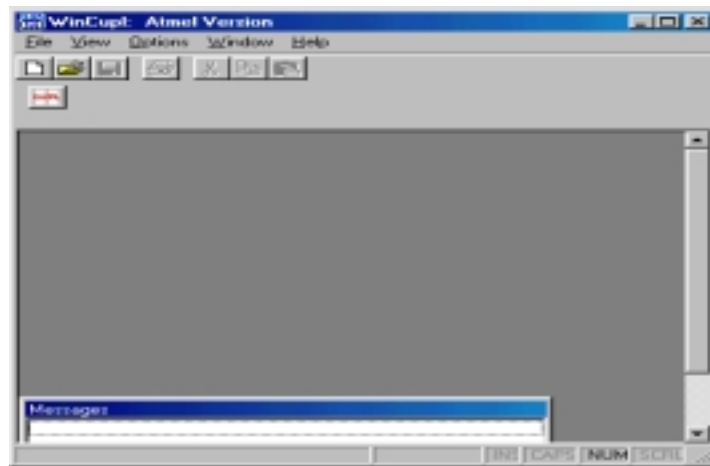


Atmel –WinCupl Tutorial 1.

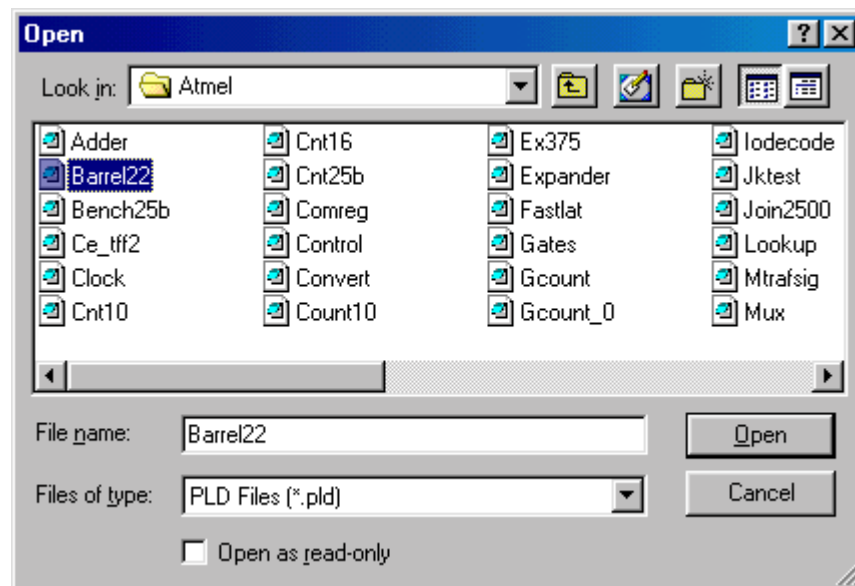
Estimated Time for Completion: 20 minutes

Objective: Familiarity with Wincupl2 Design Environment.

1. Install Wincupl2 either from a CD or from the Atmel Website [download file SETUPEX.EXE]. You should install Wincupl on the local drive of your PC {C:\ or D:\}.
2. Start Wincupl from the Start menu's Program list.

