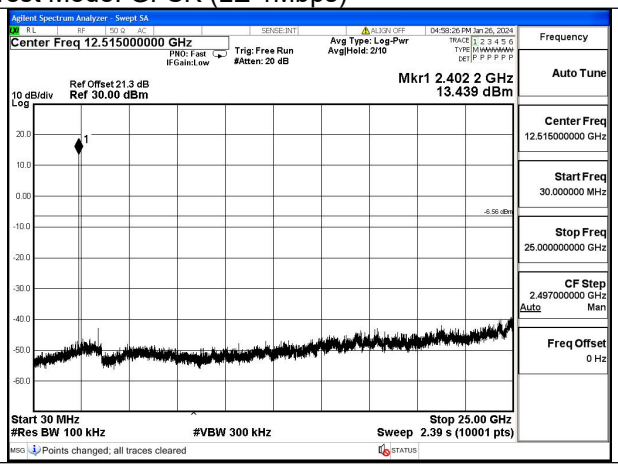
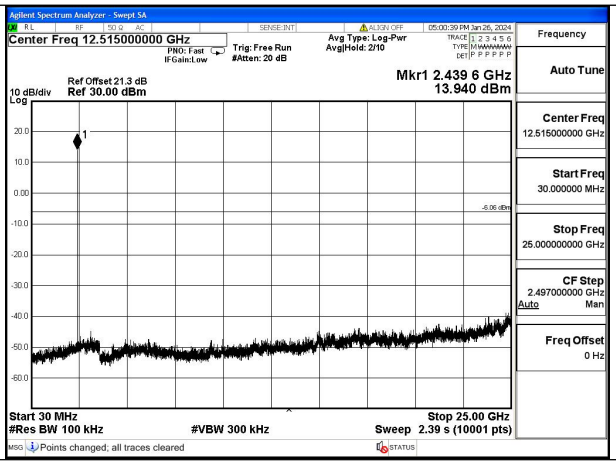
5 Conducted Out of band emission measurement

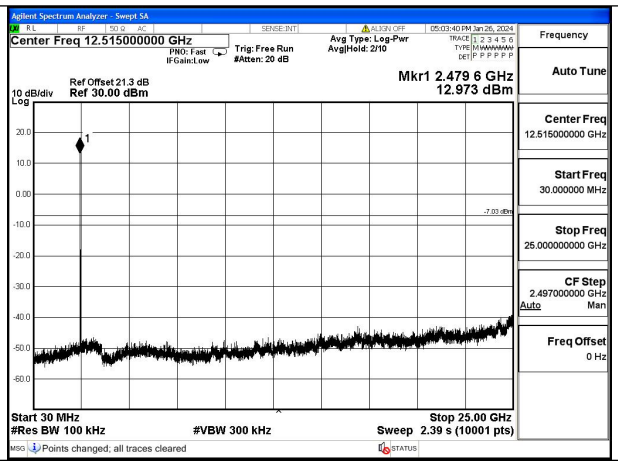
Test Mode: GFSK (LE 1Mbps)



CH0

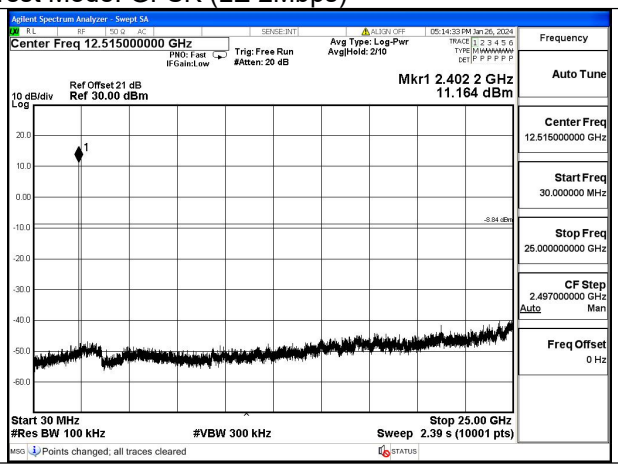


CH19

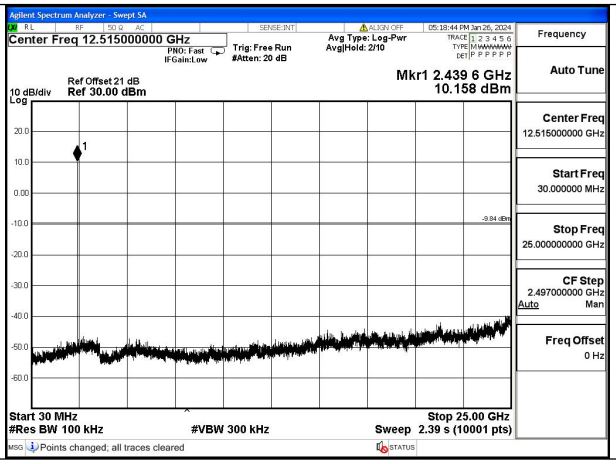


CH39

Test Mode: GFSK (LE 2Mbps)



CH0



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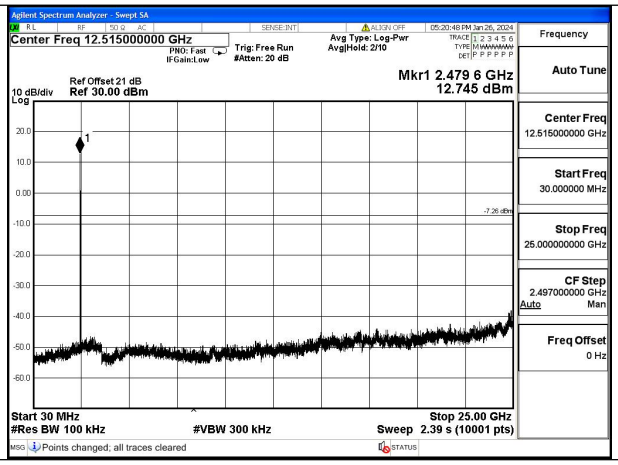
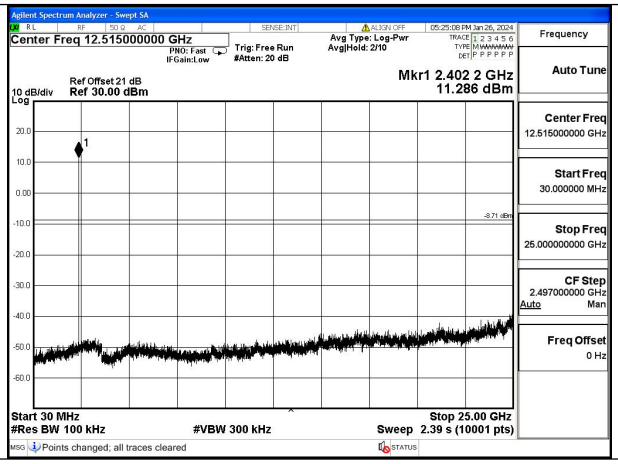
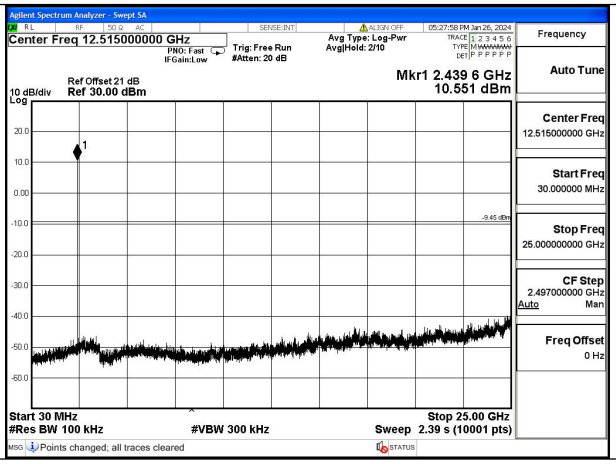


