

**Fig.25 Conducted Spurious Emission (CH39, 1GHz-26.5GHz), LE 1M**



**Fig.26 Conducted Spurious Emission (CH0, Center Frequency), LE 2M**

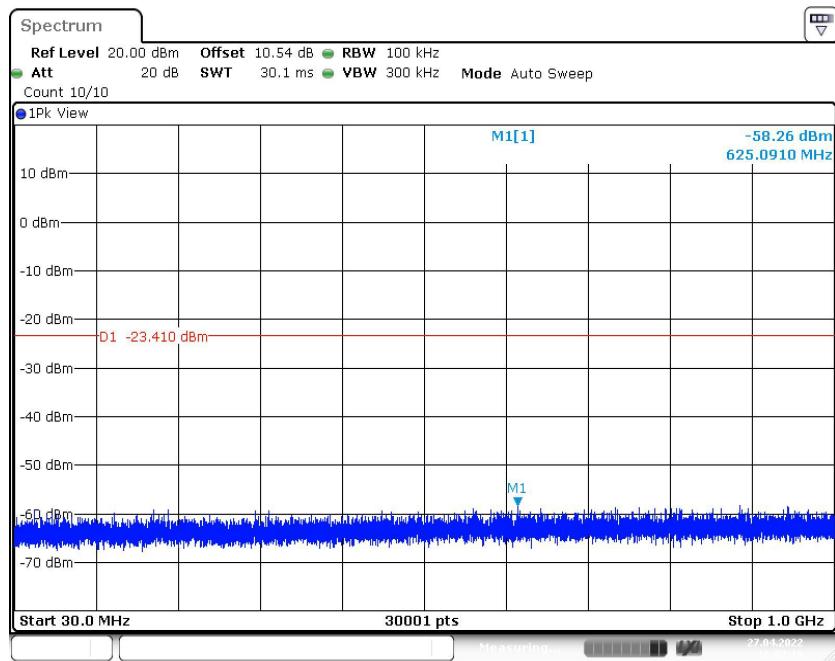


Fig.27 Conducted Spurious Emission (CH0, 30MHz -1GHz), LE 2M

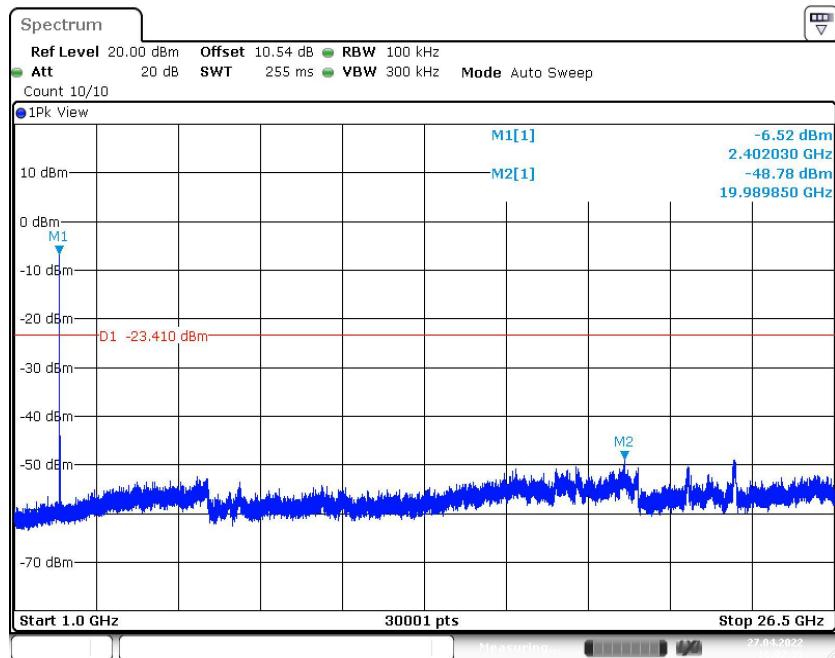
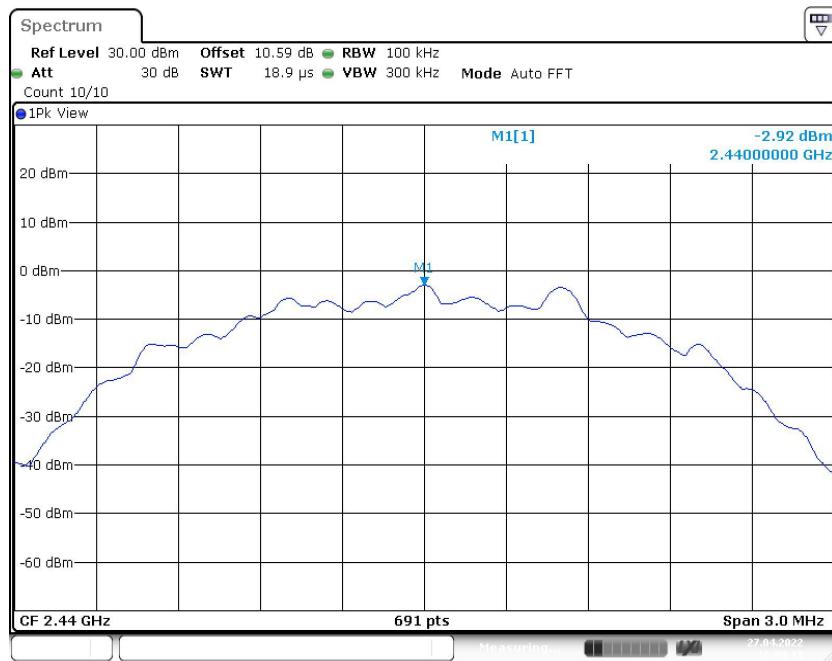
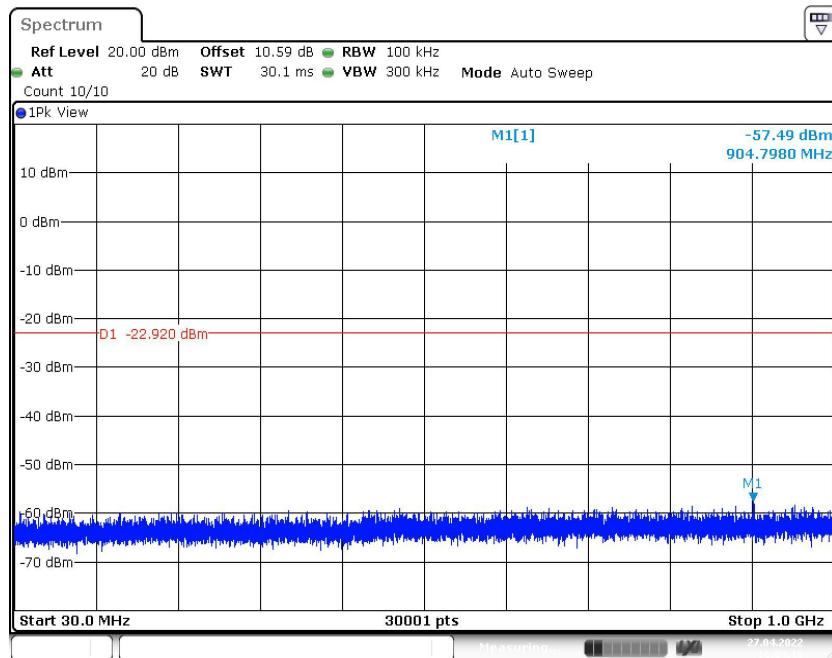


