2024 Fall IC Lab

Lab 12 Report

110511118 陳孟頡

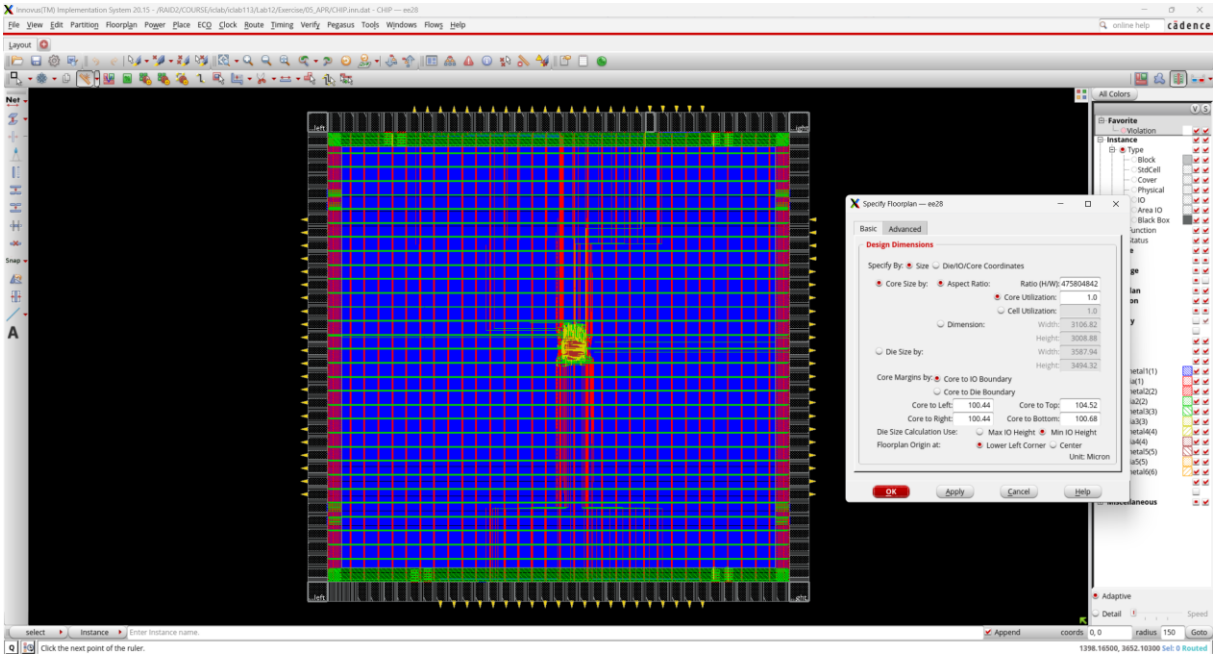
Part I. APR Result

1. Core to IO boundary :

Core utilization: 1.0

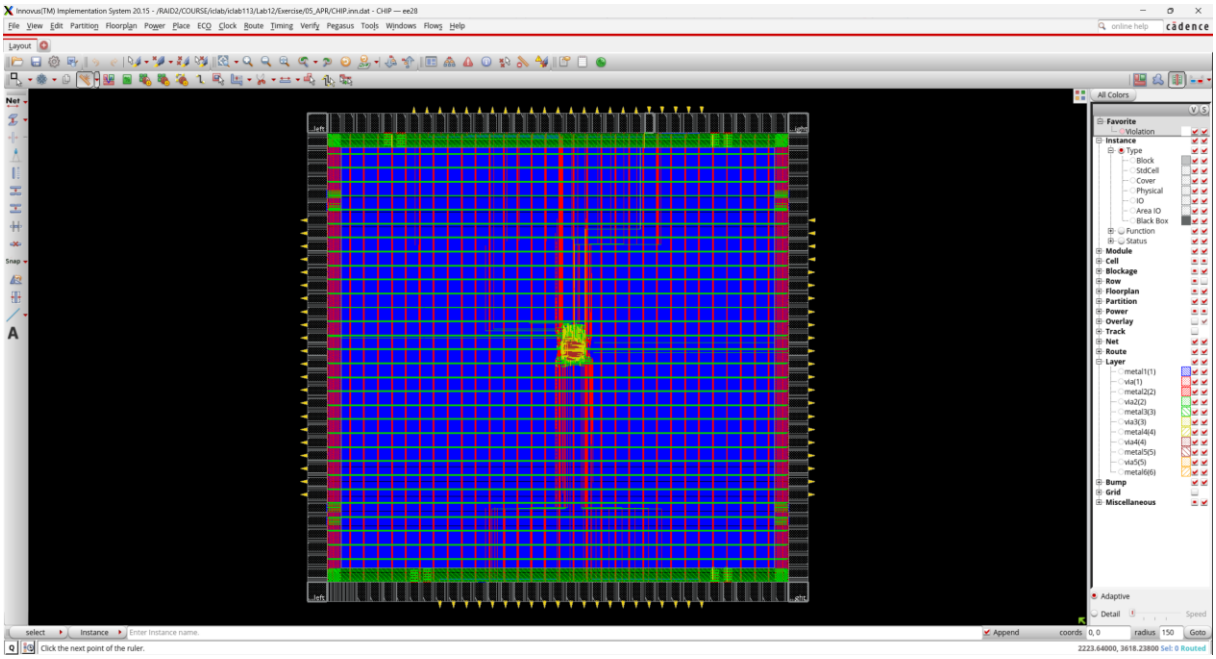
Core to left: 100.44 Core to top: 104.52

