

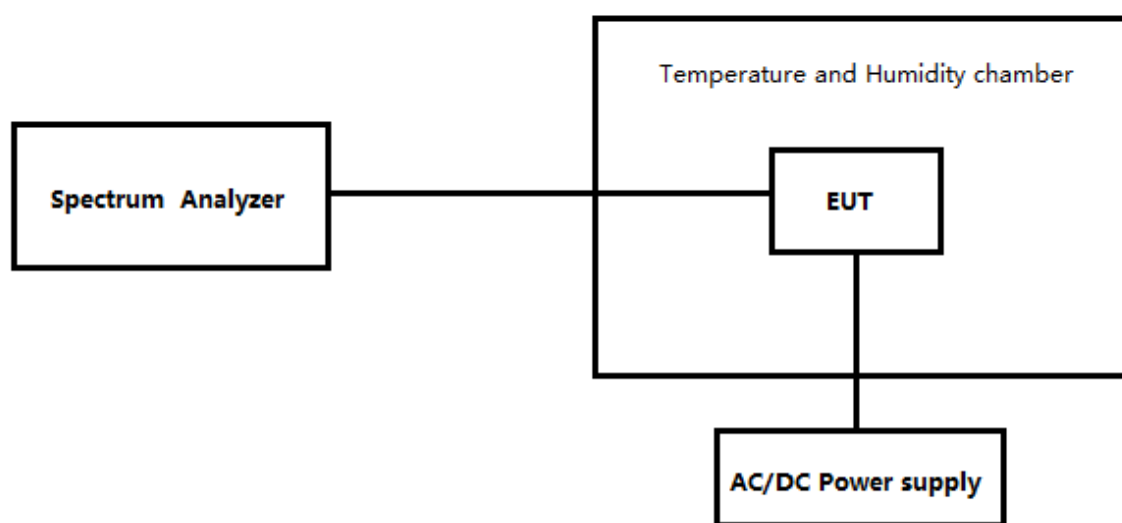


6.6 Frequency Stability Measurement

Limit

According to §15.407(g), Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

Test Configuration



Test Procedure

1. To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.
2. The EUT was operated at the maximum output power, and connected to the spectrum analyzer, which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value.
3. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

**Test Results**

Test Mode	Frequency [MHz]	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
802.11a	5260	NV	NT	-44400.00	-8.441065	20
802.11a	5260	LV	NT	-44700.00	-8.498099	20
802.11a	5260	HV	NT	-45000.00	-8.555133	20
802.11a	5280	NV	NT	-49700.00	-9.412879	20
802.11a	5280	LV	NT	-48500.00	-9.185606	20
802.11a	5280	HV	NT	-48100.00	-9.109848	20
802.11a	5320	NV	NT	-50000.00	-9.398496	20
802.11a	5320	LV	NT	-50000.00	-9.398496	20
802.11a	5320	HV	NT	-50000.00	-9.398496	20

Test Mode	Frequency [MHz]	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
802.11a	5260	NV	-30	-45300.00	-8.612167	20
802.11a	5260	NV	-20	-43800.00	-8.326996	20
802.11a	5260	NV	-10	-43200.00	-8.212928	20
802.11a	5260	NV	0	-43800.00	-8.326996	20
802.11a	5260	NV	10	-45000.00	-8.555133	20
802.11a	5260	NV	20	-45900.00	-8.726236	20
802.11a	5260	NV	30	-46500.00	-8.840304	20
802.11a	5260	NV	40	-46800.00	-8.897338	20
802.11a	5260	NV	50	-47400.00	-9.011407	20
802.11a	5280	NV	-30	-48400.00	-9.166667	20
802.11a	5280	NV	-20	-48600.00	-9.204545	20
802.11a	5280	NV	-10	-48800.00	-9.242424	20
802.11a	5280	NV	0	-48900.00	-9.261364	20
802.11a	5280	NV	10	-48800.00	-9.242424	20
802.11a	5280	NV	20	-48900.00	-9.261364	20
802.11a	5280	NV	30	-49100.00	-9.299242	20
802.11a	5280	NV	40	-49000.00	-9.280303	20
802.11a	5280	NV	50	-48900.00	-9.261364	20
802.11a	5320	NV	-30	-50000.00	-9.398496	20
802.11a	5320	NV	-20	-49700.00	-9.342105	20
802.11a	5320	NV	-10	-49300.00	-9.266917	20
802.11a	5320	NV	0	-49400.00	-9.285714	20
802.11a	5320	NV	10	-49600.00	-9.323308	20
802.11a	5320	NV	20	-49500.00	-9.304511	20
802.11a	5320	NV	30	-49400.00	-9.285714	20
802.11a	5320	NV	40	-49600.00	-9.323308	20
802.11a	5320	NV	50	-49300.00	-9.266917	20



Test Mode	Frequency [MHz]	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
802.11a	5500	NV	NT	-53100.00	-9.654545	20
802.11a	5500	LV	NT	-52200.00	-9.490909	20
802.11a	5500	HV	NT	-51900.00	-9.436364	20
802.11a	5580	NV	NT	-50000.00	-8.960573	20
802.11a	5580	LV	NT	-50000.00	-8.960573	20
802.11a	5580	HV	NT	-50000.00	-8.960573	20
802.11a	5700	NV	NT	-50000.00	-8.771930	20
802.11a	5700	LV	NT	-50000.00	-8.771930	20
802.11a	5700	HV	NT	-50000.00	-8.771930	20

Test Mode	Frequency [MHz]	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
802.11a	5500	NV	-30	-51600.00	-9.381818	20
802.11a	5500	NV	-20	-51600.00	-9.381818	20
802.11a	5500	NV	-10	-51300.00	-9.327273	20
802.11a	5500	NV	0	-51300.00	-9.327273	20
802.11a	5500	NV	10	-51300.00	-9.327273	20
802.11a	5500	NV	20	-50700.00	-9.218182	20
802.11a	5500	NV	30	-51000.00	-9.272727	20
802.11a	5500	NV	40	-50700.00	-9.218182	20
802.11a	5500	NV	50	-50700.00	-9.218182	20
802.11a	5580	NV	-30	-50000.00	-8.960573	20
802.11a	5580	NV	-20	-50000.00	-8.960573	20
802.11a	5580	NV	-10	-50000.00	-8.960573	20
802.11a	5580	NV	0	-50000.00	-8.960573	20
802.11a	5580	NV	10	-50000.00	-8.960573	20
802.11a	5580	NV	20	-50000.00	-8.960573	20
802.11a	5580	NV	30	-50000.00	-8.960573	20
802.11a	5580	NV	40	-50000.00	-8.960573	20
802.11a	5580	NV	50	-50000.00	-8.960573	20
802.11a	5700	NV	-30	-50000.00	-8.771930	20
802.11a	5700	NV	-20	-50000.00	-8.771930	20
802.11a	5700	NV	-10	-50000.00	-8.771930	20
802.11a	5700	NV	0	-50000.00	-8.771930	20
802.11a	5700	NV	10	-50000.00	-8.771930	20
802.11a	5700	NV	20	-50000.00	-8.771930	20
802.11a	5700	NV	30	-50000.00	-8.771930	20
802.11a	5700	NV	40	-50000.00	-8.771930	20
802.11a	5700	NV	50	-50000.00	-8.771930	20



6.7 Radiated Undesirable Emission

Limit

Radiated emissions from 9 kHz to 25 GHz were measured according to the methods defined in ANSI C63.10-2013. The EUT was placed above the ground plane, 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

- For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.
For transmitters operating in the 5470-5600 MHz and 5650-5725 MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725 MHz band shall not exceed an EIRP of -27 dBm/MHz.
- KDB789033v02r01G2)c) As specified in 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in 15.407(b)(4)). However, an out-of-band emission that complies with both the average and peak limits of 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz peak emission limit.
- According to §15.209(a), except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequencies (MHz)	Field strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	3
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