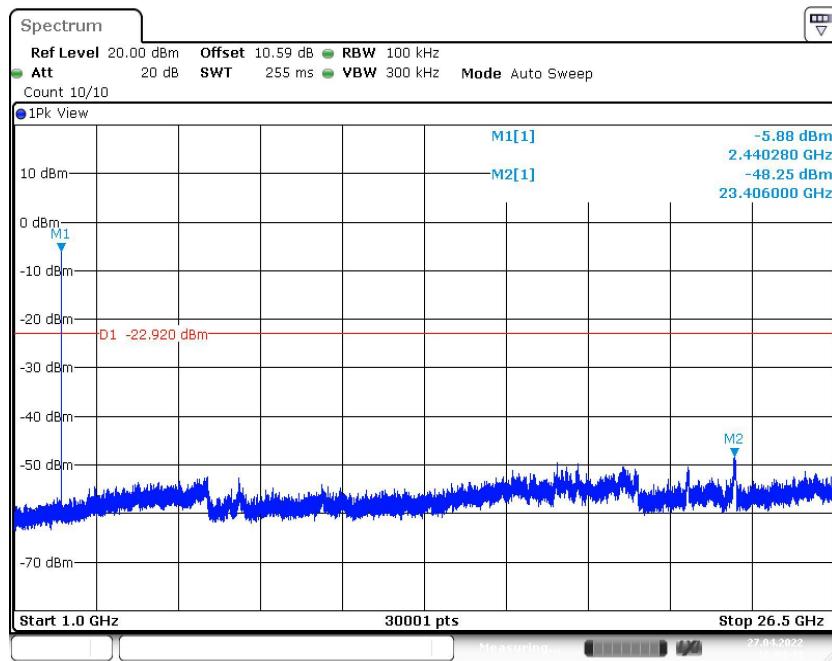
Fig.28 Conducted Spurious Emission (CH0, 1GHz-26.5GHz), LE 2M



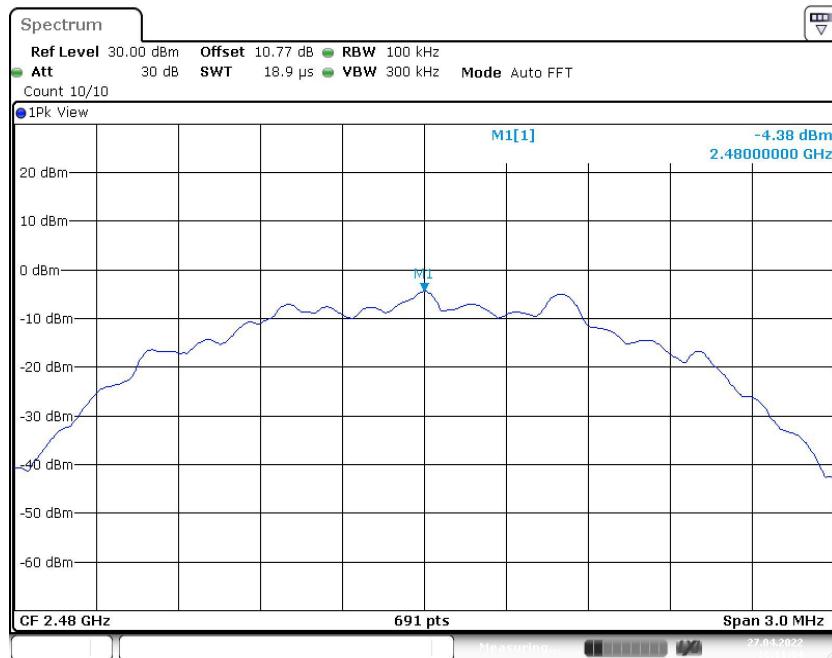
**Fig.29 Conducted Spurious Emission (CH19, Center Frequency), LE 2M**



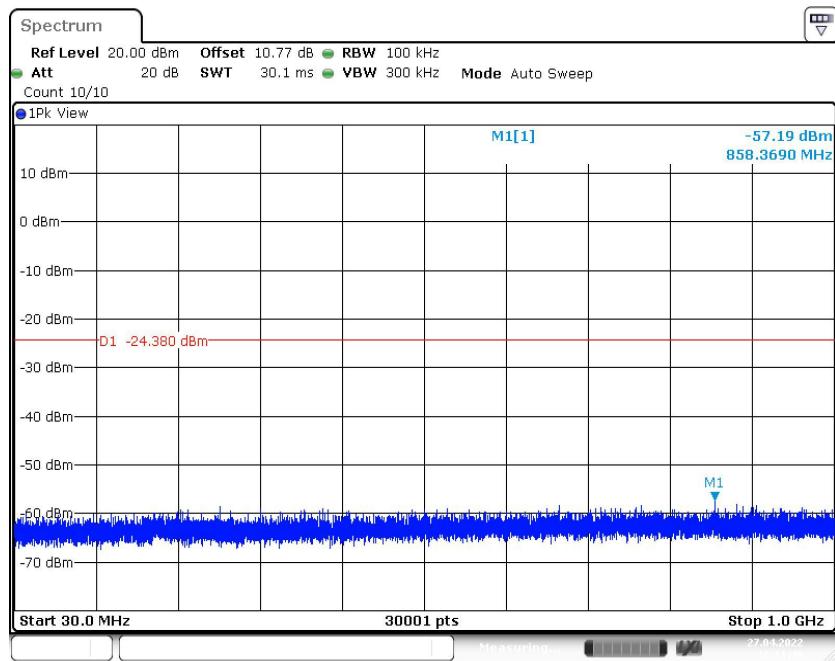
**Fig.30 Conducted Spurious Emission (CH19, 30MHz -1GHz), LE 2M**



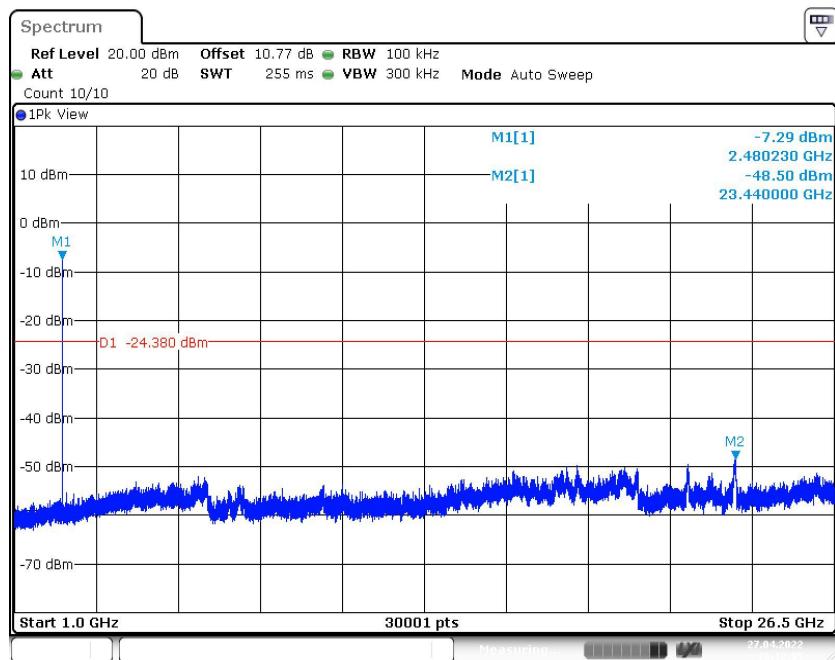
**Fig.31 Conducted Spurious Emission (CH19, 1GHz-26.5GHz), LE 2M**



