

Test Report



Declaration of Conformity

Product: Detector

Trade Mark: N/A

Model Number: T09

FCC ID: 2BRHW-T09

Prepared for

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Prepared by

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1 General Description

1.1 Description of EUT

Product name:	Detector
Model name:	T09
Series Model:	N/A
Different of series model:	N/A
Battery:	DC 3.7V, 500mAh
Power supply:	Input: 5V=1A Battery: DC 3.7V, 500mAh
Adapter information:	N/A

1.2 Test Mode

Pretest Test Mode	Description of Mode
1	Charging Mode
2	RF detection Mode
3	Magnetic field detection Mode
4	Infrared detection Mode

Test Item	Final Test Mode
Conducted Emissions	1
Radiated Emissions 30 to 1000 MHz	1
Radiated Emissions 1 GHz to 6 GHz	3

1.3 Test Setup

See photographs of the test setup in the report for the actual setup and connections between EUT and support equipment.

1.4 Ancillary Equipment

Equipment	Model	S/N	Manufacturer
Phone	iPhone 12pro Max	FF2LDX4T60 D5H	Apple Inc
Adapter	CD289	/	Ugreen Group Limited

2 Summary of Test Result

Test procedures according to the technical standards:

E-CFR Title 47 Part 15 Subpart B					
No.	Standard Section	Test Item	Limit	Result	Remark
1	15.107	Conducted Emissions	Class B	Pass	
2	15.109	Radiated Emissions	Class B	Pass	

Note:
1. "N/A" means the test case does not apply to the test object.

3 Test Facilities and Accreditations

3.1 Test Laboratory

Test Site	Shenzhen HongBiao Certification& Testing Co., Ltd
Test Site Location	Room 102, 201, Building 2, Yuanwanggu RFID Industrial Park, Tongguan Road, Tianliao Community, Yutang Street, Guangming District, Shenzhen, China
Telephone:	(86-755) 2998 9321
Fax:	(86-755) 2998 5110
A2LA Certificate No.:	6765.01

3.2 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15°C~35°C
Relative Humidity:	20%~75%
Air Pressure:	98kPa~101kPa

3.3 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

The data and results quoted in this document are true and accurate values, and uncertainties are not involved in the calculations.

In addition, components and mass production processes that are similar to testing equipment may introduce additional deviations, and the manufacturer is solely responsible for the continued compliance of the equipment.

A. Conducted Measurement:

Measurement Frequency Range	U, (dB)	Note
150 kHz to 30 MHz	2.5	AC Power Port

B. Radiated Measurement:

Measurement Frequency Range	U, (dB)	Note
30 MHz to 1000 MHz	4.2	/
1 GHz to 6 GHz	4.7	/

3.4 Test Software

Software name	Manufacturer	Model	Version
Conducted Emission test Software	Farad	EZ-EMC	EMC-CON 3A1.1+
Radiated Emission test Software	Farad	EZ-EMC	FA-03A2

4 List of Test Equipment

Radiation emission							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	HB-E001	Horn Antenna	Schwarzbeck	BBHA 9120D	02592	2024-05-18	2026-05-17
2	HB-E002	Biconical log-periodic composite antenna	Schwarzbeck	VULB 9168	01340	2024-05-18	2026-05-17
3	HB-E003	SHF-EHF Horn	Schwarzbeck	BBHA 91270	01193	2024-05-18	2026-05-17
4	HB-E005	Preamplifier	Noyetec	LAN-0118	NYCM1420102	2025-05-07	2026-05-06
5	HB-E006	Preamplifier	Noyetec	LAN-1840	NYCM1420103	2025-05-07	2026-05-06
6	HB-E007	EMI TEST RECEIVER	R&S	ESR7	102520	2025-05-07	2026-05-06
7	HB-E009	POSITINAL COTROLLE R	Noyetec	N/A	N/A	/	/
8	HB-E013	RF switch	Noyetec	NY-RF4	NY0CM1420204	/	/
9	HB-E066	Illuminance Tester	TASI	TA8121	N/A	2025-05-13	2026-05-12
10	HB-E075	Active loop antenna	Schwarzbeck	FMZB 1519B	1519B-245	2024-05-18	2026-05-17
11	HB-E076	Preamplifier	Hewlett Packard	8447D	1937A02278	2025-05-07	2026-05-06
Conduction emission							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	HB-E014	4 Path V-LISN	Schwarzbeck	NNLK 8121	00770	2025-05-07	2026-05-06
2	HB-E015	Pulse Limiter	Schwarzbeck	VTSD 9561-F	00949	2025-05-07	2026-05-06
3	HB-E016	ZN23201	Noyetec	ZN23201	N/A	2025-05-10	2026-05-09
4	HB-E059	Attenuator	Xianghua	TS2-6-1	220215166	2025-05-10	2026-05-09
5	HB-E069	EMI TEST RECEIVER	R&S	ESCI	N/A	2025-05-07	2026-05-06

Note: the calibration interval of the above test instruments is 12&24 months and the calibrations are traceable to international system unit (SI).

5 EMC Emission Test

5.1 Conducted Emission

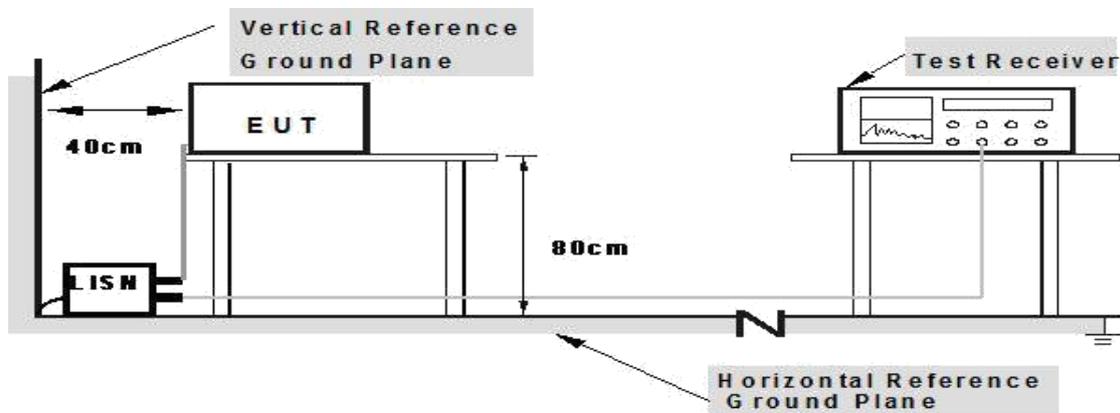
5.1.1 Limits

Limits – Class A		
Frequency (MHz)	Limit (dB μ V)	
	Quasi-Peak	Average
0.15 to 0.5	79	66
0.5 to 30	73	60
Limits – Class B		
Frequency (MHz)	Limit (dB μ V)	
	Quasi-Peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50
Note:		
1. the tighter limit applies at the band edges.		
2. the limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.		

