

FCC RADIO TEST REPORT

FCC ID: 2BEIS-HC-810

Sample : remote control boat

Trade Mark : N/A

Main Model : HC-810

Additional Model : Additional model see the table in page 6.

Report No. : UNIA23122202ER-61

Prepared for

shantou chenghai district huican toy factory

3F, Shenghe Seed, Fengxin Industrial Zone, Fengxiang Street,
Chenghai District, Shantou, China

Prepared by

Shenzhen United Testing Technology Co., Ltd.

D101&D401, No. 107, Kaicheng High-Tech Park, Taoyuan Community,
Dalang Sub-District, Longhua District, Shenzhen, Guangdong, China

TEST RESULT CERTIFICATION

Applicant : shantou chenghai district huican toy factory
Address : 3F,Shenghe Seed,Fengxin Industrial Zone,Fengxiang Street,
Chenghai District,Shantou,China
Manufacturer : shantou chenghai district huican toy factory
Address : 3F,Shenghe Seed,Fengxin Industrial Zone,Fengxiang Street,
Chenghai District,Shantou,China

Product description

Product..... : remote control boat
Trade Mark : N/A
Model Name : HC-810, Additional model see the table in page 6.

Test Methods..... : FCC Rules and Regulations Part 15 Subpart C Section 15.249,
ANSI C63.10: 2013

This device described above has been tested by Shenzhen United Testing Technology Co., Ltd., and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

This report shall not be reproduced except in full, without the written approval, this document may be altered or revised by Shenzhen United Testing Technology Co., Ltd., personnel only, and shall be noted in the revision of the document.

Date of Test

Date (s) of performance of tests..... : Dec. 22, 2023 ~ Jan. 04, 2024
Date of Issue..... : Jan. 12, 2024
Test Result..... : Pass

Prepared by:



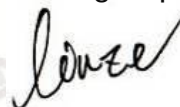
Jason Ye/Editor

Reviewer:



Kelly Cheng/Supervisor

Approved & Authorized Signer:



Liuze/Manager

Table of Contents

Page

1 TEST SUMMARY	4
2 GENERAL INFORMATION	6
2.1 GENERAL DESCRIPTION OF EUT	6
2.2 CARRIER FREQUENCY OF CHANNELS	7
2.3 TEST MODE	7
2.4 TEST SETUP	7
2.5 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL	8
2.6 MEASUREMENT INSTRUMENTS LIST	9
3 CONDUCTED EMISSION	10
3.1 TEST LIMIT	10
3.2 TEST SETUP	10
3.3 TEST PROCEDURE	11
3.4 TEST RESULT	11
4 RADIATED EMISSION	12
4.1 TEST LIMIT	12
4.2 TEST SETUP	13
4.3 TEST PROCEDURE	14
4.4 TEST RESULT	14
5 BAND EDGE	20
5.1 TEST LIMIT	20
5.2 TEST PROCEDURE	20
5.3 TEST RESULT	20
6 20DB BANDWIDTH	23
6.1 TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)	23
6.2 MEASUREMENT EQUIPMENT USED	23
6.3 TEST PROCEDURE	23
6.4 TEST RESULT	23
7 ANTENNA REQUIREMENT	26
8 PHOTO OF TEST	27
8.1 RADIATED EMISSION	27
8.2 RF CONDUCTED	28

1 TEST SUMMARY

1.1 TEST PROCEDURES AND RESULTS

ITEM	STANGARD	RESULT
CONDUCTED EMISSION	FCC Part 15.207	N/A
RADIATED EMISSION	FCC Part 15.209/15.249	COMPLIANT
BAND EDGE	FCC Part 15.249/15.205	COMPLIANT
20dB BANDWIDTH	FCC Part 15.215	COMPLIANT
ANTENNA REQUIREMENT	FCC Part 15.203	COMPLIANT

1.2 TEST FACILITY

Test Firm : Shenzhen United Testing Technology Co., Ltd.
Address : D101&D401, No. 107, Kaicheng High-Tech Park, Taoyuan Community,
Dalang Sub-District, Longhua District, Shenzhen, Guangdong, China

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.The testing quality system of our laboratory meets with ISO/IEC-17025 requirements. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

A2LA Certificate Number: 4747.01

The EMC Laboratory has been accredited by A2LA, and in compliance with ISO/IEC 17025:2017 General Requirements for testing Laboratories.

FCC Registration Number: 674885

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission.

IC Registration Number: 31584

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada.

1.3 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 %.

