

ANNEX A: Test Result

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 stand-up position (Z axis) and the loop antenna is coplanar, the others are vertical and horizontal. and the worst case was recorded.

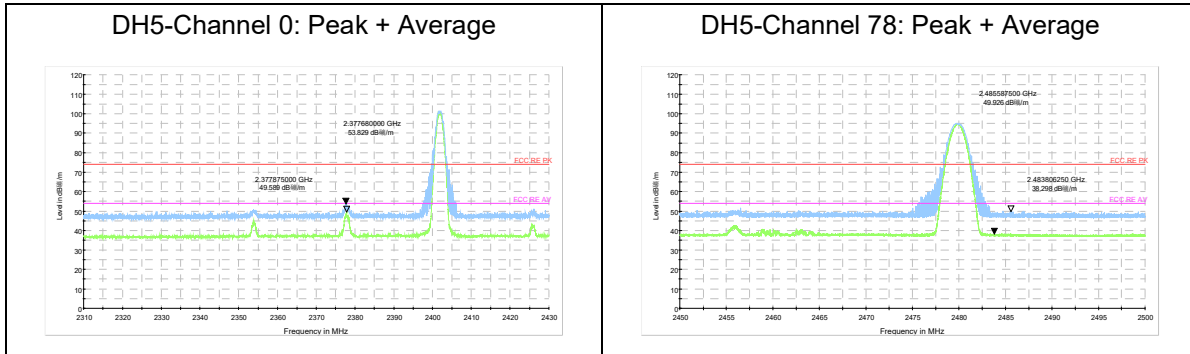
1. Unwanted Emission

1.1. Bluetooth

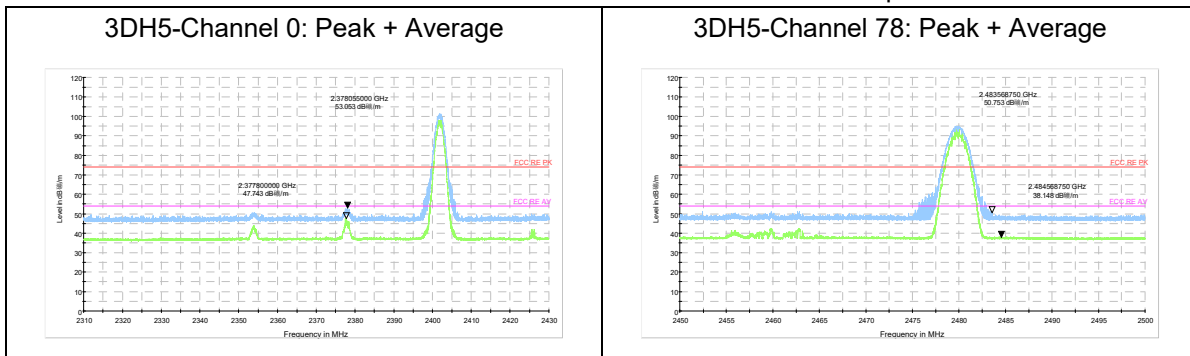
The following graphs display the maximum values of horizontal and vertical by software. Blue trace uses the peak detection, Green trace uses the average detection.

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

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.

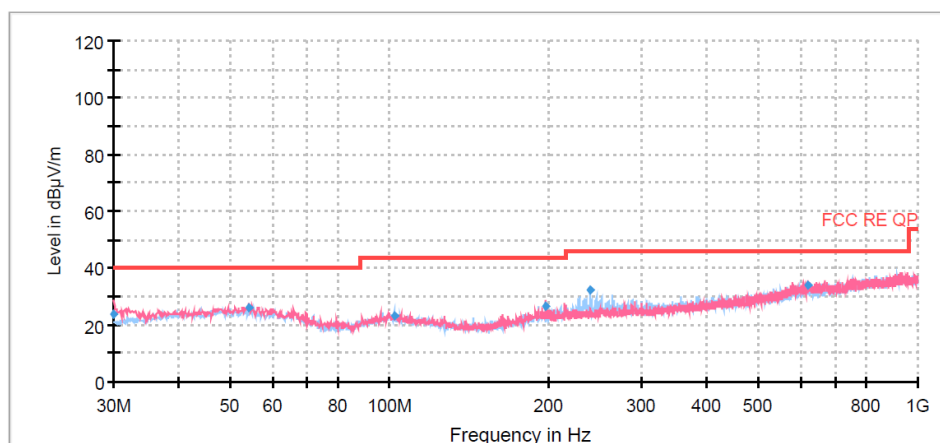
Remark:

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 ($\text{dB}\mu\text{V/m}$)
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



Continuous TX mode:

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels. The test data of the worst-case condition was recorded in this report

