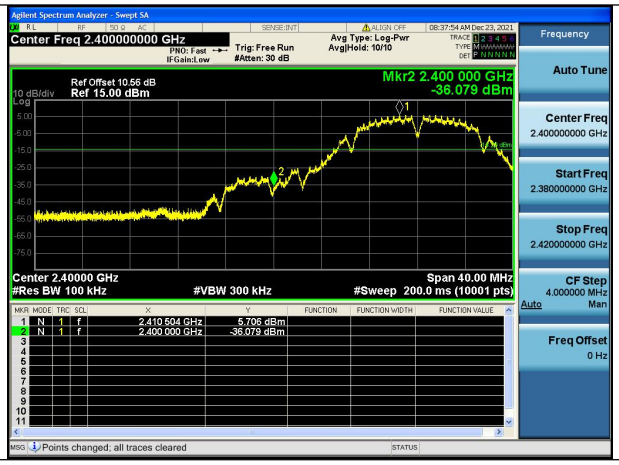
Band edge measurement

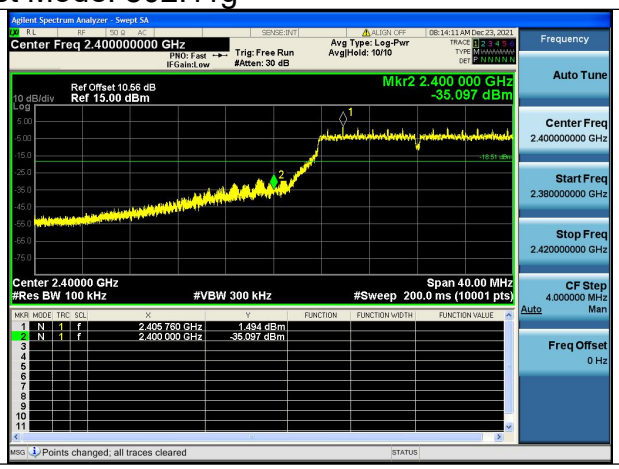
Test Mode: 802.11b



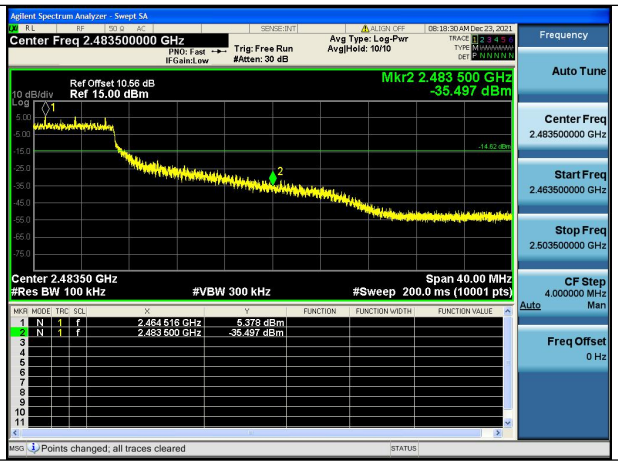
Test Mode:802.11b 2412MHz Chain0

Test Mode:802.11b 2462MHz Chain0

Test Mode: 802.11g

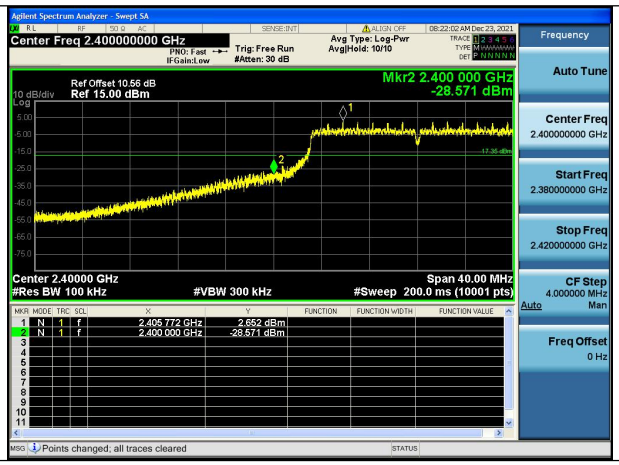


Test Mode:802.11g 2412MHz Chain0

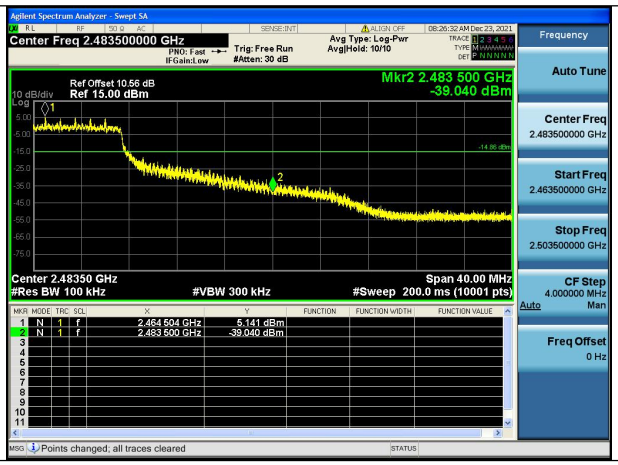


Test Mode:802.11g 2462MHz Chain0

Test Mode: 802.11n HT20



Test Mode:802.11n HT20 2412MHz Chain0



Test Mode:802.11n HT20 2462MHz Chain0

APPENDIX B – TEST DATA OF RADIATED EMISSION

Radiated Emission Band Edge

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

Note: There were no emissions above 18GHz found within 20dB of the limit. Thus the test result was not reported according to §15.31（o）

The measurement results are obtained as described below:
Measure Level = Reading Level + Cable loss + Antenna factor Sample calculation: (49.68 dBuV/m) = (83.68 dBμV) + (8.90 dB) + (25.10 dB/m), the corresponding frequency is 2412MHz.

- 802.11b

Carrier Frequency (MHz): 2412
Channel No.: 1
Test Mode: 802.11b
Detector: Peak

Frequency (MHz)	Reading Level (dBuV)	Measure Level (dBuV/m)	Over Limit (dB)	Limit (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB)
2412.0	49.68	83.68	N/A	N/A	8.90	25.10
2390.0	8.99	42.99	-31.01	74.00	8.90	25.10

Detector: Average

Frequency (MHz)	Reading Level (dBuV)	Measure Level (dBuV/m)	Over Limit (dB)	Limit (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB)
2412.0	41.01	75.01	N/A	N/A	8.90	25.10
2390.0	15.75	49.75	-4.25	54.00	8.90	25.10

Carrier Frequency (MHz): 2462
Channel No.: 11
Test Mode: 802.11b

Detector: Peak

Frequency (MHz)	Reading Level (dBuV)	Measure Level (dBuV/m)	Over Limit (dB)	Limit (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB)
2462.0	50.18	84.18	N/A	N/A	8.90	25.10
2483.5	24.21	58.21	-15.79	74.00	8.90	25.10

Detector: Average

