User's Guide

DLP® EVM GUI Tool User's Guide

ABSTRACT

The DLP® EVM includes a Windows™-based GUI tool used to control the EVM through I2C, SPI, or USB commands. This document provides instructions on how to get started with the GUI tool to communicate with the DLP EVM. More information is available on the help pages in the GUI tool.

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Trademarks

1 System Requirements

The minimum recommended system requirements for the DLP EVM GUI tool are shown in Table 1-1.

Table 1-1. System Requirements

Description	Version
Operation System	Windows 10
.Net Framework	4.6.1
Processor	1GHz or faster
RAM	1GB
Disk-space (minimum)	3GB
Internet Connection	Required for .Net Framework installation

2 Software Installation and Driver Installation

Download and execute the DLP-EVM-GUI-x.x.x.x-Setup.exe, and follow the instructions to install the GUI. Any drivers needed to communicate with the EVM are part of the installation.

3 EVM Selection

When you open the EVM GUI for the first time, an EVM selection window appears. After you select an EVM, the EVM GUI appears with UI controls customized for the selected EVM.

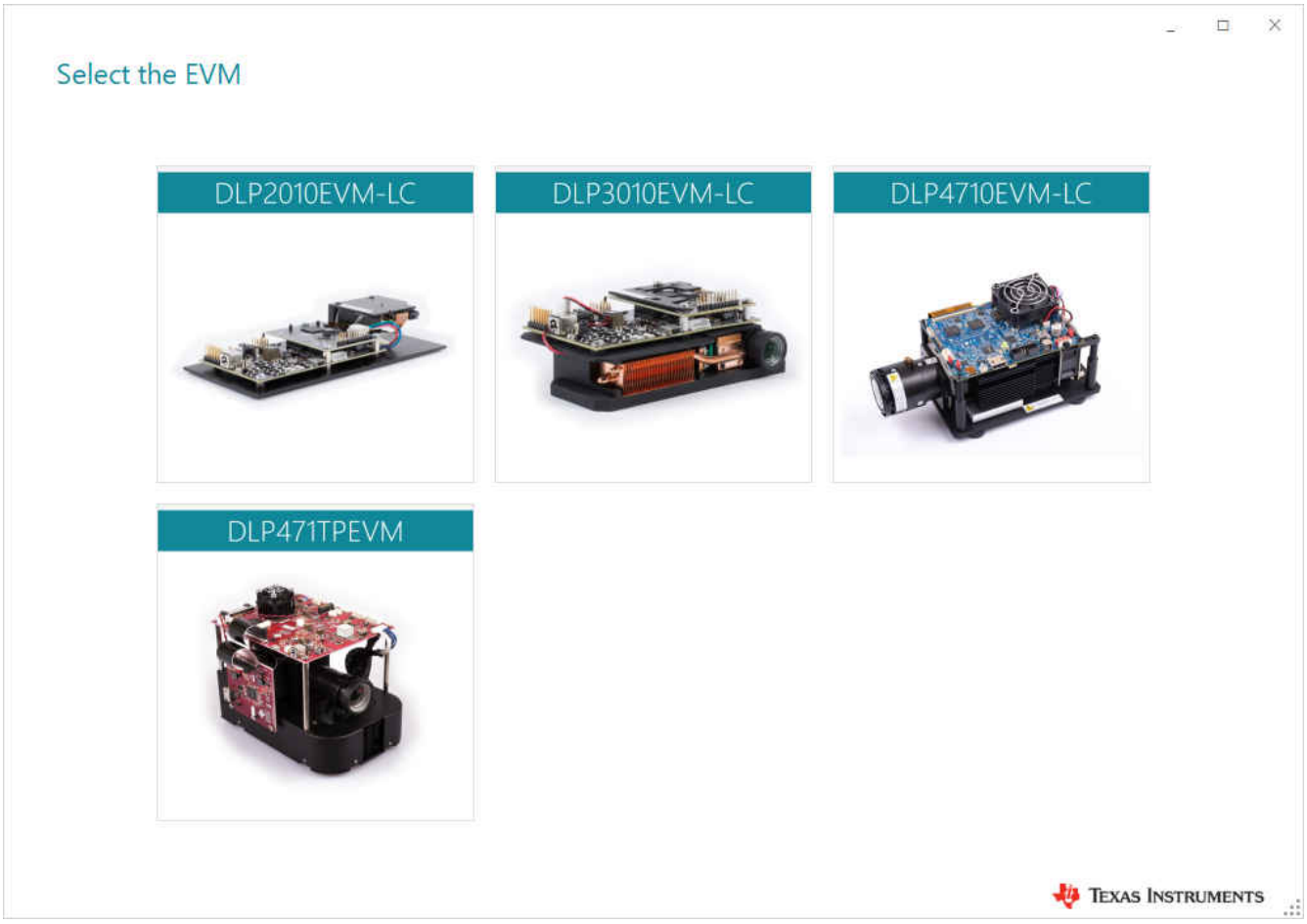

Figure 3-1. EVM Selection Window

4 User Interface Overview

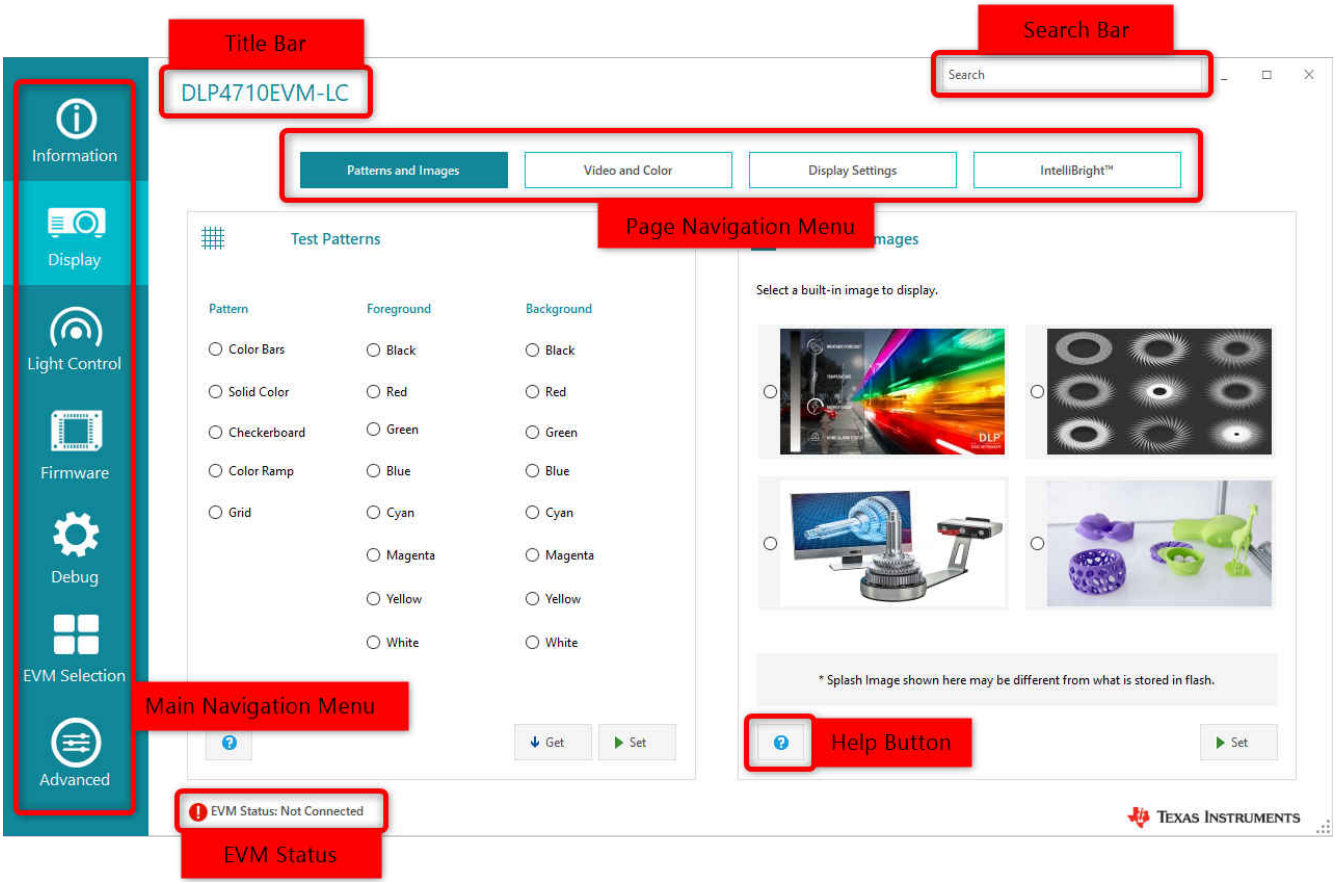

Figure 4-1. EVM GUI Tool

Figure 4-1 shows the layout of the EVM GUI tool

- The **title bar** displays the current EVM selection of the GUI. To select a different EVM, go to the EVM selection page.
- The **search bar** allows users to search for EVM GUI pages using page names.
- The **main navigation menu** lets users navigate to the different sections of the EVM GUI. Each section has one or more pages. Table 2 lists all the sections of the EVM GUI. Not all sections are visible for every EVM.
- The **page navigation menu** lets users switch between the pages in a section. Table 2 lists all the pages within each section of the EVM GUI.
- The **EVM status bar** displays the connection status and the current display mode of the EVM. The connection status could be one of the following:
  - Ready
  - Connected, Incompatible EVM
  - Connected, Power Off
  - Not Connected
- The **help buttons** in every page shows relevant help content.

