



HENRY™

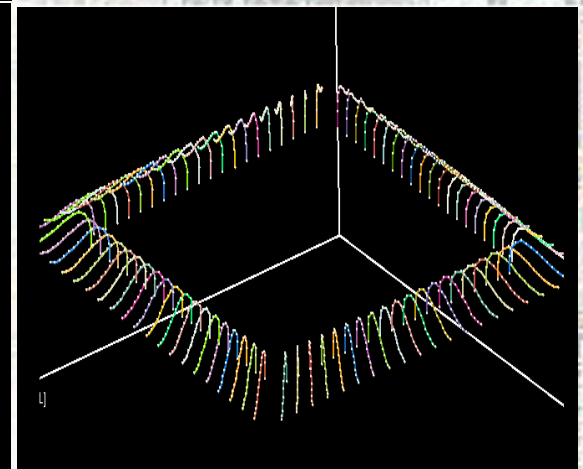
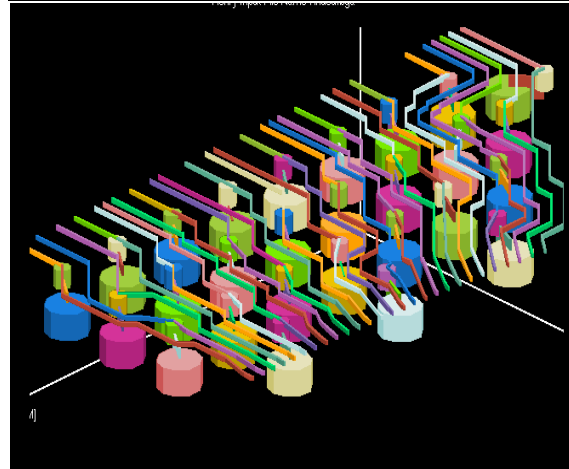
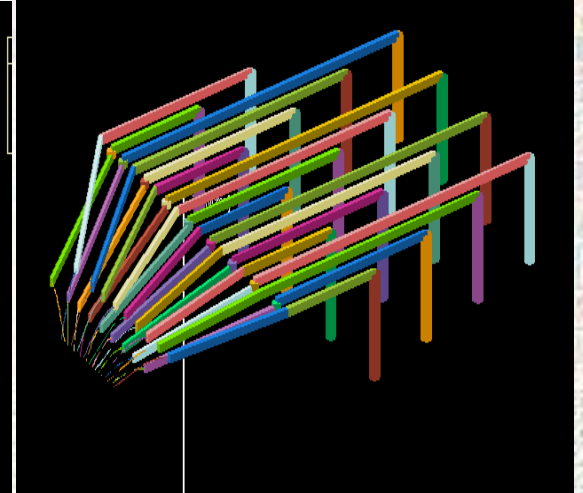
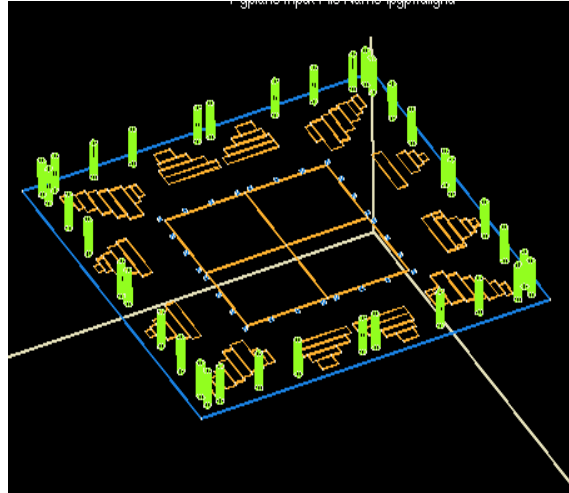
3D Inductance Simulation Tool

