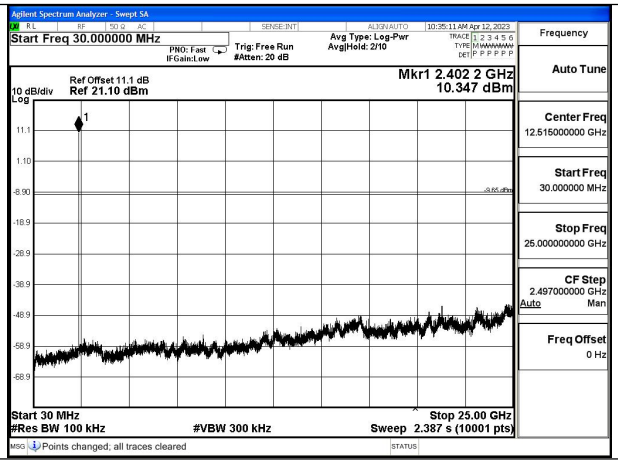
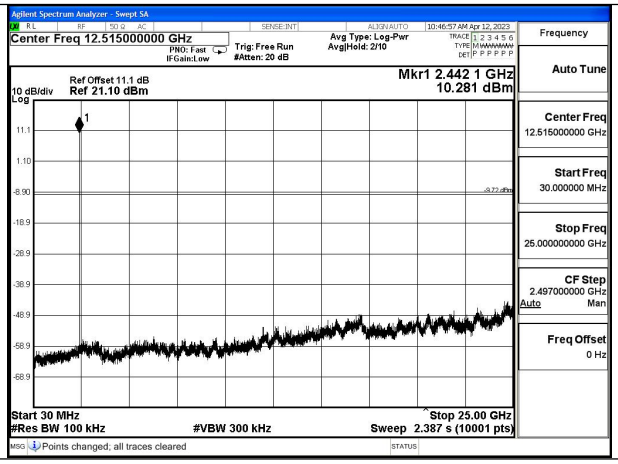
6 Conducted Out of band emission measurement

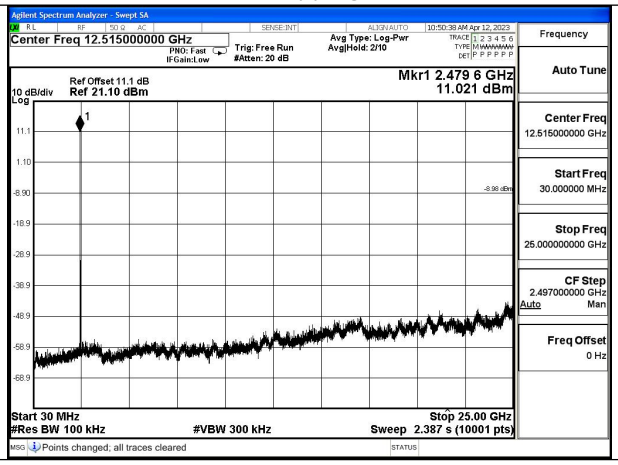
Test Mode: GFSK



CH0(Hopping off)

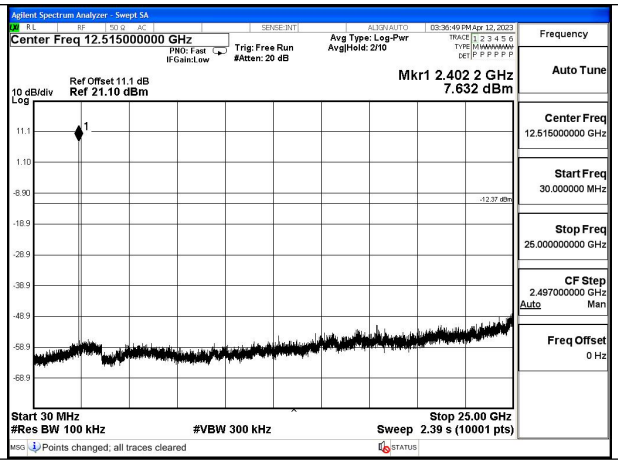


CH39(Hopping off)

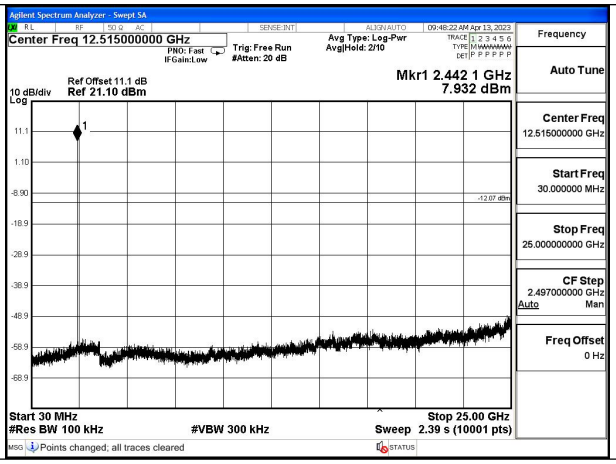


CH78(Hopping off)

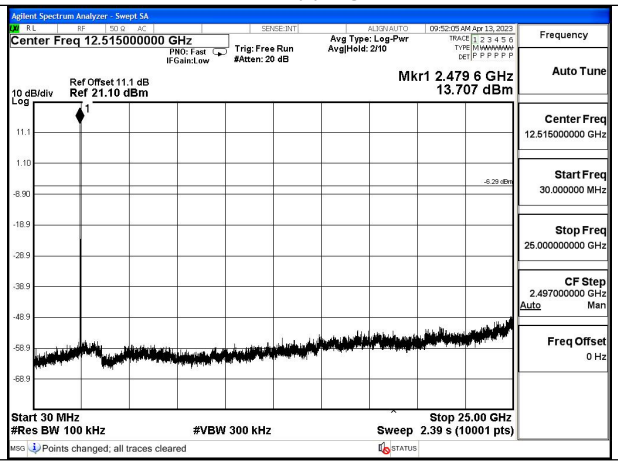
Test Mode: π/4DQPSK



CH0(Hopping off)

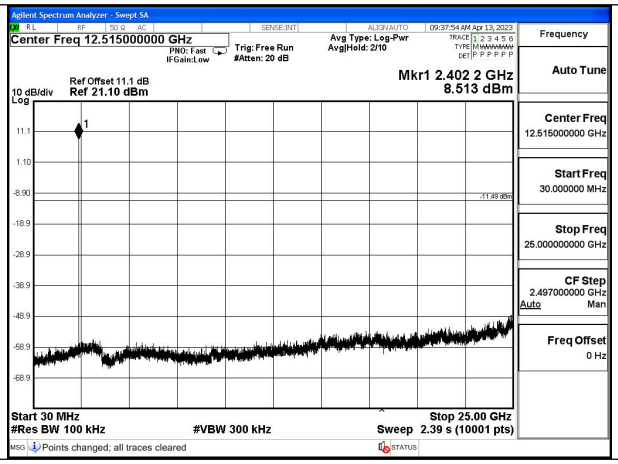


CH39(Hopping off)

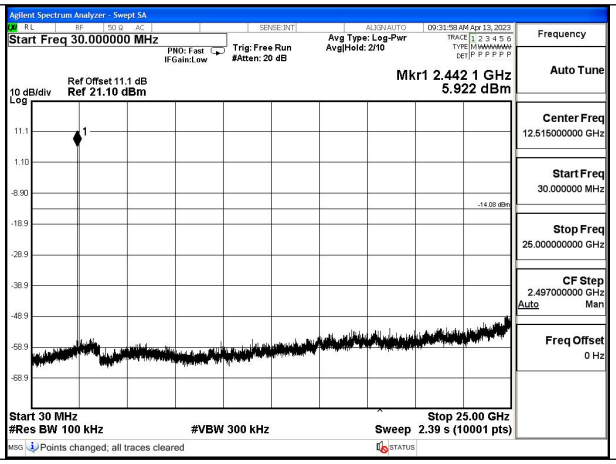


CH78(Hopping off)

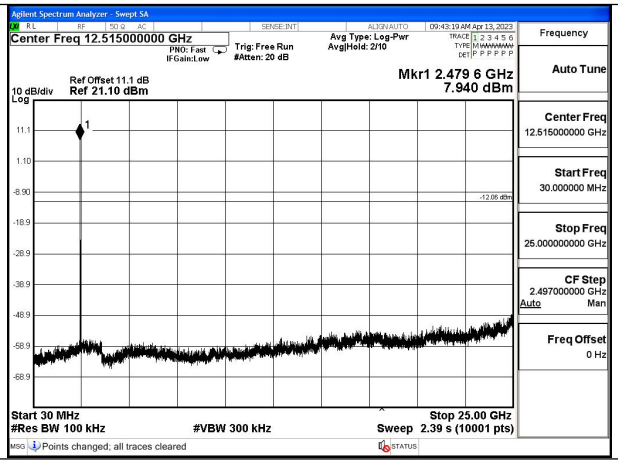
Test Mode: 8DPSK



CH0(Hopping off)



CH39(Hopping off)



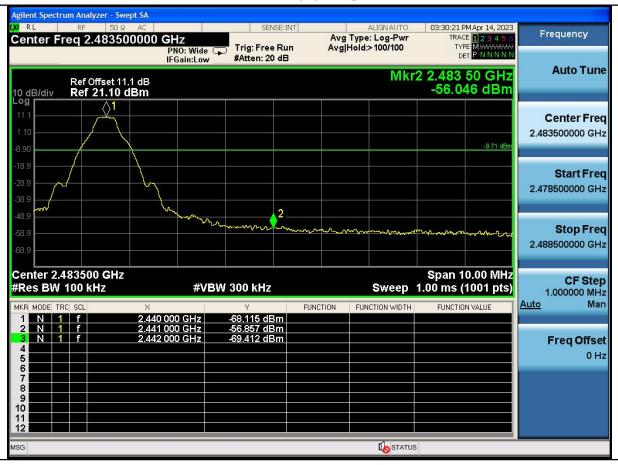
CH78(Hopping off)

7 Band Edge measurement

Test Mode: GFSK

CH0(Hopping off)

CH0(Hopping on)



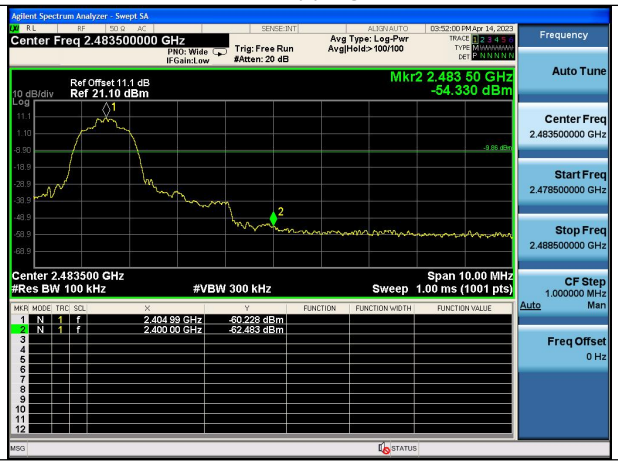
CH78(Hopping off)

