

Test Procedure:

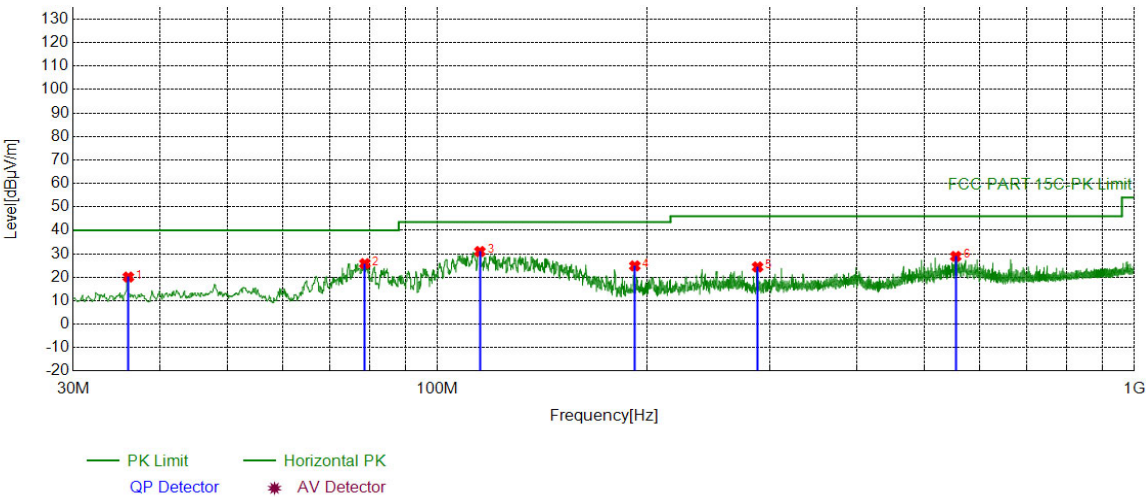
- 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
 - 2) Above 1G: The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- Note: For the radiated emission test above 1GHz:
- Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- The EUT was set 3 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

	<p>horizontal and vertical polarizations of the antenna are set to make the measurement.</p> <p>d. 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.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>f. 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.</p> <p>g. Test the EUT in the lowest channel (2402MHz),the middle channel (2440MHz),the Highest channel (2480MHz)</p> <p>h. 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.</p> <p>i. Repeat above procedures until all frequencies measured was complete.</p>
Test Mode:	Refer to clause 5.3
Test Results:	Pass

Radiated Spurious Emission below 1GHz:

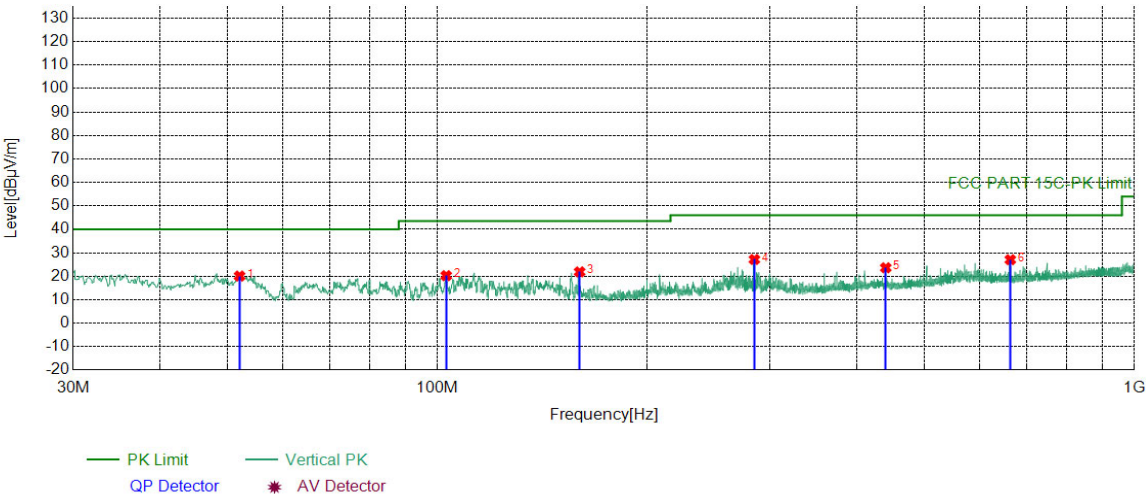
During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes, only the worst case highest channel of GFSK was recorded in the report.