**Fig.32 Conducted Spurious Emission (CH39, Center Frequency), LE 2M**



**Fig.33 Conducted Spurious Emission (CH39, 30MHz -1GHz), LE 2M**



**Fig.34 Conducted Spurious Emission (CH39, 1GHz-26.5GHz), LE 2M**

## A.6 Transmitter Spurious Emission - Radiated

**Method of Measurement: See ANSI C63.10-clause 11.11&11.12**

**Measurement Limit:**

Standard	Limit (dBm)
FCC 47 CFR Part 15.247, 15.205, 15.209	20dBm below peak output power

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

**Limit in restricted band:**

Frequency of emission (MHz)	Field strength(µV/m)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

**Test Condition:**

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	120kHz/300kHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

**Note:** According to the performance evaluation, the radiated emission margin of EUT is over 20dB in the band from 9kHz to 30MHz. Therefore, the measurement starts from 30MHz to tenth harmonic. The measurement results include the horizontal polarization and vertical polarization measurements.

**Measurement Results:**

Mode	Channel	Frequency Range	Test Results	Conclusion
LE 1M	0	1 GHz ~18 GHz	Fig.35	P
	19	1 GHz ~18 GHz	Fig.36	P
	39	1 GHz ~18 GHz	Fig.37	P
	Restricted Band(CH0)	2.38 GHz ~ 2.45 GHz	Fig.38	P
	Restricted Band(CH39)	2.45 GHz ~ 2.5 GHz	Fig.39	P
	All channels	9 kHz ~30 MHz	Fig.40	P
		30 MHz ~1 GHz	Fig.41	P
		18 GHz ~ 26.5 GHz	Fig.42	P
LE 2M	0	1 GHz ~18 GHz	Fig.43	P
	19	1 GHz ~18 GHz	Fig.44	P
	39	1 GHz ~18 GHz	Fig.45	P
	Restricted Band(CH0)	2.38 GHz ~ 2.45 GHz	Fig.46	P
	Restricted Band(CH39)	2.45 GHz ~ 2.5 GHz	Fig.47	P
	All channels	9 kHz ~30 MHz	Fig.48	P
		30 MHz ~1 GHz	Fig.49	P
		18 GHz ~ 26.5 GHz	Fig.50	P

**Worst Case Result:**
**For LE 1M:**
**CH19 (1-18GHz)**

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
4880.400000	48.23	74.00	25.77	H	3.7
11222.142857	47.84	74.00	26.16	V	9.7
14835.000000	51.31	74.00	22.69	H	12.9
15860.571429	53.57	74.00	20.43	V	14.0
17059.285714	55.12	74.00	18.88	V	18.5
17919.857143	55.41	74.00	18.59	H	18.9

Frequency (MHz)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
4880.400000	37.31	54.00	16.69	H	3.7
11222.142857	35.75	54.00	18.25	V	9.7
14835.000000	39.20	54.00	14.80	H	12.9
15860.571429	40.69	54.00	13.31	V	14.0
17059.285714	42.46	54.00	11.54	V	18.5
17919.857143	43.31	54.00	10.69	H	18.9

**For LE 2M:**  
**CH19 (1-18GHz)**

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
4879.500000	48.48	74.00	25.52	H	3.7
11044.285714	49.03	74.00	24.97	V	9.8
14899.285714	51.24	74.00	22.76	H	13.0
15894.000000	53.16	74.00	20.84	H	14.0
16890.000000	54.62	74.00	19.38	V	18.0
17979.857143	54.99	74.00	19.01	V	19.1

Frequency (MHz)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Pol	Corr. (dB/m)
4879.500000	36.60	54.00	17.40	H	3.7
11044.285714	36.02	54.00	17.98	V	9.8
14899.285714	39.18	54.00	14.82	H	13.0
15894.000000	40.37	54.00	13.63	H	14.0
16890.000000	42.37	54.00	11.63	V	18.0
17979.857143	42.73	54.00	11.27	V	19.1

**Note:**

A "reference path loss" is established and the  $A_{Rpl}$  is the attenuation of "reference path loss", and Antenna Factor, the gain of the preamplifier, the cable loss.  $P_{Mea}$  is the field strength recorded from the instrument.

The measurement results are obtained as described below:

Result=  $P_{Mea}$  +Cable Loss +Antenna Factor-Gain of the preamplifier.

