



FCC REPORT

Applicant	:	GEOMATE POSITIONING PTE. LTD.
Address of Applicant	:	38 BEACH ROAD #29-11 SOUTH BEACH TOWER SINGAPORE (189767)
Manufacturer	:	GEOMATE POSITIONING PTE. LTD.
Address of Manufacturer	:	38 BEACH ROAD #29-11 SOUTH BEACH TOWER SINGAPORE (189767)
Equipment under Test	:	Remote Controller
Model No./HVIN	:	R100
FCC ID	:	2A7ZC-R100
IC	:	34552-R100
Test Standard(s)	:	FCC Rules and Regulations Part 15 Subpart C Section 15.247, RSS-247 Issue 3, RSS-Gen Issue 5, ANSI C63.10-2020 + Cor. 1-2023 + C63.10a-2024 + Errata to C63.10a-2024
Report No.	:	A2507399-C03-R01
Issue Date	:	2025/12/16
Issued By	:	Shenzhen Alpha Product Testing Co., Ltd. Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen City, Guangdong Province, P.R. China.

Table of Contents

1.	Summary of Test Results	7
2.	General Test Information.....	8
2.1.	Description of EUT.....	8
2.2.	Accessories of EUT	8
2.3.	Block diagram of EUT configuration for test.....	9
2.4.	Test mode description	9
2.5.	Deviations of test standard	10
2.6.	Test environment conditions.....	10
2.7.	Test laboratory	10
2.8.	Measurement uncertainty	11
3.	RF Conducted Spurious Emissions.....	12
3.1.	Test equipment	12
3.2.	Block diagram of test setup	12
3.3.	Limits.....	12
3.4.	Assistant equipment used for test	12
3.5.	Test procedure	13
3.6.	Test result	13
4.	Spurious Emission	14
4.1.	Test equipment	14
4.2.	Block diagram of test setup	14
4.3.	Limits.....	15
4.4.	Assistant equipment used for test	17
4.5.	Test procedure	18
4.6.	Test result	18
4.7.	Test data	19
5.	Power Line Conducted Emissions.....	22
5.1.	Test equipment	22
5.2.	Block diagram of test setup	22
5.3.	Limits.....	22
5.4.	Assistant equipment used for test	22
5.5.	Test procedure	22
5.6.	Test result	23
5.7.	Test data	24
6.	Maximum Conducted Output Power	26
6.1.	Test equipment	26
6.2.	Block diagram of test setup	26

6.3.	Limits.....	26
6.4.	Assistant equipment used for test	26
6.5.	Test procedure.....	26
6.6.	Test result	26
7.	Maximum Power Spectral Density Level.....	28
7.1.	Test equipment.....	28
7.2.	Block diagram of test setup	28
7.3.	Limits.....	28
7.4.	Assistant equipment used for test	28
7.5.	Test procedure.....	29
7.6.	Test result	29
8.	-6 dB Bandwidth and 99% Bandwidth	30
8.1.	Test equipment.....	30
8.2.	Block diagram of test setup	30
8.3.	Limits.....	30
8.4.	Assistant equipment used for test	30
8.5.	Test procedure.....	30
8.6.	Test result	31
9.	Band Edge(Conducted)	32
9.1.	Test equipment.....	32
9.2.	Block diagram of test setup	32
9.3.	Limits.....	32
9.4.	Assistant equipment used for test	32
9.5.	Test procedure.....	33
9.6.	Test result	33
10.	Frequency stability.....	34
10.1.	Test equipment.....	34
10.2.	Block diagram of test setup	34
10.3.	Limits.....	34
10.4.	Assistant equipment used for test	34
10.5.	Test procedure.....	35
10.6.	Test result	35
10.7.	Test data	35
11.	Antenna Requirement.....	36
11.1.	Test equipment.....	36
11.2.	Block diagram of test setup	36
11.3.	Limits.....	36
11.4.	Assistant equipment used for test	36

11.5. Test procedure..... 37

11.6. Test result 37

12. Test Setup Photograph..... 38

13. Photos of the EUT 40

14. Annex..... 51

Test Report Declare

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Manufacturer	:	GEOMATE POSITIONING PTE. LTD.
Address of Manufacturer	:	38 BEACH ROAD #29-11 SOUTH BEACH TOWER SINGAPORE (189767)
Equipment under Test	:	Remote Controller
Model No./HVIN	:	R100
Trademark	:	

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247, RSS-247 Issue 3, RSS-Gen Issue 5, ANSI C63.10-2020 + Cor. 1-2023 + C63.10a-2024 + Errata to C63.10a-2024

We Declare:

The equipment described above is tested by Shenzhen Alpha Product Testing 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 Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

Report No.:	A2507399-C03-R01		
Date of Receipt:	2025/08/19	Date of Test:	2025/08/19 - 2025/12/16

Prepared By:



Yannis Wen/Engineer

Approved By:



Jack Xu/EMC Manager

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

Revision History

Rev.	Revisions	Issue Date	Revised By
V0	Initial issue	2025/12/16	Yannis Wen

1. Summary of Test Results

No.	Test Parameter	Clause No.	Result
1	RF Conducted Spurious Emissions	FCC Part 15: 15.247(d), FCC Part 15: 15.209, FCC Part 15: 15.247(d), ANSI C63.10, RSS-Gen Issue 5 (8.9), RSS-247 Issue 4 (6.6)	Pass
2	Spurious Emission	FCC Part 15: 15.209, FCC Part 15: 15.247(d), ANSI C63.10, RSS-Gen Issue 5 (8.9), RSS-247 Issue 4 (6.6)	Pass
3	Power Line Conducted Emissions	FCC Part 15: 15.207, ANSI C63.10, RSS-Gen Issue 5 (8.8)	Pass
4	Maximum Conducted Output Power	FCC Part 15: 15.247(b)(3), ANSI C63.10, RSS-247 Issue 4 (6.3.2)	Pass
5	Maximum Power Spectral Density Level	FCC PART 15:15.247(e), ANSI C63.10, RSS-247 Issue 4 (6.3.1)	Pass
6	-6 dB Bandwidth and 99% Bandwidth	FCC PART 15:15.247(a)(2), ANSI C63.10, RSS-247 Issue 4 (6.3.1)	Pass
7	Band Edge(Conducted)	FCC Part 15: 15.247(d), ANSI C63.10, RSS-Gen Issue 5 (8.9), RSS-247 Issue 4 (6.6)	Pass
8	Band Edge(Radiated)	FCC Part 15: 15.247(d), ANSI C63.10, RSS-Gen Issue 5 (6.13)	Pass
9	Frequency stability	RSS-Gen Issue 5 (6.11)	Pass
10	Antenna Requirement	FCC Part 15: 15.203, RSS-Gen Issue 5 (6.8)	Pass
Note: 1.N/A is an abbreviation for Not Applicable, and means this item is not applicable for this device or no need to test according to standard. 2. Decision rules for the conclusion of this test report: decision by actual test data without considering measurement uncertainty.			

Software Information			
Test Item	Software Name	Manufacturer	Version
RE	EZ-EMC	Farad	Alpha-3A1
RF-CE	MTS 8310	MWRFTtest	V2.0.0.0

2. General Test Information

2.1. Description of EUT

EUT Name	: Remote Controller
Model Number/HVIN	: R100
Difference of model number	: /
Power Supply	: AC 100-240V 50/60Hz 1A(Max), DC 3.7V From Battery
Hardware Version	: V1.0
Software Version	: V1.0

Radio Specification	: 2.4G Technology
Operation Frequency	: 2406.5 MHz to 2476.5 MHz
Modulation	: GFSK
Antenna Type	: Rod antenna
Max Antenna Gain(dBi)	: 4dBi(Antenna information is provided by applicant.)

