Altera MAX+PLUS II Overview

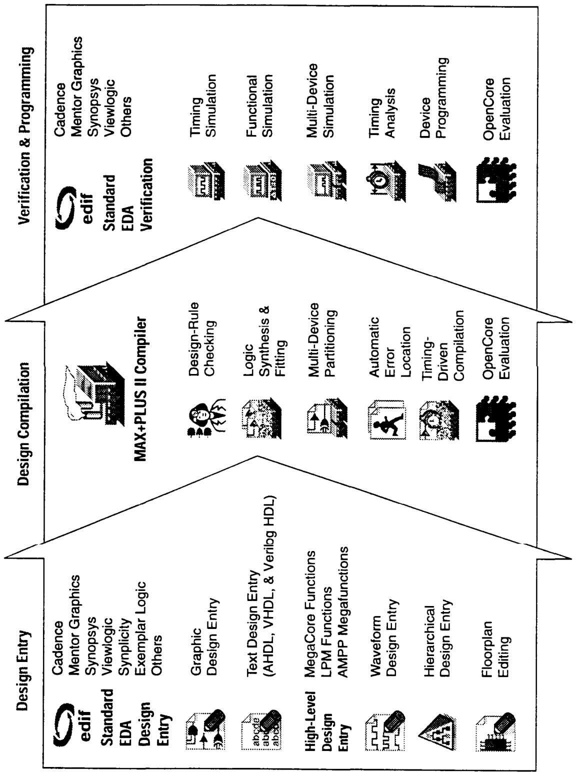


Figure from Altera technical literature

The "Chiptrip" Tutorial Example

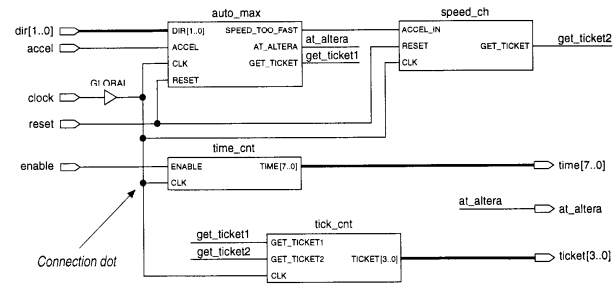


Figure from Altera technical literature

- Simulates an auto driving around town
  - auto_max — AHDL state machine that keeps track of location of auto and acceleration at that point in time, gives ticket if you accelerate on small roads
  - speed_ch — waveform state machine that gives ticket if you accelerate for a second time
  - tick_cnt — counter that counts tickets
  - time_cnt — AHDL counter that keeps track of time taken to reach Altera

Graphic Editor

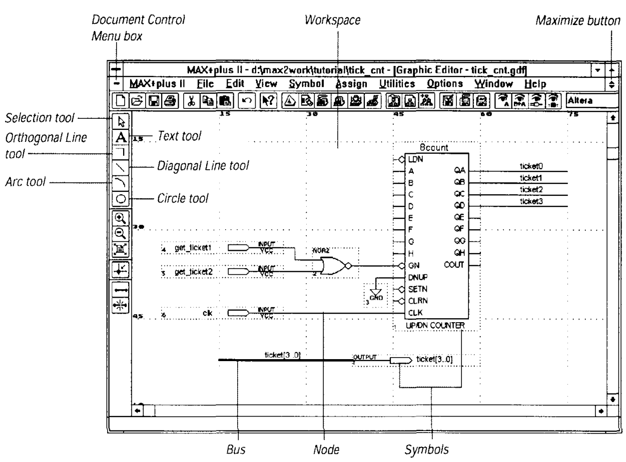


Figure from Altera technical literature

- "Smart" selection tool — automatically becomes proper tool for task at hand
- Can connect nodes by name
- Symbol editor can automatically generate default symbols

Text Editor

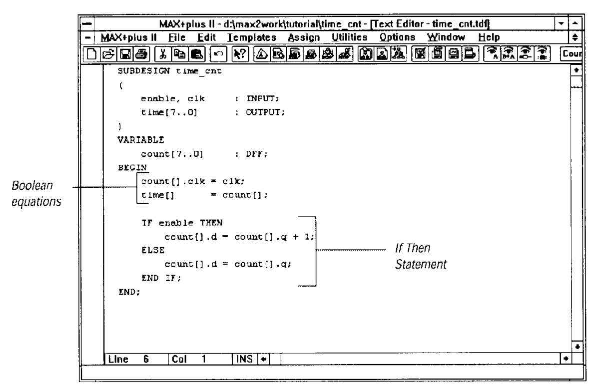


Figure from Altera technical literature

- Provides AHDL and VHDL templates
- Syntax coloring, drag-and-drop editing, ability to find matching delimiters
- Compiler / simulator automatically locates and highlights errors
- Context-sensitive help (arrow-? button)

