



PyAether 试用区 工具使用手册

北京华大九天科技股份有限公司

致力于成为全流程、全领域、全球领先的EDA提供商

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- 本试用区主要提供了三个PyAether使用实例：
 - 创建inverter
 - 创建菜单(menu)
 - 试用AetherWings功能---Bus Router & Res Display
- 为了更进一步便捷地指导用户操作，已将全部所需命令整理至以下指定路径：
 - 用户既可参照后续PPT中的步骤手动输入对应命令
 - 也可直接从“run_command_all”区域中复制并粘贴相关命令

```
[pyaether_player19@PyAether demo]$ cd /home/PyAether_Packages/demo  
[pyaether_player19@PyAether demo]$ ls  
aether.ini  display.drf  lib.defs  run_command_all  tools.bash  
[pyaether_player19@PyAether demo]$
```

目录

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01

复制配置文件

- 在自己home路径下，复制/home/PyAether_Packages下的demo文件

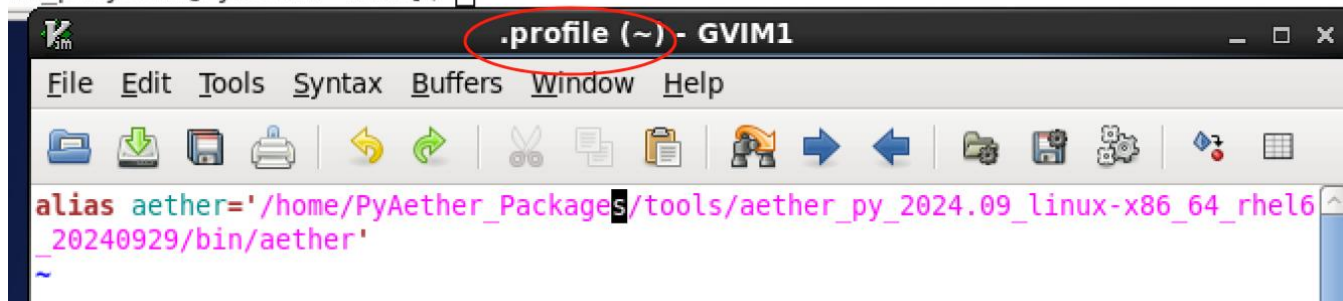
```
[pyaether_player09@PyAether ~]$ cp -r /home/PyAether_Packages/demo/ .
```

- demo文件的内容如下：

```
[pyaether_player19@PyAether ~]$ cd demo/  
[pyaether_player19@PyAether demo]$ ls  
aether.ini  display.drf  lib.defs  run_command_all  tools.bash
```

- 在home路径，创建.profile 文件，为aether命令设置快捷方式

```
er_player19@PyAether demo]$ touch ~/.profile  
er_player19@PyAether demo]$ gvim ~/.profile  
er_player19@PyAether demo]$
```



- Source 此快捷键（aether）：

```
[pyaether player09@PyAether demo]$ source ~/.profile
```

- 在demo文件夹下，Source整体环境：

```
[pyaether_player09@PyAether demo]$ source tools.bash
```


02

创建 inverter layout

- 重新回到demo文件夹下，拷贝Packages folder下的一个inv的例子

```
[pyaether_player09@PyAether demo]$ cp -r /home/PyAether_Packages/tools/aether_py_2024.09_linux  
-x86_64_rhel6_20240929/tools/pyaether/labs/db/layout/inverter_le_02/ .  
[pyaether_player09@PyAether demo]$ ls  
aether.ini display.drf inverter_le_02 lib.defs tools.bash
```

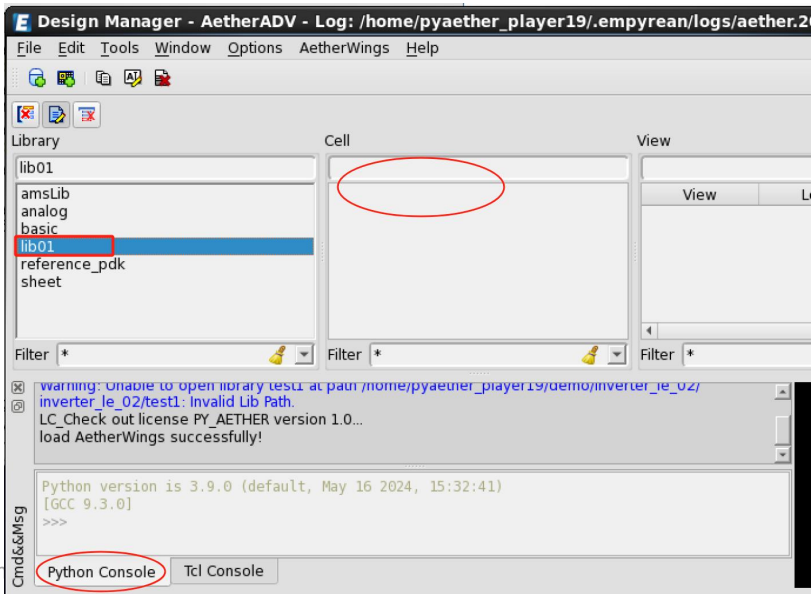
- 到inverter_le_02文件夹下，查看拷贝内容：

- 具有lib01 folder，目前暂无layout等内容

```
[pyaether_player19@PyAether inverter_le_02]$ ls  
aether.ini dbTest.py display.drf inverter_le_02 inverter_le_02.py lib.defs  
[pyaether_player19@PyAether inverter_le_02]$ cd inverter_le_02  
[pyaether_player19@PyAether inverter_le_02]$ ls  
aether.ini dbTest.py display.drf inverter_le_02.py lib01 lib.defs  
[pyaether_player19@PyAether inverter_le_02]$ cd lib01/  
[pyaether_player19@PyAether lib01]$ ls  
data.dm  
[pyaether_player19@PyAether lib01]$
```

