

ANNEX A: Test Result

There is more than one Adapters, each one should be applied throughout the compliance test respectively, and however, only the worst case (Adapter 2) 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 (Y axis) and the loop antenna is coplanar, the others are vertical and horizontal. and the worst case was recorded.

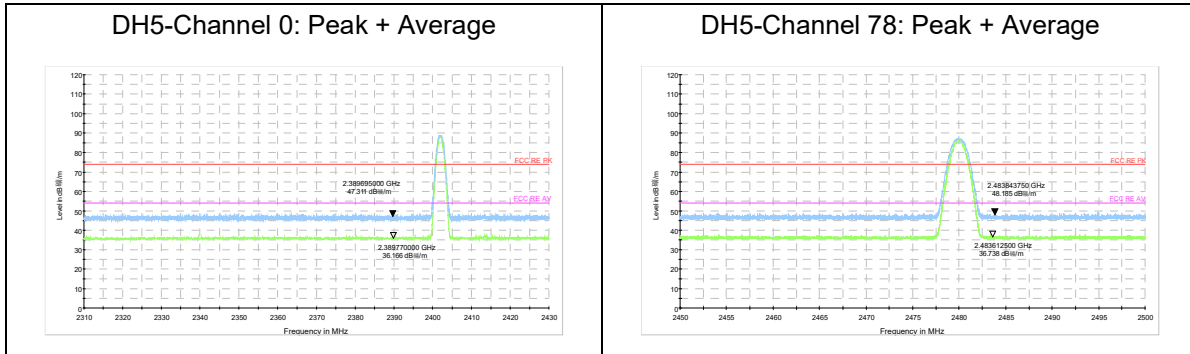
1. Unwanted Emission

1.1. Bluetooth

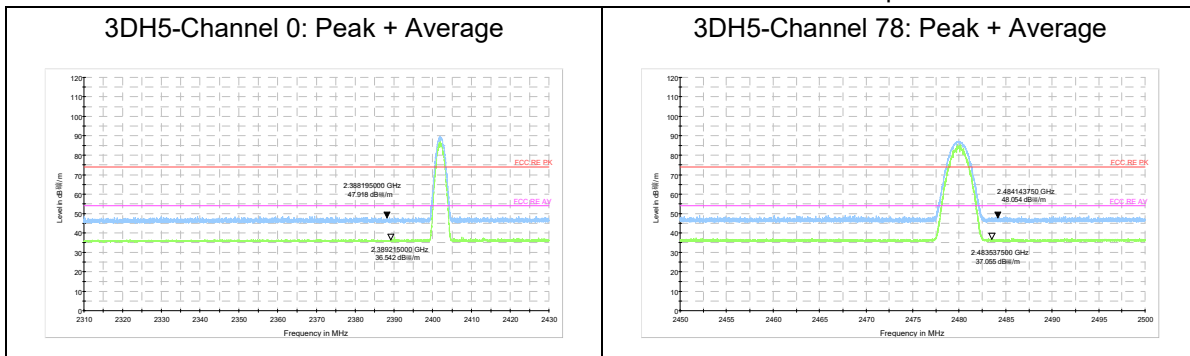
The following graphs display the maximum values of horizontal and vertical by software. Blue trace uses the peak detection, Green trace uses the average detection.

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

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.

Remark:

1. **Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**
2. **Margin = Limit – Quasi-Peak/ MAX Peak/ Average**
3. **A symbol (dB_{μV/m}) in the test plot below means (dB_{μV/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**

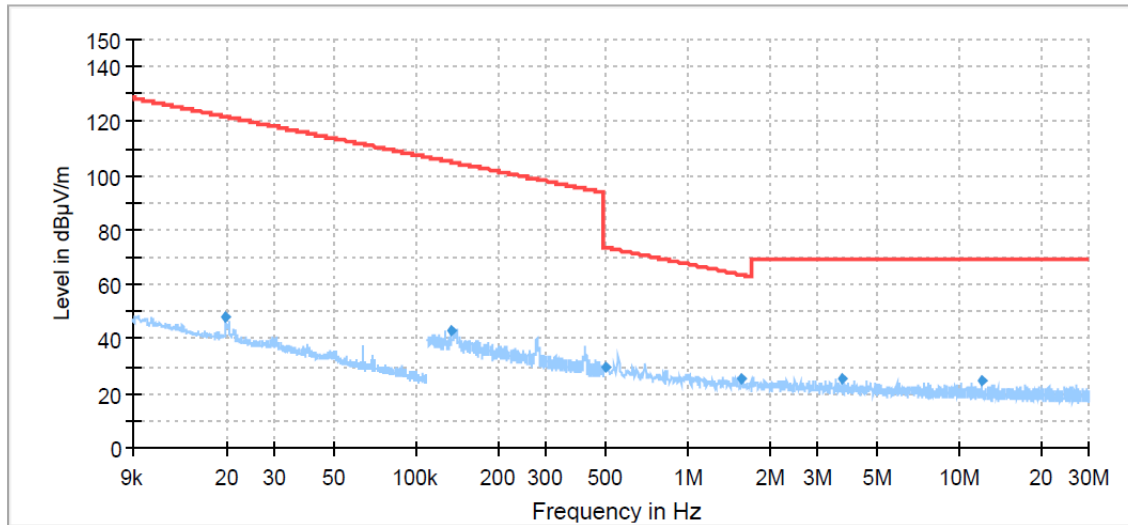
 QP Level @Spectrum Overview H
  QP Level @Spectrum Overview V
  QP Level @Final Results
  QP Limit