Core to right: 100.44 Core to bottom: 100.68



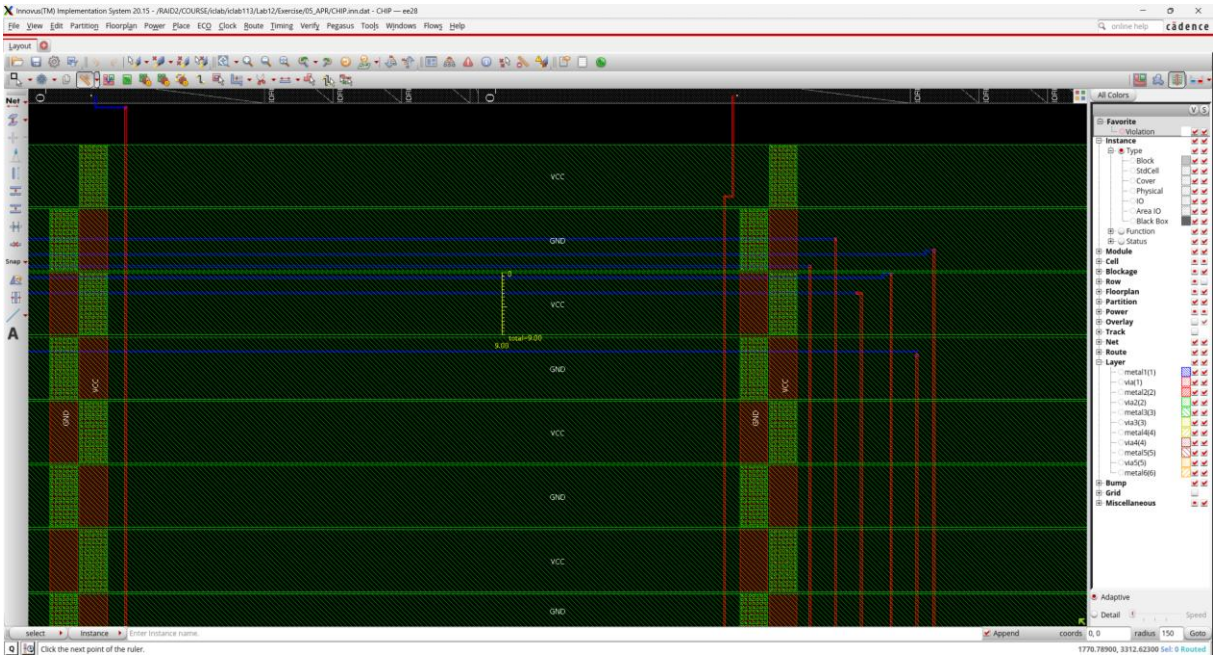
2. Core Ring :

Overview:



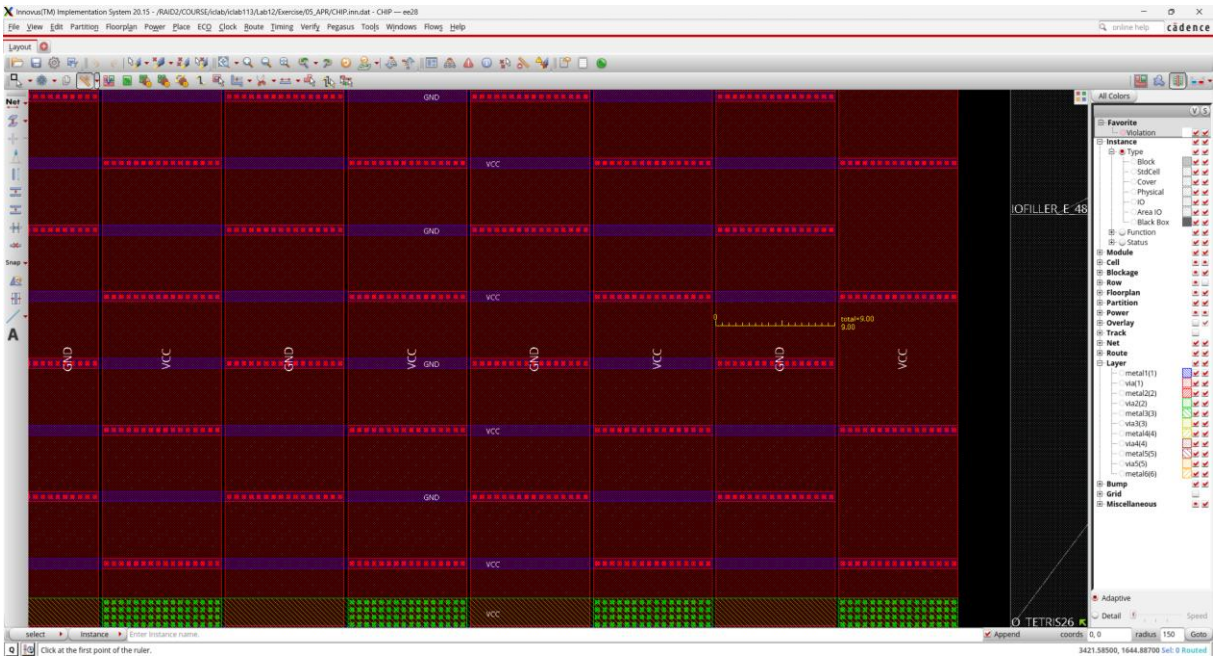
Top power ring:

Total: 9



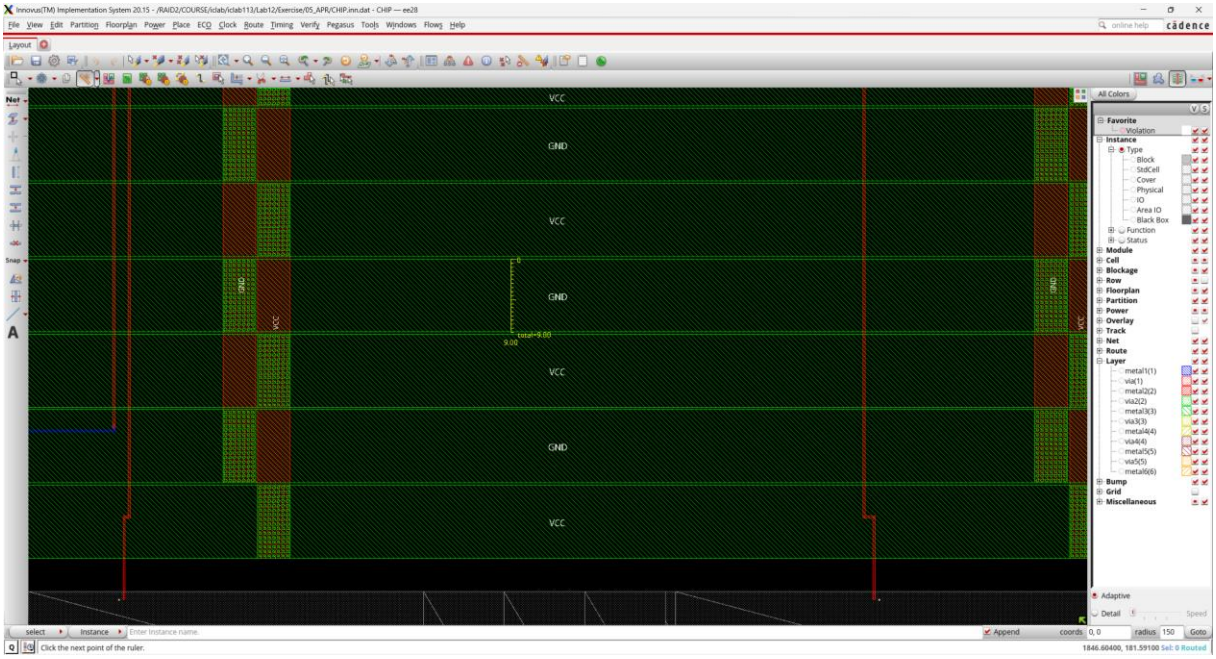
Right power ring:

Total: 9



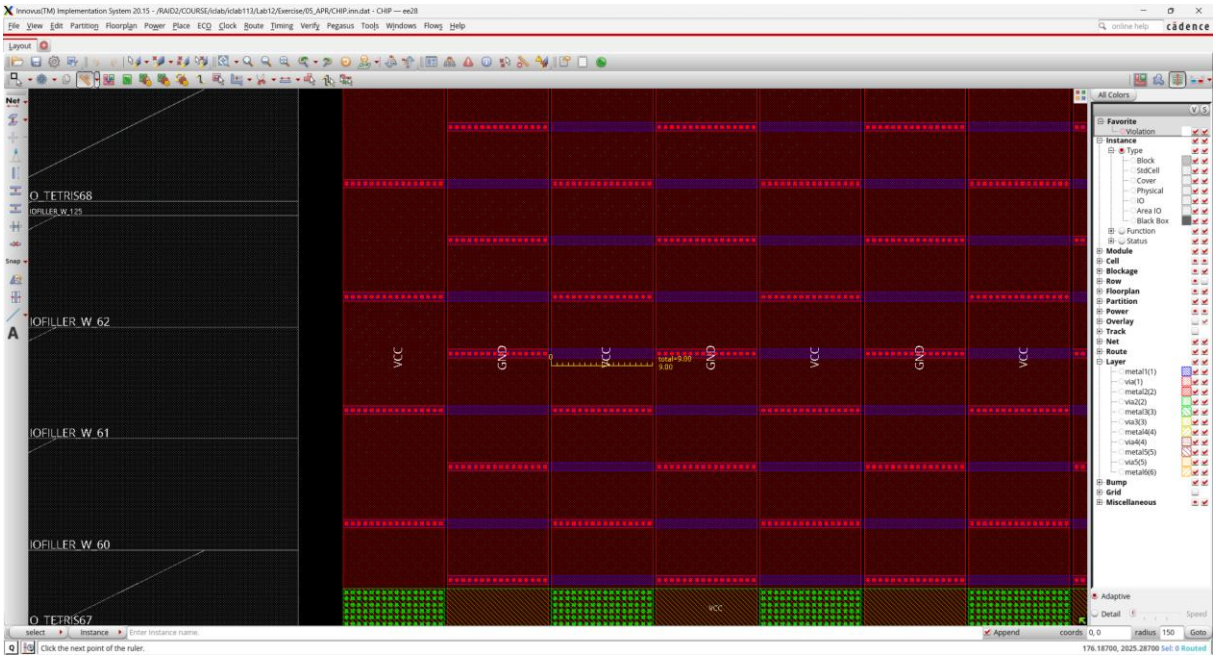
Bottom power ring:

Total: 9

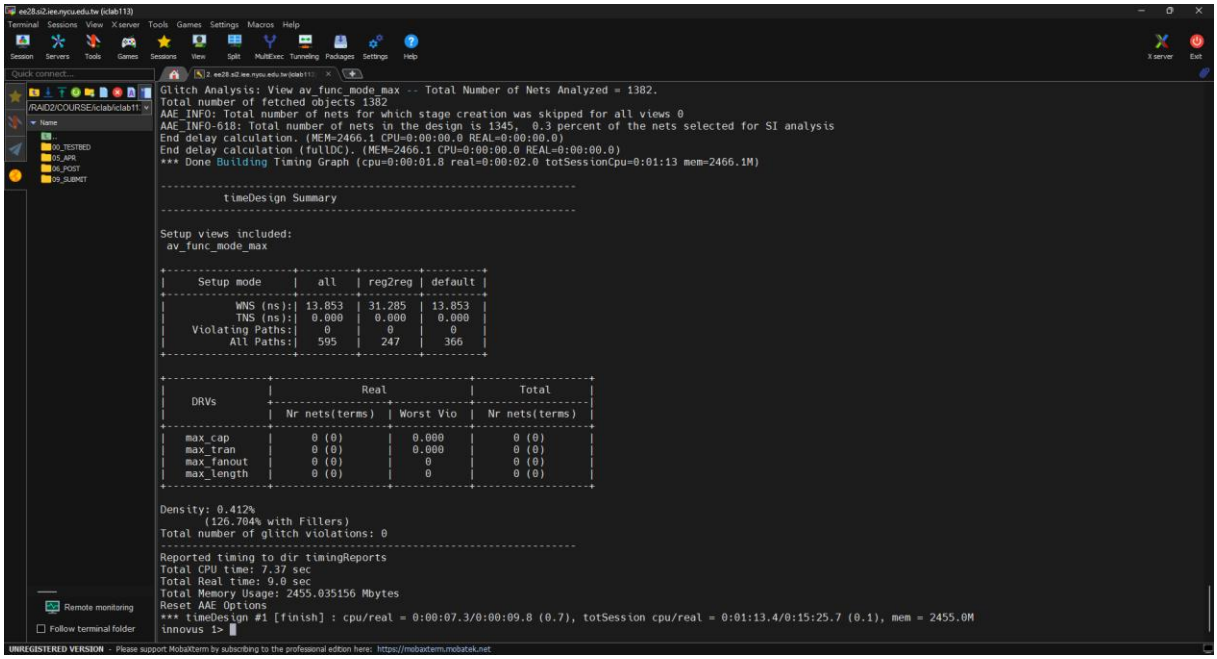


Left power ring:

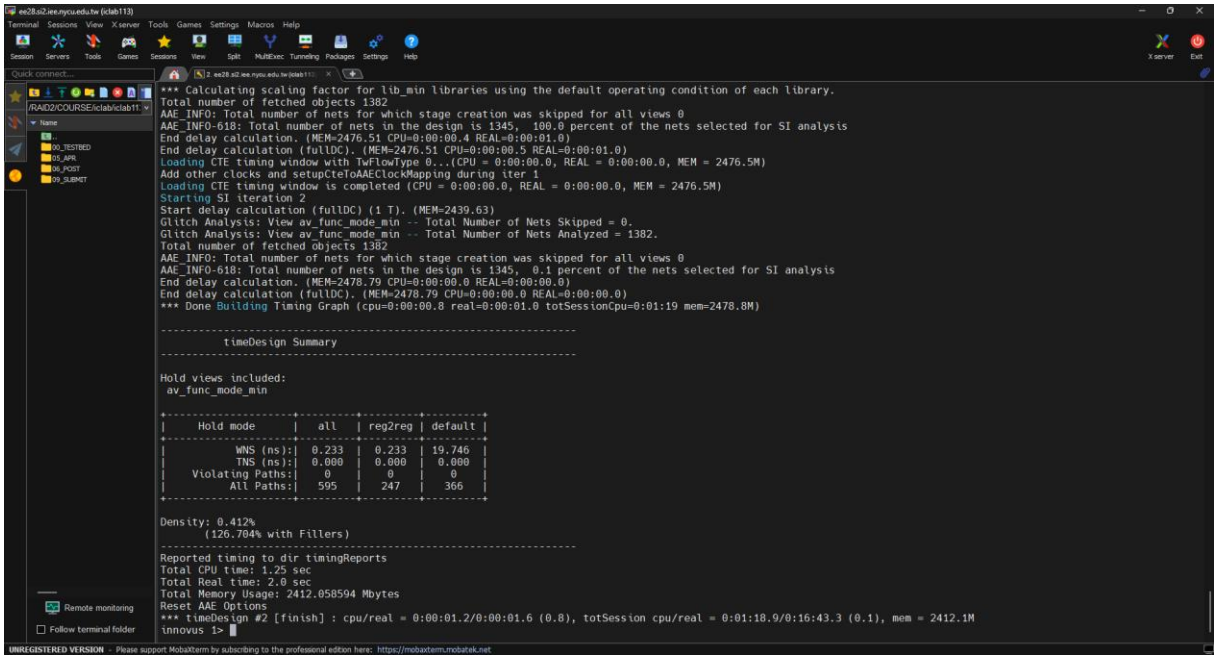
Total: 9



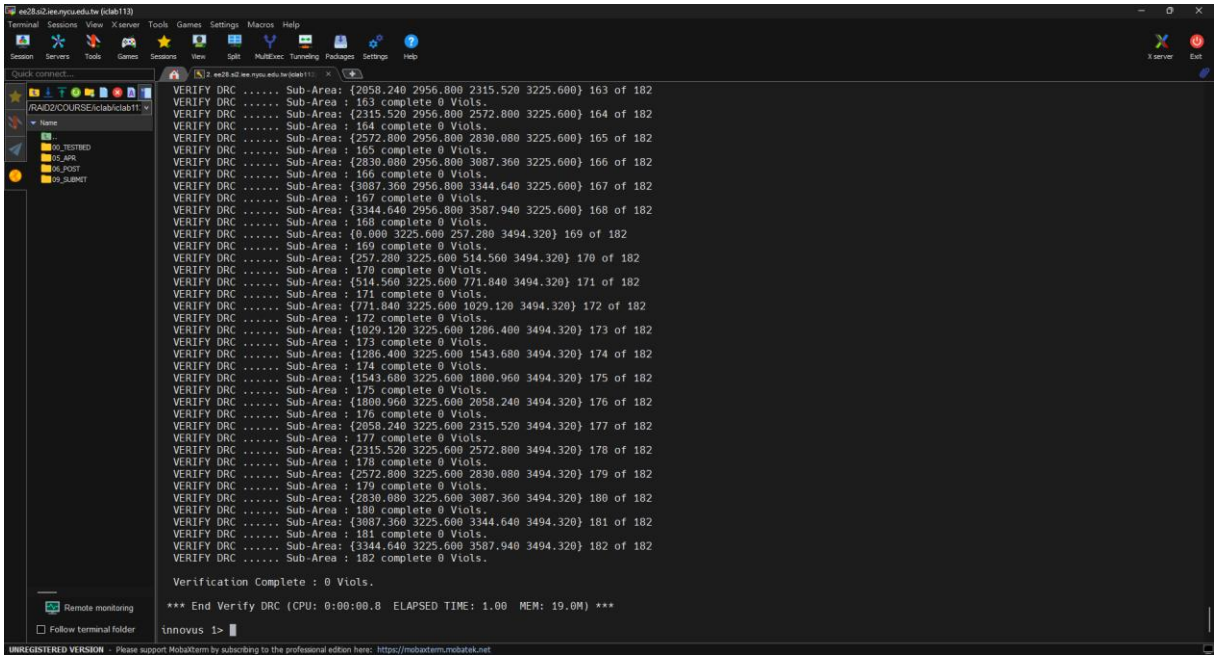
3. Post-Route setup time analysis :



