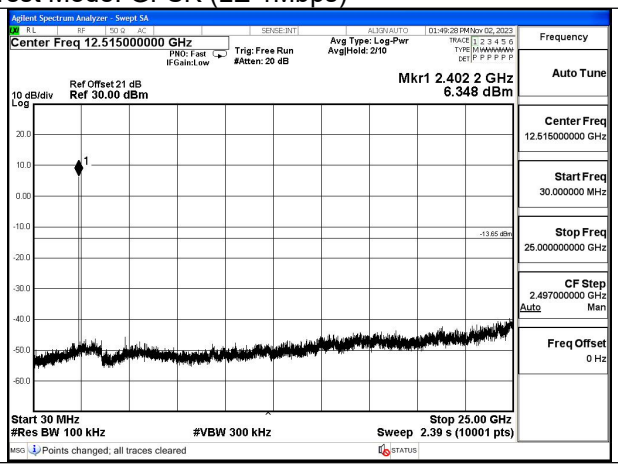
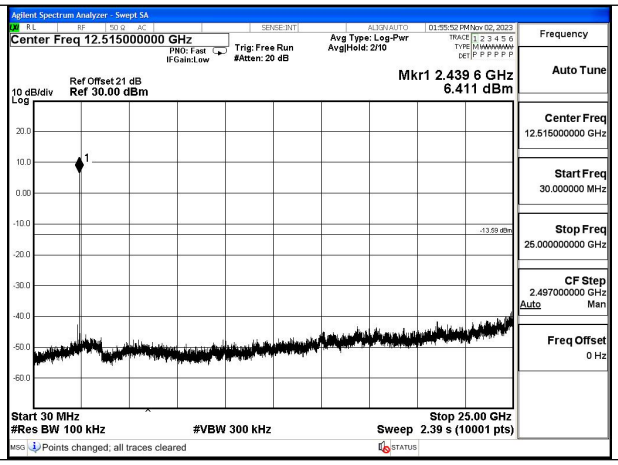
5 Conducted Out of band emission measurement

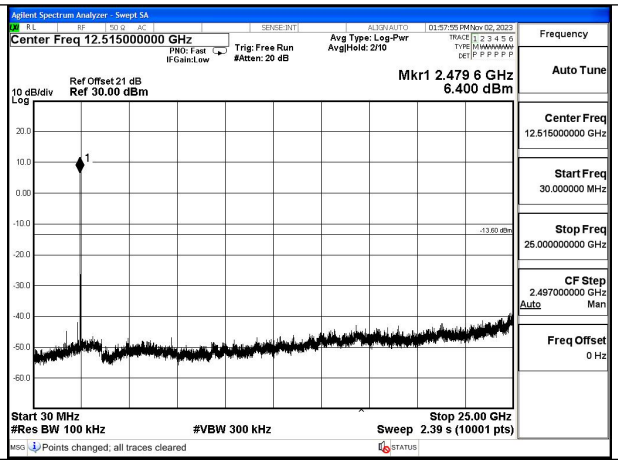
Test Mode: GFSK (LE 1Mbps)



CH0

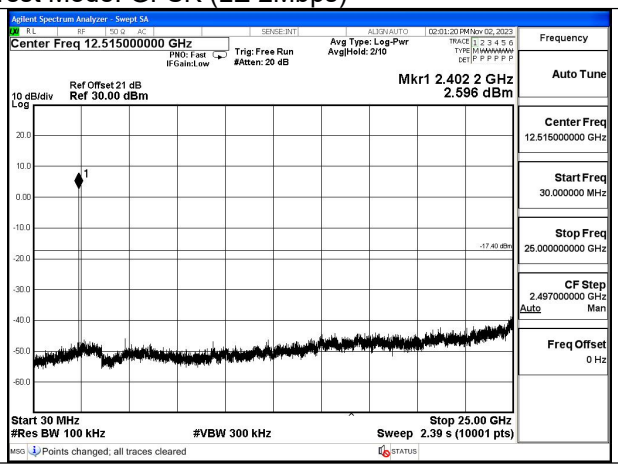


CH19

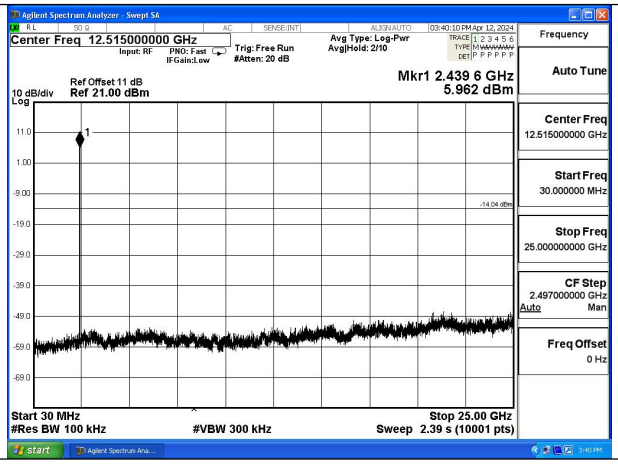


CH39

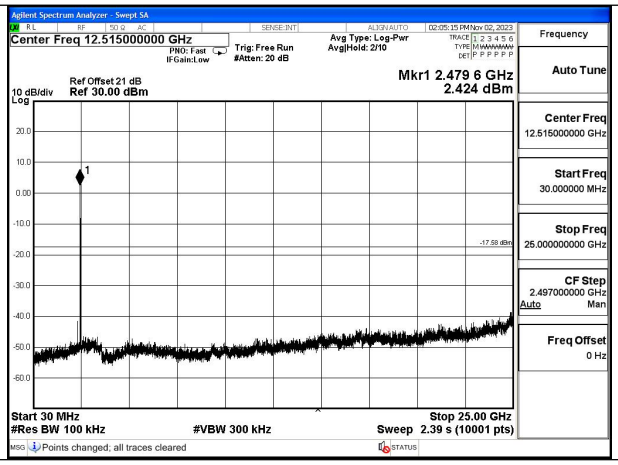
Test Mode: GFSK (LE 2Mbps)



