

Updating your uScope Firmware

Step 1

Update Computer Requirements

All uScopes can be updated using a Windows Vista or 7 computer. Only newer uScopes can be updated using a Windows 10 computer.

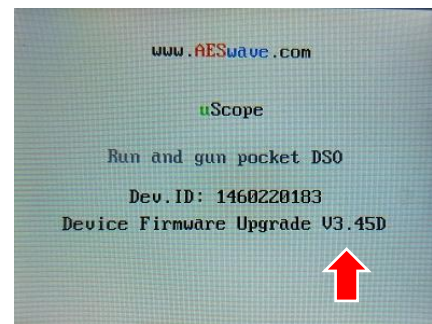
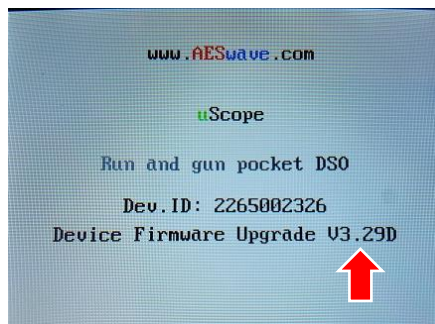
To determine if you have a uScope that has to be updated on Windows 10, follow these steps:

Check the Device Firmware Version

Before updating your uScope, it is important to check your Device Firmware Upgrade version:

- Turn on the uScope while holding the down arrow button.
 - The Firmware Upgrade screen will appear.
- Locate the Device Firmware version number.

- Version v3.45 or higher may be upgraded using Windows Vista, 7, 8, 8.1, or 10.
- Version v3.29 or lower can only be upgraded using Windows Vista or 7 at this time.



Step 2

Download the Firmware Updater Program

Use either of the following links:

https://files.aeswave.com/uscope/uScope_Firmware_Updater_Setup.exe

https://files.aeswave.com/uscope/uScope_Firmware_Updater_Setup.zip

NOTE: Some anti-virus and email programs prevent .exe files from being downloaded. If you encounter this issue try the link with the .zip extension.

Step 3

Installing the Updater Program

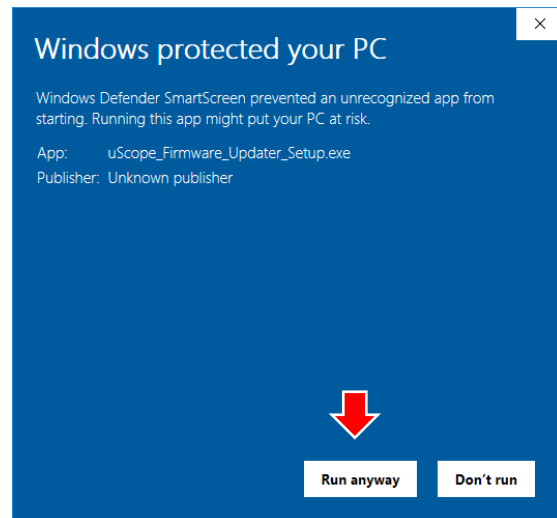
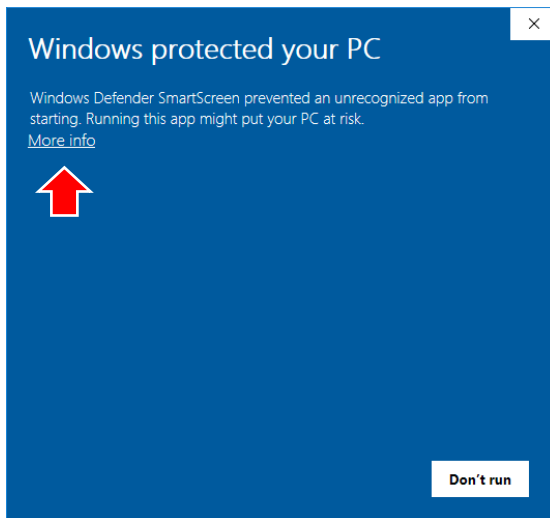
Locate the downloaded updater program file (by default it will likely be located in the default DOWNLOADS directory).

Windows Vista and 7 users will be prompted by User Access Control to Cancel or **Allow** the program to continue.

