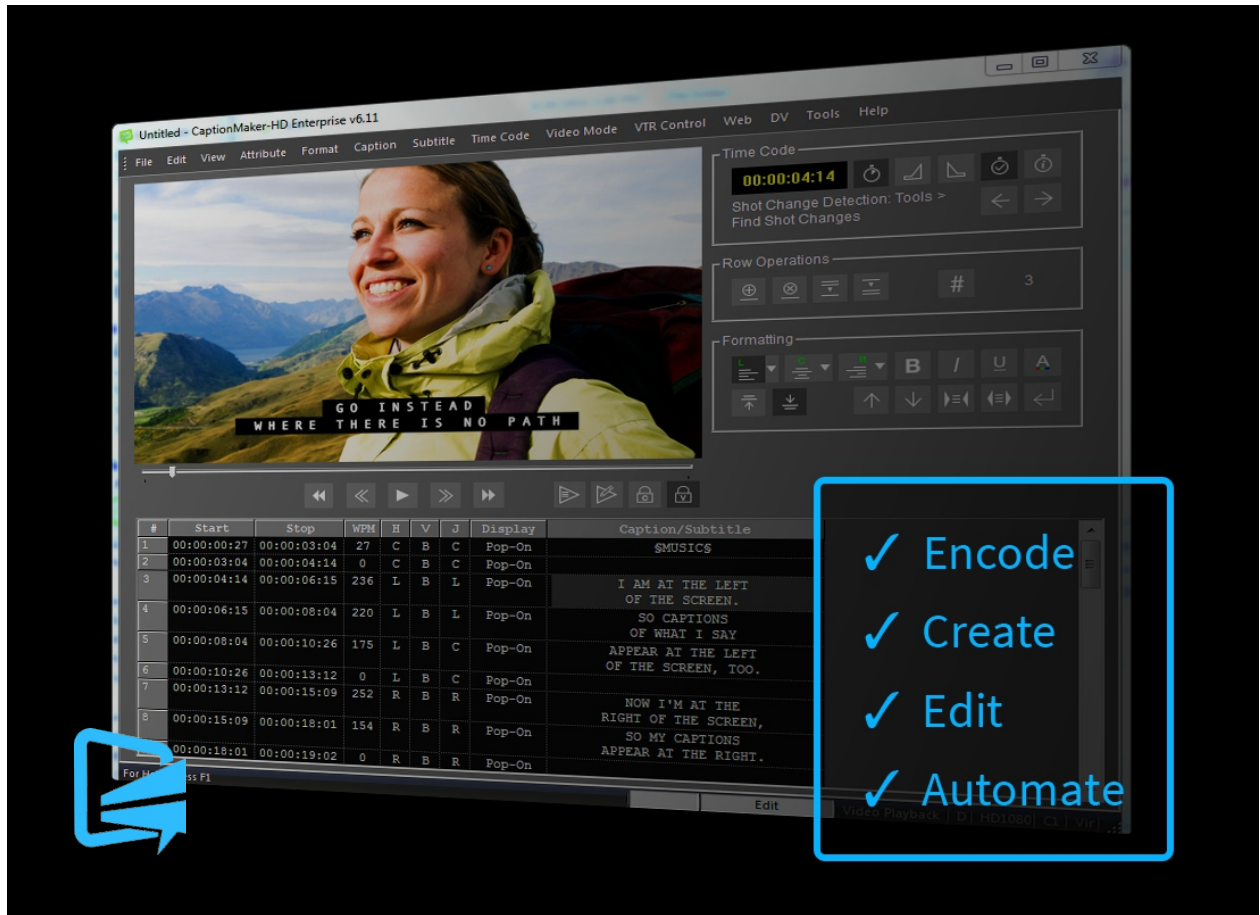


# Closed Captioning Products

User Guide



## CaptionMaker 6.4 User Guide

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# Support

To obtain product information, watch tutorial videos, get technical support, or provide comments on this guide, contact us using our web site, email, or phone number as listed in the following table.

Resource	Contact Information
Video Tutorials	<a href="http://www.telestream.net/telestream-support/captioning/tutorials.htm">www.telestream.net/telestream-support/captioning/tutorials.htm</a>
Technical Support   Information   FAQs   Upgrades	Web Site: <a href="http://www.telestream.net/telestream-support/captioning/support.htm">www.telestream.net/telestream-support/captioning/support.htm</a> Support Web Mail: <a href="mailto:www.telestream.net/telestream-support/captioning/contact-support.htm">www.telestream.net/telestream-support/captioning/contact-support.htm</a>
Telestream	Web Site: <a href="http://www.telestream.net">www.telestream.net</a> Sales and Marketing Email: <a href="mailto:info@telestream.net">info@telestream.net</a> Telestream 848 Gold Flat Road Nevada City, CA. USA 95959 530-470-1300
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# Overview

## Introduction

CaptionMaker allows you to easily author, edit, encode and repurpose video captions for television, web, and mobile delivery. Utilizing exclusive e-Captioning™ technology, CaptionMaker simplifies the process of complying with FCC regulatory requirements, enabling greater access to broadcast content for television, online, and mobile viewers.

In this chapter:

- [Captioning Process at a Glance](#)
- [Installation](#)
- [Video Tutorials](#)
- [Episode and Switch Supports Captioning](#)
- [Moving Files Between CaptionMaker and MacCaption](#)
- [Comparing CaptionMaker Versions](#)
- [Identifying Pro and Enterprise Features in This Document](#)
- [Prerequisites for Captioning](#)
- [Automatic Time Stamp \(ATS\)](#)
- [Caption Style Guidelines](#)
- [Captions vs. Subtitles](#)
- [Switching Between Caption and Subtitle Modes](#)
- [What is 608 and 708 Closed Captioning?](#)
- [Teletext in OP-47](#)
- [Live Captioning](#)
- [CaptionMaker Workspace](#)

## Captioning Process at a Glance

Captioning is basically a three-step process.

1. Transcribing—Create a text file of the video dialog.
2. Caption File Creation—Implement the timing, placement, and appearance of the captions.
3. Encoding—Encode the caption data into the video, or export the captions as a separate file.

## Installation

When you purchase CaptionMaker you will receive a software license key. You can easily download and install the software by clicking on the downloads page at [telestream.net](http://www.telestream.net) and following the instructions.

---

**Note:** As of version 6.3 of CaptionMaker and MacCaption, they only support Desktop, Pro, and Enterprise licenses issued by Telestream. If you purchased CaptionMaker or MacCaption prior to October 2013, you need to upgrade to a Telestream Desktop, Pro, or Enterprise license before upgrading to the current software version. Please contact Telestream for more information.

---

For detailed CaptionMaker installation, upgrading, and setup instructions, see the chapter, [Installing CaptionMaker](#), near the end of this guide.

## Video Tutorials

Video tutorials for CaptionMaker on the Telestream website provide a great way to get started, learn more about features, and get valuable tips and techniques.

Find the tutorials at:

<http://www.telestream.net/captioning/resources.htm>

# Episode and Switch Supports Captioning

The Telestream tools, Episode and Switch, are great companions to CaptionMaker to provide the complete workflow of tools to create, edit, encode, and verify caption data in professional file formats for TV and the Internet.

As of version 6.5, **Episode** provides many caption encoding and transcoding features:

- MCC caption file support, including CEA-608 and CEA-708 caption data insertion.
- MXF caption data insertion for SMPTE 436M.
- MPEG-2 user data 608/708 insertion (A/53).
- User data to ancillary caption track conversion/transcoding, such as MPEG-2 to MXF captions.

---

**Note:** CaptionMaker does not convert, or transcode, one type of input media file to a different type of output media file. However, it can convert caption/subtitle files to many different types. Episode or Vantage are great tools to convert one media file type to one or more other media file types.

---

As of version 1.6, **Switch** decodes and plays caption and subtitle files:

- Plays captions embedded in video and side-car caption files.
- Decodes embedded CEA-608 and CEA-708 caption data.
- Plays Internet caption files, such as WebVTT, iTT, TTML, and so on.
- MXF ancillary caption track decoding and playback.
- MPEG-2 user data caption decoding and playback.
- Decoding and playback of various caption and subtitle files, such as SCC, MOV, DV, DVB, LXF, GXF, SMPTE-TT, SRT, EBU-STL and so on.
- View Vertical Ancillary (VANC) caption data on an external monitor.  
(As of version 2.0)

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**Note:** Common video players such as VLC, Windows Media Player, QuickTime Player, Sony XDCAM Viewer, and so on, do NOT display most types of closed captions. So even if your video will play in one of these players, it may not show the captions.

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For more information and additional features of Episode and Switch, go to [telestream.net](http://telestream.net).

## Moving Files Between CaptionMaker and MacCaption

Due to the architectural differences in CaptionMaker and MacCaption, the project files are not cross-compatible. To move from one platform to another you'll need to export and then import in a format that is used by both.

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**Note:** The current version of CaptionMaker does not support unicode Asian characters for caption or subtitle projects.

---

### Moving Caption Files

For captioning projects, the MCC (.mcc) file format is a good option to move files between CaptionMaker and MacCaption.

The SCC (.scc) file format is another option, but these are limited to using only a 29.97 frame rate.

### Moving Subtitle Files

For subtitle projects, using the WebVTT or Cheetah ASC (.asc) formats to go between MacCaption and CaptionMaker are good options. These provide for more than 32 characters per line.



# Comparing CaptionMaker Versions

CaptionMaker is available in three levels:

- Desktop
- Pro
- Enterprise

Please refer to the following chart for the features of each level. You can purchase a software upgrade from one level to another to add capabilities.

