

FCC PART 15C TEST REPORT FOR CERTIFICATION On Behalf of

Acrox Technologies Co., Ltd.

Wireless Ergonomic Mouse

Model Number: G7C

Addition Model: G7C-BL, 056-00-2480

FCC ID: PRDMU136

Applicant	Acrox Technologies Co., Ltd.			
Address:	4F., No.89, Minshan St., Neihu Dist., Taipei City 114, Taiwan			
Prepared By:	Prepared By: EST Technology Co., Ltd.			
Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China				
Tel: 86-769-83081888-808				

Report Number:	ESTE-R2403120	
Date of Test:	Mar. 07~Mar. 14, 2024	
Date of Report:	Mar. 18, 2024	



TABLE OF CONTENTS

Descr	iptior	า	Page
TEST R	EPOR	T VERIFICATION	3
1.	GEN	ERAL INFORMATION	4
	1.1.	Description of Device (EUT)	
	1.2.	Antenna Information	
	1.3.	Information of RF Cable	
2.	Sum	MARY OF TEST	5
	2.1.	Summary of test result	
	2.2.	Test Facilities	
	2.3.	Measurement uncertainty	7
	2.4.	Assistant equipment used for test	7
	2.5.	Block Diagram	7
	2.6.	Test Mode	8
	2.7.	Power Setting of Test Software	8
	2.8.	Channel List	8
	2.9.	Test Equipment List	
3.	FIEL	D STRENGTH OF FUNDAMENTAL	10
	3.1.	Limit	10
	3.2.	Test Setup	10
	3.3.	Spectrum Analyzer Setting	10
	3.4.	Test Procedure	11
	3.5.	Test Result	12
4.	RAD	IATED SPURIOUS EMISSIONS AND BAND EDGE	
	4.1.	Limit	19
	4.2.	Test Setup	
	4.3.	Spectrum Analyzer Setting	
	4.4.	Test Procedure	
	4.5.	Test Result	24
5.	20D	B Bandwidth	36
	5.1.	Limit	36
	5.2.	Test Setup	
	5.3.	Spectrum Analyzer Setting	
	5.4.	Test Procedure	
	5.5.	Test Condition	
	5.6.	Test Result	37
6.	Anti	ENNA REQUIREMENTS	39
	6.1.	Limit	39
	6.2.	Test Result	39
7.	TES	T SETUP PHOTO	40
8.	EUT	PHOTO	41



Applicant: Acrox Technologies Co., Ltd. Address: 4F., No.89, Minshan St., Neihu Dist., Taipei City 114, Taiwan Manufacturer: Acrox Technologies Co., Ltd. Address: 4F., No.89, Minshan St., Neihu Dist., Taipei City 114, Taiwan Factory 1: Acrox Technology Co., Ltd. Address: NO.2, XINMIN ROAD, CHANGAN TOWN, DONGGUAN CITY. GUANGDONG, CHINA Factory 2: RXTECH ELECTRONIC VINA COMPANY LIMITED Address: Plan plot:#355, map#14, Yen Phong lindustrial Park, Long Chay Commune, Yen Phong District, Bac Ninh Province, Vietnam E.U.T: Wireless Ergonomic Mouse Model Number: G7C G7C-BL. 056-00-2480 Addition Model: Note: They are identical except model name. Power Supply: DC 1.5V From Battery **Trade Name:** dealworthy, Target Serial No: Date of Receipt: Mar. 07, 2024 Date of Test: Mar. 07~Mar. 14, 2024 Test FCC Part 15 Subpart C (15.249) Specification: ANSI C63 10:2013 The device described above is tested by EST Technology Co., Ltd. The Test Result: measurement results were contained in this test report and EST Technology Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the FCC Rules and Regulations Part 15 Subpart C requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of EST Technology Co., Ltd. Date: Mar. 18, 2024 Prepared by: Reviewed by: Approved by olong

Zephyr Zhu / Assistant

Seven Wang / Engineer

Other Aspects:

None.

Abbreviations: OK/P=passed

fail/F=failed

n.a/N=not applicable

E.U.T=equipment under tested

man Hu / Manag

This test report is based on a single evaluation of one sample of above mentioned products ,lt is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.



1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Product Name	:	Wireless Ergonomic Mouse
Model Number	:	G7C
Software Version	:	V1.0
Hardware Version	:	V1.0
Operation frequency	:	2404MHz-2478MHz
Number of channel	:	38
Field Strength of Fundamental	:	Avg: 71.44dBµV/m
Modulation Type	:	GFSK
Sample Type	:	Prototype production

Note: For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

1.2. Antenna Information

Ant No.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	-	-	PCB	-	0.9
N. I.					

Note:

1. The antenna gain is declared by the customer and the laboratory is not responsible for the accuracy of the antenna gain.

2. The test results of this report only apply to the sample as received.

1.3. Information of RF Cable

Cable Loss(dB)	Provided by
1.0	Acrox Technologies Co., Ltd.
l a c	

Note:

- 1.The customer declared the loss value of the RF Cable. and the test results of this report only apply to the sample as received.
- 2. The laboratory is not responsible for the accuracy of the cable loss.



2. SUMMARY OF TEST

2.1. Summary of test result

No.	Description of Test Item	FCC Standard Section	Results
1	Field Strength of Fundamental	15.249(a)	PASS
2	Radiated Spurious Emissions and Band Edge	15.205 15.209 15.249(a)(c)(d)(e) 15.35(b)	PASS
3	20dB Bandwidth	15.215	PASS
4	AC Power Line Conducted Emissions	15.207	N/A
5	Antenna Requirement	15.203	PASS

Note: "N/A" denotes test is not applicable in this test report.





2.2. Test Facilities

EMC Lab : Accredited by CNAS, CHINA

Registration No.: L5288

This Accreditation is valid until: November 12, 2029

Recognized by FCC, USA Designation Number: CN1215

This Recognition is valid until: January 31, 2026

Accredited by A2LA, USA Registration No.: 4366.01

This Accreditation is valid until: January 31, 2026

Recognized by Industry Canada CAB identifier No.: CN0035

This Recognition is valid until: January 31, 2026

Recognized by VCCI, Japan

Registration No.:C-14103; T-20073; R-13663;

R-20103; G-20097

Date of registration: Apr. 20, 2020

This Recognition is valid until: Apr. 19, 2026

Recognized by TUV Rheinland, Germany Registration No.: UA 50413872 0001 Date of registration: July 31, 2018

Recognized by Intertek

Registration No.: 2011-RTL-L2-64

Date of registration: November 08, 2018

Name of Firm : EST Technology Co., Ltd.

