DLPC2607 GUI

User's Guide

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Contents

DLPC2607 GUI User's Guide

1 Overview

The DLPC2607 controller includes a Windows™ based GUI application to control the module through I^2C commands. This user's guide provides instructions on how to use features provided by the GUI application to communicate with the DLPC2607 controller.

2 System Requirements

The following list shows the minimum recommended system requirements for the DLPC2607 GUI application software:

- PC with 1.4 GHz Pentium IV CPU or higher
- Windows™ XP SP3 or higher
- 512 MB of RAM
- SVGA (800 × 600) display XGA (1024 × 768) display
- 10 MB of free hard-disk space
- USB port

The user needs to have an I^2C convertor box. For more details, see the following websites and check for:

- "USB-I2CIO" USB interface hardware at www.devasys.com
- "USB-to-I2C Professional" at www.i2ctools.com/products.html

3 Software Installation

3.1 DLPC2607 GUI Software Installation

Download the installation setup for DLPC2607 GUI PC software from the product page www.ti.com/product/DLPC2607 to the desired folder in your PC. Execute “DLPC2607 GUI v1.0 Setup.exe”, and follow the instructions for software installation.

3.2 Communication Interface Driver Installation

When using the DLPC2607 GUI, the user must have a communication link established between the DLPC2607 controller and the computer running this software. This allows the user to read and write to the controller from the computer. The DLPC2607 GUI supports the I^2C interface for this communication. The user needs to install device drivers for the I^2C adaptors from the following websites:

- DeVaSys USB-to-I2C driver at www.devasys.com
- USB-to-I2C Professional drivers at www.i2ctools.com/products.html

4 User Interface Overview

When the installation successfully completes, execute “DLPC2607 GUI.exe” from Start → All Programs, or from the shortcut provided on the desktop. When the application starts, the following GUI screen displays (see Figure 1). The GUI window contains these sections:

1. Project Tree Pane: The project tree pane lists the projector control tool and pico loader tool, which are used to communicate with the DLPC2607 controller. Select a tool to open the associated tool pane and any tabs or toolbars.
2. Tool Pane: The tool pane displays the active panel for the tool selected in the project tree.
3. Output Log Window: The output log window displays information associated with the user's project and is mostly used for debugging. The output log window has its own set of tool tabs (projector control and so forth) located at the bottom of the window that allows the user to toggle through the various tool output logs without changing the active tool in the tool pane.
4. Menu Bar: The menu bar contains several menus the user can click to access other features, such as editing preferences (Edit → Preferences).
5. Toolbar: This bar contains common support functions for the project selected from project tree pane.