Frequency (MHz)	Reading Level (dBuV)	Measure Level (dBuV/m)	Over Limit (dB)	Limit (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB)

2462.0	47.47	81.47	N/A	N/A	8.90	25.10
2483.5	1.78	35.78	-18.22	54.00	8.90	25.10

- 802.11g

Carrier Frequency (MHz): 2412
Channel No.: 1
Test Mode: 802.11g

Detector: Peak

Frequency (MHz)	Reading Level (dBuV)	Measure Level (dBuV/m)	Over Limit (dB)	Limit (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB)
2412.0	50.91	84.91	N/A	N/A	8.90	25.10
2390.0	31.21	65.21	-8.79	74.00	8.90	25.10

Detector: Average

Frequency (MHz)	Reading Level (dBuV)	Measure Level (dBuV/m)	Over Limit (dB)	Limit (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB)
2412.0	40.23	74.23	N/A	N/A	8.90	25.10
2390.0	14.41	48.41	-5.59	54.00	8.90	25.10

Carrier Frequency (MHz): 2462
Channel No.: 11
Test Mode: 802.11g
Detector: Peak

Frequency (MHz)	Reading Level (dBuV)	Measure Level (dBuV/m)	Over Limit (dB)	Limit (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB)
2462.0	52.38	86.38	N/A	N/A	8.90	25.10
2483.5	35.69	69.69	-4.31	74.00	8.90	25.10

Detector: Average

Frequency (MHz)	Reading Level (dBuV)	Measure Level (dBuV/m)	Over Limit (dB)	Limit (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB)
2462.0	42.78	76.78	N/A	N/A	8.90	25.10
2483.5	18.34	52.34	-1.66	54.00	8.90	25.10

- 802.11n (HT20)

Carrier Frequency (MHz): 2412
Channel No.: 1
Test Mode: 802.11n (HT20)

Detector: Peak

Frequency (MHz)	Reading Level (dBuV)	Measure Level (dBuV/m)	Over Limit (dB)	Limit (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB)
2412.0	50.47	84.47	N/A	N/A	8.90	25.10
2390.0	30.07	64.07	-9.93	74.00	8.90	25.10

Detector: Average

Frequency (MHz)	Reading Level (dBuV)	Measure Level (dBuV/m)	Over Limit (dB)	Limit (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB)
2412.0	39.25	73.25	N/A	N/A	8.90	25.10
2390.0	15.45	49.45	-4.55	54.00	8.90	25.10

Carrier Frequency (MHz): 2462
Channel No.: 11
Test Mode: 802.11n (HT20)
Detector: Peak