Test Graph



Suspected List									
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	36.0146	-19.29	39.39	20.10	40.00	19.90	PASS	Horizontal	PK
2	78.6989	-22.34	48.15	25.81	40.00	14.19	PASS	Horizontal	PK
3	115.0775	-19.24	50.22	30.98	43.50	12.52	PASS	Horizontal	PK
4	192.0062	-18.58	43.42	24.84	43.50	18.66	PASS	Horizontal	PK
5	288.0458	-15.76	40.14	24.38	46.00	21.62	PASS	Horizontal	PK
6	554.5315	-9.70	38.59	28.89	46.00	17.11	PASS	Horizontal	PK

Test Graph



Suspected List									
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	52.0212	-17.44	37.53	20.09	40.00	19.91	PASS	Vertical	PK
2	102.9513	-18.40	38.65	20.25	43.50	23.25	PASS	Vertical	PK
3	159.9930	-21.15	43.02	21.87	43.50	21.63	PASS	Vertical	PK
4	285.0385	-15.83	42.99	27.16	46.00	18.84	PASS	Vertical	PK
5	439.9630	-12.01	35.62	23.61	46.00	22.39	PASS	Vertical	PK
6	664.0554	-8.10	35.16	27.06	46.00	18.94	PASS	Vertical	PK

Radiated Spurious Emission above 1GHz:

Mode:		BLE GFSK Transmitting						
Channel:		2402 MHz						
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	1235.0235	0.89	43.60	44.49	74.00	29.51	Pass	Horizontal
2	1753.6754	3.12	41.90	45.02	74.00	28.98	Pass	Horizontal
3	4804.1203	-16.23	68.31	52.08	74.00	21.92	Pass	Horizontal
4	7205.2804	-11.83	54.86	43.03	74.00	30.97	Pass	Horizontal
5	9607.4405	-7.37	52.93	45.56	74.00	28.44	Pass	Horizontal
6	11976.5984	-5.39	51.51	46.12	74.00	27.88	Pass	Horizontal
7	1263.0263	0.96	42.44	43.40	74.00	30.60	Pass	Vertical
8	1869.0869	3.80	40.65	44.45	74.00	29.55	Pass	Vertical
9	4803.1202	-16.23	66.29	50.06	74.00	23.94	Pass	Vertical
10	7206.2804	-11.83	53.92	42.09	74.00	31.91	Pass	Vertical
11	11091.5394	-6.20	50.85	44.65	74.00	29.35	Pass	Vertical
12	14369.7580	0.72	47.07	47.79	74.00	26.21	Pass	Vertical

Mode:		BLE GFSK Transmitting						
Channel:		2440 MHz						
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	1222.8223	0.86	42.43	43.29	74.00	30.71	Pass	Horizontal
2	1982.2982	4.46	40.93	45.39	74.00	28.61	Pass	Horizontal
3	4879.1253	-16.21	68.59	52.38	74.00	21.62	Pass	Horizontal
4	7514.3010	-11.11	53.46	42.35	74.00	31.65	Pass	Horizontal
5	9759.4506	-7.51	53.47	45.96	74.00	28.04	Pass	Horizontal
6	14379.7587	0.88	47.43	48.31	74.00	25.69	Pass	Horizontal
7	1364.8365	1.27	41.70	42.97	74.00	31.03	Pass	Vertical
8	2026.7027	4.64	40.70	45.34	74.00	28.66	Pass	Vertical
9	4879.1253	-16.21	66.38	50.17	74.00	23.83	Pass	Vertical
10	7319.2880	-11.66	53.58	41.92	74.00	32.08	Pass	Vertical
11	10873.5249	-6.33	51.70	45.37	74.00	28.63	Pass	Vertical
12	15926.8618	-0.27	49.42	49.15	74.00	24.85	Pass	Vertical