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

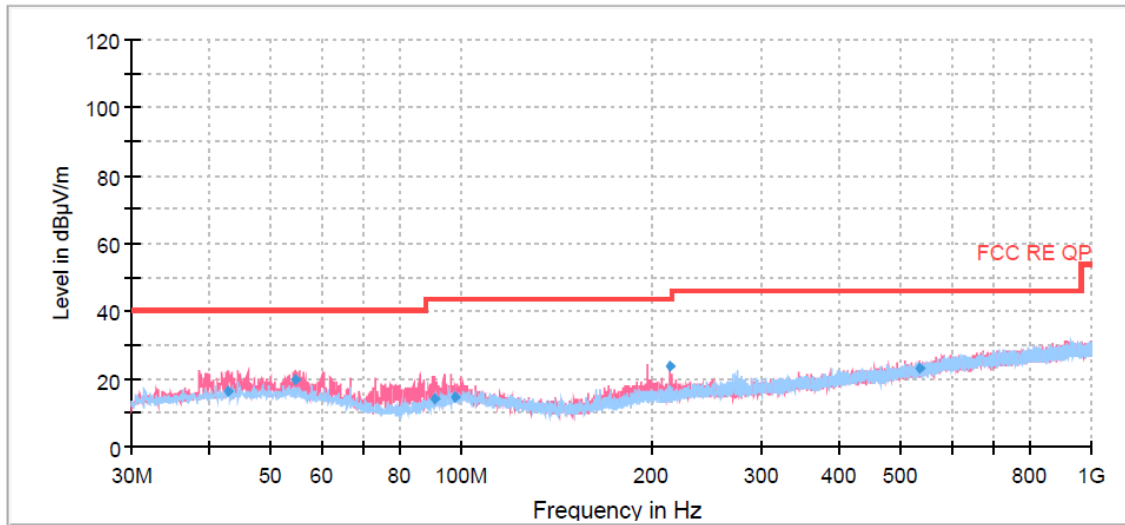
Continuous TX mode:

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 (**DH5-Channel 39**) was recorded in this report.



Radiates Emission from 9kHz to 30MHz

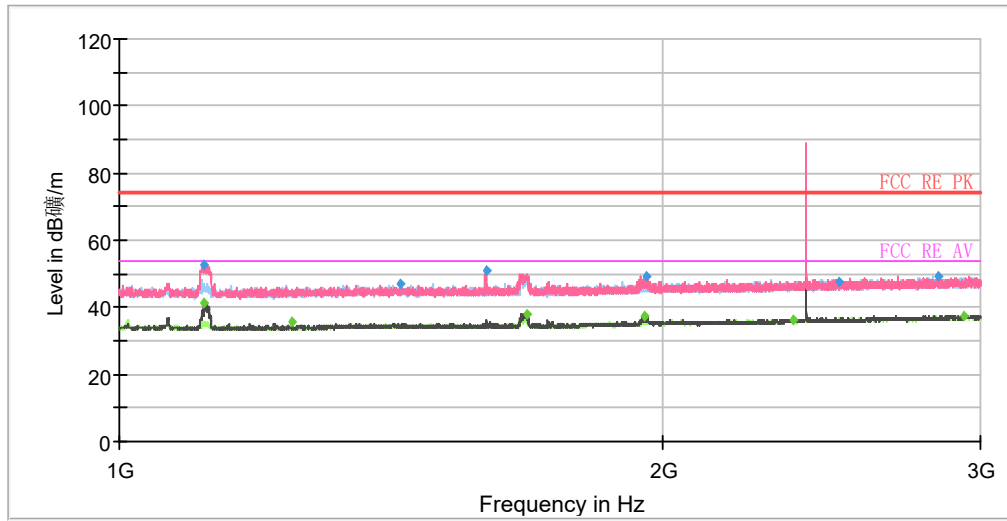
Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Azimuth (deg)	Correct Factor (dB)
0.02	48.14	121.69	73.55	500.00	0.200	191.00	17
0.13	43.07	105.08	62.01	150.00	9.000	341.00	17
0.50	29.52	73.61	44.09	150.00	9.000	0.00	17
1.57	25.71	63.65	37.94	150.00	9.000	98.00	17
3.71	25.40	69.50	44.10	150.00	9.000	238.00	17
12.09	24.75	69.50	44.75	150.00	9.000	60.00	17



Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
42.51	16.58	40.00	23.42	1000.00	100.0	V	344.00	19
54.69	20.01	40.00	19.99	1000.00	100.0	V	17.00	20
90.49	14.42	43.50	29.08	1000.00	100.0	V	92.00	17
97.79	14.98	43.50	28.52	1000.00	108.0	V	282.00	18
214.49	23.55	43.50	19.95	1000.00	210.0	V	0.00	18
534.77	23.06	46.00	22.94	1000.00	225.0	V	312.00	26