**See below for test graphs.**

**Conclusion: Pass**

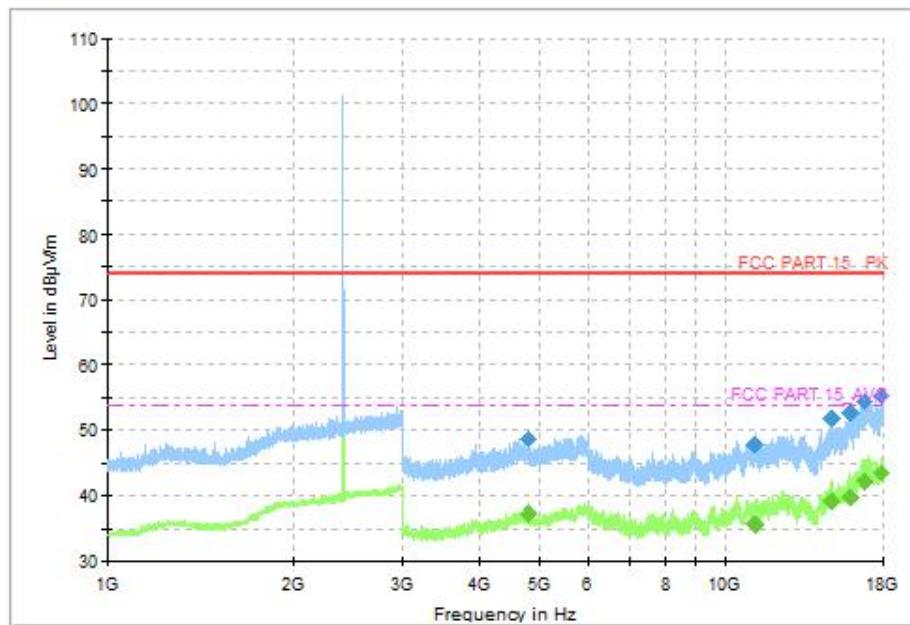


Fig.35 Radiated Spurious Emission (CH0, 1 GHz ~18GHz), LE 1M

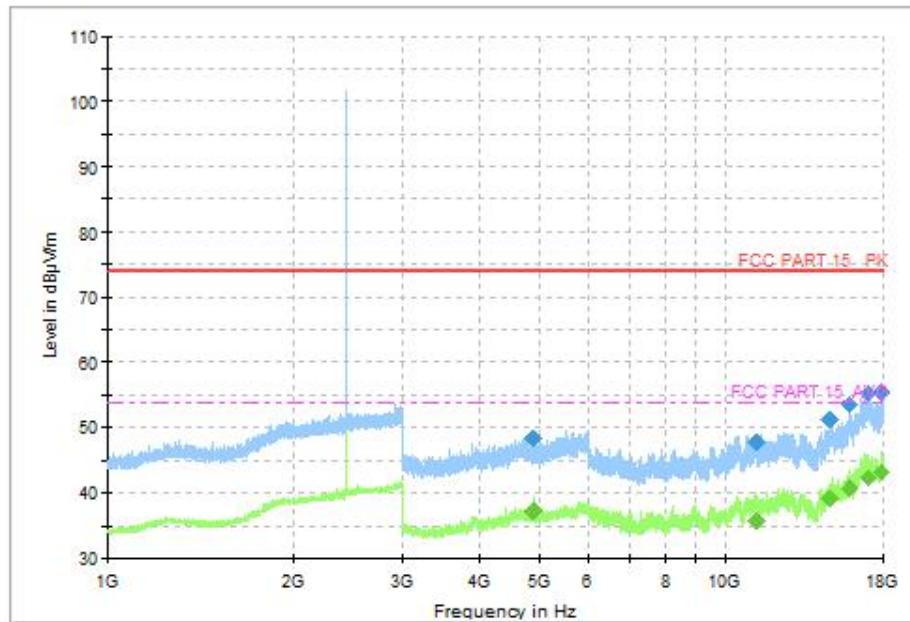


Fig.36 Radiated Spurious Emission (CH19, 1 GHz ~18 GHz), LE 1M

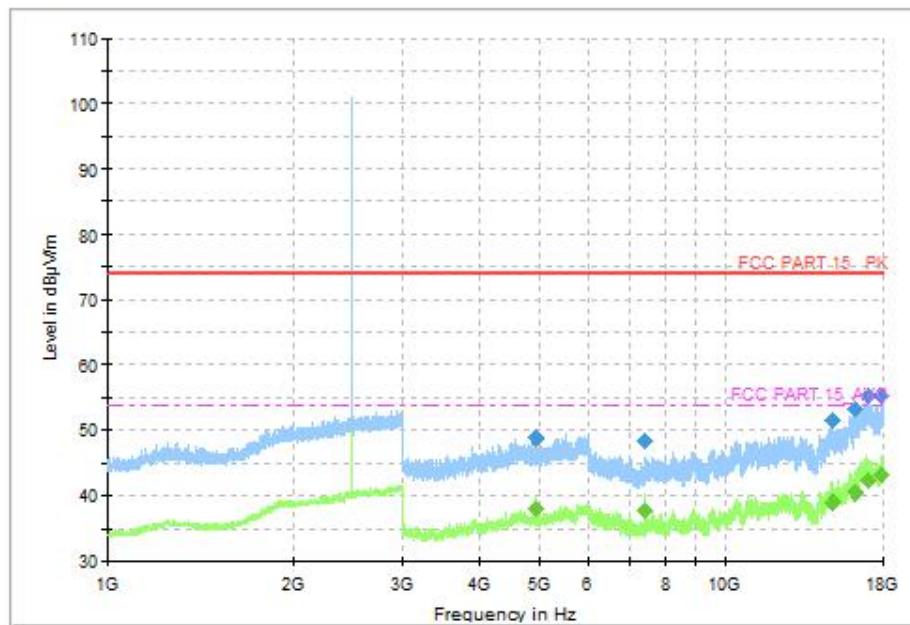


Fig.37 Radiated Spurious Emission (CH39, 1 GHz ~18GHz), LE 1M

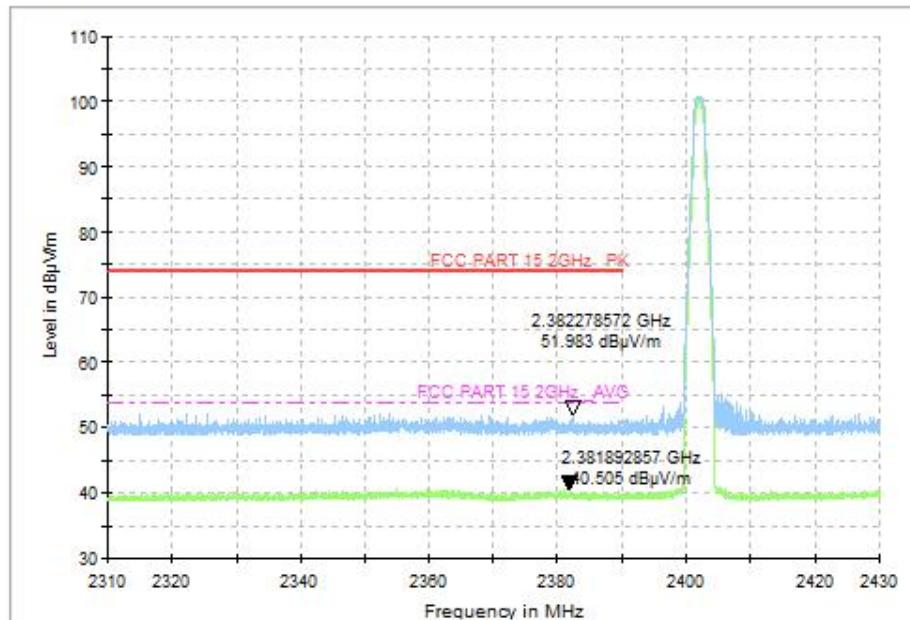


Fig.38 Radiated Band Edges (CH0, 2380GHz~2450GHz), LE 1M

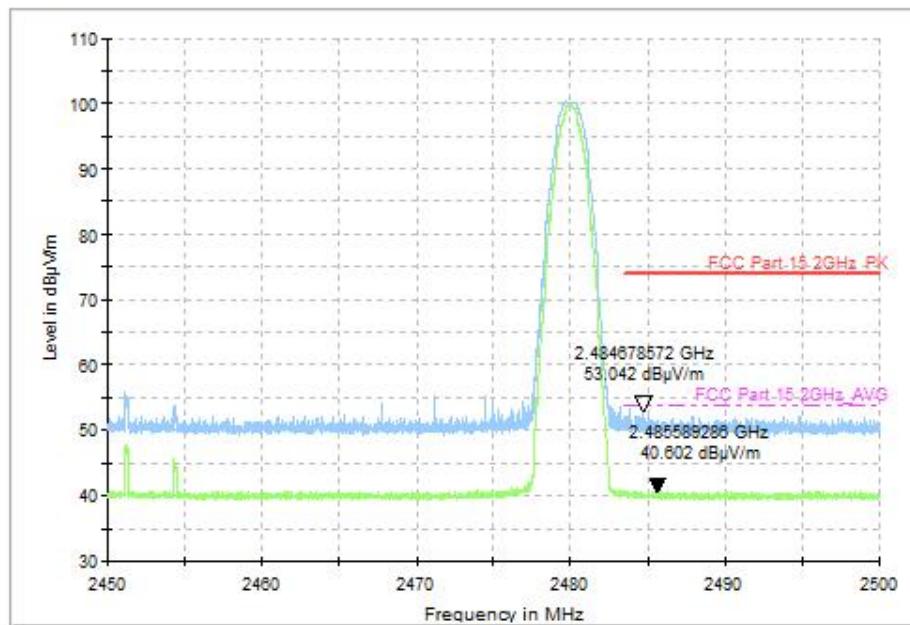


Fig.39 Radiated Band Edges (CH39, 2450GHz~2500GHz), LE 1M

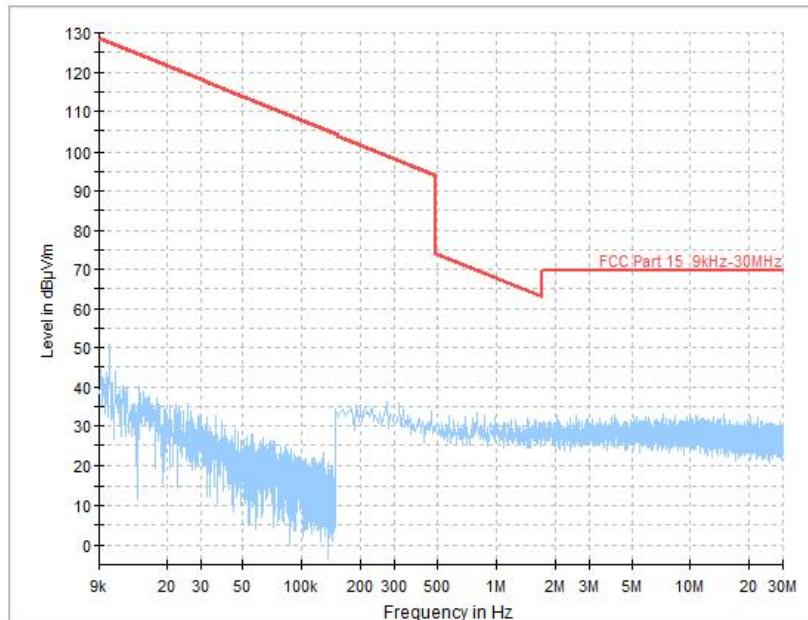


Fig.40 Radiated Spurious Emission (All Channels, 9 kHz-30 MHz), LE 1M

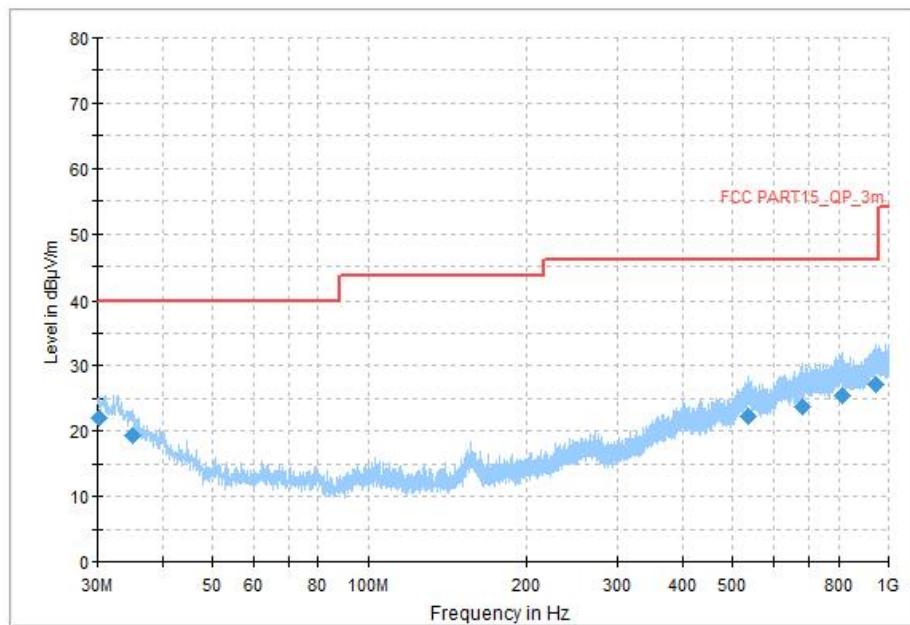


Fig.41 Radiated Spurious Emission (All Channels, 30 MHz-1 GHz), LE 1M