5.1.2 Test Procedures

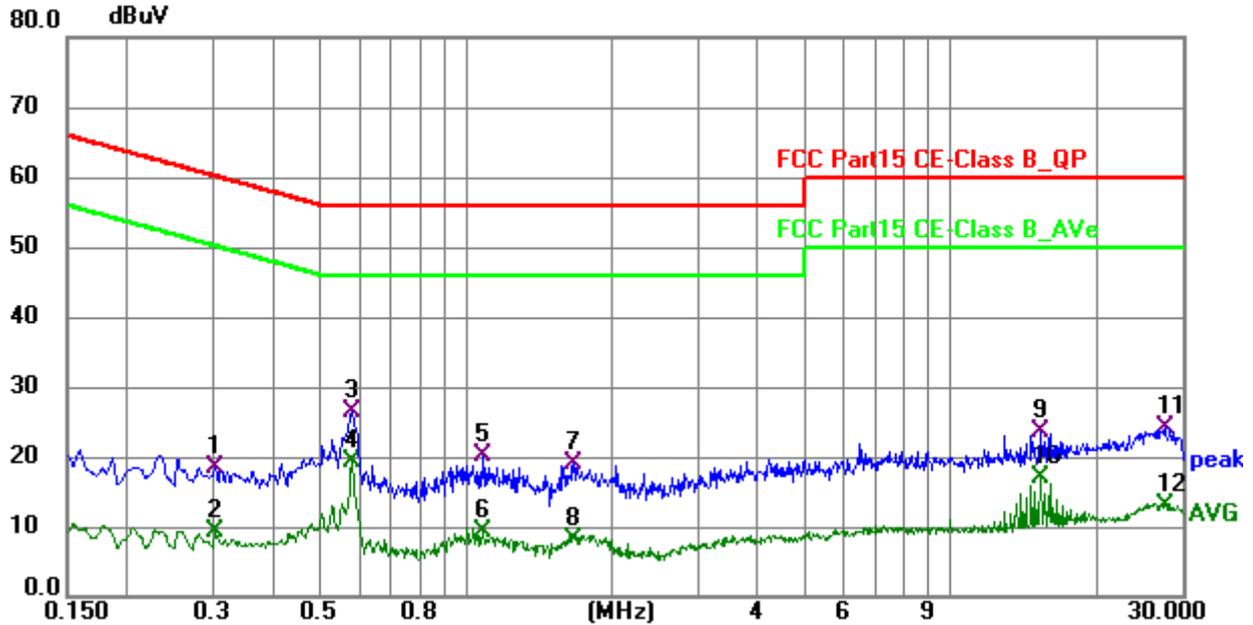
- a) The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d) LISN is at least 80 cm from nearest part of EUT chassis.
- e) For the actual test configuration, please refer to the related Item – photographs of the test setup.

5.1.3 Test setup



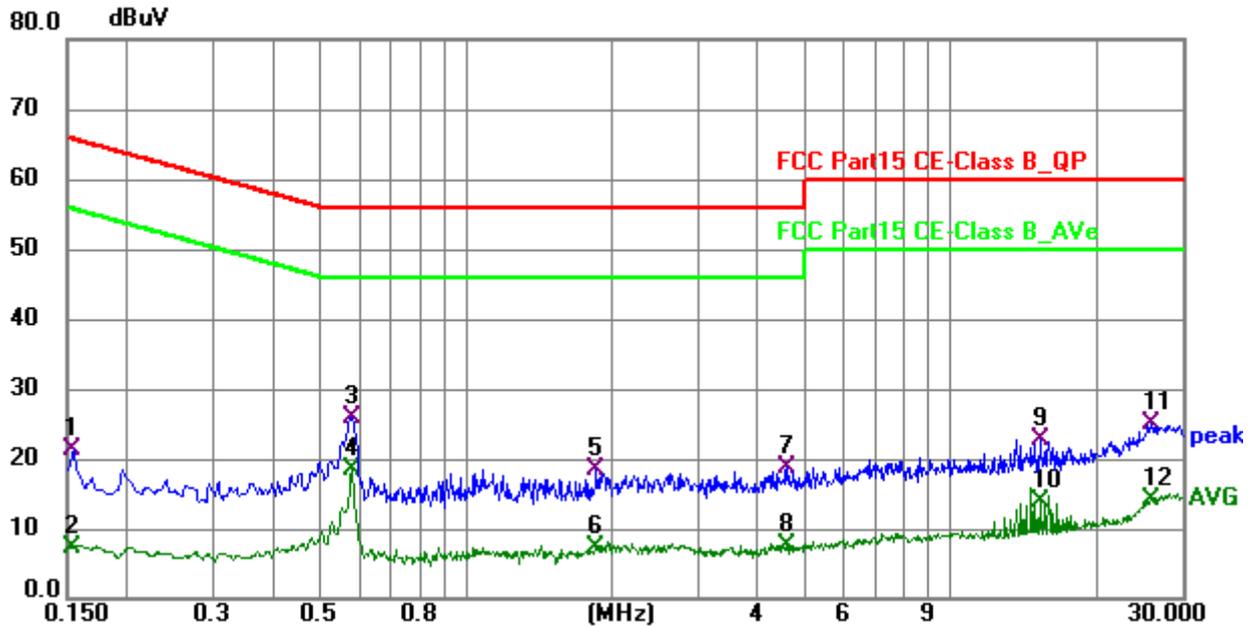
5.1.4 Test Result

EUT:	Detector	Model Name:	T09
Test Mode:	Mode 1	Phase:	L
Test Voltage:	DC 5V from adapter AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.303	8.33	10.08	18.41	60.16	-41.75	QP
2	0.303	-0.76	10.08	9.32	50.16	-40.84	AVG
3	0.582	16.27	10.11	26.38	56.00	-29.62	QP
4 *	0.582	9.15	10.11	19.26	46.00	-26.74	AVG
5	1.081	10.03	10.15	20.18	56.00	-35.82	QP
6	1.081	-0.94	10.15	9.21	46.00	-36.79	AVG
7	1.667	8.75	10.27	19.02	56.00	-36.98	QP
8	1.667	-2.06	10.27	8.21	46.00	-37.79	AVG
9	15.310	9.40	14.14	23.54	60.00	-36.46	QP
10	15.310	2.90	14.14	17.04	50.00	-32.96	AVG
11	27.618	8.52	15.69	24.21	60.00	-35.79	QP
12	27.618	-2.79	15.69	12.90	50.00	-37.10	AVG

EUT:	Detector	Model Name:	T09
Test Mode:	Mode 1	Phase:	N
Test Voltage:	DC 5V from adapter AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.154	10.97	10.20	21.17	65.79	-44.62	QP
2	0.154	-2.85	10.20	7.35	55.79	-48.44	AVG
3	0.582	15.74	10.12	25.86	56.00	-30.14	QP
4 *	0.582	8.25	10.12	18.37	46.00	-27.63	AVG
5	1.851	8.18	10.32	18.50	56.00	-37.50	QP
6	1.851	-2.92	10.32	7.40	46.00	-38.60	AVG
7	4.578	7.61	11.20	18.81	56.00	-37.19	QP
8	4.578	-3.74	11.20	7.46	46.00	-38.54	AVG
9	15.306	8.51	14.15	22.66	60.00	-37.34	QP
10	15.306	-0.38	14.15	13.77	50.00	-36.23	AVG
11	25.980	9.40	15.49	24.89	60.00	-35.11	QP
12	25.980	-1.34	15.49	14.15	50.00	-35.85	AVG