CH0

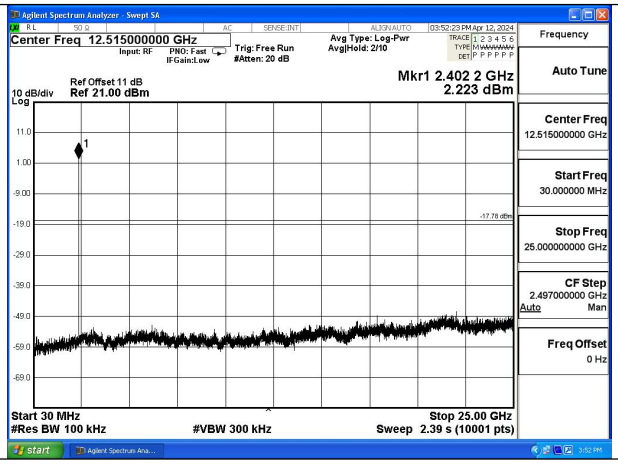


CH19

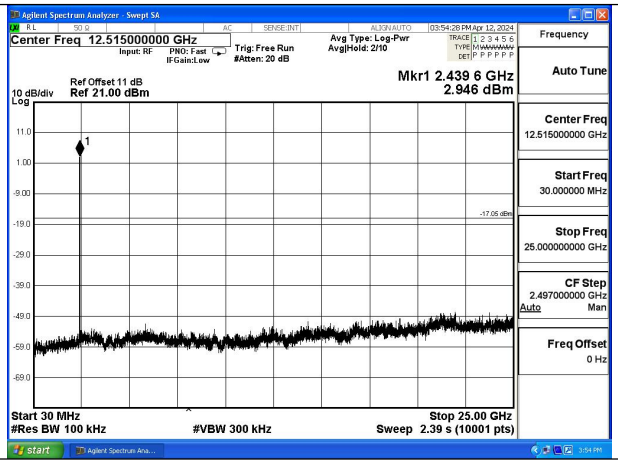


CH39

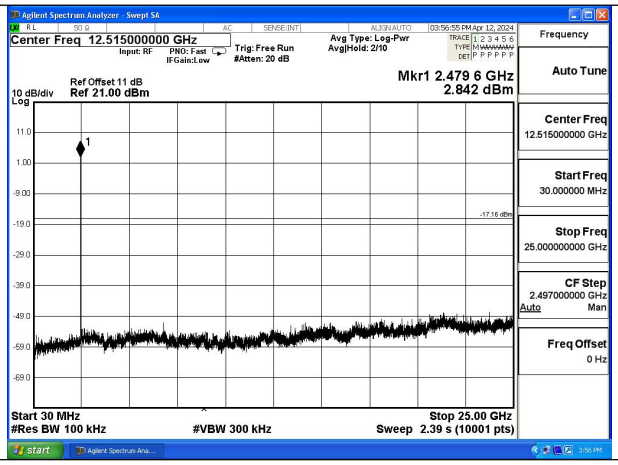
Test Mode: Coded 125K



CH0

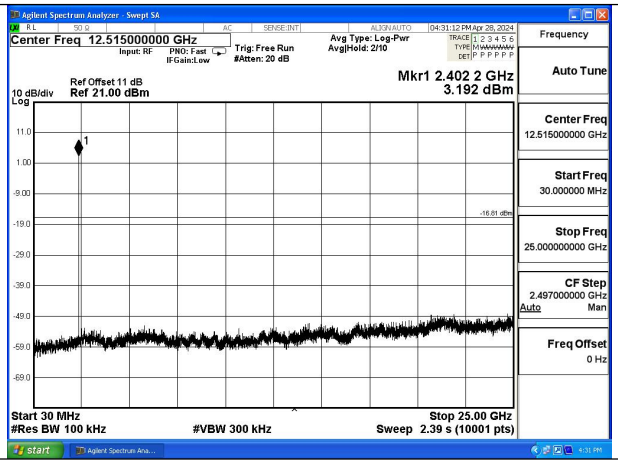


CH19

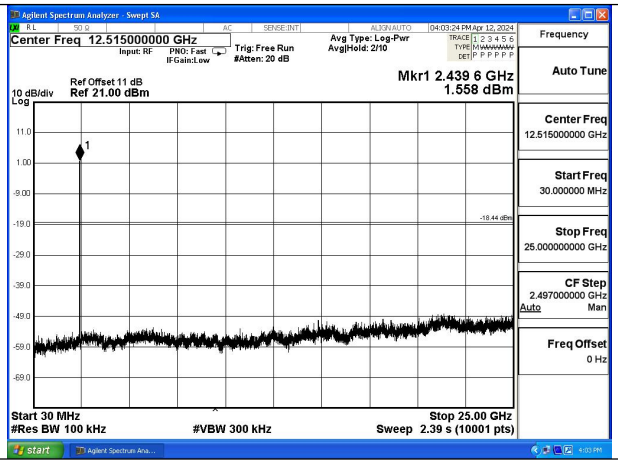


CH39

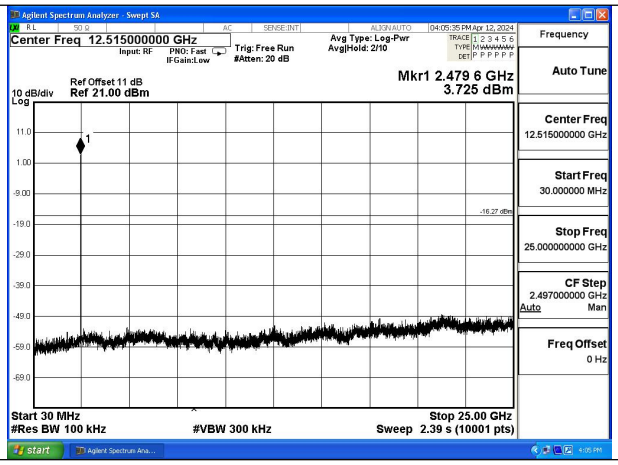
Test Mode: Coded 500K



CH0



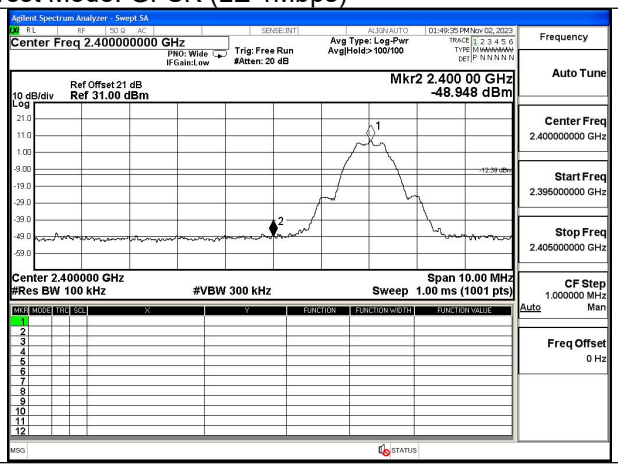
CH19



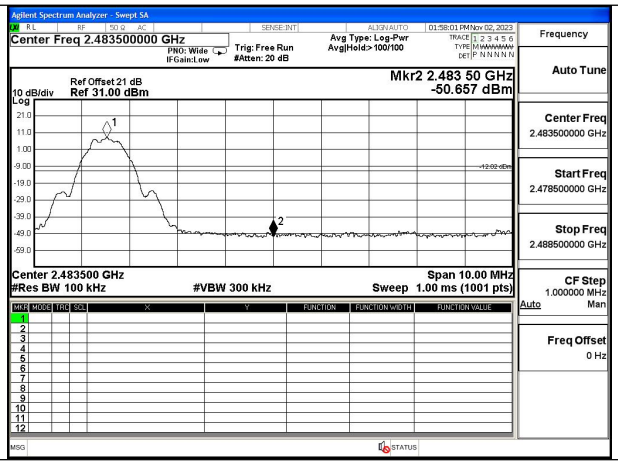
CH39

6 Band Edge measurement

Test Mode: GFSK (LE 1Mbps)

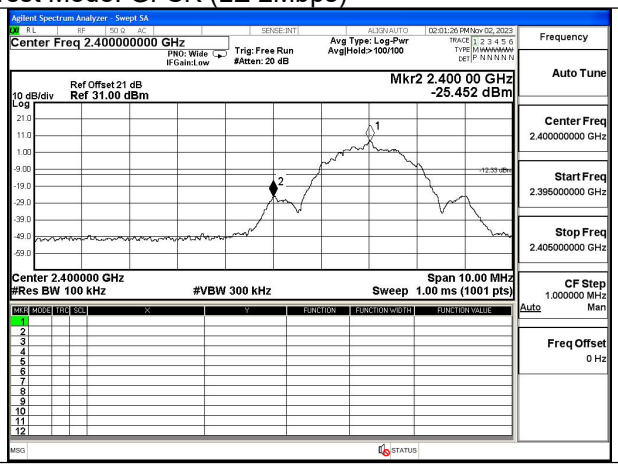


CH0

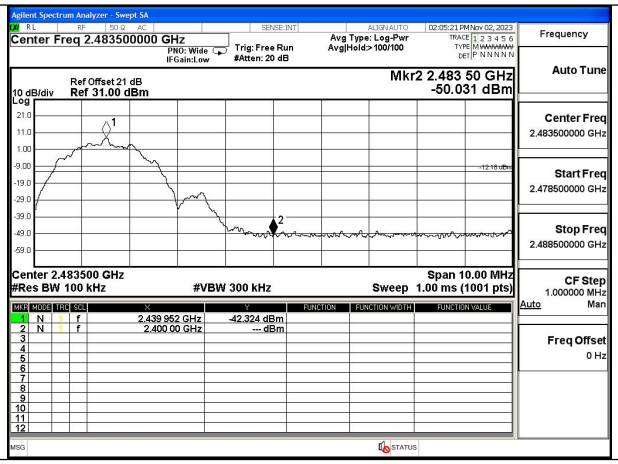


CH39

Test Mode: GFSK (LE 2Mbps)

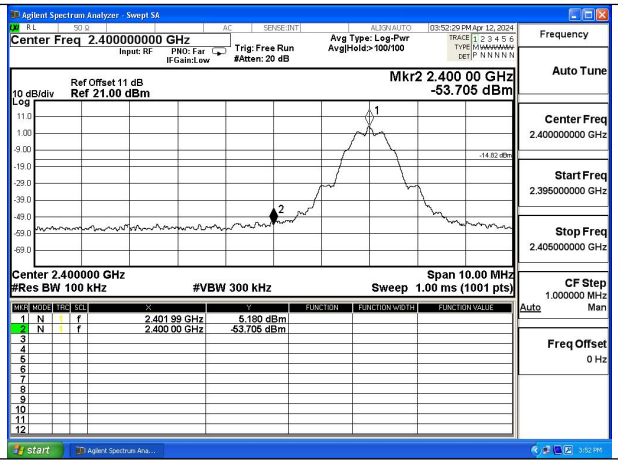


CH0

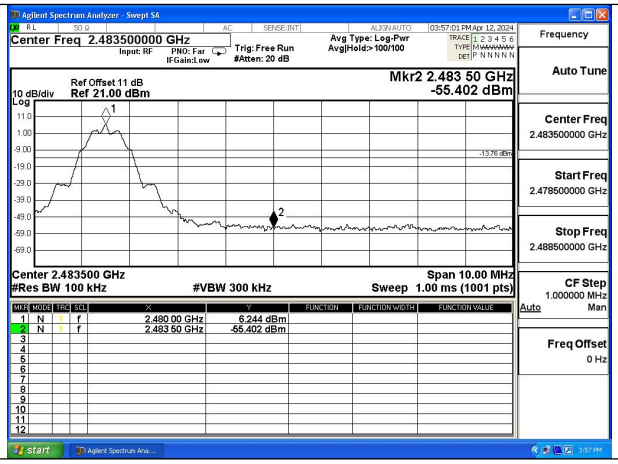


CH39

Test Mode: Coded 125K

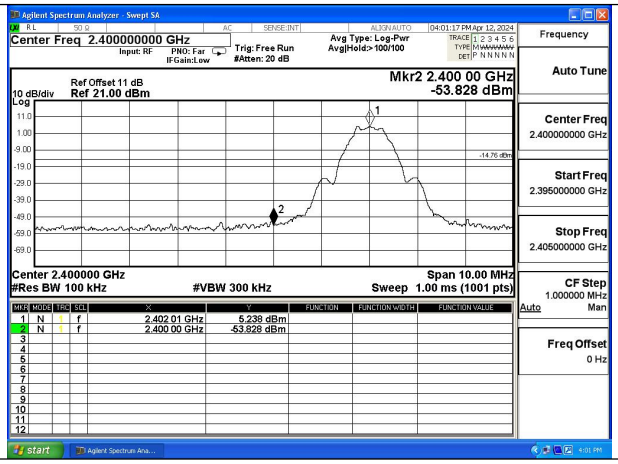
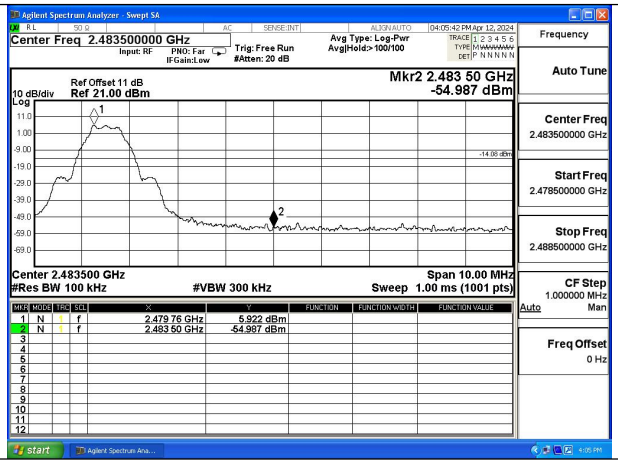


CH0



CH39

Test Mode: Coded 500K

	
CH0	CH39

APPENDIX B – TEST DATA OF RADIATED EMISSION

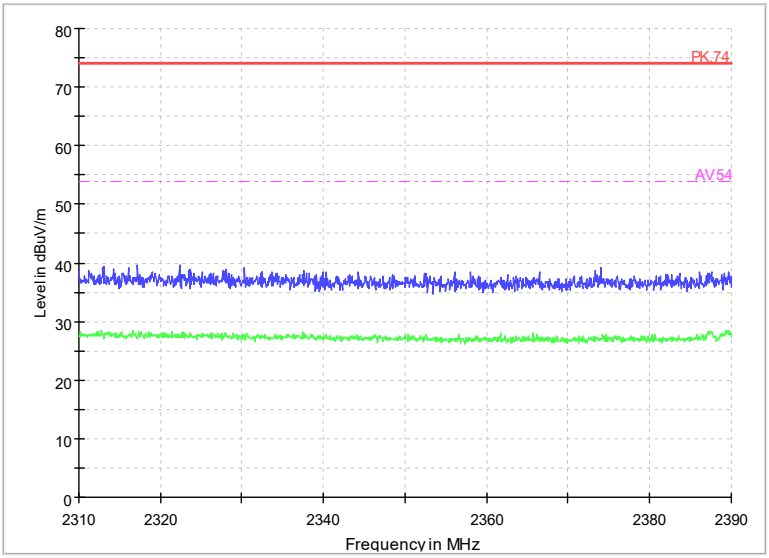
Note：The worst channel results are reflected in the report

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

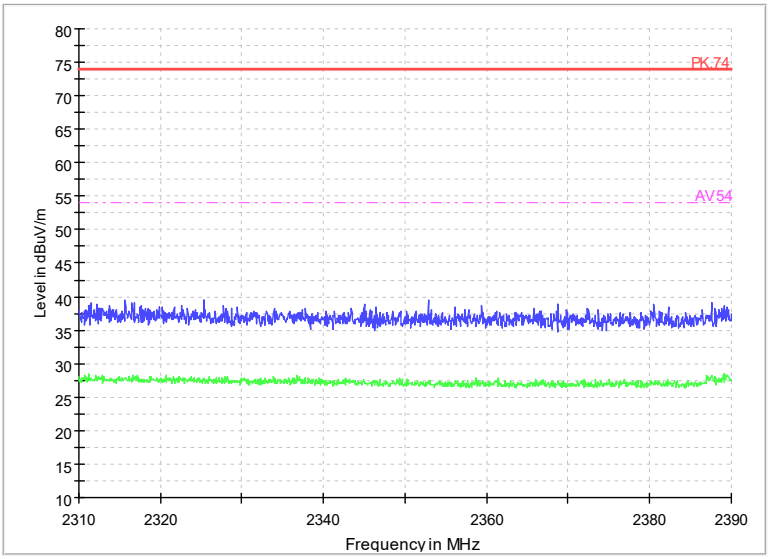
Radiated Emission Band Edge

Sample Calculations

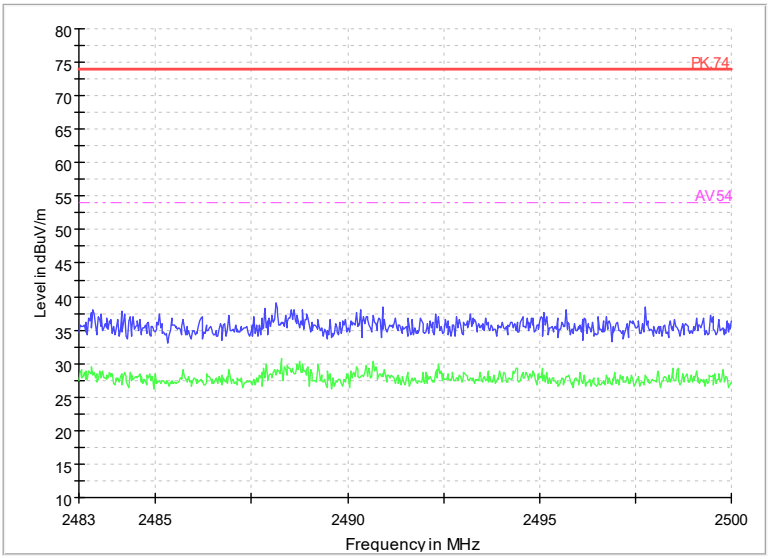
After comparison,the worst case attitude is EUT lay down.



