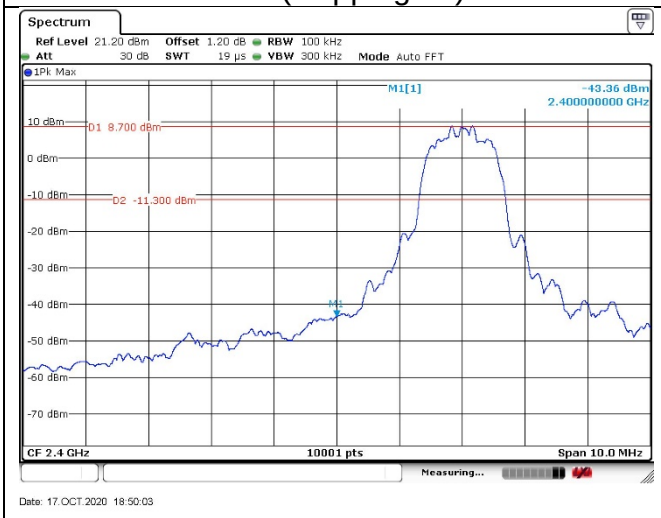
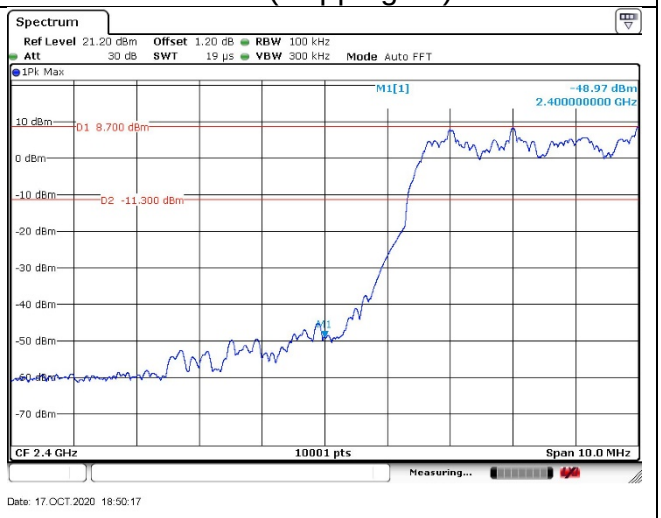
8DPSK

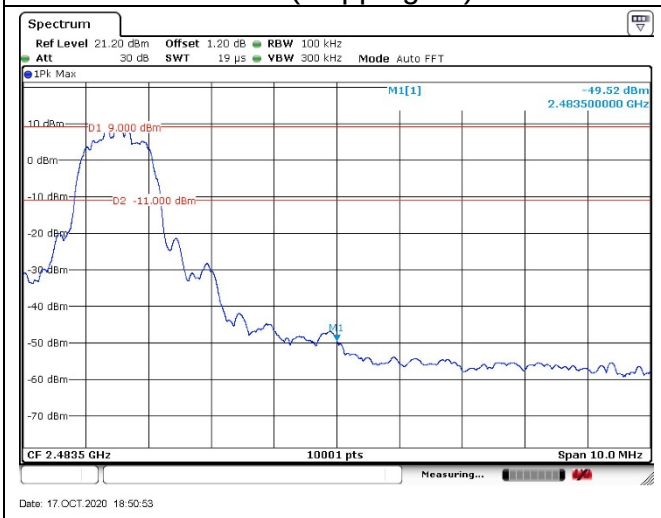
CH0 (Hopping off)



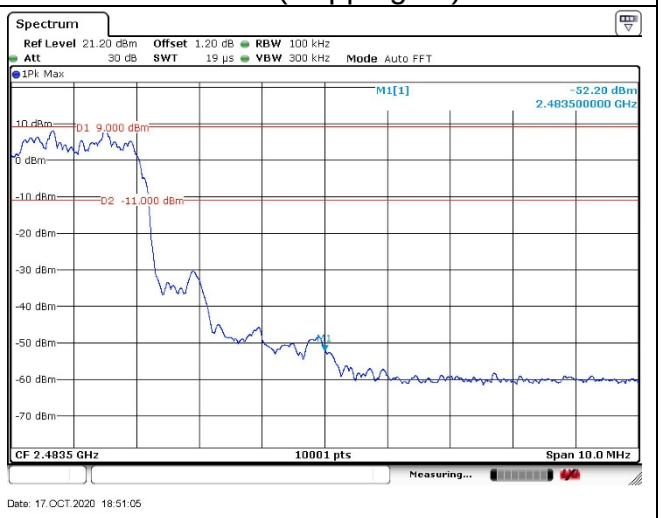
CH0 (Hopping on)



CH79 (Hopping off)



CH79 (Hopping on)



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: (100.37dBuV/m) = (66.37dBμV) + (8.90 dB)+ (25.101/m), the corresponding frequency is 2402MHz.
Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK
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 (1/m)
1	2402	100.37	66.37	N/A	N/A	8.90	25.10
2	2390	46.54	12.54	-27.46	74.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK
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 (1/m)
1	2402	95.96	61.96	N/A	N/A	8.90	25.10
2	2390	44.77	10.77	-29.23	74.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK
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 (1/m)
1	2402	96.40	62.40	N/A	N/A	8.90	25.10
2	2390	36.14	2.14	-17.86	54.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK
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 (1/m)
1	2402	91.08	57.08	N/A	N/A	8.90	25.10
2	2390	34.46	0.46	-19.54	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: GFSK
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 (1/m)
1	2480	102.09	68.09	N/A	N/A	8.90	25.10
2	2483.5	48.53	14.53	-25.47	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: GFSK
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 (1/m)
1	2480	95.61	61.61	N/A	N/A	8.90	25.10
2	2483.5	41.83	7.83	-32.17	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: GFSK
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 (1/m)
1	2480	92.58	58.58	N/A	N/A	8.90	25.10
2	2483.5	35.20	1.20	-18.80	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: GFSK
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 (1/m)
1	2480	89.43	55.43	N/A	N/A	8.90	25.10
2	2483.5	35.72	1.72	-18.28	54.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: π/4DQPSK
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 (1/m)
1	2402	101.03	67.03	N/A	N/A	8.90	25.10
2	2390	46.96	12.96	-27.04	74.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: π/4DQPSK
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 (1/m)
1	2402	95.39	61.39	N/A	N/A	8.90	25.10
2	2390	43.81	9.81	-30.19	74.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: π/4DQPSK
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 (1/m)
1	2402	93.96	59.96	N/A	N/A	8.90	25.10
2	2390	35.79	1.79	-18.21	54.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: π/4DQPSK
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 (1/m)
1	2402	91.61	57.61	N/A	N/A	8.90	25.10
2	2390	35.28	1.28	-18.72	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: π/4DQPSK
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 (1/m)
1	2480	102.39	68.39	N/A	N/A	8.90	25.10
2	2483.5	47.30	13.30	-26.70	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: π/4DQPSK
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 (1/m)
1	2480	95.05	61.05	N/A	N/A	8.90	25.10
2	2483.5	44.16	10.16	-29.84	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: π/4DQPSK
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 (1/m)
1	2480	93.03	59.03	N/A	N/A	8.90	25.10
2	2483.5	36.19	2.19	-17.81	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: π/4DQPSK
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 (1/m)
1	2480	91.77	57.77	N/A	N/A	8.90	25.10
2	2483.5	35.20	1.20	-18.80	54.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: 8DPSK
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 (1/m)
1	2402	101.41	67.41	N/A	N/A	8.90	25.10
2	2390	49.88	15.88	-24.12	74.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: 8DPSK
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 (1/m)
1	2402	95.99	61.99	N/A	N/A	8.90	25.10
2	2390	42.70	8.70	-31.30	74.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: 8DPSK
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 (1/m)
1	2402	94.57	60.57	N/A	N/A	8.90	25.10
2	2390	36.40	2.40	-17.60	54.00	8.90	25.10

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: 8DPSK
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 (1/m)
1	2402	92.93	58.93	N/A	N/A	8.90	25.10
2	2390	36.02	2.02	-17.98	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: 8DPSK
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 (1/m)
1	2480	102.26	68.26	N/A	N/A	8.90	25.10
2	2483.5	49.38	15.38	-24.62	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: 8DPSK
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 (1/m)
1	2480	94.09	60.09	N/A	N/A	8.90	25.10
2	2483.5	45.17	11.17	-28.83	74.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: 8DPSK
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 (1/m)
1	2480	93.74	59.74	N/A	N/A	8.90	25.10
2	2483.5	35.25	1.25	-18.75	54.00	8.90	25.10

Carrier frequency (MHz): 2480
Channel No.:78
Test Mode: 8DPSK
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 (1/m)
1	2480	88.91	54.91	N/A	N/A	8.90	25.10
2	2483.5	34.48	0.48	-19.52	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: (35.2dBμV/m) = (56.5dBμV/m) + (-21.3dB), the corresponding frequency is 68.791MHz.
The worst case attitude: The mobile lay down.

