FCC
TEST REPORT

Prepared for :

CHAMPION GAMES LLC

1013 CENTRE RD STE 403S, Wilmington, Delaware, 19805, United States

FCC ID: 2BP86-SH-009

Product Name:	**Laser tag**
Trade Mark:	**N/A**
Product Model (S):	**SH-009**
Date of Test:	**Feb. 12, 2025 – Mar. 07, 2025**
Date of Report:	**Mar. 07, 2025**
Report Number:	**HK2502120505-E**

Prepared By :

Shenzhen HUAK Testing Technology Co., Ltd.

1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

TEST REPORT VERIFICATION

Applicant	:	CHAMPION GAMES LLC
Address	:	1013 CENTRE RD STE 403S, Wilmington, Delaware, 19805, United States
Manufacturer	:	CHAMPION GAMES LLC
Address	:	1013 CENTRE RD STE 403S, Wilmington, Delaware, 19805, United States
Product Name	:	Laser tag
(A) Product Model	:	SH-009
(B) Series Model	:	N/A
(C) Power Supply	:	DC5V From Adapter or DC3.7V From Battery

Standards ..... : FCC Part 15 Subpart B
ANSI C63.4:2019

This device described above has been tested by HUAK, and the test results show that the equipment under test (EUT) is in compliance with Part 15 of FCC Rules. And it is applicable only to the tested sample identified in the report.

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Test Result ..... : **Pass**

Testing Engineer — Len Liao

Technical Manager — Sliver Wan

Authorized Signatory — Jason Zhou

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** Modified History **

Revision	Description	Issued Data	Remark
Revision 1.0	Initial Test Report Release	2025/03/07	Jason Zhou

1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC Part 15 Subpart B ANSI C63.4:2019	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	

NOTE:

(1) 'N/A' denotes test is not applicable in this Test Report

(2) For client's request and manual description, the test will not be executed.

1.1 TEST FACILITY

Shenzhen HUAK Testing Technology Co., Ltd.
Add. : 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Testing Laboratory Authorization：
A2LA Accreditation Code is 4781.01.
FCC Designation Number is CN1229.
Canada IC CAB identifier is CN0045.
CNAS Registration Number is L9589.

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U** · where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2** · providing a level of confidence of approximately **95** %.

A. Conducted Measurement :

Measurement Frequency Range	Uncertainty	NOTE
150 KHz ~ 30MHz	±2.71dB	

B. Radiated Measurement :

Measurement Frequency Range	Uncertainty	NOTE
30MHz ~ 1000MHz	±3.90dB	
1GHz ~6GHz	±4.28dB	

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product Name	Laser tag
Product Model	SH-009
Series Model	N/A
Model Difference	N/A
Product Description	The EUT is a Laser tag. Operating frequency: N/A Connecting I/O port: N/A Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.
Power Source	DC Voltage
Power Rating	DC5V From Adapter or DC3.7V From Battery

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

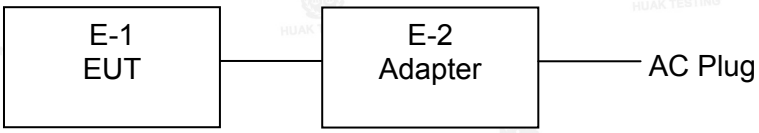
Pretest Mode	Description
Mode 1	Charging
Mode 2	Working

For Conducted Test	
Final Test Mode	Description
Mode 1	Charging
Mode 2	N/A

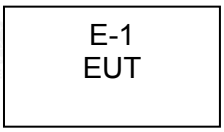
For Radiated Test	
Final Test Mode	Description
Mode 1	Charging
Mode 2	Working

2.3 DESCRIPTION OF TEST SETUP

Mode 1:



Mode 2:



2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Trade Mark	Model/Type No.	Series No.	Note
E-1	Laser tag	N/A	SH-009	N/A	EUT
E-2	Adapter	N/A	MDY-10-EH	N/A	Peripheral

Item	Shielded Type	Ferrite Core	Length	Note

Note:

(1) The support equipment was authorized by Declaration of Confirmation.

