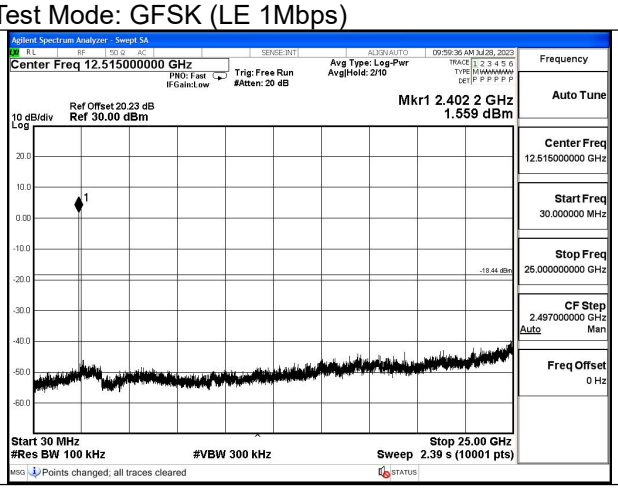
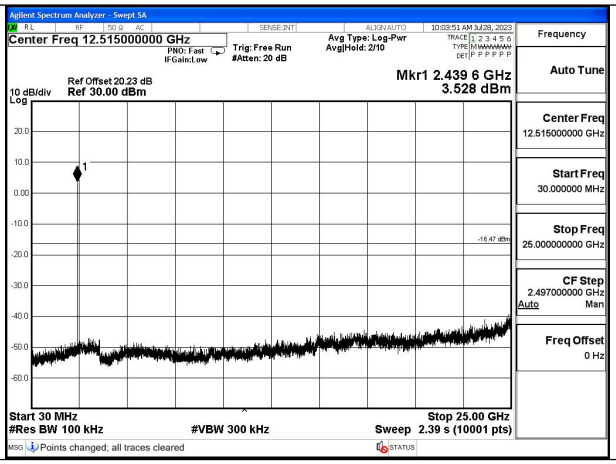
## 5 Conducted Out of band emission measurement

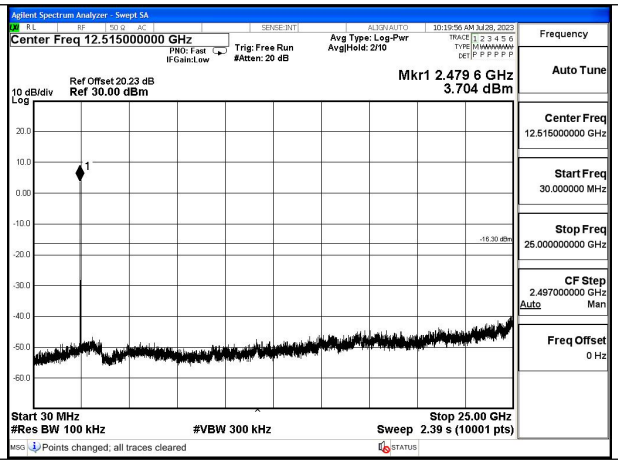
Test Mode: GFSK (LE 1Mbps)




CH0

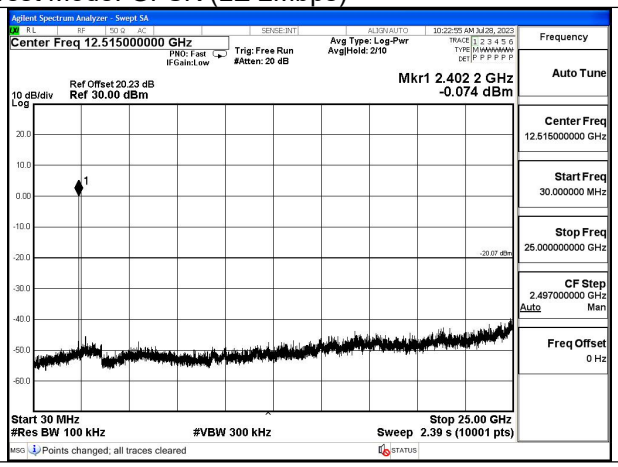



CH19

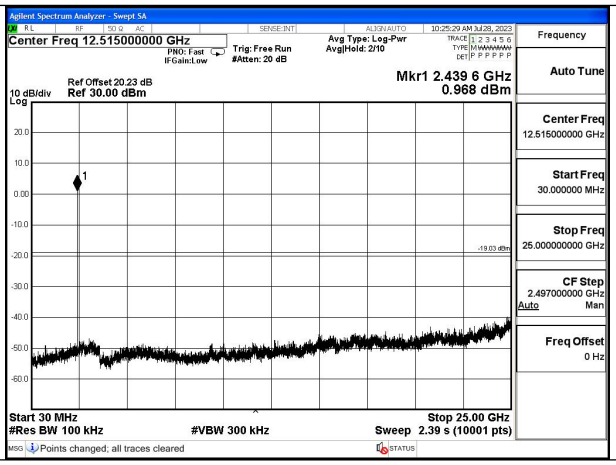



CH39

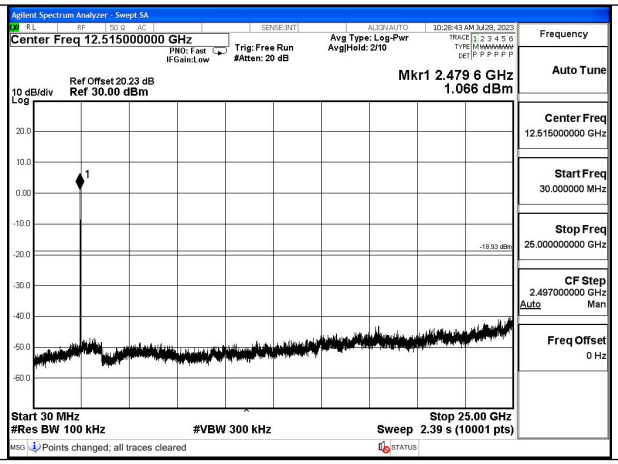
Test Mode: GFSK (LE 2Mbps)




