FCC CERTIFICATION TEST REPORT

Applicant	**:**	Rayrun Technology Co., Ltd.
Address of Applicant	**:**	5th Floor, Building 2, Haitian Lanyu Industrial Park, Shilong Community, Shiyan Street, Baoan District, Shenzhen,China
Manufacturer	**:**	Rayrun Technology Co., Ltd.
Address of Manufacturer	**:**	5th Floor, Building 2, Haitian Lanyu Industrial Park, Shilong Community, Shiyan Street, Baoan District, Shenzhen,China
Equipment under Test	**:**	Remote Controller
Model No.	**:**	ATP01, ATP02, ATP03, ATP04, ATP05, ATP06, ATP07, ATP08, ATP09
FCC ID	**:**	2ACJPATP06
Test Standard(s)	**:**	FCC Rules and Regulations Part 15 Subpart C, ANSI C63.10:2013
Report No.	**:**	DDT-RE24110531-1E01
Issue Date	:	2024/12/04
Issue By	**:**	Guangdong Dongdian Testing Service Co., Ltd.
Address of Laboratory	**:**	Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

REPORT

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Test Report Declare

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Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C

Test procedure used:

ANSI C63.10:2013

We Declare:

The equipment described above is tested by Guangdong Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Guangdong Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No.:	DDT-RE24110531-2E01		
Date of Receipt:	2024/11/19	**Date of Test:**	2024/11/19~2024/12/04

Prepared By:

Johnson Huang

Johnson Huang/Engineer

Approved By:

GUANGDONG DONGDIAN TESTING SERVICE CO.,LTD. 广东电检测技术有限公司 Certificate and Report Seal 检验检测专用章

Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	2024/12/04	

1 Summary of test results

Description of Test Item	Standard	Results
20dB Bandwidth and 99% Bandwidth	FCC Part 15: 15.215 ANSI C63.10:2013	Pass
Stop Transmitting Time Test	FCC Part 15C: 15.231(a)(1)	Pass
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.231(b) ANSI C63.10:2013	Pass
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.10:2013	N/A
Antenna requirement	FCC Part 15: 15.203	Pass
Note: N/A is an abbreviation for Not Applicable.		

2 General test information

2.1. Description of EUT

EUT Name	:	Remote Controller
Model Number	:	ATP01, ATP02, ATP03, ATP04, ATP05, ATP06, ATP07, ATP08, ATP09
Difference of model number	:	All models are identical except the appearance, software and model name, therefore the test performed on the model ATP06.
EUT function description	:	Please reference user manual of this device
Power supply	:	DC 3V From Button cell
Operation frequency	:	433.79MHz
Modulation	:	OOK
Antenna Type	:	Internal antenna
Sample Number	:	S24110531-002

Note 1: EUT is the abbreviation of equipment under test.

Note 2: "☒" means to be chosen or applicable; "☐" means don't to be chosen or not applicable; This note applies to entire report.

2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Serial No.	Other
N/A	N/A	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Serial No.	Other
N/A	N/A	N/A	N/A	N/A

2.4. Block diagram of EUT configuration for test

EUT

Tested mode, channel, information		
Mode	Channel	Frequency (MHz)
TX mode	/	433.79

Note：New battery is used during all test

2.5. Deviations of test standard

No Deviation.

2.6. Test environment conditions

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

Temperature range:	21-25℃
Humidity range:	40-75%
Pressure range:	86-106kPa

2.7. Test laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Add.: Unit 2, Building 1, No.17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China 523808

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2.8. Measurement uncertainty

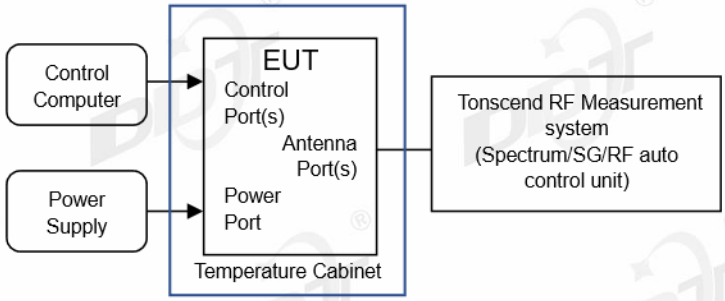
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.40 dB (3.6 GHz ≤ f < 8 GHz)
	1.66 dB (8 GHz ≤ f < 26.5 GHz)
Uncertainty for radio frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 ℃
Humidity	2 %
Uncertainty for Radiation Emission test (9 kHz – 30 MHz)	3.44 dB
Uncertainty for Radiation Emission test (30 MHz - 1 GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1 GHz - 40 GHz)	4.10 dB (1 - 6 GHz)
	4.40 dB (6 GHz - 18 GHz)
	3.54 dB (18 GHz - 26 GHz)
	4.30 dB (26 GHz - 40 GHz)
Uncertainty for Power line conduction emission test	3.34dB (150KHz-30MHz)
	3.72dB (9KHz-150KHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3 Equipment Used During Conductive Test

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☒ RF Connected Test (RF Measurement System 1#)				
SIGNAL ANALYZER	R&S	FSQ26	101272	2025/03/31
Wideband Radio Communication Tester	R&S	CMW500	120259	2025/07/08
MXG Vector Signal Generator	KEYSIGHT	N5182B	MY59100192	2025/03/31
MXG Vector Signal Generator	Agilent	N5182A	MY19060405	2025/03/31
RF Control Unit	Tonsend	JS0806-2	158060010	2025/03/31
TEMP&HUMI Programmable Chamber	ZHIXIANG	ZXGDJS-150L	ZX170110-A	2025/04/22
Test Software	Tonscend	JS1120-3	Ver.3.2.22	N/A

4. On Time and Duty Cycle

4.1. Block diagram of test setup



4.2. Limits

None: for reporting purposes only.

4.3. Test Procedure

Set the Centre frequency of the spectrum analyzer to the transmitting frequency;

Set the span=0MHz, RBW=10MHz, VBW=10MHz, Sweep time=100ms;

Trace mode = Single hold.