Site Location : Chilingxiang, Qishantou, Santun, Houjie, Dongguan,

Guangdong, China



2.3. Measurement uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test	±3.48dB
Uncertainty for spurious emissions test (Below 30MHz)	±1.62 dB
Uncertainty for spurious emissions test	±4.60 dB(Polarize: H)
(30MHz-1GHz)	±4.68 dB(Polarize: V)
Uncertainty for spurious emissions test (1GHz to 18GHz)	±4.96dB
Uncertainty for radio frequency	7×10 ⁻⁸
Uncertainty for conducted RF Power	1.08dB
Uncertainty for Power density test	0.26dB

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.4. Assistant equipment used for test

Item	Equipment	Brand	Model Name/Type No.	FCC ID	Series No.
-	-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
-	-	-	-	-

2.5. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 (or 1.5) meter high above ground. EUT was beset into test mode by software before test.

EUT DC 1.5V

(EUT: Wireless Ergonomic Mouse)



2.6. Test Mode

The test mode was selected for the final test as listed below.

Test Item	Test Mode	Test Channel
Field Strength of Fundamental	TX	Low/Middle/High
Radiated Spurious Emissions	TX	Low/Middle/High
20dB Bandwidth	TX	Low/Middle/High

Note:In radiated measurement,the EUT had been pre-scan on the positioned of each 3 axis(X,Y,Z), the worst case was found when positioned on **X-plane**.

2.7. Power Setting of Test Software

Software Name		N/A	
Frequency(MHz)	2404	2440	2478
Setting	default	default	default

Note: This information is provided by the applicant.

2.8. Channel List

Channel No.	No. (MHz)		Frequency (MHz)	
1	2404	2	2406	
3	2408	4	2410	
5	2412	6	2414	
7	2416	8	2418	
9	2420	10	2422	
11	2424	12	2426	
13	2428	14	2430	
15	2432	16	2434	
17	2436	18	2438	
19	2440	20	2442	
21	2444	22	2446	
23	2448	24	2450	
25	2452	26	2454	
27	2456	28	2458	
29	2460	30	2462	
31	2464	32	2466	
33	2468	34	2470	
35	2472	36	2474	
37	2476	38	2478	



2.9. Test Equipment List

For radiated emission test(9kHz-30MHz)										
Equipment Manufacturer Model No. Serial No. Calibration Body Last Cal. Next C										
EMI Test Receiver	Rohde & Schwarz	ESR7	EST-E047	LISAI	June 12,23	1 Year				
Active Loop Antenna	ctive Loop Antenna SCHWAREBE CK Test Software Audix		EST-E054	LISAI	June 12,23	1 Year				
Test Software			N/A	N/A	N/A	N/A				
9kHz-30MHz Cable	N/A	EST-001	N/A	N/A	N/A	N/A				

For radiated emissions test (30MHz-1000MHz)									
Equipment Manufacturer Model No. Serial No. Calibration Body Last Cal. Next Cal.									
EMI Test Receiver	Rohde & Schwarz	ESR7	EST-E047	LISAI	June 12,23	1 Year			
Bilog Antenna	Teseq	CBL 6111D	EST-E034	LISAI	June 12,23	1 Year			
Test Software Audix		e3-6.111221a	N/A	N/A	N/A	N/A			
30-1000MHz Cable	N/A	EST-002	N/A	N/A	N/A	N/A			

For radiated emission test(Above 1000MHz)									
Equipment	Manufacturer	Model No.	Serial No.	Calibration Body	Last Cal.	Next Cal.			
Horn Antenna	SCHWARZBE CK	BBHA9120D	EST-E144	LISAI	June 12,23	1 Year			
Horn Antenna	Com-Power	AHA-840	EST-E133	LISAI	June 12,23	1 Year			
Low Noise Amplifier	RF	TRLA-010180 G45N	EST-E142	LISAI	June 12,23	1 Year			
Spectrum Analyzer	Spectrum Analyzer Rohde &Schwarz		EST-E069	LISAI	June 12,23	1 Year			
Test Software	Audix	e3-6.111221a	N/A	N/A	N/A	N/A			
Above 1GHz Cable	N/A	EST-003	N/A	N/A	N/A	N/A			

For connect EUT antenna terminal test									
Equipment	Manufacturer	Serial No.	Calibration Body	Last Cal.	Next Cal.				
TS 1120	Tonscend	/	/	/	/	/			
Test Software	Tonscend	TS1120-3	3.3.38	/	/	/			
RF Control Unit	Tonscend	JS0806-2	EST-E134	LISAI	June 12,23	1 Year			
Signal and Spectrum Analyzer	Rohde &Schwarz	FSV 40	EST-E136	LISAI	June 12,23	1 Year			



3. FIELD STRENGTH OF FUNDAMENTAL

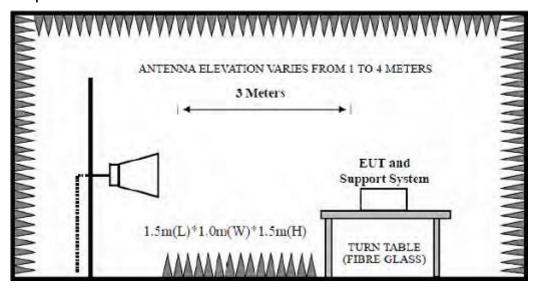
3.1. Limit

Fundamental frequency	Field strength of fundamental@3m (millivolts/meter)	Average Limit@3m dBµV/m	Peak Limit@3m dBµV/m
902-928MHz	50	94	114
2400-2483.5MHz	50	94	114
5725-5875MHz	50	94	114
24.0-24.25	250	108	128

Note:

- 1. Average Limit $(dB\mu V/m)=20 \times log[1000 \times Field Strength (mV/m)]$.
- 2. Peak Limit (dBµV/m)= Average Limit (dBµV/m)+20dB

3.2. Test Setup



3.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	≥OBW
VBW	3×RBW
Start frequency	2400MHz
Stop frequency	2483.5MHz
Sweep Time	Auto
Detector	PEAK/AVG
Trace Mode	Max Hold



3.4. Test Procedure

- a. EUT was placed on a turn table, which is 1.5 meter high above the ground.
- b. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower.
- c. Spectrum analyzer setting parameters in accordance with section 3.3.
- d. Set the EUT transmit continuously with maximum output power.
- e. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
- f. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test, record the average and peak value.
- g. Repeat above procedures until all channels were measured.
- h. Record the results in the test report.