	Desktop	Pro	Enterprise
Target uses	Caption authoring	Caption authoring, QC, asset management, TV broadcast exports	Automation & high volume caption asset management
Target customers	Corporate, Independent, academic, government, houses of worship	Caption service providers, TV networks, Post facilities	Major networks, content providers, asset management & distribution services
Authoring/Exports			
Caption Authoring, Timing and Formatting	√	√	√
Auto Time Stamp (sync text and audio)	√	√	√
Export SCC (CEA-608) & MCC (CEA-708) files	√	√	√
Streaming/Mobile Video (SMPTE 2052 timed text--TTML and DFXP, Vimeo, Safari, Android, WebVTT, SRT, iOS, YouTube, WMV, SAMI, and so on)	√	√	√
Burn-in Subtitles and Basic DVD Subtitles	√	√	√
Subtitle overlay (movie w/alpha channel, Advanced DVD/Blu-ray subtitles)		√	√
TV broadcast and VOD media (MPEG-2, H.264, MXF, Avid AAF, tape, and so on)		√	√
Export caption interchange files (CAP, TDS, ULT, EBU-STL, and so on)		√	√
V-chip/XDS/AFD Encoding		√	√
Live captioning (via hardware encoder or web stream, such as YouTube)		√	√
Caption Asset Management (Imports/Conversions)			
Import plain text, SCC & MCC, web formats	√	√	√
Import interchange files (Cheetah CAP, TDS, ULT, PAC, EBU-STL, and so on)		√	√
Extract CC from video files (MOV, MXF, MPEG-2, and so on)		√	√
Reformat Pop-on <-> Roll-up		√	√
Automation			
Batch processing (GUI)			√
Scripting & External Control (CLI)			√
Time Tailor (Non-linear Retiming)			√

## Identifying Pro and Enterprise Features in This Document

Some features described in this document are only available in the Pro or Enterprise versions of CaptionMaker. Features that are included in the Pro version are identified by the following *PRO* icon:



The Enterprise version includes all available features. Features that are included only in the Enterprise version, and not in Desktop or Pro, are identified by the following *ENT* icon:



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**Note:** Features that have no icon are included in the Desktop version, and in the Pro and Enterprise versions.

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## Prerequisites for Captioning

The two ingredients you need to start captioning a video are: (1) a video file, and (2) a transcript of the dialog in the video.

### Transcribing a Video

There is no magic solution to transcription. It is by far the most time-consuming aspect of the closed captioning/subtitling process. However, there are methods to transcribe in the most efficient way possible. If you do not have a script of the video, you can efficiently produce the script in one of these ways:

- Type the script on a regular keyboard. You can use a foot pedal control to help you transcribe the video. It costs less than \$100 and will greatly speed up the transcription process by allowing you to control the video playback with your foot so that you can keep both hands on the keyboard.
- Train speech recognition software to recognize one person's voice and produce a transcript by listening to the video and repeating the speech for the software. Speech recognition software, such as Dragon Naturally Speaking, only recognizes one speaker's voice at a time, and that person must go through a voice training process with the software. In other words, you can't simply feed in various speakers' voices and expect to get a good result.

What you can do is a process called Shadow Speaking, or Voice Captioning. For this process you train a profile of one person's voice into the Dragon Naturally Speaking software so that it can recognize the speech accurately. Then you watch the video and repeat all of the dialogue into a headset microphone. This takes a little practice to get good at listening and speaking at the same time, but for most people, it's much faster than typing on a regular keyboard. At first, you will probably get a lot of unrecognized words. As you continue to use the software and correct the errors, you can eventually expect to reach around 95% accuracy.

- Use a professional transcription service. This is the easiest way to generate the script, and can be cost-effective.

CaptionMaker can import scripts from a text file and most word processors, such as Word Rich Text Files (.rtf). Rich Text Files provide the option of importing colors and italics. However, because of special formatting and characters used in some kinds of document files, it is often best to start with a plain text (.txt) file.

### Using a Video File

The other ingredient you need for producing captions is a video file. Make sure you are using a digital video file, not videotape, as your video source. Trying to transcribe from a tape can wear out your tape deck, and you'll spend too much time starting and stopping the tape. CaptionMaker can play back most types of QuickTime files (Mac/Windows), and also Windows Media files (Windows only). See [Opening a Movie](#) for a list of all file types that play in CaptionMaker.

If you have a file format that won't play, please see [Using a Proxy Movie](#) to learn about making a proxy movie for use with CaptionMaker.

## Automatic Time Stamp (ATS)

In most other captioning software, even after you import the transcript and video, you must go through a time consuming process to manually synchronize each piece of text so that it appears at the correct time in the video.

In CaptionMaker, Auto Time Stamp (ATS) automatically synchronizes the text transcript with your audio or video file, dramatically reducing the time it takes to caption a video. See [Using Automatic Time Stamp \(ATS\)](#) for instructions on ATS operation.

## Caption Style Guidelines

Adhering to good caption style is very important. The following is an excerpt from the Described and Captioned Media Program (DCMP), web site - <http://www.dcmp.org/>:

Captioning is the key to opening up a world of information for persons with hearing loss or literacy needs. There are more than 30 million Americans with some type of hearing loss. Millions of others are illiterate, learning to read, or use English as a second language.

The first captioning of any kind was performed in the late 1950's by Captioned Films for the Deaf, the ancestor of DCMP, two decades before the advent of closed captioning on broadcast television. The first edition of the Captioning Key was published in 1994, and these guidelines were based on decades of experience by DCMP (then called Captioned Films and Videos Program), review of captioning research, and examination of standards developed by various captioning vendors. The Captioning Key has been applied to both entertainment and educational media, has been used for consumers at all levels (children through adults), has received international distribution, and has been translated into other languages.

These guidelines are a key for vendors performing captioning for the DCMP. The vendor list can be found at this URL: <http://www.dcmp.org/caai/nadh11.pdf>. The DCMP provides information on how to become an approved vendor on the DCMP Web site.

The information is applicable to vendors and other businesses that provide closed captioning (CC) and subtitles for the deaf and hard of hearing (SDH) of all types of media at various levels. Thus, these guidelines are also useful to media producers/distributors and others considering captioning their products or learning about captioning.

The Captioning Key guidelines are available in PDF from the DCMP at: <http://www.captioningkey.org/captioning-key.pdf>

A Spanish translation of the Captioning Key is also available: <http://www.dcmp.org/caai/nadh52.pdf>

# Captions vs. Subtitles

Captions are text that appear on a video and contain the dialogue and cues to indicate sounds are occurring, such as music or sound effects. Subtitles are text that appear on a video or in a movie and typically contain only a translation of the dialogue.

## Captions

The purpose of captioning is to make a video accessible to those who cannot access the audio content, such as for people who are deaf or hard of hearing, and for other situations in which the audio cannot be heard due to environmental noise or a need for silence.

Captions can be either open captions (always turned on, aka "burned in") or closed captions (can be turned on/off by the viewer). For TV broadcast, closed captions are much more common because they allow each viewer to decide whether they want the captions to be turned on or off. Closed captions are transmitted as a special coded signal sent along with the video picture, and require a decoder in your television or set top box to display the text on the screen. This special coded signal is what broadcasters check for to ensure that your video is in accordance with the law.

For technical reasons, closed captions have many more rules and constraints that affect the timing and the appearance of the text. This means that in practical use, the caption author has limited or no ability to specify the font, size, text styling, and so on. These settings are determined by the decoder which renders the text to the screen when the captions are turned on.

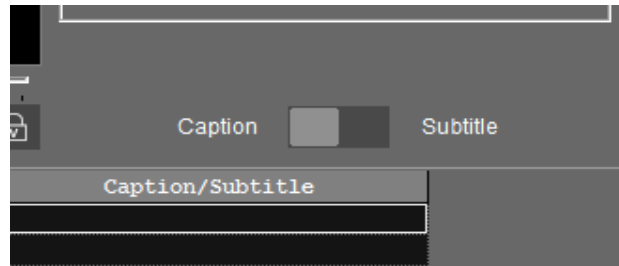
## Subtitles

Subtitles are text that appears on a video or in a movie and typically contains only a translation of the dialogue, typically because the dialogue is in a foreign language, or because the dialogue was difficult to hear clearly. Unlike captions, subtitles usually do not convey non-dialogue sounds such as background noise, sound effects, or music cues, because it is presumed that the viewer is able to hear them. Subtitles have fewer rules and limitations than closed captions, and generally have more fonts, styles, and colors available to choose from.

For more information on using subtitles, see the [Subtitle Mode](#) chapter.

## Switching Between Caption and Subtitle Modes

To switch CaptionMaker between caption and subtitle modes, simply click the button on the workspace.



When switching modes, the caption or subtitle device used is typically the last one you selected. If the Video Mode is changing between HD or SD when switching from caption to subtitle mode, CaptionMaker uses the Generic Subtitles device.

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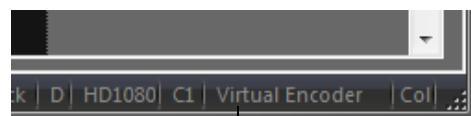
**Note:** The Caption/Subtitle switch is disabled when CaptionMaker is in Live Caption mode, and when running AutoSync or AutoPreviewSync.

---

## Device Selection and Configuration

The default caption device is Virtual Encoder, and the default subtitle device is Generic Subtitles. The default devices are good for a typical file-based workflow. If you are using a specific hardware device, or different file type, you can select an appropriate device.

The name of the currently selected device is displayed in the Status Bar at the bottom right of the CaptionMaker workspace.



Current Device

To select a new device or adjust device settings, go to the Caption > Device, or Subtitle > Device menu options. When you select a new caption or subtitle device in the Device dialog you are automatically switched into the caption or subtitle mode of the new device.

For more information on caption device selection and settings, see [Device](#) in the Caption section of the Menu chapter.

For more information on subtitle device selection and settings, see [Device](#) in the Subtitle section of the Menu chapter.

## Virtual Encoder and Generic Subtitles Default Devices

The default caption device Virtual Encoder and the default subtitle device Generic Subtitles work well for a typical file-based workflow (which means, when hardware devices are not used). Both of these devices are designed to emulate hardware encoders. The Virtual Encoder and Generic Subtitles devices work for SD, HD, and UHD resolutions. Generic Subtitles also provides more positioning options and user selectable fonts.

When you need certain options you can also use devices for a file-based workflow that have hardware names, and you do not need to have the actual hardware device connected. Some of the available devices are only for SD resolution video, such as Generic DVD. HD resolution, including 720p and 1080i/p, require devices such as Blu-ray, or the default devices.

The following features are available with the **Virtual Encoder** caption device:

- UHD (Ultra High Definition), HD (High Definition), and SD (Standard Definition).
- 2160i, 2160p, 1080i, 1080p, 720p, 480i (SD NTSC), 576i (SD PAL).
- CEA-608 and CEA-708 captioning protocols.
- Multiple frame rate support for 23.976 fps, 24 fps, 29.97 fps, 59.94 fps, 25 fps, 50 fps, including drop frame and non-drop frame.