- Click **Allow**.

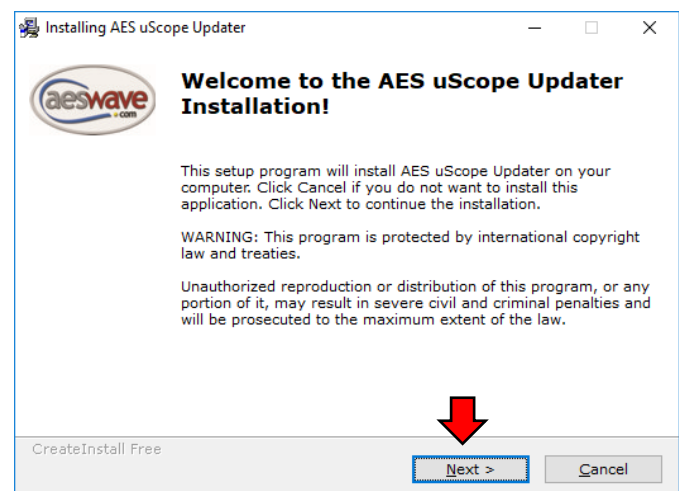
Windows 10 users may encounter this warning message.

- Click on the **More Info** link, and then click **Run anyway**.

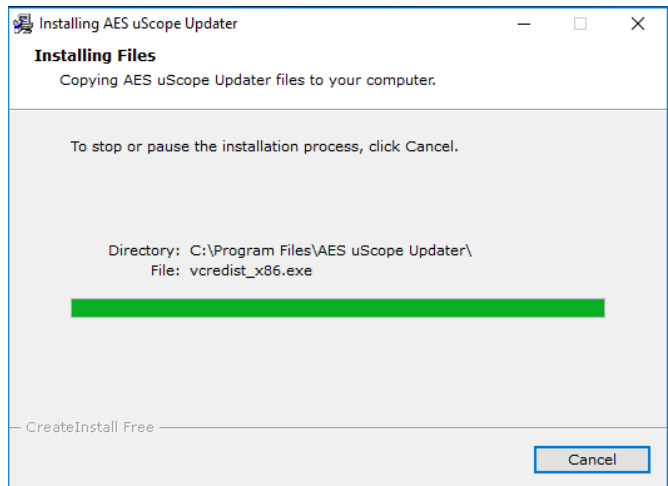
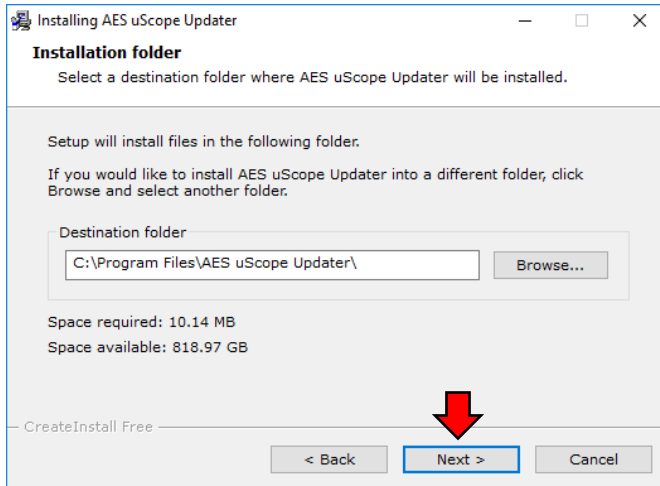


The Installation screen will appear.

- Click **Next**.