CH0

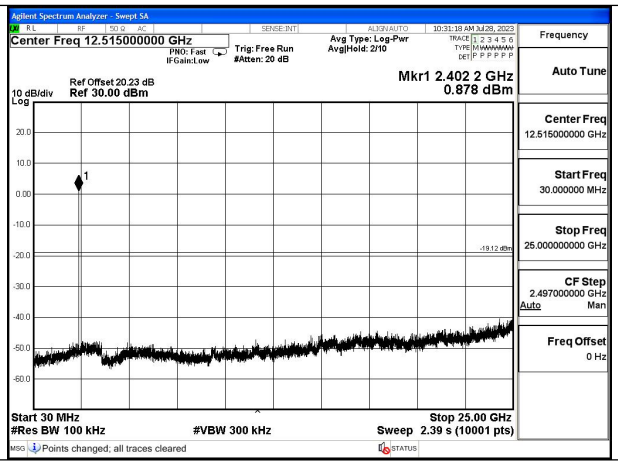



CH19

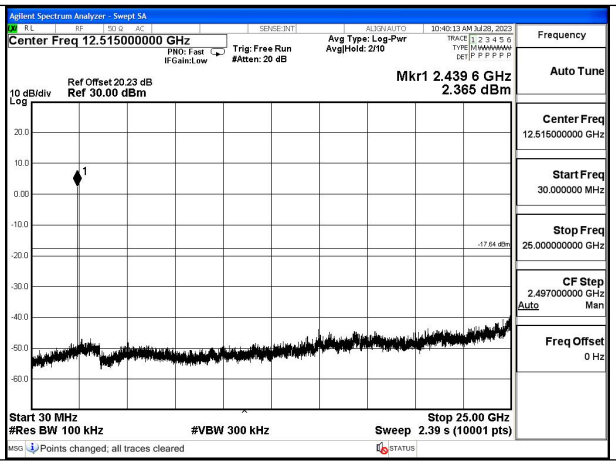



CH39

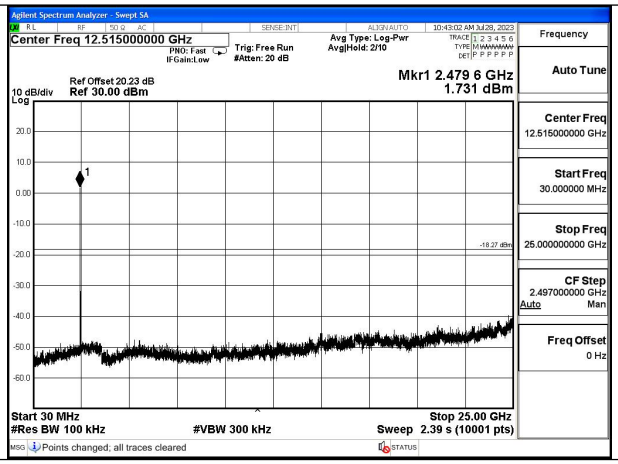
Test Mode: Coded 125K




CH0

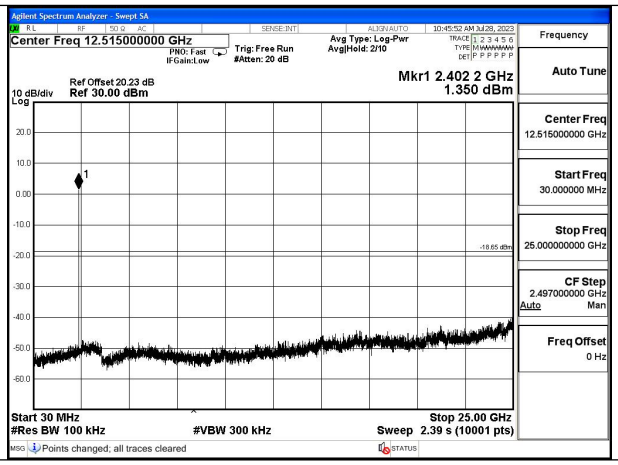



CH19

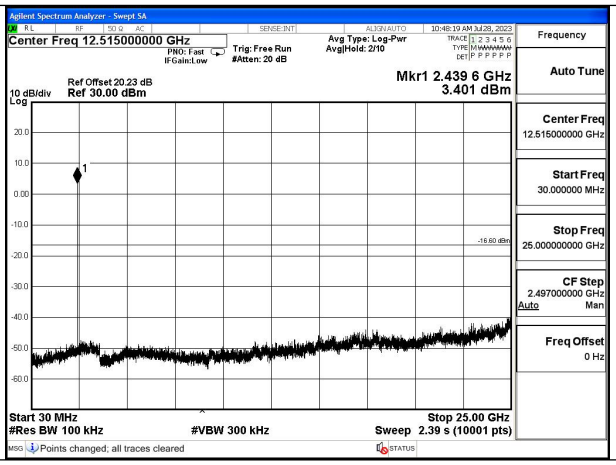



CH39

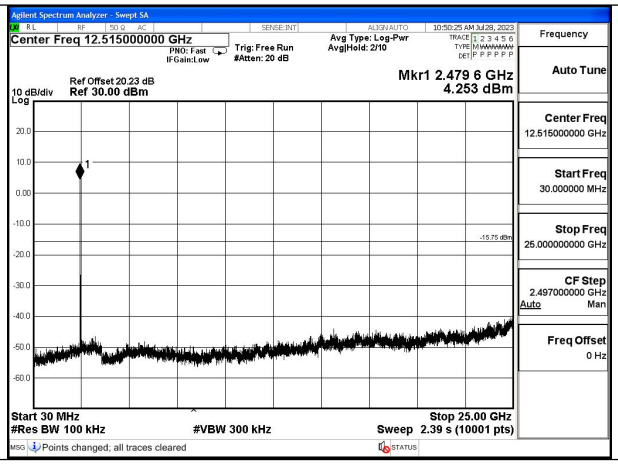
Test Mode: Coded 500K




CH0



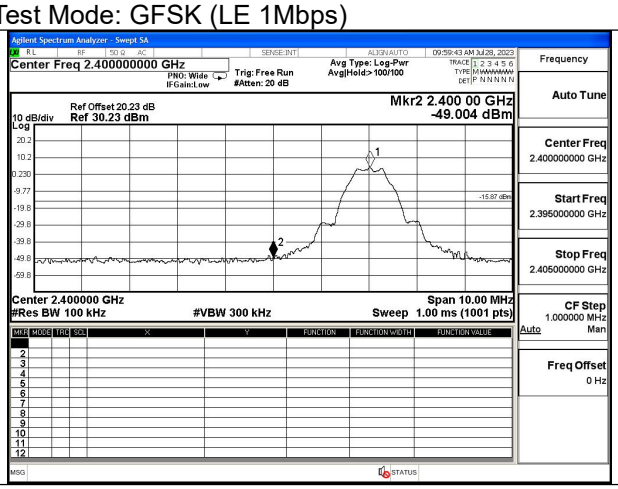

CH19



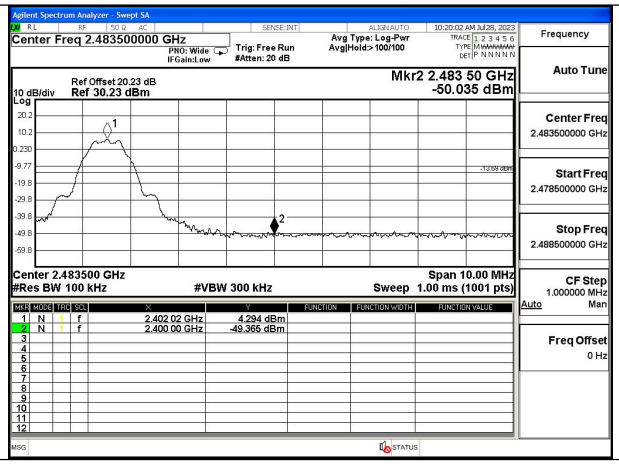

CH39

## 6 Band Edge measurement

Test Mode: GFSK (LE 1Mbps)

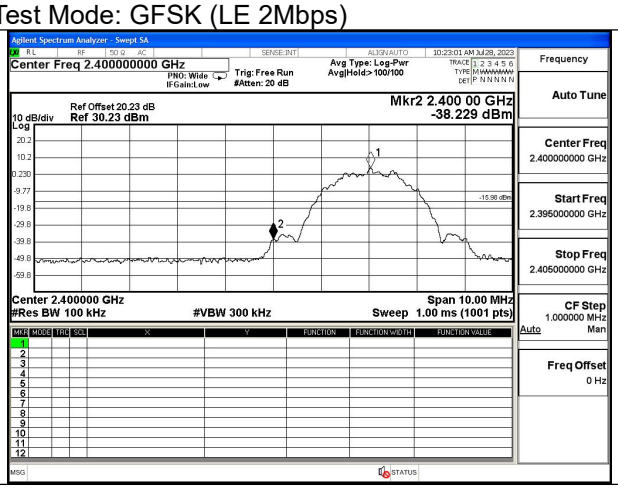



CH0

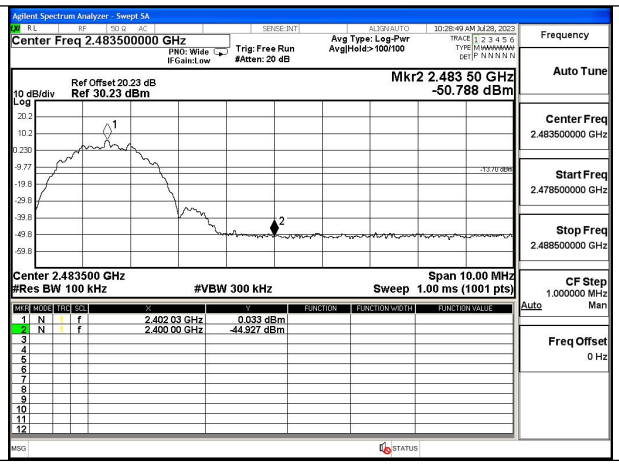



CH39

Test Mode: GFSK (LE 2Mbps)

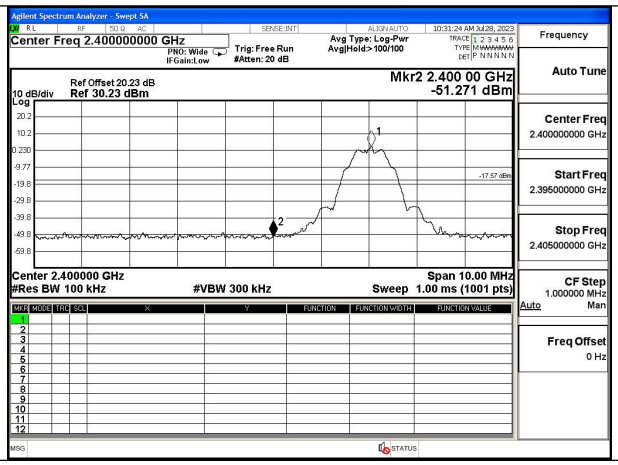



CH0

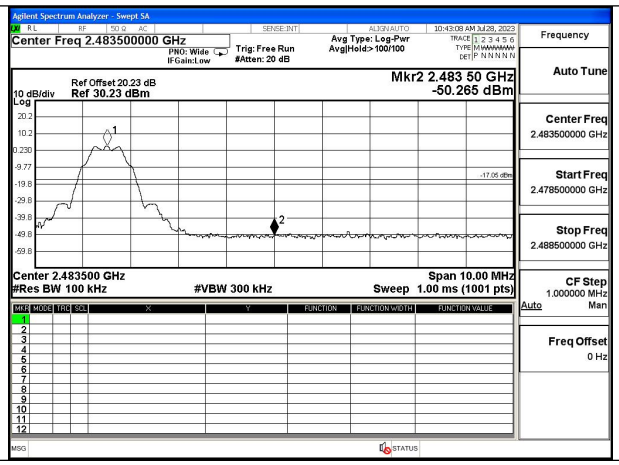



CH39

Test Mode: Coded 125K

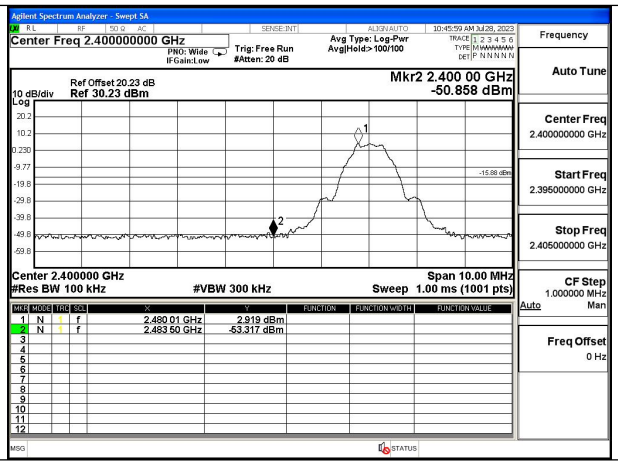
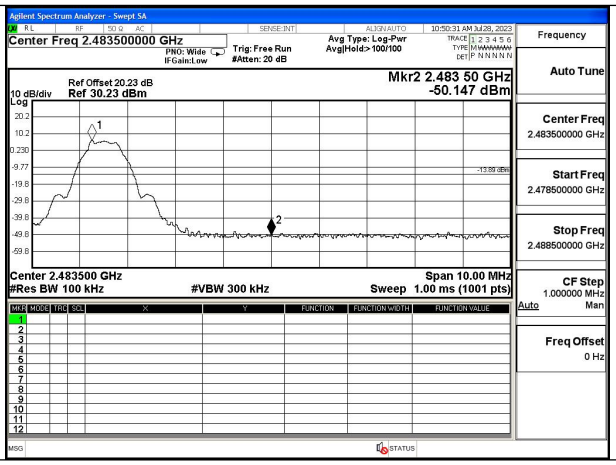



CH0




CH39

Test Mode: Coded 500K

| | |
|---|---|
|  |  |
| CH0 | CH39 |

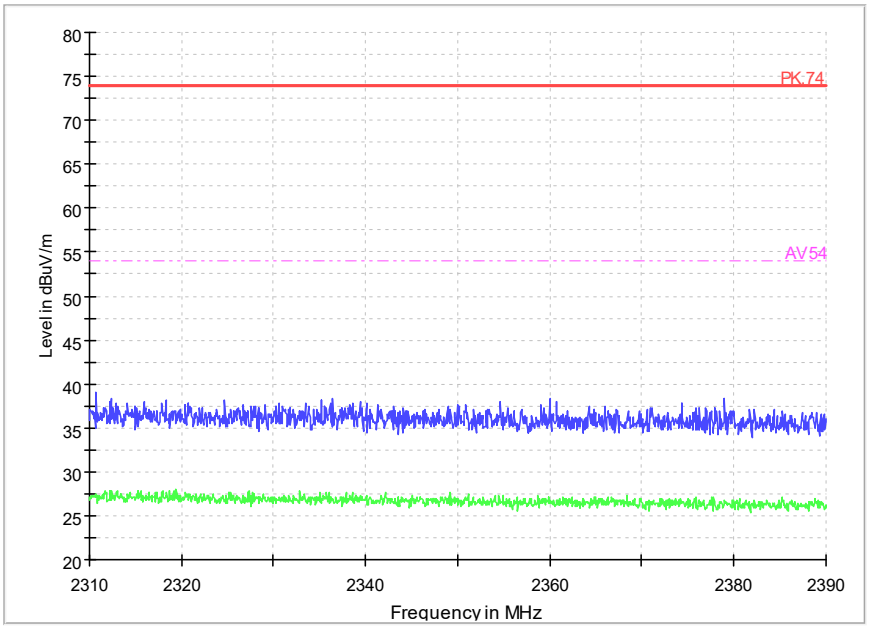
# APPENDIX B – TEST DATA OF RADIATED EMISSION

Note1：The worst channel results are reflected in the report.

