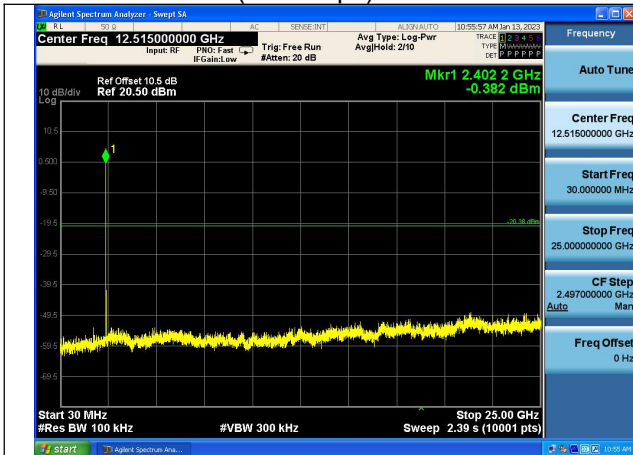




Test Mode:Coded 500K 2480MHz

5 Conducted Out of band emission measurement

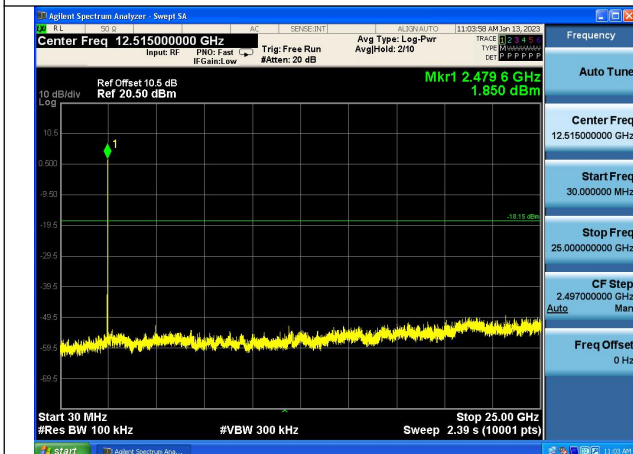
Test Mode: GFSK (LE 1Mbps)



CH0

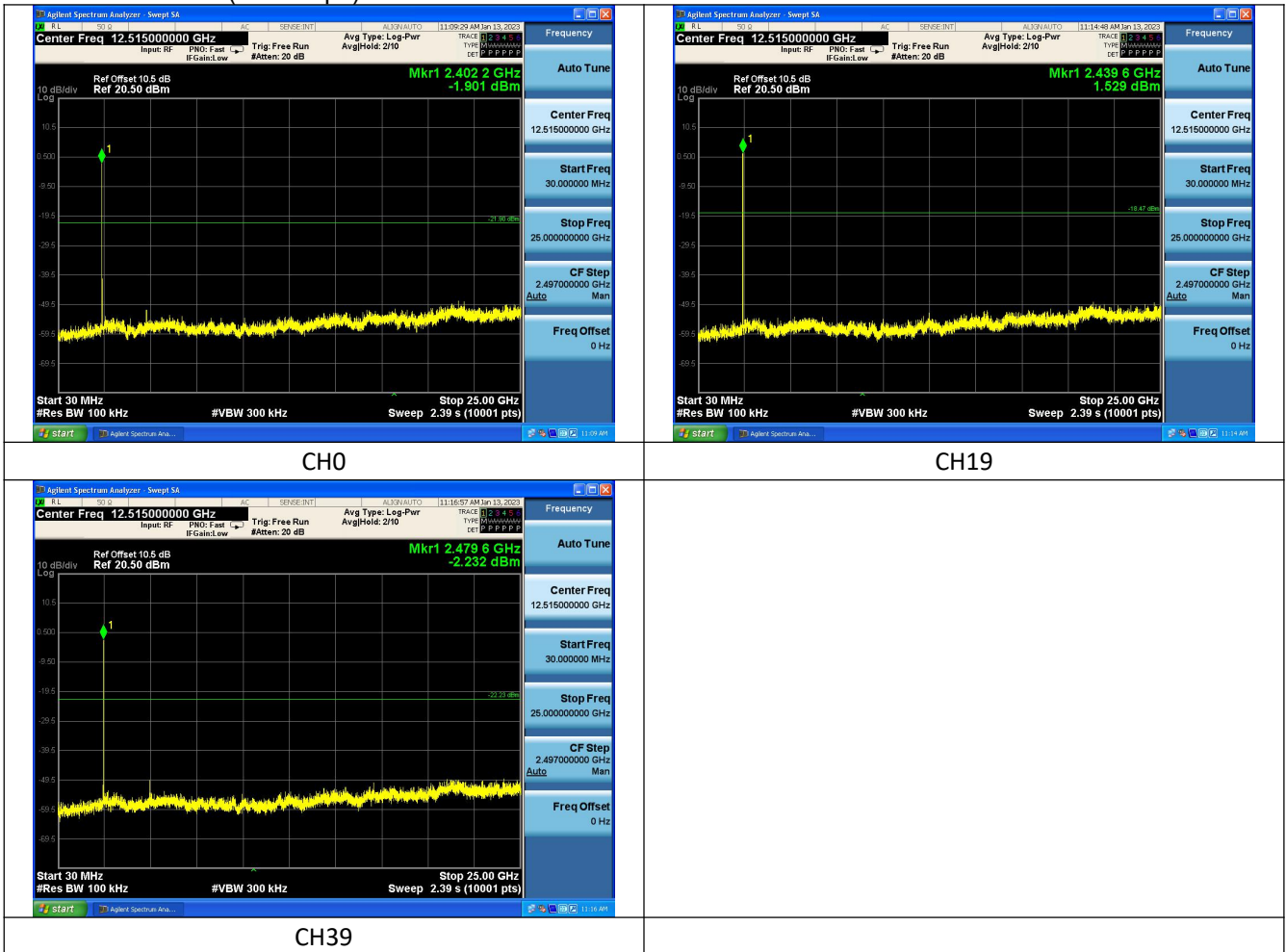


CH19

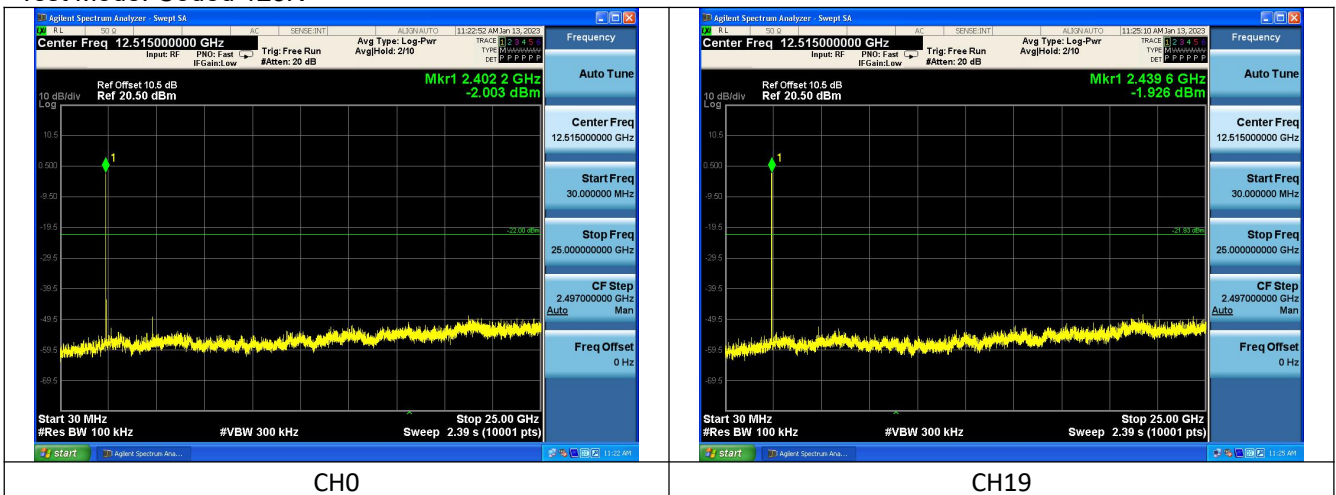


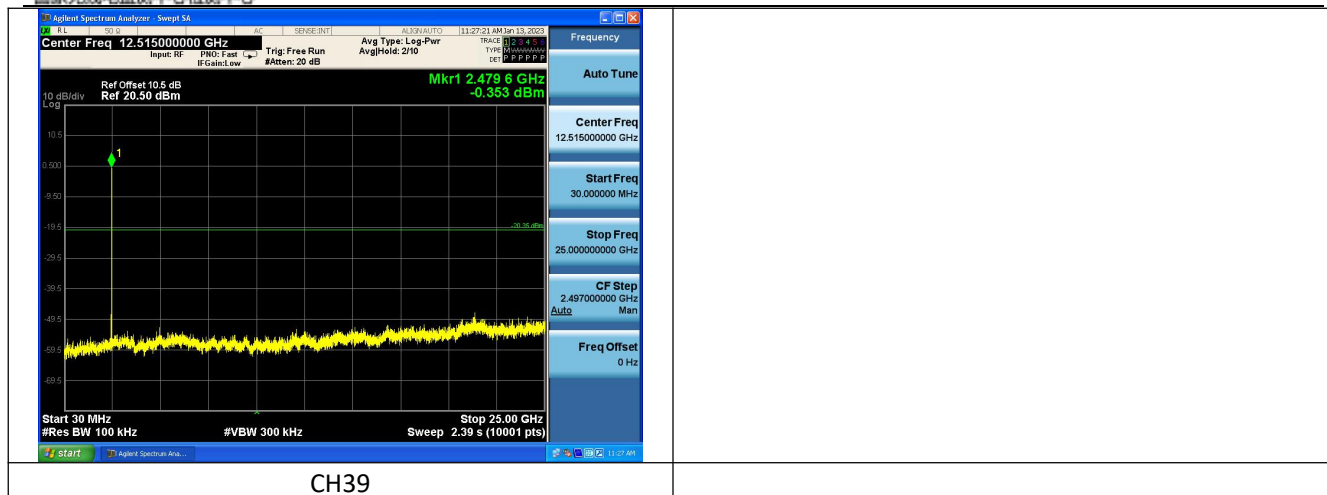
CH39

Test Mode: GFSK (LE 2Mbps)