The following features are available with the **Generic Subtitles** device:

- UHD (Ultra High Definition), HD (High Definition), and SD (Standard Definition).
- 2160i, 2160p, 1080i, 1080p, and 720p, 480i (SD NTSC), 576i (SD PAL).
- Multiple frame rate support for 23.976 fps, 24 fps, 29.97 fps, 59.94 fps, 25 fps, 50 fps, including drop frame and non-drop frame.
- Provides the background opacity option.
- Select from any font installed in your system.
- Use multiple colors for font and background.

# What is 608 and 708 Closed Captioning?

## 608

CEA-608 (formerly known as EIA-608) was the original closed captioning standard used for analog TV broadcasts since 1980. This is also called "line 21" captions because they are embedded in line 21 of analog TV signals.

608 captions are limited to a single block character font with gray mono-spaced text on a black square background. Only the standard alphanumeric and certain accented characters are supported. Due to bandwidth restrictions, it is uncommon to see more than two languages encoded simultaneously.

### Up-Converted from 608 to 708

608 captions that are up-converted to 708 do not take advantage of any of the new 708 caption features, such as multiple fonts and styles, multiple windows, Unicode character support, or proper support for more than four languages.

## 708

CEA-708 (formerly known as EIA-708) is the new closed captioning standard used for all DTV broadcasts, including both HD and SD. 708 supports a number of new features, including:

1. 708 captions can appear in multiple fonts, sizes, colors, and styles:



2. 708 captions are drawn into "windows" which allows more creative and flexible positioning of the captions, including use of the full 16x9 width of HD video.



3. 708 captions can contain up to 63 different captions tracks (although typically up to 6 are used simultaneously), without the bandwidth limitations of 608.
4. 708 captions also include a digital form of the 608 caption data for backwards compatibility with older analog gear.

708 captions are required for all captioned DTV broadcasts, which includes both HD and SD material. The DTV transition occurred on June 11, 2009. DTV broadcasts (with very few exemptions) must now include both 708 and 608 captions.

When submitting a captioned SD tape to a broadcaster, the 708 captions are automatically generated from the 608 data when the video is encoded for DTV. However, when sending a pre-encoded file for broadcast (such as a MPEG-2 transport stream), the file must contain both 708 and 608 data even if it is only SD, because it will be transmitted as-is (not re-encoded by the broadcaster). HD tapes must always contain both 708 and 608 captions as well.

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**Note:** U.S. broadcast equipment does not support the full CEA-708 specification, therefore, CaptionMaker only encodes simple CEA-708 that does not include any of the advanced features. Unicode characters do not display properly.

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## Industry-Standard Caption Format Data

All existing industry-standard caption data formats, such as SCC files or CAP files, only store CEA-608 caption data. However, CaptionMaker can import any industry standard caption file format, and then up-convert the captions into CEA-708 caption data for embedding into a video file or exporting into new formats that support CEA-708.

MacCaption developers have created a new file specification called MCC (MacCaption Closed Caption file) which contains native CEA-708 encoded caption data. CaptionMaker also supports the MCC file format. The MCC format is an open specification and free for any hardware or software manufacturer to use. Please contact Telestream for more information.

## Teletext in OP-47

OP-47 (Operational Practice number 47) is a solution for inserting a Teletext ancillary data channel into HD media. OP-47 was originally developed by Australian broadcasters and is now widely used. The data can be stored in the SMPTE 436M track of an MXF wrapper.

OP-47 Teletext stores data in selectable pages within magazines (1-8). These can be selected by viewers using menu controls on their TV monitor. Typically, the subtitle data can be stored in magazine 8 page 01, or Teletext 801. Other samples may have Teletext 888, which is magazine 8 page 88. This is according to the SMPTE-RDD8 specification.

CaptionMaker can read and write OP-47 with a user selectable parameter that specifies the magazine and page. Teletext information can have up to 40 characters per line of text, including spaces.

Teletext supports Latin, Hebrew, Arabic, Greek, and Cyrillic alphabet. However, it does not support Asian unicode characters such as Chinese and Japanese. CaptionMaker can only insert Latin alphabet Characters into OP-47.

See [OP-47 Teletext Workflows](#) for more information on working with OP-47 Teletext data in CaptionMaker.

## Live Captioning

For both live broadcast captioning and online (web) text streaming, you need a way to input the text in real time. It is not possible to type text on the computer keyboard as fast as people speak. There are two common practices—steno typing and speech recognition software.

A professional real-time captioner can type more than 200 words per minute with over 99% accuracy using a steno machine. Due to their great skills, these professionals can be expensive for a long term project. Speech recognition software is an alternative solution—not as good as real-time captioning with a steno machine, but in some cases it is acceptable.

Speech recognition software needs to be trained to recognize one person's voice. This can be the presenter, or a shadow speaker. A shadow speaker is also necessary when there is more than one person speaking. See [Transcribing a Video](#) for more about speech recognition software, and [Shadow Speaker](#) in the Glossary.

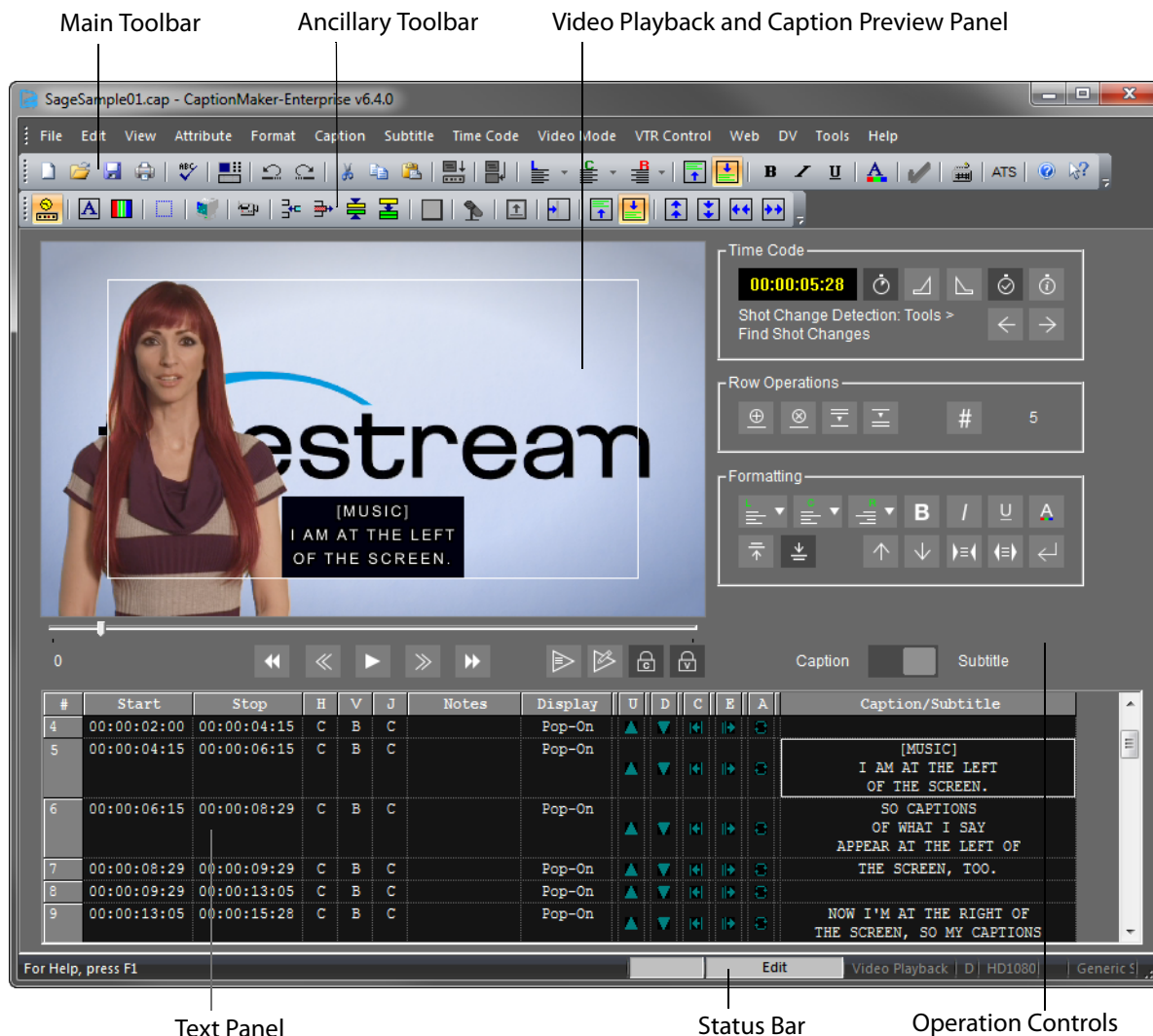
## CC Encoder Hardware

For live broadcast TV encoding, you also need closed caption encoder hardware. They range in price from \$1,200 to \$10,000 depending on whether the video is analog, digital SD, or digital HD.


## CaptionMaker Workspace

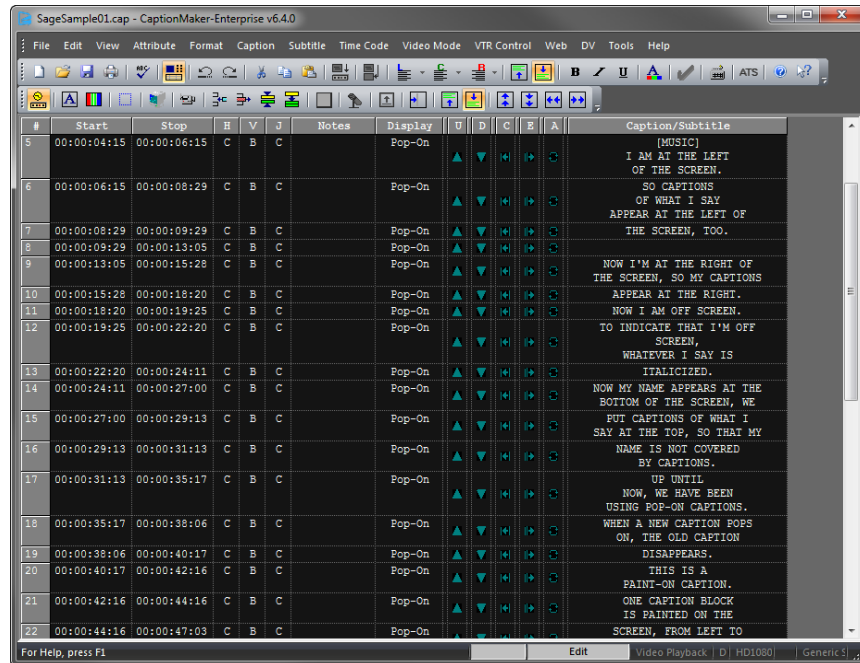
The CaptionMaker workspace contains the following main sections.

