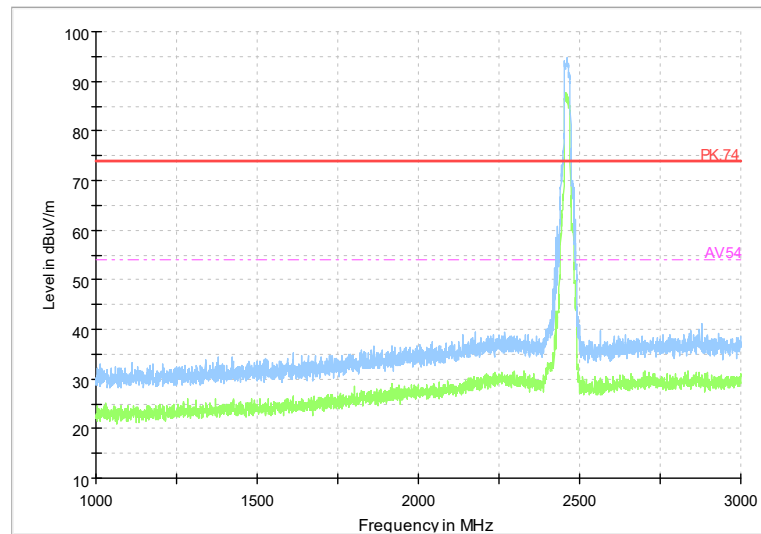
Frequency Range: 18GHz -25GHz
Detector: Av mode and PK mode
Modulation type: 802.11g

Full Spectrum



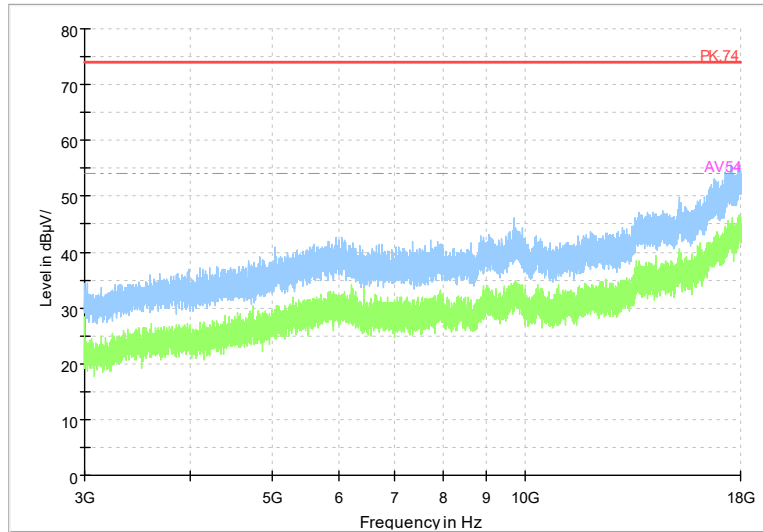
Frequency Range: 30MHz -1GHz
Detector: QP mode
Test Mode: 802.11n(HT20)

Full Spectrum



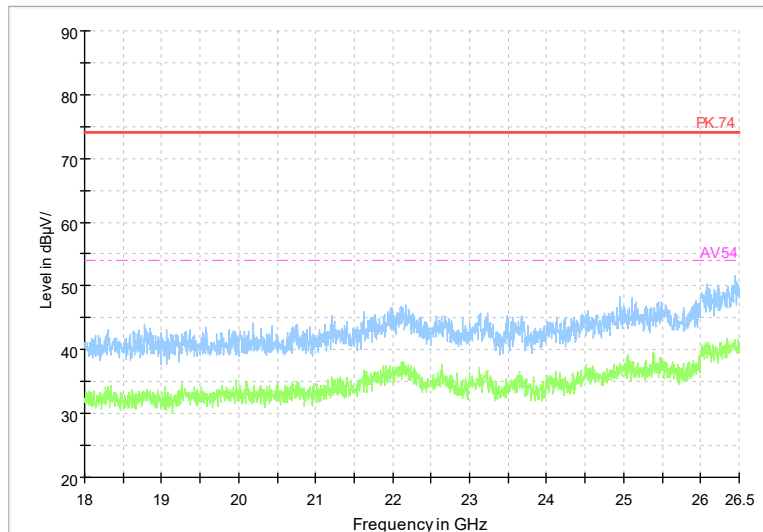
Frequency Range: 1GHz -3GHz
Detector: Av mode and PK mode
Modulation type: 802.11n(HT20)

Full Spectrum



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

Full Spectrum



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

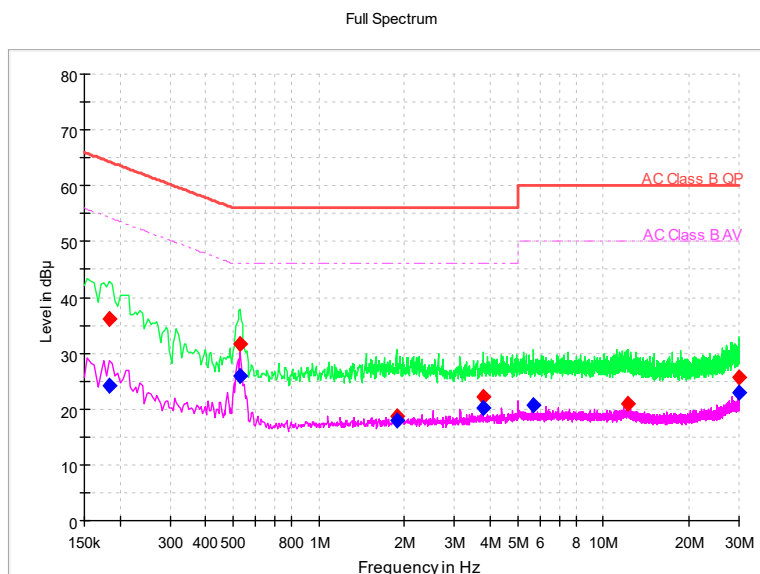
AC Power line Conducted Emission

A "reference path loss" Corr.(dB) is established and the $L_{\text{cable}} + \text{ATT} + \text{VDF}$ 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:

$$P_{\text{result}} = P_{\text{mea}} + \text{Corr. (dB)}$$

Sample calculation: $(24.11 \text{ dB}\mu\text{V}) = (-5.69 \text{ dB}\mu\text{V}) + (29.8 \text{ dB})$, the corresponding frequency is 0.184114MHz.



L+N Line

MEASUREMENT RESULT:

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	Pmea QuasiPeak (dBμV)	Pmea Average (dBμV)
0.184114	---	24.11	54.30	30.19	L1	29.8	---	-5.69
0.184114	36.23	---	64.30	28.07	L1	29.8	6.43	---
0.529522	---	25.95	46.00	20.05	L1	29.8	---	-3.85
0.529522	31.61	---	56.00	24.39	L1	29.8	1.81	---
1.877036	18.79	---	56.00	37.21	L1	29.9	-11.1	---
1.885564	---	17.91	46.00	28.09	L1	29.9	---	-11.9
3.774643	22.19	---	56.00	33.81	L1	29.9	-7.71	---
3.774643	---	20.25	46.00	25.75	L1	29.9	---	-9.65
5.663722	---	20.62	50.00	29.38	N	30.0	---	-9.38
12.175286	20.89	---	60.00	39.11	L1	30.0	-9.11	---
29.970150	---	22.99	50.00	27.01	L1	30.1	---	-7.11
29.978679	25.57	---	60.00	34.43	L1	30.1	-4.53	---

---End of Test Report---