CH78(Hopping on)

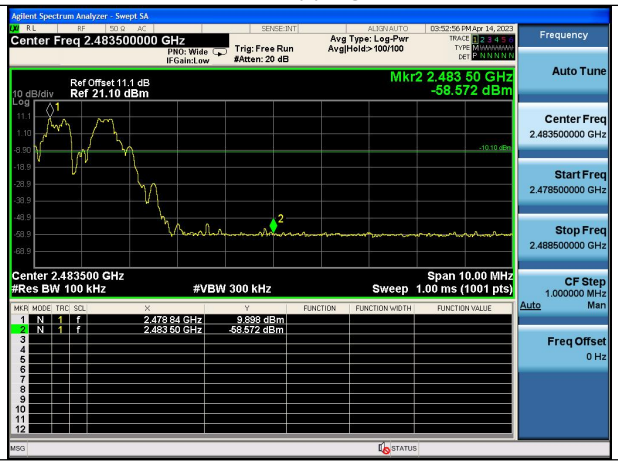
Test Mode: π/4DQPSK

CH0(Hopping off)

CH0(Hopping on)



CH78(Hopping off)



CH78(Hopping on)

Test Mode: 8DPSK

CH0(Hopping off)

CH0(Hopping on)

CH78(Hopping off)

CH78(Hopping on)

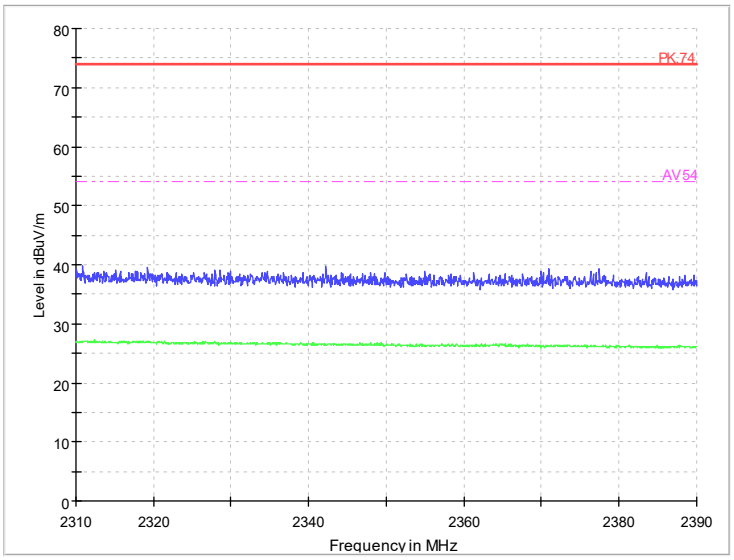
APPENDIX B – TEST DATA OF RADIATED EMISSION

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

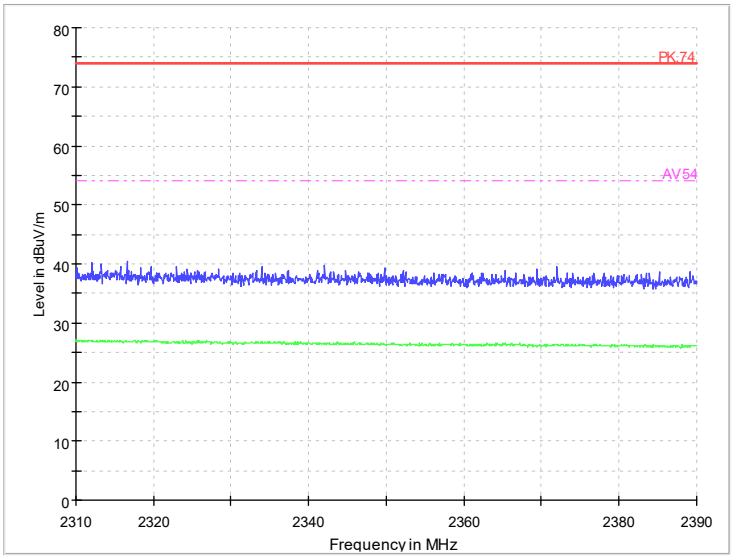
Note: The scanned graph represents the maximum of both horizontal and vertical polarizations and is not a single horizontal or vertical polarization scan.

Radiated Emission Band Edge

After comparison the worst case attitude is EUT vertical. The relevant tests have been performed in order to verify in which mode would have the worst features, the result show above is the worst case.

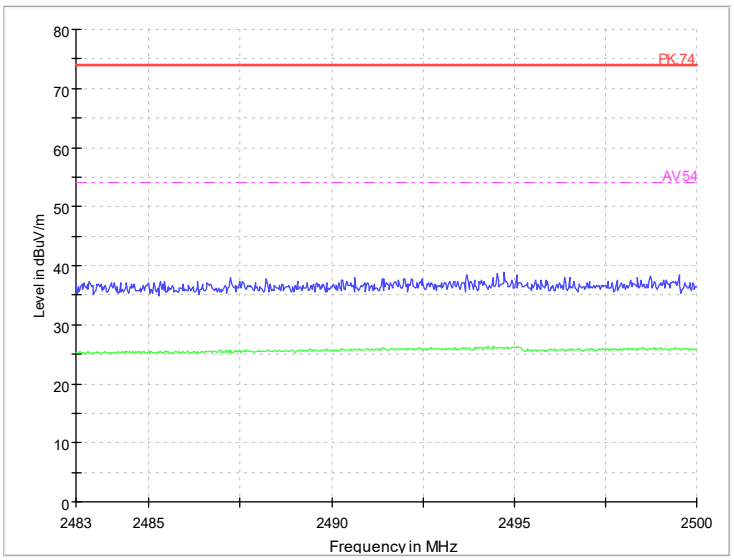


Radiated Emission Band Edge
Channel No.:0
Test Mode: GFSK
Polarization：V

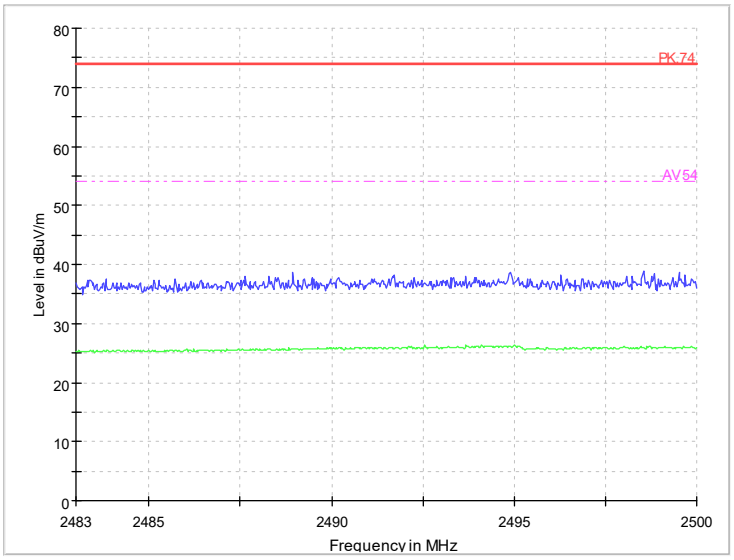


Radiated Emission Band Edge

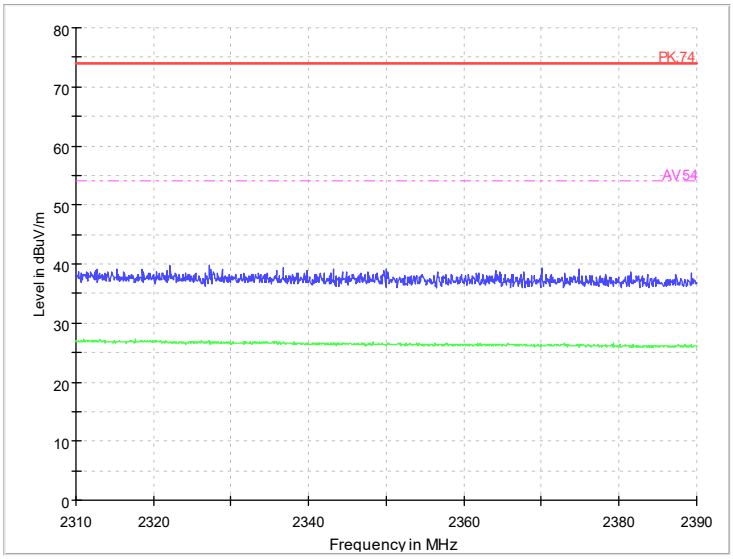
Channel No.:0
Test Mode: GFSK
Polarization：H



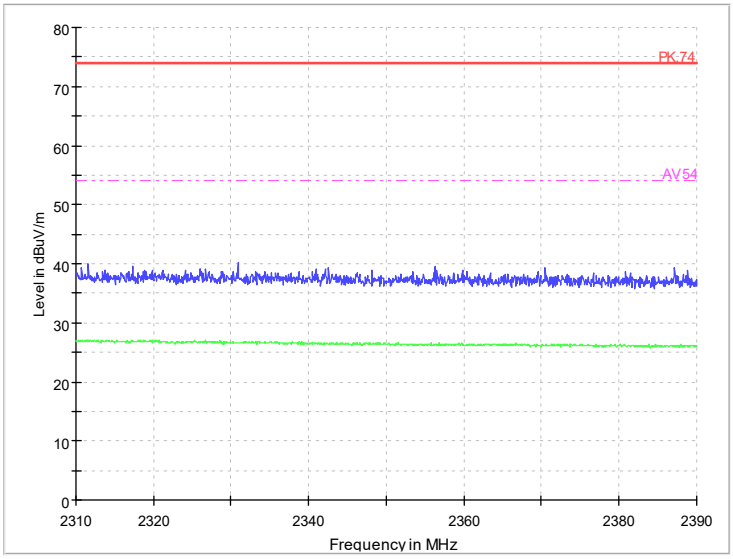
Radiated Emission Band Edge
Channel No.:78
Test Mode: GFSK
Polarization：V



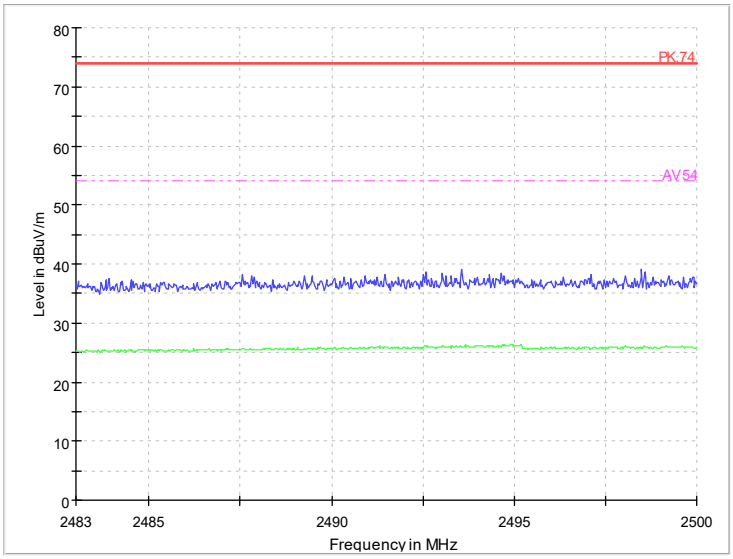
Radiated Emission Band Edge
Channel No.:78
Test Mode: GFSK
Polarization：H