- **Menus and Toolbars**—To control toolbar display, choose View > Toolbars and Docking Windows. See the [Menus](#) chapter for details on menus and [Toolbars](#) for details about the toolbars.
- **Video Playback and Caption Preview Panel**—Play the video and preview the caption/subtitle timing, location, and formatting.
- **Editing Operation Controls**—Buttons provide controls for most of the common editing operations.
- **Text Panel**—Provides timing and display parameters, text editing, and caption/subtitle selection. To select the columns you want to display, choose View > Visible Columns.
- **Status Bar**—Provides information about some current settings and operations.



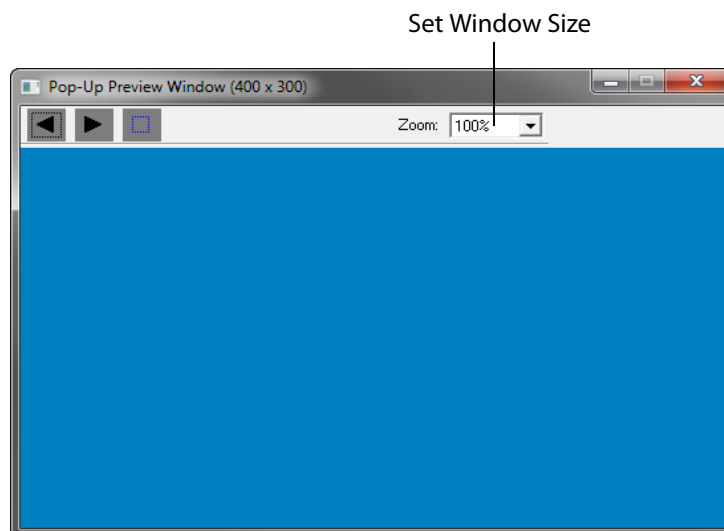
## Full Screen Text Panel

To have a large view of the text panel, select View > Full Screen Spreadsheet. Or, you can click the  Full Screen Spreadsheet button on the Main toolbar.



## Pop-Up Video Preview Window

To view the video preview panel in a separate window, select View > Pop-Up Preview Window. You can place this window wherever you like, and adjust the size using the Zoom menu.



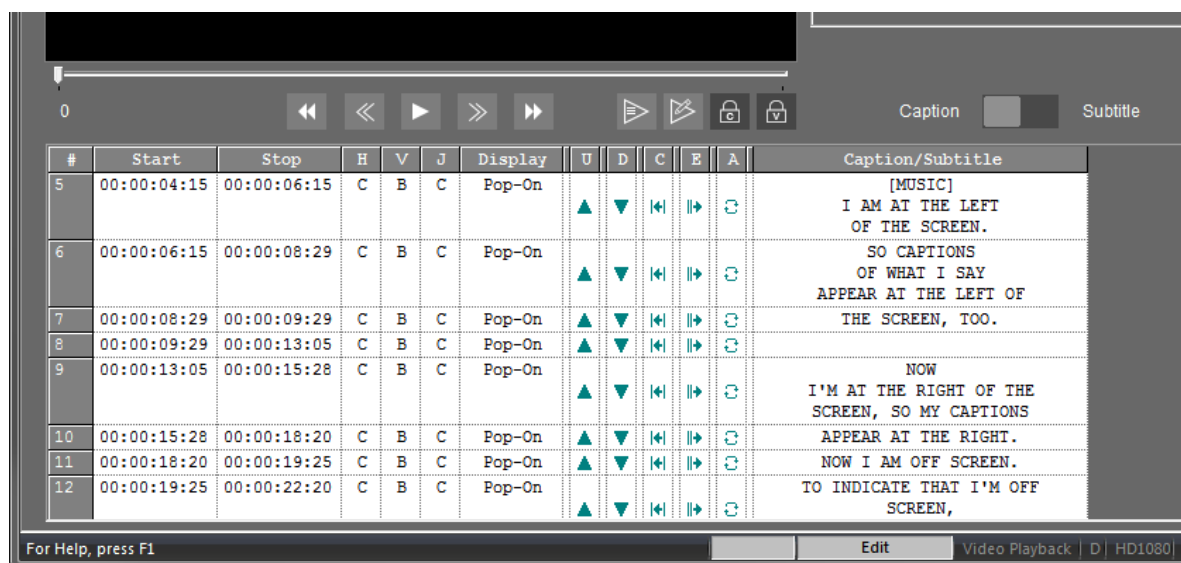
## Margin Indicator Frame

An optional white frame indicates where the margins are set for captions and subtitles. To turn the display of this frame on or off, or to adjust the margins, see [Set Caption Margins](#) and [Set Subtitle Margins](#) in the Menus chapter. The frame only displays when captions or subtitles are present.



## Black Text on White Background

You can switch to the CaptionMaker classic look of black text on white background for the text panel. To change this, choose View > Black Text on White Background.



# Preparing and Importing Files

The topics in this chapter provide information on transcription, describe how to import various types of files into CaptionMaker, and explain how to use a proxy movie.

- **Transcription**
  - Transcription Mode
  - V-Pedal
  - Speech to Text Technology
  - Avoid Italics and Bold Text
  - Indicate Change in Person Speaking
  - Using Tab Delimited
  - Plain Text is the Preferred File Format
- **Import Caption or Subtitle Files**
  - Types of Caption/Subtitle Files
  - Considerations When Importing Subtitles for Editing or Converting
  - Importing Files
  - Import Format Settings
  - Import Options for Free Form
- **Using Copy and Paste for Text**
- **Opening a Movie**
  - To Open or Replace a Movie
  - Video Playback Options
- **Importing Captions from a Video**
  - QCC Multi-Format Import
- **Using a Proxy Movie**
  - Use Episode to Make a Proxy Movie
  - Proxy Movie Settings

# Transcription

For non-live, prerecorded material, a transcript must be created of the dialog in the video before the closed captioning process can begin. While listening to a video, a typist can transcribe the video using any standard word processor.

## Transcription Mode

Since CaptionMaker is designed primarily to format and timestamp the transcribed text, the transcription process is usually done faster in a word processor, but can be performed in CaptionMaker if the user prefers to.

If you want to do some transcribing within CaptionMaker, there is a Transcription Mode. To enable/disable Transcription Mode, go to File > Transcription Mode. When enabled, the cursor moves to the next caption cell when you press Enter. When this mode is disabled, pressing Enter produces a carriage return within the same caption cell.

## V-Pedal

The V-Pedal is a device that controls the playback of video and audio files on a computer, using a foot pedal. This device is a time saver because it allows the transcriber to easily pause and rewind the video without having to take their hands off the keyboard. V-Pedal devices can connect via a USB port to either Mac or Windows.

The V-Pedal can also control video playback in CaptionMaker. CaptionMaker includes the V-Pedal drivers.

For information about V-Pedal, go to: <http://www.vpedal.com/>

## Speech to Text Technology

There are several ways that speech-to-text software can speed up the transcription process. One option is a fully automated solution, such as Dragon Naturally Speaking for Windows and Dragon Dictate for Mac, which is software that generates a transcript from an audio file or spoken voice. The software can read the audio waveform and try to match the sound to words in a dictionary. The results vary, and typically require the user to proofread and correct mistakes.

Another option is to train the user's voice to the speech-to-text software, and repeat what is being said in the video. The result is a plain text document. This is a good solution because it is very accurate. Punctuation will need to be corrected.

Recently, mobile phones have been equipped with speech-to-text technology that can be used to create a transcript for captioning. Some users find it practical to simply speak into their mobile phone while watching a video and create the transcript for captioning. Consult with your device manufacturer for details.



## Avoid Italics and Bold Text

When creating a transcript it is best to avoid using italics and bold. Italics in closed captioning generally mean that the speaker is off-screen. Do not use bold as it could result in text blinking on and off. TV sets and cable boxes do not have the ability to bold text, so we recommend avoiding bold.

## Indicate Change in Person Speaking

When importing a transcript into captioning software, the captioner looks for a change in the person speaking to start a new caption block. A good captioning project should have an indicator for the viewer to show a change in speaker. The transcript can help this effort by placing a symbol before the speaker change. The characters ">>" typically shows this change.

## Using Tab Delimited

If line breaks or timecode are critical for the captioning project, a simple tab character can be placed in the text. In the same way spreadsheet software can separate cells, captioning software can do so when it detects a tab character. For example, if a sentence is long, a tab character will create a line break in the text. See [TAB Delimited](#) for more information.

## Plain Text is the Preferred File Format

Although CaptionMaker can accept a variety of text files such as .doc, .rtf, and .txt, the recommended file format is a plain text document (.txt). Many word processors include extraneous data in native file formats such as margins, footnotes, and other non-text related code. Most word processors can save the document as a plain text file, for import into CaptionMaker.

If italics or color information needs to be preserved when importing transcripts, the .rtf format works the best to bring this information into CaptionMaker.

## Import Caption or Subtitle Files

After you have created the transcription of the dialog, or if you already have a caption/subtitle file, you are ready to import it into CaptionMaker.

### Types of Caption/Subtitle Files

In addition to text documents, CaptionMaker can import a wide variety of file types, such as TV Caption files, Subtitle files, PAC files, and Web Caption files. For a complete list of file types see [File Types for Import/Export](#).

### Considerations When Importing Subtitles for Editing or Converting

CaptionMaker can import many kinds of closed captioning and subtitle files, but when dealing with subtitle imports, there is one extra consideration. CaptionMaker can only import subtitle formats which are "text based". This refers to how the subtitles are stored in the file. If they are stored in a textual format along with formatting information and time codes, they can be imported to edit or convert them. Some examples of text-based subtitle files are SubRip SRT, WebVTT, iTunes iTT, PAC, DLP Cinema XML, and EBU-STL.