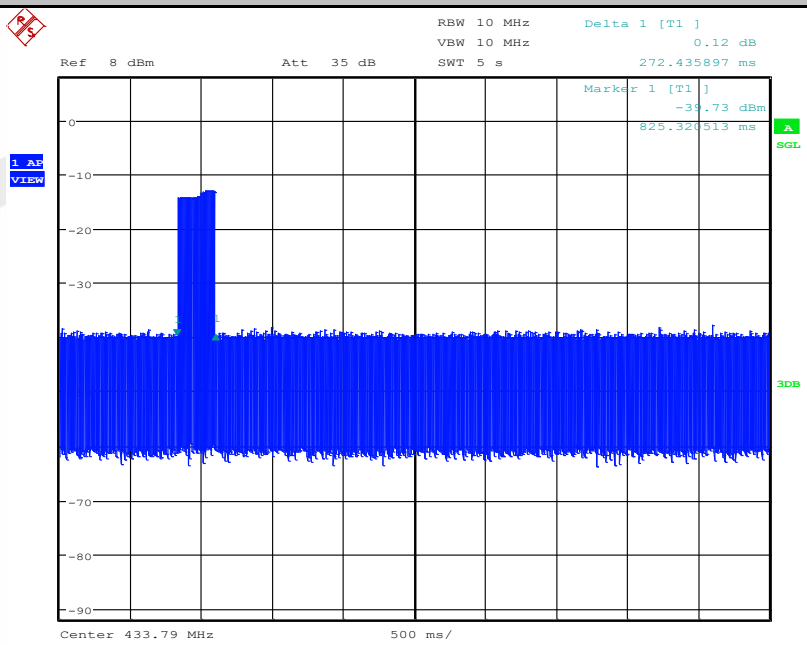
4.4. Test Result

Test Channel	Duty Cycle[%]	20 log(duty cycle)
433.79	37.49	-8.52

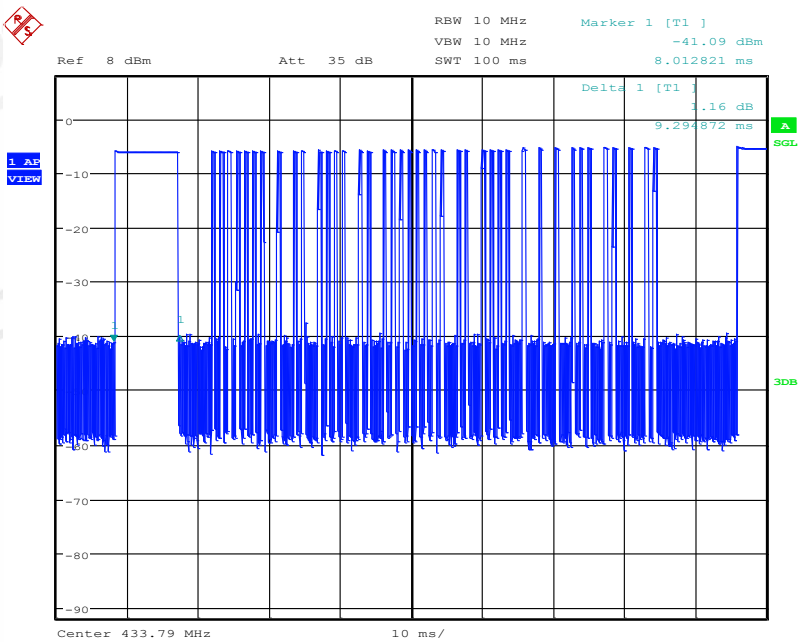
Note 1: The transmitter duty cycle was measured using a spectrum analyser in the time domain and calculated by below Equation:
δ(dB) = 20log(Δ)= 20 log[(0.641*44+9.29)/100]=-8.52dB
δ is the duty cycle correction factor (dB)
Δ is the duty cycle (dimensionless)
Note 2: In cases where the pulse train exceeds 0.1 s, the measured field strength shall be determined during a 0.1 s interval

4.5. Original test data

Duty Cycle



Date: 4.DEC.2024 19:23:33



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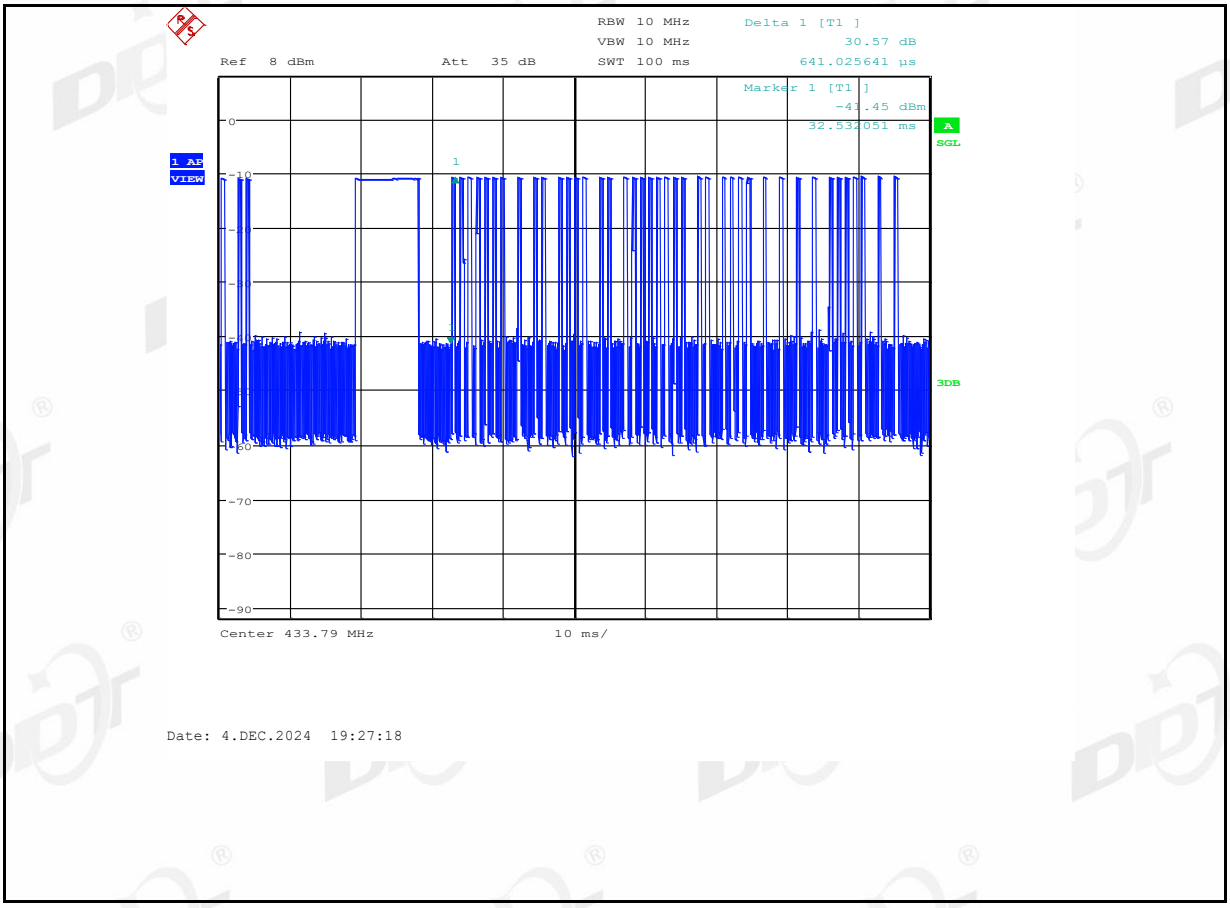