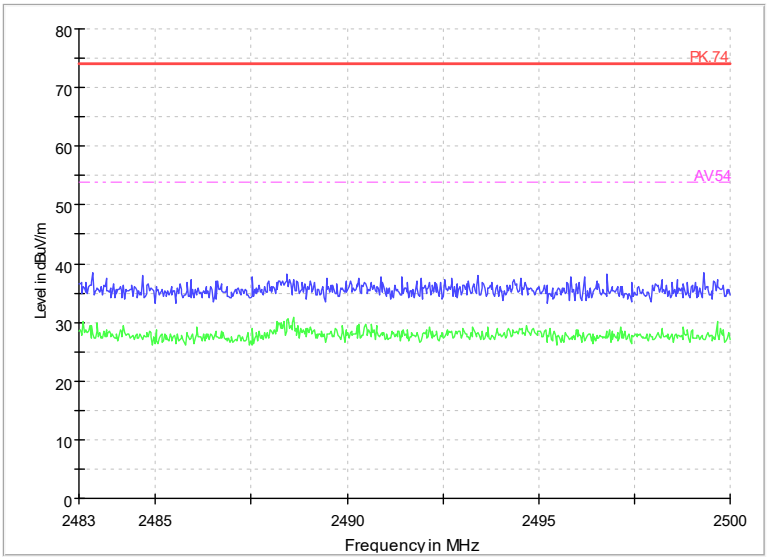
Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 1Mbps)
Polarity: Vertical



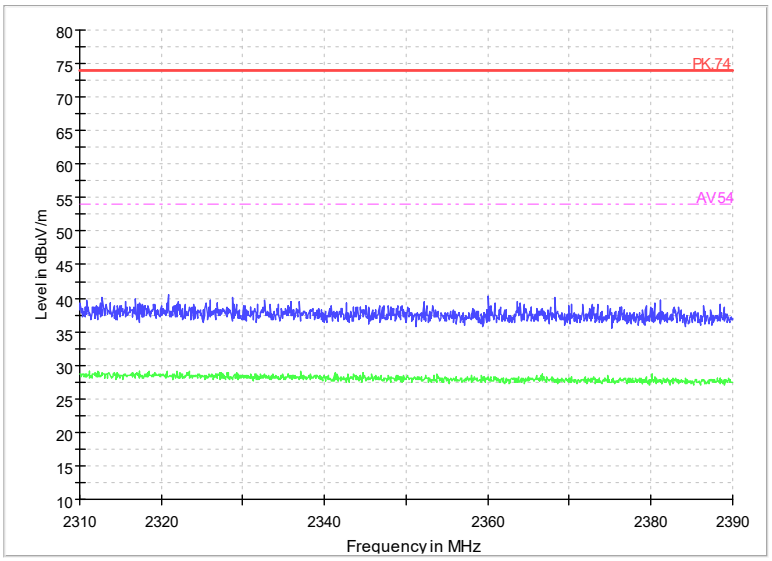
Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 1Mbps)
Polarity: Horizontal



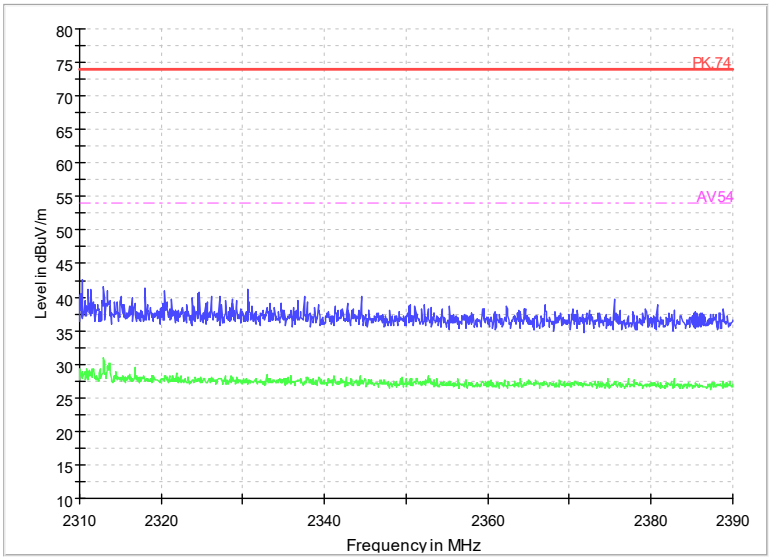
Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE 1Mbps)
Polarity: Vertical



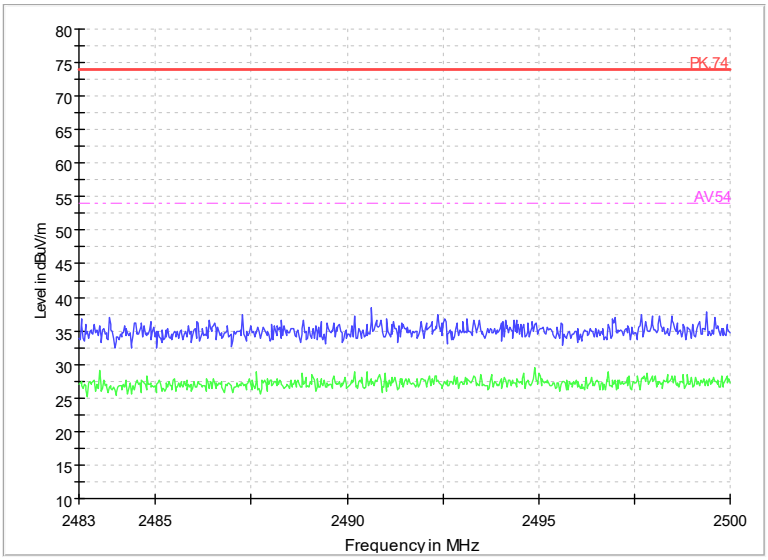
Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE 1Mbps)
Polarity: Horizontal



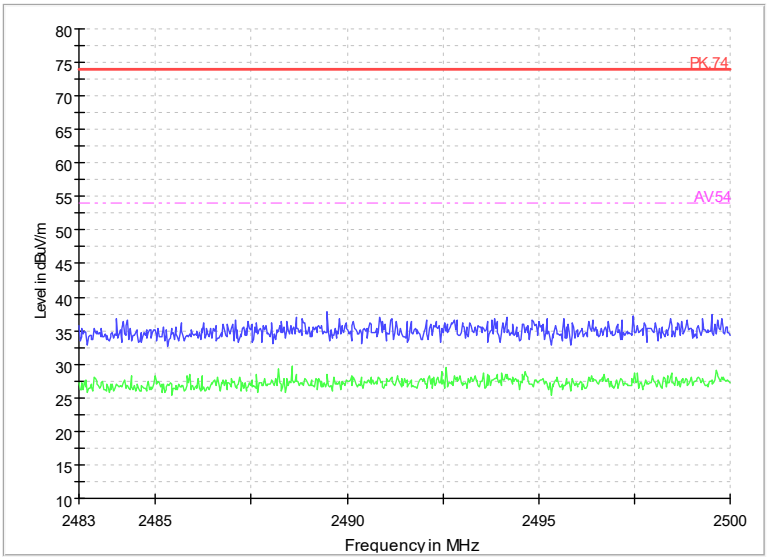
Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 2Mbps)
Polarity: Vertical



Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 2Mbps)
Polarity: Horizontal



Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE2Mbps)
Polarity: Vertical



Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE2Mbps)
Polarity: Horizontal

Test result

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

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:

Result= P_{mea}+ A_{Rpl}

Sample calculation: (24.78dBμV/m) = (44.08dBμV) + (-19.3dB/m), the corresponding frequency is36.014MHz.

For GFSK

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	24.78	-19.3	44.08	Vertical	40	15.22
84.126	26.06	-20.5	46.56	Vertical	40	13.94
149.989	15.46	-21.7	37.16	Vertical	43.5	28.04
299.9995	16.91	-15.8	32.71	Vertical	46	29.09
359.994	18.78	-14	32.78	Vertical	46	27.22
951.306	20.39	-2.8	23.19	Vertical	46	25.61

For π/4DQPSK

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	24.78	-19.3	44.08	Vertical	40	15.22
84.126	26.02	-20.5	46.52	Vertical	40	13.98
99.161	13.83	-18.7	32.53	Vertical	43.5	29.67
299.9995	16.8	-15.8	32.6	Vertical	46	29.2
359.994	18.75	-14	32.75	Vertical	46	27.25
935.592	20.43	-2.9	23.33	Vertical	46	25.57

For 8DPSK

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	24.76	-19.3	44.06	Vertical	40	15.24
84.1745	28.13	-20.5	48.63	Vertical	40	11.87
149.989	15.02	-21.7	36.72	Vertical	43.5	28.48
299.9995	16.66	-15.8	32.46	Vertical	46	29.34
359.994	18.73	-14	32.73	Vertical	46	27.27
930.5965	20.41	-3	23.41	Vertical	46	25.59

For GFSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	24.76	-19.3	44.06	Vertical	40	15.24
84.126	26.02	-20.5	46.52	Vertical	40	13.98
99.161	13.78	-18.7	32.48	Vertical	43.5	29.72
299.9995	16.83	-15.8	32.63	Vertical	46	29.17
537.8435	13.4	-9.7	23.1	Vertical	46	32.6
922.2545	20.22	-3.1	23.32	Vertical	46	25.78

For π/4DQPSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	24.8	-19.3	44.1	Vertical	40	15.2
84.1745	28.31	-20.5	48.81	Vertical	40	11.69
149.989	15.57	-21.7	37.27	Vertical	43.5	27.93
299.9995	16.97	-15.8	32.77	Vertical	46	29.03
359.994	18.82	-14	32.82	Vertical	46	27.18
926.5225	20.35	-3	23.35	Vertical	46	25.65

For 8DPSK
Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	24.81	-19.3	44.11	Vertical	40	15.19
84.1745	28.38	-20.5	48.88	Vertical	40	11.62
149.989	15.75	-21.7	37.45	Vertical	43.5	27.75
299.9995	17.05	-15.8	32.85	Vertical	46	28.95
359.994	18.83	-14	32.83	Vertical	46	27.17
852.172	18.95	-4.1	23.05	Vertical	46	27.05

For GFSK
Channel No.:78

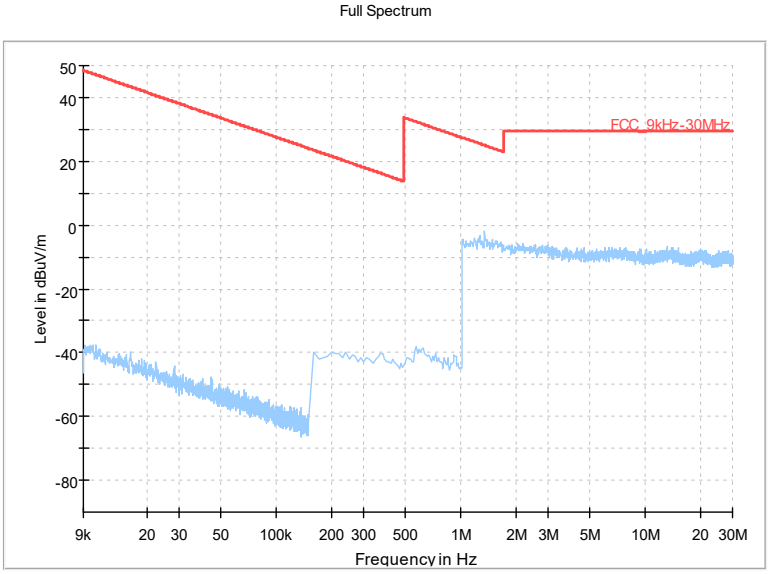
Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	24.81	-19.3	44.11	Vertical	40	15.19
84.126	26.16	-20.5	46.66	Vertical	40	13.84
149.989	15.8	-21.7	37.5	Vertical	43.5	27.7
299.9995	17.06	-15.8	32.86	Vertical	46	28.94
359.994	18.85	-14	32.85	Vertical	46	27.15
958.6295	20.31	-2.7	23.01	Vertical	46	25.69