■ 重新回到，inverter_le_02下，启动Aether

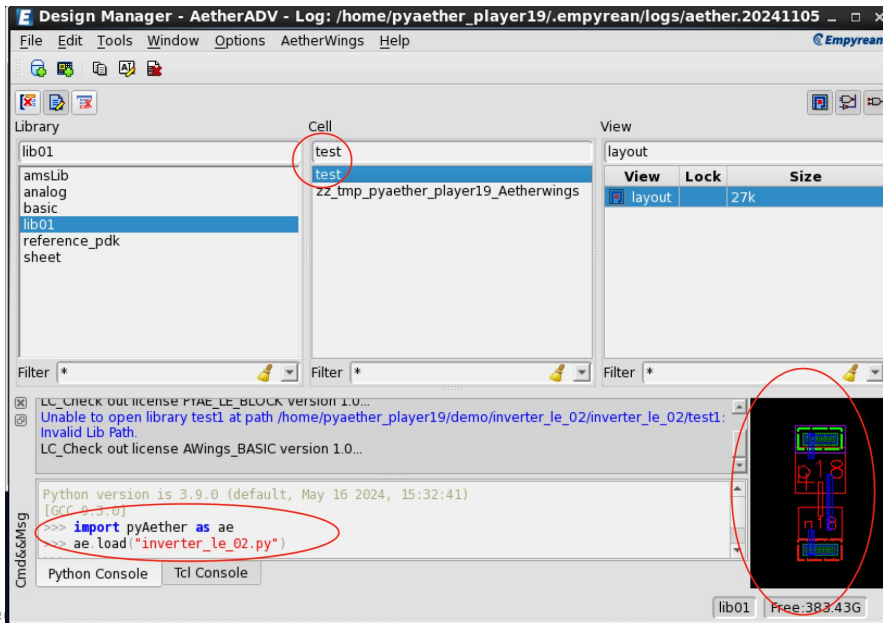
```
[pyaether_player11@PyAether lib01]$ cd ..  
[pyaether_player11@PyAether inverter_le_02]$ ls  
aether.ini dbTest.py display.drf inverter_le_02.py lib01 lib.defs  
[pyaether_player11@PyAether inverter_le_02]$ aether -adv &  
[2] 21074  
[pyaether_player11@PyAether inverter_le_02]$ LC_Check out license DM version 1.0...  
[2024-11-12 14:20:58.752528] [0x00007f0ef797a440] [info] checkOut success: DM 1.0
```



- 在“python Console”中，输入以下命令(注意不要有空格，因为Python是对空格敏感的)；即可创建一个inverter的“test”cell， layout view

```
>>> import pyAether as ae
```

```
>>> ae.load("inverter_le_02.py")
```



03

创建 Menu

- 依然在这个inverter_le_02文件夹下，复制 menu.py到这个case下

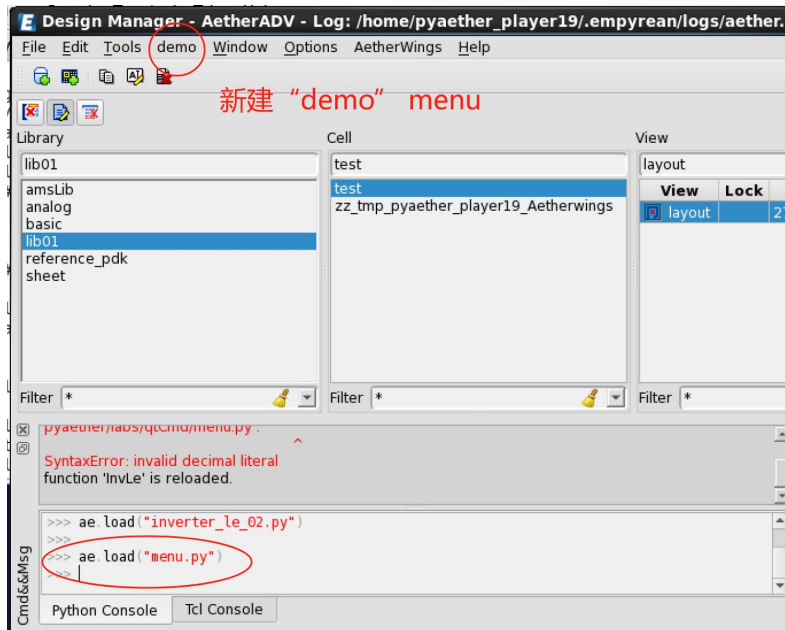
```
[pyaether_player09@PyAether inverter_le_02]$ cp /home/PyAether_Packages/tools/aether_py_2024.09_linux-x86_64_rhel6_20240929/tools/pyaether/labs/qtCmd/menu.py .
```

```
[pyaether_player09@PyAether inverter_le_02]$ ls
```

```
aether.ini dbTest.py display.drf inverter_le_02.py lib01 lib.defs menu.py
```
- 在"Python Console"中，输入以下命令，可以在DM创建"demo"菜单

```
>>> import pyAether as ae  
>>> ae.load("menu.py")
```