OEA International, Inc.
155 East Main Ave, Suite 110
Morgan Hill, CA 95037

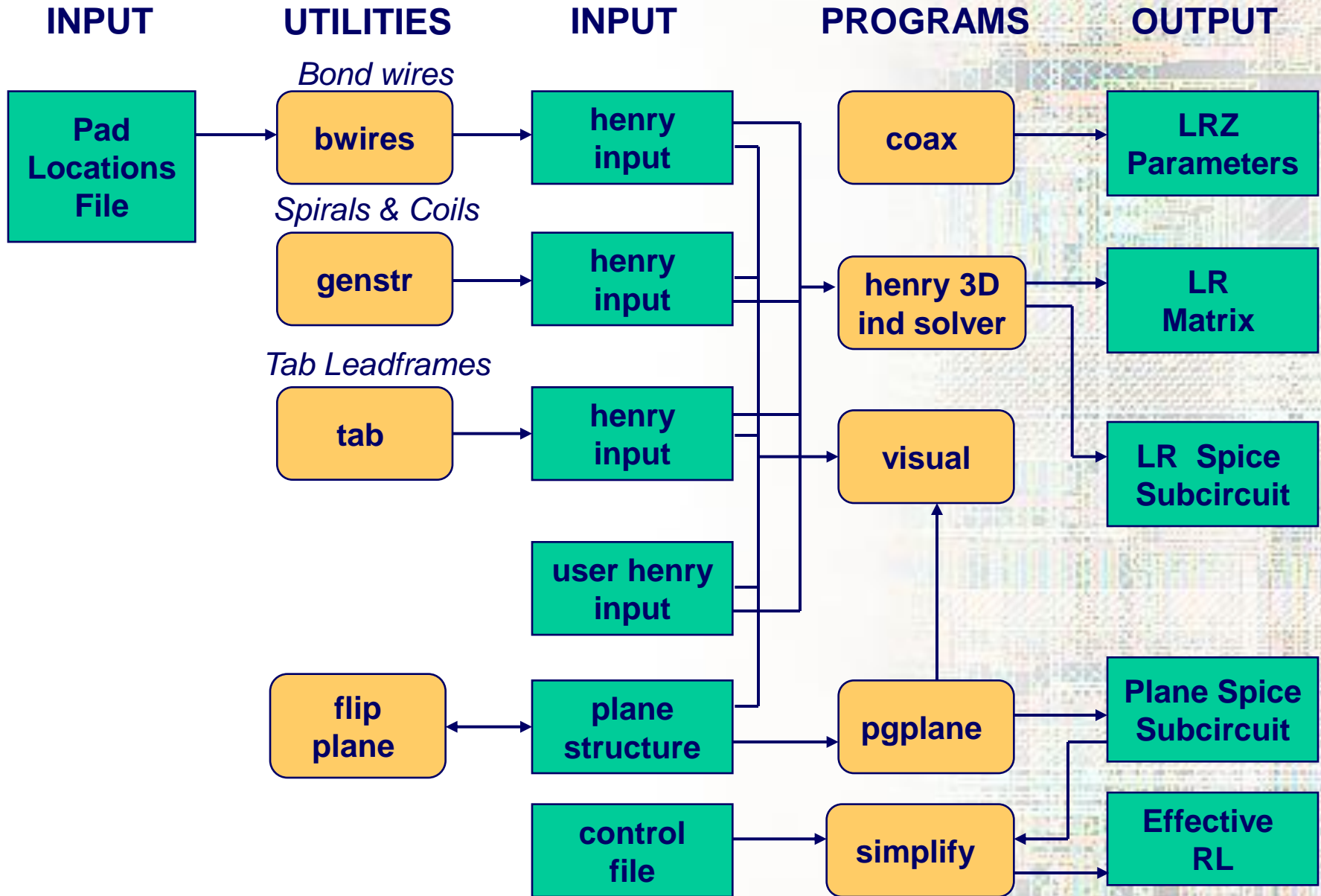
www.oea.com

HENRY Features

- ◆ Extracts accurate frequency- dependent 3D self-inductance, resistance, mutual-inductance, and effective inductance of interconnect elements
- ◆ Creates RLM models of multiple power and ground planes
- ◆ Graphics 2D/3D display of input and results plots