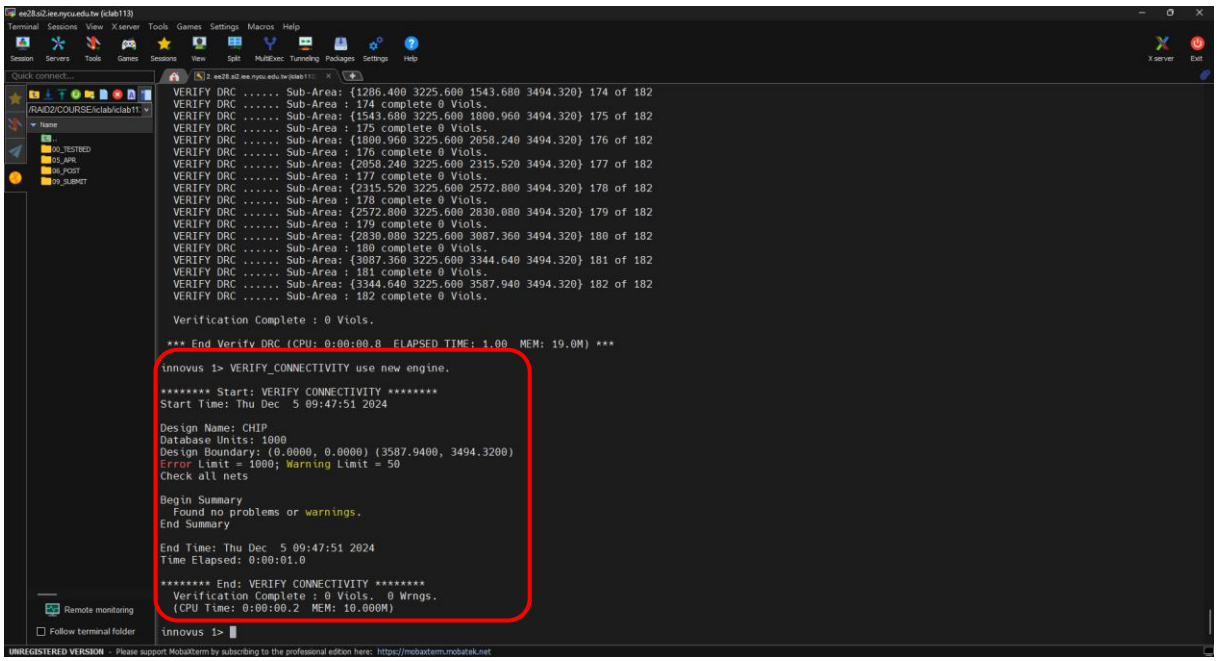
4. Post-Route hold time analysis :



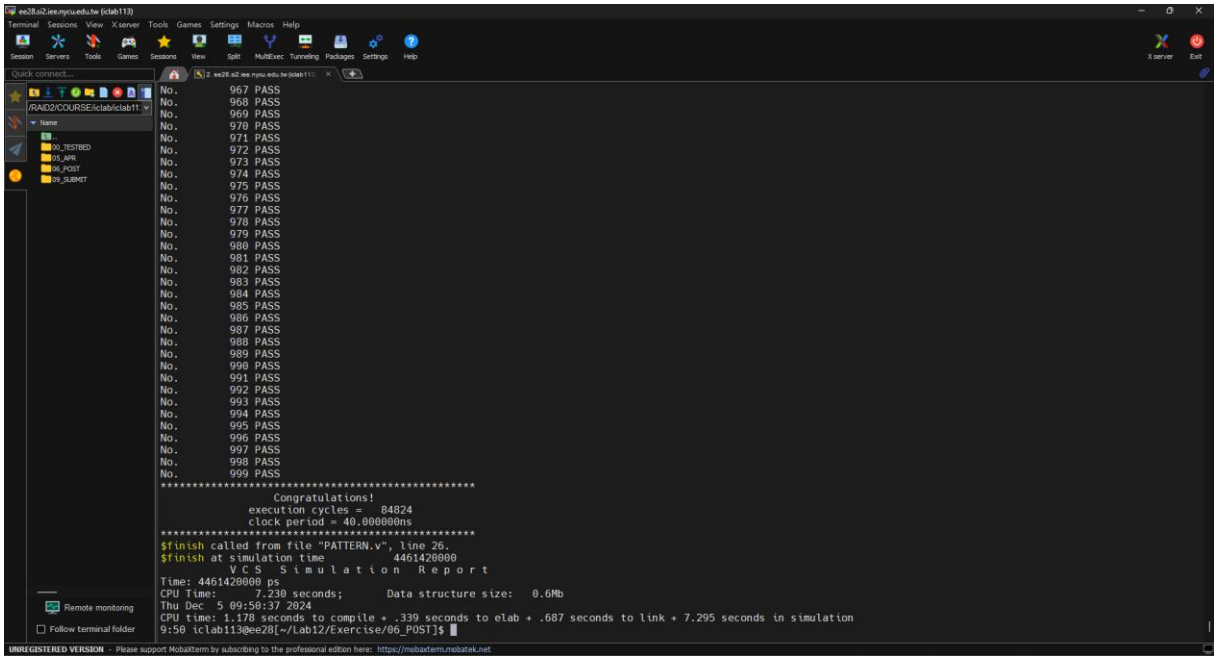
5. DRC result :