3.5. Test Result

Test frequency (MHz)	Fundamental frequency	fundame	ength of ntal level V/m)		mit ıV/m)	Result	Antenna Pole
, ,	(MHz)	Avg	Peak	Avg	Peak		(H/V)
2404	2403.93	66.29	79.48	94	114	Pass	V
2404	2403.84	64.73	75.16	94	114	Pass	Н
2440	2439.91	71.44	81.62	94	114	Pass	V
2440	2439.91	64.44	74.73	94	114	Pass	Н
2478	2477.99	67.33	78.91	94	114	Pass	V
2470	2478.07	58.38	70.24	94	114	Pass	Н
Max Field strer	71.44	81.62	-	-	-	-	



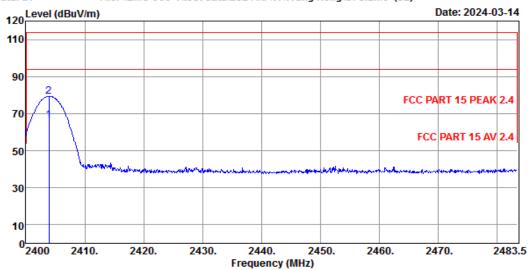
Low Channel(2404MHz)

EST Technology

Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888

Fax:+86-769-83081878

Data: 21 File: \\EMC-966-1\test data\2024\RF\W\Wang Hong\G7C.EM6 (32)



Site no. : 1# 966 Chamber Data no. : 21 Ant. pol. : VERTICAL Dis. / Ant. : 3m BBHA9120D-2667

: FCC PART 15 PEAK 2.4 Limit

Env. / Ins. : Temp:21.5°C;Humi:56%;Press:101.55kPa

: ZQL Engineer

: Wireless Ergonomic Mouse EUT : DC 1.5V From Battery Power

M/N : G7C

Test Mode : TX 2404MHz

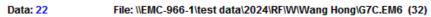
	Freq.	Factor	Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2	2403.93 2403.93			44.99 44.99	80.24 93.43	66.29 79.48	94.00 114.00	27.71 34.52	Average Peak

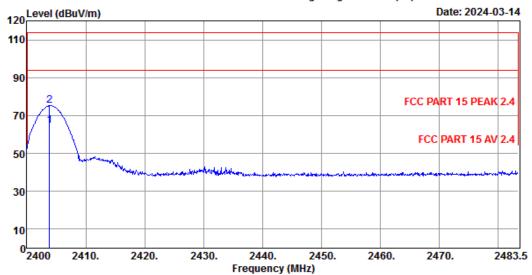
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading. 2. Margin= Limit - Emission Level.

- 3. The emission levels that are 20dB below the official limit are not reported.



Chilingxiang, Qishantou, Santun, Houjie, Dongquan, Guangdong, China Tel:+86-769-83081888 Fax:+86-769-83081878





Data no. : 22

Dis. / Ant. : 3m PPPP? Ant. pol. : HORIZONTAL : 3m BBHA9120D-2667

: FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:21.5°C; Humi:56%; Press:101.55kPa

Engineer : ZQL

: Wireless Ergonomic Mouse EUT : DC 1.5V From Battery Power

M/N : G7C

Test Mode : TX 2404MHz

	Freq. (MHz)	Factor	Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2	2403.84 2403.84			44.99 44.99	78.68 89.11	64.73 75.16	94.00 114.00	29.27 38.84	Average Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

2. Margin= Limit - Emission Level.

3. The emission levels that are 20dB below the official limit are not reported.

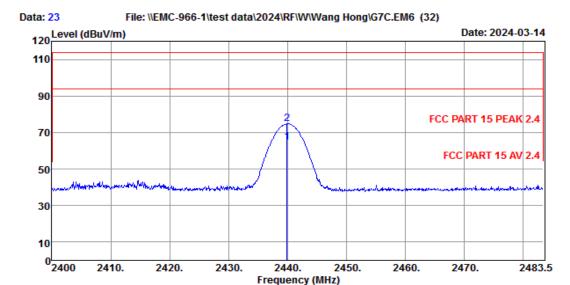


Middle Channel(2440MHz)

EST Technology

Chilingxiang, Qishantou, Santun, Houjie, Dongguan,Guangdong,China Tel:+86-769-83081888

Fax:+86-769-83081878



Site no. : 1# 966 Chamber Data no. : 23

Dis. / Ant. : 3m BBHA9120D-2667 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:21.5°C; Humi:56%; Press:101.55kPa

Engineer : ZQL

EUT : Wireless Ergonomic Mouse Power : DC 1.5V From Battery

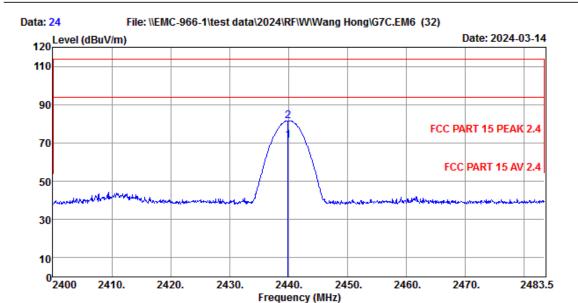
M/N : G7C Test Mode : TX 2440MHz

	Freq. (MHz)		Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2	2439.91 2439.91	 3.59 3.59	44.96 44.96	78.23 88.52	64.44 74.73	94.00 114.00	29.56 39.27	Average Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888 Fax:+86-769-83081878



Site no. : 1# 966 Chamber Data no. : 24
Dis. / Ant. : 3m BBHA9120D-2667 Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:21.5°C;Humi:56%;Press:101.55kPa

Engineer : ZQL

EUT : Wireless Ergonomic Mouse Power : DC 1.5V From Battery

M/N : G7C Test Mode : TX 2440MHz

	Freq. (MHz)		-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2	2439.91 2439.91	 		85.23 95.41	71.44 81.62	94.00 114.00	22.56 32.38	Average Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



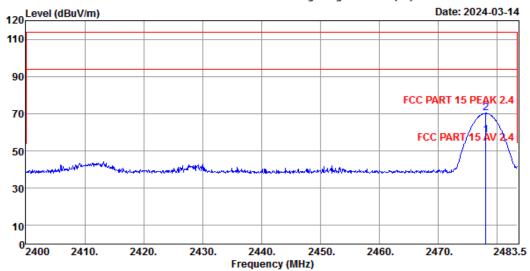
High Channel(2478MHz)

