

## EAN-Firmware Upgrade Utility

2021-01-15

Exports: [Export Summary Sheet](#)

EULA: [End User License Agreement](#)

Web: [sightlineapplications.com](http://sightlineapplications.com)

Sales: [sales@sightlineapplications.com](mailto:sales@sightlineapplications.com)

Support: [support@sightlineapplications.com](mailto:support@sightlineapplications.com)

Phone: +1 (541) 716-5137

1	Overview .....	1	7.2	Retrieving a File .....	7
1.1	Additional Support Documentation.....	1	7.3	Removing a File.....	8
1.2	SightLine Software Requirements .....	1	8	Advanced Menu .....	8
2	Upgrade Utility Download and Installation .....	2	9	Command Line File Management .....	9
3	Using the Upgrade Utility .....	2	9.1	Command Options.....	9
4	Updating the Firmware .....	3	9.2	Command Line File Management Notes .....	10
5	Updating the License File .....	4	9.3	Command Examples .....	10
5.1	Retrieving a License File.....	4	9.4	Upgrade Utility and Command Line Utility .....	11
5.2	Upload a New License File .....	4	9.5	Installing and Running Linux.....	11
5.3	Hardware Serial Number .....	5	9.6	Troubleshooting.....	12
5.4	License File Details.....	5	10	Questions and Additional Support .....	12
6	Managing the Parameter File.....	6	Appendix A - Manually Deleting Files .....		13
6.1	Retrieving a Parameter File .....	6	A1	Using Command Line Programs.....	13
6.2	Upload a Parameter File .....	6	A2	Using SightLine Upgrade Utility and FTP Client .....	13
6.3	Removing a Parameter File.....	7	Appendix B - SLA-HDMI-SDI Microcontroller Program		
7	Logo, Splash Screen and Program Files .....	7	Update (4000-OEM Only) .....		15
7.1	Uploading a File .....	7	Programming: .....		15

 **CAUTION:** Alerts to a potential hazard that may result in personal injury, or an unsafe practice that causes damage to the equipment if not avoided

 **IMPORTANT:** Identifies crucial information that is important to setup and configuration procedures.

 *Used to emphasize points or reminds the user of something. Supplementary information that aids in the use or understanding of the equipment or subject that is not critical to system use.*



## 1 Overview

This document outlines the steps for managing the system files using the SightLine upgrade utility application *SLAUpgrade<OEM board><firmware version>*. Command line versions of the SightLine upgrade utilities can also be used that can be managed from a customer GUI implementation (see the [Command Line File Management](#) section).

- **Firmware:** The video processing software and support items that are loaded on the OEM video processor.
- **Parameter File:** A file on the video processor which contains all the unit's non-volatile settings.
- **License File:** A file on the video processor (linked to the HW serial number for the device) that contains the enable application bits for that unit (functions that are enabled).
- **Program Files:** Used for getting and placing custom Lua scripts and DLLs.
- **Splash Screen:** If the splash JPEG file is present on the unit it will be displayed at startup. It will continue to display until a SightLine command is received by the unit. Connecting to the unit with Panel Plus sends the **Get Version Number (0x00)** message and will disable the splash screen. If the default camera is not connected, a *No Video Source Available* message will be displayed instead of the splash screen.
- **User Logo:** SightLine supports placement of a customer logo watermark file on the video for branding purposes. The file is kept in the unit's memory.

*If the existing license file is not found on the board for any reason, a new one will be created when the SightLine application starts for the first time. The new file will be locked and have AppBits 0xFFFF as the default. Contact [Sales](#) to reissue the original license file if it was not saved. If the original file is available use the upgrade utility tool to load it on the board. See the [Updating the License File](#) section.*

### 1.1 Additional Support Documentation

Additional Engineering Application Notes (EANs) can be found on the [Documentation](#) page of the SightLine Applications website.

The [Panel Plus User Guide](#) provides a complete overview of settings and dialog windows located in the Help menu of the Panel Plus application.

The Interface Command and Control (**IDD**) describes the native communications protocol used by the SightLine Applications product line. The IDD is also available as a PDF download on the [Documentation](#) page under Software Support Documentation.

### 1.2 SightLine Software Requirements

- **IMPORTANT:** The Panel Plus software version should match the firmware version running on the board. Firmware and Panel Plus software versions are available on the [Software Download](#) page.



## 2 Upgrade Utility Download and Installation

1. Go to the SightLine software [download page](#) and select a version of firmware. Selecting the link will initiate the download process.
2. Open zip file and right click on the *.msi* file and select *Install*. Accept all the defaults for installing the upgrade utility. Click *Close* when complete.