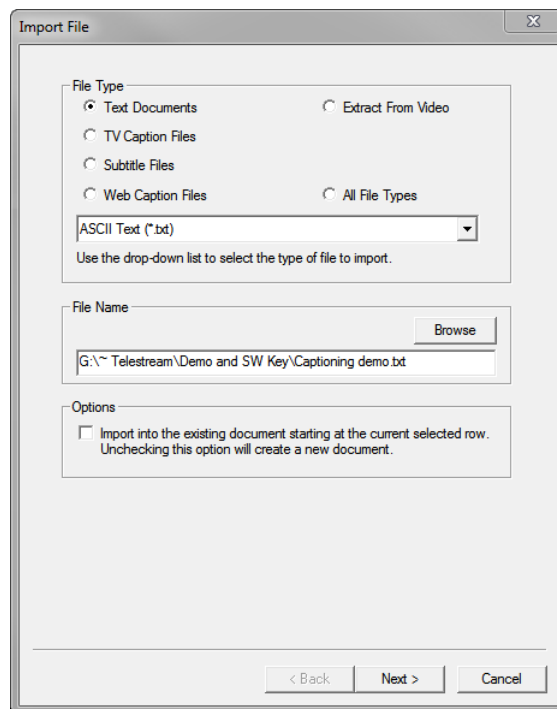
However, if the subtitles are "image based," also known as "bitmap subtitles," then CaptionMaker cannot import them. When the text is converted into an image, it is very difficult to turn that image back into an editable text format. Some examples of image-based subtitle files are Blu-ray BDN, UYC/USF, and any other subtitle format that deals with image files like PNG, TIFF, BMP, and so on.

There are also some subtitle file formats that support both text-based and image-based subtitles. For these formats, CaptionMaker can only import the subtitle file if it is the text-based variant. Some examples of these formats are: DVD Studio Pro STL, Scenarist SST, and SMPTE Timed Text.

## Importing Files

To import caption or subtitle files:

1. From the File menu choose Import... Or, drag and drop the caption/subtitle file into the CaptionMaker text panel. The Import File dialog opens.
2. Choose the type of caption/subtitle file you want to import. Text, TV, Subtitle, Web, or Extract From Video.
3. From the drop-down menu choose the specific type of file.
4. Under File Name click Browse and navigate to find the file.
5. Under Options, leave this unchecked to create a new document, or select it to import starting at the current selected row.



6. For some file types click Finish to import the file. For others, click Next for more settings. Depending on the file type, either the Import Format dialog, or the Import Options dialog opens.

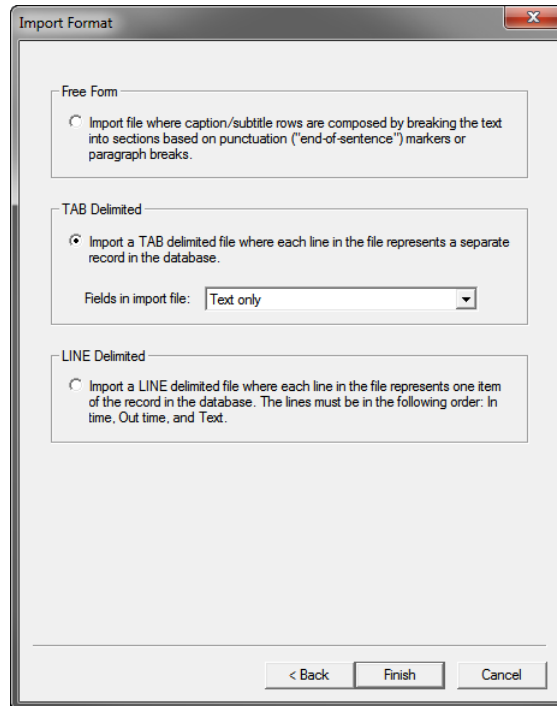
## Import Format Settings

When importing text caption or subtitle files, options in the Import Format dialog are used to match the formatting in the file.

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**Note:** Before importing, you can open the file to determine the formatting used in the document.

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- Choose the import format you need for the type of formatting in the file. Free Form, TAB Delimited, or LINE Delimited.
- When TAB Delimited or LINE Delimited is selected, click Finish to import the file.
- When Free Form is selected, click Next and the Import Options dialog opens for Free Form. See [Import Options for Free Form](#) for information on using the Import Options dialog with the Free Form selections.

### Free Form

Use Free Form when the caption/subtitle rows are created by breaking the text into sections based on punctuation markers (periods, commas) or paragraph breaks, and there is no timecode or line breaks in the document.

### TAB Delimited

Tab Delimited has several options, depending on information in the file.

**Text Only.** Tab characters in text-only files are used to indicate the point at which the line will break. Here is an example:

NOW MY NAME APPEARS        AT THE BOTTOM OF THE SCREEN,  
WE PUT CAPTIONS        OF WHAT I SAY AT THE TOP,  
SO THAT MY NAME IS NOT        COVERED BY CAPTIONS.

After opening the file in CaptionMaker, it looks like the following:

NOW MY NAME APPEARS AT THE BOTTOM OF THE SCREEN,
WE PUT CAPTIONS OF WHAT I SAY AT THE TOP,
SO THAT MY NAME IS NOT COVERED BY CAPTIONS.

**Time Code In and Text.** This type of file includes time code in, with tabs separating the time code and line breaks. Here is an example:

01:03:31:08        NOW I'M AT THE        RIGHT OF THE SCREEN,  
01:03:33:07        SO MY CAPTIONS        APPEAR AT THE RIGHT.  
01:03:35:13  
01:03:36:13        NOW I AM GOING OFF-SCREEN.

After opening the file in CaptionMaker, it looks like the following:

01:03:31:08	NOW I'M AT THE RIGHT OF THE SCREEN,
01:03:33:07	SO MY CAPTIONS APPEAR AT THE RIGHT.
01:03:35:13	
01:03:36:13	NOW I AM GOING OFF-SCREEN.

**Time Code In, Out, and Text.** This type of file includes time code in and out, with tabs separating the time code and line breaks. Here is an example:

01:03:31:08        01:03:33:05        NOW I'M AT THE        RIGHT OF THE SCREEN,  
01:03:33:07        01:03:35:15        SO MY CAPTIONS        APPEAR AT THE RIGHT.  
01:03:35:17        01:03:36:11  
01:03:36:13        01:03:38:06        NOW I AM GOING        OFF-SCREEN.

01:03:31:08	NOW I'M AT THE RIGHT OF THE SCREEN,
01:03:33:07	SO MY CAPTIONS APPEAR AT THE RIGHT.
01:03:35:17	
01:03:36:13	NOW I AM GOING OFF-SCREEN.

### **Time Code In and Web-TV Link.**

This option is a way to transmit web links (URLs) via the caption data. The actual WebTV devices and service are no longer in production, but some companies, such as Echostar, are using the same specification to display web content during a commercial. For example, the set top box could display a “Buy Now” button during an infomercial that contains the WebTV links.

### **Insert Tabs by Using a Spreadsheet**

Sometimes a captioner will receive a script that has already been timed by a stenographer or other third party. Simply importing the script would make the time code showing up as additional captions. Tabs should be inserted, as described in the previous section. A simple way to add tabs is to import the timed script into a spreadsheet program such as Excel. The Time In and Time Out as well as each caption box should get its own row in one of three columns for In/Out/Caption. Once formatted, you can export as a Tab Delimited Text file and tabs are inserted.

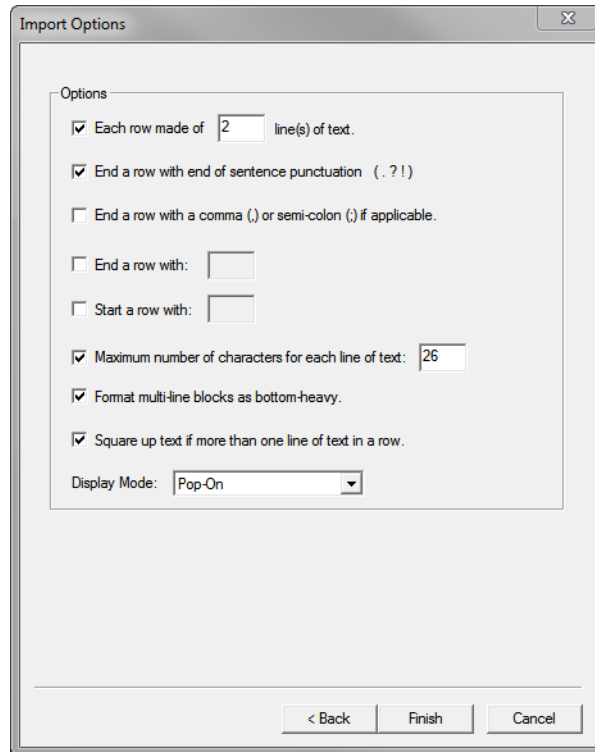
### **LINE Delimited**

Import a Line Delimited file, where each line in the file represents one item of the record in the database. The lines must be in the following order: In Time, Out Time, and Text. The following is an example of formatting in a Line Delimited file:

```
00:00:00:13
$MUSICS
00:00:04:15
I AM AT THE
LEFT OF THE SCREEN.
00:00:06:10
SO CAPTIONS OF WHAT I SAY
APPEAR AT THE LEFT OF THE
00:00:09:02
SCREEN, TOO.
00:00:11:02
00:00:13:05
```

## Import Options for Free Form

When you select Free Form in the Import Format dialog, the Import Options dialog opens when you click Next. The default settings are recommended for most captioning projects.



The Import Options dialog provides the following options:

**Each row made of [ 2 ] line(s) of text.** (2 is the default value) Specify the number of lines of text for each row in the CaptionMaker Text Panel. The limit is 4 lines of text, according to the CEA-608 standard.

**End a row with end of sentence punctuation (.?!).** When selected, a caption row ends and a new one is started when a period, question mark, or exclamation point is encountered during text import.

**End a row with a comma (,) or semi-colon (;) if applicable.** When selected, a caption row ends and a new one is started when a comma or semi-colon is encountered during text import.

**End a row with: [ ] .** Enter custom character to end a row. When this character is encountered during import, CaptionMaker ends the current row and starts a new one.

**Start a row with: [ ] .** Enter custom character to start a row. When this character is encountered during import, CaptionMaker starts a new row.