Mode:		BLE GFSK Transmitting						
Channel:		2480 MHz						
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	1164.2164	0.82	42.61	43.43	74.00	30.57	Pass	Horizontal
2	1781.2781	3.22	41.22	44.44	74.00	29.56	Pass	Horizontal
3	4960.1307	-15.97	69.97	54.00	74.00	20.00	Pass	Horizontal
4	4961.1307	-15.97	61.55	45.58	54.00	8.42	Pass	Horizontal
5	7439.2960	-11.34	54.11	42.77	74.00	31.23	Pass	Horizontal
6	9918.4612	-7.10	55.57	48.47	74.00	25.53	Pass	Horizontal
7	1295.8296	1.05	42.61	43.66	74.00	30.34	Pass	Vertical
8	2016.7017	4.61	41.30	45.91	74.00	28.09	Pass	Vertical
9	4961.1307	-15.97	65.55	49.58	74.00	24.42	Pass	Vertical
10	7439.2960	-11.34	54.69	43.35	74.00	30.65	Pass	Vertical
11	10374.4916	-6.33	51.02	44.69	74.00	29.31	Pass	Vertical
12	13758.7172	-1.69	48.63	46.94	74.00	27.06	Pass	Vertical

Remark:

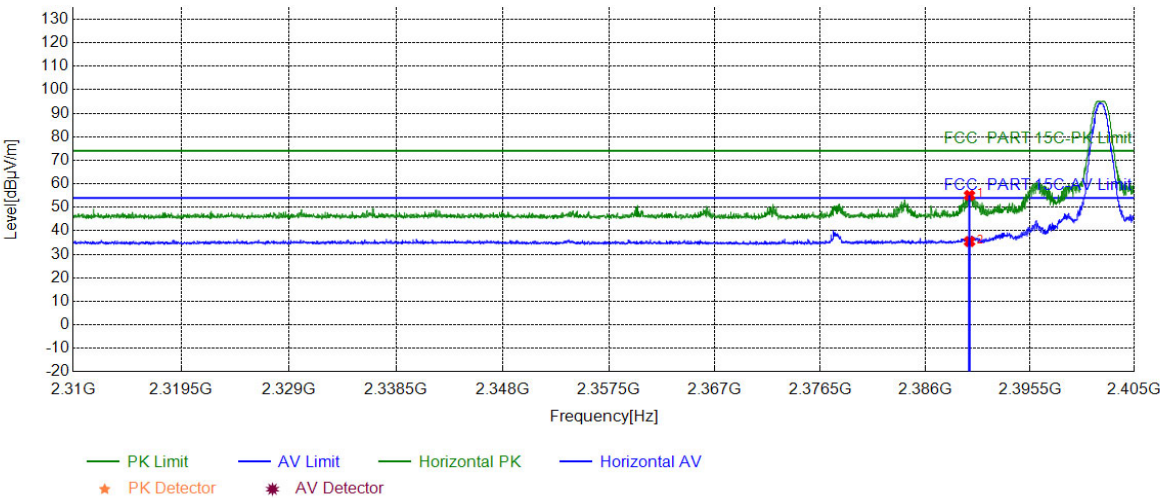
- 1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
- 2) Scan from 9kHz to 25GHz, the disturbance above 10GHz and below 30MHz was very low. 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.

