

# **Antenna Test Report**

Report No.: AGC13300221002PA01

PRODUCT DESIGNATION : Actto Mechanical KeyBoard

**BRAND NAME** : ACTTO

**MODEL NAME** : B705, B703

**APPLICANT**: Shanghai Actto Plastics Co., Ltd.

**DATE OF ISSUE** : Nov. 11, 2022

**REPORT VERSION**: V1.0

Attestation of Global CAlcological (Shenzhen) Co., Ltd



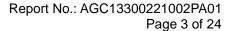


Report No.: AGC13300221002PA01

Page 2 of 24

## REPORT REVISE RECORD

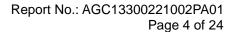
Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Nov. 11, 2022	Valid	Initial release





## **TABLE OF CONTENTS**

1. PRODUCT INFORMATON	4
2. TEST FACILITY	5
3. TEST EQUIPMENT LIST	5
4. MEASUREMENT UNCERTAINTY	5
5. TEST SUMMARY LIST	5
6. TEST SETUP	6
7. TEST RESULTS	7
7.1. VSWR	7
7.2. GAIN AND EFFICIENCY	8
7.3. RADIATION PATTERN	9
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	11
APPENDIX B: PHOTOGRAPHS OF EUT	12





# 1. PRODUCT INFORMATON

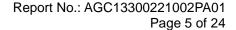
General information				
Applicant	Shanghai Actto Plastics Co., Ltd.			
Address	1F 18B/L, Fashion Valley Creative Park, 618-1, Dingyuan Rd., Songjiang, Shanghai City, China			
Manufacturer Shanghai Actto Plastics Co., Ltd.				
Address 1F 18B/L, Fashion Valley Creative Park, 618-1, Dingyuan Rd., S Shanghai City, China				
Factory	DONGGUAN ACTTO ELECTRONIC TECHNOLOGY CO., LTD			
Address	Room201, 1st Building of No. 18, Hengli Shikeng Road, Hengli Shikeng Road, Hengli Town, Dongguan City. Guangdong Province of China			
Product Designation Actto Mechanical KeyBoard				
Brand Name	ACTTO			
Test Model	B705			
Series Model	B703			
Declaration Difference	All the same except for the model name, battery, size and color of appearance.			
Date of receipt of test item	Nov. 04, 2022			
Date of test	Nov. 04, 2022 to Nov. 11, 2022			
Report Template	AGCRT-ER-PA/V1.0			
	Technical information			
Frequency Range	2400MHz-2500MHz			
Test Frequencies	2400MHz, 2410MHz, 2420MHz, 2430MHz, 2440MHz, 2450MHz, 2460MHz, 2470MHz, 2480MHz, 2490MHz, 2500MHz			
Antenna Type	PCB Antenna			
Dimensions	5mm*13mm			
Impedance	50 Ω			
Maximum test values	Gain: -3.284dBi; Efficiency: 25.422%; VSWR: 1.148:1			

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test results of this report relate only to the tested sample identified in this report.

Prepared By	Thea Huang	
	Thea Huang (Project Engineer)	Nov. 11, 2022
Reviewed By	Calin Liu	
	Calvin Liu (Reviewer)	Nov. 11, 2022
Approved By	Max Zhang	
-	Max Zhang (Authorized Officer)	Nov. 11, 2022

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# 2. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

## 3. TEST EQUIPMENT LIST

Equipment	Manufacturer	Model	Cal. Date	Cal. Due
ANTENNA MEASUREMENT SYSTEM	ETS-Lindgren	AMS-8600	Nov. 26, 2021	Nov. 25, 2022
Network Analyzer	R&S	101443	Oct. 15, 2022	Oct. 14, 2023
Test Software	ETS-Lindgren	EMQuest (Ver V1.12)	N/A	N/A

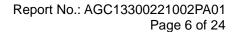
## 4. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in measurement" (GUM) published by CISPR and ANSI.