RBW 10 MHz
VBW 10 MHz
SWT 100 ms
Delta 1 [T1]
30.57 dB
641.025641 µs
Ref 8 dBm
Att 35 dB
Marker 1 [T1]
-41.45 dBm
32.532051 ms
1 AP
VIEW
A
SGL
3DB
0
-10
-70
-80
-90
Center 433.79 MHz
10 ms/
Date: 4.DEC.2024 19:27:18

5. 20dB Bandwidth and 99% Bandwidth

5.1. Block diagram of test setup

5.2. Limits

The bandwidth of the emission shall be no wider than 0.25% of the center frequency of devices operation above 70MHz and below 900MHz.

5.3. Test Procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

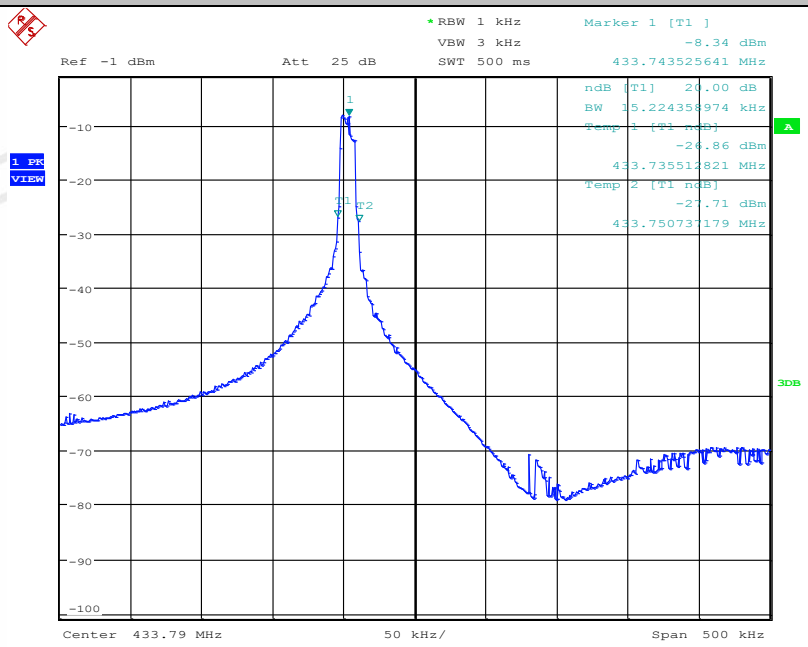
(2) The bandwidth of the fundamental frequency was measured by spectrum analyzer with 1kHz RBW and 3kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

5.4. Test Result

Frequency (MHz)	20 dB Bandwidth (kHz)	99% Bandwidth (kHz)	Limit (MHz)	Conclusion
433.79	15.22	16.03	1.08	PASS

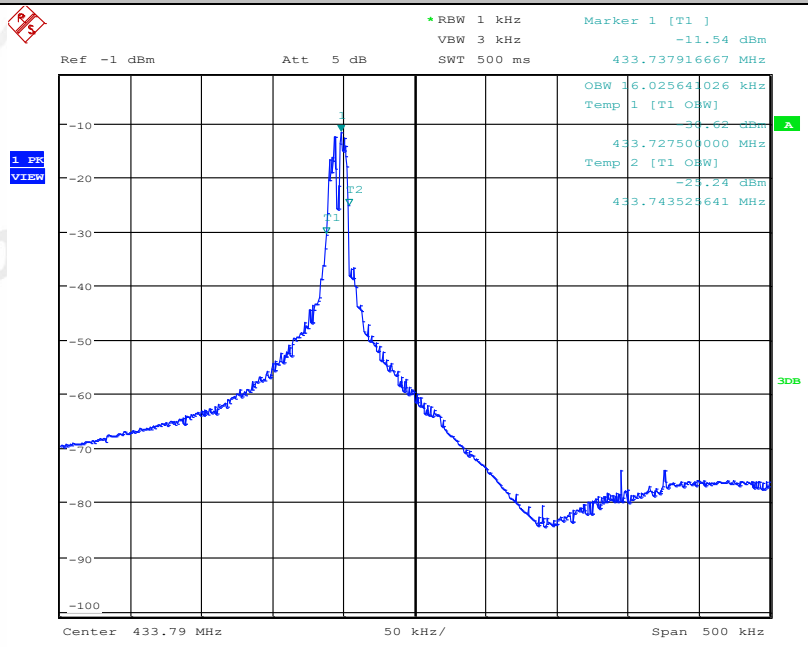
5.5. Original test data

20 dB Bandwidth



Date: 2.DEC.2024 14:54:58

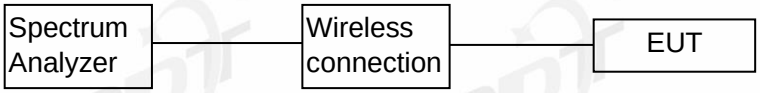
99% Bandwidth



Date: 2.DEC.2024 15:03:33

6 Stop transmitting time test

6.1. Block diagram of test setup



6.2. Limits

15.231(a), A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

6.3. Test Procedure

(1) The EUT's RF signal was coupled to spectrum analyzer by antenna connected to spectrum analyzer.