For GFSK
Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
68.791	35.2	-21.3	56.5	Vertical	40.00
69.0335	33.96	-21.3	55.26	Vertical	40.00
72.0355	34.25	-22.1	56.35	Vertical	40.00
72.3495	35.01	-22.2	57.21	Vertical	40.00
72.4465	35.47	-22.2	57.67	Vertical	40.00
72.472	35.68	-22.2	57.88	Vertical	40.00

For π/4DQPSK
Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
69.0565	35.16	-21.3	56.46	Vertical	40.00
69.082	34.71	-21.3	56.01	Vertical	40.00
72.0405	34.69	-22.1	56.79	Vertical	40.00
72.175	34.76	-22.1	56.86	Vertical	40.00
72.7375	35	-22.3	57.3	Vertical	40.00
72.8515	35.38	-22.3	57.68	Vertical	40.00

For 8DPSK
Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
68.923	33.49	-21.3	54.79	Vertical	40.00
69.208	34.73	-21.4	56.13	Vertical	40.00
72.614	35.43	-22.2	57.63	Vertical	40.00
72.666	34.59	-22.2	56.79	Vertical	40.00
72.7	35.59	-22.2	57.79	Vertical	40.00
72.7595	35.09	-22.3	57.39	Vertical	40.00

For GFSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
68.8395	33.74	-21.3	55.04	Vertical	40.00
68.9545	34.21	-21.3	55.51	Vertical	40.00
68.985	33.48	-21.3	54.78	Vertical	40.00
72.3495	34.7	-22.2	56.9	Vertical	40.00
72.472	35.03	-22.2	57.23	Vertical	40.00
72.649	35.08	-22.2	57.28	Vertical	40.00

For π/4DQPSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
68.9025	35.04	-21.3	56.34	Vertical	40.00
69.048	34.47	-21.3	55.77	Vertical	40.00
69.2055	35.18	-21.4	56.58	Vertical	40.00
72.2345	31.19	-22.1	53.29	Vertical	40.00
72.358	32.5	-22.2	54.7	Vertical	40.00
72.4805	31.81	-22.2	54.01	Vertical	40.00

For 8DPSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
68.6515	33.08	-21.2	54.28	Vertical	40.00
68.8455	31.5	-21.3	52.8	Vertical	40.00
68.9485	31.81	-21.3	53.11	Vertical	40.00
69.311	30.57	-21.4	51.97	Vertical	40.00
78.337	32.02	-23.6	55.62	Vertical	40.00
78.44	31.35	-23.6	54.95	Vertical	40.00

For GFSK
Channel No.:78

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
72.5655	31.8	-22.2	54	Vertical	40.00
72.751	33.01	-22.3	55.31	Vertical	40.00
72.8565	32.89	-22.3	55.19	Vertical	40.00
85.453	32.24	-22.1	54.34	Vertical	40.00
85.863	31.63	-22	53.63	Vertical	40.00
85.96	31.98	-21.9	53.88	Vertical	40.00

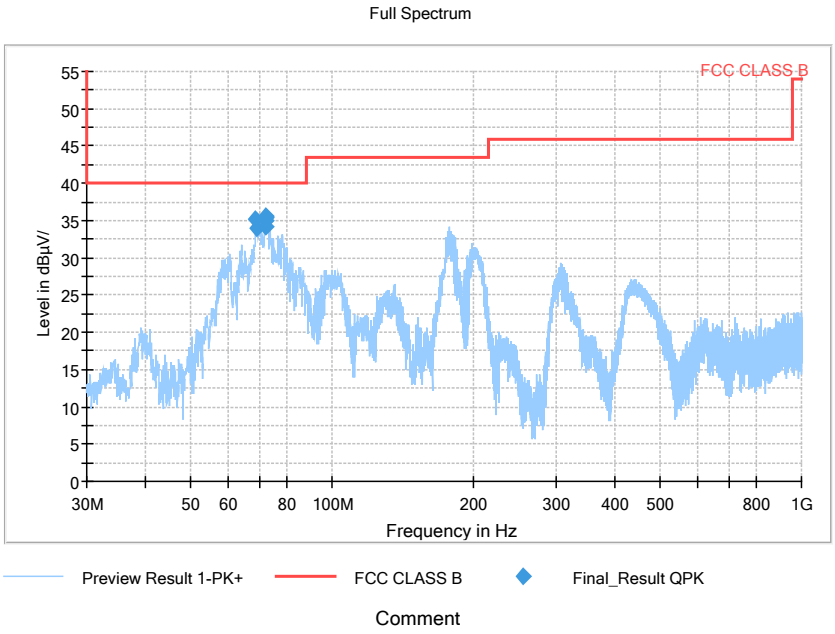
For π/4DQPSK
Channel No.:78

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
69.082	33.31	-21.3	54.61	Vertical	40.00
69.1085	32.82	-21.4	54.22	Vertical	40.00
72.7145	31.19	-22.2	53.39	Vertical	40.00
80.431	33.87	-23.8	57.67	Vertical	40.00
80.528	33.68	-23.8	57.48	Vertical	40.00
81.207	33.49	-23.5	56.99	Vertical	40.00

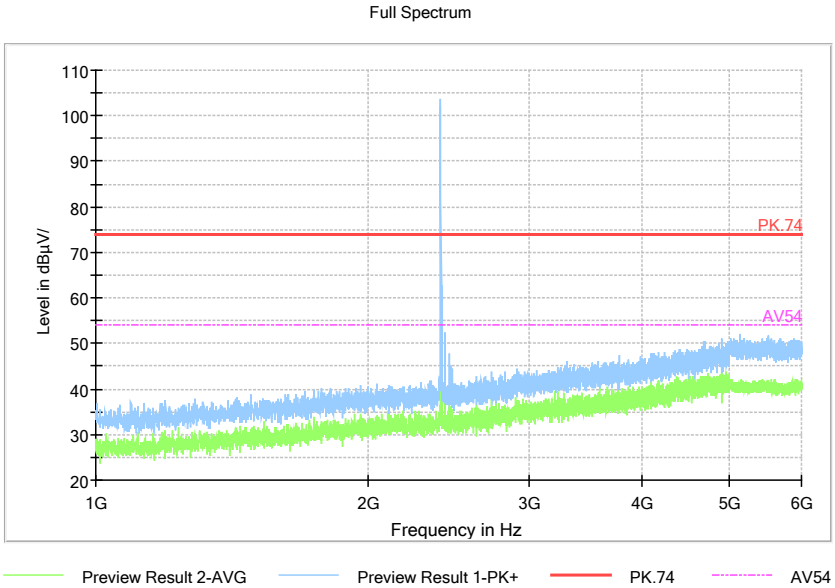
For 8DPSK
Channel No.:78

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)
78.509	35.22	-23.6	58.82	Vertical	40.00
78.5855	35.2	-23.6	58.8	Vertical	40.00
78.6	35.18	-23.6	58.78	Vertical	40.00
78.6025	35.09	-23.6	58.69	Vertical	40.00
79.2245	33.1	-23.8	56.9	Vertical	40.00
79.461	33.84	-23.8	57.64	Vertical	40.00

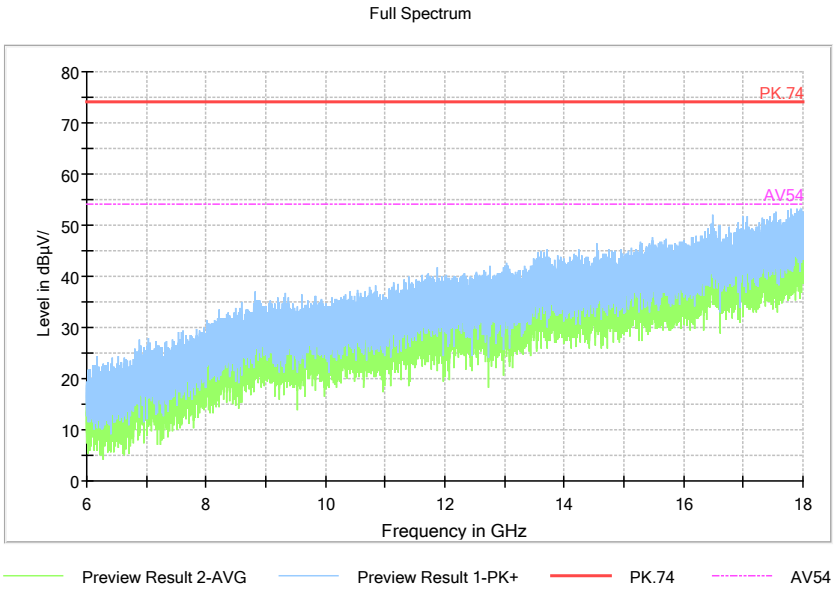
Carrier frequency (MHz): 2402
Channel No.:0



