

## 承 认 书

### SPECIFICATION APPROVAL SHEET

客 户 :  
CUSTOMER

客 户 料 号 :  
CUS PART NO

版次:

REV X1

品 名 / 规格 :

2.4~2.5/5.15~5.85GHz

单重:

SPECIFICATION

WIFI MAIN Antenna L=255mm(Ø0.81黑+MHF weight

供 方 料 号 :  
SUP PART NO

SLEingB225670255

日 期 :  
DATE

2022.03.25



厂 商 核 准 :  
SUP APPROVED

| 核准<br>APPROVED      | 审核<br>CHECKED | 品保审核<br>QA CHECKED | 承办<br>DESIGNED |
|---------------------|---------------|--------------------|----------------|
| <i>Songshanlake</i> | HZH           | ZQ                 | Wxy            |

客 户 核 准 :  
CUS APPROVED

| 核准<br>APPROVED | 审核<br>CHECKED | 品保审核<br>QA CHECKED | 承办<br>DESIGNED |
|----------------|---------------|--------------------|----------------|
|                |               |                    |                |

东莞市森岭智能科技有限公司

DONGGUAN CITY SLEing INTEL-TECH CO.,LTD

中国广东省东莞市松山湖工业东路24号现代企业加速器6栋402

Room 402, No. 6 Plant, Accelerator of Modern Enterprise, No. 24 Industry East Road  
Songshanlake District, Dongguan City, Guangdong Province, China.

Tel: +86-0769-89208968

Fax: +86-0769-89208969

[www.sleing.com](http://www.sleing.com)

正本由承办单位保存



DONGGUAN CITY SLEing INTEL-TECH CO.,LTD

东莞市森岭智能科技有限公司  
东莞市松山湖工业东路现代企业加速器6栋402  
TEL: 86-0769-89208968 FAX: 86-0769-89208969  
www.sleing.com

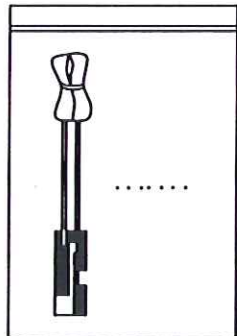
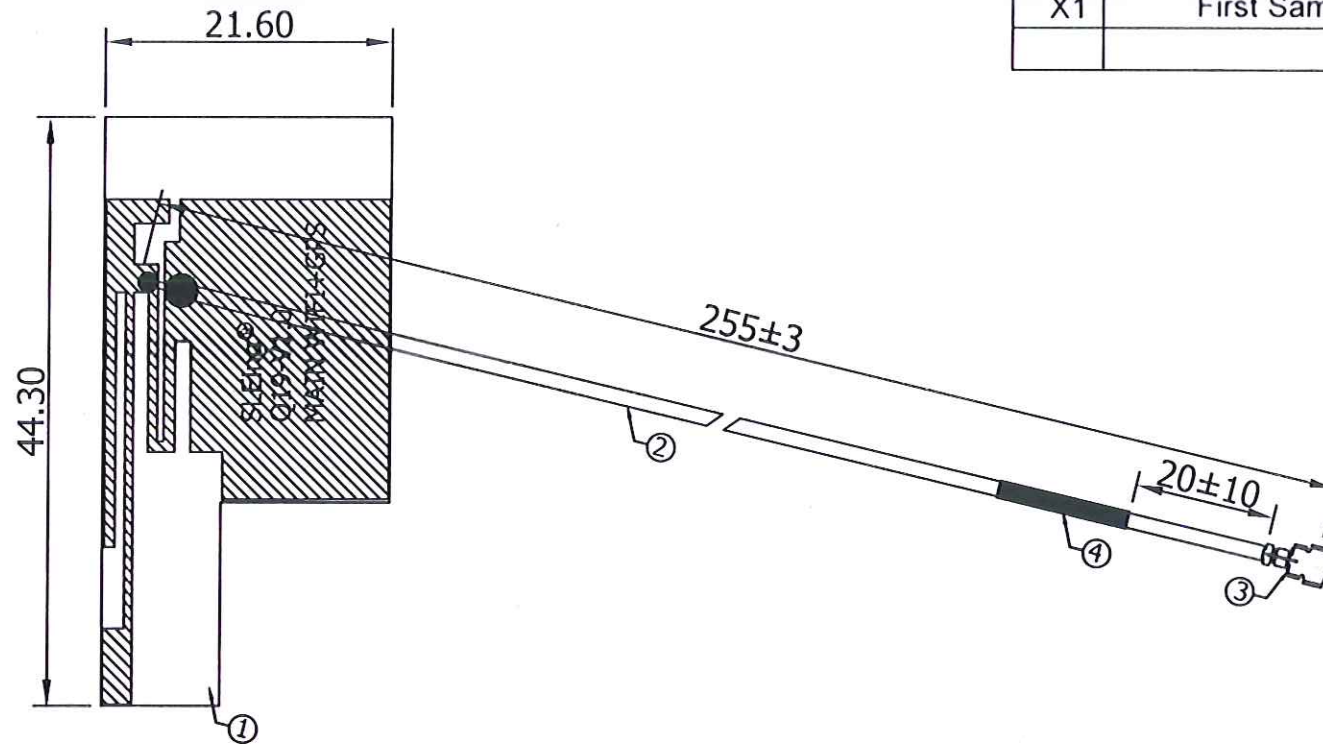
承认书项目表

