

ANNEX A: Test Result

There is more than one Adapter/ USB cable, each one should be applied throughout the compliance test respectively, and however, only the worst case (Adapter 4/ USB cables 1) will be recorded in this report.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (Z axis) and the loop antenna is coplanar, the others are vertical and horizontal. and the worst case was recorded.

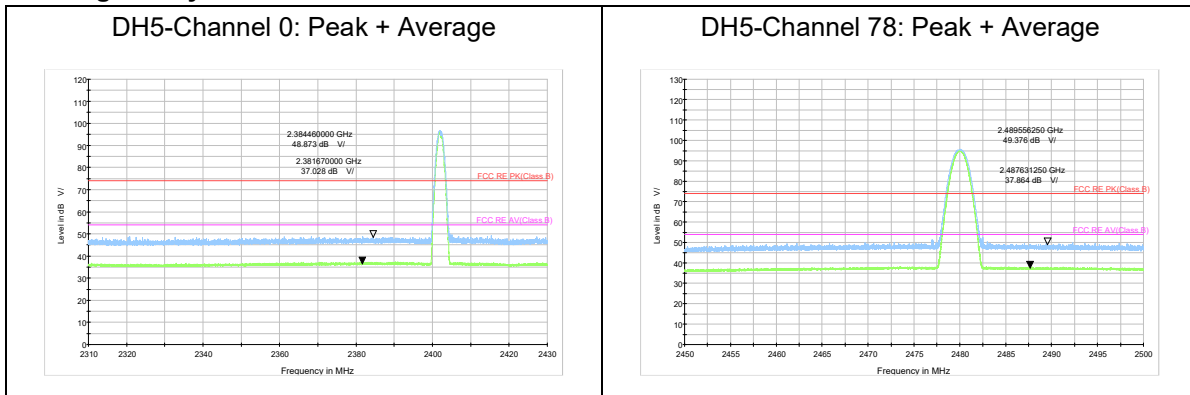
1. Unwanted Emission

1.1. Bluetooth

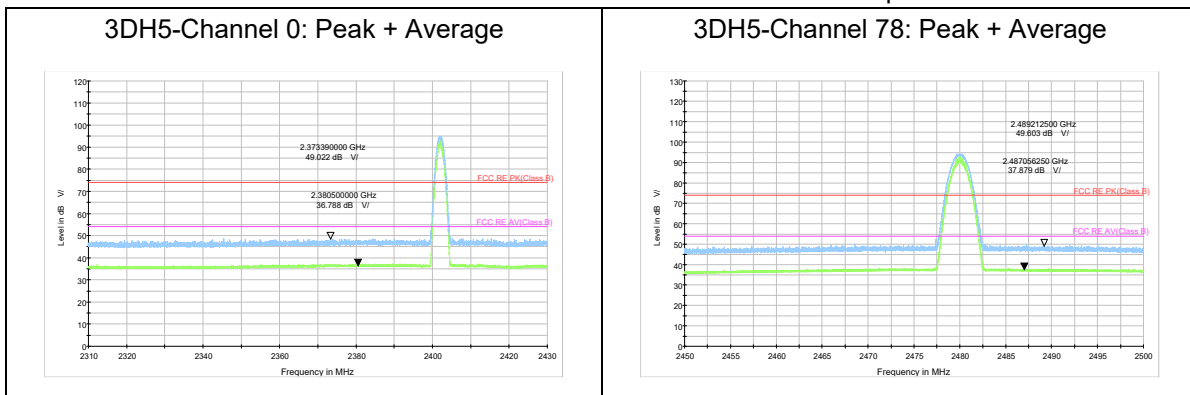
The following graphs display the maximum values of horizontal and vertical by software. Blue trace uses the peak detection, Green trace uses the average detection.

A symbol ($\text{dB } \mu\text{V}$) in the test plot below means (dB $\mu\text{V/m}$)

The signal beyond the limit is carrier.



The bandage was performed in all EDR mode (2DH5 and 3DH5), 3DH5 was selected as the worse condition. The test data of the worst-case condition was recorded in this report.



Result of RE

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier. The Radiates Emission from 9kHz to 30MHz and 18GHz to 26.5GHz are more than 20dB below the limit are not reported.

Remark:

1. **Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**
2. **Margin = Limit – Quasi-Peak/ MAX Peak/ Average**
3. **A symbol ($\text{dB } \mu\text{V/m}$) in the test plot below means (dB $\mu\text{V/m}$)**
4. **The following graphs display the maximum values of coaxial and coplanar for 9k-30MHz; horizontal and vertical for above 30MHz by software.**
5. **For below 1GHz**

 QP Level @Spectrum Overview H
  QP Level @Spectrum Overview V
  QP Level @Final Results
  QP Limit

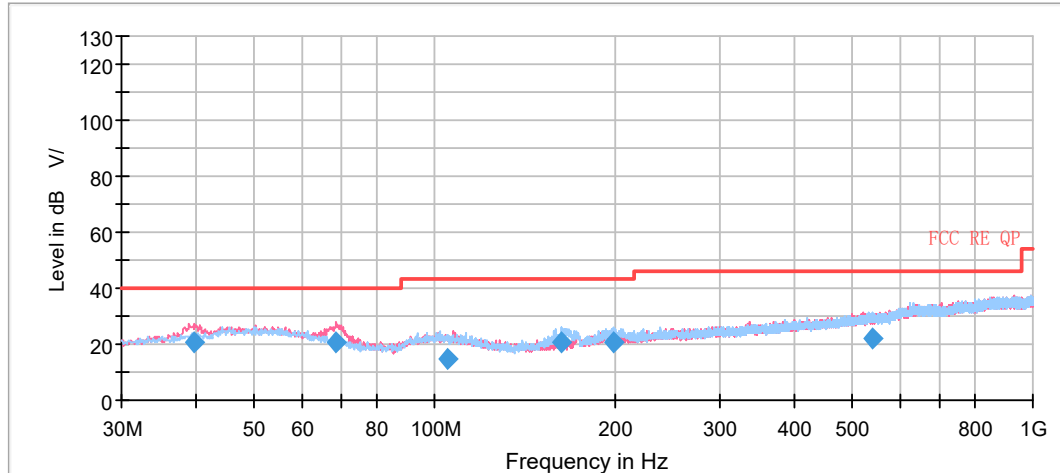
For above 1GHz

 PK Level @Spectrum Overview H
  PK Level @Spectrum Overview V
  PK Level @Final Results
  PK Limit