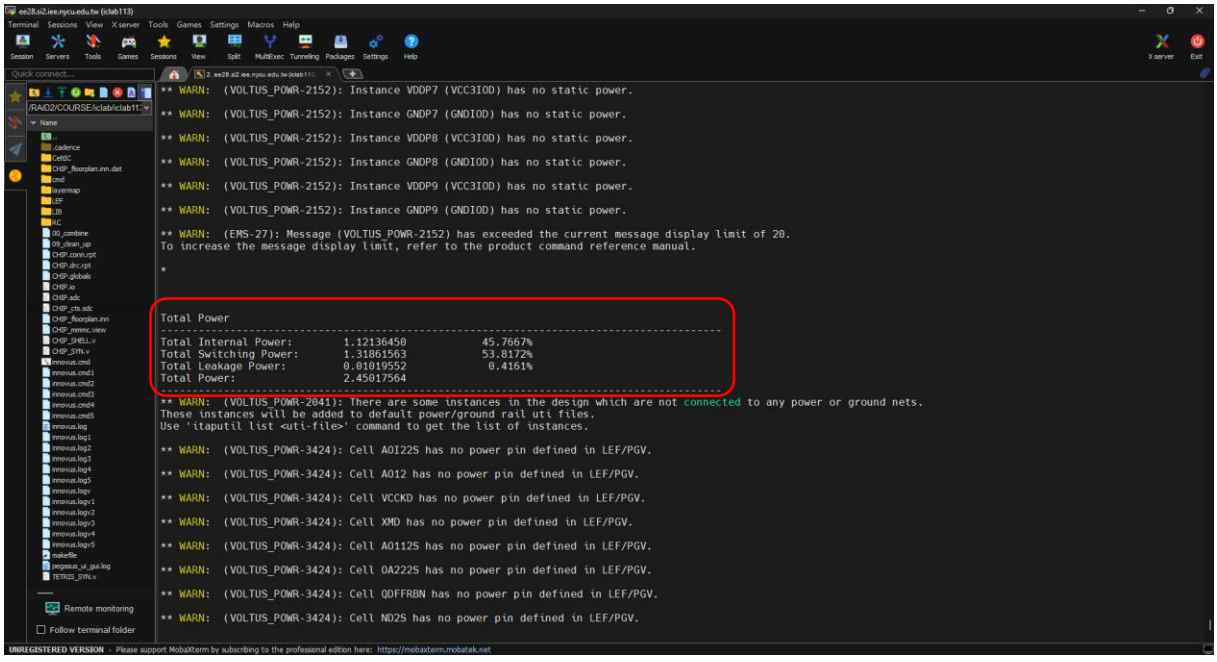
6. LVS result :