---

**Note:** Only one new row is started even if multiple consecutive instances of a character are in the text file. For example, if you enter the ">" character to start or end a row, CaptionMaker will start a new row when it sees ">", ">>", or ">>>" and so on.

---

**Maximum number of characters for each line of text.** (26 is the default value) The maximum number of characters for each line is from 26 to 32 characters when in captioning mode. 32 characters is the limit for CEA-608. The maximum number of characters per line can also be changed later by going to Format > Reformat Rows, to open the Reformat Lines dialog.

Switch to subtitle mode, before importing, to use more than 32 characters per line.

**Format multi-line blocks as bottom-heavy.** When selected, more words are included in the bottom rows than the upper rows.

**Square up text if more than one line of text in a row.** When selected, words are distributed more evenly in multiple rows of text.

**Display mode:**

- **Pop-On.** Pop-on mode is recommended for most post-production captioning projects.
- **Paint-On.** The characters are painted on the screen one after another, from left to right.
- **Roll-Up 2 Lines.** Sets a maximum of 2 lines to appear on screen at a given time.
- **Roll-Up 3 Lines.** Sets a maximum of 3 lines to appear on screen at a given time.
- **Roll-Up 4 Lines.** Sets a maximum of 4 lines to appear on screen at a given time.
- **Block Roll-Up.** This is a combination of the Paint-On and Roll-Up modes.

---

**Note:** Roll-up captions are typically used for live captioning, such as TV news. One line at a time rolls up from the bottom, up to the maximum number of lines that are set appear at a given time.

---

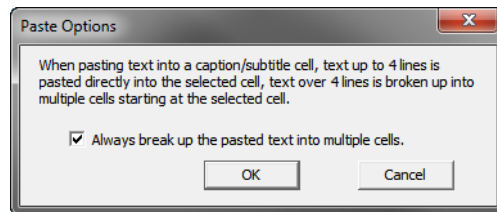
See [Display Modes](#) for more information on display mode operation.



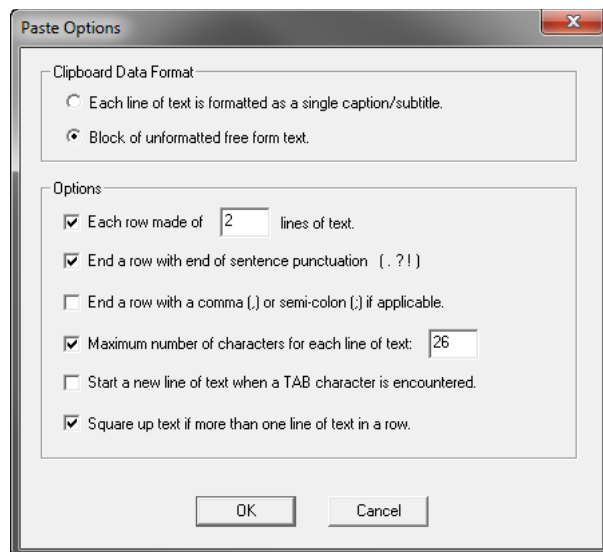
## Using Copy and Paste for Text

Copy and paste is an easy way to import transcript text directly into the text the panel of CaptionMaker. This way you can get text from various sources, such as e-mail, Word docs, PDFs, or websites.

CaptionMaker can automatically split up the text to be title safe and meet CEA-608 caption standards, when you enable the feature in the Paste Option dialog. To enable, choose Edit > Paste Options, and select "Always break up the pasted text into multiple cells".



When you copy and paste text, CaptionMaker breaks up the text based on the settings in the Paste Options dialog.



## Opening a Movie

CaptionMaker supports three technologies for playing video files: DirectX-DirectShow, QuickTime (if installed), and Microsoft Media Foundation (MMF). DirectX-DirectShow is generally good at playing WMV and AVI files. QuickTime is generally good at playing MOV, MP4, and audio files.

---

**Note:** Opening a movie only loads the video and its audio for playback. If the video contains closed captions, a separate import step is needed to bring in the captions. See [Importing Captions from a Video](#).

---

The following types of video and audio files can be played in CaptionMaker:

---

WMV (.wmv)

---

AVI (.avi) with generic codec

---

AVI (.avi) with 3rd party codec (if installed)

---

AVI (.avi) with DV codec (DV25/50) (if QuickTime is installed)

---

MP4 (.mp4)

---

MOV (.mov) ProRes (if QuickTime is installed)

---

MOV (.mov) H.264

---

MOV (.mov) DV25 and DV50

---

MOV (.mov) with Animation

---

MOV (.mov) Avid Codec (if installed)

---

MPEG-2, with 3rd party codec (if installed). Use the DirectX playback option

---

MP3 (.mp3) (audio only)

---

AIFF (.aif) (audio only)

---

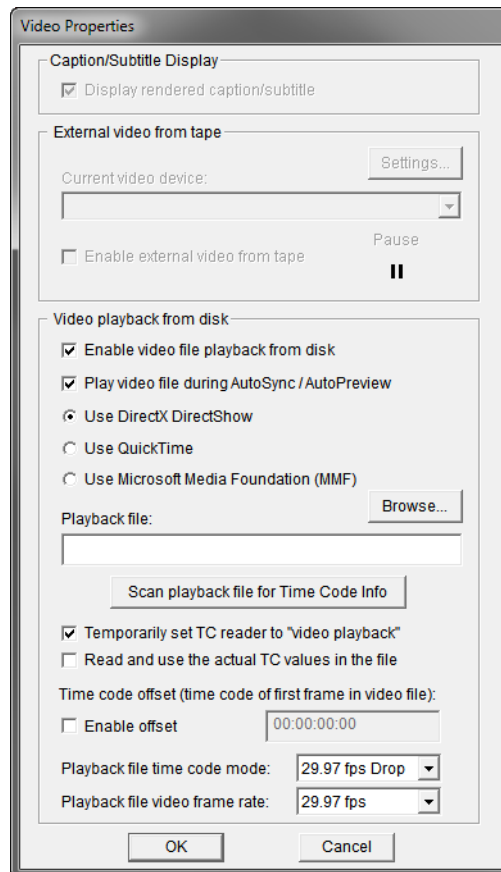
WAV (.wav) (audio only)

---

## To Open or Replace a Movie

You can open a new movie, or replace the currently loaded movie. To open or replace a movie follow these steps:

1. From the File menu choose Open Movie, or drag and drop a movie/video file into CaptionMaker's Video Preview panel. The Video Properties dialog opens.



2. The playback file type is automatically selected based on the file extension of the video or audio you're opening, however you can choose a different option if you prefer. You can select one of the following playback options for the type of video file you are opening:
  - a. **DirectX DirectShow.** The default for playing Windows Media (WMV and AVI) files.
  - b. **QuickTime.** The default for playing QuickTime files such as MOV and also works well for MP4 and audio files. QuickTime must be installed to use this option.
  - c. **Microsoft Media Foundation (MMF).** For playing MP4 files if QuickTime is not installed. This feature is not supported on Server editions of Windows.
3. Click Browse and locate the video file that you want to import. (The file is already selected if you used the drag-drop method).
4. Make any other desired adjustments, then click OK.

The video appears in the CaptionMaker Video Preview panel.

## Video Playback Options

When you choose File > Open Movie, or drag and drop a video or audio file into CaptionMaker's video preview panel, the Video Properties dialog opens. The Video Properties dialog provides the following options.

### Caption/Subtitle Display

**Display rendered captions/subtitle.** Selected by default when captions are present. De-select to turn off caption/subtitle display.

### External video from tape

CaptionMaker can interface with a webcam or a video capture card that can let users see live video or a video feed coming from a server or a tape.

**Current video device.** Choose the input video device to use, such as a video capture card or webcam.

**Settings.** Opens a dialog to set the capture card frame rate and display resolution for preview purposes.

**Enable external video from tape.** Enables access to a video device or an external capture card.

**Pause.** CaptionMaker can control a VTR via an RS-232 com port.

### Video playback from disk

**Enable video file playback from disk.** Selected by default to enable video file playback. De-select to enable video playback from a capture card or other video device.

**Play video file during AutoSync/AutoPreview.** The same function as the Preview Play button on the main workspace. Triggers captions when time code comes from video file. This is *not* the same function as Automatic Time Stamp (ATS).

**Use DirectX DirectShow.** This is the default for playing Windows Media (WMV and AVI) files.

**Use QuickTime.** This is the default for playing QuickTime files such as MOV and is the recommended option for MP4. QuickTime must be installed to use this option. (QuickTime is available as a free download from [apple.com](http://apple.com).)

**Use Microsoft Media Foundation (MMF).** This is for playing MP4 files if QuickTime is not installed.

**Playback file.** The path and name of the file currently loaded in the preview panel, or that you have selected from the Browse window.

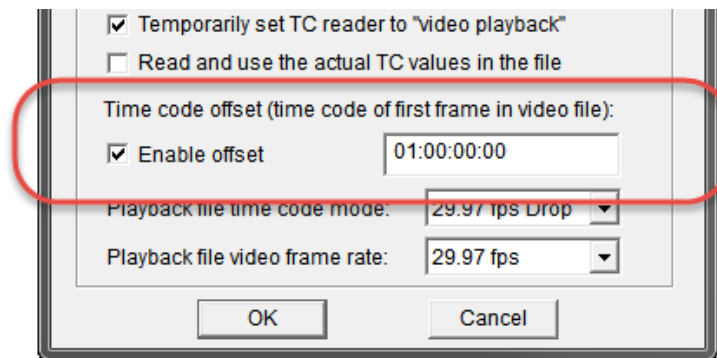
**Browse.** Open a window and browse to select the file.

**Scan playback file for Time Code Info.** When files are DV25/DV50 codec and have embedded time code, click this button to read the time code and populate the time code offset.

**Temporarily set TC reader to “video playback”.** When selected, time code will chase the video file and not look for a time code reader hardware card.

**Read and use the actual TC values in the file.** You can use this option when files are DV25/DV50 codec and have embedded time code.

**Time code offset (time code of first frame in the video file): Enable offset.** When the video time starts at a time other than zero, such as one hour, enable this option and set this time to match the video start time. For example, enter 01:00:00:00 to make the timecode clock start at one hour, as shown in the following image:



**Playback file time code mode.** Select the time code mode of the project. 30 fps Non-Drop, 29.97 fps Drop, 25 fps PAL, or 24 fps FILM. This can also be set after import.