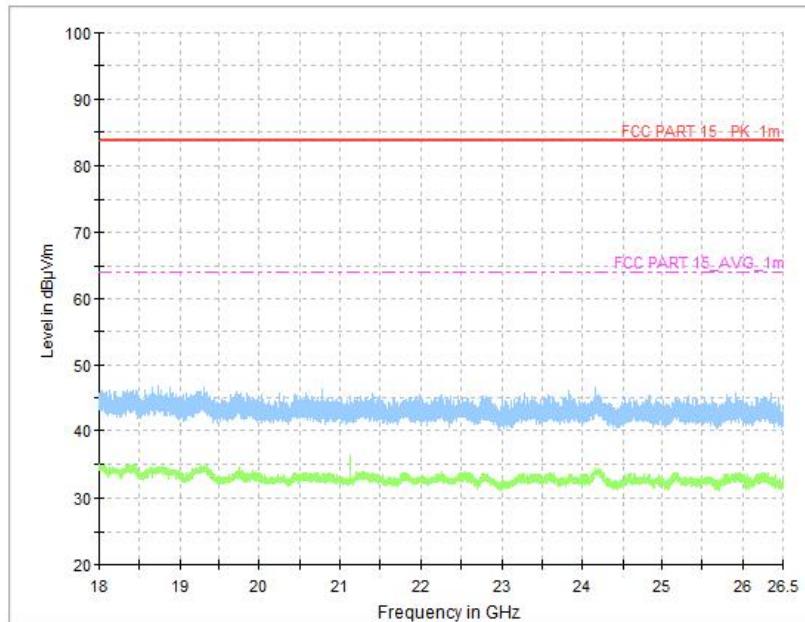


Fig.42 Radiated Spurious Emission (All Channels, 18 GHz-26.5 GHz), LE 1M

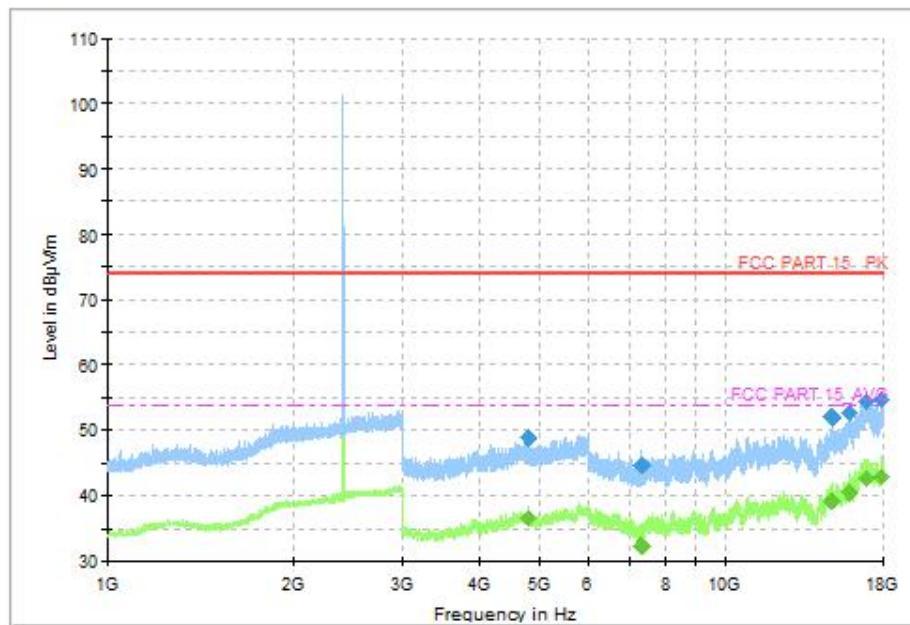


Fig.43 Radiated Spurious Emission (CH0, 1 GHz ~18 GHz), LE 2M

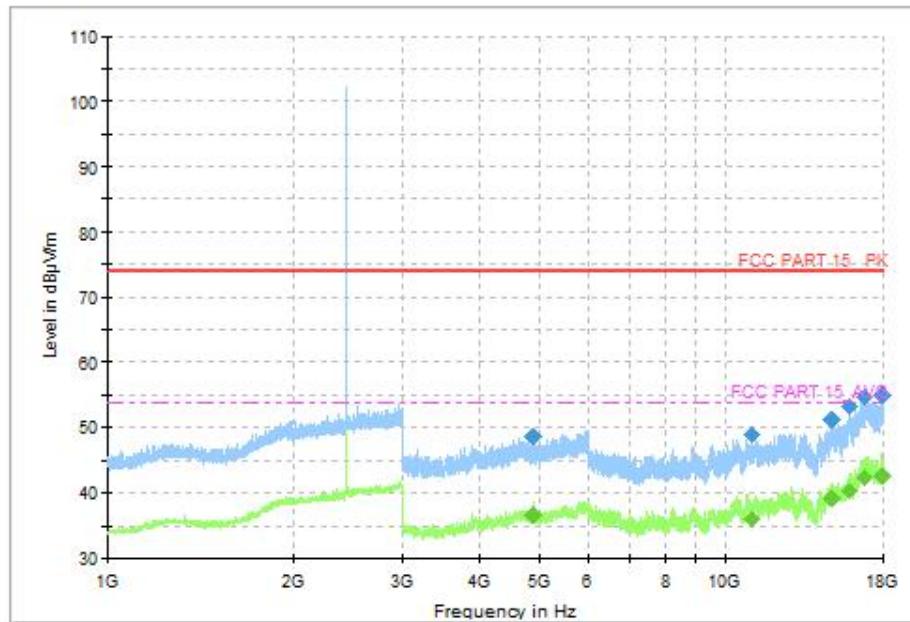


Fig.44 Radiated Spurious Emission (CH19, 1 GHz ~18 GHz), LE 2M

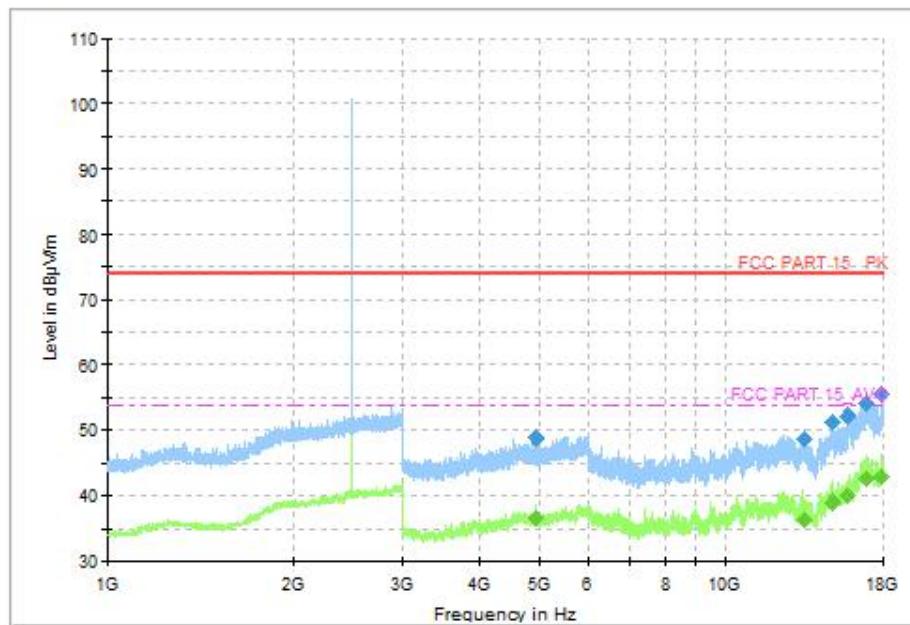


Fig.45 Radiated Spurious Emission (CH39, 1 GHz ~18 GHz), LE 2M

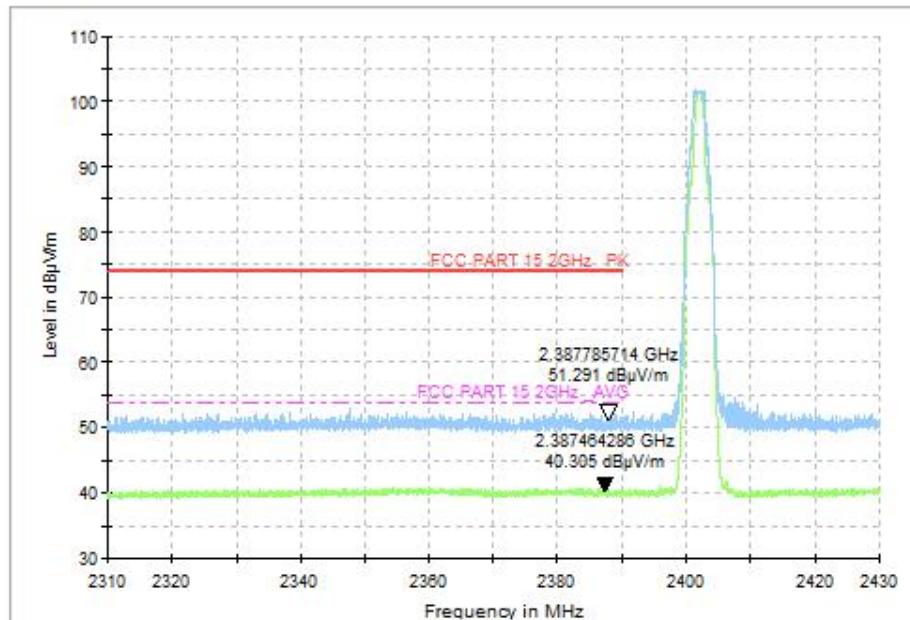


Fig.46 Radiated Band Edges (CH0, 2380GHz~2450GHz), LE 2M

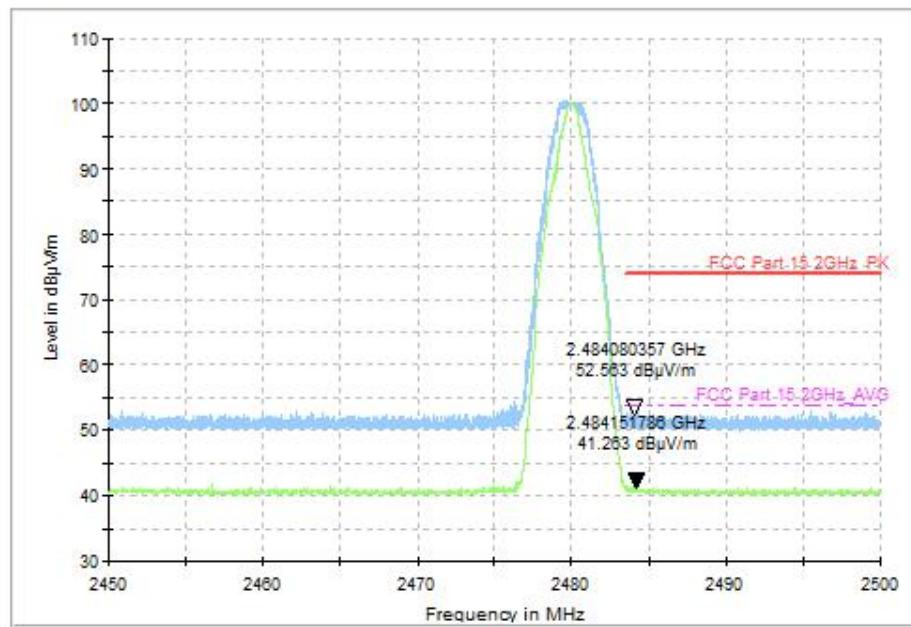


Fig.47 Radiated Band Edges (CH39, 2450GHz~2500GHz), LE 2M

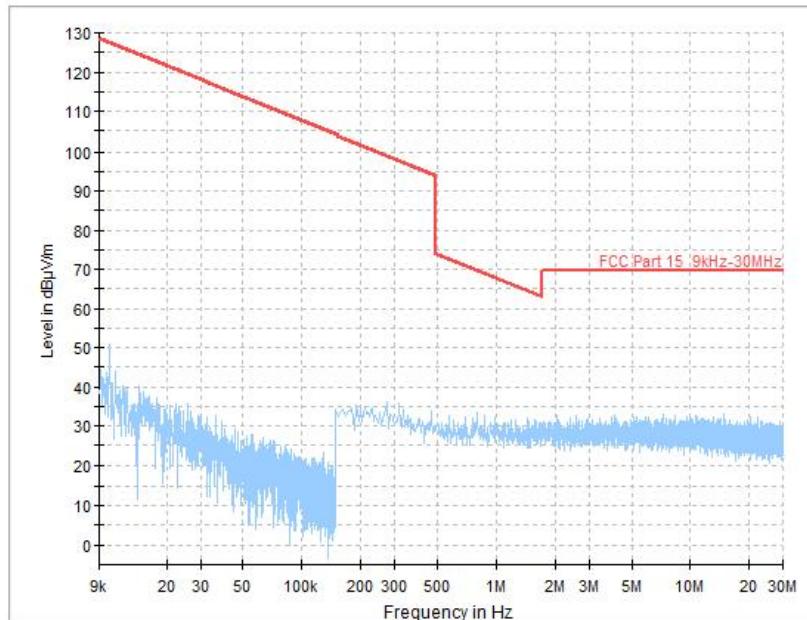


Fig.48 Radiated Spurious Emission (All Channels, 9 kHz-30 MHz), LE 2M