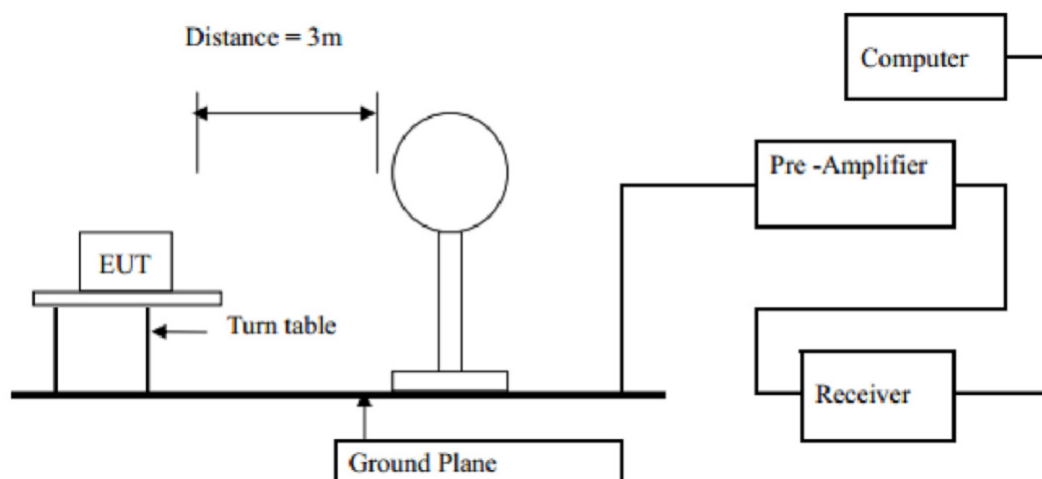
- In the emission table above, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

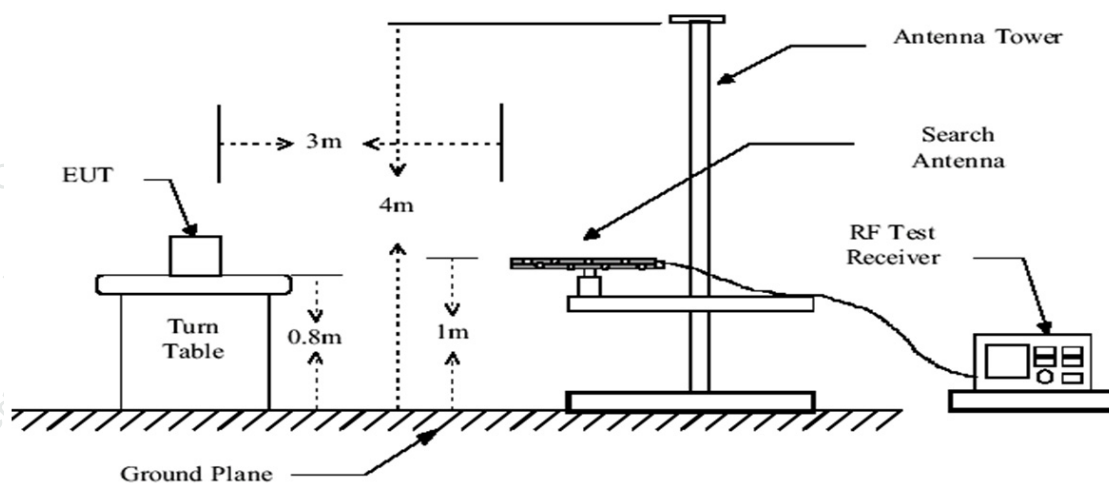


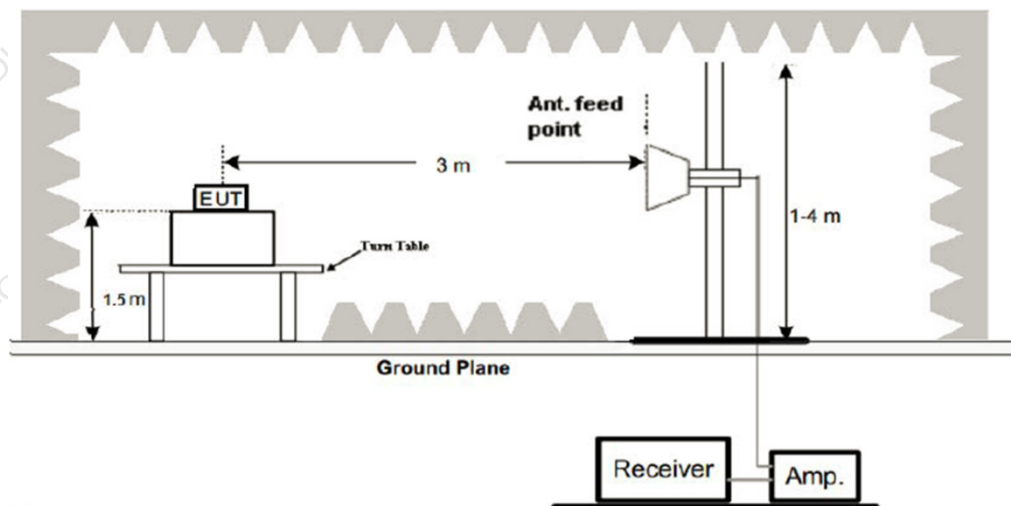
Test Configuration

Below 30MHz



Below 1GHz



**Above 1 GHz****Test Procedure**

1. The EUT is placed on a turntable above ground plane, which is 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

Below
1GHz:

RBW=100kHz/ VBW=300kHz / Sweep=AUTO

Above
1GHz:

(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO

(b) AVERAGE: RBW=1MHz / Sweep=AUTO

VBW=10Hz, when duty cycle is no less than 98 percent.

VBW $\geq 1/T$, when duty cycle is less than 98 percent, where is the minimum transmission duration over which the transmitter is on and transmitting at its maximum power control level for the tested mode of operation.

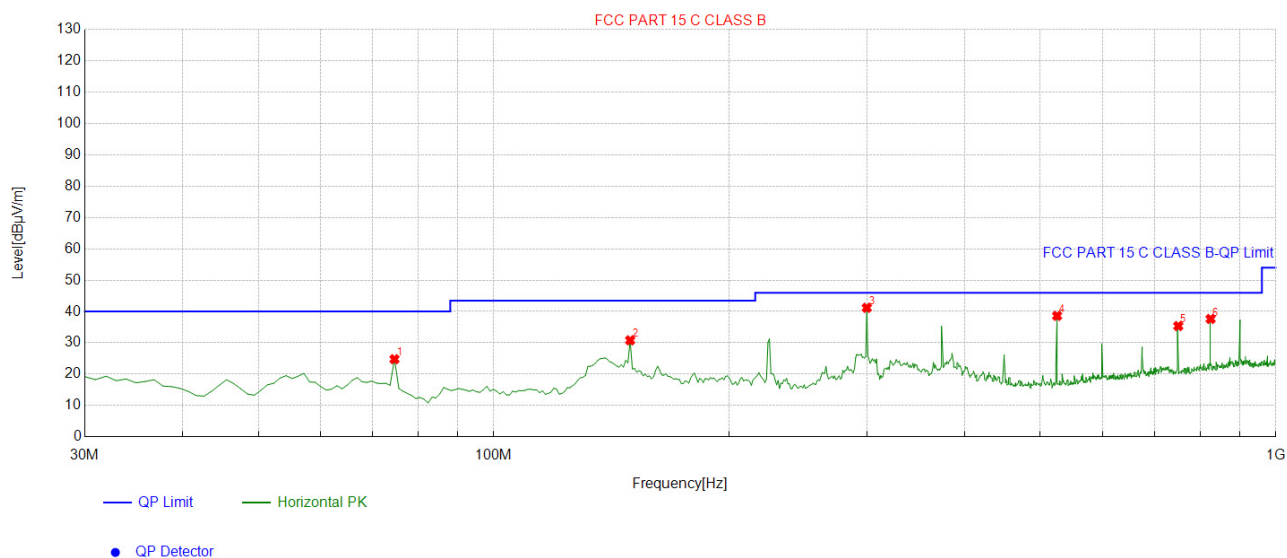
Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
IEEE 802.11 a	--	--	--	10Hz
IEEE 802.11n/ac HT20/ax HE20	--	--	--	10Hz
IEEE 802.11n ac HT40/ax HE40	--	--	--	10Hz
IEEE 802.11ac HT80/ax HE80	--	--	--	10Hz

7. Repeat above procedures until the measurements for all frequencies are complete.

**Below 1GHz Test Results**

All modes have been tested, only the worst mode of GFSK Low channel TX is reflected.