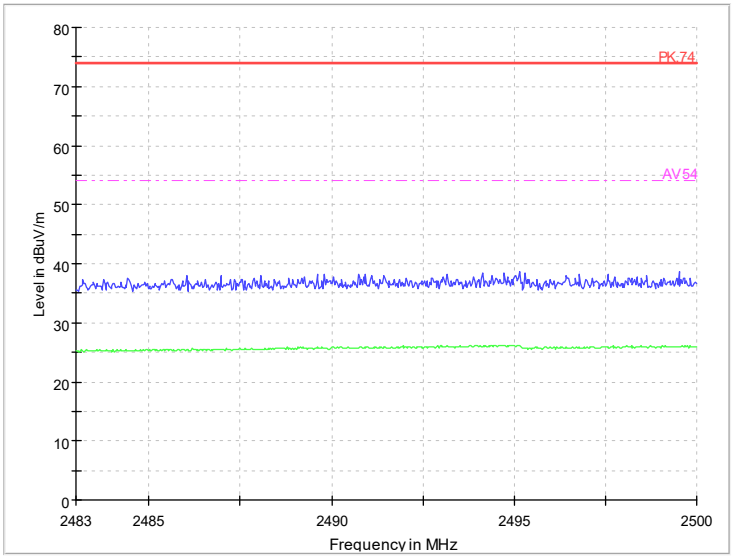
Radiated Emission Band Edge
Channel No.:0
Test Mode: π/4DQPSK
Polarization：V



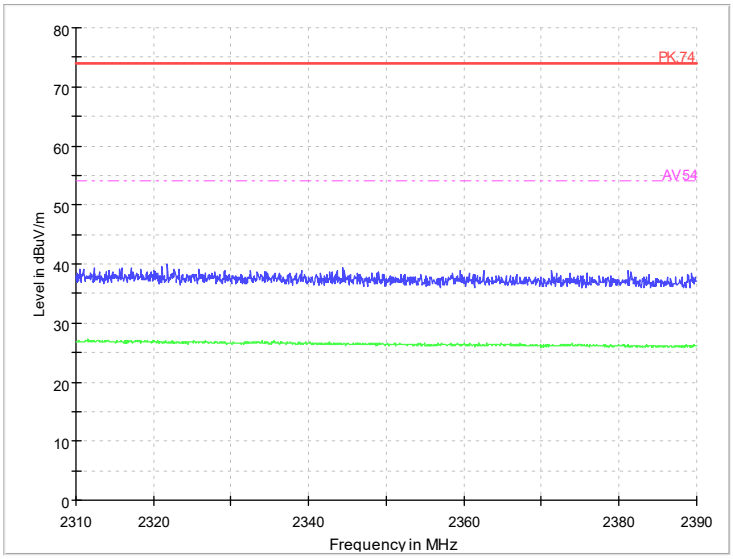
Radiated Emission Band Edge
Channel No.:0
Test Mode: π/4DQPSK
Polarization：H



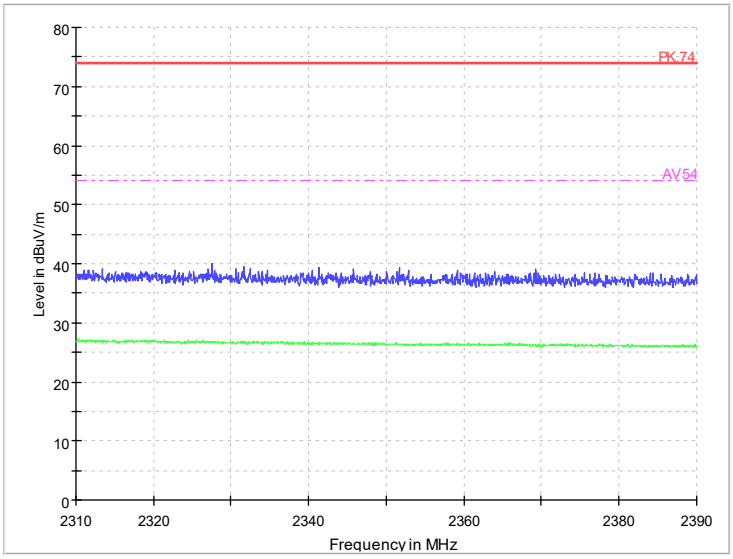
Radiated Emission Band Edge
Channel No.:78
Test Mode: π/4DQPSK
Polarization：V



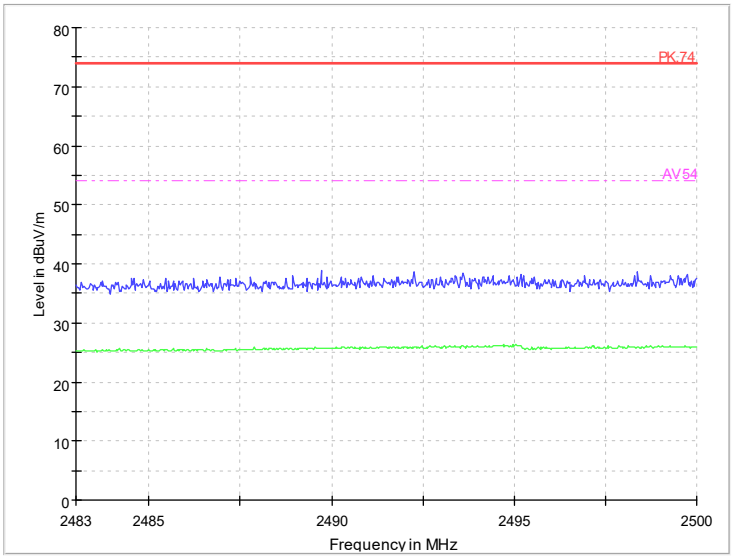
Radiated Emission Band Edge
Channel No.:78
Test Mode: π/4DQPSK
Polarization：H



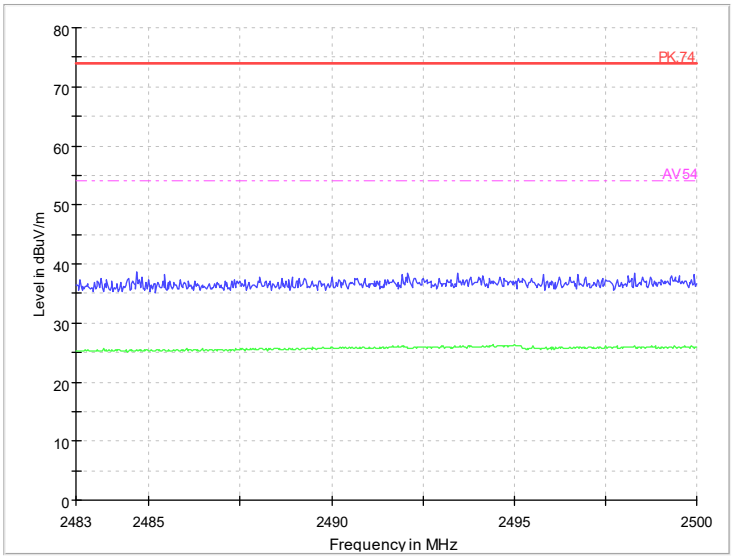
Radiated Emission Band Edge
Channel No.:0
Test Mode: 8DPSK
Polarization：V



Radiated Emission Band Edge
Channel No.:0
Test Mode: 8DPSK
Polarization：H



Radiated Emission Band Edge
Channel No.:78
Test Mode: 8DPSK
Polarization：V



Radiated Emission Band Edge
Channel No.:78
Test Mode: 8DPSK
Polarization：H

Test result

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: (3.22 dBμV/m) = (24.12dBμV) + (-20.9dB/m), the corresponding frequency is 32.875500MHz.

The worst case attitude: The EUT lay down.

For GFSK

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
32.875500	3.22	40.00	36.78	-20.9	24.12	V
58.606000	4.12	40.00	35.88	-18.6	22.72	H
97.338000	8.92	43.50	34.58	-19.9	28.82	V
305.605500	4.41	46.00	41.59	-15.6	20.01	V
524.186500	10.73	46.00	35.27	-10.3	21.03	H
890.914500	15.98	46.00	30.02	-3.4	19.38	V

For π/4DQPSK

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
44.210500	4.39	40.00	35.61	-18.0	22.39	V
56.675000	3.57	40.00	36.43	-18.4	21.97	V
96.930000	6.52	43.50	36.98	-19.7	26.22	H
209.401500	1.62	43.50	41.88	-18.7	20.32	V
556.952500	10.99	46.00	35.01	-9.5	20.49	V
929.432500	16.17	46.00	29.83	-2.9	19.07	V

For 8DPSK

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
51.437000	5.18	40.00	34.82	-17.7	22.88	V
58.615000	4.19	40.00	35.81	-18.6	22.79	H
97.657500	9.17	43.50	34.33	-19.6	28.77	V
273.227500	3.20	46.00	42.80	-16.7	19.90	V
544.633500	11.01	46.00	34.99	-9.8	20.81	H
878.895500	15.80	46.00	30.20	-3.6	19.40	V

For GFSK

Channel No.:39

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity

50.903500	4.93	40.00	35.07	-17.6	22.53	H
58.178500	4.33	40.00	35.67	-18.6	22.93	V
97.318000	9.72	43.50	33.78	-19.7	29.42	V
266.728500	3.13	46.00	42.87	-16.8	19.93	H
470.283000	9.82	46.00	36.18	-11.6	21.42	V
913.476000	16.15	46.00	29.85	-3.1	19.25	V

For π/4DQPSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
36.887000	6.66	40.00	33.34	-19.4	26.06	V
57.790500	4.28	40.00	35.73	-18.5	22.78	H
96.639000	8.18	43.50	35.32	-19.8	27.98	H
293.985500	3.37	46.00	42.63	-16.2	19.57	V
547.010000	11.01	46.00	34.99	-9.8	20.81	V
937.386500	16.17	46.00	29.83	-2.8	18.97	V

For 8DPSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
52.504000	5.26	40.00	34.74	-17.9	23.16	V
57.839000	4.30	40.00	35.70	-18.5	22.80	V
97.318000	9.87	43.50	33.63	-19.7	29.57	V
273.615500	3.16	46.00	42.84	-16.7	19.86	H
513.351000	10.65	46.00	35.35	-10.5	21.15	V
939.375000	16.25	46.00	29.75	-2.8	19.05	V