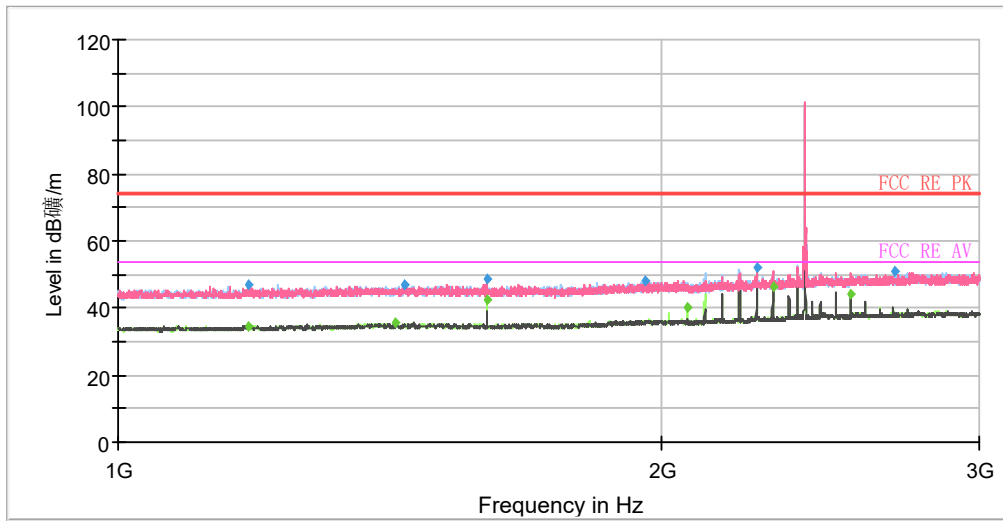


Radiates Emission from 30MHz to 1GHz

Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.00	23.56	40.00	16.44	1000.00	100.0	V	12.00	17
54.13	26.04	40.00	13.96	1000.00	100.0	V	232.00	20
101.90	23.09	43.50	20.41	1000.00	199.0	H	22.00	19
198.05	26.33	43.50	17.17	1000.00	100.0	V	210.00	18
240.01	32.44	46.00	13.56	1000.00	125.0	H	336.00	20
619.40	33.85	46.00	12.15	1000.00	100.0	V	1.00	28