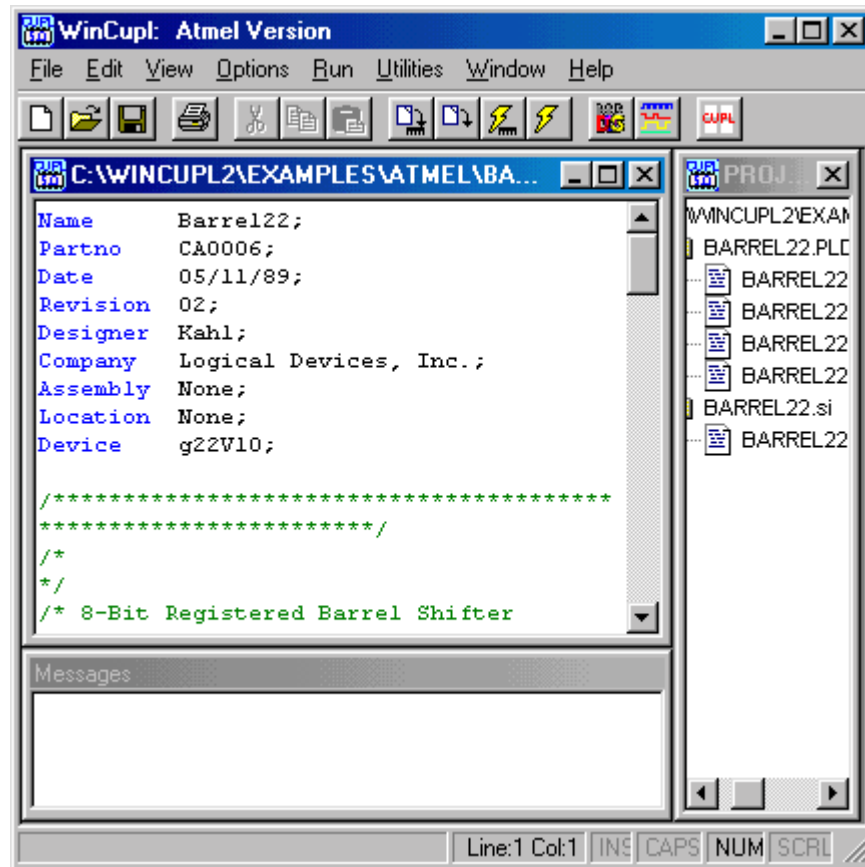


3. Open the C:\Wincupl2\Examples\Atmel Folder and open the File Barrel22.PLD



4. The **Wincupl Development Environment** thus includes the Main Source file for a Given Project in the Editor Window, a Message Window which shows Messages

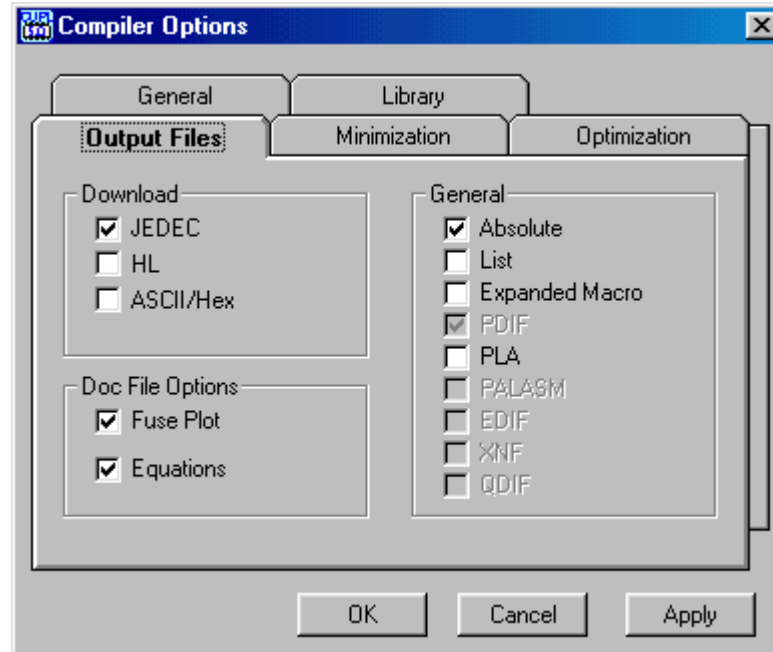
generated in the Compilation process and a Project window on the right side which shows a list of files generated by the compilation process.



5. The **Project window** displays all of the files associated with the open project or design file in a tree control. Double clicking any file within the window will open that file in the editor. You can close the project by closing the project window. If you open a design file rather than opening it as a project, you can display the project window at any time by choosing Project from the view menu.