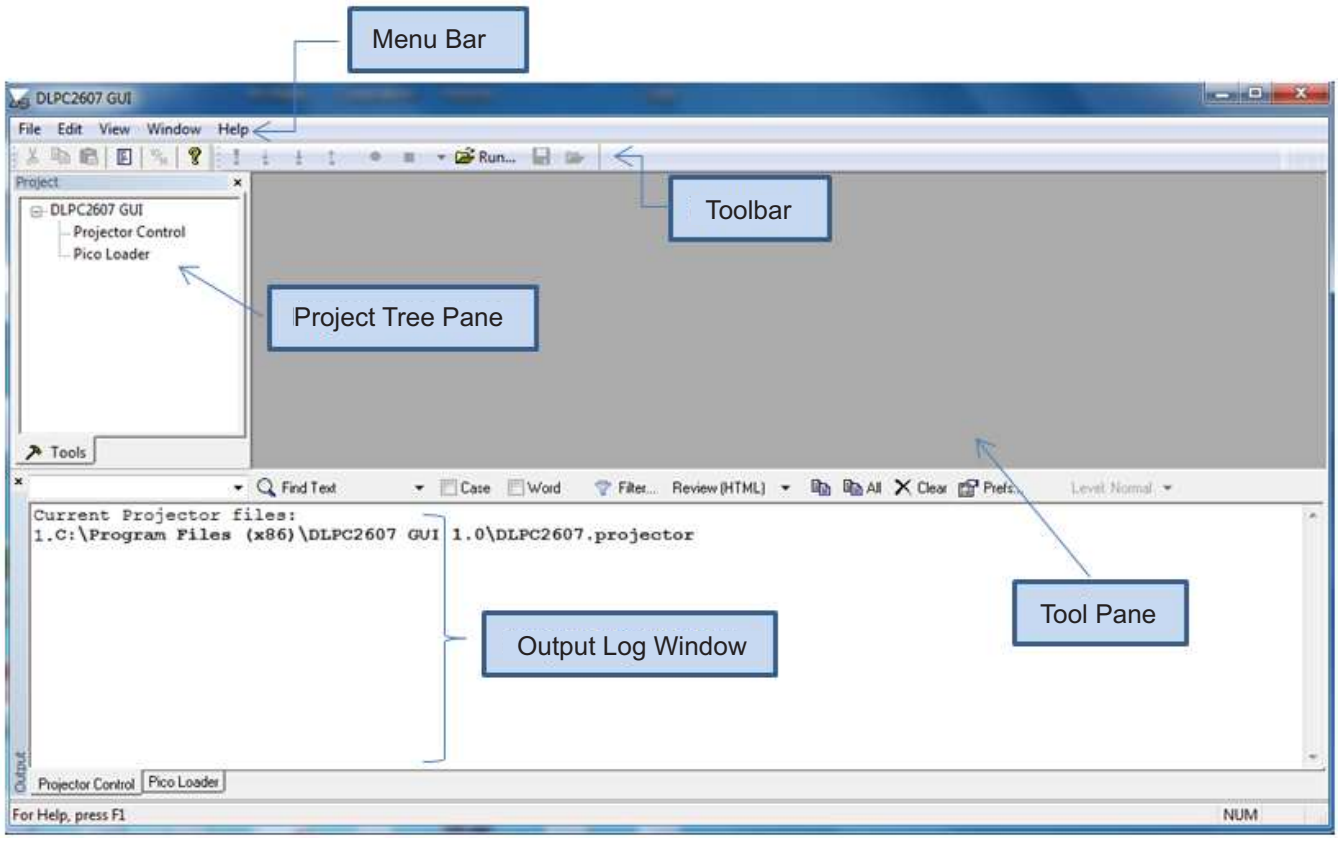

Figure 1. DLPC2607 GUI

5 Using the Edit Menu

Select Preferences from the Edit menu to specify DLPC2607 GUI options:

- Output window and logging options
- Communication options
- Pico loader options

5.1 Output Window and Logging Options

1. From the Edit menu, select Preferences. (The Preferences dialog box appears.)
2. Click "Output - Memory / Log" and "Output - Font / Speed", and select features as desired.
3. Click OK.

5.2 Communication Options

1. Select I^{2}C Interfaces using one of these options:
   - DeVaSys http://www.devasys.com
   - I^{2}C Tools http://www.i2ctools.com
2. At the end of the dialog box, select 100 kHz as the I^{2}C speed (see Figure 2).
3. Click OK.

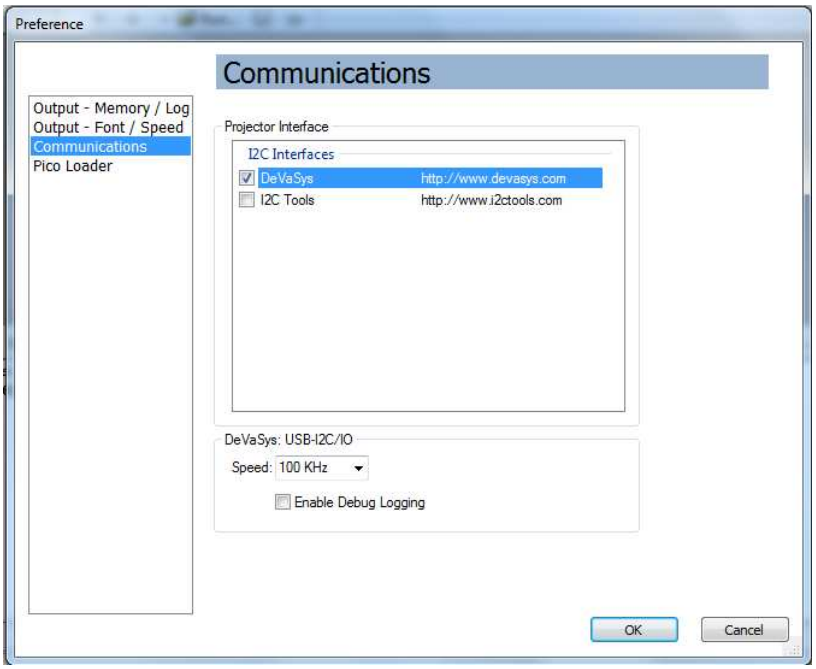

Figure 2. Selecting Communication Options GUI

5.3 Pico Loader Options

1. At the end of the dialog box, select 100 kHz as the I^2C speed (see Figure 3).
2. Select 0x36 as the slave address.
3. Click OK.

