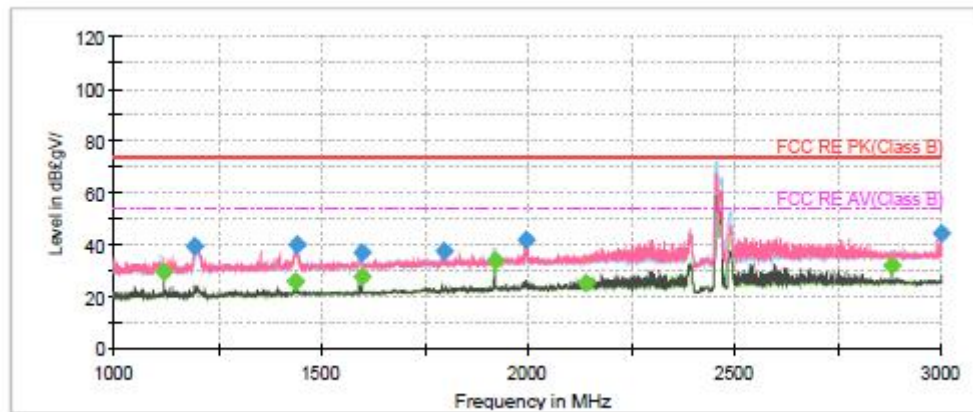


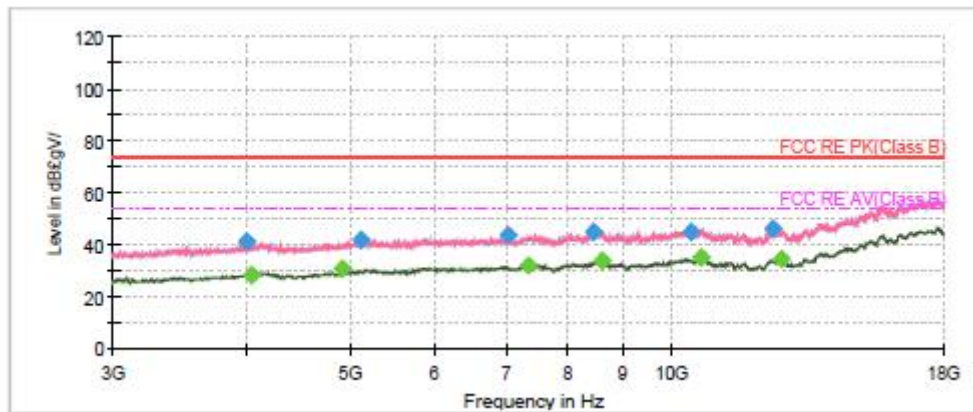
Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1119.750000	---	31.97	54.00	22.03	200.0	V	0.0	-7.7
1198.500000	43.30	---	74.00	30.70	200.0	V	113.0	-7.3
1423.750000	---	31.83	54.00	22.17	200.0	V	29.0	-6.0
1439.250000	43.78	---	74.00	30.22	100.0	H	298.0	-5.9
1706.750000	44.54	---	74.00	29.46	100.0	H	281.0	-4.4
1729.750000	---	32.97	54.00	21.03	200.0	V	36.0	-4.3
1920.000000	---	35.38	54.00	18.62	100.0	H	157.0	-3.2
2001.000000	45.78	---	74.00	28.22	100.0	V	329.0	-2.6
2203.250000	46.18	---	74.00	27.82	200.0	H	0.0	-1.8
2215.500000	---	34.12	54.00	19.88	200.0	V	14.0	-1.7
2934.750000	48.60	---	74.00	25.40	200.0	V	0.0	1.4
2988.500000	---	37.22	54.00	16.78	200.0	V	21.0	1.8

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

## 802.11g CH11



Note: The signal beyond the limit is carrier.  
Radiates Emission from 1GHz to 3GHz

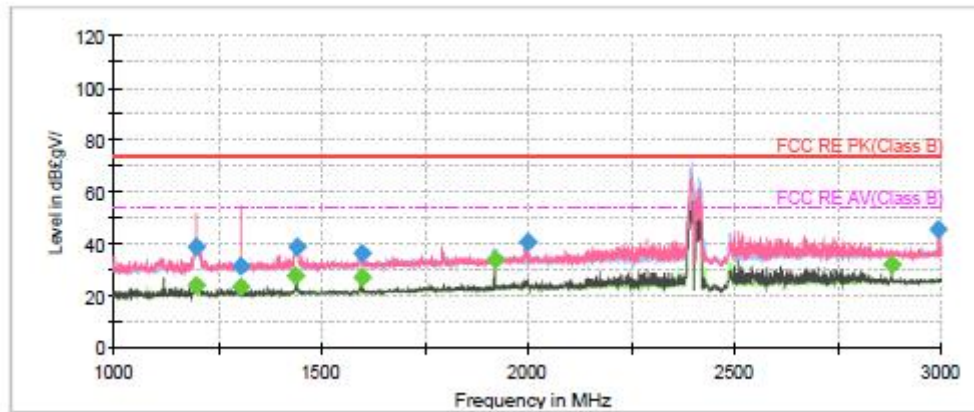


Radiates Emission from 3GHz to 18GHz

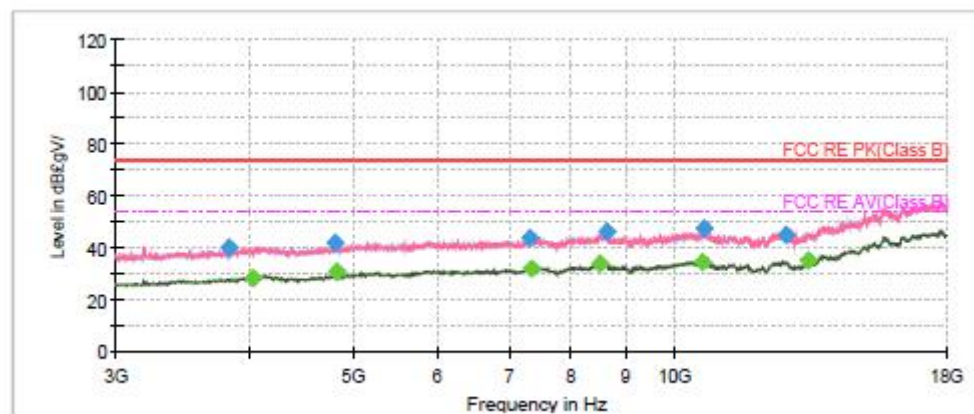
Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1120.000000	---	29.41	54.00	24.59	200.0	V	277.0	-17.7
1196.250000	39.56	---	74.00	34.44	200.0	V	88.0	-17.3
1440.000000	---	26.01	54.00	27.99	100.0	V	66.0	-15.9
1442.000000	39.89	---	74.00	34.11	100.0	H	354.0	-15.9
1598.500000	36.81	---	74.00	37.19	100.0	V	34.0	-15.1
1600.000000	---	27.63	54.00	26.37	100.0	V	79.0	-15.0
1799.250000	37.28	---	74.00	36.72	200.0	V	238.0	-13.8
1920.000000	---	33.92	54.00	20.08	100.0	H	152.0	-13.2
1997.250000	41.62	---	74.00	32.38	200.0	V	79.0	-12.7
2138.500000	---	25.04	54.00	28.96	100.0	V	14.0	-12.0
2880.000000	---	31.97	54.00	22.03	100.0	H	152.0	-8.8
2998.750000	44.34	---	74.00	29.66	200.0	H	215.0	-8.1

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

# 802.11n (HT20) CH1



Note: The signal beyond the limit is carrier.  
Radiates Emission from 1GHz to 3GHz

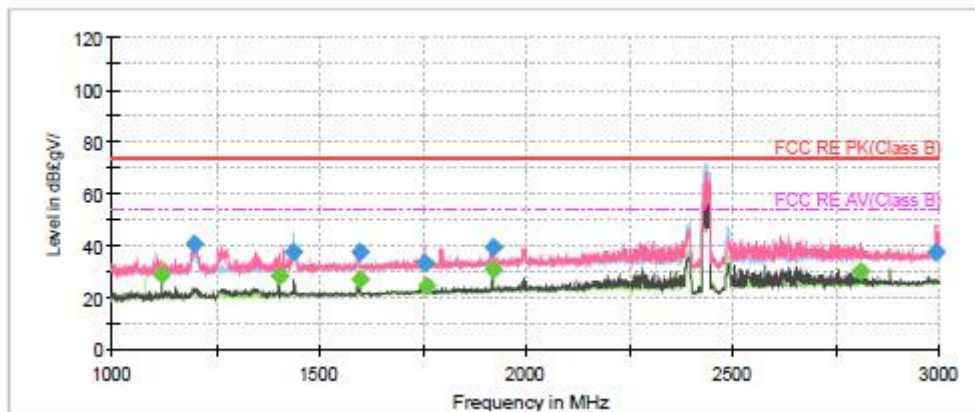


Radiates Emission from 3GHz to 18GHz

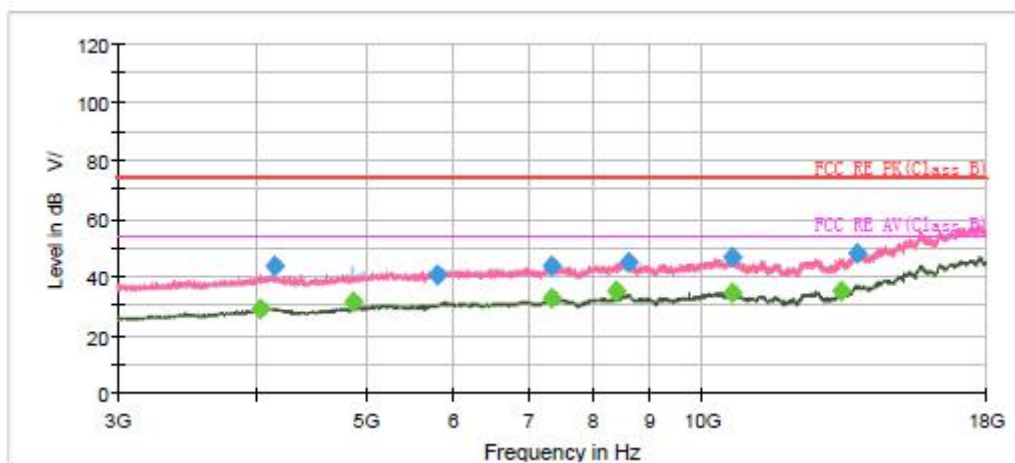
Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1198.750000	38.72	---	74.00	35.28	100.0	V	87.0	-17.3
1199.750000	---	24.27	54.00	29.73	100.0	V	275.0	-17.3
1306.000000	---	23.19	54.00	30.81	200.0	V	298.0	-16.7
1306.500000	31.39	---	74.00	42.61	100.0	V	289.0	-16.7
1439.750000	---	27.64	54.00	26.36	100.0	V	282.0	-15.9
1442.750000	38.49	---	74.00	35.51	100.0	H	352.0	-15.9
1599.500000	36.13	---	74.00	37.87	100.0	H	130.0	-15.0
1600.000000	---	27.08	54.00	26.92	100.0	V	87.0	-15.0
1920.000000	---	33.95	54.00	20.05	100.0	H	159.0	-13.2
1999.250000	40.34	---	74.00	33.66	200.0	V	82.0	-12.7
2880.000000	---	32.20	54.00	21.80	100.0	H	57.0	-8.8
2991.250000	45.79	---	74.00	28.21	200.0	V	119.0	-8.1

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

## 802.11n (HT20) CH6



Note: The signal beyond the limit is carrier.  
Radiates Emission from 1GHz to 3GHz



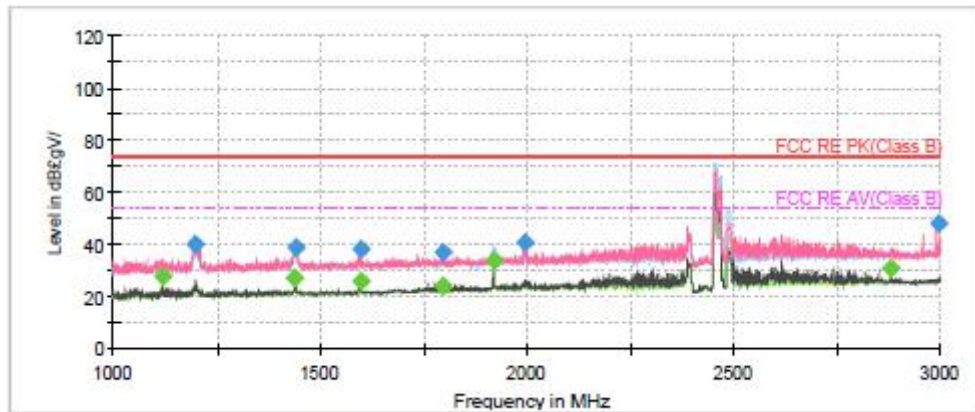
Radiates Emission from 3GHz to 18GHz



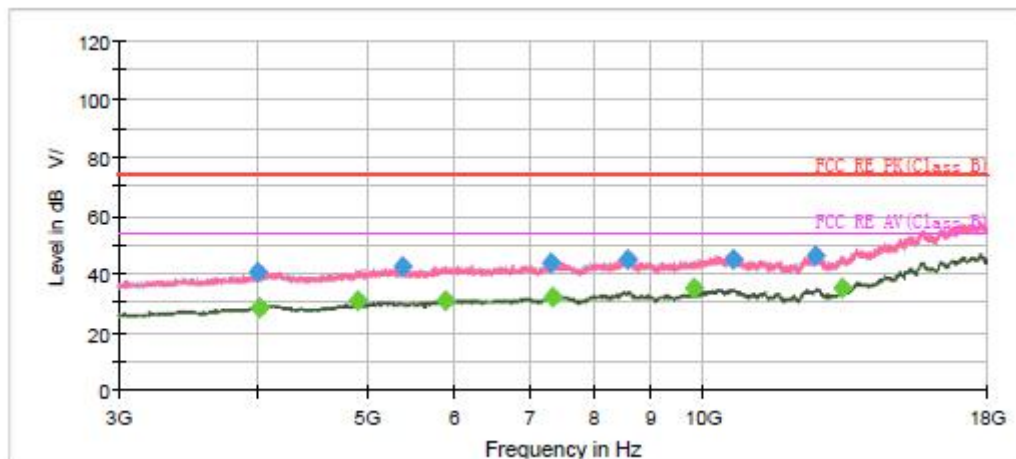
Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1119.500000	---	28.63	54.00	25.37	200.0	V	276.0	-17.7
1199.000000	40.92	---	74.00	33.08	200.0	V	87.0	-17.3
1403.500000	---	28.02	54.00	25.98	100.0	V	182.0	-16.1
1439.500000	37.32	---	74.00	36.68	200.0	V	238.0	-15.9
1598.250000	37.49	---	74.00	36.51	100.0	V	59.0	-15.1
1599.750000	---	26.78	54.00	27.22	100.0	V	79.0	-15.0
1757.750000	33.43	---	74.00	40.57	200.0	H	181.0	-14.1
1760.000000	---	24.85	54.00	29.15	200.0	V	171.0	-14.1
1920.500000	---	31.00	54.00	23.00	100.0	H	154.0	-13.2
1921.500000	39.12	---	74.00	34.88	100.0	H	161.0	-13.2
2808.250000	---	30.31	54.00	23.69	200.0	V	102.0	-9.0
2990.250000	37.54	---	74.00	36.46	100.0	H	101.0	-8.1

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

## 802.11n (HT20) CH11



Note: The signal beyond the limit is carrier.  
Radiates Emission from 1GHz to 3GHz



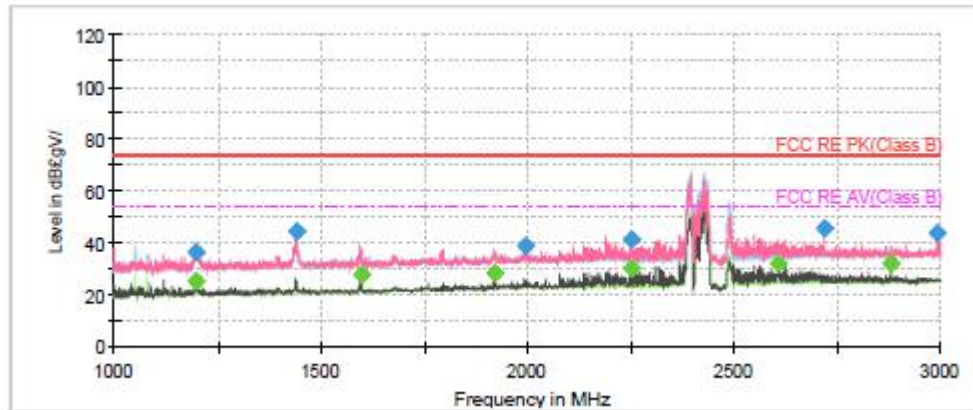
Radiates Emission from 3GHz to 18GHz



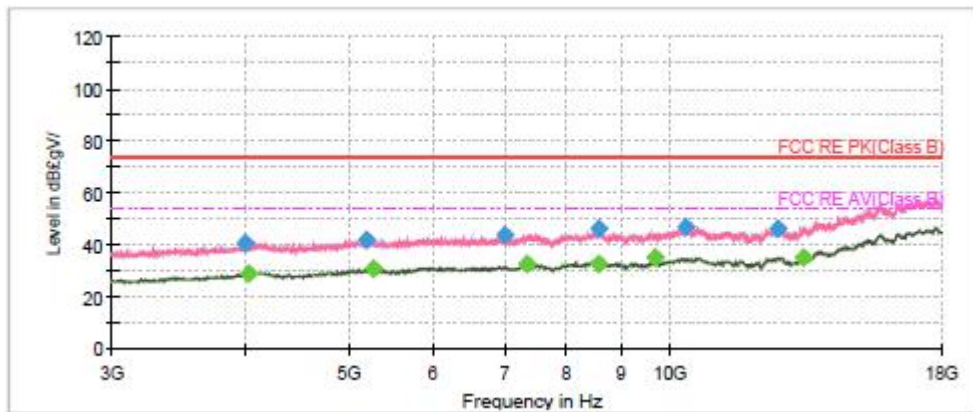
Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1119.750000	---	27.41	54.00	26.59	100.0	H	174.0	-17.7
1197.500000	40.02	---	74.00	33.98	100.0	V	265.0	-17.3
1439.750000	---	27.22	54.00	26.78	100.0	V	82.0	-15.9
1442.500000	38.69	---	74.00	35.31	100.0	H	351.0	-15.9
1598.000000	38.43	---	74.00	35.57	200.0	V	13.0	-15.1
1600.000000	---	25.90	54.00	28.10	200.0	V	28.0	-15.0
1797.500000	---	24.14	54.00	29.86	200.0	V	255.0	-13.8
1798.250000	36.75	---	74.00	37.25	200.0	V	43.0	-13.8
1920.000000	---	33.93	54.00	20.07	100.0	H	160.0	-13.2
1994.500000	40.47	---	74.00	33.53	200.0	V	285.0	-12.7
2879.750000	---	30.98	54.00	23.02	100.0	H	153.0	-8.8
2994.250000	47.89	---	74.00	26.11	100.0	V	287.0	-8.1

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

## 802.11n (HT40) CH3



Note: The signal beyond the limit is carrier.  
Radiates Emission from 1GHz to 3GHz



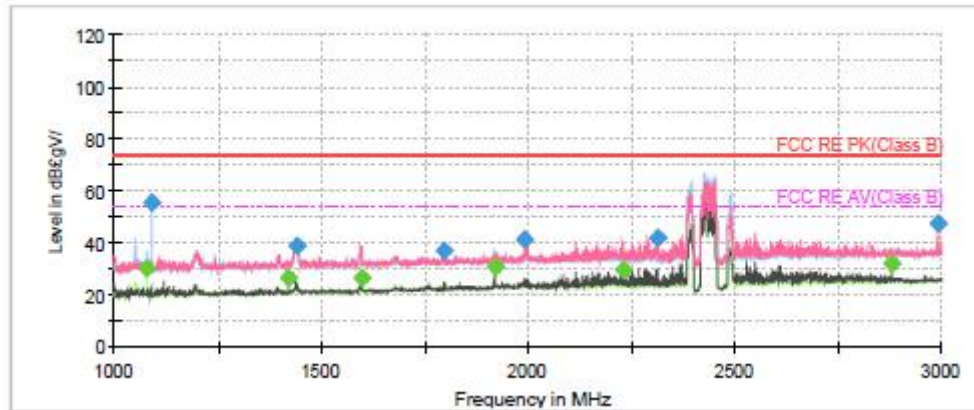
Radiates Emission from 3GHz to 18GHz



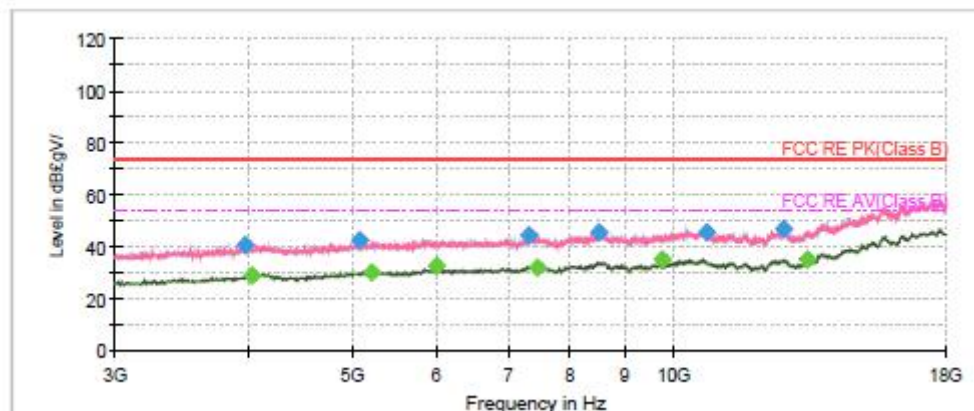
Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1197.250000	---	24.97	54.00	29.03	200.0	V	174.0	-17.3
1200.250000	36.27	---	74.00	37.73	100.0	V	166.0	-17.3
1440.250000	44.27	---	74.00	29.73	200.0	V	30.0	-15.9
1600.250000	---	27.93	54.00	26.07	200.0	V	169.0	-15.0
1919.500000	---	28.53	54.00	25.47	200.0	H	50.0	-13.2
1997.000000	39.03	---	74.00	34.97	200.0	V	218.0	-12.7
2250.750000	---	30.16	54.00	23.84	200.0	V	190.0	-11.7
2251.000000	41.53	---	74.00	32.47	200.0	V	190.0	-11.7
2608.750000	---	31.82	54.00	22.18	200.0	V	190.0	-9.9
2717.500000	45.81	---	74.00	28.19	100.0	V	299.0	-9.4
2880.000000	---	32.25	54.00	21.75	200.0	V	39.0	-8.8
2991.000000	43.45	---	74.00	30.55	200.0	V	0.0	-8.1

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

# 802.11n (HT40) CH6



Note: The signal beyond the limit is carrier.  
Radiates Emission from 1GHz to 3GHz



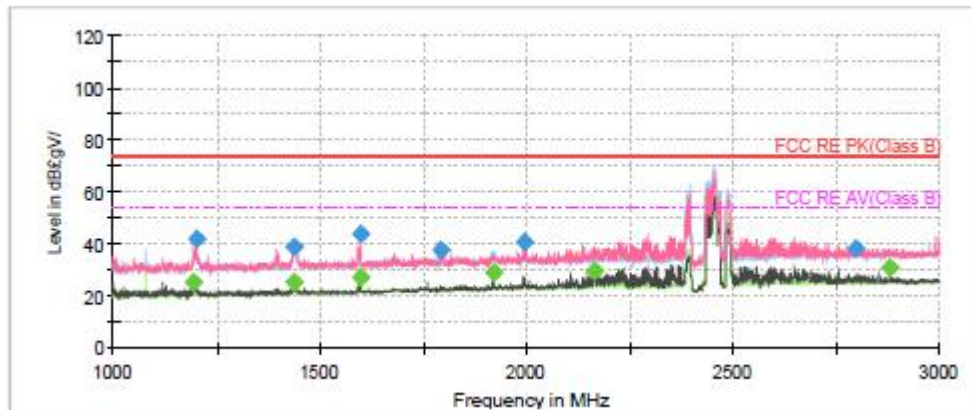
Radiates Emission from 3GHz to 18GHz



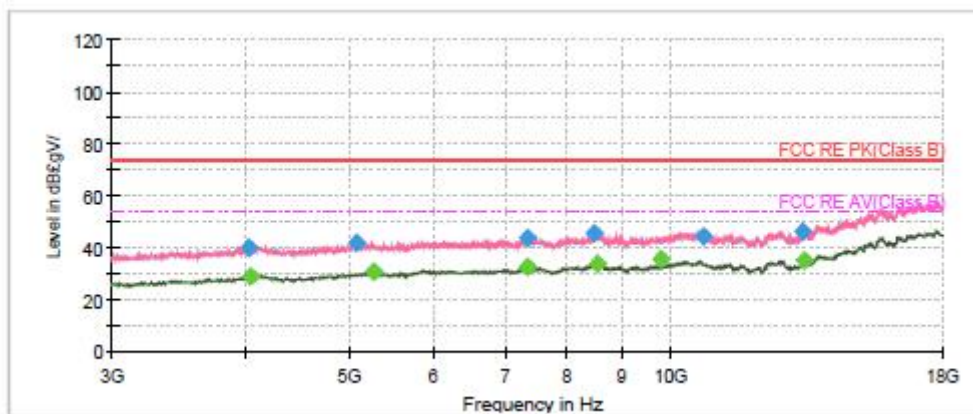
Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1079.500000	---	29.90	54.00	24.10	200.0	H	0.0	-17.9
1091.250000	55.46	---	74.00	18.54	200.0	H	250.0	-17.8
1421.000000	---	26.27	54.00	27.73	200.0	V	7.0	-16.0
1442.250000	39.03	---	74.00	34.97	200.0	H	39.0	-15.9
1599.750000	---	26.59	54.00	27.41	200.0	V	165.0	-15.0
1796.750000	36.85	---	74.00	37.15	200.0	H	239.0	-13.8
1920.000000	---	31.04	54.00	22.96	200.0	H	55.0	-13.2
1993.000000	41.21	---	74.00	32.79	200.0	V	138.0	-12.7
2232.500000	---	29.61	54.00	24.39	200.0	V	186.0	-11.7
2312.000000	41.58	---	74.00	32.42	200.0	V	192.0	-11.5
2880.000000	---	31.96	54.00	22.04	200.0	V	36.0	-8.8
2990.750000	47.22	---	74.00	26.78	200.0	V	89.0	-8.1

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

## 802.11n (HT40) CH9



Note: The signal beyond the limit is carrier.  
Radiates Emission from 1GHz to 3GHz



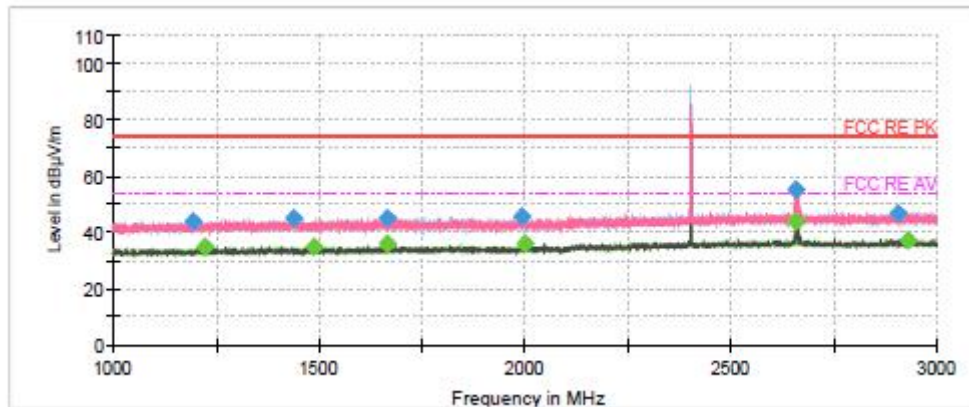
Radiates Emission from 3GHz to 18GHz



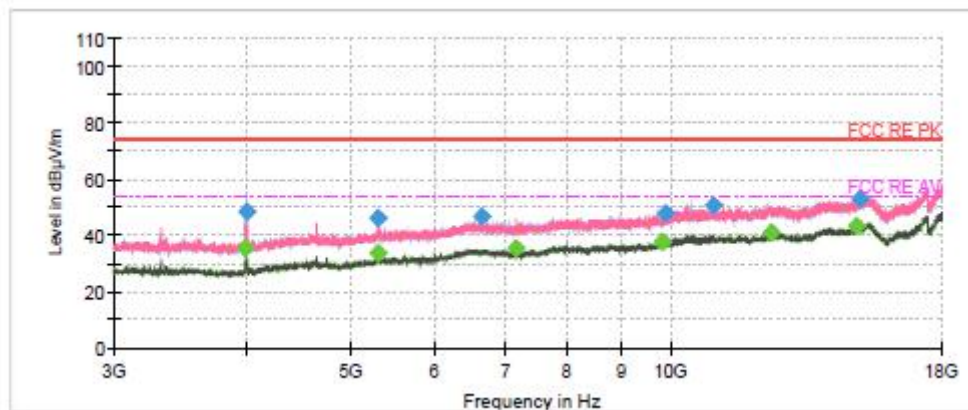
Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1195.500000	---	25.07	54.00	28.93	200.0	V	106.0	-17.3
1200.500000	41.76	---	74.00	32.24	200.0	V	242.0	-17.3
1439.500000	39.05	---	74.00	34.95	200.0	H	31.0	-15.9
1439.750000	---	25.46	54.00	28.54	200.0	V	30.0	-15.9
1600.000000	43.88	---	74.00	30.12	200.0	V	176.0	-15.0
1600.000000	---	26.86	54.00	27.14	200.0	V	176.0	-15.0
1793.500000	37.75	---	74.00	36.25	200.0	V	155.0	-13.9
1920.500000	---	28.72	54.00	25.28	200.0	H	54.0	-13.2
1996.000000	40.87	---	74.00	33.13	200.0	V	139.0	-12.7
2163.500000	---	29.46	54.00	24.54	200.0	V	171.0	-11.9
2796.250000	38.31	---	74.00	35.69	200.0	V	160.0	-9.1
2880.250000	---	30.82	54.00	23.18	100.0	H	20.0	-8.8

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

## Bluetooth LE-Channel 0



Note: The signal beyond the limit is carrier.  
Radiates Emission from 1GHz to 3GHz



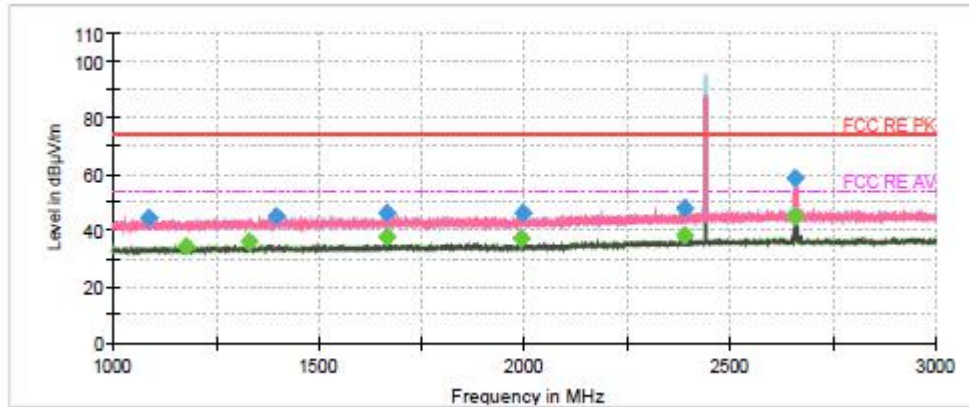
Radiates Emission from 3GHz to 18GHz



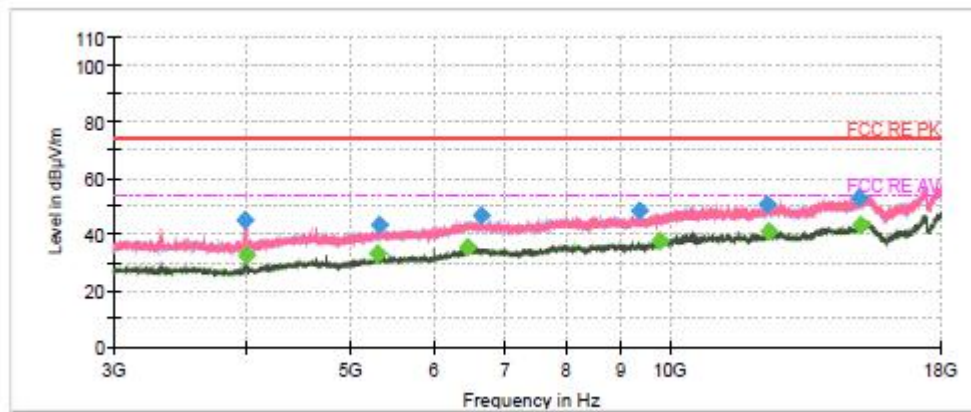
Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1194.200000	44.21	---	74.00	29.79	200.0	V	0.0	-10.3
1222.666667	---	35.04	54.00	18.96	200.0	H	148.0	-10.2
1439.800000	45.19	---	74.00	28.81	200.0	H	136.0	-9.3
1488.866667	---	34.79	54.00	19.21	200.0	V	13.0	-9.2
1664.600000	---	35.93	54.00	18.07	200.0	V	222.0	-8.8
1664.600000	45.12	---	74.00	28.88	200.0	V	222.0	-8.8
1990.466667	45.95	---	74.00	28.05	200.0	V	8.0	-8.2
1998.133333	---	35.89	54.00	18.11	200.0	V	144.0	-8.2
2657.466667	55.06	---	74.00	18.94	100.0	V	120.0	-6.0
2657.466667	---	43.89	54.00	10.11	100.0	V	120.0	-6.0
2903.733333	47.05	---	74.00	26.95	100.0	H	13.0	-6.1
2928.600000	---	37.27	54.00	16.73	100.0	H	143.0	-6.0

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

## Bluetooth LE-Channel 19



Note: The signal beyond the limit is carrier.  
Radiates Emission from 1GHz to 3GHz



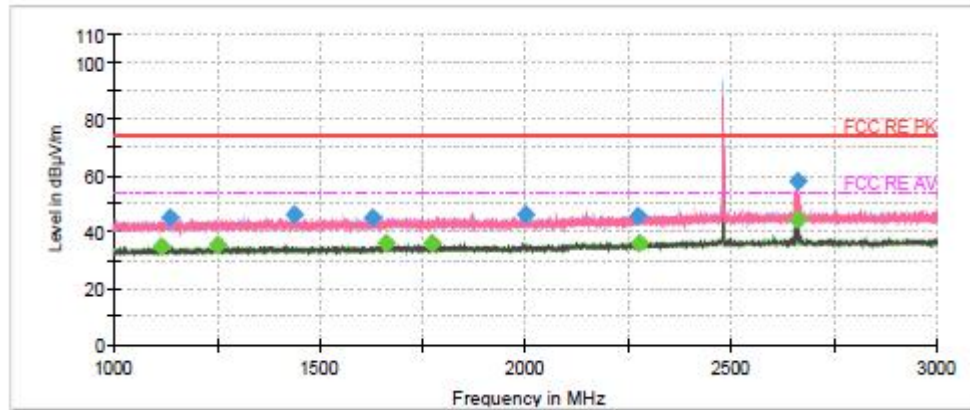
Radiates Emission from 3GHz to 18GHz



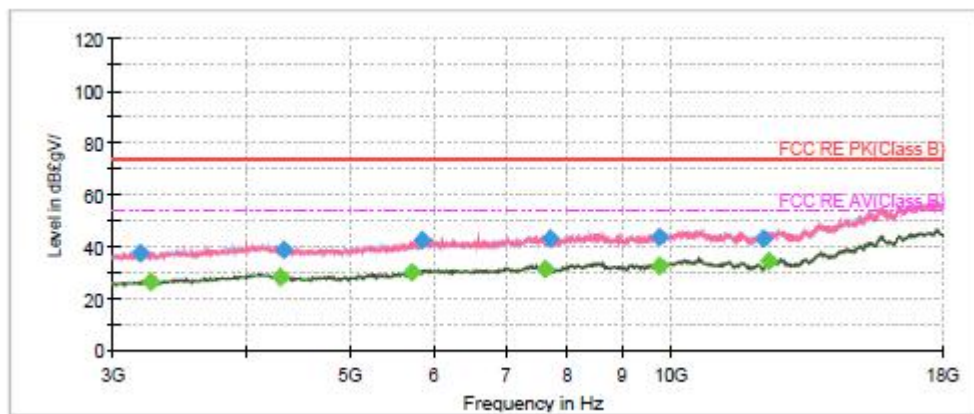
Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1085.533333	44.34	---	74.00	29.66	200.0	H	170.0	-10.7
1176.266667	---	34.62	54.00	19.38	100.0	H	46.0	-10.4
1331.333333	---	36.05	54.00	17.95	100.0	V	178.0	-9.7
1395.933333	44.97	---	74.00	29.03	100.0	V	352.0	-9.6
1666.000000	46.09	---	74.00	27.91	200.0	V	135.0	-8.8
1666.000000	---	37.89	54.00	16.11	200.0	V	135.0	-8.8
1993.533333	---	37.32	54.00	16.68	200.0	V	199.0	-8.2
1993.866667	46.38	---	74.00	27.62	200.0	V	199.0	-8.2
2389.200000	47.99	---	74.00	26.01	200.0	V	46.0	-6.5
2389.200000	---	38.37	54.00	15.63	200.0	V	46.0	-6.5
2655.733333	---	44.93	54.00	9.07	200.0	V	186.0	-6.1
2658.800000	58.57	---	74.00	15.43	100.0	V	120.0	-6.0

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

## Bluetooth LE-Channel 39



Note: The signal beyond the limit is carrier.  
Radiates Emission from 1GHz to 3GHz



Radiates Emission from 3GHz to 18GHz



Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1115.600000	---	35.09	54.00	18.91	100.0	H	47.0	-10.6
1138.000000	44.88	---	74.00	29.12	200.0	V	5.0	-10.5
1252.733333	---	35.38	54.00	18.62	200.0	H	209.0	-10.0
1438.666667	46.02	---	74.00	27.98	100.0	H	136.0	-9.3
1627.200000	45.40	---	74.00	28.60	100.0	V	352.0	-8.8
1661.000000	---	36.03	54.00	17.97	200.0	V	224.0	-8.8
1772.066667	---	36.10	54.00	17.90	200.0	H	0.0	-8.6
1998.533333	46.44	---	74.00	27.56	200.0	V	172.0	-8.2
2270.733333	45.82	---	74.00	28.18	200.0	H	357.0	-7.0
2278.533333	---	35.98	54.00	18.02	200.0	H	0.0	-7.0
2662.866667	57.86	---	74.00	16.14	200.0	V	186.0	-6.0
2662.866667	---	44.58	54.00	9.42	200.0	V	186.0	-6.0

**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

During the test, the Radiates Emission from 18GHz to 26GHz was performed in all modes with all channels, Bluetooth LE-Channel 19 was selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Radiates Emission from 18GHz to 26GHz

## 5.7. Conducted Emission

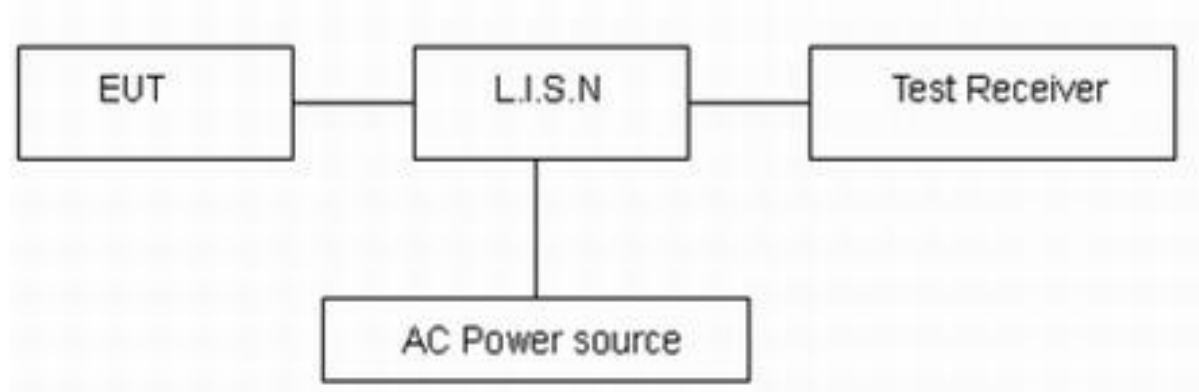
### Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

### Methods of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.10. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9 kHz, VBW is set to 30kHz. The measurement result should include both L line and N line. The test is in transmitting mode.

### Test Setup



Note: AC Power source is used to change the voltage 110V/60Hz.

### Limits

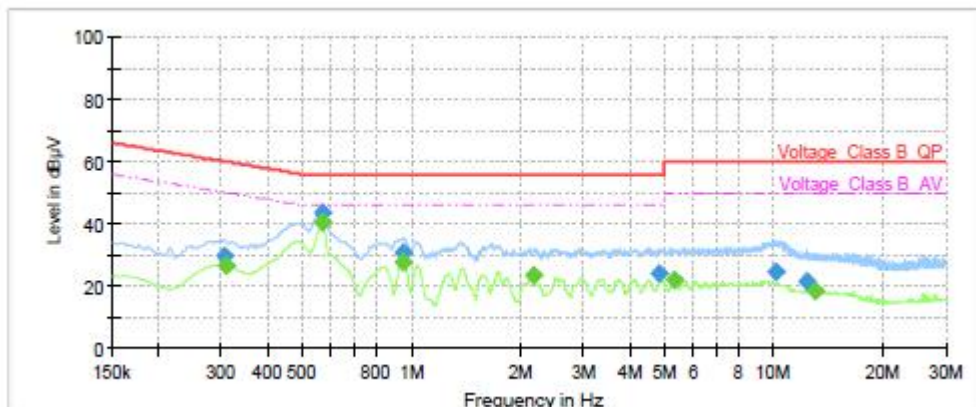
Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ ,  $U = 2.69$  dB.

## Test Results:

Following plots, Blue trace uses the peak detection and Green trace uses the average detection. During the test, the Conducted Emission was performed in all modes (WIFI 2.4G /Bluetooth LE) with all channels, Bluetooth LE-Channel 19 was selected as the worst condition. The test data of the worst-case condition was recorded in this report.

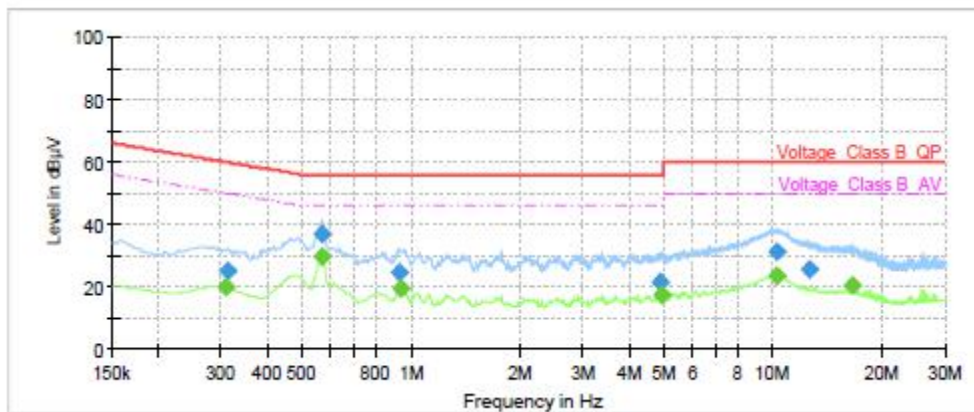


Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.31	29.65	---	60.10	30.45	70.0	9.000	L1	ON	21
0.31	---	26.78	50.04	23.26	70.0	9.000	L1	ON	21
0.57	---	40.57	46.00	5.43	70.0	9.000	L1	ON	20
0.57	43.52	---	56.00	12.48	70.0	9.000	L1	ON	20
0.95	---	27.69	46.00	18.31	70.0	9.000	L1	ON	20
0.96	30.67	---	56.00	25.33	70.0	9.000	L1	ON	20
2.18	---	23.66	46.00	22.34	70.0	9.000	L1	ON	20
4.85	24.33	---	56.00	31.67	70.0	9.000	L1	ON	19
5.32	---	21.98	50.00	28.02	70.0	9.000	L1	ON	19
10.20	24.73	---	60.00	35.27	70.0	9.000	L1	ON	20
12.41	21.31	---	60.00	38.69	70.0	9.000	L1	ON	20
13.11	---	18.55	50.00	31.45	70.0	9.000	L1	ON	20

**Remark:** Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 KHz to 30 MHz





Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.31	---	20.16	49.98	29.82	70.0	9.000	N	ON	21
0.31	25.03	---	59.92	34.89	70.0	9.000	N	ON	21
0.57	36.86	---	56.00	19.14	70.0	9.000	N	ON	20
0.57	---	29.86	46.00	16.14	70.0	9.000	N	ON	20
0.93	24.43	---	56.00	31.57	70.0	9.000	N	ON	20
0.94	---	19.30	46.00	26.70	70.0	9.000	N	ON	20
4.90	21.40	---	56.00	34.60	70.0	9.000	N	ON	19
4.95	---	17.54	46.00	28.46	70.0	9.000	N	ON	19
10.29	31.42	---	60.00	28.58	70.0	9.000	N	ON	20
10.34	---	23.53	50.00	26.47	70.0	9.000	N	ON	20
12.65	25.67	---	60.00	34.33	70.0	9.000	N	ON	20
16.56	---	20.56	50.00	29.44	70.0	9.000	N	ON	20

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 KHz to 30 MHz

## 6. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Spectrum Analyzer	R&S	FSV30	100815	2020-12-13	2021-12-12
EMI Test Receiver	R&S	ESCI	100948	2020-05-18	2021-05-17
				2021-05-15	2022-05-14
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2020-04-02	2023-04-01
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2019-12-16	2021-12-15
Horn Antenna	R&S	HF907	102723	2018-08-11	2021-08-10
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2021-06-19
EMI Test Receiver	R&S	ESR	101667	2020-05-18	2021-05-17
				2021-05-16	2022-05-15
LISN	R&S	ENV216	101171	2018-12-15	2021-12-14
Spectrum Analyzer	Agilent	N9010A	MY47191109	2020-05-18	2021-05-17
				2021-05-15	2022-05-14
Power Meter	R&S	NRP2	104306	2020-05-18	2021-05-17
				2021-05-15	2022-05-14
Power Sensor	R&S	NRP-Z21	104799	2020-05-18	2021-05-17
				2021-05-15	2022-05-14
RF Cable	Agilent	SMA 15cm	0001	2020-12-10	2021-06-09
Software	R&S	EMC32	9.26.0	/	/

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



## **ANNEX A: The EUT Appearance**

The EUT Appearance are submitted separately.



## **ANNEX B: Test Setup Photos**

The Test Setup Photos are submitted separately.