



Six15 HUD

Windows Service User Guide

Version 2.7.0

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Table of Contents

Windows Service User Guide.....	1
List of Tables	2
1. Six15 HUD Service	3
1.1 Overview.....	3
2. Provided Content	4
2.1 Provided Functionality (HUD Service)	4
2.2 Provided Functionality (Native Driver)	4
3. System Requirements and Setup	5
3.1 Six15 HUD Service Installation.....	5
3.2 Notifications	5
4. HUD Service User Interface.....	6
4.1 Clear Screen.....	6
4.2 Screen Capture.....	7
4.2.1 Record.....	8
4.2.2 Follow Mouse	9
4.2.3 Webcam Capture	10
4.2.4 Fullscreen Capture	11
4.2.5 Screen Capture	12
4.2.6 Window Capture.....	13
4.2.7 Region Capture	14
4.2.8 Camera	15
4.2.9 Audio.....	16
4.3 Firmware Update	17
4.4 About	18
4.5 Exit Button	18
5. Troubleshooting	19
5.1 Service Uninstall.....	19
5.2 Device Boots into Safemode	21
5.2.1 Powercycle.....	21
5.2.2 Reflash the Firmware	21
5.2.3 Contact Six-15.....	21
6. Software/Firmware Revision History	22
6.1 Windows Service	22
7. Document Revision History.....	23

List of Tables

Table 1 – Windows Service Revision History	22
Table 2 – Document Revision History	23

1. Six15 HUD Service

This document is intended to teach users how to use the Six15 service.

1.1 Overview

The Six15 HUD Service is a standalone application that is installed on Windows devices to provide basic functionality and the abstracted interface for programmers to develop custom applications.

2. Provided Content

2.1 Provided Functionality (HUD Service)

The HUD Service provides basic functionality such as screen capture and firmware updates.

2.2 Provided Functionality (Native Driver)

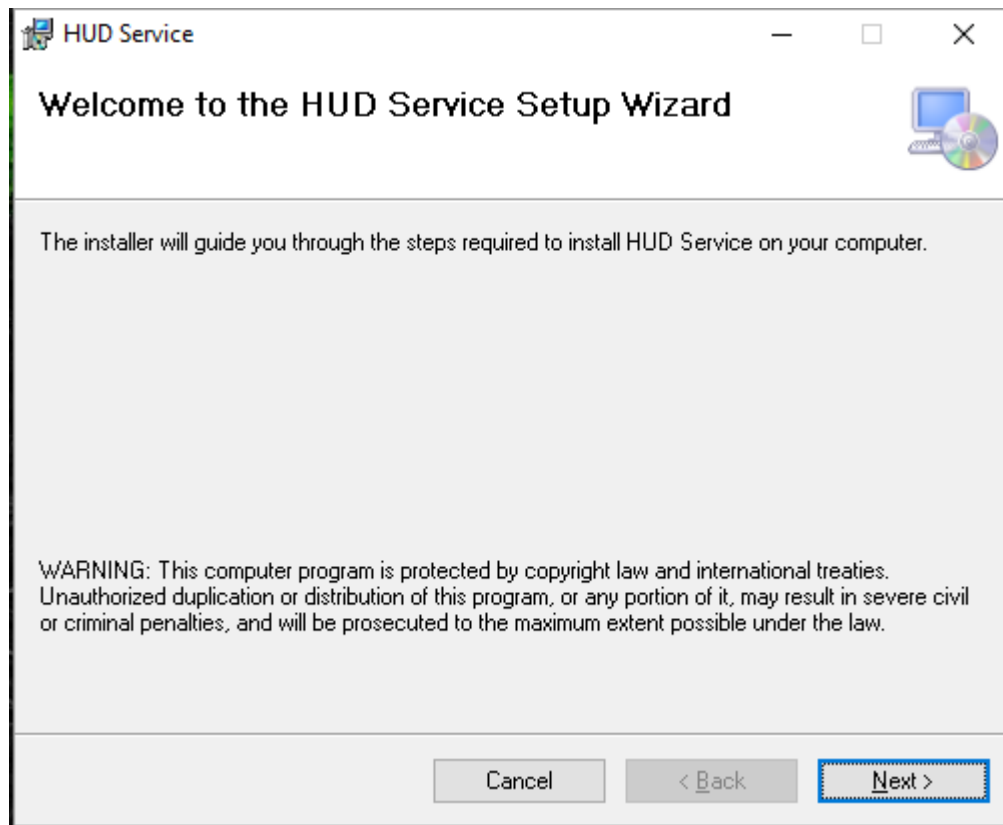
The driver for the camera and microphone is included in Windows and does not require additional drivers. This functionality is not part of the Six15 HUD Service, it uses the interfaces provided by Windows. See section 4.2.8 and 4.2.9 for details.

3. System Requirements and Setup

The Six15 HUD Service requires Windows 10 operating system.

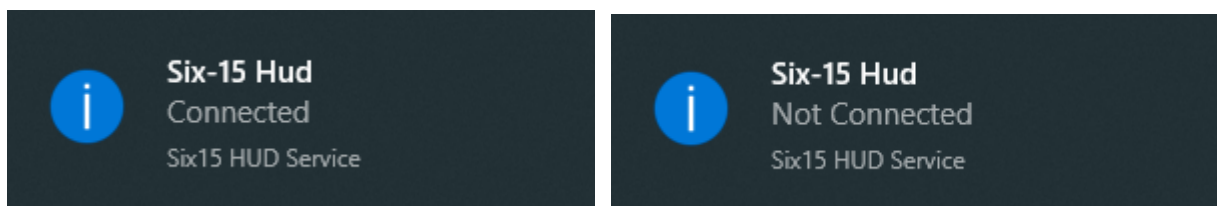
3.1 Six15 HUD Service Installation

The HUD service installation is provided via a Standard Windows Setup Package.



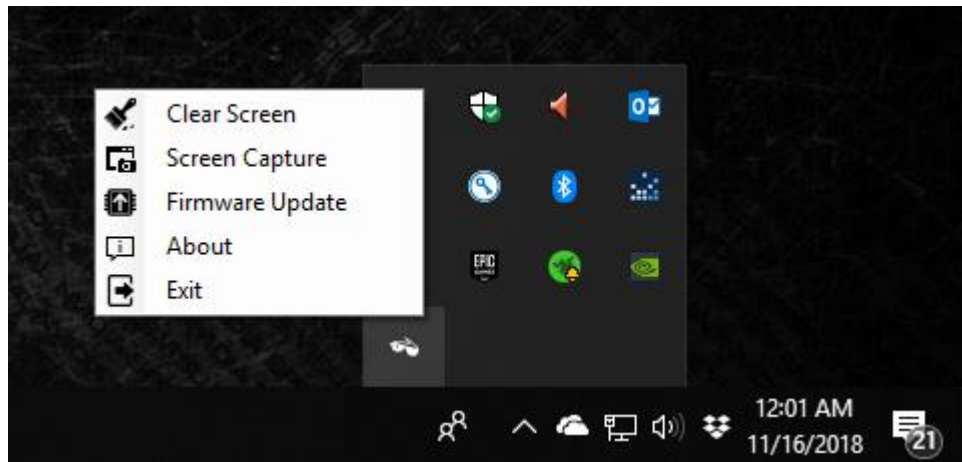
3.2 Notifications

The HUD Service provides a notification icon when a HUD device is connected or disconnected via USB in the Windows System Tray.