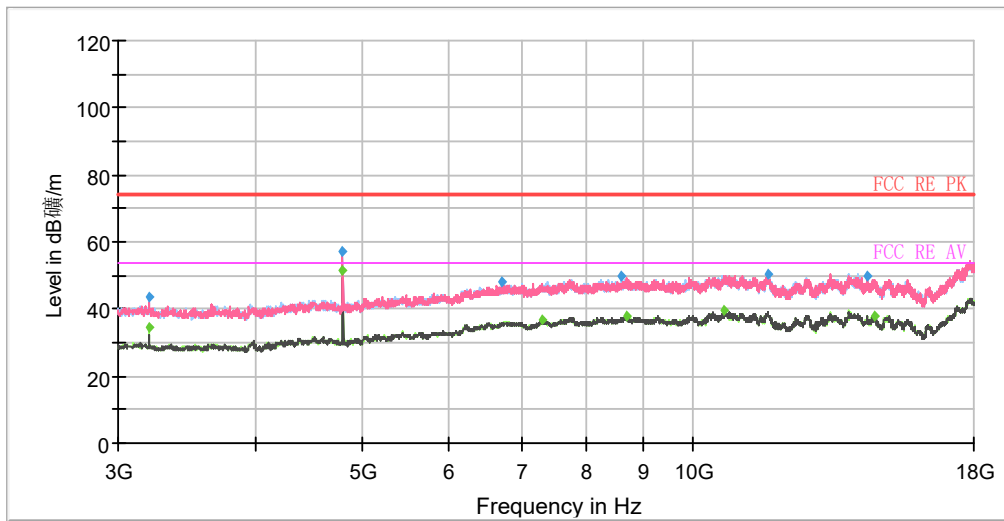
DH5-Channel 0



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

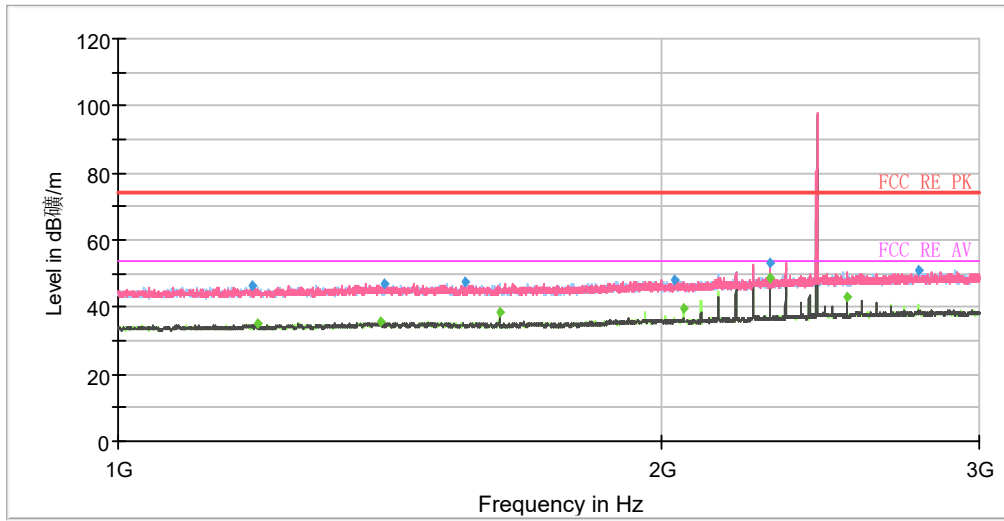
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1181.00	---	34.73	54.00	19.27	500.00	100.0	V	11.00	-5
1181.25	46.92	---	74.00	27.08	500.00	200.0	H	189.00	-5
1423.50	---	35.45	54.00	18.55	500.00	200.0	V	0.00	-4
1440.00	47.04	---	74.00	26.96	500.00	200.0	V	169.00	-4
1601.25	---	42.36	54.00	11.64	500.00	100.0	H	167.00	-4
1601.25	48.43	---	74.00	25.57	500.00	100.0	H	167.00	-4
1957.50	48.07	---	74.00	25.93	500.00	200.0	V	294.00	-2
2066.00	---	40.15	54.00	13.85	500.00	200.0	H	174.00	-2
2258.25	51.82	---	74.00	22.18	500.00	200.0	V	210.00	0
2306.00	---	46.45	54.00	7.55	500.00	200.0	V	98.00	0
2546.00	---	44.06	54.00	9.94	500.00	200.0	V	224.00	1
2691.00	50.82	---	74.00	23.18	500.00	100.0	H	359.00	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)
3202.50	---	34.72	54.00	19.28	500.00	200.0	H	174.00	-8
3202.50	43.54	---	74.00	30.46	500.00	200.0	H	174.00	-8
4803.75	---	51.72	54.00	2.28	500.00	200.0	H	128.00	-4
4803.75	57.22	---	74.00	16.78	500.00	200.0	H	128.00	-4
6691.88	47.90	---	74.00	26.10	500.00	200.0	V	13.00	1
7293.75	---	36.74	54.00	17.26	500.00	100.0	H	13.00	2
8619.38	49.53	---	74.00	24.47	500.00	100.0	H	4.00	4
8698.13	---	37.77	54.00	16.23	500.00	200.0	H	188.00	5
10676.25	---	39.36	54.00	14.64	500.00	200.0	V	247.00	6
11701.88	50.34	---	74.00	23.66	500.00	100.0	H	231.00	7
14403.75	49.97	---	74.00	24.03	500.00	200.0	H	341.00	9
14611.88	---	37.83	54.00	16.17	500.00	100.0	V	44.00	8