Table 4-1. Page Description

Section	Page	Sub-page	Description
Information	EVM Information	EVM Information	Get the current status of the EVM
Display	Patterns and Images	Test Patterns	Set/Get the Test Pattern display
		Splash Images	Set the Splash Image display
	Video and Color	Video Information	Switch to External Video display and get the current display settings
		Color Temperature	Set/Get the current Color Temperature setting
	Display Settings	Display Settings	Set/Get Display Settings
		Keystone Correction	Set/Get Keystone Settings
	IntelliBright™ (DLP2010/3010/4710LC) or DynamicBlack™ (DLP471TP)	IntelliBright™	Set/Get IntelliBright™ Settings
		LED Current	Set/Get LED Current Settings
		DynamicBlack™	Set/Get automatic or manual DynamicBlack™ settings
Light Control *(Available only for light control EVMs: DLPC2010LC, DLPC3010LC, and DLP4710LC)*	External Patterns		Configure and Display External Patterns
	Internal Patterns	Pattern Sets, Patter Set Order, & Pattern Control	Configure and Display Internal Patterns with the option to save/ load pattern data to/from a file
	Splash Patterns		Configure and Display Splash Patterns
Firmware	Backup Firmware		Backup firmware
	Update Firmware		Update firmware
	Update Flash Image	Flash Image, White Point, Splash Image, Startup Option, & Advanced	Update and create new firmware image
Debug	Connection		Select communication interface and connect/disconnect to the EVM
	Event Viewer		View the event(s) that occurred
	Command Log		View the command(s) issued with the option to export the write command(s) to a batch file
Advanced			Switch to Advanced mode GUI

5 Connecting to the EVM

The EVM GUI automatically detects and connects to the EVM. If the automatic connection fails, the user can go to the Connection page to connect/disconnect the EVM or change the connection settings. To change the connection settings, the user needs to disconnect the EVM.