**Playback file video frame rate.** Affects the rate at which the video file plays back. You must know the frame rate of the file you are importing before settings this. This *must* be set here during import.

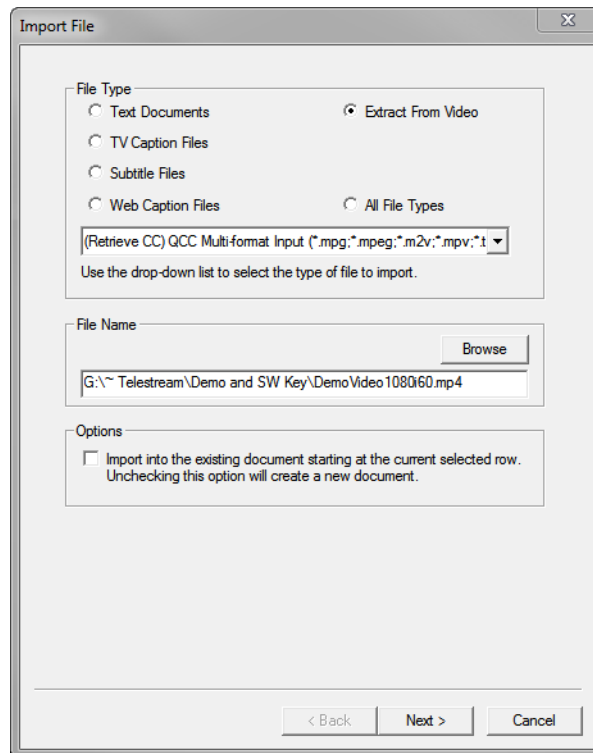
Frame rates available: 30 fps, 29.97 fps, 25 fps, 24 fps, 23.98 fps, 50 fps, 59.94 fps, 60 fps.

## Importing Captions from a Video

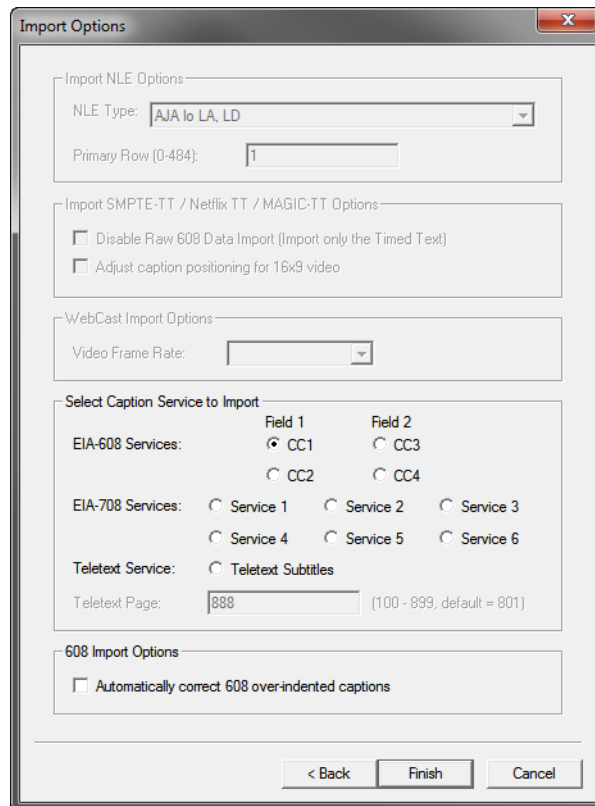
Opening a video only opens the video and audio for playback. If the video contains closed captions, a separate step is needed to import the captions.

To import captions from a video:

1. From the File menu choose Import, or drag and drop a file into the Text Panel area. The Import File dialog opens.
2. Choose Extract From Video.
3. From the drop-down menu choose the type of video file you want to import. (The QCC Multi-format Input will work for most files.)
4. Under File Name click Browse and navigate to find the file. (If you used the drag and drop method the file and location are already selected.)
5. Under Options, leave this unchecked to create a new document, or select it to import starting at the current selected row.



6. Click Next. The Import Options dialog opens.



7. Select the caption service you want to import. The default of CC1 is the most common service channel to use. When a video file has multiple languages or services these options allow you to choose which language to extract.
8. If words are cut off or going off of the screen after import, you can re-import and select 608 Import Options to try and correct this. Import is faster when this is not selected, so it's better to use this only when you need to.
9. Click Finish to import the caption file.

## QCC Multi-Format Import

### PRO

The QCC™ Multi-Format Import feature allows you to extract closed captions in 608/708 from a large variety of SD and HD video file types. This feature was introduced in CaptionMaker 5.17, and new formats and options are added regularly.

This is very useful when using Command Line Interface scripting. An entire archive of video files can be read with the QCC Multi-Format Import. Even obscure file types such as DV25/50, IMX30 with VBI, and ProRes .mov captions (both legacy Codec and Caption Track). In addition, users can extract multiple languages from the files such as CC1 and CC3.

This import function facilitates importing (retrieving/extracting) closed captions from the following file types:

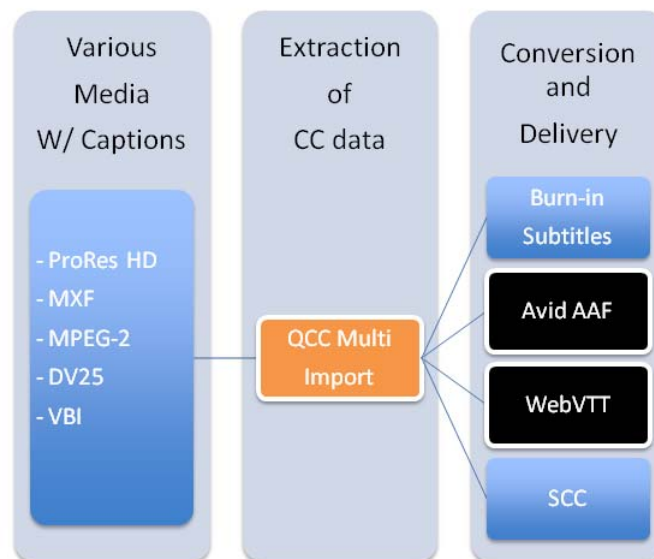
- .mpg .mpeg .m2v .mpv .ts .m2t .m2ts (MPEG-2 user data 608/708, line 21)
- .mov .mp4 .m4v .3gp (QuickTime CC tracks, line 21, H.264 NAL SEI 608/708, DV VAUX, ProRes VANC)
- .mxf (SMPTE 436m, MPEG-2 user data, line 21)
- OP-47 that uses page 801 and 888
- .gxf (VANC, MPEG-2 user data, line 21)
- .avi .wmv (Line 21, DV VAUX)

---

**Note:** New formats and features are added regularly to the QCC Multi-Format Import.

---

The following diagram depicts the extraction of data from various types of media by the QCC Multi-Format Import and the conversion and delivery to multiple destinations.





## Using a Proxy Movie

A proxy movie is a lower quality video file that is used as a stand-in for the high quality master file when authoring captions or subtitles. Here are some reasons you may want to use a proxy movie for part or all of the captioning process:

- **Large original video file.** Downloading a large movie file takes a long time and uses a lot of space. Unless you need to embed the captions into the master video file, you can do the captioning using a much smaller and easier to download proxy movie.
- **Playback issues.** The original video may be very demanding to playback without dropping frames. Especially if encoded with high quality settings, or if you have an older or lower end computer, or if the video is sitting on an external drive like a flash drive or a network drive. Using a proxy movie will help the movie play smoother and make the captioning software feel more responsive.
- **Incompatible format.** The movie might be in a format that can't be played back well or at all in the captioning software. Some types of video files, such as MXF or MPEG-2 transport streams, require additional software to play them back. In this case you can use a proxy movie for the captioning process, and then you can still embed the caption data into the original master file if you need to.

## Use Episode to Make a Proxy Movie

Episode, from Telestream, is the perfect application to create proxy movies. Episode supports a wide range of formats, including all the major input output formats for web, streaming, VOD, production, broadcast and more.

For more information about Episode, go to:

<http://www.telestream.net/episode/overview.htm>

## Proxy Movie Settings

The resolution and bit rate of the proxy movie does not matter too much. You can keep these low for easy playback. What is important, however, is that you maintain the same frame rate of the master file. For example, if the master file is 59.94 frames per second, make sure the proxy movie is also 59.94 frames per second. This is because the video frame rate has a large impact on the captioning process, and using a different frame rate could cause the captions to not sync up with the original video. Additionally, if the original master video has a time code track, ideally the proxy movie should start at the same time code as well.

Here are some general guidelines for your export settings:

- MP4 or QuickTime MOV format.
- H.264 video at 640x360 (if HD) resolution using "baseline" profile.
- A bit rate of around 500 kbps to 1000 kbps (higher will make a larger file, but will make the video more clear).
- Uncompressed (PCM) audio at 44100 or 48000 Hz, stereo or mono.

### **Note on H.264 (MP4) Compression Settings**

Some encoders, such as x264 (used by Telestream Vantage & Episode), have different profile settings such as "High profile", "Main profile", or "Baseline profile". The higher profile makes a higher quality file at the same bitrate by using more advanced compression algorithms. The problem is that these advanced settings require more CPU power to decode, and some settings such as a higher keyframe interval can cause seeking within the video to take a long time.

When authoring captions, you tend to do a lot of seeking within the video, so this can slow down the process and make the software feel less responsive. Since quality is generally not a problem when using a proxy video, we recommend encoding using "baseline" profile. This will help with smoother playback and better responsiveness while captioning. Of course, you can still use a high profile or higher quality file as your final output.

# Synchronizing and Adjusting Captions/Subtitles

The topics in this chapter describe how to perform automatic and manual time stamping, how to use the time code controls, adjust timing, and check for errors.