Frequency Range: 30MHz-1000MHz
Detector: QP mode
Modulation type: GFSK

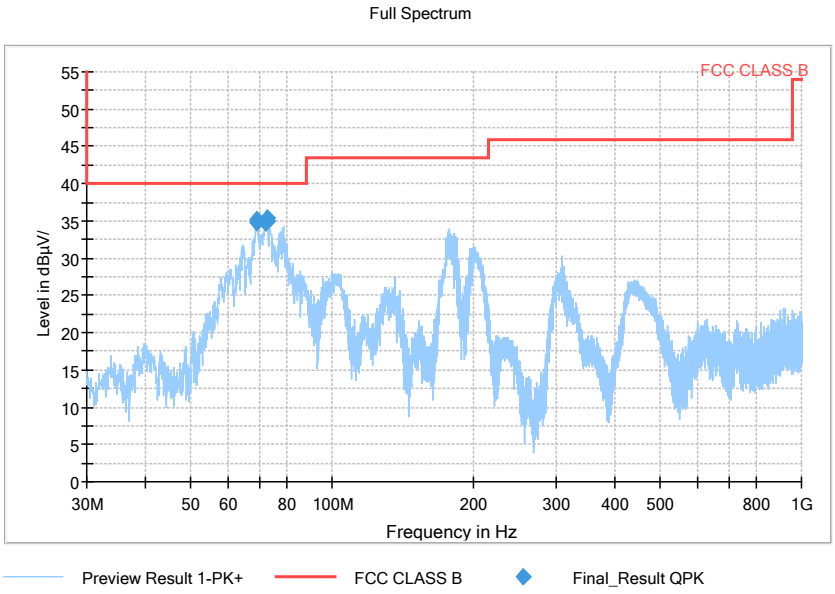


Frequency Range: 1GHz-6GHz
Detector: Av mode and PK mode
Modulation type: GFSK

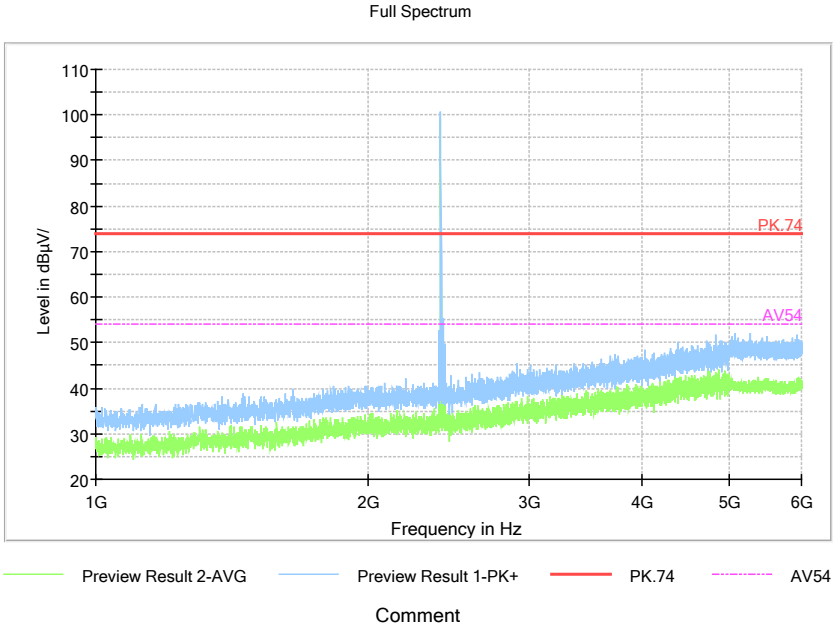


Frequency Range: 6GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: GFSK

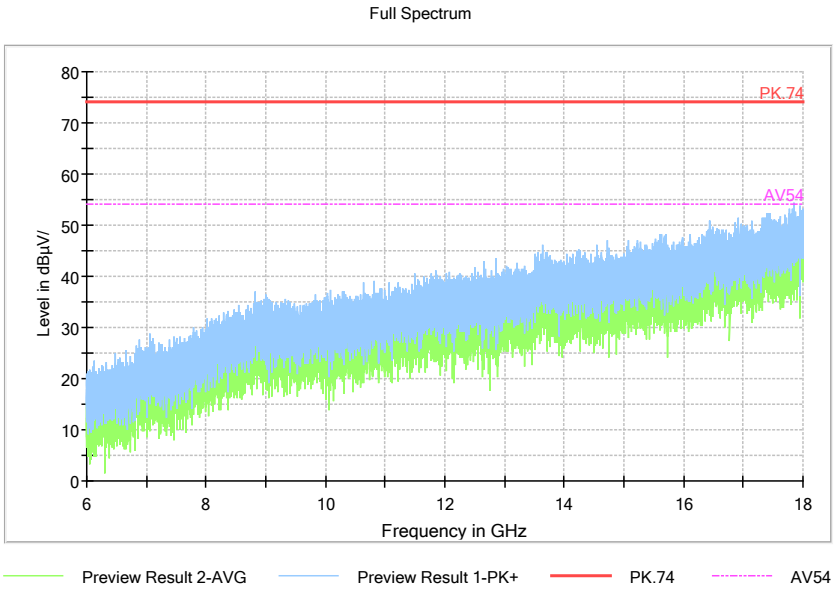
FrequencyRange: 18GHz-25GHz
Detector: Av mode and PK mode
Modulation type: GFSK



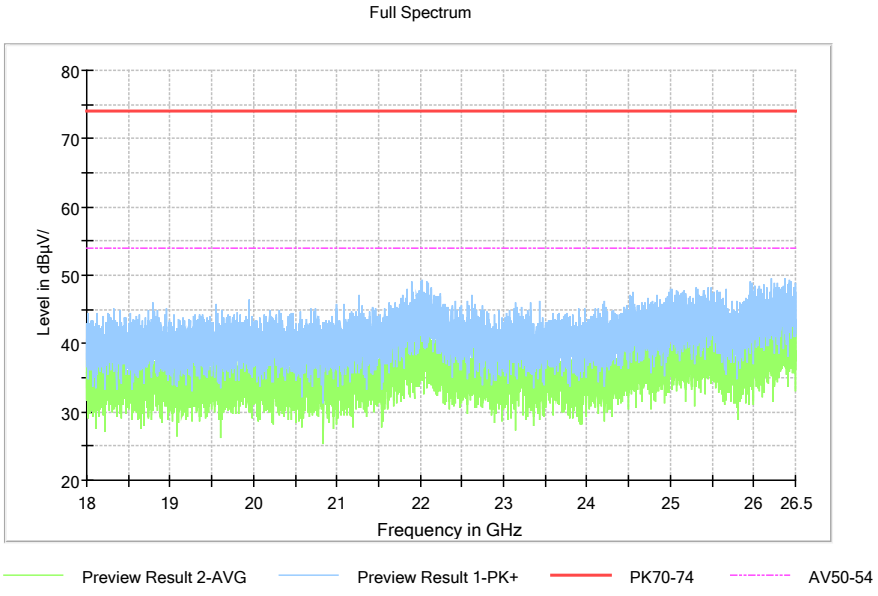
FrequencyRange: 30MHz-1000 MHz
Detector: QP mode
Modulation type: π/4DQPSK



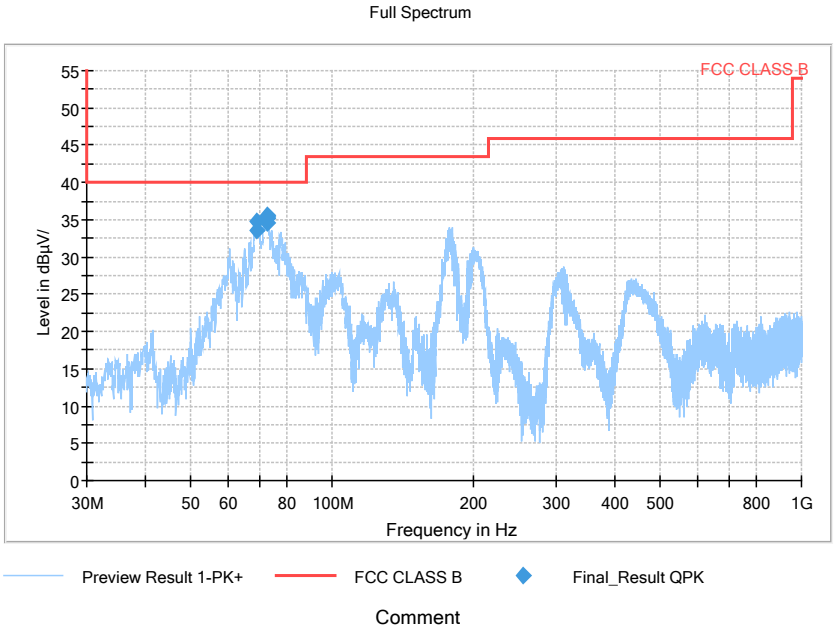
Frequency Range: 1GHz-6GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