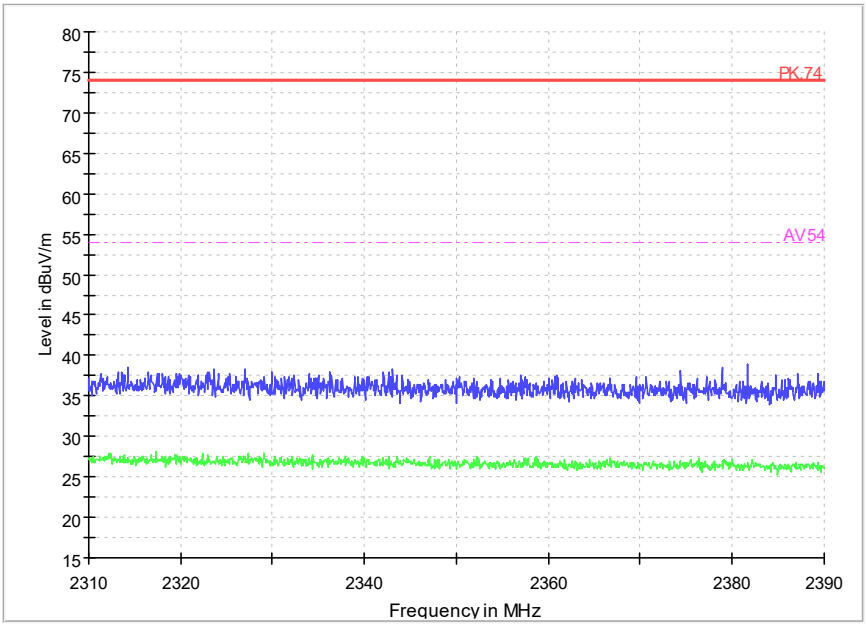
Note2: The scanned graph represents the maximum of both horizontal and vertical polarizations and is not a single horizontal or vertical polarization scan.

**Radiated Emission Band Edge**

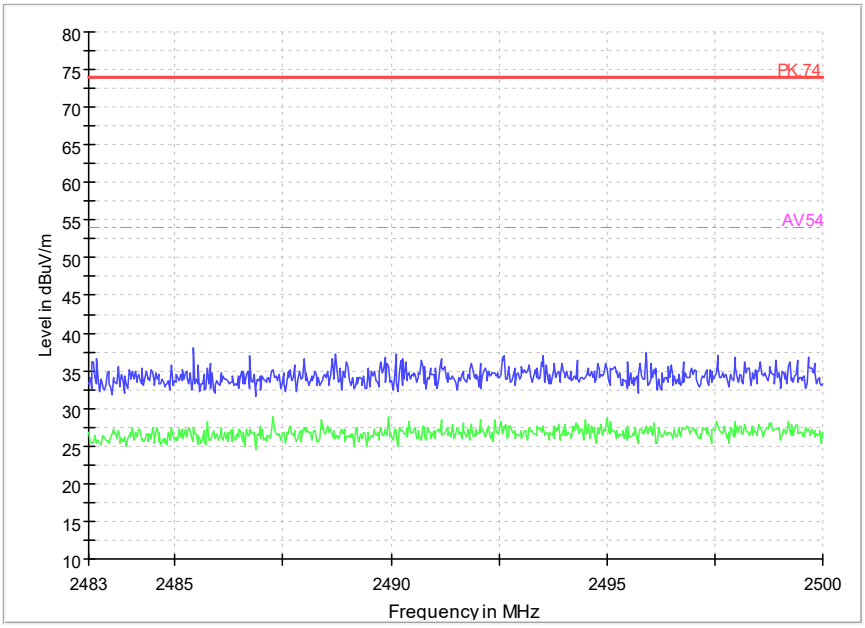
After comparison,the worst case attitude is EUT lay down.



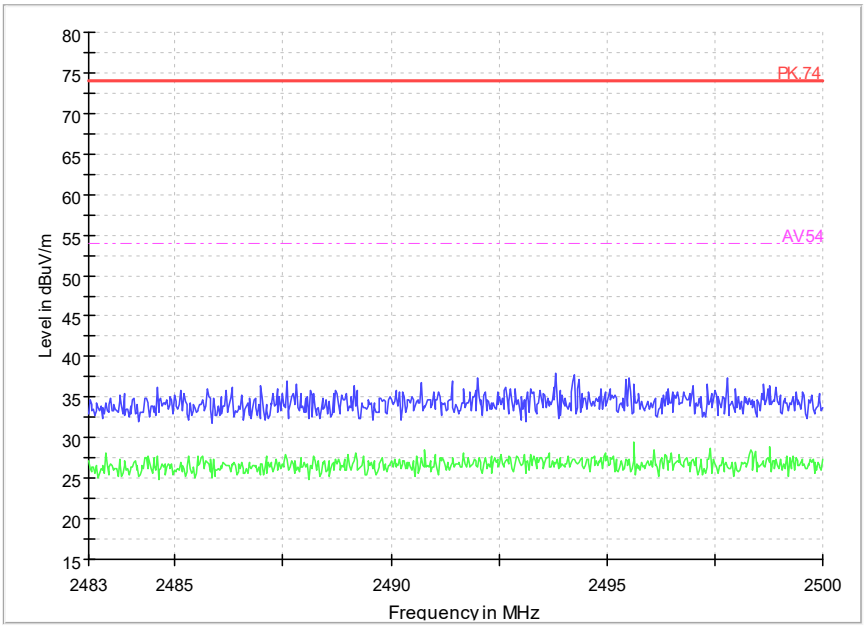

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 1Mbps)
Polarity: Vertical



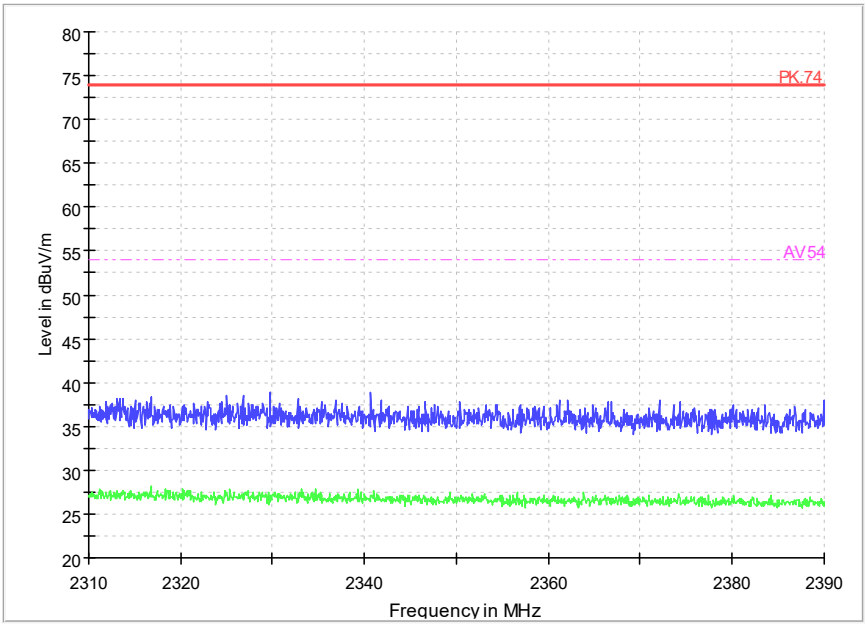

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 1Mbps)
Polarity: Horizontal