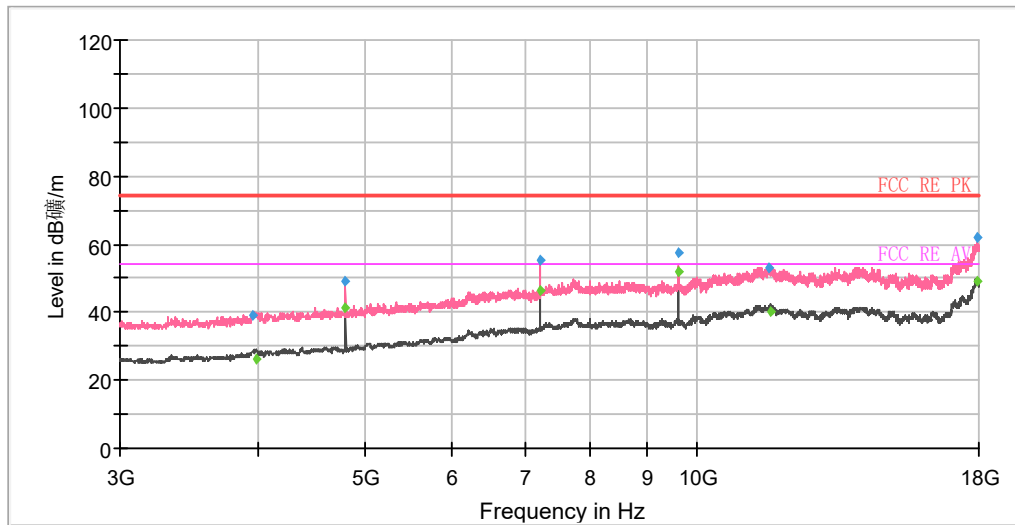
DH5-Channel 0



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

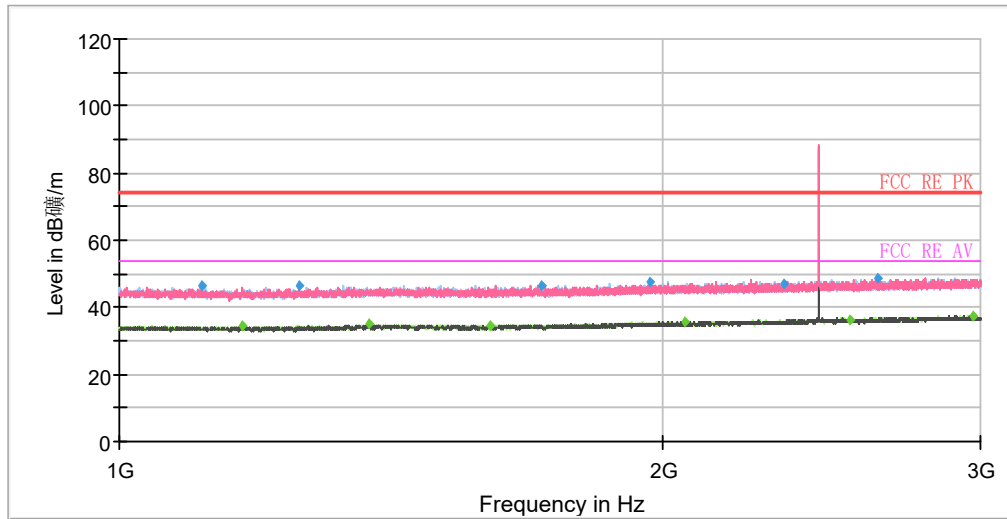
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1115.00	---	41.29	54.00	12.71	500.00	200.0	V	235.00	3
1115.00	52.73	---	74.00	21.27	500.00	200.0	V	235.00	3
1246.50	---	35.38	54.00	18.62	500.00	100.0	V	291.00	4
1430.75	47.25	---	74.00	26.75	500.00	200.0	H	96.00	4
1598.25	51.05	---	74.00	22.95	500.00	200.0	V	220.00	4
1682.00	---	38.05	54.00	15.95	500.00	100.0	V	252.00	5
1953.25	---	37.57	54.00	16.43	500.00	200.0	V	235.00	6
1960.00	49.44	---	74.00	24.56	500.00	200.0	V	235.00	6
2362.25	---	36.37	54.00	17.63	500.00	100.0	V	0.00	7
2505.00	47.30	---	74.00	26.70	500.00	100.0	V	31.00	7
2840.50	49.32	---	74.00	24.68	500.00	200.0	V	2.00	7
2937.00	---	37.57	54.00	16.43	500.00	200.0	V	3.00	8



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)
3964.37	39.12	---	74.00	34.89	1000.00	115.0	V	60.00	-11
3990.00	---	26.08	54.00	27.92	1000.00	113.0	V	62.00	-11
4803.93	---	41.58	54.00	12.42	1000.00	197.0	V	167.00	-10
4803.95	49.36	---	74.00	24.64	1000.00	176.0	H	168.00	-10
7205.82	---	46.19	54.00	7.81	1000.00	185.0	V	182.00	-2
7205.98	55.06	---	74.00	18.94	1000.00	104.0	V	274.00	-2
9607.94	---	51.69	54.00	2.31	1000.00	220.0	V	276.00	1
9607.98	57.43	---	74.00	16.57	1000.00	225.0	V	277.00	1
11627.64	52.96	---	74.00	21.04	1000.00	104.0	V	26.00	6
11659.59	---	40.10	54.00	13.90	1000.00	206.0	H	275.00	6
17897.20	---	49.20	54.00	4.80	1000.00	178.0	V	354.00	15
17924.88	62.01	---	74.00	11.99	1000.00	108.0	V	34.00	16