Restricted bands:

Test plot as follows:

Mode:	BLE GFSK Transmitting	Channel:	2402 MHz
Remark:			

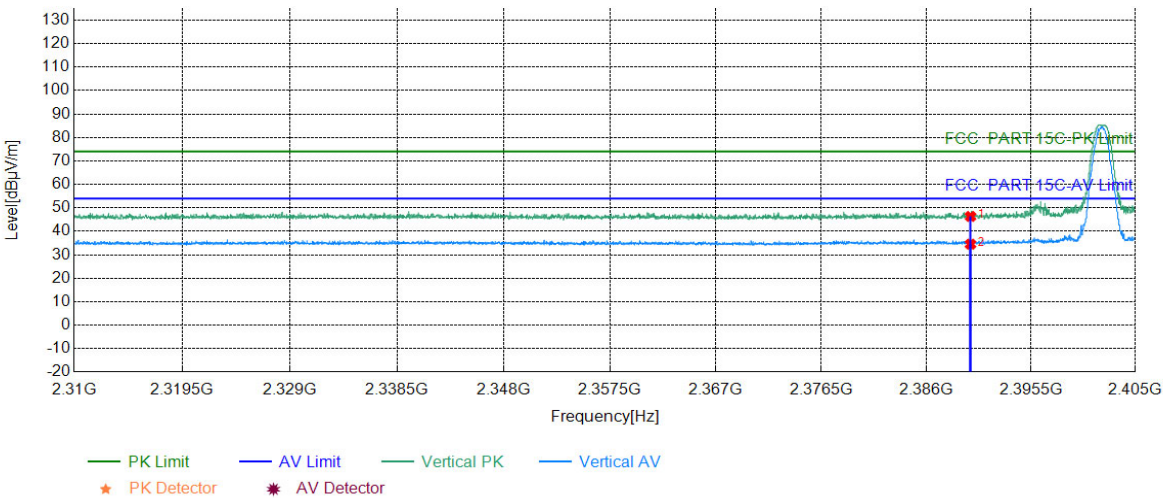
Test Graph



Suspected List									
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2390.0000	5.77	49.30	55.07	74.00	18.93	PASS	Horizontal	PK
2	2390.0000	5.77	29.66	35.43	54.00	18.57	PASS	Horizontal	AV

Mode:	BLE GFSK Transmitting	Channel:	2402 MHz
Remark:			

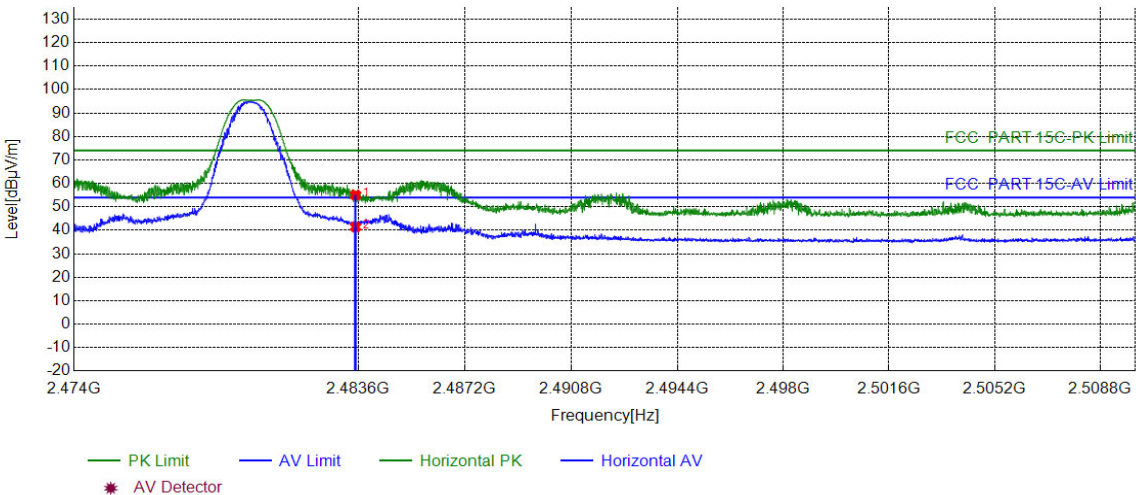
Test Graph



Suspected List									
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2390.0000	5.77	40.58	46.35	74.00	27.65	PASS	Vertical	PK
2	2390.0000	5.77	28.75	34.52	54.00	19.48	PASS	Vertical	AV