5.2 Radiated Emission

5.2.1 Limits

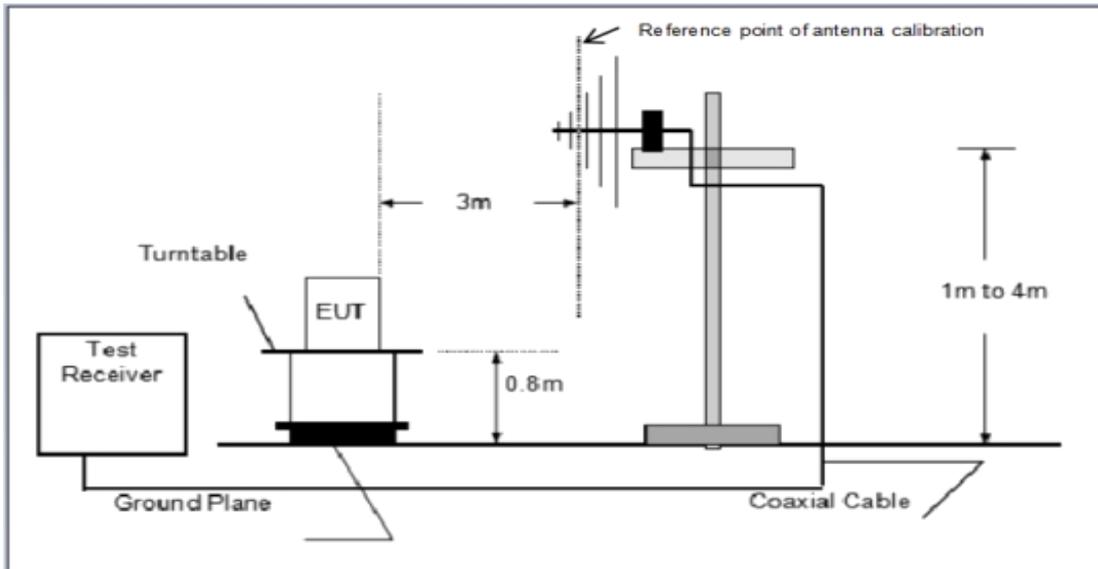
Limits – Class A at 3 m		
Frequency (MHz)	Quasi-Peak(dB μ V/m)	Average(dB μ V/m)
30 to 88	49	/
88 to 216	53.5	/
216 to 960	56.4	/
960 to 1000	59.5	/
Above 1000	84	64
Limits – Class B at 3 m		
Frequency (MHz)	Quasi-Peak(dB μ V/m)	Average(dB μ V/m)
30 to 88	40	/
88 to 216	43.5	/
216 to 960	46	/
960 to 1000	54	/
Above 1000	74	54

5.2.2 Test Procedures

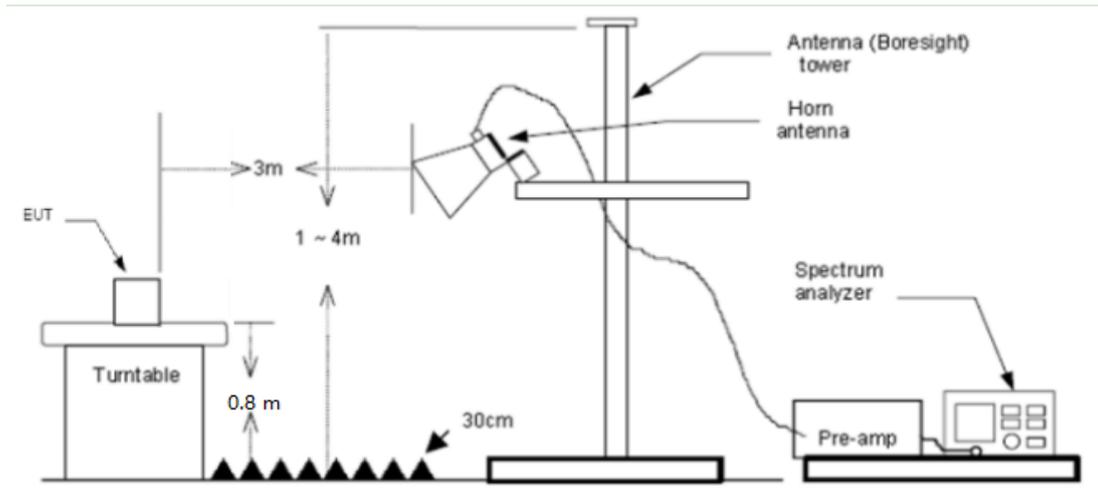
- a) The radiated emission tests were performed in the 3 meters.
- b) The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.
- c) The height of the test antenna shall vary between 1m to 4m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d) If the peak mode measured value compliance with and lower than quasi peak mode limit, the EUT shall be deemed to meet QP limits and then no additional QP mode measurement performed.
- e) If the peak mode measured value compliance with and lower than average mode limit, the EUT shall be deemed to meet average limits and then no additional average mode measurement performed.
- f) For the actual test configuration, please refer to the related item – EUT test photos.

5.2.3 Test Setup

Radiated emission test-up frequency for 30MHz - 1GHz:



Radiated emission test-up frequency for above 1GHz:



5.2.4 Test Result

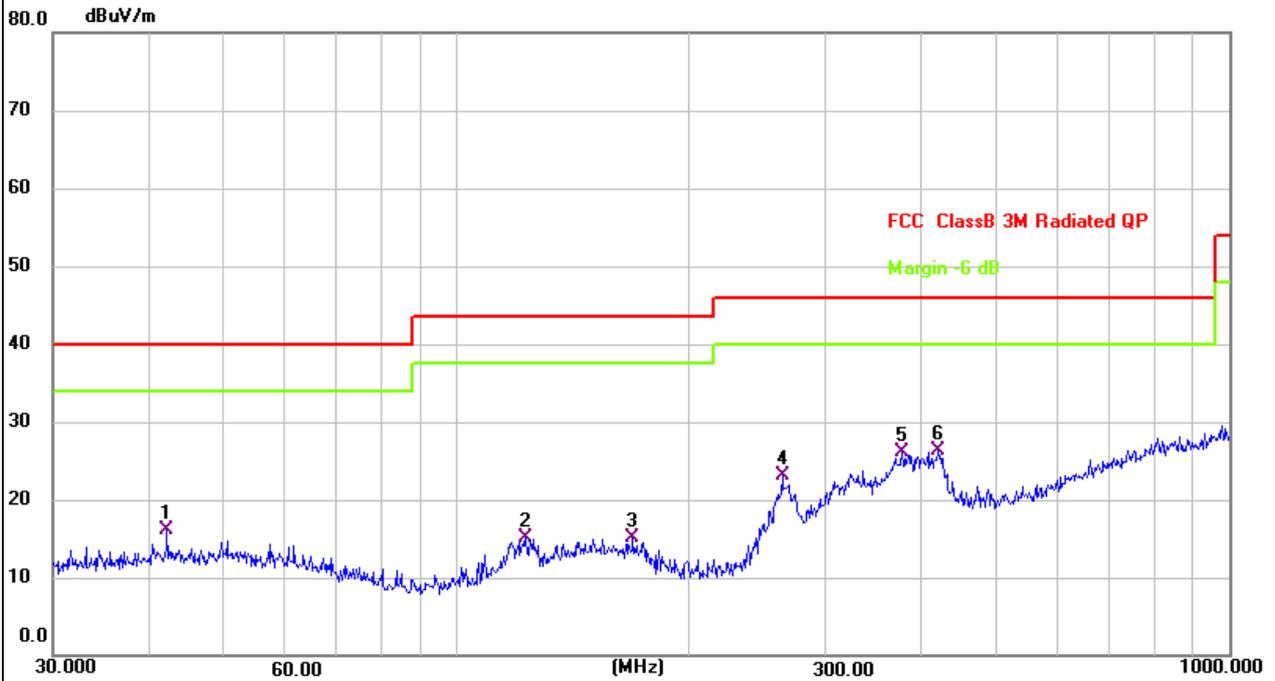
Note: the highest working frequency of EUT is above 108MHz.

