Grayhill INC.

An ISO-9001 Company

Grayhill 3DDownloadTool

Software Usage Manual

Revision History

Revision	Date	Description
A	Aug 27, 2019	Initial release; Introduced with 3Dxx VUI Builder© PC Tool rev K and 3Dxx Linux Application rev K

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1. Introduction

This Software Usage Guide provides instructions on how to load a binary project file created with the Grayhill VUI Builder software tool onto a Grayhill 3Dxx Color Display device using the Grayhill PC-based 3DDownloadTool software.

The 3Dxx Color Display programming paradigm involves using the Grayhill VUI Builder© software to 1) create a group of objects, 2) save the objects as a project, and 3) download the project to the 3Dxx Color Display unit over the CAN bus.

After a project has been created and saved using VUI Builder, the project file and its required image files can also be combined into a single binary file using VUI Builder. The resulting binary file can then be downloaded to a 3Dxx Color Display using the 3DDownloadTool.

For a detailed description of the various 3Dxx Color Display objects and how to create a project, see the VUI Builder Software Developer's Manual.

2. Applicable Software Versions

This document describes features found on the following software versions:

- VUI Builder© Tool - Part Number: 3DPG1940-1-K (Rev K)
- 3Dxx Linux Application - Part Number: 3DPR1940-2-K (Rev K)

3. Supported Hardware Products

The 3DDownloadTool software revision described above currently supports these products:

- 3D50 Five Inch Color Display (480 x 800 pixels and up to two CAN buses)
- 3D70 Seven Inch Color Display (480 x 800 pixels and up to two CAN buses)
- 3D2104 10.4 Inch Color Display (1024 x 768 pixels and up to three CAN buses)

4. CAN Bus Interface to 3Dxx Color Display Hardware

The 3DDownloadTool software interfaces to a Grayhill 3Dxx Color Display device through a CAN bus interface. The tool currently supports using a GridConnect® USB PCAN adapter. Please visit www.gridconnect.com for details regarding the USB PCAN adapter.

In order for the 3DDownloadTool software to communicate with the 3Dxx Color Display device, two things must be done:
The USB PCAN adapter software must be installed on the PC being used. For a minimum, only the PCAN USB software needs to be installed, but other tools such as PCAN-View can be installed if desired.
A copy of the Dynamic Link Library (PCANBasic.DLL) provided with the USB PCAN adapter needs to be saved in the same folder as the 3DDownloadTool executable. Make sure that the 32-bit version is used as opposed to the 64-bit version of the DLL. This file can be found in the GridConnect® web site under "Support → Product Packages → PCAN-USB package". Then look in the download file "usb.zip" under the folder "PCAN-Basic API\Win32\". If using the CD from a GC-CAN-USB hardware kit, the PCANBasic.dll file can be found in the folder "\PreRelease\PCAN-Basic v3.4 (CAN-FD Support)\Win32".

5. 3DDownloadTool Software Installation

The 3DDownloadTool software can be obtained from this Grayhill web page:

http://www.grayhill.com/members/3d50

The above web site also has the latest version of this manual and some sample 3Dxx Color Display projects.

3DDownloadTool software installation does not require running any kind of installation software. All that is required is to place the following files together in a folder on a PC:

- 3DDownloadTool.exe – 3DDownloadTool executable
- PCANBasic.dll – DLL to communicate with PCAN interface obtained from the USB PCAN adapter software described above.

6. 3DDownloadTool Startup

Double click on “3DDownloadTool.exe” file to run the application.

When the application is started the initial dialog will appear as follows:

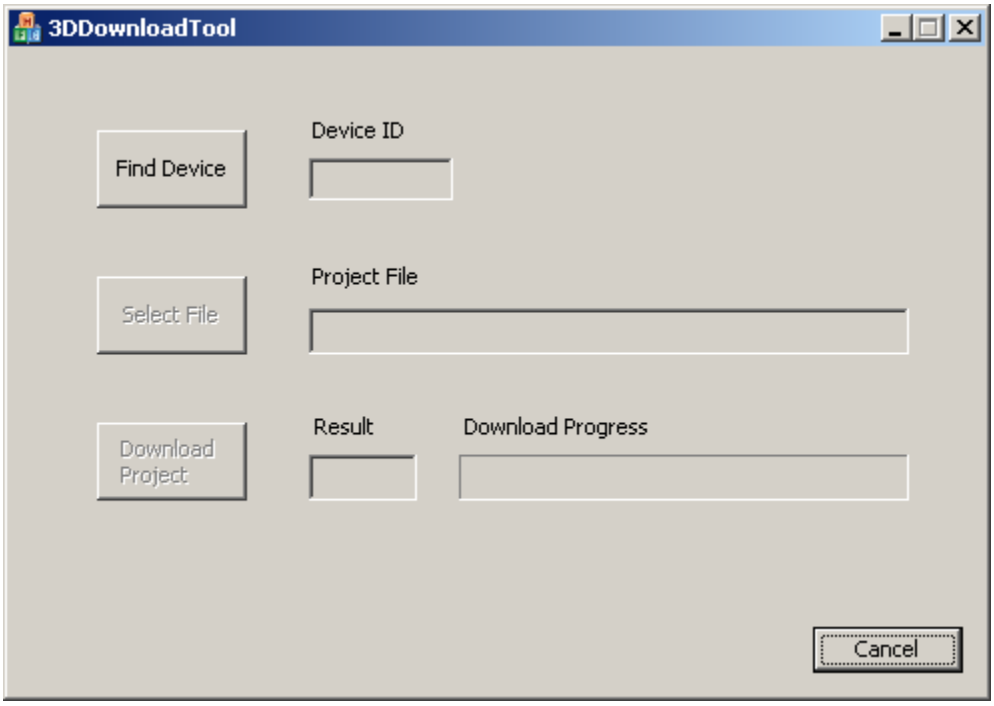

Figure1: 3DDownloadTool Startup Screen

7. Find Device

Click on the 'Find Device' button; the Select Dialog box should appear. Click the 'Find' button to discover 3Dxx displays on the CAN bus.

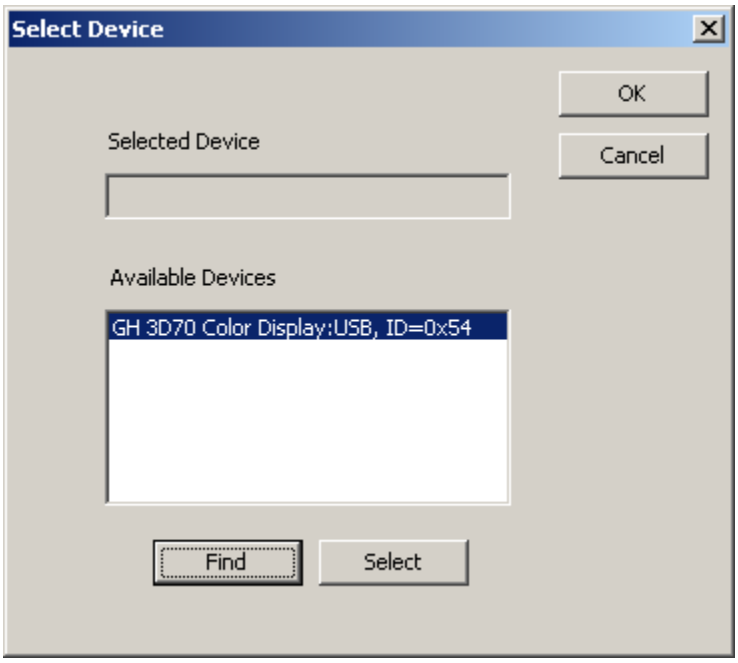

Figure2: Select Device Screen, Device Found

Click on the desired device to download the file to and click the 'Select' button. Click 'OK' when finished.

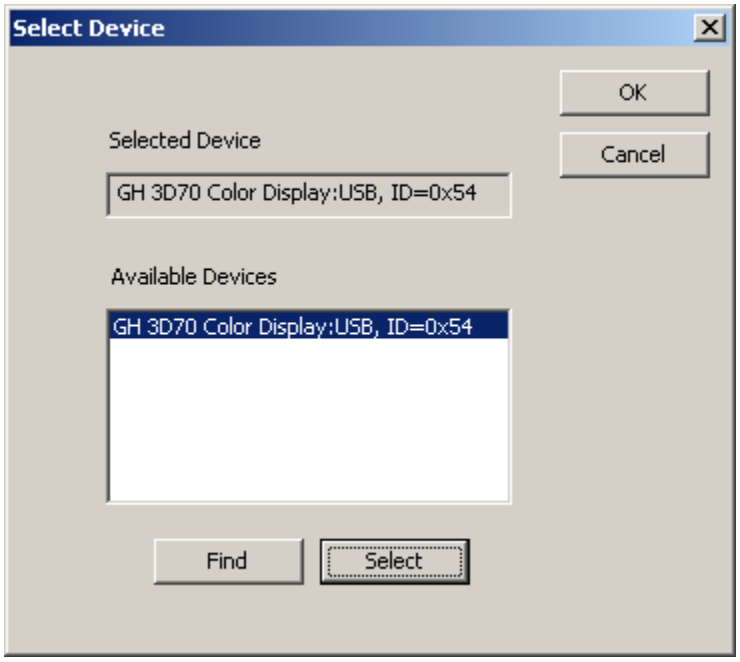

Figure3: Select Device Screen, Device Selected

8. Select File

Click on the 'Select File' button to choose a VUI Builder© project file to download to the 3Dxx display.