For π/4DQPSK
Channel No.:78

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	24.79	-19.3	44.09	Vertical	40	15.21
84.1745	28.39	-20.5	48.89	Vertical	40	11.61
149.989	15.78	-21.7	37.48	Vertical	43.5	27.72
300.5815	12.66	-15.8	28.46	Vertical	46	33.34
359.994	18.84	-14	32.84	Vertical	46	27.16
906.492	19.89	-3.3	23.19	Vertical	46	26.11

For 8DPSK
Channel No.:78

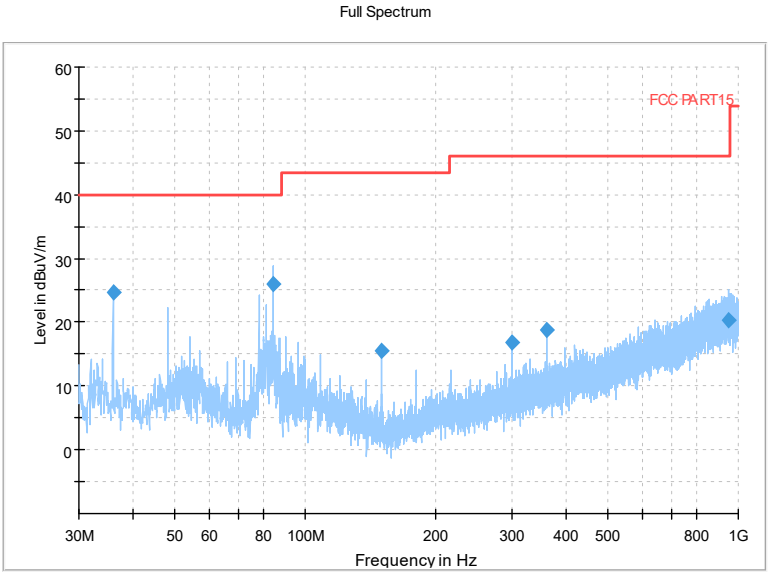
Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
36.014	24.79	-19.3	44.09	Vertical	40	15.21
84.126	26.15	-20.5	46.65	Vertical	40	13.85
99.161	13.81	-18.7	32.51	Vertical	43.5	29.69
299.9995	17.05	-15.8	32.85	Vertical	46	28.95
359.994	18.83	-14	32.83	Vertical	46	27.17
943.8855	20.46	-2.9	23.36	Vertical	46	25.54



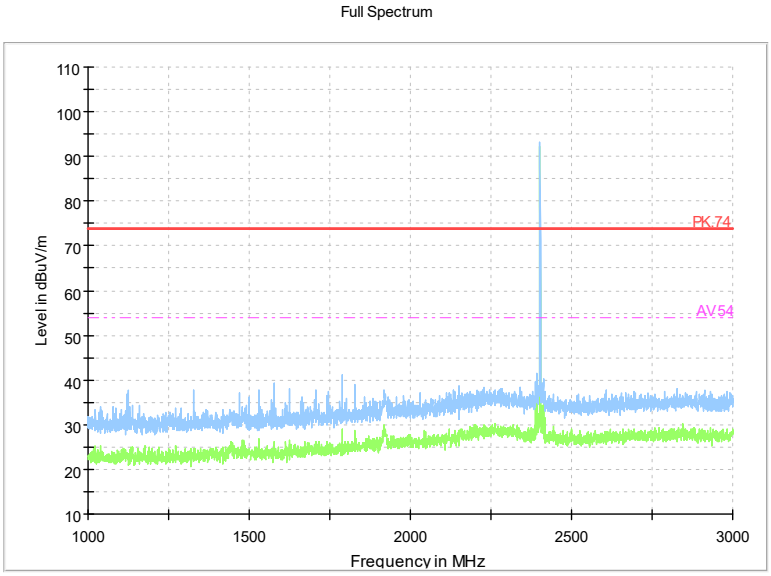
Frequency Range: 9kHz -30MHz
Detector: QP mode

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

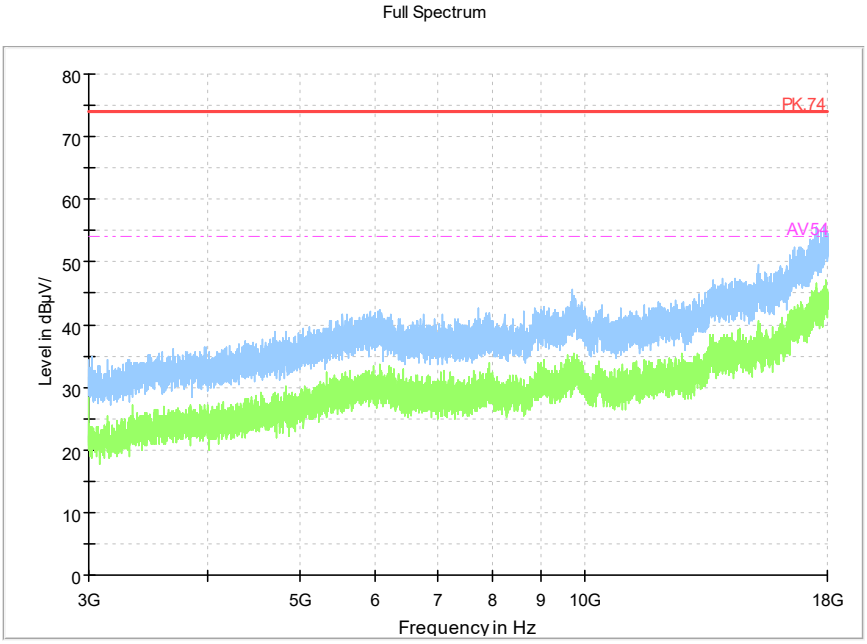
Carrier frequency (MHz): 2402
Channel No.:0



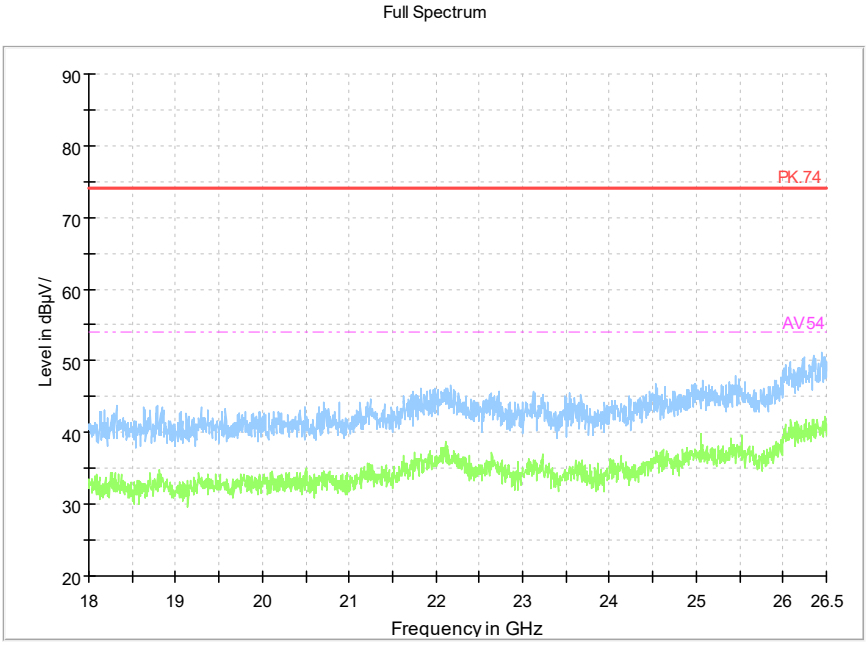
Frequency Range:30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK



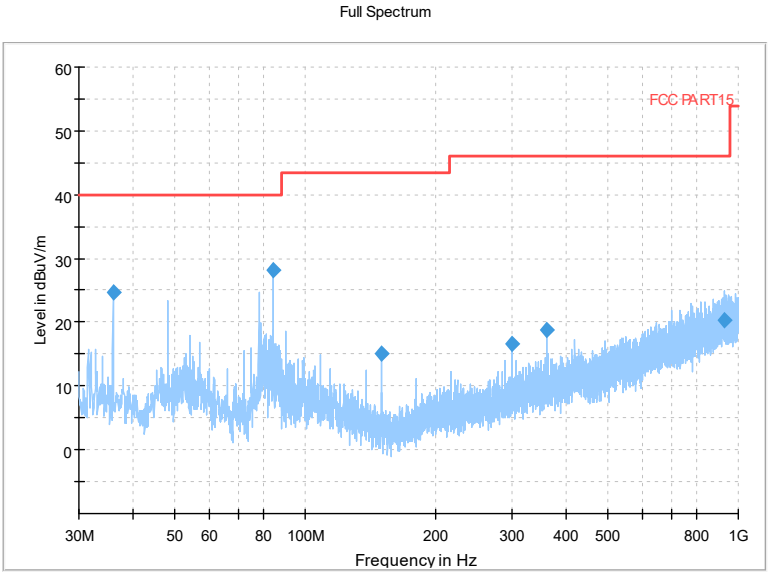
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK



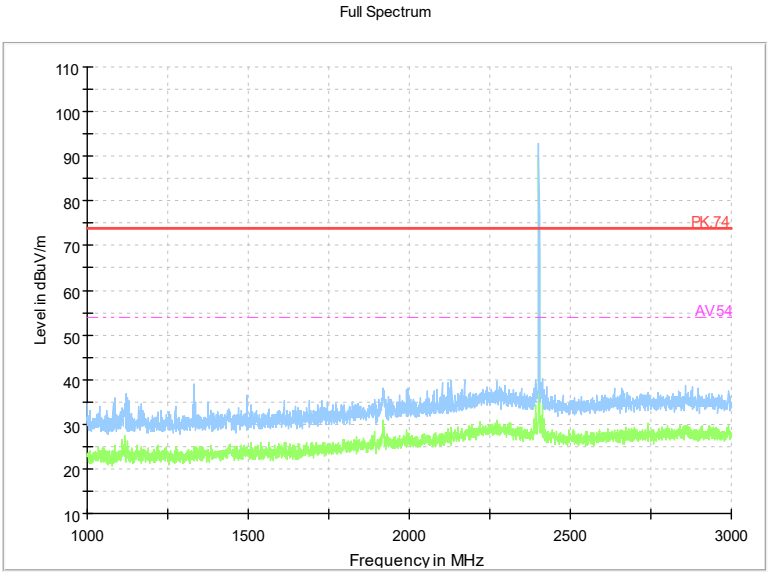
Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK



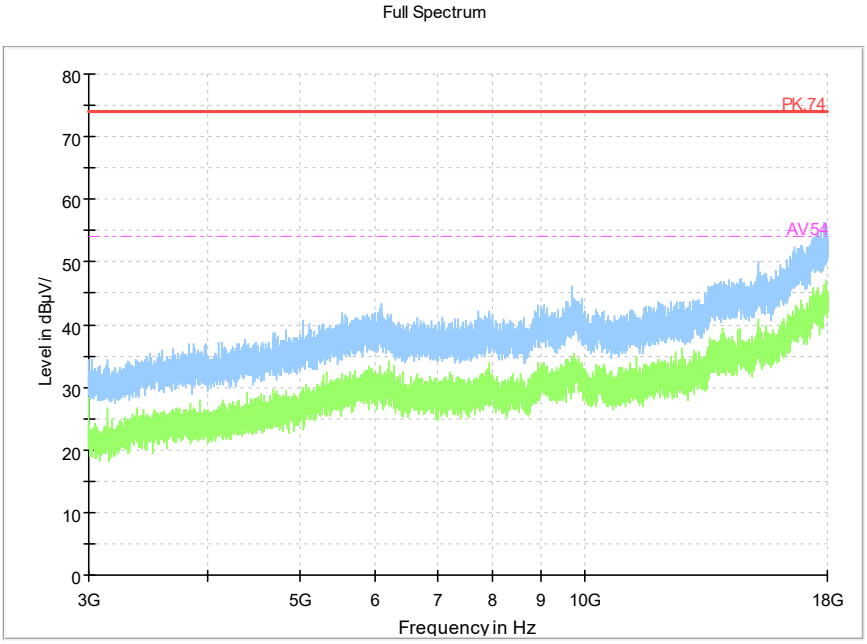
Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK



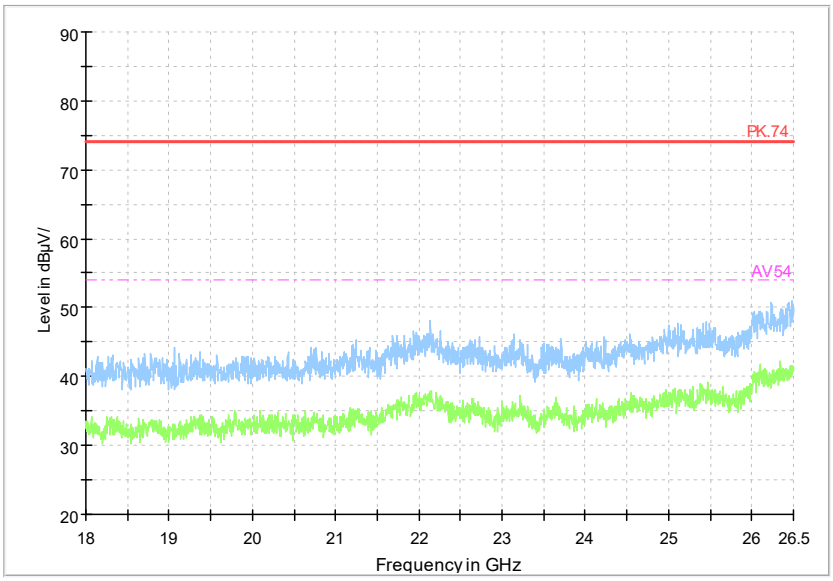
Frequency Range:30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



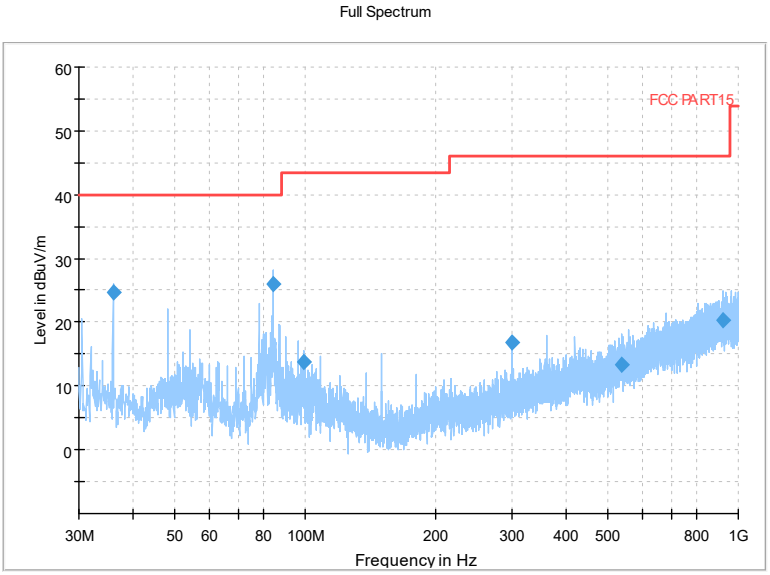
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



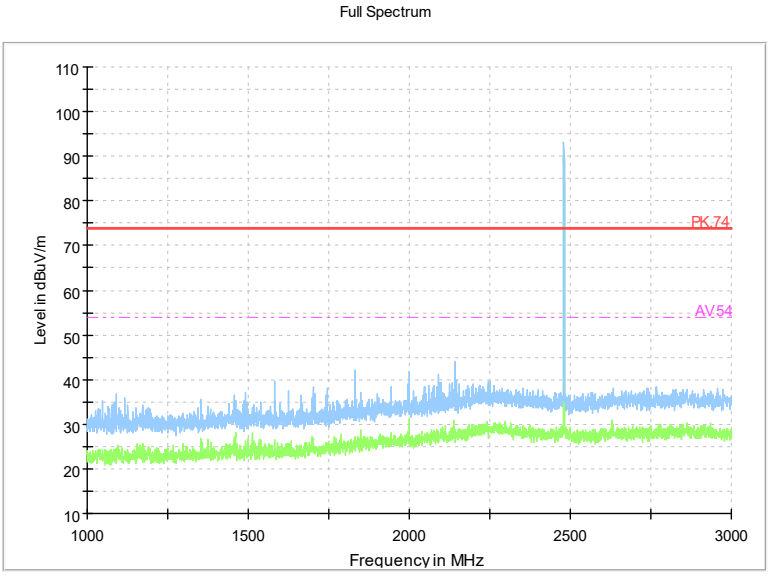
Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



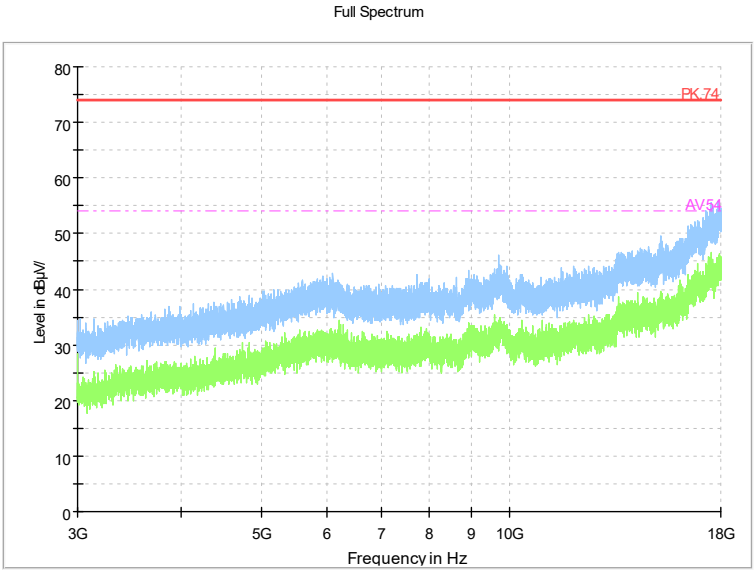
Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



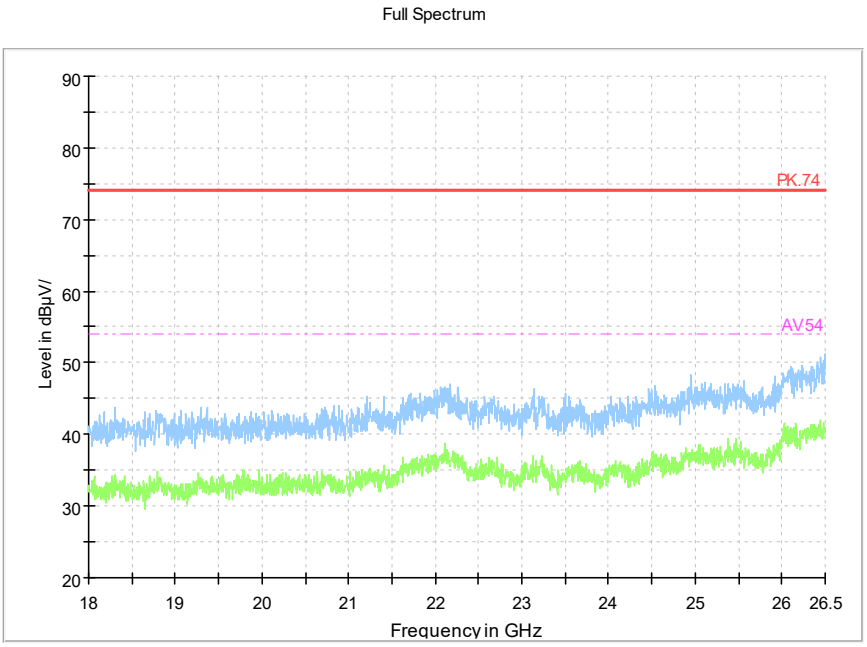
Frequency Range:30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK



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

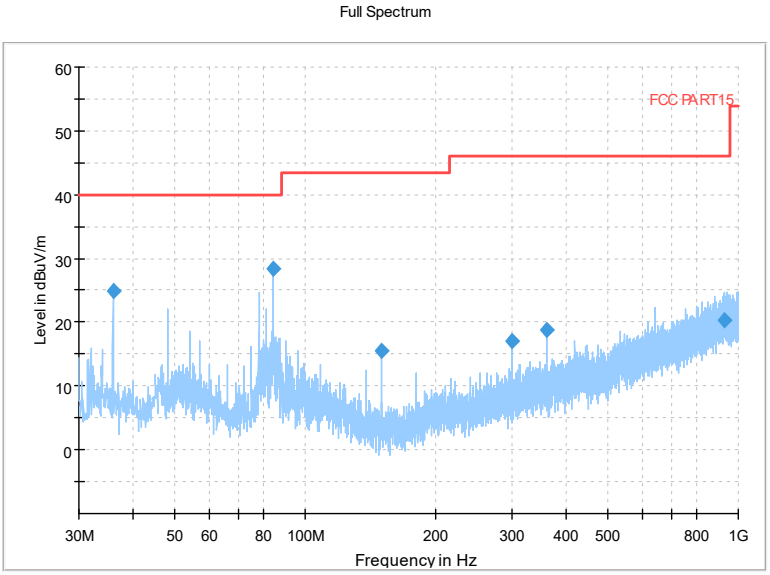


Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

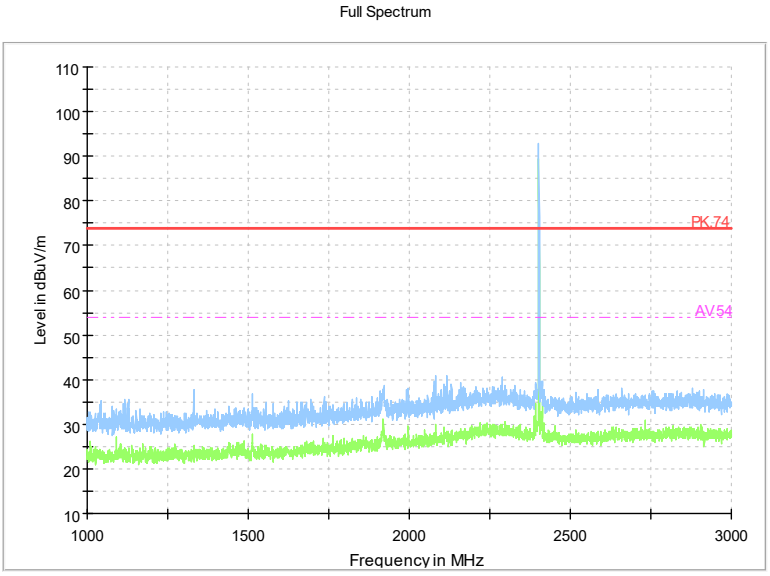


Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

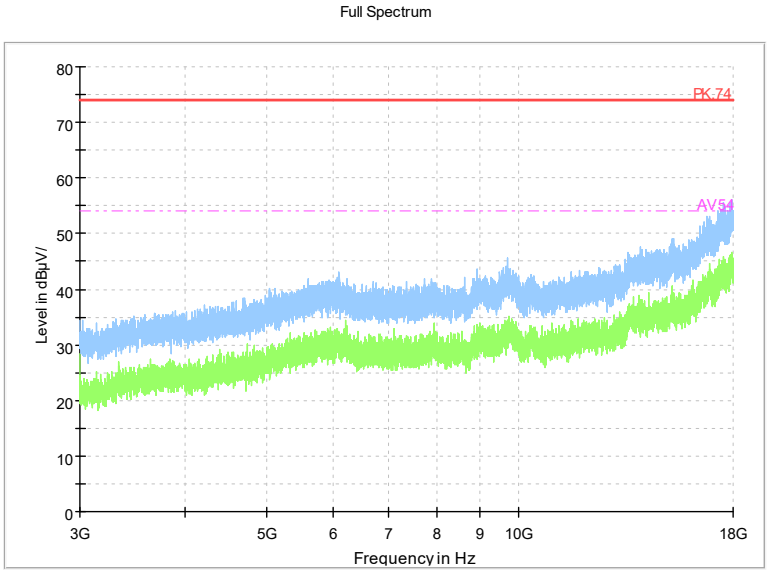
Carrier frequency (MHz): 2440
Channel No.:39