| 序号 | 项目                                 | 附件资料                     |                          | 备注                                   |
|----|------------------------------------|--------------------------|--------------------------|--------------------------------------|
|    |                                    | 有                        | 无                        |                                      |
| 1  | 承认书封面 (Spec Cover)                 | <input type="checkbox"/> | <input type="checkbox"/> | 1. 封面需注明产品料号、品名规格<br>2. 经主管核准后加盖公司印章 |
|    | 客户满意度 (Customer satisfaction)      | <input type="checkbox"/> | <input type="checkbox"/> | 请客户对我司给予真诚的评价                        |
| 2  | 承认书项目表 (Spec Item )                | <input type="checkbox"/> | <input type="checkbox"/> |                                      |
| 3  | 工程成品图 (Drawing)                    | <input type="checkbox"/> | <input type="checkbox"/> |                                      |
| 4  | 电性测试报告 (Test Reports )             | <input type="checkbox"/> | <input type="checkbox"/> |                                      |
| 5  | S参数测试 (S Parameter)                | <input type="checkbox"/> | <input type="checkbox"/> | 与产品一致                                |
| 6  | 方向图(Patten)/测试效率 (Test Efficiency) | <input type="checkbox"/> | <input type="checkbox"/> | 与产品一致                                |
| 7  | 样品检验记录 (Sample inspection)         | <input type="checkbox"/> | <input type="checkbox"/> |                                      |
| 8  | SGS报告 (SGS Report)                 | <input type="checkbox"/> | <input type="checkbox"/> | 1. 需依产品材质类别及颜色分别提供<br>2. 报告有效期为一年    |
| 9  | 其它                                 | <input type="checkbox"/> | <input type="checkbox"/> | 依贵司具体要求另行说明                          |
| 10 |                                    | <input type="checkbox"/> | <input type="checkbox"/> |                                      |
| 11 |                                    | <input type="checkbox"/> | <input type="checkbox"/> |                                      |

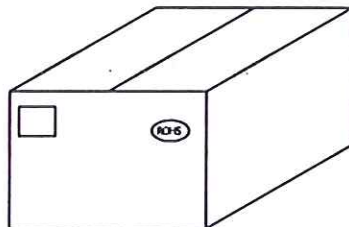
说明:

1. 承认书内容需依查核表项目依顺序排列。
2. 承认书依客户要求打印份数, SGS报告需加盖工程章。
3. 所有材料一律经过客户确认后, 任何材料/制程/可能影响产品品质及环境品质的变更, 都必需重新送样给客户确认后方可导入。
4. SGS报告有效期为一年。
5. 依实际承认书所附件内容在查核表中勾选: “有” 为已提供, “无” 根据客户要求提供。

| REV. | CONTENT      | DATE       |
|------|--------------|------------|
| X1   | First Sample | 2022.03.25 |
|      |              |            |



