























# Operation Process Of Safety LiDAR GS1-5

Wiring Connection as following

Wire Connection					
ID	Color		Default setup	Other setup	Function
1		Brown	24VDC		Power Supply: DC 24V
2		Blue	0VDC		Power Supply: DC 0V
3		Red	OSSD1A		Protection zone output 1A
4		Yellow	OSSD1B		Protection zone output 1B
5		Red/ Yellow	OSSD2A		Protection zone output 2A
6		Yellow/ Black	OSSD2B		Protection zone output 2B
7		Orange	SSD1A		Warning zone output 1A
8		Orange/ Black	SSD1B		Warning zone output 1B
9		Purple	IN1+		Area switching Input 1
10		Purple/ Black	IN1-		Area switching Input 1 invert
11		Grey	IN2+		Area switching Input 2
12		Grey/ Black	IN2-		Area switching Input 2 invert
13		White	IN3+	Muting 1A	Area switching Input 3/ OSSD1 mute input 1A
14		White/ Black	IN3-	Muting 1B	Area switching Input 3 invert/ OSSD1 mute input 1B
15		Pink	IN4+	Muting 2A	Area switching Input 4/ OSSD1 mute input 2A

16		Pink/ Black	IN4-	Muting 2B	Area switching Input 4 invert/ OSSD1 mute input 2B
17		Green	IN5+	EDM1	Area switching Input 5/ OSSD1 EDM 1
18		Green/ Black	IN5-	EDM2	Area switching Input 5 invert/ OSSD2 EDM 2
19		Yellow/ Green	IN6+	Reset 1	Area switching Input 6 /OSSD1 reset input 1
20		Yellow/ Blue	IN6-	Reset 2	Area switching Input 6 invert/OSSD1 reset input 2
21		Blue/ White	CANH		CAN communication H
22		Red/ White	CANL		CAN communication L

## 雷达通讯网线，电脑 IP 配置

### Lidar communication cable, computer IP configuration

4 芯 M12,航空插头。连接电脑时，电脑 IP 需要设置为 192.168.1.10

4-core M12, aviation plug. When connecting to a computer, the IP address of the computer must be set to 192.168.1.10



## 7. 关于 OLEI safety Config tool

### 7. About OLEI safety Config tool [Switch Chinese And English Language Version](#)



## 7 系统配置

### 7 [System configuration](#)

#### 7.1 交货状态 [Delivery status](#)

在交货状态下，安全激光扫描仪不包含任何调试配置。

[In delivery condition, the safety laser scanner does not contain any commissioning configuration.](#)

#### 7.2 [Safety Config tool](#)

安全激光扫描仪使用 [SafetyConfigTool](#) 进行配置。

本章节描述 [SafetyConfigTool](#) 相关的基本操作。

[The safety laser scanner is configured using the SafetyConfigTool.](#)

[This chapter describes the basic operations related to the SafetyConfigTool.](#)