*The installer (by default) installs Bin and Firmware folders under C:\Program Files (x86)\SightLine Applications\SLA-xxxx Upgrade Utility m.nn.rrr. The Bin folder contains the upgrade utility and library files needed for the utility. The Firmware folder contains all necessary files needed to upgrade the board.*

## 3 Using the Upgrade Utility

Use the following process to start the upgrade utility and connect to the video processing board.

**IMPORTANT:** If there are multiple versions of firmware are on the host PC, open the correct upgrade utility application that matches the firmware and board.

1. From the Windows Start menu, go to the SightLine application folder and click on the *SLAUpgrade<OEM board><firmware version>* utility tool to open it.

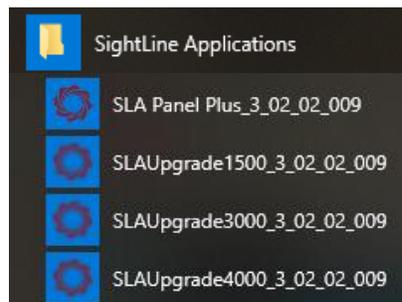


Figure 1: SLAUpgrade Utility

*When the application starts for the first time, Windows may prompt a firewall access dialog window. Select Allow for the update to continue.*

2. Click the *Find IP Addresses* button to get a list of OEM boards on the network. Click on the appropriate OEM to select it.



3. The upgrade utility application is now ready to use.



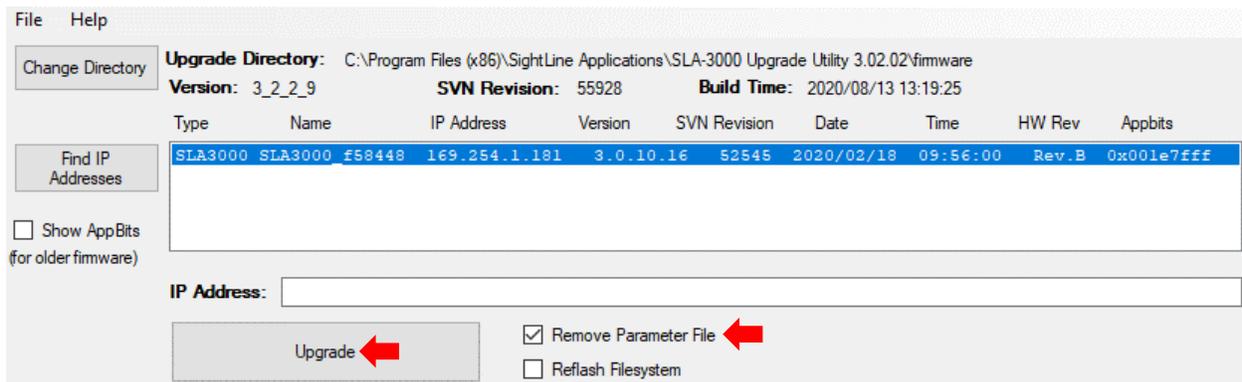
## 4 Updating the Firmware

### **i** IMPORTANT:

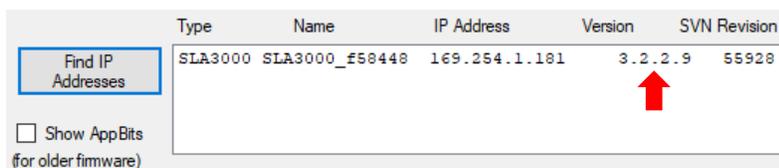
- For version firmware level upgrades, i.e., 2.22.xx to 2.23.xx, it is important to remove the parameter file from the board (see step 3 below). Older versions of parameter files may not be compatible with newer versions of firmware.
- For sub-version updates, i.e. 2.23.05 to 2.23.09, it is not important to check the *Remove the Parameter File* checkbox.
- Before removing the parameter, file record the current network, passthrough, and camera configuration settings, since these settings will be lost once the parameter file is removed from the board.

**Recommended:** Save a backup copy of the current license file and parameter file before upgrading the board (see [Retrieving the Parameter File](#) and [Retrieving a License File](#)).

1. Start the upgrade utility. Find the boards on the network and highlight the line of the board to select it.
2. Check the *Remove Parameter File* box if doing a version firmware level upgrade.
3. Click the *Upgrade* button.



4. Click *Yes* in the dialogue box to continue. The application interface will lock until the upgrade is complete (approximately 1 minute).
5. The Status window displays *Upgrade DONE* when the process is complete.
6. Click the *Find IP Addresses* button again to verify that the firmware version number on the OEM board is now the new version.





## 5 Updating the License File

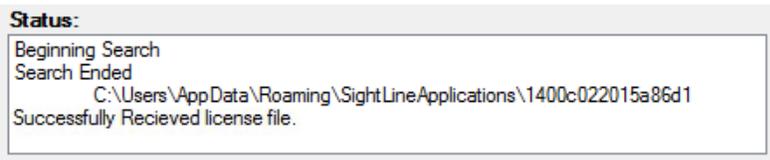
**ⓘ IMPORTANT:** Before proceeding make sure that all SightLine software applications are closed.