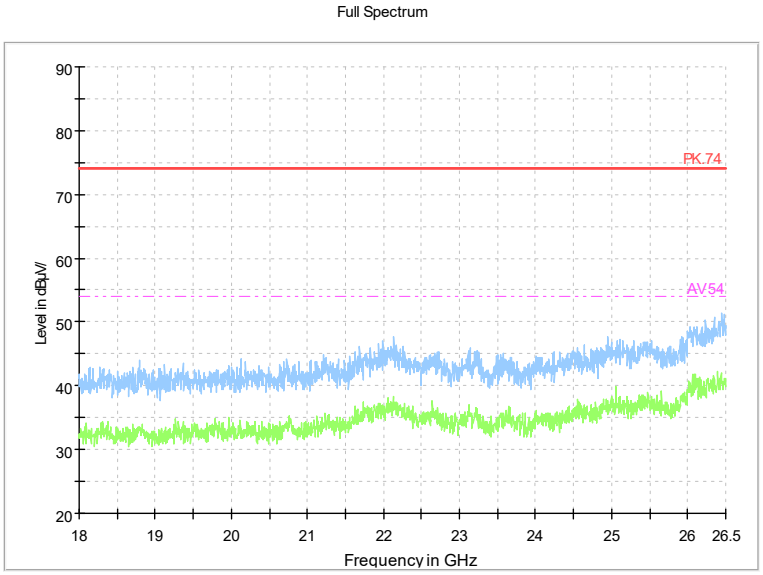
Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK



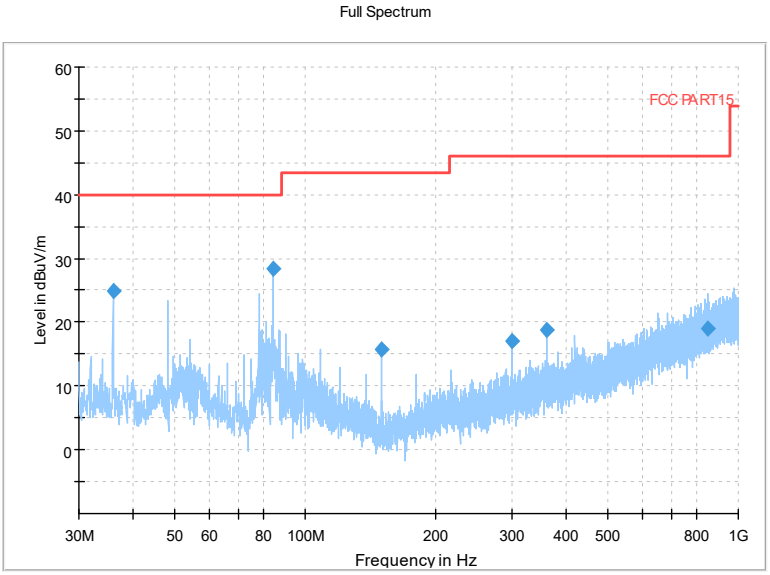
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK



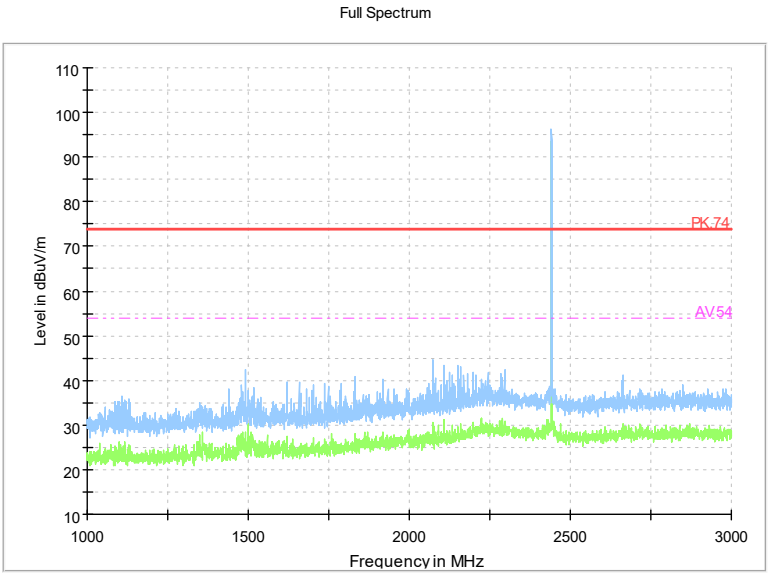
Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK



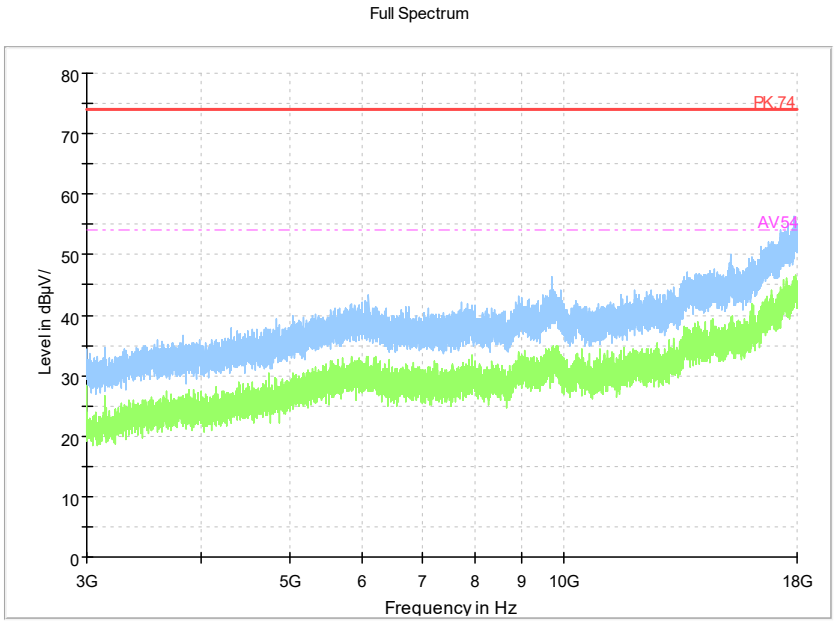
Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK



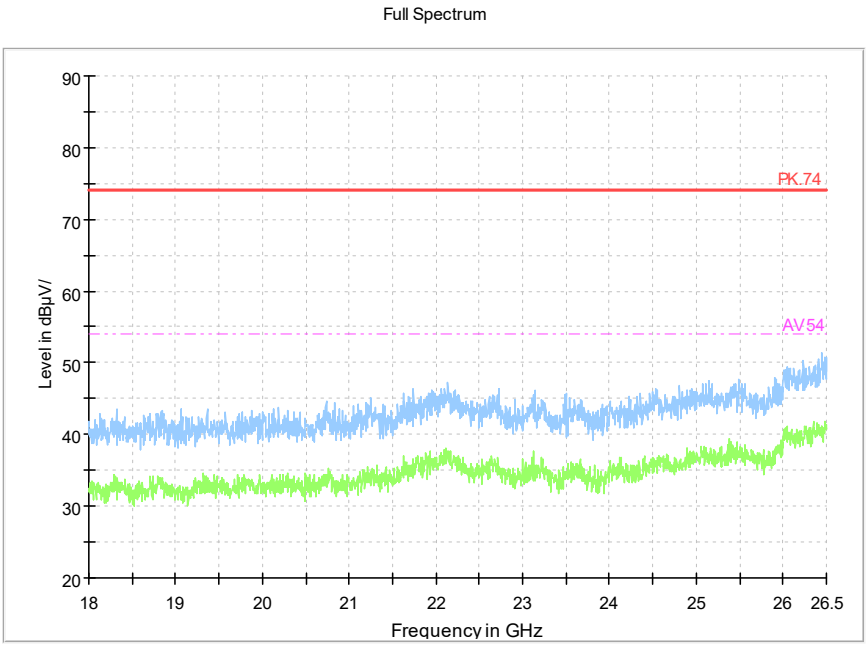
Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



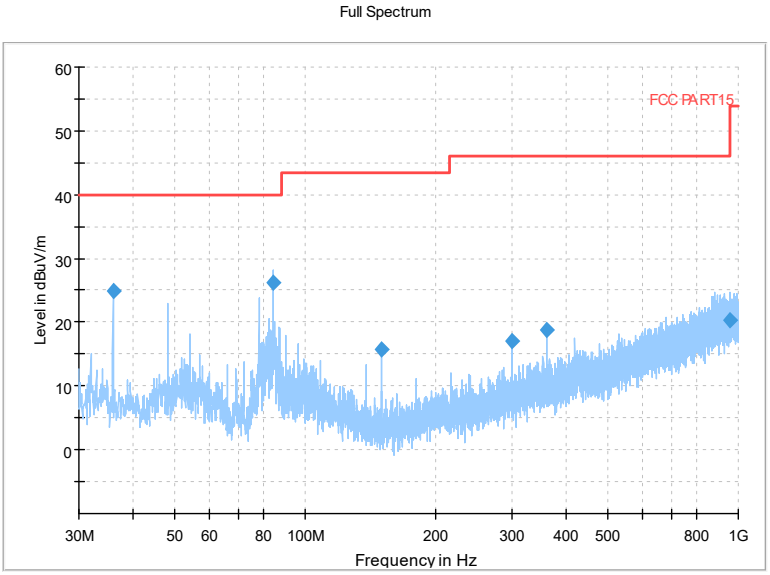
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



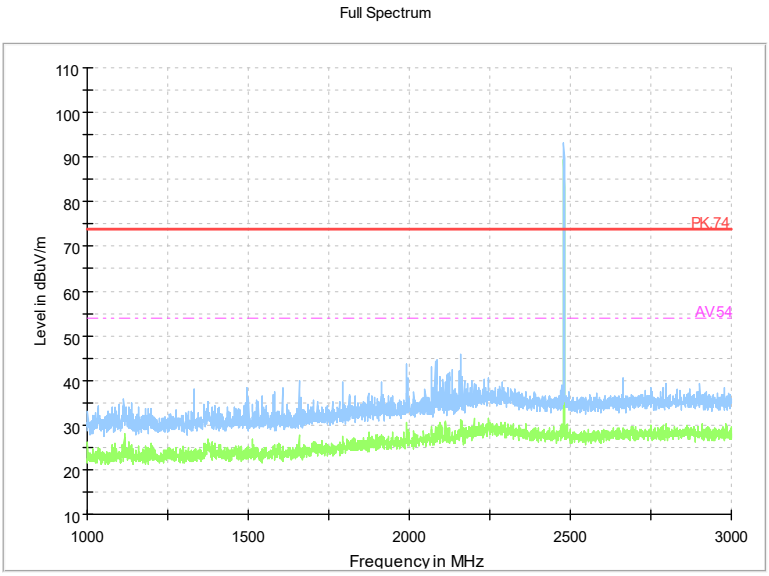
Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