A. Conducted Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
UNI	ANSI	9kHz ~ 150kHz	2.96	
		150kHz ~ 30MHz	2.44	

B. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)	NOTE
UNI	ANSI	9kHz ~ 30MHz	2.50	
		30MHz ~ 1000MHz	4.80	
		Above 1000MHz	4.13	

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product:	remote control boat
Trade Mark:	N/A
Main Model:	HC-810
Additional Model:	HC-801, HC-802, HC-803, HC-804, HC-805, HC-806, HC-807, HC-808, HC-809, HC-811, HC-812, HC-813, HC-814, HC-815, HC-816, HC-817, HC-818, HC-819, HC-820, HC-821, HC-822, HC-823, HC-824, HC-825, HC-826, HC-827, HC-828, HC-829, HC-830
Model Difference:	All model's the function, software and electric circuit are the same, only with a product color and model named different. Test sample model: HC-810.
FCC ID:	2BEIS-HC-810
Frequency Range:	2405MHz-2475MHz
Number of Channels:	16CH
Field Strength of Fundamental:	82.41dBuV/m(Peak)@3m
Modulation Type:	FSK
Antenna Type:	Internal Antenna
Antenna Gain:	0.17dBi
Battery:	DC 3V
Adapter:	N/A
Power Source:	DC 3V from battery

2.2 CARRIER FREQUENCY OF CHANNELS

Channel List							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2405	05	2421	09	2446	13	2468
02	2408	06	2423	10	2453	14	2471
03	2417	07	2434	11	2456	15	2473
04	2419	08	2440	12	2460	16	2475

2.3 TEST MODE

The EUT was programmed to be in continuously transmitting mode.

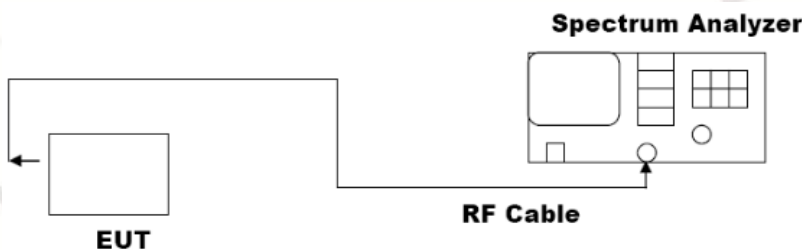
Channel List		
Test Channel	EUT Channel	Test Frequency (MHz)
Low channel	CH01	2405
Middle channel	CH08	2440
High channel	CH16	2475

2.4 TEST SETUP

Operation of EUT during Radiation testing:



Operation of EUT during RF Conducted testing:



2.5 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	Mfr/Brand	Model/Type No.	Note
E-1	remote control boat	N/A	HC-810	EUT

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”.

2.6 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
Radiated Emissions Measurement					
1	Radiated Emission Test Software	EZ-EMC	Ver.CCS-03A1	N/A	N/A
2	Horn Antenna	Sunol	DRH-118	A101415	2025.07.14
3	Broadband Hybrid Antenna	Sunol	JB1	A090215	2025.07.28
4	PREAMP	HP	8449B	3008A00160	2024.06.11
5	PREAMP	HP	8447D	2944A07999	2024.06.11
6	EMI TEST RECEIVER	Rohde&Schwarz	ESR3	101891	2024.06.11
7	VECTOR Signal Generator	Rohde&Schwarz	SMU200A	101521	2024.06.11
8	Signal Generator	Agilent	E4421B	MY4335105	2024.06.11
9	MXA Signal Analyzer	Agilent	N9020A	MY50510140	2024.06.11
10	MXA Signal Analyzer	Keysight	N9020A	MY51110104	2024.06.11
11	RF Power sensor	DARE	RPR3006W	15I00041SNO88	2024.06.11
12	RF Power sensor	DARE	RPR3006W	15I00041SNO89	2024.06.11
13	RF power divider	Anritsu	K241B	992289	2024.06.11
14	Wideband radio communication tester	Rohde&Schwarz	CMW500	154987	2024.06.11
15	Active Loop Antenna	Com-Power	AL-130R	10160009	2024.06.11
16	Broadband Hybrid Antennas	Schwarzbeck	VULB9163	VULB9163#958	2024.09.22
17	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1680	2025.07.14
18	Horn Antenna	A-INFOMW	LB-180400-KF	J211060660	2024.07.14
19	Microwave Broadband Preamplifier	Schwarzbeck	BBV 9721	100472	2024.09.22
20	Signal Generator	Agilent	N5183A	MY47420153	2024.09.22
21	Spectrum Analyzer	Rohde&Schwarz	FSP 40	100501	2024.09.22
22	Power Meter	KEYSIGHT	N1911A	MY50520168	2024.09.22
23	Frequency Meter	VICTOR	VC2000	997406086	2024.09.22
24	DC Power Source	HYELEC	HY5020E	055161818	2024.09.22

3.1 TEST LIMIT

Frequency (MHz)	Maximum RF Line Voltage (dBμV)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15~0.50	79	66	66~56*	56~46*
0.50~5.00	73	60	56	46
5.00~30.0	73	60	60	50

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

3.3 TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is placed on a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

3.4 TEST RESULT

N/A

Remark:

The EUT is powered by battery.