Channel information					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2406.5	7	2434	13	2464
2	2409	8	2439	14	2469
3	2414	9	2444	15	2474
4	2419	10	2449	16	2476.5
5	2424	11	2454		
6	2429	12	2459		

Note: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

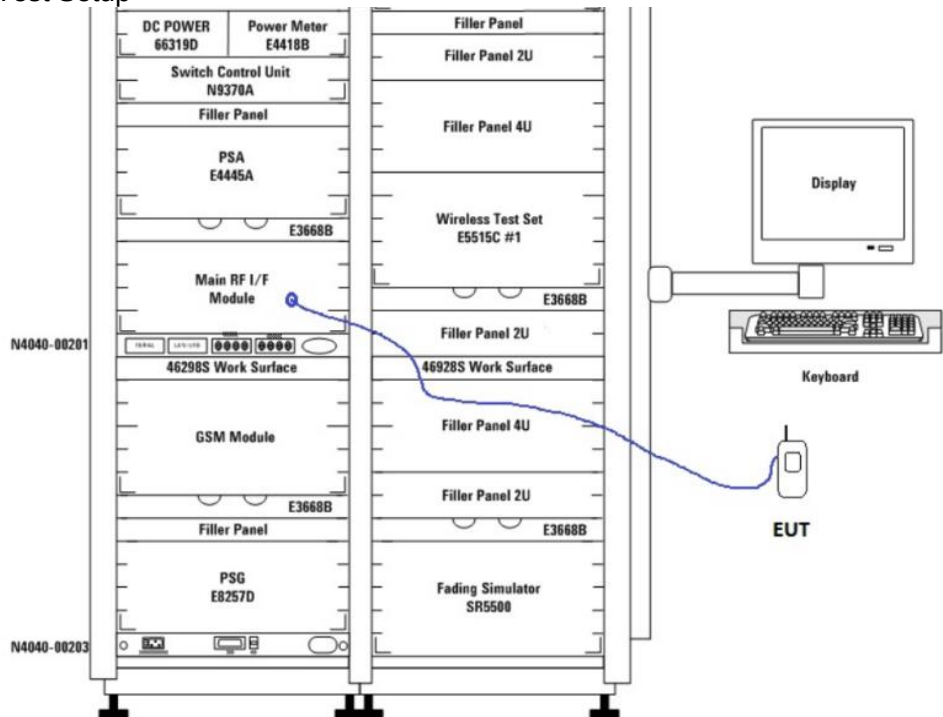
“☑” means to be chosen or applicable; “☐” means don't to be chosen or not applicable; This note applies to entire report.

2.2. Accessories of EUT

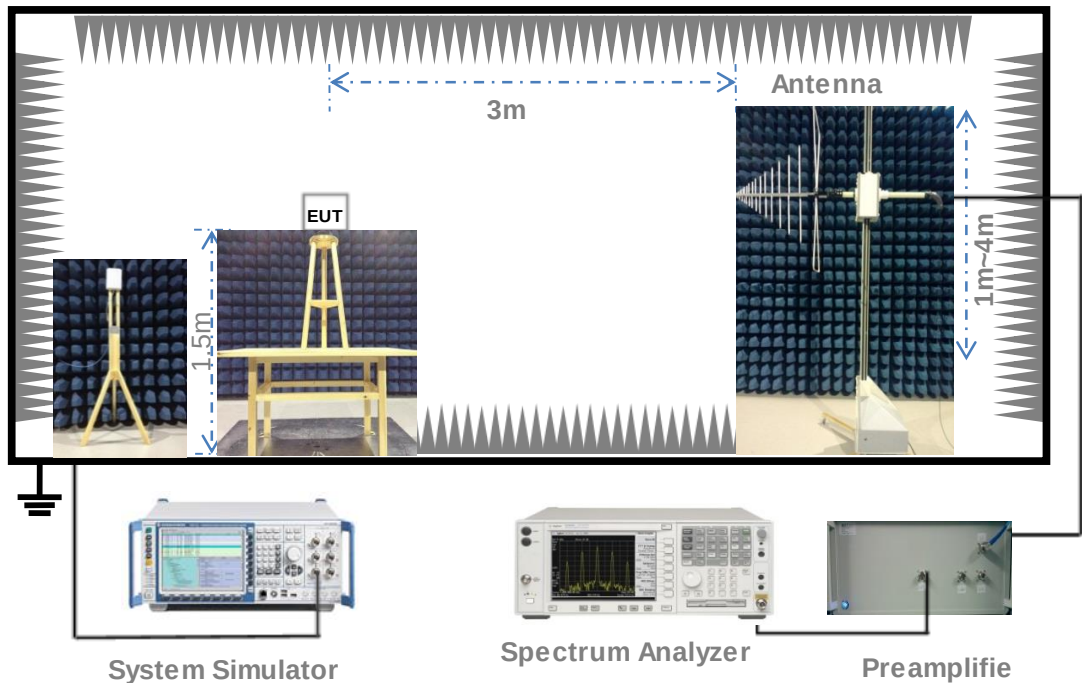
Accessories	Manufacturer	Model number	Description
AC/DC ADAPTER	Dongguan GaoFanDe Technology Co., Ltd.	GFDA7-09004000U	Input: 100~240V~50/60Hz 1A Max Output: 9.0V=4.0A

2.3. Block diagram of EUT configuration for test

Conducted Test Setup



Radiated Test Setup



2.4. Test mode description

Access the webpage and control EUT work in Continuous TX mode, and select test channel, default power level, wireless mode

Mode No.	Mode	Channel	Frequency(MHz)
Mode 1	GFSK TX mode	Low :CH0	2410

Mode 2		Middle: CH7	2440
Mode 3		High: CH15	2470

2.5. Deviations of test standard

No deviation.

2.6. Test environment conditions

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

Items	Required
Temperature range:	15-35°C
Humidity range:	25-75%
Pressure range:	86-106kPa

Note: The specific temperature and humidity information of each test item refers to the temperature and humidity record in the corresponding test data.

2.7. Test laboratory

Shenzhen Alpha Product Testing Co., Ltd.

Add.: Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen City, Guangdong Province, P.R. China.

Tel.: 4008-3008-95, Website: <http://www.a-lab.cn>, Email: service@a-lab.cn

CNAS Accreditation No. L7472; A2LA Accreditation Number: 4762.01

FCC Designation Number: CN1182, Test Firm Registration Number: 203110

Innovation, Science and Economic Development Canada Site Registration Number: 12135A

CAB identifier: CN0085

2.8. Measurement uncertainty

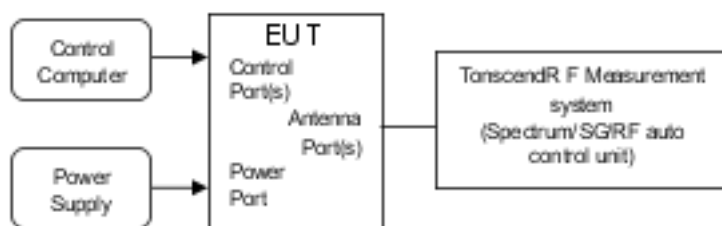
Item	Uncertainty
Uncertainty for Power point Conducted Emissions Test	1.63dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	3.5dB
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.74dB(Polarize: V)
	3.76dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	3.77dB(Polarize: V)
	3.80dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (18GHz to 40GHz)	4.31 dB(Polarize: V)
	4.30 dB(Polarize: H)
Uncertainty for radio frequency	5.06×10^{-8} GHz
Uncertainty for conducted RF Power	0.40dB
Uncertainty for temperature	0.2°C
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

3. RF Conducted Spurious Emissions

3.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

3.2. Block diagram of test setup



3.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20dB.

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Attenuation below the general field strength limits specified in RSS-Gen is not required.