HENRY Flow Chart



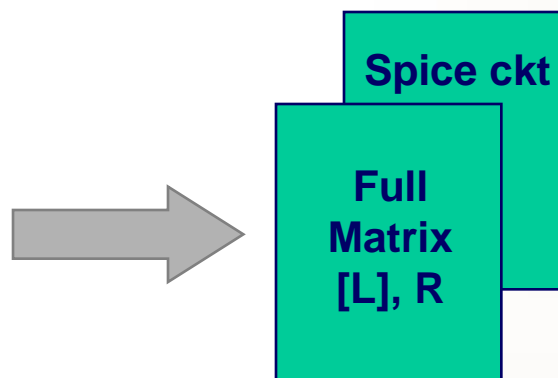
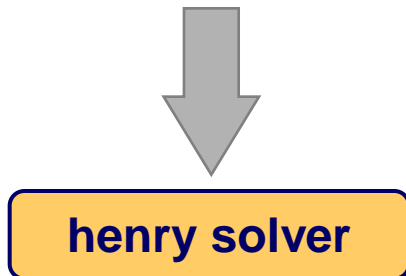
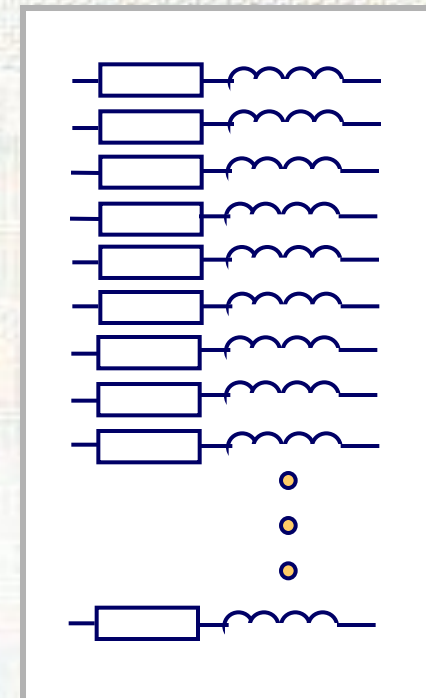
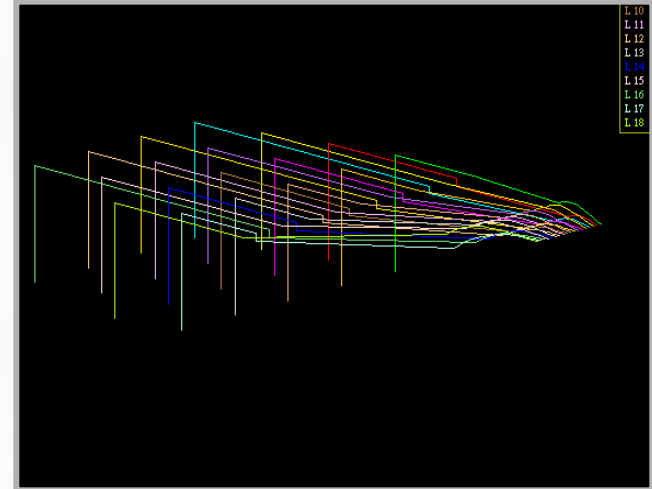
'henry' 3D Inductance Solver

* FORMAT FOR A ROUND SHAPE (PIN OR BOND WIRE)