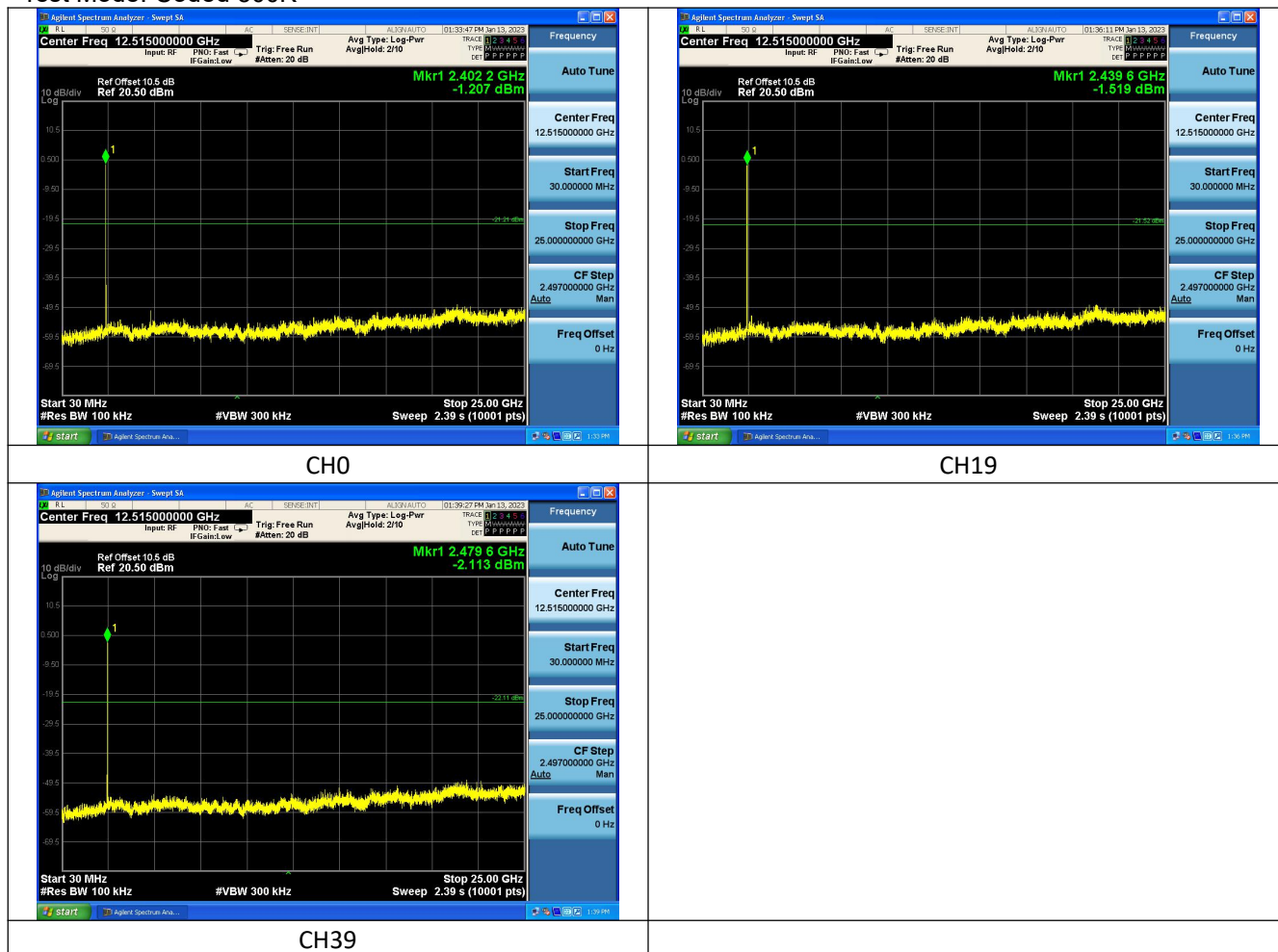


Test Mode: Coded 125K





Test Mode: Coded 500K



6 Band Edge measurement

Test Mode: GFSK (LE 1Mbps)



Test Mode: GFSK (LE 2Mbps)



Test Mode: Coded 125K



Test Mode: Coded 500K



APPENDIX B – TEST DATA OF RADIATED EMISSION

After comparison, the worst case attitude is EUT lay down and tx-antenna 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.

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK (LE 1Mbps)

Polarity: Vertical

No	Frequency (GHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2.3891	42.117	74	31.883	Peak
2	2.3897	27.915	54	26.085	Average

Carrier frequency (MHz): 2402

Channel No.:0

Test Mode: GFSK (LE 1Mbps)

Polarity: Horizontal

No	Frequency (GHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2.3653	40.302	74	33.698	Peak
2	2.3342	27.126	54	26.874	Average

Carrier frequency (MHz): 2480

Channel No.:39

Test Mode: GFSK (LE 1Mbps)

Polarity: Vertical

No	Frequency (GHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2.4867	38.808	74	35.192	Peak
2	2.4952	26.255	54	27.745	Average

Carrier frequency (MHz): 2480

Channel No.:39

Test Mode: GFSK (LE 1Mbps)

Polarity: Horizontal

No	Frequency (GHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2.4864	38.437	74	35.563	Peak
2	2.4952	26.357	54	27.643	Average

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

No	Frequency (GHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2.3181	40.303	74	33.697	Peak
2	2.3189	27.237	54	26.763	Average

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

No	Frequency (GHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2.3222	36.767	74	37.233	Peak
2	2.3213	24.805	54	29.195	Average

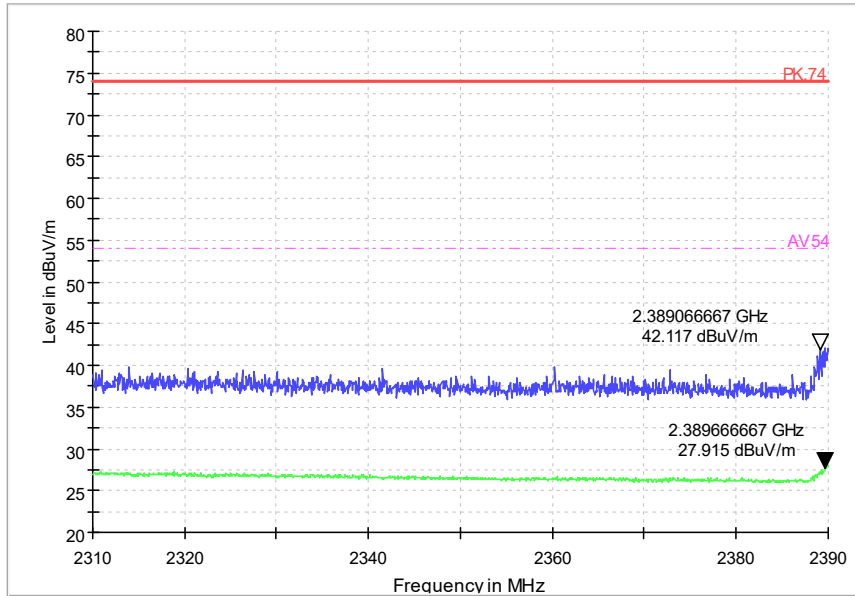
Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE 2Mbps)
Polarity: Vertical

No	Frequency (GHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2.4868	38.262	74	35.738	Peak
2	2.4862	26.933	54	24.574	Average

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

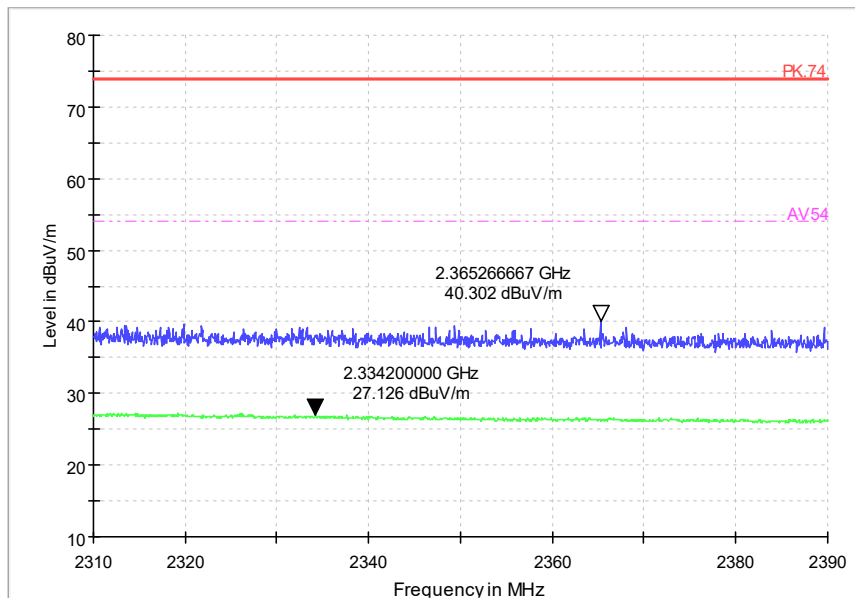
No	Frequency (GHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2.4929	38.776	74	35.224	Peak
2	2.495	26.309	54	27.691	Average