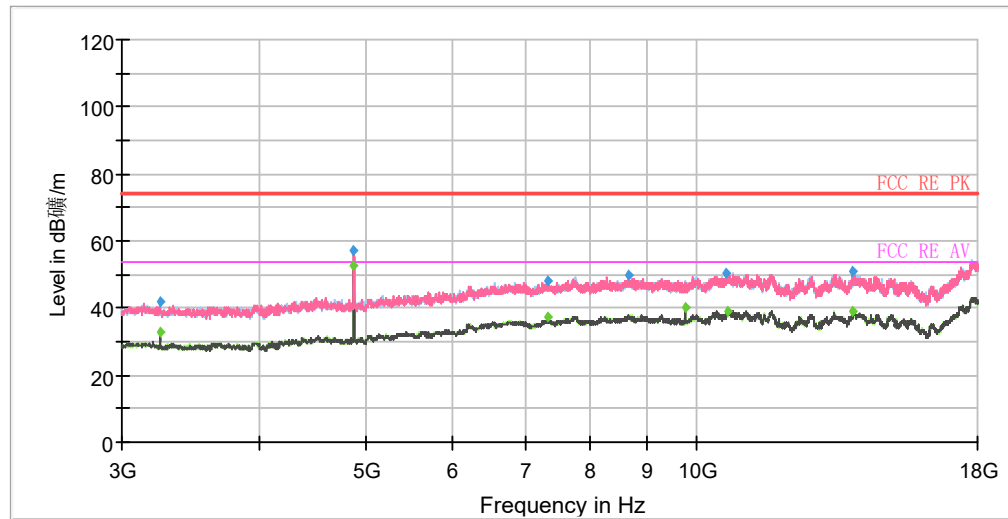
DH5-Channel 39



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

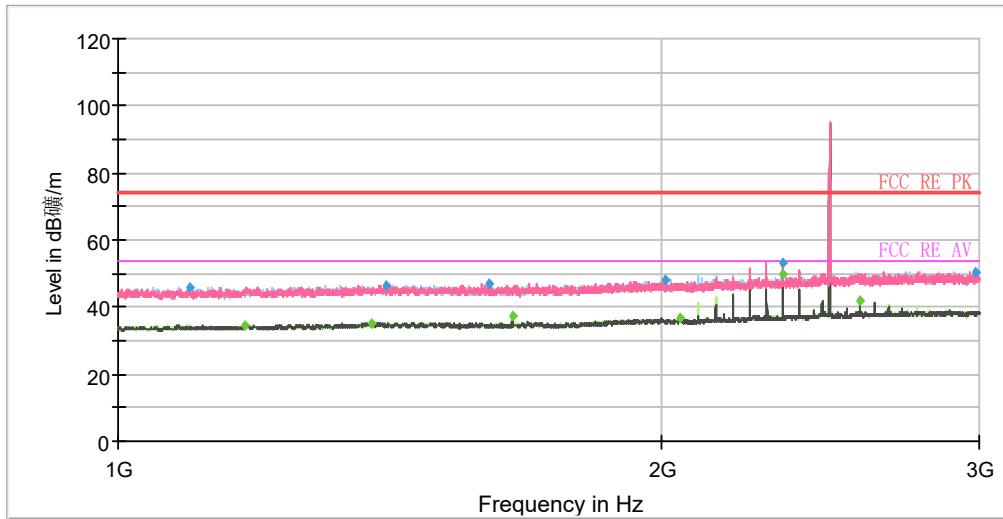
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1186.75	46.15	---	74.00	27.85	500.00	100.0	H	266.00	-5
1195.00	---	34.82	54.00	19.18	500.00	200.0	V	42.00	-5
1398.25	---	35.38	54.00	18.62	500.00	200.0	V	336.00	-4
1405.75	47.25	---	74.00	26.75	500.00	200.0	H	1.00	-4
1555.25	47.46	---	74.00	26.54	500.00	100.0	H	343.00	-4
1626.50	---	38.75	54.00	15.25	500.00	200.0	H	163.00	-4
2033.50	47.97	---	74.00	26.03	500.00	200.0	V	292.00	-2
2056.00	---	39.53	54.00	14.47	500.00	200.0	H	178.00	-1
2295.75	53.47	---	74.00	20.53	500.00	100.0	H	266.00	0
2295.75	---	48.91	54.00	5.09	500.00	200.0	V	209.00	0
2536.00	---	43.25	54.00	10.75	500.00	200.0	V	209.00	0
2776.25	50.87	---	74.00	23.13	500.00	100.0	H	56.00	2



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)
3253.13	---	33.05	54.00	20.95	500.00	200.0	H	173.00	-8
3253.13	42.06	---	74.00	31.94	500.00	200.0	H	173.00	-8
4878.75	---	52.44	54.00	1.56	500.00	200.0	V	76.00	-3
4878.75	57.36	---	74.00	16.64	500.00	200.0	V	76.00	-3
7320.00	---	37.46	54.00	16.54	500.00	200.0	V	63.00	2
7320.00	48.29	---	74.00	25.71	500.00	200.0	H	128.00	2
8679.38	49.81	---	74.00	24.19	500.00	100.0	H	0.00	5
9759.38	---	40.01	54.00	13.99	500.00	100.0	V	223.00	5
10642.50	50.43	---	74.00	23.57	500.00	100.0	V	0.00	6
10685.63	---	39.26	54.00	14.74	500.00	100.0	H	0.00	6
13869.38	50.83	---	74.00	23.17	500.00	200.0	H	354.00	9
13876.88	---	39.31	54.00	14.69	500.00	200.0	V	4.00	9