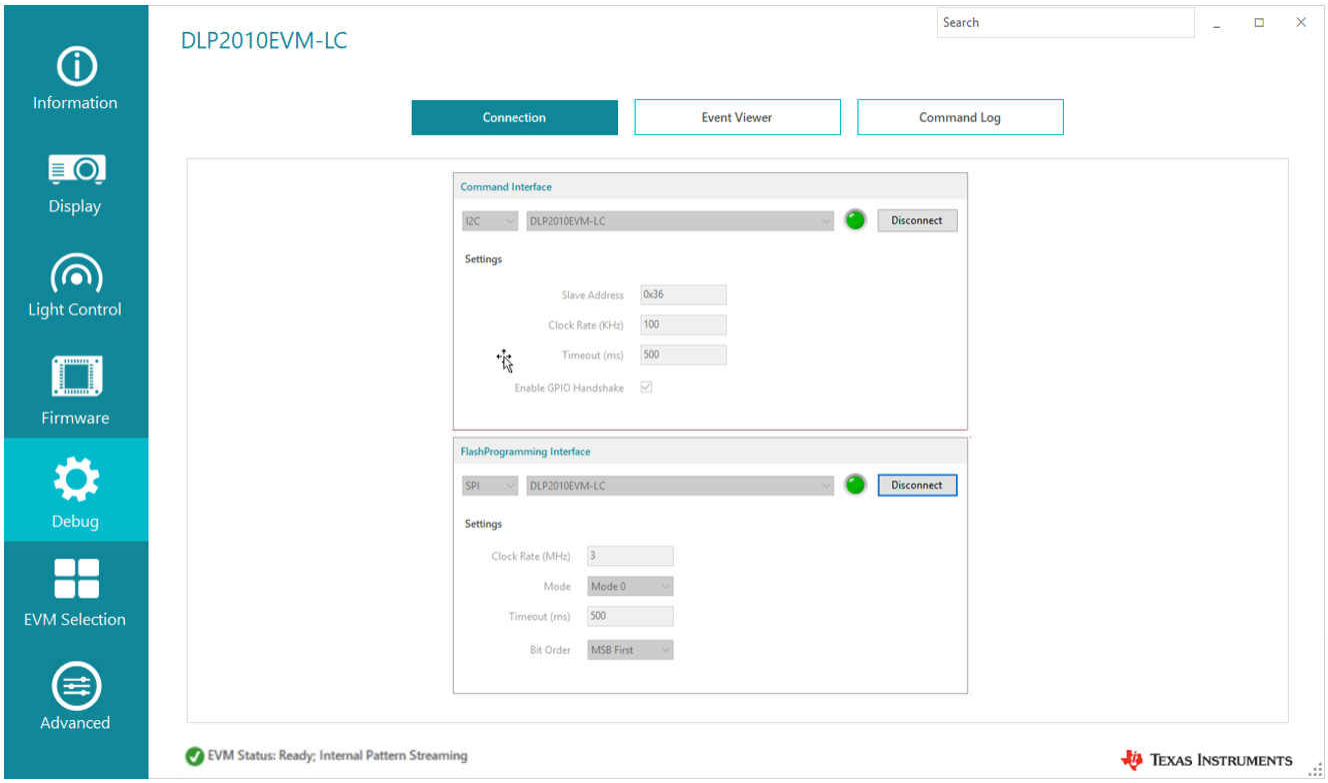

Figure 5-1. Connection Page

6 Updating the Firmware

To update the firmware, use the following steps:

1. Download the latest flash image for your EVM from TI.com.
2. Go to the Backup Firmware page in the Firmware section of the EVM GUI to create a backup of the existing firmware as a flash image file.
3. Click the browse button to select the file name and location of the backup flash image file and click the *Start Backup* button.
4. After a successful backup, go to the Update Firmware page in the Firmware section of the EVM GUI to program the latest flash image file.
5. Click the browse button to select the flash image file and then click the *Start Update* button.