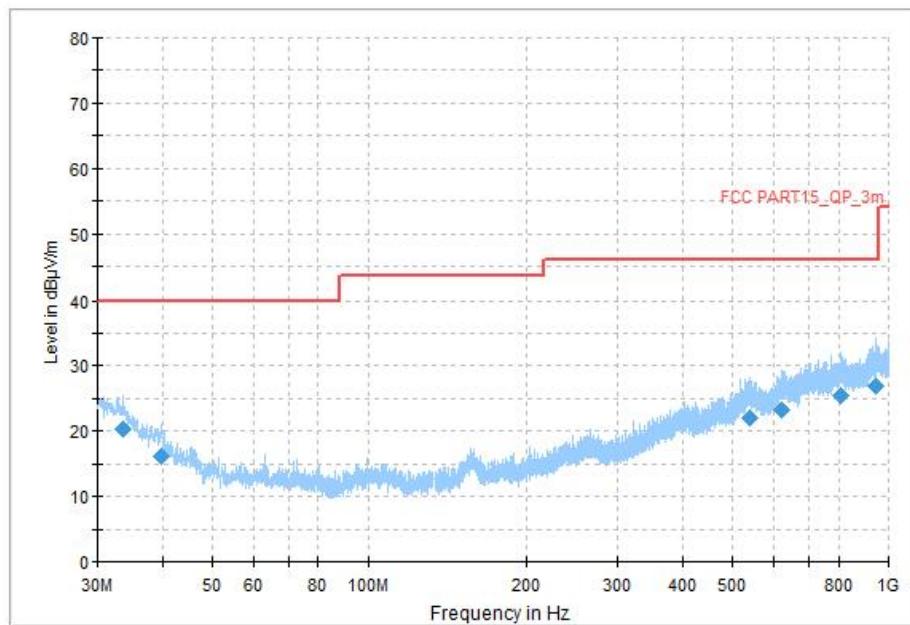


Fig.49 Radiated Spurious Emission (All Channels, 30 MHz-1 GHz), LE 2M

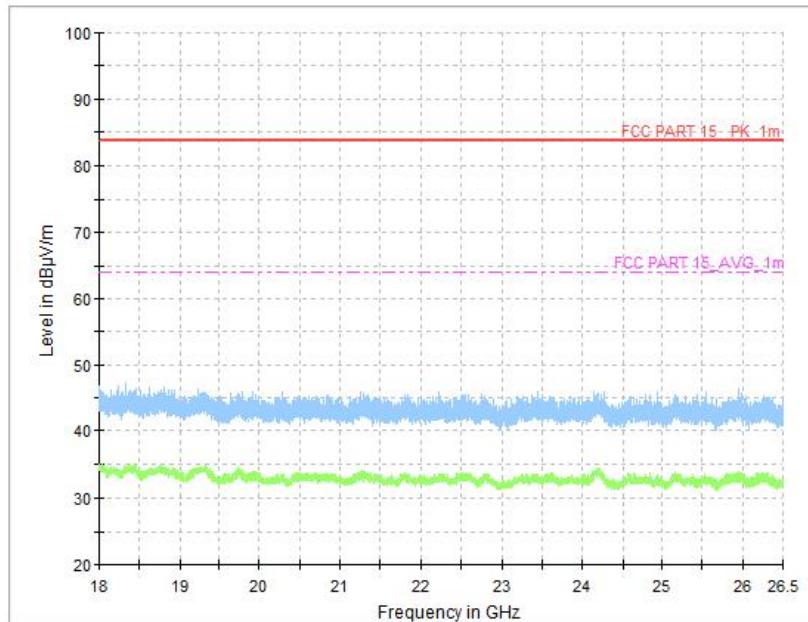


Fig.50 Radiated Spurious Emission (All Channels, 18 GHz-26.5 GHz), LE 2M

## A.7 AC Power line Conducted Emission

**Method of Measurement: See ANSI C63.10-clause 6.2**

**Test Condition:**

Voltage (V)	Frequency (Hz)
120	60

**Measurement Result and limit:**

**BLE**

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Average-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
			Traffic	Idle	
0.15 to 0.5	66 to 56	56 to 46	Fig.51	Fig.52	P
0.5 to 5	56	46			
5 to 30	60	50			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

**Note:** The measurement results include the L1 and N measurements.

**See below for test graphs.**

**Conclusion: Pass**

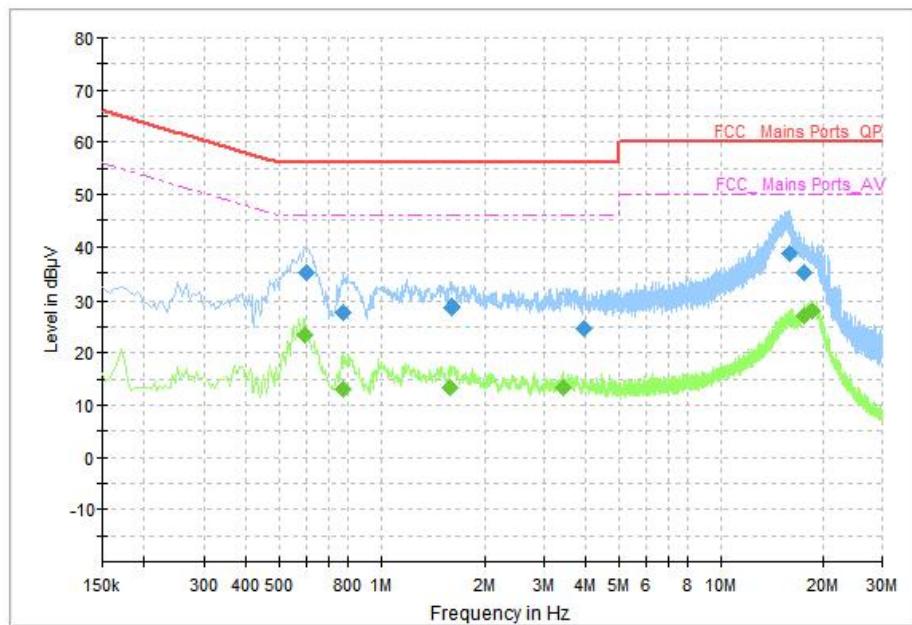