Mode:	BLE GFSK Transmitting	Channel:	2480 MHz
Remark:			

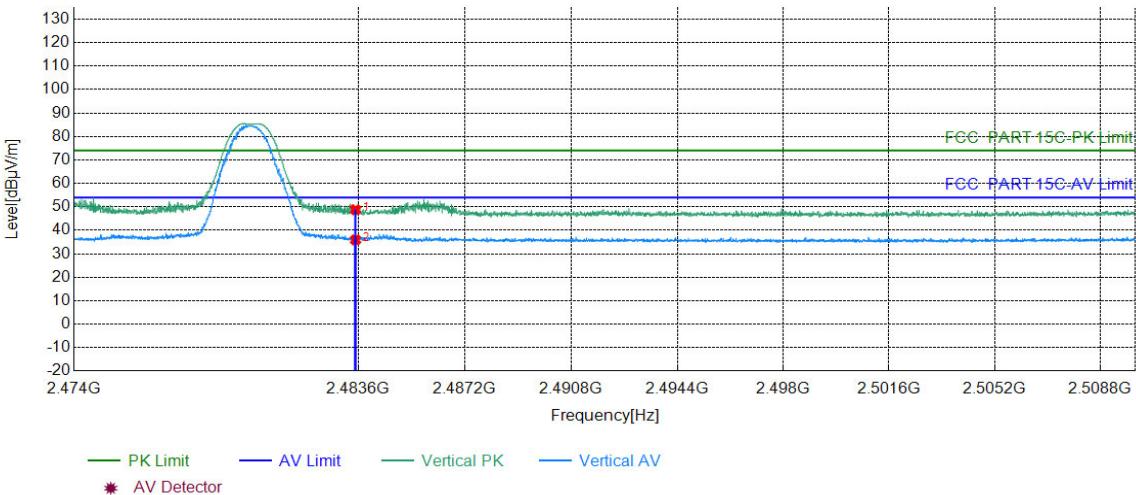
Test Graph



Suspected List									
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	2483.5000	6.57	48.49	55.06	74.00	18.94	PASS	Horizontal	PK
2	2483.5000	6.57	34.87	41.44	54.00	12.56	PASS	Horizontal	AV

Mode:	BLE GFSK Transmitting	Channel:	2480 MHz
Remark:			

Test Graph



Suspected List									
NO	Freq. [MHz]	Factor [dB]	Reading [dBµV]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Result	Polarity	Remark
1	2483.5000	6.57	42.23	48.80	74.00	25.20	PASS	Vertical	PK
2	2483.5000	6.57	29.36	35.93	54.00	18.07	PASS	Vertical	AV

Note:
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 -Correct Factor
Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

8 Appendix A

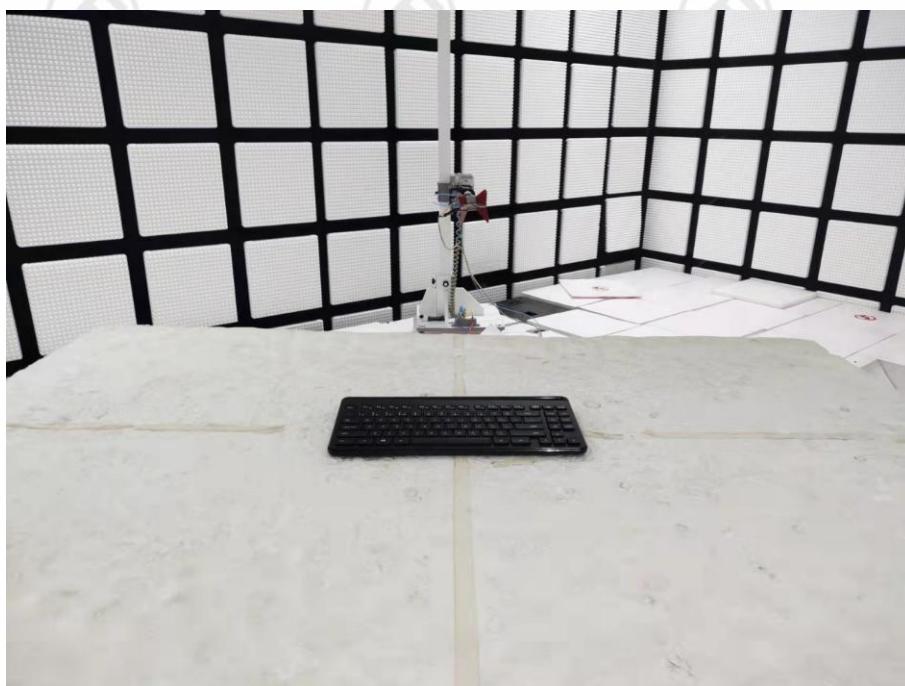
Refer to Appendix: Bluetooth LE of EED32N81433501