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with

3.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

3.5. Test procedure

The test receiver set RBW = 100kHz, VBW≥3*RBW =300kHz, sweep time set auto, detail see the test plot

3.6. Test result

Test Site: RF Laboratory	Test Date: 2025/08/19--2025/08/27
Condition: 24.1°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: offset=cable factor	

EUT Name: Remote Controller	EUT Model: R100
Sample No.: A2507399-S0001	Test Mode: GFSK TX Mode
Power supply: DC 3.7V from battery	Memo: Please refer to Conducted RF Spurious Emission of the Annex

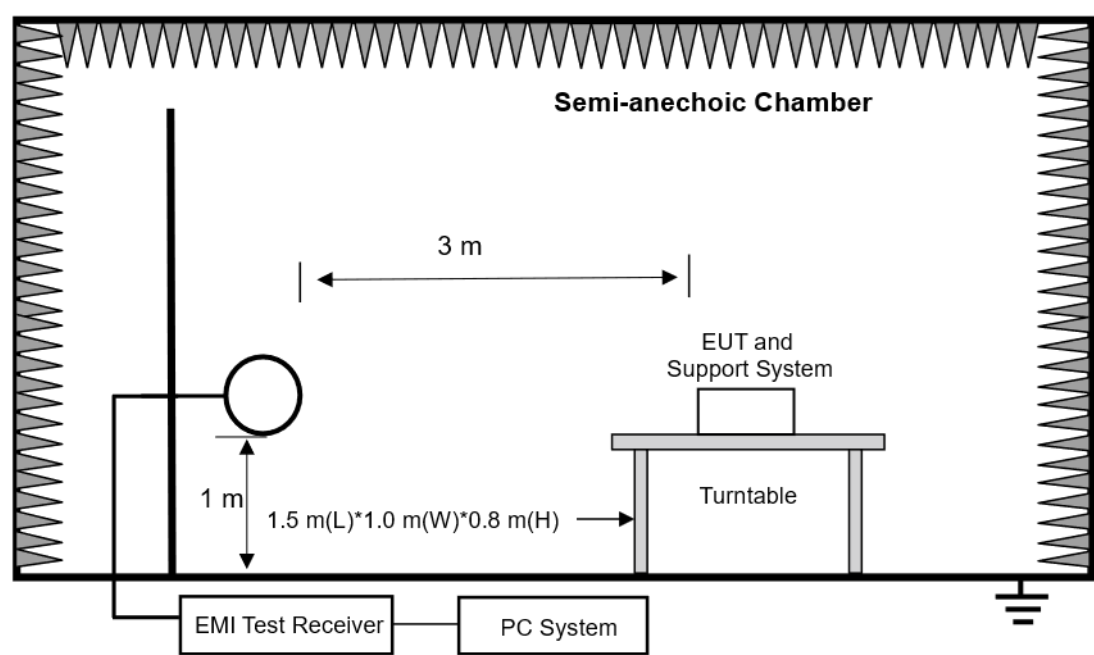
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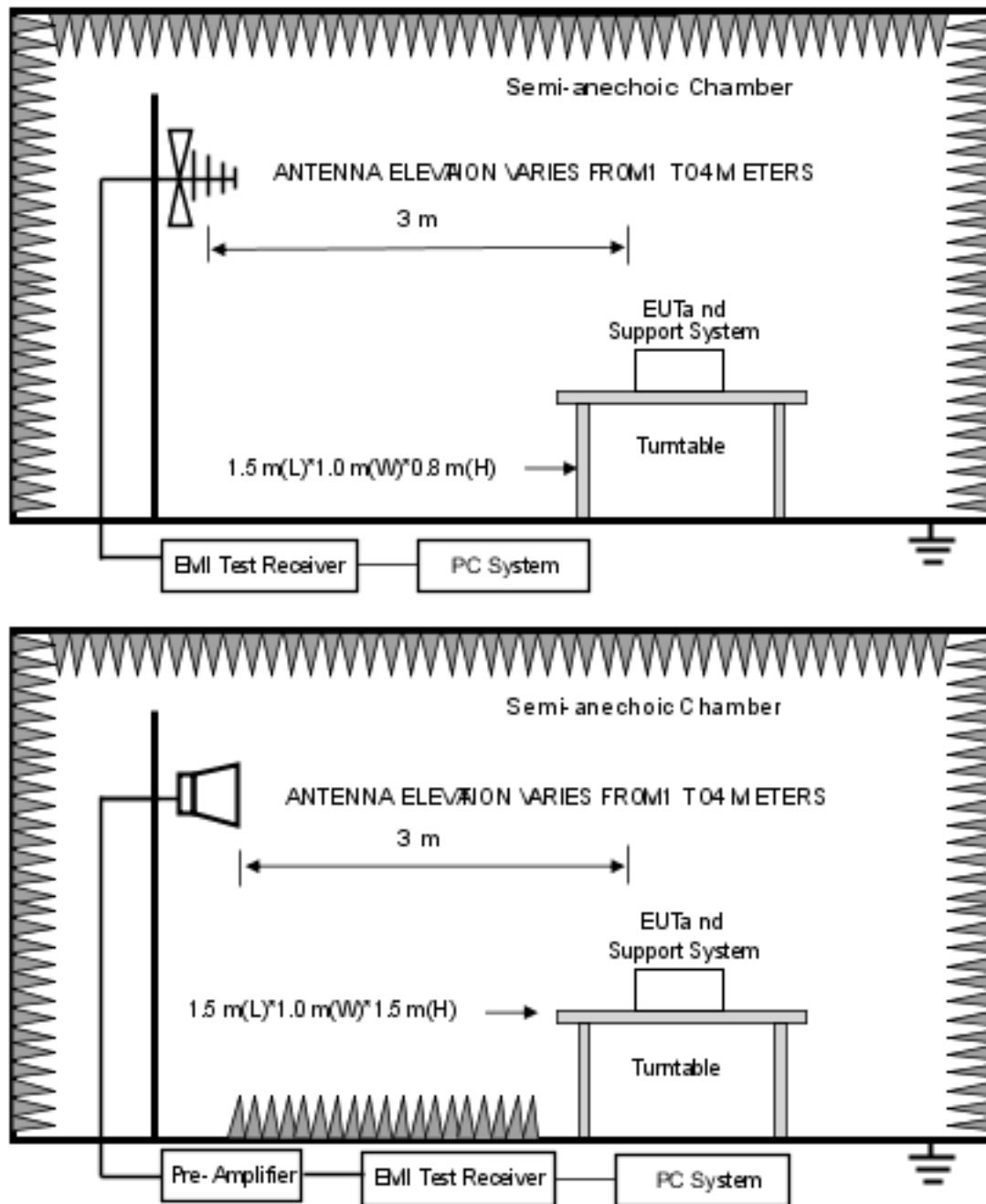
4. Spurious Emission

4.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
Spectrum analyzer	ROHDE&SCHWARZ	FSU	Aa-EE075	2025/08/04	2026/08/03
Horn Antenna	SCHWARZBECK	BBHA 9120 D	Aa-EE076	2025/08/11	2027/08/10
Test Receiver	ROHDE&SCHWARZ	ESR	Aa-EE048	2025/08/04	2026/08/03
Bilog Antenna	SCHWARZBECK	VULB 9168	Aa-EE001	2025/08/11	2027/08/10
Amplifier	SKET	LNPA_0118G-45	Aa-EE087	2025/08/04	2026/08/03
Horn Antenna	SCHWARZBECK	BBHA 9170	Aa-EE077	2025/08/11	2027/08/10
Loop Antenna	SCHWARZBECK	FMZB 1519B	Aa-EE074	2025/08/11	2027/08/10

4.2. Block diagram of test setup





4.3. Limits

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

(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	23.6-24.0
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			

1Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

2Above 38.6

(2) FCC 15.209 Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		uV/m	dBuV/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 dBuV/m (Peak) 54.0 dBuV/m (Average)	

Note: Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other 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 comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

RSS-Gen Restricted frequency band

MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 - 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12

6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 - 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 - 138		

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

Table 5-General field strength limits at frequencies above 30 MHz	
Frequency(MHz)	Field strength (uV/m at 3 m)
30-88	100
88-216	150
216-960	200
Above 960	500

Table 6-General field strength limits at frequencies below 30 MHz		
Frequency	Magnetic field strength (H-Field) (uAm)	Measurement distance (m)
9 -490 kHz ^{Note 1}	6.37/F(F in kHz)	300
490-1705 kHz	63.7/F(F in kHz)	30
1.705 -30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

4.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

4.5. Test procedure

The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground for below 1GHz and 1.5m high for above1GHz testing, The table was rotated 360 degrees to determine the position of the highest radiation

The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set of make measurement.

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 Qusia Peak Detector mode premeasured

If Peak value comply with QP limit Below 1GHz.The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.

For the actual test configuration, please see the test setup photo.

4.6. Test result

Test Site: Chamber 1#(RSE)	Test Date: 2025/10/09--2025/10/09
Condition: 22.4°C,55%RH,101kPa	Test Engineer: Yannis Wen
Memo: Only show the test data of the worst case.	

EUT Name: Remote Controller	EUT Model: R100
Sample No.: A2507399-S0001	Test Mode: GFSK TX Mode
Power supply: DC 5V From Adapter	Memo: /

Test Condition

Continual Transmitting in maximum power.