 AVG Level @Spectrum Overview H
  AVG Level @Spectrum Overview V
  AVG Level @Final Results
  AVG Limit

Continuous TX mode:

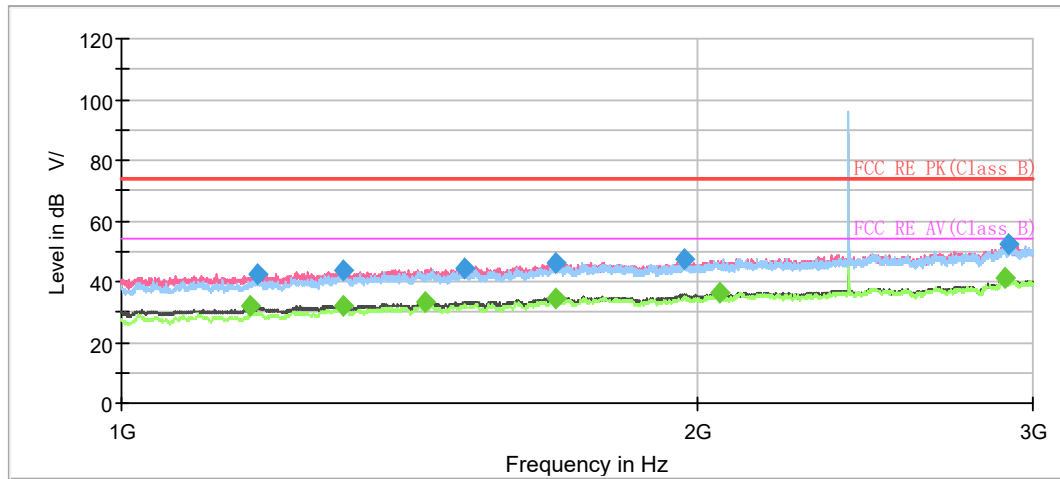
During the test, the Radiates Emission from 9kHz to 1GHz was performed in all modes with all channels. The test data of the worst-case condition (3DH5-Channel 78) was recorded in this report.



Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
39.821250	20.38	40.00	19.62	112.0	V	154.0	19.9
68.557500	20.98	40.00	19.02	105.0	V	336.0	17.0
105.417500	14.73	43.50	28.77	188.0	H	0.0	19.2
163.253750	20.94	43.50	22.56	192.0	H	256.0	16.4
198.537500	20.49	43.50	23.01	188.0	H	276.0	19.0
541.311250	22.13	46.00	23.87	205.0	H	215.0	26.1