9 PHOTOGRAPHS OF TEST SETUP

Test model No.:K802



Radiated spurious emission Test Setup-1(Below 1GHz)



Radiated spurious emission Test Setup-2(Above 1GHz)



**Radiated spurious emission Test Setup-3(Above 1GHz)
There are absorbing materials under the ground.**

10 PHOTOGRAPHS OF EUT Constructional Details

Test model No.: K802



View of Product-1



View of Product-2



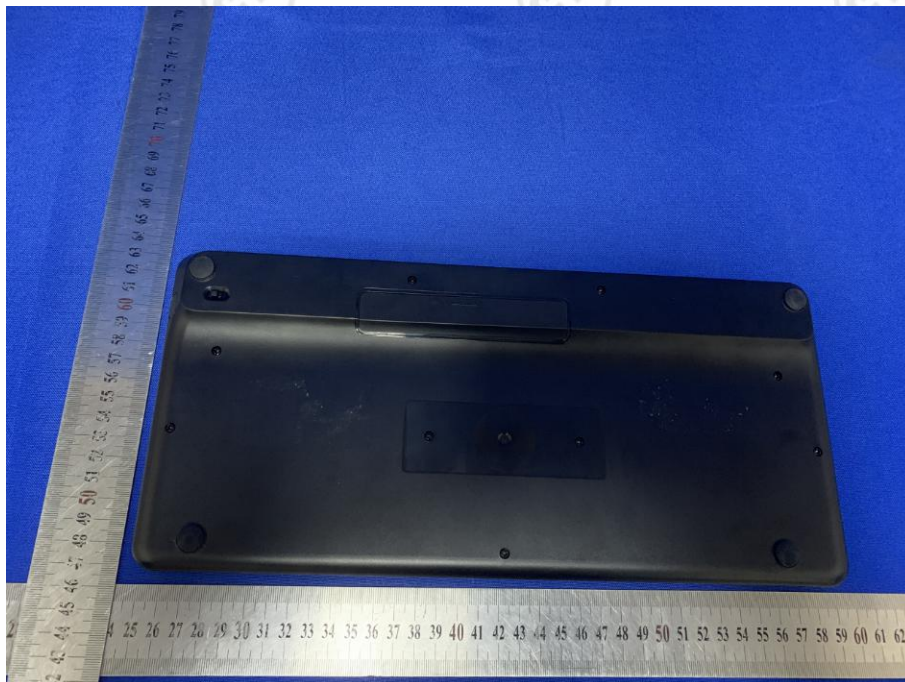
View of Product-3



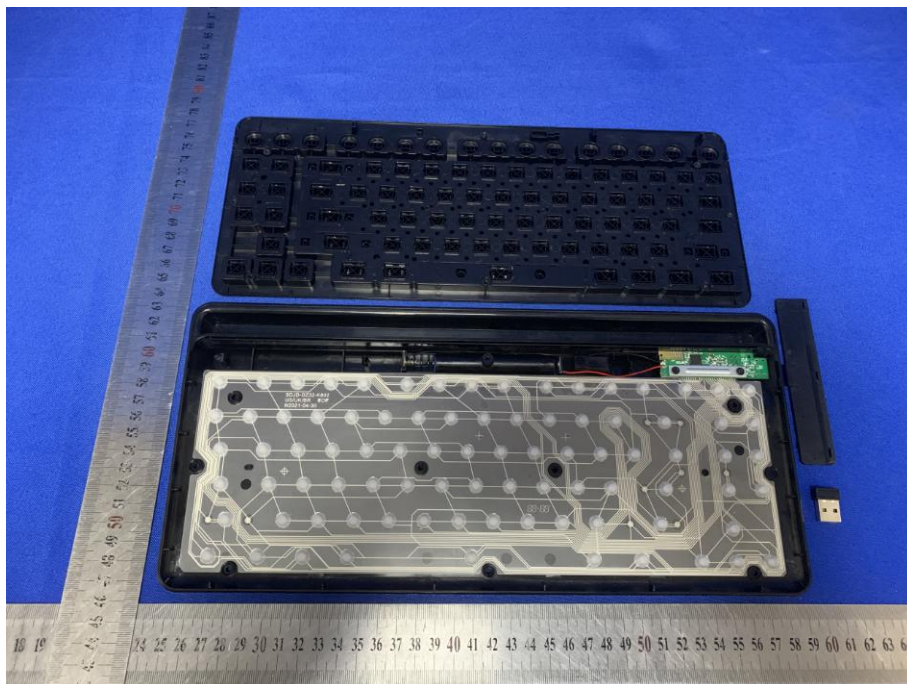
View of Product-4



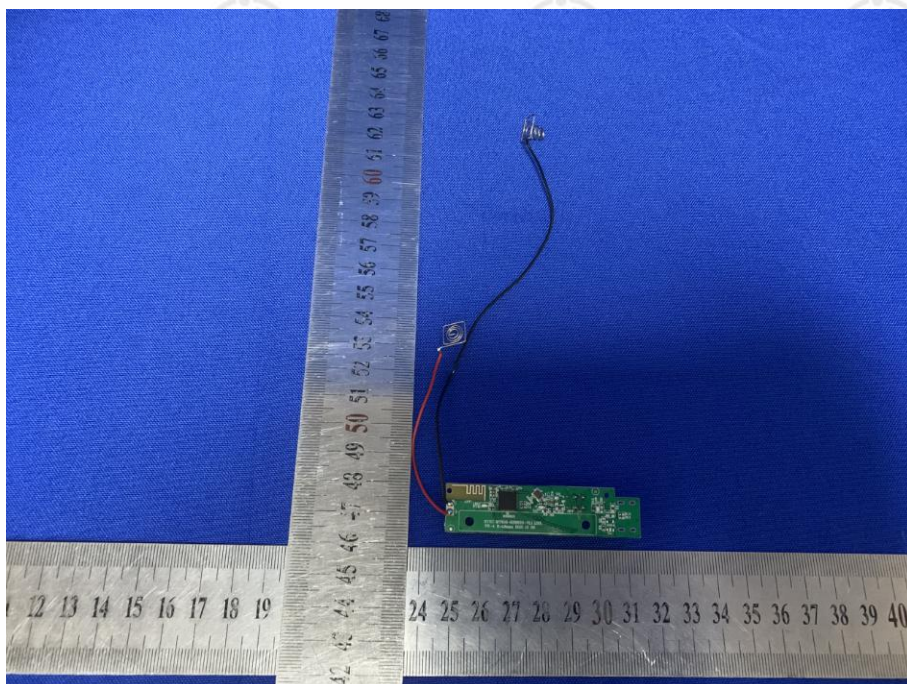
View of Product-5



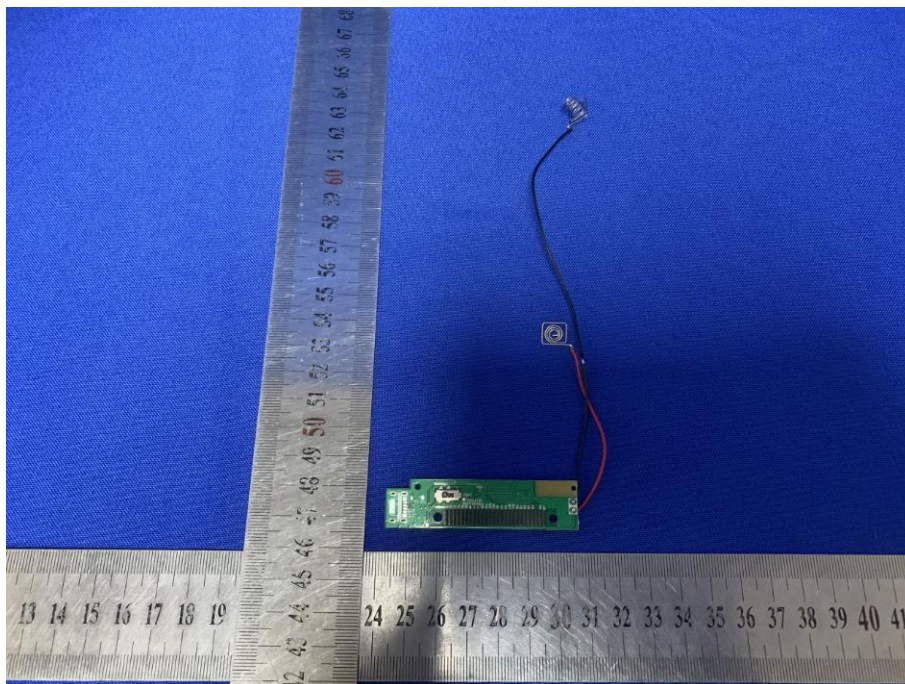