002C_FCC 2310-2390



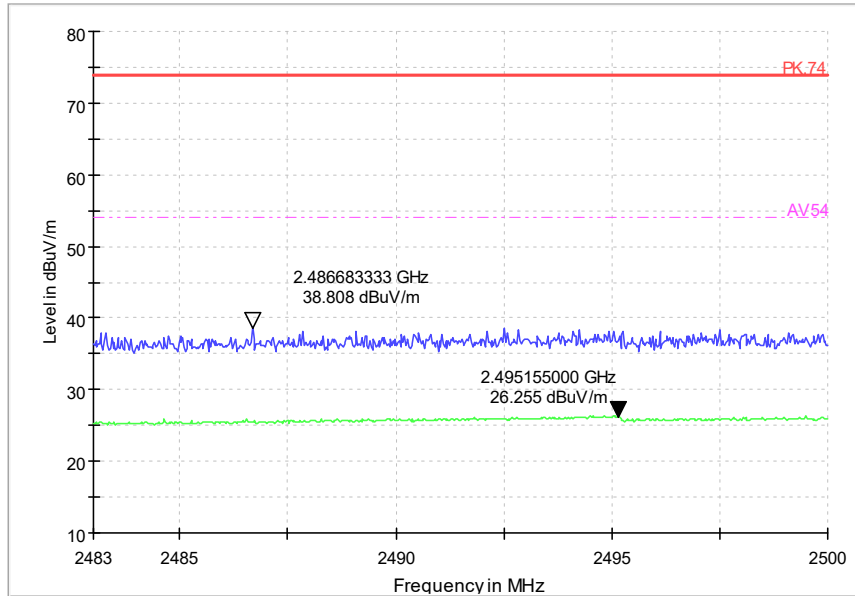
Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 1Mbps)
Polarity: Vertical

002C_FCC 2310-2390



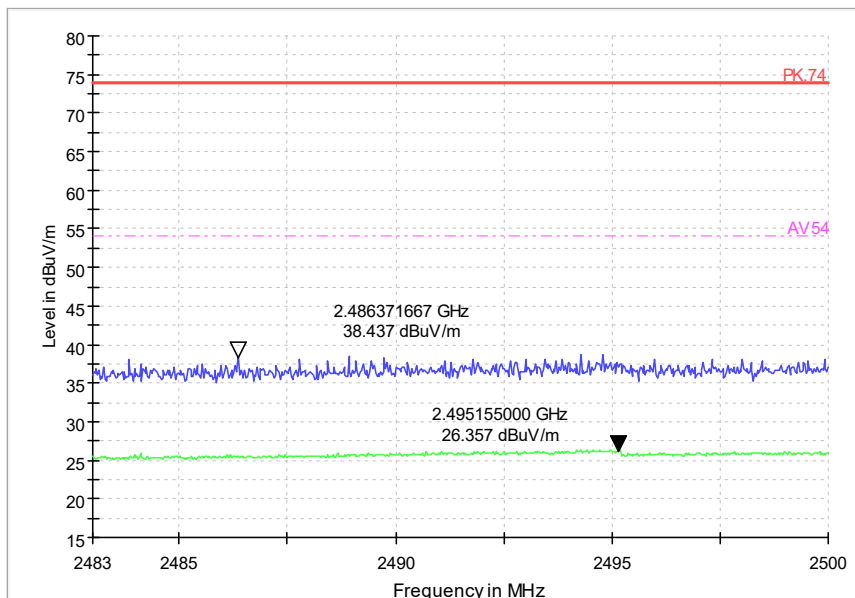
Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 1Mbps)
Polarity: Horizontal

002C_FCC 2483-2500



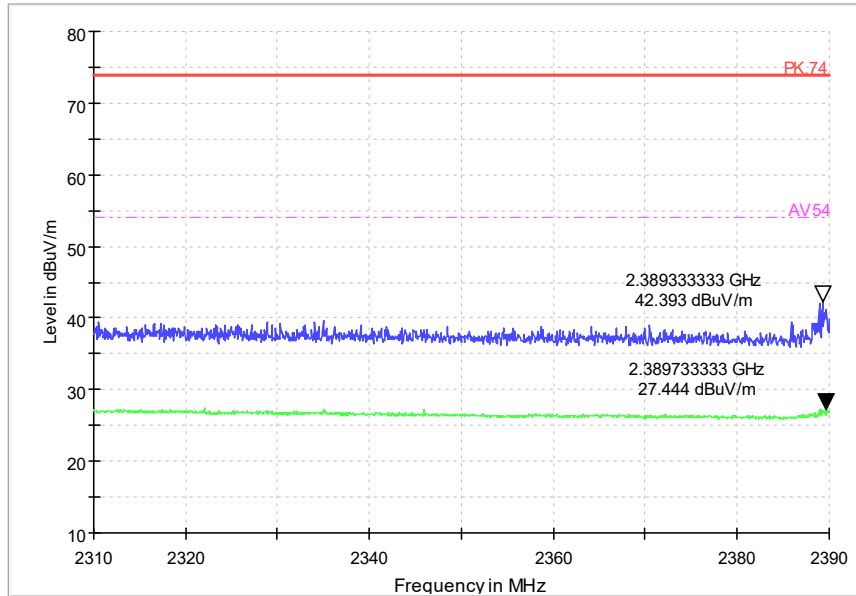
Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE 1Mbps)
Polarity: Vertical

002C_FCC 2483-2500



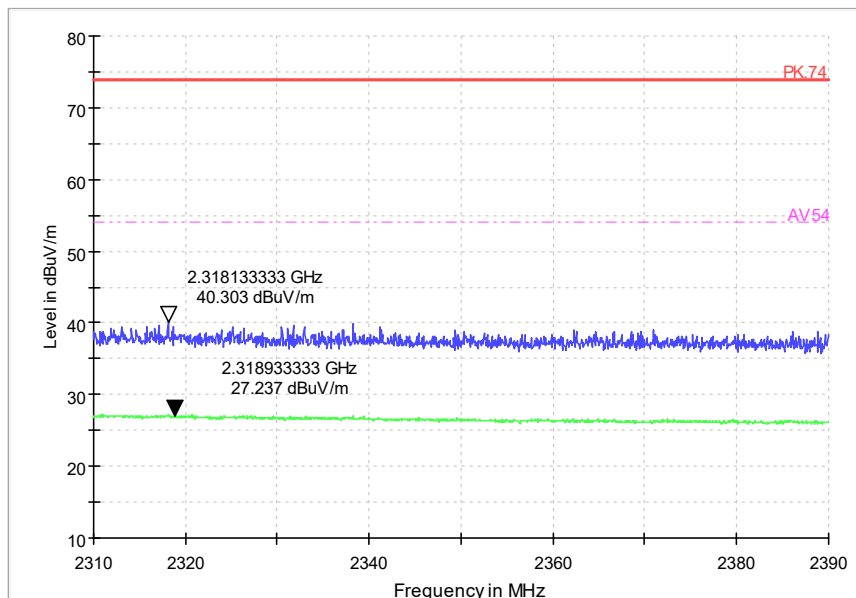
Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE 1Mbps)
Polarity: Horizontal

002C_FCC 2310-2390



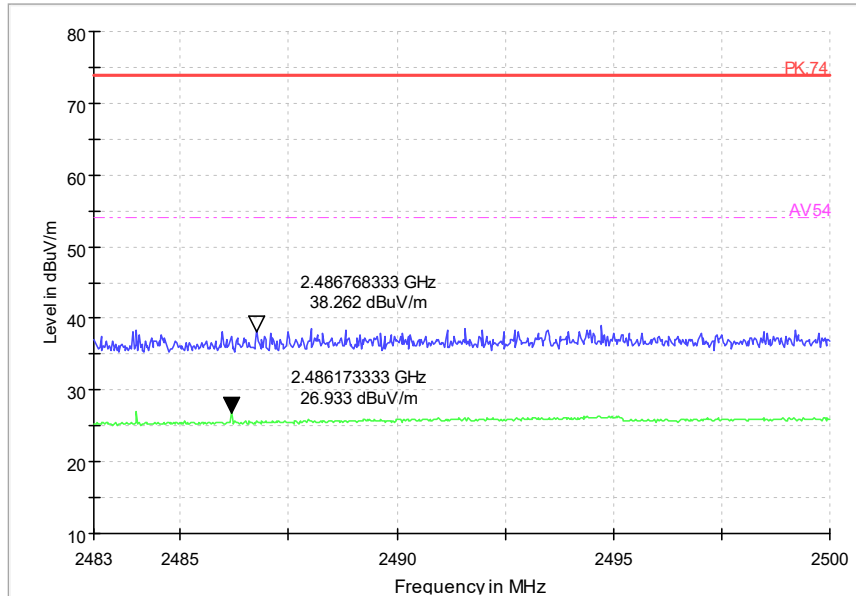
Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 2Mbps)
Polarity: Vertical

002C_FCC 2310-2390



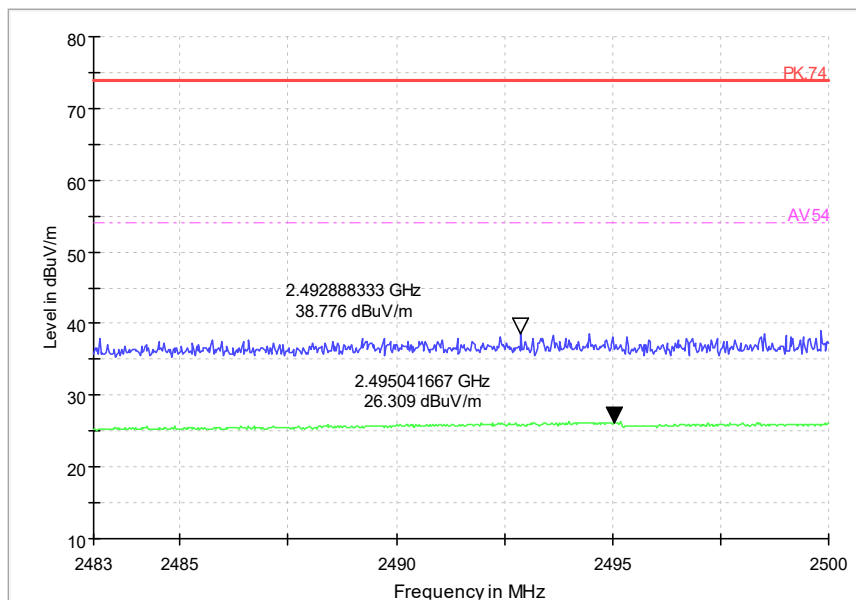
Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 2Mbps)
Polarity: Horizontal

002C_FCC 2483-2500



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

002C_FCC 2483-2500



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

Sample Calculations

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

Determining Spurious Emissions Levels

A “reference path loss” is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

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

Sample calculation: $(6.41 \text{ dB}\mu\text{V/m}) = (24.41 \text{ dB}\mu\text{V}) + (-18 \text{ dB/m})$, the corresponding frequency is 52.6495MHz.