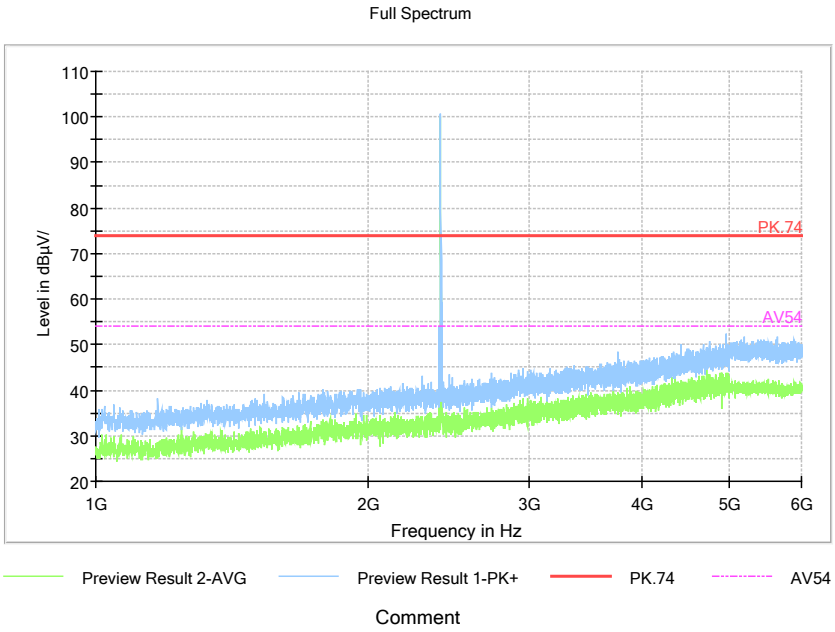
Frequency Range: 6GHz-18GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



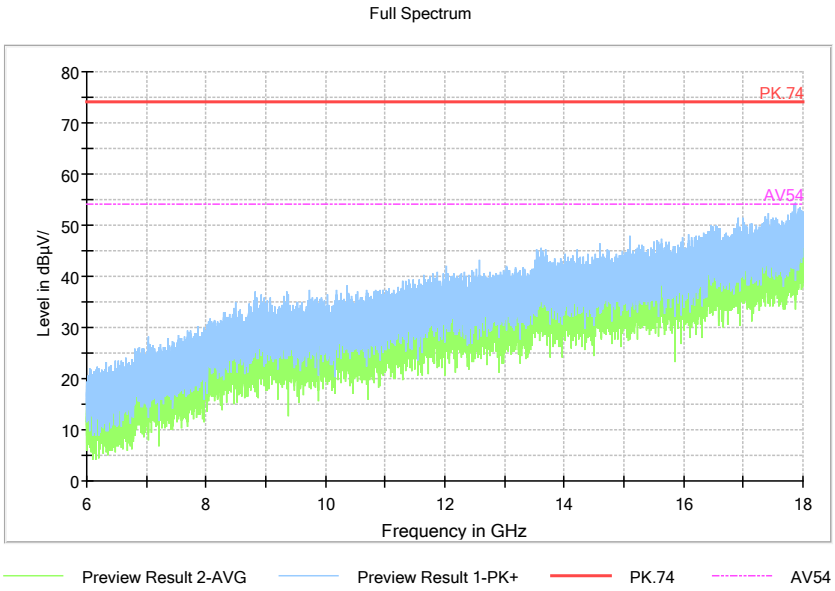
Frequency Range: 18GHz-25GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



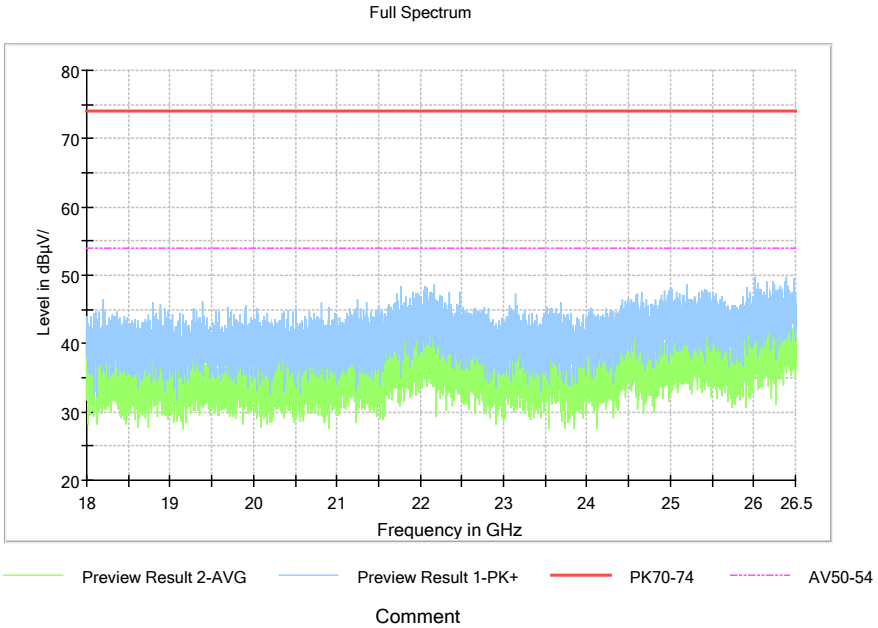
FrequencyRange: 30MHz-1000 MHz
Detector: QP mode
Modulation type: 8DPSK



Frequency Range: 1GHz-6GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

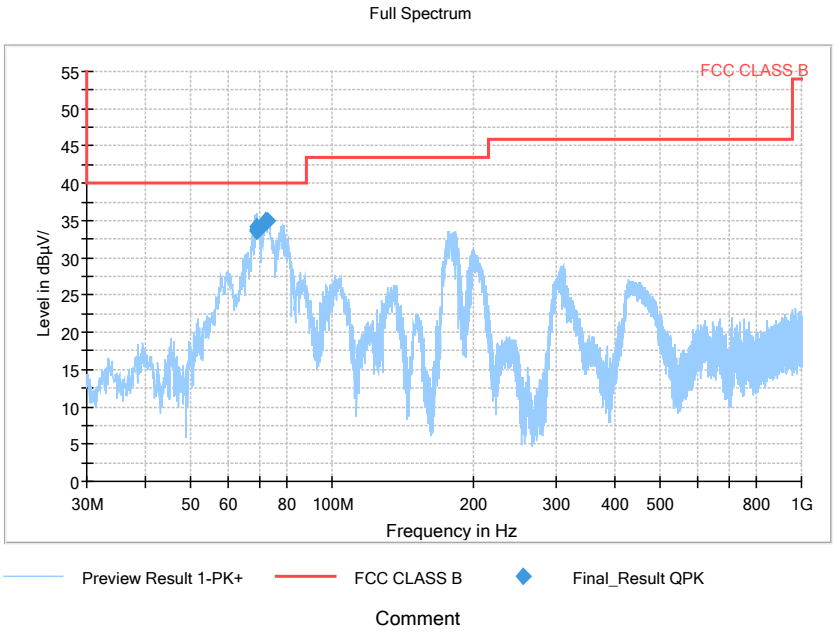


Frequency Range: 6GHz-18GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

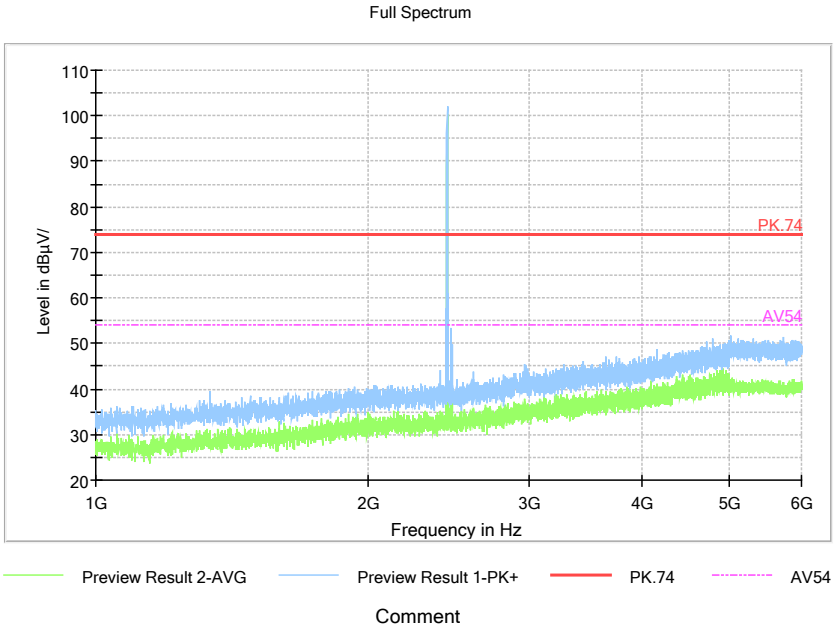


Frequency Range: 18GHz-25GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

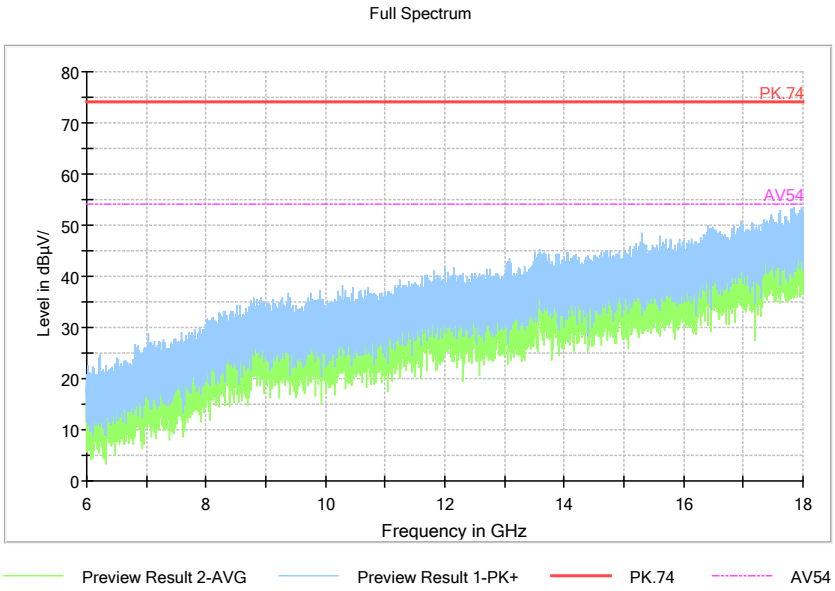
Carrier frequency (MHz): 2441
Channel No.:39