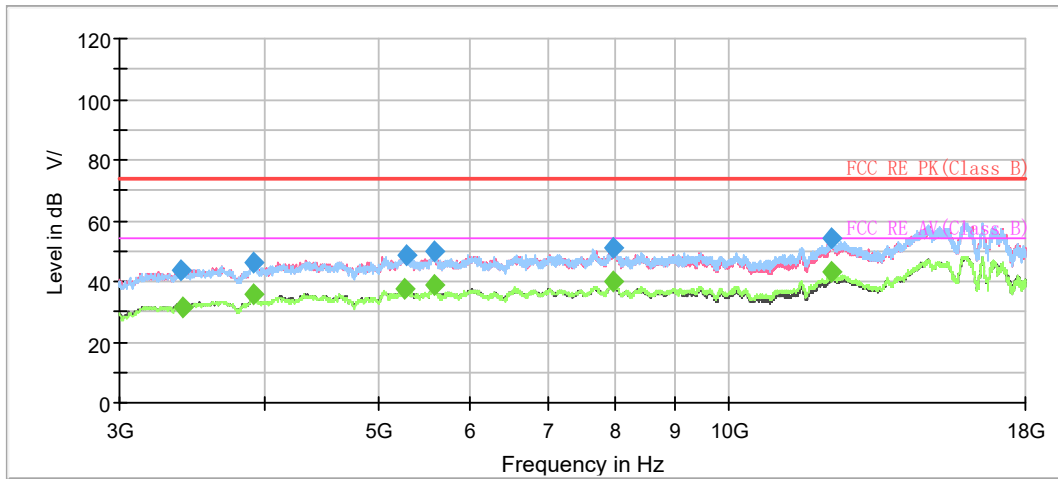
DH5-Channel 0



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

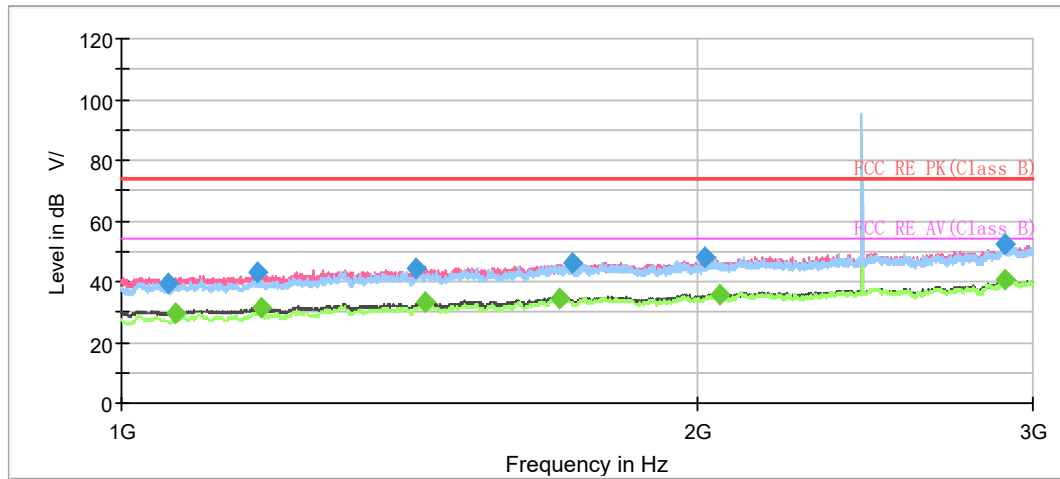
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1168.000000	---	31.81	54.00	22.19	500.0	200.0	V	261.0	-4.5
1179.250000	42.50	---	74.00	31.50	500.0	100.0	V	188.0	-4.1
1306.500000	43.91	---	74.00	30.09	500.0	200.0	V	285.0	-2.2
1306.750000	---	32.19	54.00	21.81	500.0	200.0	V	188.0	-2.2
1441.500000	---	33.23	54.00	20.77	500.0	200.0	V	249.0	-1.6
1512.500000	44.26	---	74.00	29.74	500.0	200.0	V	138.0	-1.3
1687.000000	---	34.52	54.00	19.48	500.0	200.0	V	0.0	0.4
1688.500000	45.92	---	74.00	28.08	500.0	200.0	H	15.0	0.4
1969.750000	47.36	---	74.00	26.64	500.0	100.0	V	188.0	2.2
2059.000000	---	36.38	54.00	17.62	500.0	200.0	V	334.0	2.3
2900.250000	---	40.99	54.00	13.01	500.0	200.0	V	28.0	8.6
2915.000000	52.25	---	74.00	21.75	500.0	200.0	V	0.0	8.3



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3388.125000	43.52	---	74.00	30.48	500.0	200.0	V	290.0	0.0
3405.000000	---	31.39	54.00	22.61	500.0	100.0	H	47.0	-0.2
3909.375000	---	35.65	54.00	18.35	500.0	100.0	V	243.0	3.7
3909.375000	46.28	---	74.00	27.72	500.0	200.0	V	23.0	3.7
5276.250000	---	37.61	54.00	16.39	500.0	200.0	H	288.0	6.4
5293.125000	48.64	---	74.00	25.36	500.0	100.0	H	263.0	6.2
5591.250000	50.03	---	74.00	23.97	500.0	100.0	V	281.0	8.1
5593.125000	---	38.85	54.00	15.15	500.0	100.0	H	155.0	8.1
7970.625000	51.34	---	74.00	22.66	500.0	200.0	H	354.0	9.9
7974.375000	---	39.98	54.00	14.02	500.0	100.0	H	141.0	9.9
12277.500000	---	42.86	54.00	11.14	500.0	200.0	H	327.0	14.6
12277.500000	54.07	---	74.00	19.93	500.0	200.0	H	327.0	14.6

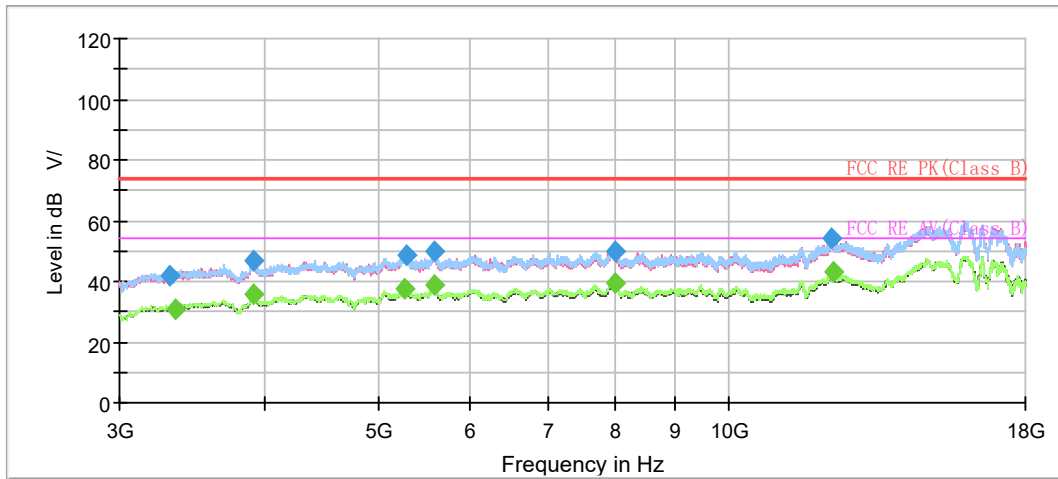
DH5-Channel 39



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

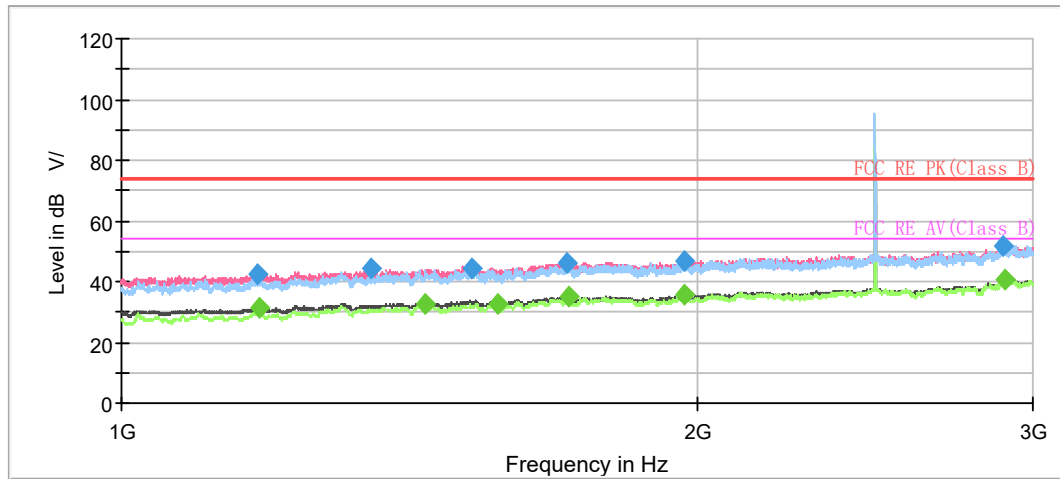
Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1057.000000	39.46	---	74.00	34.54	500.0	100.0	V	226.0	-6.0
1067.250000	---	29.70	54.00	24.30	500.0	100.0	V	299.0	-5.7
1177.750000	42.99	---	74.00	31.01	500.0	100.0	V	69.0	-4.1
1183.250000	---	31.41	54.00	22.59	500.0	200.0	V	258.0	-3.9
1427.500000	44.09	---	74.00	29.91	500.0	200.0	V	125.0	-2.2
1442.000000	---	32.94	54.00	21.06	500.0	200.0	V	359.0	-1.6
1696.500000	---	34.62	54.00	19.38	500.0	200.0	V	329.0	0.3
1722.000000	46.03	---	74.00	27.97	500.0	200.0	V	233.0	-0.2
2020.500000	48.04	---	74.00	25.96	500.0	200.0	V	359.0	2.0
2056.500000	---	35.91	54.00	18.09	500.0	200.0	V	318.0	2.4
2899.000000	---	40.92	54.00	13.08	500.0	100.0	H	0.0	8.5
2902.250000	52.30	---	74.00	21.70	500.0	200.0	V	348.0	8.6



