FCC Test Report

Applicant	:	**Shenzhen Radiomaster Co.,Ltd**
Address	:	**4F Yangtian Building, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China**
Product Name	:	**R85C**
Report Date	:	**Nov. 25, 2024**

Shenzhen Anbotek Compliance Laboratory Limited

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TEST REPORT

Applicant	:	Shenzhen Radiomaster Co.,Ltd
Manufacturer	:	Shenzhen Radiomaster Co.,Ltd
Product Name	:	R85C
Model No.	:	R85C
Trade Mark	:	Radiomaster
Rating(s)	:	Input: 4.5V~8.4V⎓
Test Standard(s)	:	**FCC 47 CFR Part 15 Subpart B** **ANSI C63.4-2014**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with above listed standard(s) requirements.
This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt: Dec. 22, 2023

Date of Test: Dec. 23, 2023 to Aug. 07, 2024

Prepared By: _____

(TuTu Hong)

Approved & Authorized Signer: _____

(KingKong Jin)

1. General Information

1.1. Client Information

Applicant	:	Shenzhen Radiomaster Co.,Ltd
Address	:	4F Yangtian Building, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China
Manufacturer	:	Shenzhen Radiomaster Co.,Ltd
Address	:	4F Yangtian Building, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China
Factory	:	Shenzhen Radiomaster Co.,Ltd
Address	:	4F Yangtian Building, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China

1.2. Description of Device (EUT)

Product Name	:	R85C
Model No.	:	R85C
Trade Mark	:	Radiomaster
Test Power Supply	:	DC 5V via PC
Test Sample No.	:	1-1-1
Adapter	:	N/A
Remark: (1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

1.3. Auxiliary Equipment Used During Test

Title	Manufacturer	Model No.	Serial No.
HUAWEI MateBook X Pro	HUAWEI	HUAWEI MateBook X Pro	/

1.4. Description of Test Modes

Pretest Modes	Descriptions
TM1	Working (DC 5V via PC)

1.5. Measurement Uncertainty

Parameter	Uncertainty
Conducted emissions (AMN 150kHz~30MHz)	3.4dB
Radiated emissions (30MHz~1000MHz)	Horizontal: 3.92dB; Vertical: 4.52dB
Radiated emissions (above 1GHz)	1G-6GHz: 4.78dB; 6G-18GHz: 4.88dB
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

1.6. Test Summary

Test Items	Test Modes	Status
Conducted emissions on AC mains	/	N
Radiated emissions (Below 1GHz)	Mode1	P
Radiated emissions (Above 1GHz)	Mode1	P
Note: P: Pass N: N/A, not applicable		

1.7. Description of Test Facility

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

FCC-Registration No.:434132
Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 434132.

ISED-Registration No.: 8058A
Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location
Shenzhen Anbotek Compliance Laboratory Limited.
Sogood Industrial Zone Laboratory & 1/F. of Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Subdistrict, Bao'an District, Shenzhen, Guangdong, China.

1.8. Test Equipment List

Conducted emissions on AC mains						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	2024-01-18	2025-01-17
2	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040DT001	2024-01-17	2025-01-16
3	Software Name EZ-EMC	Farad Technology	ANB-03A	N/A	/	/
4	EMI Test Receiver	Rohde & Schwarz	ESPI3	100926	2023-10-12	2024-10-11

Radiated emissions (Below 1GHz)						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	2024-01-23	2025-01-22
2	Pre-amplifier	SONOMA	310N	186860	2024-01-17	2025-01-16
3	Bilog Broadband Antenna	Schwarzbeck	VULB9163	345	2022-10-23	2025-10-22
4	Software Name EZ-EMC	Farad Technology	ANB-03A	N/A	/	/

Radiated emissions (Above 1GHz)						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	2024-01-23	2025-01-22
2	Pre-amplifier	SONOMA	310N	186860	2024-01-17	2025-01-16
3	Bilog Broadband Antenna	Schwarzbeck	VULB9163	345	2022-10-23	2025-10-22
4	EMI Preamplifier	SKET Electronic	LNPA-0118G-45	SKET-PA-002	2024-01-17	2025-01-16
5	Double Ridged Horn Antenna	SCHWARZBECK	BBHA 9120D	02555	2022-10-16	2025-10-15
6	Software Name EZ-EMC	Farad Technology	ANB-03A	N/A	/	/

