



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 chamber. 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 chamber. 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. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=100 kHz for $f < 1 \text{ GHz}$, RBW=1MHz for $f > 1 \text{ GHz}$; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold for peak (3) 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 + $20 * \log(\text{Duty cycle})$ 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 (2402MHz), the middle channel (2441MHz), the Highest channel (2480MHz) j. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. k. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Non-hopping transmitting mode with all kind of modulation and all kind of data type

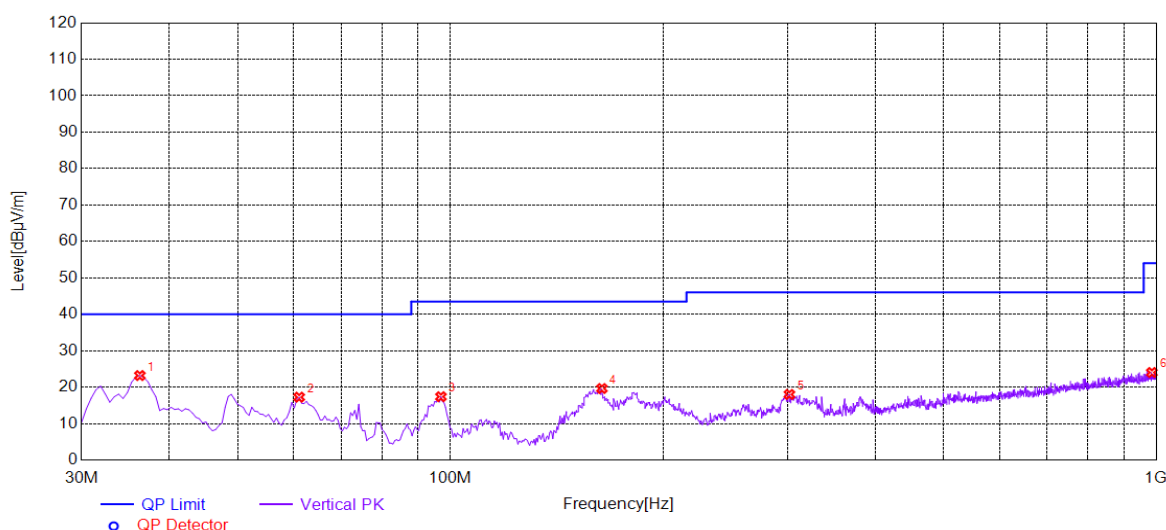




	Charge + Transmitting mode.
Final Test Mode:	Through Pre-scan, find the DH5 of data type and GFSK modulation is the worst case. Pretest the EUT at Charge + Transmitting mode For below 1GHz part, through pre-scan, the worst case is the lowest channel. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

4.11.1 Radiated Emission below 1GHz

4.11.1.1 Charge + Transmitting, Vertical

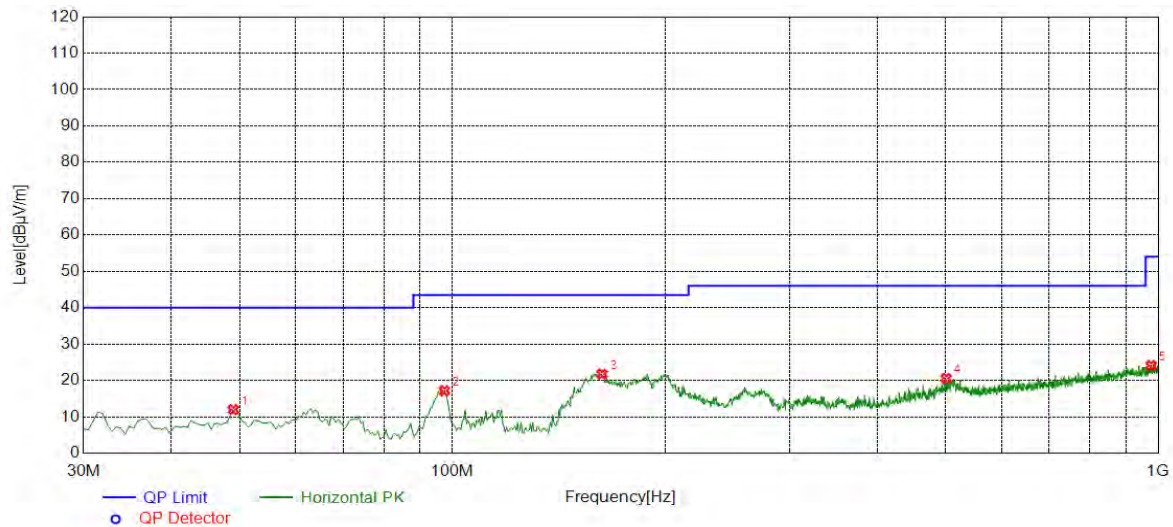


Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	36.3082	23.19	-32.34	40.00	16.81	208	15	Vertical
2	61.0555	17.25	-31.91	40.00	22.75	190	292	Vertical
3	96.9635	17.39	-32.21	43.50	26.11	290	280	Vertical
4	163.927	19.63	-34.03	43.50	23.87	288	15	Vertical
5	302.221	18.00	-27.79	46.00	28.00	162	333	Vertical
6	985.928	24.03	-14.04	54.00	29.97	265	274	Vertical





4.11.1.2 Charge + Transmitting, Horizontal



Suspected List

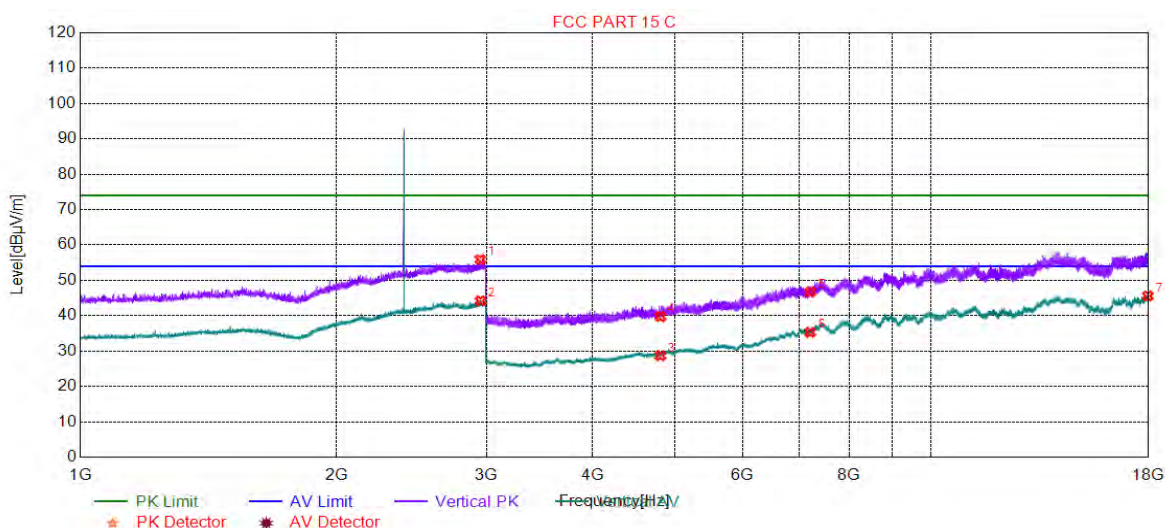
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	48.9245	11.95	-30.19	40.00	28.05	122	230	Horizontal
2	97.4487	17.17	-32.13	43.50	26.33	139	269	Horizontal
3	162.956	21.76	-34.10	43.50	21.74	231	237	Horizontal
4	500.685	20.58	-22.65	46.00	25.42	230	3	Horizontal
5	977.193	24.10	-14.14	54.00	29.90	125	162	Horizontal