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3311.250000	41.73	---	74.00	32.27	500.0	100.0	V	148.0	-0.9
3345.000000	---	31.06	54.00	22.94	500.0	100.0	H	182.0	-0.7
3907.500000	---	35.59	54.00	18.41	500.0	100.0	H	20.0	3.6
3907.500000	46.86	---	74.00	27.14	500.0	200.0	H	0.0	3.6
5272.500000	---	37.59	54.00	16.41	500.0	100.0	H	61.0	6.5
5285.625000	48.71	---	74.00	25.29	500.0	200.0	H	15.0	6.3
5593.125000	49.71	---	74.00	24.29	500.0	100.0	V	240.0	8.1
5593.125000	---	38.60	54.00	15.40	500.0	100.0	H	195.0	8.1
7989.375000	50.06	---	74.00	23.94	500.0	200.0	V	319.0	9.9
7993.125000	---	39.45	54.00	14.55	500.0	100.0	H	209.0	9.9
12258.750000	54.05	---	74.00	19.95	500.0	200.0	H	0.0	14.3
12290.625000	---	42.85	54.00	11.15	500.0	200.0	V	264.0	14.3

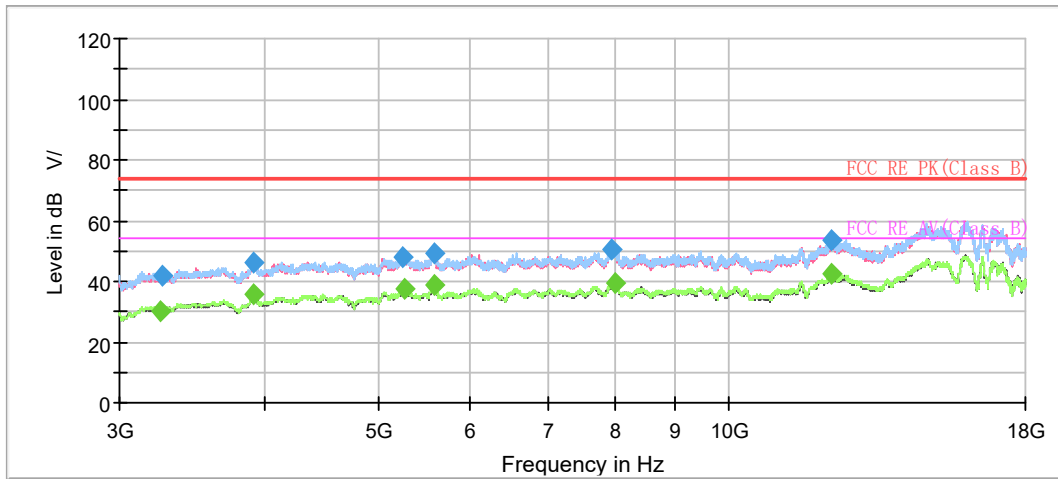
DH5-Channel 78



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1179.500000	42.64	---	74.00	31.36	500.0	200.0	V	166.0	-4.0
1181.250000	---	31.17	54.00	22.83	500.0	200.0	V	0.0	-4.0
1352.500000	44.49	---	74.00	29.51	500.0	200.0	V	0.0	-2.8
1441.000000	---	32.75	54.00	21.25	500.0	200.0	V	322.0	-1.7
1526.250000	44.19	---	74.00	29.81	500.0	200.0	V	178.0	-1.0
1574.000000	---	32.47	54.00	21.53	500.0	200.0	V	142.0	-1.4
1710.250000	46.21	---	74.00	27.79	500.0	100.0	V	0.0	0.5
1713.750000	---	34.82	54.00	19.18	500.0	200.0	V	226.0	0.4
1972.750000	46.90	---	74.00	27.10	500.0	100.0	V	161.0	2.1
1973.000000	---	35.90	54.00	18.10	500.0	200.0	V	226.0	2.1
2895.250000	51.91	---	74.00	22.09	500.0	200.0	H	20.0	8.2
2902.250000	---	40.73	54.00	13.27	500.0	100.0	H	40.0	8.6