- Uncertainty of VSWR, Uc = ±1.5dB
- Uncertainty of Gain, Uc = ±0.8dB

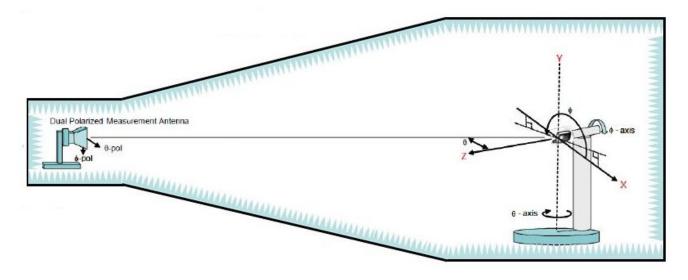
#### 5. TEST SUMMARY LIST

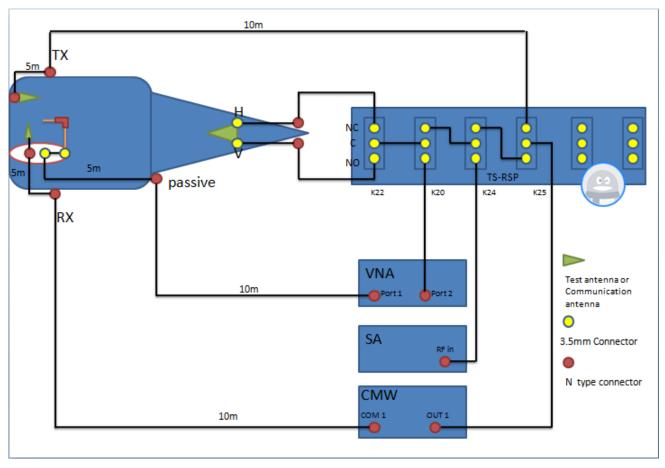
NO.	Test item	Remark
1	VSWR	
2	Gain and efficiency	
3	Radiation pattern	





## 6. TEST SETUP





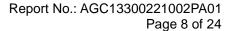


## 7. TEST RESULTS

#### 7.1. **VSWR**

Frequency(MHz)	VSWR
2402	1.137:1
2440	1.148:1
2450	1.128:1
2480	1.079:1

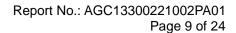






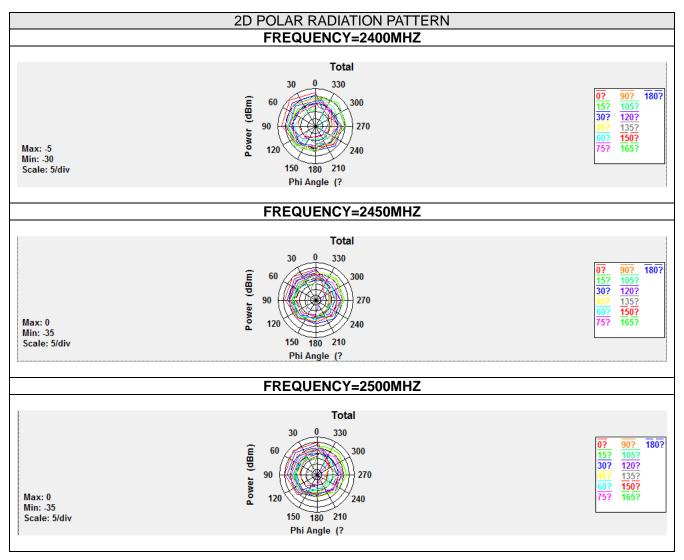
## 7.2. GAIN AND EFFICIENCY

Frequency(MHz)	Efficiency(dB)	Efficiency(%)	Gain(dBi)
2400	-7.137	22.442	-4.881
2410	-7.143	22.409	-4.738
2420	-7.245	21.871	-4.841
2430	-7.004	23.163	-4.555
2440	-6.907	23.703	-4.295
2450	5.278	23.870	-4.064
2460	-6.891	23.794	-3.825
2470	-6.946	23.483	-3.664
2480	-6.754	24.582	-3.365
2490	-6.643	25.240	-3.284
2500	-6.613	25.422	-3.306