The **Editor window** provides a full text editor for creating and editing design source and other text files.

The **Messages window** displays the output from the compiler consisting of both status information and error messages generated by the compiler.



6. Click on the **Options Button**.
The Options Menu offers the following commands:

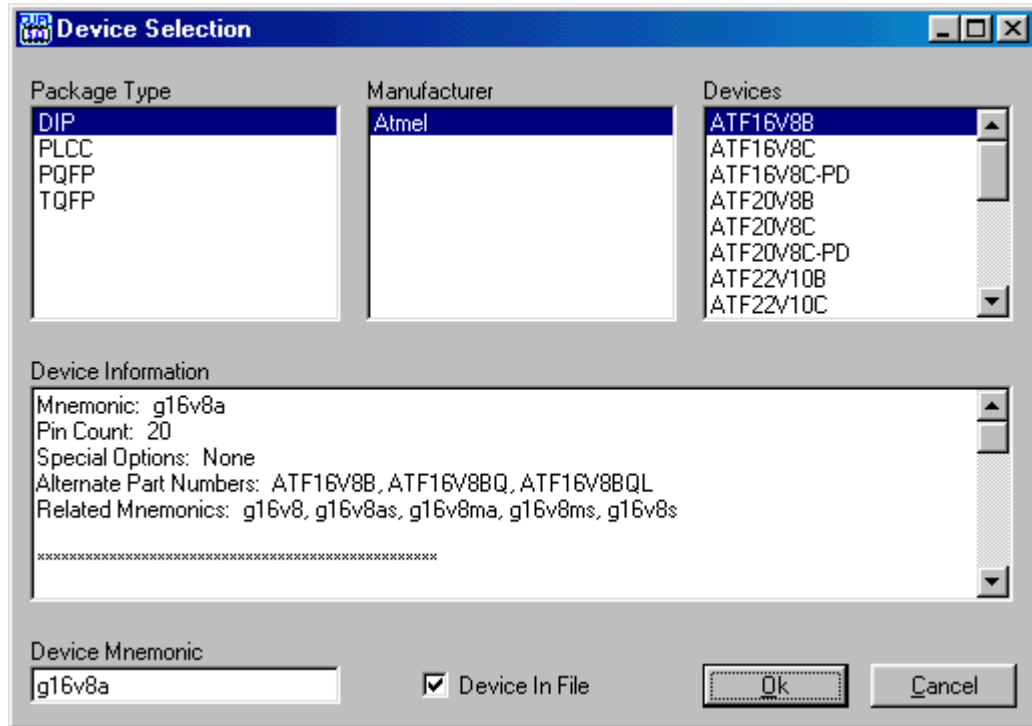
Compiler Sets the CUPL compiler options.
Devices Opens the device Selection window.
Simulator Sets the simulator options.
WinCUPL Sets the options for the WinCUPL environment.

7. Click on the **Compiler** command under the **Options menu**. Look carefully at the different Tabs and select the **Output Files** Tab. Verify that there is a Check (✓) for **Fuse Plot** and **Equations** under the **Doc File Options** option. You can now click on the OK button.

Take a minute to look at the other **TAB** settings as well.

8. Click on the **Devices option** button under the **Options menu**.
This window lists each **Package type** and the **list of Atmel EPLDs supported**.

The bottom half of this window shows the **Device mnemonic** and a **Check box** (✓) for **Device in file**. **Deselect** (remove the check mark) from the Device in file box and instead select the **ATF22V10B** device. Compare the device mnemonic with the Header section of your source file in the **Editor window**.