For GFSK (LE 1Mbps)

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
52.6495	6.41	-18	24.41	Vertical	40	33.59
87.715	3.62	-22.2	25.82	Vertical	40	36.38
167.9825	14.46	-21.6	36.06	Vertical	43.5	29.04
190.535	15.04	-19.6	34.64	Vertical	43.5	28.46
503.9905	17.45	-10.6	28.05	Vertical	46	28.55
996.0715	22	-2.5	24.5	Vertical	54	32.00

Channel No.:19

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
51.146	6.9	-17.8	24.7	Vertical	40	33.1
57.2085	6.52	-18.4	24.92	Vertical	40	33.48
167.9825	14.39	-21.6	35.99	Vertical	43.5	29.11
191.4565	12.68	-19.5	32.18	Vertical	43.5	30.82
503.9905	17.51	-10.6	28.11	Vertical	46	28.49
953.9735	19.04	-2.9	21.94	Vertical	46	26.96

Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
51.4855	6.93	-17.9	24.83	Vertical	40	33.07
58.227	6.4	-18.5	24.9	Vertical	40	33.6
146.982	7.17	-22.6	29.77	Vertical	43.5	36.33
193.542	14.63	-19.3	33.93	Vertical	43.5	28.87
503.9905	17.47	-10.6	28.07	Vertical	46	28.53
956.3985	18.66	-2.9	21.56	Vertical	46	27.34

For GFSK (LE 2Mbps)

Channel No.:0

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
52.8435	6.09	-18	24.09	Vertical	40	33.91

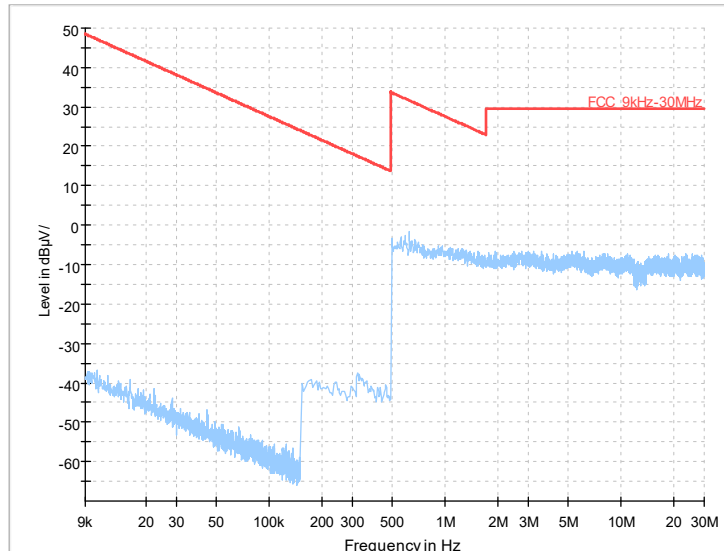
56.9175	5.81	-18.4	24.21	Vertical	40	34.19
99.937	4.12	-19.3	23.42	Vertical	43.5	39.38
200.817	4.46	-18.7	23.16	Vertical	43.5	39.04
528.483	12.78	-10.2	22.98	Vertical	46	33.22
907.9955	18.09	-3.1	21.19	Vertical	46	27.91

Channel No.:19

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
51.243	6.8	-17.8	24.6	Vertical	40	33.20
56.7235	5.67	-18.4	24.07	Vertical	40	34.33
99.1125	4.51	-19.4	23.91	Vertical	43.5	38.99
201.1565	4.47	-18.7	23.17	Vertical	43.5	39.03
530.0835	12.78	-10.1	22.88	Vertical	46	33.22
948.881	18.64	-2.9	21.54	Vertical	46	27.36

Channel No.:39

Frequency (MHz)	Result (dBuV/m)	ARpl (dB)	Pmea (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
50.661	6.59	-17.8	24.39	Vertical	40	33.41
57.451	6.02	-18.5	24.52	Vertical	40	33.98
104.8355	4.66	-19.4	24.06	Vertical	43.5	38.84
307.42	7.03	-15.5	22.53	Vertical	46	38.97
554.7215	12.97	-9.5	22.47	Vertical	46	33.03
929.384	18.73	-3	21.73	Vertical	46	27.27



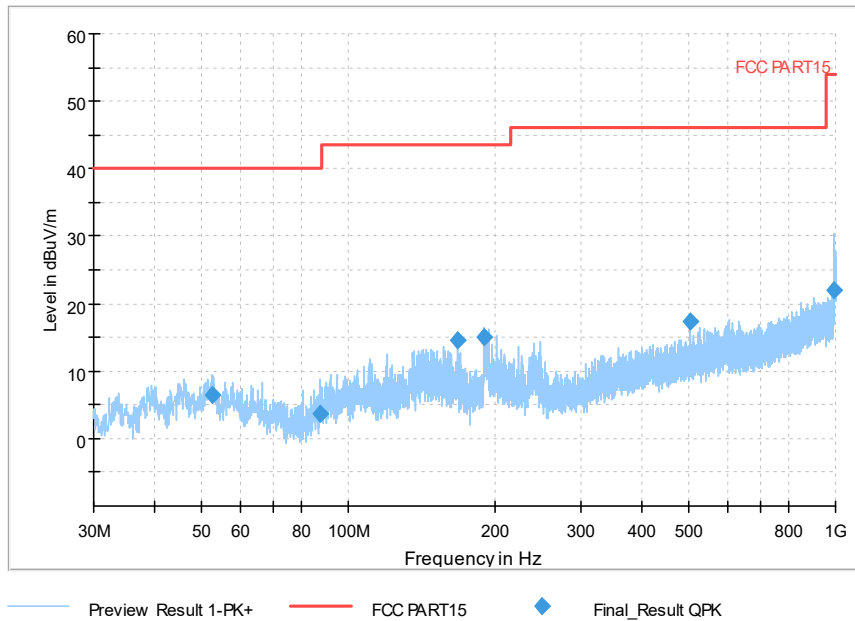
Frequency Range: 9kHz -30MHz

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.

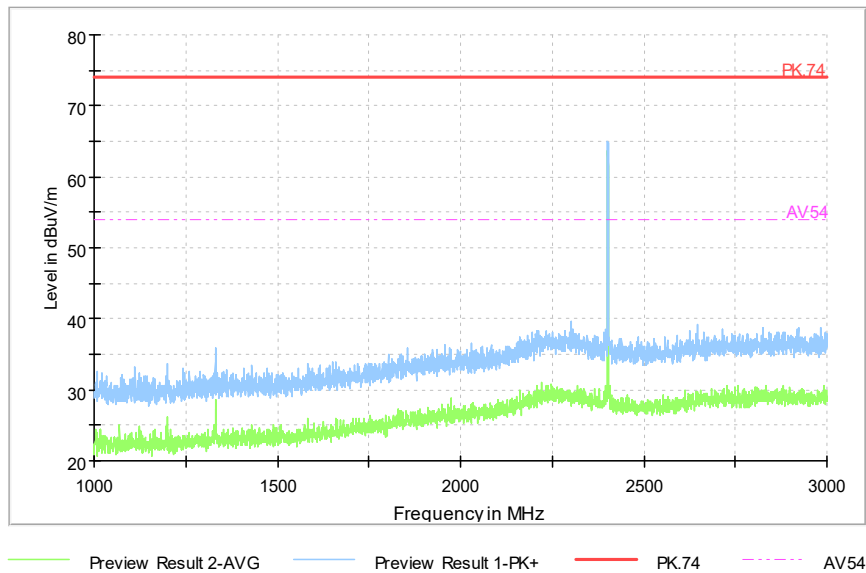
Channel No.:0

Full Spectrum



Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: GFSK (LE 1Mbps)

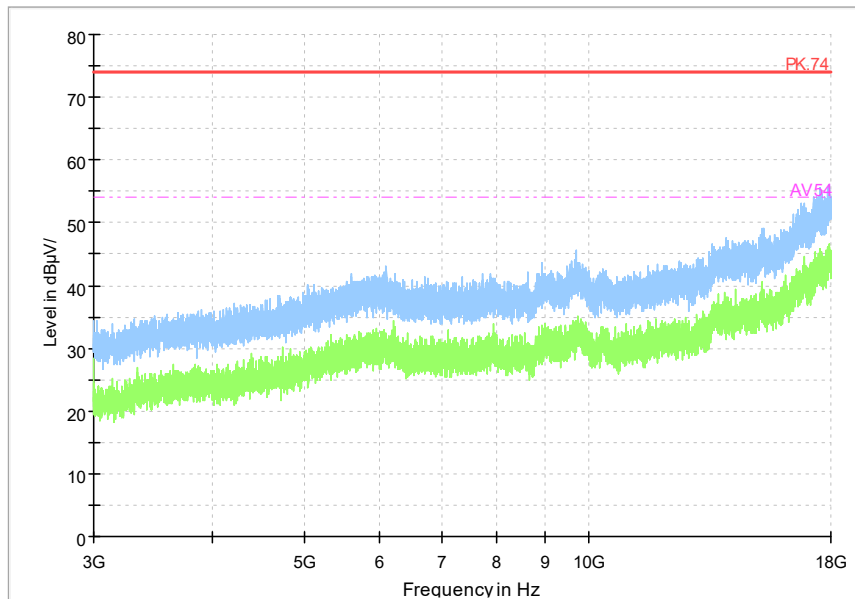
Full Spectrum



Comment

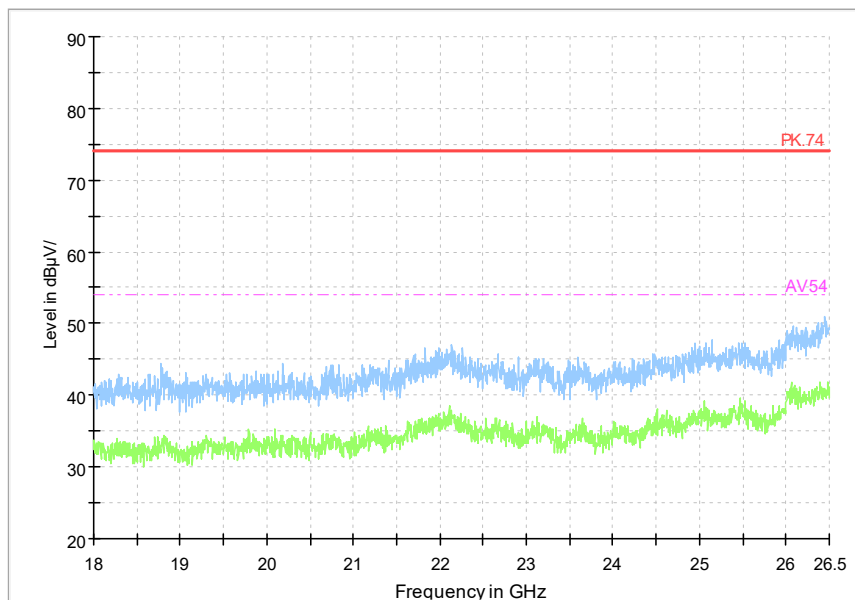
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