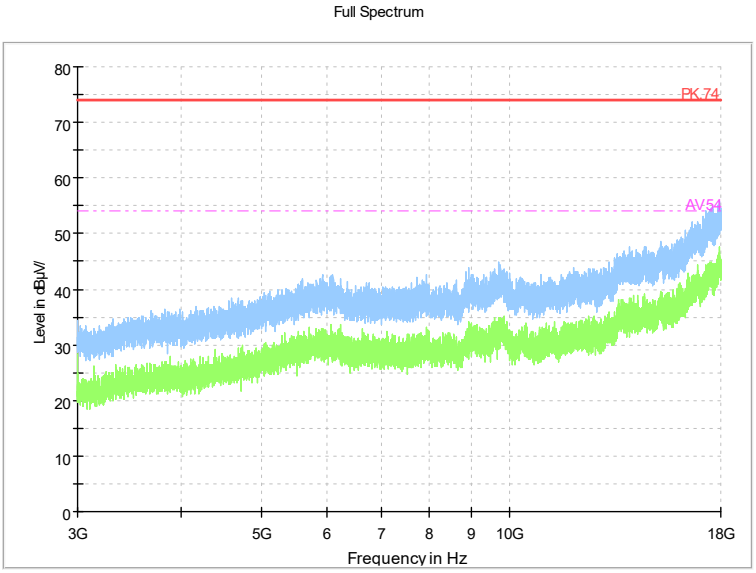
Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



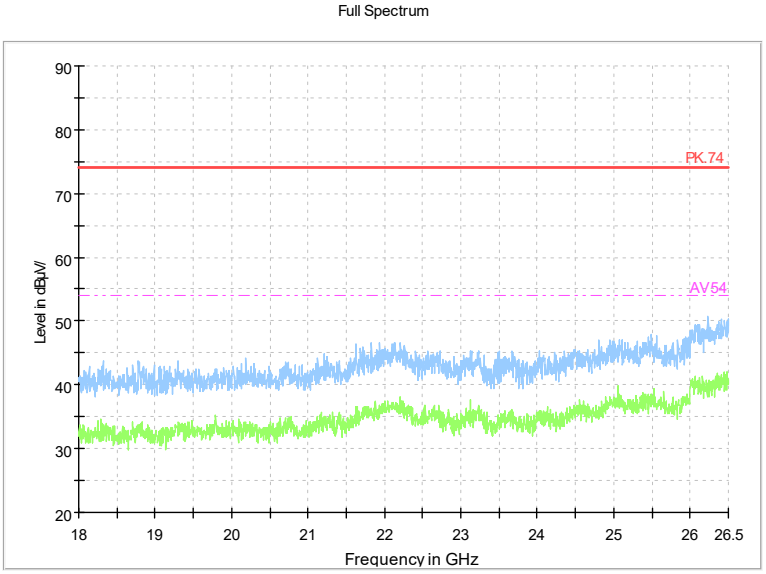
Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK



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

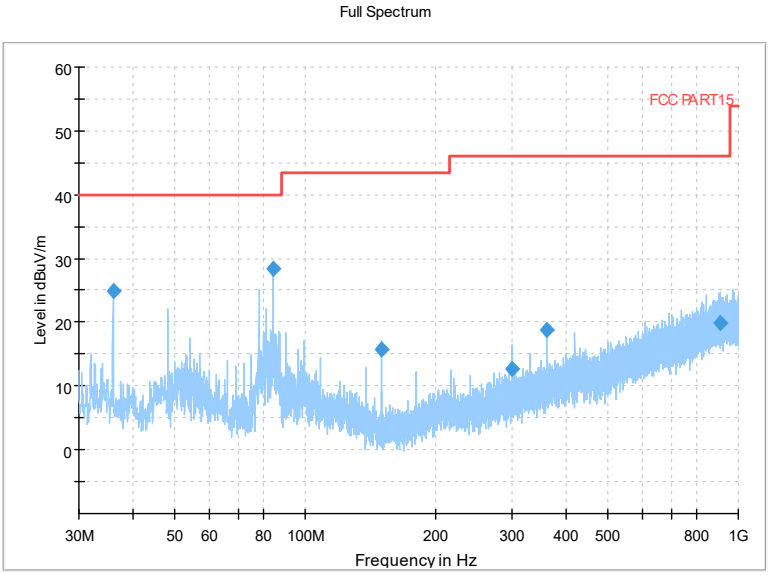


Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

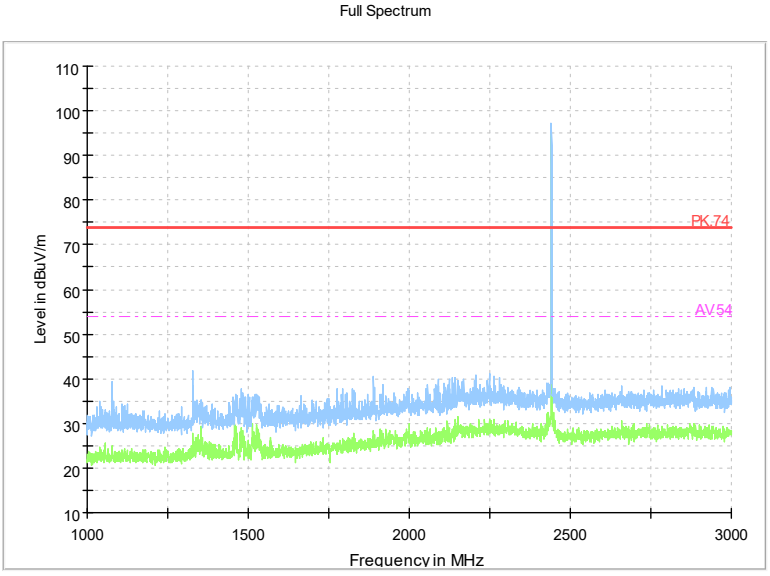


Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK

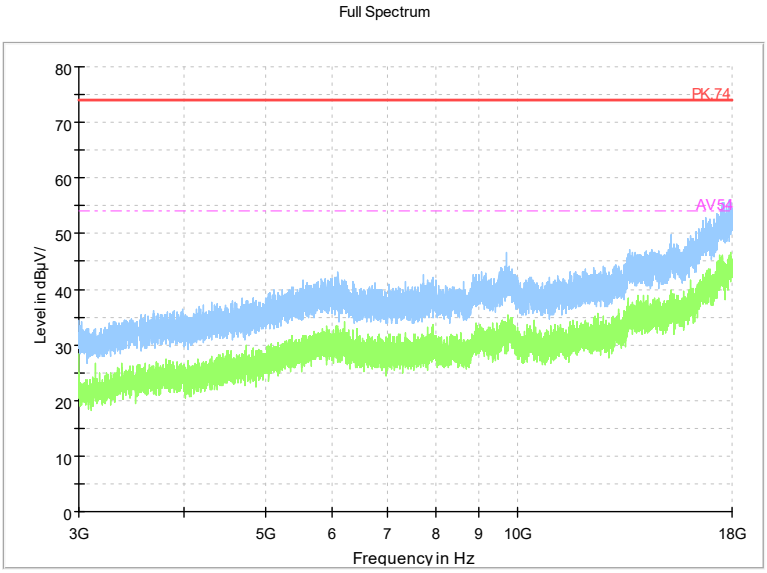
Carrier frequency (MHz): 2480
Channel No.:78



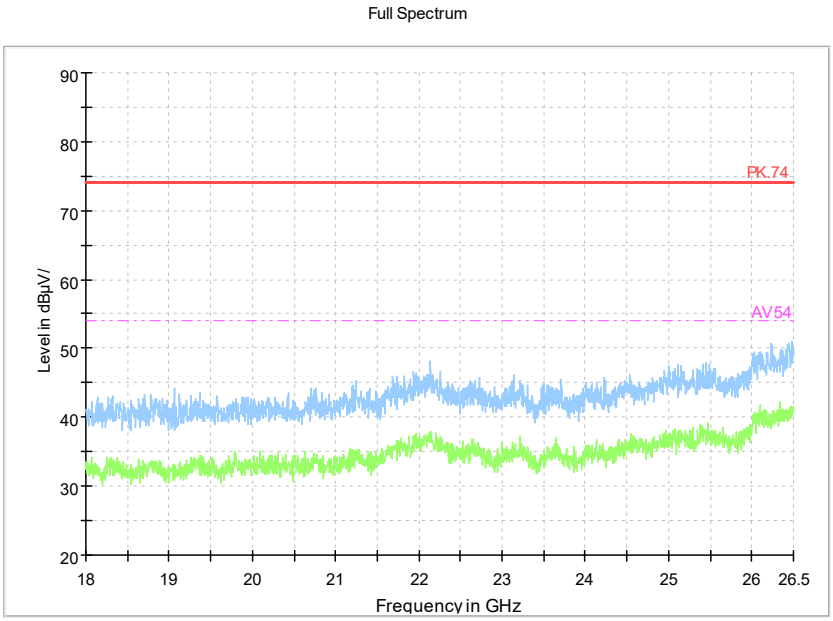
Frequency Range:30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK



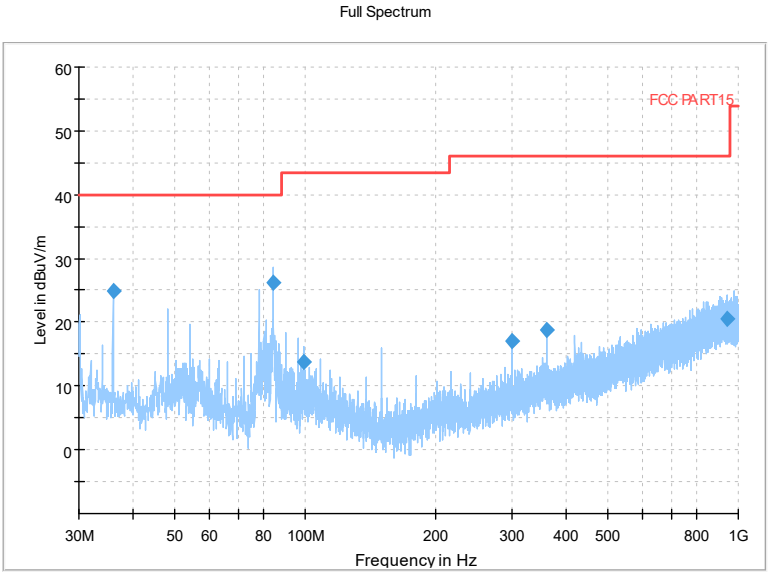
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK



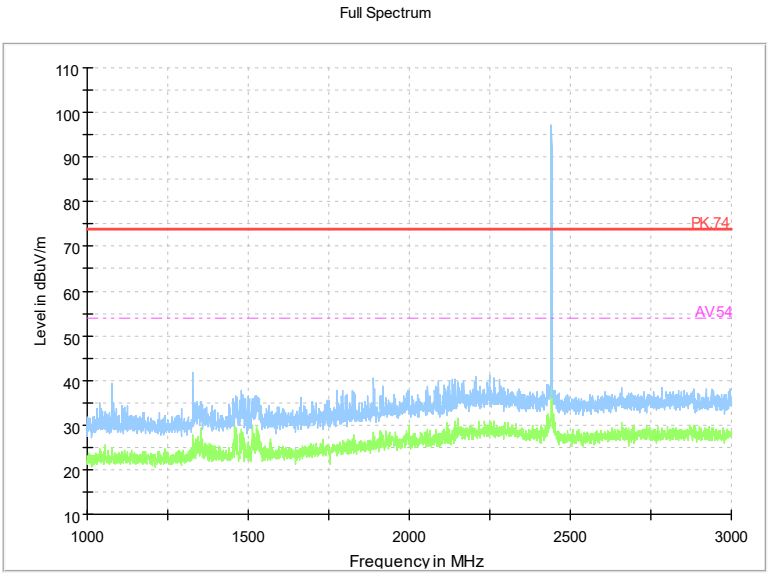
Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK



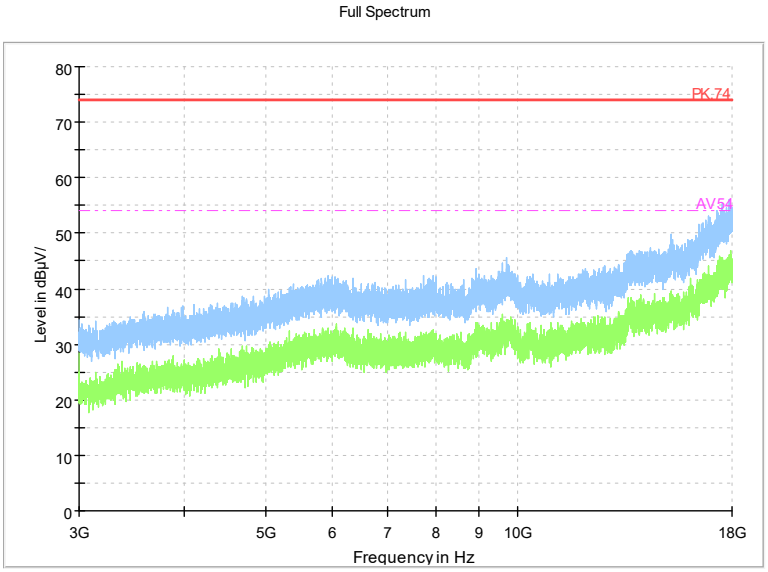
Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK



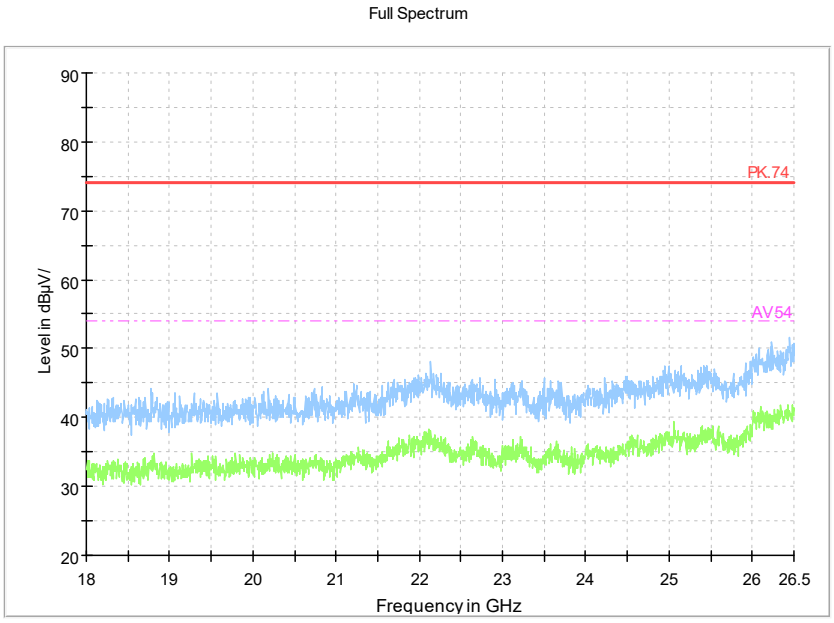
Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



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

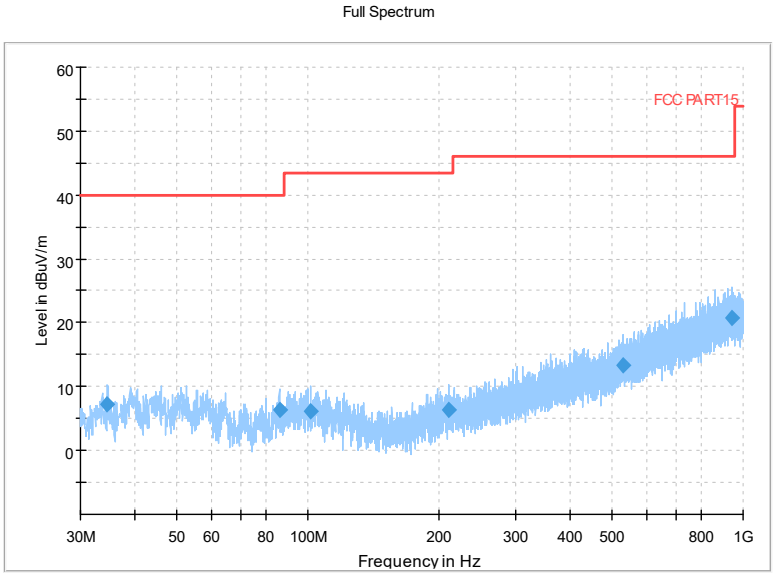


Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK

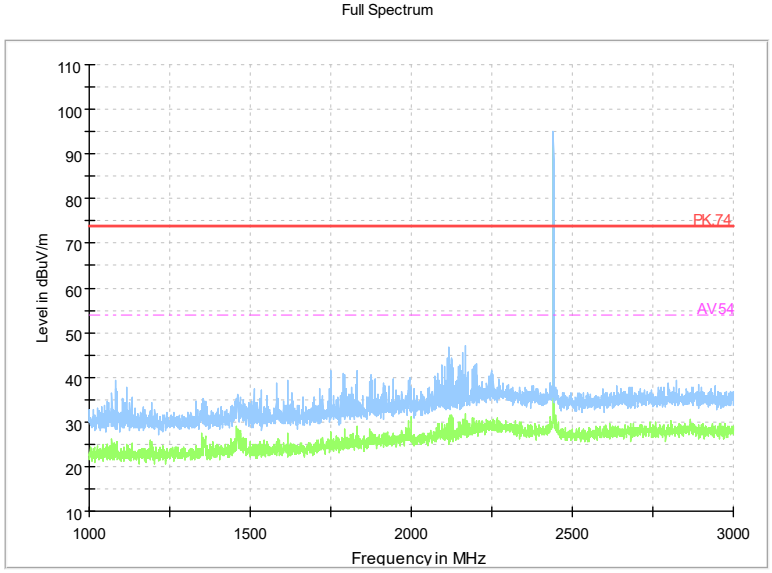


v

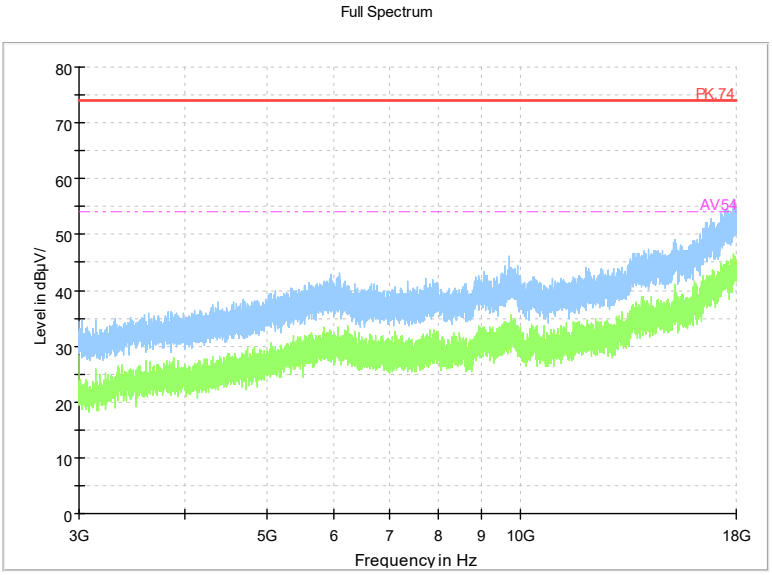
Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: π/4DQPSK



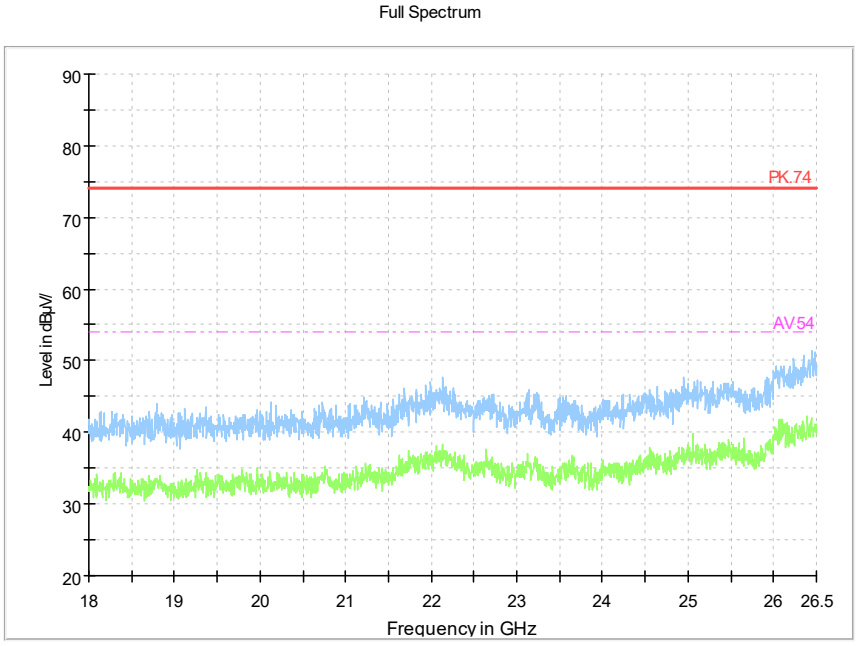
Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: 8DPSK



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

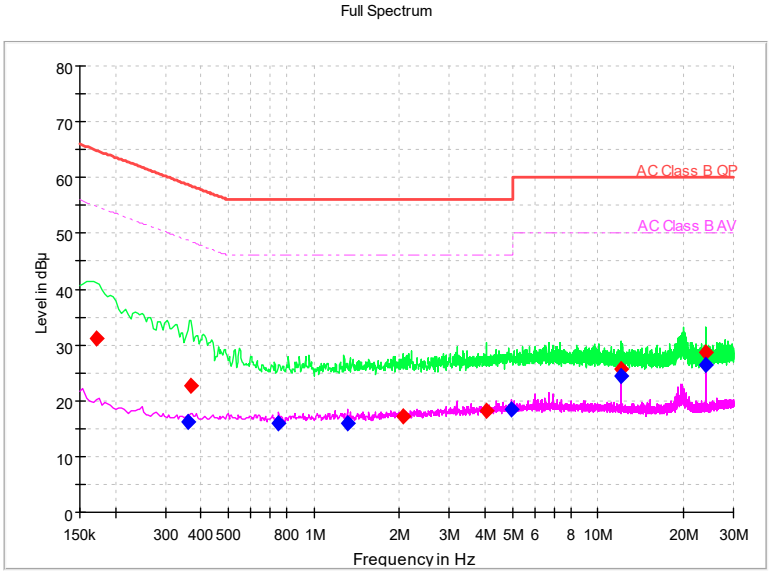
AC Power line Conducted Emission

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: (31.04dBμV) = (1.24dBμV) + (29.8 dB), the corresponding frequency is0.17132MHz.



L+N Line

MEASUREMENT RESULT:

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	PmeaQuasiPeak (dBμV)	PmeaAverage (dBμV)
0.17132	31.04	---	64.9	33.86	L1	29.8	1.24	---
0.35895	---	16.13	48.75	32.62	L1	29.8	---	-13.67
0.36748	22.65	---	58.56	35.91	L1	29.8	-7.15	---
0.75126	---	15.86	46	30.14	L1	29.8	---	-13.94
1.31415	---	16.02	46	29.98	L1	29.9	---	-13.88
2.06466	17.22	---	56	38.78	N	29.8	-12.58	---
4.04756	18.3	---	56	37.7	L1	29.9	-11.6	---
4.95159	---	18.37	46	27.63	L1	29.9	---	-11.53
12.0388	---	24.38	50	25.62	L1	30	---	-5.62
12.0388	25.75	---	60	34.25	L1	30	-4.25	---
24.03	---	26.35	50	23.65	N	30.2	---	-3.85
24.0812	28.56	---	60	31.44	N	30.2	-1.64	---

---End of Test Report---