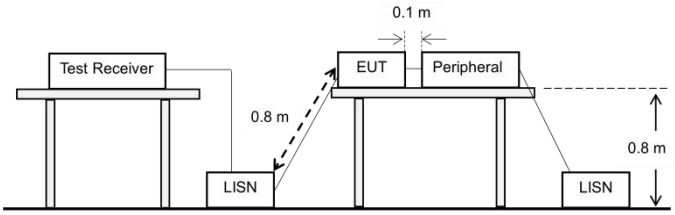
2. Conducted emissions on AC mains

Test Requirement:	15.107, Class B
Test Limit:	**Frequency of emission (MHz)** / **Conducted limit (dBμV)**: **Quasi-peak** / **Average** 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 *Decreases with the logarithm of the frequency.
Test Method:	ANSI C63.4-2014
Procedure:	An initial pre-scan was performed with peak detector.Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected. Remark: Level= Read Level+ Cable Loss+ LISN Factor

2.1. EUT Operation

Operating Environment:	
Test mode:	1: TM1: Working (DC 5V via PC)

2.2. Test Setup



2.3. Test Data

Not applicable.
The EUT is powered by DC 5V, so there is no need to conduct this test.

3. Radiated emissions (Below 1GHz)

Test Requirement:	15.109, Class B
Test Limit:	Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

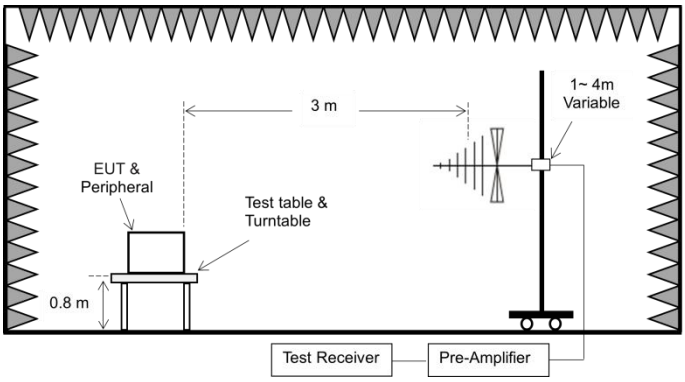
Frequency of emission (MHz)	Field strength @3m		Field strength @10m	
	(uV/m)	(dBuV/m)	(uV/m)	(dBuV/m)
30 – 88	100	40	30	29.5
88 – 216	150	43.5	45	33.1
216 – 960	200	46	60	35.6
Above 960	500	54	150	43.5

Test Method:	ANSI C63.4-2014
Procedure:	An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

3.1. EUT Operation

Operating Environment:	
Test mode:	1: TM1: Working (DC 5V via PC)

3.2. Test Setup



3.3. Test Data

Temperature:	23.6 °C	Humidity:	52 %	Atmospheric Pressure:	101 kPa

TM1 / Polarization: Horizontal

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	55.4147	45.25	-17.62	27.63	40.00	-12.37	QP			
2	122.8340	58.27	-23.53	34.74	43.50	-8.76	QP			
3	131.2965	57.01	-22.57	34.44	43.50	-9.06	QP			
4	188.4122	54.09	-22.82	31.27	43.50	-12.23	QP			
5	215.2675	48.46	-22.08	26.38	43.50	-17.12	QP			
6	942.1304	32.17	-5.74	26.43	46.00	-19.57	QP			

Temperature:	23.6 °C	Humidity:	52 %	Atmospheric Pressure:	101 kPa

TM1 / Polarization: Vertical

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	53.8817	49.41	-17.21	32.20	40.00	-7.80	QP			
2	80.0806	45.92	-19.30	26.62	40.00	-13.38	QP			
3	142.3240	53.75	-22.16	31.59	43.50	-11.91	QP			
4	173.2050	48.63	-20.95	27.68	43.50	-15.82	QP			
5	729.3582	32.80	-9.52	23.28	46.00	-22.72	QP			
6	952.0937	32.41	-5.61	26.80	46.00	-19.20	QP			