Frequency (MHz)	Reading Level (dBuV)	Measure Level (dBuV/m)	Over Limit (dB)	Limit (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB)
2462.0	53.77	87.77	N/A	N/A	8.90	25.10
2483.5	22.50	56.50	-17.50	74.00	8.90	25.10

Detector: Average

Frequency (MHz)	Reading Level (dBuV)	Measure Level (dBuV/m)	Over Limit (dB)	Limit (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB)
2462.0	42.33	76.33	N/A	N/A	8.90	25.10
2483.5	21.39	55.39	1.39	54.00	8.90	25.10

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:

Below 1GHz：

QuasiPeak=Reading Value + A_{Rpl}

Above 1GHz:

MaxPeak=Reading MaxPeak + A_{Rpl}

OR

Average=Reading Average + A_{Rpl}

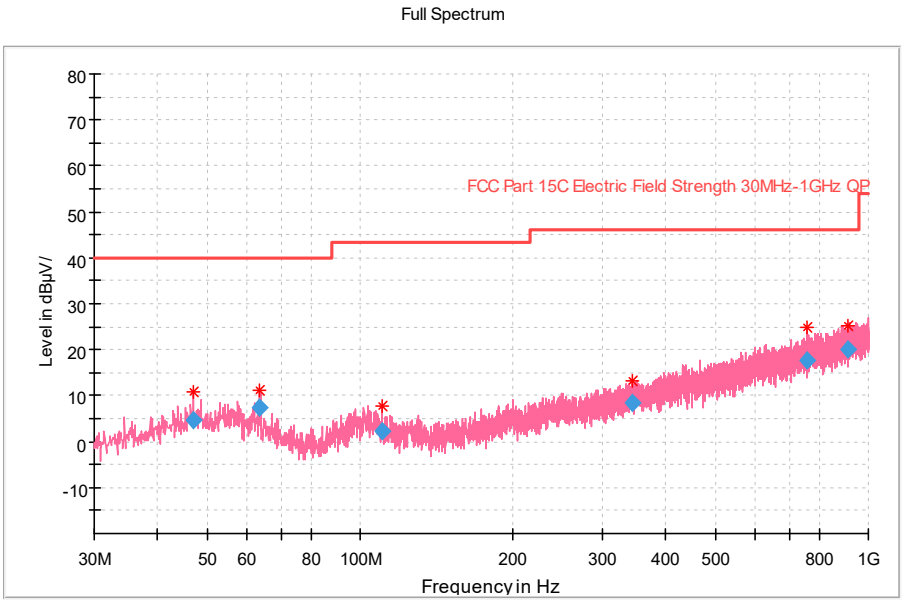
Sample calculation: (4.49 dBμV/m) = (24.09 dBμV) + (-19.60 dB/m), the corresponding frequency is 46.975MHz.

The worst case attitude：The mobile lay down.

- 802.11b

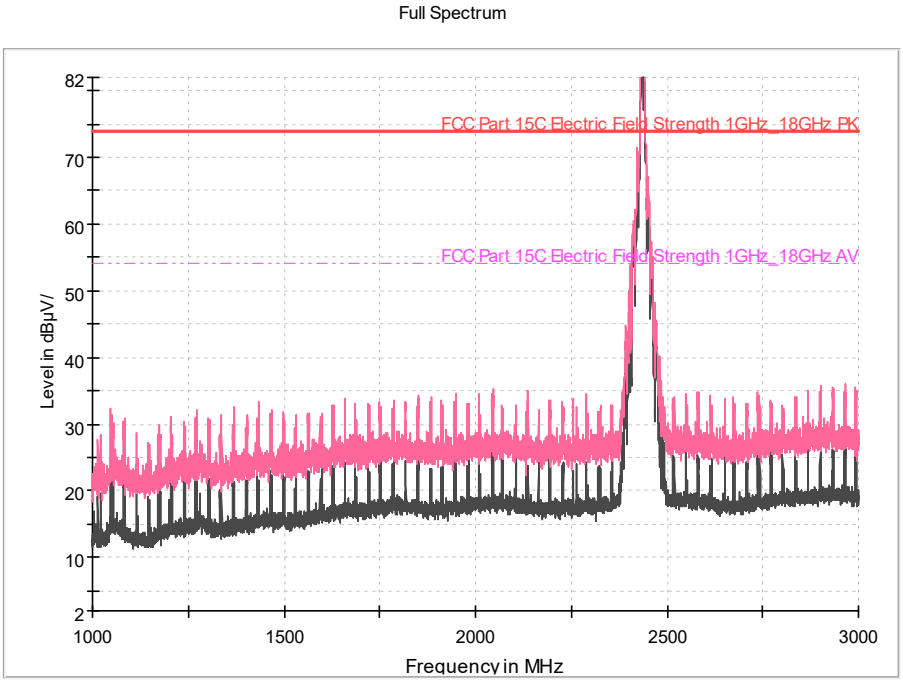
Spurious Radiated Emissions from 30MHz to 1GHz:

CH Middle (No.6)

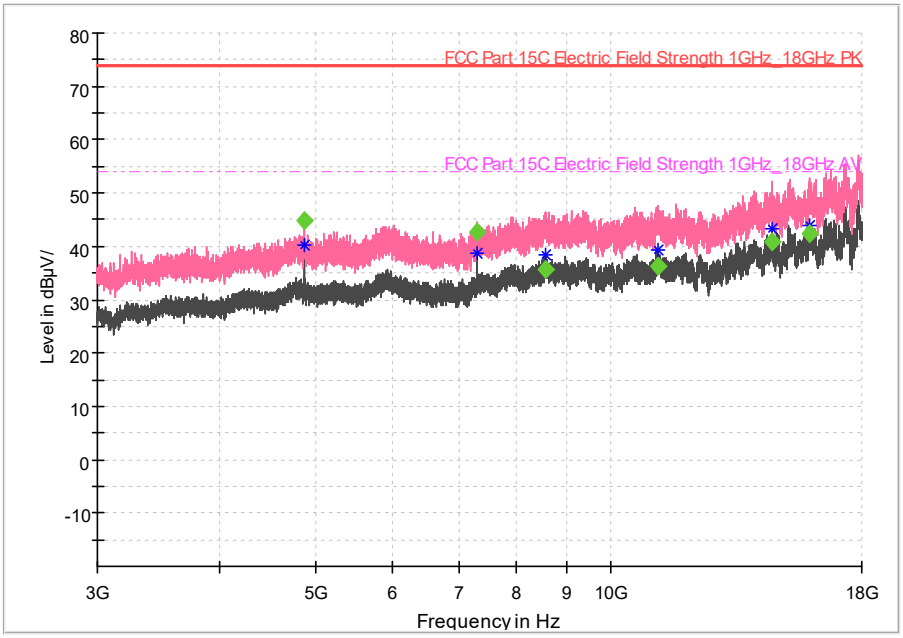


Frequency (MHz)	Reading (dBuV)	QuasiPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	A_{Rpl} (dB)	Polarity
46.975	24.09	4.49	40.00	35.51	-19.60	Vertical
63.368	28.78	7.28	40.00	32.72	-21.50	Vertical
110.607	23.41	2.21	43.50	41.29	-21.20	Vertical
343.892	23.45	8.45	46.00	37.55	-15.00	Vertical
758.955	22.93	17.53	46.00	28.47	-5.40	Vertical
910.857	22.43	19.93	46.00	26.07	-2.50	Vertical

Spurious Radiated Emissions from 1GHz to 18GHz: CH Middle (No.6)



Full Spectrum

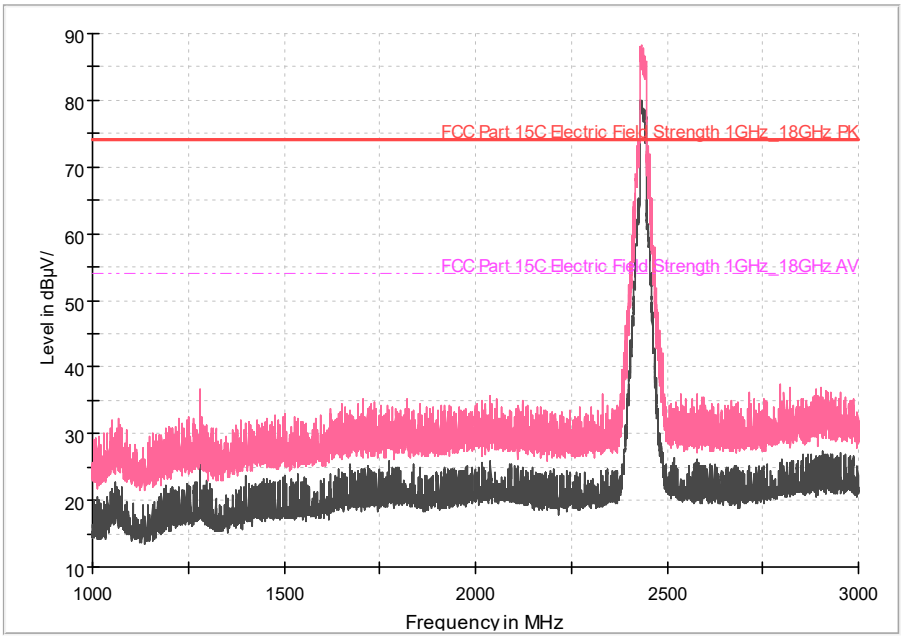


Frequency (MHz)	Reading MaxPeak (dBuV)	Reading Average (dBuV)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	A_{Rpl} (dB)	Polarity
4874.000	---	66.45	---	44.85	54.00	9.15	-21.60	Vertical
7310.000	---	63.86	---	42.56	54.00	11.44	-21.30	Vertical
8565.000	---	55.67	---	35.67	54.00	18.33	-20.00	Vertical
11167.000	---	53.74	---	36.34	54.00	17.66	-17.40	Vertical
14594.000	---	54.23	---	40.73	54.00	13.27	-13.50	Vertical
15945.500	---	56.29	---	42.39	54.00	11.61	-13.90	Vertical