Formula:

Measurement Level (dBuV/m) = Reading Level (dBuV/m) + Correct Factor (dBuV/m)

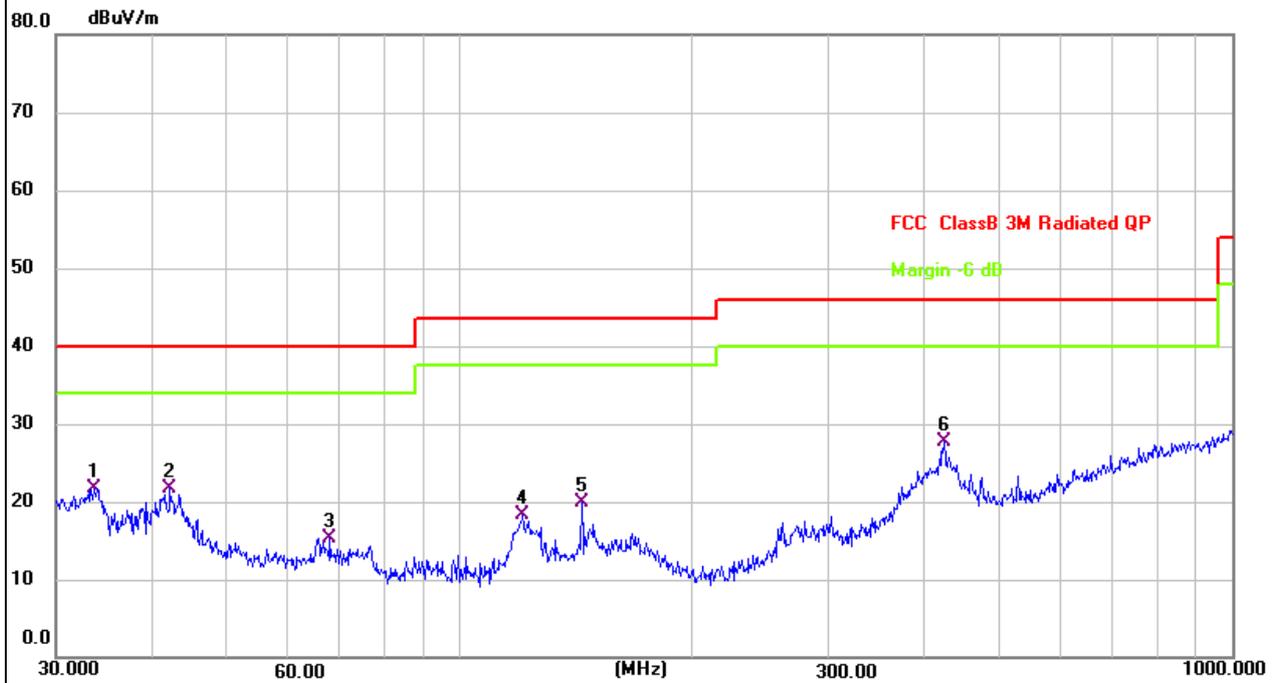
Margin Level (dBuV/m) = Measurement Level (dBuV/m) – Limit Level (dBuV/m)

EUT:	Detector	Model Name:	T09
Test Mode:	Mode 1	Phase:	Horizontal
Test Voltage:	DC 5V from adapter AC 230V/50Hz		



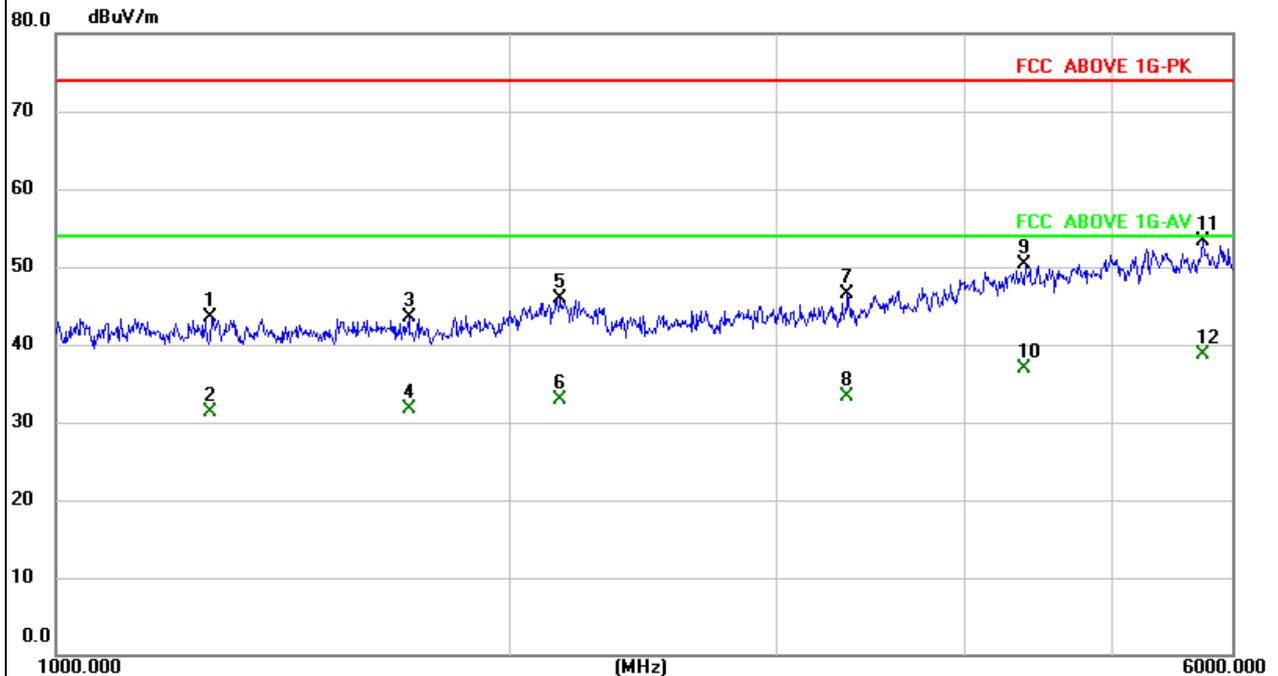
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	42.1542	29.97	-13.90	16.07	40.00	-23.93	QP
2	122.8340	30.32	-15.25	15.07	43.50	-28.43	QP
3	169.0054	28.77	-13.61	15.16	43.50	-28.34	QP
4	263.8190	37.04	-13.99	23.05	46.00	-22.95	QP
5	377.2591	36.27	-10.20	26.07	46.00	-19.93	QP
6 *	420.5803	34.97	-8.74	26.23	46.00	-19.77	QP