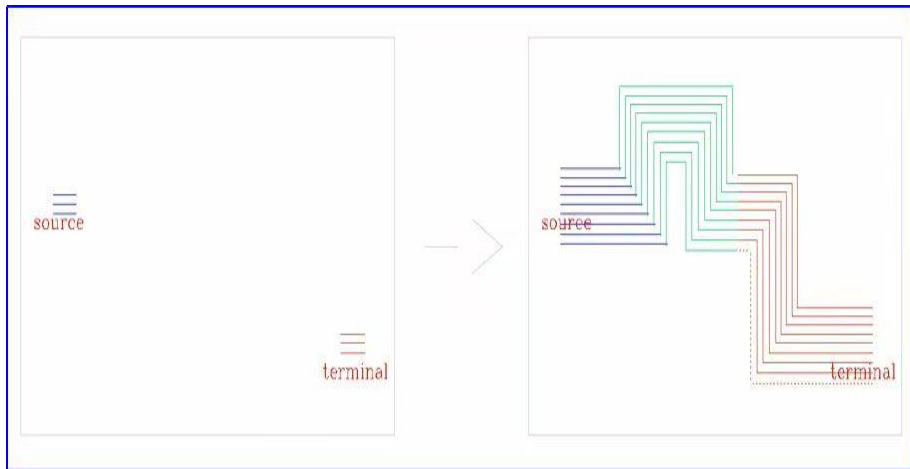
说明：在“DM”，“SE”，“LE”等界面下，均可按照此方式进行菜单创建



04

LE、SE下的AetherWings

■ BUS版图绘制（包括 BUS扩展）；显示电阻值



Simple Net R

Highlight Net Width: hilite drawing

Down To Level: 50

Reset Report Detail

Index	Net Name	R_Total
1	net1	40.954
2	Na	40.954
3	Na	40.954
4	Na	40.954

View text form - Report

Find:

NetName: net1
Total R: 40.954

M1 drawing: R = 6.855

Resistance	xy	Length	Width
SheetR			
0.5		13.71	1.0
	[[20.485, 31.285], [34.195, 31.285]]		

V1 drawing: R = 1.0

Resistance	Number	OHM/Via
SheetR		
0.5	4	xy [33.695, ...]

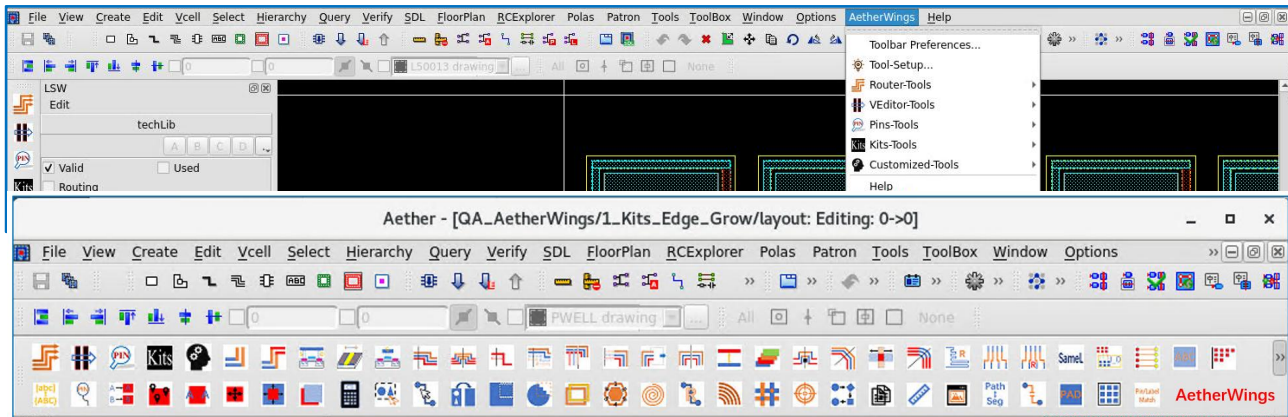
M2 drawing: R = 16.169

Resistance	xy	Length	Width
SheetR			
0.5		18.145	1.0
	[[52.025, 44.98], [52.025, 42.315], [56.0, 42.315], [56.0, 30.785], [33.695, 30.785], [33.695, 44.98]]		

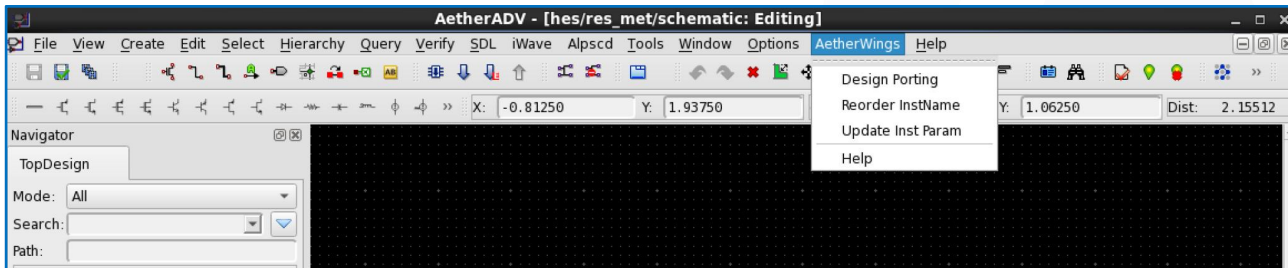
[lib01/test02/layout: Reading: 0->0]