4.11.2 Transmitter Emission above 1GHz

4.11.2.1 GFSK(DH5) _Lowest Channel _Vertical_ANT1



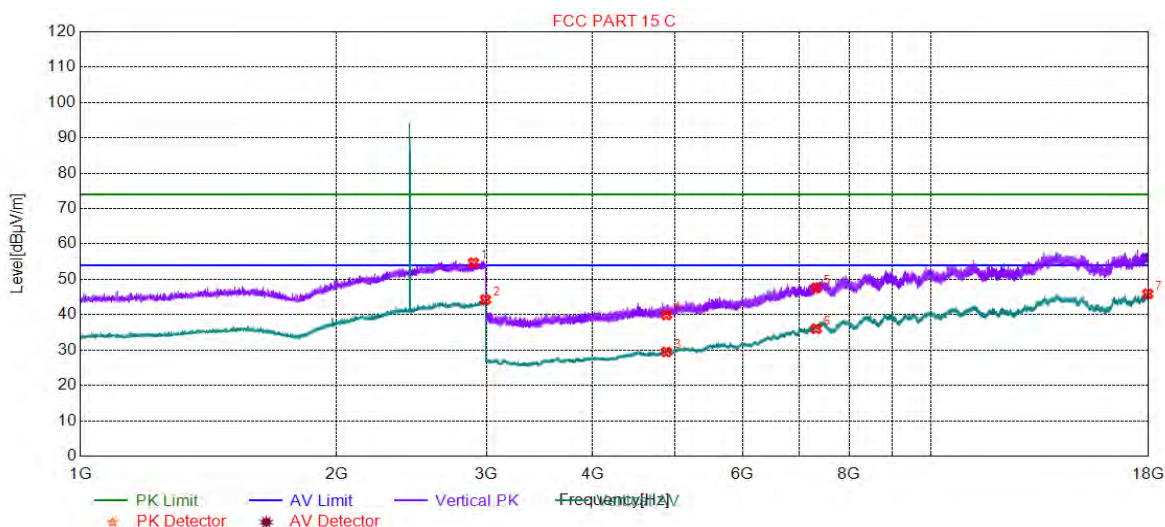
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2950.98	55.89	9.68	74.00	18.11	287	191	Vertical
2	2952.98	44.21	9.67	54.00	9.79	195	342	Vertical
3	4804.00	28.69	-18.30	54.00	25.31	298	260	Vertical
4	4804.00	39.76	-18.30	74.00	34.24	203	96	Vertical
5	7206.00	46.75	-10.09	74.00	27.25	283	18	Vertical
6	7206.00	35.30	-10.09	54.00	18.70	294	168	Vertical
7	17960.3	45.60	0.71	54.00	8.40	192	118	Vertical





4.11.2.2 GFSK(DH5) _Middle Channel _Vertical_ANT1



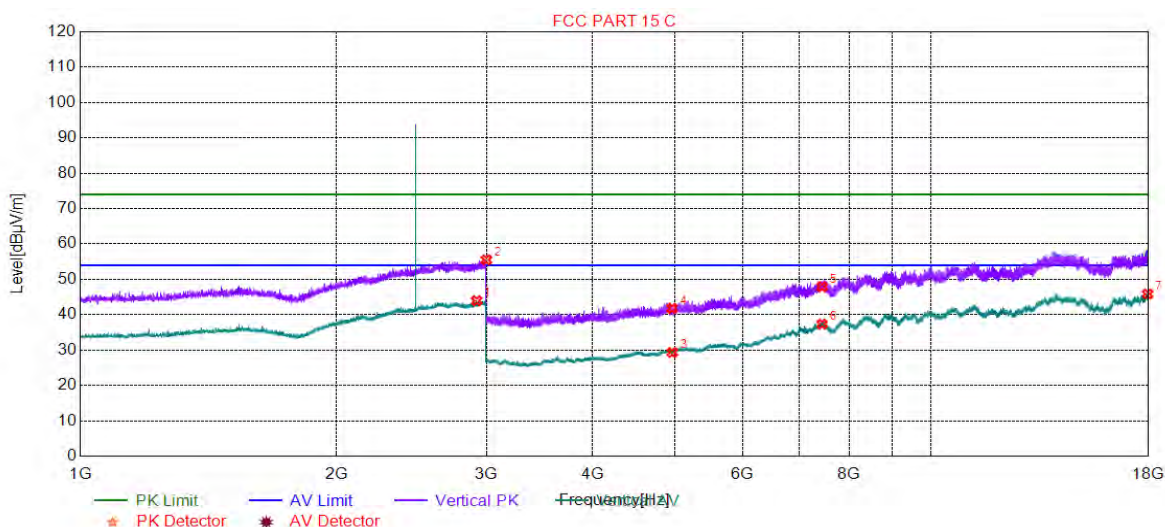
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2896.97	54.69	9.15	74.00	19.31	187	163	Vertical
2	2992.49	44.24	9.48	54.00	9.76	246	68	Vertical
3	4882.00	29.45	-17.96	54.00	24.55	172	101	Vertical
4	4882.00	39.95	-17.96	74.00	34.05	268	68	Vertical
5	7323.00	47.61	-9.71	74.00	26.39	285	219	Vertical
6	7323.00	36.03	-9.71	54.00	17.97	298	326	Vertical
7	17952.1	45.90	0.71	54.00	8.10	194	326	Vertical





4.11.2.3 GFSK(DH5) _Highest Channel _Vertical_ANT1



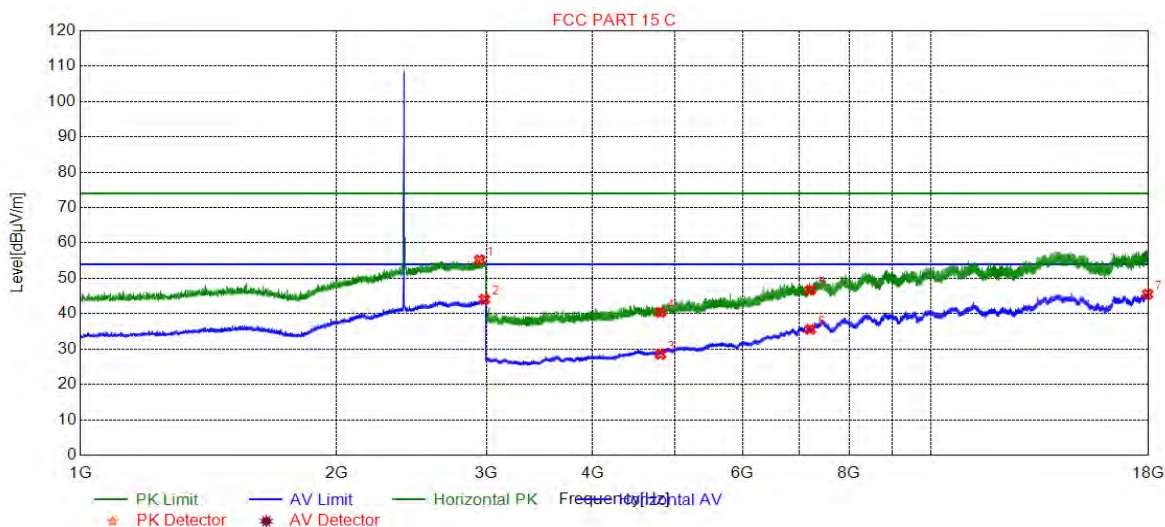
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2921.98	43.97	9.38	54.00	10.03	270	68	Vertical
2	2999.49	55.52	9.45	74.00	18.48	289	205	Vertical
3	4960.00	29.32	-17.47	54.00	24.68	250	96	Vertical
4	4960.00	41.80	-17.47	74.00	32.20	232	150	Vertical
5	7440.00	47.89	-9.35	74.00	26.11	225	320	Vertical
6	7440.00	37.33	-9.35	54.00	16.67	242	320	Vertical
7	17948.8	45.86	0.70	54.00	8.14	223	18	Vertical