For GFSK
Channel No.:78

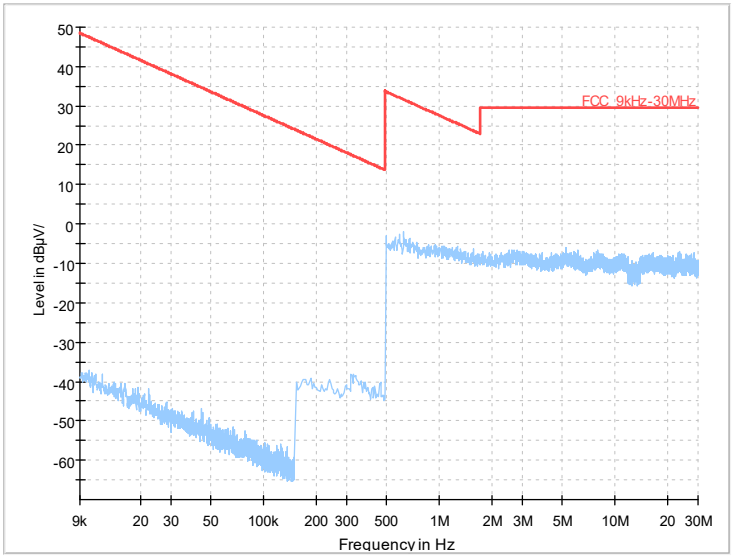
Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
30.436500	1.78	40.00	38.22	-21.1	22.88	V
55.899000	4.76	40.00	35.24	-18.3	23.06	V
99.161000	2.63	43.50	40.87	-19.2	21.83	H
211.729500	1.79	43.50	41.71	-18.6	20.39	H
539.929000	11.04	46.00	34.96	-9.9	20.94	V
925.455500	16.12	46.00	29.88	-2.9	19.02	V

For π/4DQPSK
Channel No.:78

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
51.049000	5.08	40.00	34.92	-17.7	22.78	V
57.402500	4.14	40.00	35.86	-18.5	22.64	H
97.269500	6.27	43.50	37.23	-19.7	25.97	V
291.124000	3.72	46.00	42.28	-16.3	20.02	V
553.606000	11.09	46.00	34.91	-9.6	20.69	H
956.107500	16.39	46.00	29.61	-2.6	18.99	V

For 8DPSK
Channel No.:78

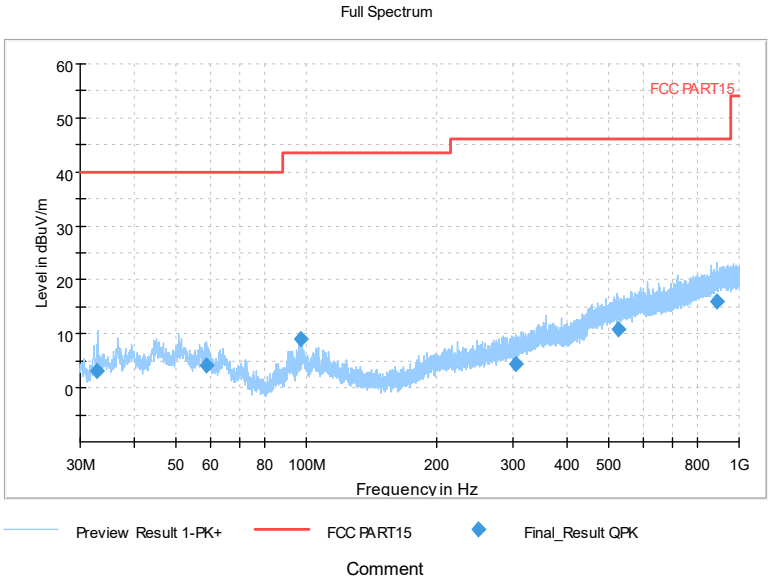
Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	ARpl (dB/m)	Pmea (dBuV)	Polarity
36.887000	6.61	40.00	33.39	-19.4	26.01	V
58.081500	4.39	40.00	35.61	-18.6	22.99	V
96.930000	6.41	43.50	37.09	-19.7	26.11	V
286.468000	3.33	46.00	42.67	-16.4	19.73	V
535.224500	10.82	46.00	35.18	-10.0	20.82	H
928.026000	16.24	46.00	29.76	-2.9	19.14	V



Frequency Range: 9kHz -30MHz
Detector: QP mode

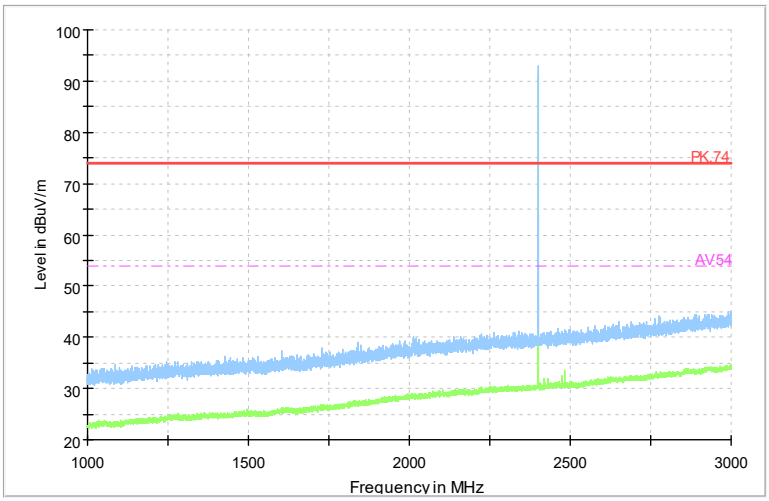
Note：The relevant tests have been performed in order to verify in which mode would have the worst features, the result show above is the worst case.

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



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

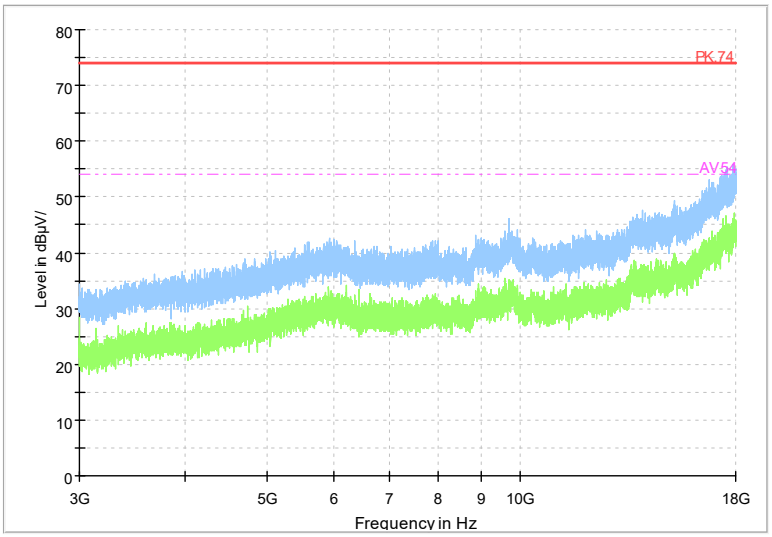
Full Spectrum



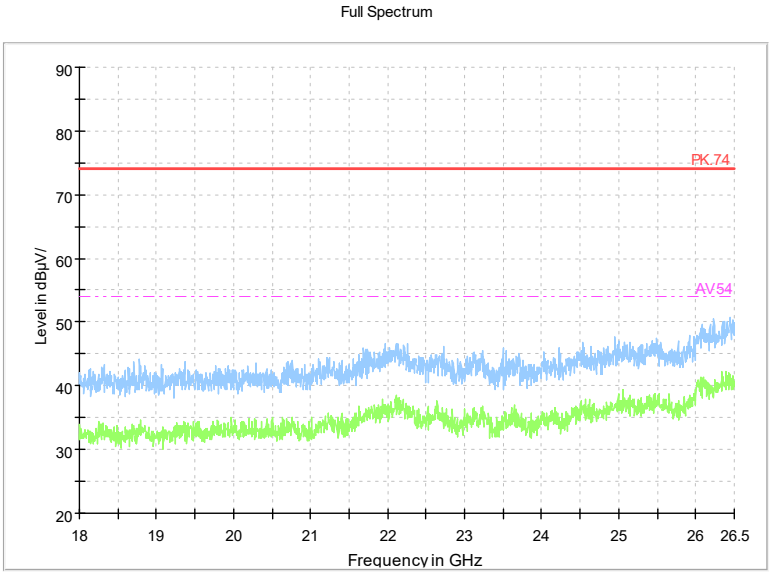
Comment

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

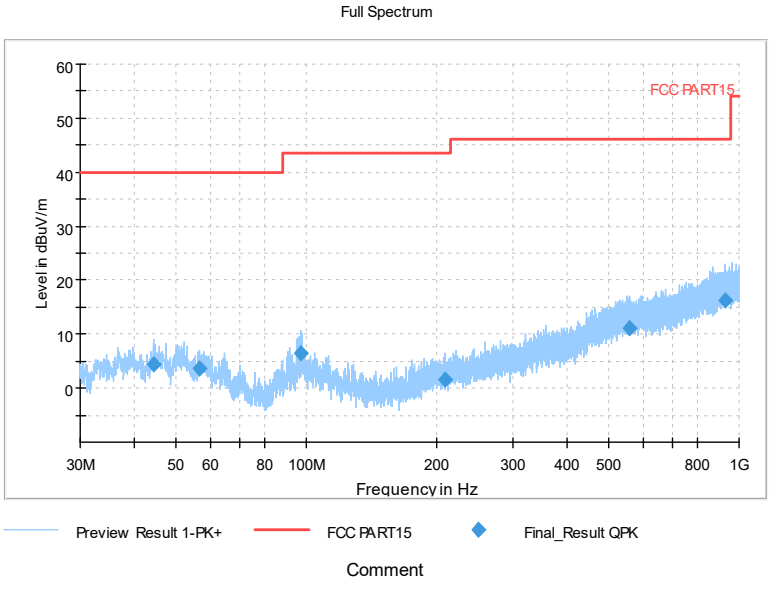
Full Spectrum



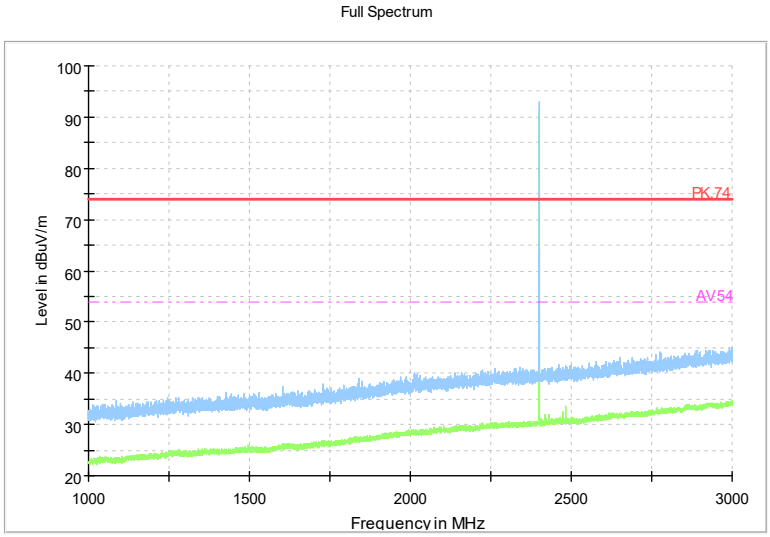
Frequency Range: 3GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: GFSK



