Download Editor Users Guide

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Introduction

The Download Editor is a small utility that allows direct modification of Sharpe2 or Sharpe32 download files. The editor, at a minimum, can be used to convert the contents of the download file data into a human readable form for easier viewing. The download file contains all the information necessary for the Sharpe2 or Sharpe32 controller to function properly.

The method used by the manufacturer when dealing with a Sharpe2-32 download is to have a set of master parameter data containing options such as velocity, acceleration, probe configuration, axis limits, and numerous other settings. The download file for the controller is generated from this master parameter data to a form suitable for the controller and the target software. Since the master parameter data is frequently missing or incorrect having the ability to directly edit a working download file is ideal in some cases.

Overview

The Download Editor shows a split view of the download file where the left side shows the raw data and the right side shows the interpreted values of the active line. The parameters from the active line can be changed by modifying the integer, hexadecimal, or value display. Illustration 1 shows an example of the editor with a download file loaded.
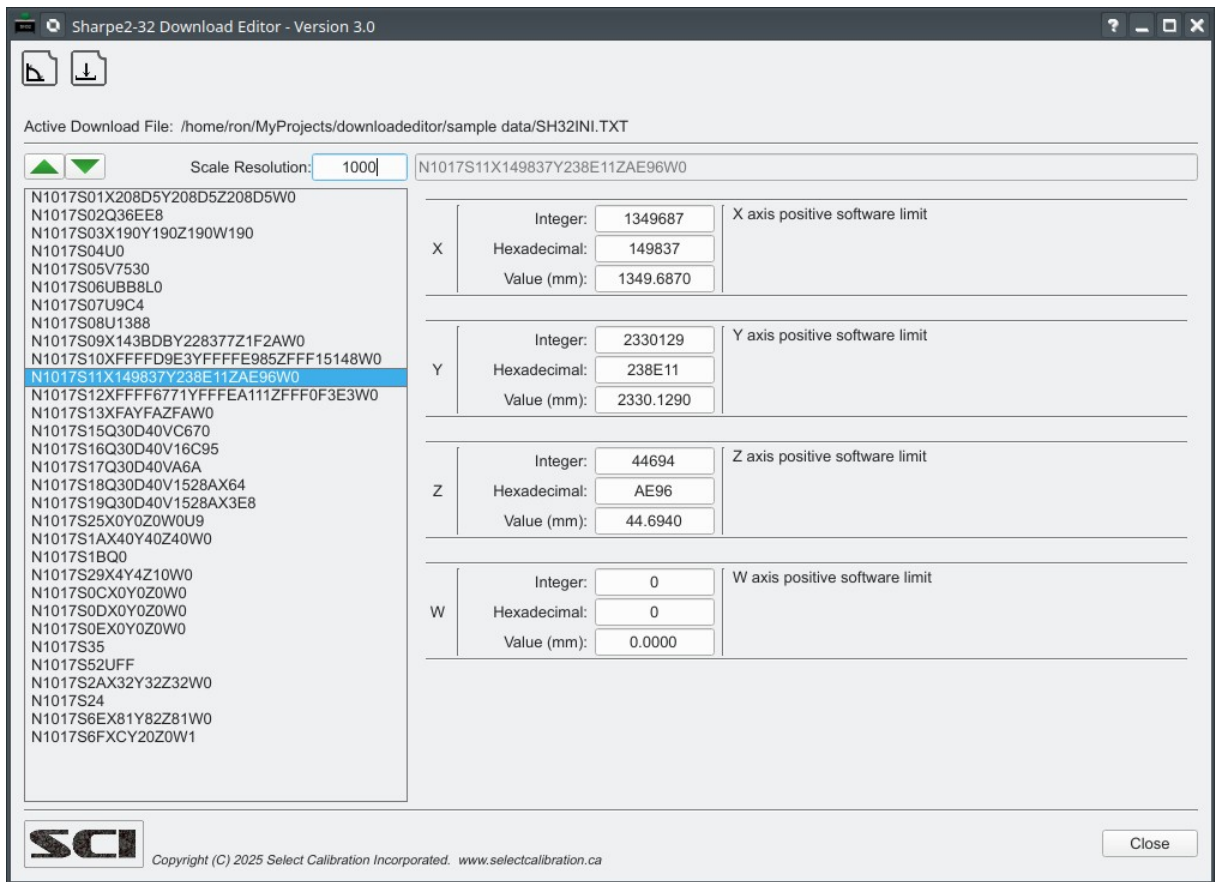

Illustration 1: Download editor main window.

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The active line of the download file can by set by one of the following methods:

- Click on the line of interest using the left mouse button.

- Press the up/down arrow buttons above the left side display to navigate to the line of interest.

- Press the up/down arrow keys on the keyboard.

The Download Editor program will shift the position of the lines so the active line is at the vertical center of the data display unless the active line is near the beginning or end of the file.

Parameter modifications are done without altering other entries on the same line. It is possible to change a single value of a line containing one or more recognized parameters surrounded by unrecognized parameters and still maintain the original order and values for unrecognized entries.

Active lines without recognized data will appear in the editor without interpretation of the contents and can be modified directly. If the active line contains recognized data it is formatted into a series of integer, hex, and floating point entries.

Modifications of the hexadecimal data is limited to values between 0x00000000 and 0xFFFFFFFF. The floating point representation of the data requires a proper scale resolution to be set. The integer data is the signed representation of the hexadecimal data and does not take into account the scale resolution.

If the download file contains an entry for the scale resolution then this value is read when the file is loaded otherwise it must be manually set. When working with download files that do not contain a scale resolution entry inspecting the software limits for the axis and comparing to the known dimensions of the machine is a good way to verify the setting is correct.

Auto Loading Download Files

Starting with version 2 of the *Download Editor* a download file can be loaded as a command line parameter from a terminal. The download file can include a relative or absolute path to the file. Some examples of starting the download editor program on macOS from the terminal window is shown below:

```
bash-3.2$ downloadeditor.app/Contents/MacOS/downloadeditor ../sample\ data/DOWNL.OAD
bash-3.2$ downloadeditor.app/Contents/MacOS/downloadeditor -style fusion ../sample\ data/DOWNL.OAD


bash-3.2$ tree downloadeditor.app
downloadeditor.app
└── Contents
    ├── Info.plist
    ├── MacOS
    │   └── downloadeditor
    └── PkgInfo
```

Applications on MacOS are actually a container (folder with a name ending with app) that has everything necessary for the program to run. The container allows the program to easily move around. When running from a command line it is necessary to run the executable from within the container and not the container itself. An example of the application structure is shown above where the executable and relative path is shown from the folder of the application.

Example: Update Software Limit

The following shows an example of changing the negative X software limit for a DCC machine with a Sharpe32 controller. For a bridge machine this parameter describes the extreme left side of the measurement volume when standing at the front.

1) Open the download file. The file can be loaded using drag and drop or by clicking on the *Load* button icon on the main toolbar and select the file using the file selection dialog.

2) Verify the scale resolution in the Download Editor utility and update it if necessary. Download files used by PC-DMIS contain an entry for the scale resolution so this entry is set automatically. Download files used by Tutor for Windows must be set to the proper resolution of the machine.

3) Select the line describing the negative software limits (line containing *S12*). If the entry is not known then use the *Up/Down* buttons to search through the parameter contents until the right side shows entries for the negative software limits.

4) Enter the new software limit in the *value* field of the X axis negative software limit.

5) Press the *Save* button to write the change to the download file.

X	Integer:	-123456	X axis negative software limit
	Hexadecimal:	FFFE1DC0	
	Value (mm):	-123.456	

Illustration 2: X axis negative software limit changed to -123.456 mm.

Download files are often stored in the installation folder of the inspection software and this location does not normally allow write access by users. Instead of returning an error the files is redirected to the Virtual Store which can cause a wide variety of problems. Inspecting the contents of the Virtual Store folder is the best way to see if redirection has occoured.

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Revision History

Date	Version	Changes
July 24, 2017	1.0	New Program
Mar 20, 2019	1.1	Added warning if program closed without saving changes. [bug fix] Ignore invalid hex entries from standard editor.
Apr 29, 2019	1.2	Update current download file name when saving. Prevent changes of the scale resolution when not available. More robust extraction of scale resolution from raw data.
Oct 26, 2019	2.0	Added theme option to program. Added option to load file from command line argument. Removed file buttons and replaced with toolbar.
Jun 18, 2025	3.0	Removed theme option. Updated software icons. Updated depreciated features.