ow Options AetherWings Help

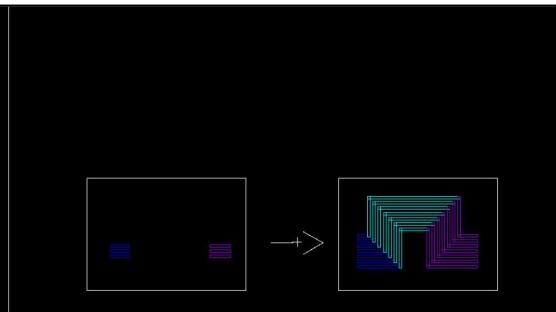
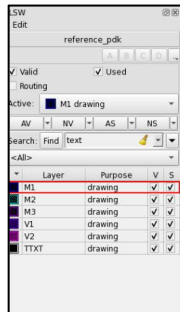
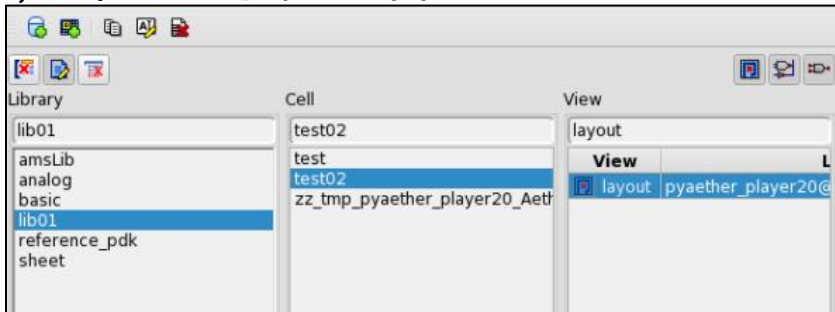
LE下的AetherWings



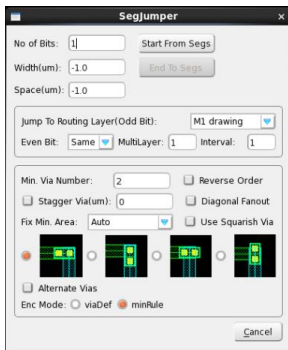
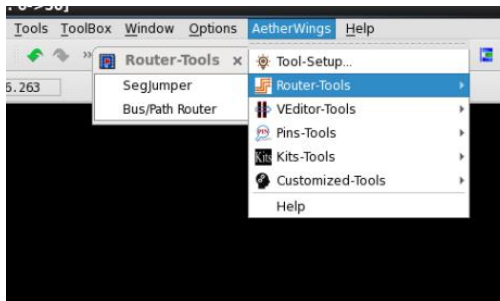
SE下的AetherWings



1. 打开lib01/test02/layout cellView, 可以看到如右图的Demo case画面。点击“F4”快捷键，出来左边的LSW窗口。

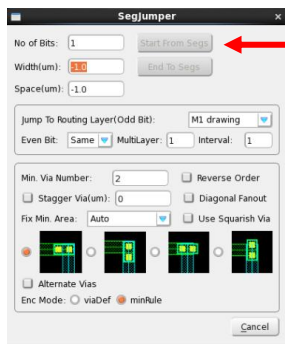
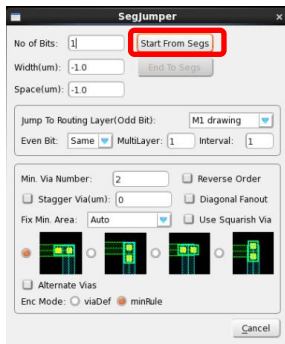


2. 点击菜单栏上的AetherWings菜单，在下拉菜单中选择Router-Tools，选择SegJumper并左键单击一次，出现SegJumper界面。



SegJumper 界面

3. 将光标放在SegJumper界面，单击'Start From Segs' 按钮。单击完毕后，该按钮会变成灰色，且layout界面左下角出现 enterSegment 提示。



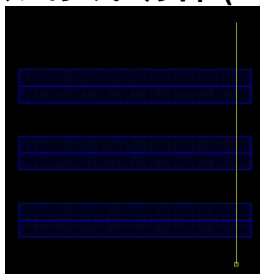
界面变灰

enterSegment 提示

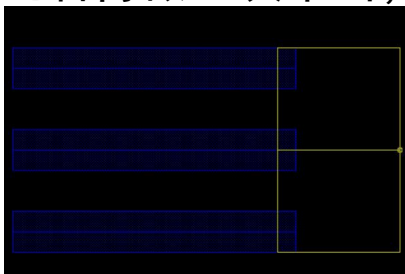


4. 将光标移动到layout中，在左侧Demo例子的M1 bus上方单击一次，然后向下拉，做划线动作(a)，贯穿Bus之后再做一次单击，此时会出现画Path的方框提示(b)。