Frequency Range: 18GHz- 26GHz
Detector: Av mode and PK mode
Modulation type: GFSK

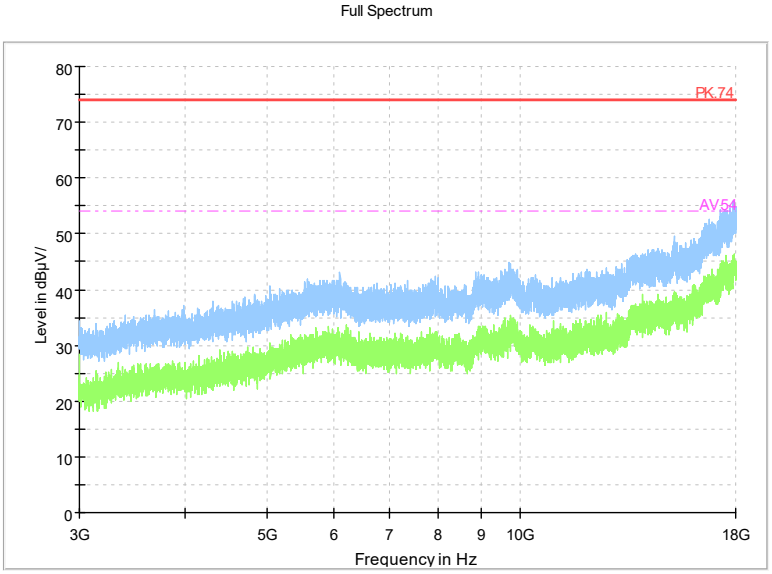


Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: π/4DQPSK

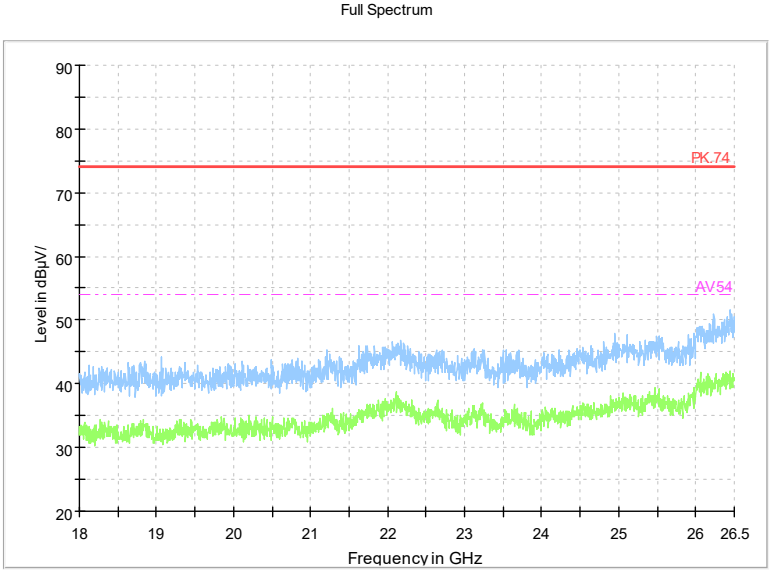


Comment

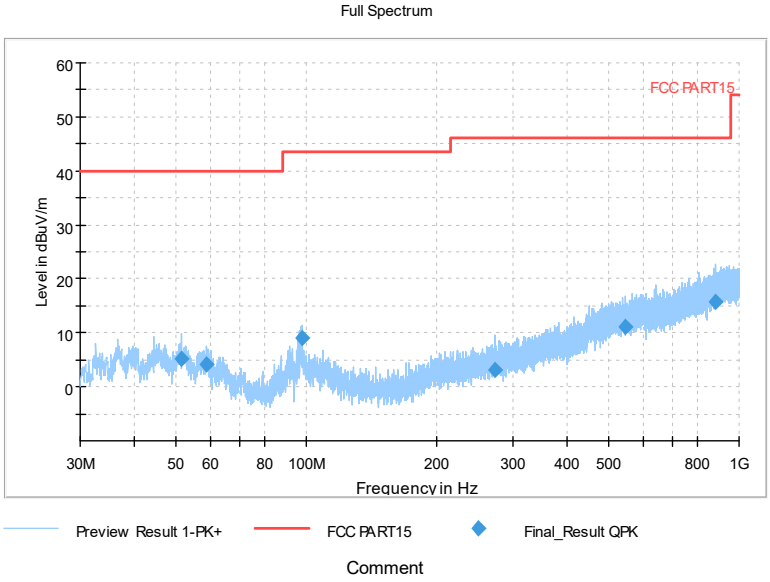
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



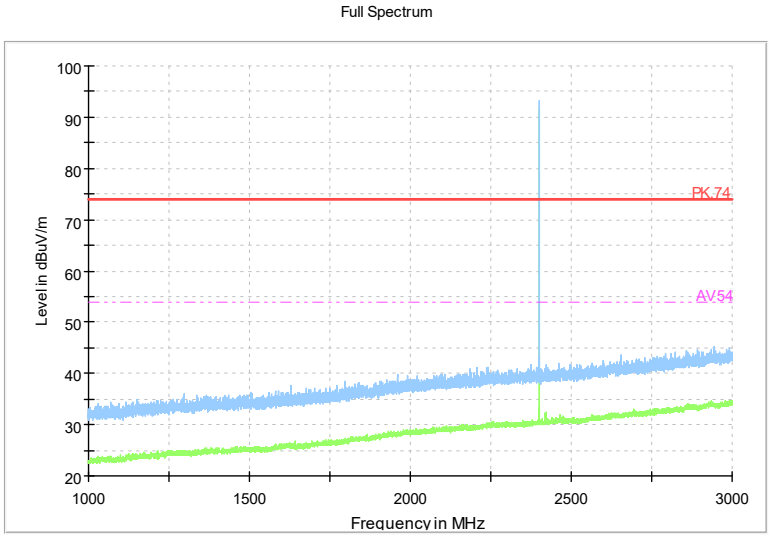
Frequency Range: 3GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



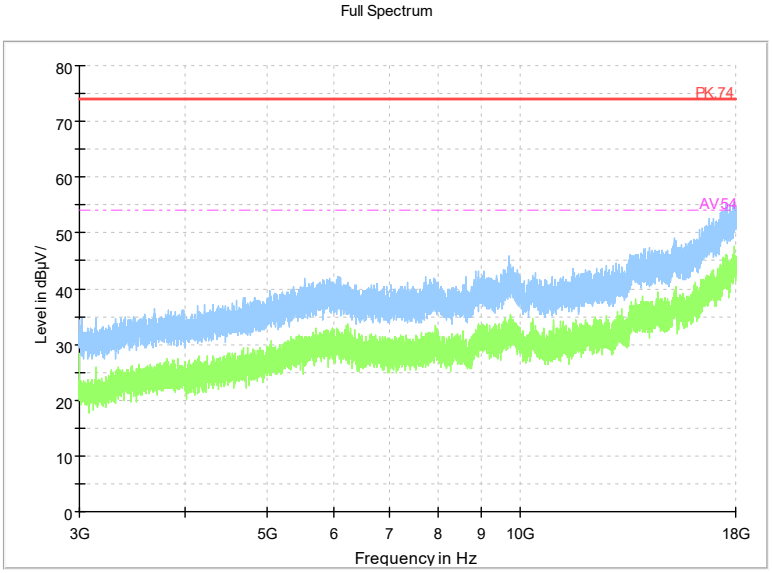
Frequency Range: 18GHz- 26GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



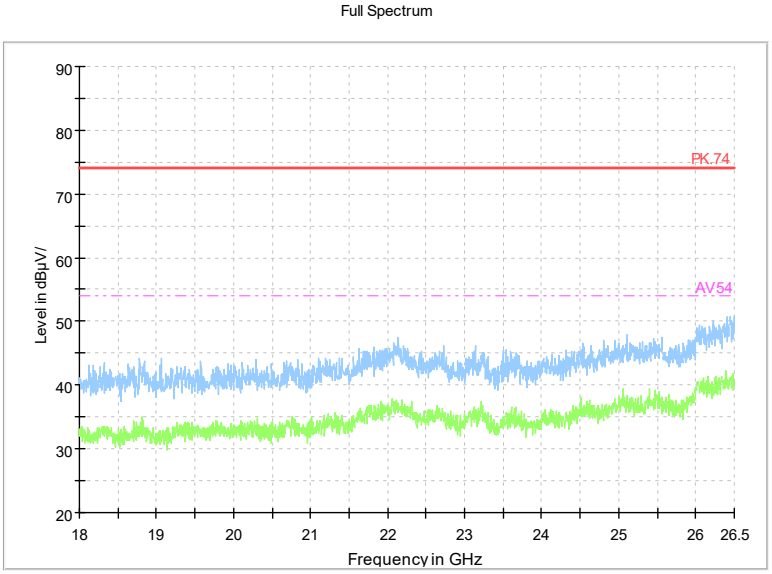
Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: 8DPSK



Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK



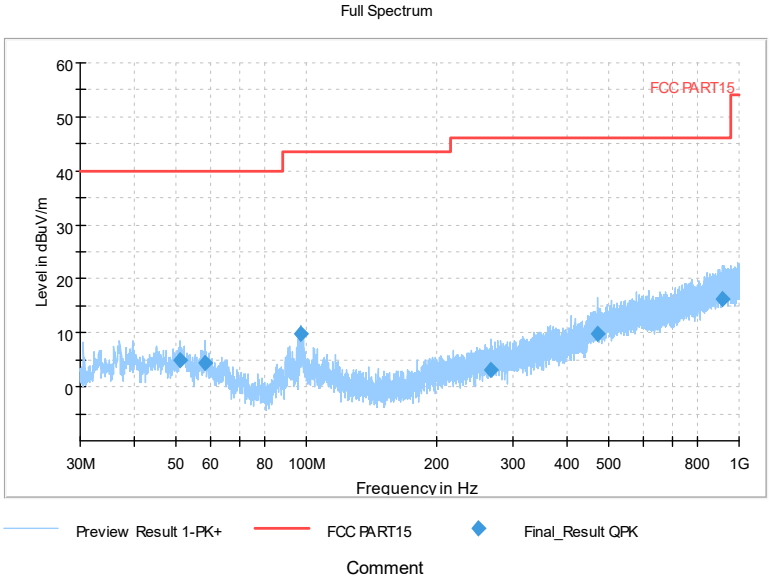
Frequency Range: 3GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK



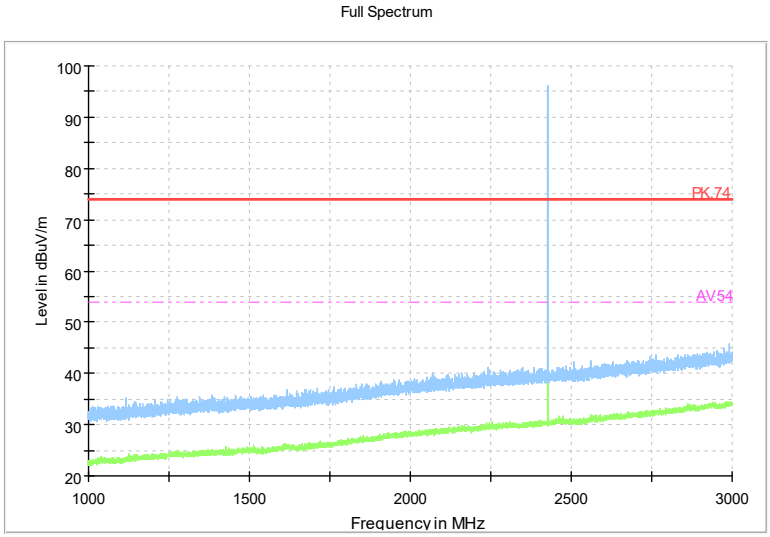
Frequency Range: 18GHz- 26GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

Carrier frequency (MHz): 2441

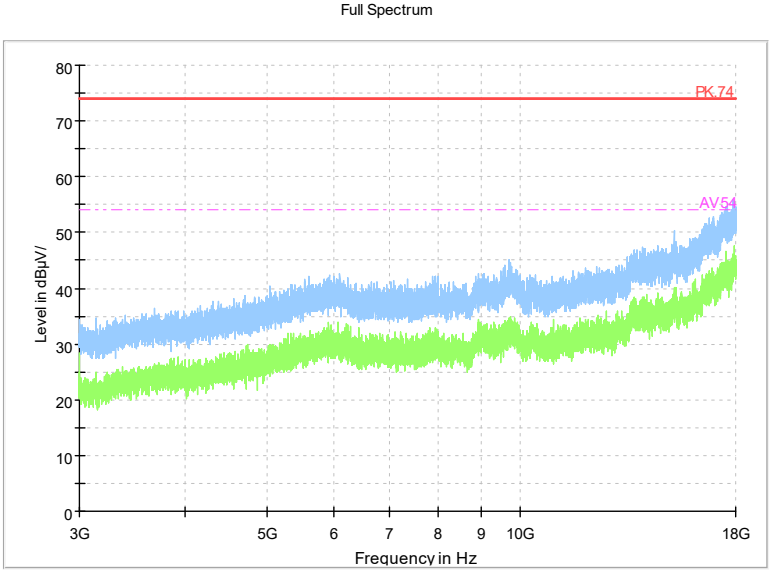
Channel No.:39



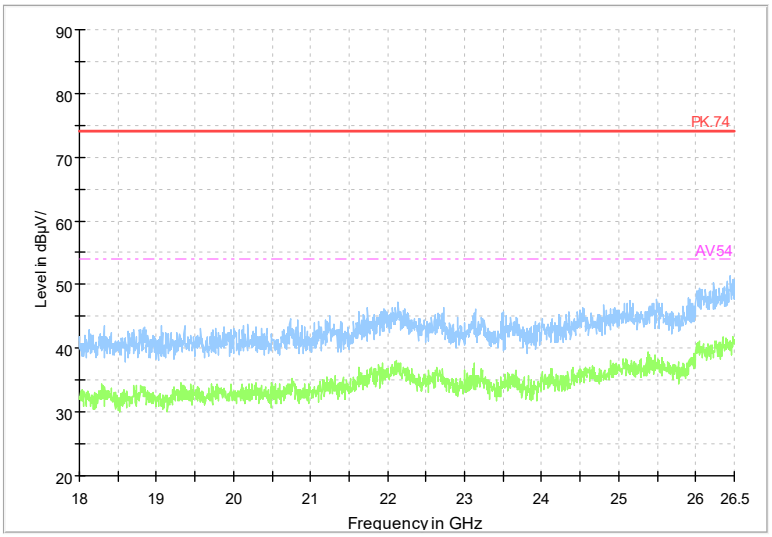
Frequency Range: 30MHz-1000MHz
Detector: QP mode
Modulation type: GFSK



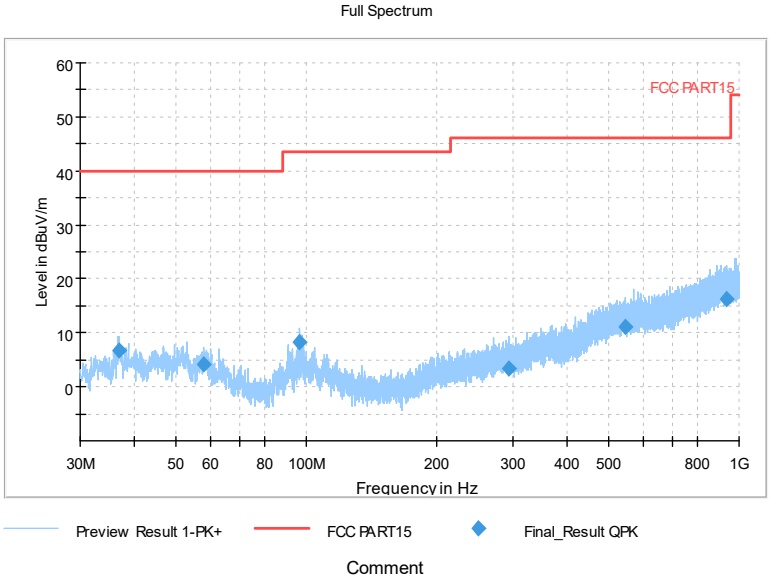
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK



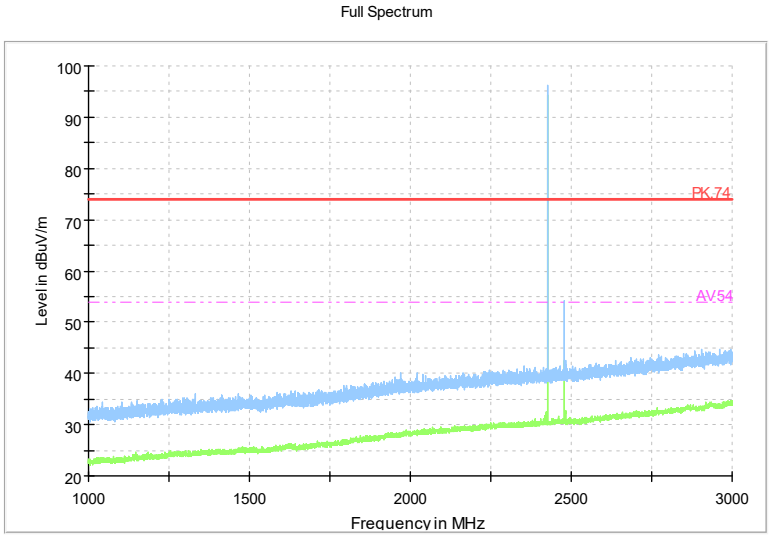
Frequency Range: 3GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: GFSK



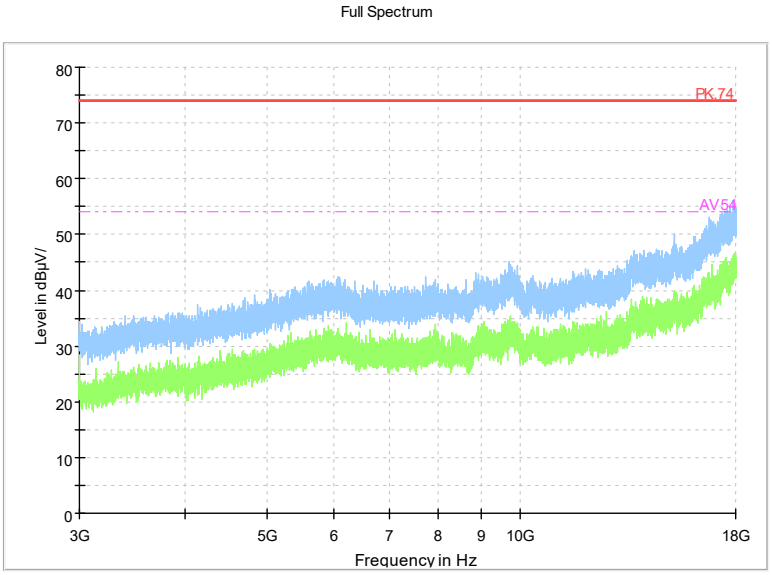
Frequency Range: 18GHz- 26GHz
Detector: Av mode and PK mode
Modulation type: GFSK



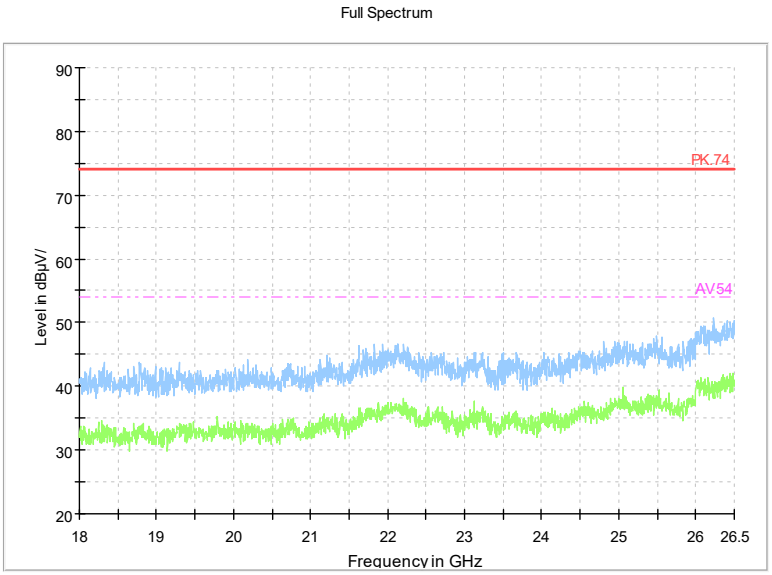
Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: π/4DQPSK



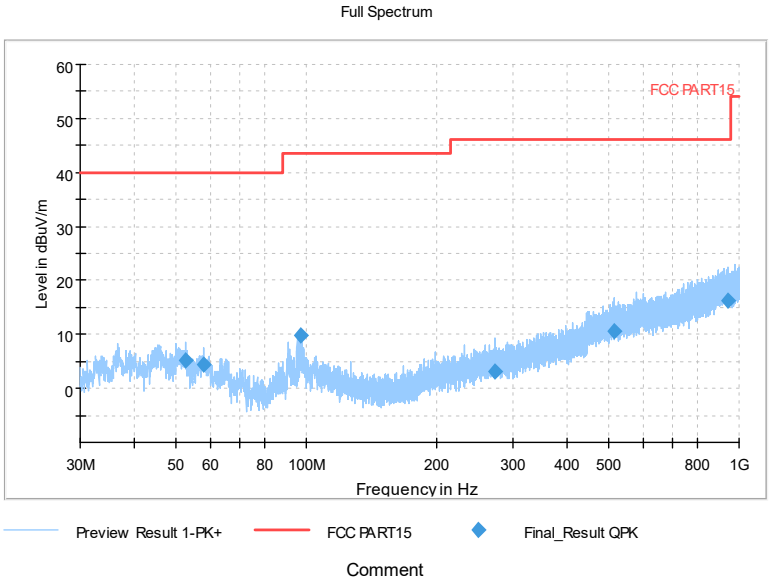
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