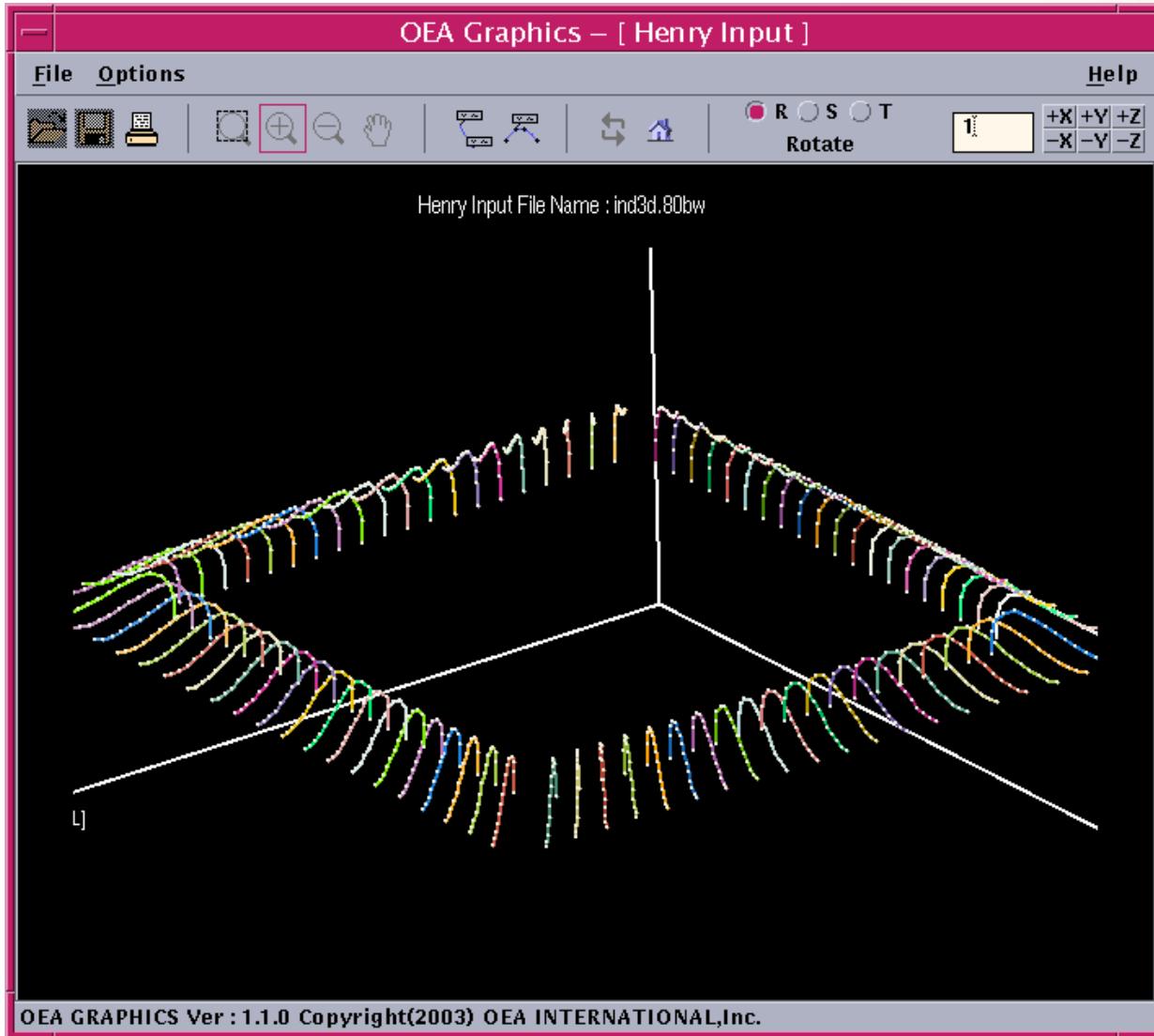
L1	NODE1	NODE2	NETA	6.45E-04
X	Y	Z	DIA	
1.0000	0.0000	0.0000	0.0100	
0.9397	0.3420	0.0066	0.0100	
0.7660	0.6428	0.0133	0.0100	
.
1.0000	0.0016	1.2000	0.0100	

* FORMAT FOR A RECTANGULAR SHAPE (LEAD)

L2	NODE5	NODE6	NETD	5.3E-05	
X	Y	Z	DIM A	DIM B	
2.0000	0.0000	-1.0000	0.0200	0.0400	
1.8940	0.6895	-1.0000	0.0200	0.0400	
1.5560	1.3060	-1.0000	0.0200	0.0400	
.	
4.0000	0.0024	-1.0000	0.0200	0.0400	