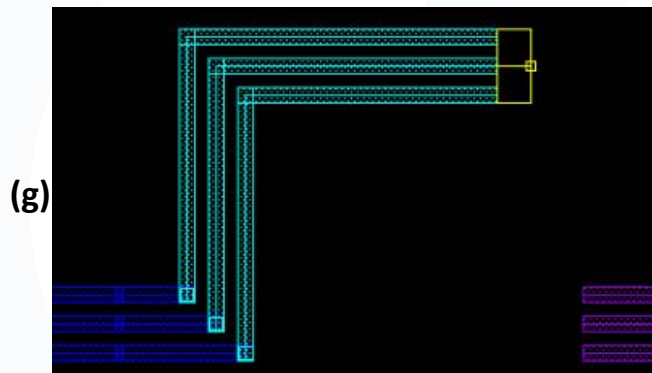
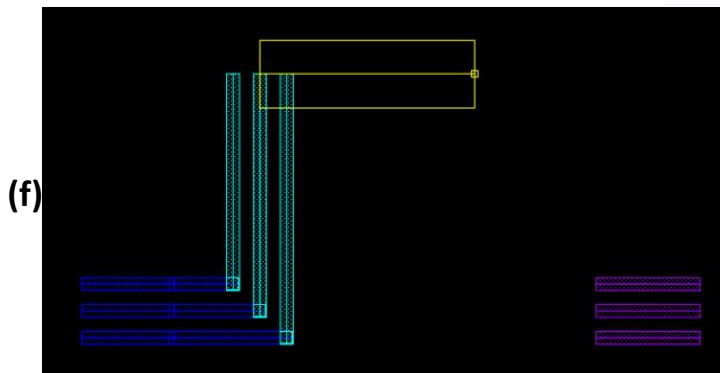
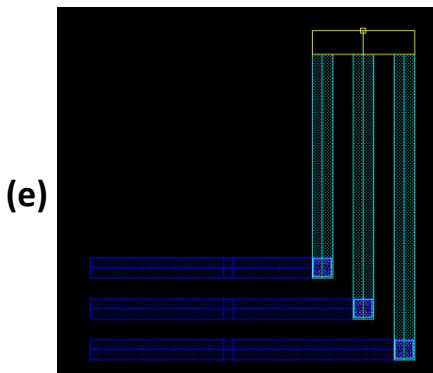
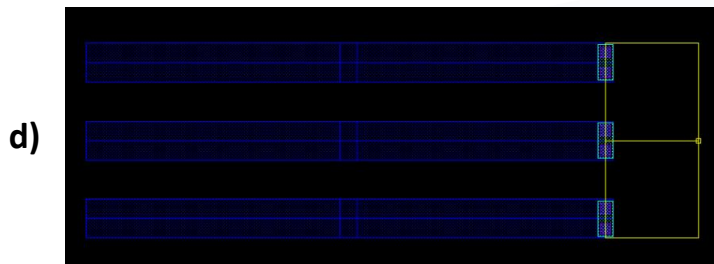
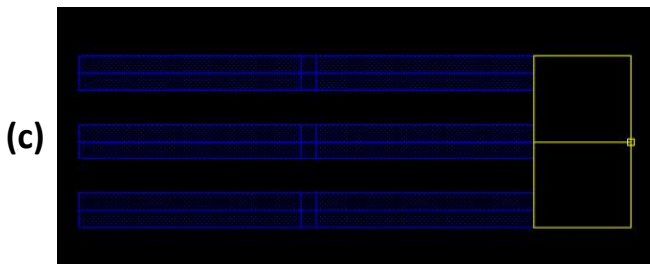
(a)



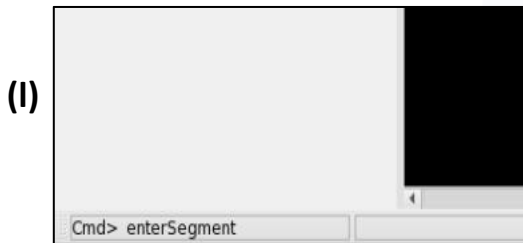
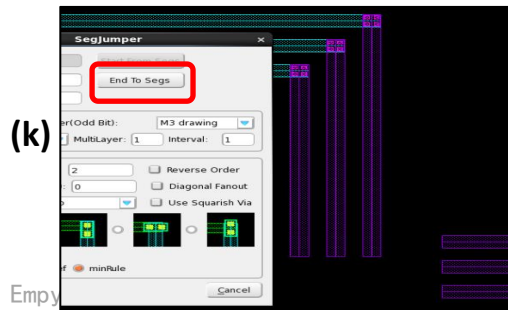
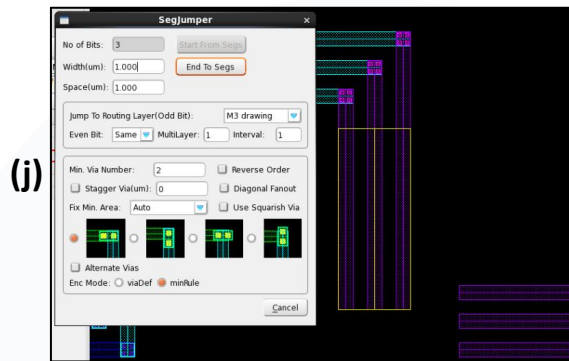
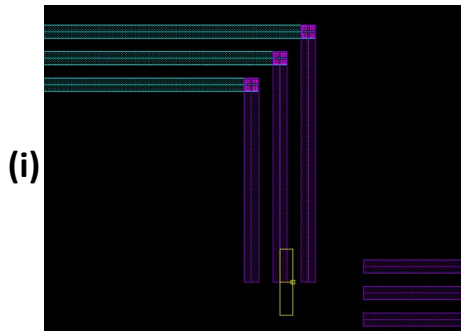
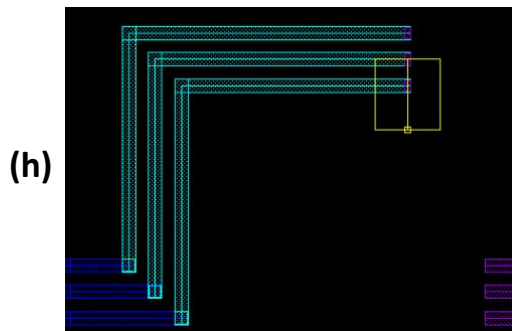
(b)