### 7.2.1 用户界面 User interface

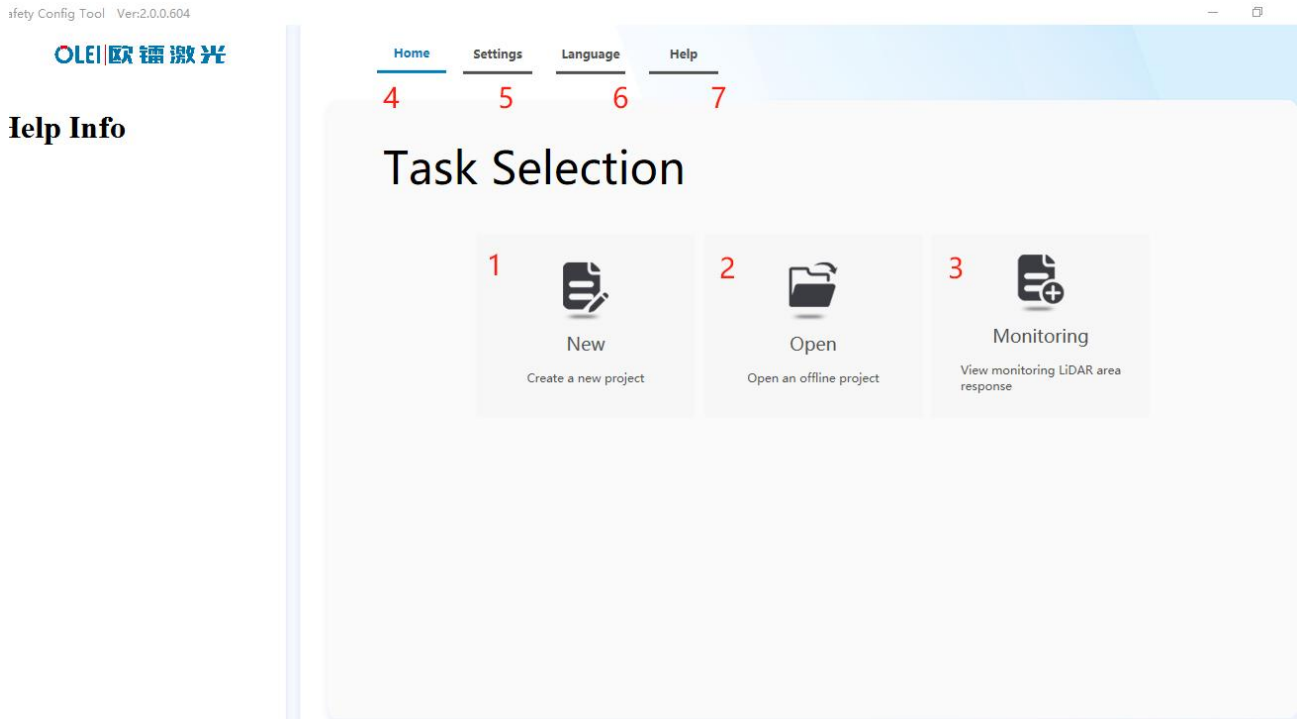


插图 1：用户界面

Figure 1: User interface

#### 1 新建（创建新项目）

注：点击打开后，可以选择雷达的连接状态，离线或连接雷达的编辑状态。（网络中的对应的是目前已经连接到的雷达/受支持的机型对应的是离线支持的雷达型号）

**New (Create a new project)**

**Note:** After clicking Open, you can select the lidar's connection status, offline or editing status of the connected Lidar. (Network corresponds to the lidar currently connected / Supported models correspond to the offline supported lidar models)

#### 2 打开（打开本地离线项目）

用于打开已经保存过的区域配置文件

**Open (Open local offline project)**

**Used to open the saved regional configuration file**

#### 3 扫描（查看监控雷达安全区域响应）

注：需要在连接雷达的状态下使用，在连接状态下，可以查看雷达的状态（包括 OSSD 输出，当前 OSSD 对应的 BANK 等信息）

Scan (check the response of the monitoring lidar safety area)

Note: It should be used when connected to the lidar. When connected, you can check the status of the lidar (including OSSD output, the BANK corresponding to the current OSSD, etc.)

4 主页（回到主页面）

[Homepage \(Back to the main page\)](#)

5 选项

用于查看雷达的引脚连接图

[options](#)

[for viewing the pin connection diagram of the lidar](#)

6 语言（中英文切换）

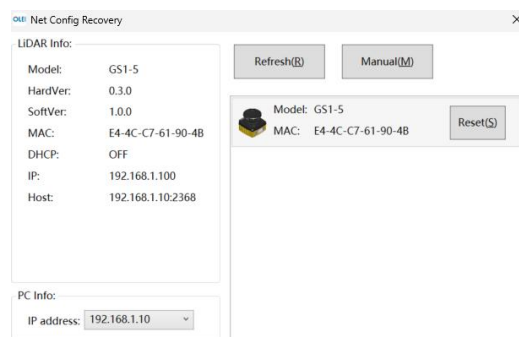
[Languages \(Chinese and English switch\)](#)

7 帮助（用户手册、恢复出厂设置）

[Help \(User Manual, Restore Factory Settings\)](#)

恢复出厂设置功能（复位网络设置）

[Restore factory settings function \(reset network settings\)](#)



详细操作请查阅 7.2.11.1

[For detailed operation, please refer to 7.2.11.1](#)

密码功能 [Password function](#)

更改密码 [Change password](#)

ChangePassword

Old Password

New Password

Repeat password

ChangePassword

忘记密码 [Forget the password](#)

Reset Password

Verify

New Password

Repeat passwor

Reset Password

详细操作请查阅 [7.2.11.2](#)

[For detailed operation, please refer to 7.2.11.2](#)

7.2.3 新建 [New](#)