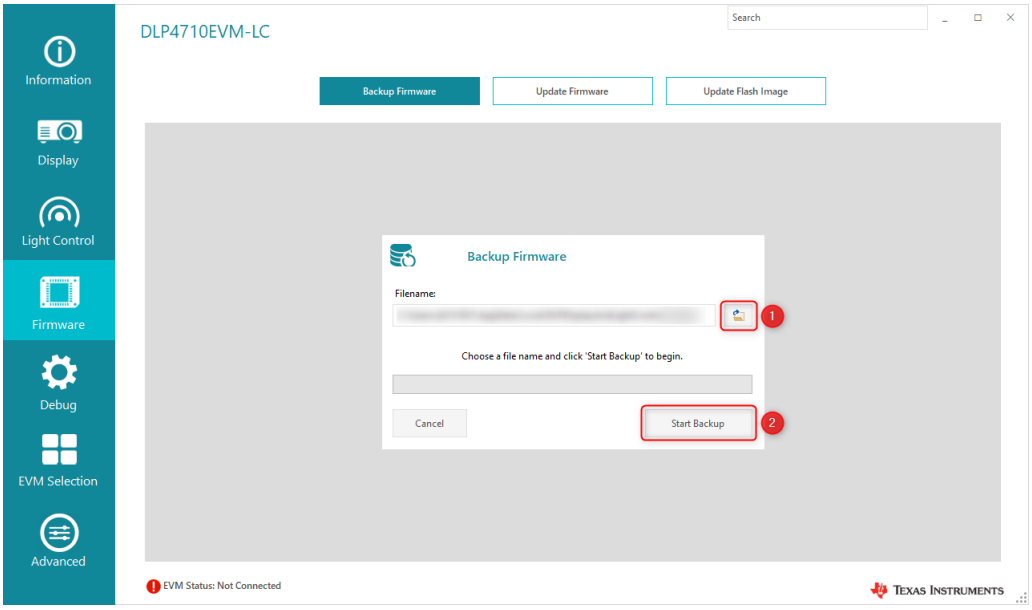

Figure 6-1. Backup Firmware

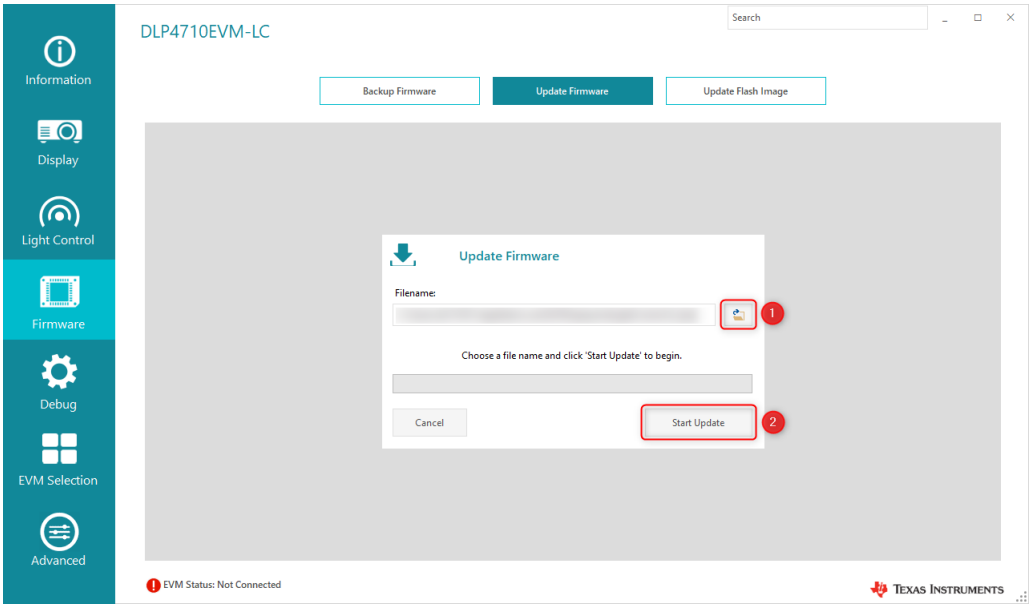

Figure 6-2. Update Firmware

7 Troubleshooting

Table 7-1. Troubleshooting

Issue	Probable Cause	Resolution
Unable to open the EVM GUI	Corrupted settings file	Find and delete the EVM's settings XML file (example DLPC2010LC.xml) which is located at user's AppData\Roaming\Texas Instruments\DLP EVM GUI folder
External Video does not display or does not display correctly	Unsupported video resolution	Check the External source's resolution and make sure it is supported/with-in-range of the EVM GUI's resolution
GUI does not connect to the DLP471TP EVM	The EVM GUI will try to connect to the EVM automatically. However, for the DLP471TP EVM, the user has to connect to the EVM for the first time manually.	Select the communication interface and make the connection manually through the Connection page in the Debug tab. Once connected, the GUI will remember the connection settings and will auto-connect during startup.
Simple mode for the DLP471TP EVM does not work after opening advanced mode	Only one application can be connected to the DLP471TP EVM at a time	Go to the connection page in the advanced mode and click disconnect. After disconnecting in the advanced mode, manually connect to the EVM from the Debug > Connection page in the simple mode.

8 Event Logging and Command Logging

8.1 Event Logging

The Even Viewer page in the Debug section lists the timestamp and description of the event(s) occurred on the EVM GUI.

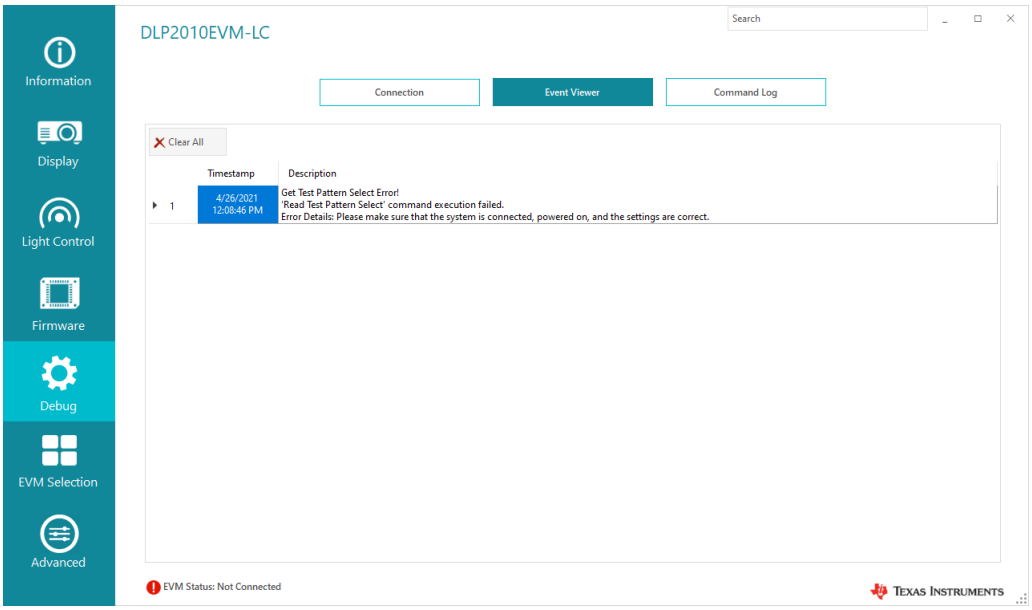

Figure 8-1. Event Viewer

8.2 Command Logging

The Command Log page in the Debug section lists the timestamp, command, transmit & receive data sent to the EVM.