CH39

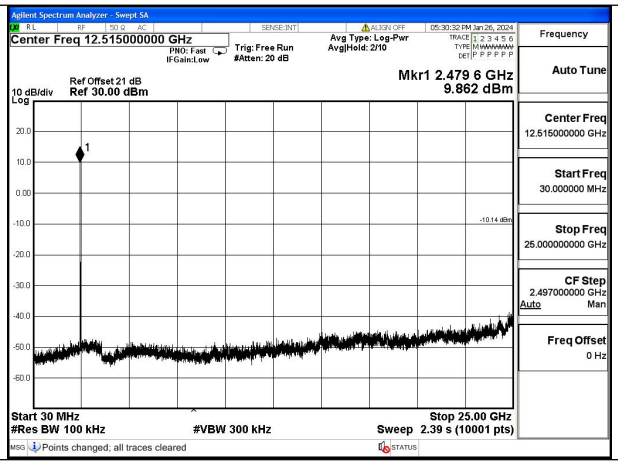
Test Mode: Coded 125K



CH0

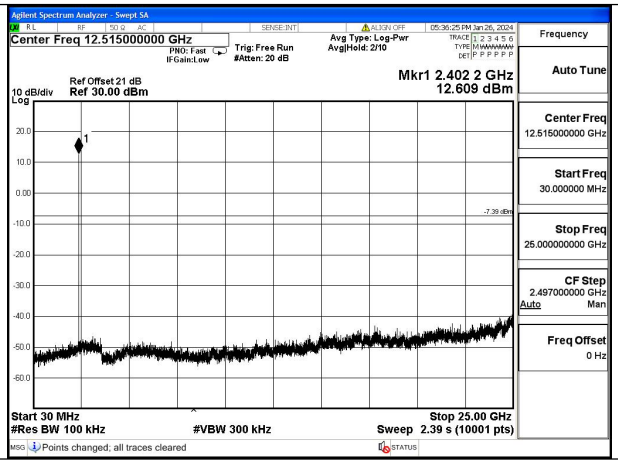


CH19

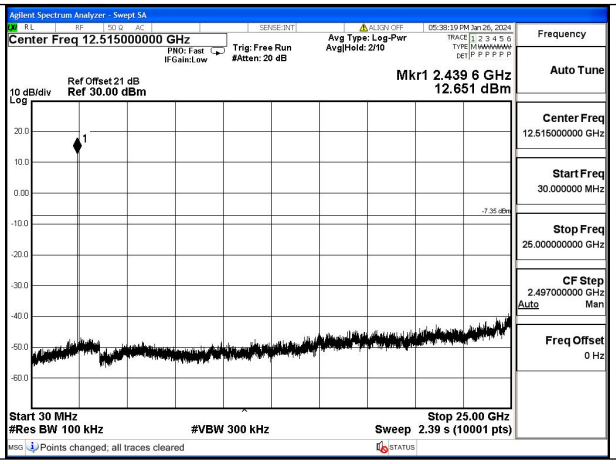


CH39

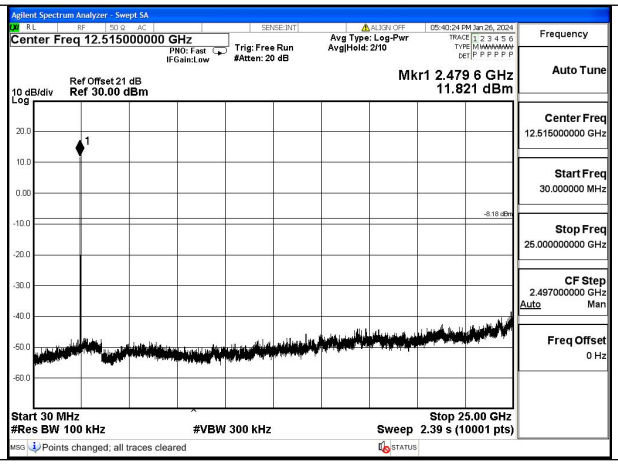
Test Mode: Coded 500K



CH0



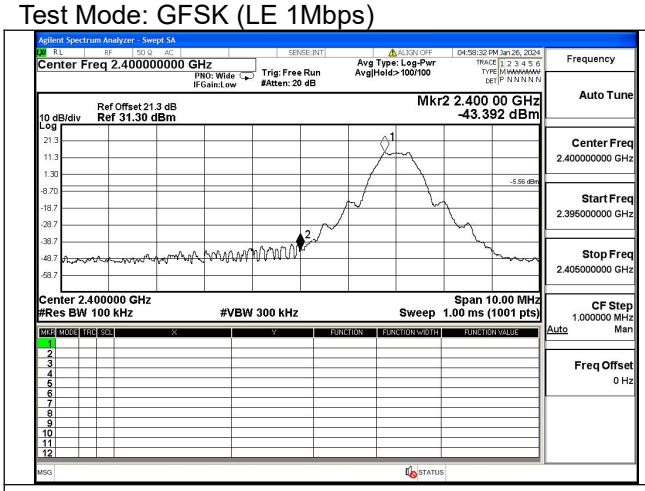
CH19



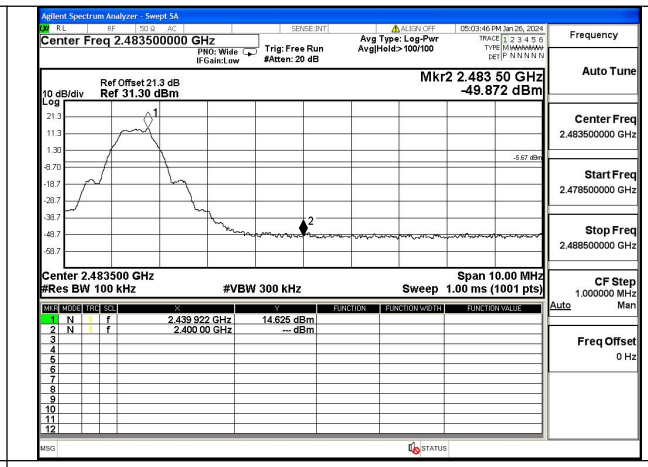
CH39

6 Band Edge measurement

Test Mode: GFSK (LE 1Mbps)

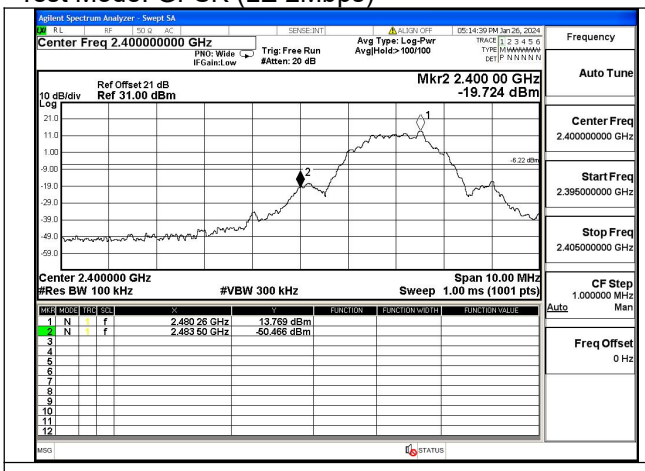


CH0

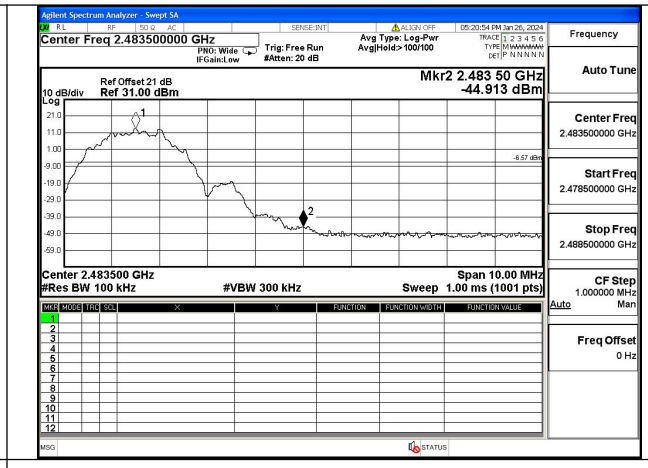


CH39

Test Mode: GFSK (LE 2Mbps)