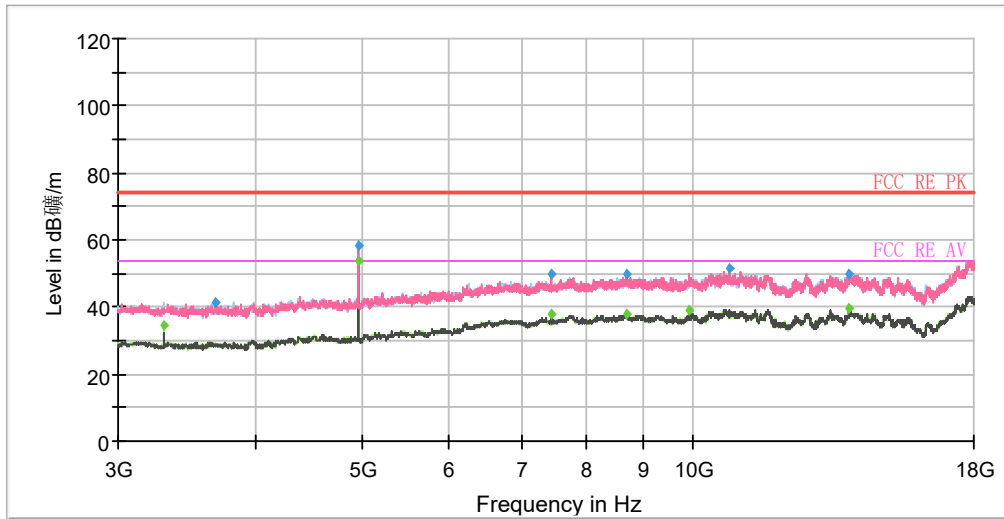
DH5-Channel 78



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)
1095.25	46.13	---	74.00	27.87	500.00	100.0	V	340.00	-6
1175.50	---	34.57	54.00	19.43	500.00	100.0	V	19.00	-5
1380.75	---	35.19	54.00	18.81	500.00	200.0	H	0.00	-4
1408.25	46.59	---	74.00	27.41	500.00	100.0	V	204.00	-4
1606.75	46.88	---	74.00	27.12	500.00	100.0	H	0.00	-4
1653.50	---	37.31	54.00	16.69	500.00	100.0	H	168.00	-4
2009.50	47.87	---	74.00	26.13	500.00	200.0	V	357.00	-2
2048.00	---	36.99	54.00	17.01	500.00	200.0	H	203.00	-2
2335.75	53.47	---	74.00	20.53	500.00	200.0	V	213.00	0
2336.00	---	49.98	54.00	4.02	500.00	200.0	V	213.00	0
2575.75	---	42.02	54.00	11.98	500.00	200.0	H	167.00	1
2983.75	50.54	---	74.00	23.46	500.00	100.0	V	32.00	2

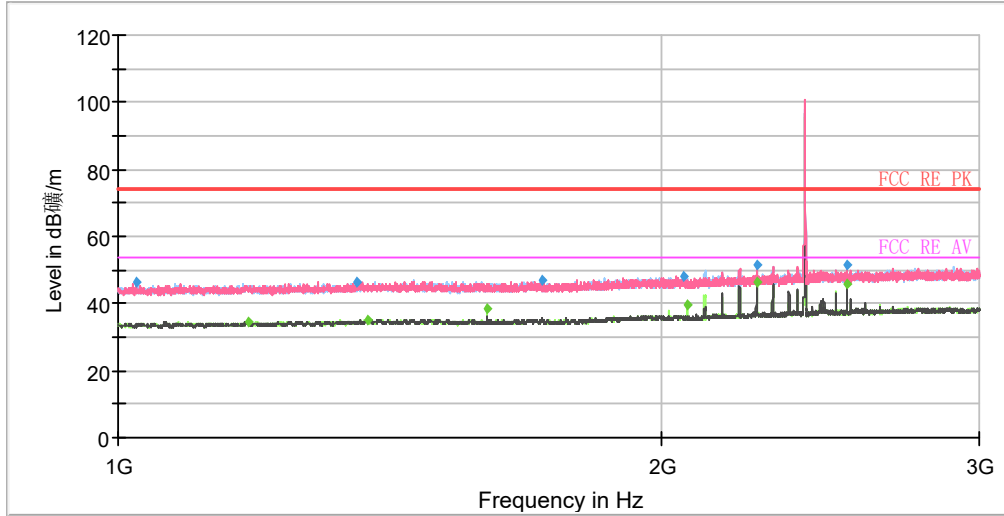


Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
3305.63	---	34.58	54.00	19.42	500.00	200.0	H	160.00	-7
3673.13	41.23	---	74.00	32.77	500.00	100.0	V	359.00	-6
4959.38	---	53.78	54.00	0.22	500.00	200.0	H	130.00	-3
4959.38	58.36	---	74.00	15.64	500.00	200.0	H	130.00	-3
7440.00	---	37.93	54.00	16.07	500.00	100.0	V	143.00	2
7440.00	49.60	---	74.00	24.40	500.00	100.0	V	143.00	2
8700.00	49.69	---	74.00	24.31	500.00	200.0	H	296.00	5
8701.88	---	37.65	54.00	16.35	500.00	100.0	V	359.00	5
9918.75	---	39.31	54.00	14.69	500.00	200.0	H	0.00	5
10779.38	51.49	---	74.00	22.51	500.00	100.0	V	127.00	7
13865.63	49.65	---	74.00	24.35	500.00	100.0	H	293.00	9
13867.50	---	39.54	54.00	14.46	500.00	100.0	V	348.00	9

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.