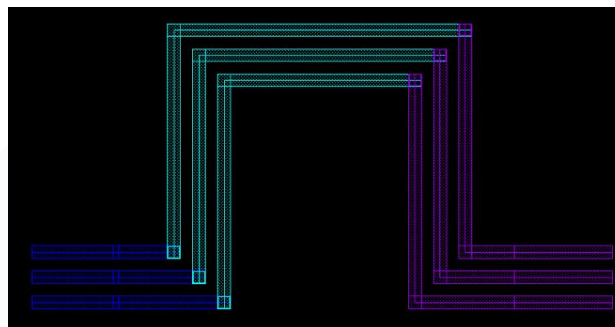
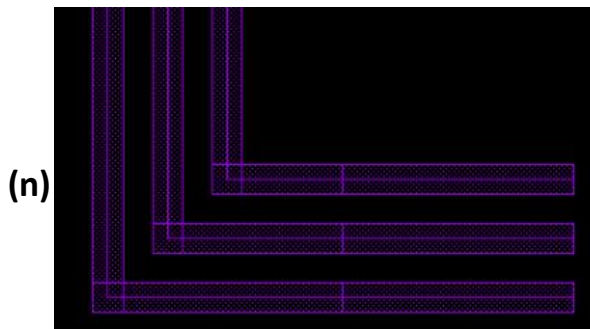
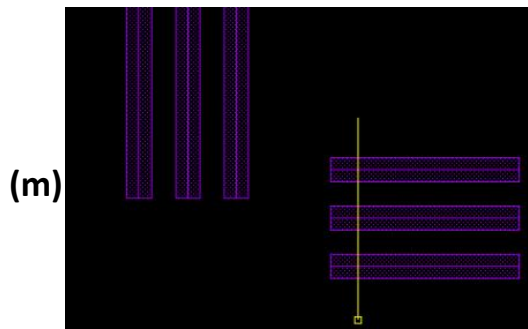
5. 向右拉动Bus方框，并在右方选择一个点左键点击，此时Bus被延伸出一段距离(c)；继续向右延长一小段距离后，按下键盘的数字键“2”，此时会生成 V1的通孔(d)；将光标划线方向向上，并在上方一段位置处鼠标点击一次，出现M2的Bus连线(e)；继续向右画线(f)(g)。



6. 按下键盘上数字键“3”，此时出现V2通孔(h)，然后将光标向下移动，在下方合适位置处左键单击一次，此时M3 Bus会向下延长(i)；此时，将光标在放到SegJumper界面空白处单击一次，将焦点聚焦到SegJumper里面，点击End To Segs 按钮(k)，此时Bus提示框消失，layout界面左下角出现enterSegment提示(l)。

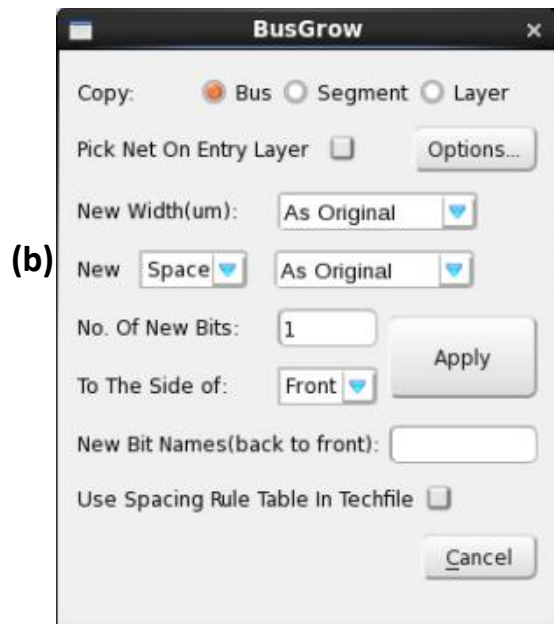
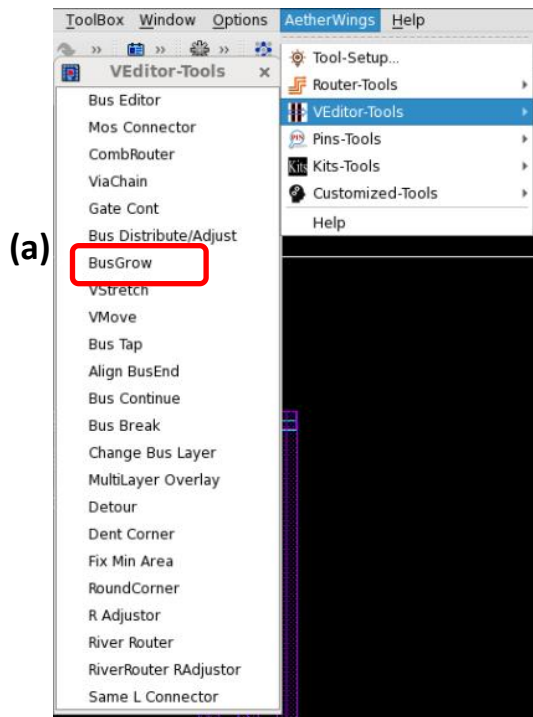


7. 将光标移动到layout界面，在M3上方处左键单击一次，确定第一个点，然后向下画线贯穿整个Bus，然后再作一次单击(m)；此时两端的Bus线会自动连接在一起(n)。按下键盘上的ESC按钮，退出SegJumper功能。