50pcs/Bundle  
Packing: 100pcs/bag



外箱须贴ROHS标签与物料标签各1PCS

Specification:  
Frequency Rang:2.4~2.5/5.15~5.85/1.57542GHz(带机测试)  
Return Loss:-10dB or less  
VSWR:1.92 Max



|                                                                                         |           |                                    |                   |      |
|-----------------------------------------------------------------------------------------|-----------|------------------------------------|-------------------|------|
| <b>SLEing® 森岭</b><br><b>东莞市森岭智能科技有限公司</b><br><b>DONGGUAN SLEing INTEL-TECH CO., LTD</b> | CUSTOMER  |                                    |                   |      |
|                                                                                         | PART NO   |                                    |                   |      |
|                                                                                         | TITLE     |                                    | WiFi MAIN ANTENNA |      |
|                                                                                         | S.L P/NO  |                                    | SLEingB225670255  |      |
| 4                                                                                       | H.S Tube  | Heat Shrink Tube, White            |                   |      |
| 3                                                                                       | Connector | MHF Plug for Φ0.81 Cable           | 第四代端子             |      |
| 2                                                                                       | Cable     | Φ0.81mm Coaxial Cable Black,50Ω    |                   |      |
| 1                                                                                       | FPCB      | FPC,L44.3*W21.6*T0.1mm,Color:Black |                   |      |
| NO                                                                                      | PART NAME | DESCRIPTION                        | REMARK            | Q'TY |



TOLERANCE UNLESS  
OTHERWISE SPECIFIED

UNIT:mm

ANGLES ±0.5°

X. ±0.3

SHEET: 1/1

0.XX ±0.05

XX. ±0.5

SCALE: 1/1

XXX. ±2.0

| SIZE | DRAWN | CHECKED | APPROVED |
|------|-------|---------|----------|
| A4   | wxy   | HZH     | Jaggei   |

# Test Reports

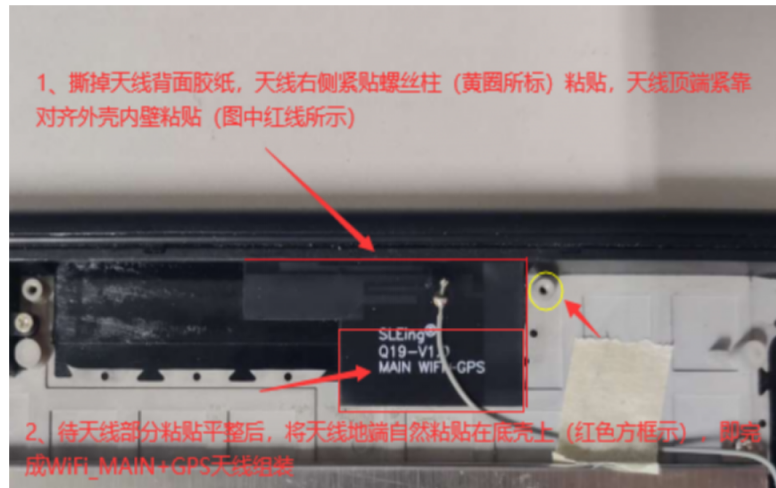
| Electrical Properties |                                          |
|-----------------------|------------------------------------------|
| Frequency             | 2.4~2.5/5.15~5.85/1.57542GHz<br>(带机测试)   |
| Impedance             | 50 Ohm Nominal                           |
| V.S.W.R               | ≤1.92                                    |
| Return Loss           | -10 dB Max                               |
| Radiation             | Omni-directional                         |
| Gain (Peak)           | 2.4G:1.8dBi,5.2G:1.63dBi<br>5.8G:1.60dBi |
| Polarization          | Linear, Vertical                         |
| Admitted Power        | 2 W                                      |
| Connector             | MHF                                      |
| Physical Properties   |                                          |
| Antenna Material      | FPCB                                     |
| Cable Type            | Φ0.81mm Black                            |
| Operating Temp.       | -40~+85 °C                               |
| Storage Temp.         | -40~+85 °C                               |
|                       |                                          |