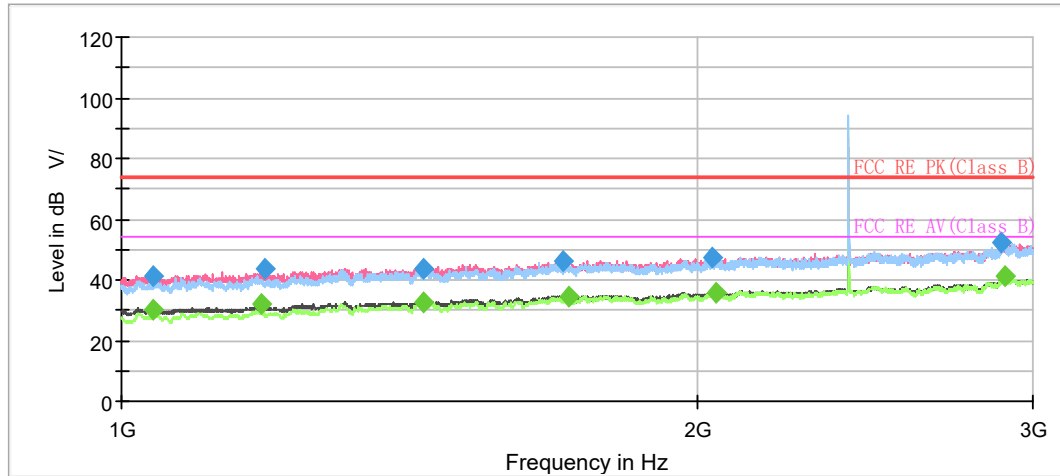


Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3251.250000	---	30.41	54.00	23.59	500.0	200.0	V	237.0	-1.2
3262.500000	41.77	---	74.00	32.23	500.0	200.0	H	339.0	-1.1
3907.500000	---	35.51	54.00	18.49	500.0	100.0	H	20.0	3.6
3909.375000	46.33	---	74.00	27.67	500.0	100.0	H	0.0	3.7
5255.625000	47.98	---	74.00	26.02	500.0	200.0	H	339.0	6.2
5270.625000	---	37.71	54.00	16.29	500.0	100.0	H	182.0	6.5
5585.625000	49.39	---	74.00	24.61	500.0	100.0	V	353.0	7.8
5591.250000	---	38.71	54.00	15.29	500.0	100.0	V	192.0	8.1
7931.250000	50.44	---	74.00	23.56	500.0	200.0	H	166.0	9.9
7998.750000	---	39.64	54.00	14.37	500.0	200.0	H	274.0	9.9
12264.375000	---	42.69	54.00	11.31	500.0	100.0	H	7.0	14.4
12283.125000	53.80	---	74.00	20.20	500.0	100.0	H	128.0	14.5

The Radiates Emission was performed in all EDR mode (2DH5 and 3DH5), 3DH5 was selected as the worse condition. The test data of the worst-case condition was recorded in this report.

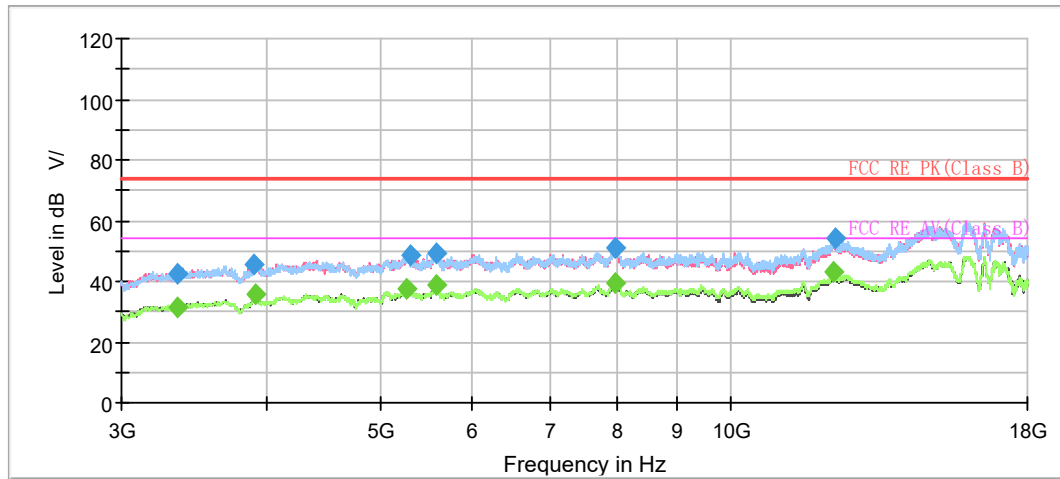
3DH5-Channel 0



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

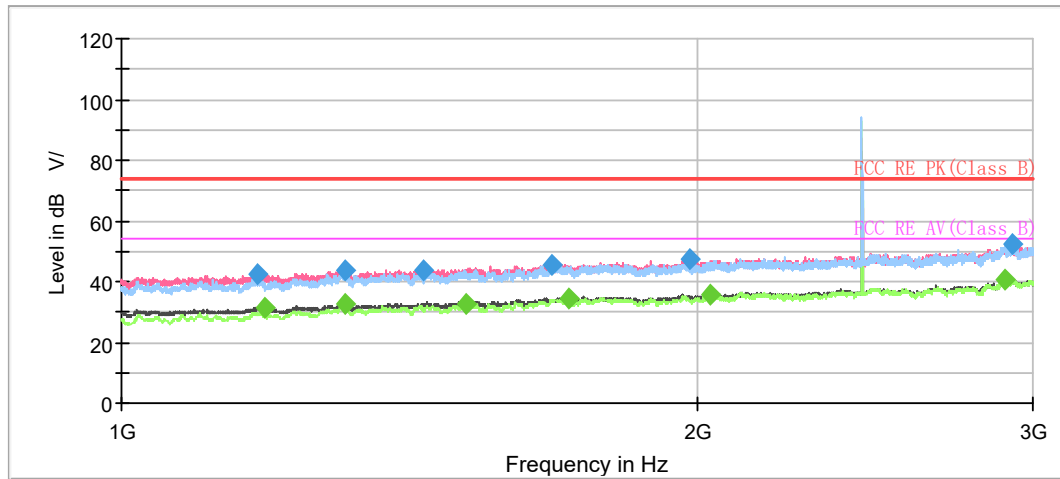
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1038.500000	40.98	---	74.00	33.02	500.0	200.0	V	354.0	-5.6
1040.000000	---	30.25	54.00	23.75	500.0	200.0	V	305.0	-5.5
1182.250000	---	31.76	54.00	22.24	500.0	200.0	V	198.0	-3.9
1187.750000	43.77	---	74.00	30.23	500.0	200.0	V	305.0	-4.1
1439.750000	43.96	---	74.00	30.04	500.0	200.0	V	2.0	-1.7
1440.000000	---	32.87	54.00	21.13	500.0	200.0	V	294.0	-1.7
1705.000000	46.13	---	74.00	27.87	500.0	200.0	V	305.0	0.4
1713.000000	---	34.62	54.00	19.38	500.0	200.0	V	221.0	0.4
2038.500000	47.18	---	74.00	26.82	500.0	200.0	V	257.0	2.4
2047.250000	---	35.84	54.00	18.16	500.0	200.0	H	252.0	2.6
2884.750000	52.18	---	74.00	21.82	500.0	200.0	V	257.0	7.4
2900.000000	---	41.09	54.00	12.91	500.0	200.0	V	209.0	8.6