Antenna polarity: Horizontal

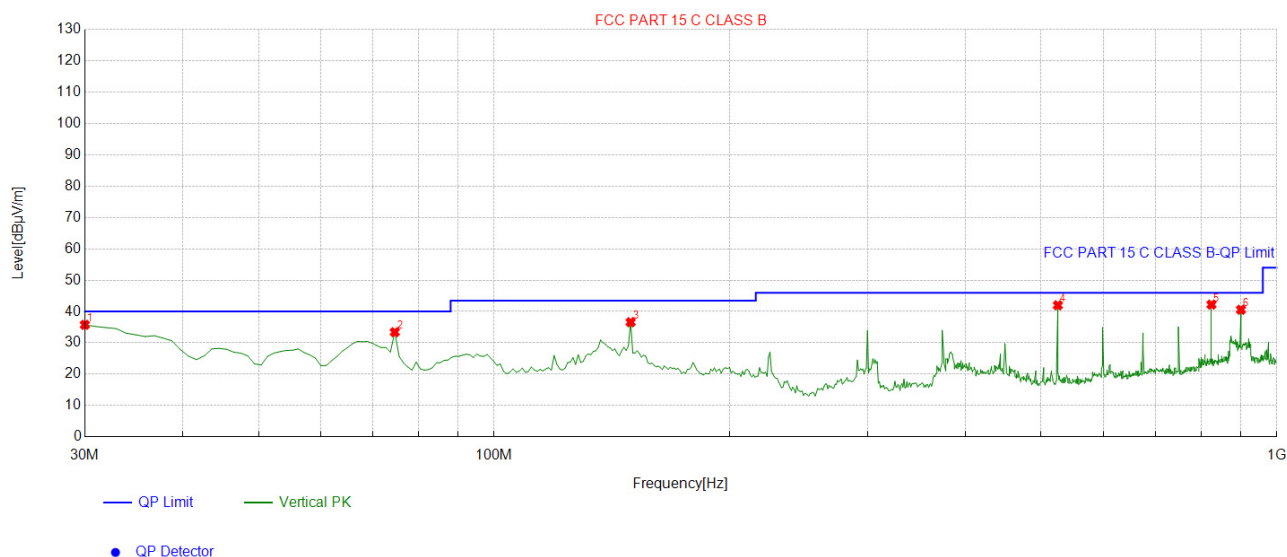


Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	74.665	-18.40	43.20	24.80	40.00	15.20	100	191	Horizontal
2	149.429	-18.24	49.05	30.81	43.50	12.69	100	210	Horizontal
3	299.930	-12.01	53.19	41.18	46.00	4.82	100	115	Horizontal
4	525.195	-7.32	45.95	38.63	46.00	7.37	100	220	Horizontal
5	750.460	-3.34	38.71	35.37	46.00	10.63	100	217	Horizontal
6	825.225	-2.21	39.84	37.63	46.00	8.37	100	78	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	30.000	-15.34	51.10	35.76	40.00	4.24	100	183	Vertical
2	74.665	-18.40	51.81	33.41	40.00	6.59	100	300	Vertical
3	149.429	-18.24	54.83	36.59	43.50	6.91	100	324	Vertical
4	525.195	-7.32	49.32	42.00	46.00	4.00	100	220	Vertical
5	825.225	-2.21	44.42	42.21	46.00	3.79	100	303	Vertical
6	899.990	-1.41	41.99	40.58	46.00	5.42	100	238	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Harmonics and Spurious Emissions Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dBμV/m)	Limit@3m (dBμV/m)
--	--	--
--	--	--
--	--	--
--	--	--

Note: 1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor

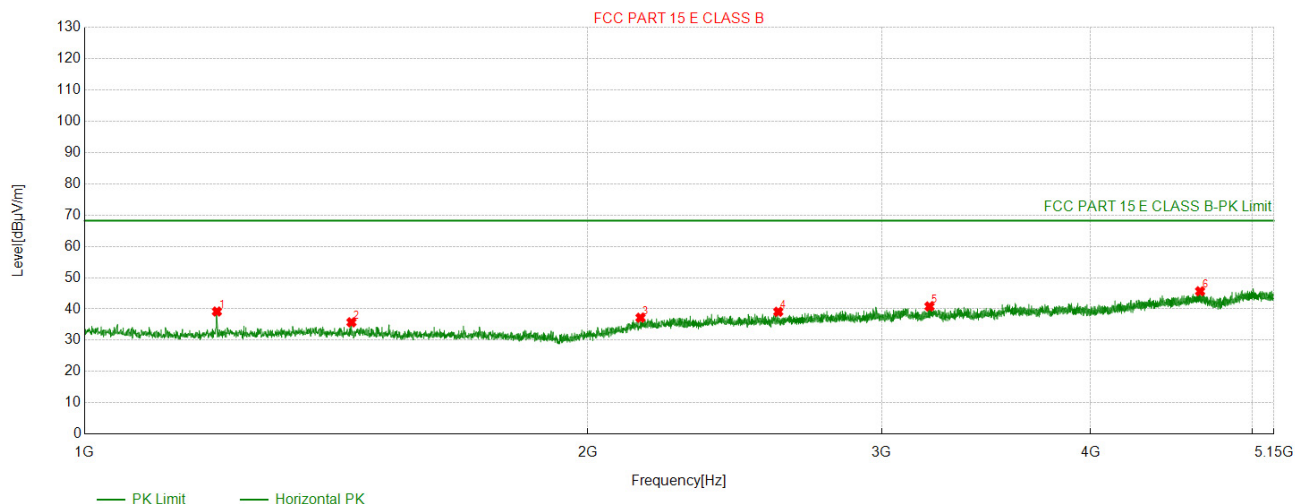
2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement

**Above 1GHz Test Results****5250~5350MHz**

All the test modes completed for test. Only the worst result was reported as below:

For 1GHz to 5.15GHz

Antenna polarity: Horizontal

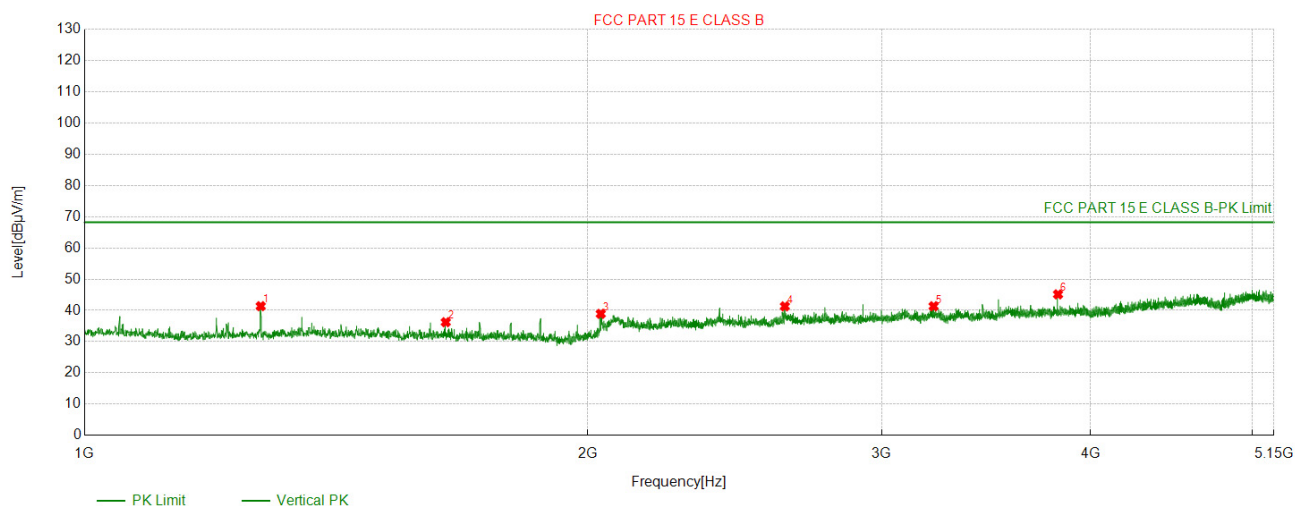


Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1200.050	58.07	39.20	-18.87	68.20	29.00	150	220	Horizontal
2	1444.509	53.93	35.74	-18.19	68.20	32.46	150	240	Horizontal
3	2151.325	52.43	37.21	-15.22	68.20	30.99	150	310	Horizontal
4	2601.230	53.50	39.11	-14.39	68.20	29.09	150	70	Horizontal
5	3203.870	53.49	40.80	-12.69	68.20	27.40	150	200	Horizontal
6	4651.950	52.26	45.66	-6.60	68.20	22.54	150	300	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