This procedure describes how to retrieve a license file from the OEM board. This is useful when a license file needs new application bit and to unlock new features on the board. It is common that SightLine support will ask for customers to retrieve and send a license file from a unit.

**Recommended:** Save a backup copy of the current license file upon receipt of a board, and before upgrading the board. A saved license file can save time and expense if repair work is being done.

### 5.1 Retrieving a License File

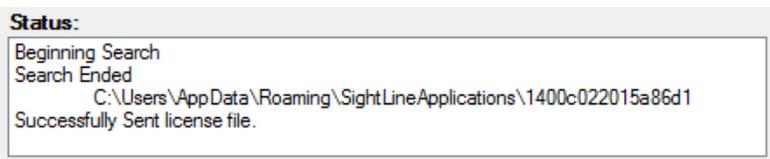
1. Start the upgrade utility and select the board.
2. Select *File » License File » Get*.
3. The *Browse for Folder* window opens. Choose a directory to put the license file. The *Browse* window defaults to *C:\Users\<username>\AppData\Roaming\SightLineApplications*, but the file can be put in any PC or network directory with writing permissions.
4. Click *OK* in the *Browse for Folder* window. The *Status* window displays *Successfully Received License File* when complete.



### 5.2 Upload a New License File

After receiving a new license file from SightLine (normally attached to an email), save it to a known PC or network directory.

1. Start the upgrade utility and select the board.
2. Select *File » License File » Put*.
3. The *Browse for Folder* window opens. Navigate to the directory that the new license file is in.
4. Click *OK* to copy the new license file to the board. The *Status* window displays *Successfully Sent File* when complete.



5. Restart the board to activate the new license file.



### 5.3 Hardware Serial Number

When contacting Support for OEM board issues it is helpful to provide the serial number. Serial numbers indicate the OEM board type and the license file being used by the board.

The serial number is printed on a white label attached to the board, e.g., *M39741-001-0033*.

Figure 2 shows the serial number label locations on the OEM boards.

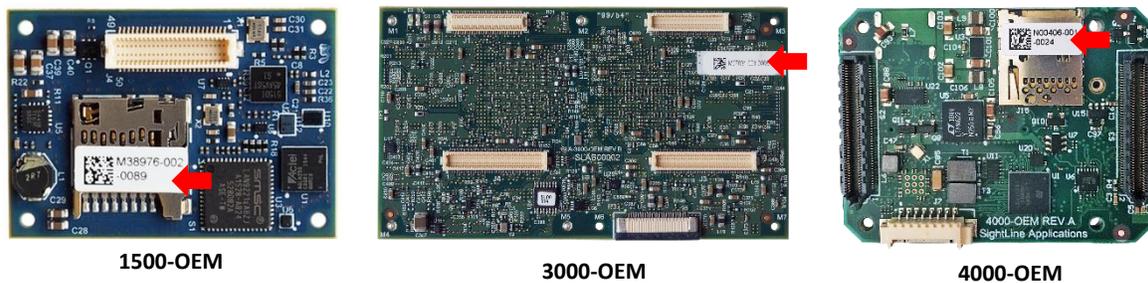


Figure 2: OEM Board Serial Number Location

### 5.4 License File Details

Each license file is generated for a specific board and must be loaded on that board. The upgrade utility will only upload or download a license file that matches the hardware ID of the board. Multiple license files can be placed in a folder. The upgrade utility will upload the one that matches the board's hardware ID.

The name of the license file includes the hardware ID, e.g., *3c943c9448eada74.license*.

To license or upgrade a board, download the license file from the board and send it to [Support](#). See [section 7](#) for instructions to download the license file.

To find the hardware ID, connect to the unit with Panel Plus and go to the main menu » *Help* » *About Board*. The dialog will show the hardware ID and related hardware and firmware information.

**IMPORTANT:** Clicking *OK* will download the license file and parameter file to the host PC download directory (*C:\Users\Username\Downloads*).

If a license file not matching the hardware ID is uploaded to the board, this license file will be ignored.

If a board is powered up without a valid license file, a new locked license file will be generated automatically. For help unlocking the file contact [Sales](#).