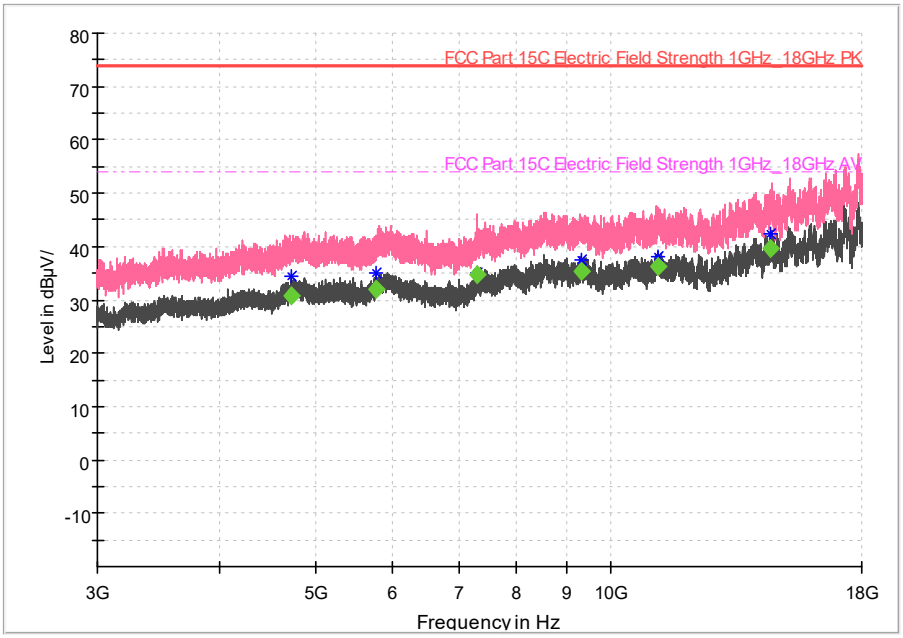
- 802.11g

Spurious Radiated Emissions from 1GHz to 18GHz:
CH Middle (No.6)

Full Spectrum



Full Spectrum

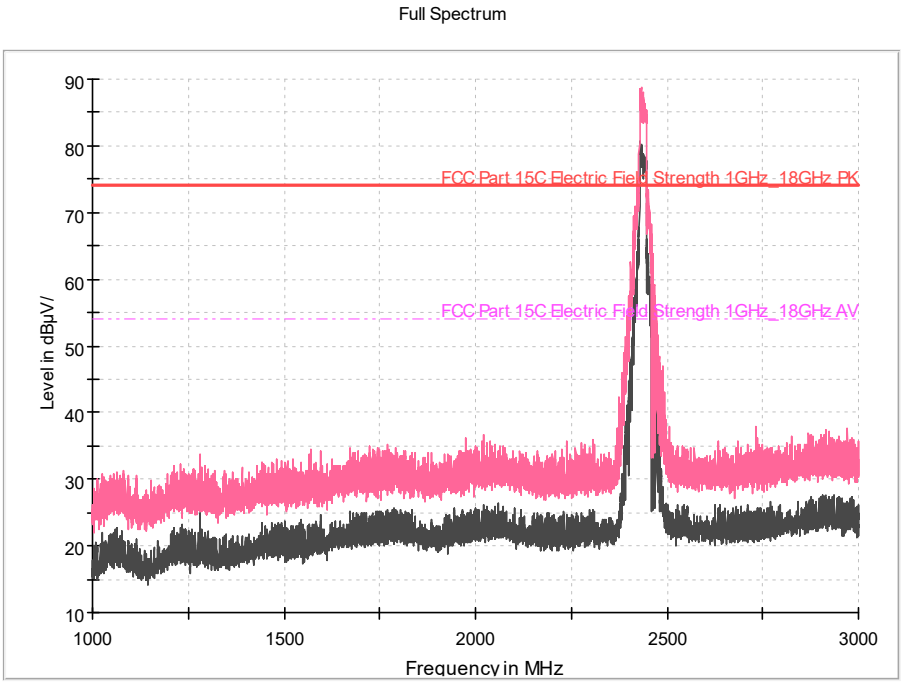


Frequency	Reading MaxPeak	Reading Average	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	A_{Rpl} (dB)	Polarity