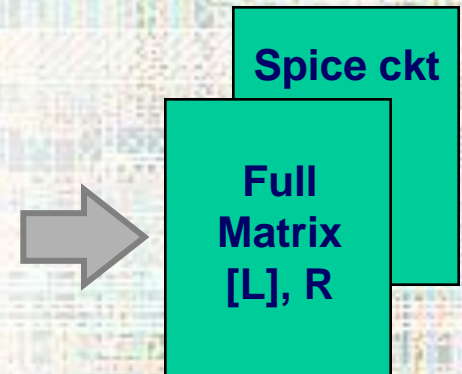
Henry Example



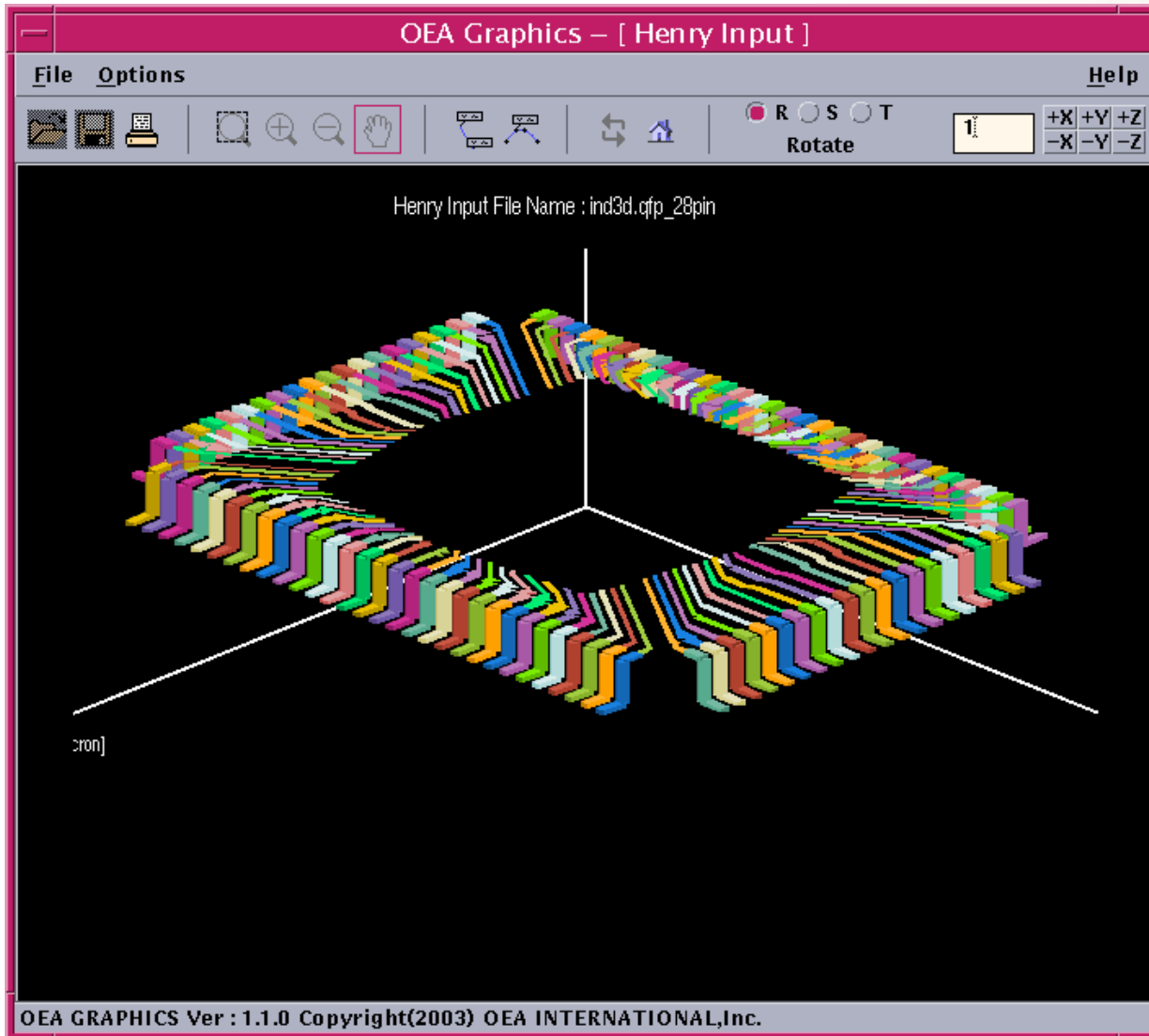
80
bondwires
10 sections
each

3D model
generation time: = 15 sec

Simulation time: = 5 sec



HENRY Package Simulation

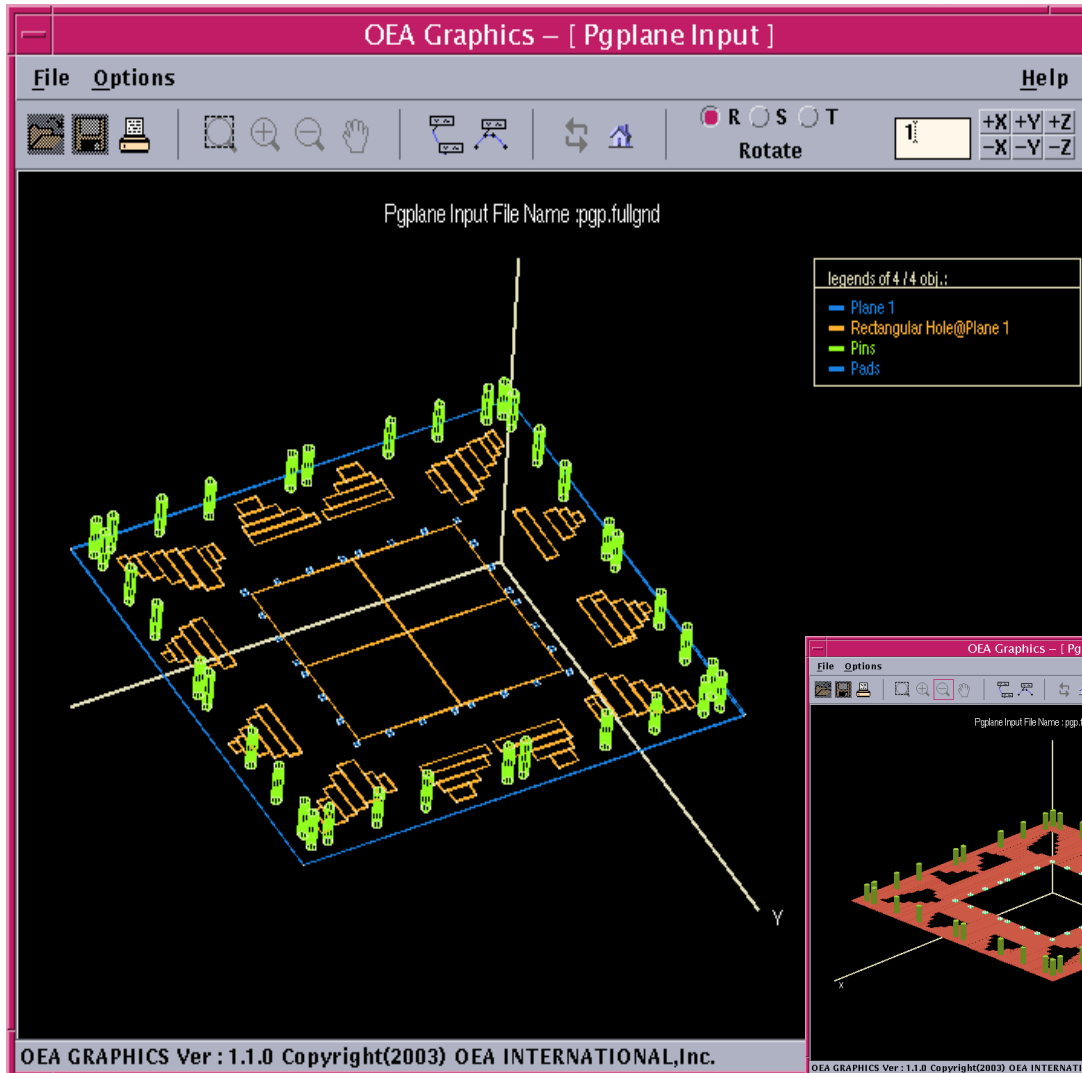


Number of
leads: 100

Number of
coordinates: 876

Elapsed time
to generate
Spice deck: 13 seconds

PG-PLANE Simulation



Number of
Spice nodes: 10,358

Total inductors
& resistors: 7,780

Elapsed time to
generate
spice deck: 7
seconds

Elapsed time to
solve spice deck
for equiv.
inductance: 11
minutes