4.11.2.4 GFSK(DH5) _Lowest Channel _Horizontal_ANT1

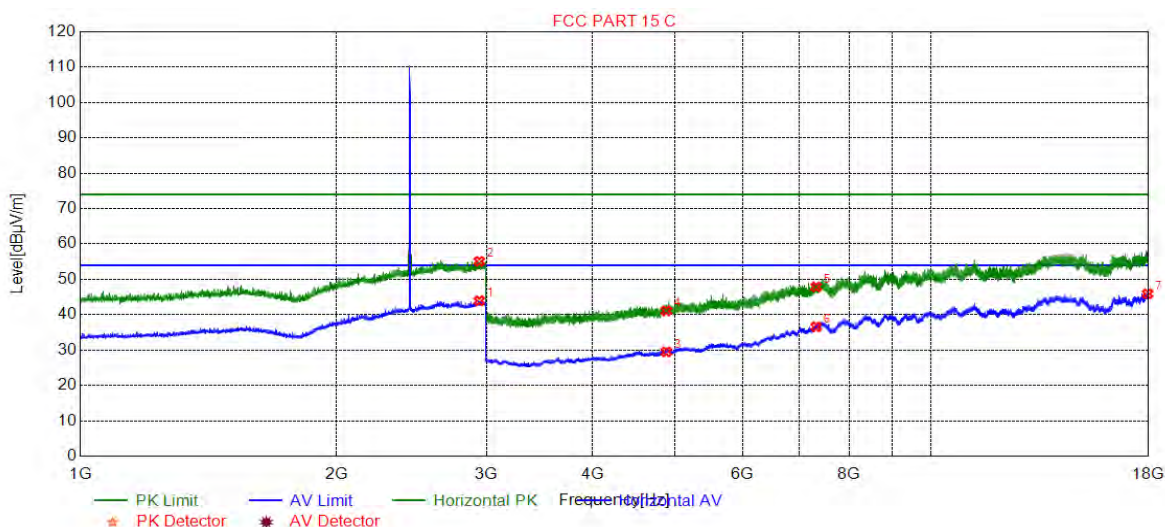


Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2945.48	55.23	9.63	74.00	18.77	143	182	Horizontal
2	2983.99	44.10	9.52	54.00	9.90	104	210	Horizontal
3	4804.00	28.54	-18.30	54.00	25.46	138	259	Horizontal
4	4804.00	40.37	-18.30	74.00	33.63	187	314	Horizontal
5	7206.00	46.69	-10.09	74.00	27.31	173	73	Horizontal
6	7206.00	35.61	-10.09	54.00	18.39	198	18	Horizontal
7	17947.7	45.53	0.70	54.00	8.47	191	274	Horizontal





4.11.2.5 GFSK(DH5) _Middle Channel _ Horizontal_ANT1



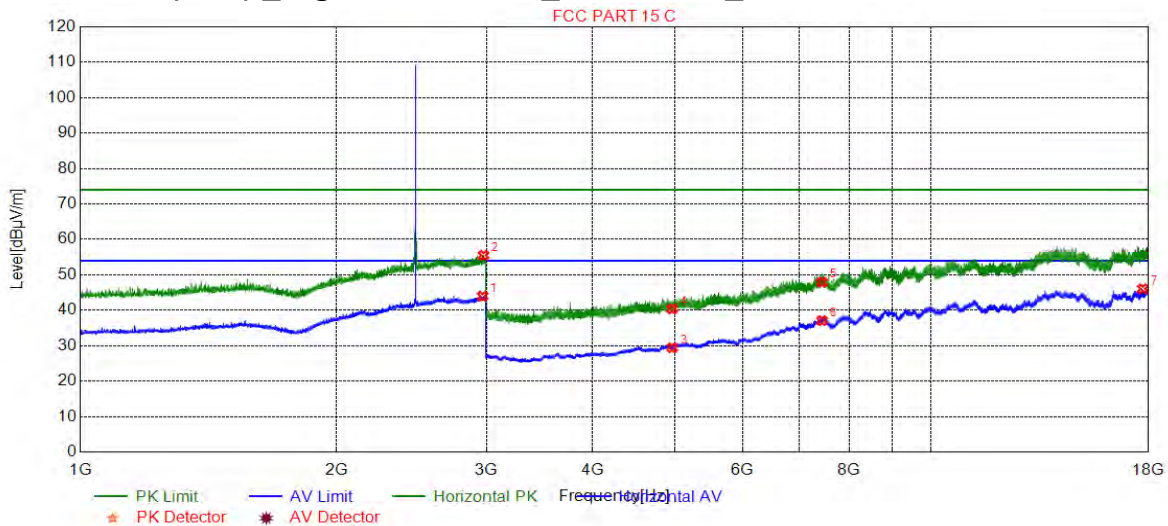
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2942.48	43.95	9.60	54.00	10.05	206	306	Horizontal
2	2942.98	55.11	9.60	74.00	18.89	169	358	Horizontal
3	4882.00	29.51	-17.96	54.00	24.49	142	314	Horizontal
4	4882.00	41.09	-17.96	74.00	32.91	168	314	Horizontal
5	7323.00	47.87	-9.71	74.00	26.13	104	275	Horizontal
6	7323.00	36.59	-9.71	54.00	17.41	102	360	Horizontal
7	17947.7	45.91	0.70	54.00	8.09	160	118	Horizontal





4.11.2.6 GFSK(DH5) _Highest Channel _Horizontal _ANT1



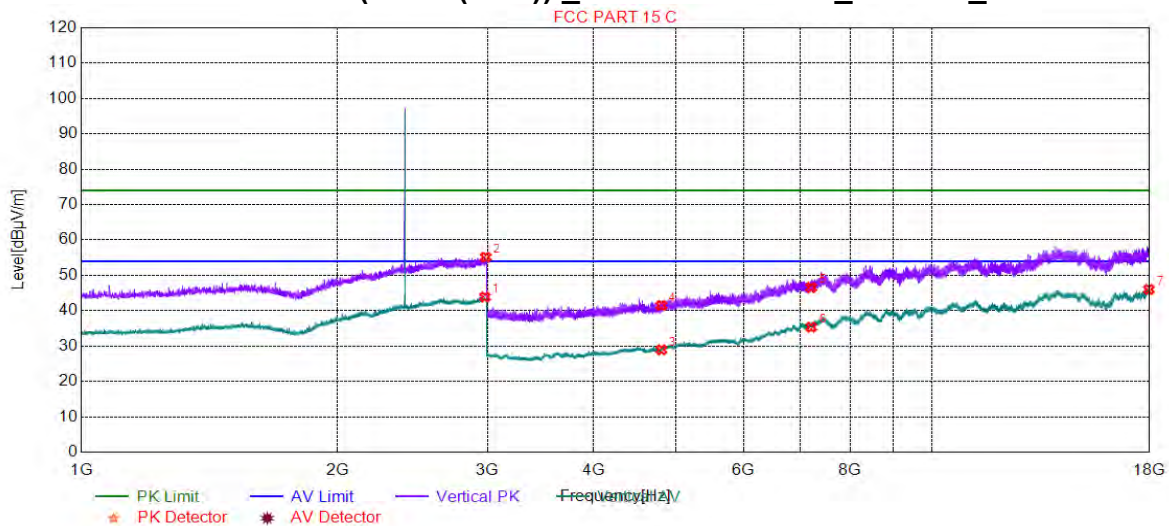
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2968.99	43.98	9.59	54.00	10.02	211	278	Horizontal
2	2976.99	55.51	9.56	74.00	18.49	210	32	Horizontal
3	4960.00	29.43	-17.47	54.00	24.57	200	286	Horizontal
4	4960.00	40.39	-17.47	74.00	33.61	242	204	Horizontal
5	7440.00	47.92	-9.35	74.00	26.08	246	18	Horizontal
6	7440.00	37.07	-9.35	54.00	16.93	184	318	Horizontal
7	17718.3	46.06	0.99	54.00	7.94	205	118	Horizontal