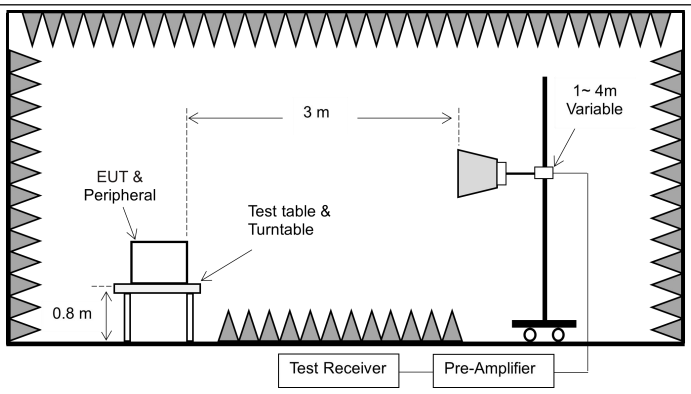
4. Radiated emissions (Above 1GHz)

Test Requirement:	15.109, Class B
Test Limit:	**Frequency of emission (MHz)** / **Field strength @3m**: **Average (uV/m)** 500; **Average(dBuV/m)** 54; **Peak (dBuV/m)** 74 (Above 1GHz)
Test Method:	ANSI C63.4-2014
Procedure:	An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. For below 1GHz test, Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. For above 1GHz test, Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

4.1. EUT Operation

Operating Environment:	
Test mode:	1: TM1: Working (DC 5V via PC)

4.2. Test Setup



4.3. Test Data

Temperature:	23.6 °C	Humidity:	52 %	Atmospheric Pressure:	101 kPa

TM1 / Polarization: Horizontal

Frequency MHz	Read Level (dBuV)	Correct Factor (dB)	Measurement (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Polar (H/V)	Detector
1420.02	49.38	-3.10	46.28	74.00	-27.72	H	PEAK
2063.37	48.88	-2.48	46.40	74.00	-27.60	H	PEAK
2234.78	49.76	-3.80	45.95	74.00	-28.05	H	PEAK
4194.10	52.66	-5.38	47.28	74.00	-26.72	H	PEAK
4660.09	48.31	-4.93	43.38	74.00	-30.62	H	PEAK
5175.51	50.55	-5.65	44.90	74.00	-29.10	H	PEAK
1420.02	39.92	-3.10	36.82	54.00	-17.18	H	AVG
2063.37	39.72	-2.48	37.24	54.00	-16.76	H	AVG
2234.78	38.94	-3.80	35.13	54.00	-18.87	H	AVG
4194.10	42.02	-5.38	36.64	54.00	-17.36	H	AVG
4660.09	42.70	-4.93	37.77	54.00	-16.23	H	AVG
5175.51	37.82	-5.65	32.17	54.00	-21.83	H	AVG
1465.24	49.38	-2.36	47.02	74.00	-26.98	V	PEAK
1827.59	51.76	-3.26	48.50	74.00	-25.50	V	PEAK
1959.97	53.90	-3.80	50.10	74.00	-23.90	V	PEAK
3947.43	47.26	-5.09	42.17	74.00	-31.83	V	PEAK
4451.71	45.59	-4.65	40.94	74.00	-33.06	V	PEAK
5104.38	52.50	-5.55	46.96	74.00	-27.04	V	PEAK
1465.24	36.92	-2.36	34.57	54.00	-19.43	V	AVG
1827.59	44.73	-3.26	41.47	54.00	-12.53	V	AVG
1959.97	38.79	-3.80	34.99	54.00	-19.01	V	AVG
3947.43	39.06	-5.09	33.96	54.00	-20.04	V	AVG
4451.71	37.44	-4.65	32.78	54.00	-21.22	V	AVG
5104.38	40.95	-5.55	35.40	54.00	-18.60	V	AVG

APPENDIX I -- TEST SETUP PHOTOGRAPH

Please refer to separated files Appendix I -- Test Setup Photograph_EMC

APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to separated files Appendix II -- External Photograph

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to separated files Appendix III -- Internal Photograph

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