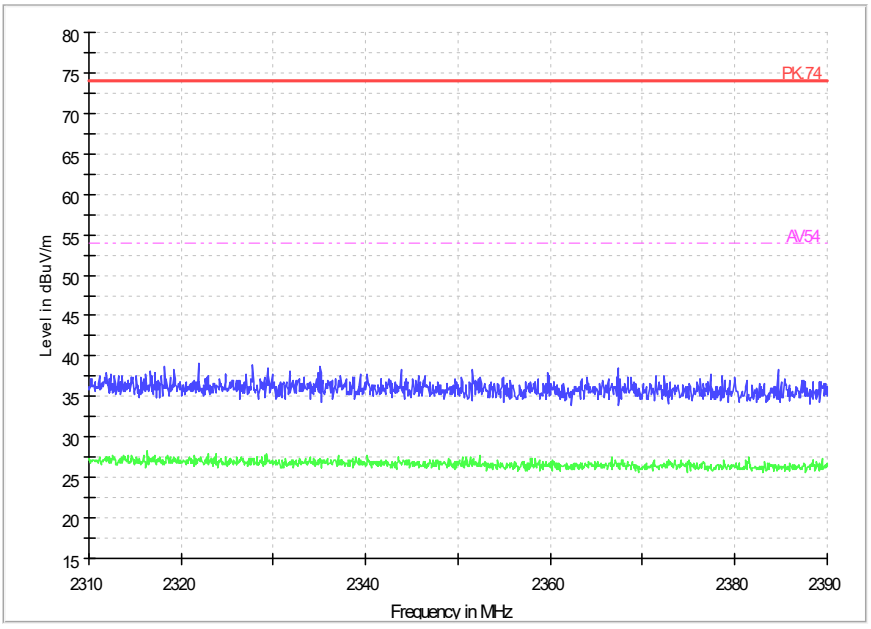

Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE 1Mbps)
Polarity: Vertical



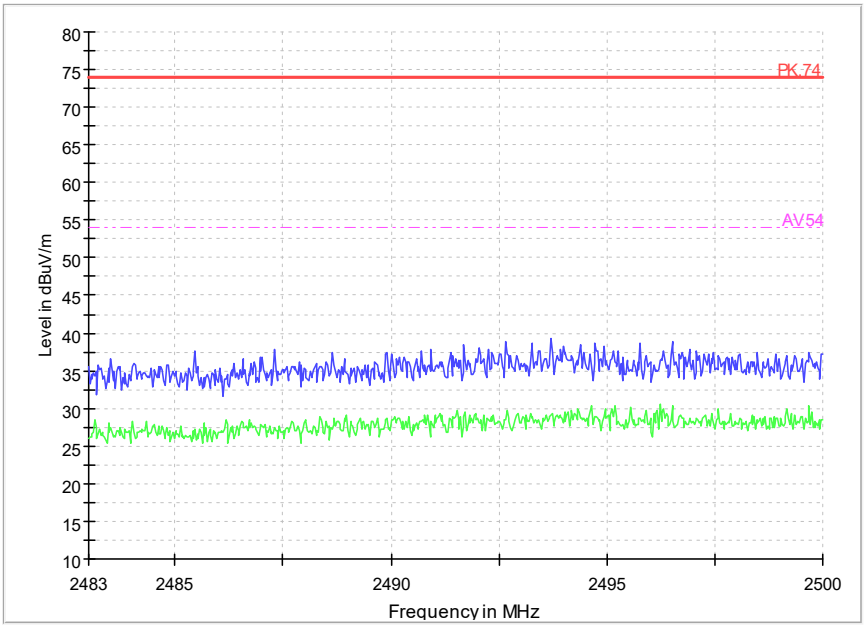

Carrier frequency (MHz): 2480
Channel No.:39
Test Mode: GFSK (LE 1Mbps)
Polarity: Horizontal



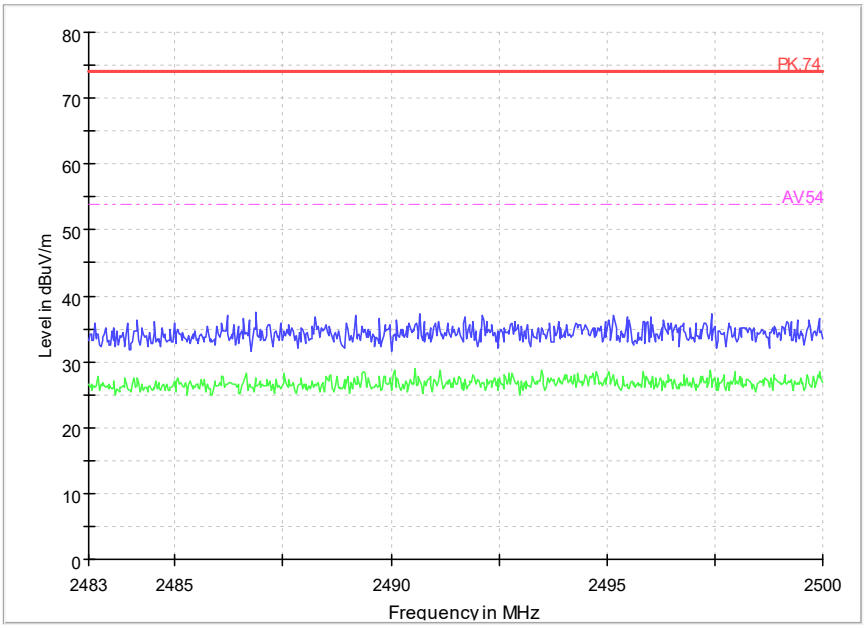

Carrier frequency (MHz): 2402
Channel No.:0
Test Mode: GFSK (LE 2Mbps)
Polarity: Vertical




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: (9.22 dBμV/m) = (27.62 dBuV) + (-18.4dB/m), the corresponding frequency is 45.035MHz.

For GFSK (LE 1Mbps)

Channel No.:0

| Frequency (MHz) | Result (dBuV/m) | ARpl (dB) | Pmea (dBuV/m) | Polarity | Limit (dBuV/m) | Margin (dB) |
|---|---|---|---|---|---|---|
| 45.035 | 9.22 | -18.4 | 27.62 | Vertical | 40 | 30.78 |
| 87.23 | 8.91 | -19.8 | 28.71 | Vertical | 40 | 31.09 |
| 98.5305 | 7.77 | -18.7 | 26.47 | Vertical | 43.5 | 35.73 |
| 296.5075 | 8.97 | -15.9 | 24.87 | Vertical | 46 | 37.03 |
| 539.5895 | 13.97 | -9.6 | 23.57 | Vertical | 46 | 32.03 |
| 930.451 | 21.04 | -3 | 24.04 | Vertical | 46 | 24.96 |

Channel No.:19

| Frequency (MHz) | Result (dBuV/m) | ARpl (dB) | Pmea (dBuV/m) | Polarity | Limit (dBuV/m) | Margin (dB) |
|---|---|---|---|---|---|---|
| 34.365 | 7.68 | -19.6 | 27.28 | Vertical | 40 | 32.32 |
| 87.909 | 10.18 | -19.7 | 29.88 | Vertical | 40 | 29.82 |
| 110.122 | 7.45 | -18.9 | 26.35 | Vertical | 43.5 | 36.05 |
| 309.4085 | 9.27 | -15.5 | 24.77 | Vertical | 46 | 36.73 |
| 546.9615 | 14.04 | -9.5 | 23.54 | Vertical | 46 | 31.97 |
| 946.65 | 21.02 | -2.9 | 23.92 | Vertical | 46 | 24.98 |

Channel No.:39

| Frequency (MHz) | Result (dBuV/m) | ARpl (dB) | Pmea (dBuV/m) | Polarity | Limit (dBuV/m) | Margin (dB) |
|---|---|---|---|---|---|---|
| 52.3585 | 8.79 | -18.5 | 27.29 | Vertical | 40 | 31.21 |
| 86.26 | 9.03 | -20 | 29.03 | Vertical | 40 | 30.97 |
| 105.2235 | 7.48 | -18.8 | 26.28 | Vertical | 43.5 | 36.02 |
| 209.8865 | 6.57 | -18.5 | 25.07 | Vertical | 43.5 | 36.93 |
| 543.7605 | 13.91 | -9.5 | 23.41 | Vertical | 46 | 32.09 |
| 955.5255 | 21.16 | -2.8 | 23.96 | Vertical | 46 | 24.84 |

For GFSK (LE 2Mbps)

Channel No.:0

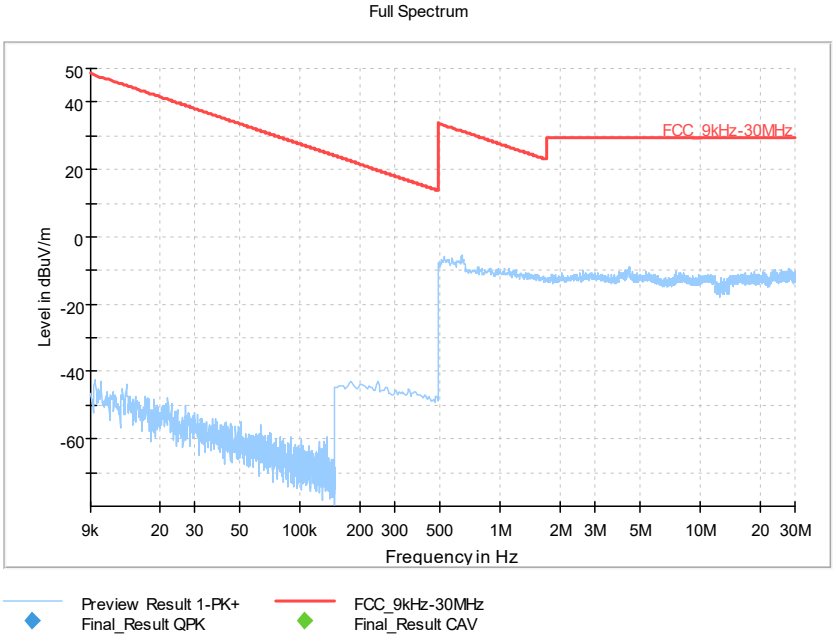
| Frequency (MHz) | Result (dBuV/m) | ARpl (dB) | Pmea (dBuV/m) | Polarity | Limit (dBuV/m) | Margin (dB) |
|---|---|---|---|---|---|---|
| 44.356 | 9.08 | -18.4 | 27.48 | Vertical | 40 | 30.92 |
| 87.5695 | 9.73 | -19.7 | 29.43 | Vertical | 40 | 30.27 |
| 98.676 | 8.71 | -18.7 | 27.41 | Vertical | 43.5 | 34.79 |
| 298.011 | 9.06 | -15.9 | 24.96 | Vertical | 46 | 36.94 |
| 542.16 | 13.94 | -9.6 | 23.54 | Vertical | 46 | 32.06 |
| 951.015 | 21.05 | -2.8 | 23.85 | Vertical | 46 | 24.95 |

Channel No.:19

| Frequency (MHz) | Result (dBuV/m) | ARpl (dB) | Pmea (dBuV/m) | Polarity | Limit (dBuV/m) | Margin (dB) |
|---|---|---|---|---|---|---|
| 46.102 | 8.6 | -18.4 | 27 | Vertical | 40 | 31.4 |
| 87.5695 | 9.66 | -19.7 | 29.36 | Vertical | 40 | 30.34 |
| 104.69 | 7.71 | -18.8 | 26.51 | Vertical | 43.5 | 35.79 |
| 211.778 | 6.66 | -18.5 | 25.16 | Vertical | 43.5 | 36.84 |
| 538.9105 | 14.04 | -9.6 | 23.64 | Vertical | 46 | 31.96 |
| 926.8135 | 21.16 | -3 | 24.16 | Vertical | 46 | 24.84 |

Channel No.:39

| Frequency (MHz) | Result (dBuV/m) | ARpl (dB) | Pmea (dBuV/m) | Polarity | Limit (dBuV/m) | Margin (dB) |
|---|---|---|---|---|---|---|
| 39.894 | 8.63 | -18.6 | 27.23 | Vertical | 40 | 31.37 |
| 87.5695 | 9.92 | -19.7 | 29.62 | Vertical | 40 | 30.08 |
| 110.025 | 7.3 | -18.9 | 26.2 | Vertical | 43.5 | 36.2 |
| 305.868 | 9.14 | -15.7 | 24.84 | Vertical | 46 | 36.86 |
| 553.509 | 14.24 | -9.3 | 23.54 | Vertical | 46 | 31.76 |
| 950.433 | 21.12 | -2.8 | 23.92 | Vertical | 46 | 24.88 |