For DLP2010/3010/4710LC,

- Transmit data includes the read/write command opcode and command parameter
- Read data includes read command returned data

For DLP471TP,

- Transmit data includes the read/write command Header (1 byte), Opcode (1 or 2 bytes), Length (2 bytes), Command Parameter (0 to 510 bytes), and Checksum (if enabled at the Connection Page)
- Read data includes the response Header (1 byte), Length (2 bytes), returned read data (0 to 510 bytes), and Checksum (if enabled at the Connection Page)

The user also has the option to export batch-able WRITE command(s) to a batch file for use later.

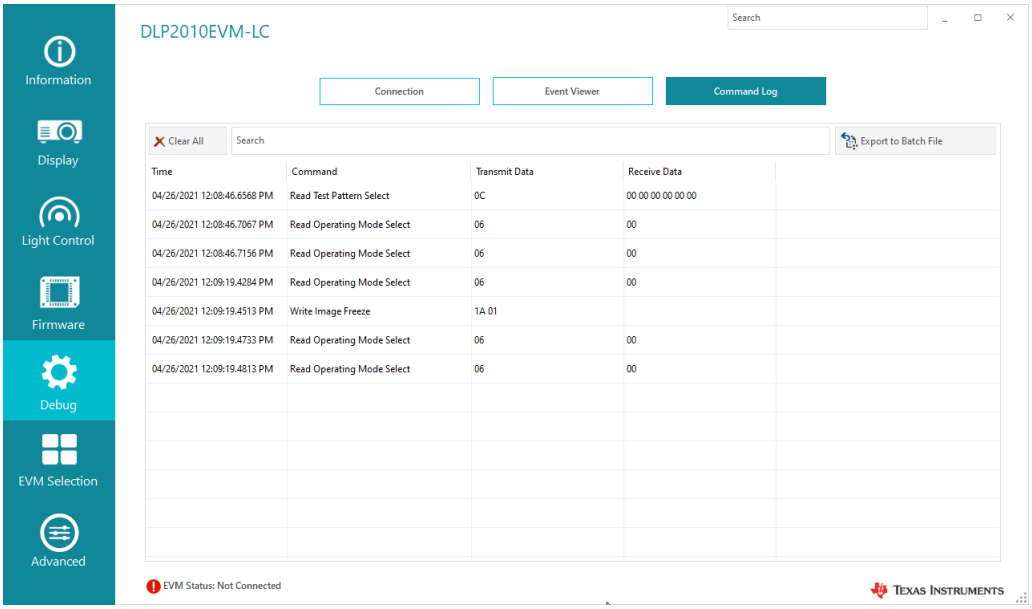

Figure 8-2. Command Log

9 Advanced Mode

The Advanced Mode of the EVM GUI tool allows the more experienced users to control the EVM system through low-level USB/I2C command pages and Python Scripting.

9.1 Connection Page

The connection page in the Advanced mode works similar to the connection page in the Simple mode, with the addition of the Logging Interface for DLP471TP EVM.