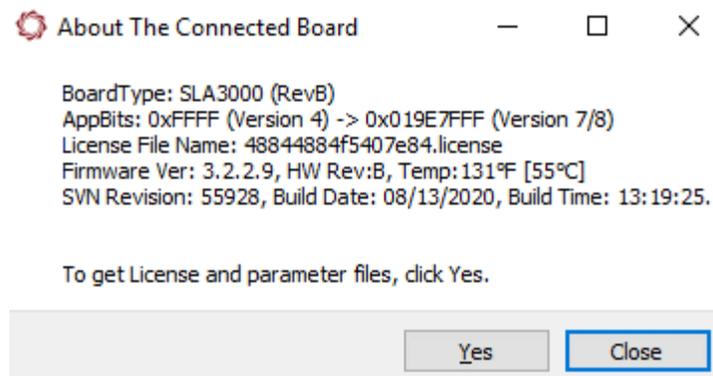


Figure 3: About the Connected Board



## 6 Managing the Parameter File

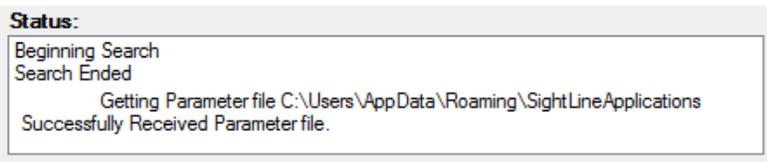
The parameter file on each board contains system and configuration startup settings. See [EAN-Parameter File](#) for more information about parameter file settings and how to correctly save them to the board.

All systems have the following parameter file name: *param51ac4a9a.txt*. The upgrade utility can be used to remove, upload, or archive a parameter file from a system for unit [recovery](#).

**i IMPORTANT:** The upgrade utility can also be used to propagate a known parameter file to multiple units allowing production teams to quickly duplicate settings across systems. Since all settings are contained in the parameter file, including network IP addresses, make sure the settings in the file will not cause a conflict in other systems when propagating files.

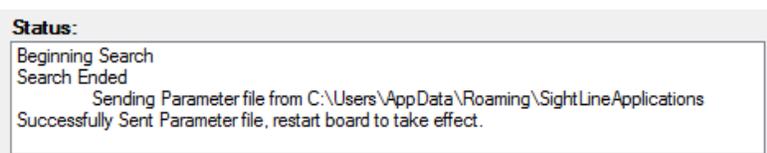
### 6.1 Retrieving a Parameter File

1. Start the upgrade utility and select the board.
2. Select *File » Parameter File » Get*.
3. The *Browse for Folder* window opens. Choose a directory to put the parameter file. The Browse window defaults to *C:\Users\<username>\AppData\Roaming\SightLineApplications*, but the file can be put in any known PC or network directory.
4. Click *OK* in the *Browse for Folder* window. The Status window displays *Successfully Received Parameter File* when complete.



### 6.2 Upload a Parameter File

1. Start the upgrade utility and select the board.
2. Select *File » Parameter File » Put*.
3. The *Browse for Folder* window opens. Navigate to the directory that the new parameter file is in.
4. Click *OK* to copy the new parameter file to the board. The Status window displays *Successfully Sent Parameter File* when complete.



5. Restart the board to activate the parameter file.



### 6.3 Removing a Parameter File

1. Start the upgrade utility and select the board.
2. Select *File » Parameter File » Remove*.
3. Click *Yes* in the *dialog* window to remove the file. The utility removes the parameter file from the board and saves a copy in *C:\Users\\AppData\Roaming\SightLineApplications*.

```

Status:
Beginning Search
Search Ended
Beginning Search
Search Ended
Copied param file to C:\Users\Van\AppData\Roaming\SightLineApplications\192.168.0.21_param51ac9a4a.txt
Successfully renamed parameter file to *.txt_renamed, restart board to take effect.

```

## 7 Logo, Splash Screen and Program Files

The upgrade utility can also be used to manage Logo, Splash Screen and Program Files. File types and definitions are shown in [Table 1](#).

**Table 1: Logo, Splash Screen and Program Files**

File	File Type	Explanation
<b>User Logo (watermark)</b>	userLogo.png	Used for displaying a watermark image in the lower right-hand corner of displayed imagery.
<b>Splash Screen</b>	splash.jpg	Used for displaying a splash screen at startup.
<b>Program Files</b>	*.lua, *.so	Used for custom scripts or custom DLLs.

See the [EAN-Overlay-Graphics](#) document for more information on displaying and creating a custom logo and splash screen.

See [EAN-Script Development](#) for more information for working with LUA scripts and DLLs.

### 7.1 Uploading a File

1. Start the firmware upgrade utility and select the board.
2. Select *File » XXX » Put*. The *Browse for Folder* window opens.
3. Navigate to the directory that the new file is in. Click *OK* to copy the new file to the board. The *Status* window displays the result when complete.
4. Restart the board for the change to take effect.

### 7.2 Retrieving a File

1. Start the firmware upgrade utility and select the board.
2. Select *File » XXX » Get*. The *Browse for Folder* window opens.
3. Choose a directory to put the file.
4. Click *OK* to copy the file from the board. The *Status* window displays the result when complete.



### 7.3 Removing a File

1. Start the firmware upgrade utility and select the board.
2. Select *File » XXX » Remove*.
3. The *Status* window displays the result when complete.