9KHz~150KHz	RBW200Hz	VBW1KHz
150KHz~30MHz	RBW9KHz	VBW 30KHz
30MHz~1GHz	RBW120KHz	VBW 300KHz
Above1GHz	RBW1MHz	VBW 3MHz

We have scanned the 10th harmonic from 9 kHz to the EUT.

Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: PASS

Note: 1.The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

2. Only show the test data of the worst Channel in this report.

4.7. Test data

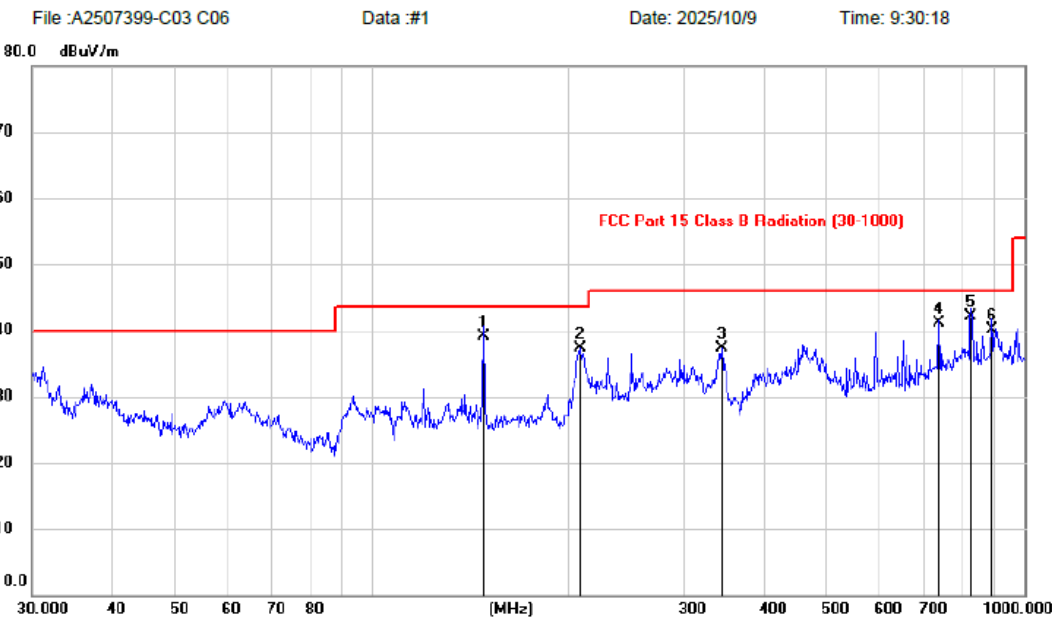


深圳阿尔法商品检验有限公司
SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.

深圳阿尔法商品检验有限公司
Shenzhen Alpha Product Testing Co.,Ltd.
地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋
TEL: 4008-3008-95

Site	LAB 966 Chamber 1	Polarization:	Vertical	Temperature:	22.4
Limit:	FCC Part 15 Class B Radiation (30-1000)	Power:	DC 5V From Adapter	Humidity:	55 %
EUT/Task No :	A2507399-C03 C06	Distance:	3m		
M/N/Sample No:	A2507399-S0001				
Mode	: Mode 1				
Note:					
Engineer Signature:	yanniz wen				

Radiated Emission Measurement



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		148.1289	24.14	14.92	39.06	43.50	-4.44	QP
2		208.2634	26.24	11.04	37.28	43.50	-6.22	peak
3		344.1841	22.17	15.14	37.31	46.00	-8.69	peak
4		740.6986	18.75	22.27	41.02	46.00	-4.98	QP
5	*	830.3030	18.88	23.20	42.08	46.00	-3.92	QP
6		892.8124	16.16	23.95	40.11	46.00	-5.89	QP

Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.



深圳阿尔法商品检验有限公司

SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.

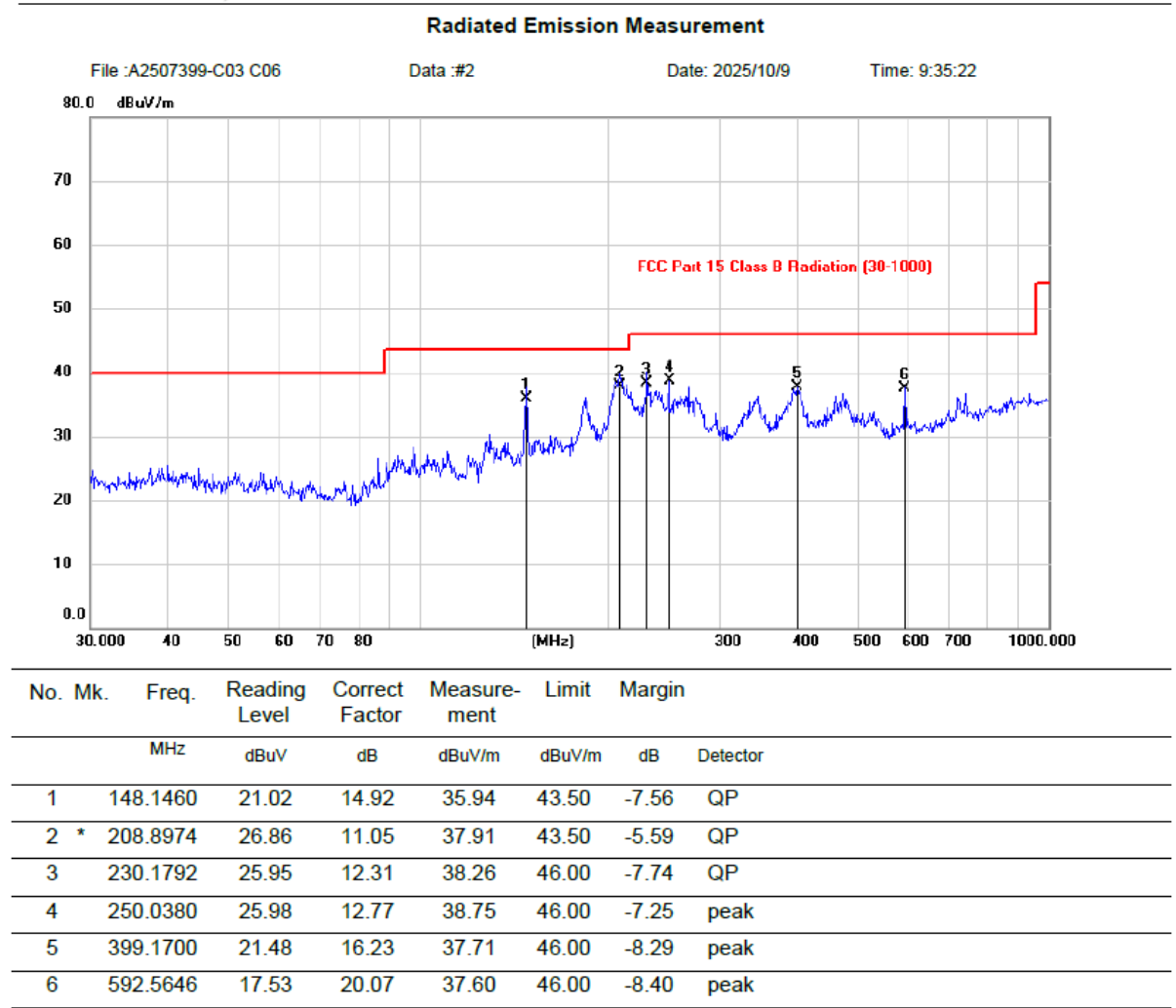
深圳阿尔法商品检验有限公司

Shenzhen Alpha Product Testing Co.,Ltd.