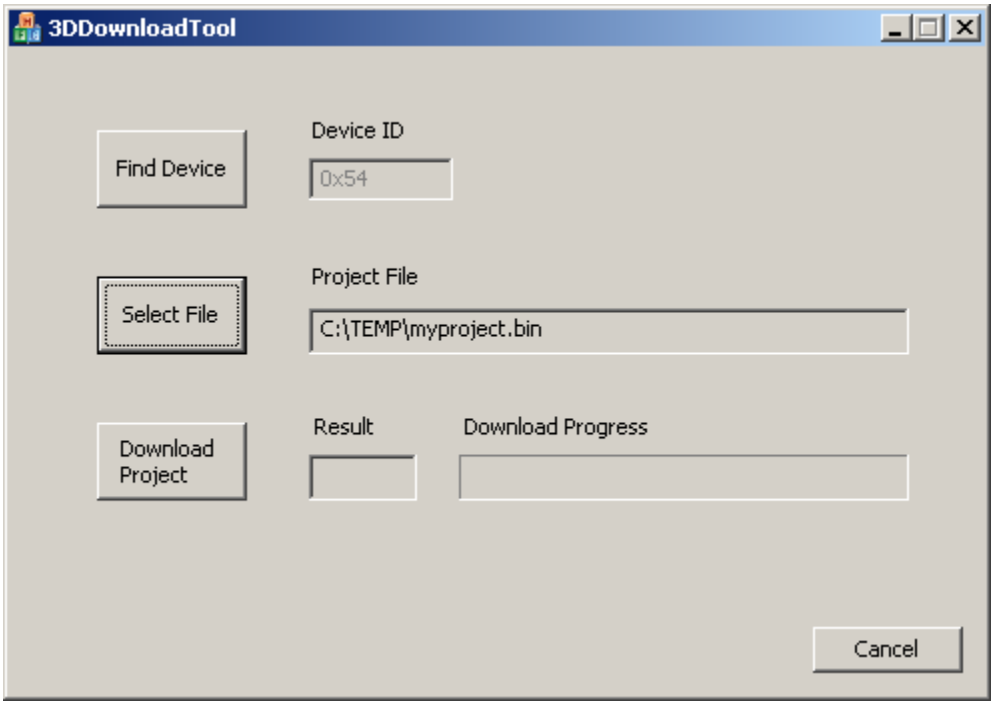

Figure4: Select File

9. Download Project

Click on the 'Download Project' button to transmit the selected project file over the CAN bus to the 3Dxx display. The progress bar will update as the file is transferred, then "OK" should be shown in the Result box when a successful download has completed.

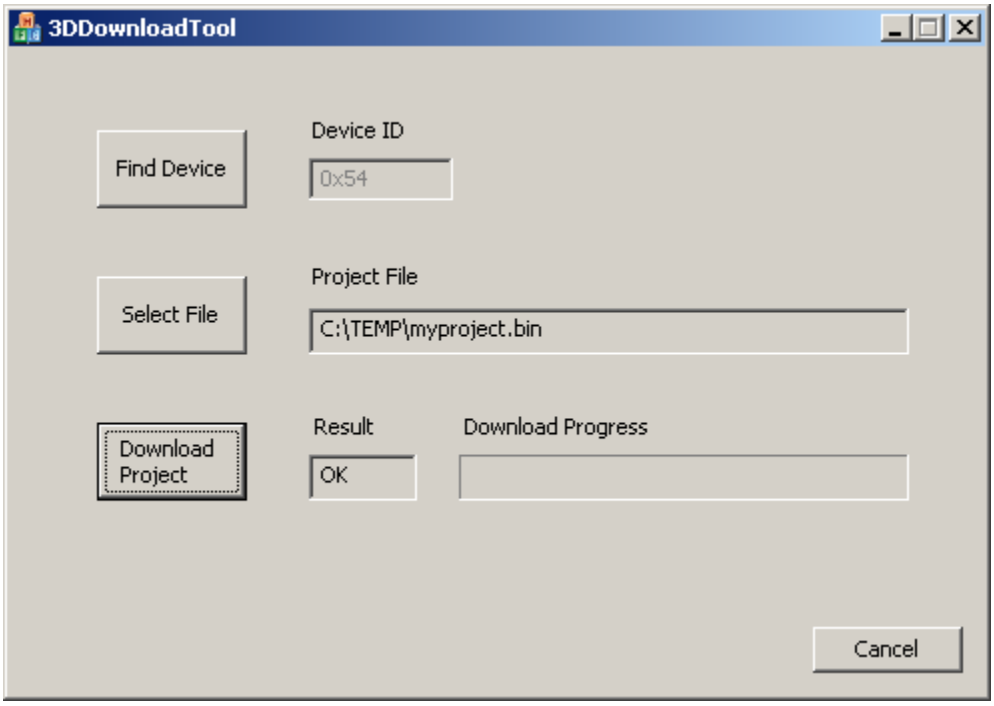

Figure5: Download Project

After the binary file has been successfully transferred to the display, the Grayhill Linux application running on the display will extract the project file and its' associated image files. Power cycle the display to start running the newly downloaded project.