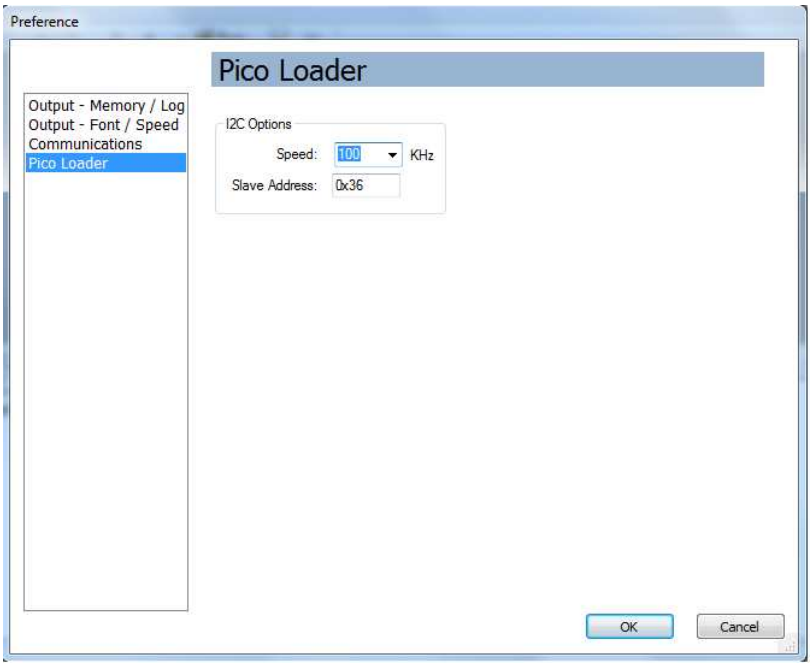

Figure 3. Selecting Pico Loader Options GUI

6 Using DLPC2607 GUI Tools

6.1 Using Projector Control

The Projector Control tool is used to control a DLPC2607 controller by issuing I^2C commands.

Use this tool to construct batch files consisting of multiple I^2C commands (and other commands) to automate simple tasks when developing and testing a new projector using the Batch Files page.

Several other pages are available to issue commands and view data. For descriptions of the pages and their registers, see the DLPC2607 Programmer's Guide, available on www.ti.com/product/DLPC2607.

6.1.1 Batch Files

The Batch Files page processes batch files consisting of multiple I^2C commands (and other commands) to automate simple tasks when developing and testing a new projector.

To run a batch file:

1. From the toolbar Run → Choose Batch File, click the *Choose Batch File* button.
2. Select a batch file. The batch files are typically named with the .bf extension.
3. The batch file runs and produces output in the output window.

All displayed output from the batch file is also logged to a disk file. The file is named the same as the batch file, but with the .log extension and is in the same directory as the batch file.

Options:

- Long-running batch files can be stopped using the *Cancel* button.
- The *Resume* button can be used to continue a paused batch file.
- To setup the batch file to stop when it encounters an error, click the Stop Batch File on the First Error checkbox.
- To setup a popup message to appear when a batch file encounters an error, click the Display Message box on the Error checkbox.

6.1.1.1 Writing Batch Files

Batch files are text files that can be created with any text editor, such as Notepad. Each line of a batch file represents a command. The following commands are supported:

#— Lines starting with # are considered to be comments and are ignored. Comments can also be given on the same line as a command by preceding it with the # character.

ALIAS— Defines a command alias. For example, "alias brightness w 34 0x42", followed by "brightness 0x1234" is the same as writing "w 34 0x42 0x1234". The aliased command is replaced by the text that follows it, and aliasing only matches commands at the start of a line.

BYTESWAP— Causes bytes to be swapped before they are sent to the projector. Turn on byte swapping using BYTESWAP ON, and disable it using BYTESWAP OFF. The default is BYTESWAP OFF, in which bytes are sent in the order written. When byte swapping is turned on "0x12345678" is sent as "0x78 0x56 0x34 0x12" instead of "0x12 0x34 0x56 0x78", and "0x1234" is sent as "0x34 0x12" instead of "0x12 0x34".

CHAIN— Calls another batch file as a subroutine. When the nested batch file completes, the current batch file resumes. The full path of another batch file should be given as a parameter after the command (for example, "chain c:\batch\other.bf"). If no other batch file is named, the command is ignored.

DELAY— Waits some amount of time before continuing to process the batch file. The only parameter should be the number of milliseconds to delay, specified in hex. If no parameter is given, it defaults to 10 ms.

ECHO— Displays the text after the command to the output window and log file.

GOTO— Simple looping control. A batch file can loop continuously until cancelled by using the GOTO BEGIN command (abbreviated as G BEGIN). Commands after the GOTO command are not processed.

PAUSE— Pauses the batch file. A dialog box appears that displays the remainder of the text on the pause command line, and it prompts for input. Any text input is displayed in the output window and log file. After the dialog is dismissed, the batch file can be resumed or cancelled by pressing the corresponding button on the Batch Files page.