EUT:	Detector	Model Name:	T09
Test Mode:	Mode 1	Phase:	Vertical
Test Voltage:	DC 5V from adapter AC 230V/50Hz		



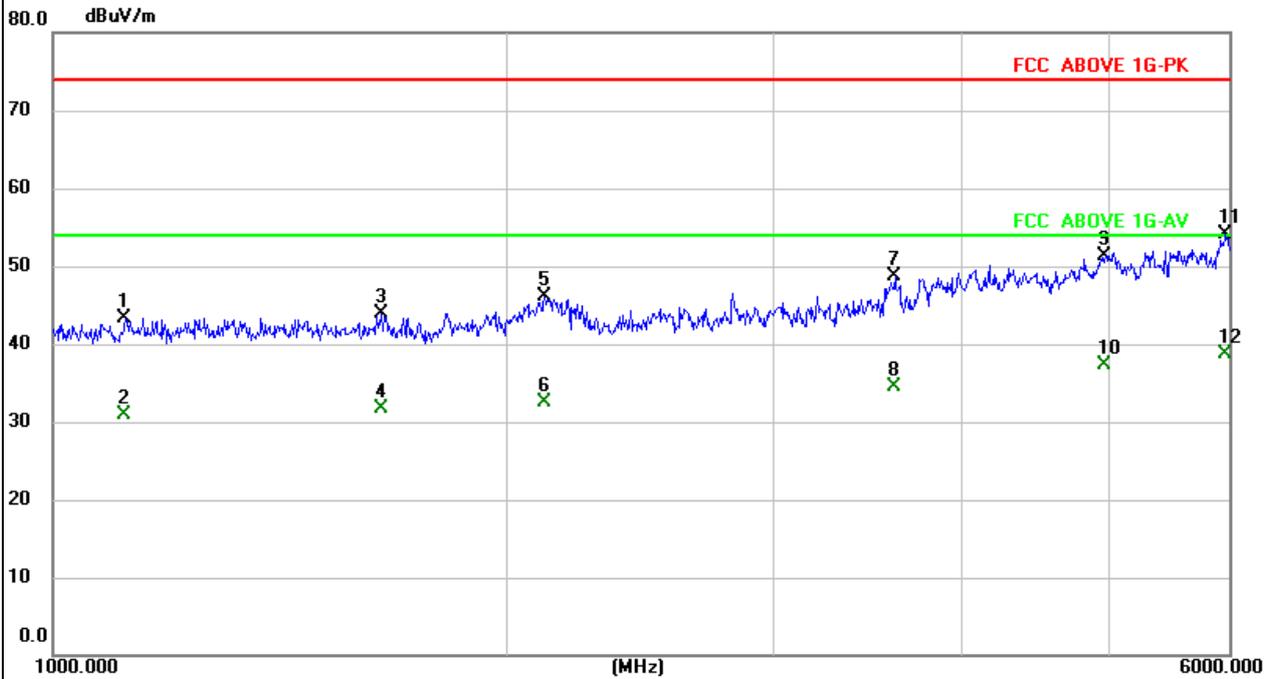
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	33.5624	36.59	-14.86	21.73	40.00	-18.27	QP
2	42.1542	35.67	-13.90	21.77	40.00	-18.23	QP
3	67.9129	31.11	-15.76	15.35	40.00	-24.65	QP
4	120.6991	33.57	-15.30	18.27	43.50	-25.23	QP
5	143.8295	33.58	-13.77	19.81	43.50	-23.69	QP
6 *	423.5403	36.47	-8.68	27.79	46.00	-18.21	QP

EUT:	Detector	Model Name:	T09
Test Mode:	Mode 3	Phase:	Horizontal
Test Voltage:	DC 3.7V from battery		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1266.823	46.37	-2.91	43.46	74.00	-30.54	peak
2	1266.823	34.21	-2.91	31.30	54.00	-22.70	AVG
3	1711.770	46.69	-3.26	43.43	74.00	-30.57	peak
4	1711.770	35.06	-3.26	31.80	54.00	-22.20	AVG
5	2156.884	46.33	-0.46	45.87	74.00	-28.13	peak
6	2156.884	33.36	-0.46	32.90	54.00	-21.10	AVG
7	3339.610	44.66	1.77	46.43	74.00	-27.57	peak
8	3339.610	31.63	1.77	33.40	54.00	-20.60	AVG
9	4377.202	43.56	6.79	50.35	74.00	-23.65	peak
10	4377.202	30.21	6.79	37.00	54.00	-17.00	AVG
11	5737.167	44.10	9.26	53.36	74.00	-20.64	peak
12 *	5737.167	29.54	9.26	38.80	54.00	-15.20	AVG

EUT:	Detector	Model Name:	T09
Test Mode:	Mode 3	Phase:	Vertical
Test Voltage:	DC 3.7V from battery		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1117.494	46.40	-3.13	43.27	74.00	-30.73	peak
2	1117.494	34.03	-3.13	30.90	54.00	-23.10	AVG
3	1648.558	46.66	-2.80	43.86	74.00	-30.14	peak
4	1648.558	34.50	-2.80	31.70	54.00	-22.30	AVG
5	2114.790	46.24	-0.16	46.08	74.00	-27.92	peak
6	2114.790	32.76	-0.16	32.60	54.00	-21.40	AVG
7	3607.084	45.33	3.38	48.71	74.00	-25.29	peak
8	3607.084	31.12	3.38	34.50	54.00	-19.50	AVG
9	4971.018	42.84	8.51	51.35	74.00	-22.65	peak
10	4971.018	28.79	8.51	37.30	54.00	-16.70	AVG
11	5967.835	43.91	10.21	54.12	74.00	-19.88	peak
12 *	5967.835	28.59	10.21	38.80	54.00	-15.20	AVG