Full Spectrum



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

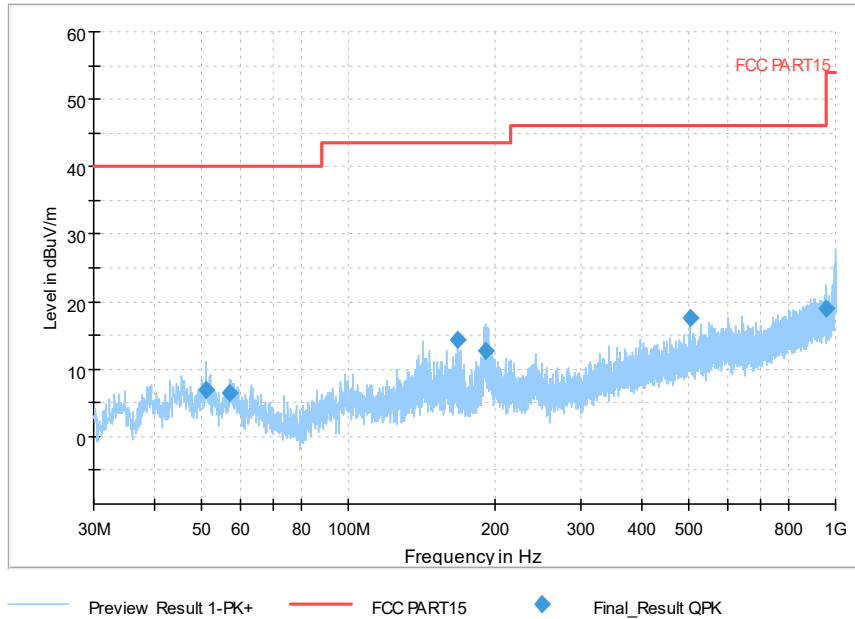
Full Spectrum



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

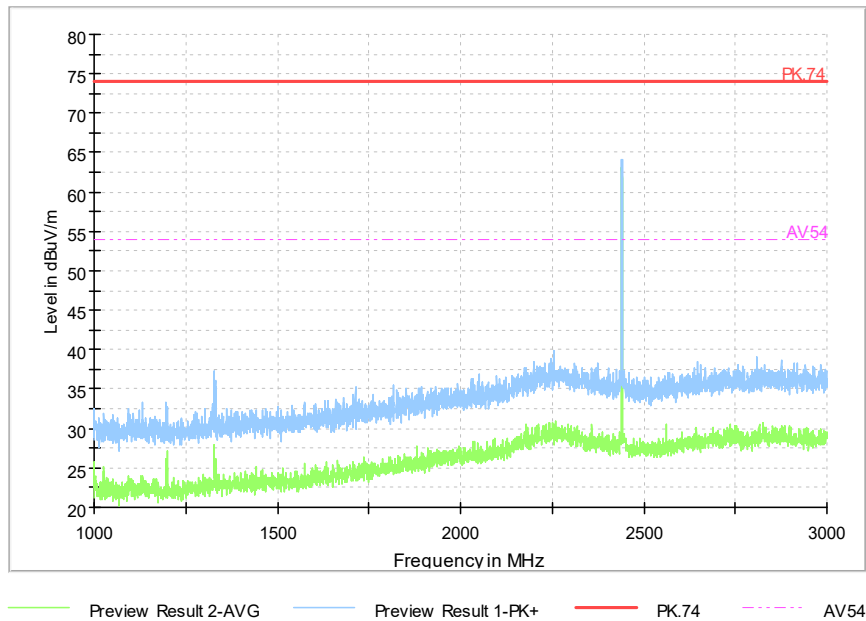
Channel No.:19

Full Spectrum



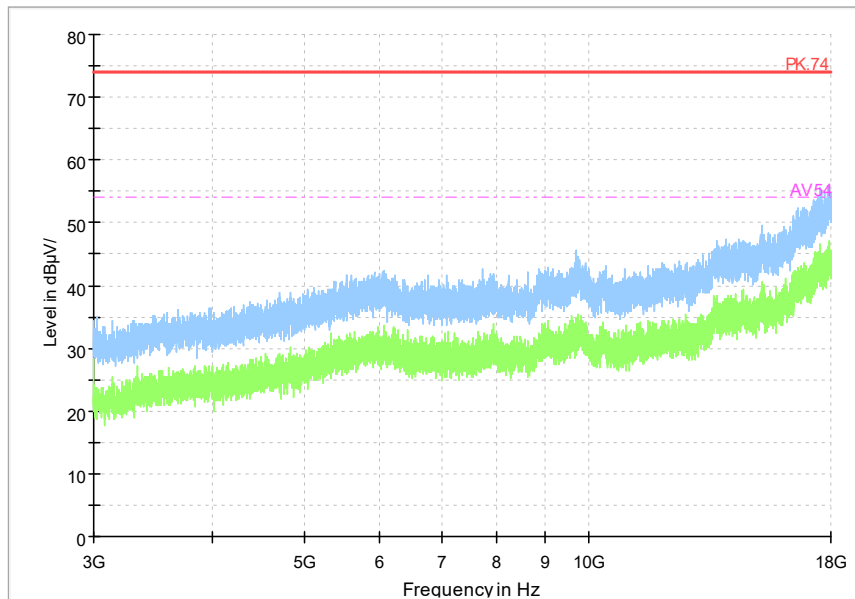
Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: GFSK (LE 1Mbps)

Full Spectrum



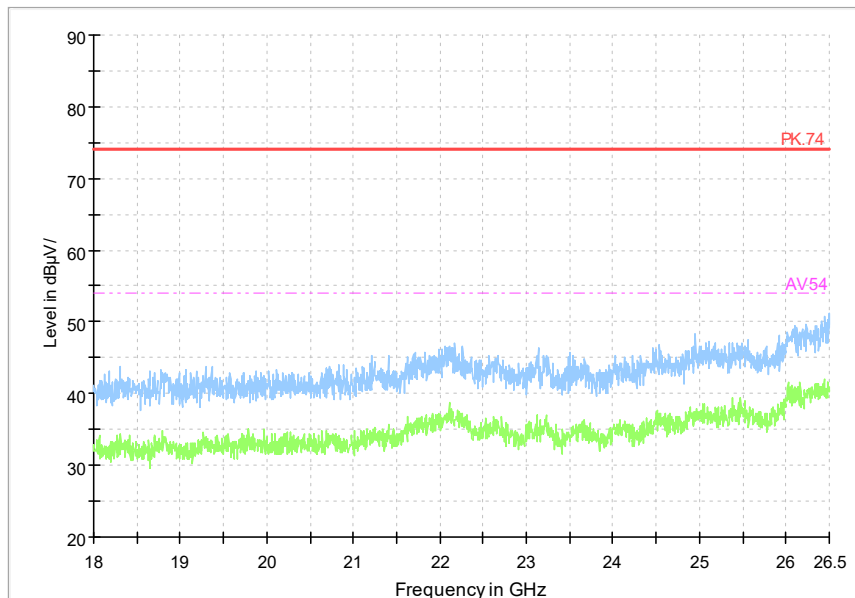
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