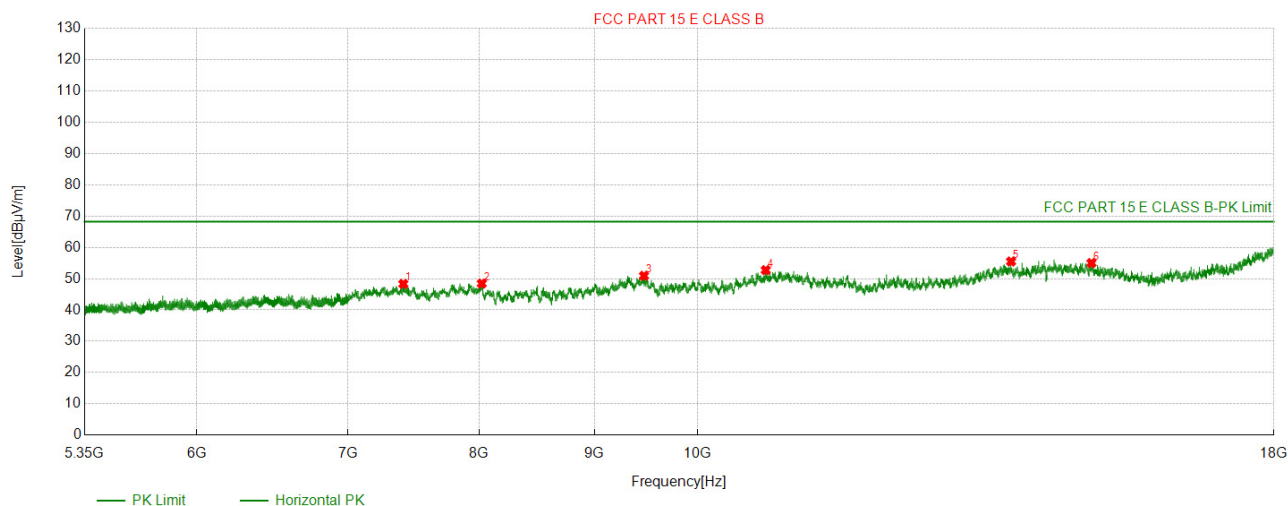
Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1274.757	59.88	41.37	-18.51	68.20	26.83	150	40	Vertical
2	1644.974	54.70	36.23	-18.47	68.20	31.97	150	70	Vertical
3	2036.774	55.54	38.91	-16.63	68.20	29.29	150	280	Vertical
4	2624.887	55.65	41.32	-14.33	68.20	26.88	150	100	Vertical
5	3222.132	54.00	41.34	-12.66	68.20	26.86	150	260	Vertical
6	3824.772	55.20	45.15	-10.05	68.20	23.05	150	350	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



For 5.35GHz to 18GHz

Antenna polarity: Horizontal

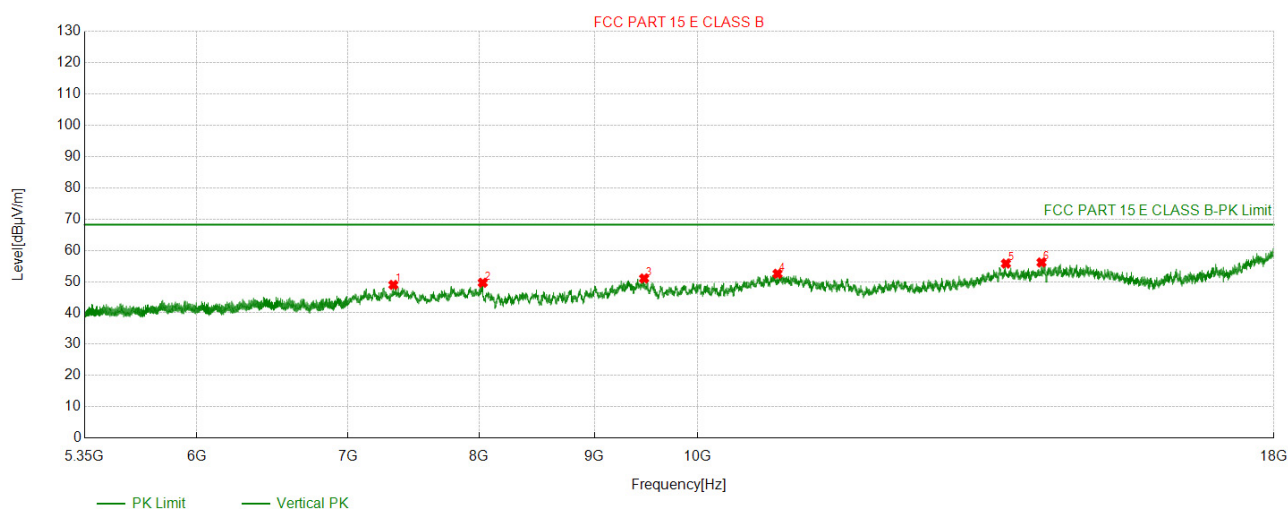


Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	7405.941	51.40	48.33	-3.07	68.20	19.87	150	150	Horizontal
2	8023.102	50.27	48.45	-1.82	68.20	19.75	150	57	Horizontal
3	9466.447	50.61	50.92	0.31	68.20	17.28	150	245	Horizontal
4	10718.372	50.75	52.73	1.98	68.20	15.47	150	268	Horizontal
5	13766.777	49.64	55.49	5.85	68.20	12.71	150	53	Horizontal
6	14942.794	48.00	54.99	6.99	68.20	13.21	150	1	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Pre-amplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



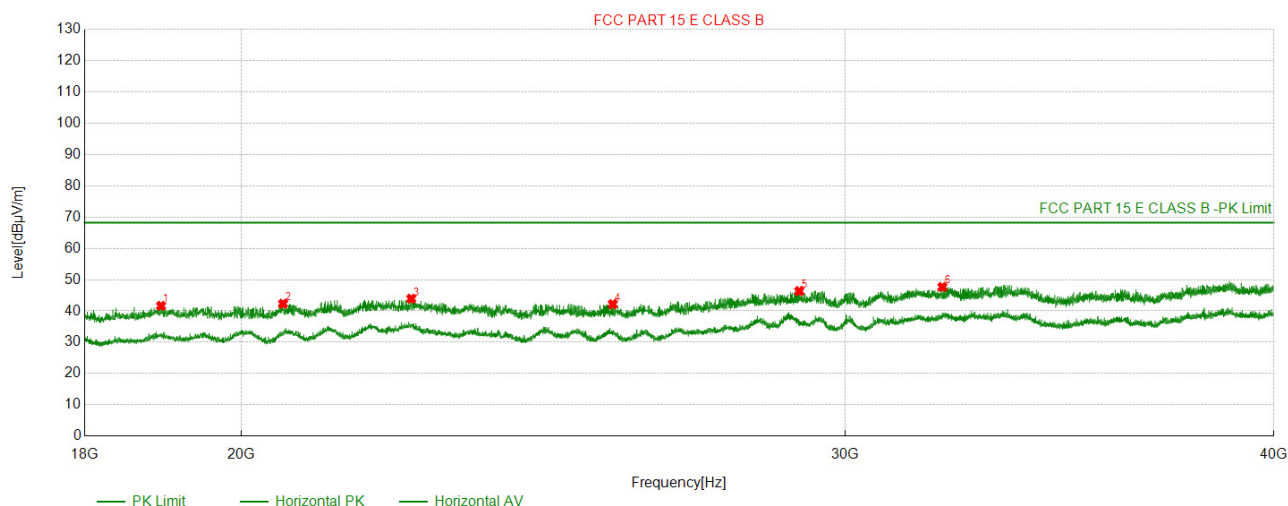
Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	7331.133	52.19	48.97	-3.22	68.20	19.23	150	76	Vertical
2	8030.803	51.51	49.65	-1.86	68.20	18.55	150	241	Vertical
3	9467.547	50.71	51.02	0.31	68.20	17.18	150	173	Vertical
4	10848.185	50.23	52.52	2.29	68.20	15.68	150	40	Vertical
5	13694.169	49.98	55.78	5.80	68.20	12.42	150	228	Vertical
6	14200.220	48.92	56.14	7.22	68.20	12.06	150	54	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