4 RADIATED EMISSION

4.1 TEST LIMIT

For unintentional device, according to § 15.209(a), except for Class B digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F (kHz)	-	Quasi-peak	300
0.490MHz-1.705MHz	24000/F (kHz)	-	Quasi-peak	30
1.705MHz-30MHz	30	-	Quasi-peak	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3
		74.0	Peak	3

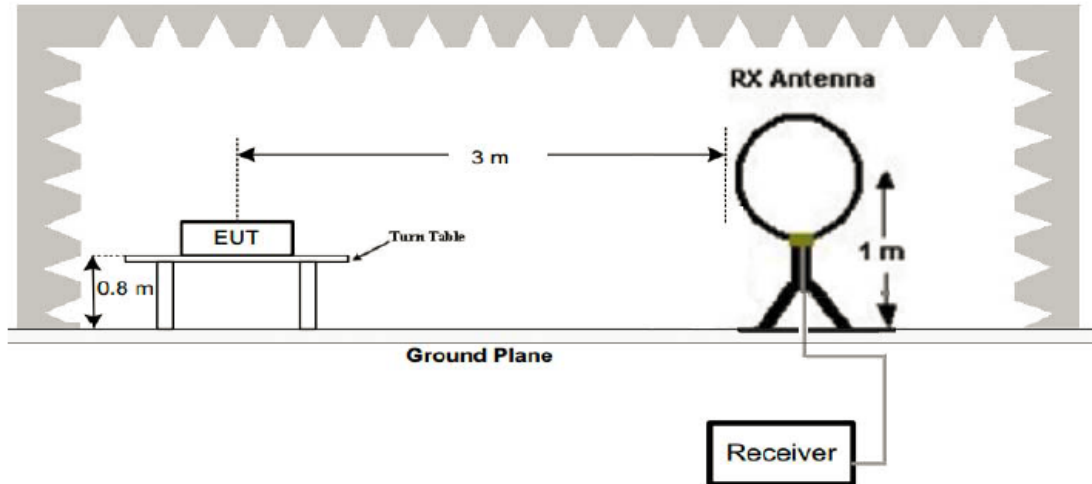
For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

Limit: (Field strength of the fundamental signal)

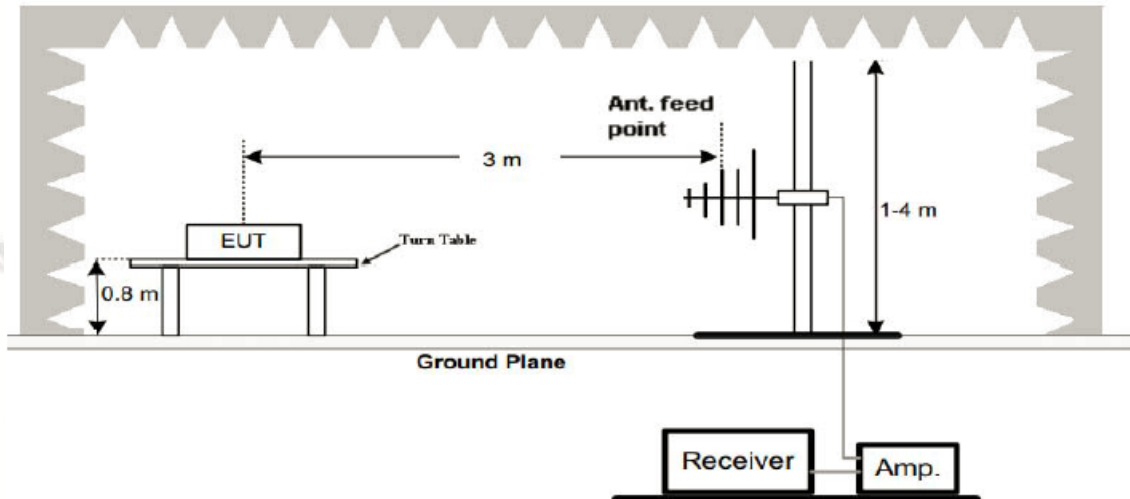
Frequency	Limit (dBuV/m @3m)	Remark
2400MHz-2483.5MHz	94.0	Average Value
	114.0	Peak Value

4.2 TEST SETUP

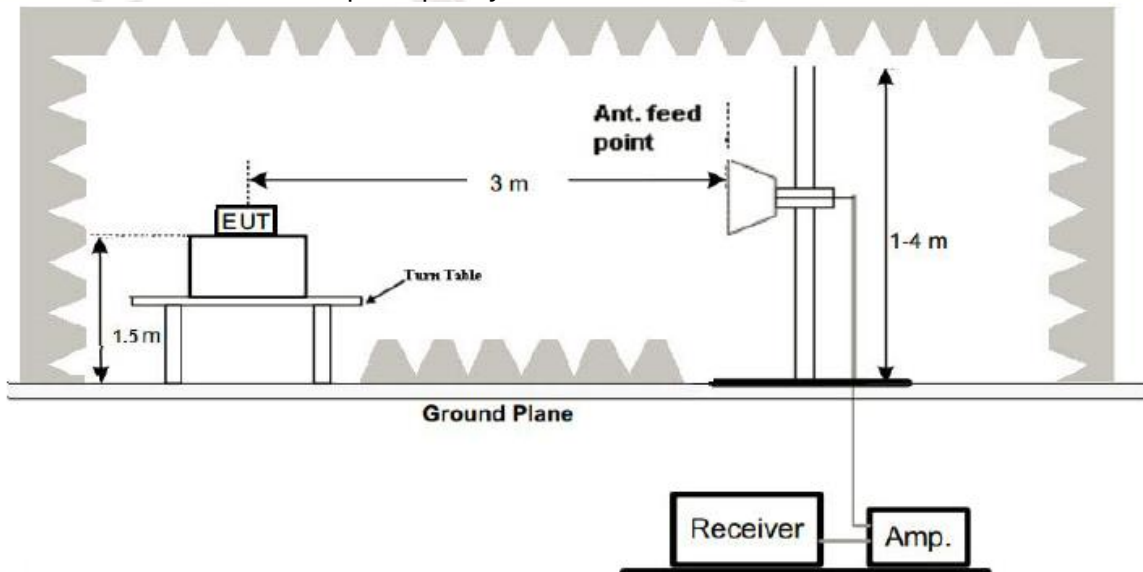
1. Radiated Emission Test-Up Frequency Below 30MHz