*Program files cannot be removed.*

## 8 Advanced Menu

**Get Diagnostic Files:** Used to retrieve crash logs and other diagnostic files from the board including parameter files, license files, etc. that can be useful in troubleshooting. This feature is new in 3.0.xx.

**Reset Board (Reboot):** Restarts the board.

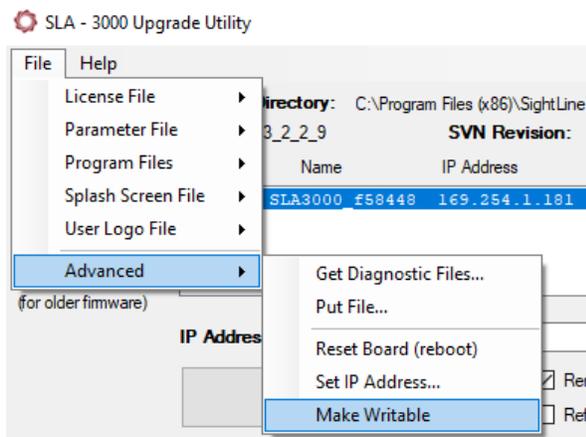
**Set IP Address:** Temporarily sets an IP address to the board. This is useful when troubleshooting a network issue, i.e., the board is on a different subnet. In this case, assign a temporary IP address to the board so that it can be connected from the Panel Plus application. The temporary address is not saved (unless it is saved to the parameter file from Panel Plus). The board will revert to the original address when the board is restarted.

**Make Writeable (3000-OEM):** This option allows users to use other utilities (WinSCP or FileZilla) to copy custom program files to the file system or library files of the 3000-OEM board.

**CAUTION:** This is an advanced option and could potentially lockup or damage the board. If you are unsure how to proceed, contact SightLine [Support](#) before proceeding.

The filesystem is read-only on the 3000-OEM. To copy files to the 3000-OEM with another utility, the filesystem must be made temporarily writeable.

1. Start the firmware upgrade utility and select the board.
2. From the main menu » *File » Advanced » Make Writeable*.



3. After making any changes to the board reset the board. From the main menu » *File » Advanced » Reset Board (reboot)*.

*Resetting the board ensures that the new files are written to the file system and puts the board back into a read only state.*



## 9 Command Line File Management

This section describes how to use command line versions of the SightLine upgrade utilities from a Windows CMD window or WSL shell to manage system files.

There are two versions of the command line upgrade utility:

- *SLAUpgradeCmd.exe*: Runs in a Windows CMD shell. It is distributed in the bin directory of every firmware distribution.
- *SLAUpgradeCmd*: Runs in a shell on a 64-bit Linux system. Ubuntu 18.04 running under WSL is currently supported. See [Installing and Running Linux](#).

Both programs provide:

- the same functionality and have the same command line options.
- support paths using a forward slash (/) as a separator. The Windows CMD version also supports a backslash (\) as a path separator for paths on the PC host. Do not mix the forward slash (/) and backslash (\) within a single path.

Examples throughout the document will assume the Windows executable name, and the PC host and a target system (4000-OEM, 3000-OEM or 1500-OEM) are connected by a network ([Figure 3](#)).

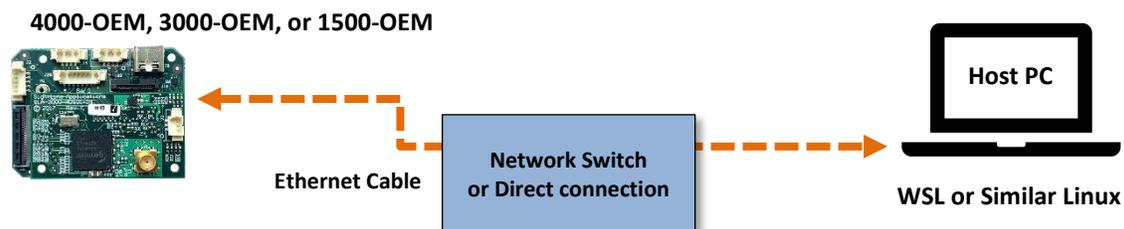


Figure 4: PC Host and Target System Network

### 9.1 Command Options

To see the options, run with -?:

```
SLAUpgradeCmd.exe -IP <IPAddress>[-UP <Firmware Directory>] [-DP] [-GF
<localDirectory> <remoteName>] [-SF <localName> <remoteName>] [-GL
<localDirectory>] [-SL <localDirectory>]
```

-IP <IPAddress>	(Required) Indicate the IP Address of the target (e.g., 192.168.1.75).
-UP <Firmware Directory>	Upgrade Firmware. Specify directory containing the upgrade files.
-DP	Delete parameter file during upgrade (recommended). Currently only works when -UP is used.
-GF <localDirectory> <remoteName>	Get file <i>remoteName</i> and download it to <i>localDirectory</i> .
-SF <localName> <remoteName>	Copy file <i>localName</i> and send it to destination file <i>remoteName</i> .
-GL <localDirectory>	Get License file from SightLine board to localDirectory.
-SL <localDirectory>	Send License file from <i>localDirectory</i> to SLA board.