For 18GHz to 40GHz

Antenna polarity: Horizontal

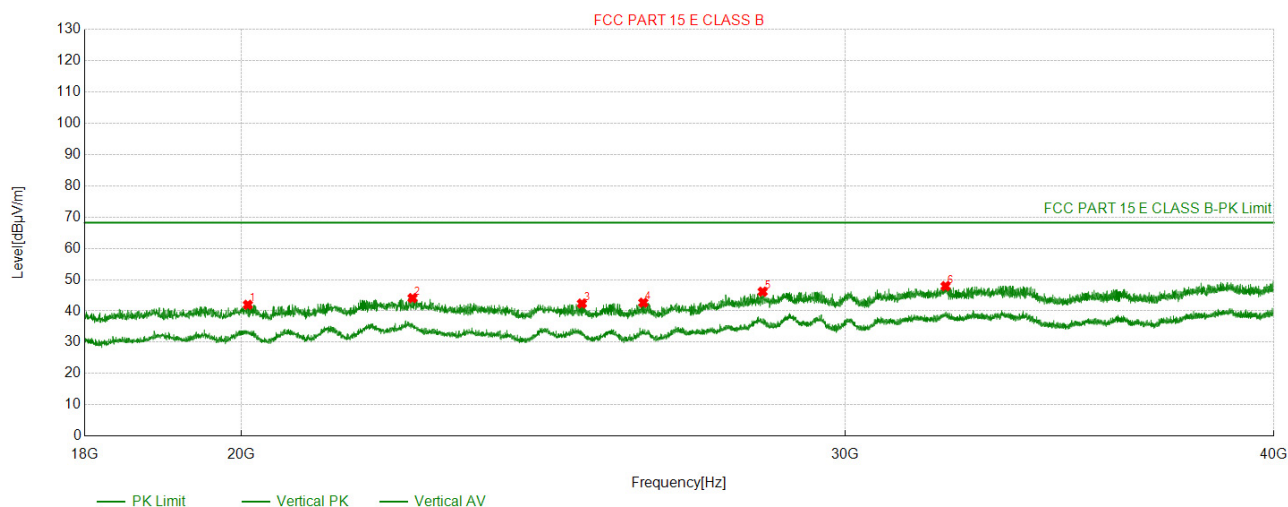


Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18948.295	36.00	41.65	5.65	68.20	26.55	150	270	Horizontal
2	20565.457	36.41	42.32	5.91	68.20	25.88	150	110	Horizontal
3	22413.641	38.25	43.92	5.67	68.20	24.28	150	310	Horizontal
4	25661.166	35.97	42.18	6.21	68.20	26.02	150	100	Horizontal
5	29084.708	37.34	46.35	9.01	68.20	21.85	150	300	Horizontal
6	32017.602	37.91	47.67	9.76	68.20	20.53	150	120	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Pre-amplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	20085.809	35.83	41.98	6.15	68.20	26.22	150	230	Vertical
2	22433.443	38.44	44.11	5.67	68.20	24.09	150	20	Vertical
3	25135.314	36.02	42.37	6.35	68.20	25.83	150	30	Vertical
4	26193.619	35.95	42.65	6.70	68.20	25.55	150	220	Vertical
5	28378.438	37.46	46.15	8.69	68.20	22.05	150	300	Vertical
6	32085.809	38.08	47.93	9.85	68.20	20.27	150	210	Vertical

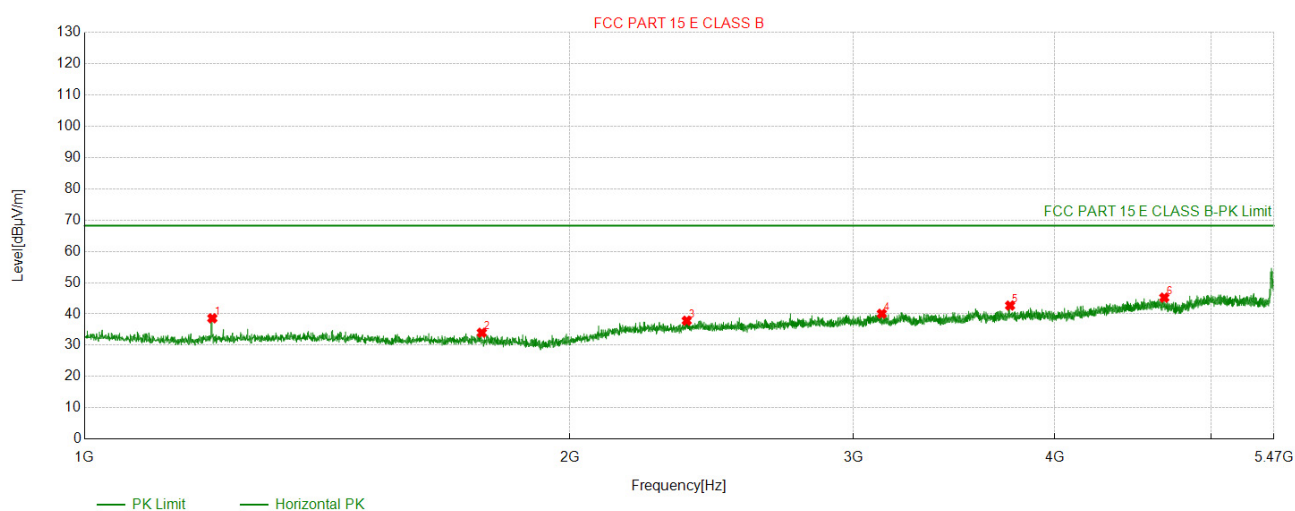
Remark: Factor = Cable loss + Antenna factor + Attenuator – Pre-amplifier; Level = Reading + Factor; Margin = Limit – Level

**5470~5725MHz**

All the test modes completed for test. Only the worst result was reported as below:

For 1GHz to 5.47GHz

Antenna polarity: Horizontal

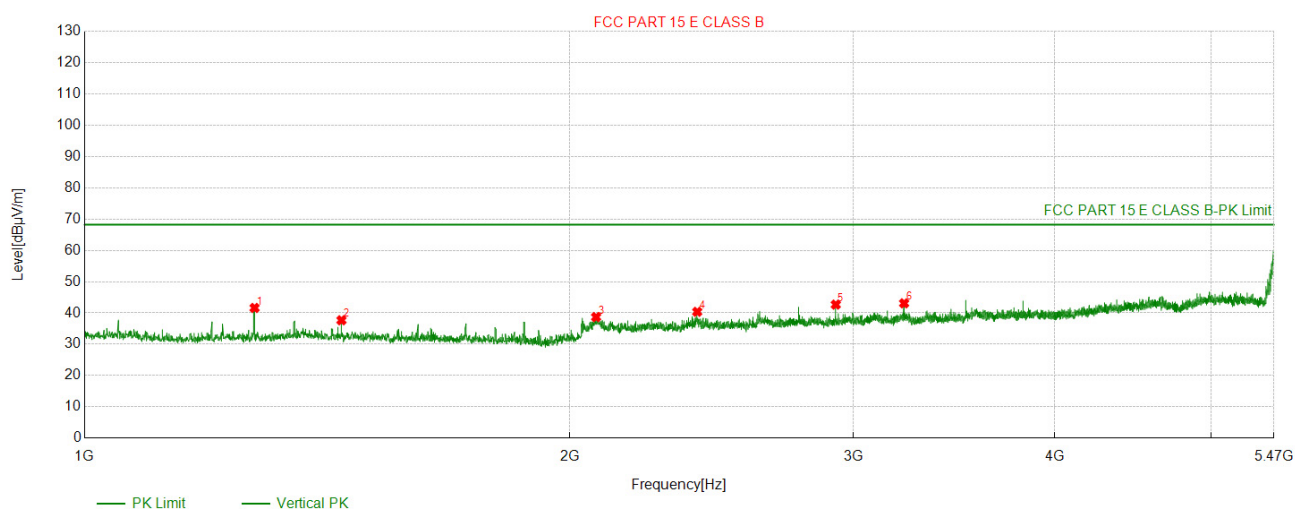


Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1200.276	57.49	38.62	-18.87	68.20	29.58	150	280	Horizontal
2	1763.999	52.11	34.01	-18.10	68.20	34.19	150	210	Horizontal
3	2363.933	52.43	37.85	-14.58	68.20	30.35	150	210	Horizontal
4	3123.909	52.68	40.08	-12.60	68.20	28.12	150	220	Horizontal
5	3752.007	53.04	42.69	-10.35	68.20	25.51	150	110	Horizontal
6	4676.943	51.63	45.22	-6.41	68.20	22.98	150	230	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