6 Photographs of the Test Setup

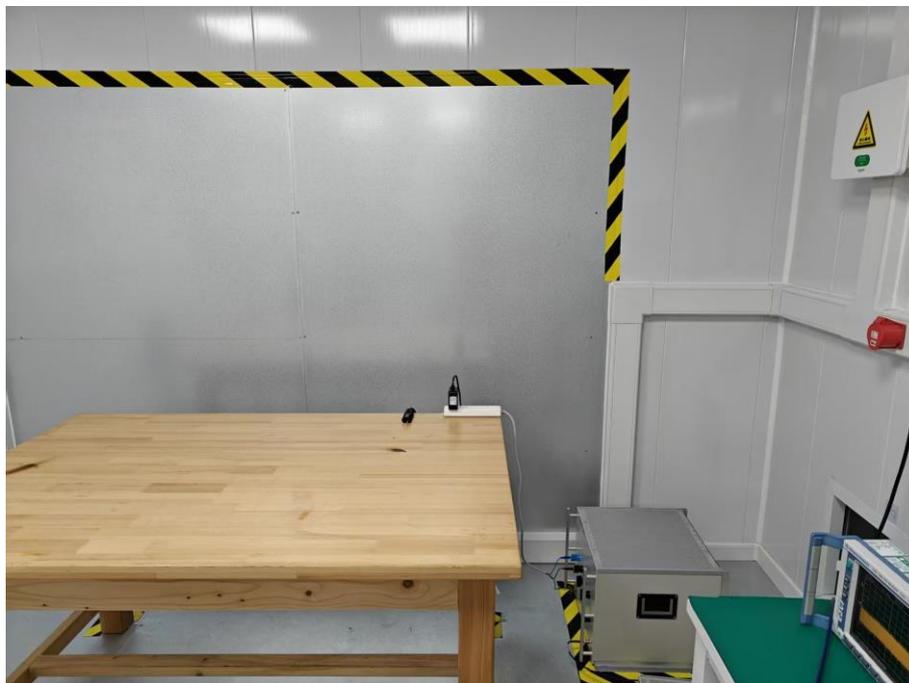
Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