EST Technology

Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888

Fax:+86-769-83081878

Data: 31 File: \\EMC-966-1\\test data\\2024\\RF\\W\\Wang Hong\\G7C.EM6 (32)



Site no. : 1# 966 Chamber Data no. : 31

Dis. / Ant. : 3m BBHA9120D-2667 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:21.5°C;Humi:56%;Press:101.55kPa

Engineer : ZQL

EUT : Wireless Ergonomic Mouse
Power : DC 1.5V From Battery

M/N : G7C

Test Mode : TX 2478MHz

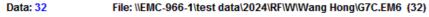
	Freq. (MHz)	Ant. Factor (dB/m)		Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2	2478.07 2478.07		3.62 3.62	44.93 44.93	72.00 83.86	58.38 70.24	94.00 114.00	35.62 43.76	Average Peak

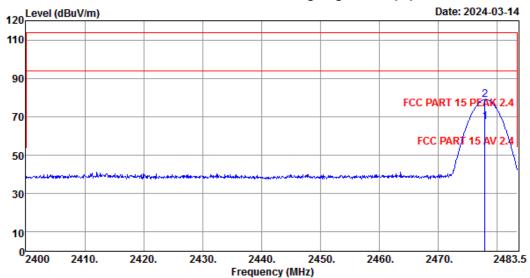
- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888

Fax:+86-769-83081878





Site no. : 1# 966 Chamber Data no. : 32

Dis. / Ant. : 3m BBHA9120D-2667 Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:21.5°C;Humi:56%;Press:101.55kPa

Engineer : ZQL

EUT : Wireless Ergonomic Mouse Power : DC 1.5V From Battery

M/N : G7C Test Mode : TX 2478MHz

		Freq.	Factor	Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
-	1 2	2477.99 2477.99		3.62 3.62	44.93 44.93	80.95 92.53	67.33 78.91	94.00 114.00	26.67 35.09	Average Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



4. RADIATED SPURIOUS EMISSIONS AND BAND EDGE

4.1. Limit

(a) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of harmonics@3m (microvolts/meter)	Average Limit@3m dBµV/m	Peak Limit@3m dBµV/m
902-928MHz	500	54	74
2400-2483.5MHz	500	54	74
5725-5875MHz	500	54	74
24.0-24.25	2500	68	88

- (b) Field strength limits are specified at a distance of 3 meters.
- (c) 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.

15.209 Radiated emission limits

Frequency (MHz)	Field Strength(μV/m)	Distance(m)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

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
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 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)



(d)	As	shown	in	§15.35(b), for	frequencies	above	1000	MHz,	the	field	strength	limits	in
	para	agraphs	(a)	of this se	ction	are based on	averag	e limit	s. How	ever	the	peak field	streng	gth
	of a	ny emis	sio	n shall no	t exce	eed the maxir	num pe	rmitted	d avera	ige li	mits s	specified a	above	by
	mor	e than 2	0.0	B under a	anv co	ondition of mo	dulation	า						

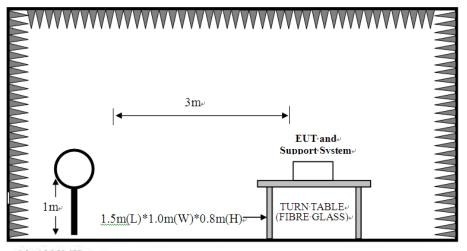
Note:

- (1) Emission level $dB\mu V = 20 log Emission level <math>\mu V/m$.
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

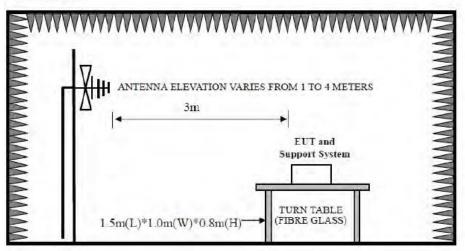


4.2. Test Setup

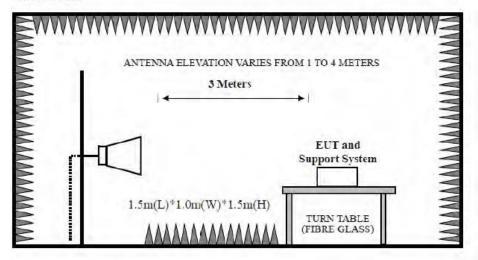
9kHz~30MHz4



30~1000MHz



Above 1GHz





4.3. Spectrum Analyzer Setting

For 9KHz-150KHz

Spectrum Parameters	Setting
RBW	300Hz(for Peak&AVG)/CISPR 200Hz(for QP)
VBW	300Hz(for Peak&AVG)/CISPR 200Hz(for QP)
Start frequency	9KHz
Stop frequency	150KHz
Sweep Time	Auto
Detector	PEAK/QP/AVG
Trace Mode	Max Hold

For 150KHz-30MHz

Spectrum Parameters	Setting			
RBW	9KHz			
VBW	9KHz			
Start frequency	150KHz			
Stop frequency	30MHz			
Sweep Time	Auto			
Detector	QP			
Trace Mode	Max Hold			

For 30MHz-1000MHz

Spectrum Parameters	Setting
RBW	120KHz
VBW	300KHz
Start frequency	30MHz
Stop frequency	1000MHz
Sweep Time	Auto
Detector	QP
Trace Mode	Max Hold

For Above 1GHz

Spectrum Parameters	Setting
RBW	1MHz
VBW	3MHz
Start frequency	1GHz
Stop frequency	10 Times Carrier Frequency
Sweep Time	Auto
Detector	PEAK
Trace Mode	Max Hold



4.4. Test Procedure

- a. EUT was placed on a turn table, which is 0.8 meter high above ground for below 1GHz test, and which is 1.5 meter high above ground for above 1GHz test.
- b. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower.
- c. Set the EUT transmit continuously with maximum output power.
- d. The turn table can rotate 360 degrees to determine the position of the maximum emission level
- e. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.
- f. Spectrum analyzer setting parameters in accordance with section 4.3.
- g. Repeat above procedures until all channels were measured.
- h. Record the results in the test report.

Note:

- 1. For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.
- 2. The frequency 2404MHz/2440MHz/2478MHz are fundamental frequency.