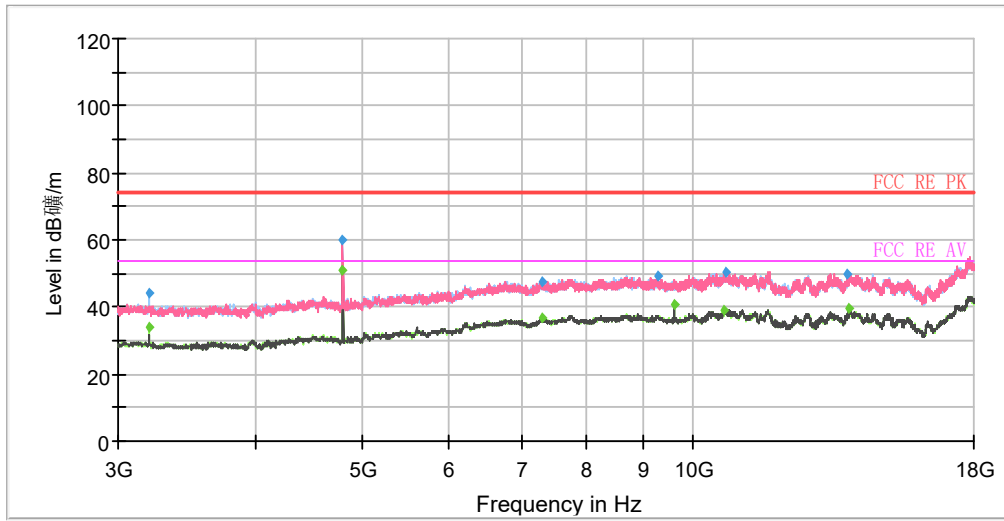
3DH5-Channel 0



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

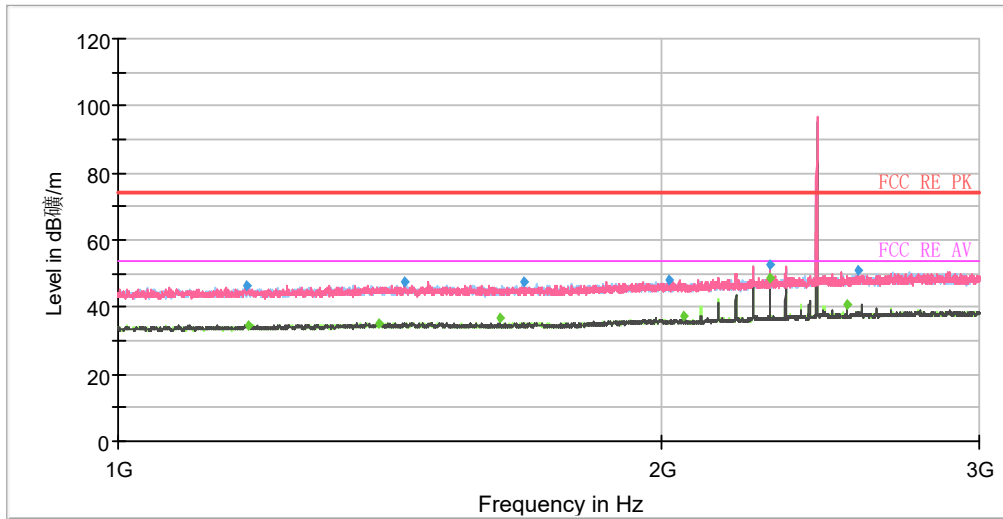
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1024.50	46.22	---	74.00	27.78	500.00	100.0	V	3.00	-7
1180.50	---	34.54	54.00	19.46	500.00	200.0	V	44.00	-5
1356.50	46.63	---	74.00	27.37	500.00	200.0	H	2.00	-4
1376.25	---	35.18	54.00	18.82	500.00	100.0	H	185.00	-4
1601.00	---	38.73	54.00	15.27	500.00	100.0	H	358.00	-4
1719.50	47.04	---	74.00	26.96	500.00	200.0	H	149.00	-3
2057.00	47.97	---	74.00	26.03	500.00	100.0	V	0.00	-1
2066.00	---	39.47	54.00	14.53	500.00	200.0	H	163.00	-2
2257.75	---	46.15	54.00	7.85	500.00	200.0	V	217.00	0
2258.25	51.71	---	74.00	22.29	500.00	200.0	V	148.00	0
2534.25	---	45.63	54.00	8.37	500.00	200.0	V	217.00	0
2534.25	51.27	---	74.00	22.73	500.00	200.0	V	217.00	0



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)
3202.50	---	33.79	54.00	20.21	500.00	200.0	H	175.00	-8
3202.50	43.87	---	74.00	30.13	500.00	200.0	H	175.00	-8
4803.75	---	50.95	54.00	3.05	500.00	200.0	H	190.00	-4
4803.75	59.78	---	74.00	14.22	500.00	200.0	H	190.00	-4
7291.88	---	36.55	54.00	17.45	500.00	200.0	V	109.00	2
7299.38	47.77	---	74.00	26.23	500.00	200.0	V	66.00	2
9300.00	49.17	---	74.00	24.83	500.00	100.0	V	280.00	6
9607.50	---	40.52	54.00	13.48	500.00	200.0	H	190.00	5
10676.25	---	39.23	54.00	14.77	500.00	200.0	V	0.00	6
10702.50	50.49	---	74.00	23.51	500.00	200.0	H	267.00	6
13830.00	49.95	---	74.00	24.05	500.00	200.0	V	54.00	9
13869.38	---	39.57	54.00	14.43	500.00	100.0	V	0.00	9