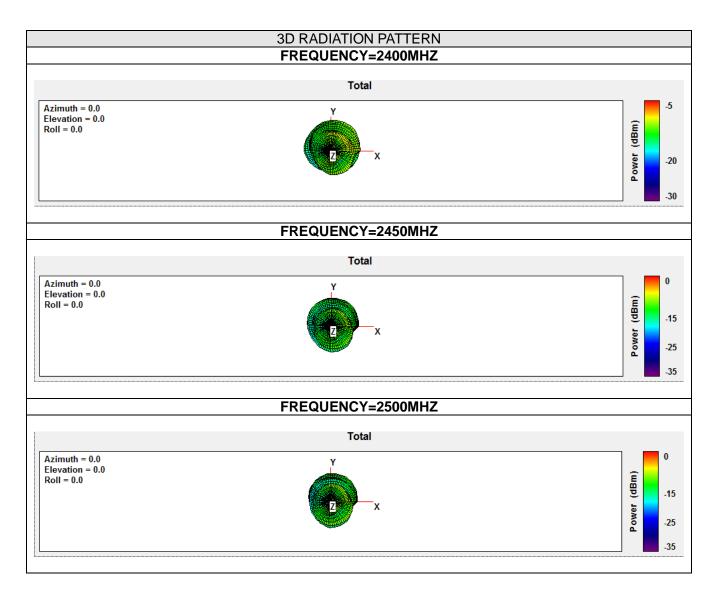


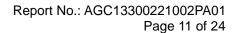


#### 7.3. RADIATION PATTERN



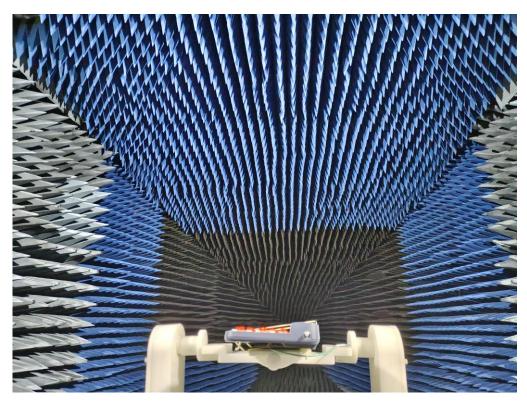


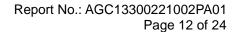






# **APPENDIX A: PHOTOGRAPHS OF TEST SETUP**







# **APPENDIX B: PHOTOGRAPHS OF EUT**

## The main test model is B705

TOP VIEW OF EUT

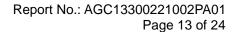


**BOTTOM VIEW OF EUT** 



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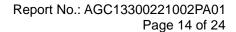
## FRONT VIEW OF EUT