4.11.2.7 Worst Case Mode (GFSK(DH5)) _Lowest Channel _Vertical _ANT2



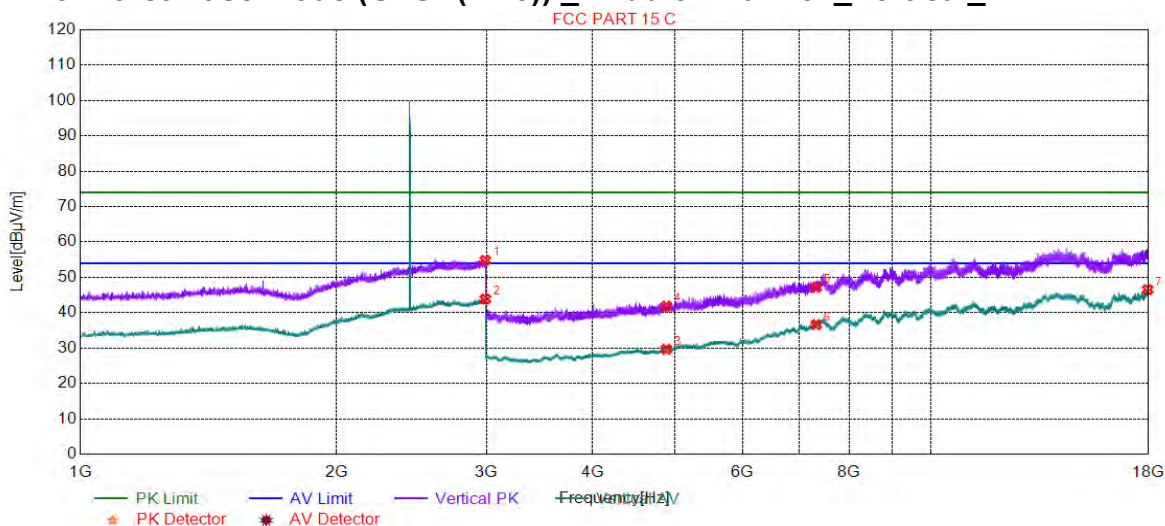
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2980.49	43.88	9.54	54.00	10.12	220	155	Vertical
2	2986.49	55.16	9.51	74.00	18.84	196	3	Vertical
3	4804.00	28.96	-18.30	54.00	25.04	236	243	Vertical
4	4804.00	41.50	-18.30	74.00	32.50	290	180	Vertical
5	7206.00	46.58	-10.09	74.00	27.42	270	324	Vertical
6	7206.00	35.35	-10.09	54.00	18.65	173	324	Vertical
7	17962.5	46.03	0.71	54.00	7.97	194	324	Vertical





4.11.2.8 Worst Case Mode (GFSK(DH5)) _ Middle Channel _Vertical_ ANT2



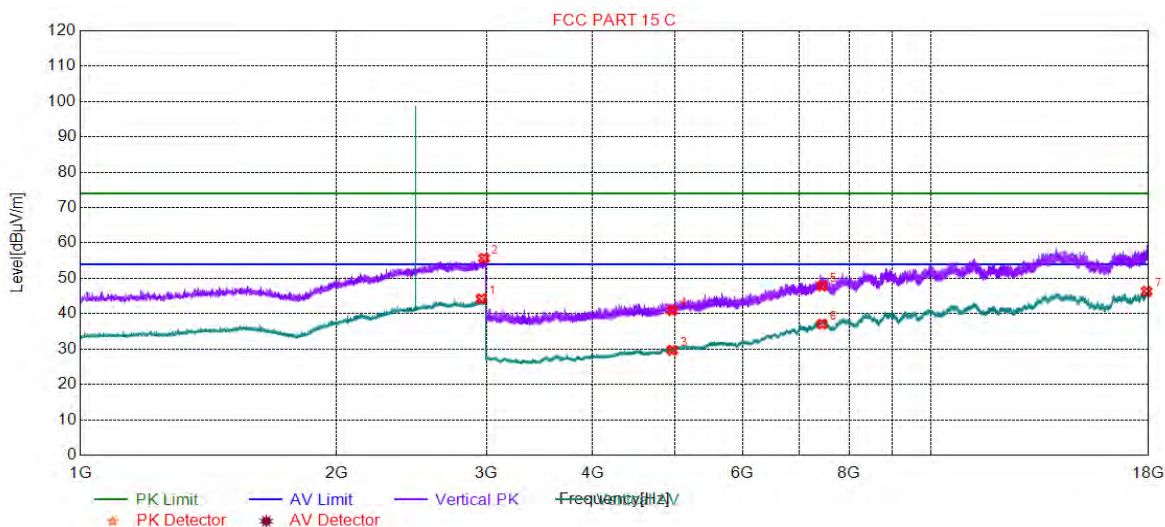
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2990.49	54.82	9.49	74.00	19.18	244	220	Vertical
2	2991.49	43.85	9.49	54.00	10.15	252	71	Vertical
3	4882.00	29.67	-17.96	54.00	24.33	240	289	Vertical
4	4882.00	41.89	-17.96	74.00	32.11	198	100	Vertical
5	7323.00	47.18	-9.71	74.00	26.82	218	43	Vertical
6	7323.00	36.64	-9.71	54.00	17.36	194	142	Vertical
7	17952.6	46.52	0.71	54.00	7.48	249	142	Vertical