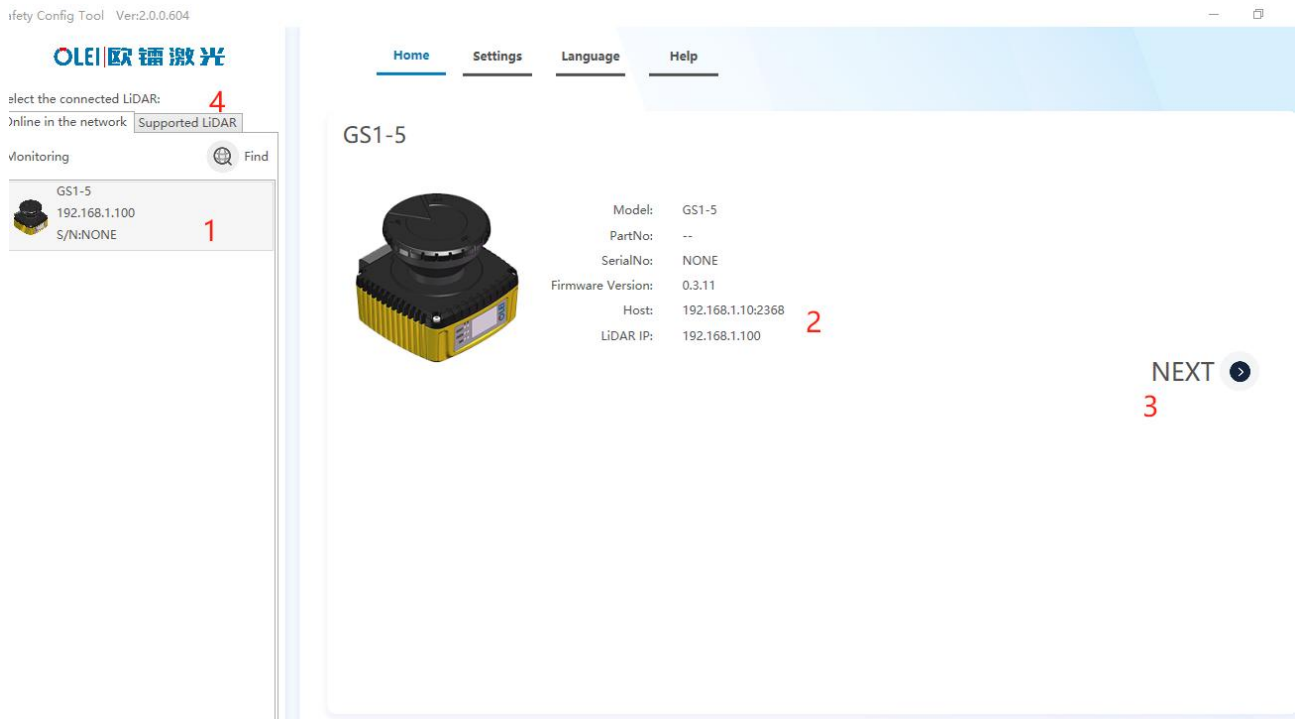


插图 2: 新建

- 1 扫描的雷达型号及网络 ID
- 2 雷达参数
- 3 下一步（进入雷达配置页面）
- 4 受支持的机型

#### Illustration 2: Create a new project

- 1 Scanned radar model and network ID
- 2 Lidar parameters
- 3 Next step (enter lidar configuration page)
- 4 Supported models

#### 7.2.4 配置 Configuration

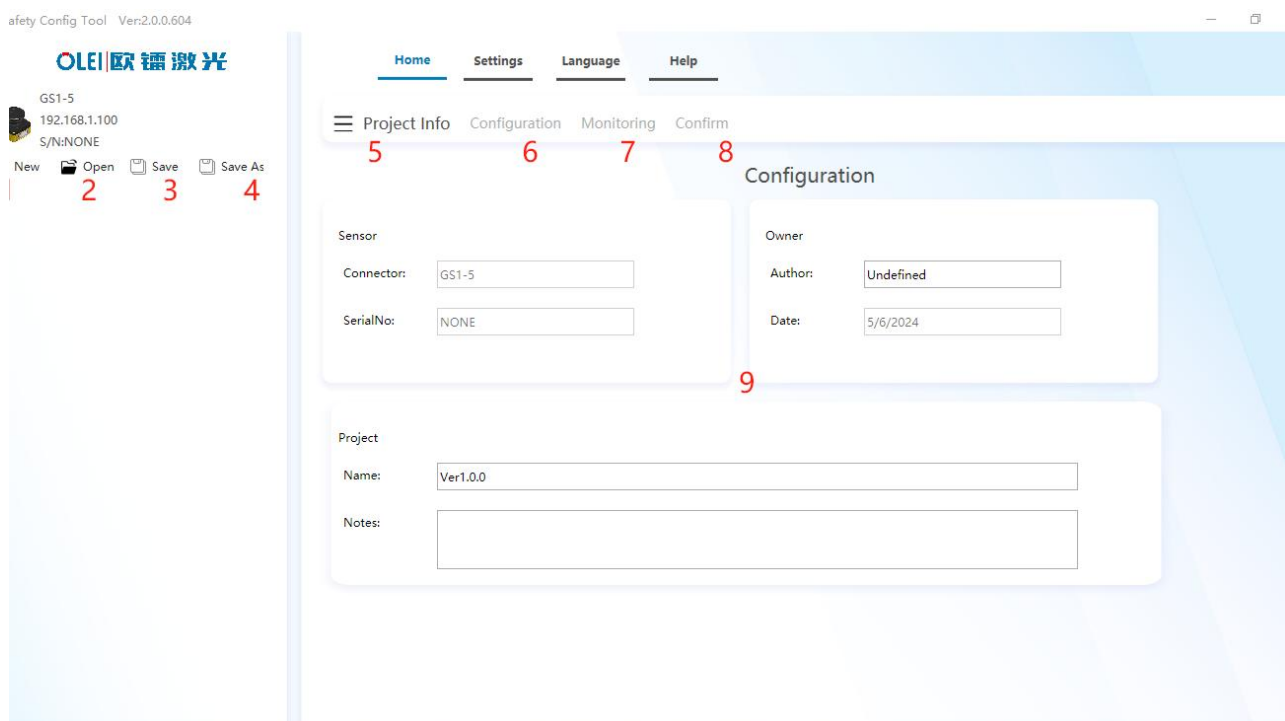


插图 3: 配置 Figure 3: Configuration

- 1 新建（新建系统配置） [New \(New system configuration\)](#)
- 2 打开（打开保存的系统配置） [Open \(Open a saved system configuration\)](#)
- 3 保存（保存当前系统配置） [Save \(save the current system configuration\)](#)
- 4 另存为（保存配置至其他目录下） [Save As \(save the configuration to another directory\)](#)
- 5 项目信息 [Project Information](#)
- 6 参数设定（详细见 7.2.5） [Parameter setting \(see 7.2.5 for details\)](#)
- 7 点云监视（详细见 7.2.6） [Point cloud monitoring \(see 7.2.6 for details\)](#)
- 8 确认（详细见 7.2.10） [Confirmation \(see 7.2.10 for details\)](#)
- 9 项目信息界面 [Project information interface](#)