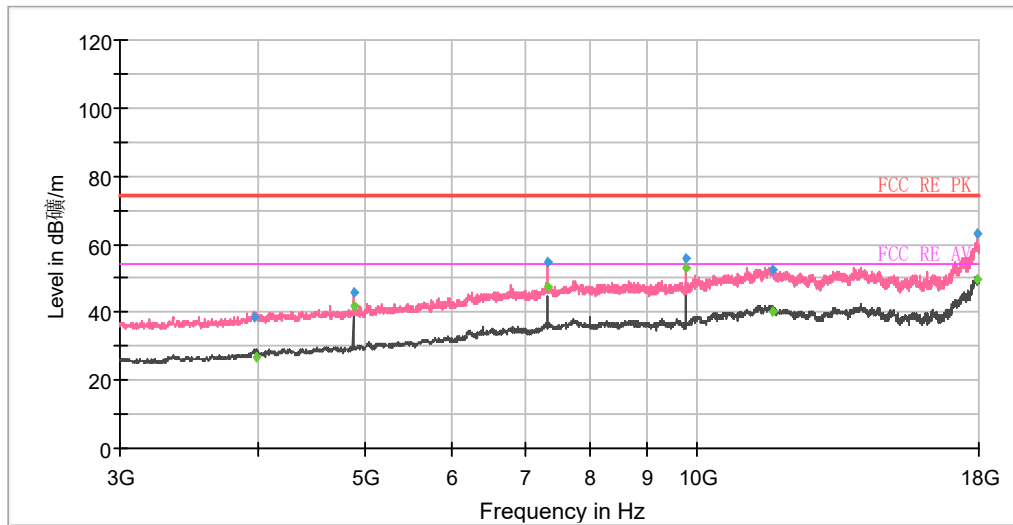
DH5-Channel 39



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

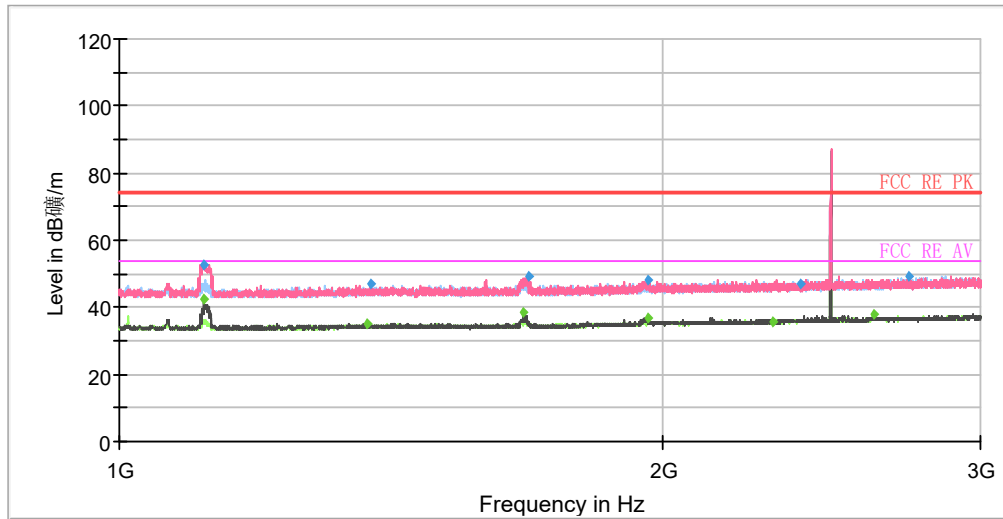
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1110.25	46.45	---	74.00	27.55	500.00	100.0	V	205.00	3
1169.75	---	34.51	54.00	19.49	500.00	200.0	V	252.00	3
1257.50	46.30	---	74.00	27.70	500.00	200.0	V	181.00	4
1375.25	---	34.84	54.00	19.16	500.00	200.0	V	343.00	4
1606.25	---	34.81	54.00	19.19	500.00	100.0	V	12.00	4
1714.25	46.44	---	74.00	27.56	500.00	200.0	H	2.00	5
1969.00	47.55	---	74.00	26.45	500.00	200.0	H	8.00	6
2056.00	---	35.80	54.00	18.20	500.00	200.0	H	189.00	6
2336.50	47.14	---	74.00	26.86	500.00	100.0	H	324.00	6
2542.50	---	36.26	54.00	17.74	500.00	200.0	H	0.00	7
2630.25	48.90	---	74.00	25.10	500.00	200.0	V	252.00	7
2971.00	---	37.57	54.00	16.43	500.00	100.0	V	0.00	8



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)
3971.70	38.58	---	74.00	35.42	1000.00	185.0	V	224.00	-11
3985.16	---	26.88	54.00	27.12	1000.00	120.0	V	180.00	-11
4882.08	---	41.64	54.00	12.36	1000.00	125.0	V	174.00	-10
4882.29	45.76	---	74.00	28.24	1000.00	178.0	H	246.00	-10
7322.72	54.95	---	74.00	19.05	1000.00	220.0	V	341.00	-1
7322.93	---	47.50	54.00	6.50	1000.00	225.0	V	333.00	-1
9763.94	55.71	---	74.00	18.29	1000.00	102.0	V	294.00	1
9764.02	---	53.10	54.00	0.91	1000.00	102.0	V	293.00	1
11689.87	---	40.05	54.00	13.95	1000.00	177.0	V	329.00	6
11694.92	52.63	---	74.00	21.37	1000.00	210.0	V	355.00	6
17927.02	62.82	---	74.00	11.18	1000.00	101.0	H	22.00	16
17936.22	---	49.51	54.00	4.49	1000.00	124.0	V	15.00	16