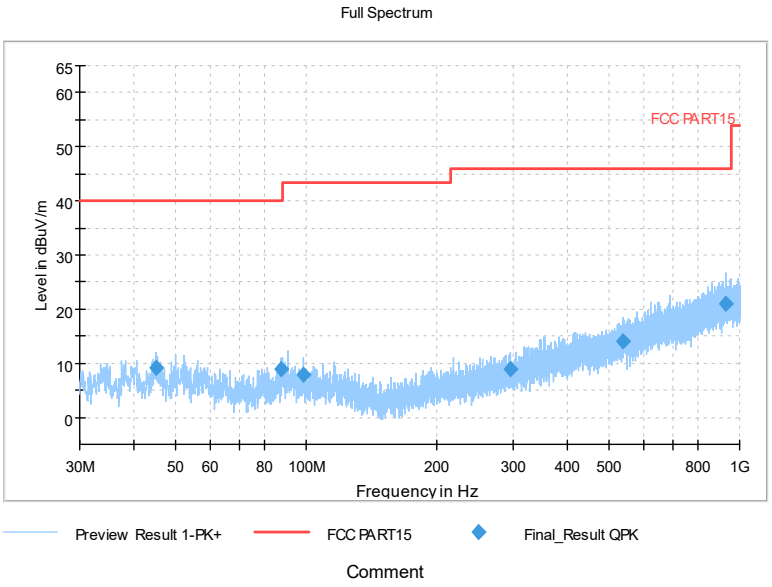



Frequency Range: 9kHz -30MHz

Detector: QP mode

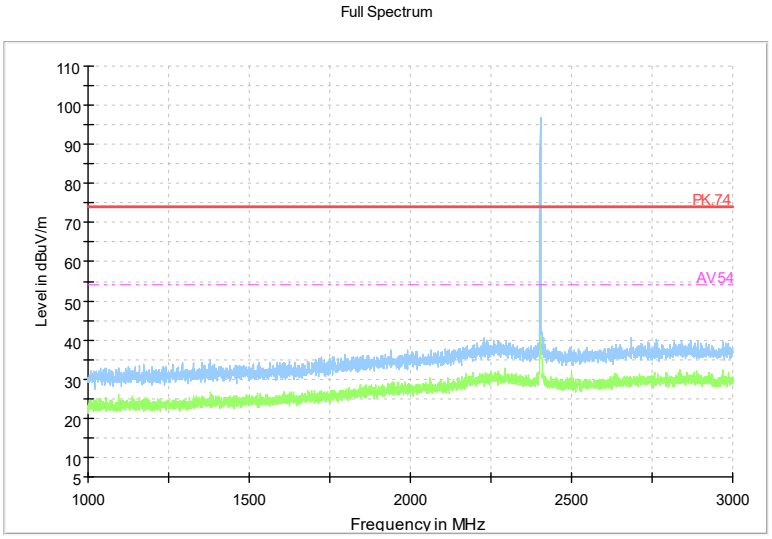
Note：The relevant tests have been performed in order to verify in which mode would have the worst features, the result show above is the worst case.

Channel No.:0

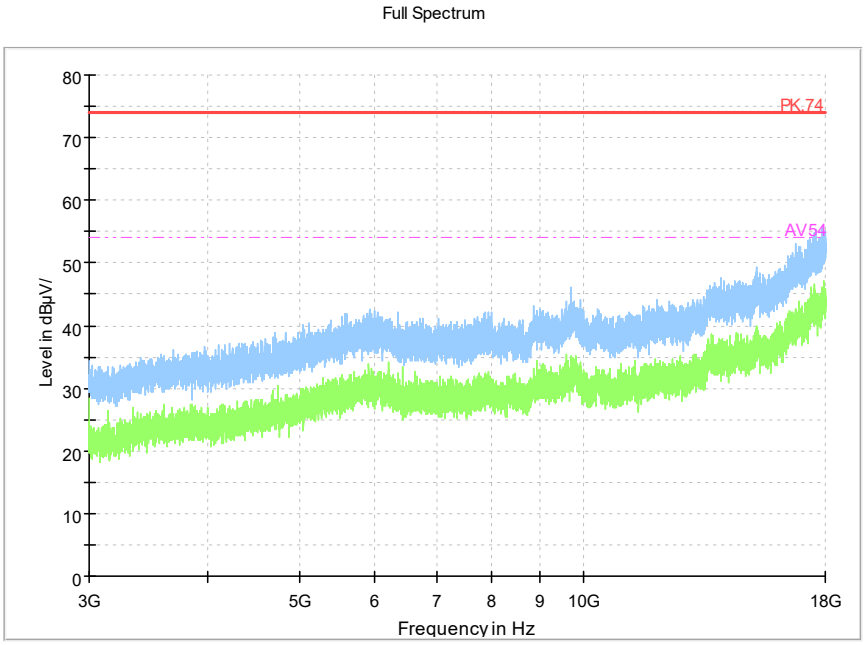



Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode

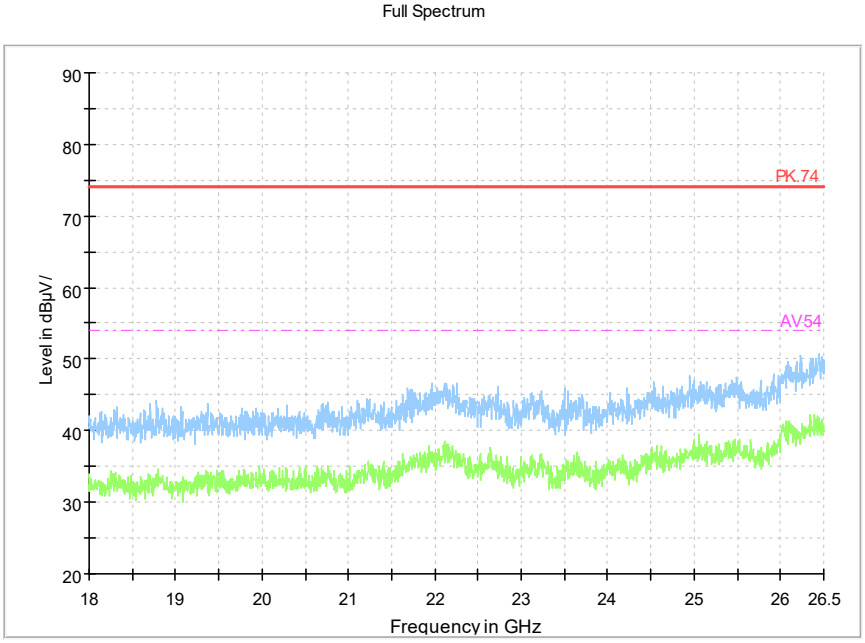
Modulation type: GFSK (LE 1Mbps)