Waveform Editor

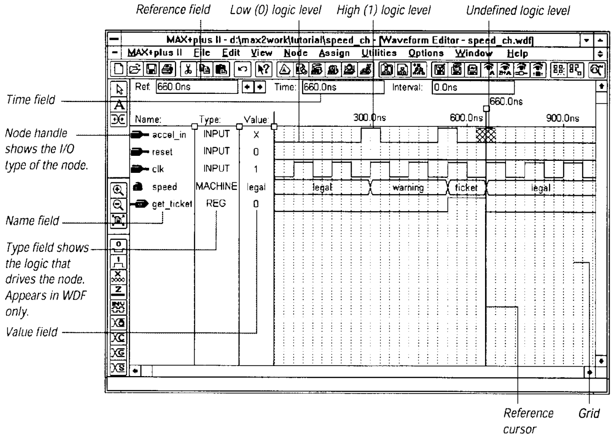
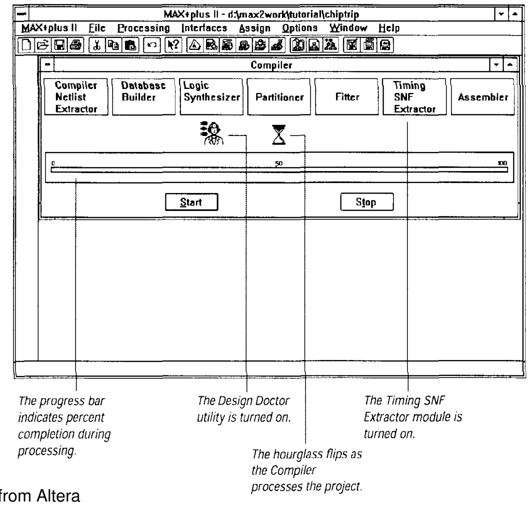


Figure from Altera technical literature

- Can contain logical and state machine inputs; combinational, registered, and state machine outputs; and “buried” nodes to help define desired outputs
  - Can specify state names for state machines
- Can compare desired and actual outputs

Compiler



Figuref from Altera technical literature

- Checks for design entry errors, builds a single large flat database
- Logic synthesis to minimize resource usage (see Assign/Global Project Logic Synthesis) , partitioner and fitter to match to available devices

Floorplan Editor

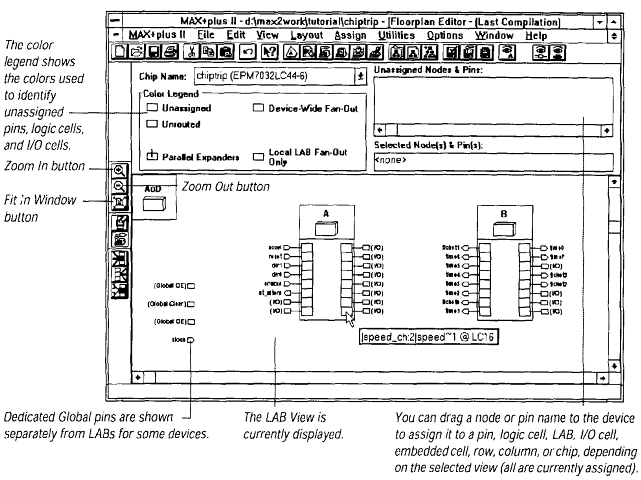


Figure from Altera technical literature

- Device view shows pins, LAB view shows LABs, equations, I/O, and routing
- Can use to edit assignments
- Can get information on most congested area of chip, with number of expanders used within each LAB

Simulation Results

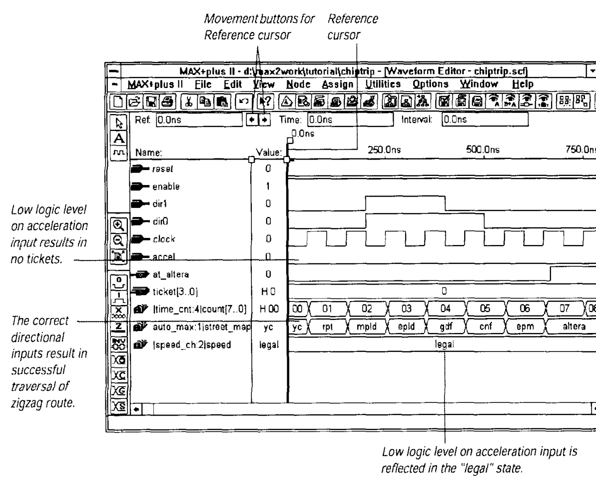


Figure from Altera technical literature

- Use waveform editor to specify simulation inputs
- Simulate, then view results in waveform editor (as shown above)
  - Simulate individual or grouped nodes (particularly good for state machines)