4.11.2.9 Worst Case Mode (GFSK(DH5)) _Highest Channel _Vertical_ANT2

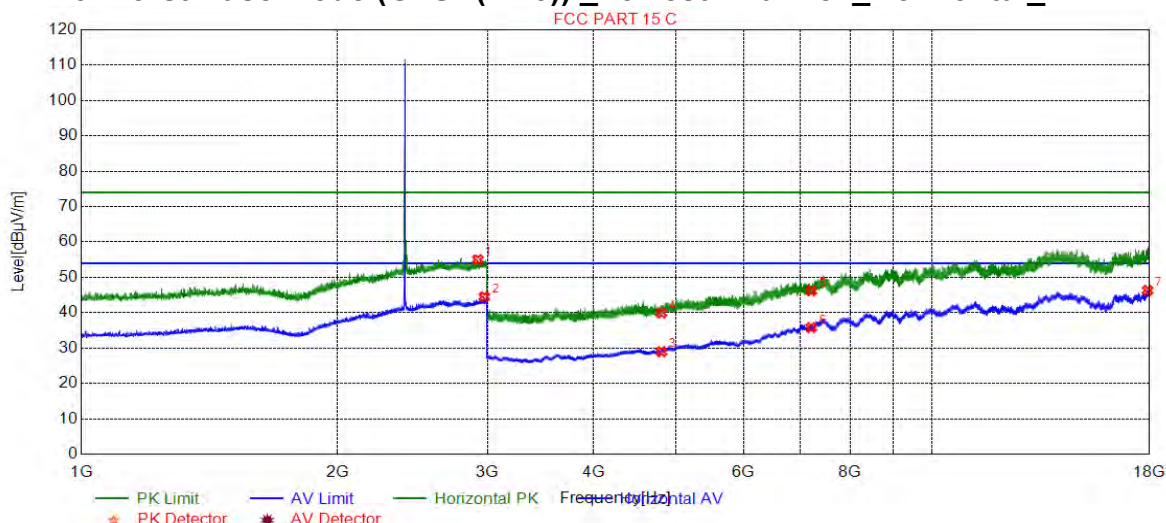


Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2959.48	44.21	9.64	54.00	9.79	253	148	Vertical
2	2980.99	55.70	9.54	74.00	18.30	231	106	Vertical
3	4960.00	29.66	-17.47	54.00	24.34	244	344	Vertical
4	4960.00	40.91	-17.47	74.00	33.09	285	208	Vertical
5	7440.00	47.84	-9.35	74.00	26.16	170	0	Vertical
6	7440.00	37.06	-9.35	54.00	16.94	263	342	Vertical
7	17905.9	46.32	0.69	54.00	7.68	258	342	Vertical





4.11.2.10 Worst Case Mode (GFSK(DH5)) _Lowest Channel _Horizontal_ANT2



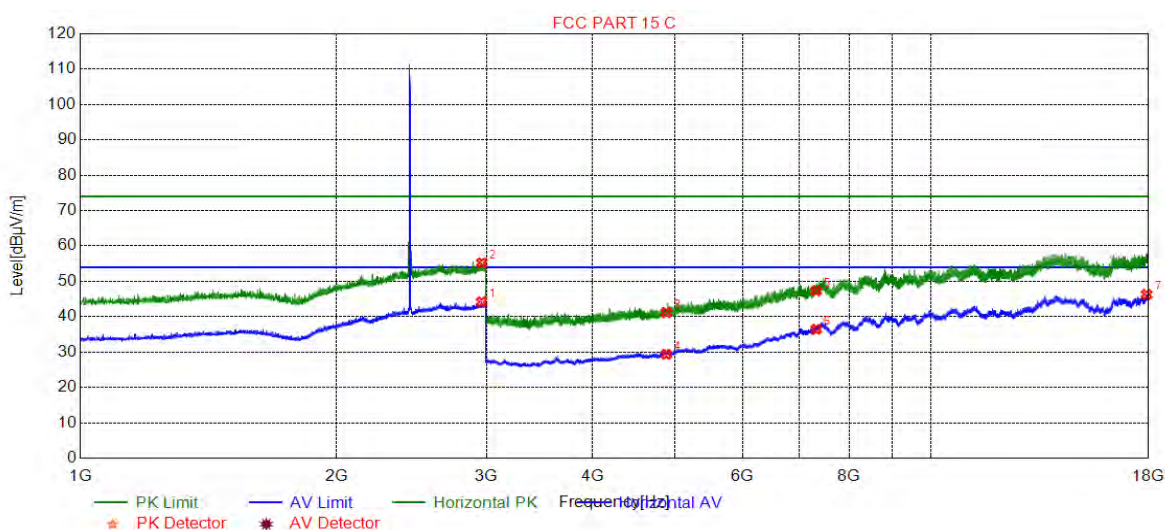
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2922.98	55.04	9.39	74.00	18.96	222	79	Horizontal
2	2974.99	44.53	9.57	54.00	9.47	209	31	Horizontal
3	4804.00	28.99	-18.30	54.00	25.01	145	89	Horizontal
4	4804.00	39.92	-18.30	74.00	34.08	133	182	Horizontal
5	7206.00	46.20	-10.09	74.00	27.80	161	130	Horizontal
6	7206.00	35.80	-10.09	54.00	18.20	158	290	Horizontal
7	17902.6	46.31	0.69	54.00	7.69	202	232	Horizontal





4.11.2.11 Worst Case Mode (GFSK(DH5)) _Middle Channel _Horizontal _ANT2

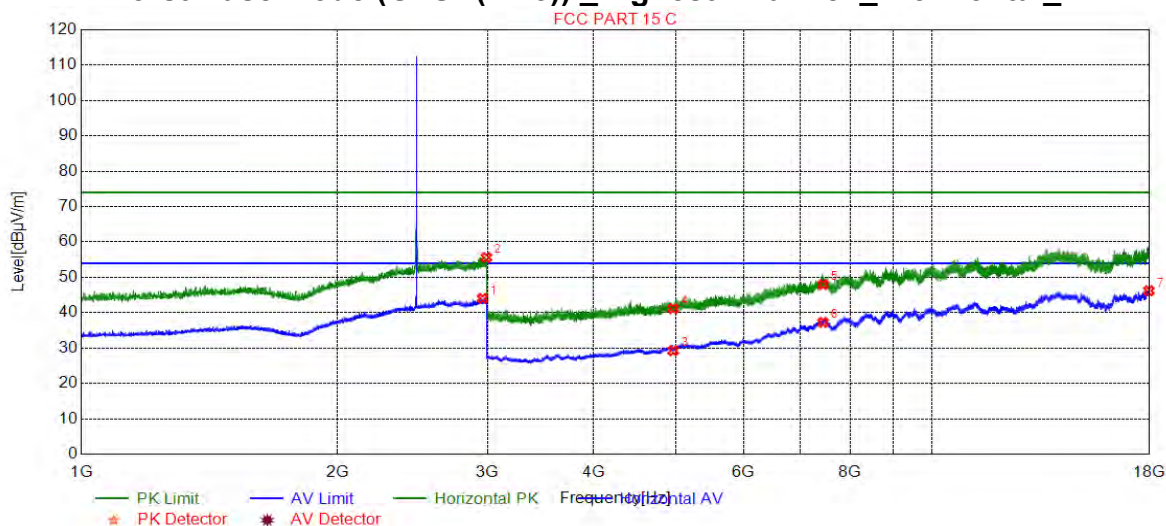


Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2961.99	44.21	9.62	54.00	9.79	179	234	Horizontal
2	2962.99	55.24	9.62	74.00	18.76	158	152	Horizontal
3	4882.00	41.16	-17.96	74.00	32.84	168	294	Horizontal
4	4882.00	29.38	-17.96	54.00	24.62	200	46	Horizontal
5	7323.00	47.32	-9.71	74.00	26.68	239	143	Horizontal
6	7323.00	36.44	-9.71	54.00	17.56	185	1	Horizontal
7	17905.3	46.29	0.69	54.00	7.71	150	292	Horizontal





4.11.2.12 Worst Case Mode (GFSK(DH5)) _Highest Channel _ Horizontal _ANT2



Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2960.99	44.03	9.63	54.00	9.97	205	196	Horizontal
2	2990.99	55.62	9.49	74.00	18.38	192	168	Horizontal
3	4960.00	29.26	-17.47	54.00	24.74	114	154	Horizontal
4	4960.00	41.17	-17.47	74.00	32.83	129	209	Horizontal
5	7440.00	47.96	-9.35	74.00	26.04	137	342	Horizontal
6	7440.00	37.28	-9.35	54.00	16.72	246	242	Horizontal
7	17958.7	46.19	0.71	54.00	7.81	125	292	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.