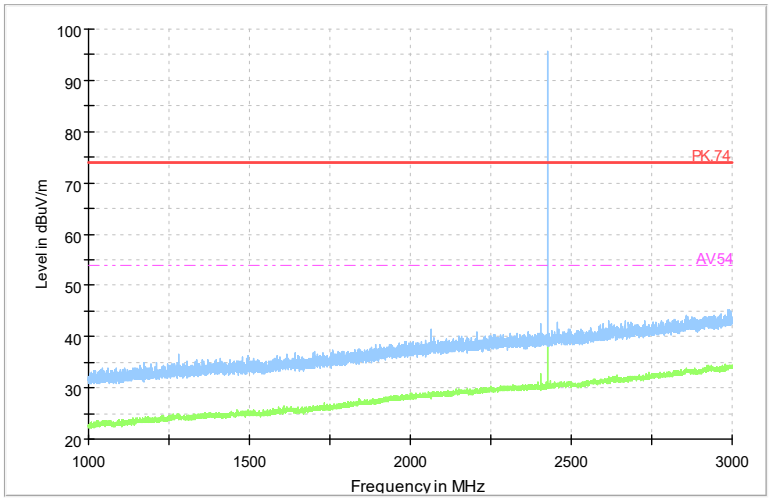
Frequency Range: 3GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



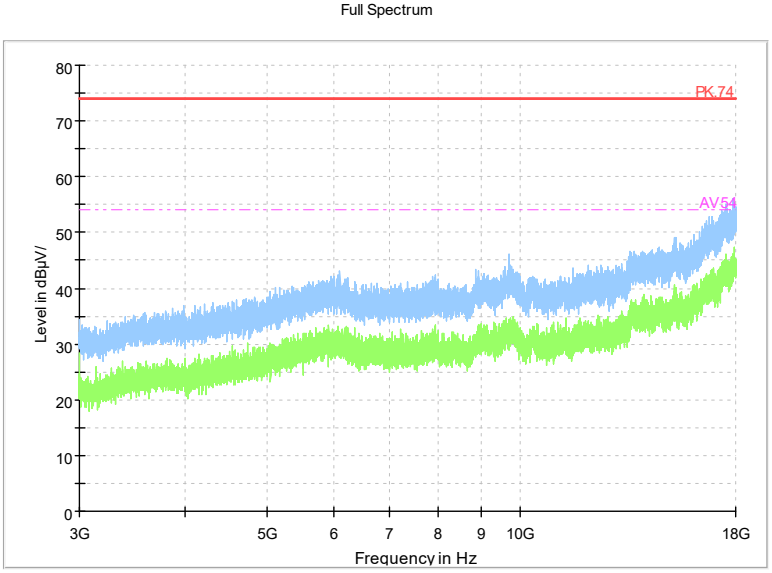
Frequency Range: 18GHz- 26GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



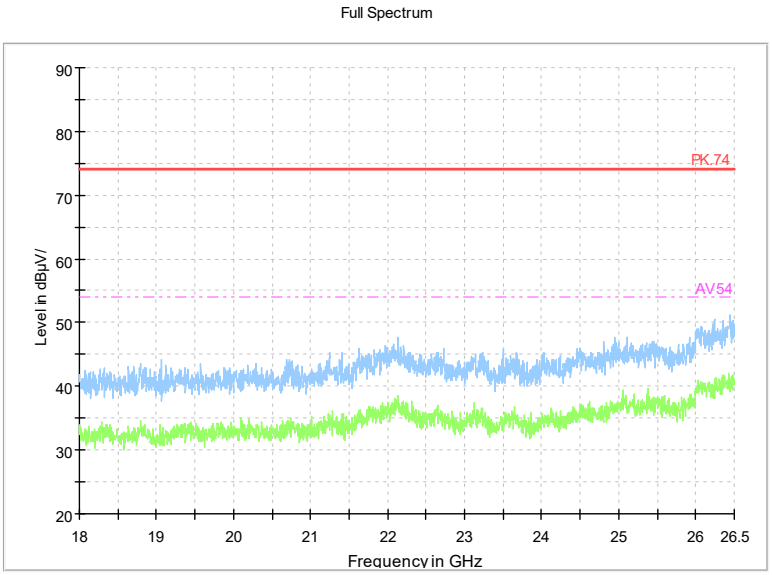
Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: 8DPSK



Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

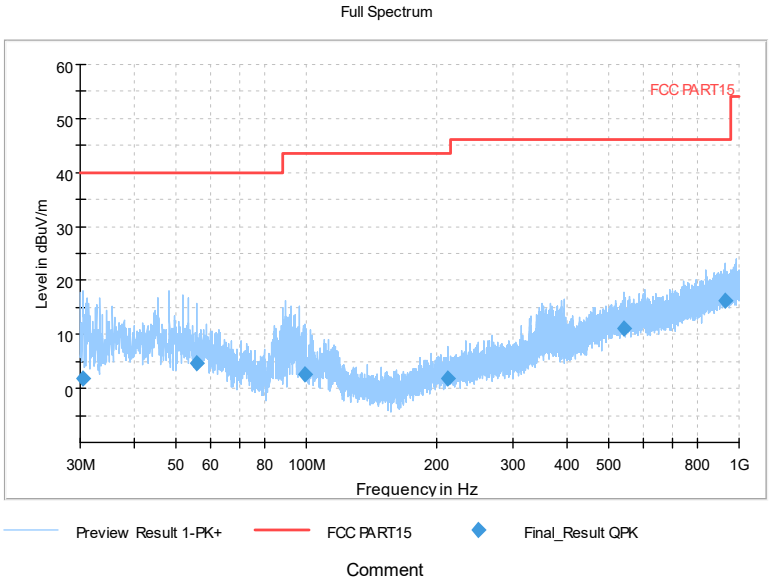


Frequency Range: 3GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

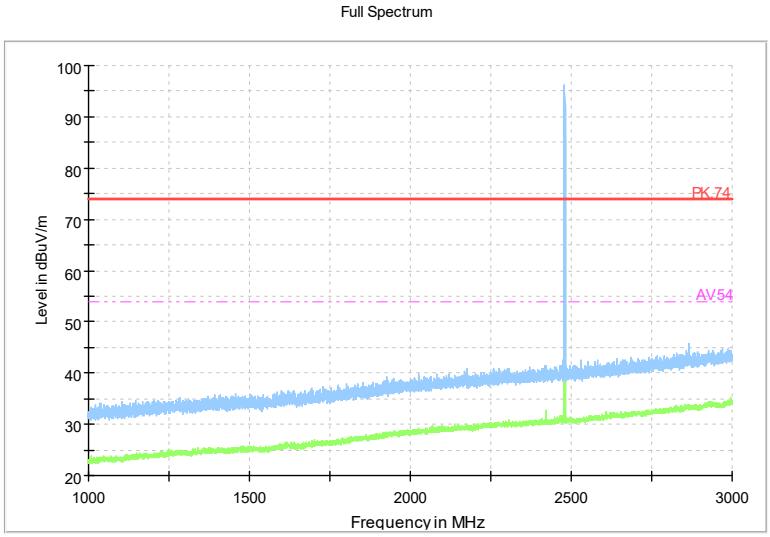


Frequency Range: 18GHz- 26GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

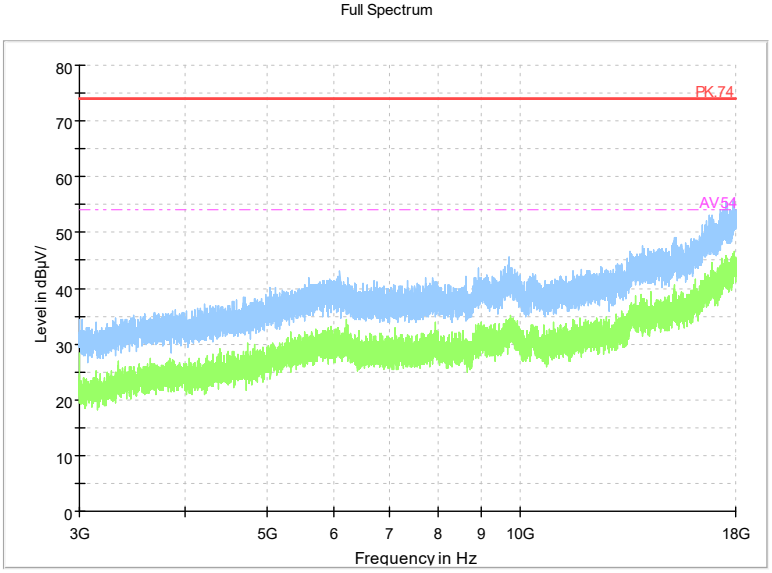
Carrier frequency (MHz): 2480
Channel No.:78