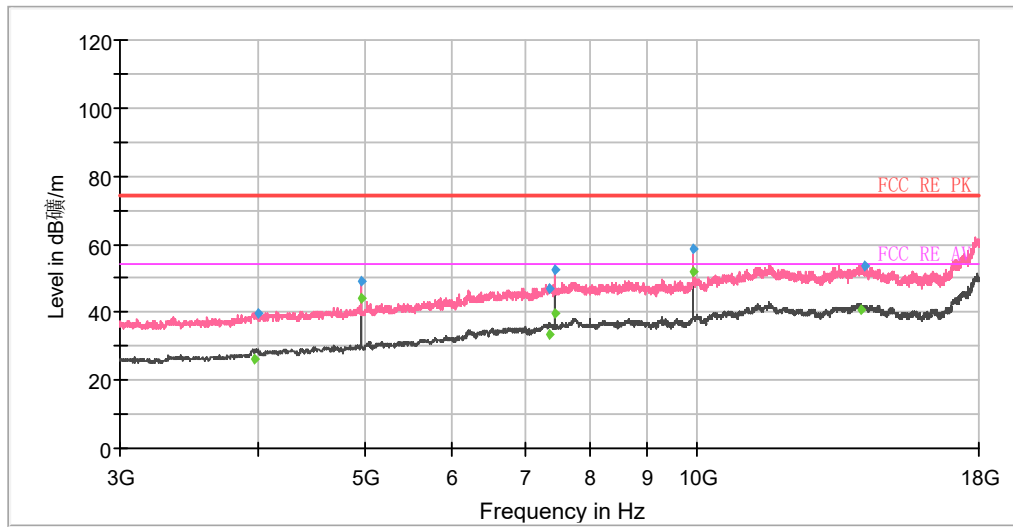
DH5-Channel 78



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)
1113.75	52.85	---	74.00	21.15	500.00	200.0	V	235.00	3
1114.25	---	42.57	54.00	11.43	500.00	200.0	V	235.00	3
1373.25	---	35.04	54.00	18.96	500.00	100.0	V	0.00	4
1377.00	46.83	---	74.00	27.17	500.00	100.0	V	312.00	4
1675.50	---	38.27	54.00	15.73	500.00	100.0	V	235.00	5
1686.75	49.01	---	74.00	24.99	500.00	100.0	V	235.00	5
1961.25	---	36.83	54.00	17.17	500.00	200.0	V	150.00	6
1963.00	48.01	---	74.00	25.99	500.00	200.0	V	150.00	6
2301.00	---	35.61	54.00	18.39	500.00	200.0	H	273.00	6
2387.25	47.21	---	74.00	26.79	500.00	200.0	H	326.00	7
2616.25	---	37.87	54.00	16.13	500.00	200.0	V	2.00	7
2736.75	49.45	---	74.00	24.55	500.00	200.0	V	123.00	7

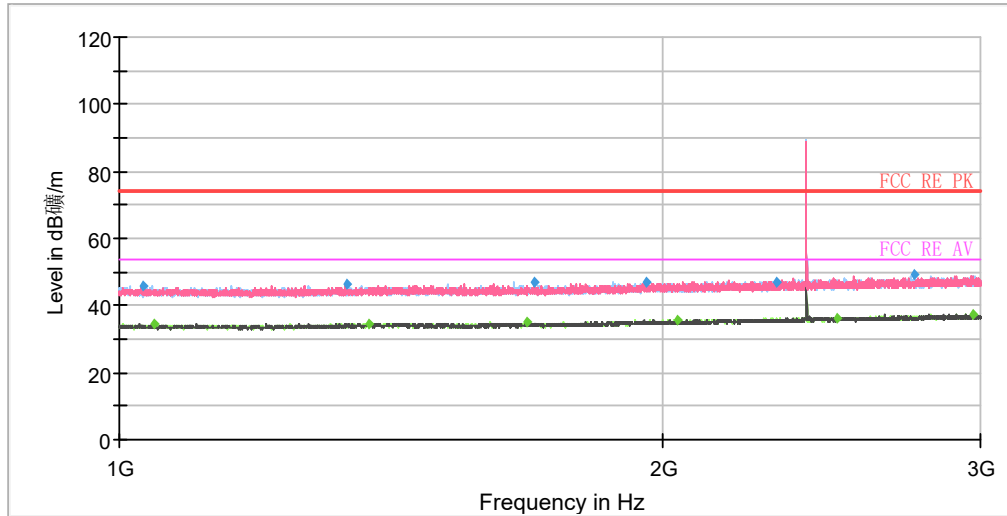


Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3969.92	---	26.40	54.00	27.60	1000.00	176.0	V	129.00	-11
4000.08	39.42	---	74.00	34.58	1000.00	184.0	V	206.00	-11
4959.93	---	44.25	54.00	9.75	1000.00	185.0	V	270.00	-10
4960.39	49.28	---	74.00	24.72	1000.00	195.0	V	276.00	-10
7336.68	47.05	---	74.00	26.95	1000.00	215.0	V	319.00	-1
7344.42	---	33.73	54.00	20.27	1000.00	199.0	H	358.00	-1
7439.80	52.23	---	74.00	21.77	1000.00	125.0	V	246.00	0
7439.98	---	39.72	54.00	14.28	1000.00	118.0	V	248.00	0
9919.94	---	51.82	54.00	2.18	1000.00	120.0	V	14.00	1
9920.09	58.77	---	74.00	15.23	1000.00	222.0	V	50.00	1
14098.84	---	40.66	54.00	13.34	1000.00	215.0	H	256.00	6
14189.37	53.59	---	74.00	20.41	1000.00	216.0	V	0.00	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.