4.12 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10: 2013		
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:			

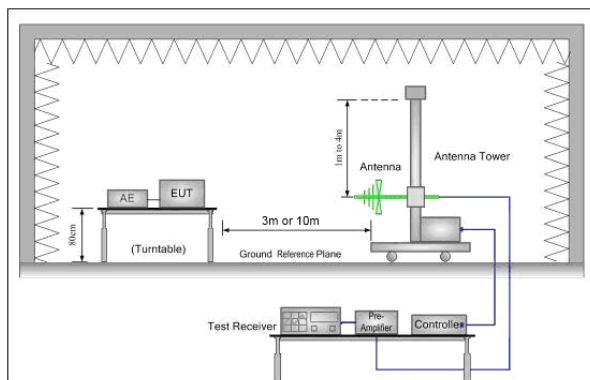


Figure 1. 30MHz to 1GHz

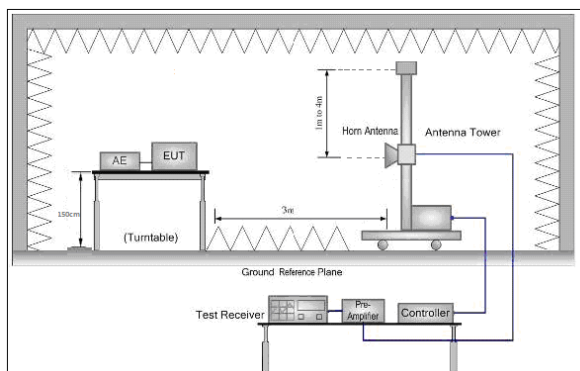


Figure 2. Above 1 GHz



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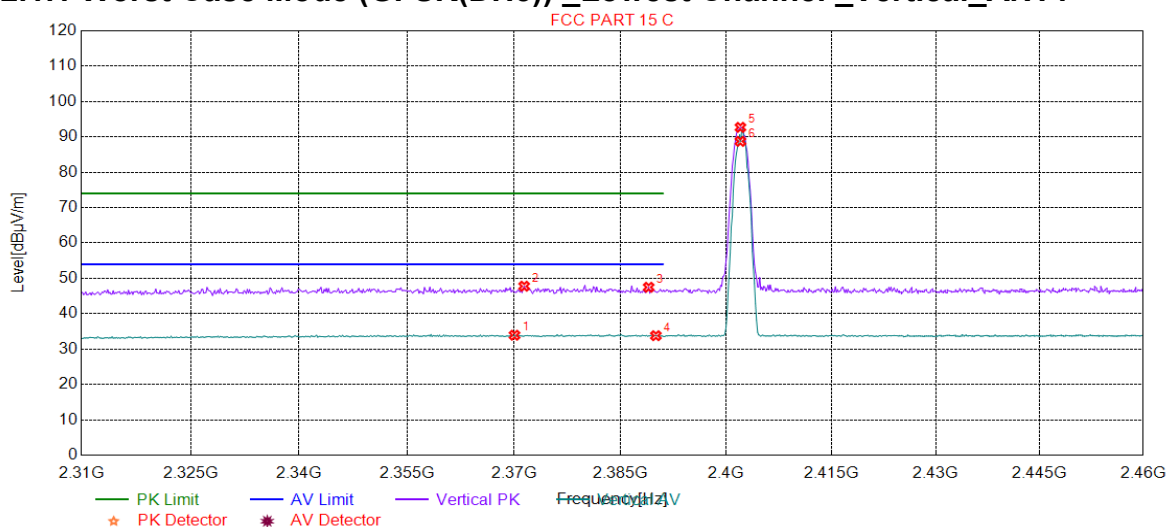
Test Procedure:	a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. 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 the worst case. j. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Non-hopping transmitting mode with all kind of modulation and all kind of data type Charge + Transmitting mode.
Final Test Mode:	Through Pre-scan, find the DH5 of data type and GFSK modulation is the worst case. Pretest the EUT at Charge + Transmitting mode, Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass





4.12.1 Test plots

4.12.1.1 Worst Case Mode (GFSK(DH5)) _Lowest Channel _Vertical_ANT1



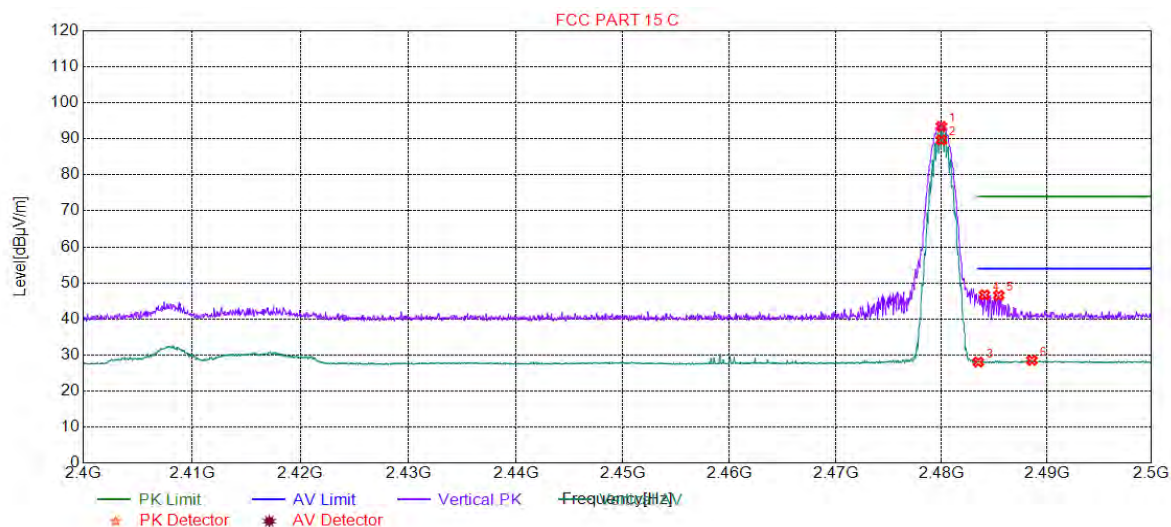
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2370.06	33.92	7.79	54.00	20.08	252	346	Vertical
2	2371.41	47.78	7.79	74.00	26.22	179	330	Vertical
3	2388.97	47.48	7.77	74.00	26.52	211	78	Vertical
4	2390.00	33.79	7.77	54.00	20.21	230	65	Vertical
5	2402.00	92.69	7.77	0.00	-92.69	184	302	Vertical
6	2402.00	88.74	7.77	0.00	-88.74	160	314	Vertical