地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋

TEL: 4008-3008-95

Site LAB 966 Chamber 1	Polarization: Horizontal	Temperature: 22.4
Limit: FCC Part 15 Class B Radiation (30-1000)	Power: DC 5V From Adapter	Humidity: 55 %
EUT/Task No : A2507399-C03 C06	Distance: 3m	
M/N/Sample No: A2507399-S0001		
Mode : Mode 1		
Note:		
Engineer Signature: <i>Yannu3 wen</i>		



Note:1. *:Maximum data; x:Over limit; !:over margin.
2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

From 1G-25GHz

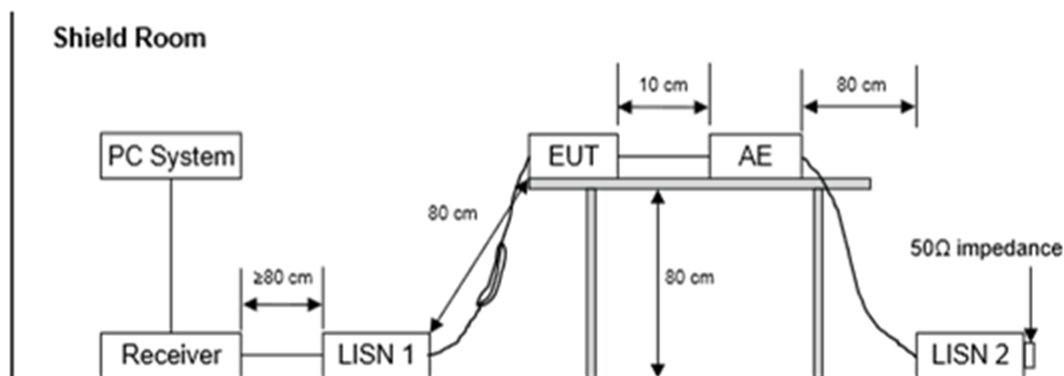
Test Mode: GFSK TX Low									
Freq (MHz)	Read Level (dBuV/m)	Polar (H/V)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4813	42.40	V	33.95	10.18	34.26	52.27	74	-21.73	PK
4813	36.14	V	33.95	10.18	34.26	46.01	54	-7.99	AV
7219.5	/	/	/	/	/	/	/	/	/
9626	/	/	/	/	/	/	/	/	/
4813	46.56	H	33.95	10.18	34.26	56.43	74	-17.57	PK
4813	35.44	H	33.95	10.18	34.26	45.31	54	-8.69	AV
7219.5	/	/	/	/	/	/	/	/	/
9626	/	/	/	/	/	/	/	/	/
Test Mode: GFSK TX Mid									
4813	44.38	V	33.93	10.2	34.29	54.22	74	-19.78	PK
4813	35.35	V	33.93	10.2	34.29	45.19	54	-8.81	AV
7219.5	/	/	/	/	/	/	/	/	/
9626	/	/	/	/	/	/	/	/	/
4813	45.50	H	33.93	10.2	34.29	55.34	74	-18.66	PK
4813	37.00	H	33.93	10.2	34.29	46.84	54	-7.16	AV
7219.5	/	/	/	/	/	/	/	/	/
9626	/	/	/	/	/	/	/	/	/
Test Mode: GFSK TX High									
4813	46.39	V	33.98	10.22	34.25	56.34	74	-17.66	PK
4813	35.15	V	33.98	10.22	34.25	45.10	54	-8.90	AV
7219.5	/	/	/	/	/	/	/	/	/
9626	/	/	/	/	/	/	/	/	/
4813	42.55	H	33.98	10.22	34.25	52.50	74	-21.50	PK
4813	34.02	H	33.98	10.22	34.25	43.97	54	-10.03	AV
7219.5	/	/	/	/	/	/	/	/	/
9626	/	/	/	/	/	/	/	/	/
Note:									
1, Result = Read level + Antenna factor + cable loss-Amp factor									
2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

5. Power Line Conducted Emissions

5.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
Test Receiver	ROHDE&SCHWARZ	ESCI	Aa-EE005	2025/08/04	2026/08/03
Pulse Limiter	SCHWARZBEC K	9516F	Aa-EE004	2025/08/04	2026/08/03
L.I.S.N.	SCHWARZBEC K	NSLK8126	Aa-EE003	2025/08/04	2026/08/03

5.2. Block diagram of test setup



5.3. Limits

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

Notes: 1. *Decreasing linearly with logarithm of frequency.

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

3. The limit decreases in line with the logarithm of the frequency in rang of 0.15 to 0.50 MH

5.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

5.5. Test procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10 on Conducted Emission Measurement.

The bandwidth of test receiver is set at 9 kHz.

5.6. Test result

Test Site: Shield Room CE 1#	Test Date: 2025/09/18--2025/09/18
Condition: 23.3°C,52%RH,101kPa	Test Engineer: Yannis Wen
Memo: /	

EUT Name: Remote Controller	EUT Model: R100
Sample No.: A2507399-S0001	Test Mode: GFSK TX Mode
Power supply: DC 5V From Adapter	Memo: /

Pass. (See below detailed test result)

Note1: All emissions not reported below are too low against the prescribed limits.

Note2: “----” means Peak detection; “----” means Average detection.

Note3: Pre-test AC conducted emission at both voltage AC 120V/60Hz and AC 240V/50Hz, recorded the worst case.

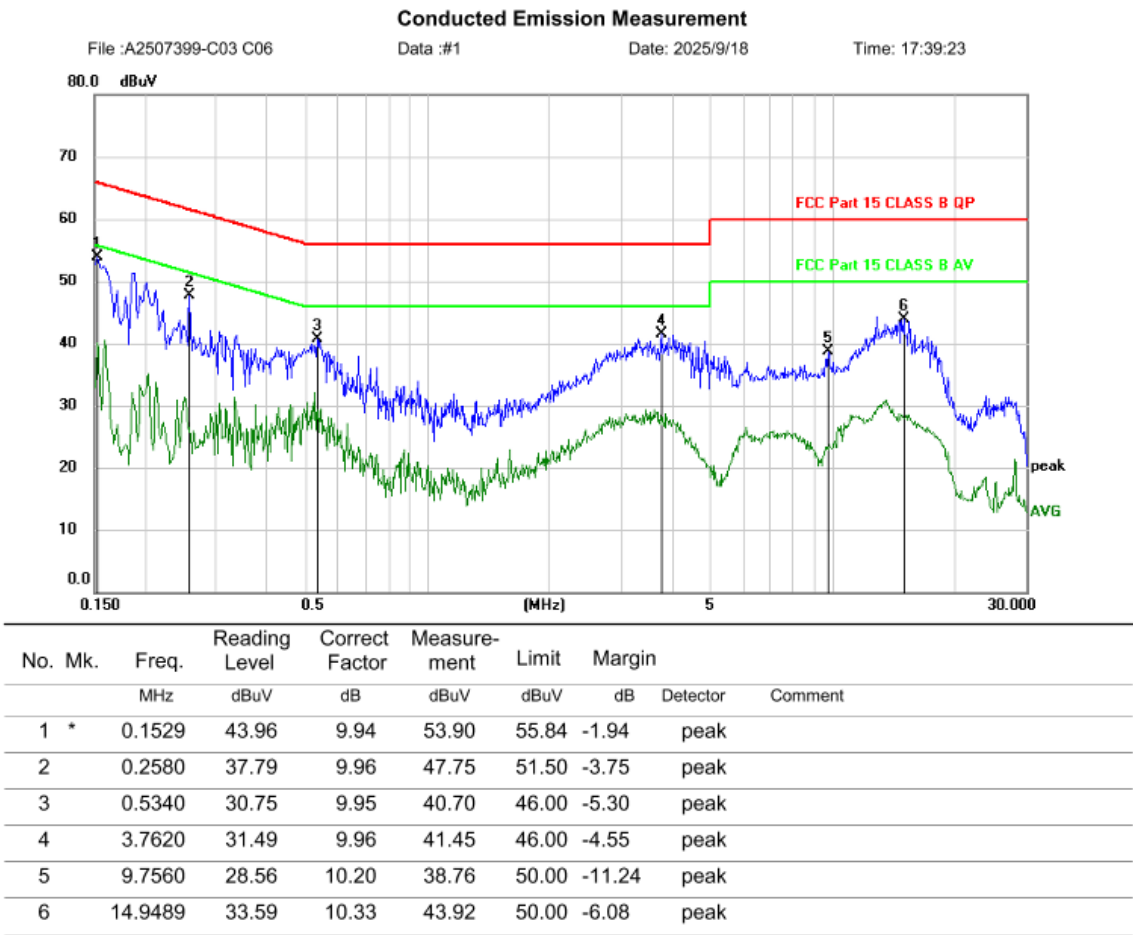
5.7. Test data



深圳阿尔法商品检验有限公司
SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.