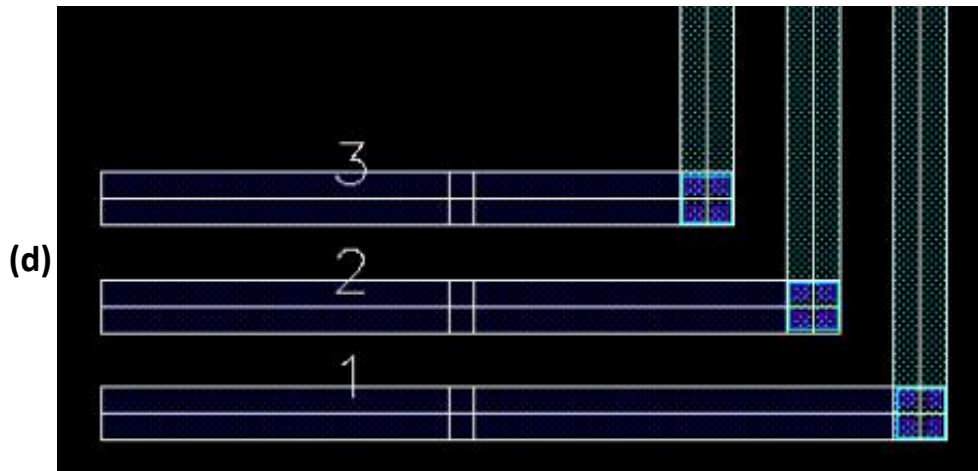
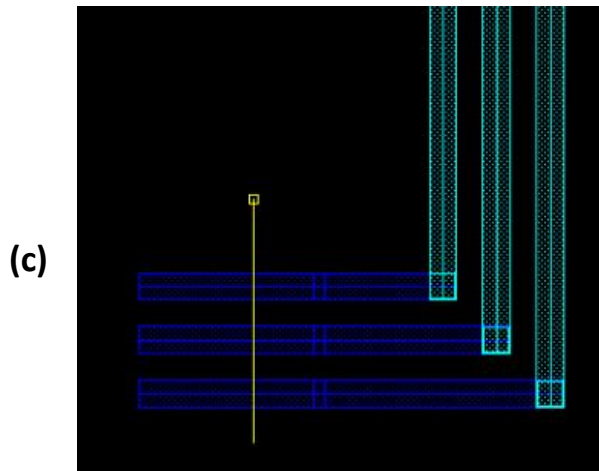


SegJumper演示最终结果

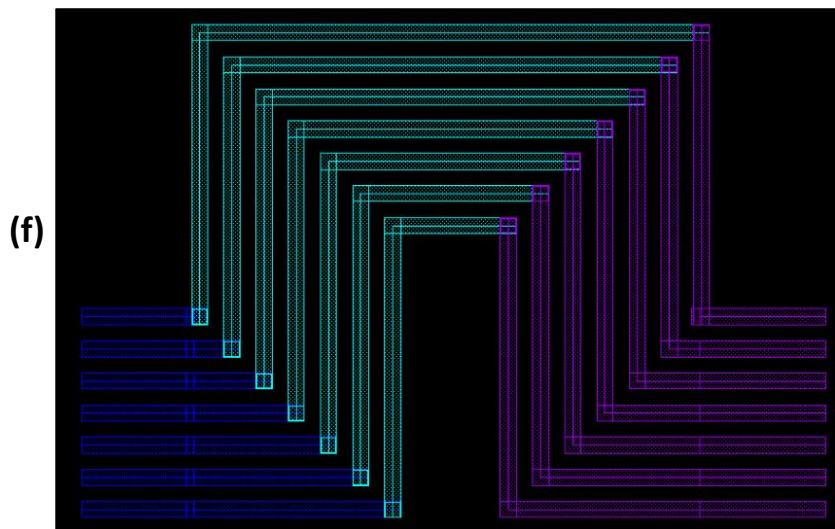
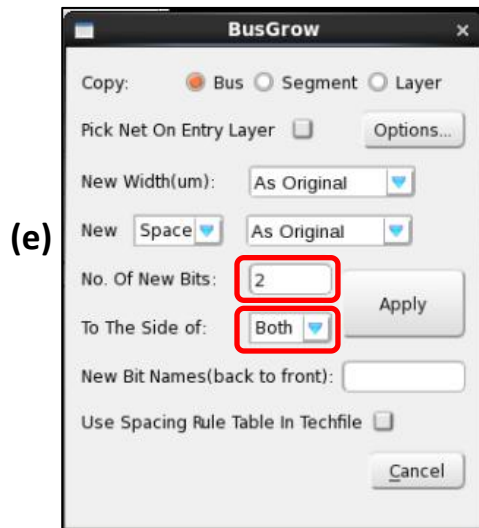
1. 点击layout 菜单栏上的AetherWings菜单，选择VEditor-Tools，在弹出的子菜单中选择BusGrow(a)，左键单击，弹出BusGrow窗口(b)。



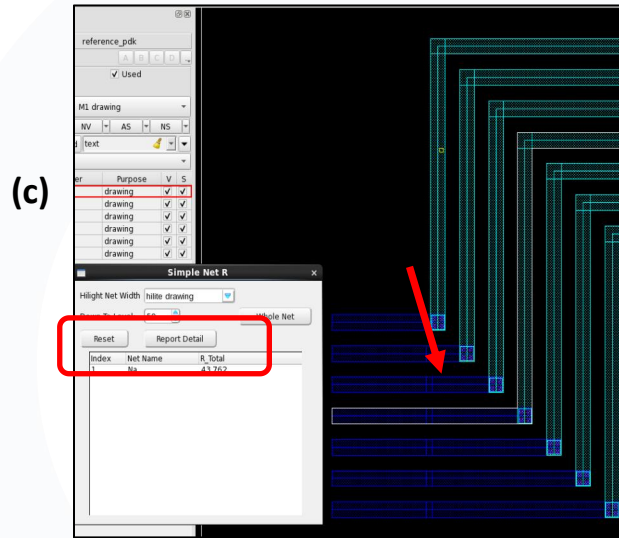
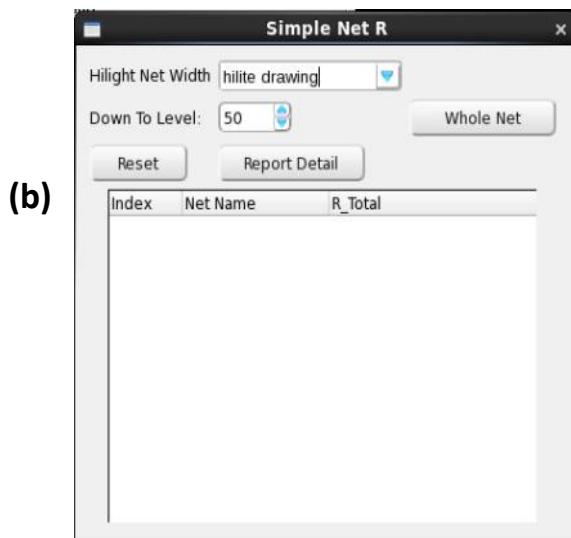
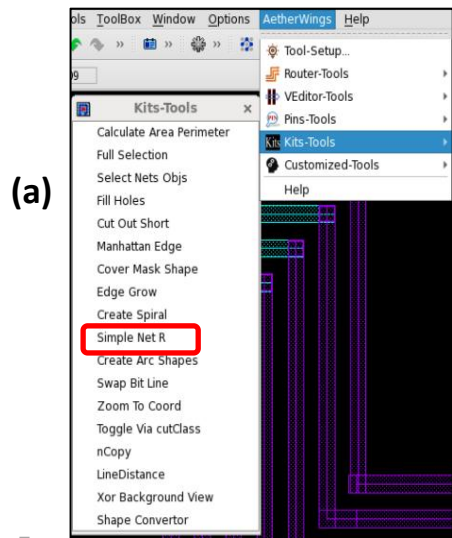
2. 将鼠标光标移动到layout中，在Bus底部开始划线，并且贯穿三条Bus(c)，此时被选中的Bus会出现数字标志(d)，且Bus处于被选中状态。