## 9.2 Command Line File Management Notes

The firmware upgrade will not be completed if the same revision of firmware is already loaded on the system.

```
\bin>SLAUpgradcmd.exe -IP 192.168.1.114 -UP ../firmware/  
Update not necessary, already at svnRevision 43635
```

The firmware upgrade utility does not provide status message if the firmware update procedure succeeds.

Wildcards are not supported with Get File (GF) option.

Directory names should end in a forward slash (/) or backslash (\):

**Good:** C:/temp/mySLAdir/

**Bad:** C:/temp/mySLAdir

Use ./ or .\ to indicate the directory local to the executable.

Remote filenames are assumed to be relative to the SL root directory (/root for 1500, /home/root for 3000, /home/slroot/sl/bin for 4000). For access to remote files outside that directory, SightLine recommends using scp.

In this example the command downloads the license file and places it in the same directory as *SLAUpgradeCmd*.

```
SLAUpgradeCmd.exe -IP 192.168.1.75 -GL ./
```

Use quotes around directory and file names when there are spaces in the name:

**Good:** SLAUpgradeCmd.exe -IP 192.168.1.75 -UP "C:/Program Files (x86)/SightLine Applications/SLA-3000 Upgrade Utility 2.25.03/firmware/"

**Bad:** SLAUpgradeCmd.exe -IP 192.168.1.75 -UP C:/Program Files (x86)/SightLine Applications/SLA-3000 Upgrade Utility 2.25.03/firmware/

## 9.3 Command Examples

### Upgrade 3000-OEM from installed firmware:

```
SLAUpgradeCmd.exe -IP 192.168.1.75 -UP "C:/Program Files (x86)/SightLine Applications/SLA-3000 Upgrade Utility 2.25.03/firmware/"
```

```
SLAUpgradeCmd.exe -IP 192.168.1.75 -UP ../firmware/
```

### Upgrade 1500-OEM firmware and remove parameter file during the upgrade:

```
SLAUpgradeCmd.exe -IP 192.168.1.71 -DP -UP "C:/Program Files (x86)/SightLine Applications/SLA-3000 Upgrade Utility 2.25.03/firmware/"
```

### Get the parameter file (from board to PC):

```
SLAUpgradeCmd.exe -IP 192.168.1.75 -GF C:/temp/ ./param51ac9a4a.txt
```



### Set the parameter file (from PC to board):

```
SLAUpgradeCmd.exe -IP 192.168.1.75 -SF C:/temp/param51ac9a4a_3000.txt
param51ac9a4a.txt
```

### Get the license file (from board to PC):

The license file name depends on the board hardware ID. The upgrade utility determines the correct file name based on the hardware ID. The filename does not need to be specified, only the path.

```
SLAUpgradeCmd.exe -IP 192.168.1.75 -GL C:/temp/
```

```
SLAUpgradeCmd.exe -IP 192.168.1.75 -GL ./
```

### Set the license file (from PC to board):

The license file name depends on the board hardware ID.

```
SLAUpgradeCmd.exe -IP 192.168.1.75 -SL C:/temp/
```

### Copy a script file (from PC to the board):

```
SLAUpgradeCmd.exe -IP 192.168.1.75 -GF "C:/temp/" tracksnap.lua
```

### Copy a watermark logo file from PC to the board:

```
SLAUpgradeCmd.exe -IP 192.168.1.75 -SF "C:/temp/userLogo.png" userLogo.png
```

## 9.4 Upgrade Utility and Command Line Utility

The following table shows the user interface differences between the Upgrade Utility and the Command Line Utility.

**Table 2: Upgrade Utility and Command Line Utility User Interface Differences**

Upgrade Utility UI	Command Line Utility	Upgrade Utility UI	Command Line Utility
License File Get and Put	Use -GL or -SL option	User Logo File Get and Put	Use -GF or -SF option
Parameter File Get and Put	Use -GF or -SF option	User Logo File Remove	Not yet implemented
Parameter File Remove	Not yet implemented as standalone operation. Can be deleted using the -DF option when upgrading (-UP).	Advanced » Reset Board	Not yet implemented
Program Files Get and Put	Use -GF or -SF option	Advanced » Set IP Address	Not yet implemented
Splash Screen File Get and Put	Use -GF or -SF option	Advanced » Make Writable	Not yet implemented
Splash Screen File Remove	Not yet implemented		

## 9.5 Installing and Running Linux

The program is developed using 64-bit Ubuntu 18.04, under WSL. 32-bit Linux is not supported. Running on native Ubuntu 16.04 has been tested, but the results have been poor with Ubuntu 16.04 running in VirtualBox. Ubuntu 16.04 under WSL has not been tested.