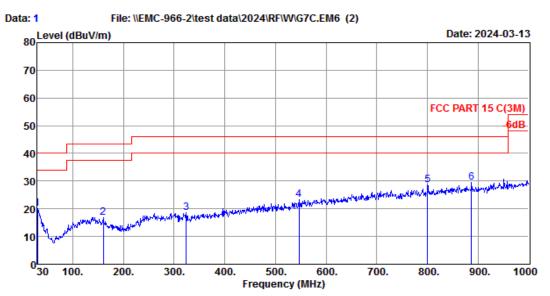


4.5. Test Result

Radiated Emissions Below 1GHz

EST Technology

Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888 Fax:+86-769-83081878



Site no. : 2# 966 chamber Data no. : 1

Dis. / Ant. : 3m 47018 Ant. pol. : VERTICAL

Limit : FCC PART 15 C(3M)

Env. / Ins. : Temp:17.6°C;Humi:52%;Press:100.3kPa

Engineer : GBond

EUT : Wireless Ergonomic Mouse

Power : DC 1.5V M/N : G7C Test Mode : TX Mode

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.00	18.90	0.58	0.69	20.17	40.00	19.83	QP
2	159.98	11.60	1.54	3.64	16.78	43.50	26.72	QP
3	323.91	14.78	2.34	1.57	18.69	46.00	27.31	QP
4	547.01	19.74	3.10	0.50	23.34	46.00	22.66	QP
5	800.18	23.20	3.89	1.49	28.58	46.00	17.42	QP
6	887.48	24.03	4.20	1.21	29.44	46.00	16.56	QP

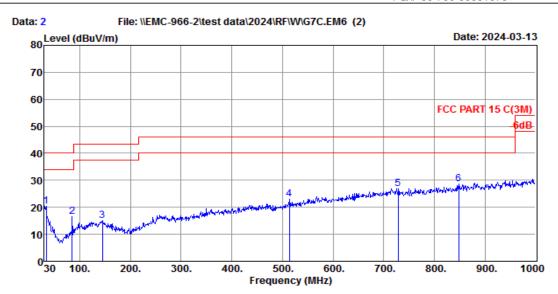
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. Margin= Limit - Emission Level.

3. The emission levels that are 20dB below the official limit are not reported.



Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888 Fax:+86-769-83081878



Site no. : 2# 966 chamber Data no. : 2
Dis. / Ant. : 3m 47018 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 C(3M)

Env. / Ins. : Temp:17.6°C; Humi:52%; Press:100.3kPa

Engineer : GBond

EUT : Wireless Ergonomic Mouse

Power : DC 1.5V M/N : G7C Test Mode : TX Mode

	Freq. (MHz)	ANT Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	33.88	15.90	0.61	3.98	20.49	40.00	19.51	QP
2	85.29	8.40	1.07	7.18	16.65	40.00	23.35	QP
3	144.46	12.25	1.53	1.28	15.06	43.50	28.44	QP
4	514.03	18.84	2.97	1.11	22.92	46.00	23.08	QP
5	728.40	22.00	3.69	1.21	26.90	46.00	19.10	QP
6	847.71	23.80	4.06	0.82	28.68	46.00	17.32	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. Margin= Limit - Emission Level.

3. The emission levels that are 20dB below the official limit are not reported.

Note:

- 1. The amplitude of 9KHz to 30MHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.
- 2. All channels had been pre-test, only the worst case was reported.



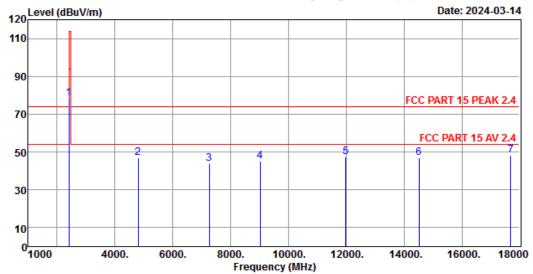
Radiated Emissions Above 1G

EST Technology

Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888

Fax:+86-769-83081878

Data: 17 File: \\EMC-966-1\test data\\2024\\RF\\W\\Wang Hong\\G7C.EM6 (32)



Site no. : 1# 966 Chamber Data no. : 17
Dis. / Ant. : 3m BBHA9120D-2667 Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:21.5°C; Humi:56%; Press:101.55kPa

Engineer : ZQL

EUT : Wireless Ergonomic Mouse
Power : DC 1.5V From Battery

M/N : G7C Test Mode : TX 2404MHz

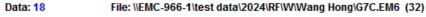
		Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
	 1	2404.00	27.47	3.57	44.99	92.37	78.42	114.00	35.58	Peak
- 2	2	4808.00	32.40	5.20	44.49	53.91	47.02	74.00	26.98	Peak
3	3	7256.00	36.20	6.68	44.07	44.83	43.64	74.00	30.36	Peak
4	4	9024.00	38.00	7.78	43.41	42.98	45.35	74.00	28.65	Peak
	5	11982.00	38.80	8.82	42.21	41.83	47.24	74.00	26.76	Peak
(6	14515.00	39.74	10.01	42.07	39.15	46.83	74.00	27.17	Peak
	7	17694.00	40.59	12.18	43.16	38.84	48.45	74.00	25.55	Peak

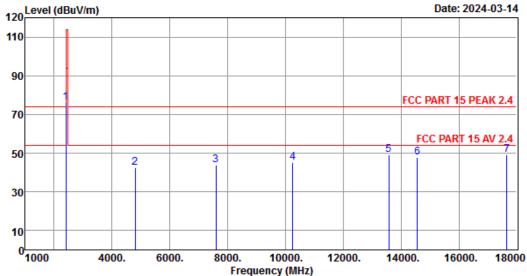
- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China. Tel:+86-769-83081888

Fax:+86-769-83081878





Site no. : 1# 966 Chamber Data no. : 18

Dis. / Ant. : 3m BBHA9120D-2667 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:21.5°C; Humi:56%; Press:101.55kPa

Engineer : ZQL

EUT : Wireless Ergonomic Mouse Power : DC 1.5V From Battery

M/N : G7C Test Mode : TX 2404MHz

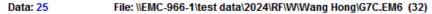
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2404.00	27.47	3.57	44.99	90.11	76.16	114.00	37.84	Peak
2	4808.00	32.40	5.20	44.49	49.21	42.32	74.00	31.68	Peak
3	7596.00	36.48	6.79	44.04	44.76	43.99	74.00	30.01	Peak
4	10248.00	38.37	7.89	43.60	42.72	45.38	74.00	28.62	Peak
5	13580.00	39.87	9.55	40.80	40.38	49.00	74.00	25.00	Peak
6	14566.00	39.72	10.04	42.20	40.09	47.65	74.00	26.35	Peak
7	17660.00	40.48	12.15	43.21	39.78	49.20	74.00	24.80	Peak