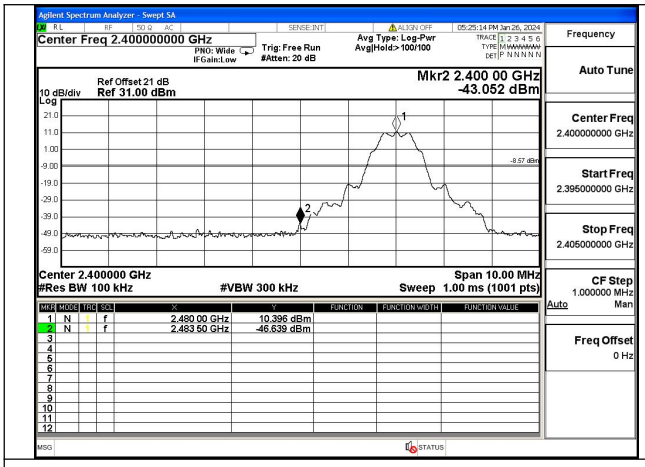


CH0

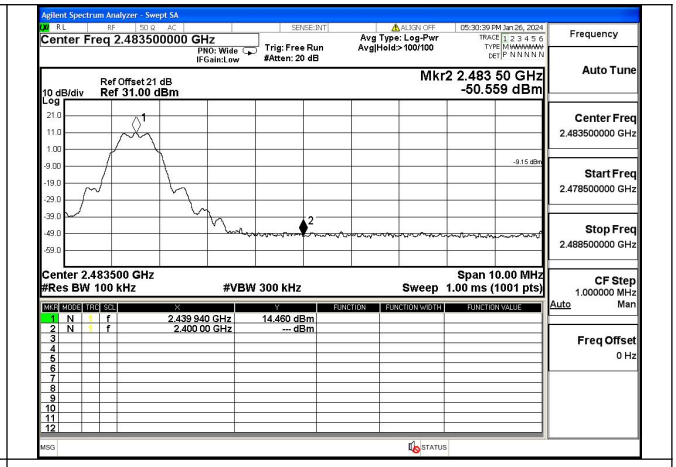


CH39

Test Mode: Coded 125K

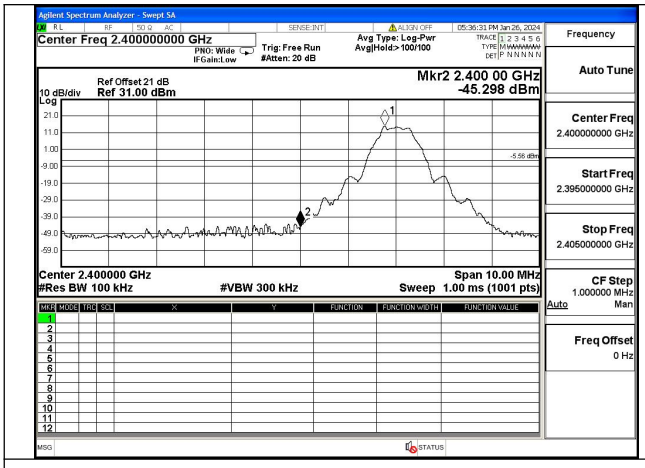


CH0

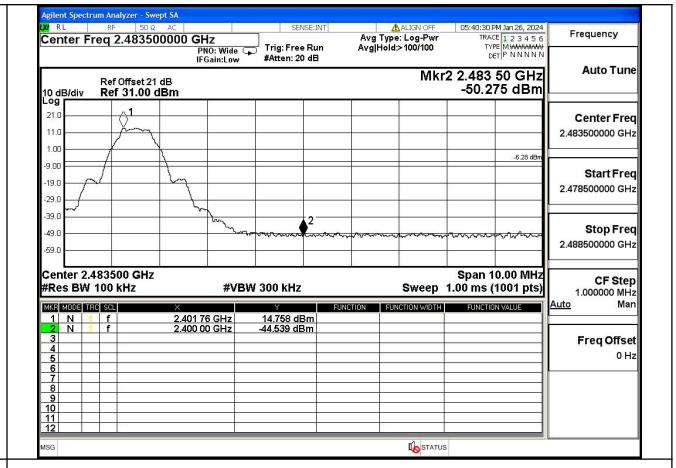


CH39

Test Mode: Coded 500K



CH0



CH39

APPENDIX B – TEST DATA OF RADIATED EMISSION

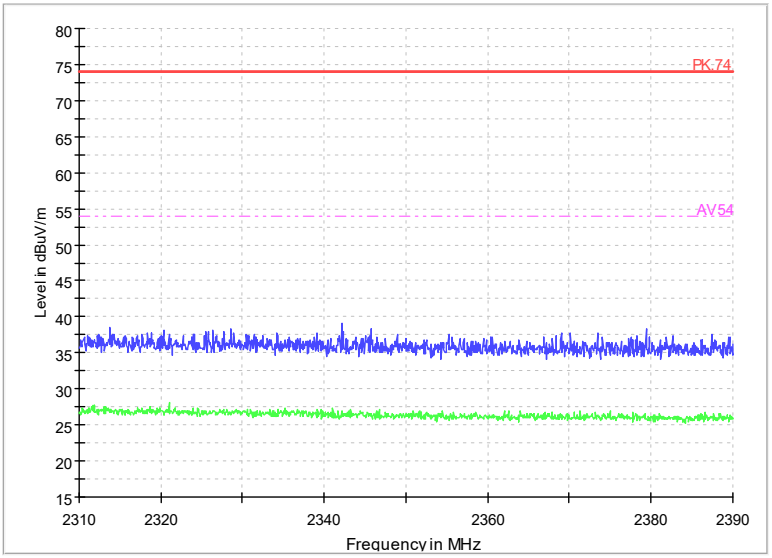
Note：The worst channel results are reflected in the report

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

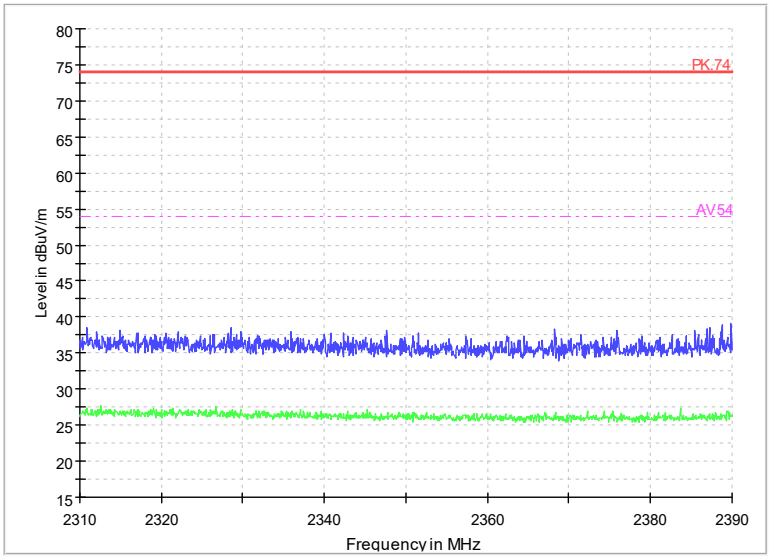
Radiated Emission Band Edge

Sample Calculations

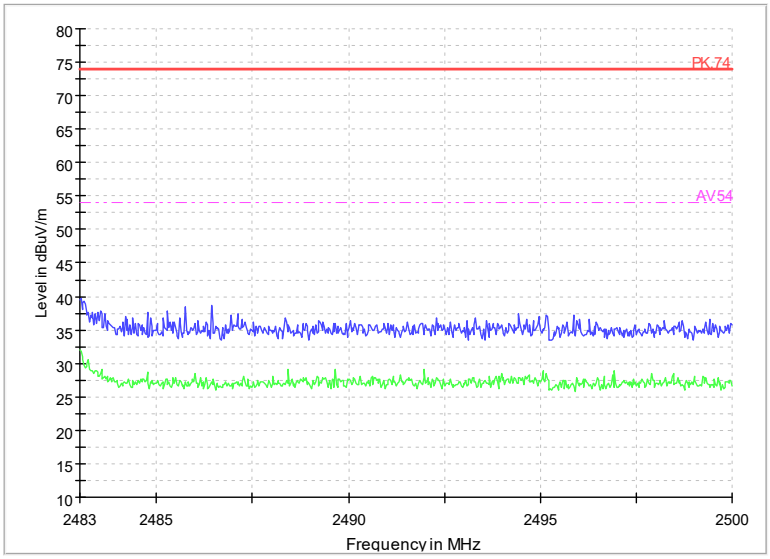
After comparison,the worst case attitude is EUT lay down.



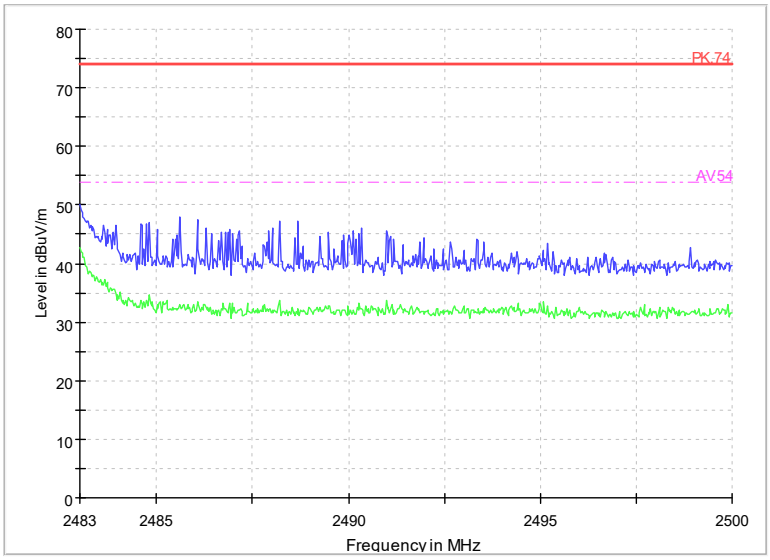
Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 1Mbps)
Polarity: Vertical



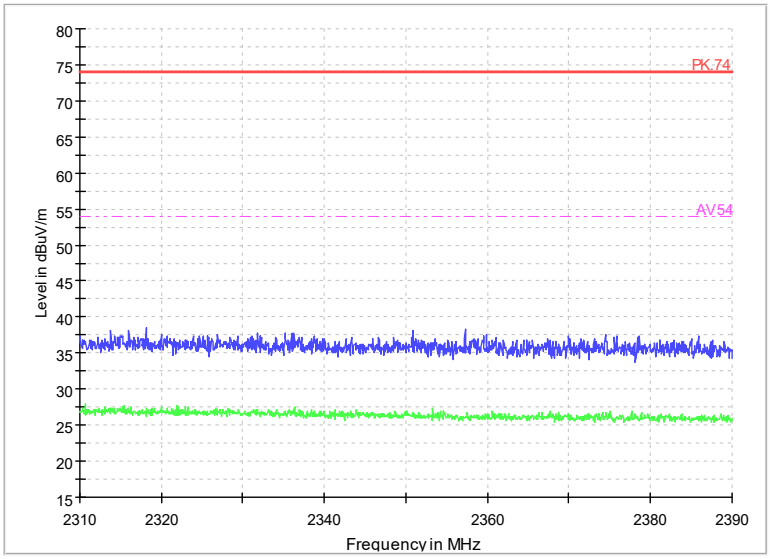
Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 1Mbps)
Polarity: Horizontal



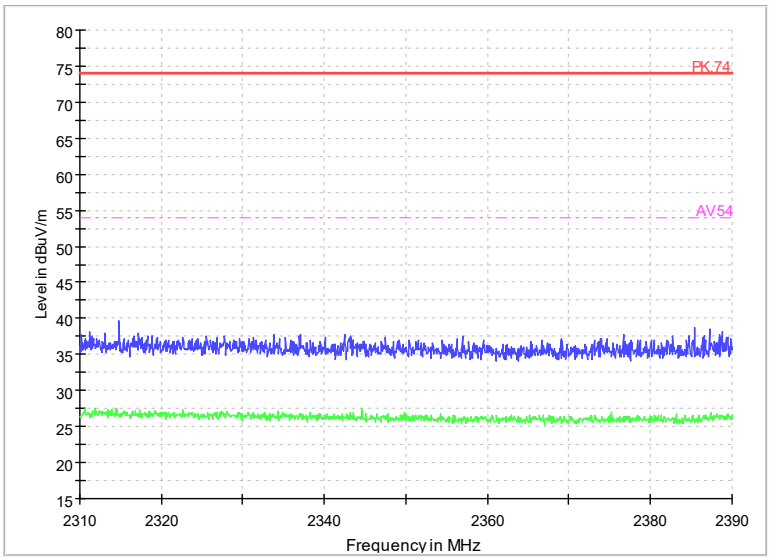
Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE 1Mbps)
Polarity: Vertical