4. HUD Service User Interface

The HUD Service User Interface allows for basic functionality of the Connected HUD with no programming or additional applications required. Right-clicking on the HUD icon located in the system tray will bring up a context menu allowing the user to perform basic functions with the HUD device.

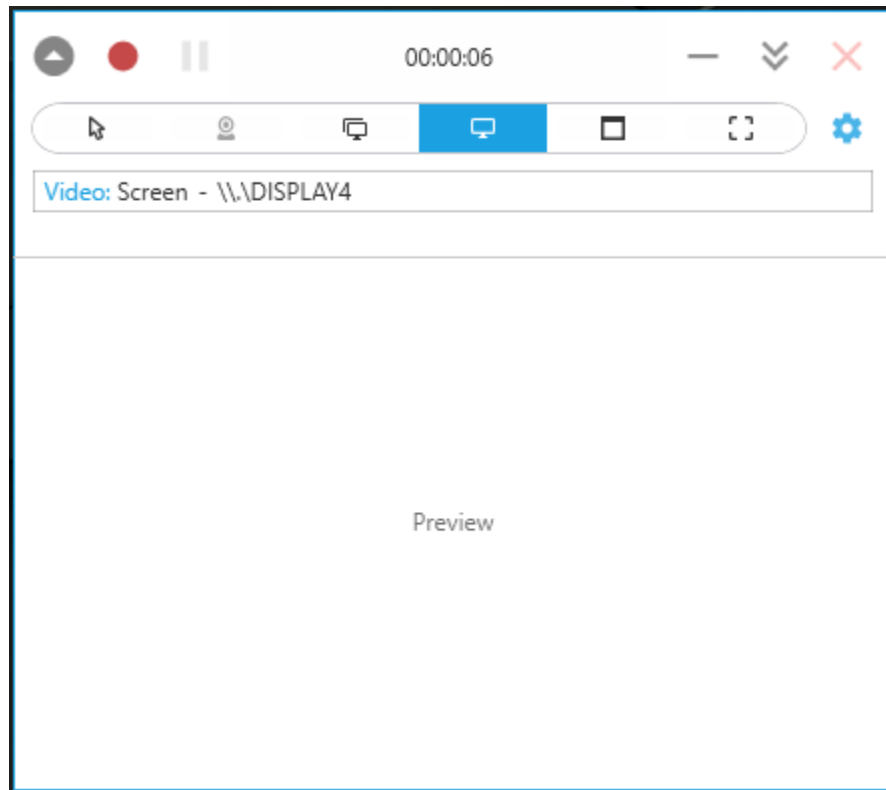


4.1 Clear Screen

The HUD clear screen option will clear the HUD display, removing anything on the screen without turning off the display.

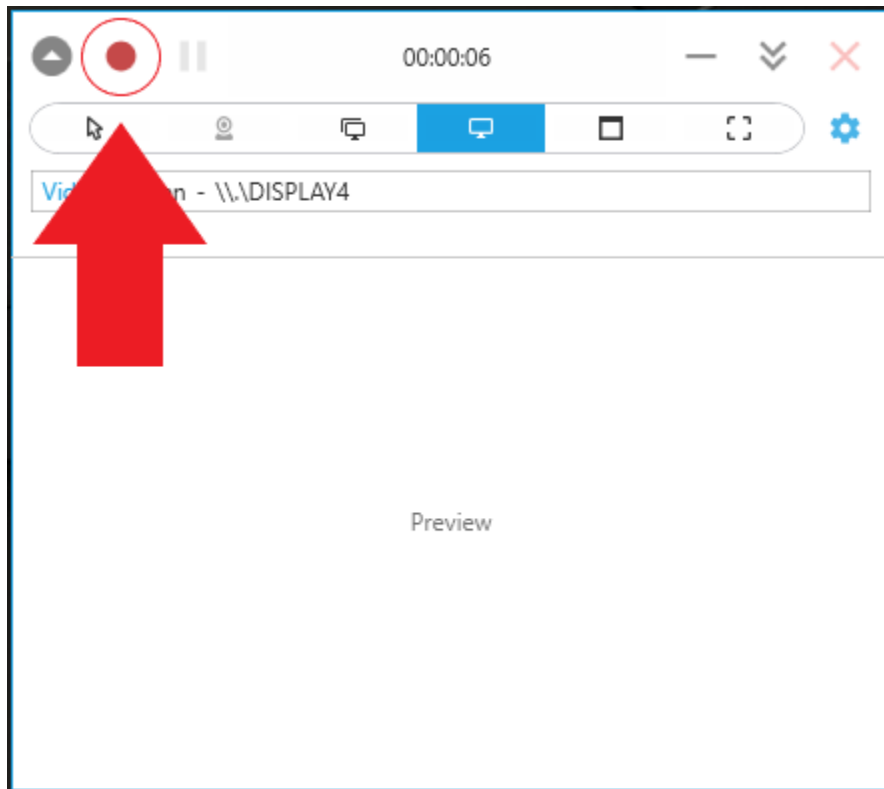
4.2 Screen Capture

Selecting this option will open up Captura, Six15's window capture software. From here you will be able to control what can be displayed on the HUD. Captura has several functionalities.



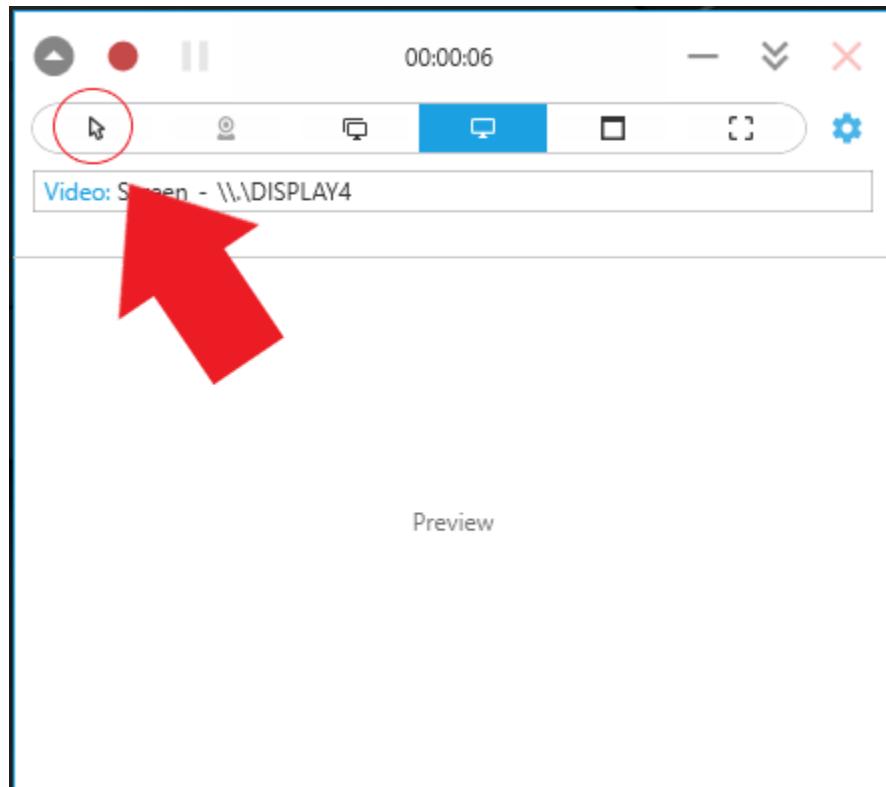
4.2.1 Record

At the top left of the Captura window is the red Record button. Clicking this button will start the capture process, sending information to be displayed on the HUD.