(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.5 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N.	R&S	ENV216	HKE-002	Feb. 20, 2024	1 Year
2.	L.I.S.N.	R&S	ENV216	HKE-059	Feb. 20, 2024	1 Year
3.	EMI Test Receiver	R&S	ESR	HKE-005	Feb. 20, 2024	1 Year
4.	Spectrum analyzer	Agilent	N9020A	HKE-048	Feb. 20, 2024	1 Year
5.	Spectrum analyzer	R&S	FSV3044	HKE-126	Feb. 20, 2024	1 Year
6.	Preamplifier	EMCI	EMC051845S	HKE-006	Feb. 20, 2024	1 Year
7.	Preamplifier	Schwarzbeck	BBV 9743	HKE-016	Feb. 20, 2024	1 Year
8.	Preamplifier	A.H. Systems	SAS-574	HKE-182	Feb. 20, 2024	1 Year
9.	6d Attenuator	Pasternack	6db	HKE-184	Feb. 20, 2024	1 Year
10.	EMI Test Receiver	Rohde & Schwarz	ESR-7	HKE-010	Feb. 20, 2024	1 Year
11.	Broadband Antenna	Schwarzbeck	VULB9168	HKE-167	Feb. 21, 2024	2 Year
12.	Loop Antenna	COM-POWER	AL-130R	HKE-014	Feb. 21, 2024	2 Year
13.	Horn Antenna	Schewarzbeck	9120D	HKE-013	Feb. 21, 2024	2 Year
14.	EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	/	/
15.	EMI Test Software	Tonscend	JS32-RE 5.0.0	HKE-082	/	/

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N.	R&S	ENV216	HKE-002	Feb. 19, 2025	1 Year
2.	L.I.S.N.	R&S	ENV216	HKE-059	Feb. 19, 2025	1 Year
3.	EMI Test Receiver	R&S	ESR	HKE-005	Feb. 19, 2025	1 Year
4.	Spectrum analyzer	Agilent	N9020A	HKE-048	Feb. 19, 2025	1 Year
5.	Spectrum analyzer	R&S	FSV3044	HKE-126	Feb. 19, 2025	1 Year
6.	Preamplifier	EMCI	EMC051845S	HKE-006	Feb. 19, 2025	1 Year
7.	Preamplifier	Schwarzbeck	BBV 9743	HKE-016	Feb. 19, 2025	1 Year
8.	Preamplifier	A.H. Systems	SAS-574	HKE-182	Feb. 19, 2025	1 Year
9.	6d Attenuator	Pasternack	6db	HKE-184	Feb. 19, 2025	1 Year
10.	EMI Test Receiver	Rohde & Schwarz	ESR-7	HKE-010	Feb. 19, 2025	1 Year
11.	Broadband Antenna	Schwarzbeck	VULB9168	HKE-167	Feb. 21, 2024	2 Year
12.	Loop Antenna	COM-POWER	AL-130R	HKE-014	Feb. 21, 2024	2 Year
13.	Horn Antenna	Schewarzbeck	9120D	HKE-013	Feb. 21, 2024	2 Year
14.	EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	/	/
15.	EMI Test Software	Tonscend	JS32-RE 5.0.0	HKE-082	/	/

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

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.

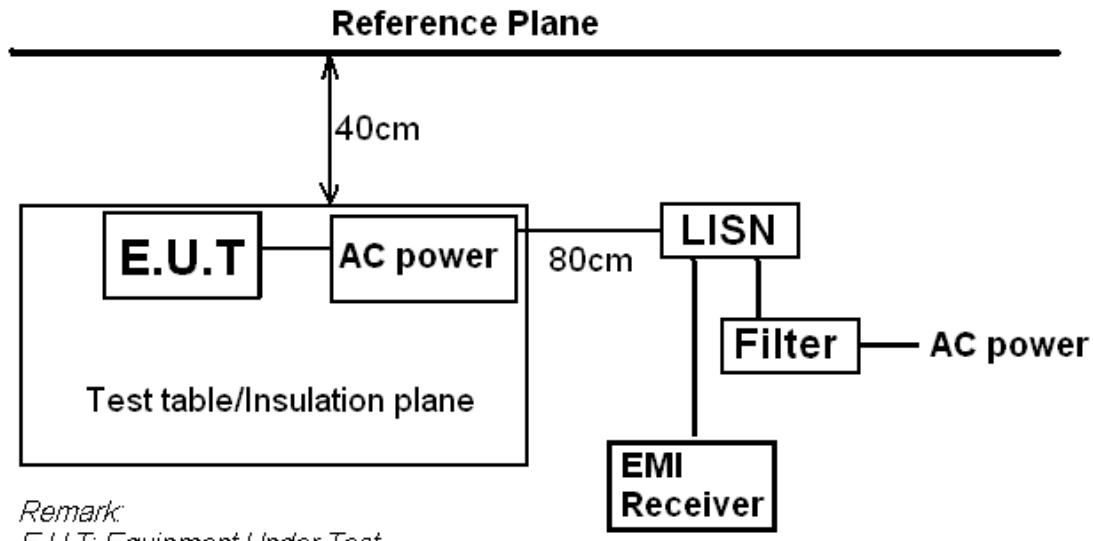
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments 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 at least 10 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



