BELLATRIX USER MANUAL

1. INTRODUCTION

In this document we will give you brief information about Bellatrix's user interfaces and basic controls. This tutorial has the concept of how to use the Bellatrix modules: drawing and scripting.

2. BELLATRIX OVERVİEW

Bellatrix EDA is based on a MDI concept (Multiple Document Interface). Several sheets can be used to draw the schematics and simulate them.
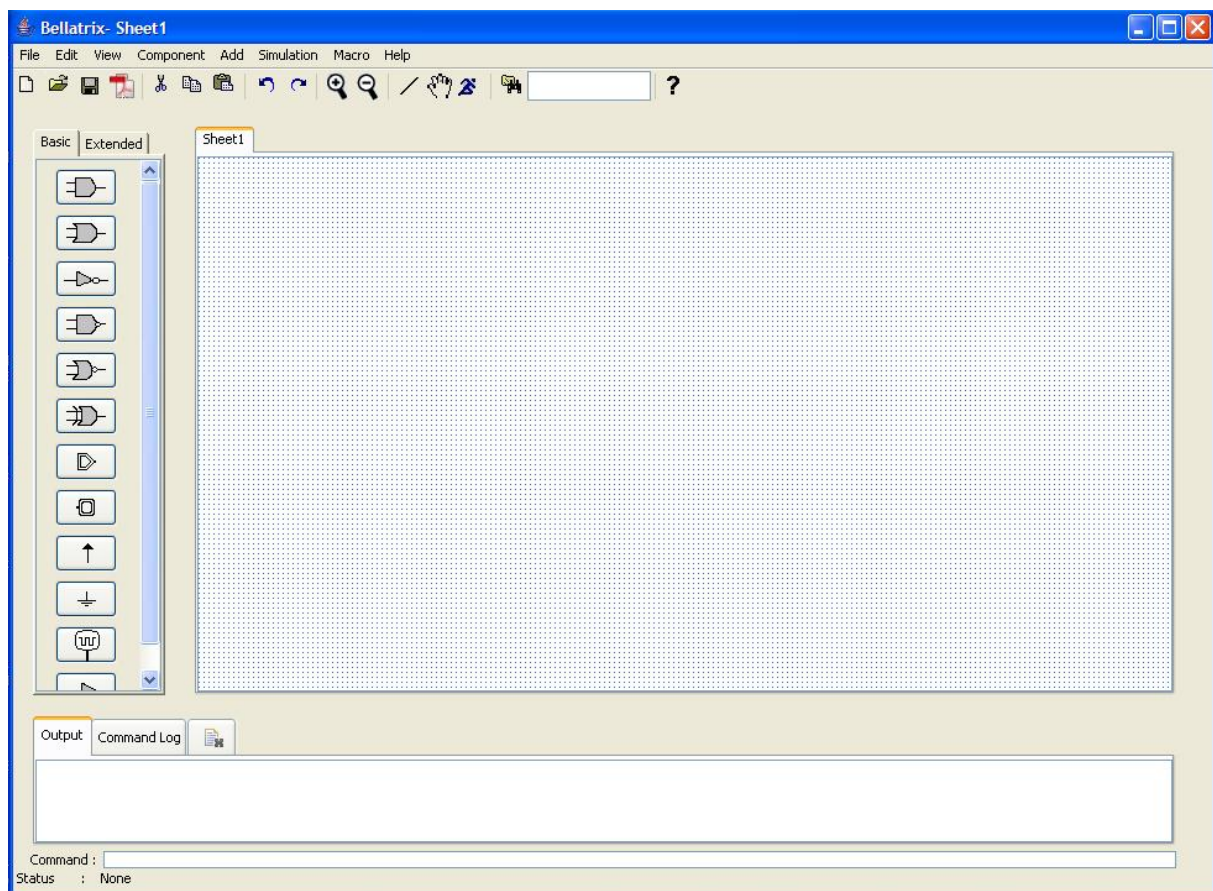

Figure 1: Bellatrix Overview

Project title header contains the name of the application and the current active sheet.

Figure 2: Title Bar of Bellatrix.

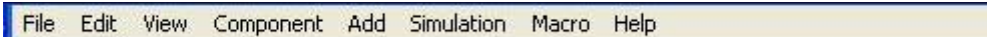Menu bar allows to access all system features of the application.