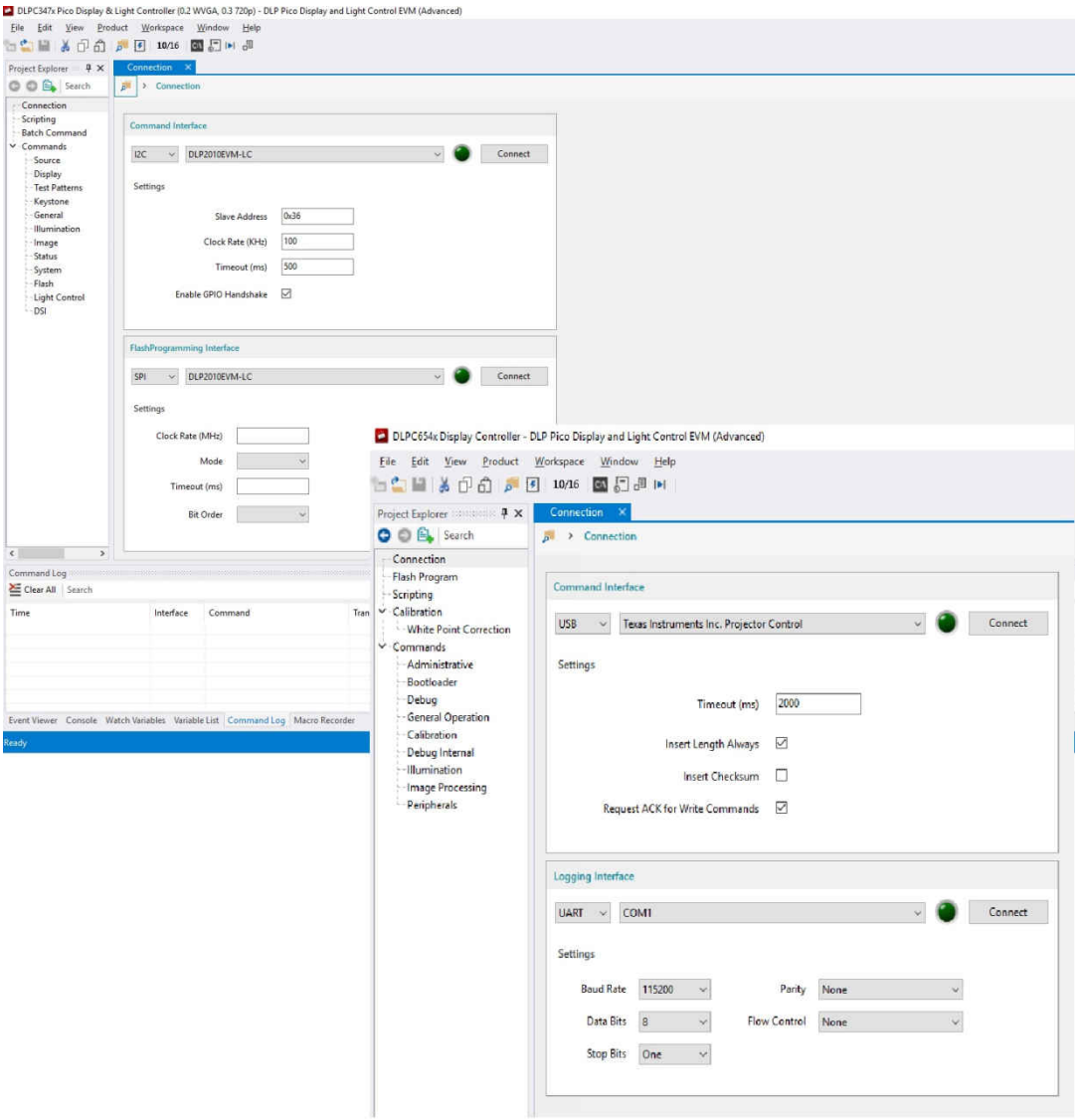

Figure 9-1. Advanced GUI – Connection Page

9.2 Scripting Page

The Scripting Page allows users to execute I2C/USB commands via Python scripts. The user can monitor and debug the execution of the script through the Event Viewer, Console, Watch Variables, Variable List, and Command Log panels at the bottom of the page.

From the *Help* menu, click *Scripting Reference* to see the list of commands available and the syntax for the command.