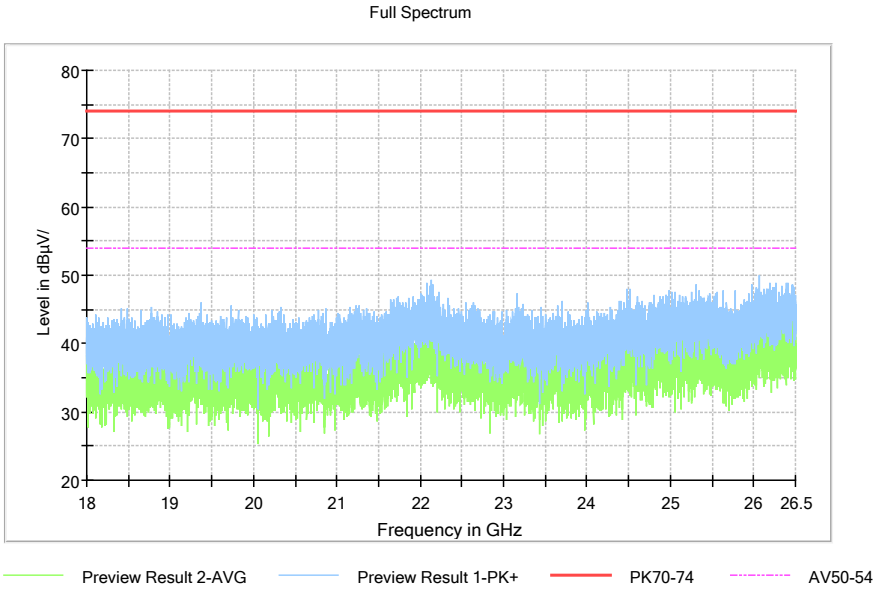
Frequency Range: 30MHz-1000MHz
Detector: QP mode
Modulation type: GFSK



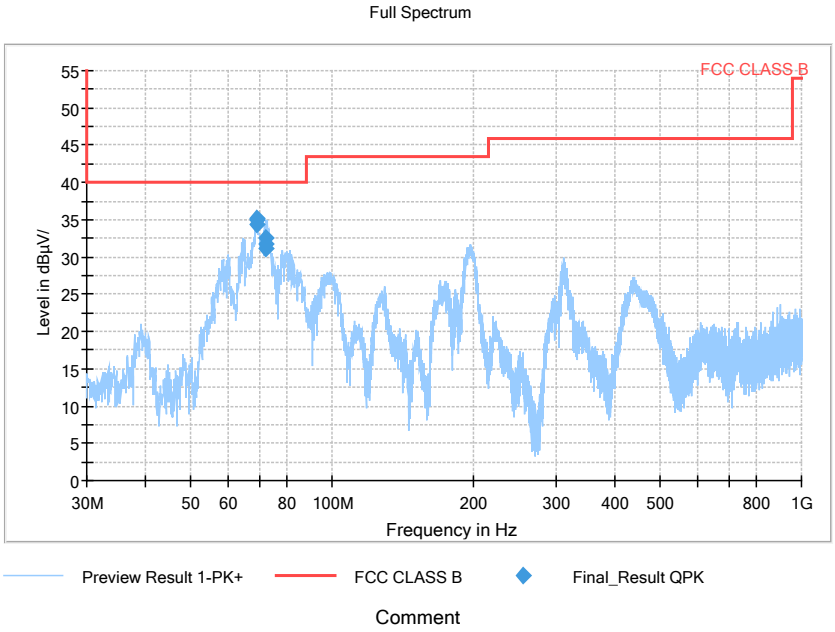
Frequency Range: 1GHz-6GHz
Detector: Av mode and PK mode
Modulation type: GFSK



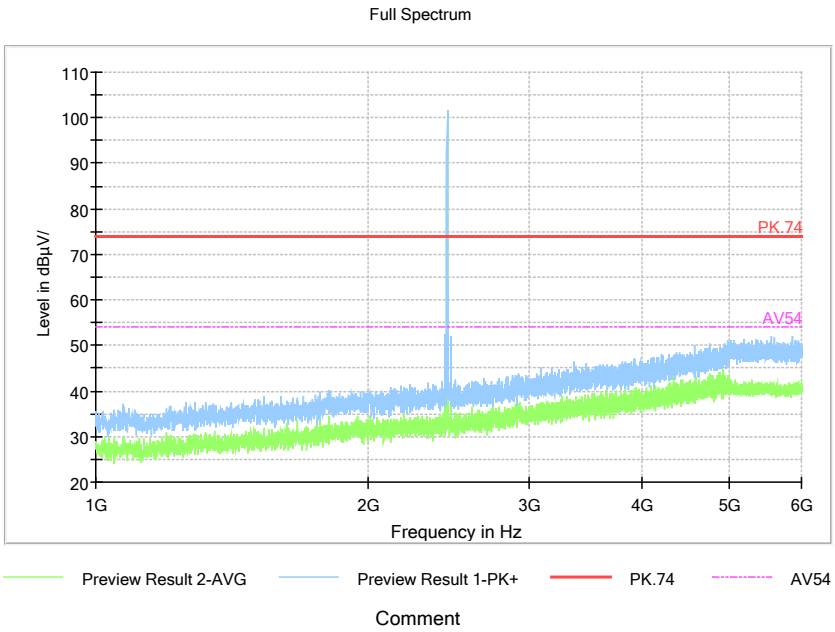
Frequency Range: 6GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: GFSK



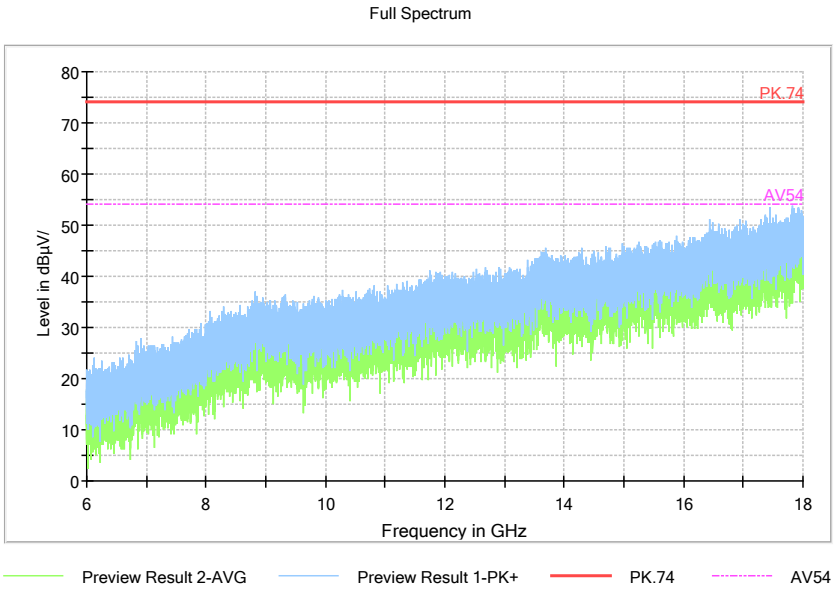
FrequencyRange: 18GHz-25GHz
Detector: Av mode and PK mode
Modulation type: GFSK