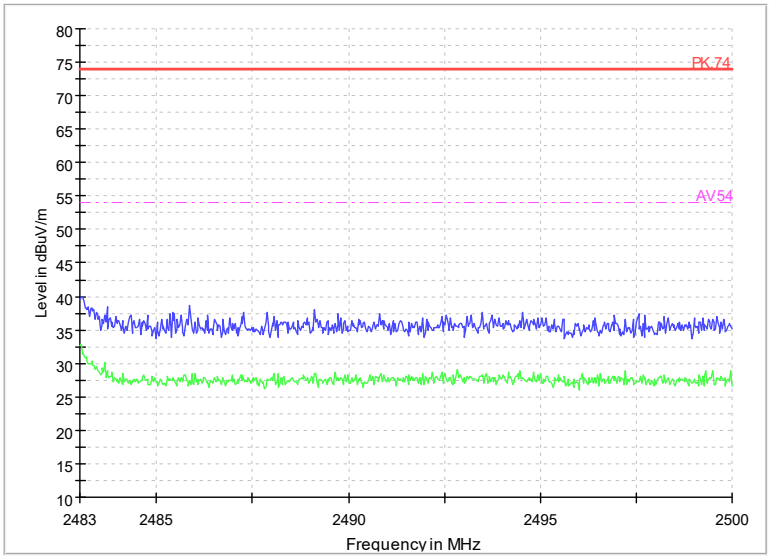
Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE 1Mbps)
Polarity: Horizontal



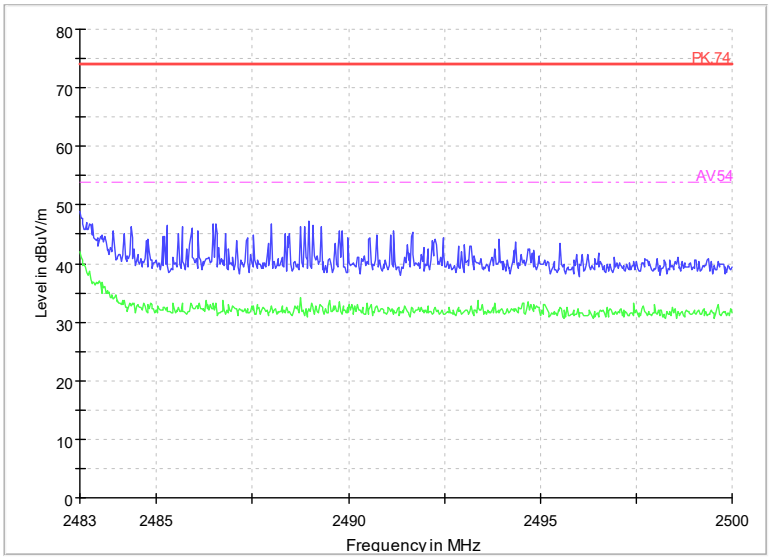
Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 2Mbps)
Polarity: Vertical



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



Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE 2Mbps)
Polarity: Vertical



Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE 2Mbps)
Polarity: Horizontal

Radiated Emission

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: (7.22dBμV/m) = (25.62dBuV) + (-18.4dB/m), the corresponding frequency is 51.3885MHz.

For GFSK (LE 1Mbps)

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
51.3885	7.22	-18.4	25.62	Vertical	40	32.78
57.257	6.44	-19	25.44	Vertical	40	33.56
109.249	5.83	-18.9	24.73	Vertical	43.5	37.67
200.817	7.79	-18.8	26.59	Vertical	43.5	35.71
552.054	13.55	-9.4	22.95	Vertical	46	32.45
955.089	18.75	-2.8	21.55	Vertical	46	27.25

Channel No.:19

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
52.4555	6.84	-18.5	25.34	Vertical	40	33.16
57.645	6.58	-19	25.58	Vertical	40	33.42
104.69	6.44	-18.8	25.24	Vertical	43.5	37.06
290.2025	7.96	-16.1	24.06	Vertical	46	38.04
508.695	12.68	-10.4	23.08	Vertical	46	33.32
957.2715	18.71	-2.7	21.41	Vertical	46	27.29

Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
38.148	6.27	-19	25.27	Vertical	40	33.73
56.869	6.1	-18.9	25	Vertical	40	33.9
113.711	4.83	-19.1	23.93	Vertical	43.5	38.67
291.9485	7.92	-16.1	24.02	Vertical	46	38.08
531.684	13.47	-9.9	23.37	Vertical	46	32.53
959.939	18.67	-2.7	21.37	Vertical	46	27.33

For GFSK (LE 2Mbps)

Channel No.:0

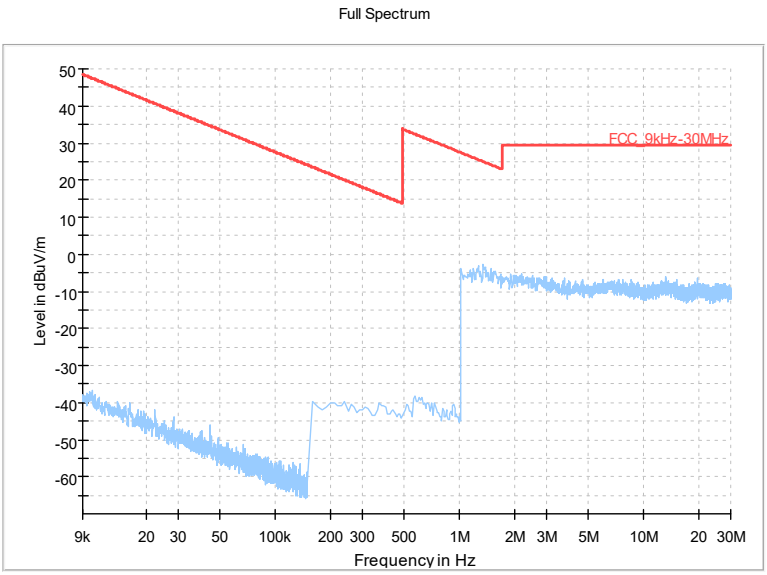
Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
39.603	7.34	-18.7	26.04	Vertical	40	32.66
57.839	6.72	-19	25.72	Vertical	40	33.28
105.466	6.12	-18.8	24.92	Vertical	43.5	37.38
205.861	5.48	-18.7	24.18	Vertical	43.5	38.02
537.2615	13.53	-9.7	23.23	Vertical	46	32.47
912.021	18.42	-3.2	21.62	Vertical	46	27.58

Channel No.:19

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
44.9865	7.19	-18.4	25.59	Vertical	40	32.81
58.033	6.67	-19	25.67	Vertical	40	33.33
111.1405	6.31	-19	25.31	Vertical	43.5	37.19
206.734	5.54	-18.6	24.14	Vertical	43.5	37.96
547.883	13.4	-9.5	22.9	Vertical	46	32.6
907.268	18.45	-3.3	21.75	Vertical	46	27.55

Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
38.827	6.74	-18.8	25.54	Vertical	40	33.26
56.966	6.12	-18.9	25.02	Vertical	40	33.88
98.0455	6.43	-18.8	25.23	Vertical	43.5	37.07
297.429	8.14	-15.9	24.04	Vertical	46	37.86
504.0875	12.62	-10.5	23.12	Vertical	46	33.38
936.853	18.7	-2.9	21.6	Vertical	46	27.3

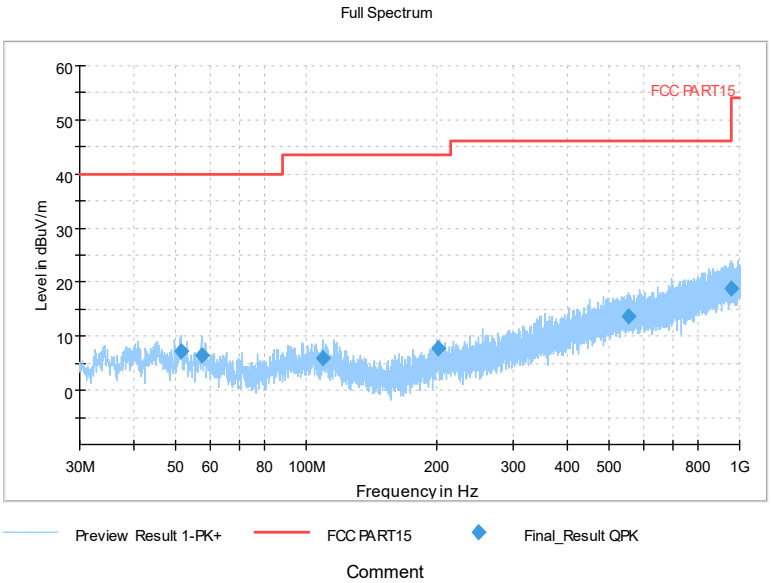


Frequency Range: 9kHz -30MHz

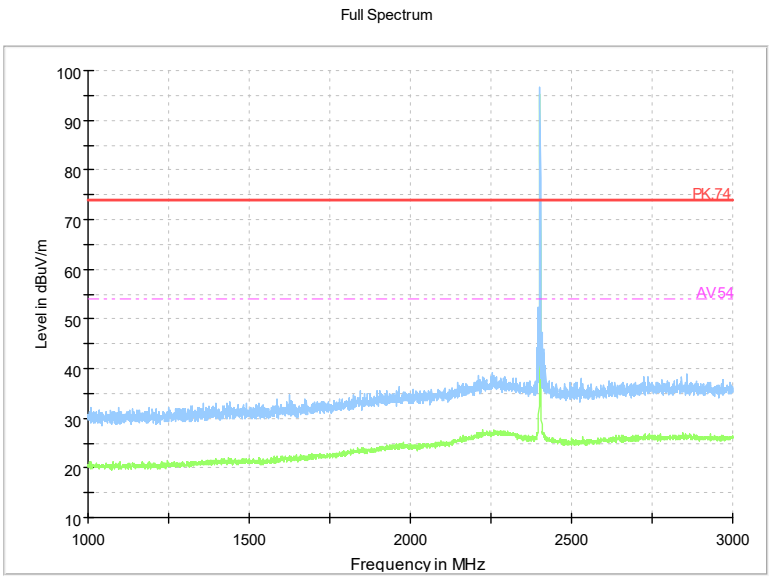
Detector: QP mode

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.