(2) Set the spectrum to zero span mode, and centered of EUT frequency.

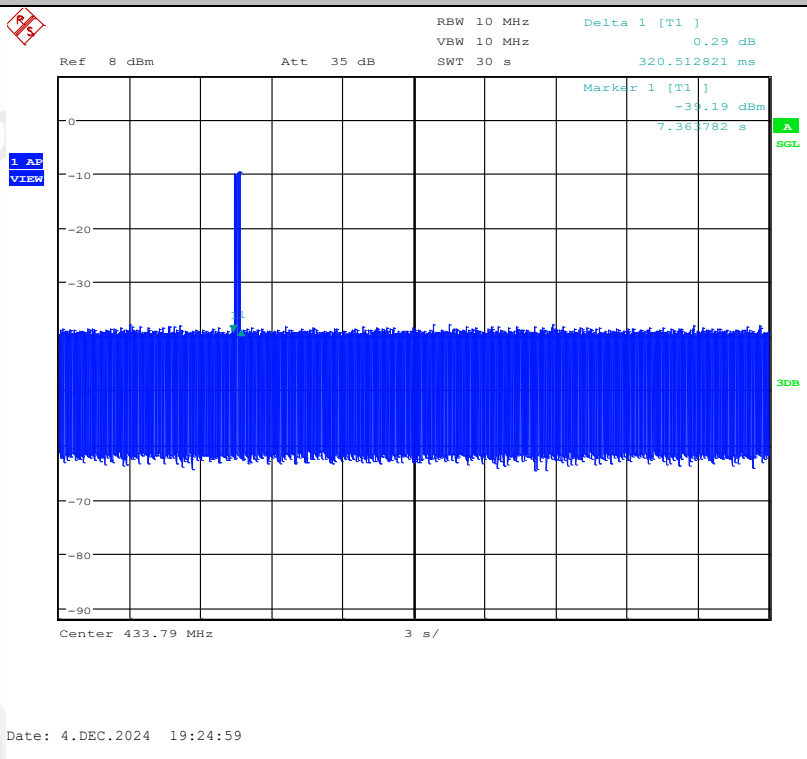
(3) Measure the stop transmitting time after release EUT button.