Full Spectrum



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

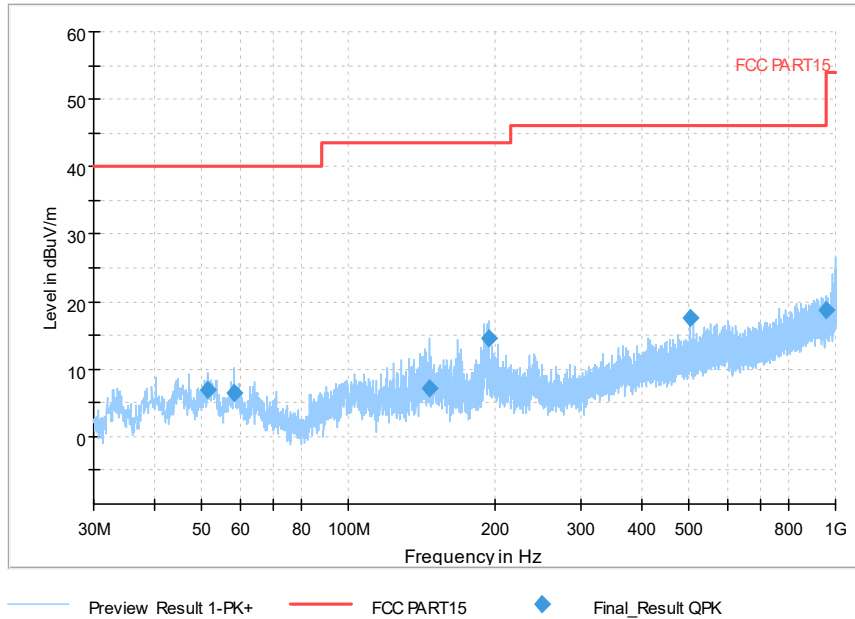
Full Spectrum



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

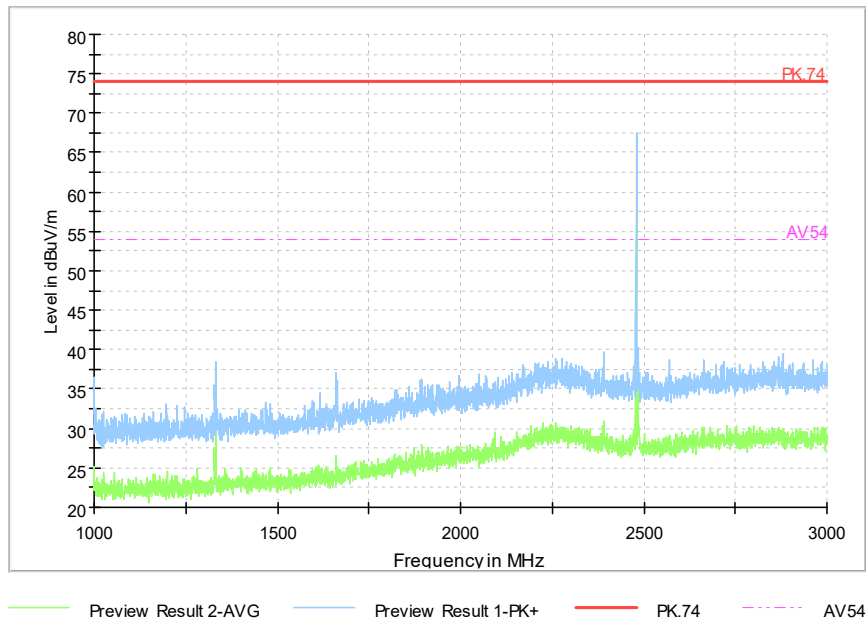
Channel No.:39

Full Spectrum



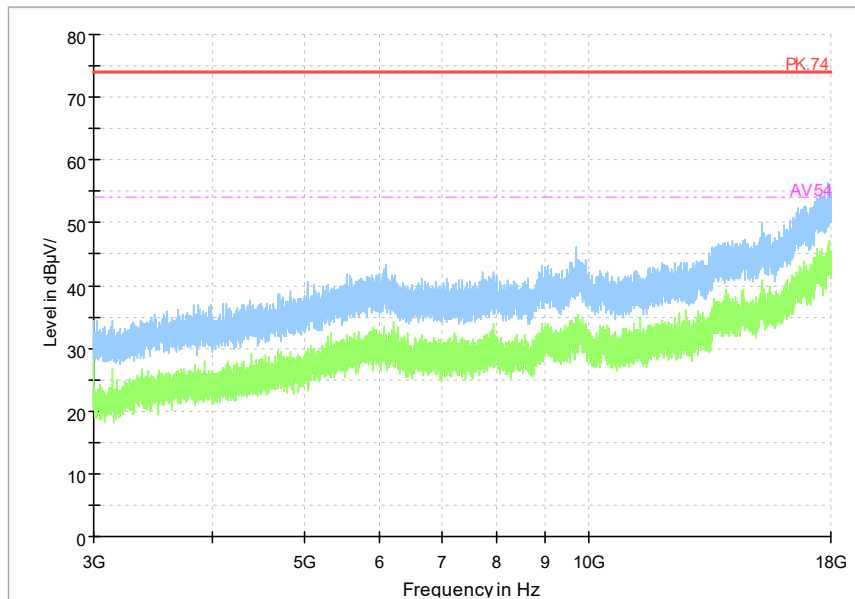
Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: GFSK (LE 1Mbps)

Full Spectrum



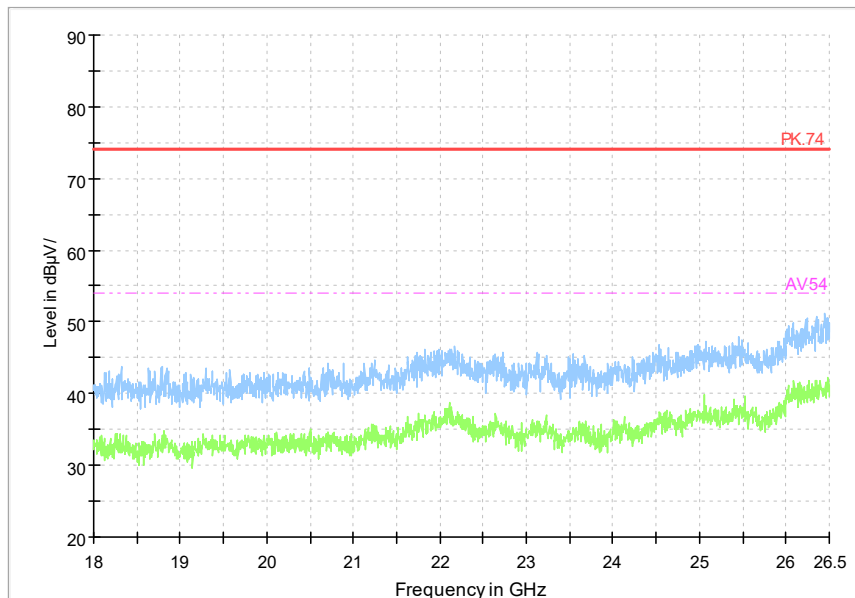
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

Full Spectrum



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

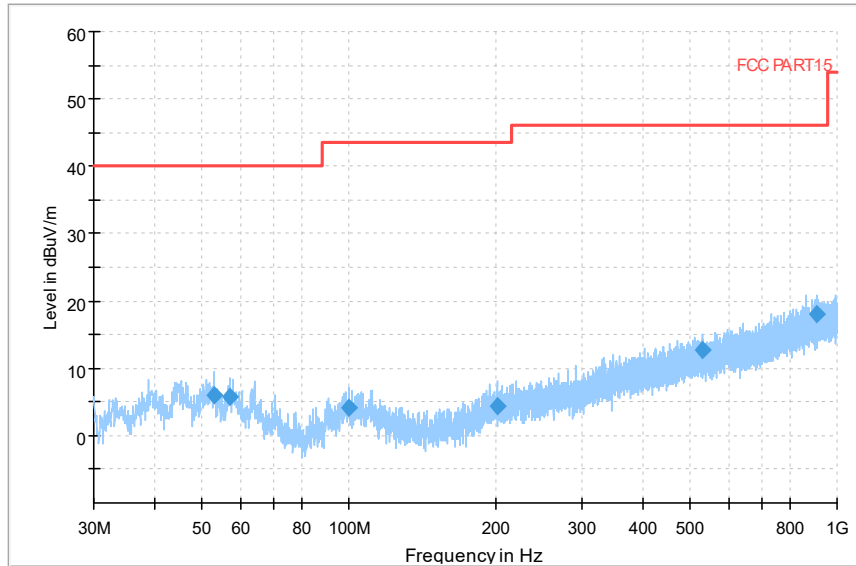
Full Spectrum



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

Channel No.:0

Full Spectrum



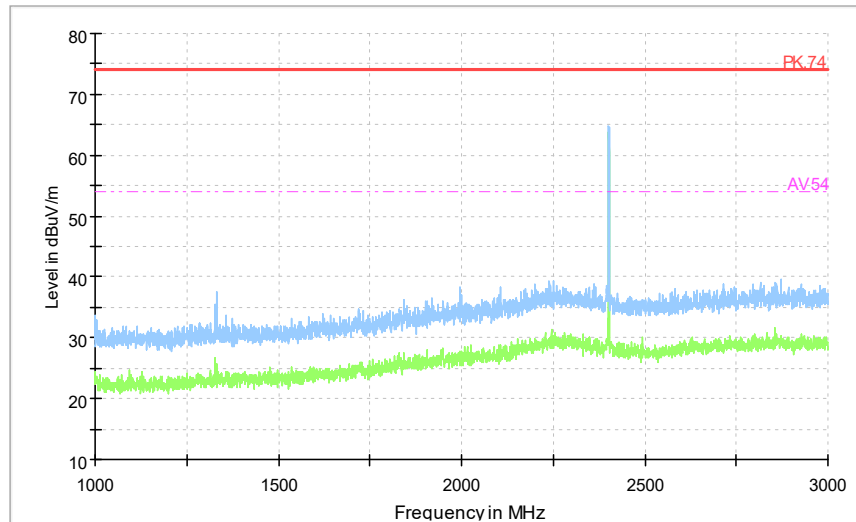
— Preview Result 1-PK+ — FCC PART15 ◆ Final_Result QPK

Frequency Range: 30MHz-1000 MHz

Detector: QP mode

Modulation type: GFSK (LE 2Mbps)

Full Spectrum



— Preview Result 2-AVG — Preview Result 1-PK+ — PK.74 - - - AV54

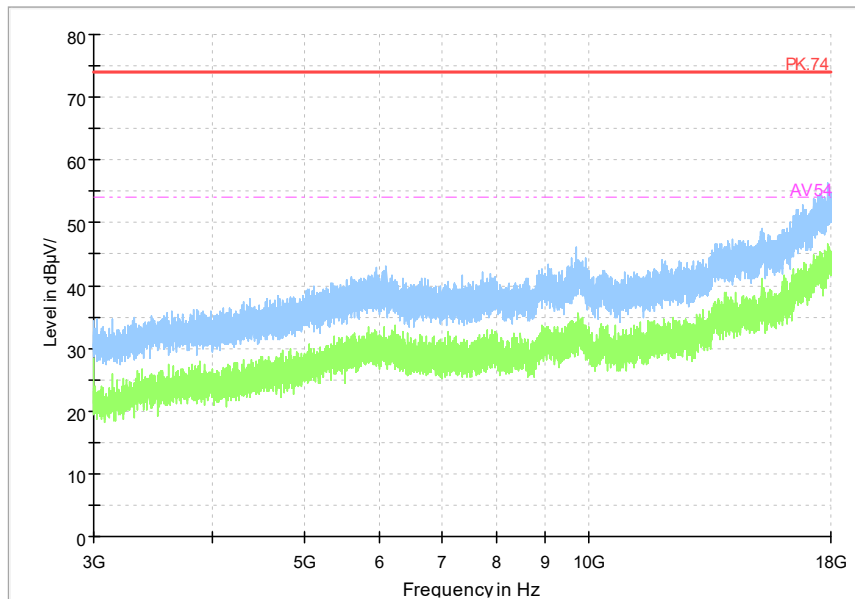
Comment

Frequency Range: 1GHz-3GHz

Detector: Av mode and PK mode

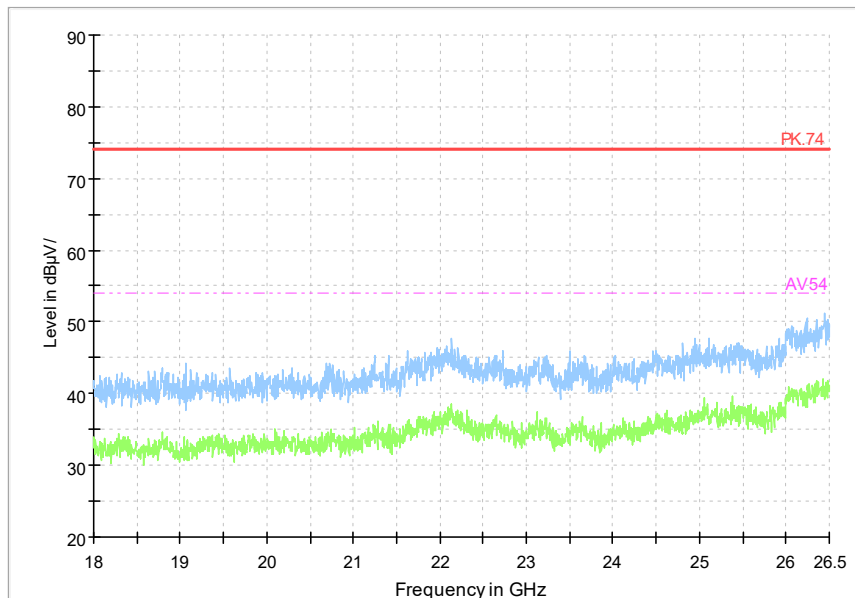
Modulation type: GFSK (LE 2Mbps)

Full Spectrum



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

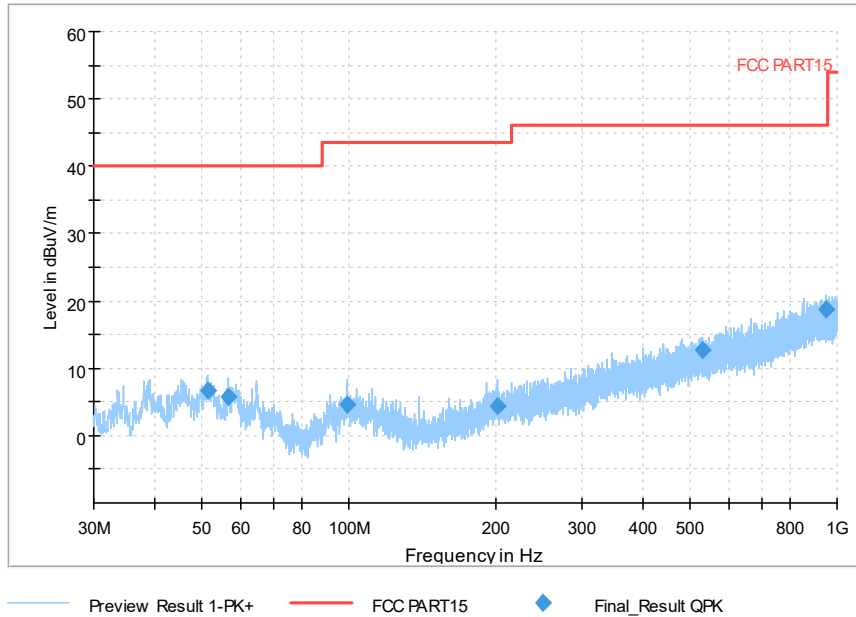
Full Spectrum



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

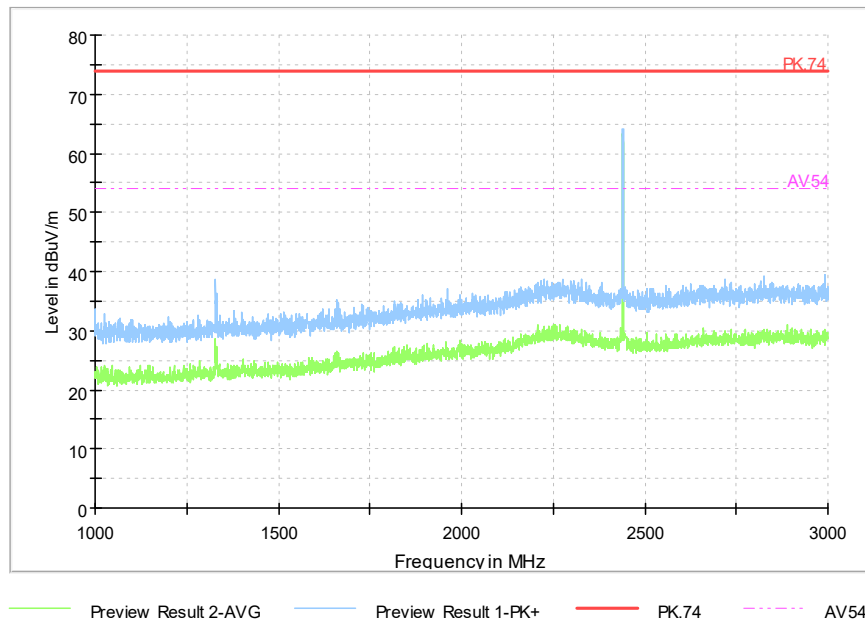
Channel No.:19

Full Spectrum



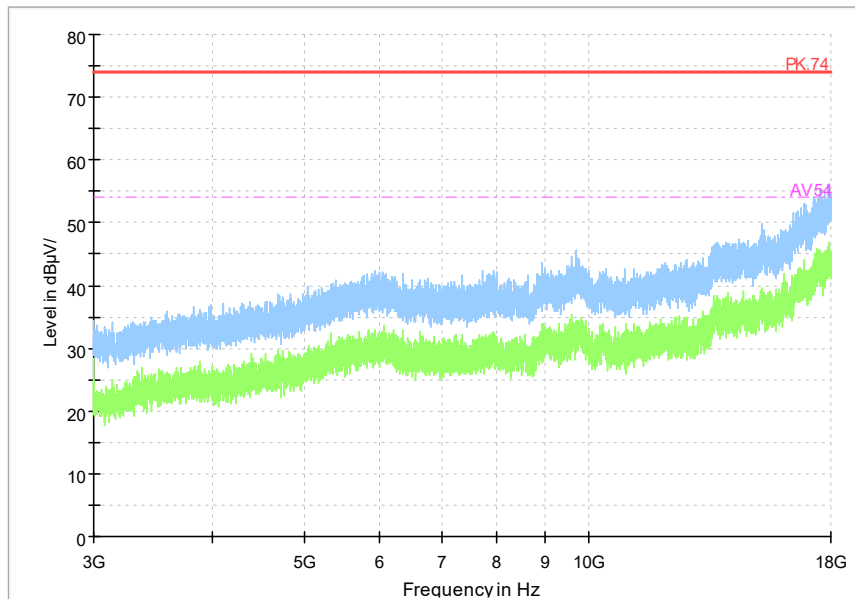
Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: GFSK (LE 2Mbps)

Full Spectrum



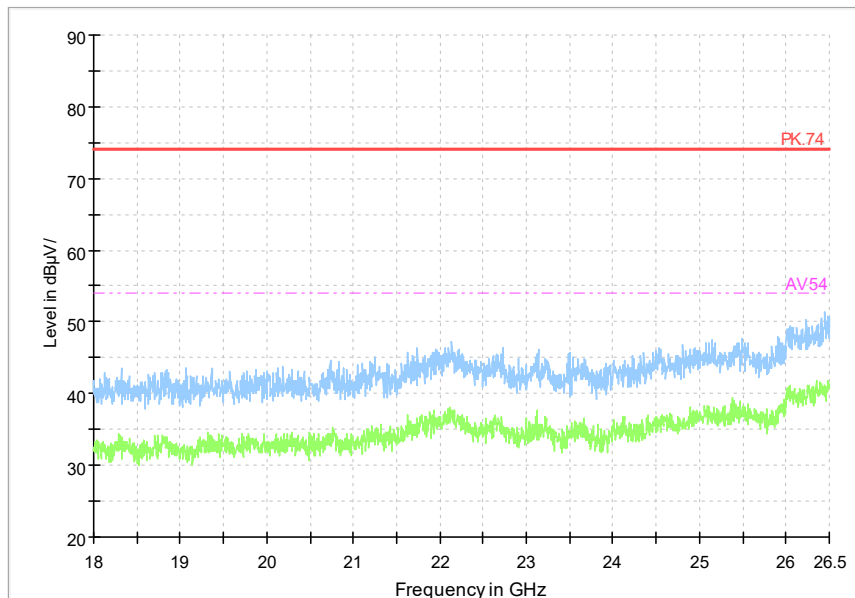
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)