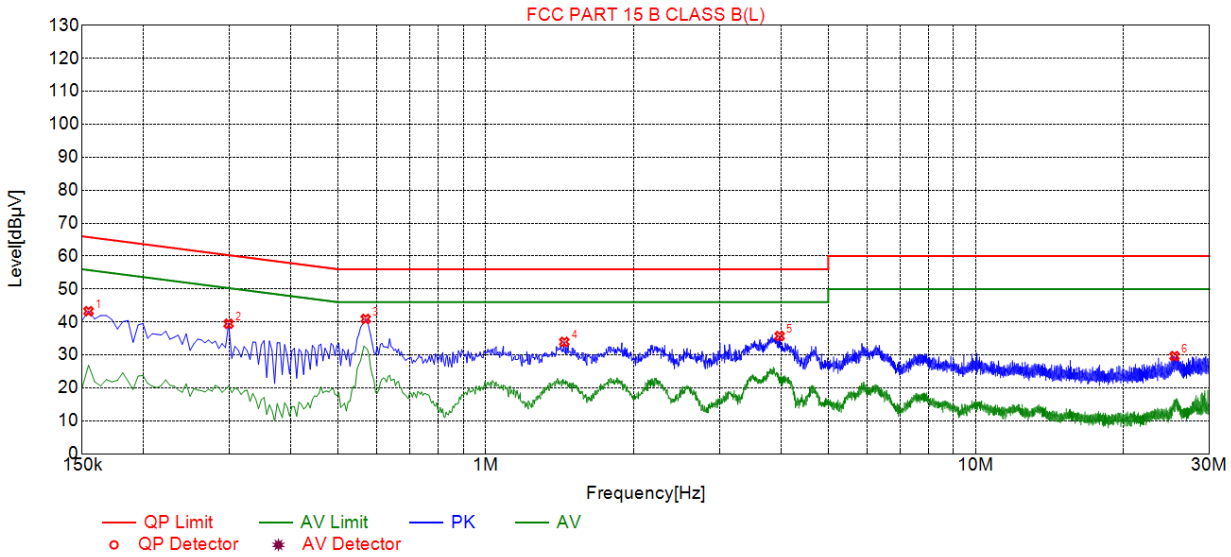
Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

3.1.5 TEST RESULTS

EUT :	Laser tag	Model Name. :	SH-009
Temperature :	24 ℃	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2025-03-06
Test Mode :	Mode 1	Polarization :	L
Test Voltage :	DC5V From Adapter		