Conducted Emission



7 Photographs of the EUT

Photo 1

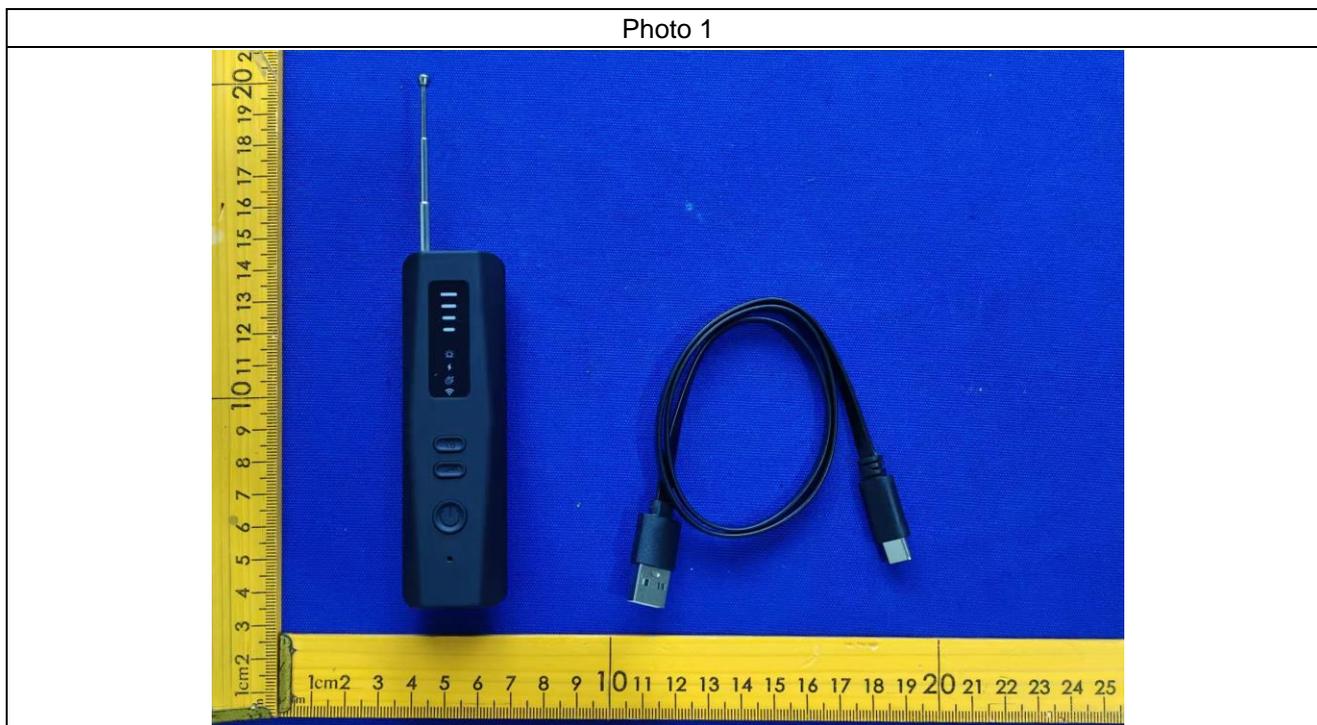


Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8

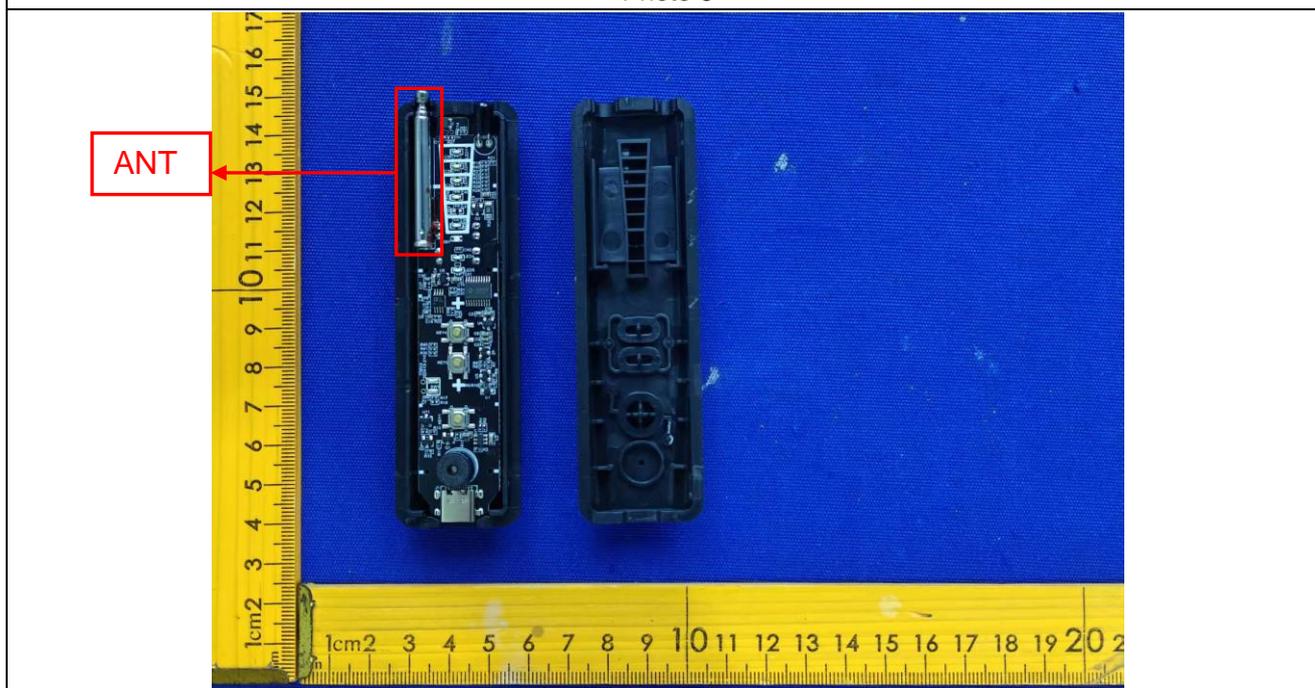


Photo 9



Photo 10

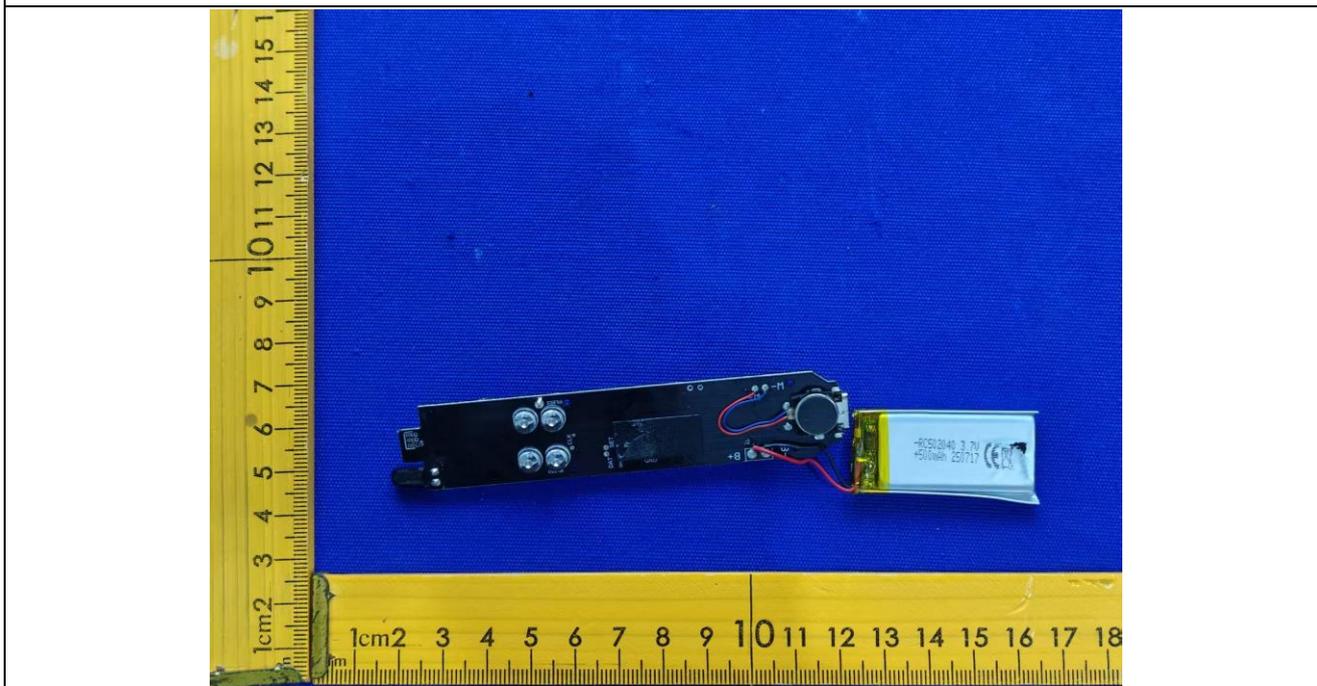