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3345.000000	42.60	---	74.00	31.40	500.0	100.0	V	86.0	-0.7
3348.750000	---	31.59	54.00	22.41	500.0	100.0	H	177.0	-0.5
3903.750000	45.84	---	74.00	28.16	500.0	200.0	H	226.0	3.3
3907.500000	---	35.61	54.00	18.39	500.0	100.0	H	151.0	3.6
5272.500000	---	37.58	54.00	16.42	500.0	200.0	V	92.0	6.5
5304.375000	48.42	---	74.00	25.58	500.0	200.0	H	12.0	6.0
5587.500000	49.16	---	74.00	24.84	500.0	200.0	V	220.0	7.9
5593.125000	---	38.64	54.00	15.36	500.0	100.0	H	0.0	8.1
7970.625000	---	39.54	54.00	14.46	500.0	200.0	H	0.0	9.9
7972.500000	50.86	---	74.00	23.14	500.0	200.0	H	185.0	9.9
12275.625000	---	42.90	54.00	11.10	500.0	100.0	H	177.0	14.6
12290.625000	54.08	---	74.00	19.92	500.0	200.0	H	0.0	14.3

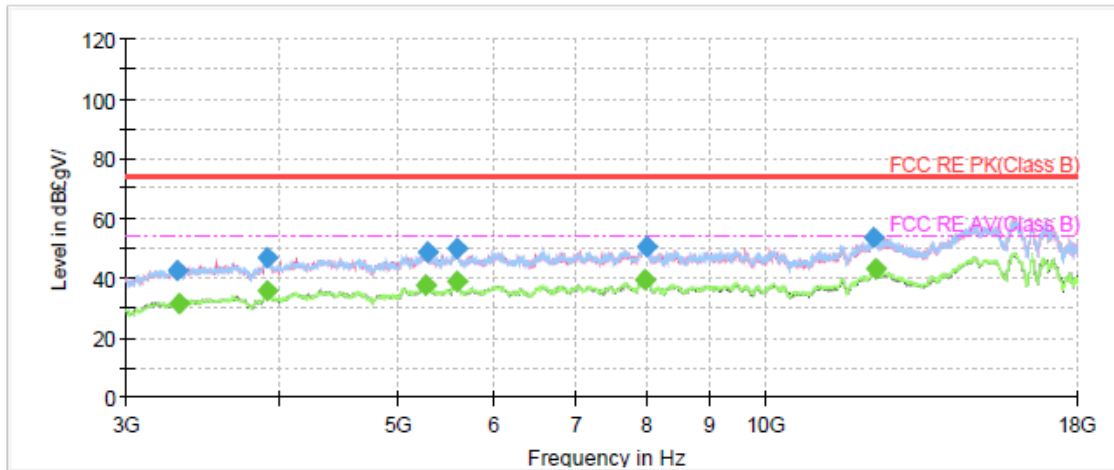
3DH5-Channel 39



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

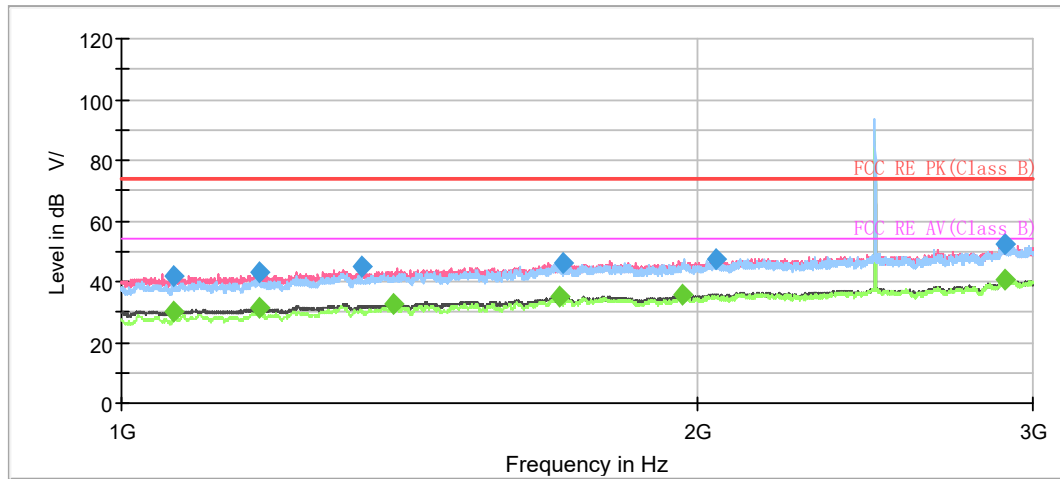
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1179.500000	42.75	---	74.00	31.25	500.0	200.0	V	303.0	-4.0
1188.500000	---	31.26	54.00	22.74	500.0	200.0	V	207.0	-4.1
1308.000000	---	32.90	54.00	21.10	500.0	200.0	V	338.0	-2.0
1310.750000	43.86	---	74.00	30.14	500.0	100.0	V	68.0	-2.3
1438.750000	43.94	---	74.00	30.06	500.0	100.0	V	55.0	-1.7
1514.750000	---	32.49	54.00	21.51	500.0	200.0	V	338.0	-1.2
1679.000000	45.81	---	74.00	28.19	500.0	200.0	V	0.0	0.4
1712.750000	---	34.72	54.00	19.28	500.0	200.0	V	338.0	0.4
1983.750000	47.37	---	74.00	26.63	500.0	200.0	V	349.0	1.7
2035.750000	---	35.75	54.00	18.25	500.0	200.0	V	0.0	2.3
2901.750000	---	40.78	54.00	13.22	500.0	100.0	H	242.0	8.6
2923.750000	52.09	---	74.00	21.91	500.0	100.0	H	254.0	8.1



Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3296.250000	42.36	---	74.00	31.64	500.0	200.0	H	54.0	-0.8
3315.000000	---	31.59	54.00	22.41	500.0	100.0	H	82.0	-0.9
3905.625000	---	35.65	54.00	18.35	500.0	100.0	H	128.0	3.5
3907.500000	46.85	---	74.00	27.15	500.0	100.0	H	44.0	3.6
5274.375000	---	37.54	54.00	16.46	500.0	200.0	H	244.0	6.5
5287.500000	48.47	---	74.00	25.53	500.0	100.0	H	358.0	6.3
5589.375000	50.07	---	74.00	23.93	500.0	200.0	H	330.0	8.0
5589.375000	---	38.66	54.00	15.34	500.0	100.0	H	116.0	8.0
7955.625000	---	39.53	54.00	14.47	500.0	100.0	H	222.0	9.9
7996.875000	50.45	---	74.00	23.55	500.0	200.0	V	183.0	9.9
12285.000000	53.80	---	74.00	20.20	500.0	200.0	H	317.0	14.4
12290.625000	---	42.97	54.00	11.03	500.0	100.0	H	69.0	14.3

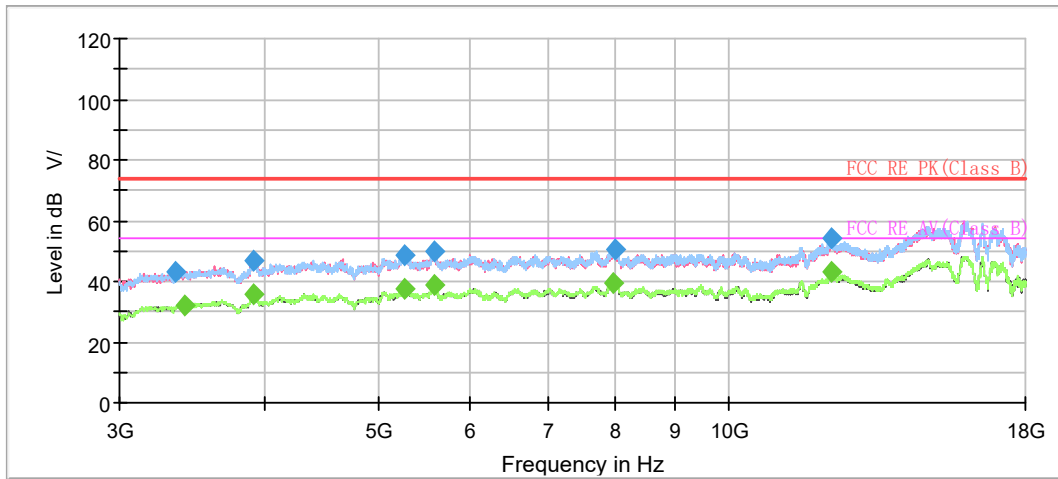
3DH5-Channel 78



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1065.750000	---	30.14	54.00	23.86	500.0	200.0	V	273.0	-5.7
1066.000000	41.64	---	74.00	32.36	500.0	200.0	V	237.0	-5.7
1180.500000	---	31.50	54.00	22.50	500.0	200.0	V	237.0	-4.0
1181.500000	42.80	---	74.00	31.20	500.0	200.0	V	237.0	-4.0
1336.000000	44.79	---	74.00	29.21	500.0	100.0	V	325.0	-2.8
1389.750000	---	32.85	54.00	21.15	500.0	200.0	V	260.0	-2.4
1694.250000	---	35.06	54.00	18.94	500.0	200.0	V	0.0	0.3
1704.250000	46.04	---	74.00	27.96	500.0	200.0	V	273.0	0.4
1967.250000	---	35.65	54.00	18.35	500.0	200.0	V	349.0	2.3
2047.000000	47.21	---	74.00	26.79	500.0	100.0	H	236.0	2.6
2899.500000	52.22	---	74.00	21.78	500.0	100.0	H	357.0	8.6
2901.250000	---	40.91	54.00	13.09	500.0	200.0	H	69.0	8.6