2. Radiated Emission Test-Up Frequency 30MHz~1GHz



3. Radiated Emission Test-Up Frequency Above 1GHz



4.3 TEST PROCEDURE

1. Below 1GHz measurement the EUT is placed on turntable which is 0.8m above ground plane.
And above 1GHz measurement EUT was placed on low permittivity and low tangent turn table which is 1.5m above ground plane.
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. Repeat above procedures until the measurements for all frequencies are complete.
7. The test frequency range from 9kHz to 25GHz per FCC PART 15.33(a).

Note:

For battery operated equipment, the equipment tests shall be performed using a new battery.

4.4 TEST RESULT

PASS

Remark:

1. All modes were test at Low, Middle, and High channel, only the worst result of FSK Low Channel was reported for below 1GHz test.
2. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "X axis" position was the worst, and test data recorded in this report.
3. Radiated emission test from 9kHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor in 9kHz to 30MHz and not recorded in this report.

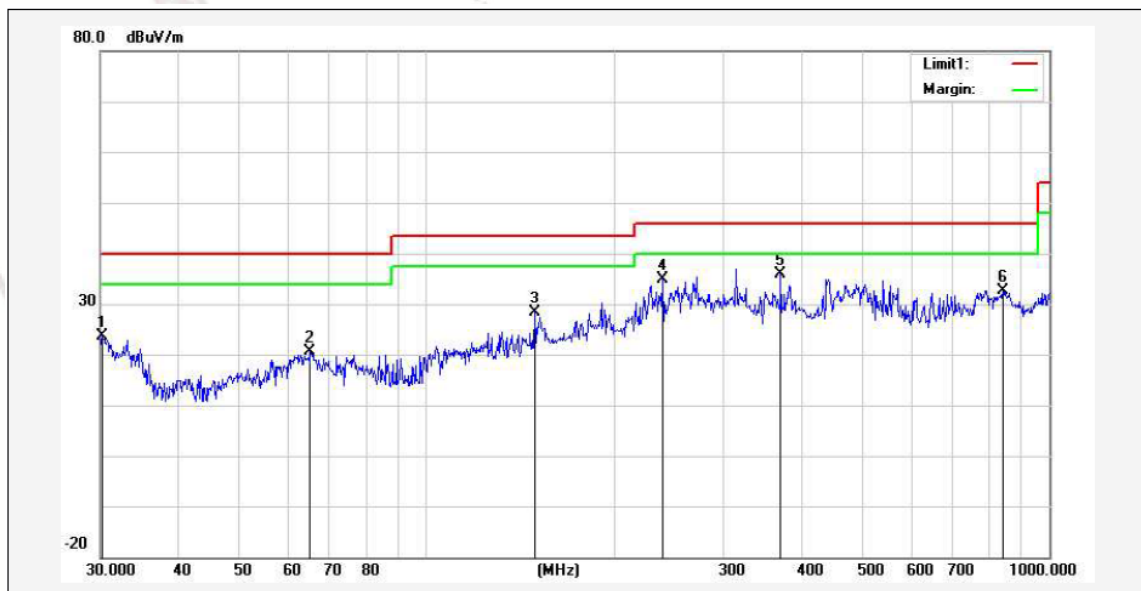
Below 1GHz Test Results:

Temperature:	24℃	Relative Humidity:	48%
Test Date:	Dec. 26, 2023	Pressure:	1010hPa
Test Voltage:	DC 3V	Phase:	Horizontal
Test Mode:	Transmitting mode of FSK 2405.0MHz		



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	30.1053	32.60	-7.43	25.17	40.00	-14.83	137	100	peak
2	62.6507	37.25	-21.68	15.57	40.00	-24.43	114	100	peak
3	89.5900	44.61	-20.76	23.85	43.50	-19.65	99	100	peak
4*	148.9625	49.09	-16.69	32.40	43.50	-11.10	85	100	peak
5	311.0867	47.27	-14.40	32.87	46.00	-13.13	74	100	peak
6	929.0081	34.23	-5.30	28.93	46.00	-17.07	102	100	peak

Temperature:	24℃	Relative Humidity:	48%
Test Date:	Dec. 26, 2023	Pressure:	1010hPa
Test Voltage:	DC 3V	Phase:	Vertical
Test Mode:	Transmitting mode of FSK 2405.0MHz		