## 7.2.5 参数设定

### Parameter settings



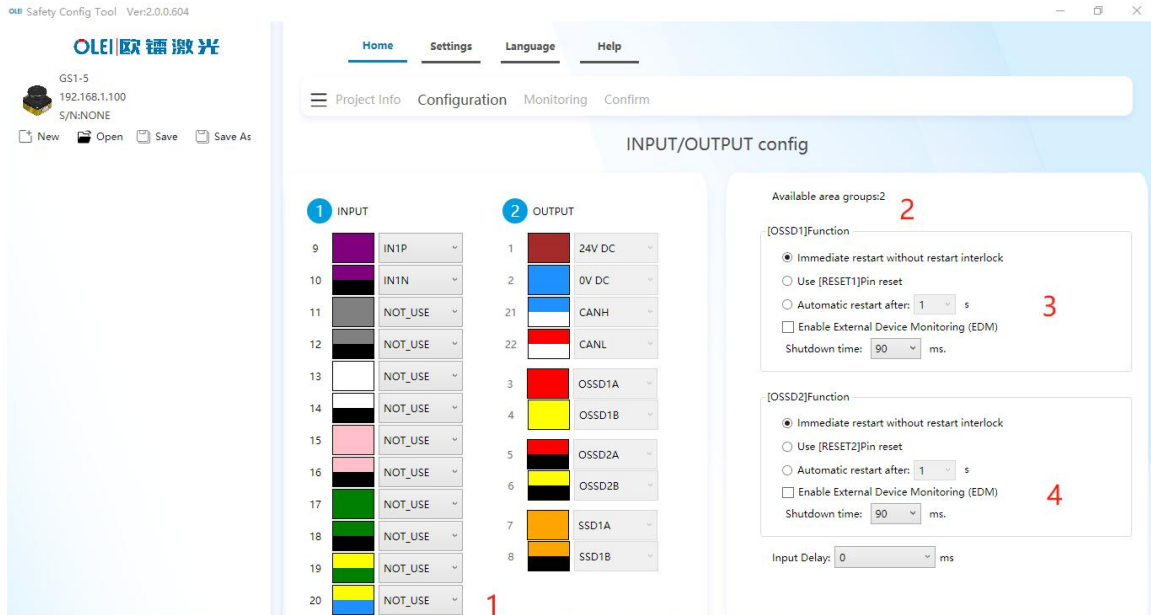


插图 4: 输入输出配置

- 1 INPUT 口可调, OUTPUT 口不可调
- 2 可用区域数量显示
- 3 OSSD1 属性配置
- 4 OSSD2 属性配置

Illustration 4: Input and output configuration

- 1 INPUT port adjustable, OUTPUT port not adjustable
- 2 Display of the number of available zones
- 3 OSSD1 property configuration
- 4 OSSD2 property configuration

## 7.2.6 配置功能

### Configuration function

[OSSD1]Function

- 1 ☒ Immediate restart without restart interlock
- 2 ☐ Use [RESET1]Pin reset
- 3 ☐ Automatic restart after: 1 s
- 4 ☐ Enable External Device Monitoring (EDM)
- 5 Shutdown time: 90 ms.

[OSSD2]Function

☒ Immediate restart without restart interlock

☐ Use [RESET2]Pin reset

☐ Automatic restart after: 1 s

☐ Enable External Device Monitoring (EDM)

Shutdown time: 90 ms.

Input Delay: 0 ms

插图 5: 配置功能 Figure 5: Configuration function

## 1 雷达 OSSD 初始状态

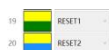
选中后，如果遇到障碍物，OSSD 进入 OFF 状态，障碍物退出后，OSSD 立即进入 ON 状态。

### Lidar OSSD initial state

After selection, if an obstacle is encountered, OSSD switch the OFF state, and after the obstacle is removed, OSSD immediately enters the ON state.

## 2 Reset 功能（启动联锁功能，选择后对应 INPUT 口会自动更改，给予设定 INPUT 口来回高低电平复位）

Reset function (start the interlock function, after selection, the corresponding INPUT port will automatically change, and the INPUT port will be reset by switching high and low levels)

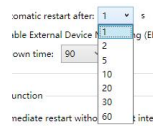


选中后，障碍物退出后，需要给 Reset 接口提供高电平信号，OSSD 才能恢复 ON 状态。

After selection, once the obstacle has cleared, a high-level signal must be provided to the Reset interface for the OSSD to return to the ON state.

### 3 延时功能（时间可按需跟更改，单位：秒）

Delay function (time can be changed as needed, unit: seconds)



选中后，障碍物退出后，需要等待达到设定的时间，OSSD 才能恢复 ON 状态。

After selection, once the obstacle has removed, it's necessary to wait for the set time to elapse before the OSSD can return to the ON state.

### 4 EDM 功能（外部设备监控，选择后对应 INPUT 口会自动更改）

EDM function (external device monitoring, the corresponding INPUT port will automatically change after selection)



打开后，需要接入监控 OSSD 的输出，并且与 OSSD 的逻辑相反。

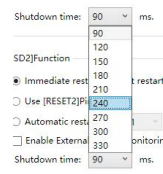
After opening, it's necessary to connect to monitor the output of OSSD, and its logic is opposite to that of OSSD.

注：如果 EDM 的监控信号与 OSSD 的输出信号一致，雷达会进入锁定状态。

Note: If the monitoring signal of EDM is consistent with the output signal of OSSD, the lidar will enter the locked state.