**BACK VIEW OF EUT** 



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#### **LEFT VIEW OF EUT**



RIGHT VIEW OF EUT

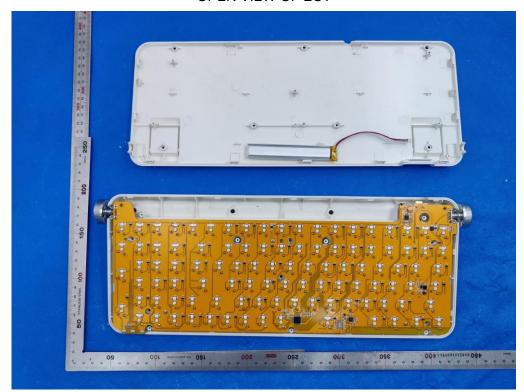




# VIEW OF EUT(PORT)

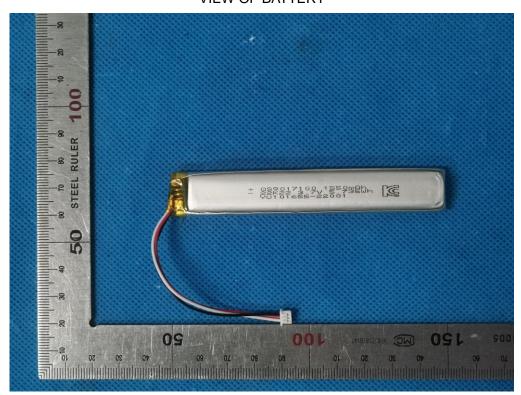


**OPEN VIEW OF EUT** 

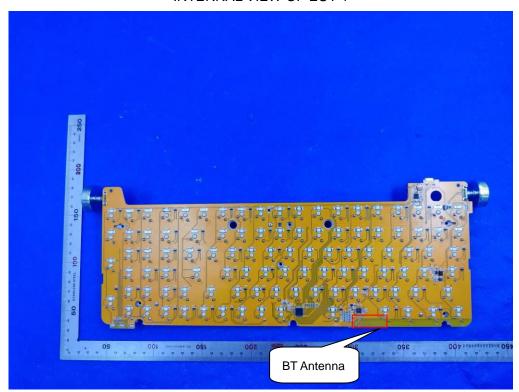




#### VIEW OF BATTERY

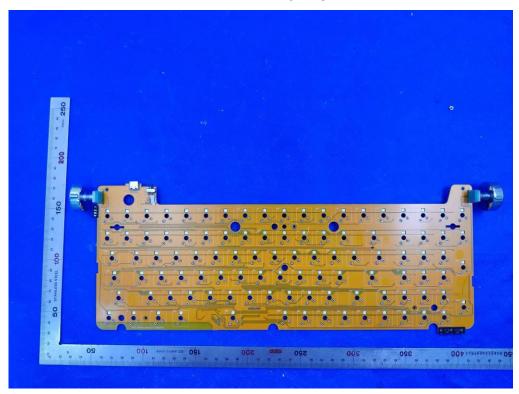


**INTERNAL VIEW OF EUT-1** 

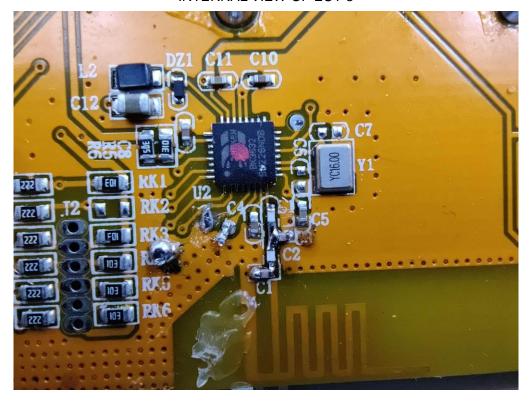




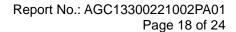
#### **INTERNAL VIEW OF EUT-2**



**INTERNAL VIEW OF EUT-3** 

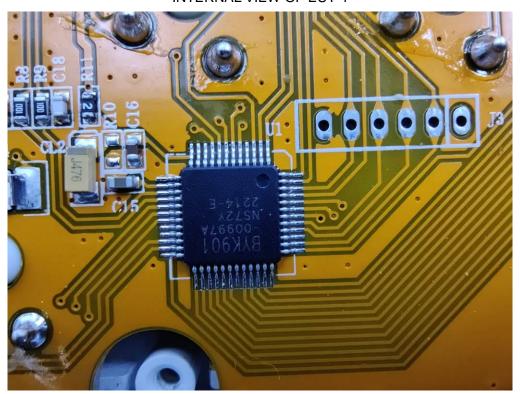


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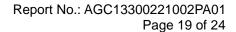