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

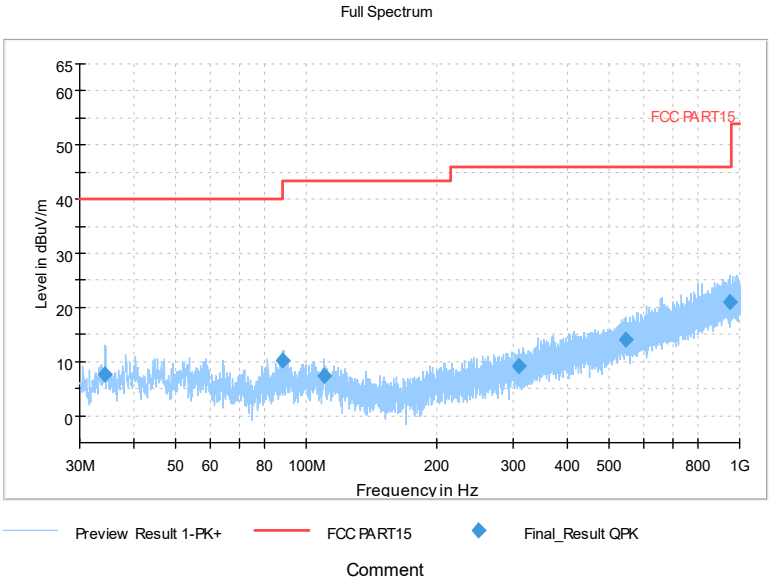



Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

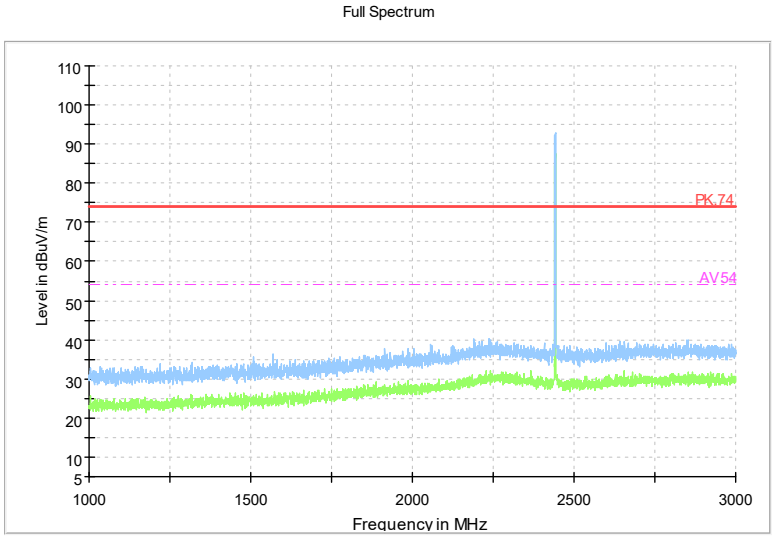



Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

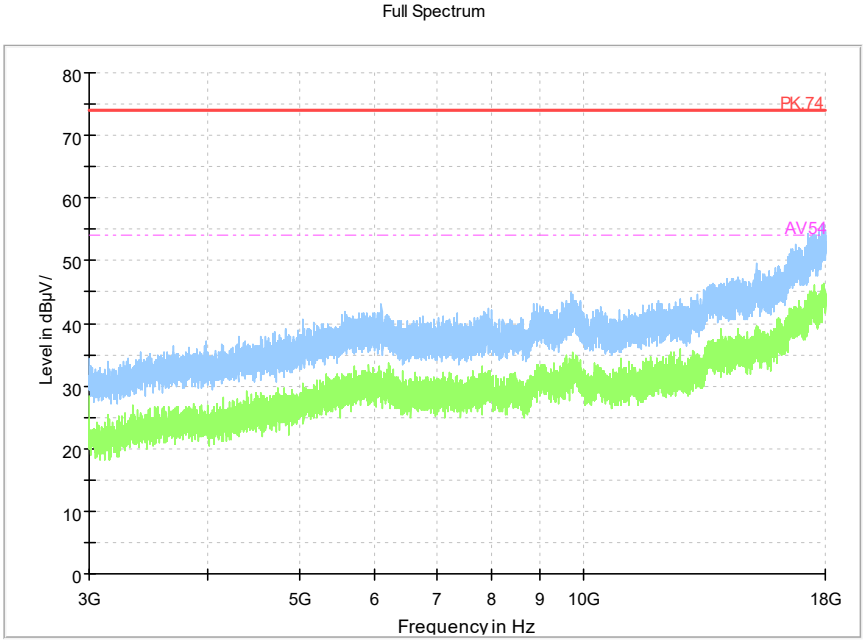
Channel No.:19



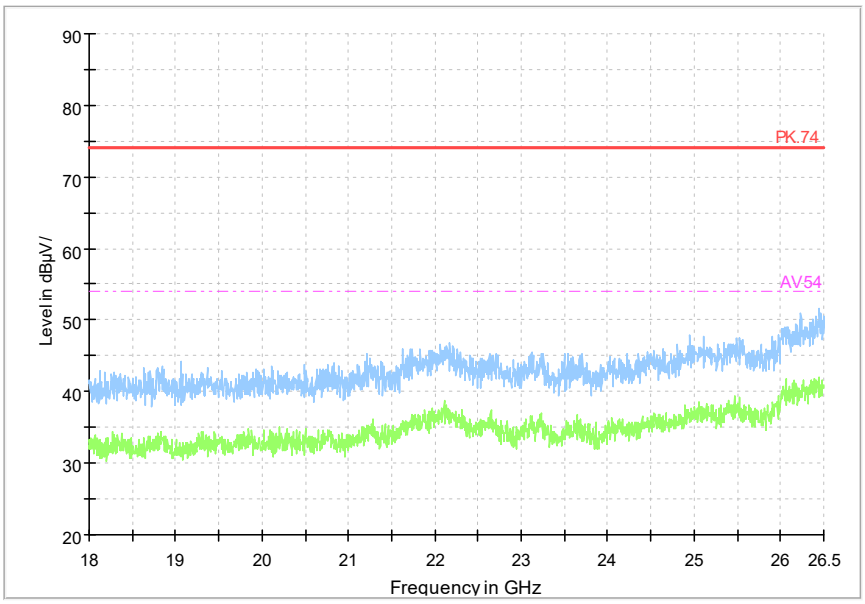

Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)




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

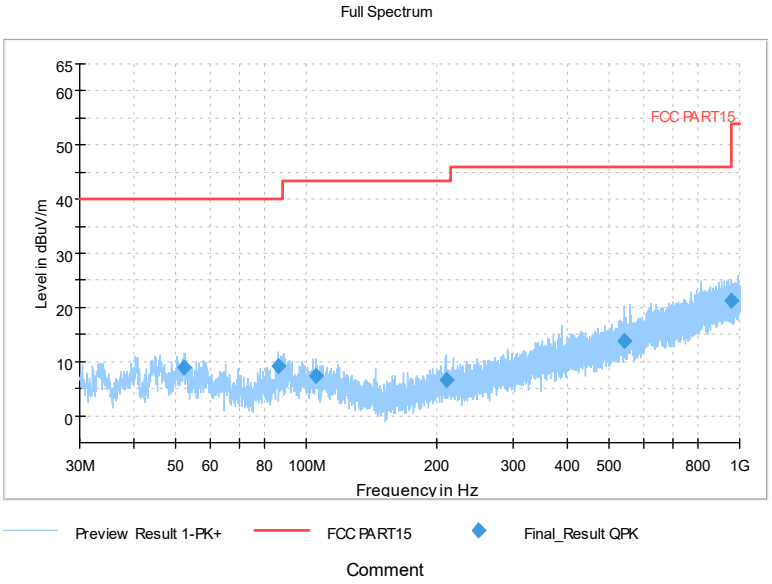



Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

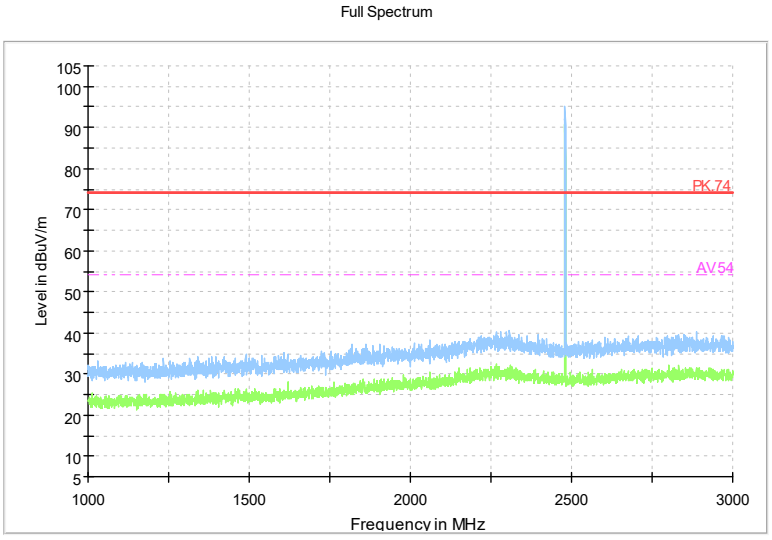



Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

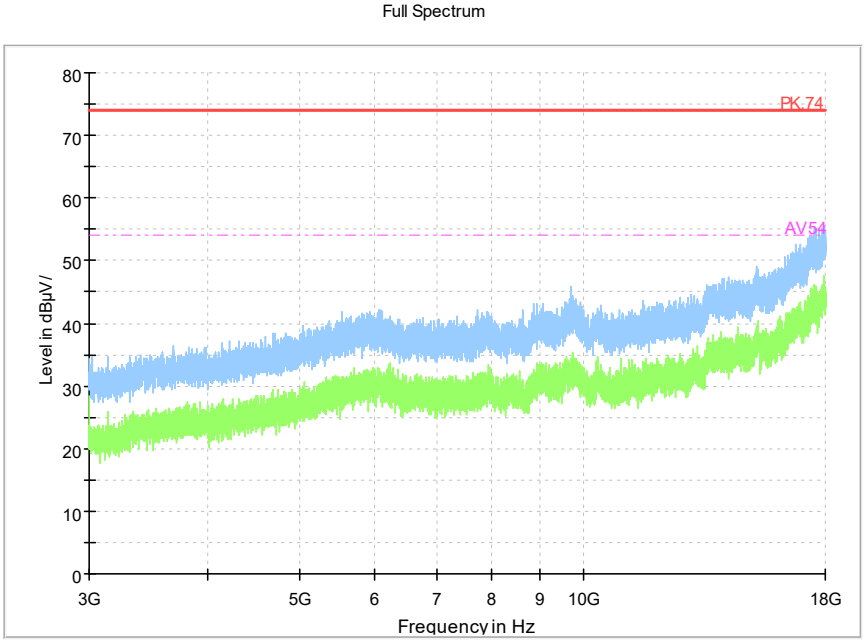
Channel No.:39



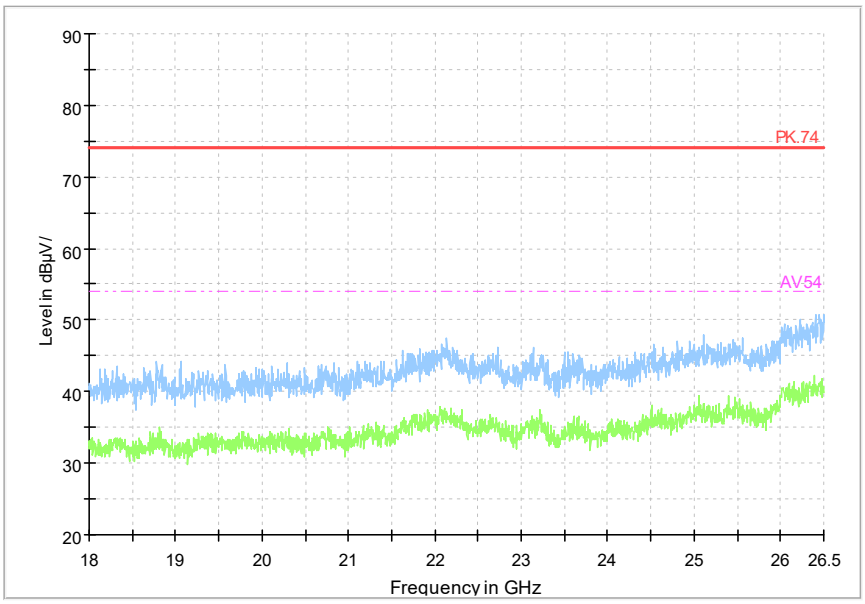

Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)




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

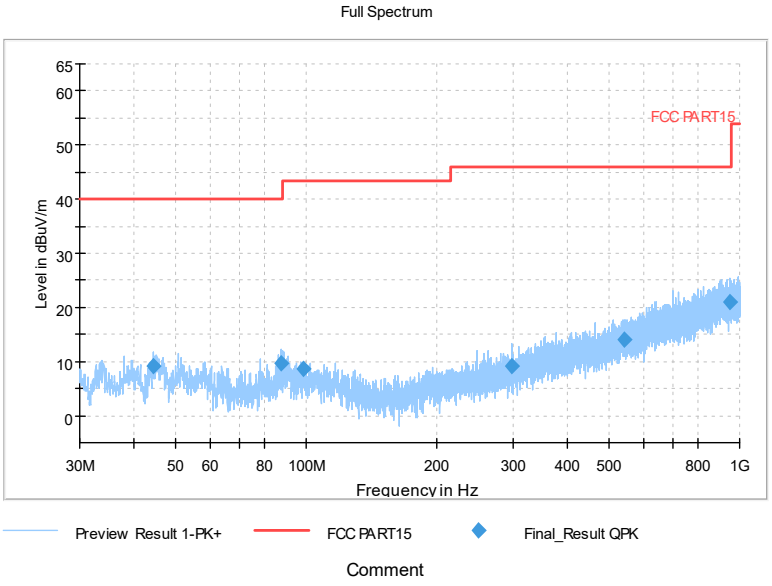



Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

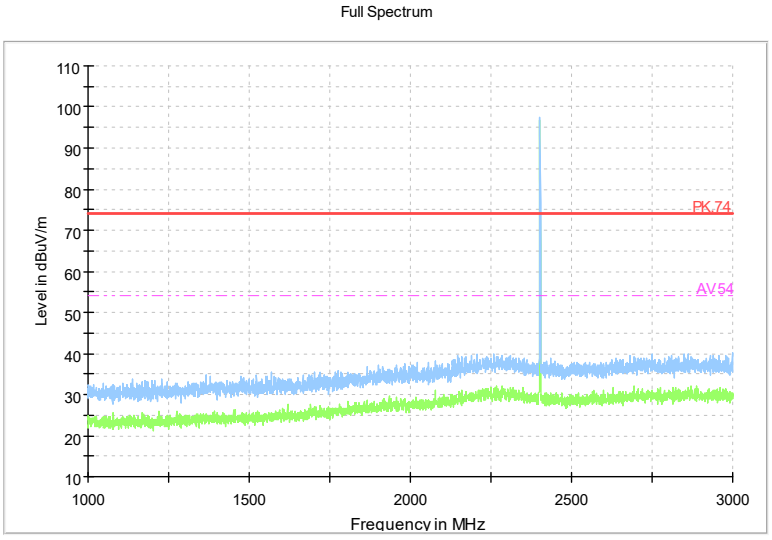



Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 1Mbps)