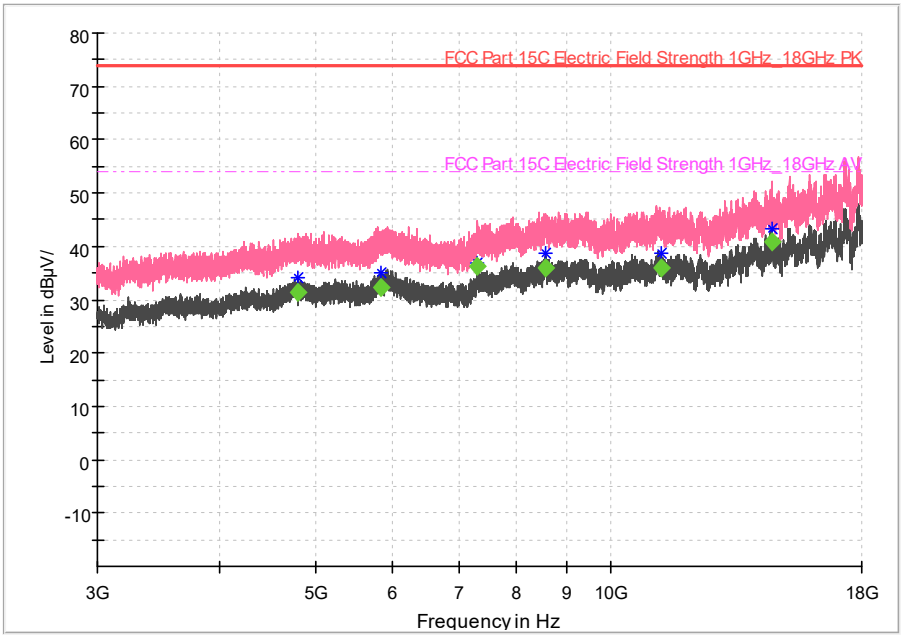
(MHz)	(dBuV)	(dBuV)						
4730.000	---	51.95	---	30.75	54.00	23.25	-21.20	Vertical
5765.500	---	52.19	---	31.99	54.00	22.01	-20.20	Vertical
7312.500	---	56.03	---	34.73	54.00	19.27	-21.30	Vertical
9313.000	---	55.04	---	35.34	54.00	18.66	-19.70	Vertical
11154.000	---	53.79	---	36.29	54.00	17.71	-17.50	Vertical
14554.000	---	53.12	---	39.72	54.00	14.28	-13.40	Vertical

- 802.11n (HT20)

Spurious Radiated Emissions from 1GHz to 18GHz:
CH Middle (No.6)