Photo 11

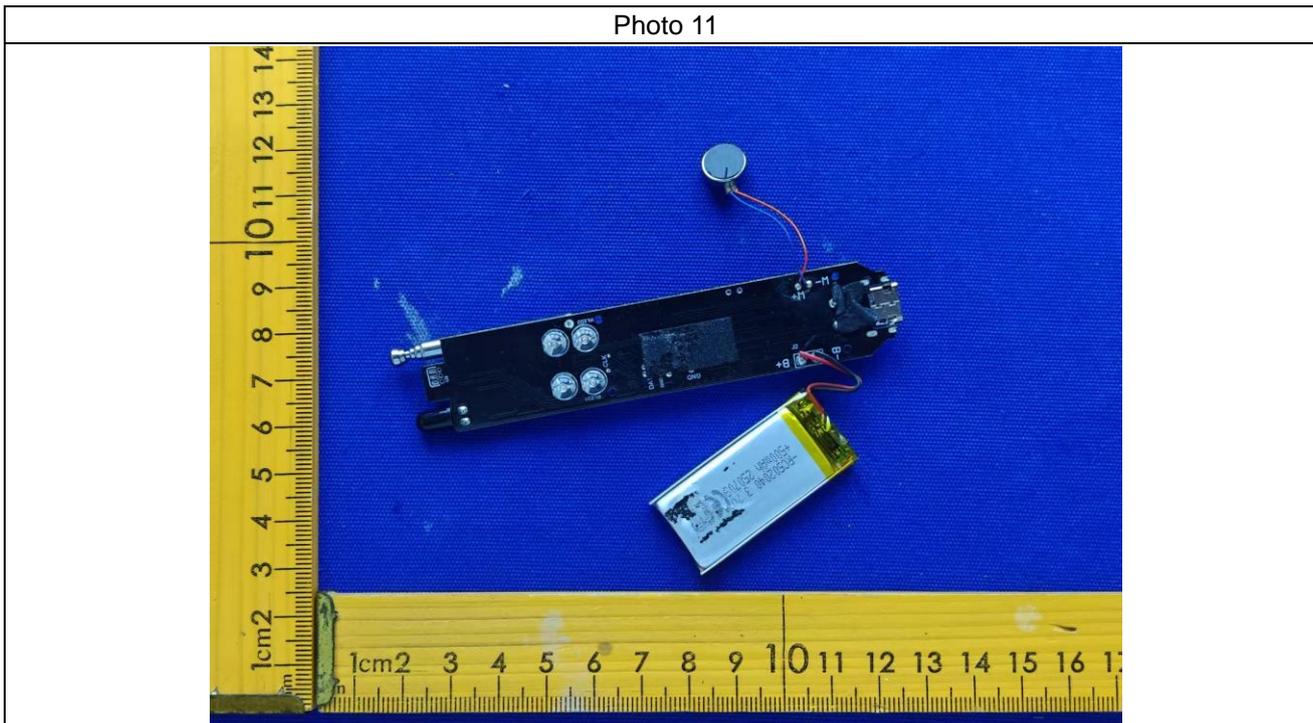


Photo 12

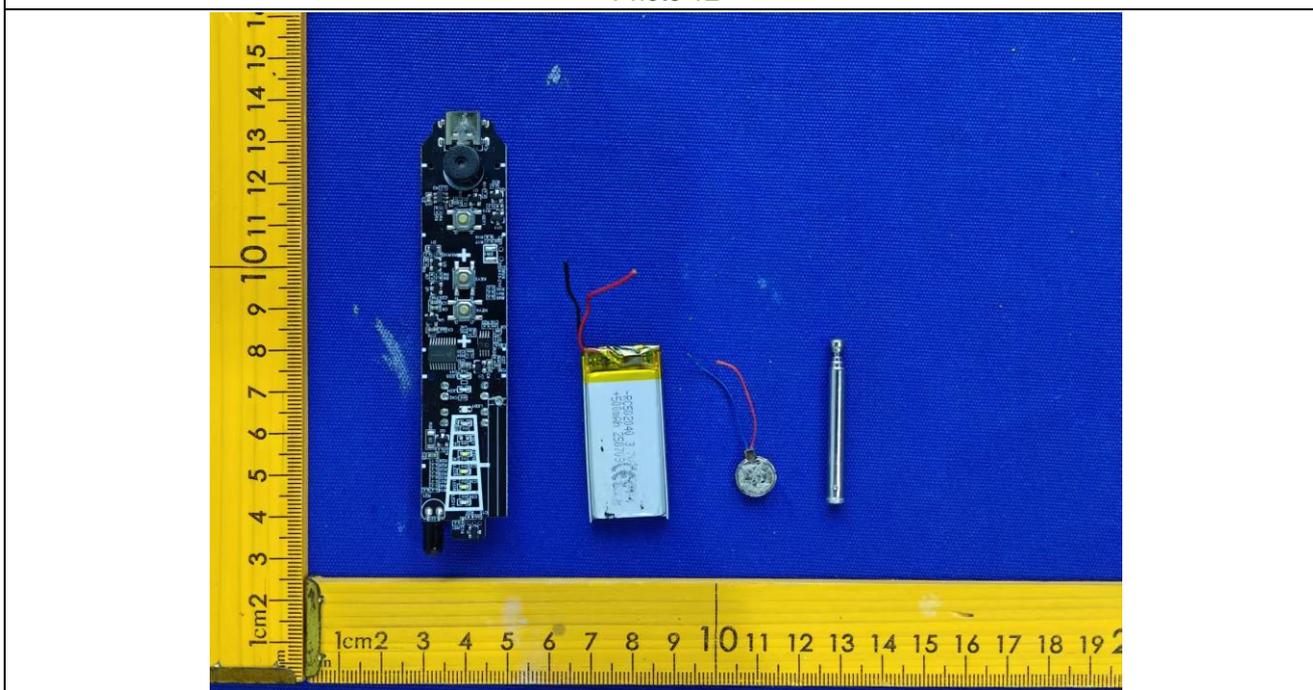


Photo 13

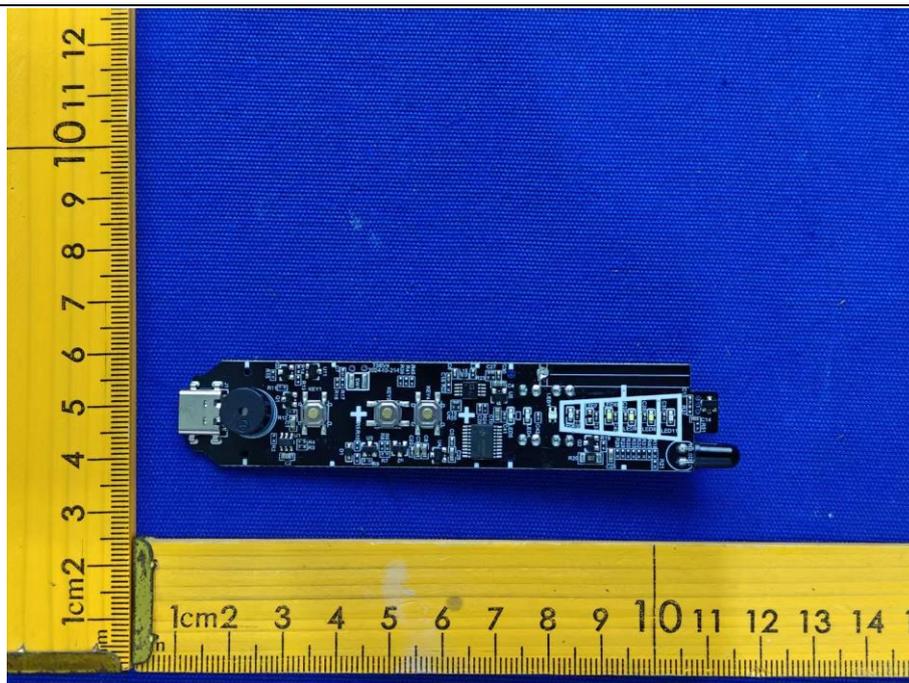
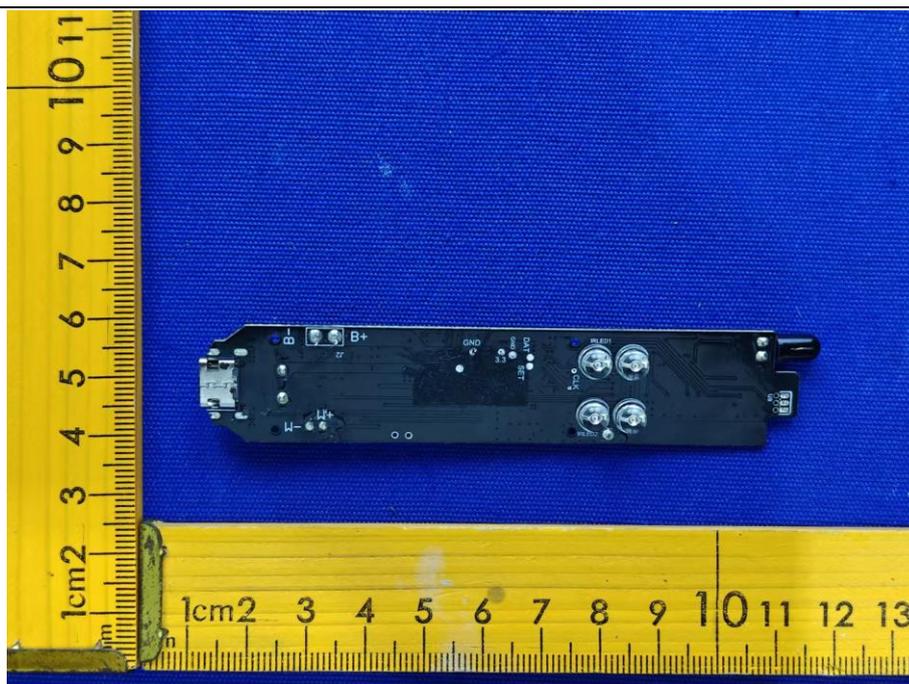


Photo 14



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