Suspected List

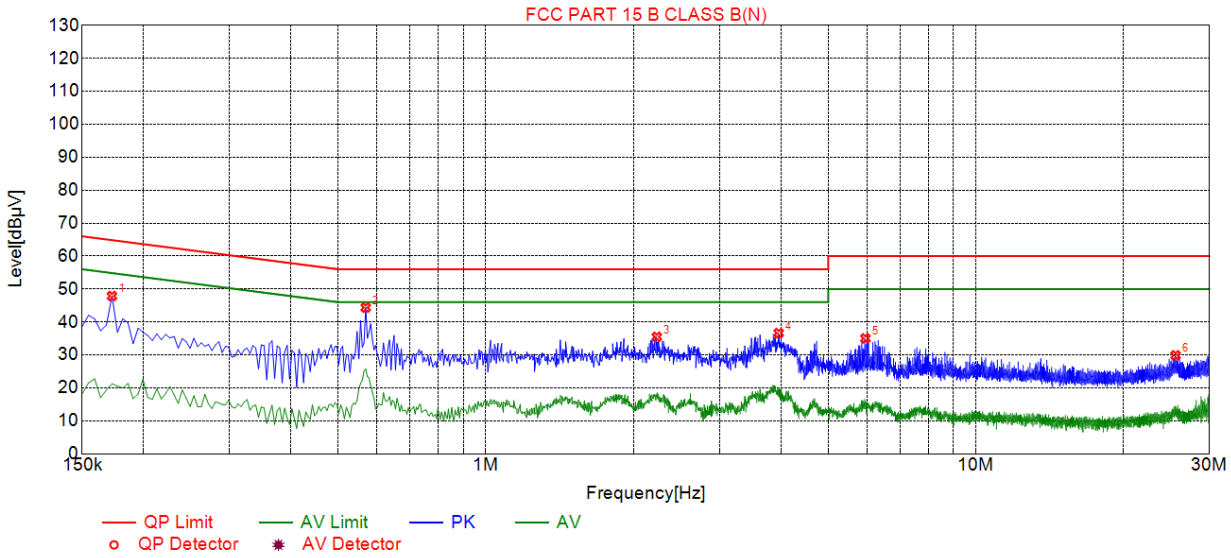
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1545	43.27	19.83	65.75	22.48	23.44	PK	L
2	0.2985	39.46	19.84	60.28	20.82	19.62	PK	L
3	0.5685	40.92	19.86	56.00	15.08	21.06	PK	L
4	1.4460	33.96	19.92	56.00	22.04	14.04	PK	L
5	3.9795	35.73	20.09	56.00	20.27	15.64	PK	L
6	25.4625	29.63	20.16	60.00	30.37	9.47	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

EUT：	Laser tag	Model Name. ：	SH-009
Temperature：	24 ℃	Relative Humidity：	54%
Pressure：	1010 hPa	Test Date：	2025-03-06
Test Mode：	Mode 1	Polarization：	N
Test Voltage ：	DC5V From Adapter		



Suspected List

NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1725	47.88	19.73	64.84	16.96	28.15	PK	N
2	0.5685	44.37	19.74	56.00	11.63	24.63	PK	N
3	2.2335	35.50	19.87	56.00	20.50	15.63	PK	N
4	3.9615	36.63	19.97	56.00	19.37	16.66	PK	N
5	5.9550	35.03	19.98	60.00	24.97	15.05	PK	N
6	25.5885	29.88	20.26	60.00	30.12	9.62	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 3m)
	dBuV/m	dBuV/m
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Notes:

(1) The limit for radiated test was performed according to as following: FCC PART 15B /ICES-003.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The height of the equipment or of the substitution antenna shall be 0.1 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

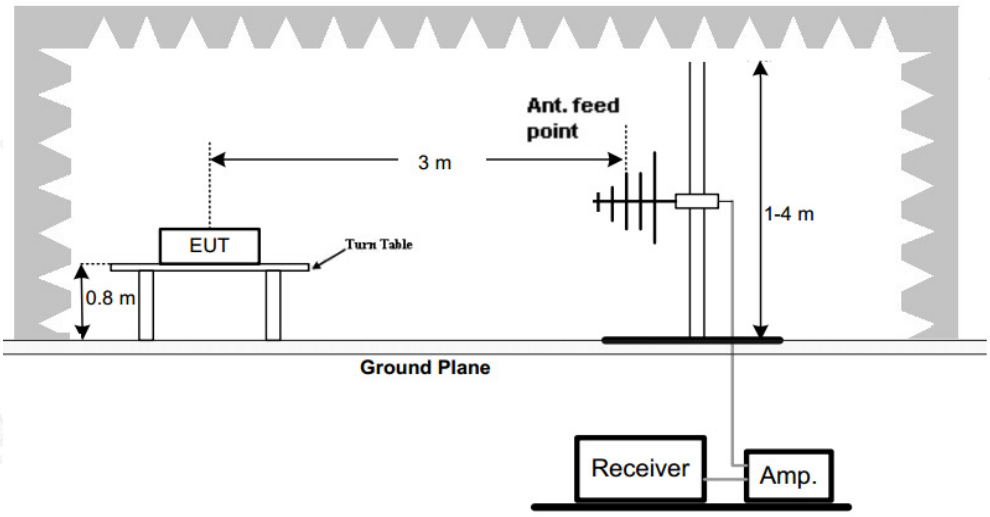
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured, above 1G Average detector mode will be instead.

e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP(AV) Limits and then no additional QP Mode measurement performed.