6.4. Test Result

Frequency (MHz)	Burst Duration[s]	Limit [s]	Verdict
433.79	0.32	≤5	PASS

6.5. Original test data

Graphs



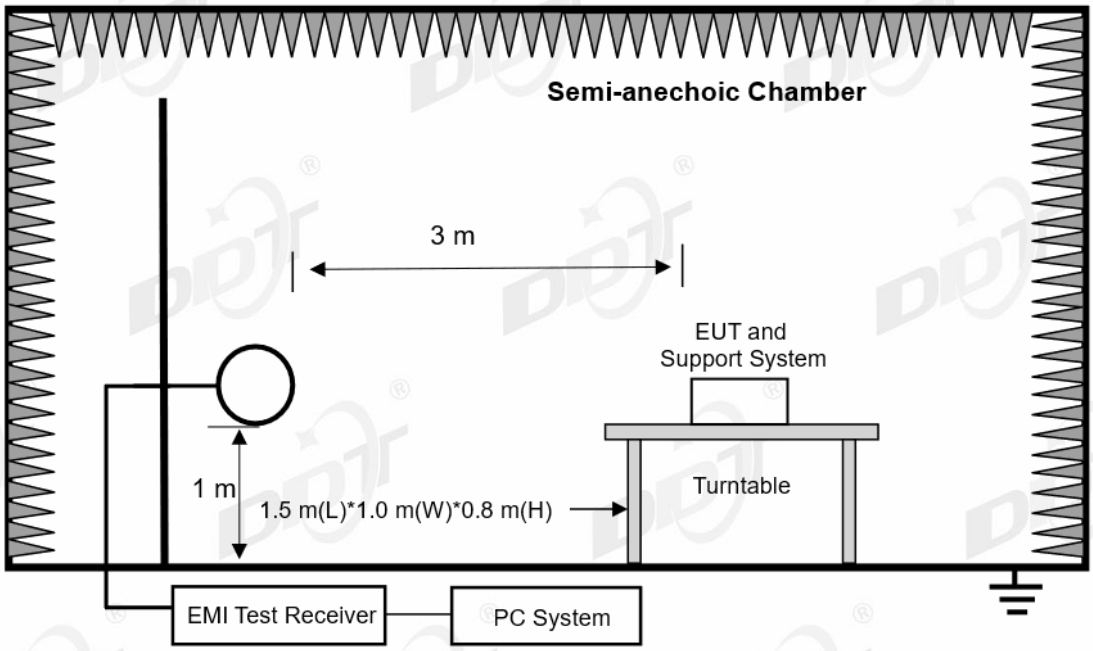
7 Radiated emission

7.1. Test equipment

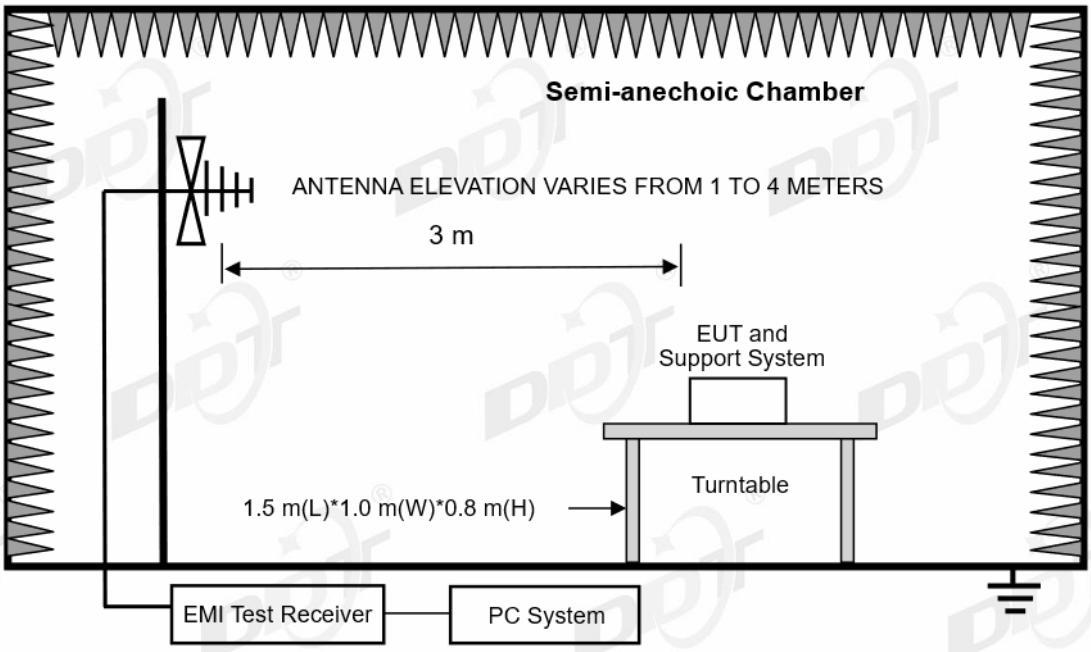
Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
Micro-Tronics filters	REBES	BRM50702	DDT-ZC03242	/
RF Cable	N/A	W24.02 HL-562	DDT-ZC04022	2025/03/31
RF cable	Yuhu Technology	JCTB810-NJ-NJ-9M	DDT-ZC02538	2025/03/31
RF cable	Zhongke Junchuang	JCT26S-NJ-NJ-1.5M	DDT-ZC02762	2025/03/31
RF cable	Yuhu Technology	ZT26S-SMAJ-SMAJ-1M	DDT-ZC02037	2025/03/31
RF Cable	N/A	W13.02 AP1-X2	DDT-ZC04023	2025/03/31
Pre-amplifier	COM-POWER	PAM-840A	DDT-ZC01693	2025/03/31
Pre-amplifier	COM-POWER	PAM-118A	DDT-ZC01293	2025/08/25
High pass filter	Micro-Tronics	HPM50102	DDT-ZC00561	2025/04/22
EMI TEST RECEIVER	R&S	ESU26	DDT-ZC01909	2025/03/31
High pass filter	Micro-Tronics	HPM50108	DDT-ZC00560	2025/04/22
High Pass filter	Xi'an Xingbo	XBLBQ-GTA67	DDT-ZC02179	2025/04/22
Micro-Tronics filters	REBES	BRM50716	DDT-ZC03240	/
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	DDT-ZC00506	2025/04/26
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	DDT-ZC02050	2025/07/11
Hochgewinn-Hornantenne	SCHWARZBECK	BBHA 9120 D	DDT-ZC02129	2025/09/18
Active Loop Antenna	Schwarzbeck	FMZB1519	DDT-ZC00524	2025/09/11
PSA Series Spectrum Analyzer	Agilent	E4447A	DDT-ZC00517	2025/03/31

7.2. Block diagram of test setup

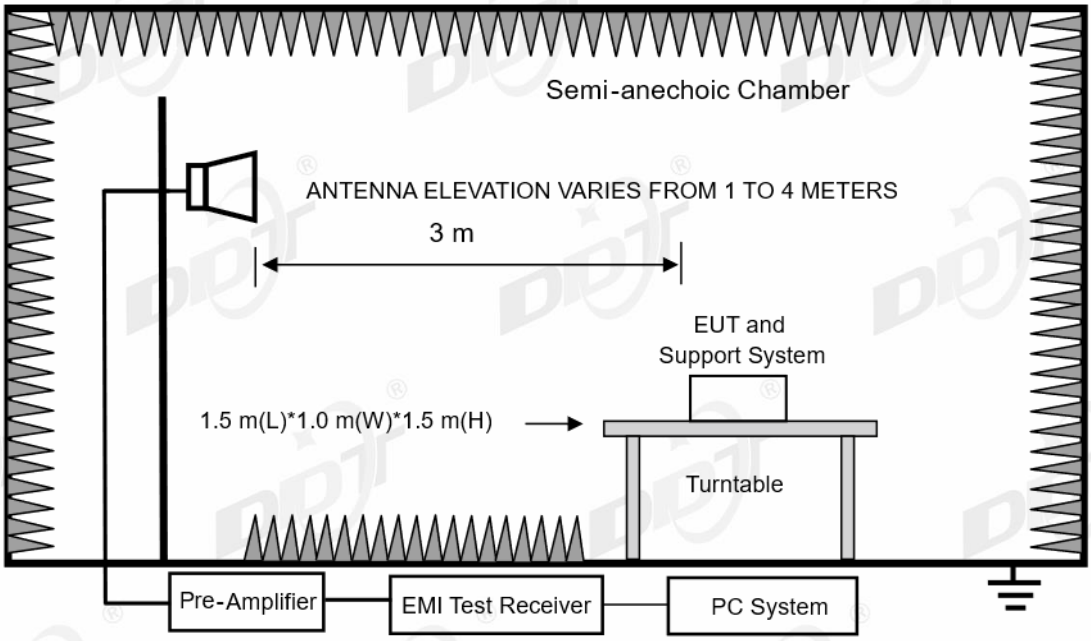
In 3m Anechoic Chamber Test Setup Diagram for 9kHz-30MHz



In 3m Anechoic Chamber Test Setup Diagram for below 1GHz



In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

7.3. Limit

(1) FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.G
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

(2) FCC 15.209 Limit.

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
0.009 ~ 0.490	300	2400/F(kHz)	67.6-20log(F)
0.490 ~ 1.705	30	24000/F(kHz)	87.6-20log(F)
1.705 ~ 30.0	30	30	29.54
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

(3) FCC 15.231 section (e) limit

Fundamental Frequency (MHz)	Field Strength of Fundamental	Field strength of spurious emission
433.92	AV:80.82dBuV/m @3m PK:100.82dBuV/m @3m	AV:60.82dBuV/m @3m PK:80.82dBuV/m @3m

Note:

(1) The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000MHz.Radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30MHz, measurement may be performed at a distance closer then that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$Limit_{3m}(dBuV/m) = Limit_{300m}(dBuV/m) + 40Log(300m/3m) = Limit_{300m}(dBuV/m) + 80$

$Limit_{3m}(dBuV/m) = Limit_{30m}(dBuV/m) + 40Log(30m/3m) = Limit_{30m}(dBuV/m) + 40$

(3) Limit for this EUT

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions include fundamental emission shall not exceed FCC 15.231 section (e) limit of comply with FCC 15.209 limit which permit higher emission level.