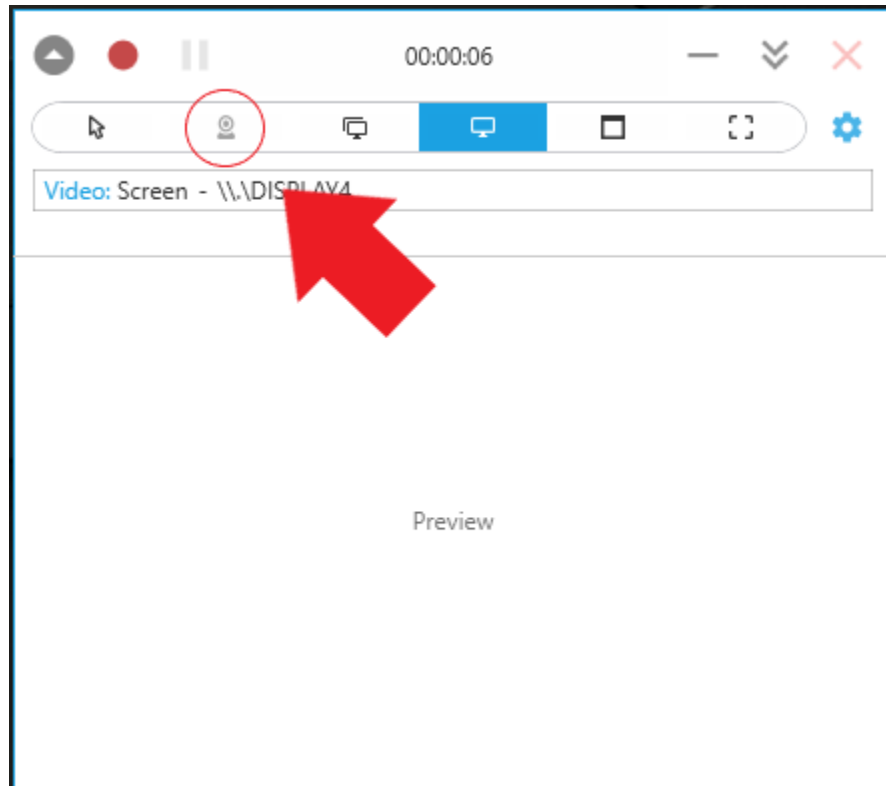
4.2.2 Follow Mouse

Clicking on the Follow Mouse button on the far-left side of the toolbar spanning the top of the window activates the Follow Mouse mode. When Follow Mouse mode is activated, Captura will present you with the options to adjust Width, Height, and Margin. These measurements are in reference to the area around the mouse that will be captured and sent to the HUD.



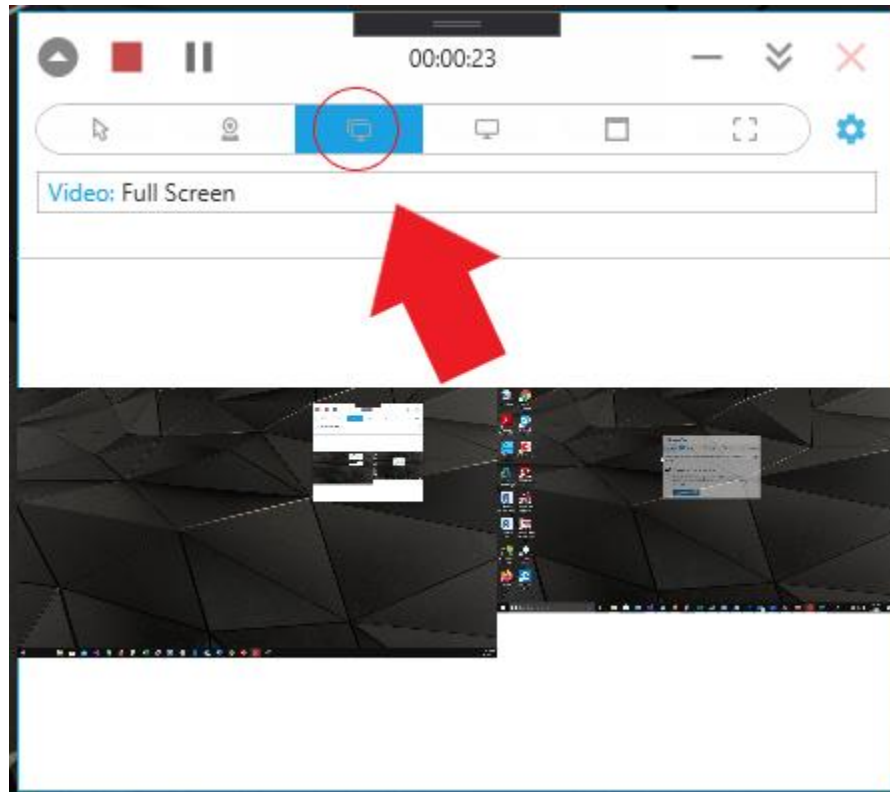
4.2.3 Webcam Capture

Moving to the right on the toolbar is the Webcam Capture button. Clicking on this will set Captura to capture images using a webcam and sending the footage to the HUD. It is important that a webcam be connected to the system before choosing this mode. You can select which webcam to use by configuring it in the Webcam submenu of the Configuration Menu, which you can get to by clicking on the gear icon to the right of the toolbar. This also includes the use of the HUD's onboard camera.