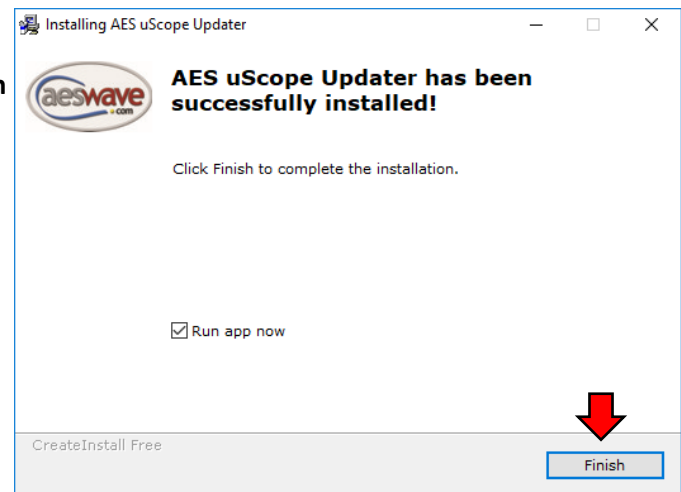
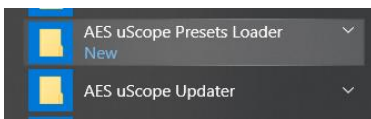


Next, you will be asked if you want to change the default destination folder. When ready, click **Next** to proceed.



After the program has finished installing, click the **Finish** button. If the **Run app now** box is still checked, the program will start.

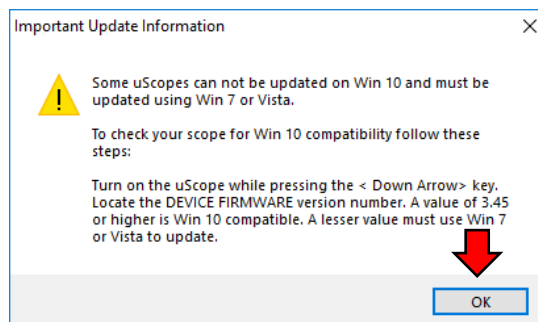
NOTE: The installer will add a program ICON to the Desktop and add links into the START MENU:



Step 4

Running the Updater Program

When the program starts, you will be presented with a message asking to check the Device Firmware versioning in regards to using Windows 10 or Windows 7 for the update process. Press <OK> to continue.



Ready to start the update process:

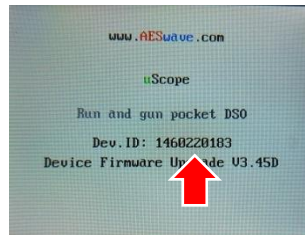
Step 1:

Select the image the best matches your uScope.

Step 2:

Put the uScope in FIRMWARE UPDATE mode to get the 10 digit device ID number.

- **Hold down <ARROW> button** and power up the uScope.



Enter the device ID into the box labeled **ENTER YOUR DEVICE ID**

NOTE: The uScope must be on and at this screen for the update to take place.

Step 3:

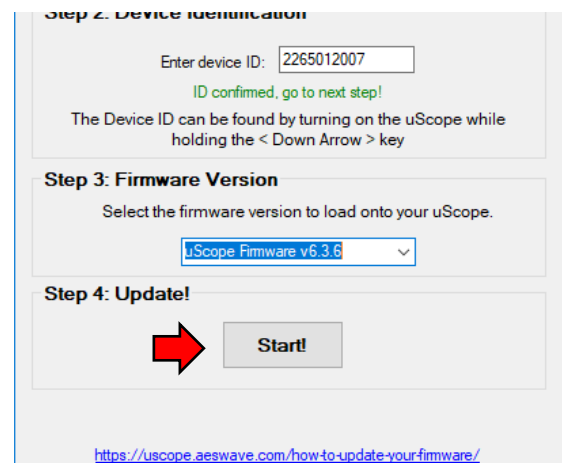
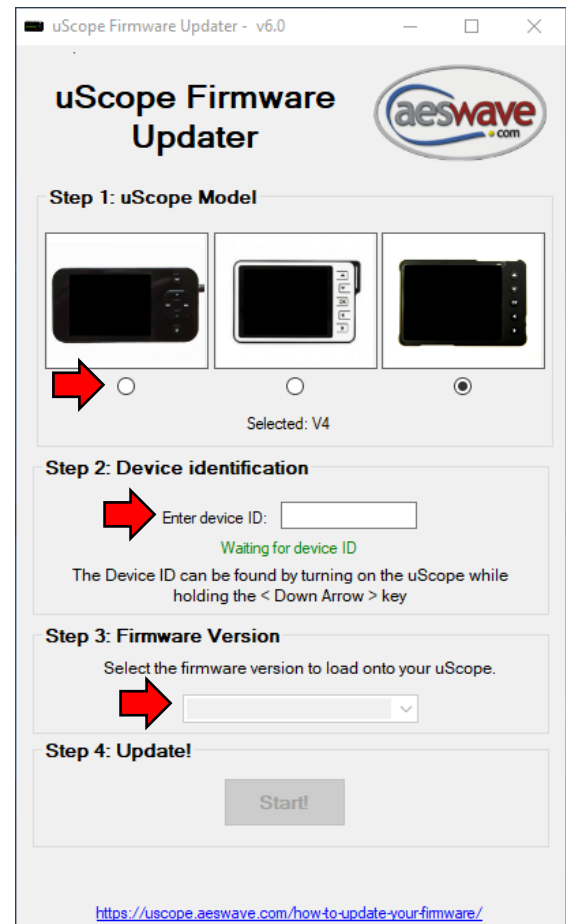
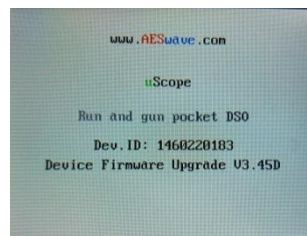
Select the Firmware version from the drop down box.