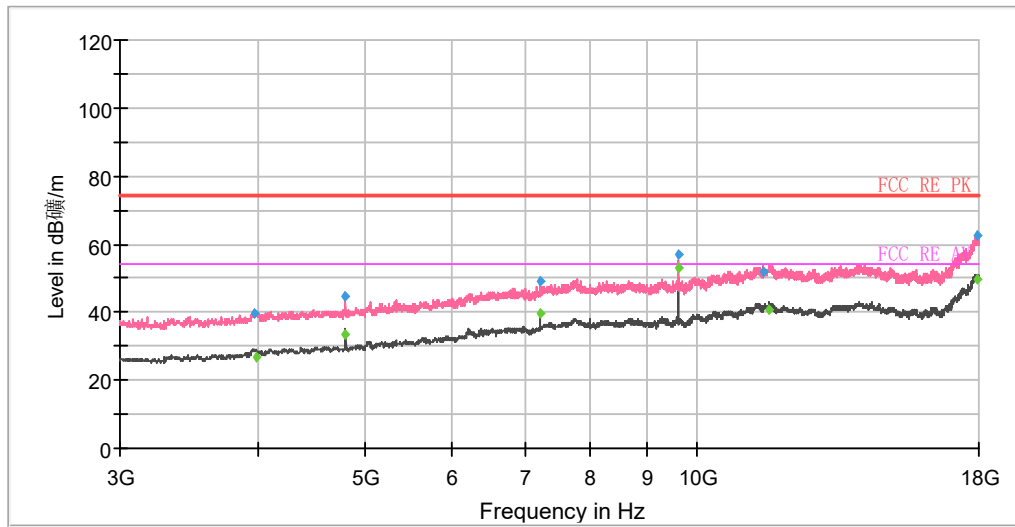
3DH5-Channel 0



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

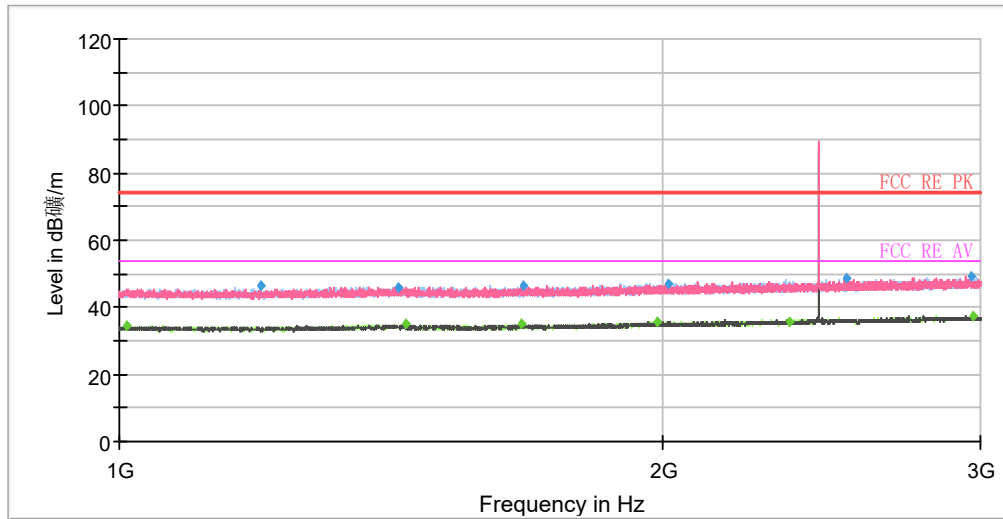
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1031.75	46.06	---	74.00	27.94	500.00	200.0	V	357.00	3
1045.50	---	34.35	54.00	19.65	500.00	100.0	V	13.00	3
1336.00	46.30	---	74.00	27.70	500.00	100.0	V	150.00	4
1376.00	---	34.74	54.00	19.26	500.00	100.0	V	236.00	4
1682.00	---	34.87	54.00	19.13	500.00	200.0	H	63.00	5
1699.00	46.75	---	74.00	27.25	500.00	100.0	V	6.00	5
1960.00	46.86	---	74.00	27.14	500.00	100.0	V	93.00	6
2037.00	---	35.64	54.00	18.36	500.00	200.0	H	354.00	6
2312.25	46.79	---	74.00	27.21	500.00	200.0	V	354.00	6
2498.00	---	36.22	54.00	17.78	500.00	100.0	H	309.00	7
2757.25	49.13	---	74.00	24.87	500.00	100.0	H	345.00	7
2970.25	---	37.36	54.00	16.64	500.00	200.0	V	0.00	8



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)
3970.28	39.55	---	74.00	34.45	1000.00	104.0	V	0.00	-11
3985.07	---	26.63	54.00	27.37	1000.00	119.0	V	296.00	-11
4804.05	44.40	---	74.00	29.60	1000.00	176.0	V	163.00	-10
4804.13	---	33.38	54.00	20.62	1000.00	122.0	H	174.00	-10
7205.80	---	39.87	54.00	14.13	1000.00	222.0	V	331.00	-2
7206.11	49.16	---	74.00	24.84	1000.00	109.0	V	0.00	-2
9608.00	---	53.05	54.00	0.95	1000.00	225.0	V	274.00	1
9608.09	57.09	---	74.00	16.91	1000.00	200.0	V	282.00	1
11493.48	52.11	---	74.00	21.89	1000.00	101.0	V	167.00	6
11630.45	---	40.77	54.00	13.23	1000.00	104.0	V	324.00	6
17946.59	---	49.69	54.00	4.31	1000.00	103.0	V	146.00	16
17959.84	62.65	---	74.00	11.35	1000.00	222.0	V	248.00	16