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

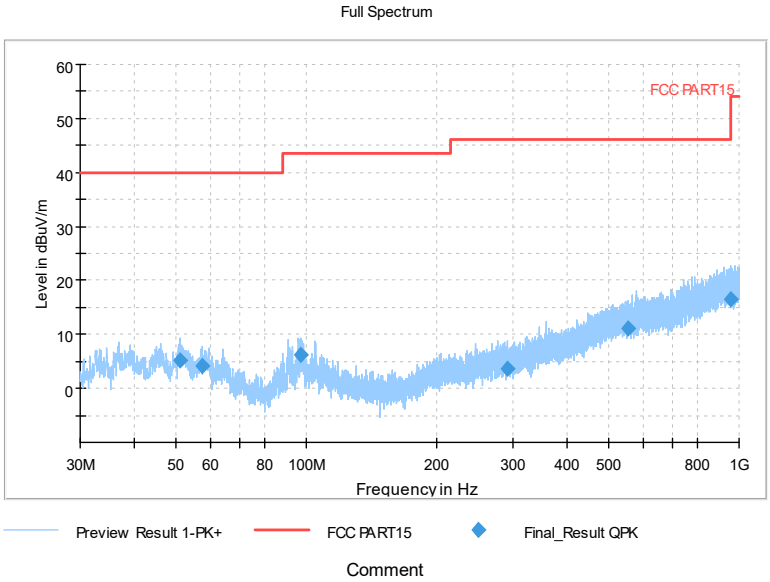


Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK

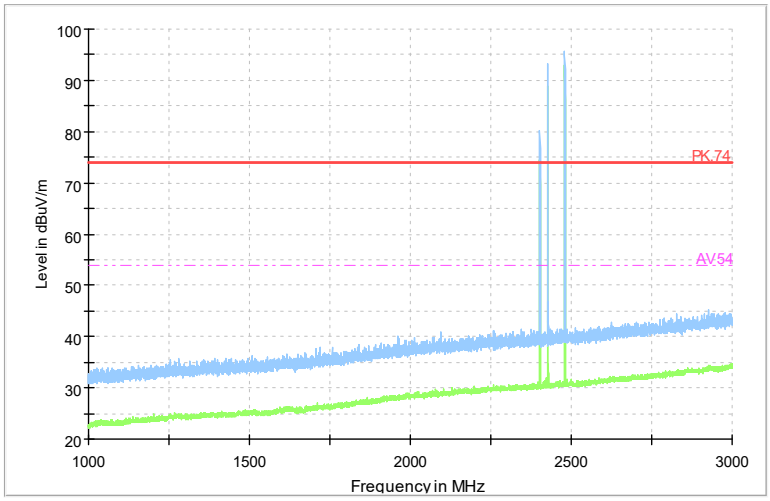


Frequency Range: 3GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: GFSK

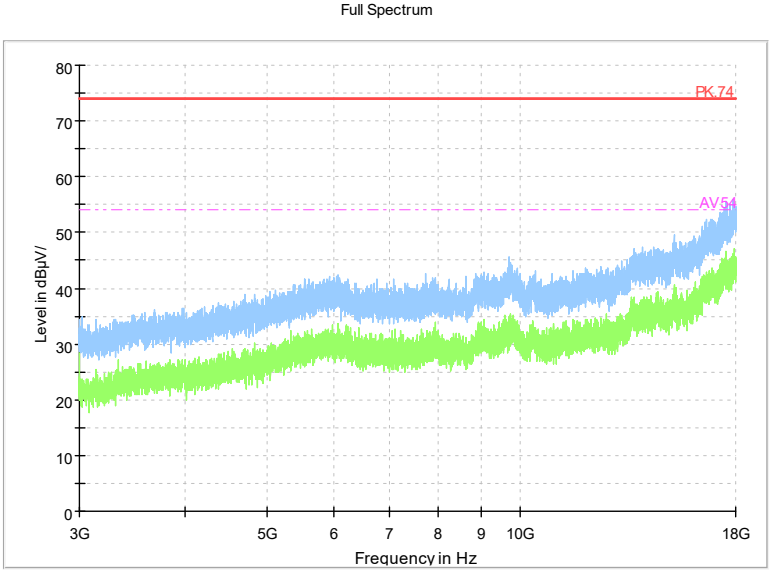
Frequency Range: 18GHz- 26GHz
Detector: Av mode and PK mode
Modulation type: GFSK



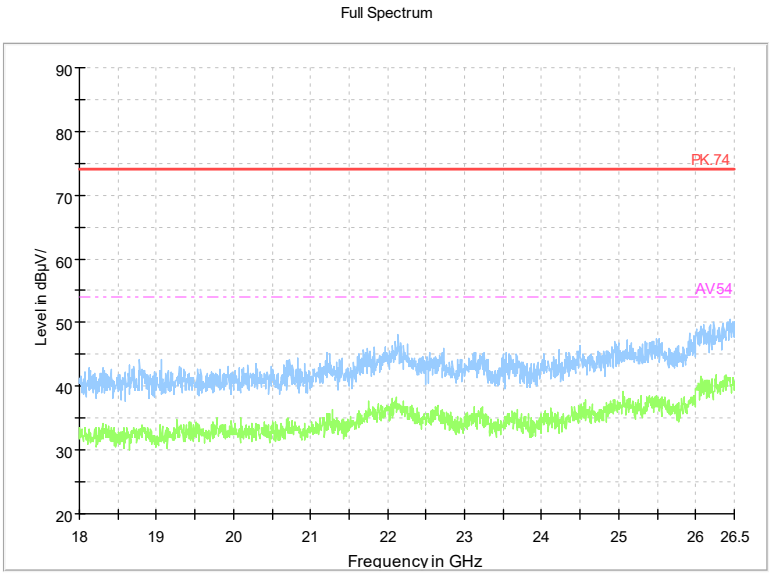
Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: π/4DQPSK



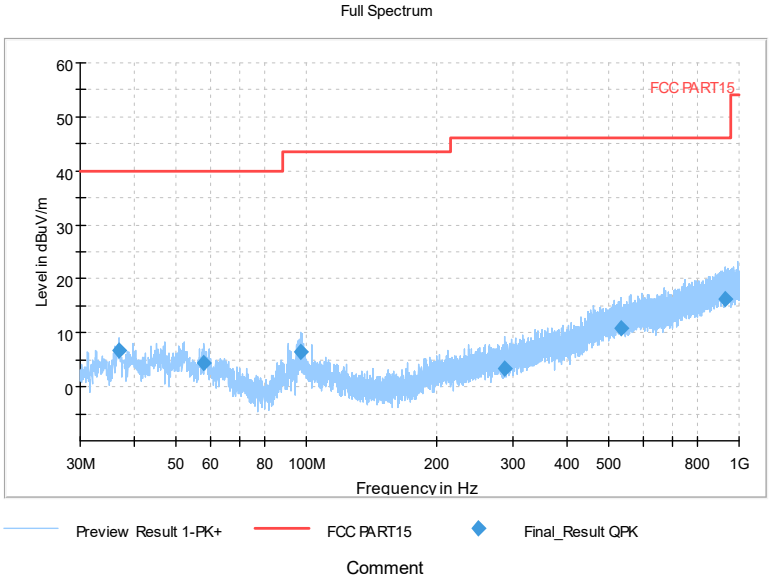
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



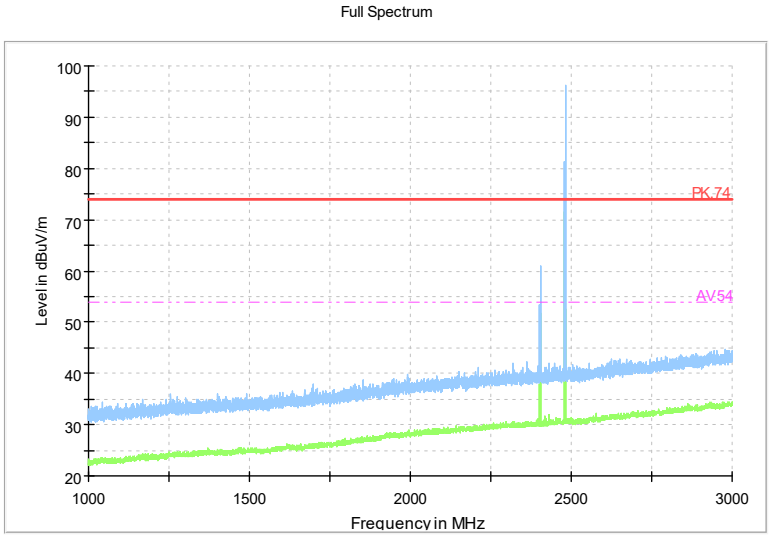
Frequency Range: 3GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



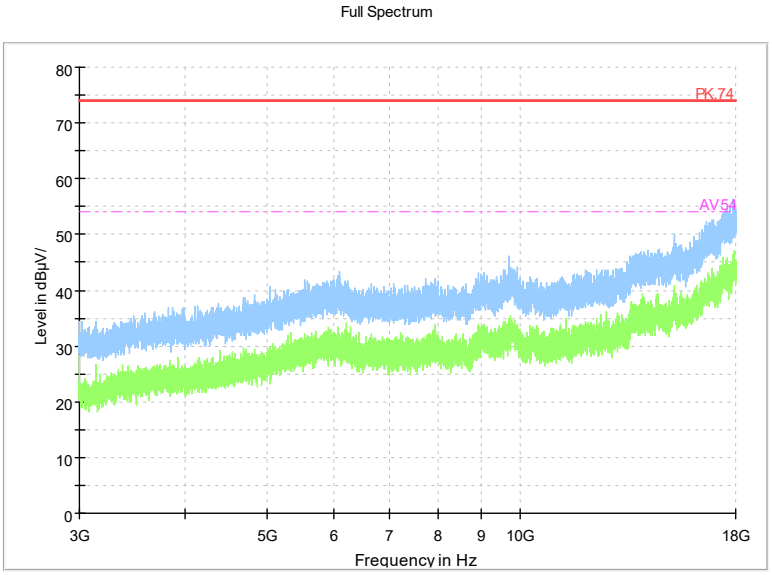
Frequency Range: 18GHz- 26GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



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



Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK



Frequency Range: 3GHz- 18GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

Frequency Range: 18GHz- 26GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

AC Power line Conducted Emission

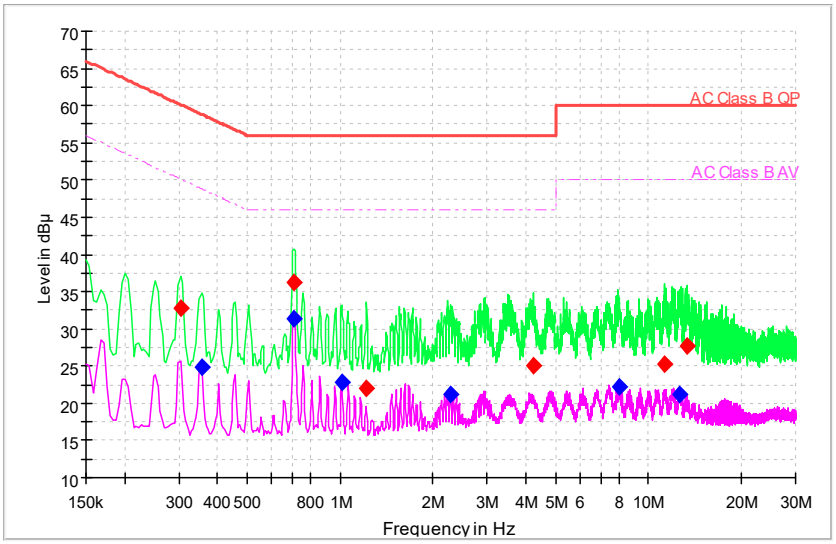
A “reference path loss” Corr.(dB) is established and the L_{cable}+ATT+VDF is the attenuation of ” reference path loss”, and including the cable loss, the attenuation of the attenuator, the voltage division factor of AMN.

The measurement results are obtained as described below:

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

Sample calculation: (32.86 dBμV) = (3.06 dBμV) + (29.8 dB), the corresponding frequency is 0.303514MHz.

Full Spectrum



Comment

L+N Line

MEASUREMENT RESULT:

Frequency (MHz)	Quasi Peak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	Pmea QuasiPeak (dBμV)	Pmea Average (dBμV)
0.303514	32.86	---	60.15	27.29	N	29.8	3.06	---
0.354686	---	24.78	48.85	24.07	L1	29.8	---	-5.02
0.708622	36.14	---	56.00	19.86	L1	29.8	6.34	---
0.708622	---	31.33	46.00	14.67	L1	29.8	---	1.53
1.011386	---	22.77	46.00	23.23	L1	29.8	---	-7.03
1.220336	22.06	---	56.00	33.94	L1	29.8	-7.74	---
2.282143	---	21.14	46.00	24.86	L1	29.9	---	-8.76
4.218129	24.96	---	56.00	31.04	L1	29.9	-4.94	---
8.081572	---	22.21	50.00	27.79	L1	30.0	---	-7.79
11.279786	25.34	---	60.00	34.66	L1	30.0	-4.66	---
12.597450	---	21.28	50.00	28.72	L1	30.0	---	-8.72
13.292529	27.62	---	60.00	32.38	L1	30.0	-2.38	---

---End of Test Report---