# 天线组装图

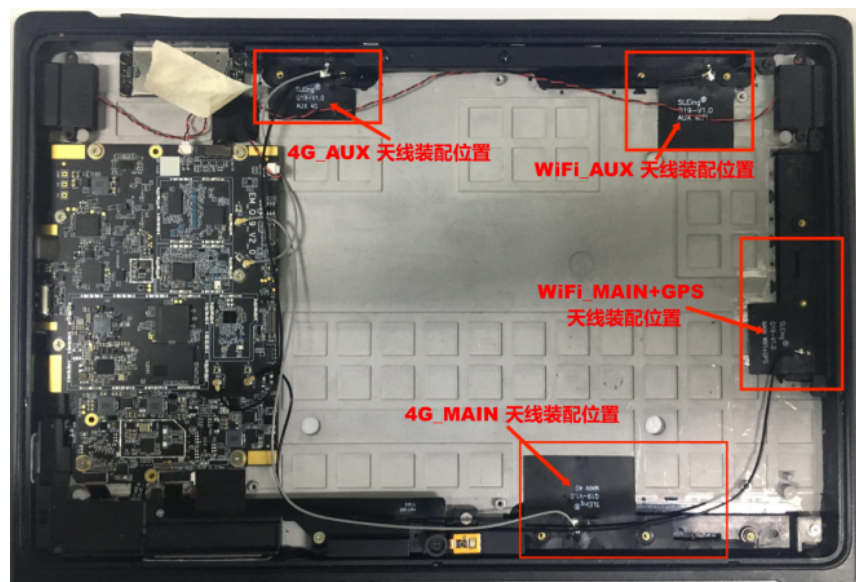
## Antenna Profile

### Device

粘贴 WiFi\_MAIN 天线细节如图所示。将天线右侧紧贴螺丝柱放置，天线顶端紧靠对齐外壳内壁（红色直线示），由上而下依次粘贴，并将天线底部自然粘贴在机器底壳上。  
(注：取消天线支架)