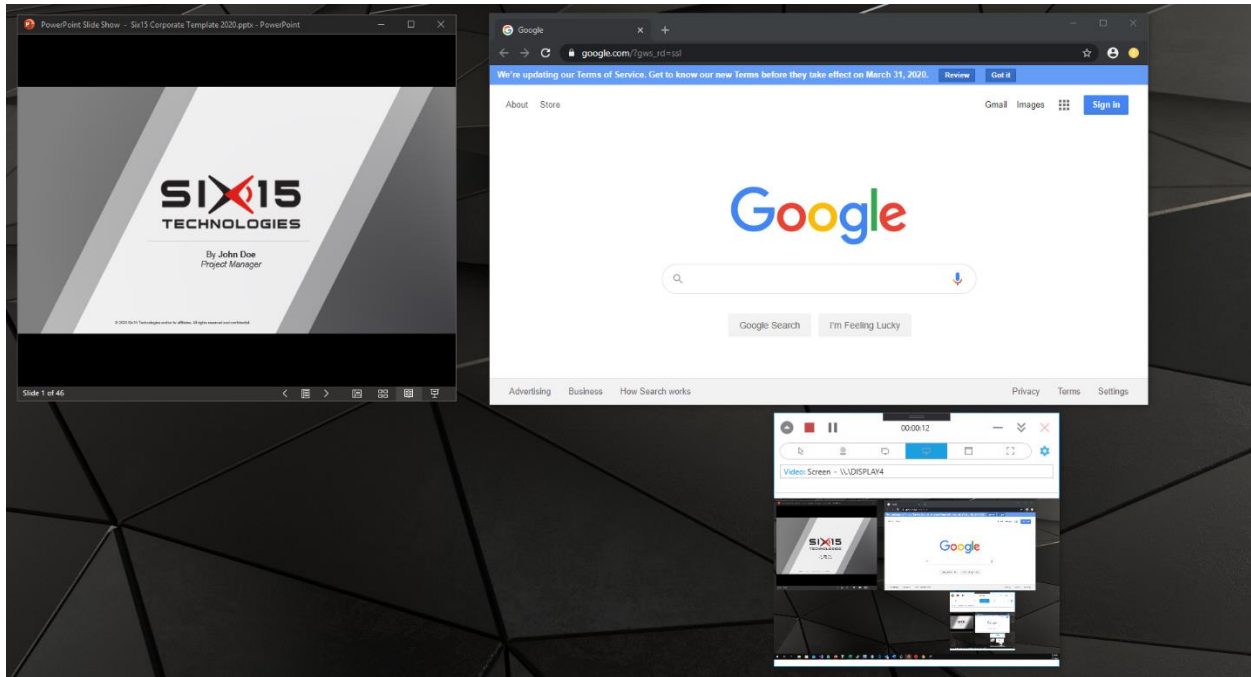
4.2.4 Fullscreen Capture

Next in the toolbar is Fullscreen capture. While in this mode, everything being displayed on your computer's monitor will displayed on the HUD screen. This includes multiple monitors being displayed side by side like in the figure below.



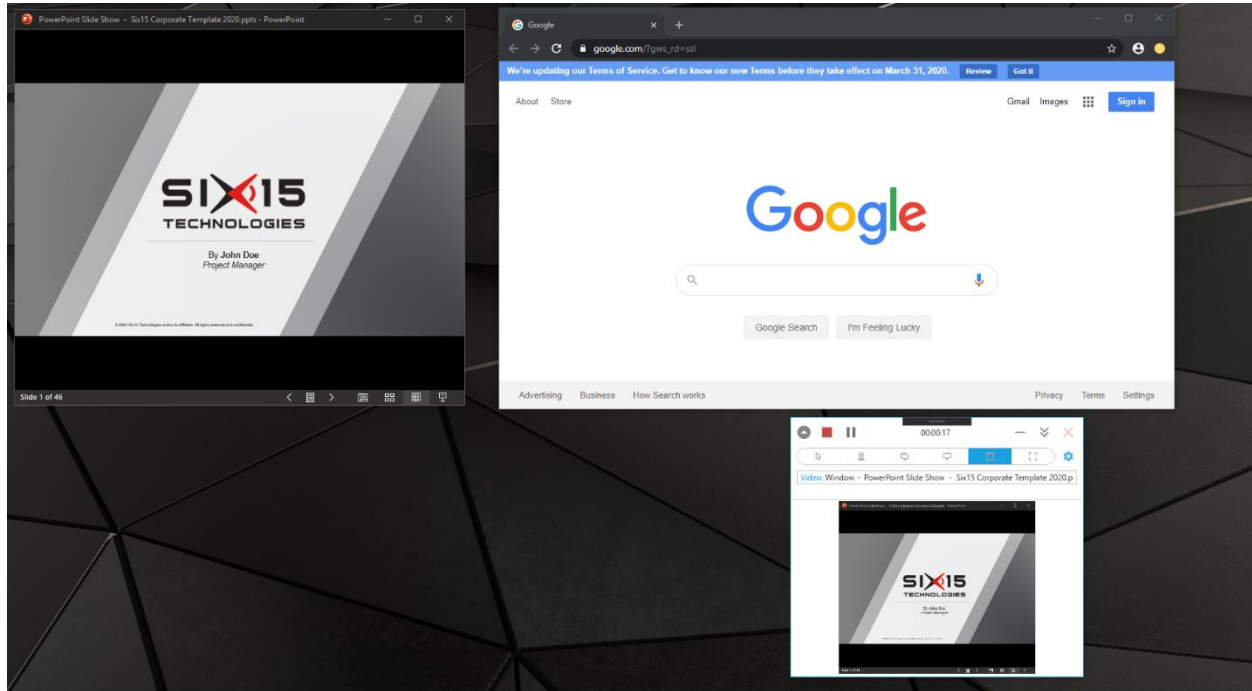
4.2.5 Screen Capture

In Screen Capture mode, you can select a single screen to be displayed by the HUD. This is most useful with computers that have multiple screens to display on.



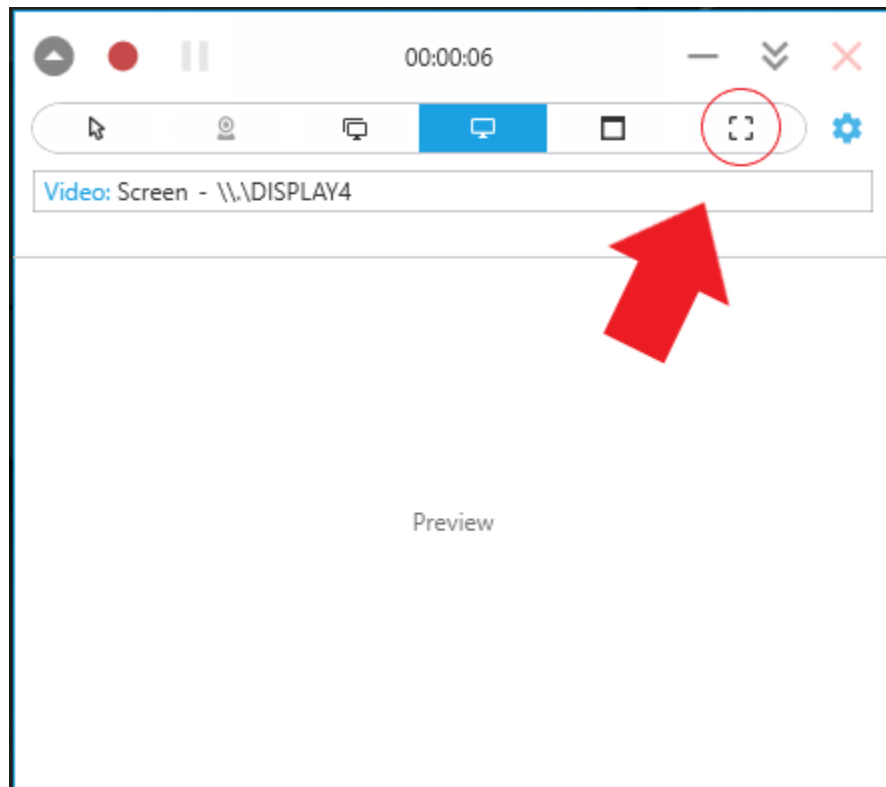
4.2.6 Window Capture

Second to last in the toolbar is Window Capture option. While this mode is enabled, the HUD will be able to see anything that happens within a specified window defined by the user. Since the HUD is set to see only that window, moving the window around on the screen will not affect the HUD's display.