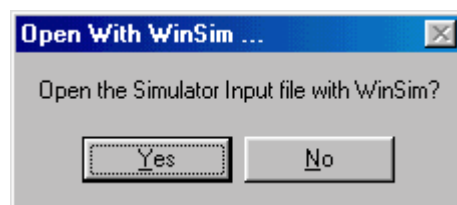


9. Next click on the **RUN** button and select **Device dependent compile** button. Proceed to **compile the file**.

Device Dependent Compile (Run menu):

This command compiles the design using the specified device. You may specify a device either with the DEVICE statement in the header section or by selecting a device on the Devices Tab of the Options dialog.

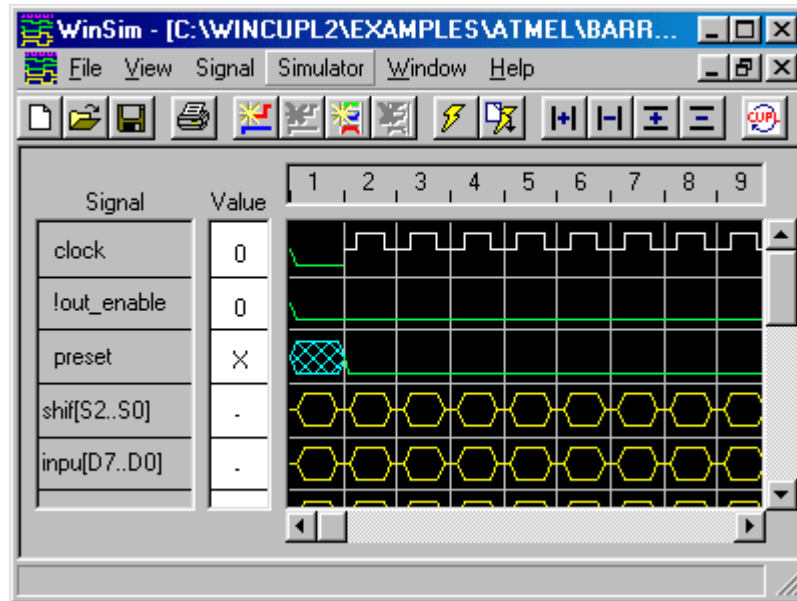
10. If your compilation is successful, proceed to double click on the Barrel22.SI file. This opens a window “**Open with Winsim..**”



11. Click on Yes button. This opens the WINSIM [WinSiM functional simulator]. Also take a minute to look at the OPTIONS button and SIMULATOR options.

[You can also click on the Device Dependent Simulate Option from the Run Option Dialog in order to compile and simulate. **Note:** If you do not want to run the WinSIM and click on the NO option, it opens the .SI file in the Editor Window.]

12. This opens the **WinSIM** window. Click on the **Simulator Options** button and then Proceed to simulate your Design.

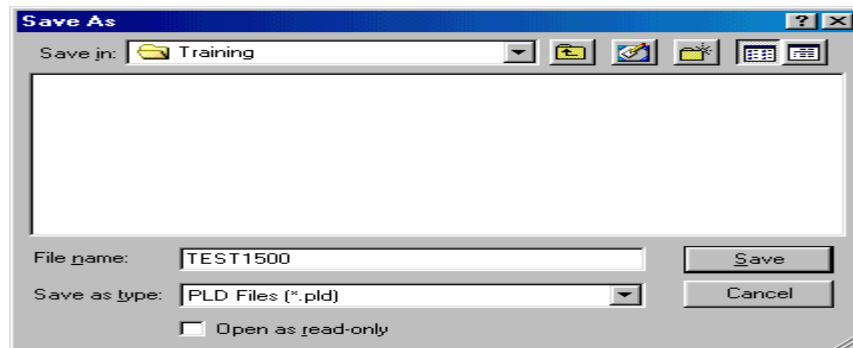


13. **Congratulations !!** This completes an Introduction to Atmel-WinCUPL !!!