### Antenna



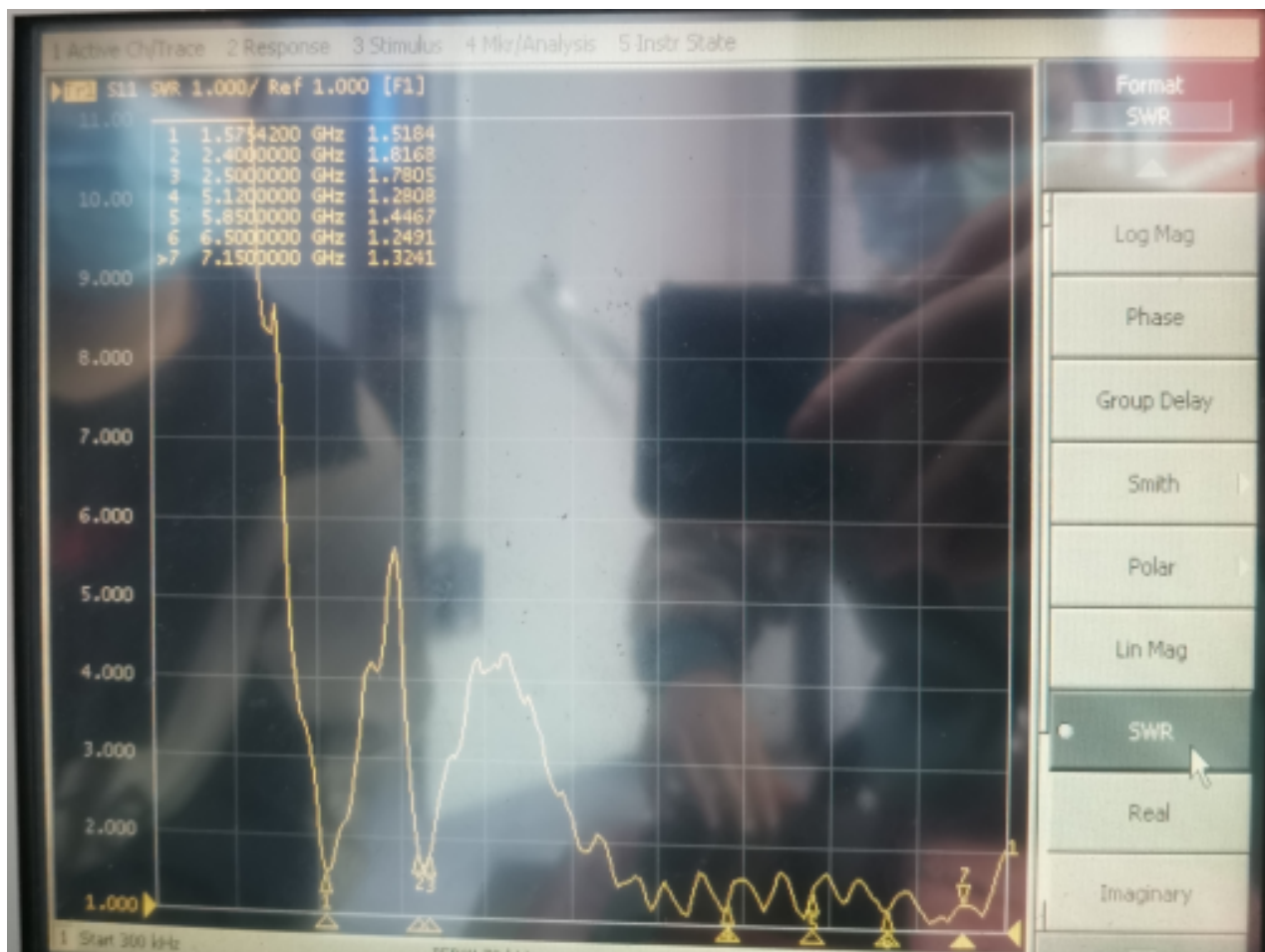
# S 参数测试

## S Parameter Test

Agilent E5071C Network Analyzer



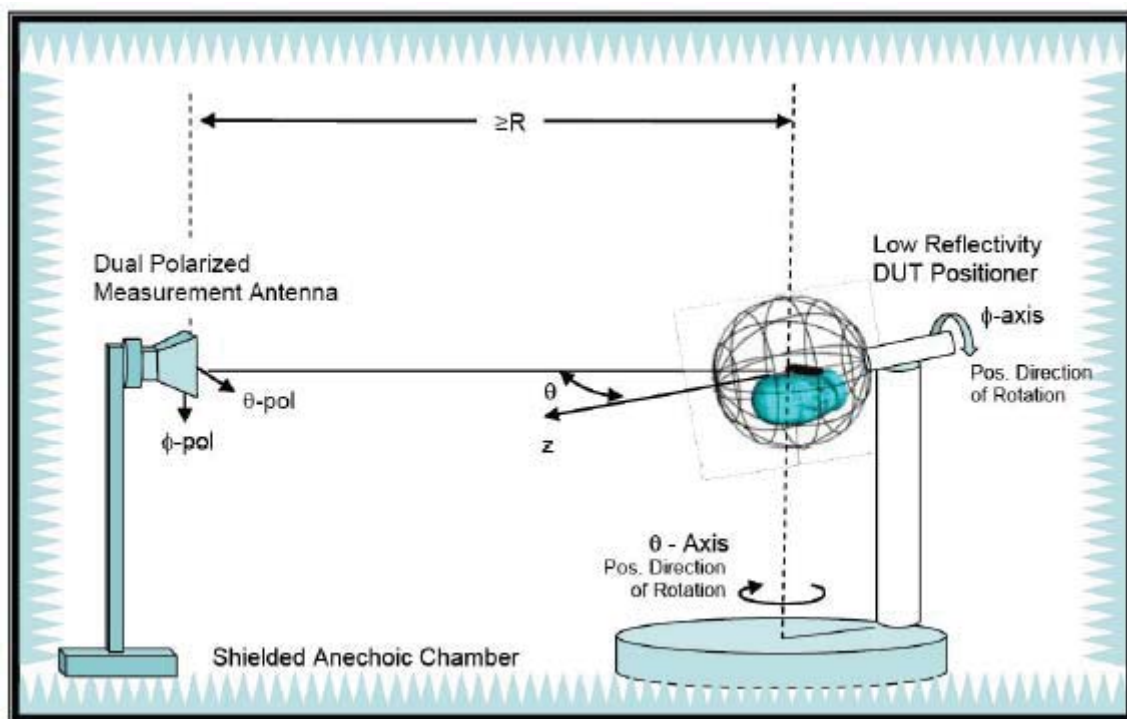
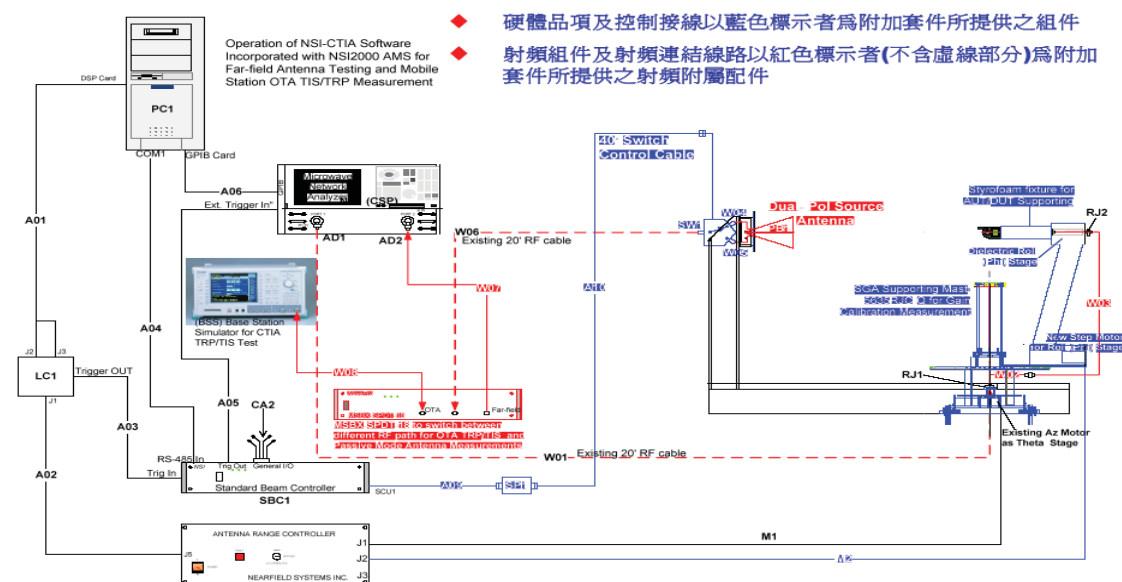
WiFi Antenna (NO.1)