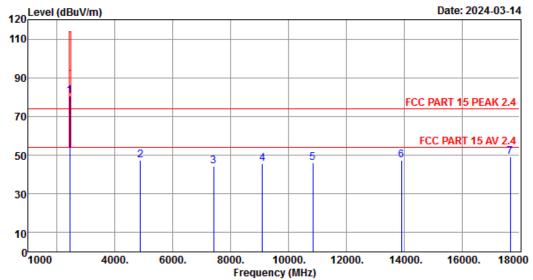
- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888

Fax:+86-769-83081878





Site no. : 1# 966 Chamber Data no. : 25
Dis. / Ant. : 3m BBHA9120D-2667 Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:21.5°C; Humi:56%; Press:101.55kPa

Engineer : ZQL

EUT : Wireless Ergonomic Mouse Power : DC 1.5V From Battery

M/N : G7C Test Mode : TX 2440MHz

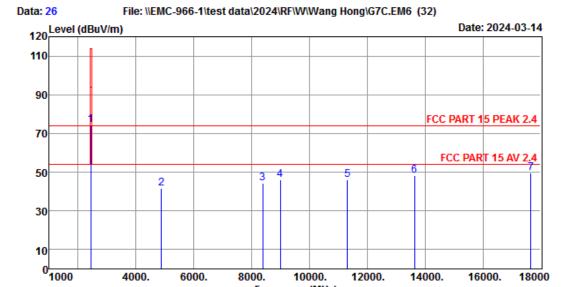
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2440.00	27.58	3.59	44.96	94.48	80.69	114.00	33.31	Peak
2	4876.00	32.54	5.28	44.42	53.81	47.21	74.00	26.79	Peak
3	7409.00	36.33	6.73	44.06	45.11	44.11	74.00	29.89	Peak
4	9092.00	38.02	7.78	43.43	43.17	45.54	74.00	28.46	Peak
5	10843.00	38.79	8.19	43.12	42.12	45.98	74.00	28.02	Peak
6	13903.00	39.97	9.72	40.80	38.33	47.22	74.00	26.78	Peak
7	17677.00	40.53	12.17	43.18	39.53	49.05	74.00	24.95	Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888

Fax:+86-769-83081878



10000.

Frequency (MHz)

12000.

14000.

16000.

18000

Site no. : 1# 966 Chamber

Data no. : 26 Ant. pol. : HORIZONTAL Dis. / Ant. : 3m BBHA9120D-2667

6000.

8000.

: FCC PART 15 PEAK 2.4 Limit

Env. / Ins. : Temp:21.5°C; Humi:56%; Press:101.55kPa

: ZQL Engineer

EUT : Wireless Ergonomic Mouse : DC 1.5V From Battery Power

4000.

M/N : G7C Test Mode : TX 2440MHz

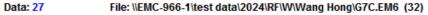
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2440.00	27.58	3.59	44.96	88.33	74.54	114.00	39.46	Peak
2	4876.00	32.54	5.28	44.42	48.35	41.75	74.00	32.25	Peak
3	8378.00	37.25	7.24	43.78	43.43	44.14	74.00	29.86	Peak
4	8990.00	37.99	7.77	43.41	43.56	45.91	74.00	28.09	Peak
5	11319.00	38.87	8.44	42.74	41.33	45.90	74.00	28.10	Peak
6	13631.00	39.89	9.58	40.80	39.42	48.09	74.00	25.91	Peak
7	17660.00	40.48	12.15	43.21	40.26	49.68	74.00	24.32	Peak

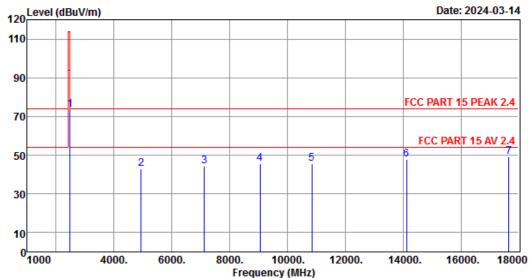
- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China. Tel:+86-769-83081888

Fax:+86-769-83081878





Site no. : 1# 966 Chamber Data no. : 27

Dis. / Ant. : 3m BBHA9120D-2667 Ant. pol. : HORIZONTAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:21.5°C; Humi:56%; Press:101.55kPa

Engineer : ZQL

EUT : Wireless Ergonomic Mouse Power : DC 1.5V From Battery

M/N : G7C Test Mode : TX 2478MHz

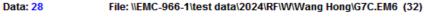
	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2478.00	27.69	3.62	44.93	87.05	73.43	114.00	40.57	Peak
2	4944.00	32.68	5.35	44.35	49.49	43.17	74.00	30.83	Peak
3	7120.00	36.10	6.64	44.09	45.62	44.27	74.00	29.73	Peak
4	9058.00	38.01	7.78	43.42	43.39	45.76	74.00	28.24	Peak
5	10843.00	38.79	8.19	43.12	41.79	45.65	74.00	28.35	Peak
6	14124.00	39.94	9.83	41.10	39.22	47.89	74.00	26.11	Peak
7	17660.00	40.48	12.15	43.21	39.59	49.01	74.00	24.99	Peak

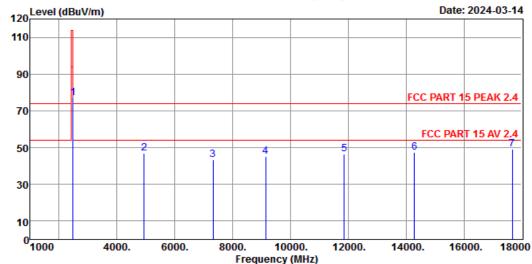
- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China. Tel:+86-769-83081888

Fax:+86-769-83081878





Site no. : 1# 966 Chamber Data no. : 28
Dis. / Ant. : 3m BBHA9120D-2667 Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:21.5°C; Humi:56%; Press:101.55kPa

Engineer : ZQL

EUT : Wireless Ergonomic Mouse Power : DC 1.5V From Battery

M/N : G7C

Test Mode : TX 2478MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2478.00	27.69	3.62	44.93	90.61	76.99	114.00	37.01	Peak
2	4944.00	32.68	5.35	44.35	53.29	46.97	74.00	27.03	Peak
3	7324.00	36.26	6.70	44.07	44.47	43.36	74.00	30.64	Peak
4	9143.00	38.03	7.78	43.46	42.72	45.07	74.00	28.93	Peak
5	11863.00	38.81	8.75	42.31	41.19	46.44	74.00	27.56	Peak
6	14294.00	39.85	9.91	41.52	39.15	47.39	74.00	26.61	Peak
7	17677.00	40.53	12.17	43.18	39.59	49.11	74.00	24.89	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.

- Margin= Limit Emission Level.
 - The emission levels that are 20dB below the official limit are not reported.

Note:

1. The amplitude of 18GHz to 25GHz spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

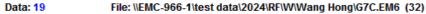


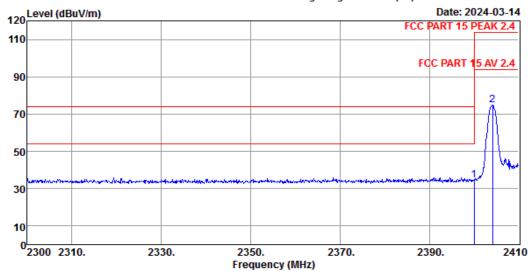
Radiated Band Edge

EST Technology

Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel: +86-769-83081888

Fax:+86-769-83081878





: 1# 966 Chamber Site no. Data no. : 19

Dis. / Ant. : 3m BBHA9120D-2667 Ant. pol. : HORIZONTAL

: FCC PART 15 PEAK 2.4 Limit

Env. / Ins. : Temp:21.5°C; Humi:56%; Press:101.55kPa

Engineer : ZQL

: Wireless Ergonomic Mouse EUT : DC 1.5V From Battery Power

M/N : G7C Test Mode : TX 2404MHz

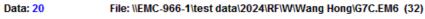
	Freq. (MHz)	Ant. Factor (dB/m)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2	2400.00 2404.17		 45.01 44.99	48.34 89.00	34.34 75.05	74.00 114.00	39.66 38.95	Peak Peak

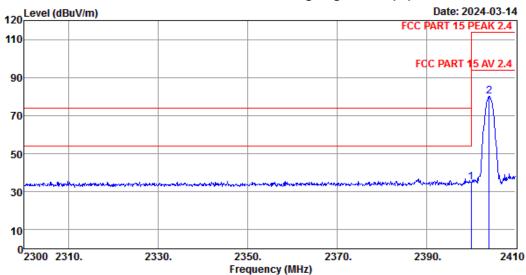
- 2. Margin= Limit Emission Level.
 - 3. The emission levels that are 20dB below the official limit are not reported.



Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China.

Tel:+86-769-83081888 Fax:+86-769-83081878





Site no. : 1# 966 Chamber Data no. : 20
Dis. / Ant. : 3m BBHA9120D-2667 Ant. pol. : VERTICAL

Limit : FCC PART 15 PEAK 2.4

Env. / Ins. : Temp:21.5°C; Humi:56%; Press:101.55kPa

Engineer : ZQL

EUT : Wireless Ergonomic Mouse Power : DC 1.5V From Battery

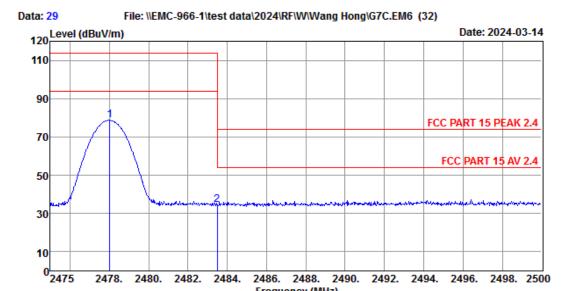
M/N : G7C Test Mode : TX 2404MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2	2400.00 2404.06		3.55 3.57	45.01 44.99	49.15 94.10	35.15 80.15	74.00 114.00	38.85 33.85	Peak Peak

- 2. Margin= Limit Emission Level.
- The emission levels that are 20dB below the official limit are not reported.



Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888 Fax:+86-769-83081878



Frequency (MHz)

: 1# 966 Chamber Data no. : 29 Site no. Dis. / Ant. : 3m BBHA9120D-2667 Ant. pol. : VERTICAL

: FCC PART 15 PEAK 2.4 Limit

Env. / Ins. : Temp:21.5°C;Humi:56%;Press:101.55kPa

Engineer : ZQL

EUT : Wireless Ergonomic Mouse Power : DC 1.5V From Battery

: G7C M/N Test Mode : TX 2478MHz

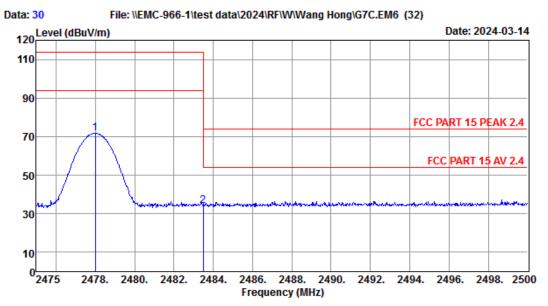
	Freq. (MHz)	Ant. Factor (dB/m)		-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2	2478.03 2483.50		3.62 3.62		92.31 48.19	78.69 34.58	114.00 74.00	35.31 39.42	Peak Peak

- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China Tel:+86-769-83081888

Fax:+86-769-83081878



Site no. : 1# 966 Chamber

Data no. : 30 Ant. pol. : HORIZONTAL Dis. / Ant. : 3m BBHA9120D-2667

: FCC PART 15 PEAK 2.4 Limit

Env. / Ins. : Temp:21.5°C; Humi:56%; Press:101.55kPa

Engineer

: ZQL : Wireless Ergonomic Mouse EUT Power : DC 1.5V From Battery

: G7C M/N Test Mode : TX 2478MHz

	Freq.	Ant. Factor (dB/m)	-	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1 2	2478.00 2483.50		 44.93 44.93	85.33 47.86	71.71 34.25	114.00 74.00	42.29 39.75	Peak Peak

- 2. Margin= Limit Emission Level.
- 3. The emission levels that are 20dB below the official limit are not reported.