### 5 最小关断时间（时间可按需跟更改，单位：毫秒）

Minimum shutdown time (time can be changed as needed, unit: milliseconds)

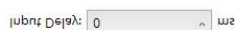


选中后，遇到障碍物需要连续保持的时间，OSSD 才会进入 OFF 状态。

After selection, the OSSD will only enter the OFF state after continuously encountering obstacles for a certain period of time.

### 6 输入延迟时间（IO 切换 BANK 的输入延迟信号时间）

Input delay time (The input delay signal time for IO switching BANK.)



## 7.2.7 点云监视 Point Cloud Monitoring

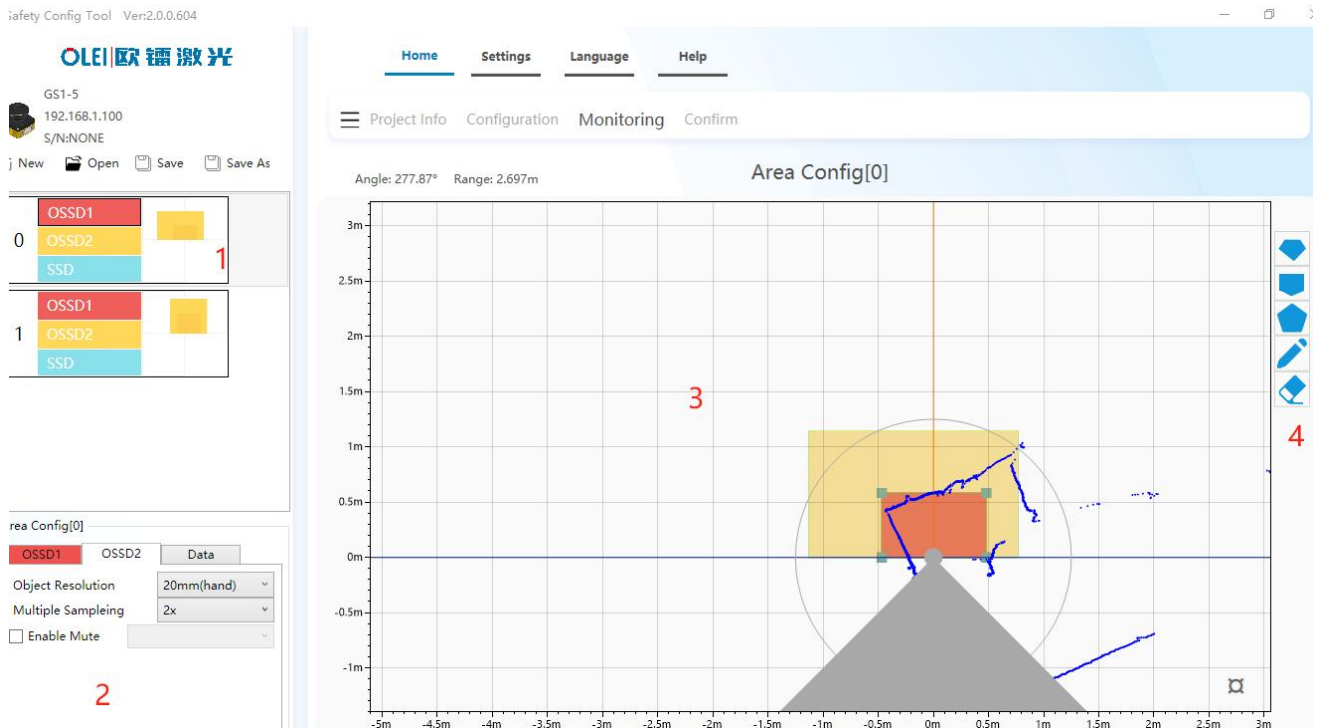


插图 6: 点云监视 Figure 6: Point cloud monitoring

- 1 **BANK 选择 (0-63 BANK) BANK selection (0-63 BANK)**  
选中不同的 BANK 后，再点击不同颜色的图块，就可以对不同的区域进行编辑（红色对应 OSSD1、黄色对应 OSSD2、蔚蓝对应 SSD）  
After selecting different BANKs, click on blocks of different colors to edit different areas (red corresponds to OSSD1, yellow corresponds to OSSD2, and blue corresponds to SSD)
  - 2 **BANK 区域配置 (详见 7.2.8) BANK area configuration (see 7.2.8 for details)**
  - 3 **点云监视画面 Point cloud monitoring screen**
  - 4 **画图工具 (多边形, 矩形, 圆形, 擦除) Drawing tools (polygon, rectangle, circle, erase)**
- 7.2.8 **BANK 区域配置 BANK area configuration**