7.4. Test Procedure

(1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber for blow 1G and 150 cm above the ground plane inside a semi-anechoic chamber for above 1G.
(2) Test antenna was located 3m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used	Test antenna distance
9kHz-30MHz	Active Loop antenna	3m
30MHz-1GHz	Trilog Broadband Antenna	3m
1GHz-18GHz	Double Ridged Horn Antenna(1GHz-18GHz)	3m
18GHz-40GHz	Horn Antenna(18GHz-40GHz)	1m

According ANSI C63.10:2013 clause 6.4.6 and 6.5.3, for measurements below 30 MHz, Antenna was located 3 m from EUT, the loop antenna was positioned in three antenna orientations (parallel, perpendicular, and round-parallel), for each measurement antenna alignment, the EUT shall be rotated through 0° to 360° on a turntable, and the lowest height of the magnetic antenna shall be 1 m above the ground. For measurement above 30MHz, the Trilog Broadband Antenna or Horn Antenna was located 3m from EUT, Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the measurement antenna was varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(3) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9kHz to 5GHz (tenth harmonic of fundamental frequency):

(a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degree, the antenna height was varied from 1m to 4m(Except loop antenna, it's fixed 1m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions.

(4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10 2013 on Radiated Emission test.

(5) The emissions from 9kHz to 1GHz were measured based on CISPR QP detector except for the frequency bands 9-90kHz, 110-490kHz, for emissions from 9kHz-90kHz,110kHz-490kHz and above 1GHz were measured based on average detector, for emissions above 1GHz, peak emissions also be measured and need comply with Peak limit.

(6) The emissions from 9kHz to 1GHz, QP or average values were measured with EMI receiver with below RBW.

Frequency band	RBW
9kHz-150kHz	200Hz
150kHz-30MHz	9kHz
30MHz-1GHz	120kHz

(7) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; RMS detector RBW 1MHz VBW 3MHz for Average measure(according ANSI C63.10:2013 clause 4.2.3.2.3 procedure for average measure).

(8) X axis, Y axis, Z axis are tested, and worse setup X axis is reported.

7.5. Test result

PASS. (See below detailed test result)

Note1: According exploratory test no any obvious emission were detected from 9kHz to 30MHz.

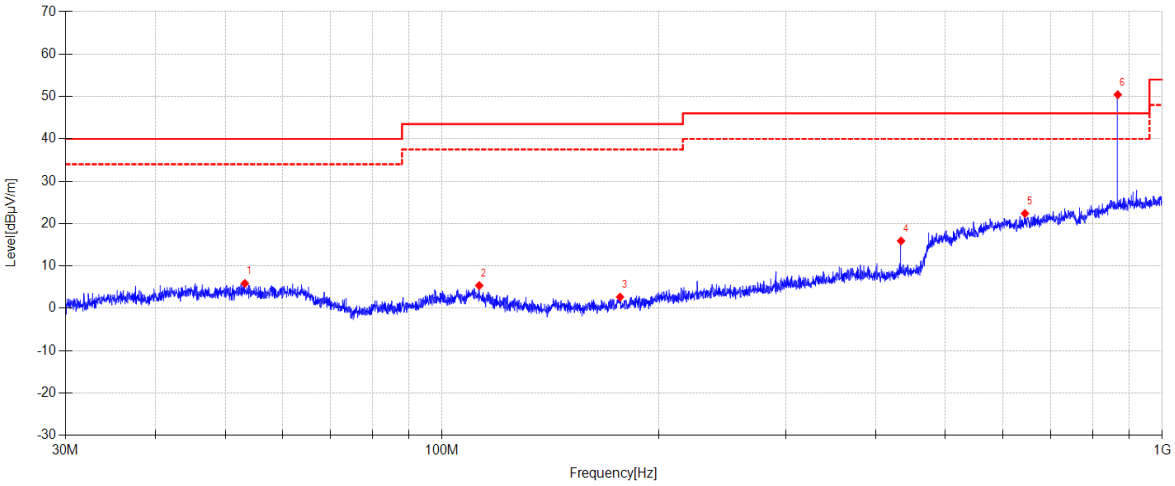
Note2: For emissions above 1GHz. If peak results comply with AV limit, AV Result is deemed to comply with AV limit.

Note3: All mode have been pretest, and only the worst case is shown in report.

Radiated Emission test (below 1GHz)

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-11-27	**Tested By**:	Zhong Nan
EUT:	Remote control	**Model Number**:	ATP06
Test Mode:	433.79MHz TX Mode	**Power Supply**:	DC 3V
Condition:	Temp:21.9°C;Humi:51.0%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24110531-1E\433\20241127-155726_H		
Memo:	Sample NumberS24110531-002 Power Setting:NA		

