

This guide offers a quick overview of using IPexpress® to use LatticeCORE™ IP modules. For more information, check the IPexpress Help in the Help menu.

**Note:**

This guide describes the Lattice Diamond® software version of IPexpress, which differs slightly from the Lattice ispLEVER® software version of IPexpress. For a complete description of the Lattice ispLEVER version of IPexpress, check the IPexpress Help in the Help menu.

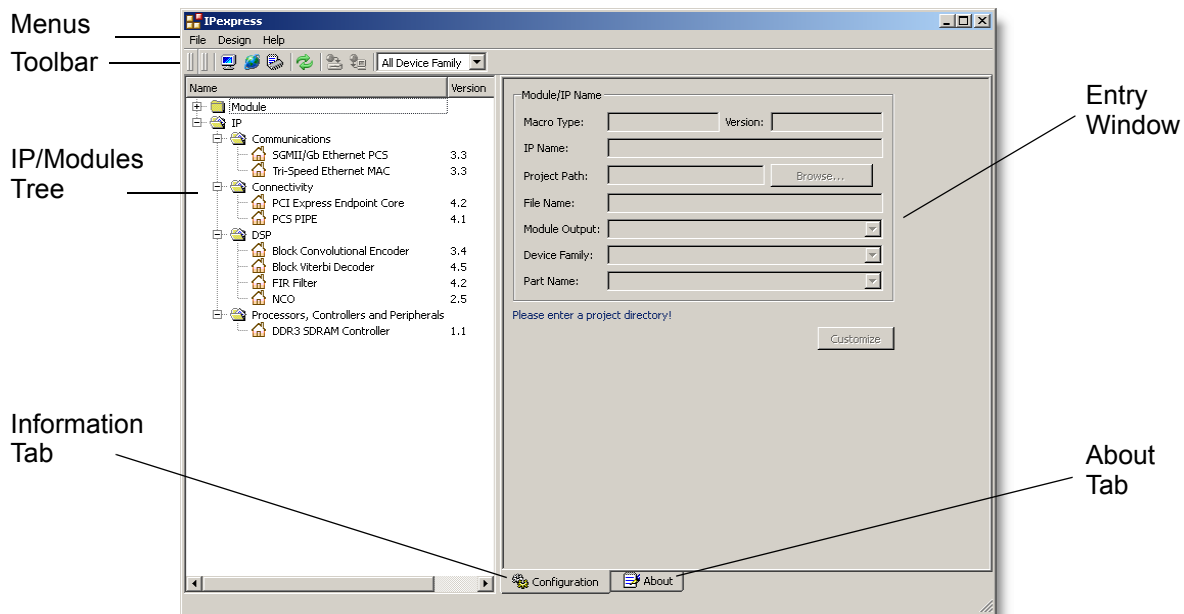
## IPexpress Main Window

When you start IPexpress, the main window lets you browse LatticeCORE IP modules available on your local computer and on the Lattice IP Server.

LatticeCORE IP modules allow you to configure the IP and generate a netlist and simulation file for use in your design. Please note that you may be prevented from generating a bitstream or the bitstream may have time logic present unless you purchase a license for the IP.

**Note:**


A red “X” next to the LatticeCORE IP icon indicates that the IP is not available for the selected device.

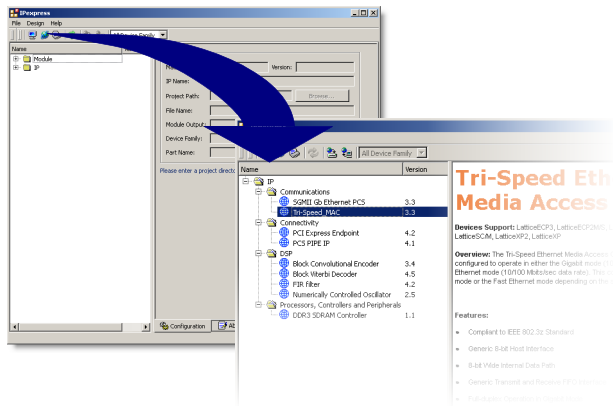


## Viewing IP Modules Available for Download

From the IPexpress main window, you can view LatticeCORE IP modules available for download. An Internet connection is required.

To view LatticeCORE IP modules available from the Lattice Web site:


1. In the main window, click the IP Server button  in the IPexpress toolbar. IPexpress automatically connects to the internet.
2. Click the IP folder in the left panel to download IP information and view the available LatticeCORE IP modules.




## Installing or Downloading a LatticeCORE IP Module

You can download and install LatticeCORE IP modules on your computer, or you can simply download them and then install them at a later time.

To download an IP for installation at a later time:


1. Highlight the desired IP in the IP list, then click the Download button  on the main window toolbar or you can right-click on the desired IP and choose **Download** from the drop-down menu.

To install an IP in IPexpress:

1. Highlight the desired IP in the IP list, then click the Install button  on the main window toolbar, or you can right-click on the desired IP and choose **Install** from the drop-down menu.
2. Follow the on-screen instructions.