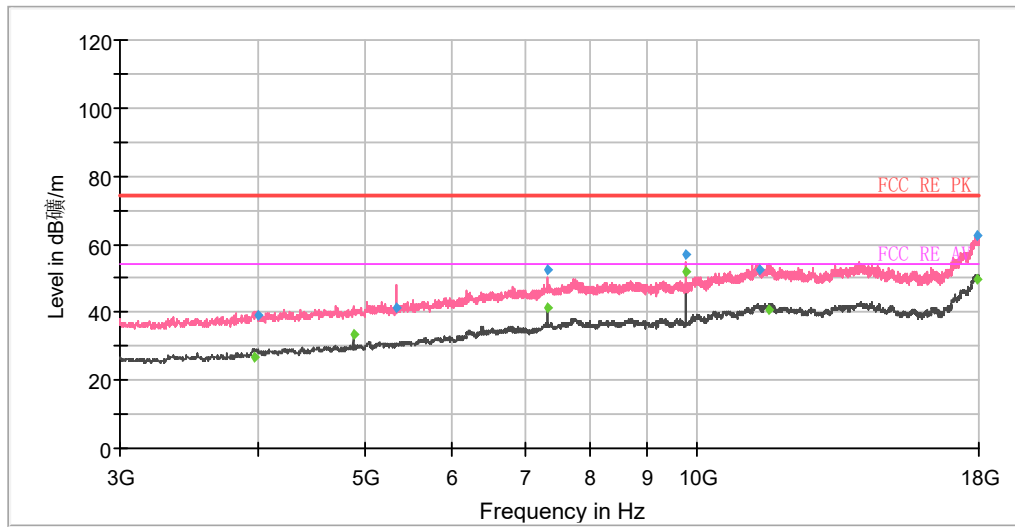
3DH5-Channel 39



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

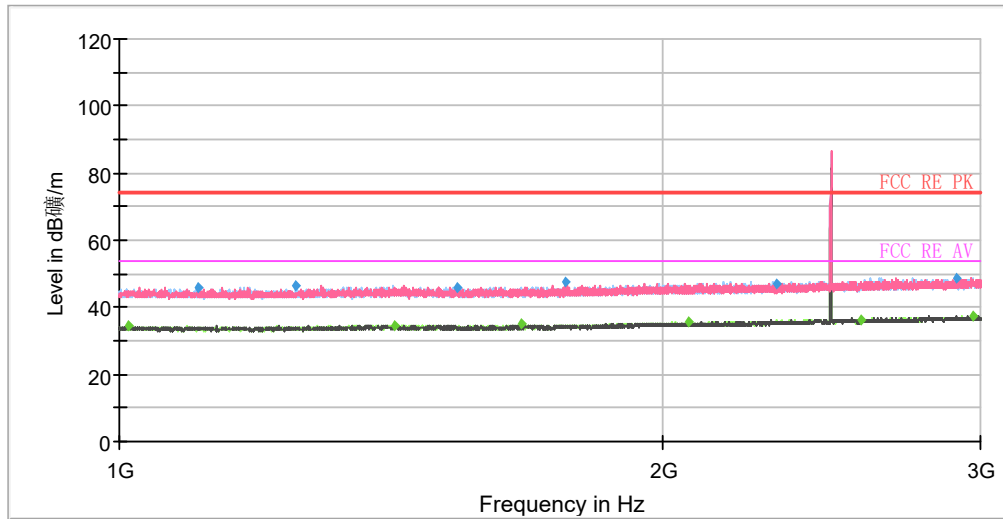
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1009.75	---	34.48	54.00	19.52	500.00	100.0	H	114.00	3
1198.25	46.20	---	74.00	27.80	500.00	200.0	H	17.00	3
1427.25	46.09	---	74.00	27.91	500.00	100.0	V	24.00	4
1440.50	---	34.89	54.00	19.11	500.00	100.0	H	297.00	4
1669.25	---	34.93	54.00	19.07	500.00	200.0	H	29.00	5
1673.25	46.32	---	74.00	27.68	500.00	200.0	V	0.00	5
1985.25	---	35.69	54.00	18.31	500.00	100.0	H	0.00	6
2014.25	47.20	---	74.00	26.81	500.00	200.0	H	4.00	6
2350.00	---	35.82	54.00	18.18	500.00	100.0	H	162.00	7
2530.75	48.47	---	74.00	25.53	500.00	200.0	V	0.00	7
2965.00	49.28	---	74.00	24.72	500.00	100.0	H	0.00	8
2971.50	---	37.60	54.00	16.40	500.00	200.0	H	0.00	8



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)
3968.81	---	26.53	54.00	27.47	1000.00	178.0	V	0.00	-11
4000.02	38.88	---	74.00	35.12	1000.00	125.0	V	24.00	-11
4881.92	---	33.57	54.00	20.43	1000.00	204.0	V	277.00	-10
5335.06	41.22	---	74.00	32.78	1000.00	176.0	V	326.00	-8
7322.94	52.19	---	74.00	21.81	1000.00	222.0	V	337.00	-1
7323.03	---	41.46	54.00	12.54	1000.00	224.0	V	333.00	-1
9763.97	56.68	---	74.00	17.32	1000.00	100.0	V	53.00	1
9763.97	---	51.96	54.00	2.04	1000.00	109.0	V	54.00	1
11380.39	52.54	---	74.00	21.46	1000.00	216.0	V	235.00	5
11628.11	---	40.65	54.00	13.35	1000.00	100.0	H	46.00	6
17937.01	---	49.64	54.00	4.36	1000.00	178.0	V	334.00	16
17947.63	62.52	---	74.00	11.48	1000.00	185.0	V	0.00	16

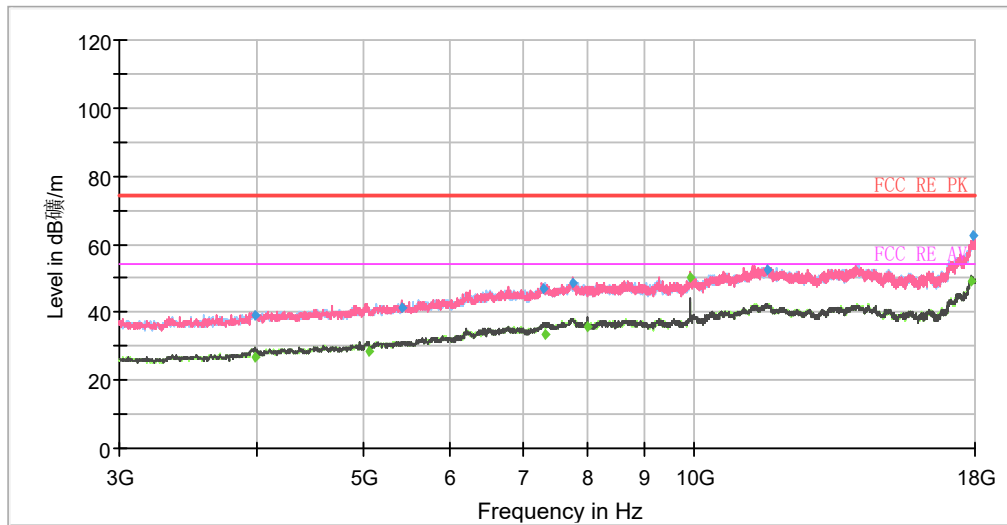
3DH5-Channel 78



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)
1012.75	---	34.52	54.00	19.48	500.00	100.0	H	345.00	3
1106.50	46.06	---	74.00	27.94	500.00	200.0	V	295.00	3
1252.00	46.28	---	74.00	27.72	500.00	200.0	H	249.00	4
1419.50	---	34.68	54.00	19.32	500.00	100.0	H	228.00	4
1540.50	46.10	---	74.00	27.90	500.00	100.0	H	296.00	4
1671.00	---	34.86	54.00	19.14	500.00	100.0	H	317.00	5
1765.75	47.68	---	74.00	26.32	500.00	100.0	V	93.00	5
2066.00	---	35.60	54.00	18.40	500.00	200.0	V	98.00	6
2315.50	47.20	---	74.00	26.80	500.00	200.0	H	18.00	6
2577.00	---	36.42	54.00	17.58	500.00	200.0	H	57.00	7
2909.50	48.93	---	74.00	25.07	500.00	200.0	H	106.00	8
2971.75	---	37.45	54.00	16.55	500.00	100.0	H	87.00	8