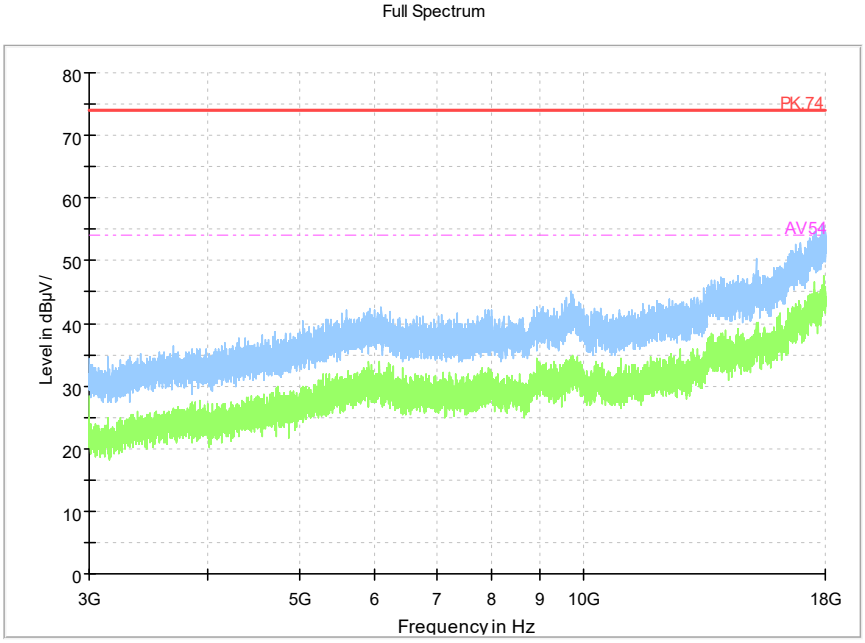
Channel No.:0



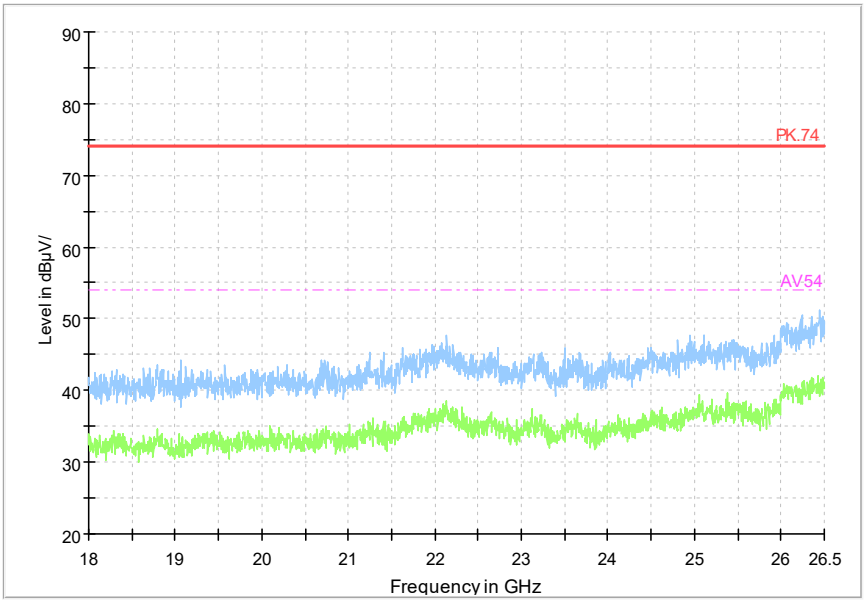

Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)




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

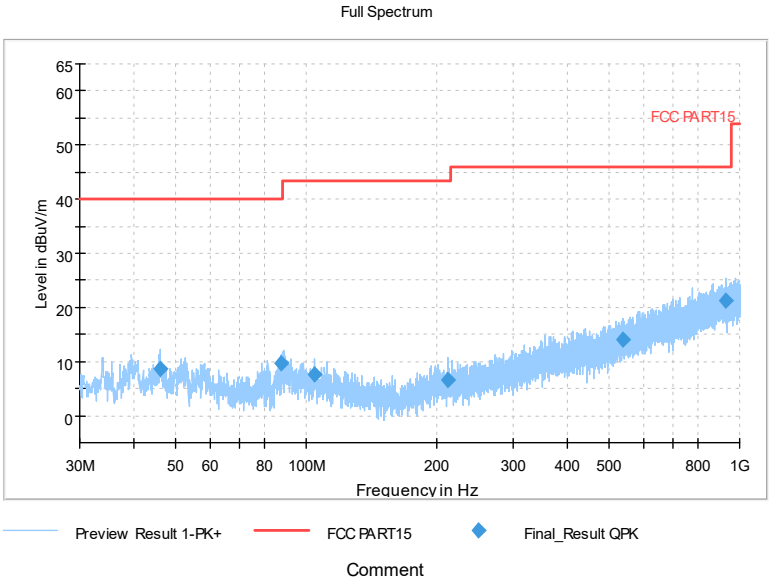



Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)

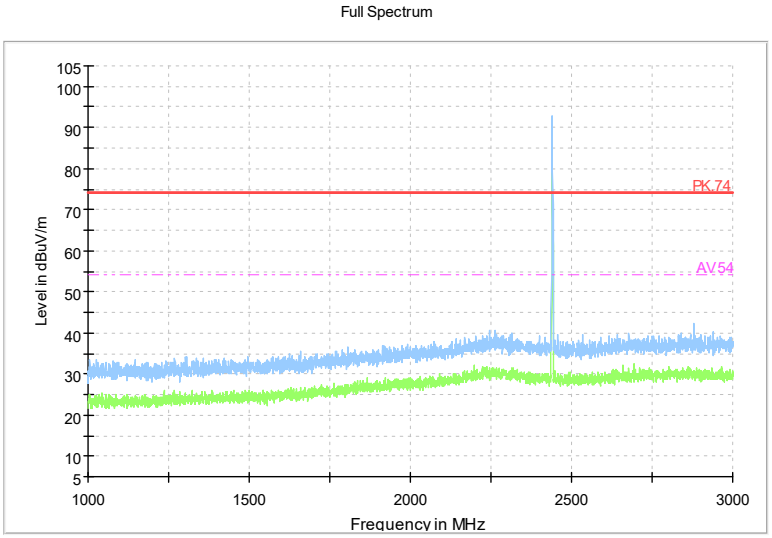



Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)

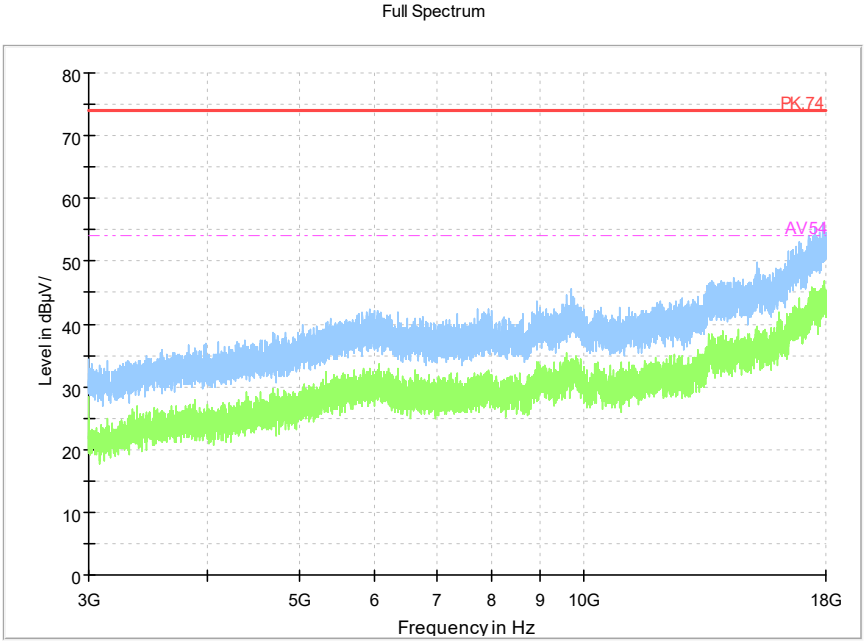
Channel No.:19



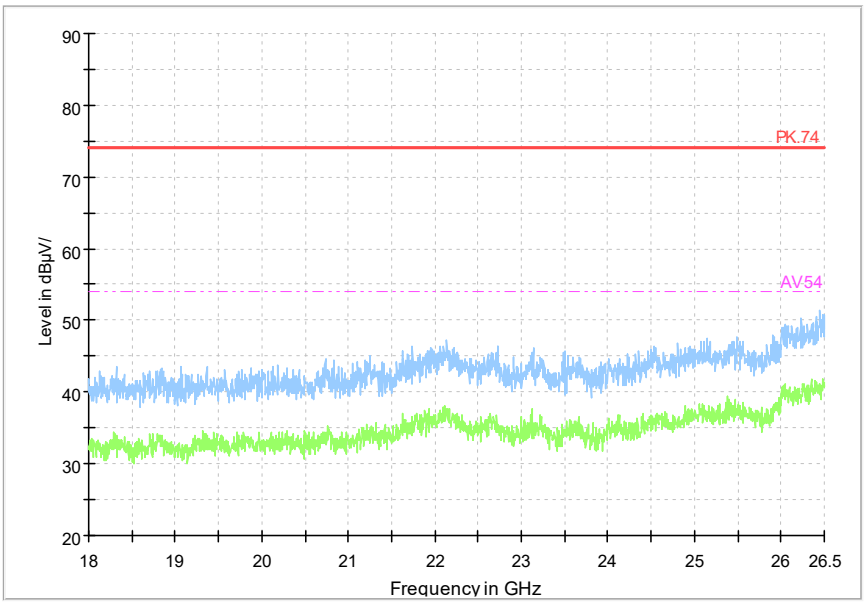

Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)