7. Post Layout simulation result :

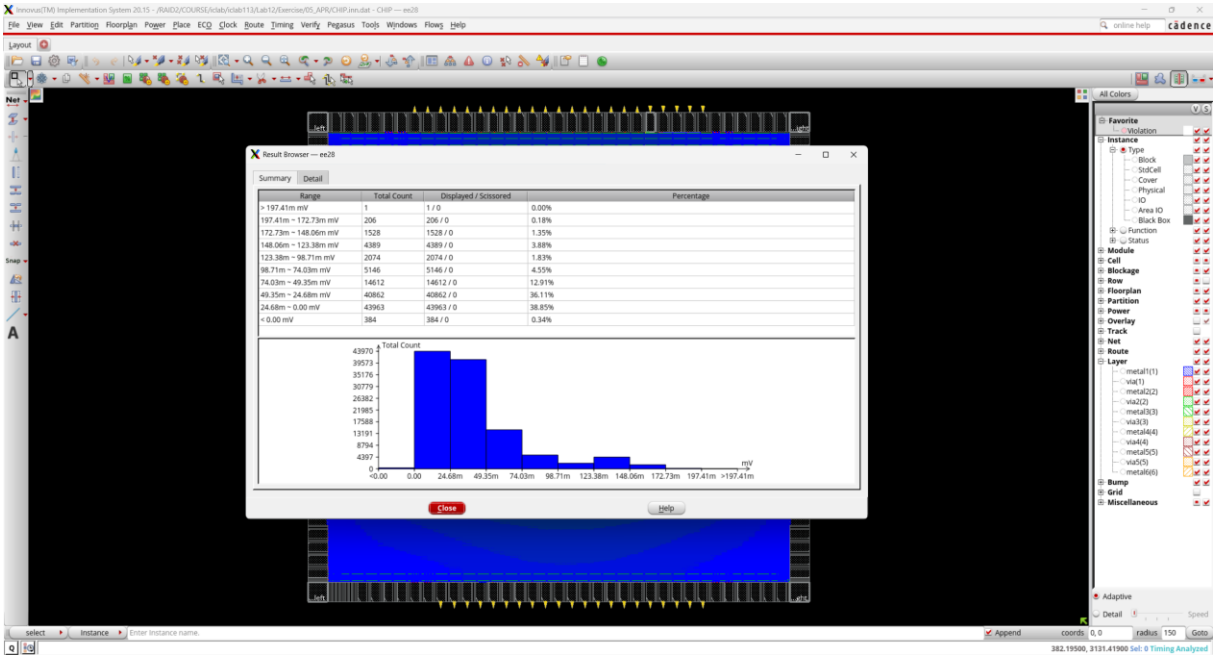


8. Power result :

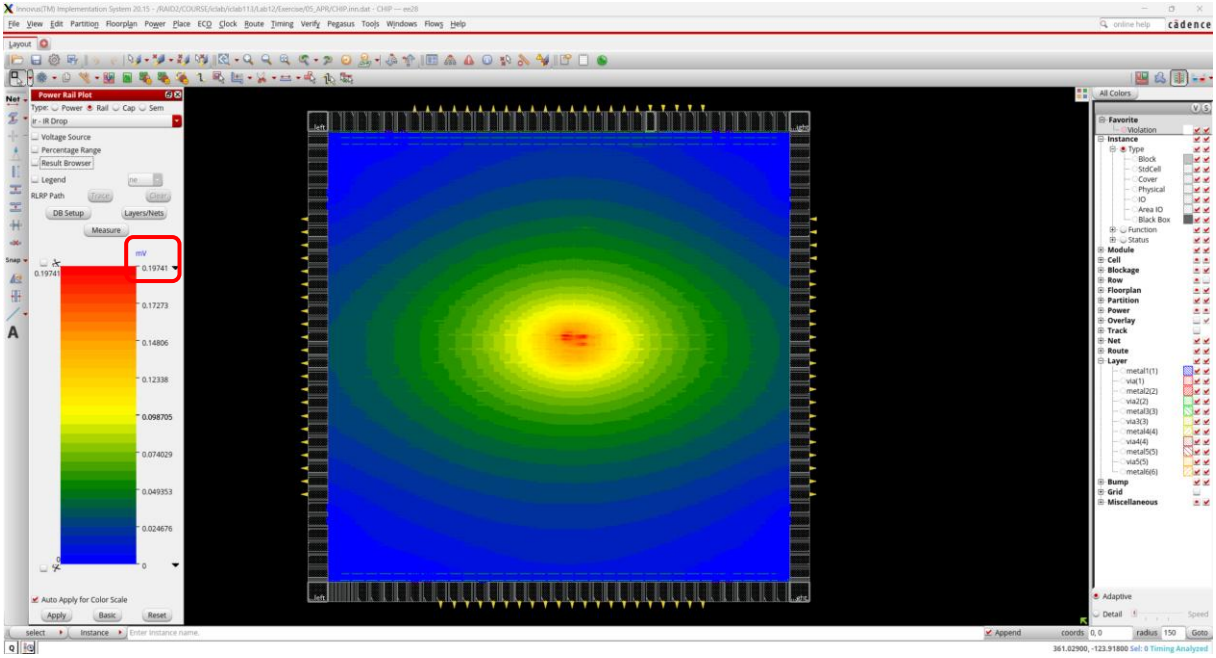


9. IR Drop Results :

Result browser:



Power rail plot:



Part II. IR Drop Reduction

1. Power grid design

藉由增加 power grid density，來確保 power distribution network 有足夠的 metal 層，減少電阻值，進一步降低 IR drop

2. Power stripes design

增加 power stripes 數量以及密度，在降低阻抗的同時減少 standard cell 供電路徑，以此降低 IR drop。