深圳阿尔法商品检验有限公司
Shenzhen Alpha Product Testing Co.,Ltd.
地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋
TEL: 4008-3008-95

Site LAB	Phase: L1	Temperature: 23.3
Limit: FCC Part 15 CLASS B QP	Power: DC 5V From Adapter	Humidity: 52 %
EUT/Task No : A2507399-C03 C06		
M/N/Sample No: A2507399-S0001		
Mode : Mode 1		
Note:		
Engineer Signature: <i>Yann's wen</i>		



*:Maximum data x:Over limit !:over margin <Reference Only
Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable



深圳阿尔法商品检验有限公司
SHENZHEN ALPHA PRODUCT TESTING CO.,LTD.

深圳阿尔法商品检验有限公司
Shenzhen Alpha Product Testing Co.,Ltd.

地址: ALPHA 广东省深圳市宝安区福永街道立新路 2 号 i 栋
TEL: 4008-3008-95

Site LAB

Phase: N

Temperature: 23.3

Limit: FCC Part 15 CLASS B QP

Power: DC 5V From Adapter

Humidity: 52 %

EUT/Task No : A2507399-C03 C06

M/N/Sample No: A2507399-S0001

Mode : Mode 1

Note:

Engineer Signature: Yanni3 Wen

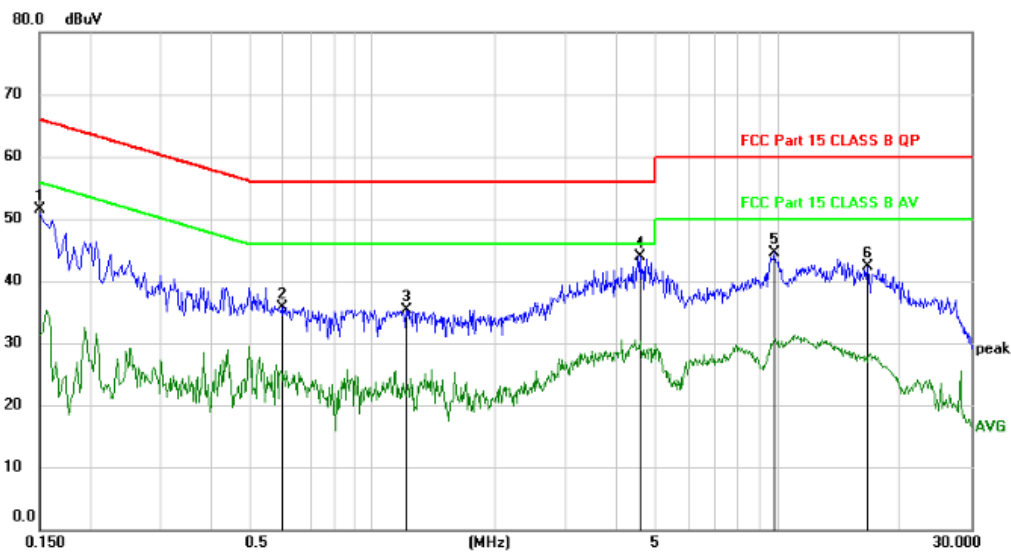
Conducted Emission Measurement

File :A2507399-C03 C06

Data :#2

Date: 2025/9/18

Time: 17:42:11



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector Comment
1		0.1500	41.51	9.94	51.45	56.00	-4.55	peak
2		0.6000	25.82	9.92	35.74	46.00	-10.26	peak
3		1.2149	25.49	9.89	35.38	46.00	-10.62	peak
4	*	4.5838	33.98	10.01	43.99	46.00	-2.01	peak
5		9.8070	34.40	10.20	44.60	50.00	-5.40	peak
6		16.6350	31.96	10.38	42.34	50.00	-7.66	peak

*:Maximum data x:Over limit !:over margin

<Reference Only

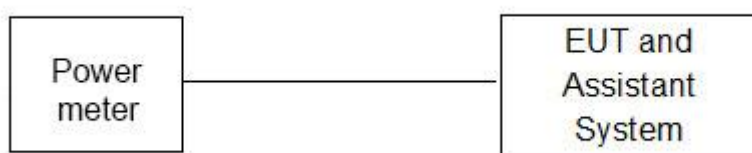
Note: Measurement=Reading Level+Correc Factor. Factor=(LISN or ISN or PLC or Current Probe)Factor+Cable

6. Maximum Conducted Output Power

6.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

6.2. Block diagram of test setup



6.3. Limits

Please refer section RSS-247 & 15.247.

The limit of Maximum Peak conducted output power Measurement is 1W(30dBm). The e.i.r.p. shall not exceed 4 W(36dBm).

6.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

6.5. Test procedure

Place the EUT on the table and set it in transmitting mode.

Connected the EUT's antenna port to peak power meter by 10dB attenuator.

Measure out each mode and each bands peak output power of EUT. Note: The cable loss and attenuator loss were offset into measure device as amplitude offset.

6.6. Test result

Test Site: RF Laboratory	Test Date: 2025/12/16--2025/12/16
Condition: 24.1°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: /	

EUT Name: Remote Controller	EUT Model: R100
Sample No.: A2507399-S0001	Test Mode: GFSK TX Mode
Power supply: DC 3.7V from battery	Memo: Please refer to Maximum Conducted Output Power of the Annex

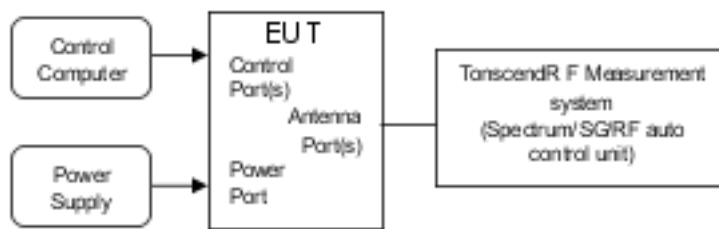
/

7. Maximum Power Spectral Density Level

7.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

7.2. Block diagram of test setup



7.3. Limits

Please refer section 15.247 and RSS-247.

For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

7.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

7.5. Test procedure

Details see the KDB 558074 D01 15.247 Meas Guidance v05r02

Place the EUT on the table and set it in transmitting mode.

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

Set the spectrum analyzer as RBW = 3kHz(Set the RBW to: $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$.), VBW = 10kHz(Set the $\text{VBW} \geq 3 \times \text{RBW}$), span=1.5×DTS bandwidth., detail see the test plot.

Record the max reading.

Repeat the above procedure until the measurements for all frequencies are completed.

7.6. Test result

Test Site: RF Laboratory	Test Date: 2025/08/19--2025/08/27
Condition: 24.1°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: /	

EUT Name: Remote Controller	EUT Model: R100
Sample No.: A2507399-S0001	Test Mode: GFSK TX Mode
Power supply: DC 3.7V from battery	Memo: Please refer to Maximum Power Spectral Density Level of the Annex

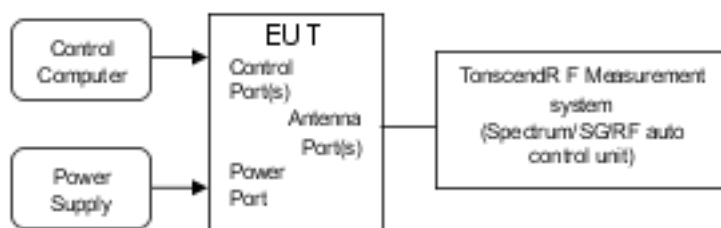
/

8. -6 dB Bandwidth and 99% Bandwidth

8.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCHWARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

8.2. Block diagram of test setup



8.3. Limits

Please refer section 15.247 and RSS-247

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500 kHz.

8.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

8.5. Test procedure

Details see the KDB 558074 D01 15.247 Meas Guidance v05r02

a) The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

b) The test receiver set RBW = 100kHz, VBW $\geq$ 3*RBW =300kHz, sweep time set auto, detail see the test plot.