Figure 3: Menu Bar of Bellatrix.

Tool bar contains the symbols of most frequently used features.

Figure 4: Tool Bar of Bellatrix.

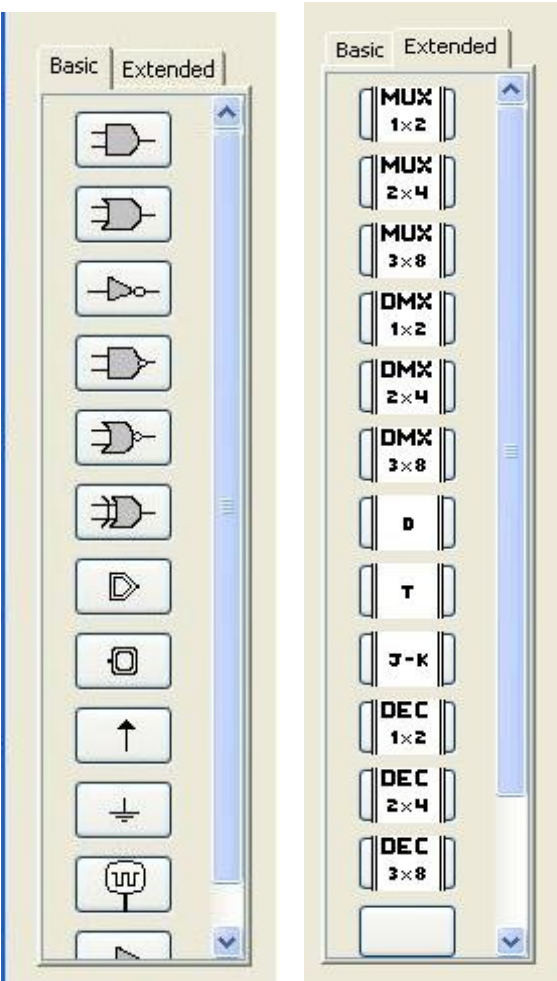Workspace view displays the components that are available.

Figure 5: Workspace: Basic and Extended Components.

Console view is used to display informations related to the Edit and Simulation modes.
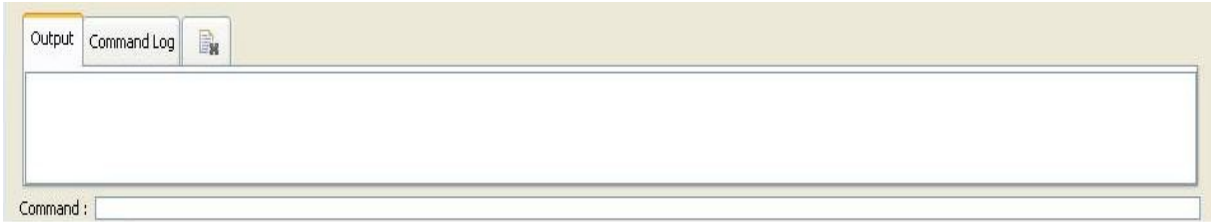

Figure 6: Console: The general input-output area of the system.

Status Bar displays some interesting informations like the current mode of the program.

Figure7: Status Bar shows the current status of the system.