The program and firmware are distributed in a gzip TAR file. Use the following steps to install and run from the TAR file. This example assumes the target is a 1500-OEM, at address 192.168.1.211, and the firmware to be loaded is version 2.25.04.



1. Choose a directory to start. In a Linux terminal window create a temporary directory (tmpDir). Copy the tar file to it, and then cd to it. Type:

```
mkdir tmpDir
cp ~/Downloads/SLAUpgrade1500_2_25_04.tgz tmpDir
cd tmpDir
```

2. Unpack the contents of the .tgz file to a local directory tree. Type:

```
tar -zxvf SLAUpgrade1500_2_25_04.tgz
```

3. Use the change directory command and type:

```
cd "SightLine Applications/SLA-1500 Upgrade Utility 2.25.04"
```

The bin and firmware directories are now in your current directory.

4. Type:

```
bin/SLAUpgradeCmd -?
```

A usage message should display.

5. Type:

```
bin/SLAUpgradeCmd -IP 192.168.1.211 -UP ./firmware/
```

This will upgrade the target.

## 9.6 Troubleshooting

Problem	Recommendation
Program does not run.	Try running with -? argument. Linux version only runs on 64-bit hosts.
Upgrade fails.	Make sure target is up and running on specified IP address. Use Panel Plus to try to connect to unit. Make sure host and target are on same network. Use <i>ping</i> to query the unit.
Target will not run after failed upgrade.	Try power-cycling target. Follow instructions in <a href="#">EAN-OEM-Recovery</a> for updating firmware with MicroSD card.
Failed to upgrade <IP Address>.	Check network connection, cables, etc. Check network adapter is enabled (ifconfig).
Why FTP cannot be used to push files to the target.	The target file system is <u>Read Only</u> by default. When using the upgrade utility, the remote file system management is maintained.

## 10 Questions and Additional Support

For questions and additional support, please contact [Support](#). Additional support documentation and Engineering Application Notes (EANs) can be found on the [Documentation](#) page of the SightLine Applications website.



## Appendix A - Manually Deleting Files

### A1 Using Command Line Programs

Use **Tera Term** (recommended) or a similar program to establish an SSH session to the target and delete files. The IP address can be read by connecting to the board through Panel Plus.

1. Establish an SSH session to the target.
2. Login:  
 1500-OEM: Username and password - *root*.  
 3000-OEM: Username - *root* (no password).  
 4000-OEM: Username and password - *slroot*.

*The 1500-OEM and 4000-OEM file system have been created with read/write permissions. The 3000-OEM has a read only file system.*

3. To make it writable, type:

```
mount -w -o remount /
```

4. To see all the files, type:

```
ls
```

5. To remove a file, use:

```
rm drawCircle.lua
```

```
sync
```

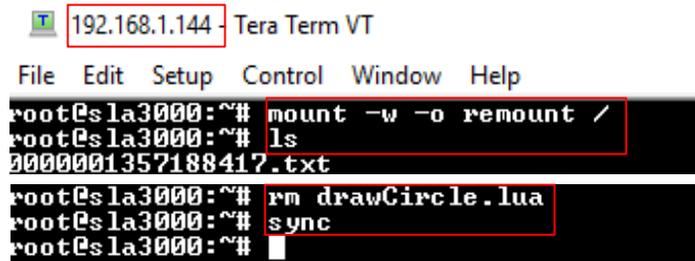


Figure A1: Manually Deleting Files with Tera Term

6. If connecting to the 3000-OEM, power cycle the target hardware or type `reboot` to restart the system. When the system reboots the file system will automatically return to read only mode.

### A2 Using SightLine Upgrade Utility and FTP Client

1. Open a 1500, 3000, or 4000 Upgrade Utility application.
2. Click the *Find IP Addresses* button to see SLA hardware on the network.
3. Select the target hardware.

Type	Name	IP Address	Version	SVN Revision	Date	Time	HW Rev	Appbits
SLA4000	SLA4000_5e2a12	169.254.1.182	3.2.2.9	55928	2020/08/13	13:25:25	---	0x0fffffff

4. The 1500-OEM and 4000-OEM file system has been created with read/write permissions. The 3000-OEM has a read only file system. To make it writable, got to the main menu » *File* » *Advanced* » *Make Writable*.