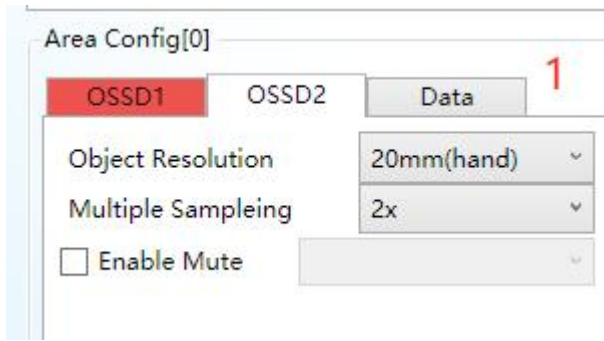


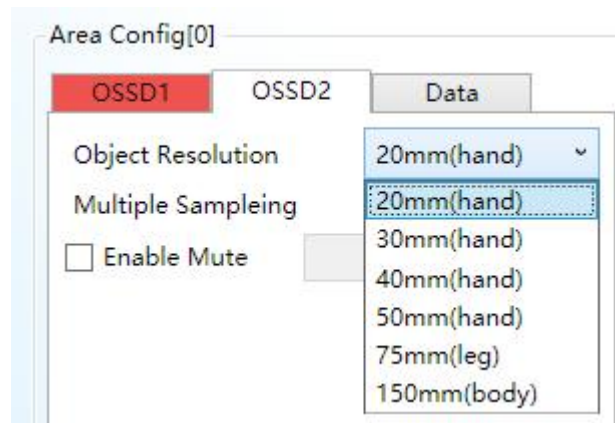
插图 7: BANK 区域配置 Figure 7: BANK area configuration

1 OSSD 选择 (OSSD1,OSSD2) /画图坐标编辑

[OSSD selection \(OSSD1, OSSD2\)/drawing coordinate editing](#)

2 目标分辨率 (检测目标分辨率尺寸, 分辨率可按需跟更改, 单位: 毫米)

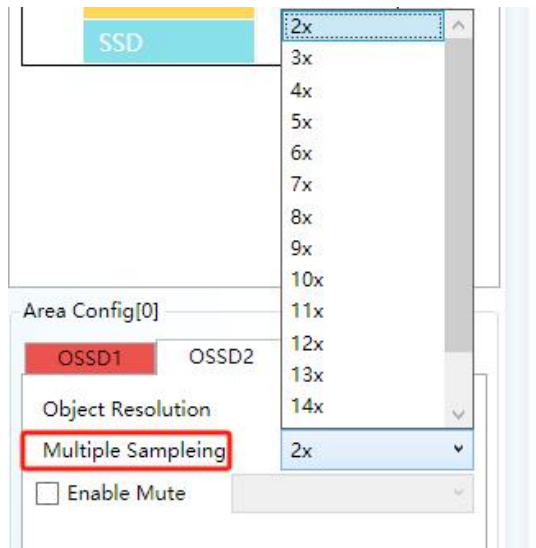
[Target resolution \(detect target resolution size, resolution can be changed as needed, unit: mm\)](#)



- 20 mm = 手部检测
- 30 mm = 手部检测
- 40 mm = 手部检测
- 50 mm = 腿部检测/手臂检测
- 60 mm = 腿部检测/手臂检测
- 75 mm = 腿部检测/手臂检测
- 150 mm = 躯干检测
- 20 mm = Hand detection
- 30 mm = Hand detection
- 40 mm = Hand detection
- 50 mm = Leg detection/Arm detection
- 60 mm = Leg detection/Arm detection
- 75 mm = Leg detection/Arm detection

- 150 mm = Torso detection

### 3 多重采样 (2-16 可选) Multiple sampling (2-16 optional)

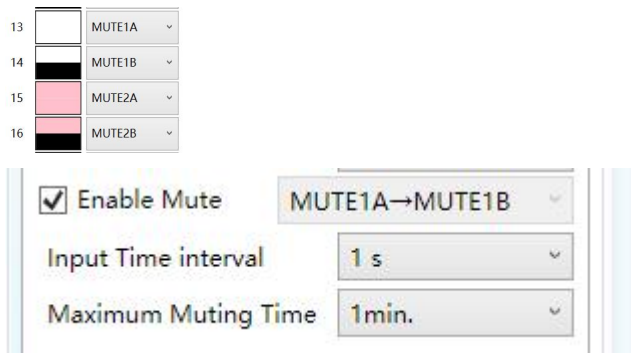


设定后会影响到雷达的相应时间，详细操作请参考 3.7 部分。

The setting will affect the lidar's response time. For detailed operation, please refer to section 3.7.

### 4 MUTE 静音功能 (需先在 INPUT 口设置静音功能，才能在点云监视画面内设置区域静音)

MUTE function (must set the mute function at the INPUT port before setting the regional mute in the point cloud monitoring screen)



输入时间差：设定 MUTE1A 和 MUTE1B 两个信号接口之间的间隔时间

Input time difference: Set the interval time between the two signal interfaces of MUTE1A and MUTE1B

最大静音时间：设定静音状态保持的持续时间

Maximum mute time: Set the duration of the mute state.