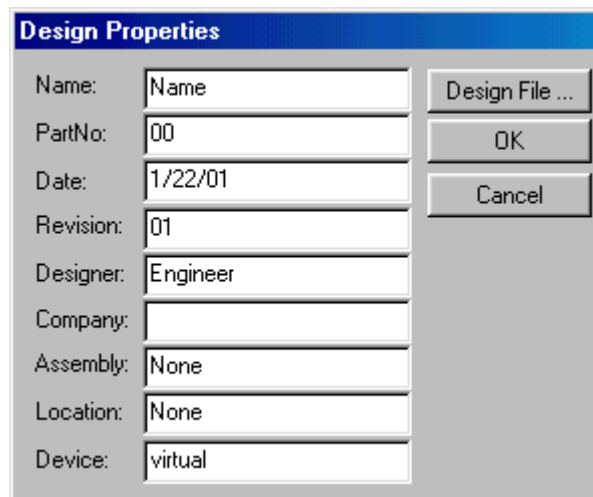
Exercise 1

Objective: Use Atmel-Wincupl to compile a Design file.

1. Use Atmel-Wincupl to open the Wincupl\Examples\Atmel\Gates example.
2. Use File...Save As..... to Save the Project in C:\Test\Training. Rename the file as Test1500.PLD [Click on the New Folder button to create a New Directory]

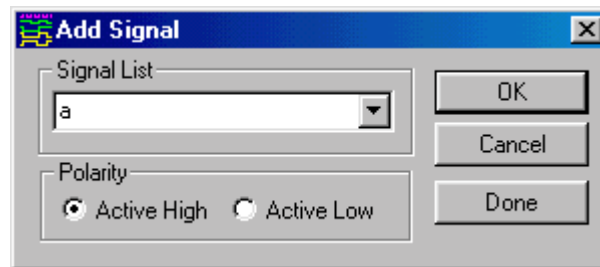


3. If the Project Window is not visible, you can Click on **View..Project** option
4. Click on Options... Devices Tab and select the ATF1500A. Change the Pin Numbers in your Source File for **Signal Nand to Pin 20**. Compile your Design.
5. The next Step is to create a Simulation file for this Design. Click on the **WinSim Icon to initialize WINSIM**.
6. **After the WinSim Window is open, click on File...New button.**

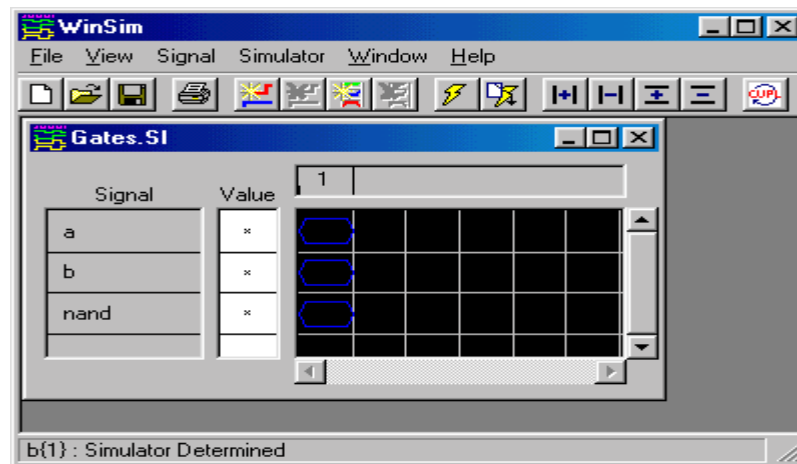


7. Click on the **Design File** and Open the C:\Test\Training\Test1500.PLD file.

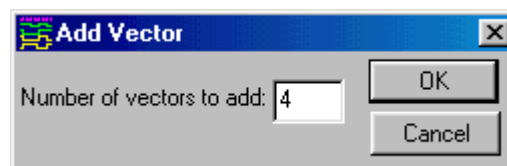
8. This will allow you to create a **Simulation file (.SI)** with the same header information and **Signal** names.