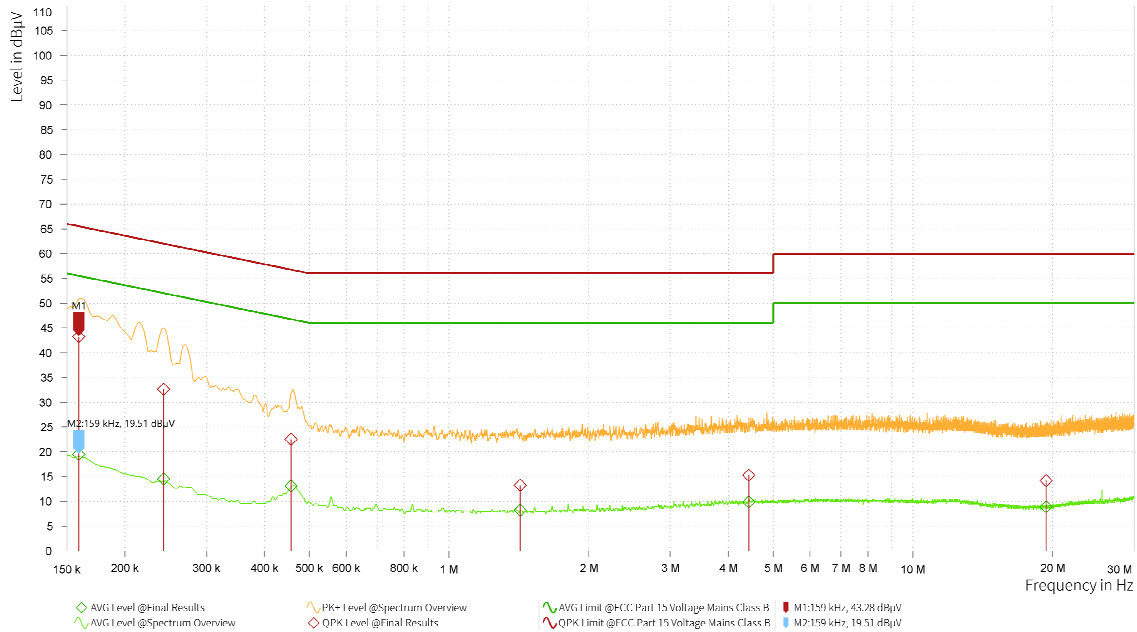
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3987.34	39.10	---	74.00	34.90	1000.00	199.0	V	122.00	-11
3988.17	---	26.80	54.00	27.20	1000.00	188.0	V	38.00	-11
5053.00	---	28.44	54.00	25.56	1000.00	224.0	H	354.00	-8
5414.13	41.29	---	74.00	32.71	1000.00	103.0	V	209.00	-8
7280.09	46.63	---	74.00	27.37	1000.00	109.0	V	106.00	-1
7316.25	---	33.63	54.00	20.37	1000.00	101.0	V	355.00	-1
7746.76	48.38	---	74.00	25.62	1000.00	207.0	V	340.00	1
7999.33	---	35.50	54.00	18.50	1000.00	101.0	V	355.00	1
9920.03	---	49.96	54.00	4.04	1000.00	221.0	V	153.00	1
11667.34	52.58	---	74.00	21.42	1000.00	222.0	V	208.00	6
17896.40	---	49.33	54.00	4.68	1000.00	207.0	V	125.00	15
17945.46	62.63	---	74.00	11.37	1000.00	117.0	H	0.00	16

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 (**DH5-Channel 39**) was recorded in this report.



Frequency [MHz]	QPK Level [dBμV]	QPK Limit [dBμV]	QPK Margin [dB]	AVG Level [dBμV]	AVG Limit [dBμV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.159	43.28	65.52	22.24	19.51	55.52	36.01	20.90	L1	9.000	1.000
0.242	32.65	62.02	29.37	14.51	52.02	37.51	20.98	L1	9.000	1.000
0.456	22.51	56.77	34.26	13.09	46.77	33.67	20.82	L1	9.000	1.000
1.424	13.24	56.00	42.76	8.18	46.00	37.82	19.88	L1	9.000	1.000
4.430	15.29	56.00	40.71	9.88	46.00	36.12	19.41	L1	9.000	1.000
19.385	14.18	60.00	45.82	8.92	50.00	41.08	19.64	L1	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 kHz to 30 MHz



Frequency [MHz]	QPK Level [dBµV]	QPK Limit [dBµV]	QPK Margin [dB]	AVG Level [dBµV]	AVG Limit [dBµV]	AVG Margin [dB]	Correction [dB]	Line	Meas. BW [kHz]	Meas. Time [s]
0.164	42.98	65.28	22.31	19.44	55.28	35.84	20.90	N	9.000	1.000
0.274	28.84	61.00	32.17	13.37	51.00	37.64	20.97	N	9.000	1.000
0.458	22.32	56.72	34.40	13.21	46.72	33.51	20.83	N	9.000	1.000
1.127	13.45	56.00	42.55	8.12	46.00	37.88	20.08	N	9.000	1.000
3.431	14.51	56.00	41.49	9.43	46.00	36.57	19.46	N	9.000	1.000
12.986	15.22	60.00	44.78	9.91	50.00	40.09	19.47	N	9.000	1.000

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 kHz to 30 MHz