View of Product-6



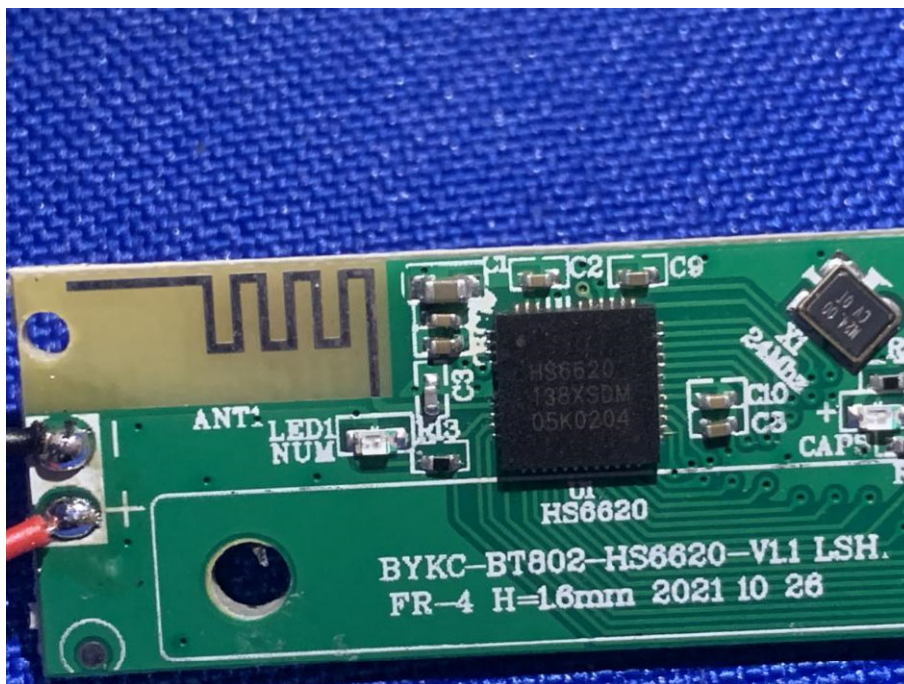
View of Product-7



View of Product-8



View of Product-9



View of Product-10

The test report is effective only with both signature and specialized stamp, the result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

*** End of Report ***