Full Spectrum



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

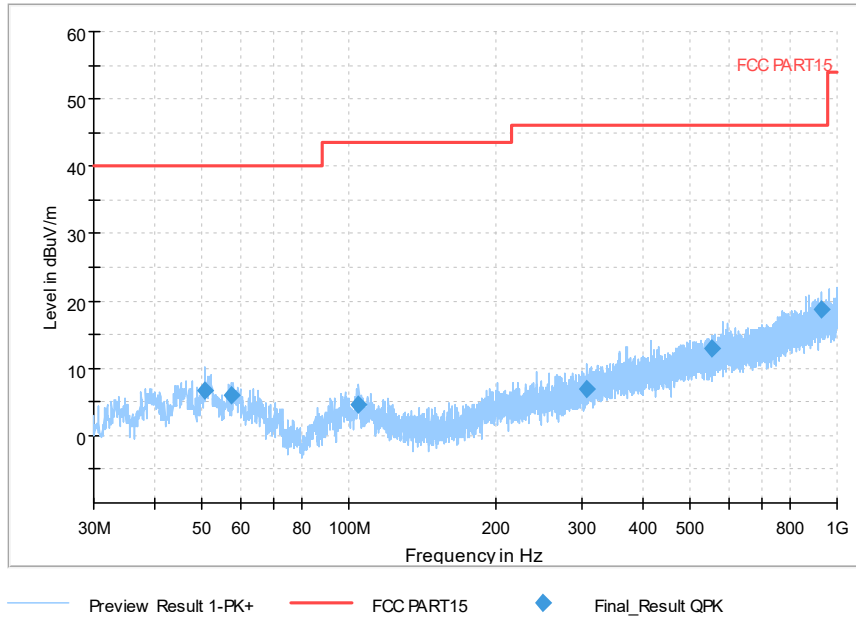
Full Spectrum



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

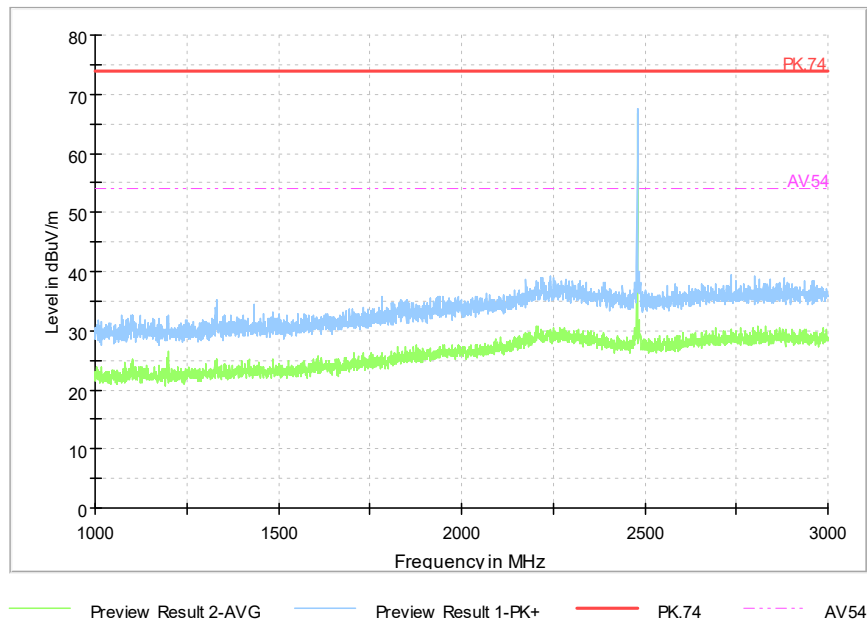
Channel No.:39

Full Spectrum



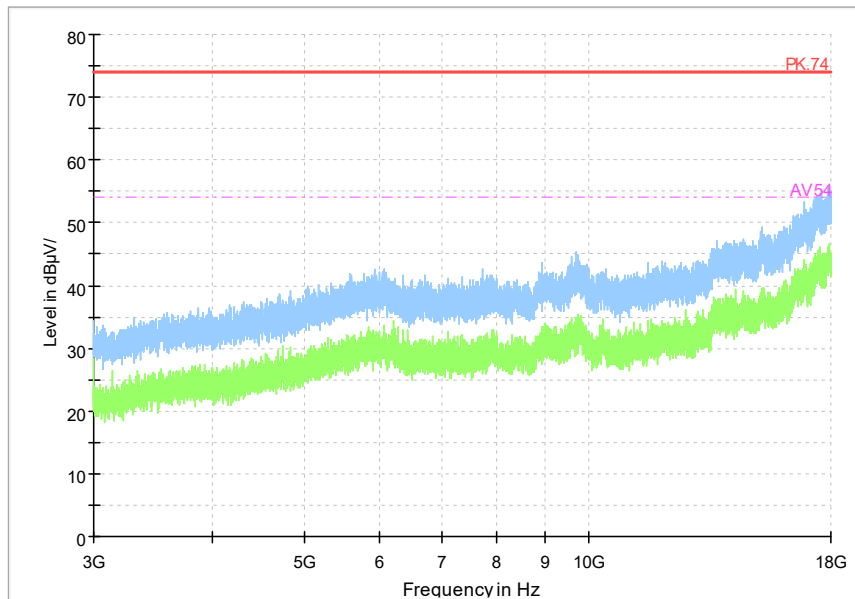
Frequency Range: 30MHz-1000 MHz
Detector: QP mode
Modulation type: GFSK (LE 2Mbps)

Full Spectrum



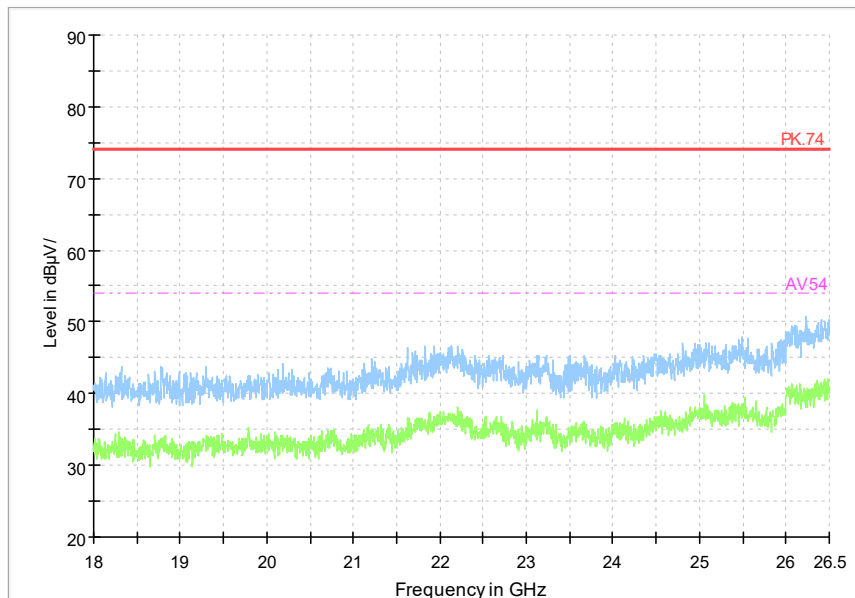
Frequency Range: 1GHz-3GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)

Full Spectrum



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

Full Spectrum



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

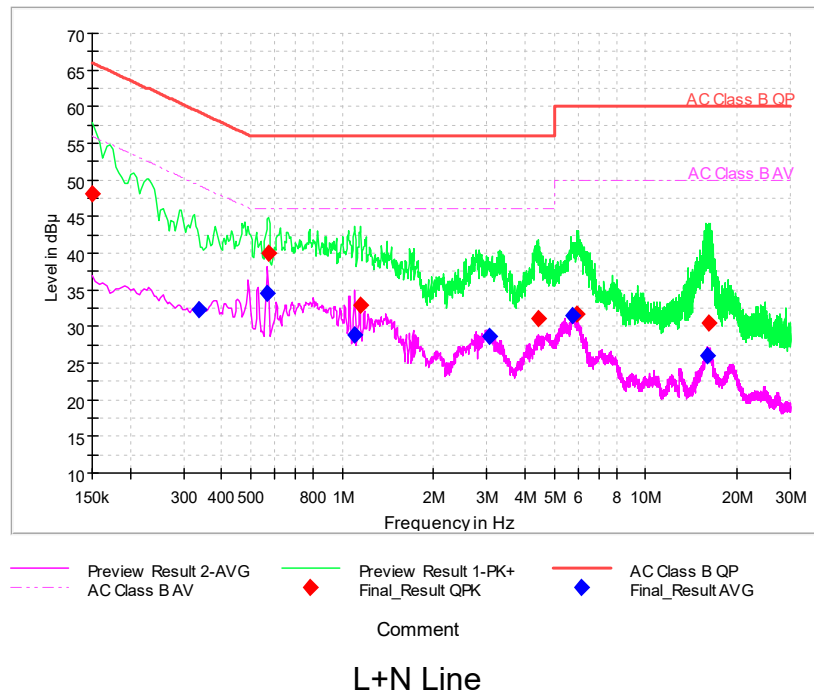
AC Power line Conducted Emission

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

The measurement results are obtained as described below:

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

Sample calculation: $(48.11 \text{ dB}\mu\text{V}) = (18.31 \text{ dB}\mu\text{V}) + (29.8 \text{ dB})$, the corresponding frequency is 0.15MHz.



MEASUREMENT RESULT:

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	Pmea QuasiPe ak (dBμV)	Pmea Averag e (dBμV)
0.15	48.11	---	66	17.89	L1	29.8	18.31	----
0.33763	---	32.28	49.26	16.98	L1	29.8	---	2.48
0.5679	---	34.55	46	11.45	L1	29.8	---	4.75
0.57216	39.94	---	56	16.06	L1	29.8	10.14	---
1.09667	---	28.76	46	17.24	L1	29.8	---	-1.04
1.14784	32.95	---	56	23.05	L1	29.8	3.15	---
3.05824	---	28.67	46	17.33	L1	29.9	---	-1.23
4.41429	30.99	---	56	25.01	L1	29.9	1.09	---
5.76606	---	31.48	50	18.52	L1	29.9	---	1.58
5.95369	31.64	---	60	28.36	L1	29.9	1.74	---
15.9407	---	25.92	50	24.08	L1	30	---	-4.08
0.15	48.11	---	66	17.89	L1	29.8	18.31	----