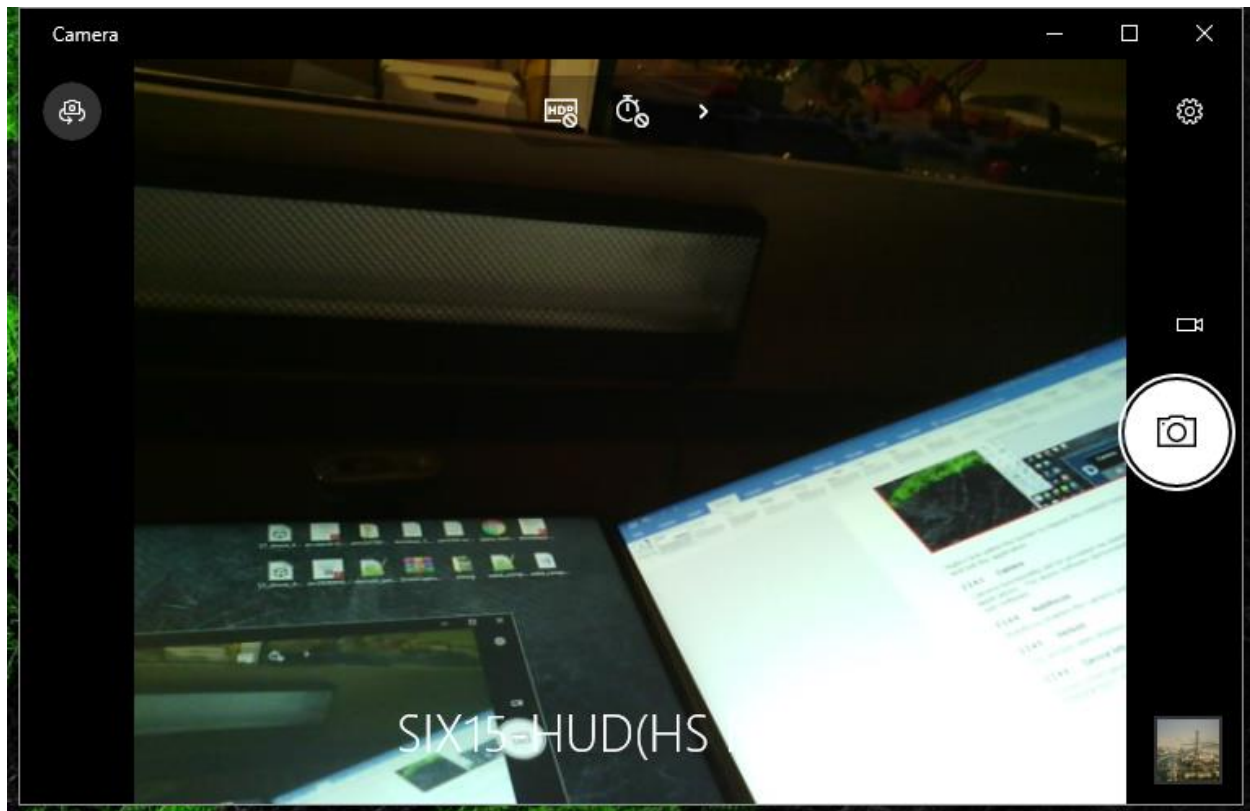
4.2.7 Region Capture

Last, we have Region Capture. Once you select Region Capture, you will be prompted to draw out an area of the screen that will be sent to the HUD. Anything moving through this area will be visible on the HUD, but the defined region itself will not move. Rather it will work like a viewport onto your computer screen. Additionally, you can select a part of a window, for example a video playing on a webpage. Doing so will select only that region of the window to be displayed in the HUD.



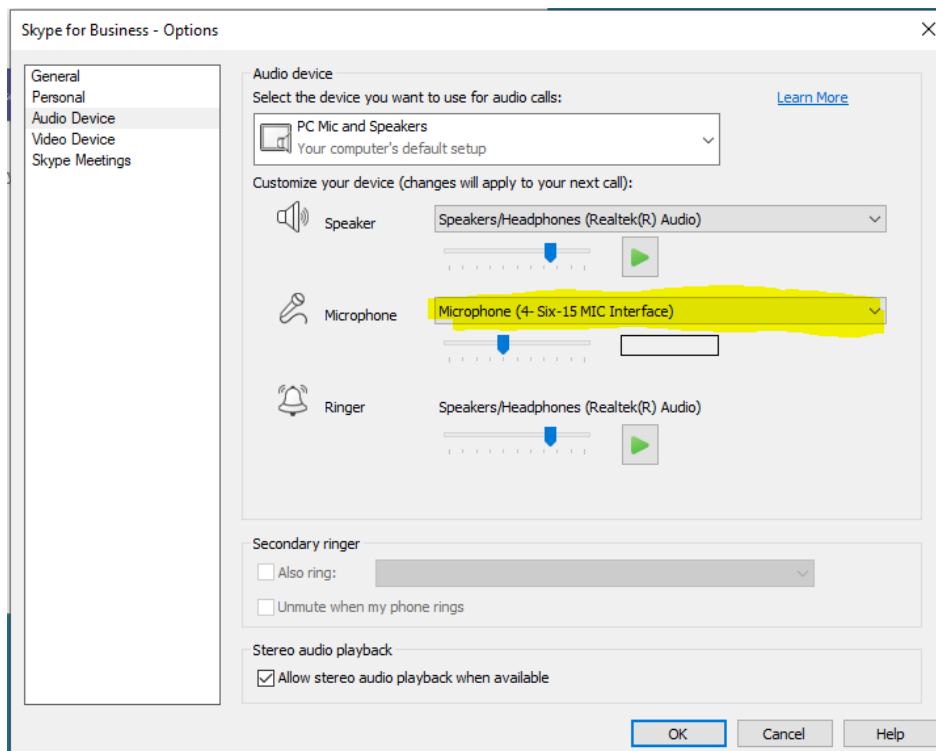
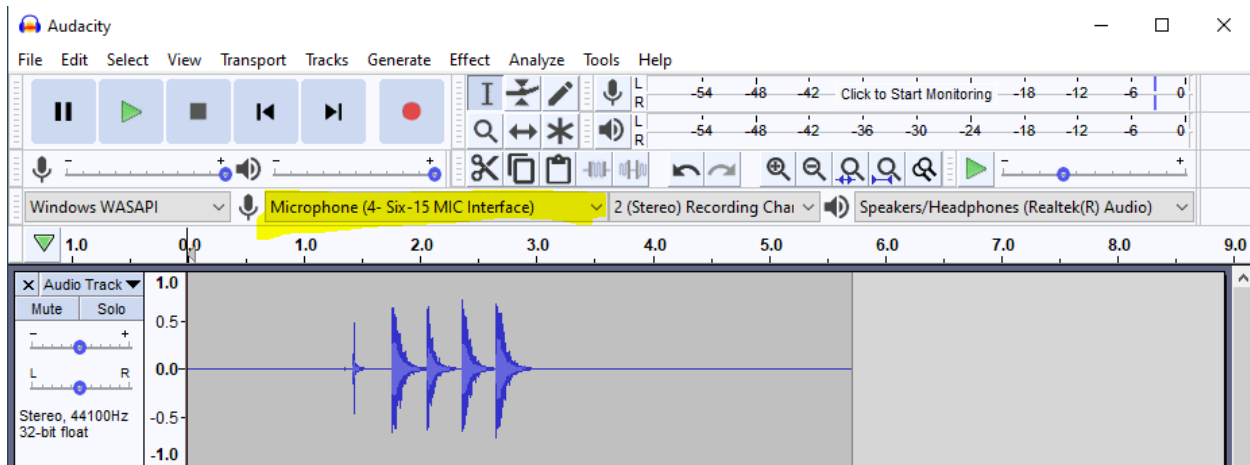
4.2.8 Camera