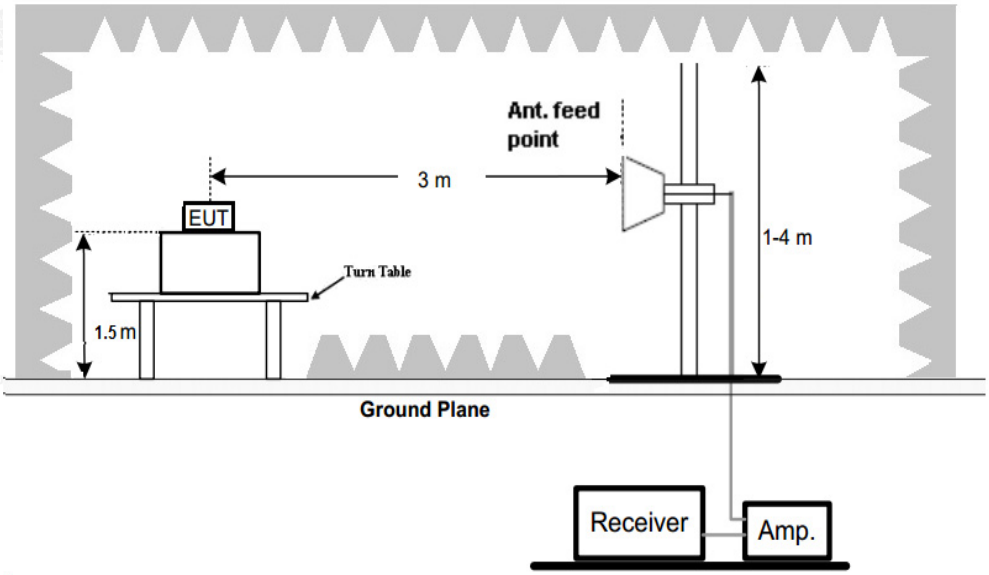
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1GHz



3.2.4 EUT OPERATING CONDITIONS

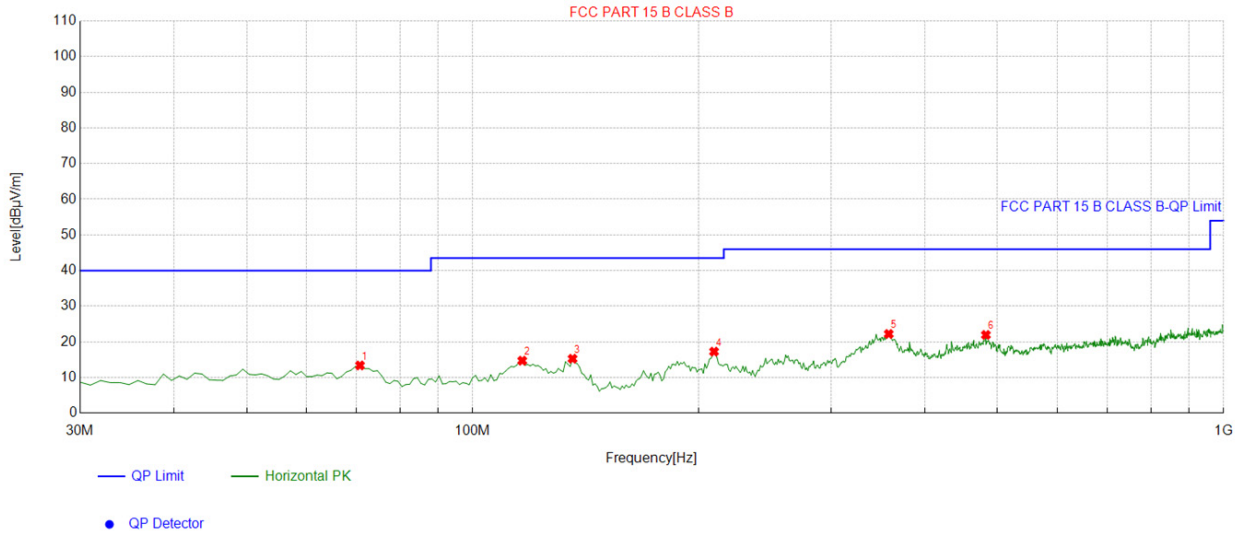
The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.5 TEST RESULTS

Note:

All the test modes completed for test. only the worst result of was reported.