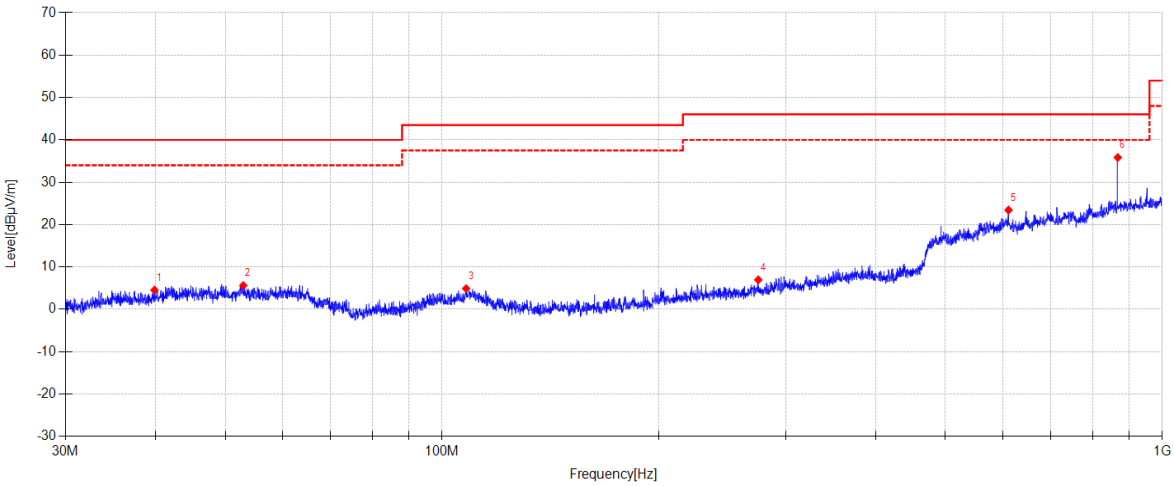


Data List										
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable loss [dB]**	**AMP [dB]**	**Level [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	53.237	19.76	13.29	3.91	-31.10	5.86	40.00	34.14	PK	Horizontal
2	112.652	20.76	11.44	4.29	-31.11	5.38	43.50	38.12	PK	Horizontal
3	176.701	19.48	9.73	4.63	-31.18	2.66	43.50	40.84	PK	Horizontal
4	433.833	25.71	15.91	5.75	-31.47	15.90	46.00	30.10	PK	Horizontal
5	644.724	28.31	19.07	6.51	-31.50	22.39	46.00	23.61	PK	Horizontal
6	867.328	52.84	21.19	7.12	-30.72	50.43	80.82	30.39	PK	Horizontal
7	867.328	52.84	21.19	7.12	-30.72	41.91	60.82	18.91	AV	Horizontal

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.
4. AV Level= PK Level+ Duty factor =PK-8.52

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-11-27	**Tested By**:	Zhong Nan
EUT:	Remote control	**Model Number**:	ATP06
Test Mode:	433.79MHz TX Mode	**Power Supply**:	DC 3V
Condition:	Temp:21.9°C;Humi:51.0%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24110531-1E\433\20241127-155821_V		
Memo:	Sample NumberS24110531-002 Power Setting:NA		



Data List										
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable loss [dB]**	**AMP [dB]**	**Level [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	39.880	19.89	11.94	3.82	-31.10	4.55	40.00	35.45	PK	Vertical
2	52.976	19.24	13.58	3.90	-31.10	5.62	40.00	34.38	PK	Vertical
3	108.011	20.33	11.41	4.26	-31.11	4.89	43.50	38.61	PK	Vertical
4	274.842	20.71	12.50	5.10	-31.35	6.96	46.00	39.04	PK	Vertical
5	611.695	29.39	19.13	6.41	-31.50	23.43	46.00	22.57	PK	Vertical
6	867.328	38.25	21.19	7.12	-30.72	35.84	80.82	44.98	PK	Vertical
7	867.328	38.25	21.19	7.12	-30.72	27.32	60.82	33.50	AV	Vertical

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.
4. AV Level= PK Level+ Duty factor =PK-8.52

Field Strength Of The Fundamental Signal

Frequency (MHz)	PK Level (dBuV/m)	PK Limit Line (dBuV/m)	Over Limit (dB)	Polarization
433.79	63.35	100.82	-37.47	Horizontal
433.79	49.95	100.82	-50.87	Vertical

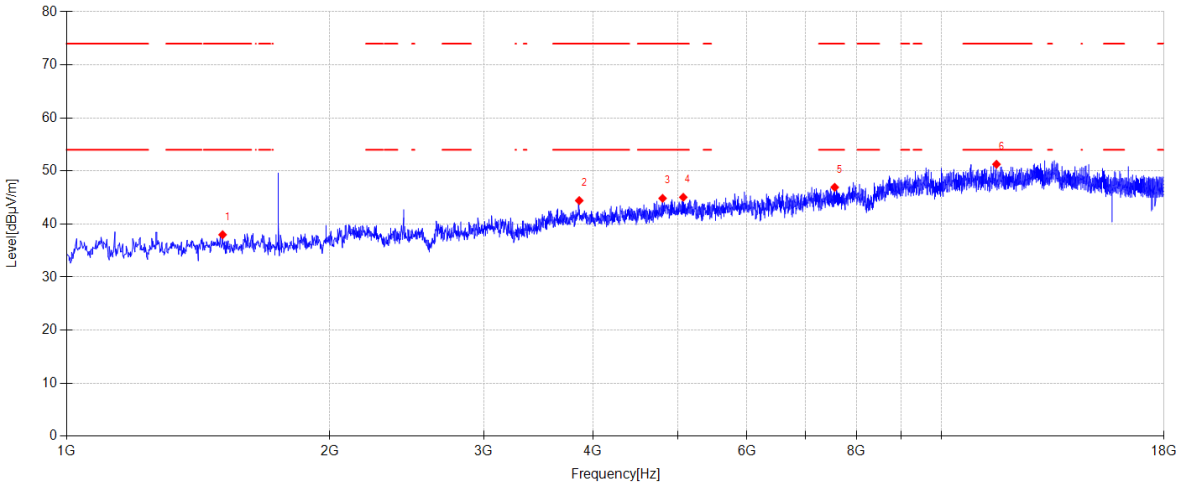
Frequency (MHz)	AV Level (dBuV/m)	AV Limit Line (dBuV/m)	Over Limit (dB)	Polarization
433.79	54.83	80.82	-25.99	Horizontal
433.79	41.43	80.82	-39.39	Vertical
Note: AV Level= PK Level+ Duty factor				

Radiated Emission test (above 1GHz)

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-11-27	**Tested By**:	Zhong Nan
EUT:	Remote control	**Model Number**:	ATP06 系列
Test Mode:	433.79MHz TX Mode	**Power Supply**:	DC 3V
Condition:	Temp:21.9°C;Humi:51.0%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24110531-1E\433\11		
Memo:	Sample NumberS24110531-002 Power Setting:NA		