### 7.2.9 绘制 BANK 区域 Draw the BANK area

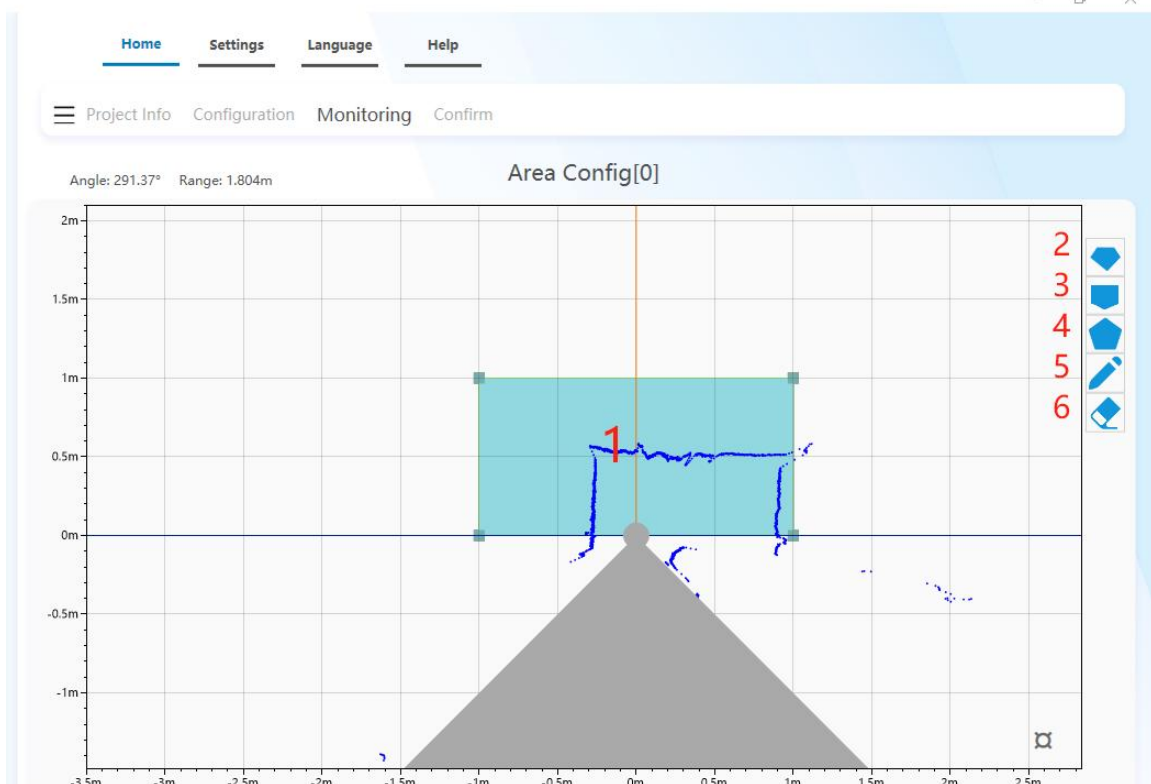


插图 8: 绘制 BANK 区域 Figure 8: Drawing the BANK area

- 1 画图区域 Drawing area
- 2 多边形绘制 Polygon drawing
  1. 选择用于绘制参考轮廓区域的工具。
  2. 首先用鼠标点击所需轮廓。
  3. 点击添加轮廓边角。
  4. 后双击轮廓边缘的坐标点，可以进行拖动放置到需要的位置。
- 3 矩形绘制 Rectangle drawing
- 4 Area (根据雷达扫描的轮廓画出图形) Area (draw a graphic based on the contours of the lidar scan)
- 5 线段 (线段快速画出图形) Line segment (draw graphics quickly with line segment)
- 6 擦除功能 (擦除对应 OSSD 内的图形) Erase function (erase the graphics in the corresponding OSSD)

注：绘图时，可以查看 BANK 配置区域的 Data，可以显示当前图形中各个坐标点的数据

Note: When drawing, you can view the Data in the BANK configuration area to display the data of each coordinate point in the current graph.

7.2.10 确认 confirm

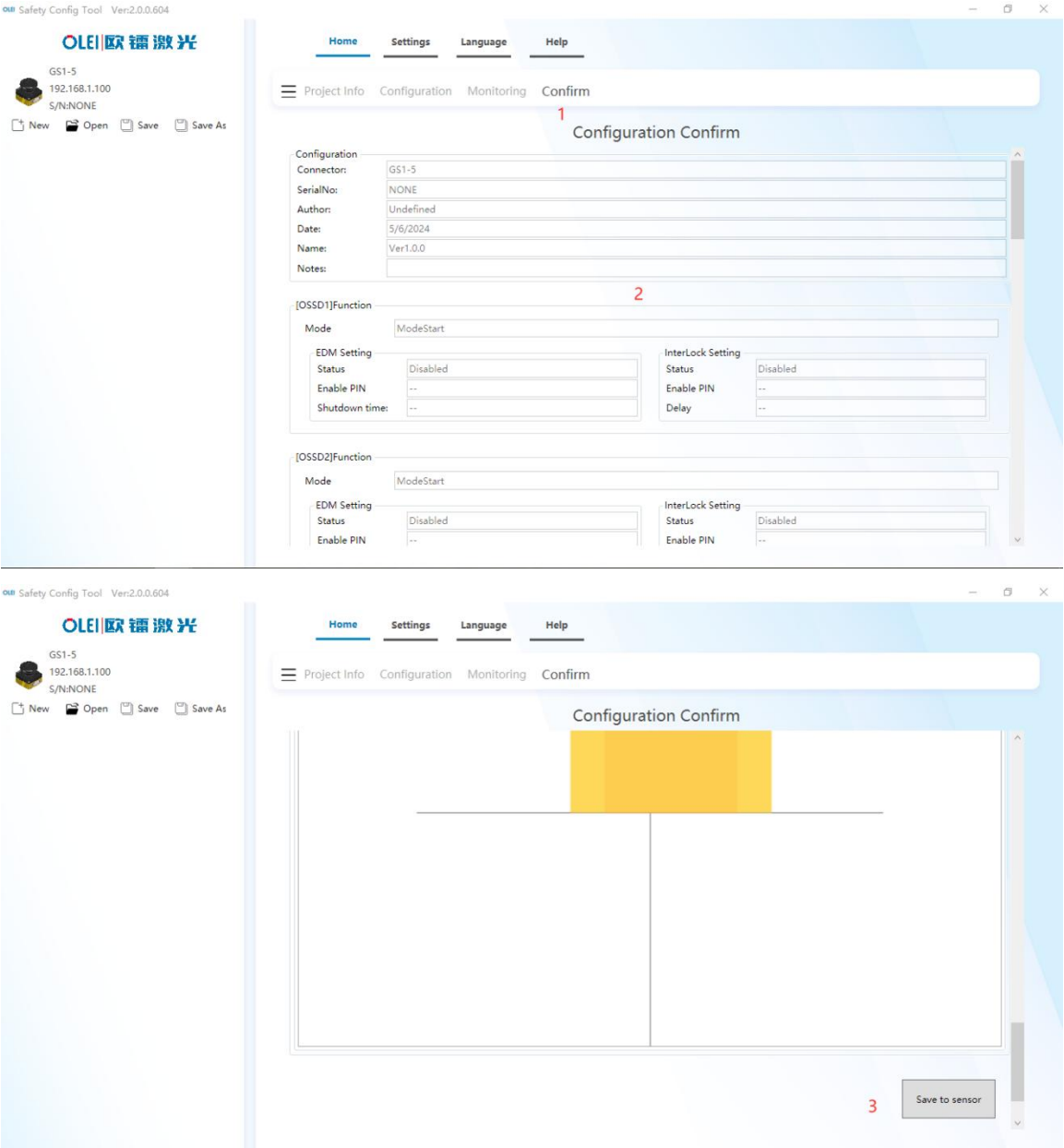


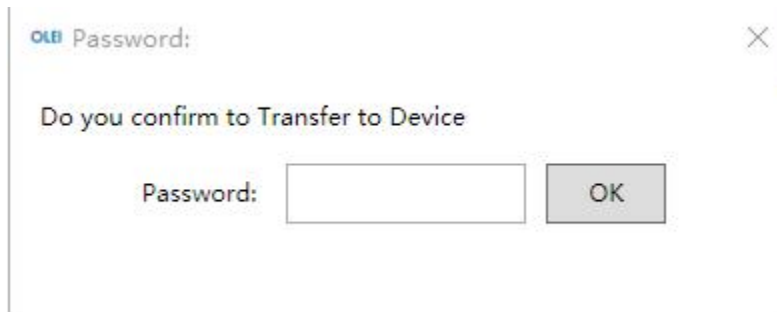
插图 9: 确认 Figure 9: Confirmation

- 1 确认设定的参数 Confirm the set parameters
- 2 配置信息确认 Configuration information confirmation



3 将设定写入雷达（需输入密码，初始密码为 123456）

Write the settings to the radar (password is required, the initial password is 123456)



OLEI Password: [X]

Do you confirm to Transfer to Device

Password:

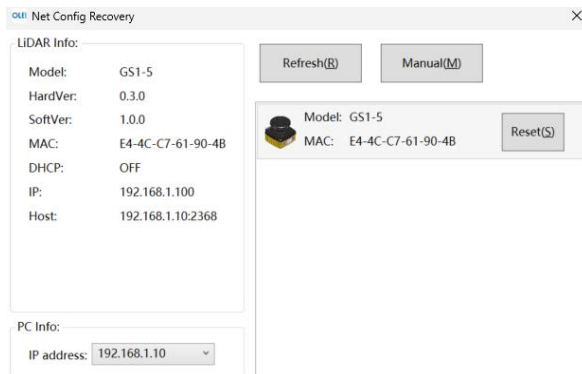


该雷达的使用密码需要由担负责任或经过授权的人管理使用。

The password for using the radar shall be managed and used by the responsible or authorized person.

## 7.2.11 设置初始化 Setting initialization

### 7.2.11.1 网络配置初始化 Network configuration initialization



OLEI Net Config Recovery [X]

LIDAR Info:

Model:	GS1-5
HardVer:	0.3.0
SoftVer:	1.0.0
MAC:	E4-4C-C7-61-90-4B
DHCP:	OFF
IP:	192.168.1.100
Host:	192.168.1.10:2368

Refresh(R) Manual(M)

Model: GS1-5  
MAC: E4-4C-C7-61-90-4B  
Reset(S)


PC Info:

IP address: 192.168.1.10

扫描到雷达后（会在左侧显示雷达的型号、固件版本号、MAC 地址、DHCP 状态、IP 地址、HOST 地址），然后选择 **Refresh (R)**，进行网络配置复位，然后选择 **Reset** 重启雷达即可将雷达恢复至出厂 IP 地址：192.168.1.100。

After scanning the lidar (the radar model, firmware version number, MAC address, DHCP status, IP address, and HOST address will be displayed on the left), select **Refresh (R)** to reset the network configuration, and then select **Reset** to restart the lidar to restore the lidar to the factory IP address: 192.168.1.100.

### 7.2.11.2 密码初始化 Password initialization

Reset Password 

Verify

New Password

Repeat password

Reset Password

请将 **Reset Key** 对应的随机号码和雷达的 **SN** 号以 **E-MAIL**、电话或其他方式发送给我们，我们会提供校验码。

注：操作的时候，请务必保持雷达与电脑连接

Please send us the random number corresponding to the Reset Key and the radar's SN number by E-MAIL, phone or other means, and we will provide a verification code.

Note: When operating, please be sure to keep the lidar connected to the computer