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (deg.)	Height (cm)	Remark
1	30.2110	32.47	-8.78	23.69	40.00	-16.31	116	100	peak
2	65.1145	41.62	-21.09	20.53	40.00	-19.47	77	100	peak
3	149.4857	43.73	-15.28	28.45	43.50	-15.05	132	100	peak
4	239.1473	50.41	-15.47	34.94	46.00	-11.06	140	100	peak
5*	370.7022	48.83	-12.92	35.91	46.00	-10.09	129	100	peak
6	842.1295	38.54	-5.93	32.61	46.00	-13.39	215	100	peak

Remark: Result = Reading Level + Factor, Margin = Result – Limit
Factor = Ant. Factor + Cable Loss – Pre-amplifier

Remark:

1. Measuring frequencies from 9 kHz to the 1 GHz, Radiated emission test from 9kHz to 30MHz was verified, and no any emission was found except system noise floor.
2. * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
3. The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120kHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10kHz.

Above 1 GHz Test Results:

CH01 (2405.0MHz)

Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type
2405	88.25	-5.84	82.41	114	-31.59	PK
2405	67.93	-5.84	62.09	94	-31.91	AV
4810	45.16	-3.64	41.52	74	-32.48	PK
4810	25.04	-3.64	21.4	54	-32.6	AV
7215	42.09	-0.95	41.14	74	-32.86	PK
7215	21.77	-0.95	20.82	54	-33.18	AV
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Absolute Level – Limit						

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type
2405	88.07	-5.84	82.23	114	-31.77	PK
2405	67.77	-5.84	61.93	94	-32.07	AV
4810	45.14	-3.64	41.5	74	-32.5	PK
4810	24.88	-3.64	21.24	54	-32.76	AV
7215	41.77	-0.95	40.82	74	-33.18	PK
7215	21.3	-0.95	20.35	54	-33.65	AV
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Absolute Level – Limit						

CH08 (2440.0MHz)
Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type
2440	86.98	-5.71	81.27	114	-32.73	PK
2440	66.67	-5.71	60.96	94	-33.04	AV
4880	43.9	-3.51	40.39	74	-33.61	PK
4880	23.78	-3.51	20.27	54	-33.73	AV
7320	40.77	-0.82	39.95	74	-34.05	PK
7320	20.47	-0.82	19.65	54	-34.35	AV
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Absolute Level – Limit						

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type
2440	86.79	-5.71	81.08	114	-32.92	PK
2440	66.55	-5.71	60.84	94	-33.16	AV
4880	43.86	-3.51	40.35	74	-33.65	PK
4880	23.6	-3.51	20.09	54	-33.91	AV
7320	40.49	-0.82	39.67	74	-34.33	PK
7320	20.02	-0.82	19.2	54	-34.8	AV
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Absolute Level – Limit						

CH16 (2475.0MHz)

Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type
2475	85.75	-5.65	80.1	114	-33.9	PK
2475	65.46	-5.65	59.81	94	-34.19	AV
4950	42.78	-3.43	39.35	74	-34.65	PK
4950	22.66	-3.43	19.23	54	-34.77	AV
7425	39.68	-0.75	38.93	74	-35.07	PK
7425	19.31	-0.75	18.56	54	-35.44	AV

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Absolute Level – Limit

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type
2475	85.44	-5.63	79.81	114	-34.19	PK
2475	65.14	-5.65	59.49	94	-34.51	AV
4950	42.51	-3.43	39.08	74	-34.92	PK
4950	22.25	-3.43	18.82	54	-35.18	AV
7425	39.14	-0.75	38.39	74	-35.61	PK
7425	18.67	-0.75	17.92	54	-36.08	AV

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier. Margin = Absolute Level – Limit

Remark:

1. Measuring frequencies from 1 GHz to the 25 GHz.
2. "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.
3. * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
4. Data of measurement within this frequency range shown "---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120kHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10kHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
6. When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.
7. All modes of operation were investigated and the worst-case emissions of π/4 DQPSK are reported.
8. For fundamental frequency, RBW >20dB BW, VBW>=3XRBW, PK detector for PK value, AV detector for AV value.

5 BAND EDGE

5.1 TEST LIMIT

FCC PART 15.249(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

5.2 TEST PROCEDURE

The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW to 1MHz and VBM to 3MHz to measure the peak field strength and set RBW to 1MHz and VBW to 10Hz to measure the average radiated field strength. Peak detector is for both.