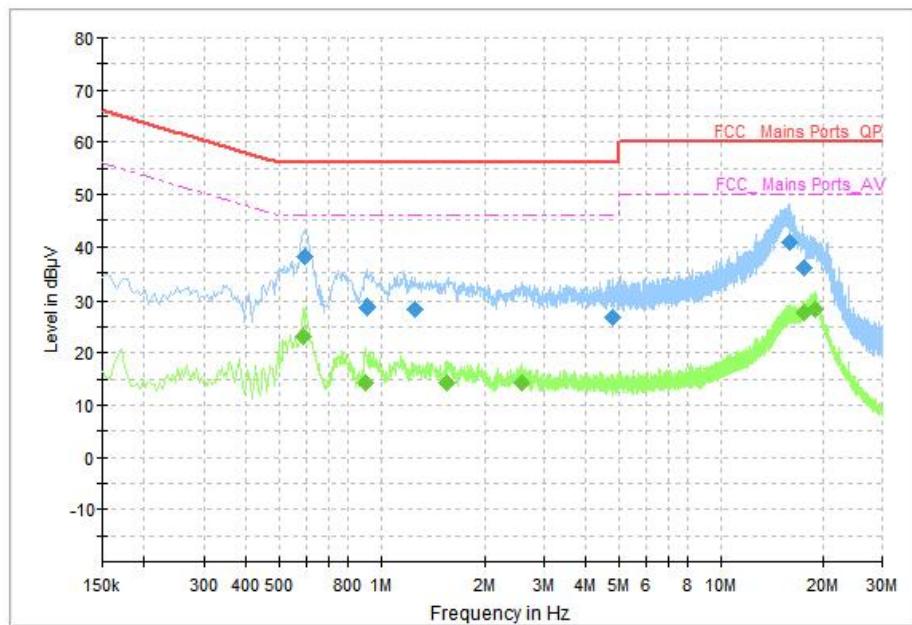
Fig.51 AC Power line Conducted Emission (Traffic), LE 1M

**Measurement Results: Quasi Peak**

Frequency (MHz)	Quasi Peak (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.602000	35.17	56.00	20.83	N	ON	10
0.774000	27.73	56.00	28.27	L1	ON	10
1.594000	28.48	56.00	27.52	L1	ON	10
3.958000	24.51	56.00	31.49	N	ON	10
16.034000	38.72	60.00	21.28	N	ON	11
17.678000	35.03	60.00	24.97	N	ON	11

**Measurement Results: Average**

Frequency (MHz)	Average (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.594000	23.35	46.00	22.65	N	ON	10
0.774000	12.98	46.00	33.02	L1	ON	10
1.578000	13.24	46.00	32.76	L1	ON	10
3.410000	13.27	46.00	32.73	L1	ON	10
17.646000	26.95	50.00	23.05	N	ON	11
18.702000	27.95	50.00	22.05	N	ON	10



**Fig.52 AC Power line Conducted Emission (Idle), LE 1M**

**Measurement Results: Quasi Peak**

Frequency (MHz)	Quasi Peak (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.594000	38.09	56.00	17.91	N	ON	10
0.914000	28.71	56.00	27.29	N	ON	10
1.258000	28.30	56.00	27.70	N	ON	10
4.766000	26.68	56.00	29.32	L1	ON	10
15.938000	40.73	60.00	19.27	N	ON	11
17.698000	36.08	60.00	23.92	N	ON	11

**Measurement Results: Average**

Frequency (MHz)	Average (dB $\mu$ V)	Limit (dB $\mu$ V)	Margin (dB)	Line	Filter	Corr. (dB)
0.586000	23.04	46.00	22.96	N	ON	10
0.902000	14.39	46.00	31.61	N	ON	10
1.554000	14.20	46.00	31.80	L1	ON	10
2.578000	14.18	46.00	31.82	L1	ON	10
17.646000	27.66	50.00	22.34	N	ON	11
19.094000	28.44	50.00	21.56	N	ON	10

\*\*\*END OF REPORT\*\*\*