EUT :	Laser tag	Model Name :	SH-009
Temperature :	24 ℃	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2025-03-06
Test Mode :	Mode 1	Polarization :	Horizontal
Test Power :	DC5V From Adapter		



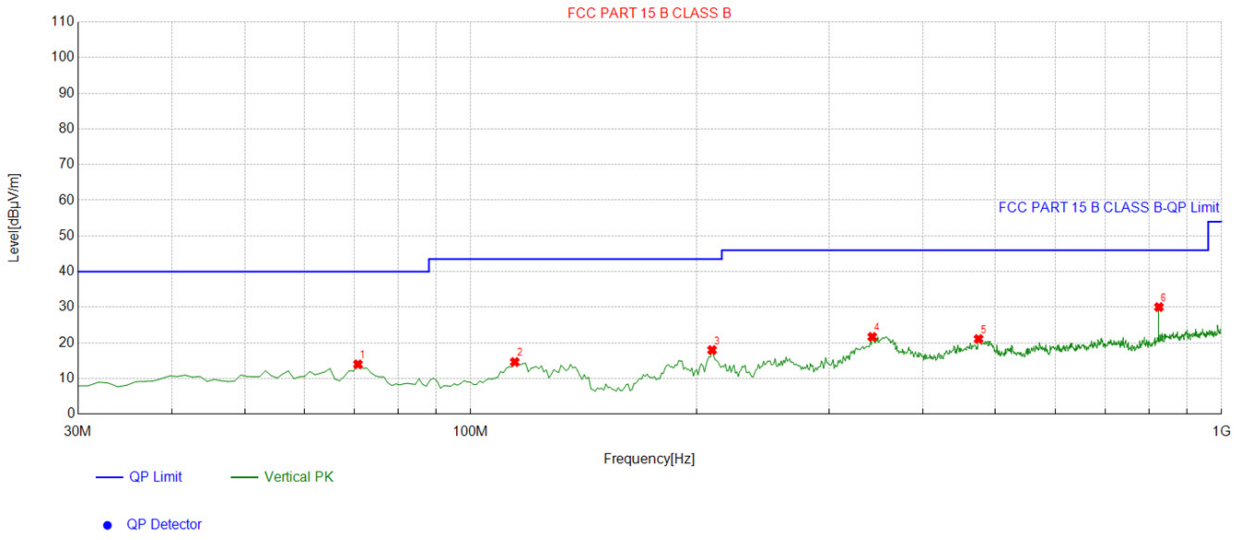
Suspected List

NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	70.780781	-16.89	30.29	13.40	40.00	26.60	100	199	Horizontal
2	116.41641	-15.95	30.68	14.73	43.50	28.77	100	216	Horizontal
3	135.83583	-17.57	32.85	15.28	43.50	28.22	100	230	Horizontal
4	209.62963	-14.93	32.20	17.27	43.50	26.23	100	159	Horizontal
5	358.18818	-10.00	32.22	22.22	46.00	23.78	100	56	Horizontal
6	482.47247	-8.11	30.06	21.95	46.00	24.05	100	106	Horizontal

Final Data List

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

EUT :	Laser tag	Model Name :	SH-009
Temperature :	24 ℃	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2025-03-06
Test Mode :	Mode 1	Polarization :	Vertical
Test Power :	DC5V From Adapter		



Suspected List

NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	70.780781	-16.89	30.88	13.99	40.00	26.01	100	196	Vertical
2	114.47447	-15.28	29.92	14.64	43.50	28.86	100	225	Vertical
3	209.62963	-14.93	32.92	17.99	43.50	25.51	100	157	Vertical
4	342.65265	-10.22	31.91	21.69	46.00	24.31	100	58	Vertical
5	474.70470	-8.23	29.32	21.09	46.00	24.91	100	115	Vertical
6	825.22522	-2.88	32.92	30.04	46.00	15.96	100	92	Vertical