5.3 TEST RESULT

PASS

Operation Mode: TX CH01 (2405.0MHz)

Horizontal:

Frequency (MHz)	Reading Result (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2310	57.08	-5.81	51.27	74	-22.73	PK
2310	/	-5.81	/	54	/	AV
2390	57.2	-5.84	51.36	74	-22.64	PK
2390	/	-5.84	/	54	/	AV
2400	57.05	-5.84	51.21	74	-22.79	PK
2400	/	-5.84	/	54	/	AV
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

Frequency (MHz)	Reading Result (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2310	56.82	-5.81	51.01	74	-22.99	PK
2310	/	-5.81	/	54	/	AV
2390	56.99	-5.84	51.15	74	-22.85	PK
2390	/	-5.84	/	54	/	AV
2400	57.15	-5.84	51.31	74	-22.69	PK
2400	/	-5.84	/	54	/	AV
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Operation Mode: TX CH16 (2475.0MHz)

Horizontal:

Frequency (MHz)	Reading Result (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2483.5	55.72	-5.65	50.07	74	-23.93	PK
2483.5	/	-5.65	/	54	/	AV
2500	56.84	-5.72	51.12	74	-22.88	PK
2500	/	-5.72	/	54	/	AV
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Vertical:

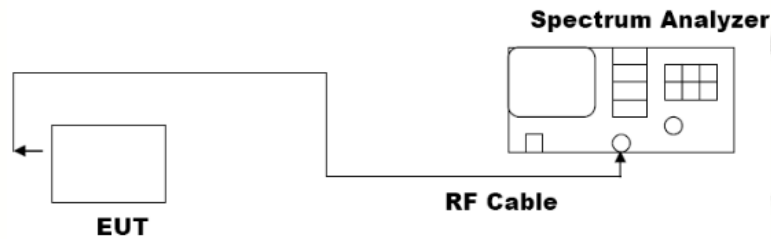
Frequency (MHz)	Reading Result (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2483.5	57.3	-5.65	51.65	74	-22.35	PK
2483.5	/	-5.65	/	54	/	AV
2500	56.81	-5.72	51.09	74	-22.91	PK
2500	/	-5.72	/	54	/	AV
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Note:

1. Since the peak value is less than the average limit, the average value does not reflected in the report.

6 20dB BANDWIDTH

6.1 TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)



6.2 MEASUREMENT EQUIPMENT USED

Refer to Section 3.3.

6.3 TEST PROCEDURE

1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 30 kHz. Set the Video bandwidth (VBW) = 100 kHz. In order to make an accurate measurement.
4. For 20dB Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW) $\geq 3 * RBW$.
5. Measure and record the results in the test report.