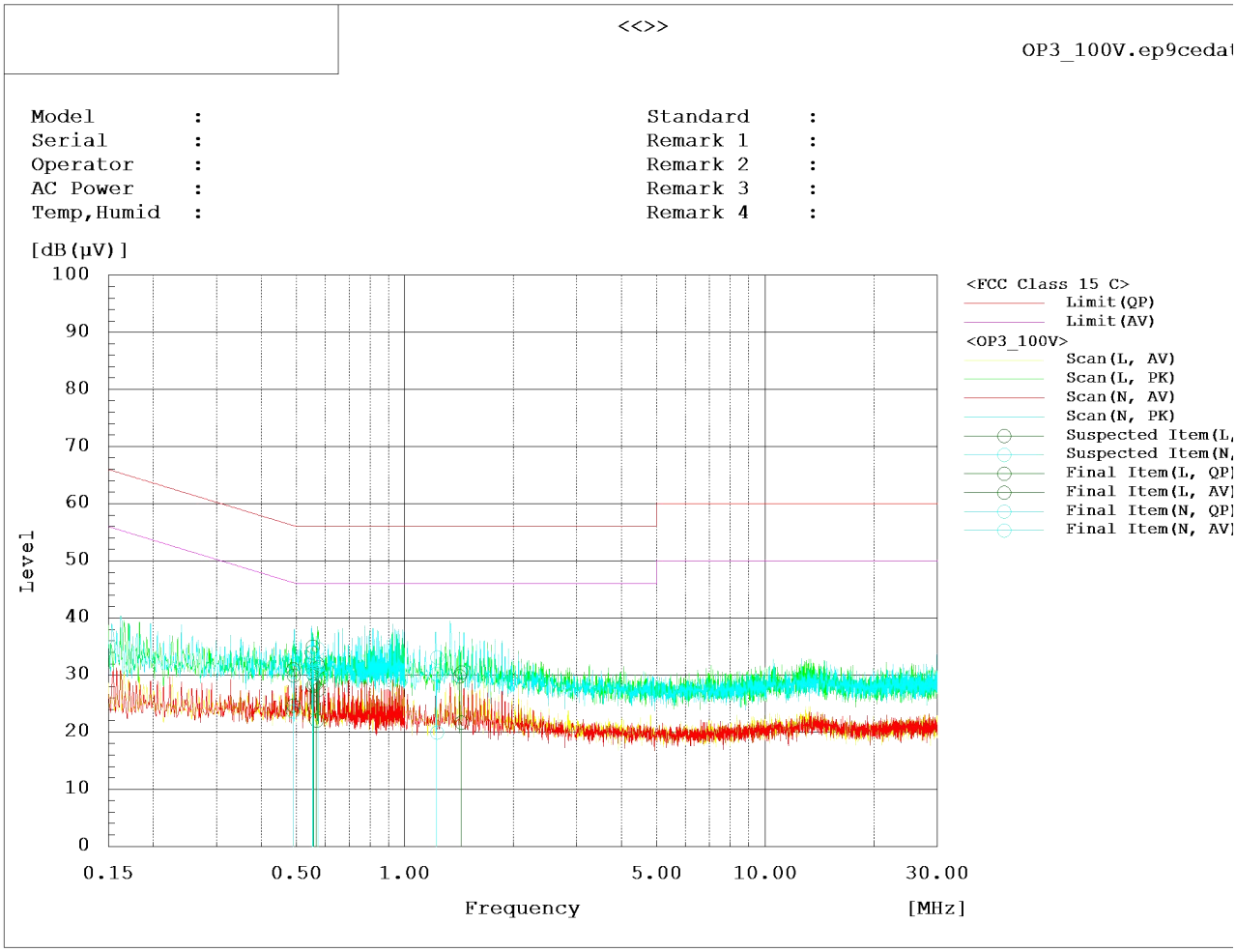


Full Spectrum

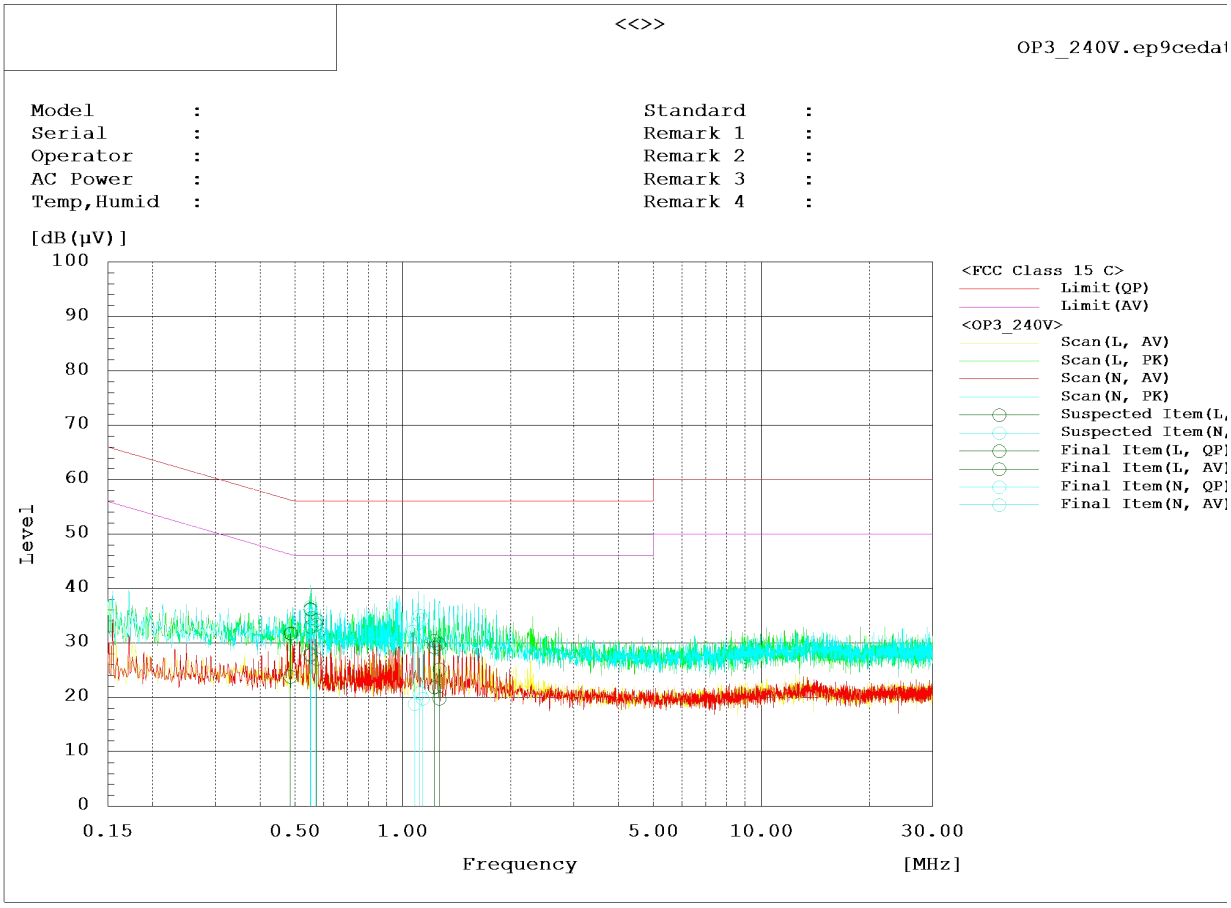


Frequency (MHz)	Reading MaxPeak (dBuV)	Reading Average (dBuV)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	A_{Rpl} (dB)	Polarity
4793.000	---	52.21	---	31.31	54.00	22.69	-20.90	Vertical
5824.000	---	52.43	---	32.43	54.00	21.57	-20.00	Vertical
7309.500	---	57.60	---	36.30	54.00	17.70	-21.30	Vertical
8572.000	---	55.82	---	35.82	54.00	18.18	-20.00	Vertical
11231.500	---	53.17	---	35.87	54.00	18.13	-17.30	Vertical
14580.500	---	54.50	---	41.00	54.00	13.00	-13.50	Vertical

AC Power line Conducted Emission



Range	Frequency	Line	Reading			Factor	Level			Limit	Limit			Margin			Pass/Fail
	MHz		dB(µV)			dB	dB(µV)			dB(µV)	dB(µV)			dB			
			QP	AV	PK		QP	AV	PK		QP	AV	PK	QP	AV	PK	
Band1	0.49	L	11.1	4.8		19.9	31	24.7			56.2	46.2		25.2	21.5		Pass
Band1	0.55	L	15.1	8.2		19.9	35	28.1			56	46		21	17.9		Pass
Band1	0.56	L	8.5	4.3		19.9	28.4	24.2			56	46		27.6	21.8		Pass
Band1	0.57	L	8.7	2.1		19.9	28.6	22			56	46		27.4	24		Pass
Band1	0.57	L	14.7	7.5		19.9	34.6	27.4			56	46		21.4	18.6		Pass
Band1	1.43	L	10.6	1.8		19.9	30.5	21.7			56	46		25.5	24.3		Pass
Band1	0.49	N	10.7	3.7		19.9	30.6	23.6			56.2	46.2		25.6	22.6		Pass