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

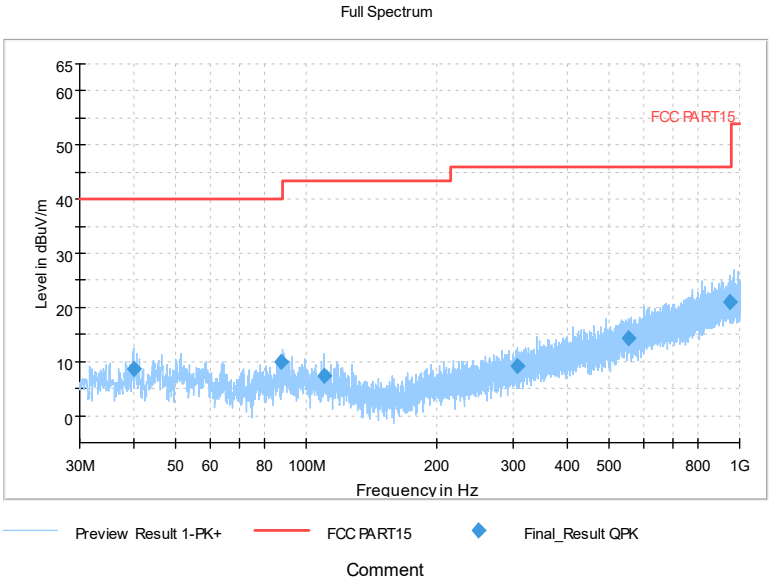



Frequency Range: 3GHz-18GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)

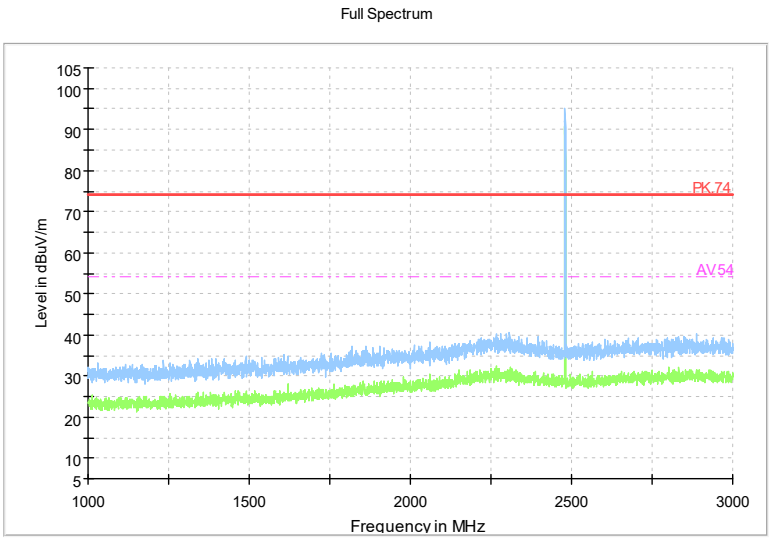



Frequency Range: 18GHz-26GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)

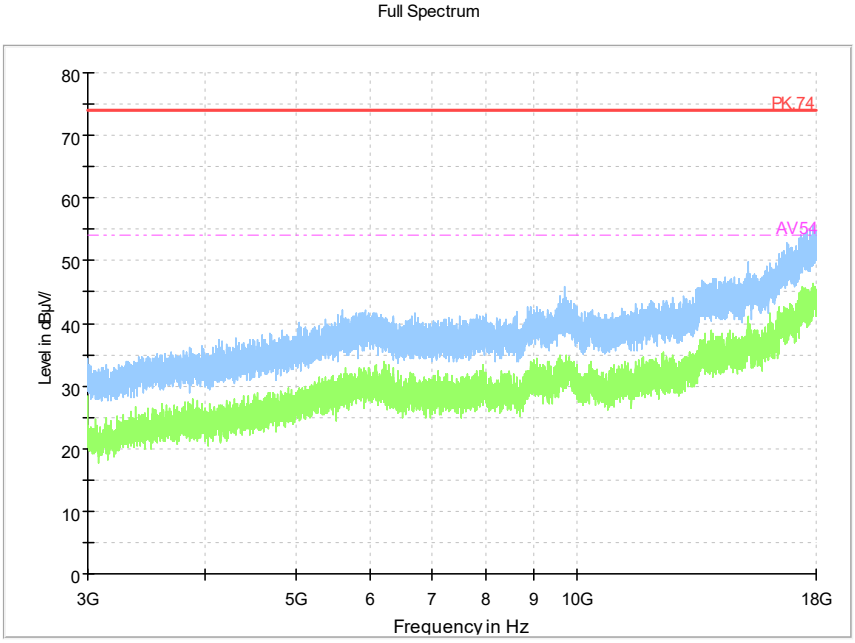
Channel No.:39



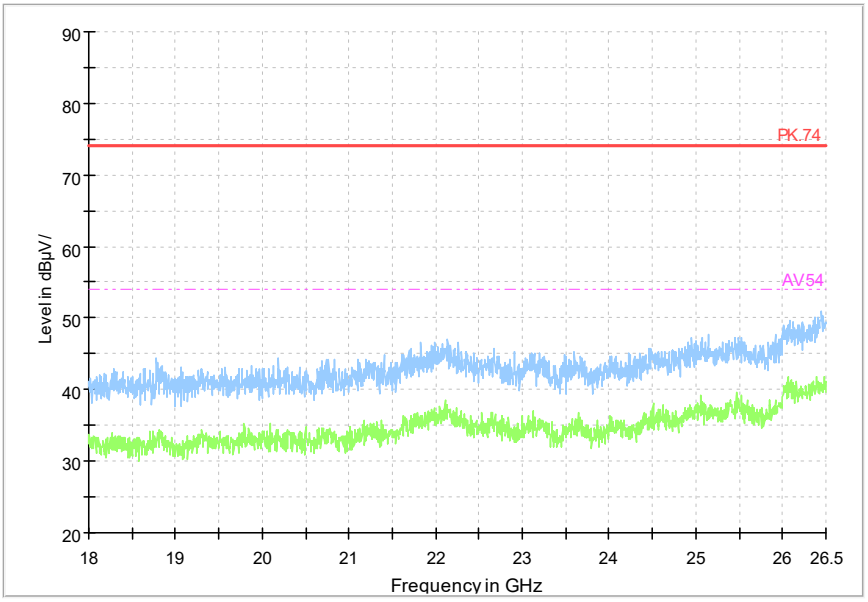

Frequency Range: 30MHz-1GHz
Detector: Av mode and PK mode
Modulation type: GFSK (LE 2Mbps)




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)

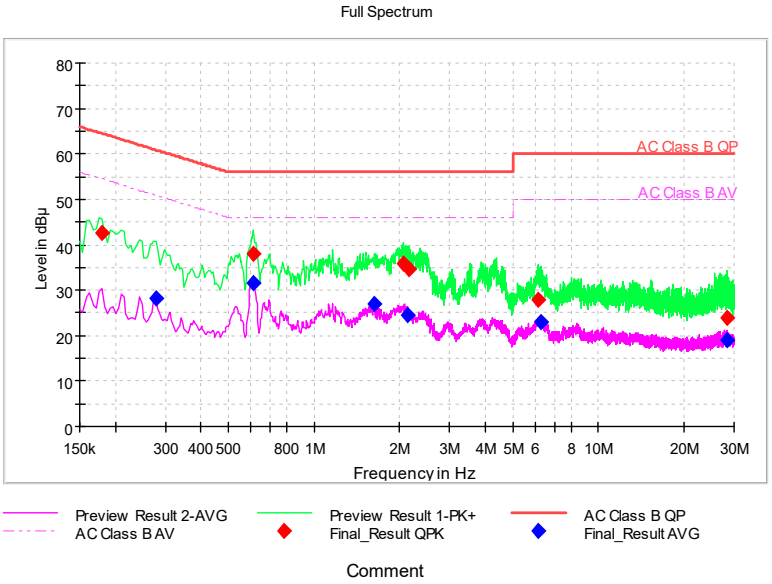
## AC Power line Conducted Emission

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: (42.47dBμV) = (12.67dBμV) + (29.8dB), the corresponding frequency is 0.17985MHz.




L+N Line

***MEASUREMENT RESULT:***

| Frequency (MHz) | QuasiPeak (dBμV) | Average (dBμV) | Limit (dBμV) | Margin (dB) | Line | Corr. (dB) | Pmea QuasiPeak (dBμV) | Pmea Average (dBμV) |
|---|---|---|---|---|---|---|---|---|
| 0.17985 | 42.47 | --- | 64.49 | 22.02 | L1 | 29.8 | 12.67 | --- |
| 0.277929 | --- | 28.08 | 50.88 | 22.8 | L1 | 29.8 | --- | -1.72 |
| 0.610543 | 38.12 | --- | 56 | 17.88 | L1 | 29.8 | 8.32 | --- |
| 0.614807 | --- | 31.68 | 46 | 14.32 | L1 | 29.8 | --- | 1.88 |
| 1.629707 | --- | 26.88 | 46 | 19.12 | L1 | 29.8 | --- | -2.92 |
| 2.064664 | 36.01 | --- | 56 | 19.99 | N | 29.8 | 6.21 | --- |
| 2.128629 | --- | 24.48 | 46 | 21.52 | N | 29.8 | --- | -5.32 |
| 2.154214 | 34.76 | --- | 56 | 21.24 | N | 29.8 | 4.96 | --- |
| 6.115736 | 27.91 | --- | 60 | 32.09 | N | 29.9 | -1.99 | --- |
| 6.286307 | --- | 22.9 | 50 | 27.1 | L1 | 29.9 | --- | -7 |
| 28.209 | 24.04 | --- | 60 | 35.96 | N | 30.1 | -6.06 | --- |
| 28.366779 | --- | 19.03 | 50 | 30.97 | N | 30.1 | --- | -11.07 |

---End of Test Report---