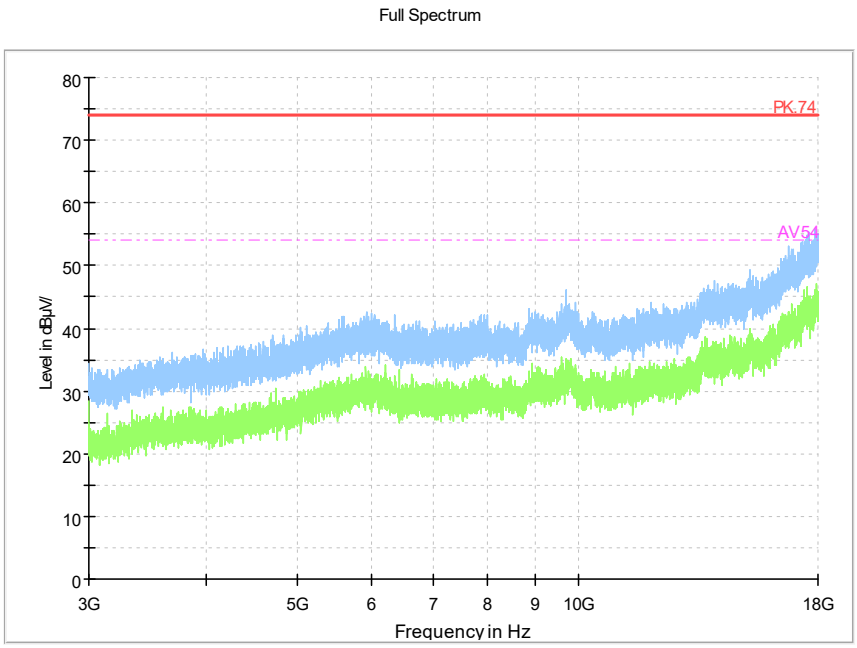
Channel No.:0



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

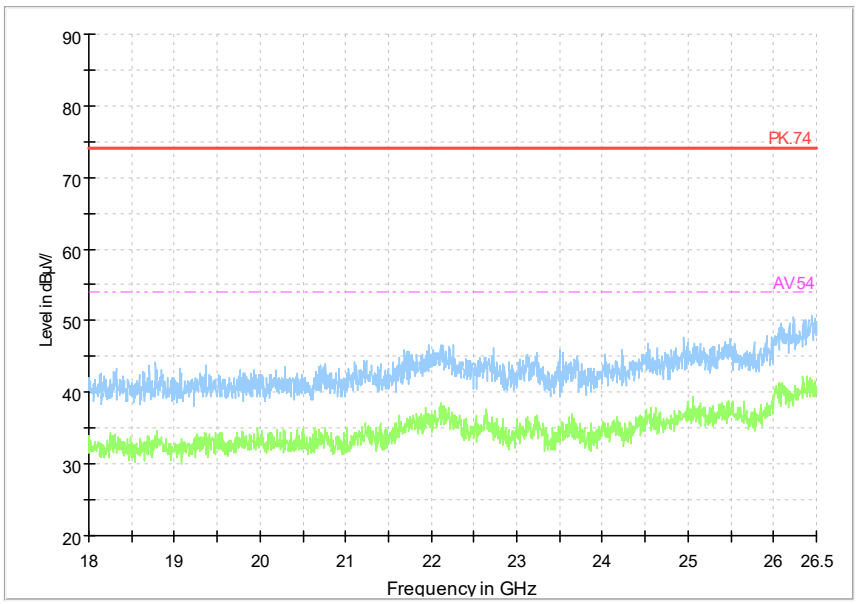


Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)



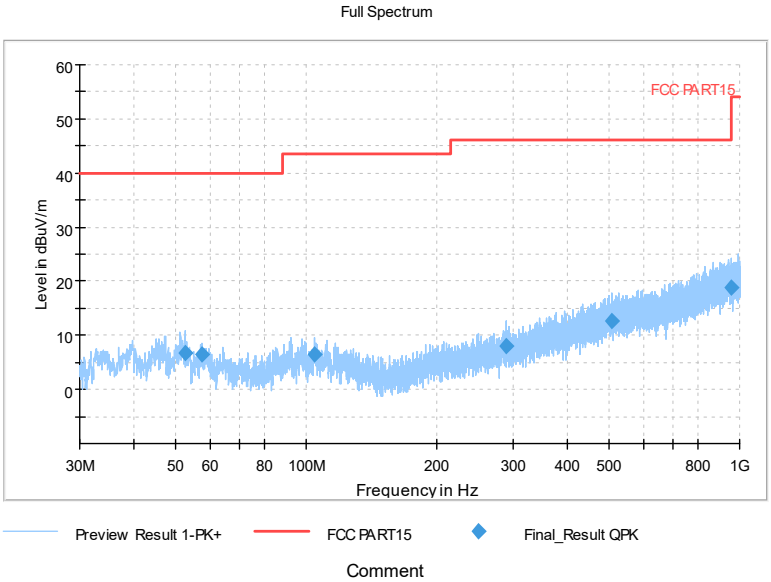
Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

Full Spectrum

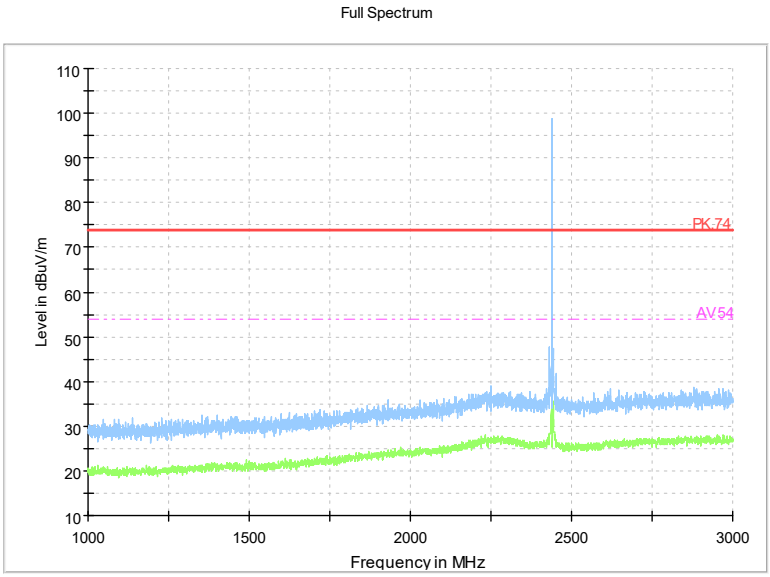


Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

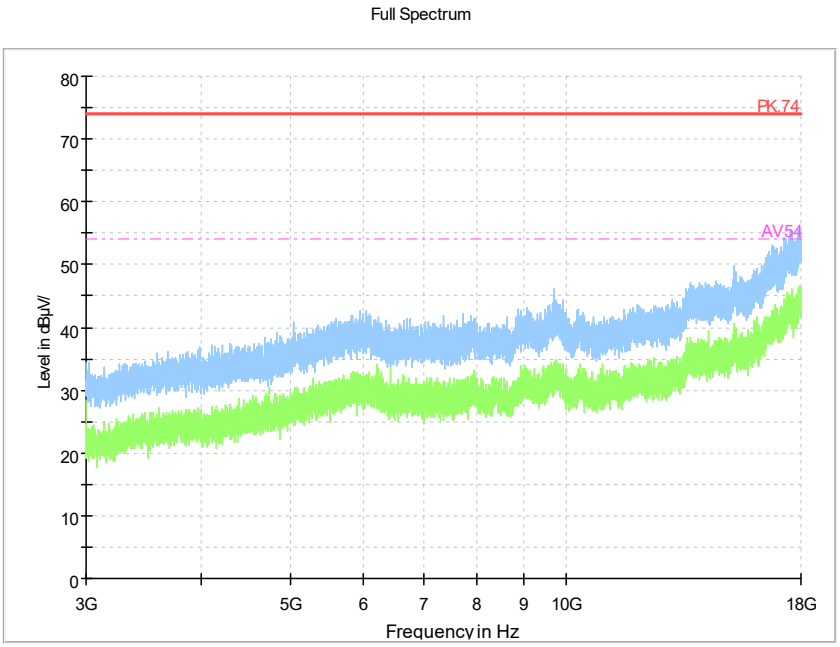
Channel No.:19



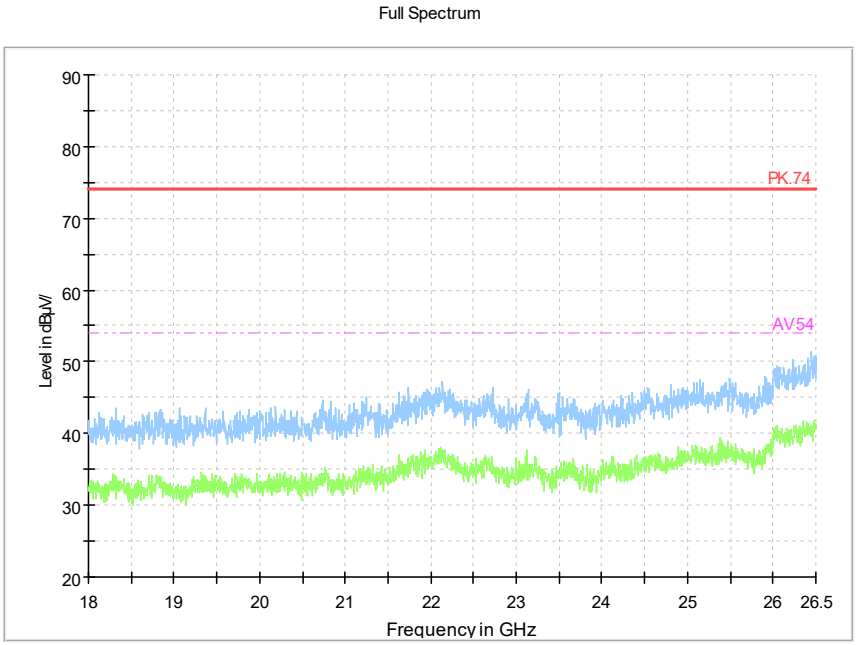
Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)



Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

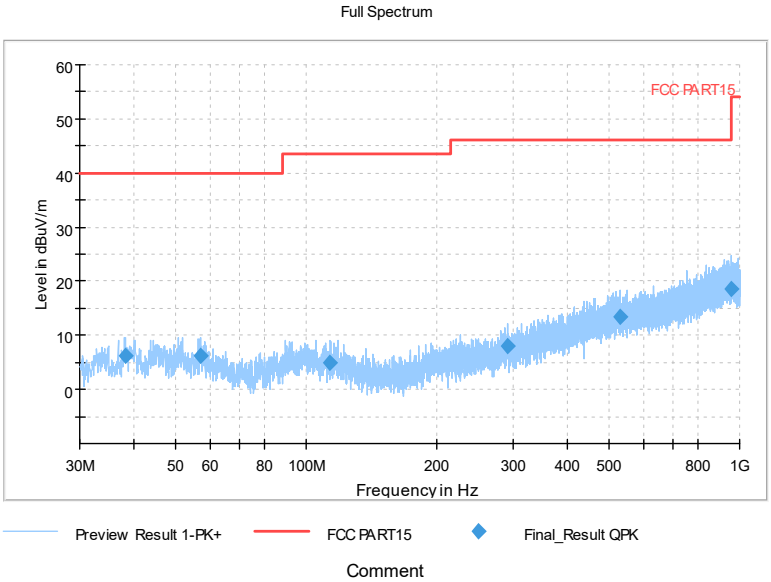


Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

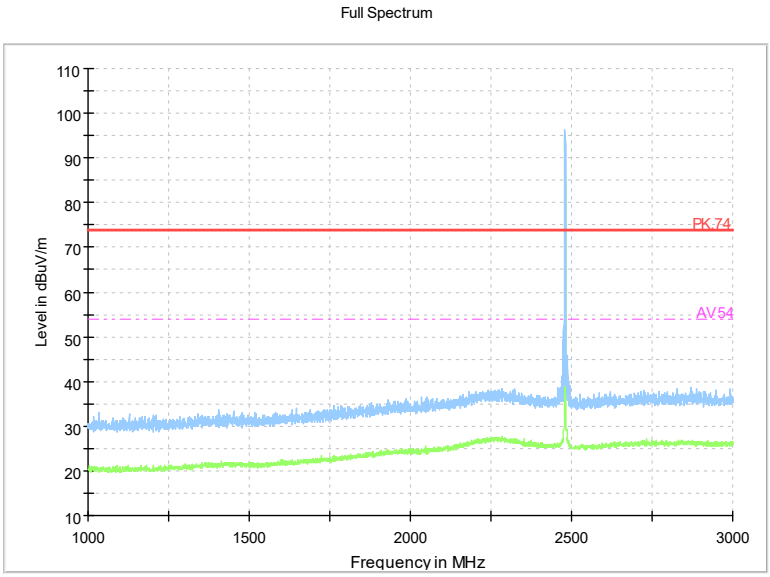


Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

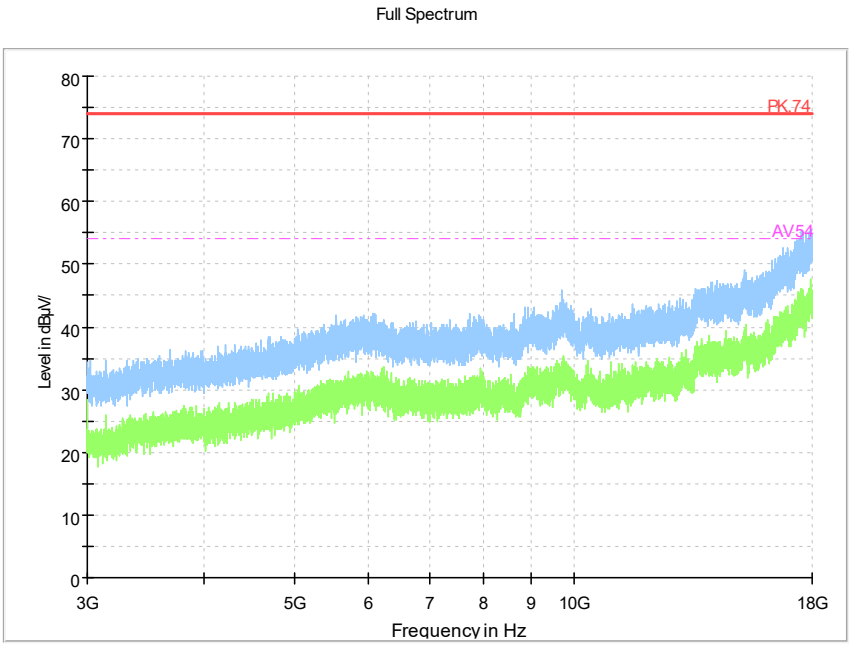
Channel No.:39



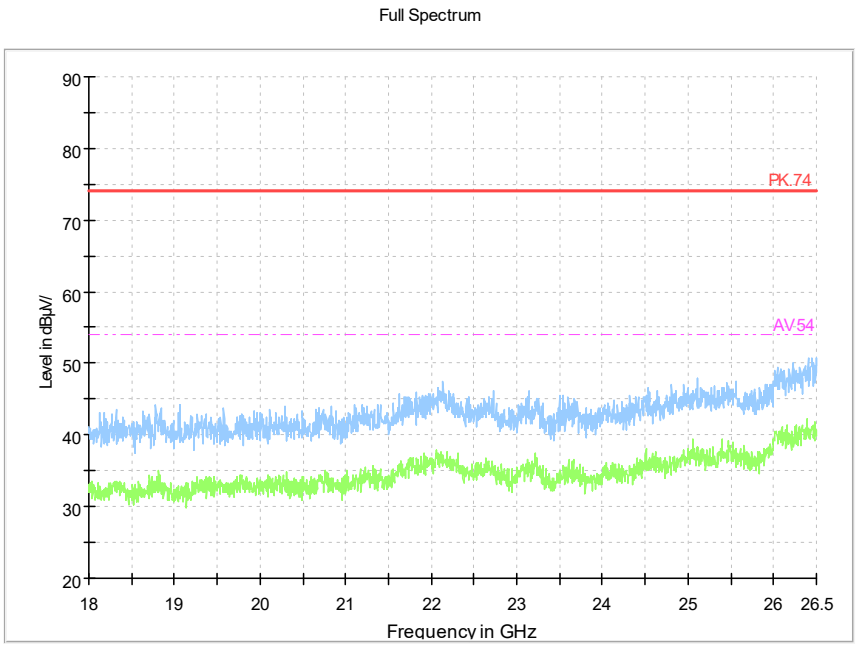
Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)



Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

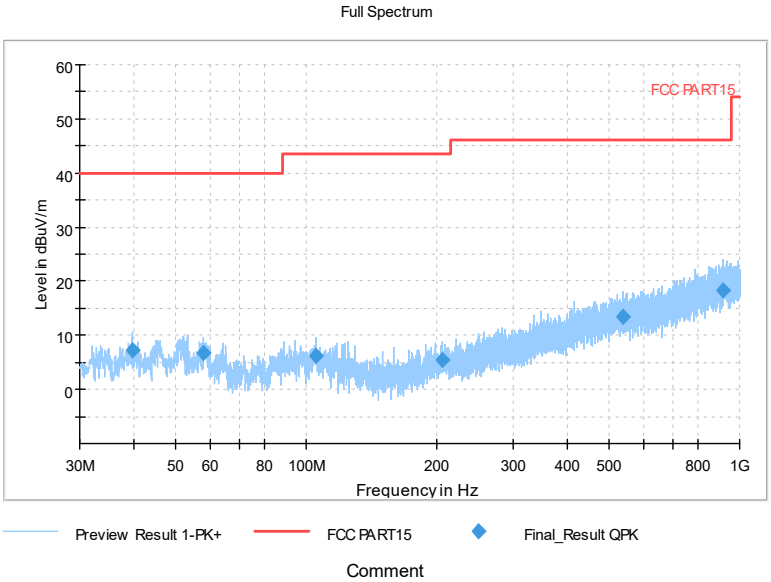


Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

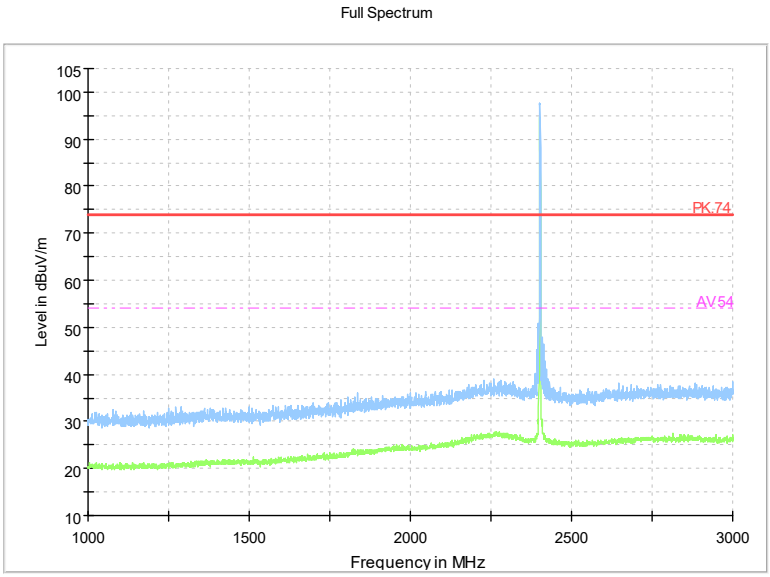


Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

Channel No.:0

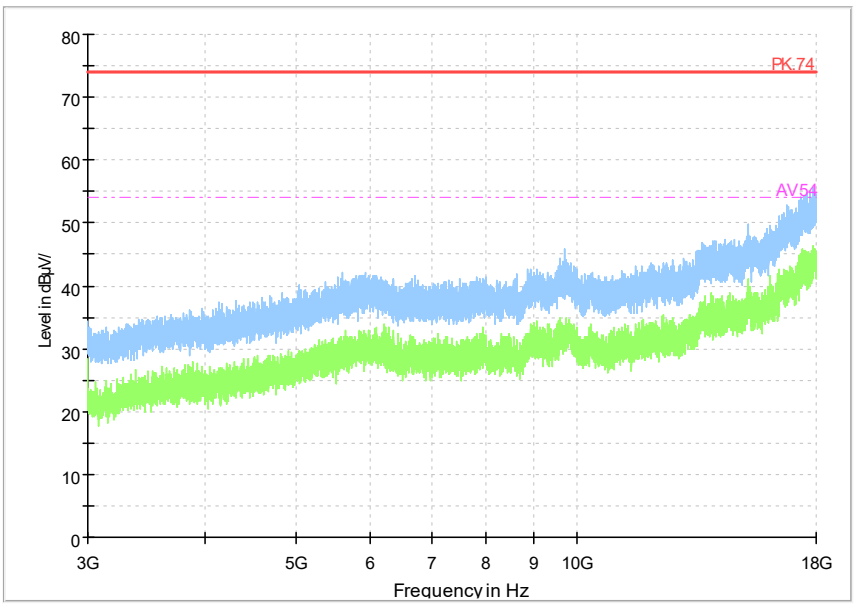


Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)



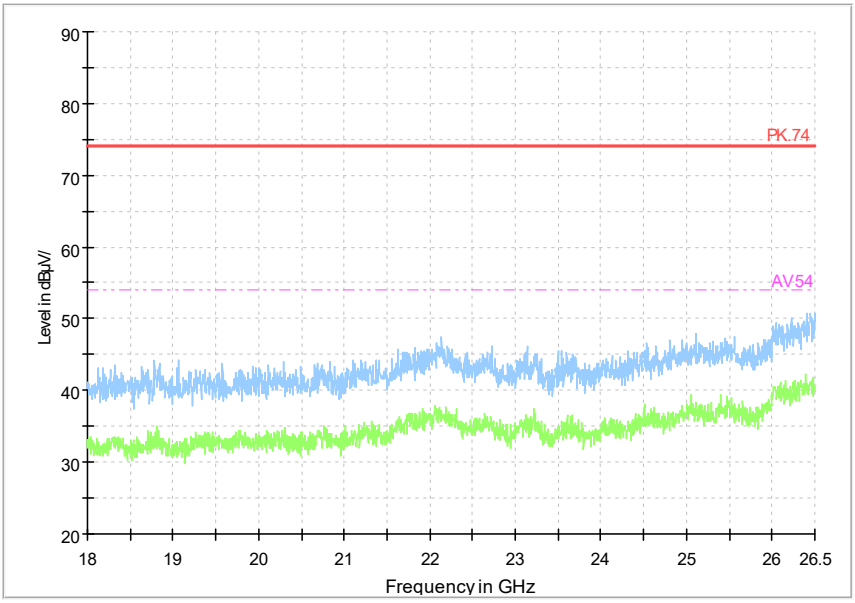
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE2Mbps)

Full Spectrum



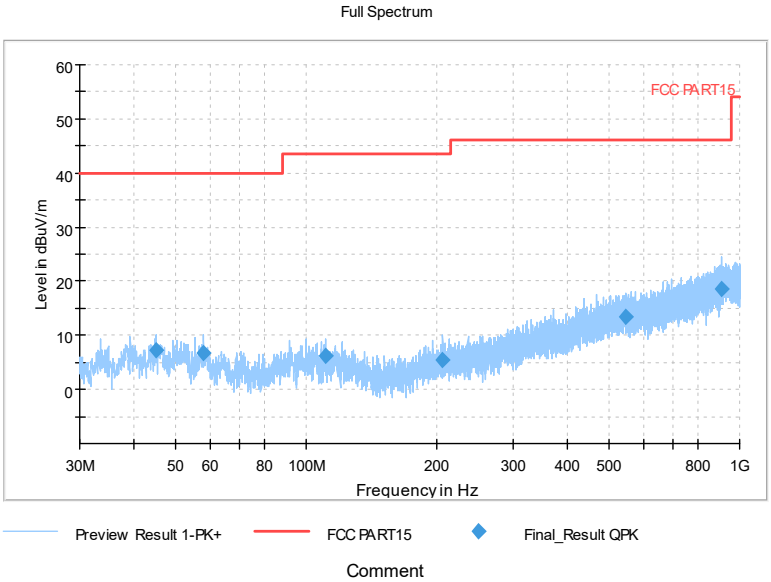
Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE2Mbps)

Full Spectrum

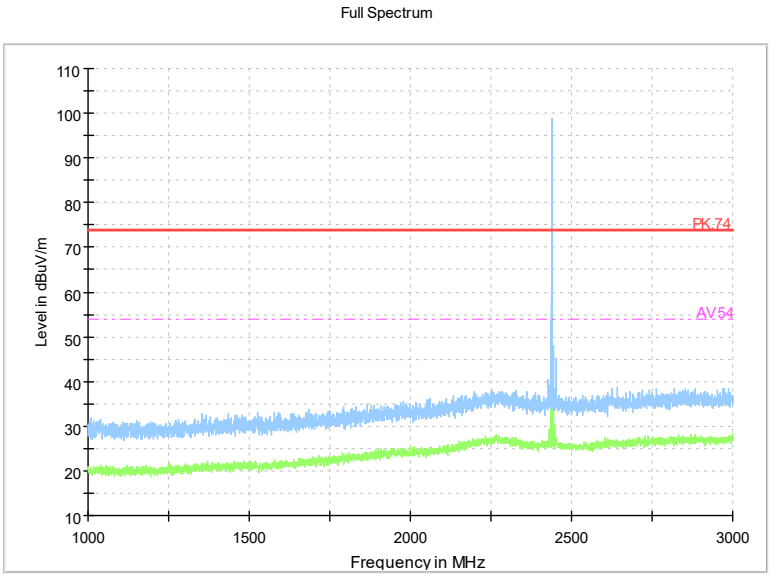


Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE2Mbps)

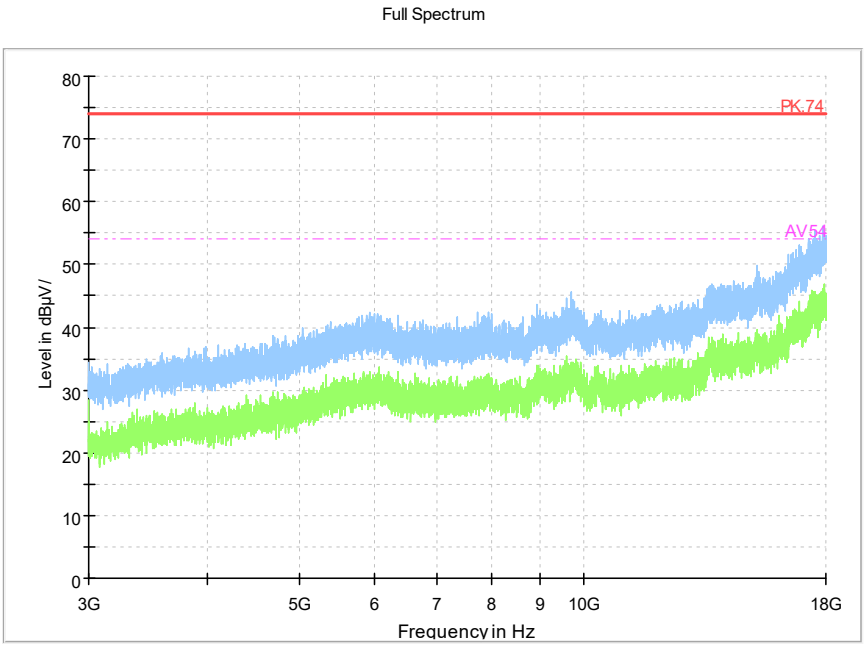
Channel No.:19



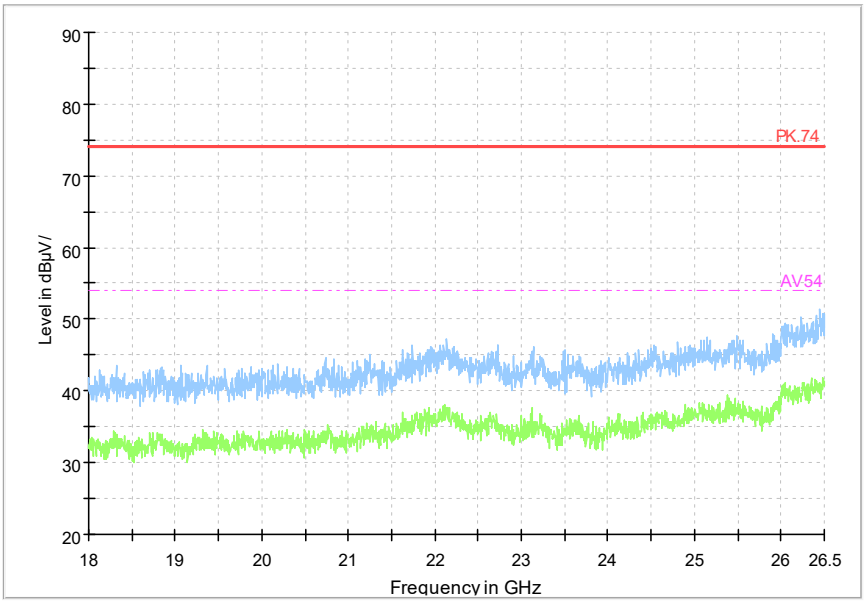
Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)



Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)

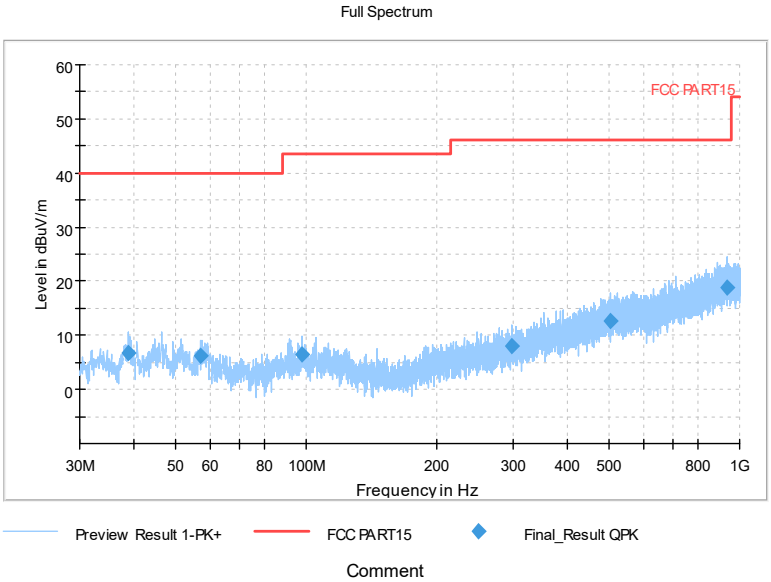


Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)

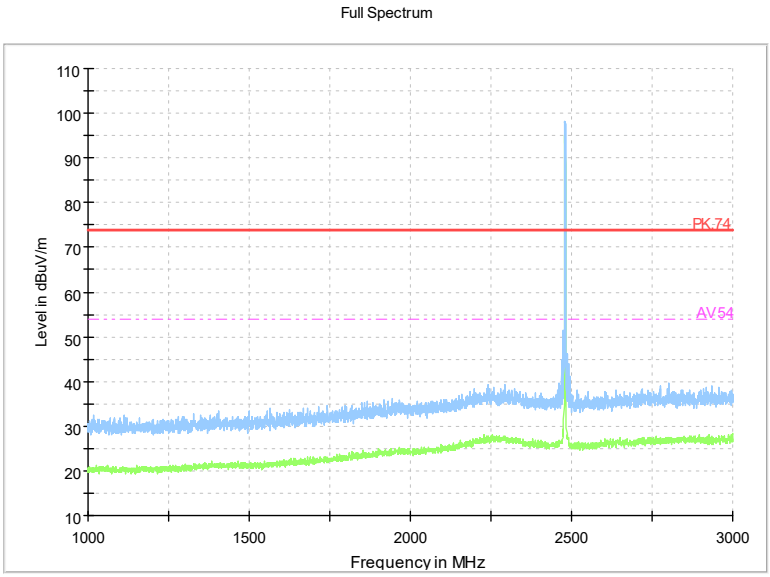


Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)

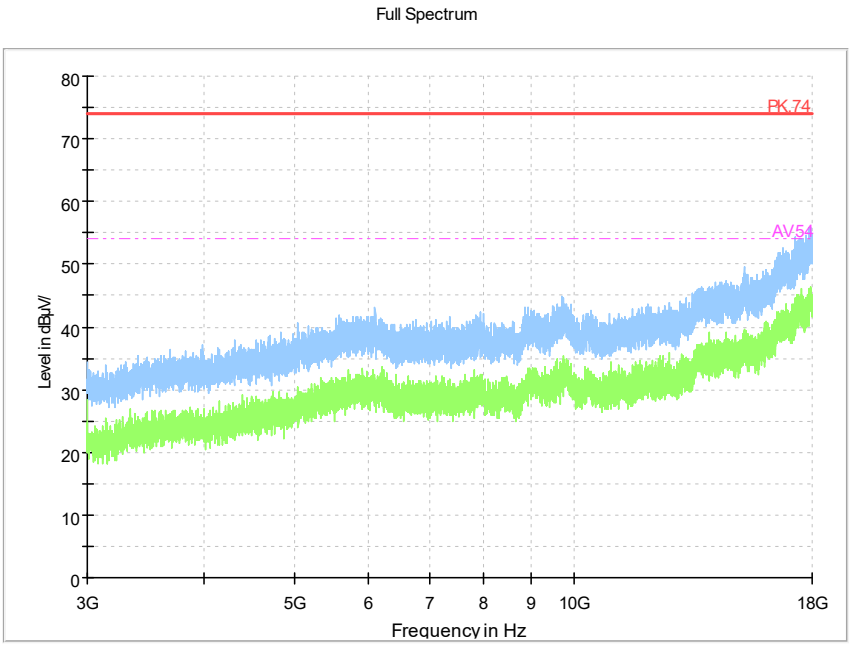
Channel No.:39



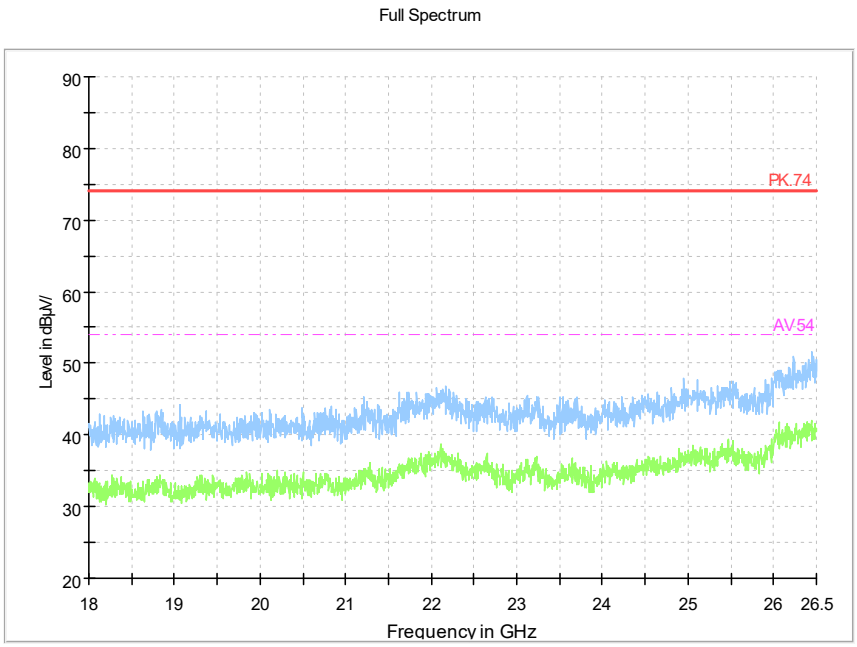
Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)



Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)



Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)



Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)

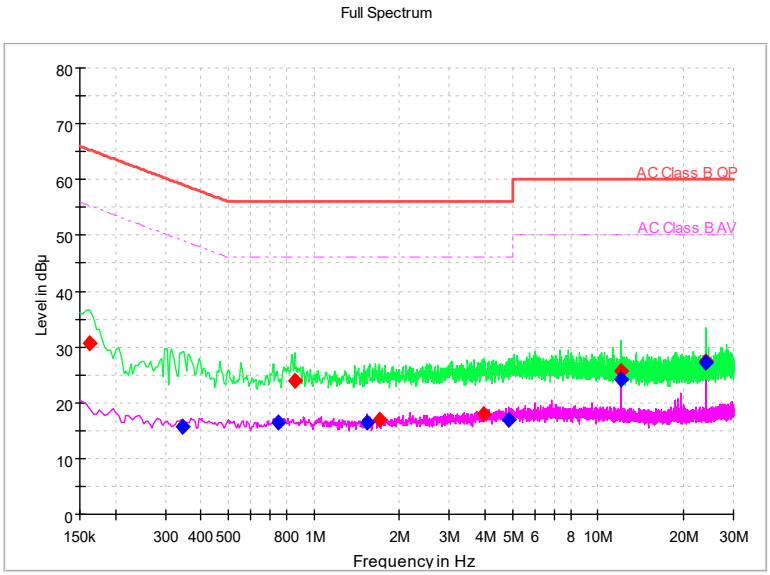
AC Power line Conducted Emission

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: (30.75dBμV) = (0.95dBμV) + (29.8dB), the corresponding frequency is 0.16279MHz.



L+N Line

MEASUREMENT RESULT:

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	PmeaQuasiPeak (dBμV)	PmeaAverage (dBμV)
0.16279	30.75	---	65.32	34.57	L1	29.8	0.95	---
0.34616	---	15.76	49.05	33.29	L1	29.8	---	-14.04
0.75126	---	16.45	46	29.55	N	29.7	---	-13.25
0.85787	23.95	---	56	32.05	L1	29.8	-5.85	---
1.54016	---	16.51	46	29.49	L1	29.8	---	-13.29
1.69794	17.07	---	56	38.93	N	29.7	-12.63	---
3.95374	17.9	---	56	38.1	L1	29.9	-12	---
4.87056	---	17.06	46	28.94	L1	29.9	---	-12.84
12.0388	---	24.29	50	25.71	L1	30	---	-5.71
12.0431	25.65	---	60	34.35	L1	30	-4.35	---
24.03	---	27.11	50	22.89	N	30.1	---	-2.99
24.03	27.41	---	60	32.59	N	30.1	-2.69	---

---End of Test Report---