Band1	0.56	N	12.4	10		19.9	32.3	30.2			56	46		23.7	15.8		Pass
Band1	0.55	N	14.2	11		19.9	34.1	30.9			56	46		21.9	15.1		Pass
Band1	0.56	N	12.9	11		19.9	32.8	30.4			56	46		23.2	15.6		Pass
Band1	0.57	N	14.7	11		19.9	34.6	30.7			56	46		21.4	15.3		Pass
Band1	1.23	N	13.2	0		19.9	33.1	19.9			56	46		22.9	26.1		Pass



Range	Frequency	Line	Reading			Factor	Level			Limit	Limit			Margin			Pass/Fai
	MHz		dB(µV)			dB	dB(µV)			dB(µV)	dB(µV)			dB			
			QP	AV	PK		QP	AV	PK		QP	AV	PK	QP	AV	PK	
Band1	0.56	N	15.4	13		19.9	35.3	32.7			56	46		20.7	13.3		Pass
Band1	0.55	N	16.7	12		19.9	36.6	32.3			56	46		19.4	13.7		Pass
Band1	0.57	N	14.5	10		19.9	34.4	30.3			56	46		21.6	15.7		Pass
Band1	1.08	N	9.4	-1.1		19.9	29.3	18.8			56	46		26.7	27.2		Pass
Band1	1.11	N	15.1	0.9		19.9	35	20.8			56	46		21	25.2		Pass
Band1	1.13	N	14.4	-0.1		19.9	34.3	19.8			56	46		21.7	26.2		Pass
Band1	0.49	L	11.8	3.9		19.9	31.7	23.8			56.2	46.2		24.5	22.4		Pass
Band1	0.55	L	16.3	7.8		19.9	36.2	27.7			56	46		19.8	18.3		Pass
Band1	0.55	L	16.3	8		19.9	36.2	27.9			56	46		19.8	18.1		Pass
Band1	0.57	L	14.3	7.1		19.9	34.2	27			56	46		21.8	19		Pass
Band1	1.22	L	9.3	2		19.9	29.2	21.9			56	46		26.8	24.1		Pass
Band1	1.26	L	5.2	-0.2		19.9	25.1	19.7			56	46		30.9	26.3		Pass

---End of the test report---