FrequencyRange: 30MHz-1000 MHz
Detector: QP mode
Modulation type: π/4DQPSK

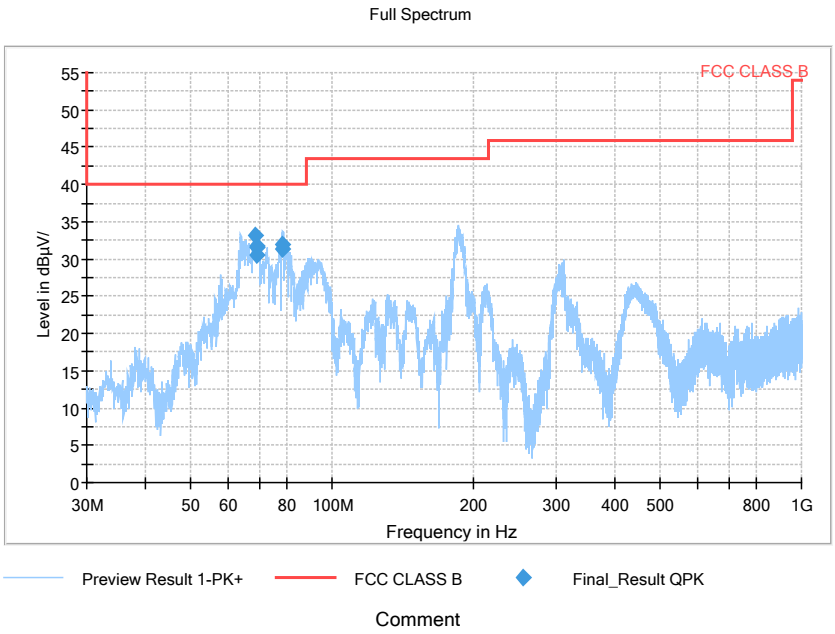


Frequency Range: 1GHz-6GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK

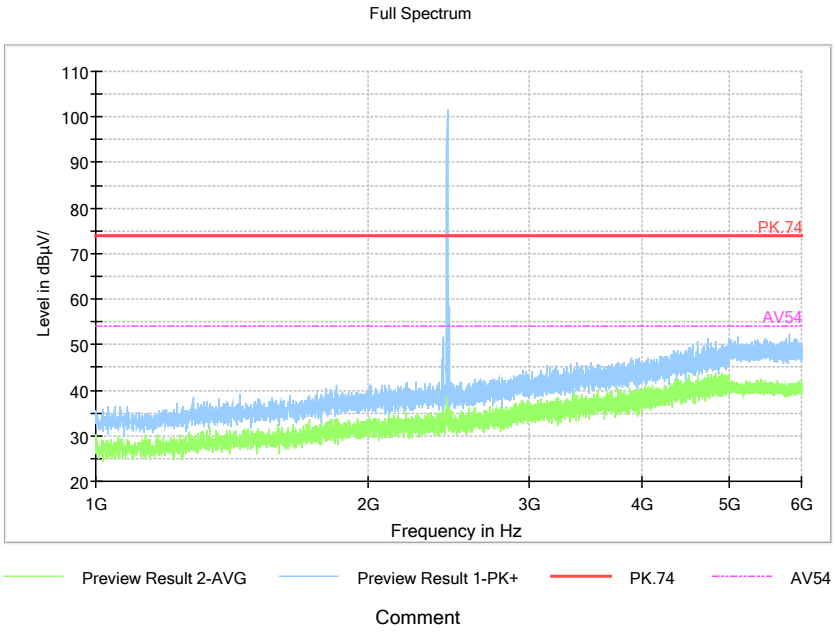


Frequency Range: 6GHz-18GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK

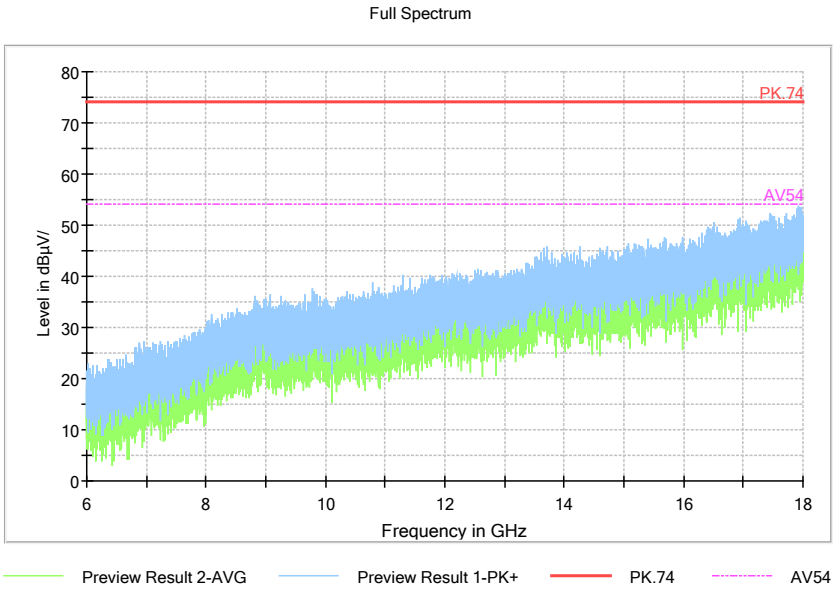
Frequency Range: 18GHz-25GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



FrequencyRange: 30MHz-1000 MHz
Detector: QP mode
Modulation type: 8DPSK



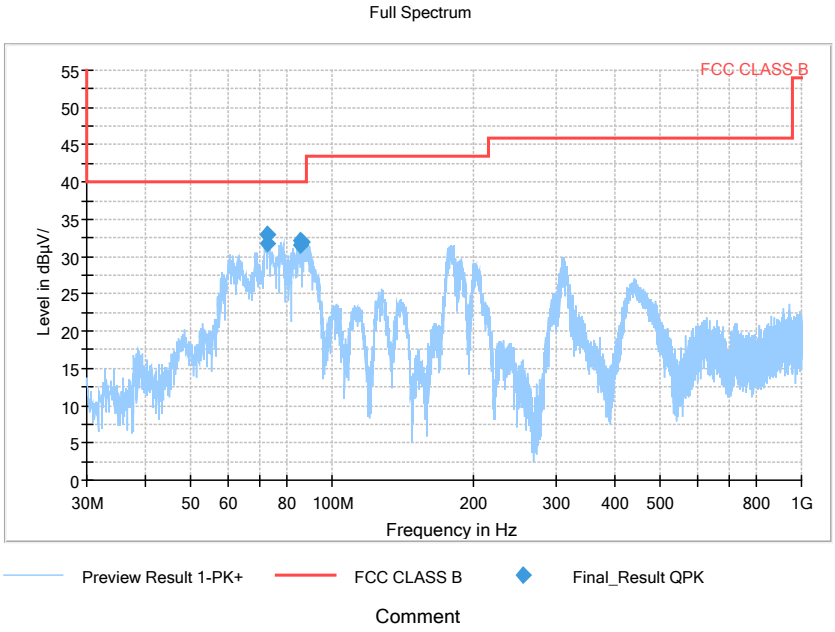
Frequency Range: 1GHz-6GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK



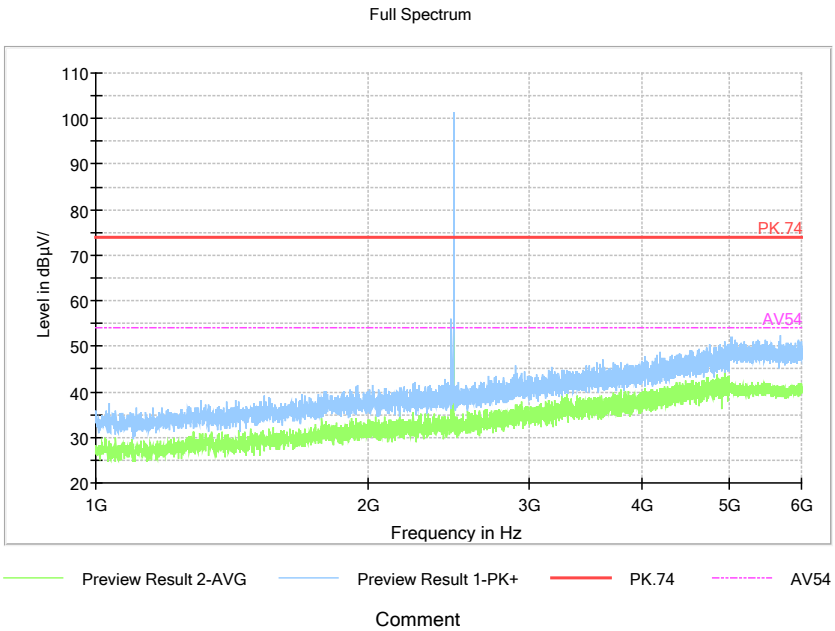
Frequency Range: 6GHz-18GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

Frequency Range: 18GHz-25GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

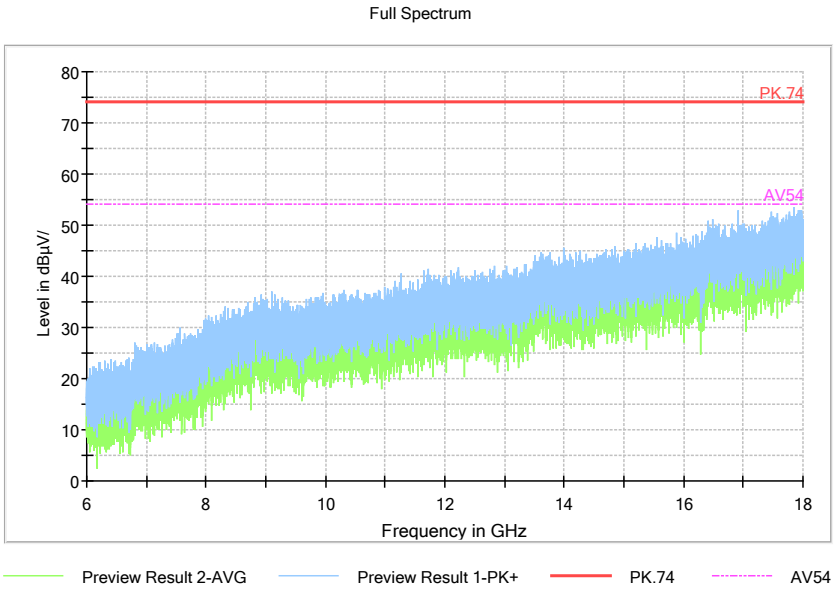
Carrier frequency (MHz): 2480
Channel No.:78