## **INTERNAL VIEW OF EUT-4**



The series model is B703
TOP VIEW OF EUT





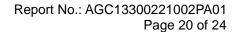


## **BOTTOM VIEW OF EUT**



FRONT VIEW OF EUT







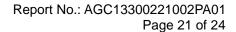
# **BACK VIEW OF EUT**



LEFT VIEW OF EUT



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#### RIGHT VIEW OF EUT



VIEW OF EUT(PORT)

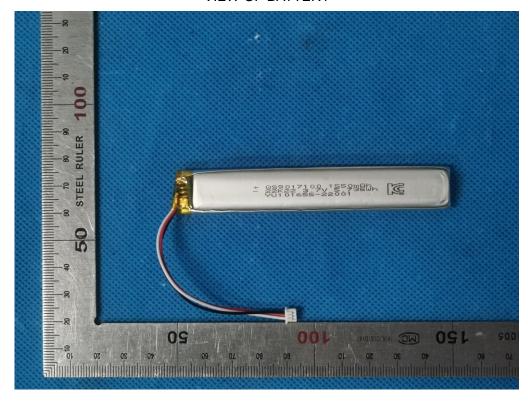


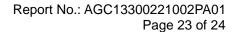


#### **OPEN VIEW OF EUT**



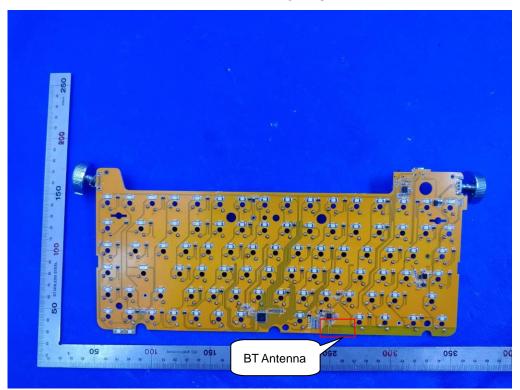
VIEW OF BATTERY



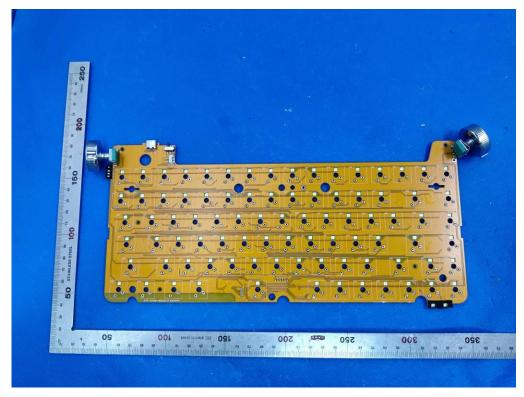




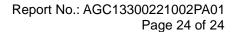
#### **INTERNAL VIEW OF EUT-1**



**INTERNAL VIEW OF EUT-2** 

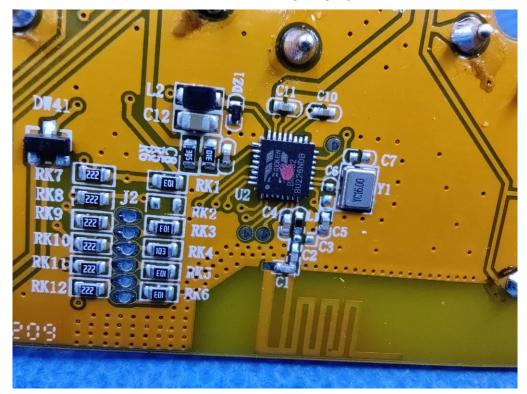


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#### **INTERNAL VIEW OF EUT-3**



**INTERNAL VIEW OF EUT-4** 



----END OF REPORT----



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- 1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd. (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").
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- 3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
- 4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
- 5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
- 6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
- 7. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
- 8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
- 9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.