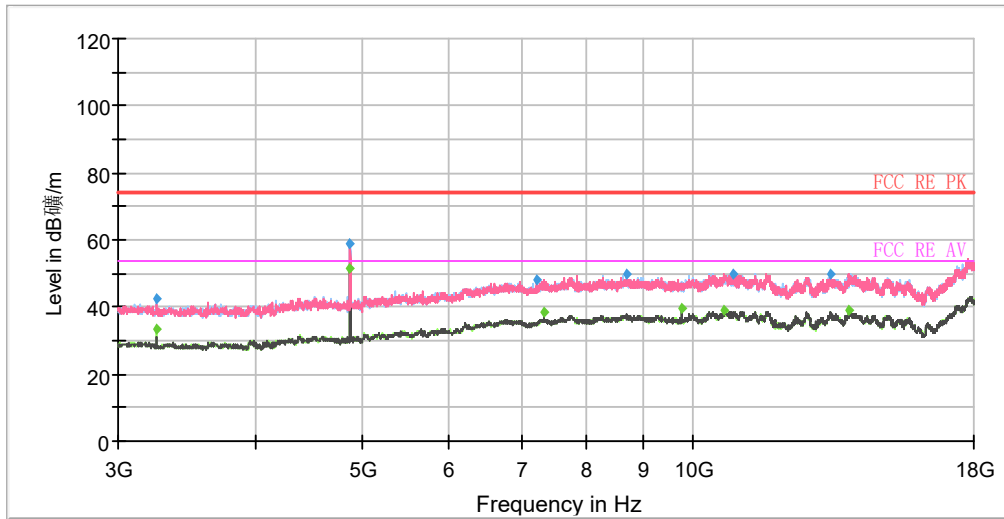
3DH5-Channel 39



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

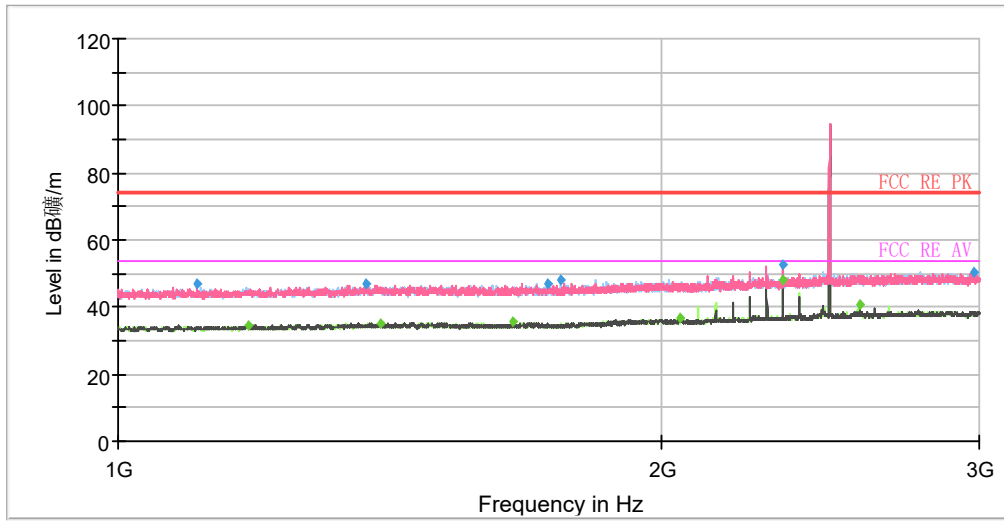
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1177.25	46.26	---	74.00	27.74	500.00	100.0	V	103.00	-5
1180.00	---	34.65	54.00	19.35	500.00	200.0	H	16.00	-5
1396.25	---	35.19	54.00	18.81	500.00	200.0	V	20.00	-4
1440.25	47.56	---	74.00	26.44	500.00	200.0	V	241.00	-4
1626.50	---	36.53	54.00	17.47	500.00	100.0	V	203.00	-4
1676.25	47.68	---	74.00	26.32	500.00	200.0	H	330.00	-3
2021.00	48.02	---	74.00	25.98	500.00	200.0	H	4.00	-2
2056.00	---	37.56	54.00	16.44	500.00	200.0	H	175.00	-1
2295.75	52.80	---	74.00	21.20	500.00	200.0	V	156.00	0
2295.75	---	48.79	54.00	5.21	500.00	200.0	V	156.00	0
2535.75	---	40.93	54.00	13.07	500.00	200.0	H	160.00	0
2570.50	51.01	---	74.00	22.99	500.00	100.0	H	342.00	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)
3253.13	---	33.50	54.00	20.50	500.00	200.0	H	169.00	-8
3253.13	42.61	---	74.00	31.39	500.00	200.0	H	169.00	-8
4878.75	---	51.68	54.00	2.32	500.00	200.0	V	66.00	-3
4878.75	59.02	---	74.00	14.98	500.00	200.0	V	66.00	-3
7207.50	48.08	---	74.00	25.92	500.00	200.0	V	238.00	1
7320.00	---	38.70	54.00	15.30	500.00	200.0	V	162.00	2
8688.75	49.57	---	74.00	24.43	500.00	100.0	H	221.00	5
9759.38	---	39.78	54.00	14.22	500.00	100.0	V	231.00	5
10676.25	---	39.03	54.00	14.97	500.00	100.0	H	0.00	6
10873.13	49.64	---	74.00	24.36	500.00	200.0	V	284.00	7
13351.88	50.00	---	74.00	24.00	500.00	200.0	H	202.00	8
13871.25	---	38.87	54.00	15.13	500.00	100.0	H	267.00	9