4.12.1.2 Worst Case Mode (GFSK(DH5)) _Highest Channel _Vertical ANT1

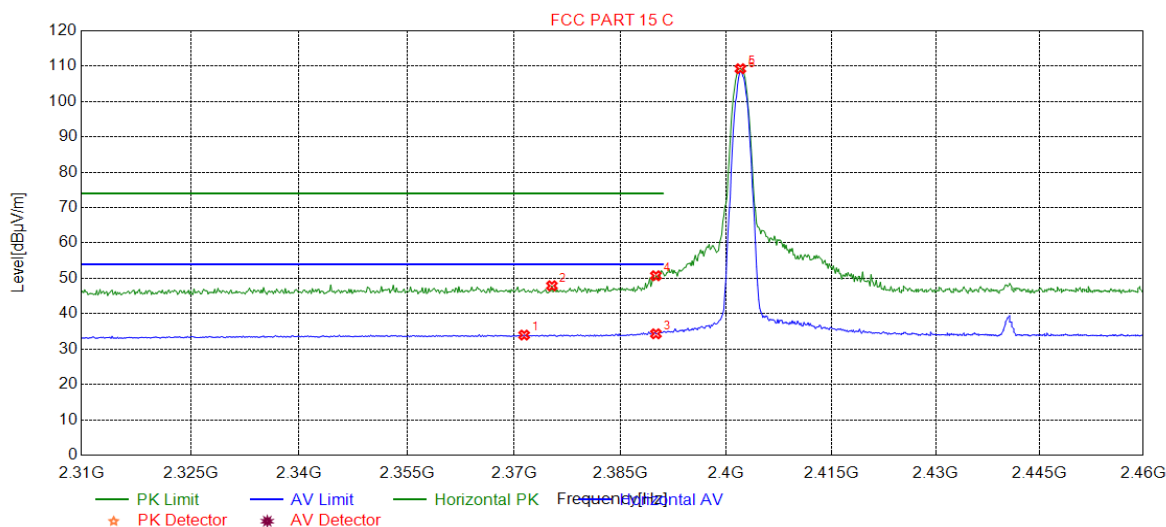


Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.00	93.42	8.01	0.00	-93.42	207	302	Vertical
2	2480.00	89.66	8.01	0.00	-89.66	267	269	Vertical
3	2483.50	28.06	8.01	54.00	25.94	244	263	Vertical
4	2484.09	46.69	8.01	74.00	27.31	192	302	Vertical
5	2485.44	46.54	8.01	74.00	27.46	171	302	Vertical
6	2488.59	28.51	8.02	54.00	25.49	254	114	Vertical





4.12.1.3 Worst Case Mode (GFSK(DH5)) _Lowest Channel _Horizontal_ANT1



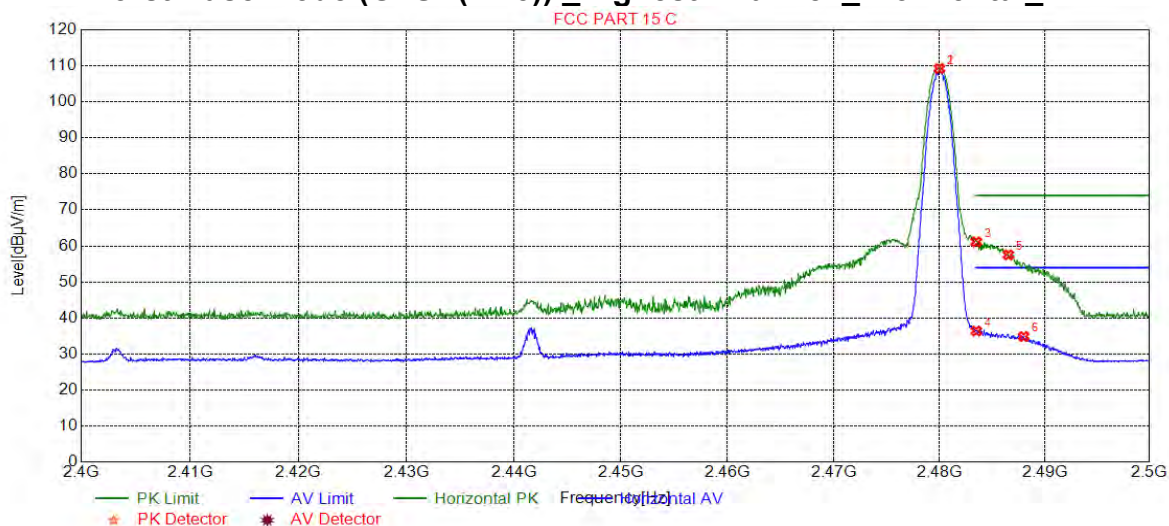
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2371.41	33.96	7.79	54.00	20.04	177	34	Horizontal
2	2375.31	47.90	7.78	74.00	26.10	197	313	Horizontal
3	2390.00	34.31	7.77	54.00	19.69	164	55	Horizontal
4	2390.00	50.74	7.77	74.00	23.26	168	63	Horizontal
5	2402.00	109.28	7.77	0.00	-109.28	159	55	Horizontal
6	2402.00	108.53	7.77	0.00	-108.53	209	55	Horizontal





4.12.1.4 Worst Case Mode (GFSK(DH5)) _Highest Channel _ Horizontal _ANT1



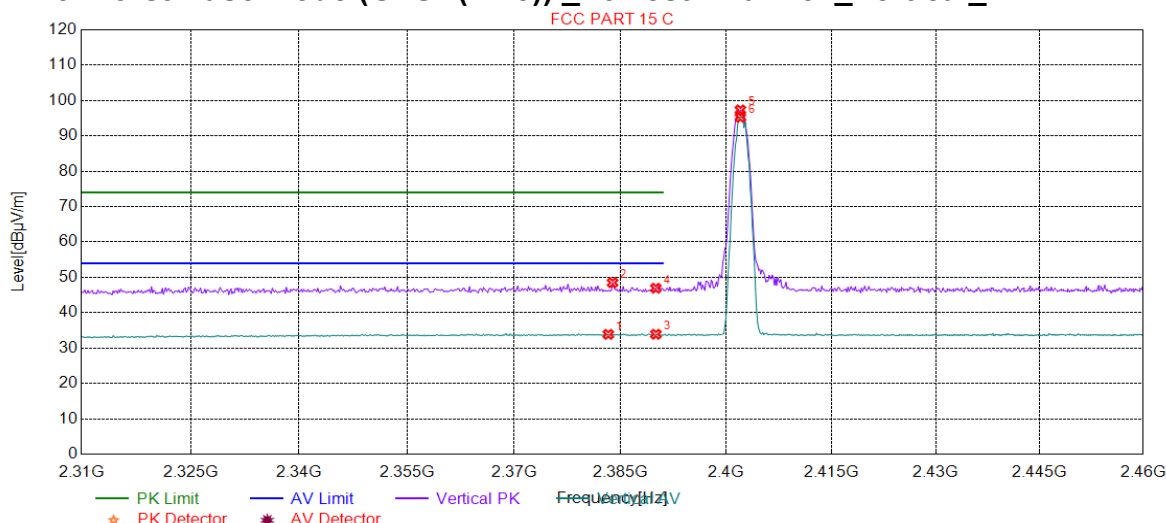
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.00	109.26	8.01	0.00	-109.26	239	57	Horizontal
2	2480.00	108.97	8.01	0.00	-108.97	115	57	Horizontal
3	2483.50	61.13	8.01	74.00	12.87	103	41	Horizontal
4	2483.50	36.38	8.01	54.00	17.62	217	57	Horizontal
5	2486.54	57.53	8.01	74.00	16.47	109	57	Horizontal
6	2487.99	34.86	8.02	54.00	19.14	121	62	Horizontal





4.12.1.5 Worst Case Mode (GFSK(DH5)) _Lowest Channel _Vertical _ANT2



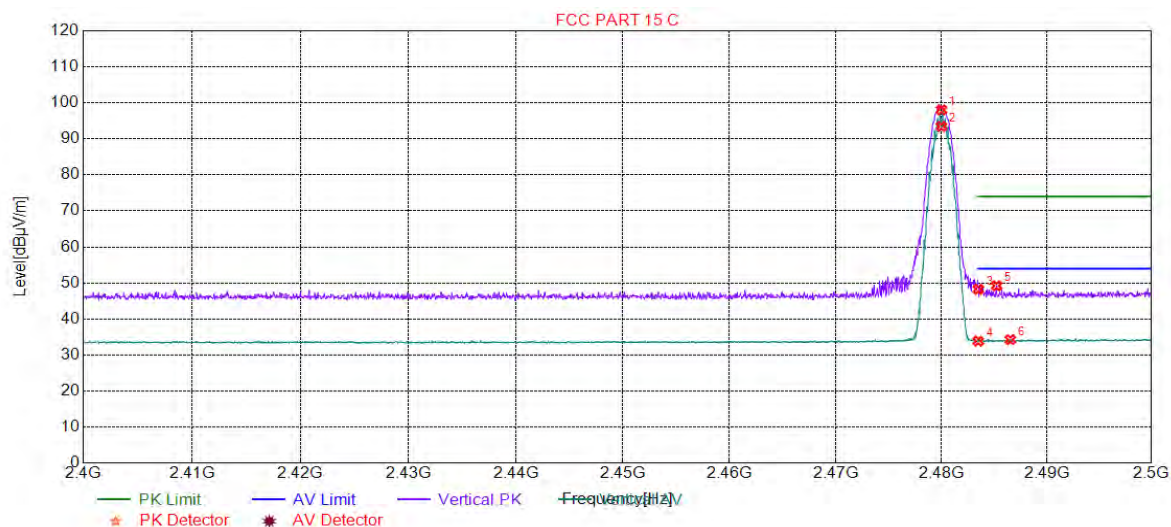
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2383.27	33.89	7.78	54.00	20.11	168	335	Vertical
2	2383.87	48.49	7.78	74.00	25.51	242	322	Vertical
3	2390.00	33.92	7.77	54.00	20.08	207	109	Vertical
4	2390.00	46.93	7.77	74.00	27.07	219	69	Vertical
5	2402.00	97.34	7.77	0.00	-97.34	264	189	Vertical
6	2402.00	95.25	7.77	0.00	-95.25	241	193	Vertical





4.12.1.6 Worst Case Mode (GFSK(DH5)) _Highest Channel _Vertical ANT2



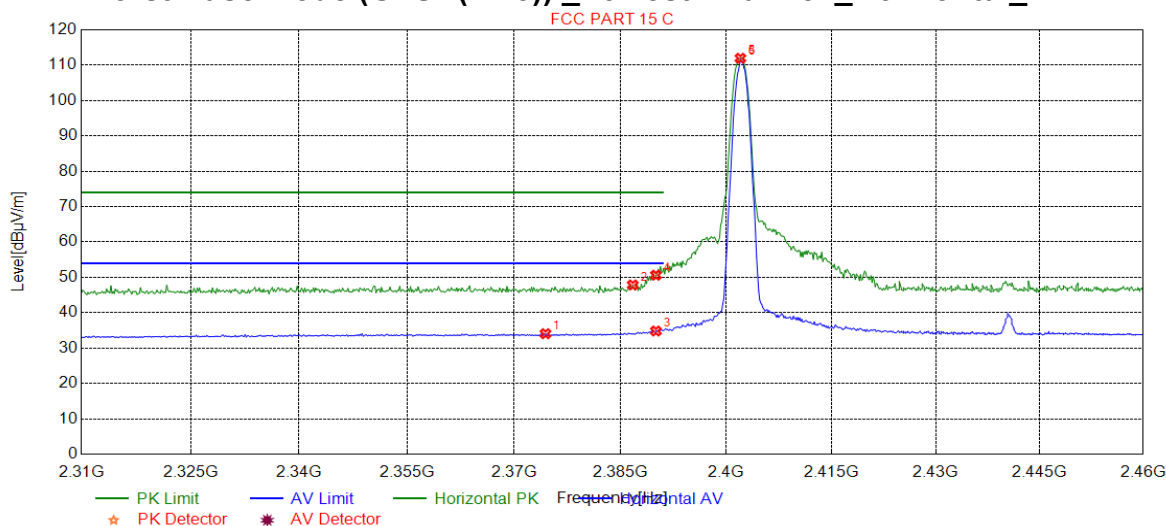
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.00	98.06	8.01	0.00	-98.06	298	187	Vertical
2	2480.00	93.43	8.01	0.00	-93.43	239	119	Vertical
3	2483.50	48.25	8.01	74.00	25.75	220	187	Vertical
4	2483.50	33.85	8.01	54.00	20.15	239	233	Vertical
5	2485.24	49.22	8.01	74.00	24.78	213	193	Vertical
6	2486.54	34.26	8.01	54.00	19.74	207	167	Vertical





4.12.1.7 Worst Case Mode (GFSK(DH5)) _Lowest Channel _Horizontal _ANT2



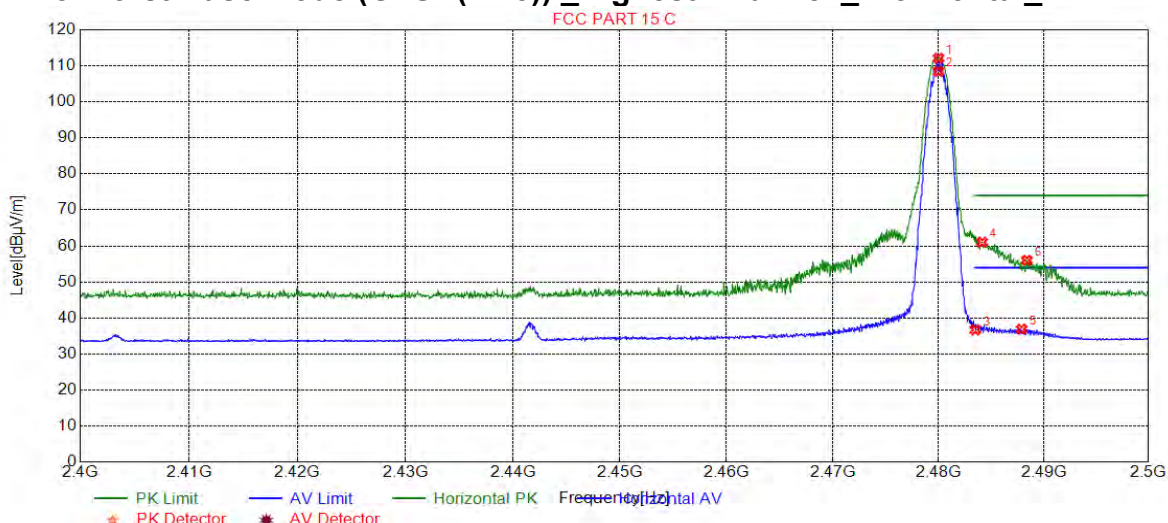
Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2374.41	34.07	7.79	54.00	19.93	158	192	Horizontal
2	2386.72	47.85	7.77	74.00	26.15	106	249	Horizontal
3	2390.00	34.83	7.77	54.00	19.17	173	212	Horizontal
4	2390.00	50.61	7.77	74.00	23.39	196	212	Horizontal
5	2402.00	111.95	7.77	0.00	-111.95	234	212	Horizontal
6	2402.00	111.68	7.77	0.00	-111.68	168	212	Horizontal





4.12.1.8 Worst Case Mode (GFSK(DH5)) _Highest Channel _ Horizontal _ANT2



Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.00	112.10	8.01	0.00	-112.10	212	213	Horizontal
2	2480.00	108.43	8.01	0.00	-108.43	130	360	Horizontal
3	2483.50	36.72	8.01	54.00	17.28	119	248	Horizontal
4	2484.14	61.04	8.01	74.00	12.96	236	213	Horizontal
5	2487.89	36.91	8.02	54.00	17.09	143	202	Horizontal
6	2488.39	56.02	8.02	74.00	17.98	153	208	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.





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)





6 Equipment List

RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal.Duedate
				(yyyy-mm-dd)	(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	2020/1/3	2021/1/2
Coaxial Cable	SGS	N/A	SEM031-01	2019/6/12	2020/6/11
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	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	NRVS	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
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/2020/30010

The End



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

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