READ— Reads data from an I^2C slave. The parameters are: the slave address and the number of data bytes to read. For example, "Read 34 4" would read 4 bytes of data from I^2C slave address 0x35.

WRITE— Writes data to an I^2C slave. The parameters are: the slave address, the sub address, and zero or more data bytes. All parameters should be one byte long separated by spaces. For example, "Write 34 1 12 23" would write two bytes to slave address 34, sub address 1.

NOTE: All batch file commands (except for ALIAS and BYTESWAP) can be abbreviated using the first character of the command name. For example, the READ command can be abbreviated as R. Case is not significant, so Read, READ, read, R, and r are considered to be the same command.

6.1.2 Projector Control Pages

Several other pages are available to issue commands and view data (as shown in Figure 4). For descriptions of the pages and their registers, see the DLPC2607 Programmer's Guide, available on www.ti.com/product/DLPC2607.

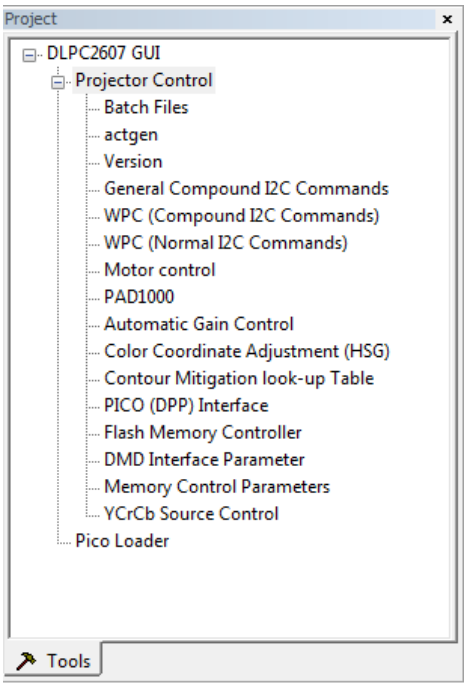

Figure 4. Projector Control Pages GUI

6.2 Using Pico Loader

Use this tool to send a flash image file to a DLPC2607 controller using I²C. This flash image is created by the user's Optical Engine Manufacturer to tune the DLPC2607 controller to the desired level of image quality. The user should obtain the flash image file for the DLPC2607 controller and copy it onto the user's PC. After the user obtains the flash image, select Pico Loader from the project tree pane. The Pico Loader GUI (see Figure 5) appears in the tool pane.

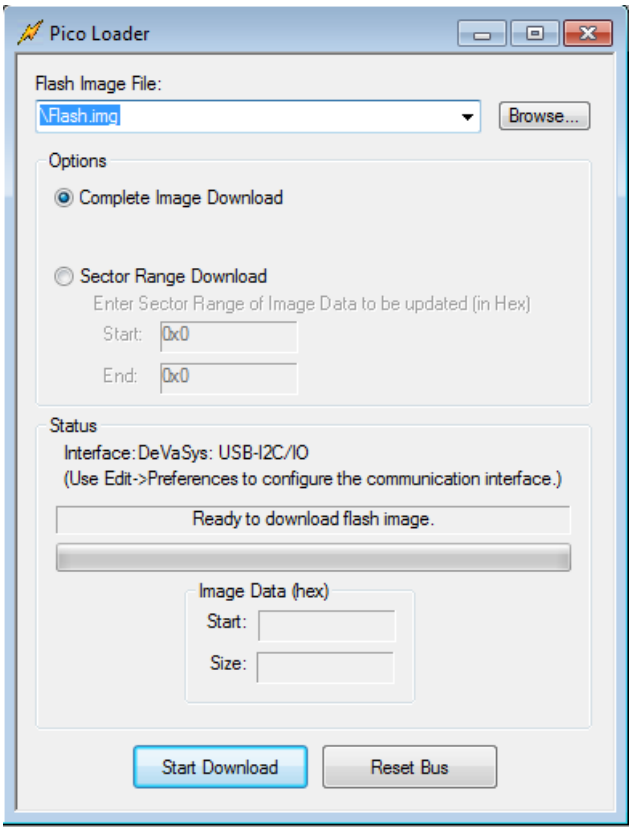

Figure 5. Pico Loader GUI

To download a flash image, select the pico loader tool and follow these steps:

1. Click Browse to select the filename.
2. (Optional) select sector range parameters.
3. Power the device by connecting the USB cable to the PC, and ensure I²C connectivity.
4. Click Start Download to begin the transfer.
5. Do not interrupt power until after the download completes.

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