The current latest version is v6.3.6

WARNING: If you receive an error message that the firmware update is not available, call us at 1-877-351-9573 or send an email with your Device ID to support@aeswave.com

Step 4:

Press <Start> when you are ready to continue.





Step 5:

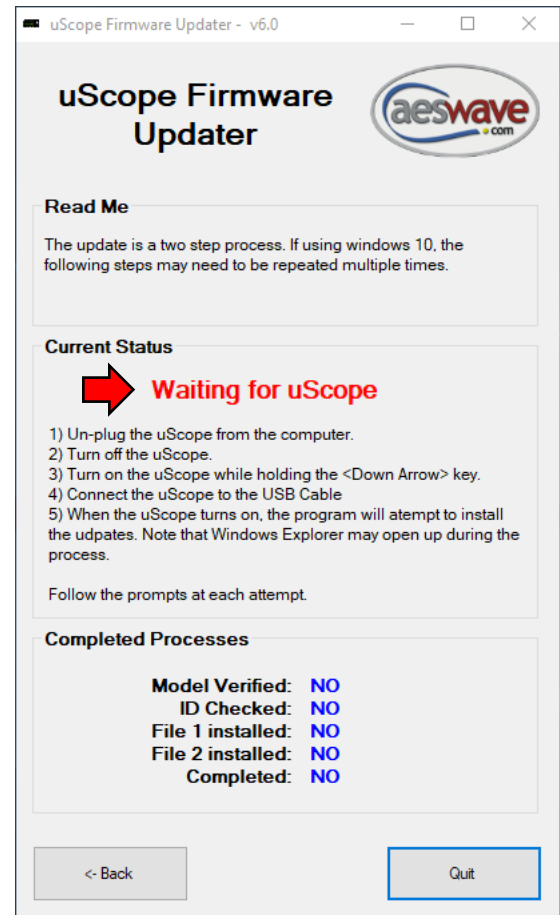
A new window will appear with a Status warning flashing **Waiting for uScope**.

If not already, connect the uScope to the PC with the supplied USB cable.

Power up the uScope while holding the **<DOWN ARROW>** key to enter *Device Firmware Update mode*.

- The updater will begin the update process.

Monitor the Completed Processes section at the bottom, once all of the items say **Yes**, the update is complete.



Step 6:

Turn off and restart your uScope in the normal fashion without using the down arrow key.

Note the version number on the splash screen. It should match the version number selected in the update program. In this example the firmware version has been updated to 6.3.6 or to match what was chosen in Step 3.

Congratulations!



Updating uScope Presets

Use the Preset Updater Program to add updated and new presents, and in some cases, datasheets for many of the presets. You will find the datasheets on the memory card in PDF format and offer some insights to the setup and application.