Camera functionality will be provided via standard Windows Camera application or third-party applications. If more than one USB camera is attached to your system you must use the change camera button to switch to the Six15 camera which will display the name at the start of the capture. While in this mode, you can also change the resolution of the image that is being captured and sent to the computer.



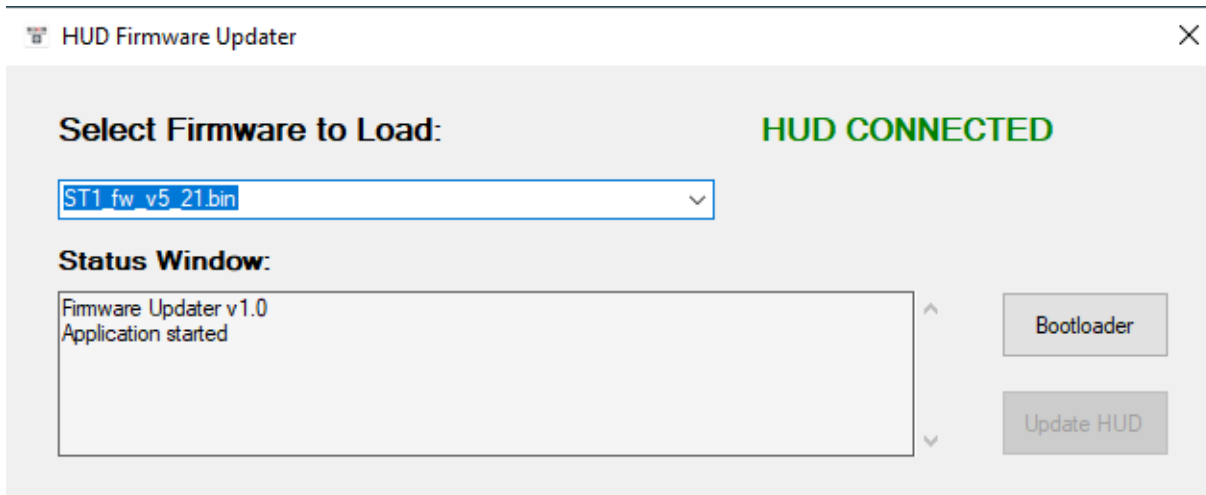
4.2.9 Audio

Microphone functionality will be provided via standard Windows application or third-party applications. Below are two examples of applications that record using this interface: Audacity and Skype for Business.

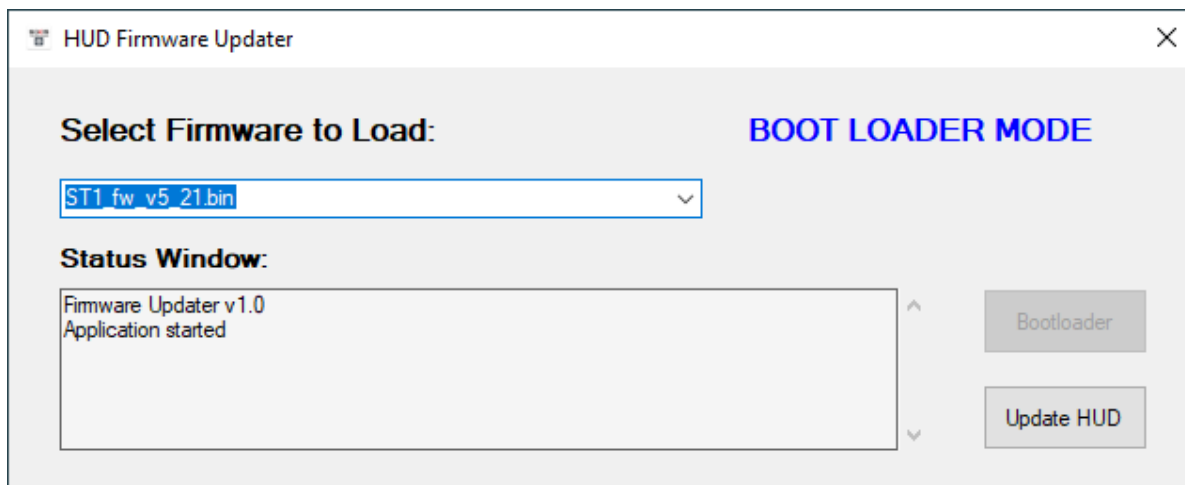


4.3 Firmware Update

HUD Firmware Updater is a tool available that updates your HUD hardware to selected firmware. Selecting the Firmware Update option from the context menu in the system tray will launch the firmware update application. The user will select the desired firmware to load from the drop-down list.



Then the user must then put the HUD device into bootloader mode to perform the update by clicking on the Bootloader button. In the upper right corner, there is a status that will signify the state of the HUD device.

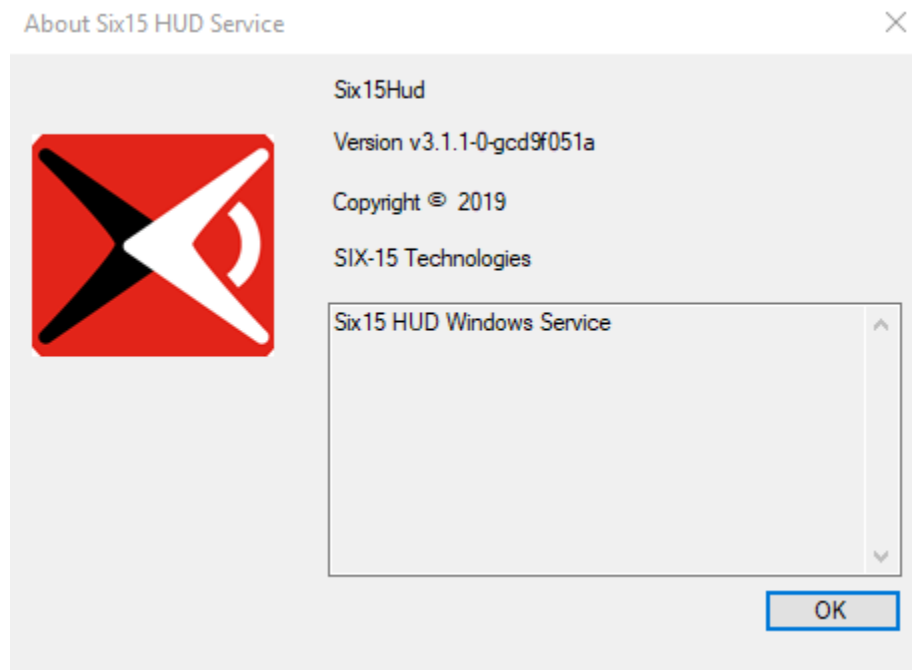


Once the device is in Bootloader mode, ensure that the desired firmware is selected before clicking the “Update HUD” button. Clicking the “Update HUD” button will update the firmware on the HUD to the selected firmware in the drop-down box.

When the firmware update is complete the HUD will reset on its own. The firmware update application can be closed by clicking the X in the upper right corner.

4.4 About

About provides you with all the information you would need pertaining to the HUD’s software such as version and firmware numbers.



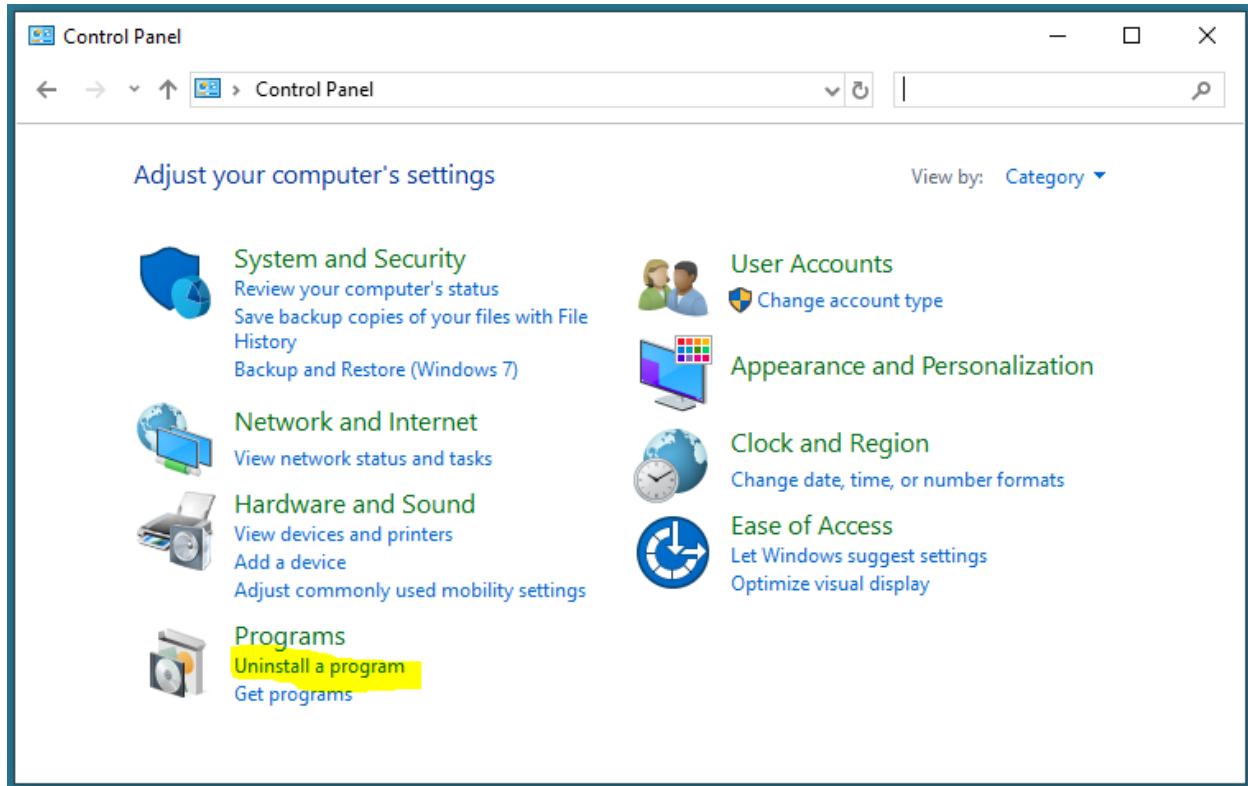
4.5 Exit Button

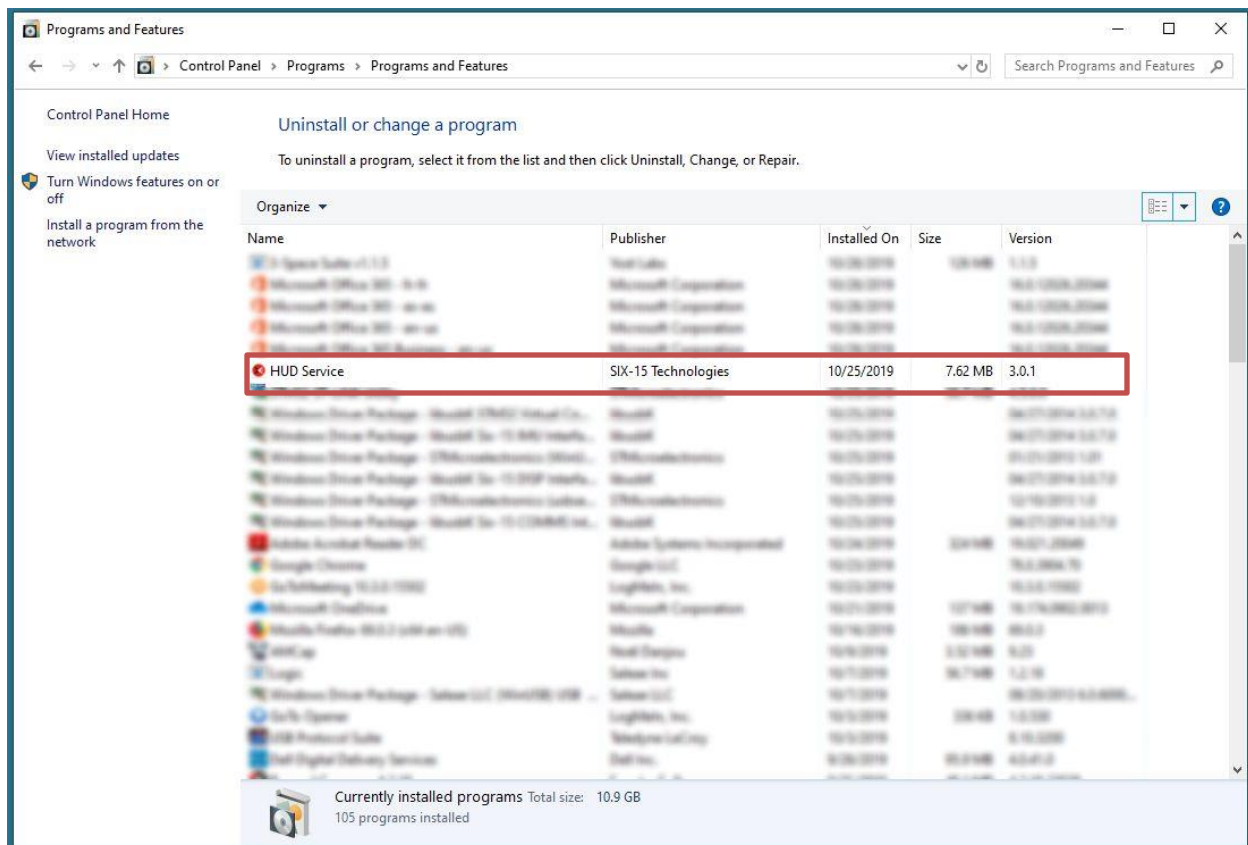
Will close out the application.