8.6. Test result

Test Site: RF Laboratory	Test Date: 2025/08/19--2025/08/27
Condition: 24.1°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: /	

EUT Name: Remote Controller	EUT Model: R100
Sample No.: A2507399-S0001	Test Mode: GFSK TX Mode
Power supply: DC 3.7V from battery	Memo: Please refer to -6dB Bandwidth&Occupied Channel Bandwidth of the Annex

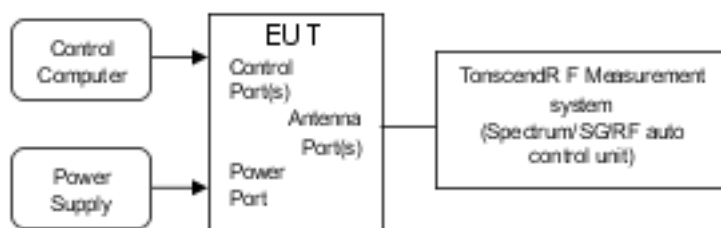
/

9. Band Edge(Conducted)

9.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

9.2. Block diagram of test setup



9.3. Limits

Please refer section 15.247 and RSS-247.

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum device, digitally modulated device, or hybrid system is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power – based on either an RF conducted or a radiated measurement – provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 6.3.2, the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

9.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

9.5. Test procedure

- 1) Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation.
- 2) Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation.
- 3) Attenuation: Auto (at least 10 dB preferred).
- 4) Sweep time: Coupled.
- 5) Resolution bandwidth: 100 kHz.
- 6) Video bandwidth: 300 kHz.
- 7) Detector: Peak.
- 8) Trace: Max hold.

9.6. Test result

Test Site: RF Laboratory	Test Date: 2025/08/19--2025/08/27
Condition: 24.1°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: /	

EUT Name: Remote Controller	EUT Model: R100
Sample No.: A2507399-S0001	Test Mode: GFSK TX Mode-L/H
Power supply: DC 3.7V from battery	Memo: Please refer to Band Edge of the Annex

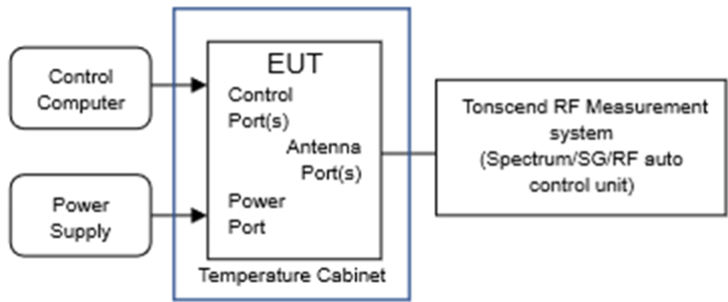
/

10.Frequency stability

10.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Regulated Power Supply	Haode	HD-10KVA	Aa-EE112	2025/03/06	2026/03/05
Temp. & Humid. Chamber	Teelong	TL-HW408S	Aa-SE338	2024/07/15	2025/07/14
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

10.2. Block diagram of test setup



10.3. Limits

Please refer section RSS-Gen.
Regulation RSS-Gen If the frequency stability of the licence-exempt radio apparatus is not specified in the applicable RSS, the fundamental emissions of the radio apparatus should be kept within at least the central 80% of its permitted operating frequency band in order to minimize the possibility of out-of-band operation. In addition, its occupied bandwidth shall be entirely outside the restricted bands and the prohibited TV bands of 54-72 MHz, 76-88 MHz, 174-216 MHz, and 470-602 MHz, unless otherwise indicated.

10.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

10.5. Test procedure

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

10.6. Test result

Test Site: RF Laboratory	Test Date: 2025/09/08--2025/09/08
Condition: 24.2°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: Only show the test data of the worst case.	

EUT Name: Remote Controller	EUT Model: R100
Sample No.: A2507399-S0001	Test Mode: GFSK TX Mode-L
Power supply: DC 3.7V from battery	Memo: /

10.7. Test data

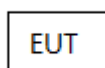
Assigned Frequency(MHz): 2406.5MHz				
Voltage	Temperature	Measured Frequency (MHz)	Frequency stability(MHz)	Limit(MHz)
Low DC 3.2V	+20°C	2406.496	-0.004	±0.020
Normal DC 3.7V	-10°C	2406.496	-0.004	±0.020
	-5°C	2406.492	-0.008	±0.020
	0°C	2406.495	-0.005	±0.020
	+10°C	2406.492	-0.008	±0.020
	+20°C	2406.491	-0.009	±0.020
	+30°C	2406.491	-0.009	±0.020
	+40°C	2406.500	0.000	±0.020
	+50°C	2406.496	-0.004	±0.020
	+60°C	2406.496	-0.004	±0.020
High DC 4.2V	+20°C	2406.491	-0.009	±0.020

11. Antenna Requirement

11.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal Due To
CMW500	ROHDE&SCH WARZ	CMW500	Aa-EE073	2025/08/04	2026/08/03
Spectrum analyzer	ROHDE&SCH WARZ	FSV40-N	Aa-EE081	2025/08/04	2026/08/03
Signal Analyzer	Agilent	N9020A	Aa-EE039	2025/08/04	2026/08/03
Power Sensor	Agilent	E9300A	Aa-EE046	2025/08/04	2026/08/03
Vector Signal Generator	Agilent	N5182A	Aa-EE040	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE071	2025/08/04	2026/08/03
Power Sensor	DARE	RPR3006W	Aa-EE070	2025/08/04	2026/08/03
Power meter	Agilent	E4419B	Aa-EE045	2025/08/04	2026/08/03

11.2. Block diagram of test setup



11.3. Limits

According to 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

According to RSS-Gen 6.8

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

11.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

11.5. Test procedure

Please see EUT photo for details.

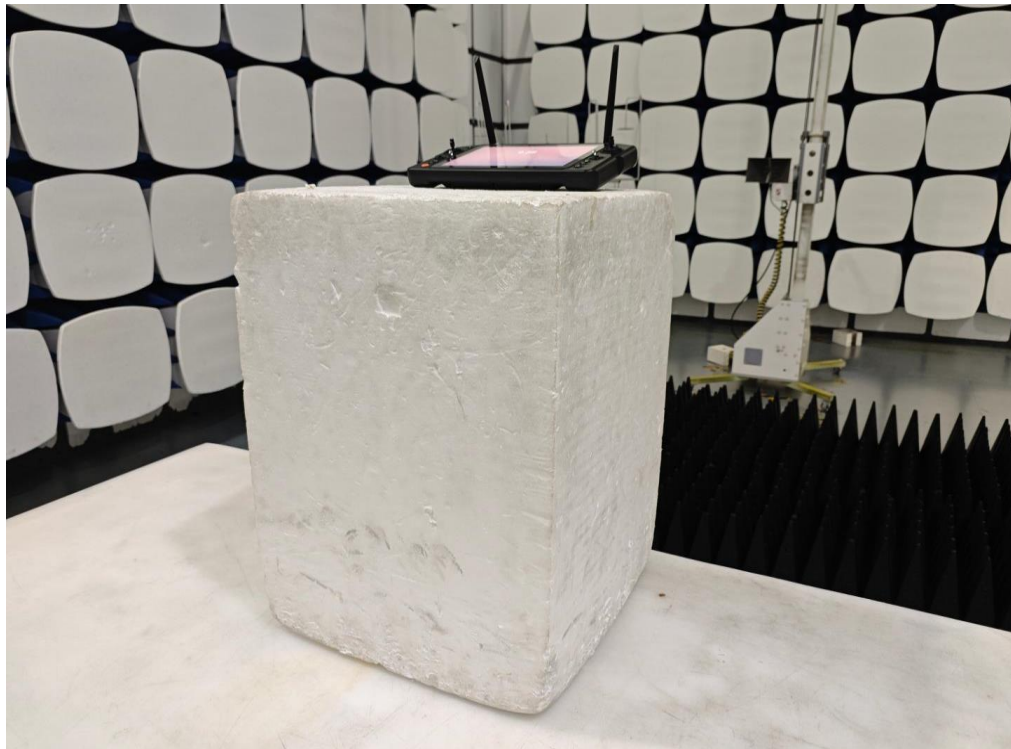
11.6. Test result

Test Site: RF Laboratory	Test Date: 2025/08/19--2025/08/19
Condition: 24.3°C,56%RH,101kPa	Test Engineer: Yannis Wen
Memo: /	

EUT Name: Remote Controller	EUT Model: R100
Sample No.: A2507399-S0001	Test Mode: /
Power supply: /	Memo: The EUT antenna is Rob Antenna. It complies with the standard requirement.