Step 1:

You can download the Preset Loader program using either of the following links:

https://files.aeswave.com/uscope/uScope_Presets_Loader_Setup.exe

https://files.aeswave.com/uscope/uScope_Presets_Loader_Setup.zip

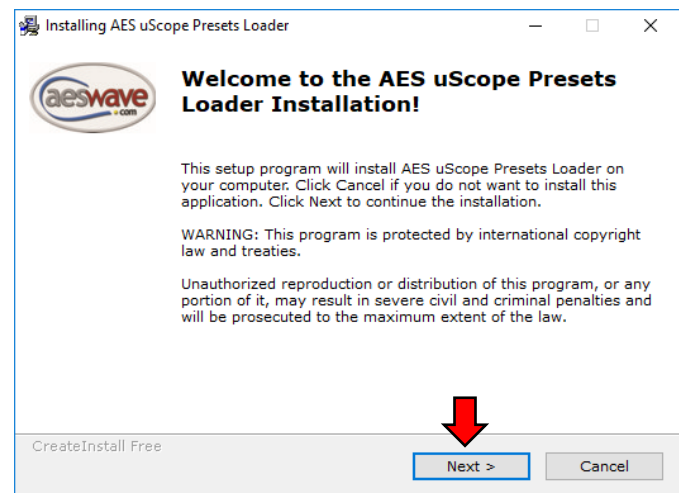
NOTE: Some anti-virus and email programs prevent .exe files from being downloaded. If you encounter this issue, try the link with the .zip extension. For more information refer to **STEP 3** on page 2.

NOTE: All models of uScopes can be updated on Windows 10, Win 7 or Vista.

Step 2:

Once the file has been downloaded, the installation window will appear.

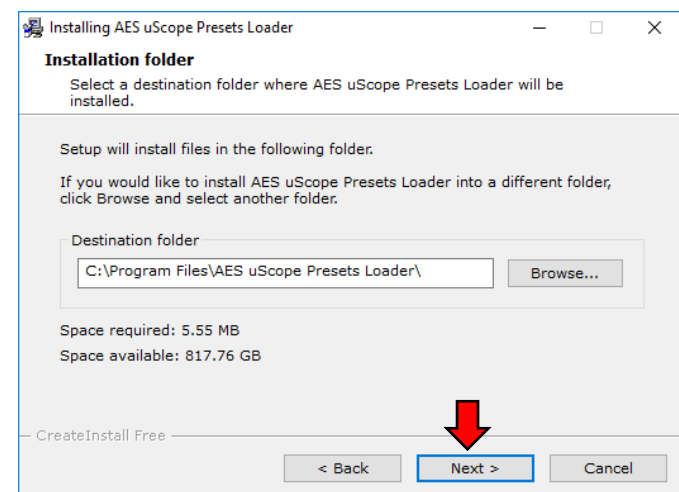
- Click **Next**.



Step 3:

You may change the default destination folder for the install.

- Click **Next** to proceed.

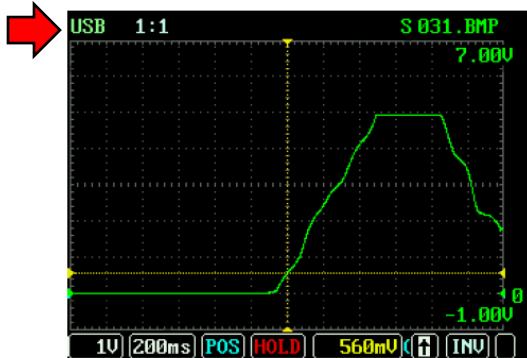


Step 4:

Once the program is finished installing, it will automatically open.

Turn on and Connect the uScope to the computer.

The upper left corner should display **USB**.



NOTE: The uScope must be on and be displaying the waveform grid. (Do not press the <DOWN ARROW> while powering up.)

Step 5:

Select uScope Drive - The drive associated with the uScope should be present in the white list box captioned, *Select uScope Drive*.

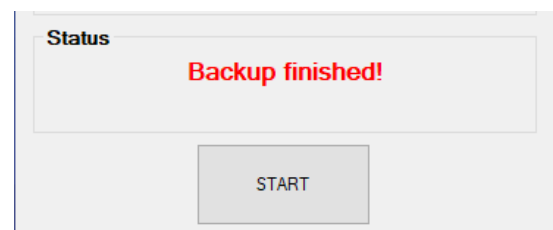
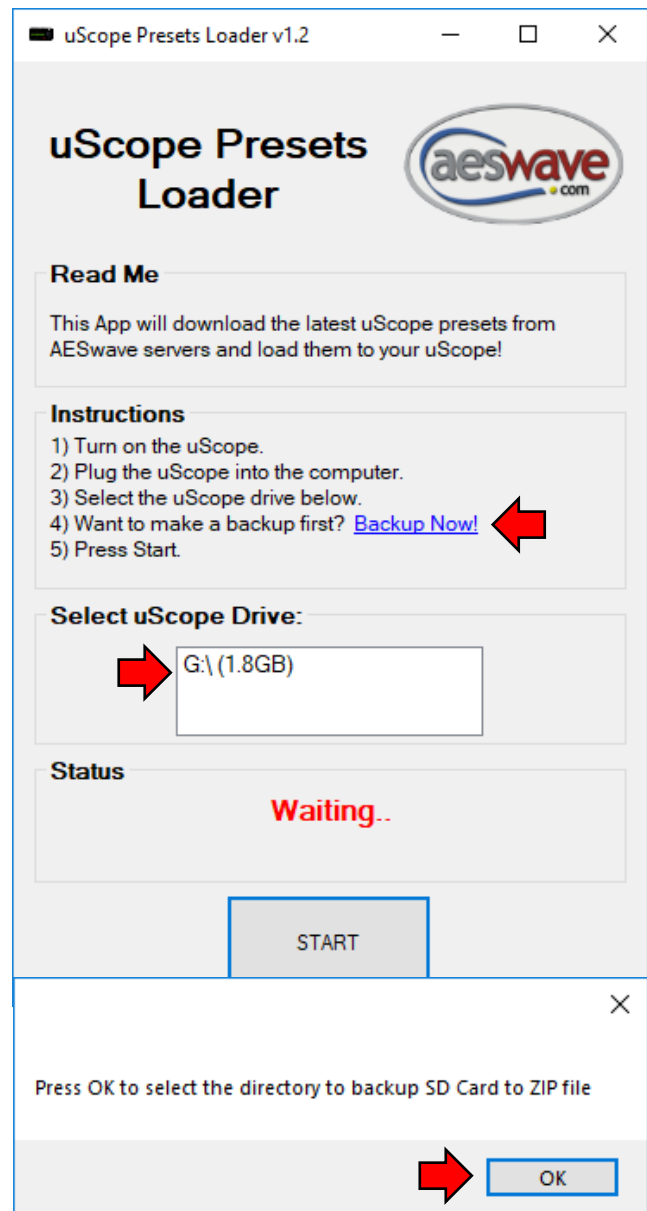
- Click to select the uScope drive.

Create a backup – It is recommended to backup the full CF memory card. Note that if a new preset file has the same name as an existing file, it will be overwritten.

- To create a backup, click the blue link in the instructions, line 4.

Select Directory to save your CF card data –

- Click **OK**.
- Select location and enter file name.
- Click **Save**
- Backup finish** will appear when completed.

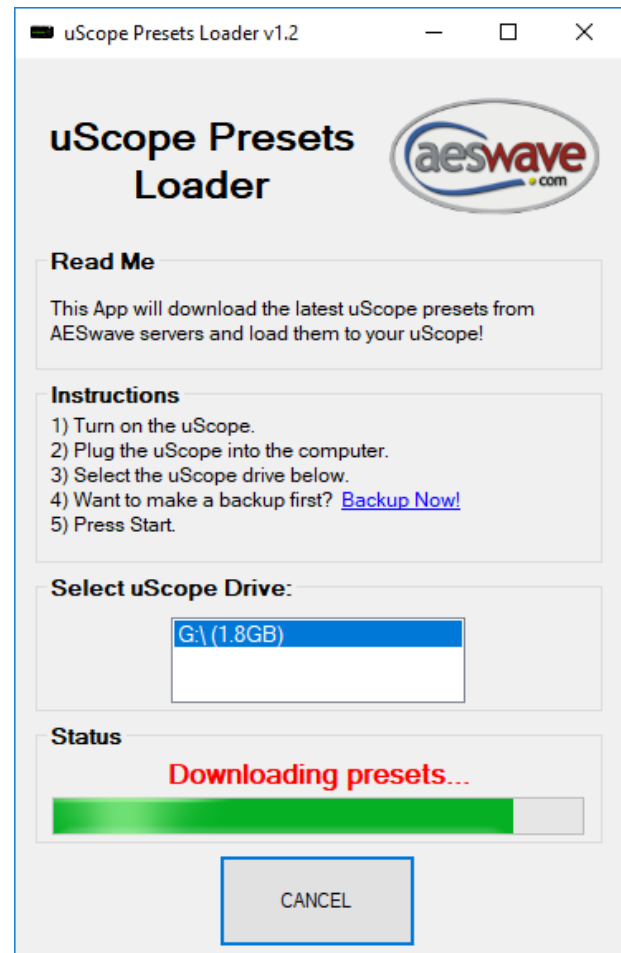
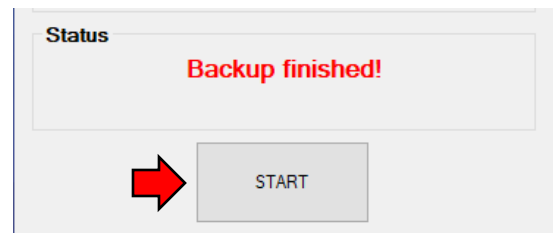




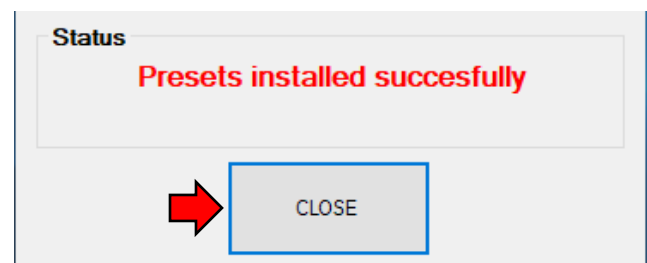
Step 6:

Ready to load the new presets

To begin the new preset transfer, click the <START> button. A status bar will appear indicating progress.



When all the presets are loaded click on the **Close** button.

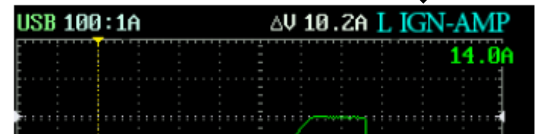


Step 7:

Confirm that the new presets are available

Following a successful installation of the new preset files, turn your uScope **Off** and back **On**.

- Navigate to the Pop-up Menu by pressing the <OK> button.
- Use the <UP/DOWN> arrow keys to select **Prst** (Presets).
- Use the <UP/DOWN> arrows to highlight the different folders (Sensors, Actuators, Amp, etc)
- Use the <LEFT/RIGHT> arrow keys to scroll through the presets. NOTE: The preset name will appear in the top right of the screen.



Preset List

The follow presets should be available. Note that any existing presets that do not use these file names will remain available.

Sensors	Actuators	Amp	Ignition	Charging
CAN –HiLo	IDLE-SOL	CRNK-AMP	IGN-AMP	ALT-AC
CAN–High	INJ-PH	FPUMPAMP	PRO-IGN	BAT-CRNK
CAN-Low	INJECTOR	IGN-AMP	SEC-IGN	
DIFITL-HF			SECDIS-N	
DIFITL-LF			SECDIS-P	
O2-WRMUP				
TPS-5V				
VRSENSOR				

Accessing the Preset Data sheets

In addition to the new presets, there PDFs available on the uScope that will help you become more familiar with the presets and testing. Keep in mind that the presets are often used as a starting point for scope setup. Adjustments may be necessary for your specific needs and applications.

Datasheets can be accessed any time the uScope is turned on and connected to a computer with the USB cable.

Use Windows File Explore to navigate to the uScope drive. Locate the folders that correspond to the preset menu. Each PDF will be found alongside the preset file (*.AES), a representative bitmap screen capture (*.BMP), and the PDF.

See next page for example preset...

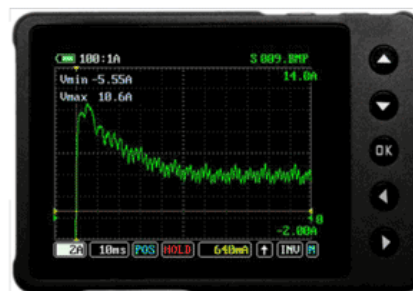
Use this setup to view the current in a fuel pump circuit.

Activate Preset

- | <OK> to open Pop-up Menu | Select [Presets] > [Amp] |
- | Use <Left/Right> arrow keys to locate FPUMPAMP.AES |
- | Press and hold the <OK> button for 2 seconds |

Overview

A fuel pump current waveform can provide important and unique diagnostic information. This setup is optimized to capture the initial turn-on of the pump and then display enough detail to allow for analysis of the brush bar contact.



Setup and Connections !Must use a low amp probe!

Low amp probe 100mv/1amp

A low amp probe with a 100mV/1amp calibration such as the AES# 07-60 must be used. Adapters are available to connect BNC or banana plug amp probes to the uScope.

- **Probe Setup:** With charged battery, set amp probe to 100mV/1Amp setting.
- **Circuit Connection:** Clamp amp probe around wire to fuel pump. The use of a fuse amp loop or relay amp loop can aid in this process.
- **NOTE:** If signal does not appear, flip the amp probe connection to the wire – the amp probe is current direction sensitive.
- **Trigger:** This presets defaults to TRIGGER MODE = SING(single) This means scope will not update until the trigger requirements are met, the scope will capture one waveform. Looking at the image above: When the signal rises up to 640mA the uScope will capture one full waveform and then go into HOLD mode. To rearm the trigger, simply press the <A> button to release the HOLD mode. To get the waveform to continuously update change the TRIGGER MODE = AUTO.



Waveform Analysis

Test Considerations

- Consistency in the humps. Watch for repetitive unique features which will represent the integrity of a particular brush bar contact.
- Steady state current level
- Time from start up to steady state
- Check good to know good
- Load the fuel system while monitoring current level for variations (TRIGGER MODE = AUTO).

If the voltage to the circuit is steady, then the current waveform can be considered a pretty complete picture of the energy the circuit is using. The initial rise in current indicates how much energy it takes to get the pump spinning. The slower it is spinning, the higher the current. As the pump RPM speeds up, the current comes down. The higher the current, the more work is being done and the lower the current the less work. For example: Out of gas = less work = higher pump RPM = lower current. Clogged filter = more work = less RPM = higher current.

- **NOTE:** New pumps can display a very erratic waveform until the brushes have a chance to seat in. Keep in mind that the waveform can be bad but that does not always mean the pressure and volume are bad.

Useful Links

[Current Probes](#) | [Mastering Low Current Probes](#) | [AES TechFeed Support Group](#)

uScope Preset Setting

2A/Div | 10ms/Div | Trig Mode: SING | Trig Level: 64.0mA | Trig Slope: Rising | Invert: NO | Probe Cal: 100mV/1A

Trouble Shooting

If the update process fails:

- **Updating Firmware**
 - Refer to the beginning of this document and confirm your uScope is compatible with the version of Windows on your computer.
 - Confirm that your uScope is in Device Firmware Update mode, as in “Step 2:” on page 4.
 - Check to make sure your computer is connected to the internet.
 - Make sure the USB cable is plugged in and secure on both the uScope and the computer.
- **Updating Presets**
 - Presets can be uploaded using Win7, Win10 or Vista.
 - Confirm that when the uScope is turned on, the waveform grid is on the display.
 - Ensure your computer is connected to the internet.
 - Make sure the USB cable is plugged in and secure on both the uScope and the computer.

Still not working:

Contact AESwave: www.aeswave.com Support@aeswave.com (559) 292-7851

Getting Started Resources

AESwave Techfeed Facebook User Group

- Join the conversation with techs from around the globe. [AESwave TechFeed](#)



AESWave YouTube Channel

- <https://www.youtube.com/AESwave>
- Be sure to check out the great getting started videos by Justin Morgan click here to open the play list > [uScope 6.3.6 Video Playlist](#)



uScope at the AESwave Store

- Learn more about [uScope accessories](#)

uScope Reference Manual

- Available soon. Will be posted at www.aeswave.com.