3. 将光标移动到BusGrow界面，并且在界面中的“No. Of New Bits:”输入框中输入 2, “To The Side of:” 下列框中选择 “Both”，点击Apply 按钮(e)；此时Bus从3根变成7根(f)，点击Cancel 退出BusGrow界面。

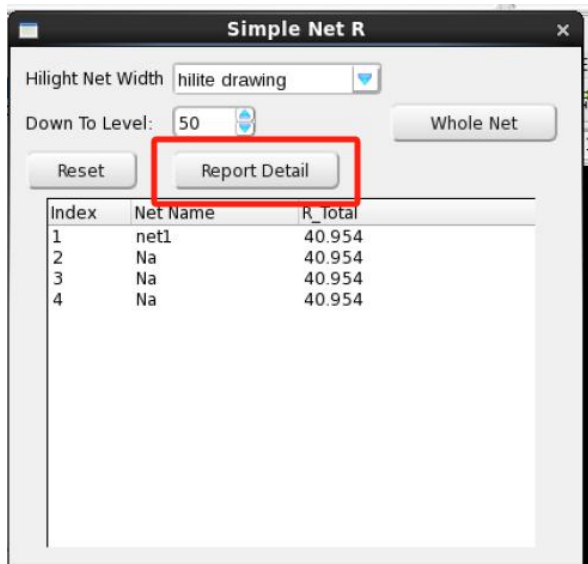


1. 在layout界面菜单栏上单击AetherWings菜单，选择Kits-Tools，然后选择Simple Net R并单击(a)；此时会弹出Simple Net R的界面(b)，单击Simple Net R界面的Whole Net按钮，然后单击layout界面中的Bus，此时被点击的Bus会高亮，并且Simple Net R界面的表单中会显示对应的net和R信息(c)；点击界面中的Report Detail可以查看详细信息。如果想查看另外的Bus的信息，需要重新单击Whole Net，然后单击对应的Net即可；

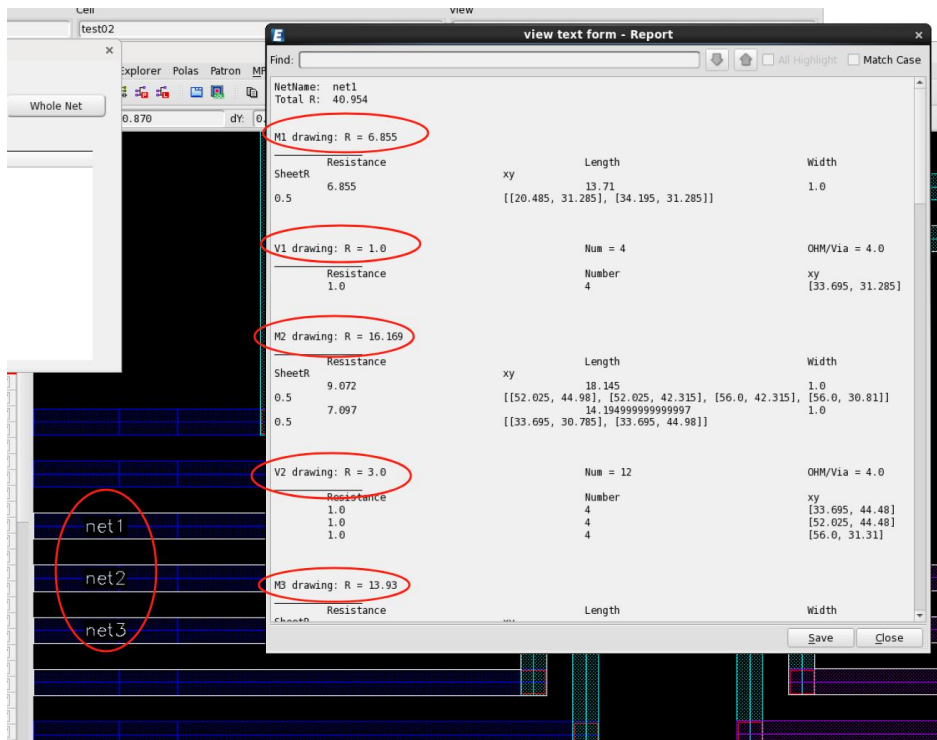


2. 可以通过“Report Detail” 来展示电阻值

(a)



(b)





Thank You

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