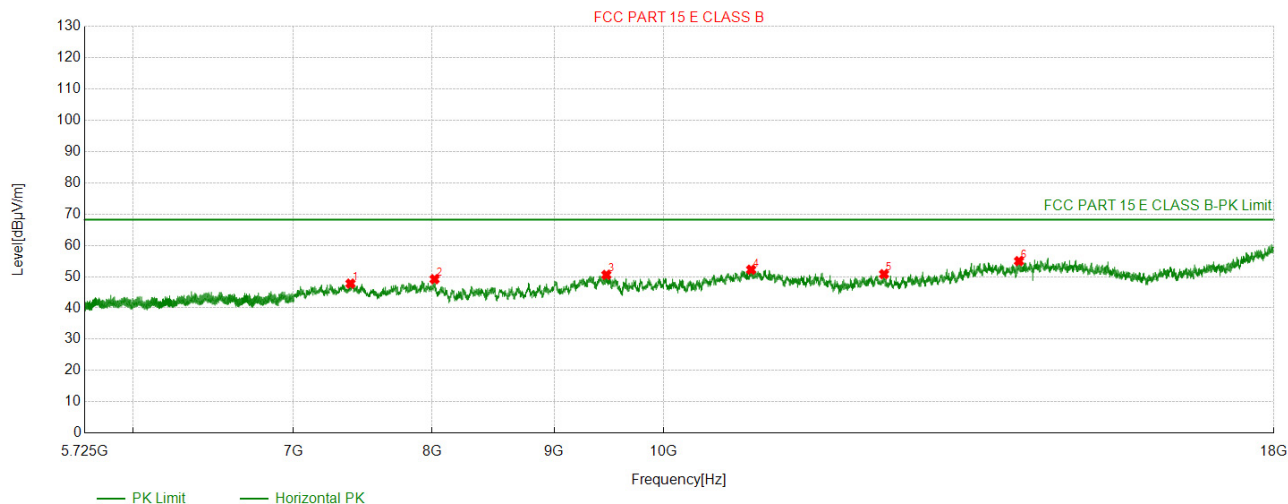
Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1274.932	60.12	41.61	-18.51	68.20	26.59	150	180	Vertical
2	1443.468	55.86	37.67	-18.19	68.20	30.53	150	120	Vertical
3	2076.931	54.93	38.69	-16.24	68.20	29.51	150	100	Vertical
4	2399.697	54.71	40.38	-14.33	68.20	27.82	150	120	Vertical
5	2924.974	55.90	42.67	-13.23	68.20	25.53	150	250	Vertical
6	3224.941	55.75	43.09	-12.66	68.20	25.11	150	280	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



For 5.725GHz to 18GHz

Antenna polarity: Horizontal



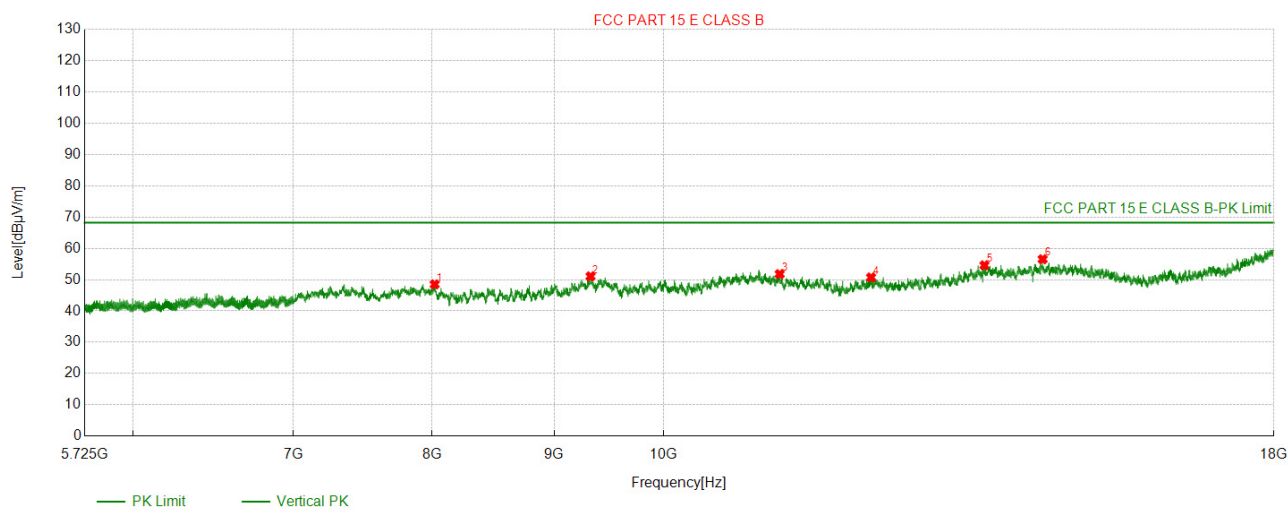
Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	7396.040	50.87	47.79	-3.08	68.20	20.41	150	71	Horizontal
2	8019.802	51.00	49.20	-1.80	68.20	19.00	150	121	Horizontal
3	9463.146	50.28	50.57	0.29	68.20	17.63	150	71	Horizontal
4	10878.988	49.81	52.23	2.42	68.20	15.97	150	360	Horizontal
5	12365.237	48.25	50.81	2.56	68.20	17.39	150	89	Horizontal
6	14081.408	48.20	54.98	6.78	68.20	13.22	150	212	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



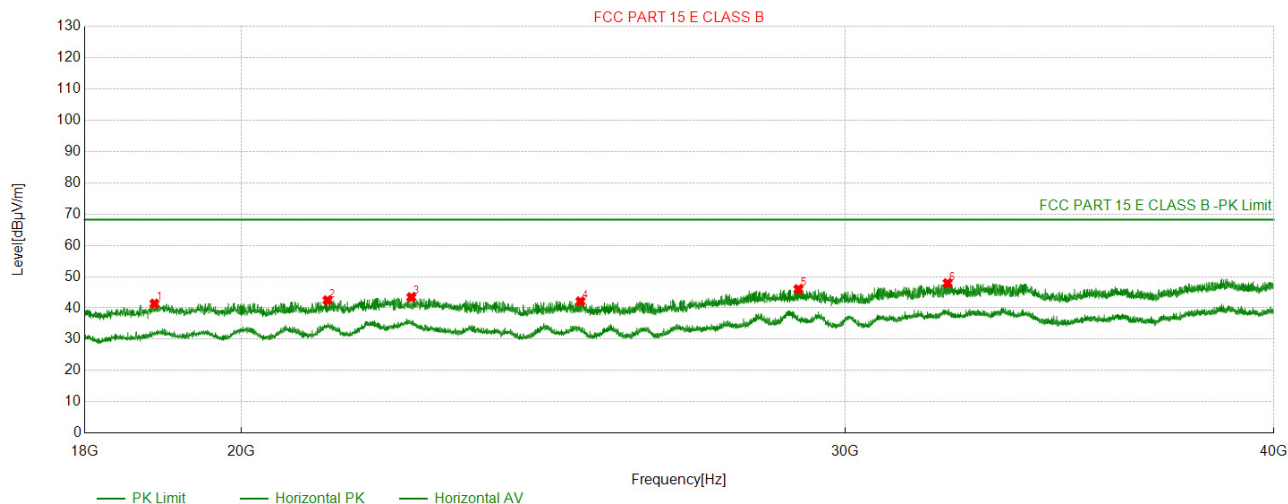
Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	8020.902	50.31	48.51	-1.80	68.20	19.69	150	26	Vertical
2	9320.132	51.38	51.07	-0.31	68.20	17.13	150	215	Vertical
3	11182.618	48.85	51.78	2.93	68.20	16.42	150	2	Vertical
4	12211.221	47.94	50.72	2.78	68.20	17.48	150	8	Vertical
5	13620.462	49.05	54.59	5.54	68.20	13.61	150	85	Vertical
6	14405.941	49.12	56.54	7.42	68.20	11.66	150	248	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