5. Troubleshooting

5.1 Service Uninstall

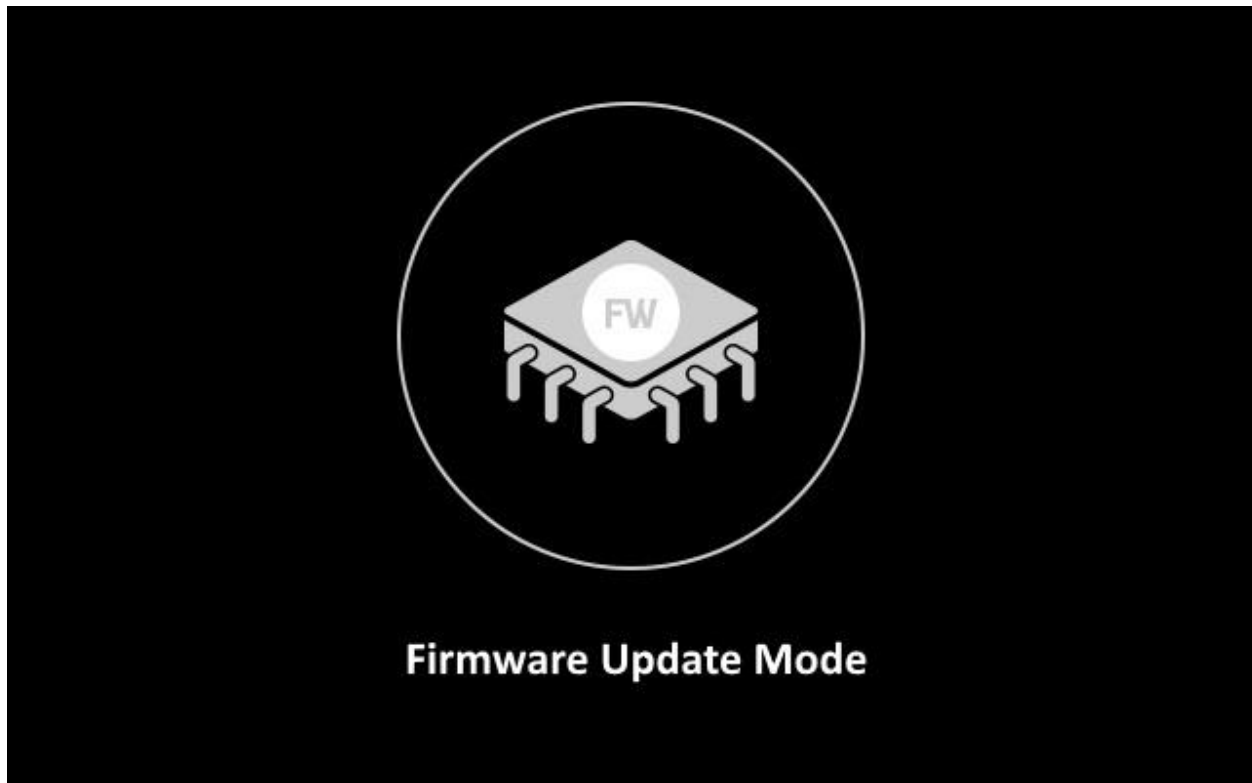
Use Windows “Uninstall or change a program” interface to uninstall the program.





5.2 Device Boots into Safemode

Your device may occasionally display an image like the one below. This is because the device has entered bootloader mode.



5.2.1 Powercycle

When this happens, the first step you should take is to power cycle your device. Make sure to close the application connecting the device to your computer before unplugging and reconnected the HUD.

5.2.2 Reflash the Firmware

If power cycling does not work, your next step is to try and reflash the firmware. To do this, refer to section 4.3 “Firmware Update” for instructions on updating the HUD’s firmware.

5.2.3 Contact Six-15

If all else fails and you are unsure why your device does not appear to be working, please contact Six-15.

Email: Info@six-15.com

6. Software/Firmware Revision History

6.1 Windows Service

Table 1 – Windows Service Revision History

SDK Version Number	Author/Owner	Service Version	Description of Change
1.00	G. Vigelette	1.0.2r0	<ul style="list-style-type: none"> First Release
2.00	A. Sojda	3.0.1	<ul style="list-style-type: none"> Integrated firmware version 5.21 to update screen. Windows driver update to support firmware 5.21 and above. Stability updates and improvements.
2.01	A Sojda	3.1.1	<ul style="list-style-type: none"> Changed Screen Capture to run at 24 fps Clear screen when exiting screen capture Cleanup to firmware update (board resets on its own, don't need to unplug/plug) HUD firmware update supports 5.23
2.2	A Sojda	3.2.1	<ul style="list-style-type: none"> Added new screen capture tool (Captura)
2.3	A Sojda	3.2.6	<ul style="list-style-type: none"> Update firmware to 5.41
2.5.0	A Sojda	3.2.10	<ul style="list-style-type: none"> Update firmware to 5.34
2.5.3	A Sojda	3.2.11	<ul style="list-style-type: none"> Update firmware to 5.37
2.6.3	A Sojda	3.2.12	<ul style="list-style-type: none"> Update firmware to 5.39
2.6.5	A Sojda	3.2.13	<ul style="list-style-type: none"> Update firmware to 5.41
2.7.0	A Sojda	3.2.14	<ul style="list-style-type: none"> Update firmware to 5.42

7. Document Revision History

Table 2 – Document Revision History

Version Number	Date	Author/Owner	Description of Change
1.00	11/18/2018	G. Vigelette	Initial Release
2.00	10/25/2019	A. Sojda	Updated document for service 3.0.1
2.2	03/04/2020	John Martel	Corrected spelling and grammatical errors. Made style changes for ease of reading. Rearranged content to flow easier. Added Troubleshooting.
2.3	07/06/2020	A Sojda	Release SDK 2.3
2.5.0	3/31/2021	A Sojda	Release SDK 2.5.0
2.5.3	8/31/2021	A Sojda	Release SDK 2.5.3
2.6.3	10/28/2021	A Sojda	Release SDK 2.6.3
2.6.5	11/17/2021	A Sojda	Release SDK 2.6.5
2.7.0	12/07/2021	A Sojda	Release SDK 2.7.0