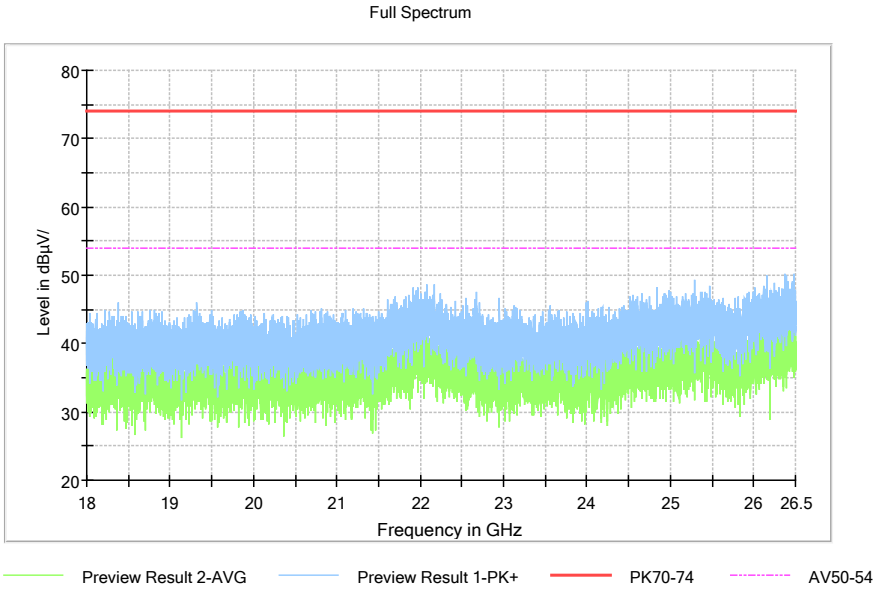
Frequency Range: 30MHz-1000MHz
Detector: QP mode
Modulation type: GFSK



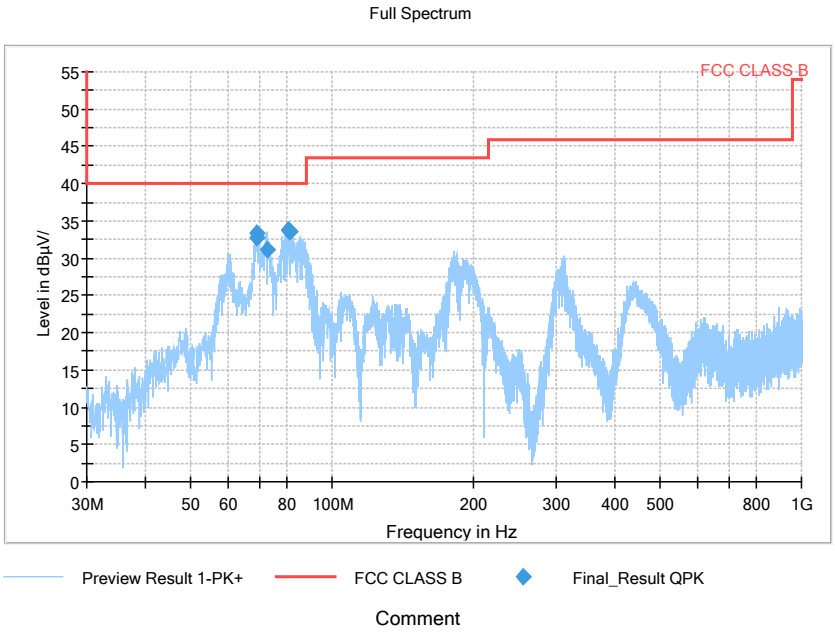
Frequency Range: 1GHz-6GHz
Detector: Av mode and PK mode
Modulation type: GFSK



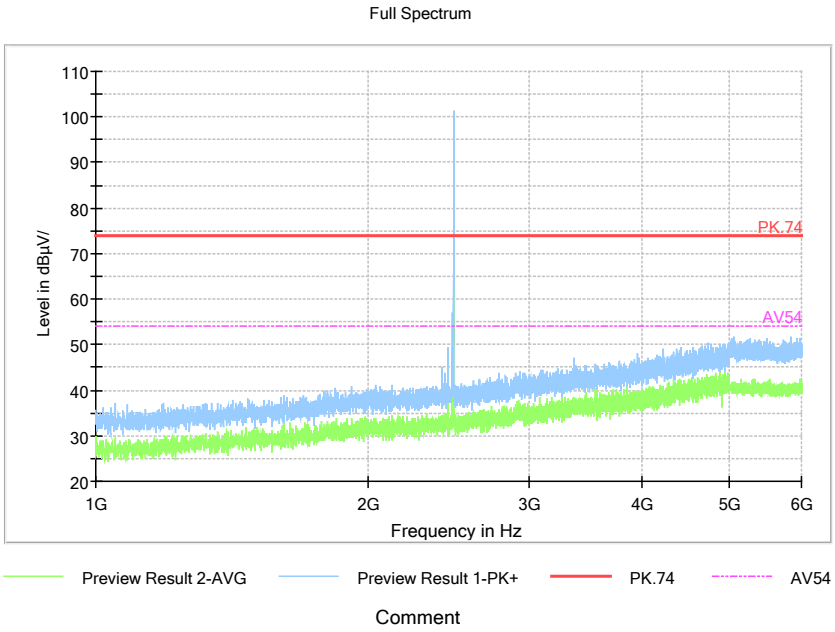
Frequency Range: 6GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: GFSK



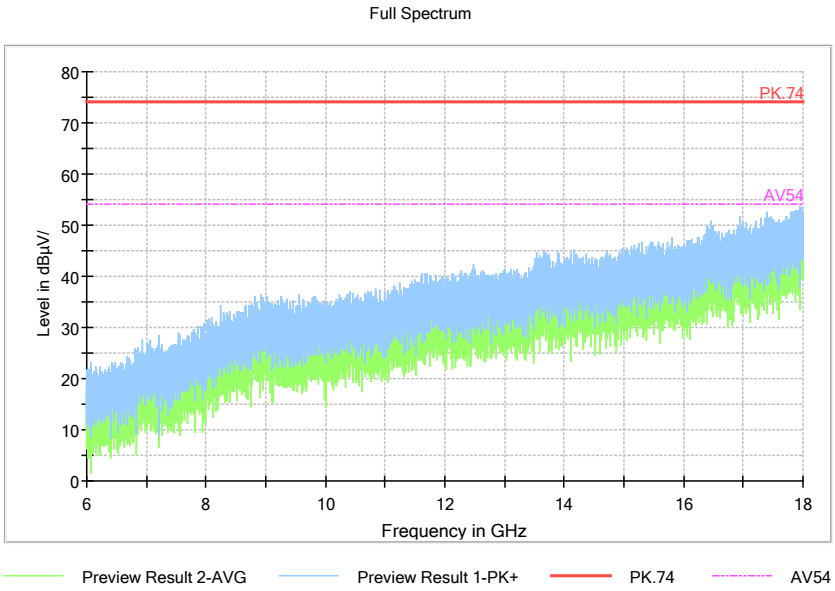
FrequencyRange: 18GHz-25GHz
Detector: Av mode and PK mode
Modulation type: GFSK



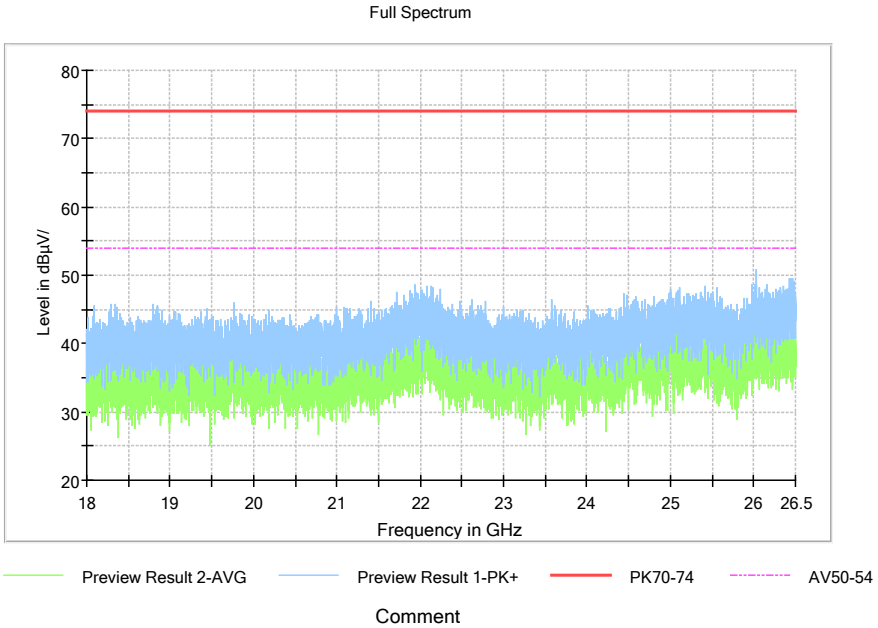
FrequencyRange: 30MHz-1000 MHz
Detector: QP mode
Modulation type: π/4DQPSK