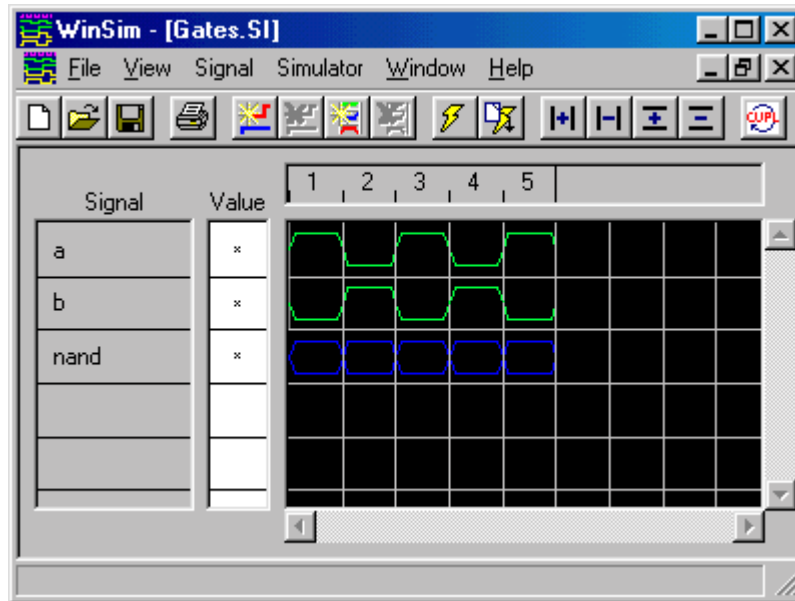
9. Click on the **SignalAdd Signal** button to add signals **a, b** and **NAND** . Use the **Active High Polarity** and after you have added **these 3 signals**, click on the **Done** button in the same Dialog box.



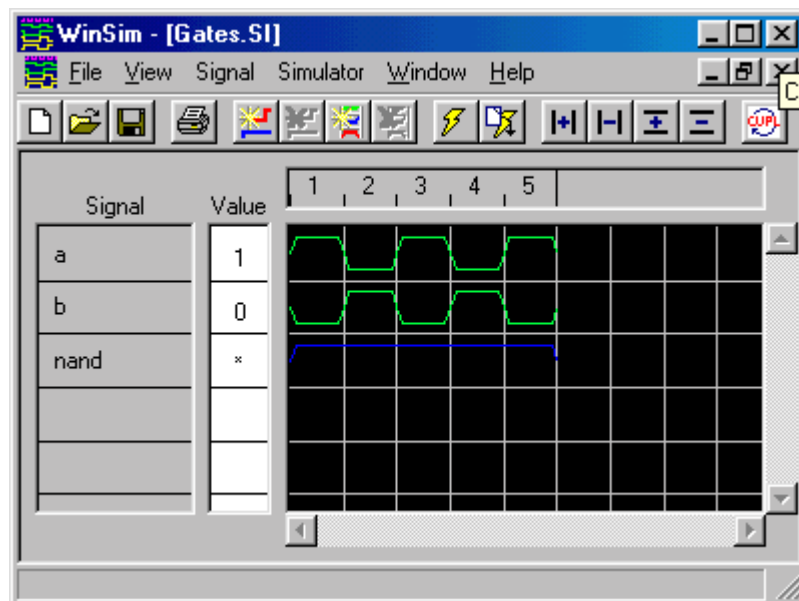
10. Click on Signal button in the main WINSIM window and then click on the Add vector button. This opens a Dialog box:



11. **Add 4 vectors.** The next step is Setting Signals to a specific stimulus. Click on **Help** button and then go to the “Setting Signals” in the **WinSIM Procedures** section to see



how the Stimulus for a signal can be set. **Note:** You need to Set the stimulus only for signals **a** and **b**. **Nand** signal can be left undefined.



12. After the signals have been set as shown in the Screen shot you can run the WinSIM Simulator. The results of Simulation are as shown below:

Congratulations !!

You can now use Atmel-Wincupl to Design in PLDs.