Final Data List

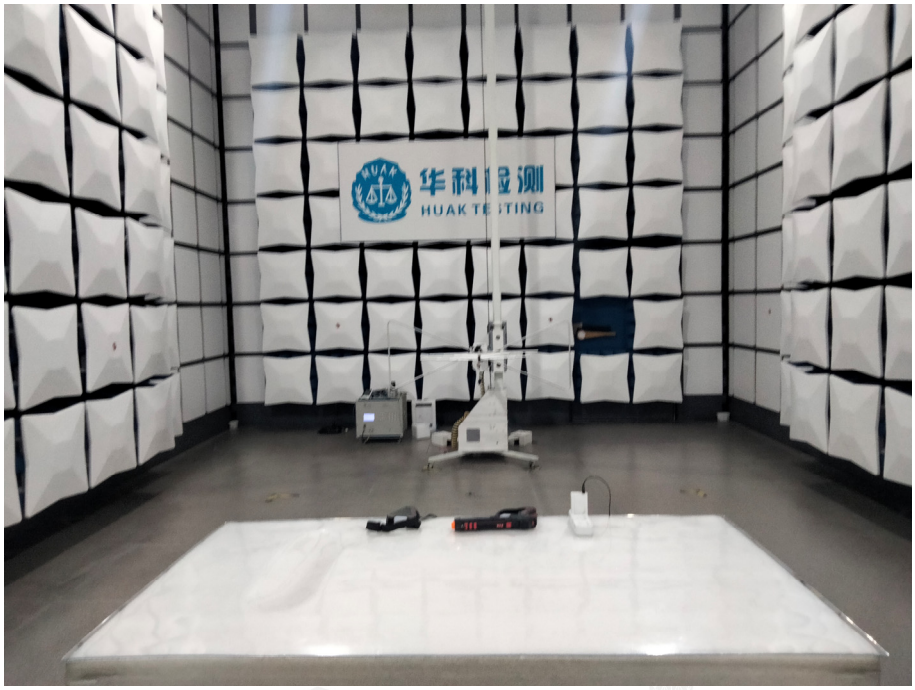
Remark: Factor = Cable loss + Antenna factor – Preamplifier; Level = Reading + Factor; Margin = Limit – Level;

3.2.6 TEST RESULTS(Above 1GHz)

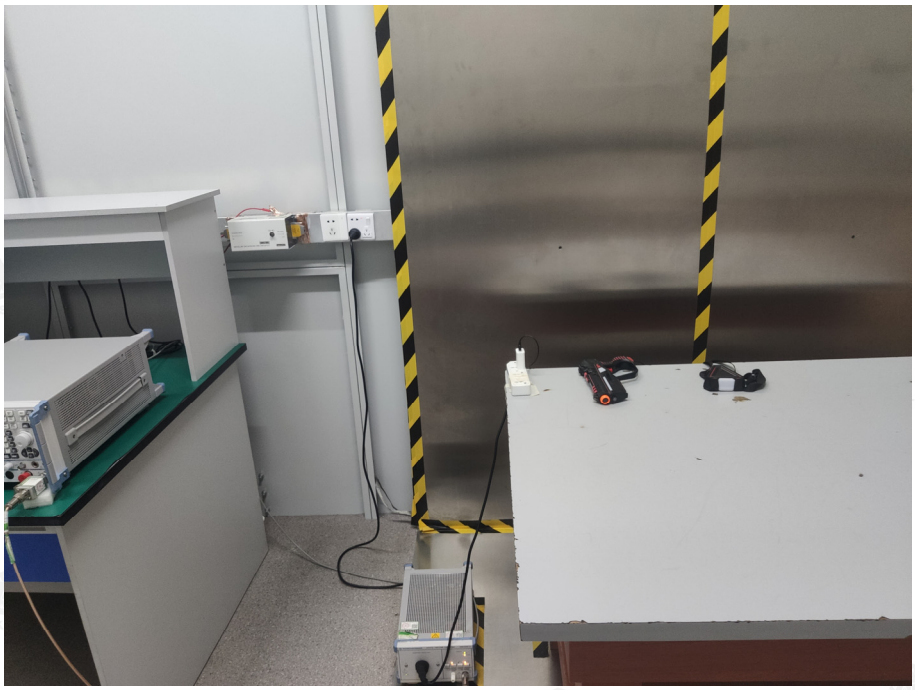
EUT：	Laser tag	Model Name ：	SH-009
Temperature：	N/A	Relative Humidity：	N/A
Pressure：	N/A	Test Date：	N/A
Test Mode ：	N/A		
Test Power ：	N/A		
Note: EUT high frequency is less than 108MHz, so this test report is not applicable.			

4. EUT TEST PHOTO

Radiated Emission



Conducted Emission



5. Photos of the EUT

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

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