For 18GHz to 40GHz

Antenna polarity: Horizontal

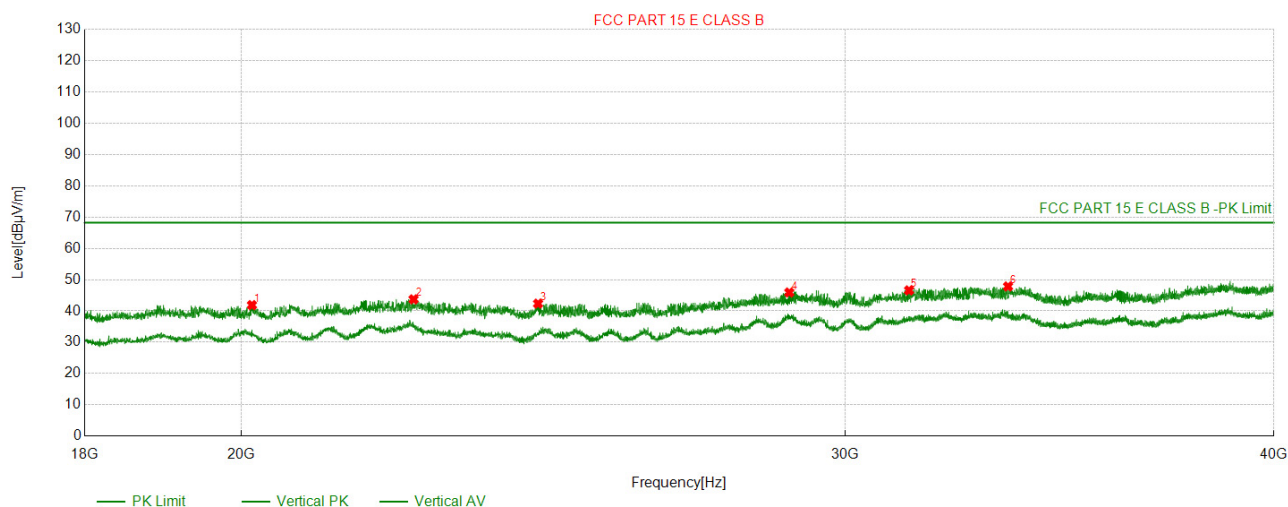


Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18864.686	35.81	41.40	5.59	68.20	26.80	150	80	Horizontal
2	21188.119	37.18	42.47	5.29	68.20	25.73	150	30	Horizontal
3	22415.842	37.76	43.43	5.67	68.20	24.77	150	200	Horizontal
4	25111.111	35.74	42.10	6.36	68.20	26.10	150	210	Horizontal
5	29069.307	37.00	46.01	9.01	68.20	22.19	150	360	Horizontal
6	32129.813	38.01	47.93	9.92	68.20	20.27	150	70	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	20140.814	35.76	41.88	6.12	68.20	26.32	150	310	Vertical
2	22448.845	38.06	43.72	5.66	68.20	24.48	150	30	Vertical
3	24407.041	36.72	42.35	5.63	68.20	25.85	150	310	Vertical
4	28891.089	36.94	45.91	8.97	68.20	22.29	150	180	Vertical
5	31309.131	36.60	46.59	9.99	68.20	21.61	150	130	Vertical
6	33460.946	36.92	47.84	10.92	68.20	20.36	150	0	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



6.8 AC Power line Conducted Emissions

Limit

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

* Decreases with the logarithm of the frequency.

Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

Test Procedure

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

Test Results

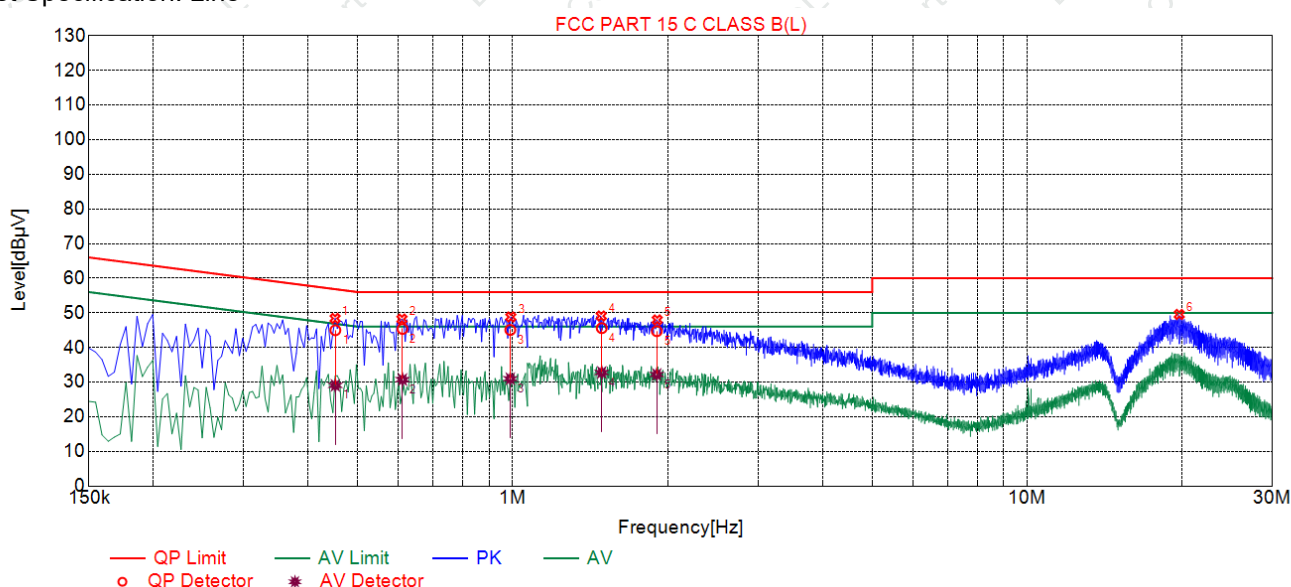
The initial step in collecting conducted data is a spectrum analyzer peaks scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.



Test Data

All modes are tested; only the worst result of was reported as below:

Test Specification: Line



Suspected List

NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.4515	48.39	19.83	56.85	8.46	28.56	PK	L
2	0.6090	48.21	19.90	56.00	7.79	28.31	PK	L
3	0.9915	48.81	19.87	56.00	7.19	28.94	PK	L
4	1.4865	49.09	19.97	56.00	6.91	29.12	PK	L
5	1.9095	47.97	20.05	56.00	8.03	27.92	PK	L
6	19.7745	49.55	23.01	60.00	10.45	26.54	PK	L

Final Data List

NO.	Freq. [MHz]	Correction factor[dB]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	QP Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	AV Reading [dBμV]	Type
1	0.4519	19.83	45.00	56.84	11.84	25.17	29.07	46.84	17.77	9.24	L
2	0.6105	19.91	45.37	56.00	10.63	25.46	30.73	46.00	15.27	10.82	L
3	0.9890	19.87	45.09	56.00	10.91	25.22	30.99	46.00	15.01	11.12	L
4	1.4895	19.97	45.60	56.00	10.40	25.63	32.79	46.00	13.21	12.82	L
5	1.9059	20.05	44.73	56.00	11.27	24.68	32.21	46.00	13.79	12.16	L

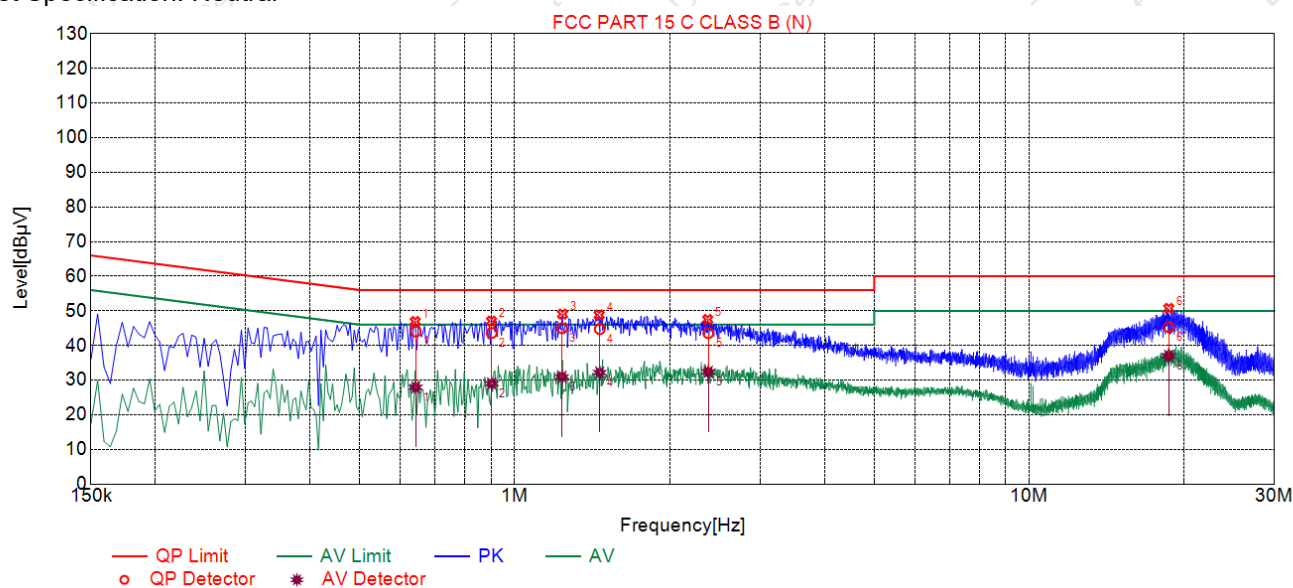
Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor



Test Specification: Neutral



Suspected List

NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.6405	46.91	19.95	56.00	9.09	26.96	PK	N
2	0.9015	47.02	19.96	56.00	8.98	27.06	PK	N
3	1.2390	49.06	20.02	56.00	6.94	29.04	PK	N
4	1.4595	48.83	20.06	56.00	7.17	28.77	PK	N
5	2.3730	47.50	20.17	56.00	8.50	27.33	PK	N
6	18.6990	50.72	22.77	60.00	9.28	27.95	PK	N

Final Data List

NO.	Freq. [MHz]	Correction factor[dB]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	QP Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	AV Reading [dBμV]	Type
1	0.6421	19.95	44.04	56.00	11.96	24.09	27.92	46.00	18.08	7.97	N
2	0.9018	19.96	43.64	56.00	12.36	23.68	28.99	46.00	17.01	9.03	N
3	1.2359	20.02	45.00	56.00	11.00	24.98	30.97	46.00	15.03	10.95	N
4	1.4631	20.06	44.75	56.00	11.25	24.69	32.19	46.00	13.81	12.13	N
5	2.3789	20.17	43.58	56.00	12.42	23.41	32.38	46.00	13.62	12.21	N
6	18.6868	22.77	45.34	60.00	14.66	22.57	36.97	50.00	13.03	14.20	N

Remark: Margin = Limit – Level

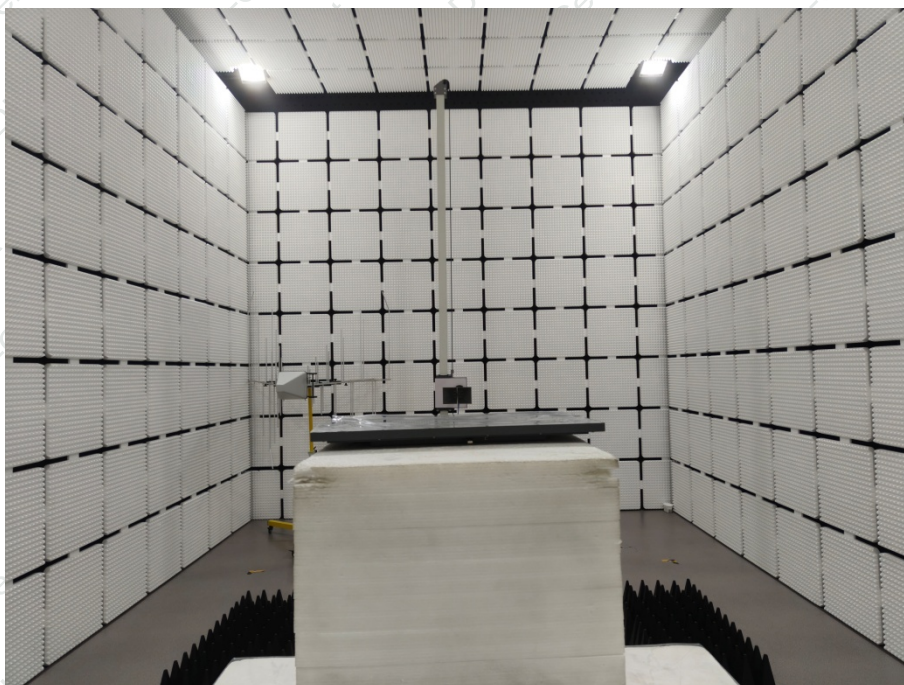
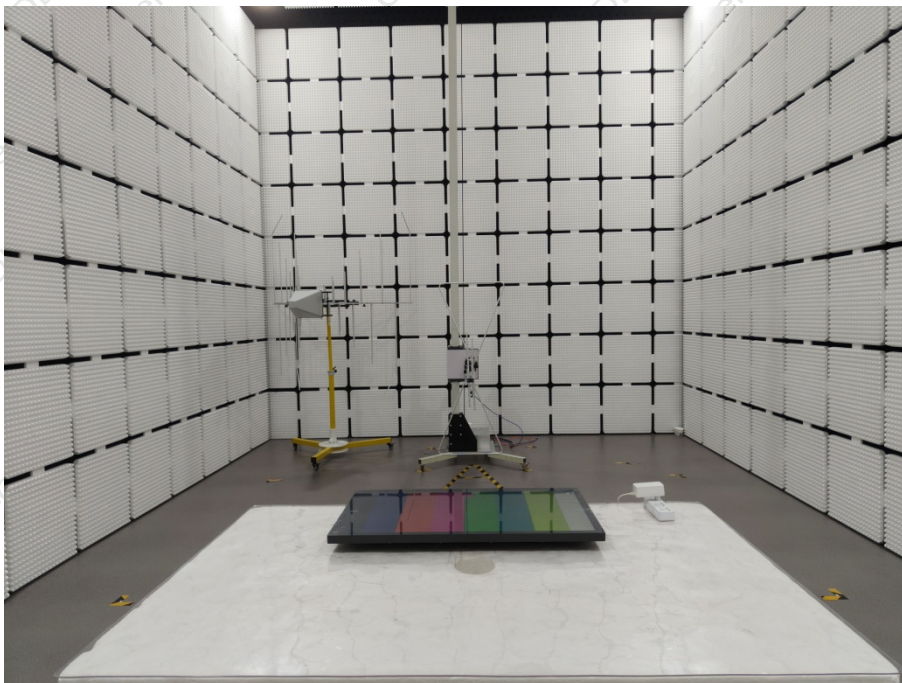
Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor



7. Test Setup Photos of the EUT

Radiated Emission

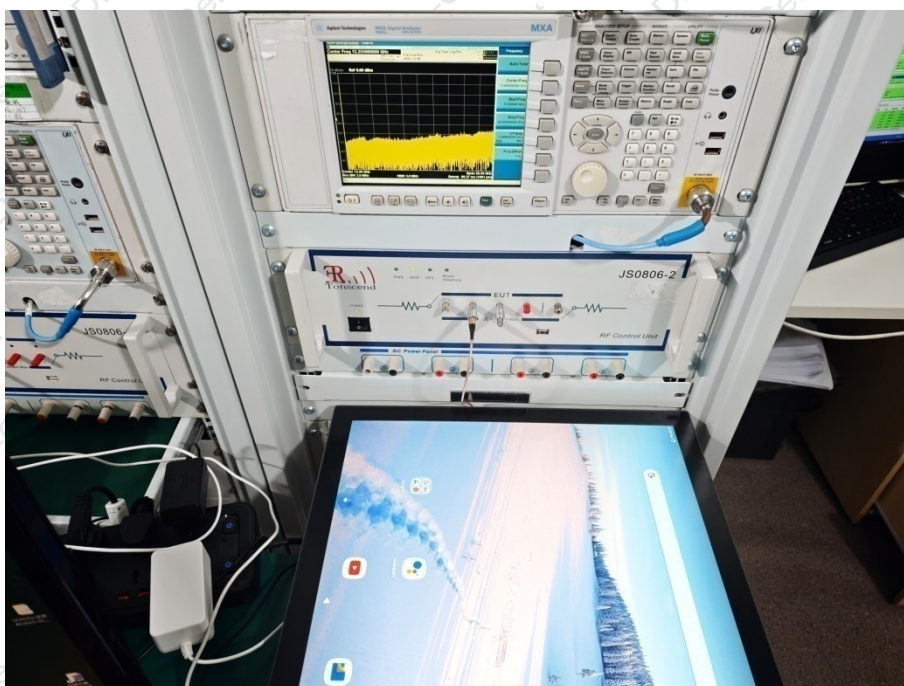




AC Conducted Emission



RF Conducted Emission





8. Photos of the EUT

Reference to the report: ANNEX A of external photos and ANNEX B of internal photos

-----End of test report-----