5. Open an FTP client such as FileZilla. Connect to the target hardware IP address:

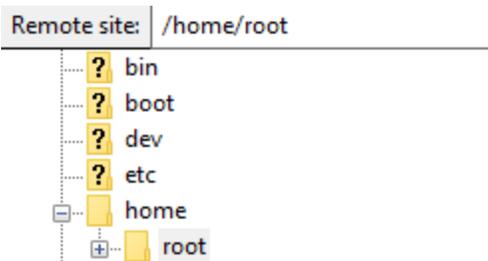
1500-OEM: Username and password - *root*.

3000-OEM: Username - *root* (no password).

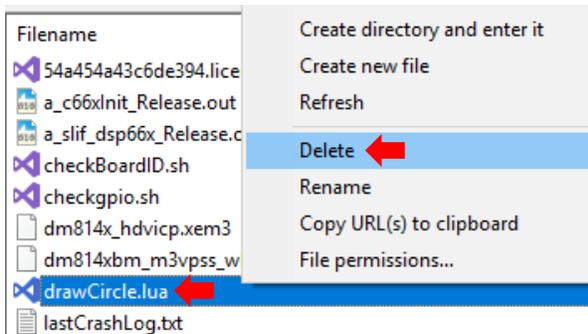
4000-OEM: Username and password - *slroot*.



6. If connecting to the 1500-OEM navigate to the /root directory. If connecting to the 3000-OEM navigate to /home/root. If connecting to the 4000-OEM navigate to /home/slroot/sl/bin.



7. Right-click on the file and select *Delete*.



*If connecting to the 3000-OEM, power cycle the target hardware or type `reboot` to restart the system. When the system reboots the file system will automatically return to read only mode.*



## Appendix B - SLA-HDMI-SDI Microcontroller Program Update (4000-OEM Only)

The SLA-HDMI-SDI adapter board is supported in 3.3.x software. In 4000-OEM applications, in some cases, it may be necessary to update the microcontroller program running on the board.

See the *SLA-HDMI-SDI* section in the [ICD-3000-4000 Adapter Boards](#) for technical specifications.

The SLA-HDMI-SDI serial port on connector J2 is at 3.3V TTL levels. When connecting to the 4000-OEM board, use CAB-0301 cable to connect to an unused serial port on the OEM (typically Serial Port 1 or Serial Port 3).

See the *Serial Port Summary* section in the [ICD-4000-OEM](#) for serial port selection.

### Requirements:

- 40000-OEM board.
- SLA-HDMI-SDI with power.
- SLA-CAB-0301 connected from the SLA-HDMI-SDI serial port to an unused serial port on the 4000-OEM board.
- Firmware version 3.3.x or higher.
- Tera Term (recommended) or PuTTY SSH terminal.
- Boards must be powered and have a network connection for SSH.

**CAUTION:** To prevent damage to hardware boards, verify that the SLA-CAB-0301 is connected to the correct serial port used in this procedure.

### Programming:

Use [Tera Term](#) (recommended) or [PuTTY](#) terminal emulator program to upgrade the SLA-HDMI-SDI board. This process will take approximately two minutes to complete.

This example uses *Serial Port 3* on the *4000-OEM* to connect to the serial port on *SLA-HDMI-SDI* board.

1. Establish an SSH session to the target. The IP address can be read by connecting to board through Panel Plus.
2. Login using the default username and password: `slroot`
3. Change the directory to: `sl/bin`
4. Type in the name of the program with the correct `<port>` and `<hex file>` names and run the application.

```
x_HdmiToHdsdi_Loader_ARM64_Release.out <port> <hex file>
```

```
slroot @ ~
SD> cd sl/bin
slroot @ ~/sl/bin
SD> ./x_HdmiToHdsdi_Loader_ARM64_Release.out 3 hdsdi/ATtiny817_HDMI-SDI.hex
```

**CAUTION:** To prevent damage to the hardware boards it is important to use the same serial port number in this step that was used to connect to the SLA-HDMI-SDI board.



- When the program progress is finished (~15 seconds) *Successfully loaded program* is displayed in the terminal window.

If an error message displays, verify that SLA-CAB-0301 is securely connected and the serial port number is correct when running the `x_HdmiToHdsdi_Loader_ARM_Release.out` application.

- Confirm the program was loaded and working correctly. In the terminal window type:

```
sudo get-edid -b 4 | parse-edid
```

- In the terminal window verify *Identifier "SLA-HDSDI"* is displayed in the terminal window.

```
islroot @ ~/sl/bin
SD> sudo get-edid -b 4 | parse-edid
4
This is read-edid version 3.0.2. Prepare for some fun.
Attempting to use i2c interface
Only trying 4 as per your request.
256-byte EDID successfully retrieved from i2c bus 4
Looks like i2c was successful. Have a good day.
Checksum Correct

Section "Monitor"
  Identifier "SLA-HDSDI"
  ModelName "SLA-HDSDI"
  VendorName "ZRN"
  # Monitor Manufactured week 0 of 2009
  # EDID version 1.3
```