Test Graph



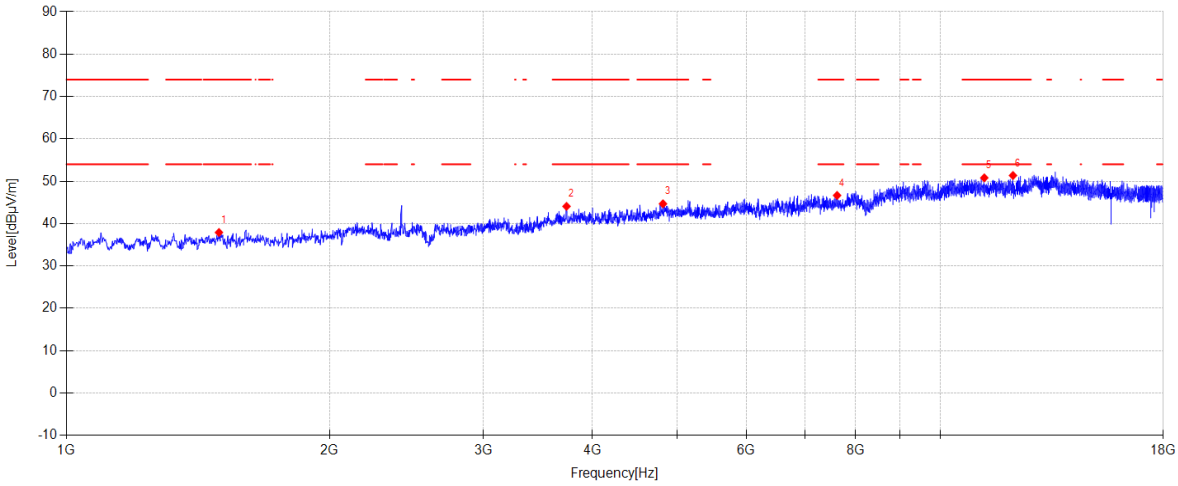
Data List										
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable loss [dB]**	**AMP [dB]**	**Level [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	1508.300	46.33	25.38	3.74	-37.47	37.98	74.00	36.02	PK	Horizontal
2	3857.700	48.05	30.95	5.07	-39.65	44.42	74.00	29.58	PK	Horizontal
3	4804.600	46.31	32.62	5.53	-39.62	44.84	74.00	29.16	PK	Horizontal
4	5073.200	45.61	33.35	5.69	-39.60	45.05	74.00	28.95	PK	Horizontal
5	7558.600	44.27	36.42	6.74	-40.50	46.93	74.00	27.07	PK	Horizontal
6	11572.300	43.29	39.06	8.49	-39.57	51.27	74.00	22.73	PK	Horizontal

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-11-27	**Tested By**:	Zhong Nan
EUT:	Remote control	**Model Number**:	ATP06
Test Mode:	433.79MHz TX Mode	**Power Supply**:	DC 3V
Condition:	Temp:21.9°C;Humi:51.0%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24110531-1E\433\12		
Memo:	Sample NumberS24110531-002 Power Setting:NA		

Test Graph



Data List										
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable loss [dB]**	**AMP [dB]**	**Level [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	1494.700	46.15	25.48	3.72	-37.45	37.90	74.00	36.10	PK	Vertical
2	3735.300	48.13	30.47	5.09	-39.62	44.07	74.00	29.93	PK	Vertical
3	4816.500	45.81	32.93	5.54	-39.61	44.67	74.00	29.33	PK	Vertical
4	7619.800	43.78	36.54	6.77	-40.44	46.65	74.00	27.35	PK	Vertical
5	11230.600	42.55	39.20	8.28	-39.23	50.80	74.00	23.20	PK	Vertical
6	12112.900	43.21	39.30	8.82	-39.98	51.35	74.00	22.65	PK	Vertical

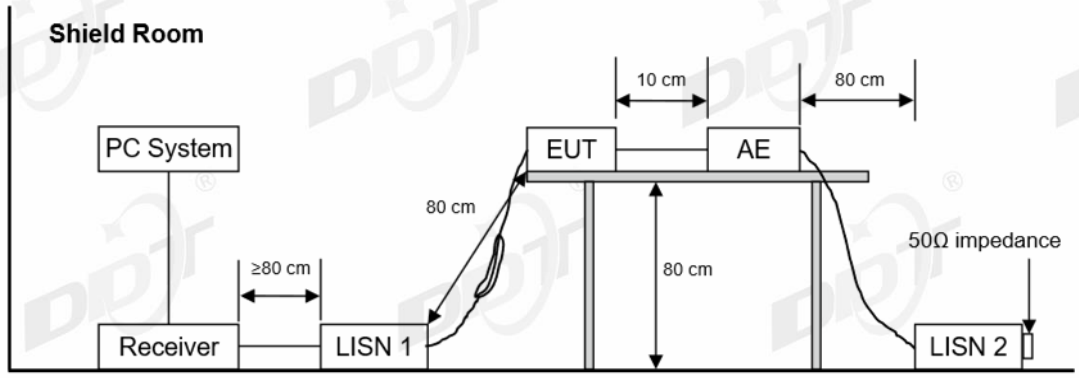
Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

8 Power Line Conducted Emission

8.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
Pulse Limiter	R&S	KH43101	DDT-ZC00747	2025/04/22
Two Line V-Network	R&S	ENV216	DDT-ZC01247	/
Two Line V-Network	R&S	ENV216	DDT-ZC00586	2025/07/08
EMI Test Receiver	R&S	ESCI	DDT-ZC01972	2025/03/31
Condected Radiated Software	Audix	E3	DDT-ZC00562	/
Copper shaft signal cable	H&S	RG214-5	DDT-ZC01817	2025/03/31

8.2. Block diagram of test setup



8.3. Power Line Conducted Emission Limits

Frequency	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

8.4. Test Procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 8.1 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

8.5. Test Result

Not Applicable

Conducted limits are not required for devices which only employ battery power for operation according to 15.207(C)

9 Antenna Requirements

9.1. Limit

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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

9.2. Result

The antenna used for this product as Antenna information described in section 2.1 of the report, and there is no other antenna than that furnished by the responsible party shall be used with the device.

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11 Photos of the EUT

Please refer to Q24110531-2E appendix I

END OF REPORT