3. Specify a location in which to save the IP in the dialog box, and click **Save**.

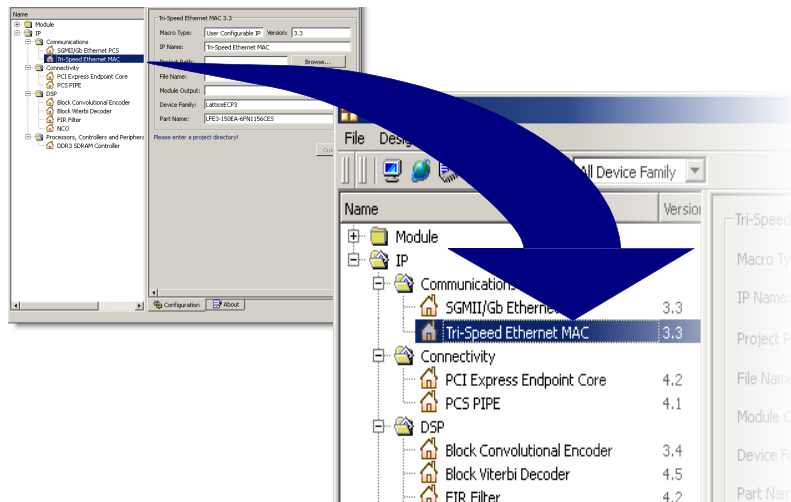
- When you are ready to install the IP, double-click on the `<ip_name>.exe` file that you had previously saved, and follow the on-screen instructions. Once completed, the installed IPs will appear in the IP/Modules tree of the main window. Click the Local button  to view the IP/Modules tree.

## Customizing an IP Module With IPexpress

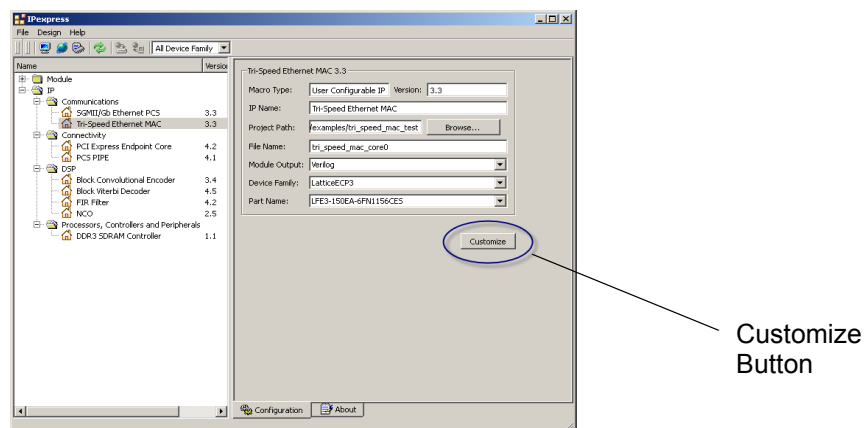
Once you have downloaded and installed a LatticeCORE IP module, you can customize it with the IPexpress software.

To customize a LatticeCORE IP module in IPexpress:

- Select the desired IP in the list. IPs are indicated in the list with a  icon.

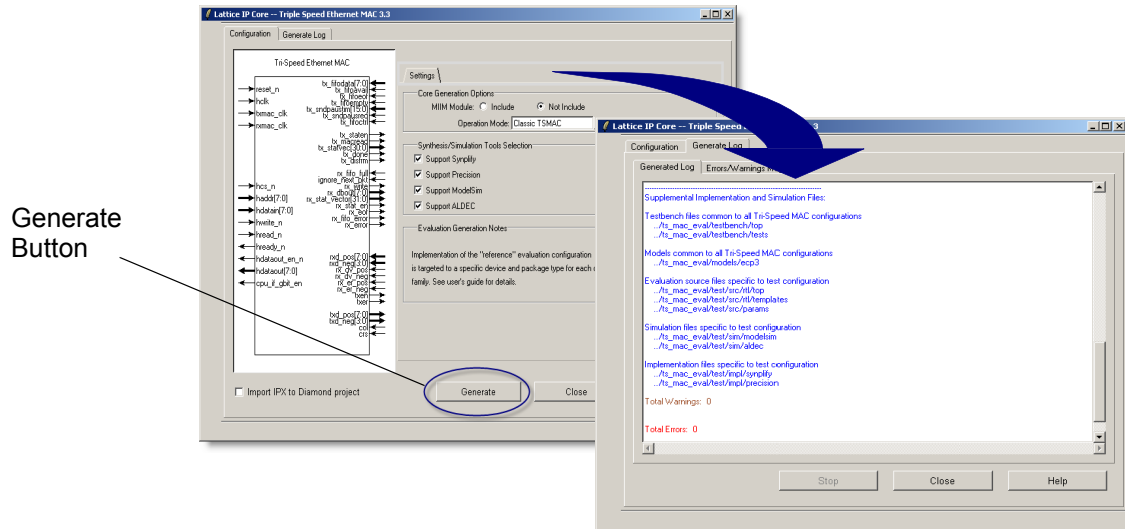


- Enter the following information in the right pane of the main window:
  - ◆ **Project Path** – Enter or browse to the directory where the generated IP files will be located.
  - ◆ **File Name** – Enter the base name for the module's files (that is, with no extension).
  - ◆ **Module Output** – Select a design entry format from the drop-down list.
  - ◆ **Device Family** – Select the device family for the module or core you've selected.
  - ◆ **Part Name** – Select the specific part from the drop-down list.
- Click **Customize** in the lower-right corner of the main window. This displays the Configuration dialog box for your IP.



To generate IP output files:

1. Set desired IP parameters, if available, in the Configuration dialog box.
2. Click **Generate**. The output directories and files are generated in the location you specified in the main window.



Extensive documentation is provided with each LatticeCORE and with the IPexpress software.

- ◆ **User's Guide.** Each LatticeCORE IP module comes with a user's guide containing information specific to that IP. Access the user's guide by clicking **Help** in the IP Configuration dialog box.
- ◆ **Online Help.** The online Help includes instructions on how to use IPexpress. Access the online Help from the IPexpress software by choosing **Help > IPexpress Help**.

More information about LatticeCORE IP modules can be found online at:  
<http://www.latticesemi.com/ip>.



**Customer Support**

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 Other locations: +1 503 268 8001  
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**Customer Support—Asia**

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