/

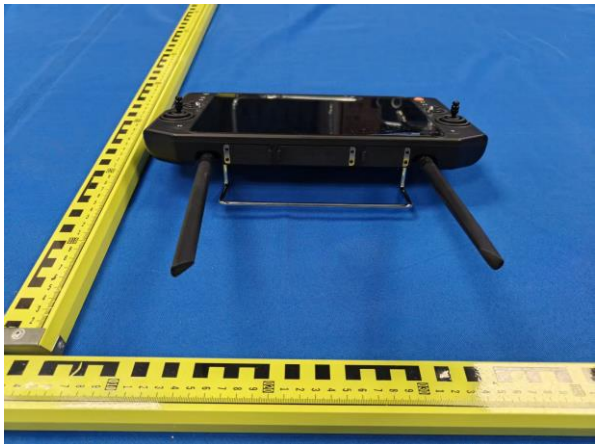
12. Test Setup Photograph





13. Photos of the EUT

	
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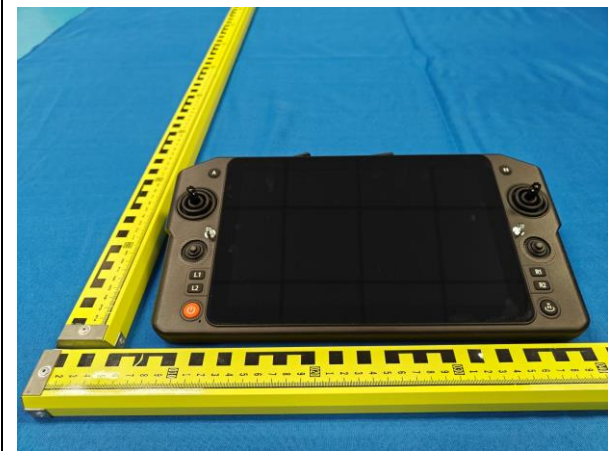
	
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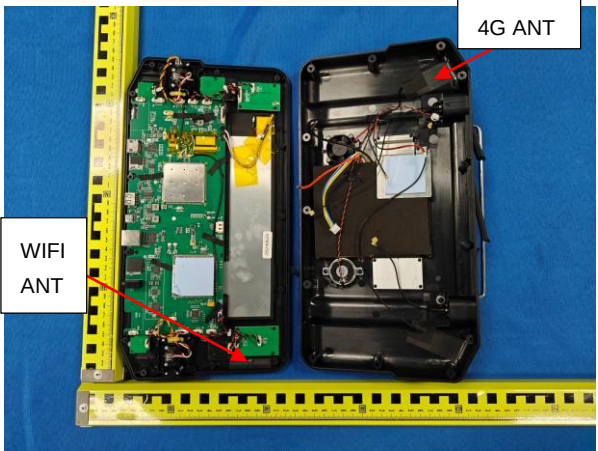
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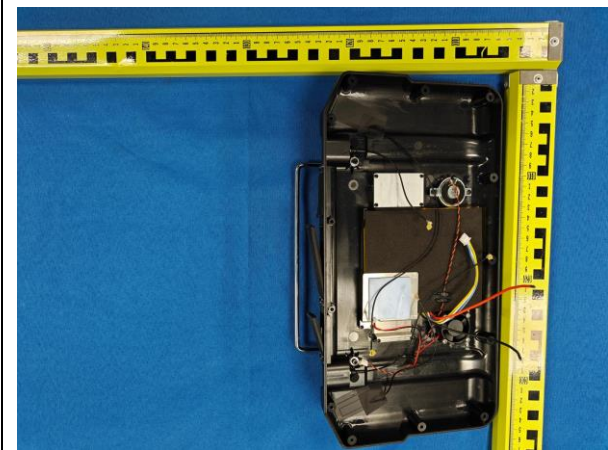
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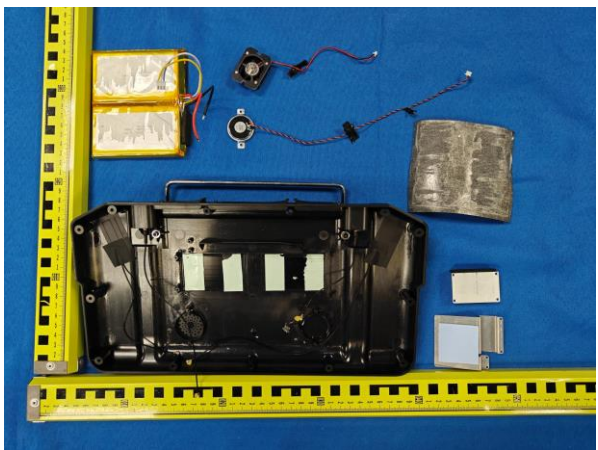
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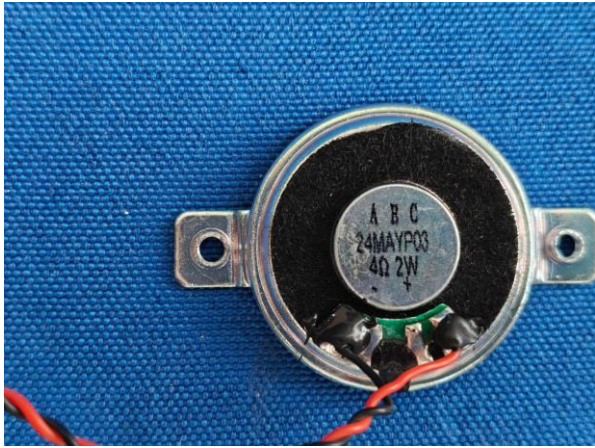
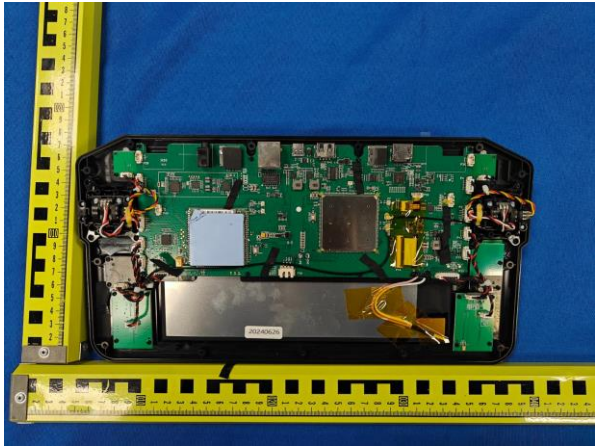
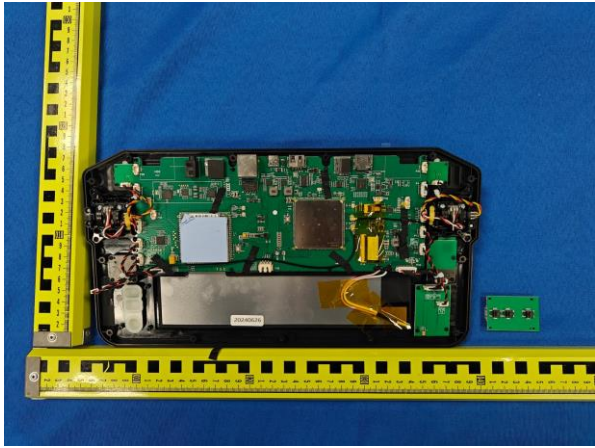
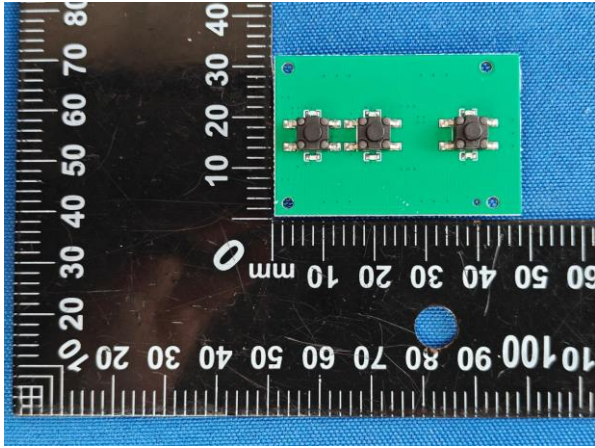
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