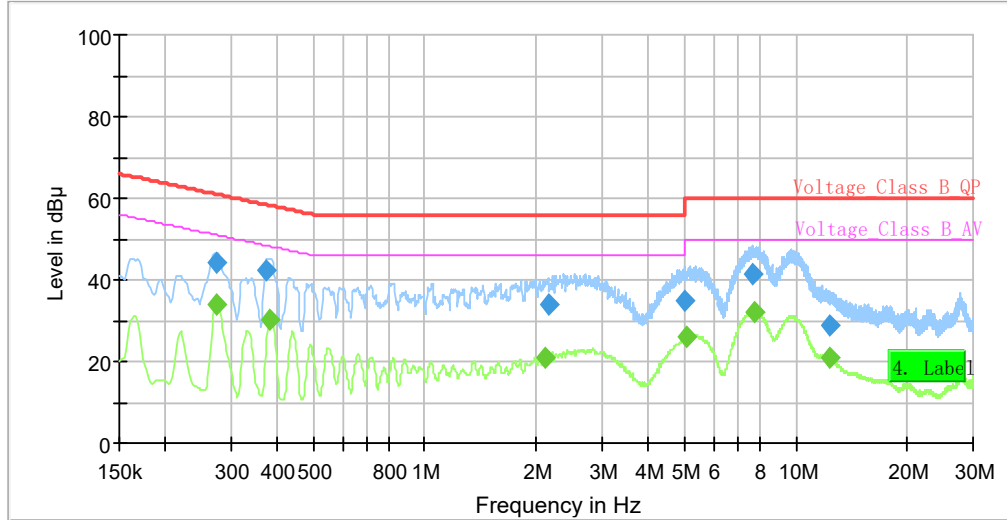
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3350.625000	43.23	---	74.00	30.77	500.0	100.0	H	63.0	-0.5
3410.625000	---	32.15	54.00	21.85	500.0	200.0	H	0.0	-0.2
3905.625000	---	35.58	54.00	18.42	500.0	200.0	H	97.0	3.5
3907.500000	46.58	---	74.00	27.42	500.0	200.0	H	0.0	3.6
5268.750000	---	37.67	54.00	16.33	500.0	100.0	H	0.0	6.6
5272.500000	48.59	---	74.00	25.41	500.0	200.0	H	263.0	6.5
5591.250000	---	38.62	54.00	15.38	500.0	200.0	H	230.0	8.1
5593.125000	49.82	---	74.00	24.18	500.0	200.0	H	0.0	8.1
7974.375000	---	39.41	54.00	14.59	500.0	100.0	V	191.0	9.9
7985.625000	50.50	---	74.00	23.50	500.0	200.0	H	290.0	9.9
12271.875000	---	43.11	54.00	10.89	500.0	100.0	H	104.0	14.6
12288.750000	53.99	---	74.00	20.01	500.0	200.0	H	192.0	14.4

2. Conducted Emission

2.1. Bluetooth

During the test, the Conducted Emission was performed in all modes with all channels. The test data of the worst-case condition (3DH5-Channel 78) was recorded in this report.

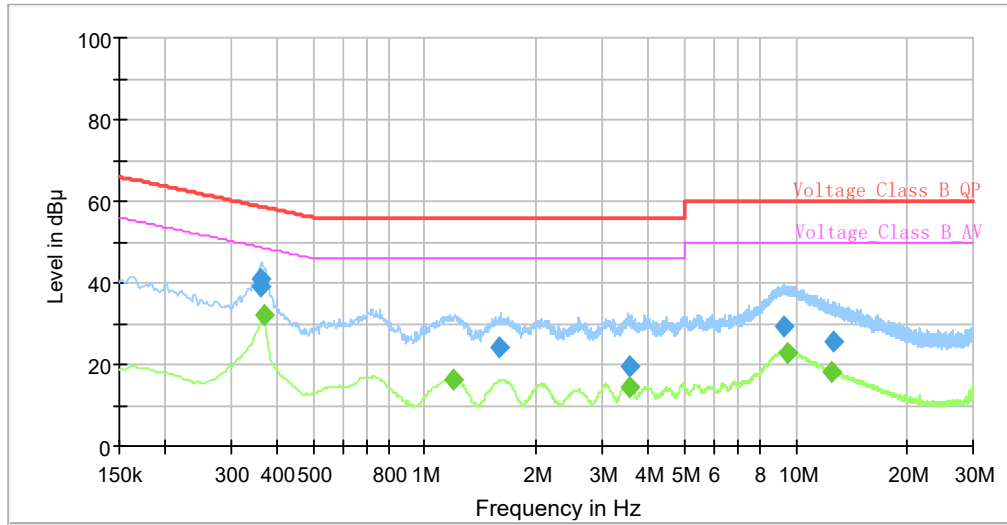


Final Result

Frequency (MHz)	QuasiPeak (dBμ i V)	Average (dBμ i V)	Limit (dBμ i V)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.274000	---	33.80	51.00	17.19	1000.0	9.000	L1	ON	21.0
0.275250	44.32	---	60.96	16.64	1000.0	9.000	L1	ON	21.0
0.374750	42.42	---	58.40	15.98	1000.0	9.000	L1	ON	20.9
0.383750	---	30.28	48.20	17.92	1000.0	9.000	L1	ON	20.9
2.105500	---	21.07	46.00	24.93	1000.0	9.000	L1	ON	19.6
2.151000	33.89	---	56.00	22.11	1000.0	9.000	L1	ON	19.6
5.008500	34.89	---	60.00	25.11	1000.0	9.000	L1	ON	19.4
5.050750	---	25.91	50.00	24.09	1000.0	9.000	L1	ON	19.4
7.655750	41.35	---	60.00	18.65	1000.0	9.000	L1	ON	19.4
7.712750	---	32.21	50.00	17.79	1000.0	9.000	L1	ON	19.4
12.320250	28.90	---	60.00	31.10	1000.0	9.000	L1	ON	19.4
12.344750	---	20.88	50.00	29.12	1000.0	9.000	L1	ON	19.4

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.360000	39.25	---	58.73	19.48	1000.0	9.000	N	ON	20.9
0.362250	41.05	---	58.68	17.63	1000.0	9.000	N	ON	20.9
0.368000	---	32.28	48.55	16.26	1000.0	9.000	N	ON	20.9
1.193750	---	16.05	46.00	29.95	1000.0	9.000	N	ON	20.0
1.585000	24.21	---	56.00	31.79	1000.0	9.000	N	ON	19.8
3.566750	19.40	---	56.00	36.60	1000.0	9.000	N	ON	19.5
3.569750	---	14.35	46.00	31.65	1000.0	9.000	N	ON	19.5
9.316250	29.42	---	60.00	30.58	1000.0	9.000	N	ON	19.4
9.517500	---	22.93	50.00	27.07	1000.0	9.000	N	ON	19.4
12.547500	---	18.29	50.00	31.71	1000.0	9.000	N	ON	19.5
12.632750	25.54	---	60.00	34.46	1000.0	9.000	N	ON	19.5

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz