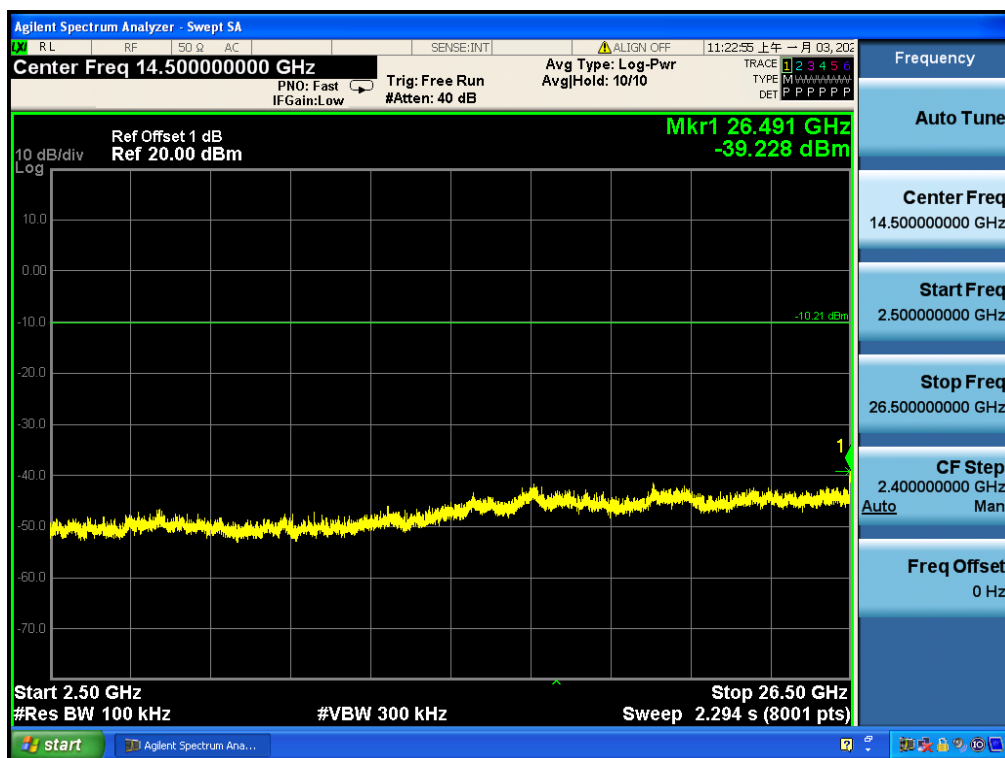
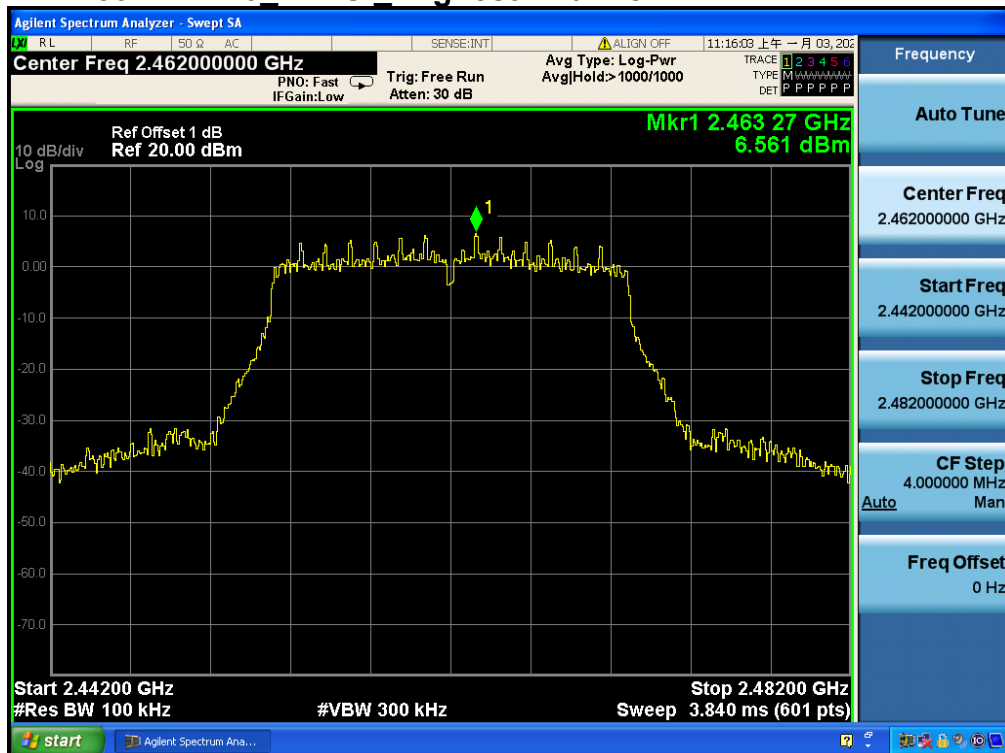
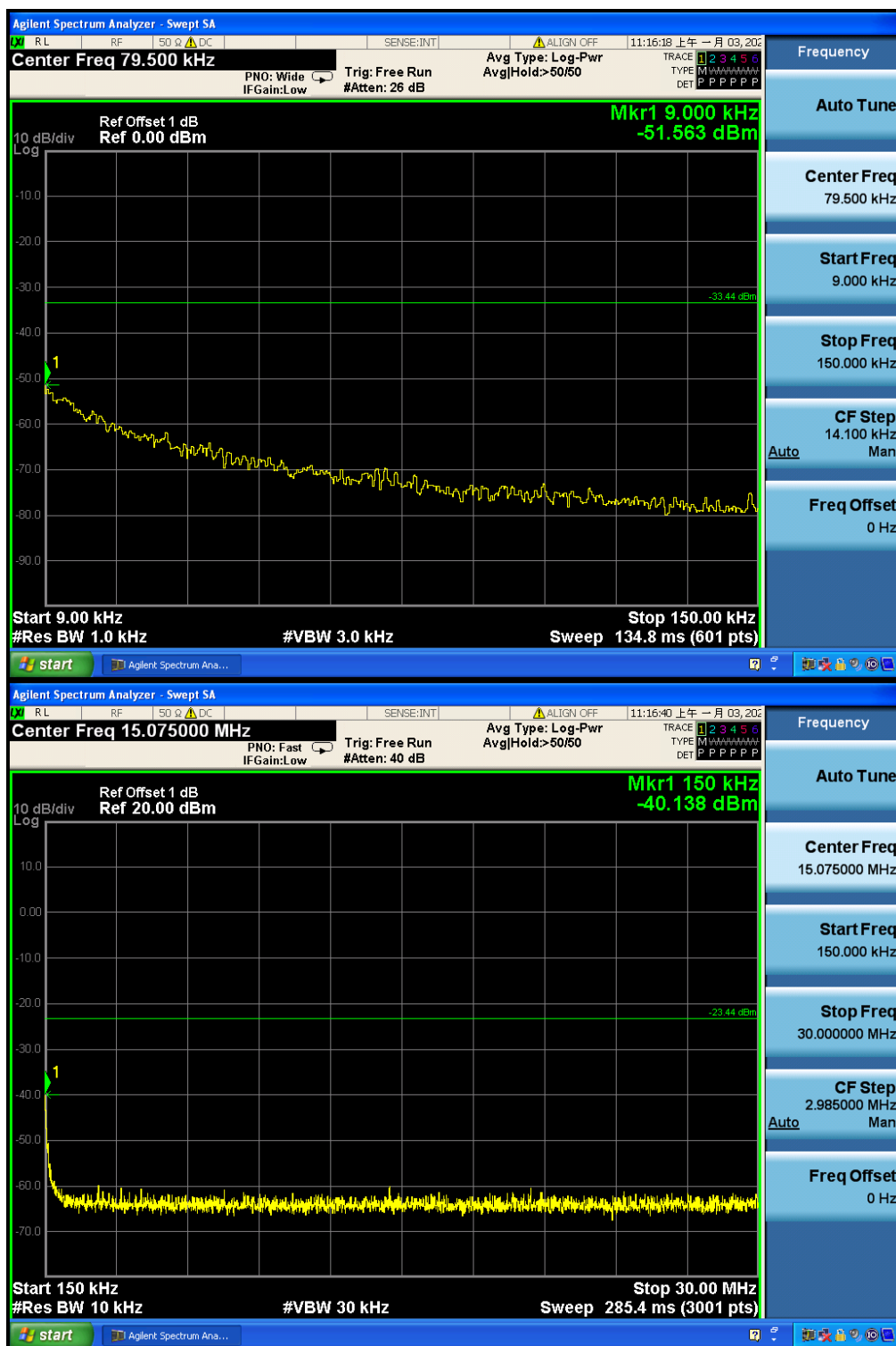






4.8.1.2.12 802.11 N20 MIMO Highest Channel









Remark:



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz was very low, and the above harmonics were the highest point could be found when testing, The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch (SGS-CSTC EEC Laboratory)

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



4.9 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205				
Test Method:	ANSI C63.10 :2013 Section 11.12				
Test Site:	Measurement Distance: 3m or 10m (Semi-Anechoic Chamber)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	100 kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
	Remark: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.				

Test Setup:	
-------------	--



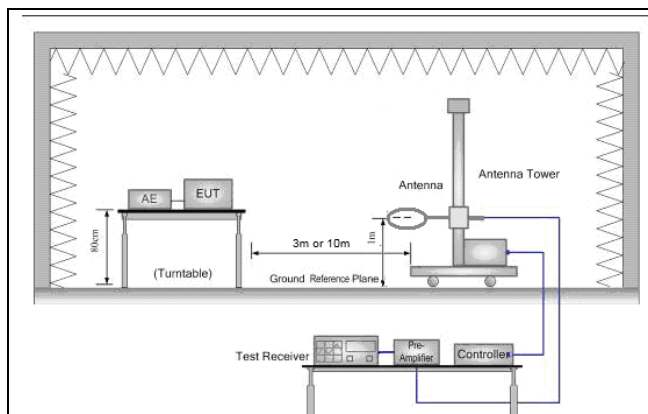


Figure 1. Below 30MHz

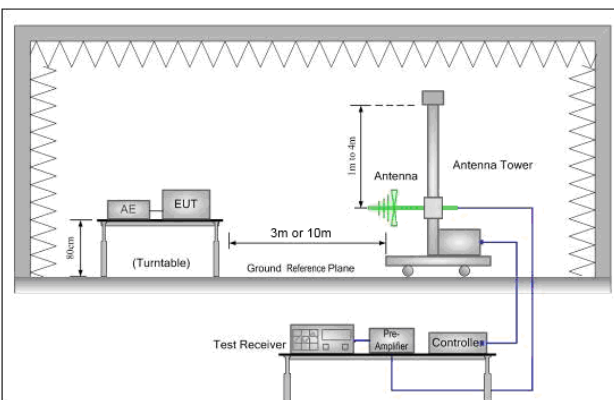


Figure 2. 30MHz to 1GHz

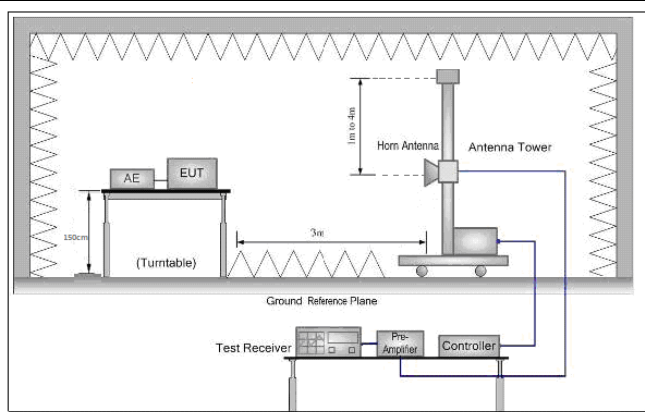


Figure 3. Above 1 GHz

Test Procedure:

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- Use the following spectrum analyzer settings:
 - Span shall wide enough to fully capture the emission being measured;
 - Set RBW=100 kHz for $f < 1$ GHz, RBW=1MHz for $f > 1$ GHz ;
VBW $\geq$ RBW; Sweep = auto;
Detector function = peak; Trace = max hold for peak
 - For average measurement: use duty cycle correction factor method per 15.35(c).

Duty cycle = On time/100 milliseconds

On time = $N_1 * L_1 + N_2 * L_2 + \dots + N_{n-1} * L_{n-1} + N_n * L_n$

Where N_1 is number of type 1 pulses, L_1 is length of type 1 pulses, etc.



	Average Emission Level = Peak Emission Level + 20*log(Duty cycle) f. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters(for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. g. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. h. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. i. Test the EUT in the lowest channel, the middle channel ,the Highest channel j. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case. k. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Charge + Transmitting mode.
Final Test Mode:	Pretest the EUT at Charge + Transmitting mode. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11B; 6Mbps of rate is the worst case of 802.11G; 6.5Mbps of rate is the worst case of 802.11N(HT20); For below 1GHz, through Pre-scan, find the 1Mbps of rate of 802.11B at lowest channel is the worst case. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

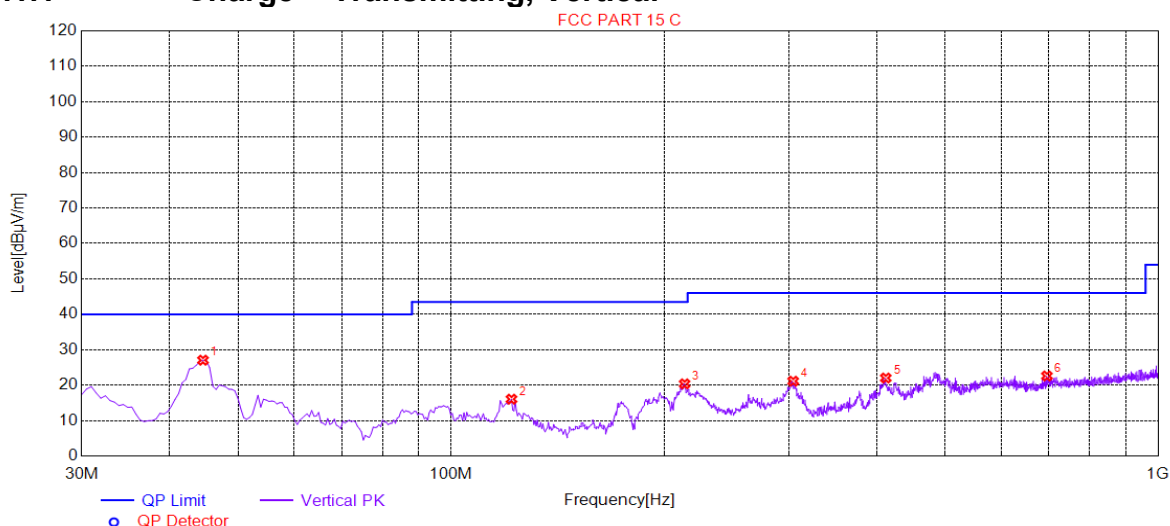
SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch (M-10 Middle Section, Science & Technology Park, Shenzhen, China)

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



4.9.1 Radiated emission below 1GHz

4.9.1.1 Charge + Transmitting, Vertical

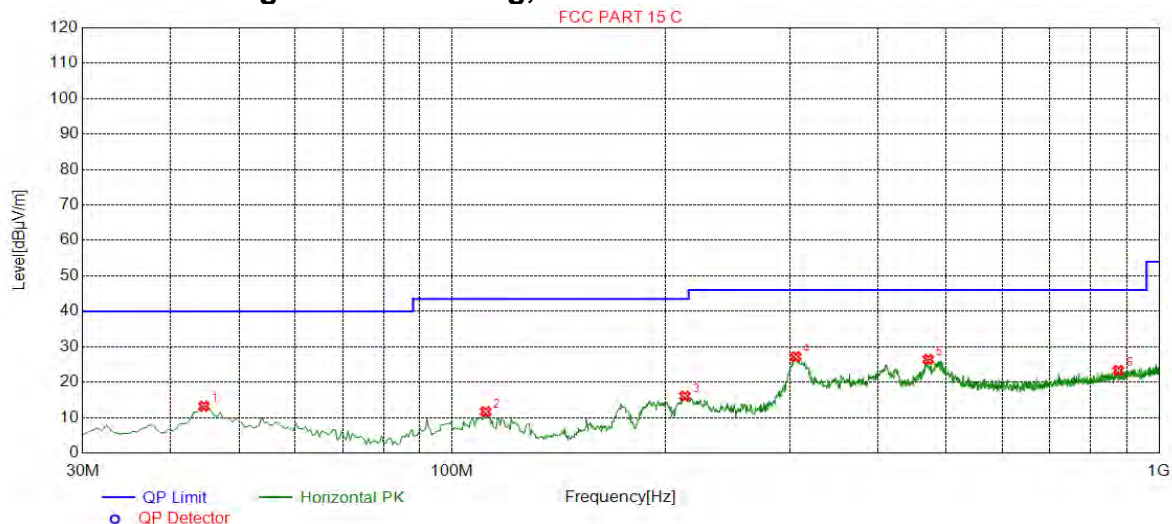


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	44.5573	27.05	-30.29	40.00	12.95	202	6	Vertical
2	121.7109	16.05	-33.52	43.50	27.45	206	0	Vertical
3	213.9070	20.37	-30.50	43.50	23.13	198	332	Vertical
4	304.6473	21.13	-27.72	46.00	24.87	252	206	Vertical
5	411.8859	22.02	-24.65	46.00	23.98	197	304	Vertical
6	696.2381	22.59	-18.85	46.00	23.41	209	182	Vertical



4.9.1.2 Charge + Transmitting, Horizontal



Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	44.5573	13.22	-30.29	40.00	26.78	210	344	Horizontal
2	111.5208	11.66	-31.93	43.50	31.84	122	102	Horizontal
3	213.4217	16.04	-30.52	43.50	27.46	208	282	Horizontal
4	306.1031	27.16	-27.68	46.00	18.84	243	335	Horizontal
5	471.5708	26.42	-23.39	46.00	19.58	178	356	Horizontal
6	875.7779	23.29	-15.62	46.00	22.71	122	86	Horizontal



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

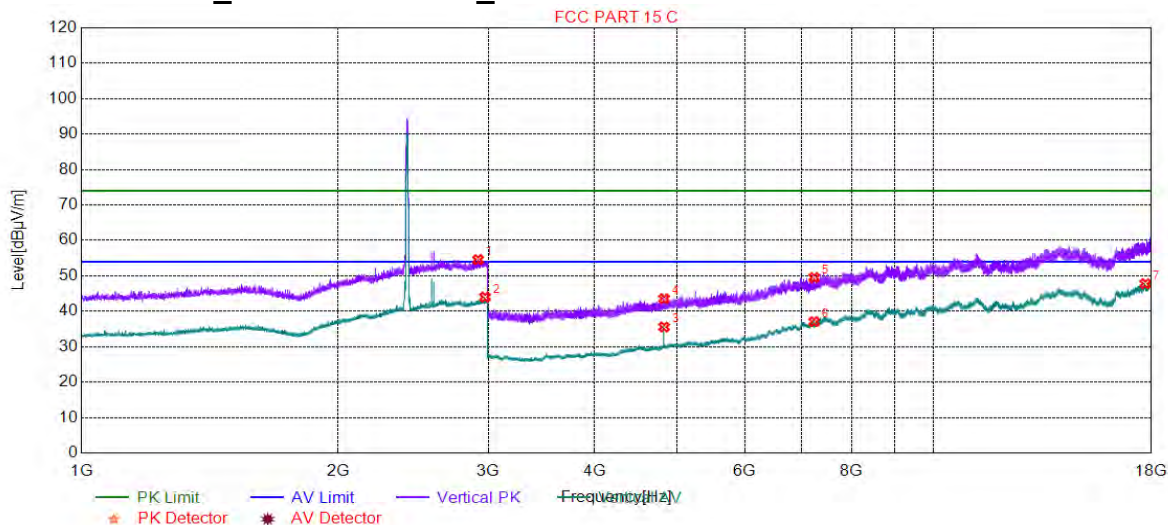
SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch (Middle Section) EMC Laboratory

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

4.9.2 Transmitter emission above 1GHz

4.9.2.1 ANT1

4.9.2.1.1 802.11B_Lowest Channel_ Vertical

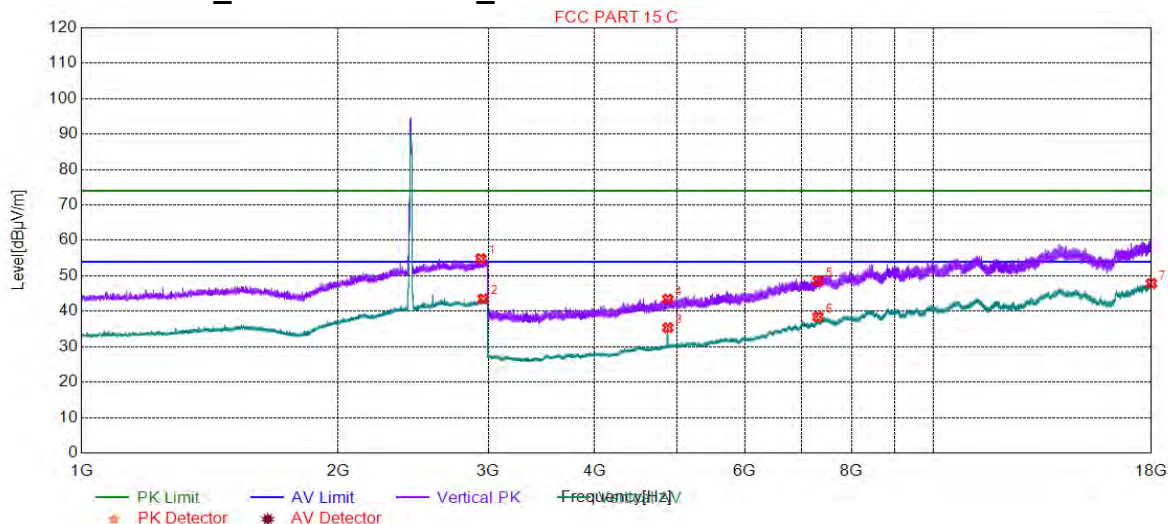


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2918.9797	54.59	9.34	74.00	19.41	203	246	Vertical
2	2973.9935	44.01	9.57	54.00	9.99	198	219	Vertical
3	4824.0000	35.56	-18.21	54.00	18.44	239	209	Vertical
4	4824.0000	43.54	-18.21	74.00	30.46	212	209	Vertical
5	7236.0000	49.52	-9.99	74.00	24.48	298	0	Vertical
6	7236.0000	37.08	-9.99	54.00	16.92	241	41	Vertical
7	17702.4351	47.78	2.31	54.00	6.22	209	242	Vertical



4.9.2.1.2 802.11B_ Middle Channel_ Vertical

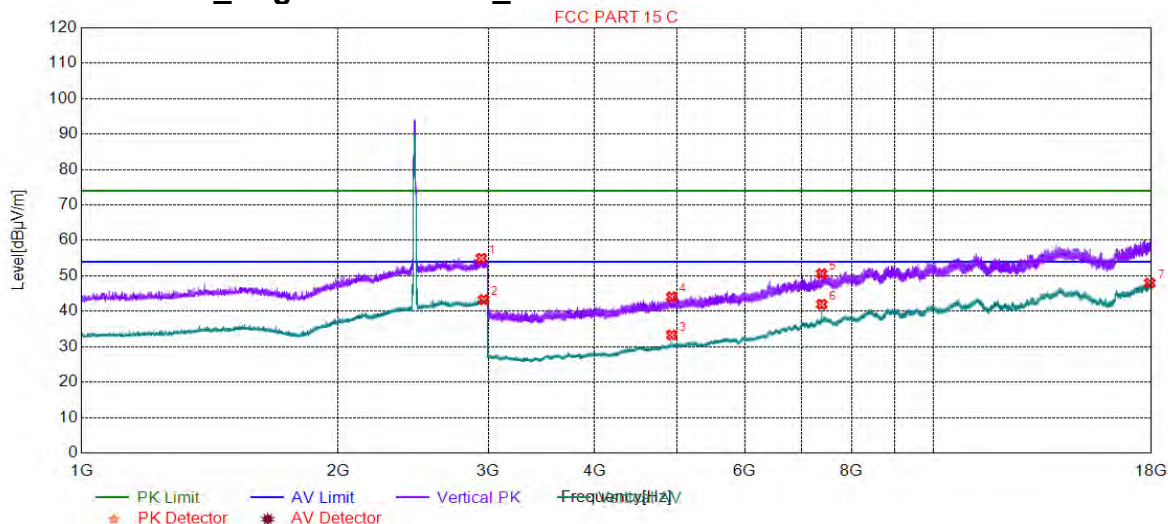


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2940.9852	54.86	9.58	74.00	19.14	197	218	Vertical
2	2958.9897	43.52	9.64	54.00	10.48	186	108	Vertical
3	4874.0000	35.36	-17.99	54.00	18.64	198	211	Vertical
4	4874.0000	43.41	-17.99	74.00	30.59	203	211	Vertical
5	7311.0000	48.63	-9.74	74.00	25.37	301	292	Vertical
6	7311.0000	38.41	-9.74	54.00	15.59	288	0	Vertical
7	17993.9497	47.86	1.72	54.00	6.14	166	143	Vertical



4.9.2.1.3 802.11B_ Highest Channel_ Vertical

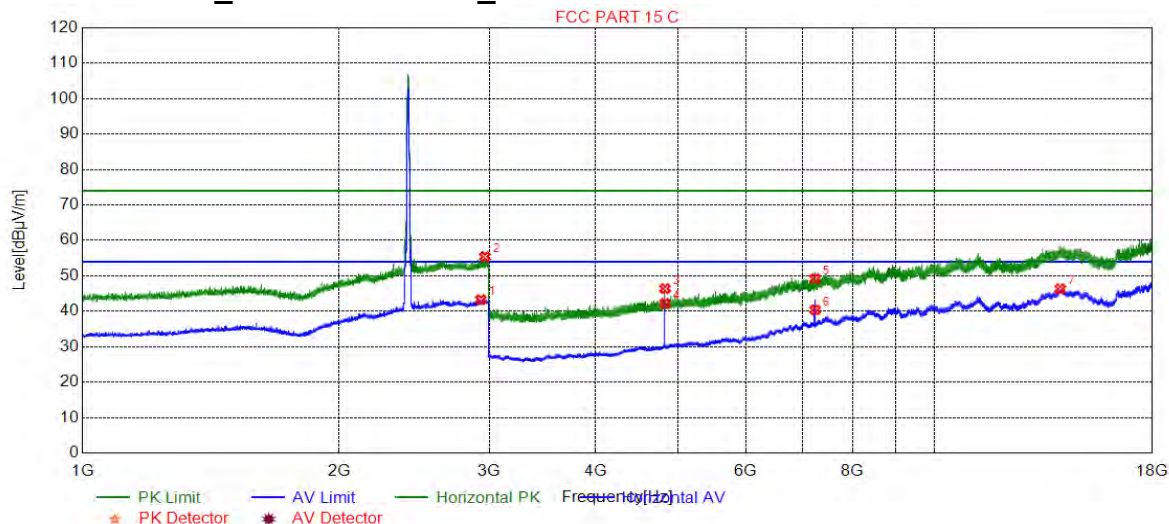


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2944.9862	54.99	9.63	74.00	19.01	201	328	Vertical
2	2962.9907	43.28	9.62	54.00	10.72	243	219	Vertical
3	4924.0000	33.32	-17.72	54.00	20.68	187	210	Vertical
4	4924.0000	44.08	-17.72	74.00	29.92	198	238	Vertical
5	7386.0000	50.60	-9.55	74.00	23.40	202	0	Vertical
6	7386.0000	41.97	-9.55	54.00	12.03	195	0	Vertical
7	17914.1957	47.98	1.69	54.00	6.02	267	142	Vertical



4.9.2.1.4 802.11B_Lowest Channel_ Horizontal

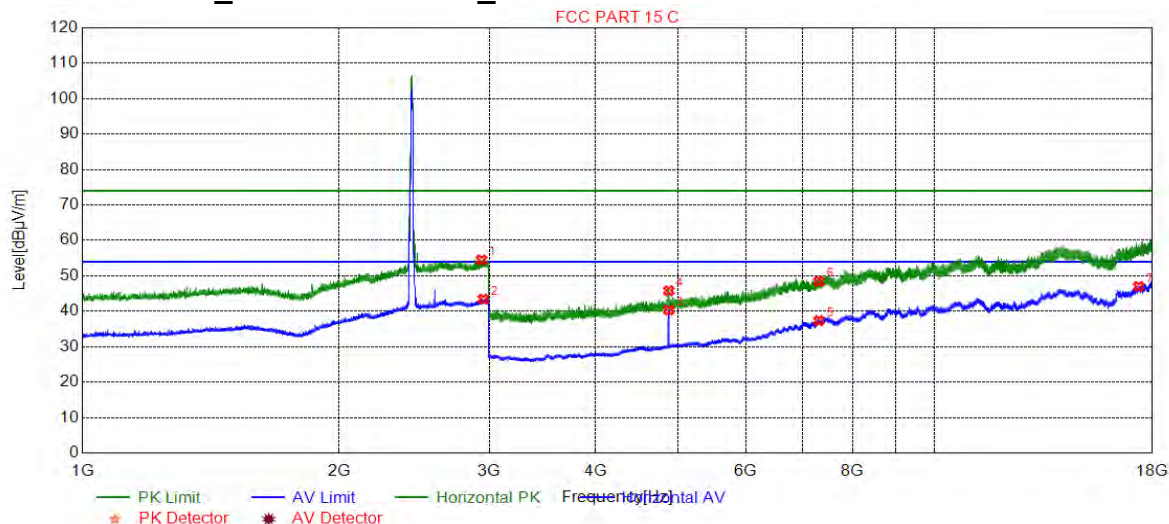


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2932.9832	43.28	9.50	54.00	10.72	198	266	Horizontal
2	2965.9915	55.42	9.61	74.00	18.58	169	101	Horizontal
3	4824.0000	46.39	-18.21	74.00	27.61	159	346	Horizontal
4	4824.0000	42.23	-18.21	54.00	11.77	174	236	Horizontal
5	7236.0000	49.24	-9.99	74.00	24.76	165	292	Horizontal
6	7236.0000	40.41	-9.99	54.00	13.59	189	342	Horizontal
7	14028.8014	46.32	2.60	54.00	7.68	119	242	Horizontal



4.9.2.1.5 802.11B_ Middle Channel_ Horizontal

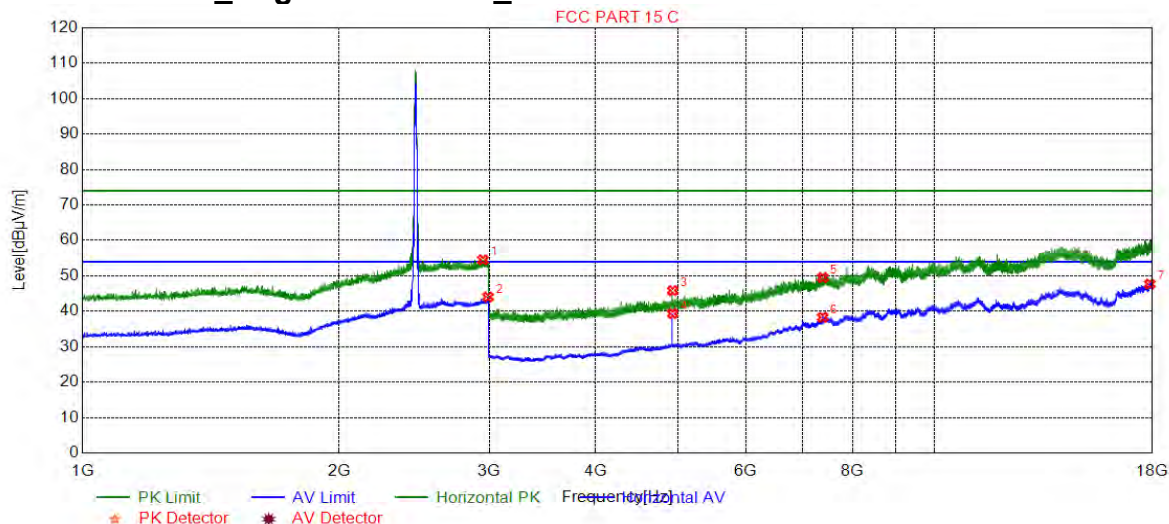


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2938.4846	54.50	9.56	74.00	19.50	195	170	Horizontal
2	2952.4881	43.44	9.67	54.00	10.56	166	198	Horizontal
3	4874.0000	40.33	-17.99	54.00	13.67	186	237	Horizontal
4	4874.0000	45.81	-17.99	74.00	28.19	174	237	Horizontal
5	7311.0000	37.37	-9.74	54.00	16.63	152	40	Horizontal
6	7311.0000	48.47	-9.74	74.00	25.53	149	40	Horizontal
7	17338.3169	47.01	0.98	54.00	6.99	125	91	Horizontal



4.9.2.1.6 802.11B_ Highest Channel_ Horizontal

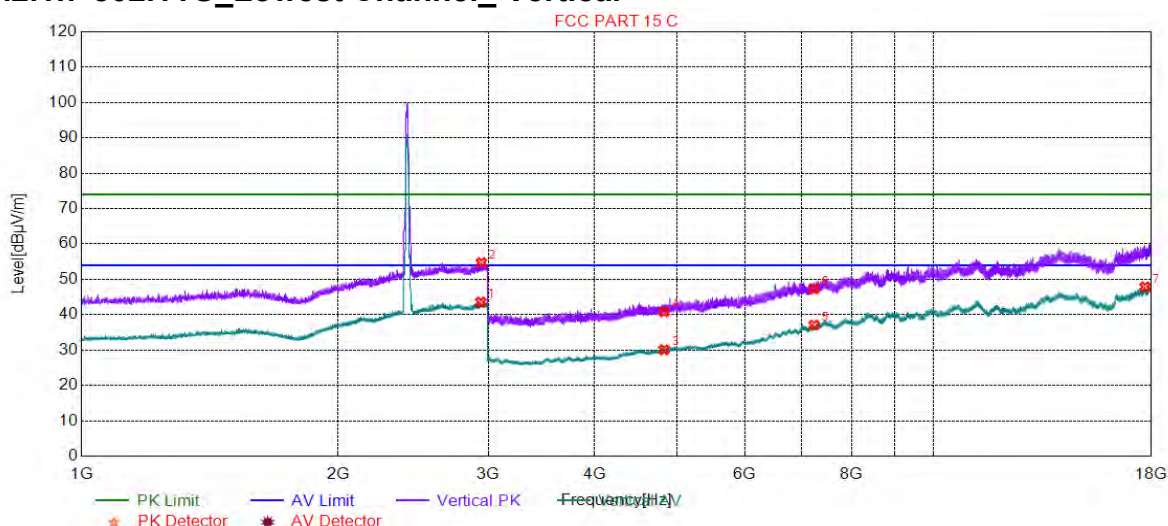


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2948.9872	54.52	9.67	74.00	19.48	152	31	Horizontal
2	2989.9975	44.05	9.50	54.00	9.95	165	86	Horizontal
3	4924.0000	45.82	-17.72	74.00	28.18	186	238	Horizontal
4	4924.0000	39.35	-17.72	54.00	14.65	174	73	Horizontal
5	7386.0000	49.50	-9.55	74.00	24.50	216	42	Horizontal
6	7386.0000	38.29	-9.55	54.00	15.71	201	42	Horizontal
7	17866.8933	47.69	1.25	54.00	6.31	175	292	Horizontal



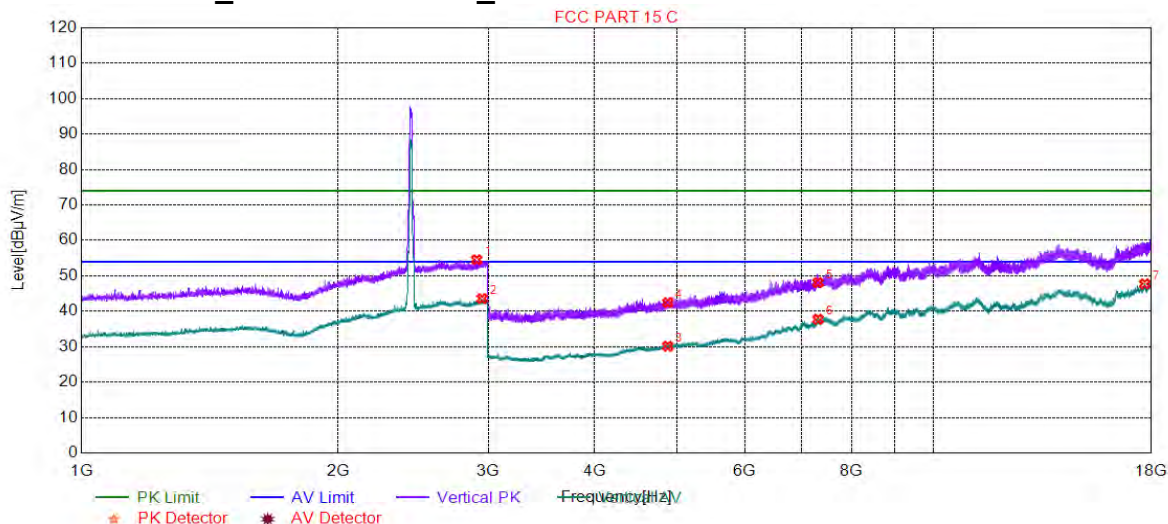
4.9.2.1.7 802.11G_Lowest Channel_Vertical



Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2939.4849	43.57	9.57	54.00	10.43	195	328	Vertical
2	2944.4861	54.74	9.62	74.00	19.26	202	108	Vertical
3	4824.0000	30.10	-18.21	54.00	23.90	197	188	Vertical
4	4824.0000	40.84	-18.21	74.00	33.16	184	157	Vertical
5	7236.0000	37.07	-9.99	54.00	16.93	204	41	Vertical
6	7236.0000	47.31	-9.99	74.00	26.69	195	0	Vertical
7	17690.3345	47.89	2.36	54.00	6.11	184	141	Vertical



4.9.2.1.8 802.11G_ Middle Channel_ Vertical

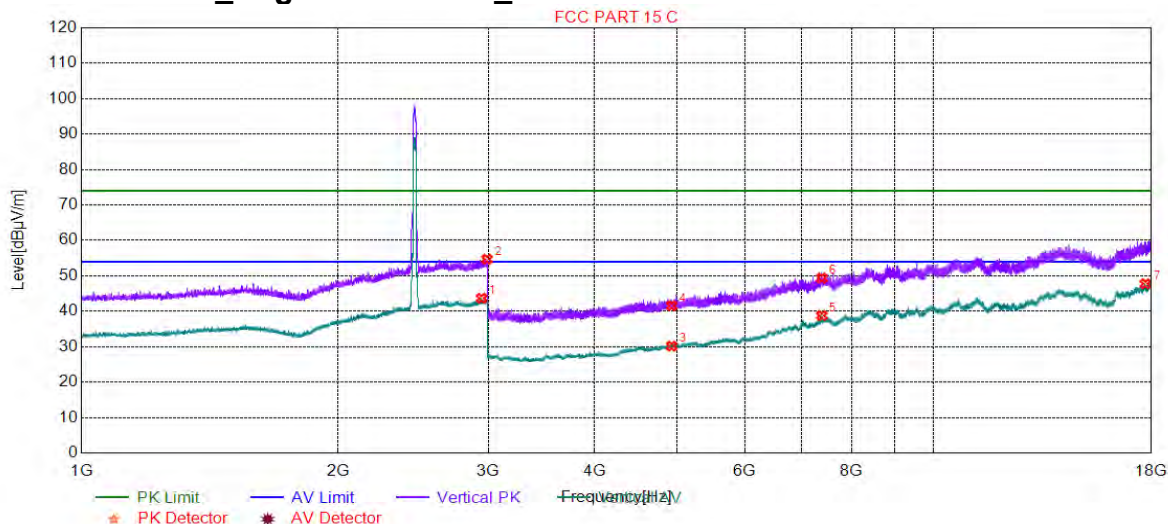


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2907.4769	54.55	9.22	74.00	19.45	198	218	Vertical
2	2950.4876	43.58	9.68	54.00	10.42	187	38	Vertical
3	4874.0000	30.14	-17.99	54.00	23.86	199	56	Vertical
4	4874.0000	42.44	-17.99	74.00	31.56	204	352	Vertical
5	7311.0000	48.09	-9.74	74.00	25.91	216	164	Vertical
6	7311.0000	37.76	-9.74	54.00	16.24	223	2	Vertical
7	17674.3837	47.73	2.35	54.00	6.27	214	2	Vertical



4.9.2.1.9 802.11G_ Highest Channel_ Vertical

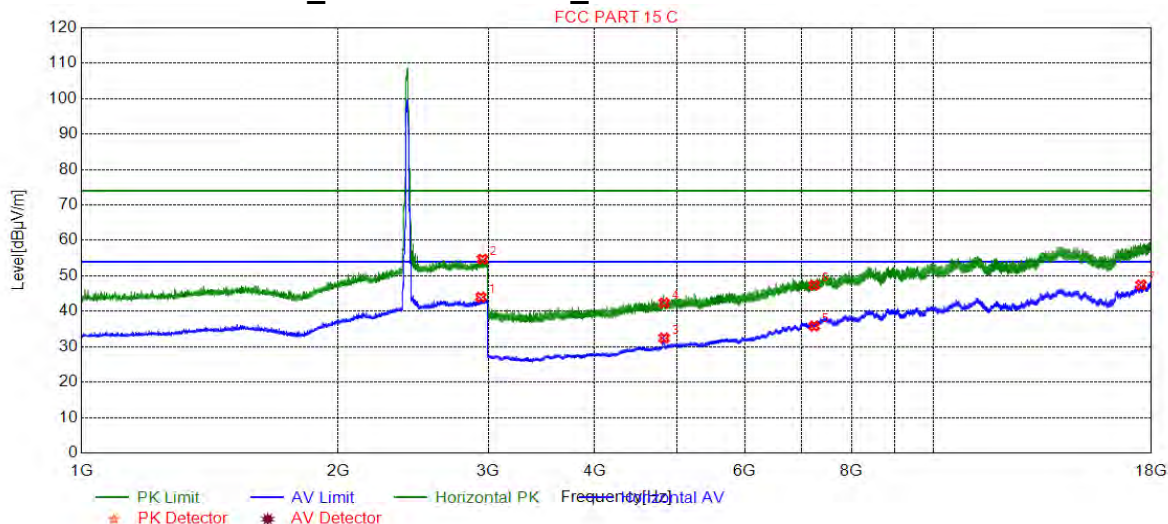


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2946.9867	43.67	9.65	54.00	10.33	198	53	Vertical
2	2989.9975	54.69	9.50	74.00	19.31	188	288	Vertical
3	4924.0000	30.17	-17.72	54.00	23.83	182	46	Vertical
4	4924.0000	41.56	-17.72	74.00	32.44	203	346	Vertical
5	7386.0000	38.81	-9.55	54.00	15.19	186	0	Vertical
6	7386.0000	49.38	-9.55	74.00	24.62	196	342	Vertical
7	17706.2853	47.75	2.23	54.00	6.25	249	342	Vertical



4.9.2.1.10 802.11G_Lowest Channel_ Horizontal

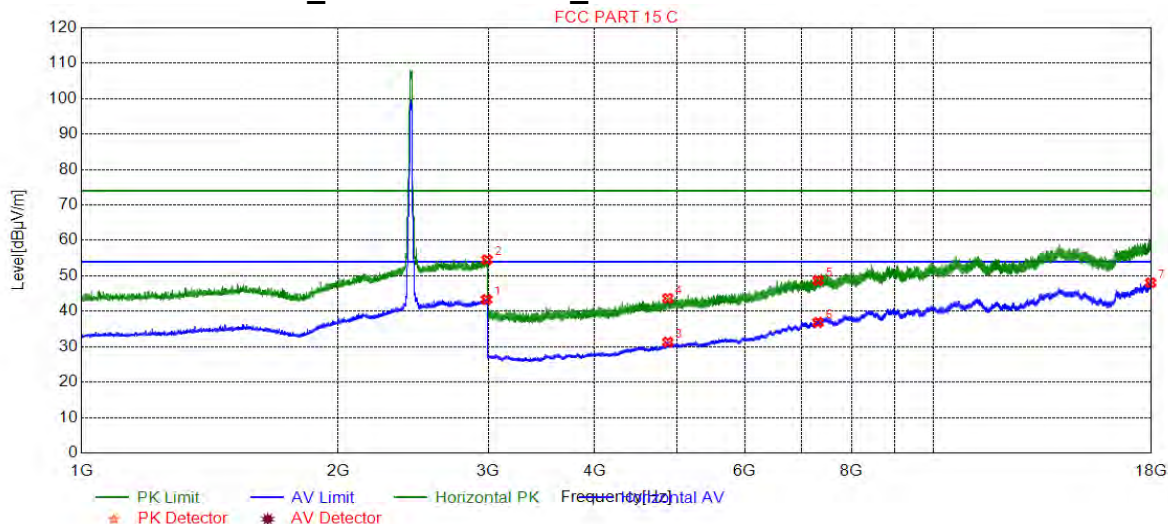


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2940.9852	43.98	9.58	54.00	10.02	169	292	Horizontal
2	2953.9885	54.72	9.66	74.00	19.28	175	237	Horizontal
3	4824.0000	32.44	-18.21	54.00	21.56	149	240	Horizontal
4	4824.0000	42.33	-18.21	74.00	31.67	162	326	Horizontal
5	7236.0000	35.82	-9.99	54.00	18.18	166	342	Horizontal
6	7236.0000	47.35	-9.99	74.00	26.65	184	190	Horizontal
7	17497.2749	47.41	1.90	54.00	6.59	136	0	Horizontal



4.9.2.1.11 802.11G_ Middle Channel_ Horizontal

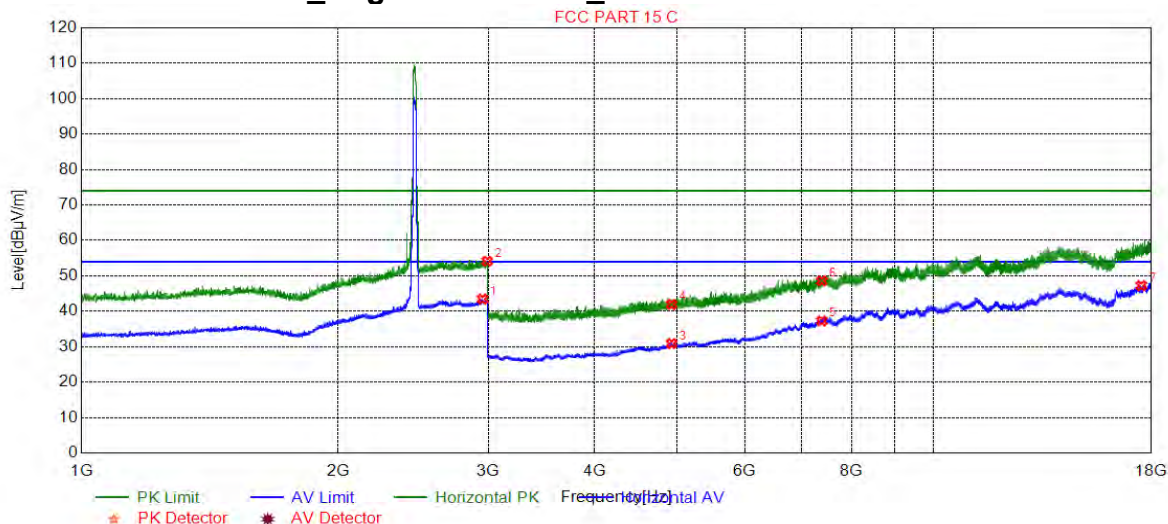


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2986.4966	43.33	9.51	54.00	10.67	149	99	Horizontal
2	2989.9975	54.54	9.50	74.00	19.46	155	196	Horizontal
3	4874.0000	31.30	-17.99	54.00	22.70	178	249	Horizontal
4	4874.0000	43.65	-17.99	74.00	30.35	169	70	Horizontal
5	7311.0000	48.73	-9.74	74.00	25.27	153	232	Horizontal
6	7311.0000	36.83	-9.74	54.00	17.17	188	76	Horizontal
7	17952.6976	48.05	1.71	54.00	5.95	188	127	Horizontal



4.9.2.1.12 802.11G_ Highest Channel_ Horizontal

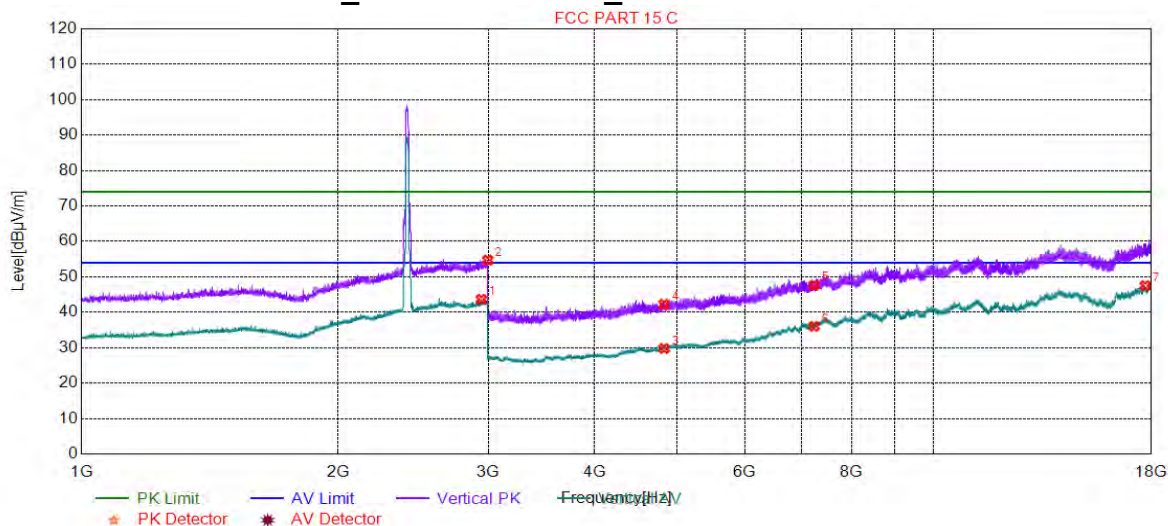


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2954.4886	43.43	9.66	54.00	10.57	159	18	Horizontal
2	2991.4979	54.14	9.49	74.00	19.86	175	99	Horizontal
3	4924.0000	30.88	-17.72	54.00	23.12	185	73	Horizontal
4	4924.0000	41.93	-17.72	74.00	32.07	164	73	Horizontal
5	7386.0000	37.27	-9.55	54.00	16.73	147	42	Horizontal
6	7386.0000	48.58	-9.55	74.00	25.42	169	292	Horizontal
7	17511.0256	47.24	1.96	54.00	6.76	126	292	Horizontal



4.9.2.1.13 802.11N20_Lowest Channel_Vertical

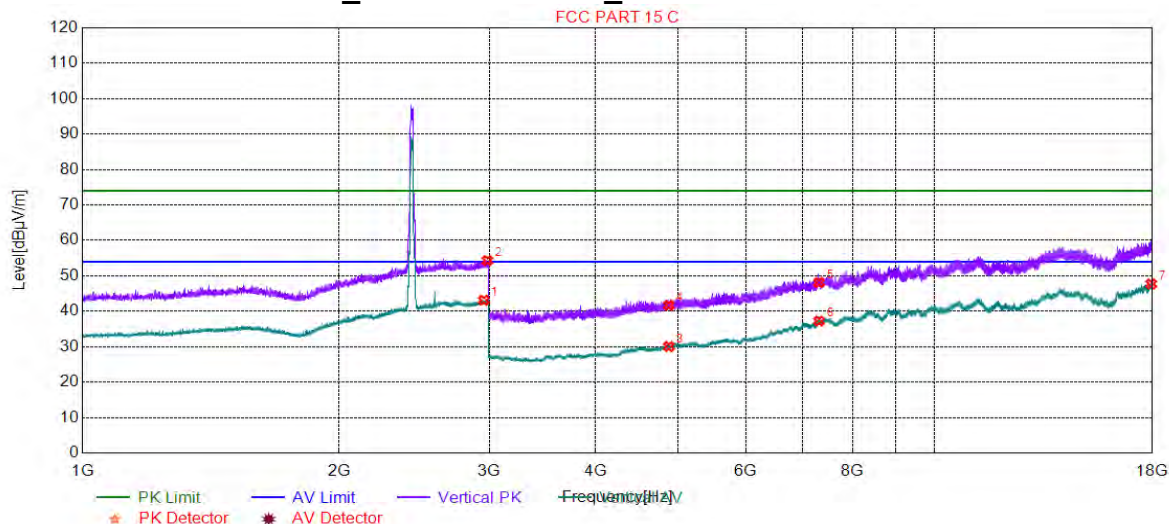


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2944.9862	43.69	9.63	54.00	10.31	201	82	Vertical
2	2996.9993	54.71	9.46	74.00	19.29	199	27	Vertical
3	4824.0000	29.79	-18.21	54.00	24.21	176	154	Vertical
4	4824.0000	42.26	-18.21	74.00	31.74	183	360	Vertical
5	7236.0000	47.65	-9.99	74.00	26.35	197	192	Vertical
6	7236.0000	36.03	-9.99	54.00	17.97	195	0	Vertical
7	17702.4351	47.53	2.31	54.00	6.47	263	241	Vertical



4.9.2.1.14 802.11N20_Middle Channel_Vertical

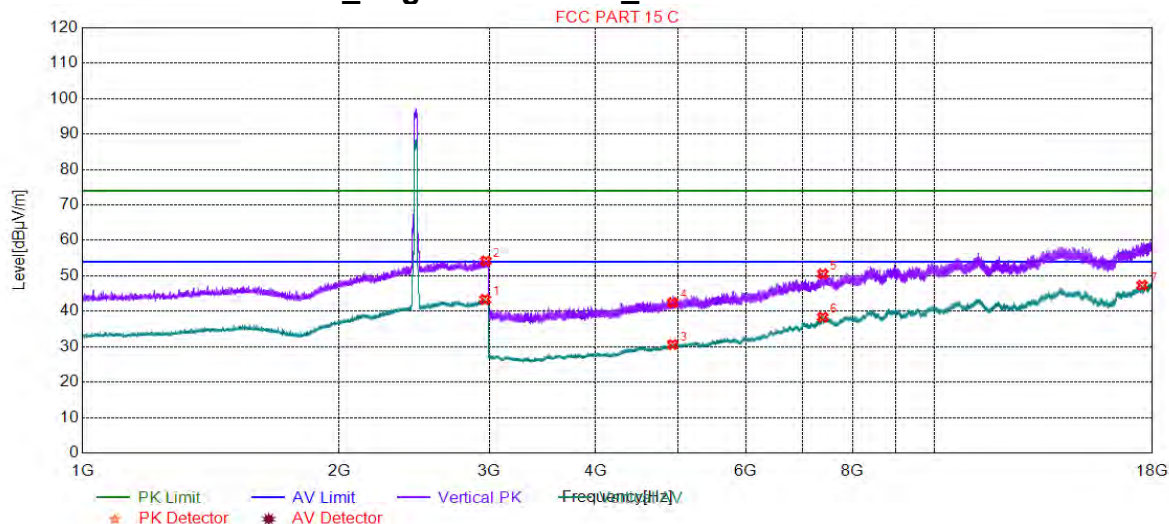


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2955.9890	43.11	9.65	54.00	10.89	202	149	Vertical
2	2985.4964	54.33	9.52	74.00	19.67	198	342	Vertical
3	4874.0000	30.06	-17.99	54.00	23.94	189	156	Vertical
4	4874.0000	41.68	-17.99	74.00	32.32	213	320	Vertical
5	7311.0000	48.13	-9.74	74.00	25.87	247	191	Vertical
6	7311.0000	37.24	-9.74	54.00	16.76	211	191	Vertical
7	17937.2969	47.73	1.70	54.00	6.27	291	0	Vertical



4.9.2.1.15 802.11N20_ Highest Channel_ Vertical

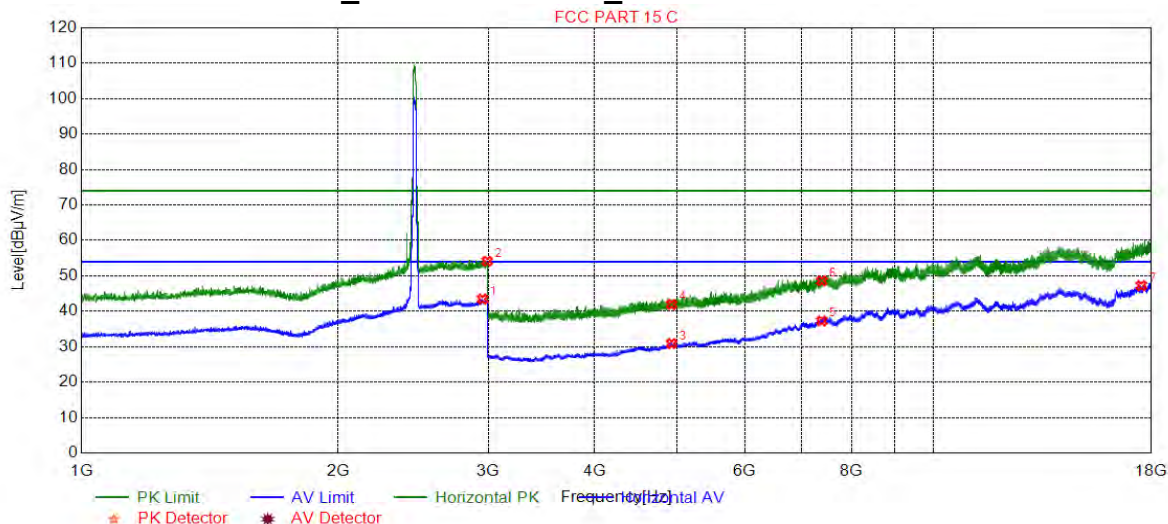


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2966.9917	43.34	9.60	54.00	10.66	198	217	Vertical
2	2972.4931	54.19	9.58	74.00	19.81	203	230	Vertical
3	4924.0000	30.61	-17.72	54.00	23.39	237	72	Vertical
4	4924.0000	42.45	-17.72	74.00	31.55	214	209	Vertical
5	7386.0000	50.54	-9.55	74.00	23.46	199	342	Vertical
6	7386.0000	38.34	-9.55	54.00	15.66	222	191	Vertical
7	17503.8752	47.33	1.94	54.00	6.67	217	191	Vertical



4.9.2.1.16 802.11N20_Lowest Channel_Horizontal

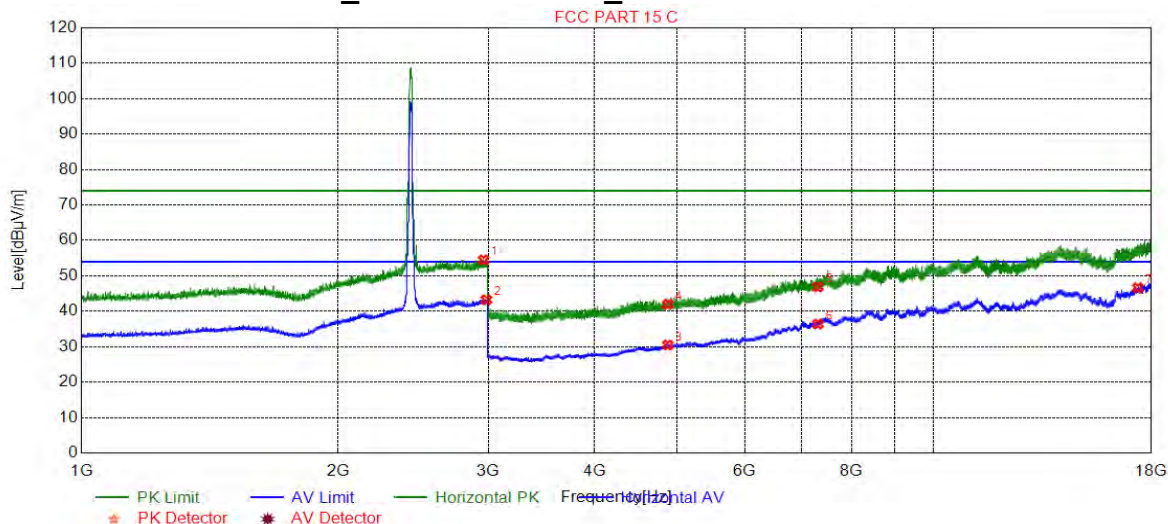


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2954.4886	43.43	9.66	54.00	10.57	159	18	Horizontal
2	2991.4979	54.14	9.49	74.00	19.86	164	99	Horizontal
3	4924.0000	30.88	-17.72	54.00	23.12	186	73	Horizontal
4	4924.0000	41.93	-17.72	74.00	32.07	175	73	Horizontal
5	7386.0000	37.27	-9.55	54.00	16.73	155	42	Horizontal
6	7386.0000	48.58	-9.55	74.00	25.42	179	292	Horizontal
7	17511.0256	47.24	1.96	54.00	6.76	137	292	Horizontal



4.9.2.1.17 802.11N20_ Middle Channel_ Horizontal

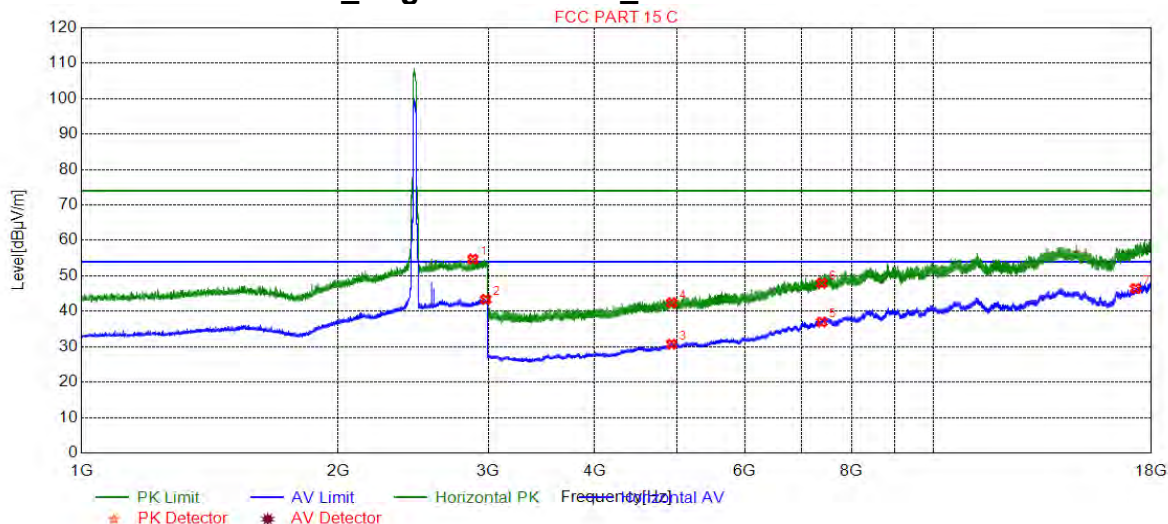


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2962.4906	54.52	9.62	74.00	19.48	168	86	Horizontal
2	2985.9965	43.25	9.51	54.00	10.75	154	265	Horizontal
3	4874.0000	30.50	-17.99	54.00	23.50	172	291	Horizontal
4	4874.0000	41.94	-17.99	74.00	32.06	167	318	Horizontal
5	7311.0000	46.89	-9.74	74.00	27.11	148	342	Horizontal
6	7311.0000	36.41	-9.74	54.00	17.59	163	0	Horizontal
7	17347.6674	46.62	1.02	54.00	7.38	136	241	Horizontal



4.9.2.1.18 802.11N20_ Highest Channel_ Horizontal



Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2878.4696	54.73	9.18	74.00	19.27	159	72	Horizontal
2	2980.9952	43.37	9.54	54.00	10.63	167	306	Horizontal
3	4924.0000	30.72	-17.72	54.00	23.28	174	46	Horizontal
4	4924.0000	42.38	-17.72	74.00	31.62	153	347	Horizontal
5	7386.0000	36.97	-9.55	54.00	17.03	146	41	Horizontal
6	7386.0000	47.90	-9.55	74.00	26.10	169	242	Horizontal
7	17248.6624	46.45	0.42	54.00	7.55	205	141	Horizontal

Remark:

- 1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 2) Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz and 18GHz to 25GHz was very low, and the above harmonics were the highest point could be found when testing, The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
- 3) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.
- 4) All Modes have been tested, but only the worst case data displayed in this report.



4.10 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10: 2013 Section 11.12		
Test Site:	Measurement Distance: 3m or 10m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m @3m)	Remark
	30MHz-88MHz	40.0	Quasi-peak Value
	88MHz-216MHz	43.5	Quasi-peak Value
	216MHz-960MHz	46.0	Quasi-peak Value
	960MHz-1GHz	54.0	Quasi-peak Value
	Above 1GHz	54.0	Average Value
		74.0	Peak Value
Test Setup:			

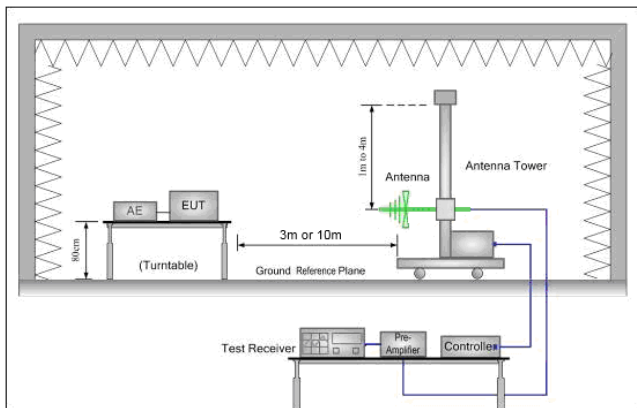


Figure 1. 30MHz to 1GHz

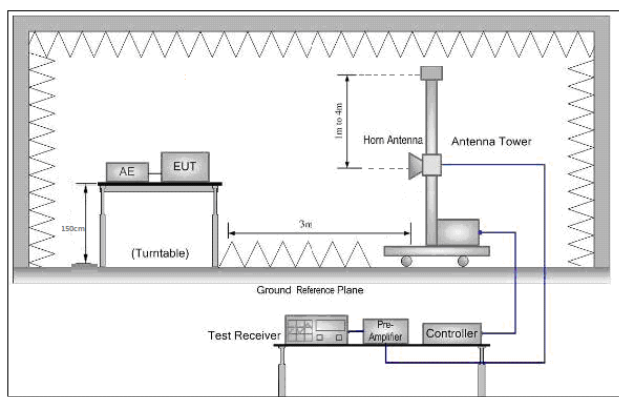


Figure 2. Above 1 GHz



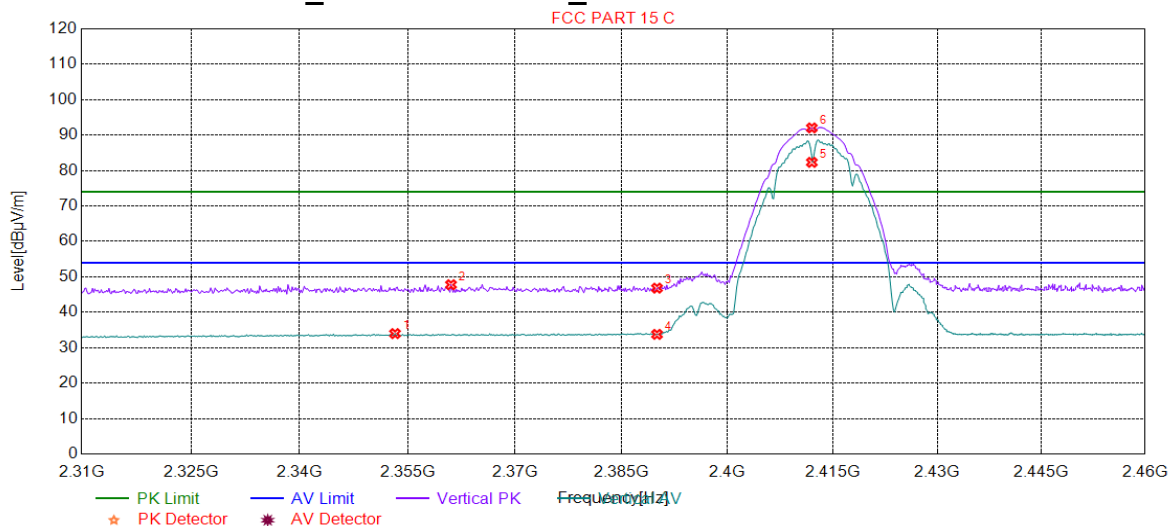


Test Procedure:	a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. g. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel h. Test the EUT in the lowest channel , the Highest channel i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case. j. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates. Charge + Transmitting mode.
Final Test Mode:	Pretest the EUT at Charge +Transmitting mode. Through Pre-scan, find the 1Mbps of rate is the worst case of 802.11B; 6Mbps of rate is the worst case of 802.11G ; 6.5Mbps of rate is the worst case of 802.11N(HT20); Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass



Test plot as follows:

4.10.1.1 802.11B_Lowest Channel_Vertical



Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2353.2432	33.99	7.81	54.00	20.01	315	192	Vertical
2	2361.0511	47.78	7.80	74.00	26.22	246	2	Vertical
3	2390.0000	46.82	7.77	74.00	27.18	201	213	Vertical
4	2390.0000	33.77	7.77	54.00	20.23	241	2	Vertical
5	2412.0000	82.32	7.81	54.00	-28.32	279	80	Vertical
6	2412.0000	92.04	7.81	74.00	-18.04	266	80	Vertical

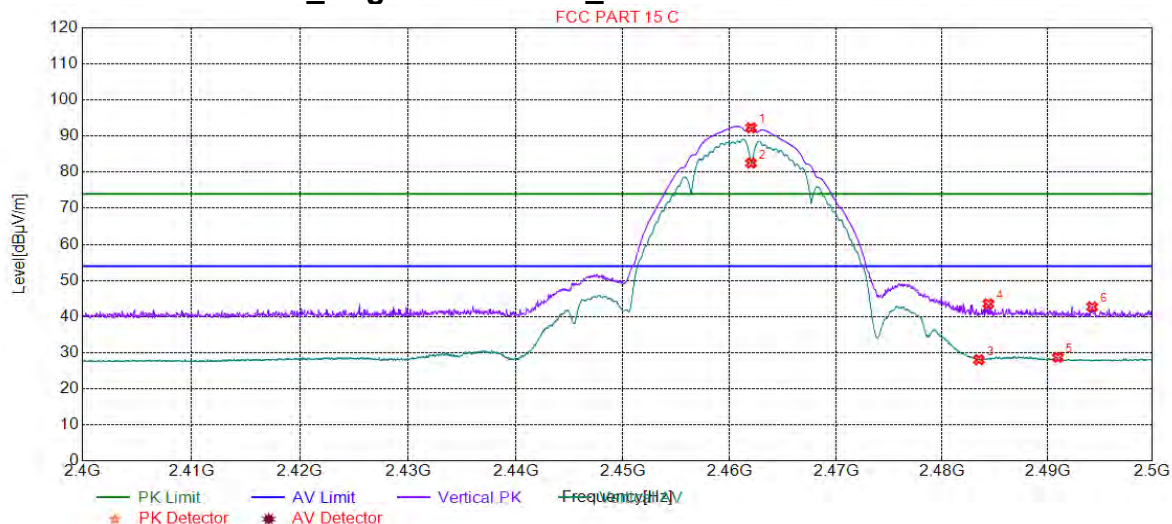


SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch (M-10) Testing Laboratory

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

4.10.1.2 802.11B_ Highest Channel_ Vertical

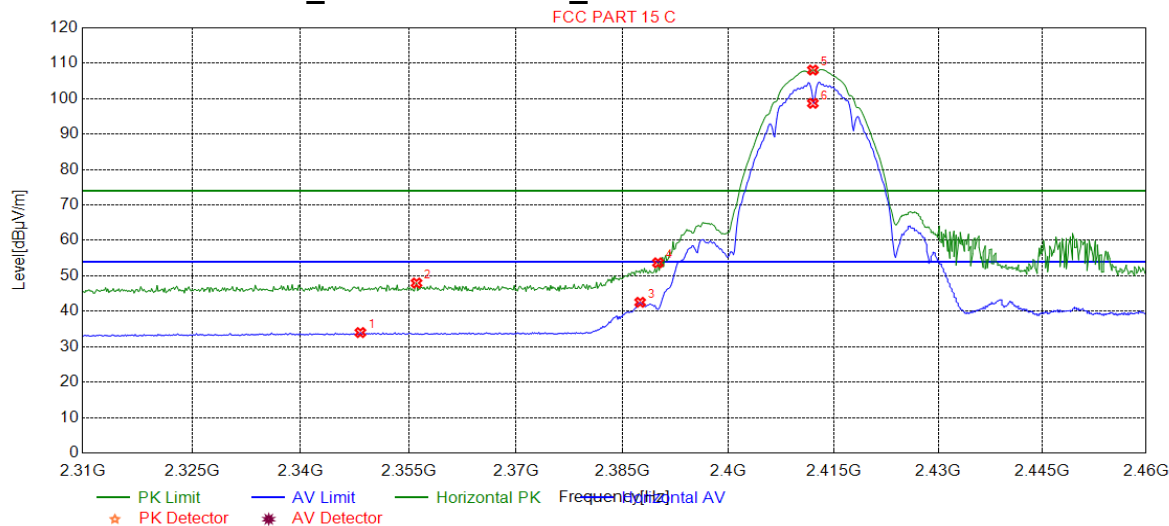


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.0000	92.30	7.98	74.00	-18.30	247	82	Vertical
2	2462.0000	82.53	7.98	54.00	-28.53	245	82	Vertical
3	2483.5000	28.06	8.01	54.00	25.94	261	22	Vertical
4	2484.3922	43.52	8.01	74.00	30.48	206	5	Vertical
5	2490.9955	28.68	8.02	54.00	25.32	246	143	Vertical
6	2494.2471	42.69	8.02	74.00	31.31	274	193	Vertical



4.10.1.3 802.11B_Lowest Channel_Horizontal

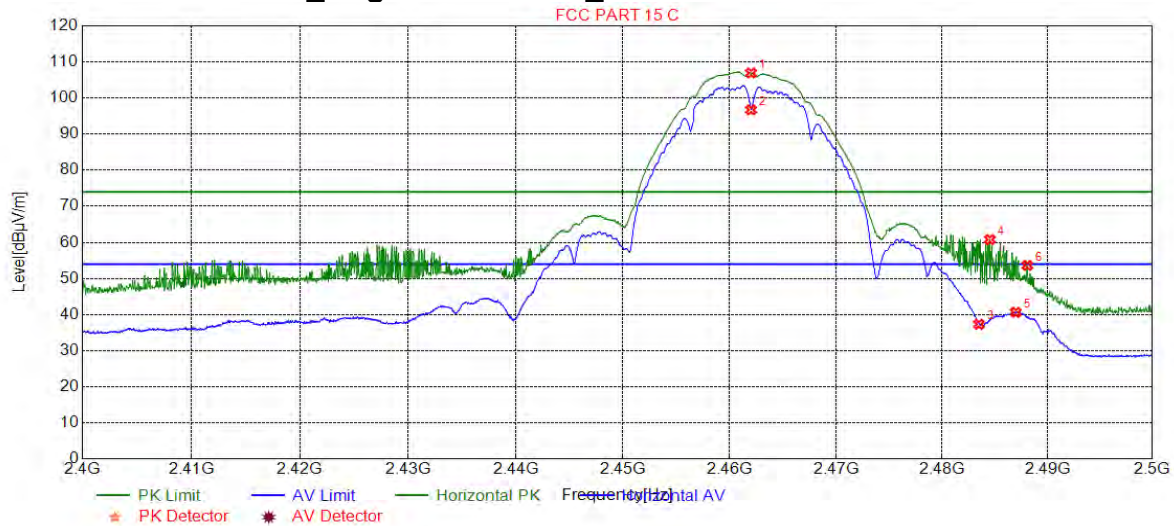


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2348.2883	34.00	7.79	54.00	20.00	154	90	Horizontal
2	2356.0961	47.97	7.80	74.00	26.03	135	37	Horizontal
3	2387.4775	42.54	7.77	54.00	11.46	182	65	Horizontal
4	2390.0000	53.69	7.77	74.00	20.31	162	53	Horizontal
5	2412.0000	108.08	7.81	74.00	-34.08	191	62	Horizontal
6	2412.0000	98.69	7.81	54.00	-44.69	164	62	Horizontal



4.10.1.4 802.11B_ Highest Channel_ Horizontal



Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.0000	106.93	7.98	74.00	-32.93	143	62	Horizontal
2	2462.0000	96.72	7.98	54.00	-42.72	192	62	Horizontal
3	2483.5000	37.31	8.01	54.00	16.69	167	62	Horizontal
4	2484.5423	60.79	8.01	74.00	13.21	159	62	Horizontal
5	2486.9935	40.61	8.01	54.00	13.39	162	62	Horizontal
6	2488.0940	53.62	8.02	74.00	20.38	164	68	Horizontal



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

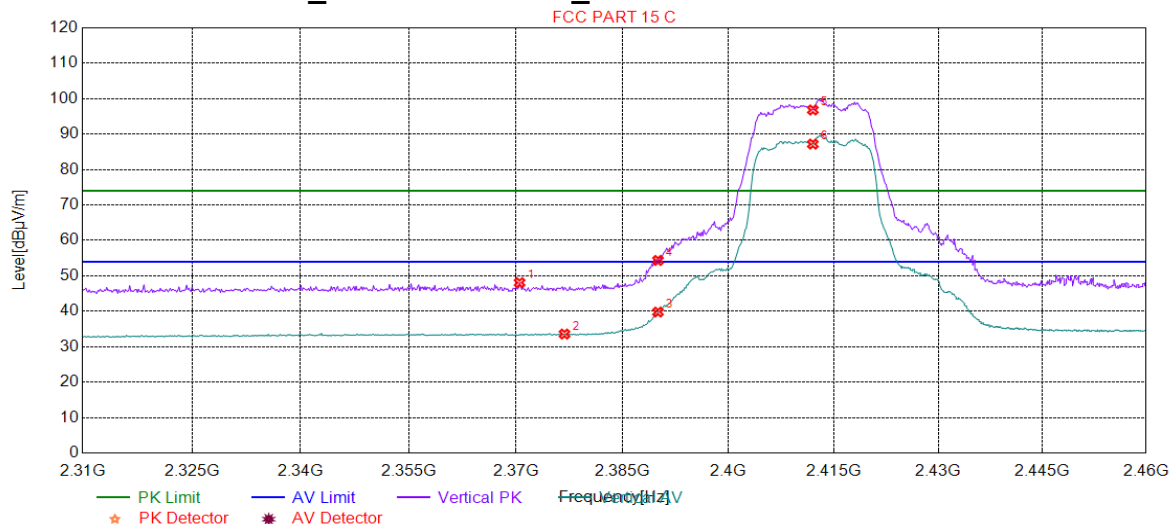
Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch (M-10) Science & Technology Park

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgs.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



4.10.1.5 802.11G_Lowest Channel_ Vertical

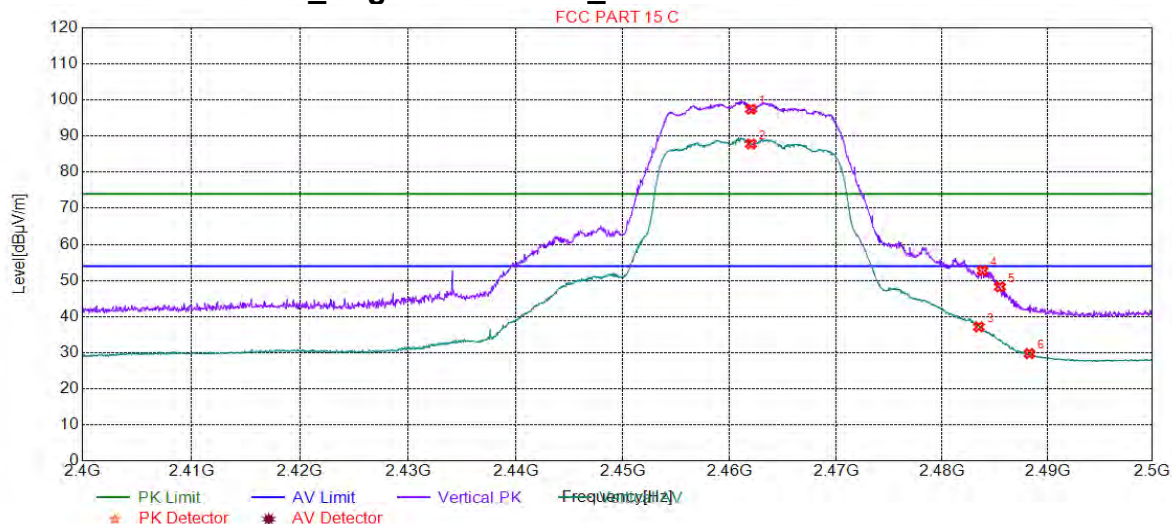


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2370.5105	48.07	7.79	74.00	25.93	201	296	Vertical
2	2376.8168	33.58	7.78	54.00	20.42	245	106	Vertical
3	2390.0000	39.79	7.77	54.00	14.21	261	40	Vertical
4	2390.0000	54.36	7.77	74.00	19.64	241	15	Vertical
5	2412.0000	96.82	7.81	74.00	-22.82	263	152	Vertical
6	2412.0000	87.19	7.81	54.00	-33.19	277	152	Vertical



4.10.1.6 802.11G_ Highest Channel_ Vertical



Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.0000	97.45	7.98	74.00	-23.45	256	169	Vertical
2	2462.0000	87.85	7.98	54.00	-33.85	234	163	Vertical
3	2483.5000	37.15	8.01	54.00	16.85	246	191	Vertical
4	2483.8419	52.73	8.01	74.00	21.27	221	253	Vertical
5	2485.4927	48.23	8.01	74.00	25.77	241	247	Vertical
6	2488.2941	29.74	8.02	54.00	24.26	200	191	Vertical



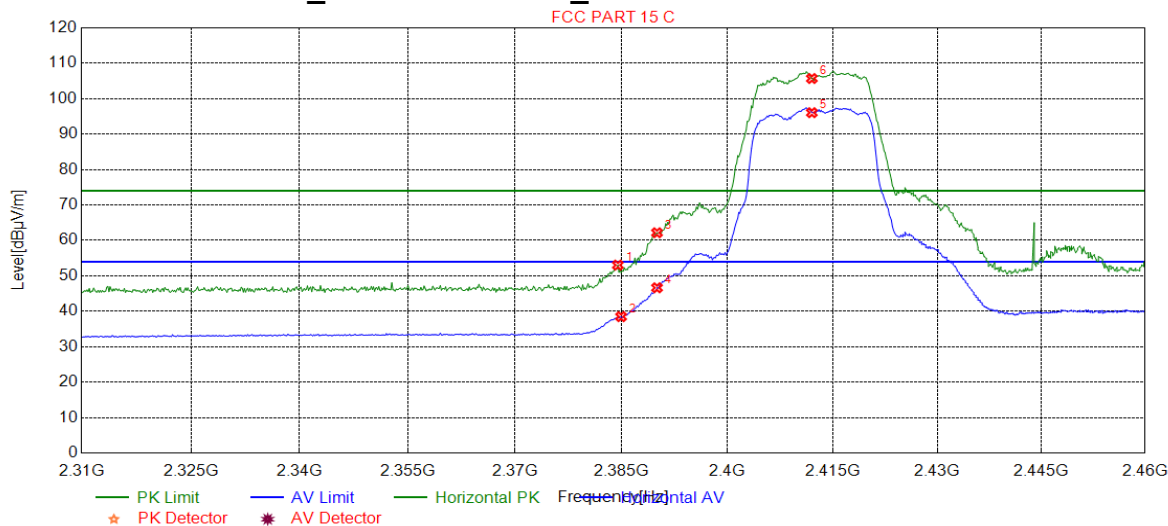
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch (M-10) Science & Technology Park

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

4.10.1.7 802.11G_Lowest Channel_ Horizontal

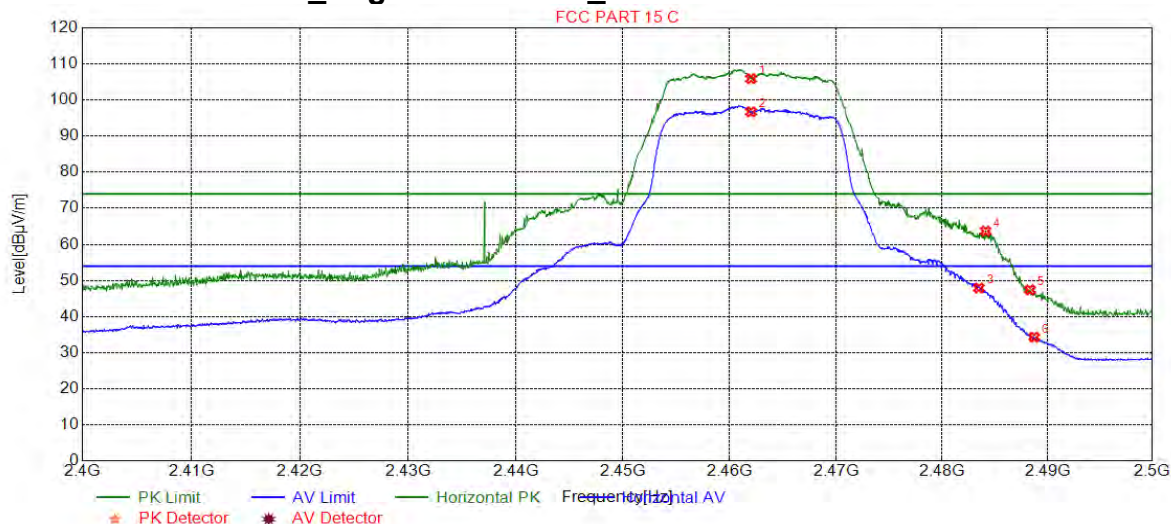


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2384.4745	53.04	7.78	74.00	20.96	125	42	Horizontal
2	2384.9249	38.49	7.78	54.00	15.51	144	47	Horizontal
3	2390.0000	62.17	7.77	74.00	11.83	116	47	Horizontal
4	2390.0000	46.64	7.77	54.00	7.36	130	47	Horizontal
5	2412.0000	96.05	7.81	54.00	-42.05	154	51	Horizontal
6	2412.0000	105.70	7.81	74.00	-31.70	164	47	Horizontal



4.10.1.8 802.11G_ Highest Channel_ Horizontal

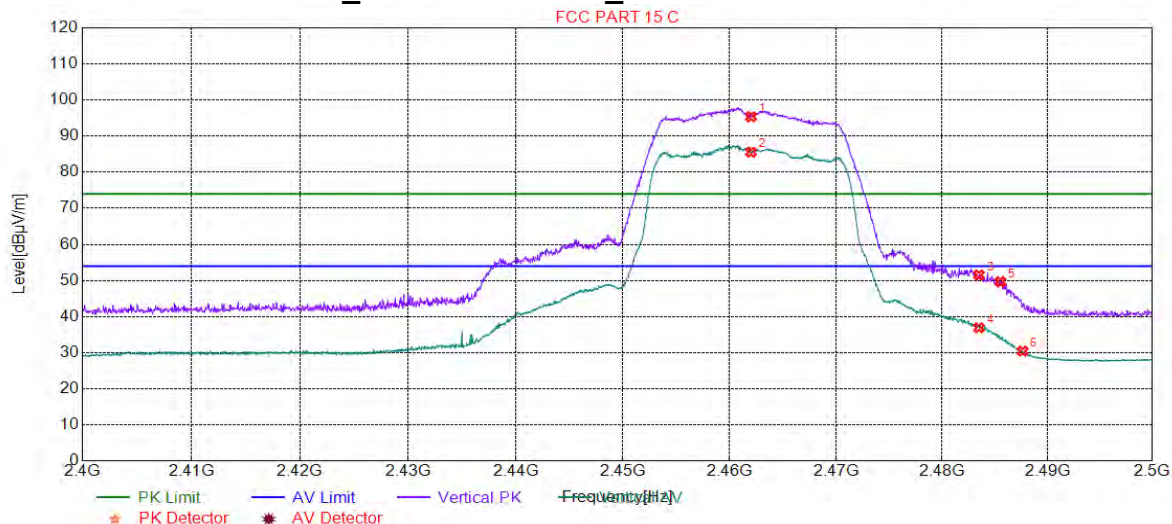


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.0000	105.89	7.98	74.00	-31.89	165	53	Horizontal
2	2462.0000	96.72	7.98	54.00	-42.72	145	48	Horizontal
3	2483.5000	47.92	8.01	54.00	6.08	135	53	Horizontal
4	2484.1421	63.67	8.01	74.00	10.33	138	48	Horizontal
5	2488.3442	47.40	8.02	74.00	26.60	145	59	Horizontal
6	2488.7444	34.31	8.02	54.00	19.69	152	53	Horizontal



4.10.1.9 802.11N20_Lowest Channel_Vertical



Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.0000	95.37	7.98	74.00	-21.37	231	167	Vertical
2	2462.0000	85.57	7.98	54.00	-31.57	246	167	Vertical
3	2483.5000	51.54	8.01	74.00	22.46	274	149	Vertical
4	2483.5000	36.89	8.01	54.00	17.11	272	118	Vertical
5	2485.5428	49.66	8.01	74.00	24.34	265	129	Vertical
6	2487.6438	30.42	8.02	54.00	23.58	245	44	Vertical



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

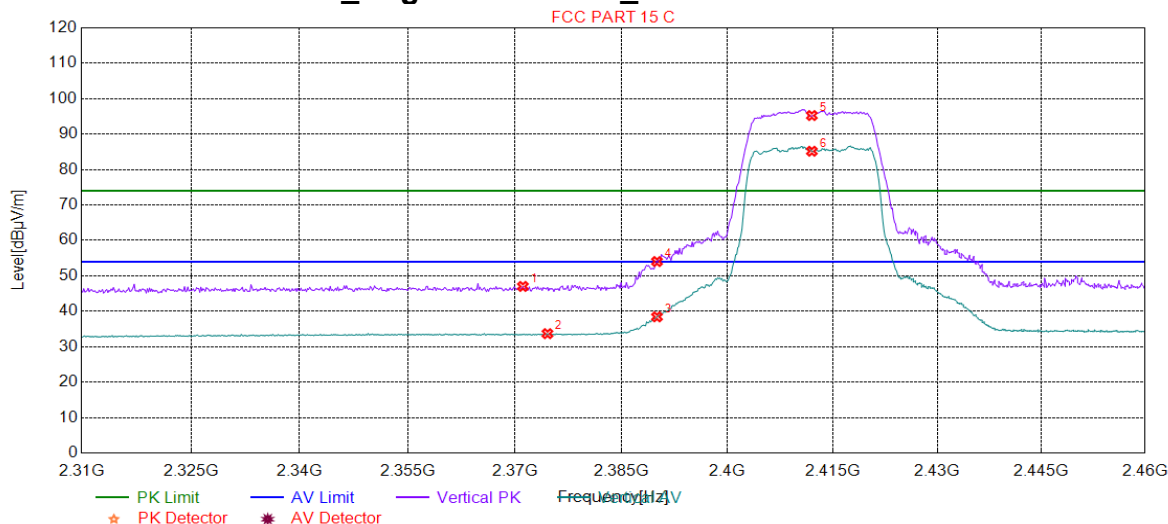
Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch (M-10) Science & Technology Park

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



4.10.1.10 802.11N20_ Highest Channel_ Vertical

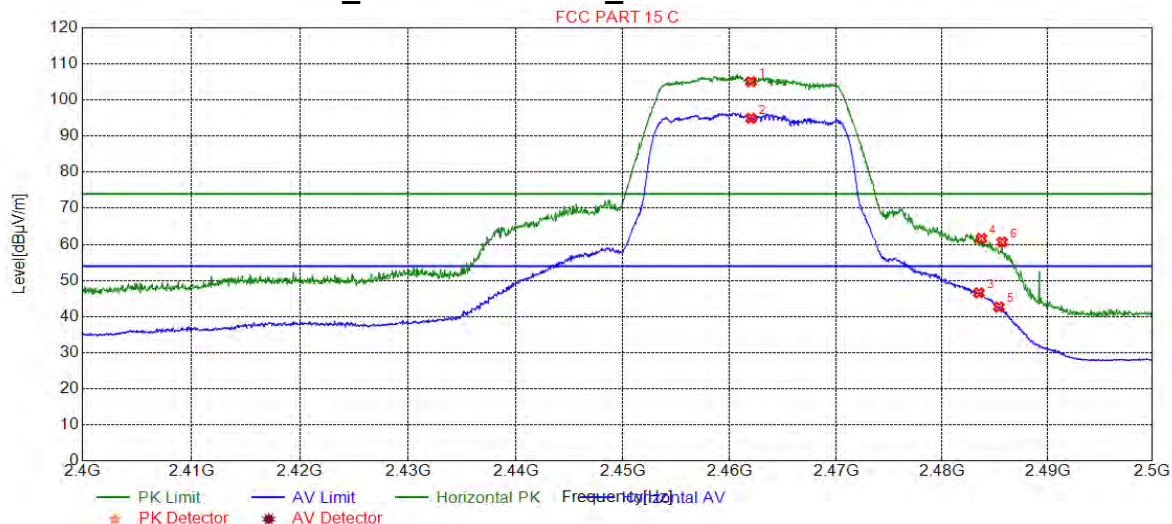


Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2371.1111	47.02	7.79	74.00	26.98	278	29	Vertical
2	2374.5646	33.69	7.79	54.00	20.31	221	337	Vertical
3	2390.0000	38.43	7.77	54.00	15.57	264	346	Vertical
4	2390.0000	54.04	7.77	74.00	19.96	264	145	Vertical
5	2412.0000	95.25	7.81	74.00	-21.25	245	295	Vertical
6	2412.0000	85.18	7.81	54.00	-31.18	245	295	Vertical



4.10.1.11 802.11N20_Lowest Channel_Horizontal



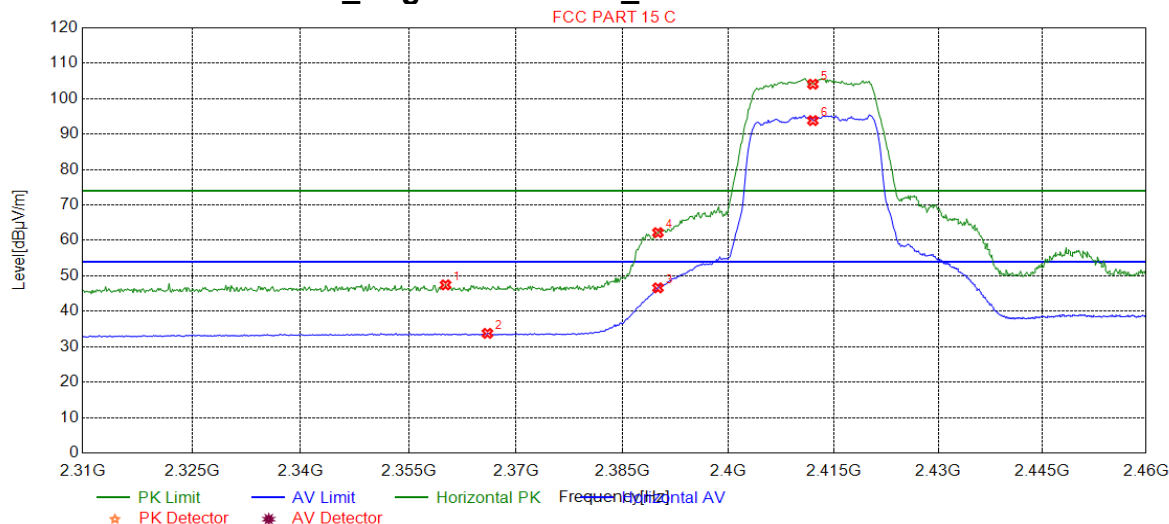
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.0000	105.08	7.98	74.00	-31.08	127	56	Horizontal
2	2462.0000	94.93	7.98	54.00	-40.93	115	56	Horizontal
3	2483.5000	46.58	8.01	54.00	7.42	162	62	Horizontal
4	2483.7419	61.65	8.01	74.00	12.35	151	88	Horizontal
5	2485.3927	42.67	8.01	54.00	11.33	132	56	Horizontal
6	2485.6928	60.64	8.01	74.00	13.36	125	56	Horizontal





4.10.1.12 802.11N20_ Highest Channel_ Horizontal



Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2360.1502	47.45	7.80	74.00	26.55	262	0	Horizontal
2	2366.0060	33.77	7.79	54.00	20.23	274	91	Horizontal
3	2390.0000	46.61	7.77	54.00	7.39	233	38	Horizontal
4	2390.0000	62.20	7.77	74.00	11.80	249	42	Horizontal
5	2412.0000	104.10	7.81	74.00	-30.10	212	42	Horizontal
6	2412.0000	93.82	7.81	54.00	-39.82	200	52	Horizontal

Remark:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

All Modes have been tested, but only the worst case data displayed in this report.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



5 Measurement Uncertainty (95% confidence levels, k=2)

Lab A:

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	$\pm 0.75\text{dB}$
2	RF power density, conducted	$\pm 2.84\text{dB}$
3	Spurious emissions, conducted	$\pm 0.75\text{dB}$
4	Temperature test	$\pm 1^{\circ}\text{C}$
5	Humidity test	$\pm 3\%$
6	DC and low frequency voltages	$\pm 0.5\%$

Lab B:

No.	Item	Measurement Uncertainty
1	Conduction Emission	$\pm 3.0\text{dB}$ (150kHz to 30MHz)
2	Radiated Emission	$\pm 4.8\text{dB}$ (Below 1GHz)
		$\pm 4.8\text{dB}$ (1GHz to 6GHz)
		$\pm 4.5\text{dB}$ (6GHz to 18GHz)
		$\pm 5.02\text{dB}$ (Above 18GHz)



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

6 Equipment List

RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
DC Power Supply	Agilent Technologies Inc	66311B	W009-09	2019/7/15	2020/7/15
Signal Analyzer	Rohde & Schwarz	FSV	W025-05	2019/4/9	2020/4/8
Coaxial Cable	SGS	N/A	SEM031-01	2019/8/12	2020/8/11
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEY SIGHT	N5173B	SEM008-05	2019/7/14	2020/7/14
Temperature Chamber	GIANT FORCE	ICT-150-40-CP-AR	W027-03	2019/10/27	2020/10/27
Power Meter	Rohde & Schwarz	NRV/S	SEM014-02	2019/7/14	2020/7/14

CE Test System					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	Brilliant-emc	N/A	XAW03-35-01	2019-09-11	2022-09-10
Test receiver	ROHDE&SCHWARZ	ESR	XAW01-08-01	2019-09-07	2020-09-06
Artificial network	ROHDE&SCHWARZ	ENV216	XAW01-04-01	2019-07-16	2020-07-15
Temperature and humidity meter	MingGao	TH101B	XAW01-01-01	2019-12-06	2020-12-05
Measurement Software	Tonscend	TS+ CE V2.5	XAW02-05-02	NCR	NCR

RSE Test System					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Semi-Anechoic Chamber	Brilliant-emc	N/A	XAW03-35-01	2019-09-11	2022-09-10
MXA signal analyzer	Keysight	N9020A	XAW01-06-01	2019-06-27	2020-06-26
Test receiver	ROHDE&SCHWARZ	ESR	XAW01-08-01	2019-09-07	2020-09-06
Receiving antenna (30MHz-3GHz)	Schwarzbeck	VULB 9163	XAW01-09-01	2019-10-13	2021-10-12
Receiving antenna (1GHz~18GHz)	Schwarzbeck	BBHA 9120D	XAW01-09-02	2019-10-13	2021-10-12
Receiving antenna (15GHz~40GHz)	Schwarzbeck	BBHA 9170	XAW01-09-03	2019-10-13	2021-10-12
Directional antenna rack controller	Max-Full	MF-7802BS	XAW03-03-01	NCR	NCR
High-speed antenna rack controller	Max-Full	MF-7802	XAW03-04-01	NCR	NCR
Filter bank	Tonscend	JS0806-F	XAW03-05-01	NCR	NCR
Filter bank	Tonscend	JS0806s	XAW03-05-02	NCR	NCR
Amplifier	Tonscend	TAP00903040	XAW01-41-01	2019-11-18	2020-11-17
Amplifier	Tonscend	TAP01018048	XAW01-41-02	2019-11-18	2020-11-17



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
 No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgs.com.cn
 中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com



Amplifier	Tonscend	TAP18040048	XAW01-41-03	2019-12-03	2020-12-02
Amplifier	Shanghai Steed	YX28980930	XAW01-41-06	2019-11-18	2020-11-17
Temperature and humidity meter	MingGao	TH101B	XAW01-01-01	2019-12-06	2020-12-05
Measurement Software	Tonscend	TS+ RSE V3.0.0.2	XAW02-05-01	NCR	NCR

7 Photographs - EUT Constructional Details

Refer to Appendix A - Photographs of Set-Up for ZR/2019/C0026.

The End



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing/inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch, Testing Center, EUT Laboratory

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com