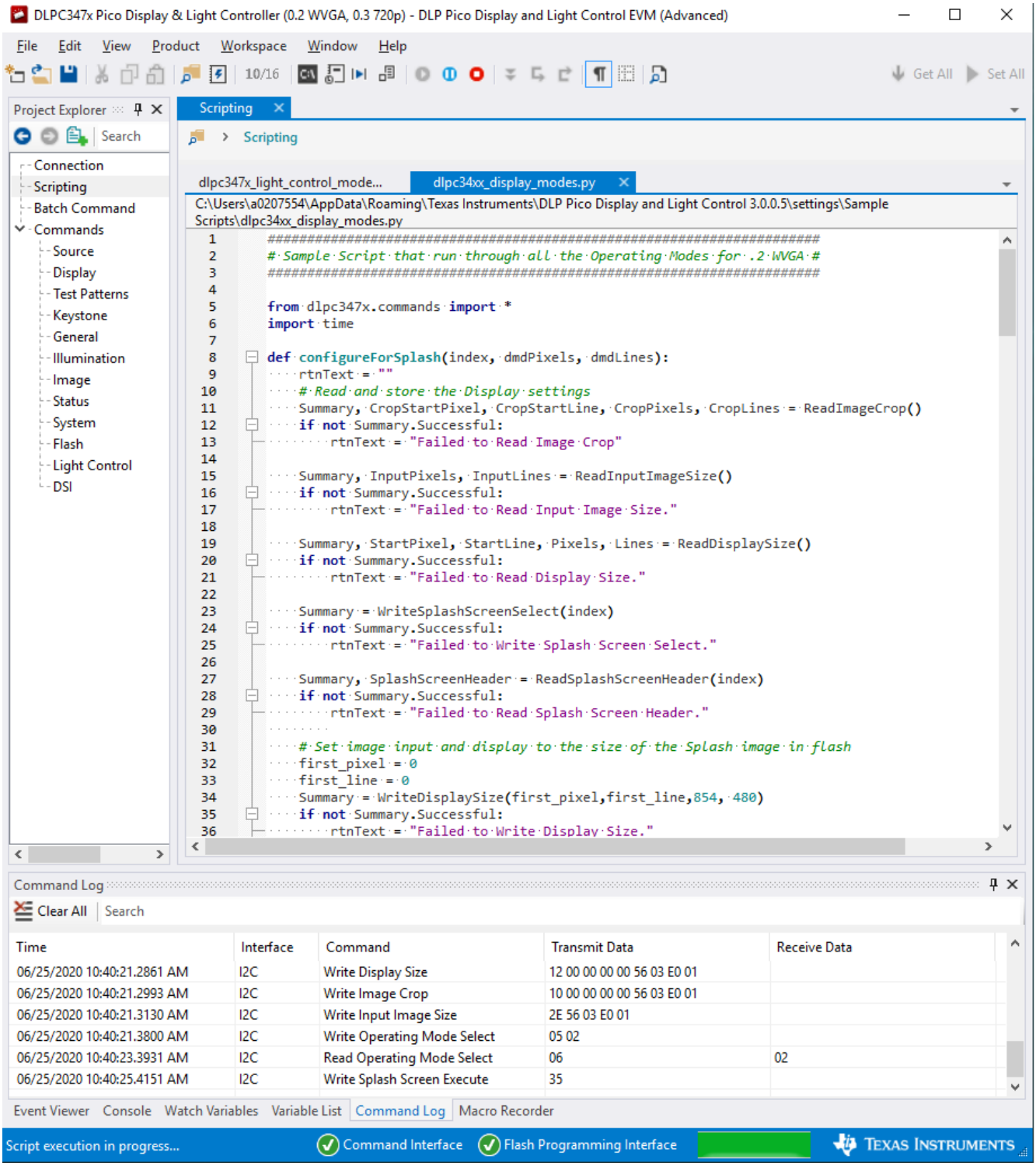

Figure 9-2. Advanced GUI – Scripting Page

9.3 Command Pages

The command pages allow the users access to the low-level I2C/USB commands. Click the command category from the Project Explorer window to find the list of commands available in each category. The user can **set** the parameter(s) of the individual command or *get* the parameter(s) of the command. Users can click *Set All* or *Get All* button at the top-right to send/receive all the commands on the page.

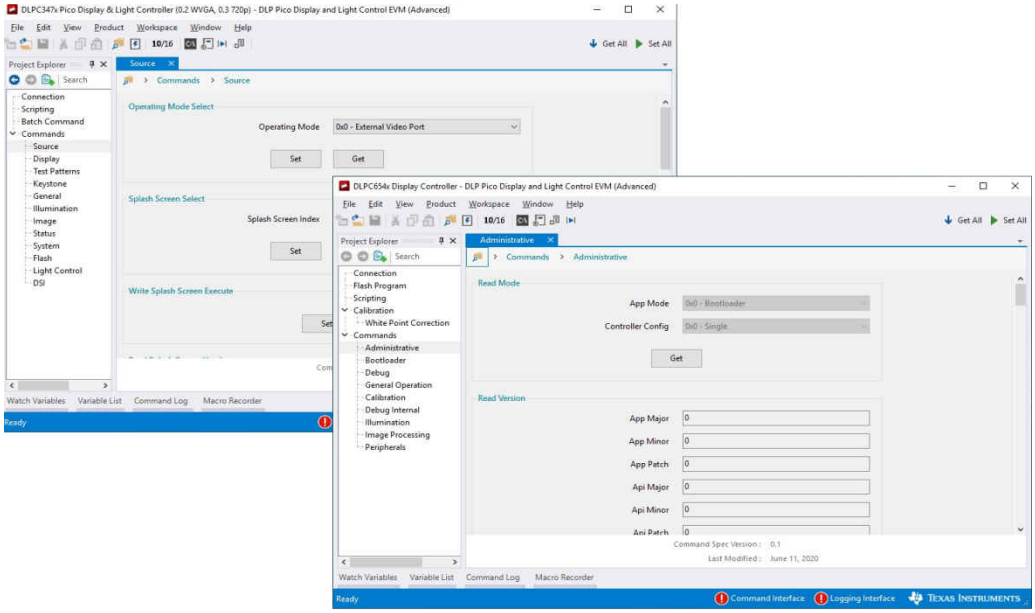

Figure 9-3. Advanced GUI - Command Pages

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265