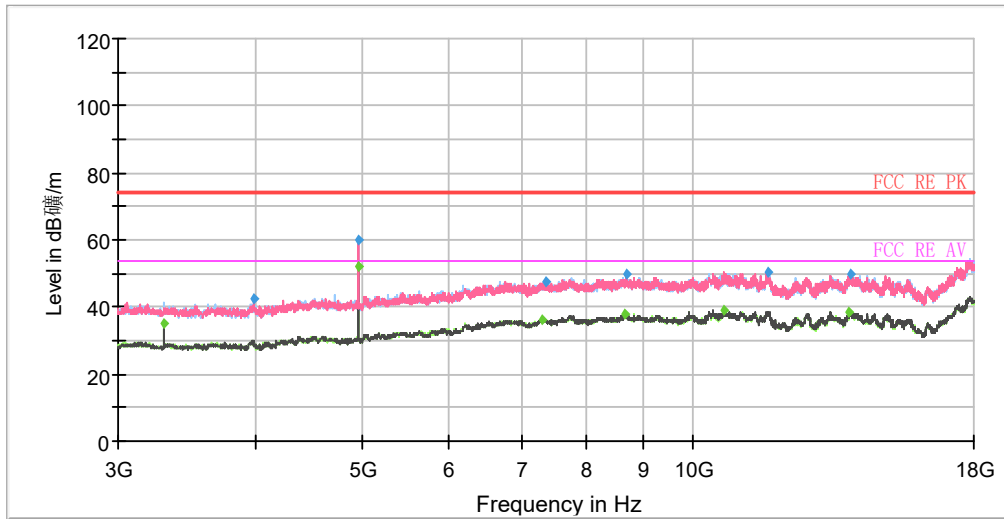
3DH5-Channel 78



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)
1105.25	46.87	---	74.00	27.13	500.00	100.0	V	0.00	-6
1181.75	---	34.79	54.00	19.21	500.00	200.0	H	20.00	-5
1371.50	46.70	---	74.00	27.30	500.00	100.0	V	4.00	-4
1396.75	---	35.20	54.00	18.80	500.00	100.0	V	62.00	-4
1653.00	---	35.81	54.00	18.19	500.00	200.0	V	186.00	-4
1729.00	47.02	---	74.00	26.98	500.00	200.0	H	15.00	-3
1759.00	48.03	---	74.00	25.97	500.00	200.0	H	130.00	-3
2047.75	---	36.58	54.00	17.42	500.00	200.0	H	159.00	-2
2336.00	52.62	---	74.00	21.38	500.00	200.0	V	214.00	0
2336.25	---	47.84	54.00	6.16	500.00	200.0	V	214.00	0
2576.00	---	40.81	54.00	13.19	500.00	200.0	H	159.00	1
2976.25	50.30	---	74.00	23.70	500.00	100.0	H	351.00	2



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)
3305.63	---	35.28	54.00	18.72	500.00	200.0	H	185.00	-7
3982.50	42.21	---	74.00	31.79	500.00	100.0	V	0.00	-4
4959.38	---	52.25	54.00	1.75	500.00	200.0	H	137.00	-3
4959.38	59.92	---	74.00	14.08	500.00	200.0	H	137.00	-3
7288.13	---	36.49	54.00	17.51	500.00	100.0	V	2.00	2
7344.38	47.38	---	74.00	26.62	500.00	100.0	V	279.00	2
8666.25	---	37.99	54.00	16.01	500.00	200.0	H	9.00	4
8711.25	49.65	---	74.00	24.35	500.00	200.0	V	127.00	5
10680.00	---	39.07	54.00	14.93	500.00	100.0	V	27.00	6
11701.88	50.56	---	74.00	23.44	500.00	200.0	V	326.00	7
13876.88	---	38.71	54.00	15.29	500.00	200.0	H	3.00	9
13908.75	49.84	---	74.00	24.16	500.00	100.0	H	203.00	9