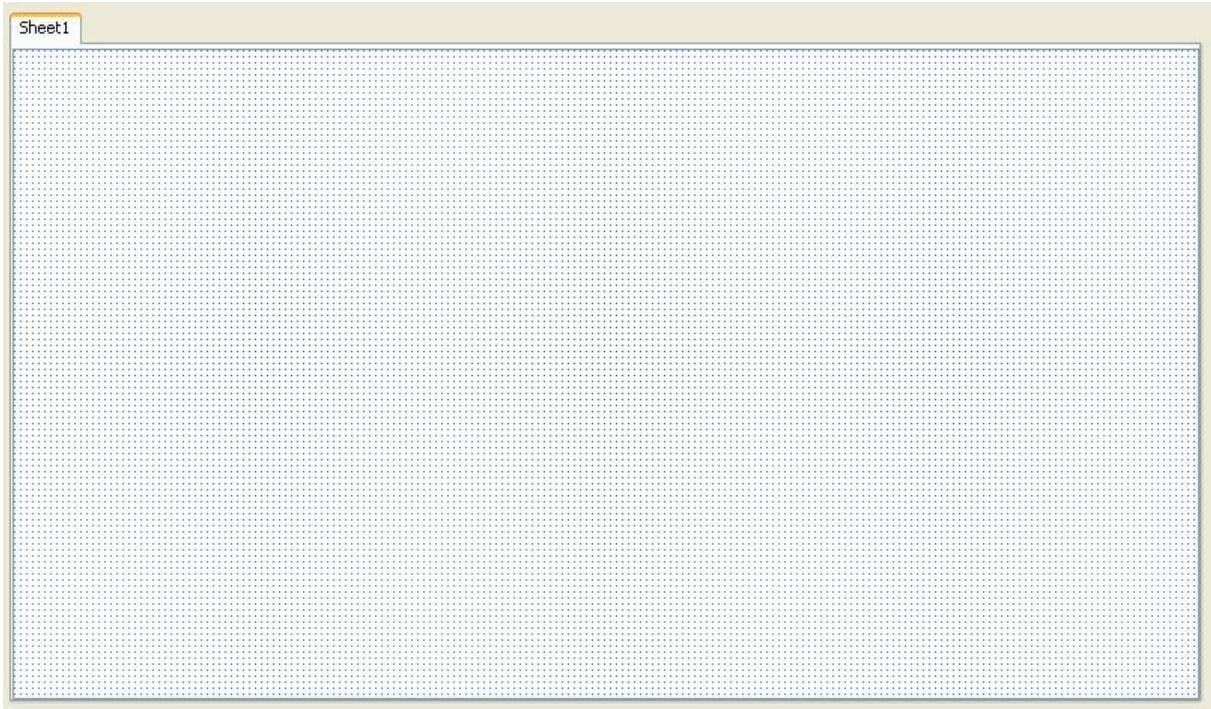Drawing Area is the place where the circuit is drawn. This place can support various pages called "sheets".

Figure 8: Main Drawing Area

3. MENUS

3.1 File Menu

New create a new project.
Open open an existing project.
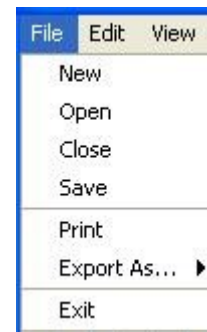*Close* close the current project.
Save save the current project with a different name.
Print prints the current project.
Export As PDF creates the pdf file of schematics.
Export As JPG creates the jpg file of schematics.
Exit enables the user to exit from the program.

3.2 Edit Menu

Undo undo the last action before the user save the current project.
Redo redo until the first undo action.
Cut cut the selected item(s). First a right click must be performed on the selected item.
Copy copy the selected item(s).
Paste paste the last cut or copied item(s). After selecting paste a right click must be performed to the place where the item is pasted.
Select All select all items in the current sheet.
Deselect deselect a selected item.
Select Inverse select all items except the selected item in the current sheet.
Group group the selected items.
Ungroup ungroup the selected group.
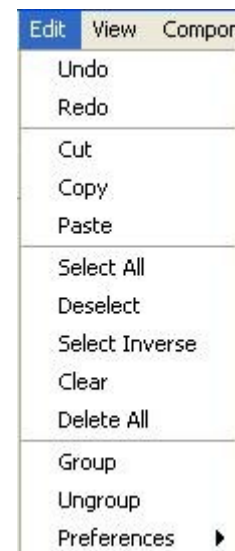*Clear* clear the selected items.
Delete All delete all items in the current sheet.
Preferences contains the background color and grid view options.
Background color provides a color palet to the user in order to set the background color of the drawing area. Default color is white.
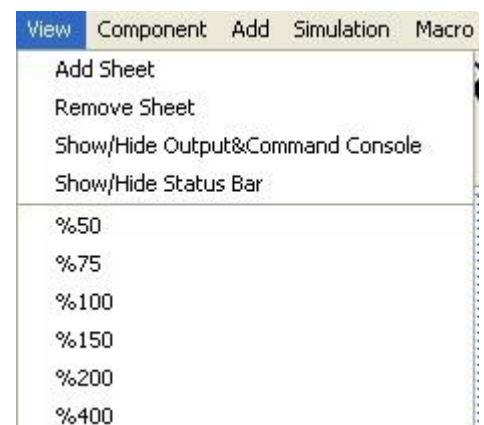*Show Grid* provides a grid view.