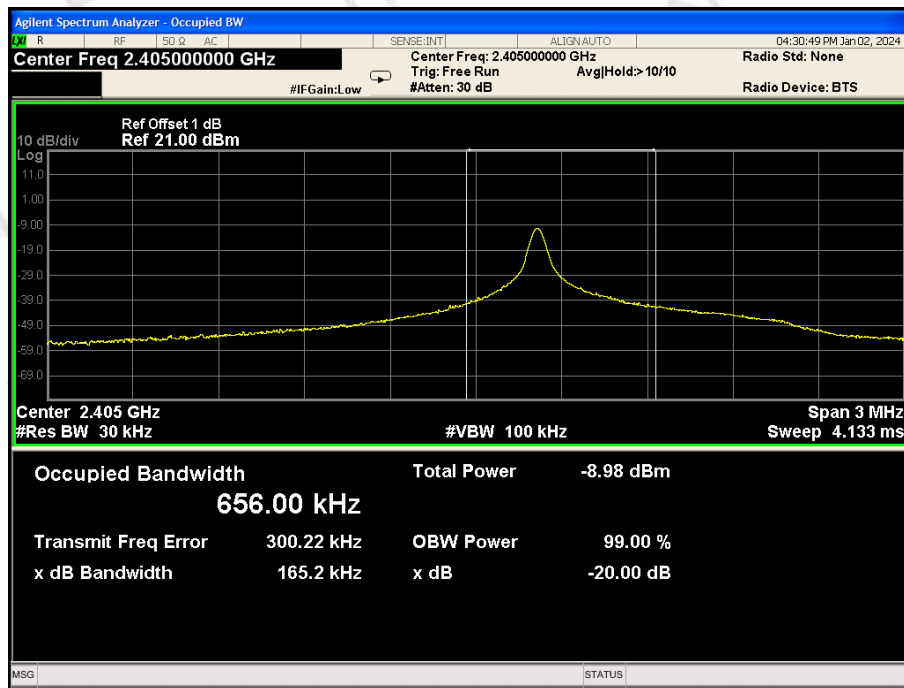
6.4 TEST RESULT

PASS

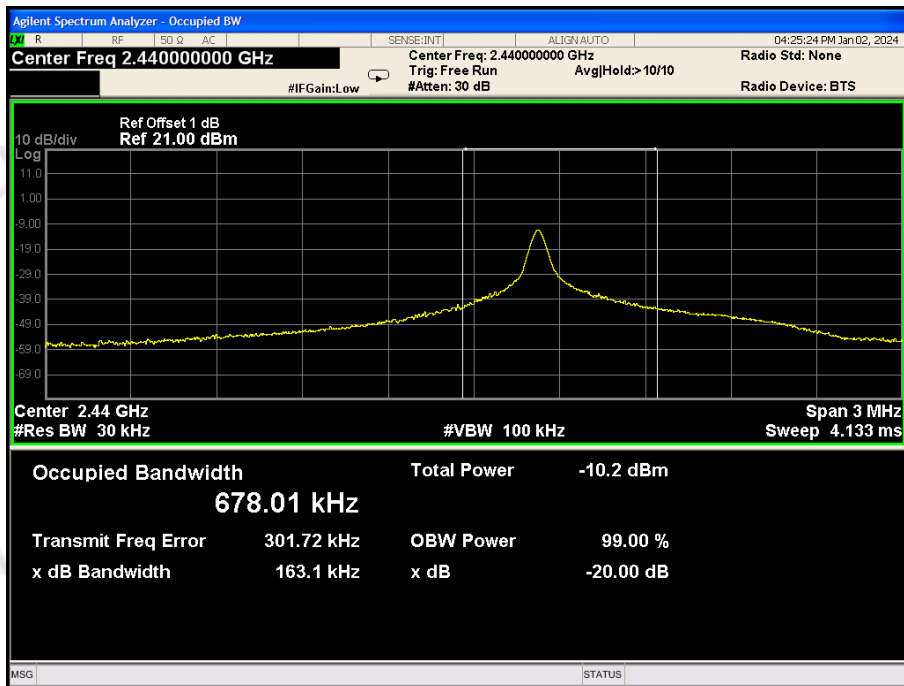
FSK Modulation:

Channel	Frequency (MHz)	20dB Bandwidth (MHz)	Result
Low Channel	2405.00	0.165	PASS
Middle Channel	2440.00	0.163	PASS
High Channel	2475.00	0.164	PASS

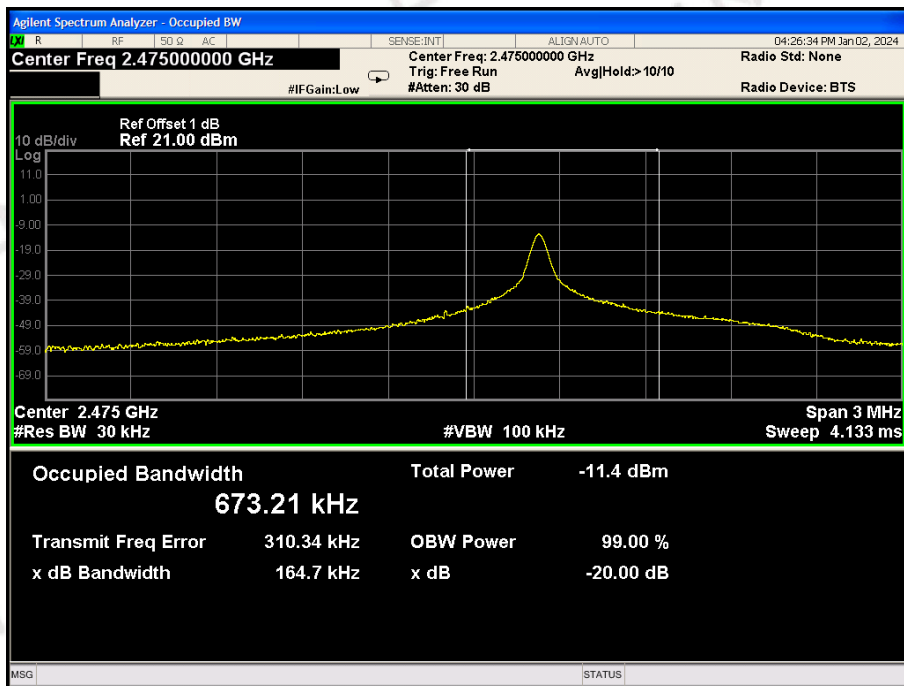
CH01: 2405.00MHz



CH08: 2440.00MHz



CH16: 2475.00MHz



7 ANTENNA REQUIREMENT

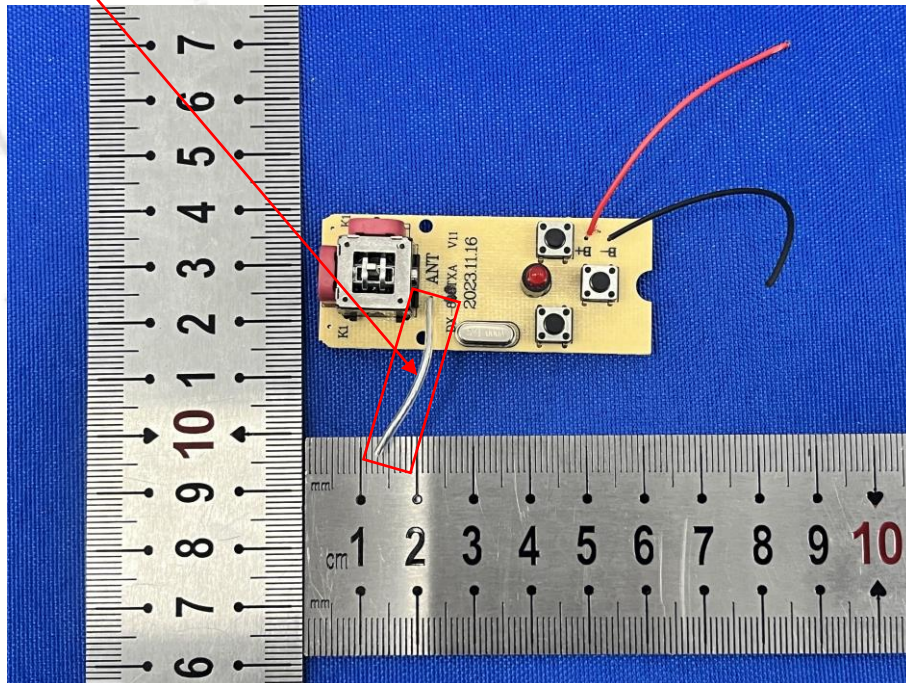
Standard Applicable:

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna Connected Construction

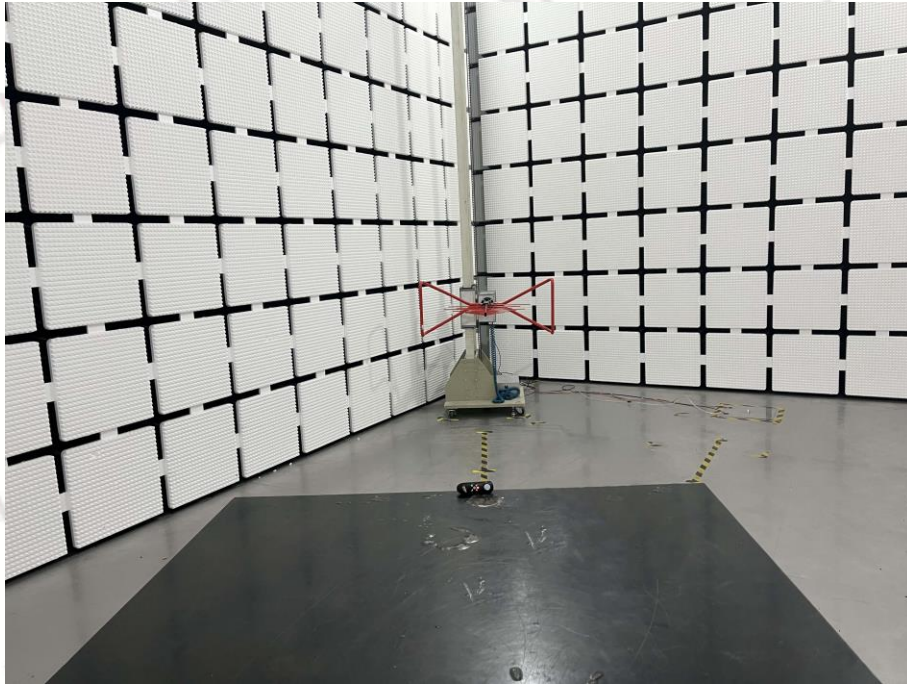
The antenna used in this product is an Internal Antenna, The directional gains of antenna used for transmitting is 0.17dBi.

ANTENNA:



8 PHOTO OF TEST

8.1 RADIATED EMISSION

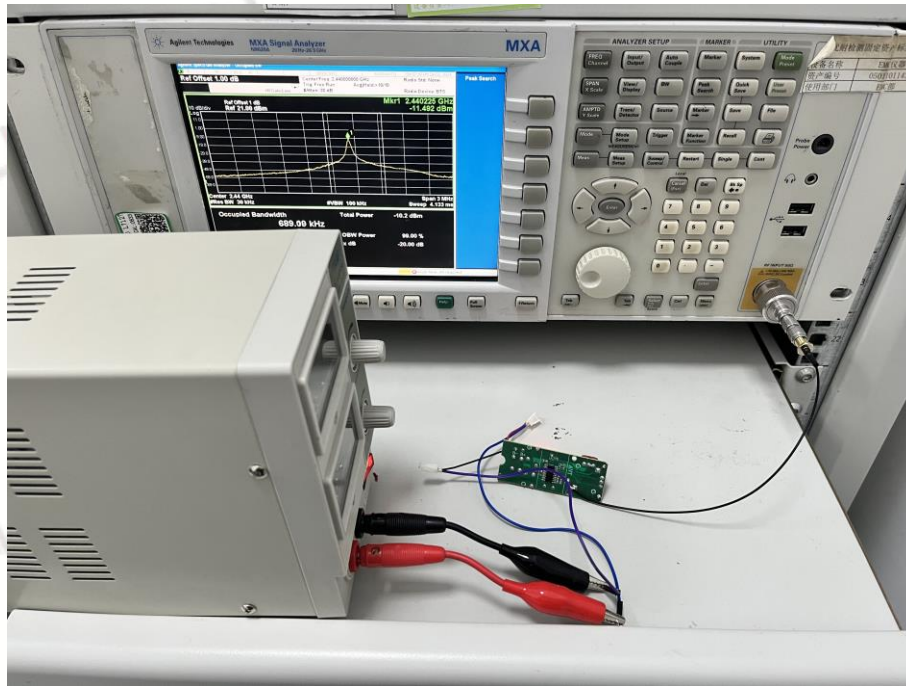


30MHz-1000MHz



Above 1GHz

8.2 RF CONDUCTED



End of Report