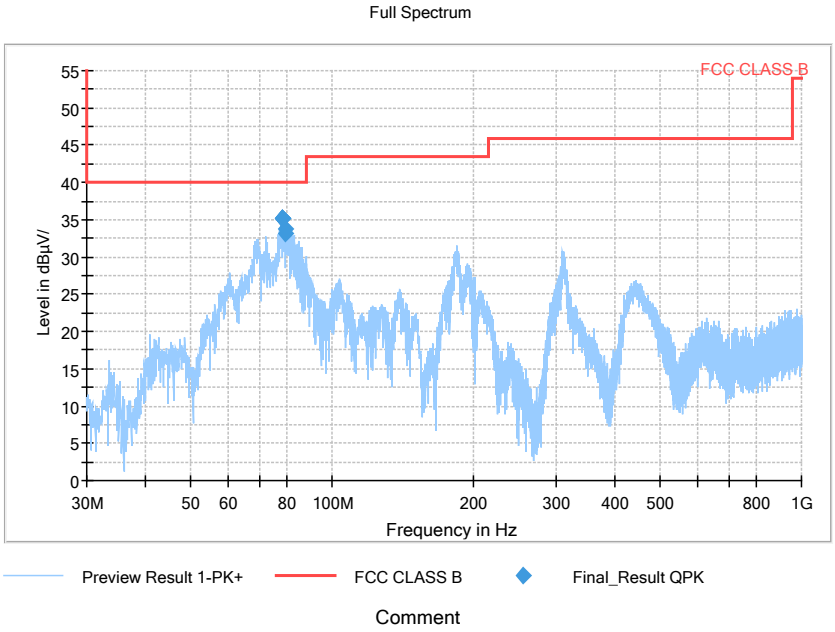
Frequency Range: 1GHz-6GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



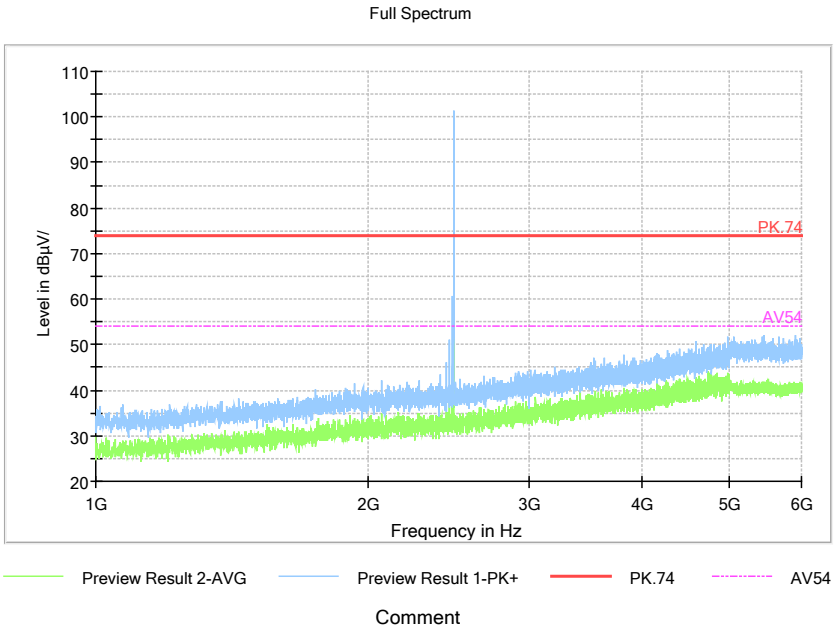
Frequency Range: 6GHz-18GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



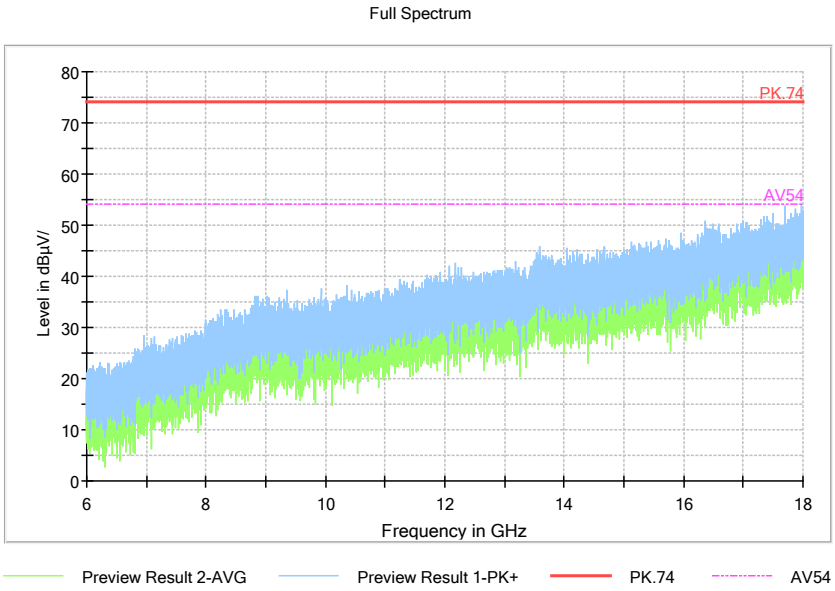
Frequency Range: 18GHz-25GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



FrequencyRange: 30MHz-1000 MHz
Detector: QP mode
Modulation type: 8DPSK



Frequency Range: 1GHz-6GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK



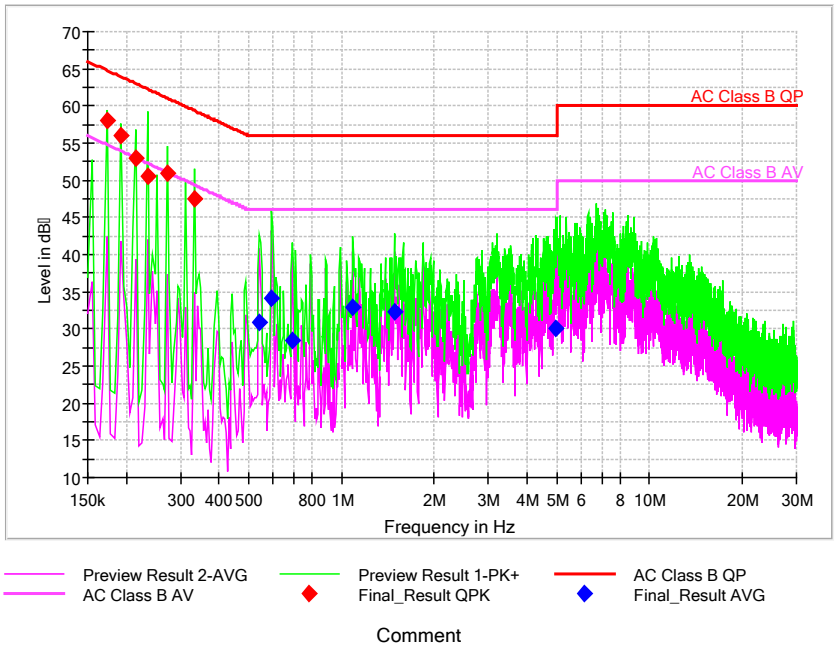
Frequency Range: 6GHz-18GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

Frequency Range: 18GHz-25GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

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: (58.01dBμV) = (28.41dBμV) + (29.6 dB), the corresponding frequency is 0.173320MHz.



L+N Line

MEASUREMENT RESULT:

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	PmeaQuasiPeak (dBμV)	Pmea Average (dBμV)
0.173320	58.01	---	64.80	6.79	L1	29.6	28.41	---
0.191977	55.97	---	63.95	7.98	L1	29.6	26.37	---
0.215297	52.91	---	63.00	10.09	L1	29.6	23.31	---
0.233953	50.52	---	62.31	11.79	L1	29.6	20.92	---
0.271266	50.95	---	61.08	10.13	L1	29.6	21.35	---
0.331898	47.41	---	59.40	11.99	L1	29.6	17.81	---
0.541781	---	30.90	46.00	15.10	L1	29.6	---	1.3
0.593086	---	34.13	46.00	11.87	N	29.6	---	4.53
0.691031	---	28.45	46.00	17.55	L1	29.6	---	-1.15
1.092141	---	32.97	46.00	13.03	L1	29.7	---	3.27
1.488586	---	32.32	46.00	13.68	L1	29.7	---	2.62
4.986633	---	30.12	46.00	15.88	L1	29.7	---	0.42

---End of Test Report---