3.3 View Menu

Add Sheet insert a new sheet to the current project.
Remove Sheet option shall enable the user to remove the current sheet from the project.
Show/Hide Console option shall enable the user to show or hide the console view.
Show/Hide Status Bar option shall enable the user to show or hide the status bar.

Zoom options shall be listed such that *Fit to Window, Fit to Page, 50%, 75% ..., Custom.*

3.4 Component Menu

Properties display the name, code and input/output informations of the selected component.
Library display the library pages which contains all the components that are available as listed.
Find Component display a pop up window which contains a text box for the name of the searched component and enable the user to find it.
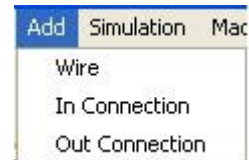*Create Component* adds a new component defined by the user.
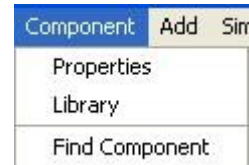
3.5 Add Menu

Wire connect components with wires.
*In Connection* add input connection instead of line drawing between sheets.
Out Connection add output connection instead of line drawing between sheets.

3.6 Simulation Menu

On-the-Fly On enables the simulation active while Editing or drawing the objects. Simulation mode is Active and changes dynamically.
Glow Mode On enables the highlighton of lines as Red or green according to their simulation values.
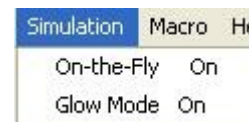
3.7 Macro Menu

Script Editor open a text file with the file extension .bx in order to enable the user to write or edit a script file. These scripts can be used for testing.
Execute execute the selected script file.
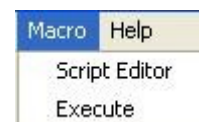
3.8 Help Menu

About connect to the our web site in order to give information about the Project Bellatrix.
Bellatrix Help display the tutorials about the usage Of Bellatrix.

4. MODES

Bellatrix uses two functional modes:

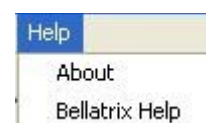- An Edit mode with two sub modes
  - o A Component Selection and Placement mode which allows to select, to place and move components.
  - o A Component Link mode which allows to link component together.
- A Script Mode which allows to execute scripts from command line.
- Simulation Mode is always active which means simulation is performed on the fly at every new change.

a. Edit Mode

4.1.1 Component Selection and Placement Mode

Selection

1. Open one of the panels displayed in the workspace view or select the component option in the add menu.

2. Left click on the selected component

3. Choose the sheet to insert the component to (if not yet selected)

4. Left click to put the component. The component appears in a box if selected.

5. Right click on a free place to deselect the current component

Tips:

A left click on the sheet on a free place will put an other component of the selected type.

Placement

- Left click on a component while the mouse is moved will move the component(s).

4.1.2 Component Link Mode

Wire Link

1. Select the line icon in the tool bar or the add menu

2. Select Line option

3. Left click on the first component pin

4. Left click on the second component pin.

Tips:

*   Once the line drawn, it shall be able to be moved or modified by right clicking on it. Two options are displayed on the menu after right clicking the line.

*   Delete option deletes the selected line.

*   Detach option unlinks the line and the components which the line is connected to.

*   A line shall be highlighted if the wire is connected to a pin. If the value of the wire is 0 it will be highlighted as red color, if the value of the wire is 1 it will be highlighted as green.

*   It is important that only the unconnected lines can be link to another line. In order to connect to lines the unconnected port must be drag and drop on to the line which will be connected. After this operation both lines will have the same value.

In / Out Connection

In / Out connections can be named by right clicking on them in order to use these names to set values by using scipt console.
How to proceed ?

1. Select In/Out Connection
2. Right click on the selected In/Out Connection
3. A pop-up menu will be displayed. The inputlabel is the default name of the input connections. User can not initialize values of in/out connections by using script console without naming the in/out connection labels.

4. Change the name of the connection (for example: Input1) in the properties window.

b. *Script Mode*

Script Console can be used both loading files from command line, and setting the input values and after naming them and then the output values are displayed on the console.

Commands:

- *open(fullpath)* command loads the file in the given path.
- *set(label, value)* command is used to set the input values to the input labels named before as explained above.

5. SAMPLE PROJECT

A sample Bellatrix project…