5. 20DB BANDWIDTH

5.1. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

5.2. Test Setup



5.3. Spectrum Analyzer Setting

Spectrum Parameters	Setting
RBW	1%~5% OBW
VBW	3×RBW
Span	two times and five times the OBW
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

5.4. Test Procedure

- a. Connect EUT antenna terminal to the spectrum analyzer with RF cable.
- b. Spectrum analyzer setting parameters in accordance with section 5.3.
- c. Set the EUT transmit continuously with maximum output power.
- d. Allow trace to stabilize, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.
- e. Repeat above procedures until all modes and channels were measured.
- f. Record the results in the test report.

5.5. Test Condition

Temperature	22.9℃	Relative Humidity	52%	Test Voltage	DC 1.5V
-------------	-------	-------------------	-----	-----------------	---------



5.6. Test Result

Test Frequency (MHz)	20dB Bandwidth (MHz)	Result
2404	1.275	Pass
2440	1.251	Pass
2478	1.260	Pass

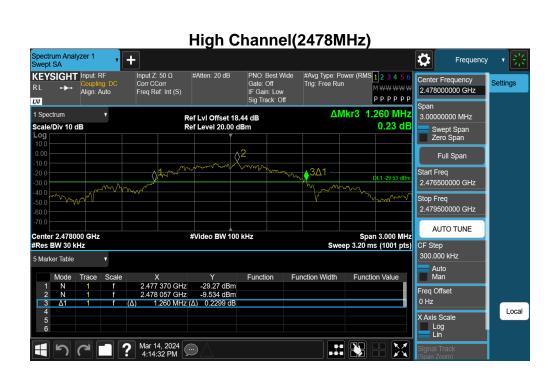














6. ANTENNA REQUIREMENTS

6.1. Limit

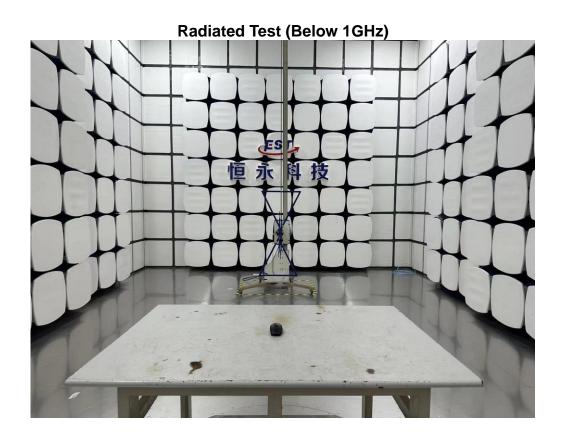
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

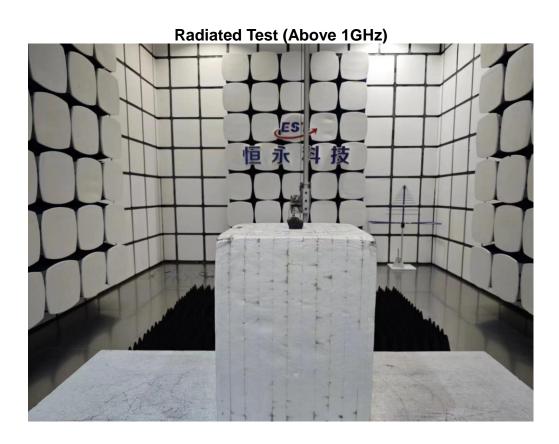
6.2. Test Result

The antennas used for this product is PCB antenna, so compliance with antenna requirements. (Please refer to the EUT photo for details)



7. TEST SETUP PHOTO

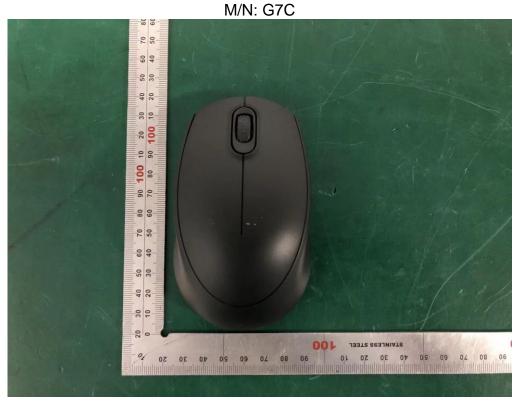






8. EUT PHOTO

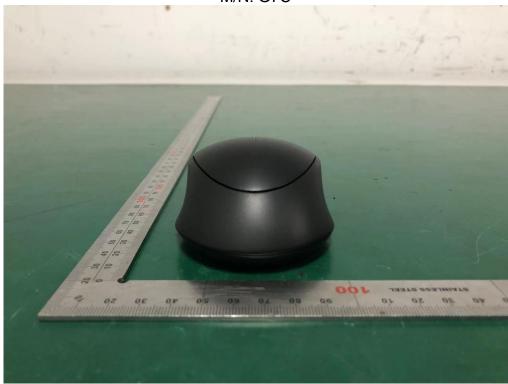
External Photos







External Photos M/N: G7C















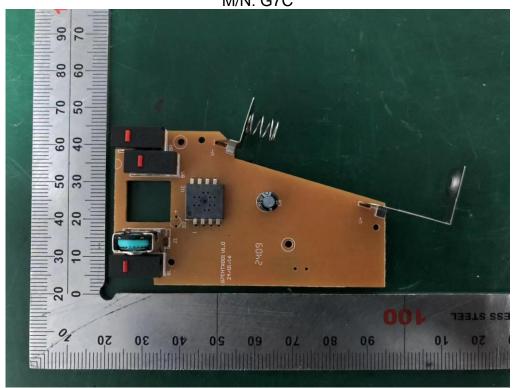
Internal Photos M/N: G7C







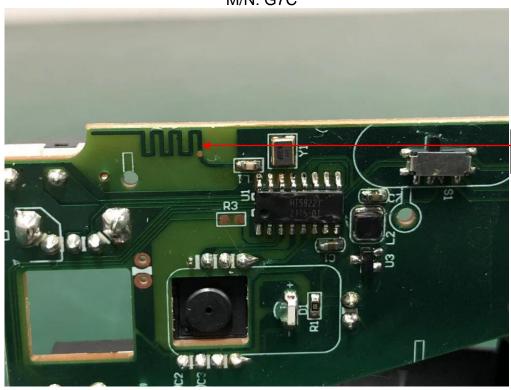
Internal Photos M/N: G7C







Internal Photos M/N: G7C



PCB Antenna

End of Test Report