# 测试设备

## Test Setup

## NFC-500S 3D Chamber Coordinate System Definition



## Configuration of 3D Chamber



## 测试效率 Test Efficiency

|           |                 |        |        |        |        |        |        |        |        |        |        |
|-----------|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| GPS       | Frequency (MHz) | 1550   | 1560   | 1570   | 1580   | 1590   | 1600   |        |        |        |        |
|           | Gain (dBi)      | 0.21   | 0.11   | 0.36   | 0.28   | 0.24   | 0.32   |        |        |        |        |
|           | Efficiency (%)  | 34.72  | 35.94  | 36.72  | 36.60  | 36.08  | 36.40  |        |        |        |        |
| 2.4G WIFI | Frequency (MHz) | 2410.0 | 2420.0 | 2430.0 | 2440.0 | 2450.0 | 2460.0 | 2470.0 | 2480.0 | 2490.0 | 2500.0 |
|           | Gain (dBi)      | 1.72   | 1.53   | 1.67   | 1.68   | 1.67   | 1.32   | 1.80   | 1.86   | 1.78   | 1.80   |
|           | Efficiency (%)  | 44.77  | 45.09  | 46.59  | 47.16  | 46.64  | 45.92  | 43.92  | 43.76  | 43.40  | 42.19  |
| 5G WIFI   | Frequency (MHz) | 5150.0 | 5200.0 | 5250.0 | 5300.0 | 5350.0 | 5400.0 | 5450.0 | 5500.0 | 5550.0 | 5600.0 |
|           | Gain (dBi)      | 1.53   | 1.61   | 1.63   | 1.40   | 1.63   | 0.77   | 0.78   | 1.14   | 0.77   | 1.71   |
|           | Efficiency (%)  | 36.48  | 37.20  | 37.90  | 37.95  | 38.16  | 38.18  | 37.19  | 37.49  | 37.33  | 37.75  |
|           | Frequency (MHz) | 5650.0 | 5700.0 | 5750.0 | 5800.0 | 5850.0 |        |        |        |        |        |
|           | Gain (dBi)      | 0.31   | 1.30   | 1.41   | 0.74   | 1.60   |        |        |        |        |        |
|           | Efficiency (%)  | 36.16  | 36.46  | 35.50  | 35.84  | 35.55  |        |        |        |        |        |