- [Time Code Overview](#)
- [Using Automatic Time Stamp \(ATS\)](#)
  - [Requirements for ATS](#)
  - [ATS Results](#)
  - [Best Practices for ATS](#)
  - [Automatic Time Stamp Operation](#)
- [Checking the Timing](#)
  - [Preview Play](#)
- [Caption and Video Playback Controls](#)
  - [Advanced Playback Control](#)
- [Time Code Controls](#)
- [Manual Time Stamping](#)
  - [Creating a Pause in Caption Display](#)
  - [Check Your Timing](#)
- [Adjusting the Timing](#)
  - [Applying Ripple Time Code Offsets](#)
  - [Stretch/Shrink Time Code](#)
- [Setting the Time Code Mode](#)
- [Making Two Captions Appear Simultaneously](#)
- [Error Checking](#)
  - [AutoSync Error Checking](#)
  - [Error Color Settings](#)
  - [Final Checking](#)

## Time Code Overview

CaptionMaker converts text to closed caption data and simulates sending control codes to captioning hardware for file-based delivery, or sends actual control codes to hardware devices. Start and stop time codes tell the captions when to turn on and turn off. Start and stop time codes are also required for a blank space between captions, when there is a pause in speaking.

The following topics describe how to apply the time codes to each portion of text, so they line up properly with actions in the video. This is also called “time stamping”. CaptionMaker provides options for automatic time stamping, manual time stamping, and many ways to make manual and automatic adjustments.

## Using Automatic Time Stamp (ATS)

After you have all of the text loaded into the CaptionMaker Text Panel, and have it broken into the sections you want, you are ready to time stamp it for synchronization with the video. The easiest way is to use the Automatic Time Stamp (ATS) feature.

The ATS feature works very well for videos with high quality audio and containing mostly dialog. It does not work as well if the dialog is mixed with music or sound effects, so it is preferable to use a dialog-only audio mix to synchronize the captions.

## Requirements for ATS

The following are the basic requirements to perform an Auto Time Stamp operation:

- A video with a clear high quality audio dialog track, in the English language, with very little background noise or other interfering sounds.
- An accurate transcript of all the dialogue in the video.
- Java Runtime Environment (JRE), version 6 or later, must be installed.
- See [System Requirements](#) for the minimum computer specs.

## ATS Results

When you run an Automatic Time Stamp operation, the following occurs:

- Automatically synchronizes each caption; no need to manually time-stamp captions.
- The process is much faster than real-time (15 times to 30 times faster, depending on the speed of your computer).
- When error checking is enabled, CaptionMaker automatically detects captions with poor synchronization and highlights them in a color (red is the default), so you can spot check and manually correct these captions.

See [Error Color Settings](#) for information on changing error detection options and colors.

## Best Practices for ATS

The following are important points to consider for getting the best results from an Automatic Time Stamp operation:

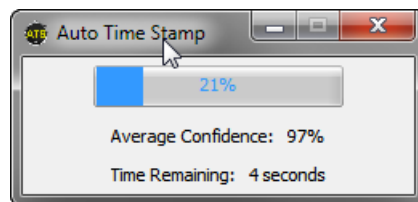
- An accurate transcript is vital. To get good results, the transcript cannot deviate significantly from the audio.
- High quality audio is also the key. Compression, sound effects, or music can distort the dialog.
- Speaker IDs that are indicated with ">> Name:" are treated as unspoken text.
- Non-verbal information in the transcript, such as music or sound effect indications, should be enclosed by brackets such as this: [MUSIC], or [Applause].
- If the software highlights some caption lines as low confidence, you might want to do a quick Preview Play to spot check these sections. In many cases the low confidence sections may be fine or close enough for your needs. If not, you can do a manual time stamp just on these few sections to improve the alignment.

## Automatic Time Stamp Operation

After the text is imported and broken into the sections you want, you are ready for Automatic Time Stamp.

To perform the Automatic Time Stamp operation:

1. In the Time Code menu select ATS Automatic Time Stamp. The Auto Time Stamp dialog opens and indicates the progress, confidence percentage, and time remaining.



2. The ATS dialog closes automatically when the operation is complete.

### Selecting a Range for Auto Time Stamp

You can also run ATS on a range of captions if there is a small portion that could use additional adjusting. See [Selecting Multiple Rows](#) for techniques to select a range of captions.

### ATS Error When File Name Contains Special Characters

If you use a video file that has a # (hash, pound) or some other special characters in the file name, you may get an error message when trying to use Auto Time Stamp (ATS).





If this error occurs, copy the video file to a local hard drive (not a network drive) and rename the video file so there are no special characters. That should allow ATS to read the video file.

## Checking the Timing

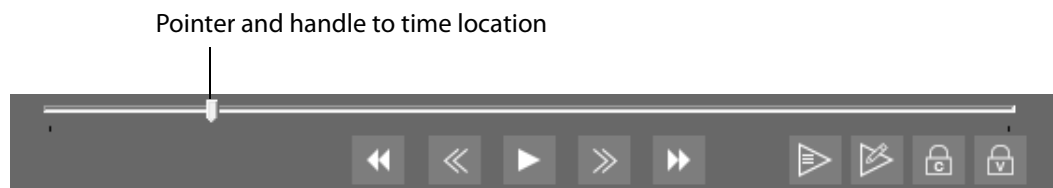
After running ATS, or after manual time stamping, you are ready to check the timing of the captions by using Preview Play. At the same time you can check the location of the captions to see if position adjustments are needed. Each caption should start when the first word of the caption is spoken.


### Preview Play


To preview the caption and video synchronization:



1. Rewind the video all of the way to the beginning by dragging the slider, that's just below the video, all of the way to the left.
2. Press the Preview Play button . This engages the Auto Row button  which makes the captions change with the video, following the Start and Stop times that are set.
3. To stop the video, press the Play/Pause button .
4. You can now use the Play/Pause button  to start and stop the video and the captions will stay synchronized since the Auto Row button is engaged.


## Caption and Video Playback Controls






**Rewind.**  Press to put the video into rewind mode.


**Step Back.**  Press to go back one frame. Hold Shift and press to go back about 1/3 of a second. Hold Control and press to go back about 1 second.

**Play/Pause.**   Press to play and pause the video.


**Step Forward.**  Press to go forward one frame. Hold Shift and press to go forward about 1/3 of a second. Hold Control and press to go forward about 1 second.

**Fast Forward.**  Press to put the video into fast forward mode.

**Preview Play.**  Press to start playback and engage the Auto Row button . This makes the captions change along with the video, following the Start and Stop times that are set.

**Time Stamp.**  This button starts video playback, but the captions do not play along. Use this mode when you want to edit the In points (start times) of the captions and you don't want the captions to advance.

**Auto Row (Captions Follow Video).**  When this is pressed (toggled on), the captions change along with the video, following the Start and Stop times that are set.

**Auto Shuttle (Video Follows Captions).**  When this is pressed (toggled on), and you select a caption row, the video automatically jumps to the time of that caption. You can also quickly move through the caption rows using the up and down arrow keys, and the video follows along.

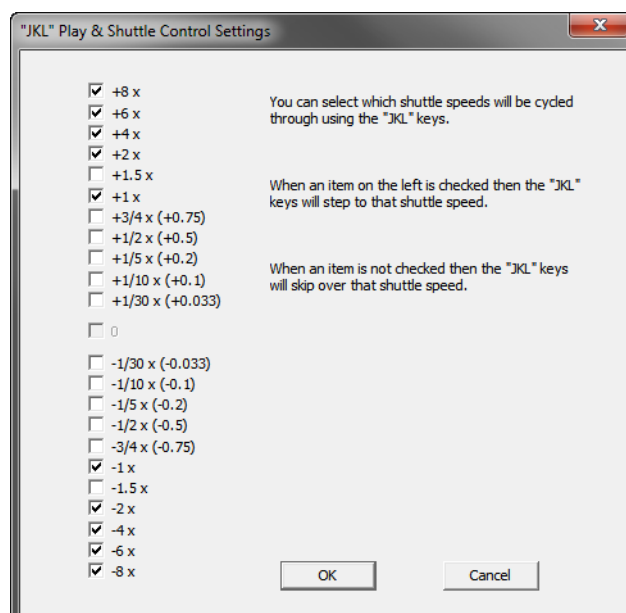
## Advanced Playback Control

Users can control the video playback speed using the VTR controls toolbar to speed up or slow down the video. See [VTR Toolbar](#) for more information.

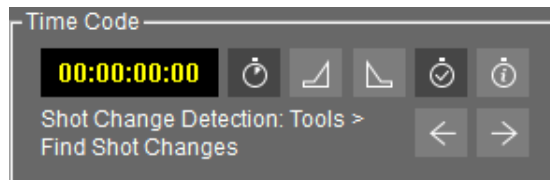
You can also use the J-K-L keyboard controls to shuttle the video, the same way that popular video editing applications operate. To enable the J-K-L option, from the VTR Control menu choose Enable "JKL" Control.


To use the J-K-L keyboard control, press J to rewind, K to stop, and L to play forward. Multiple presses of the J or L keys increases the speed of rewind or forward. When your cursor is in a text edit field the J-K-L keys will enter letters. Click in the Video Preview Panel to switch back to the J-K-L keys controlling video playback.


You can configure the speed increments that are used for multiple presses of the J or L keys. To do so, go to VTR Control > Configure "JKL" Control. The "JKL" Play & Shuttle Control Settings dialog opens.





## Time Code Controls



**Time Display.**  Displays the current time of the video in HH:MM:SS:FF format. (H = hours; M = minutes; S = seconds; F = frames.)

**Start Time Code Reader.**  When selected, timing information is displayed from the time code reader, video playback, or the PC System Timer.


**Send Caption/Subtitle (Keypad Plus (+)).**  Click to set the In Point or Start Time of the first word of the currently selected caption. If multiple rows are selected, start time is set for the first, or top row. For hardware devices, this sends the selected caption/subtitle to the device. The Plus key (+) on an extended keyboard or keypad is the shortcut.


**Send Caption/Subtitle Erase (Keypad Minus (-)).**  Click to set the Out Point or End Time of the last word of the currently selected caption. This only needs to be set when a space is needed between captions, such as when there is a pause in the speech, or when the captions have ended. For hardware devices, this sends a command to erase the selected caption/subtitle from the device at that time code point. The Minus key (-) on an extended keyboard or keypad is the shortcut.


---

**Note:** When you set an Out Point or End Time, you must set an In Point or Start Time at the point you want the next caption to appear in the video. When a space is not needed between captions, you only need to set the In Point or Start Time for each caption.

---

**Mark Time Code on Send Lines.**  This associates the clock time to the In Point and Out Point (Send) buttons. This must be selected for time codes to be written to captions when time stamping with the In Point or Out Point buttons, or other time stamp method. De-select this when you do not want to preserve time codes, such as when sending to certain hardware devices.

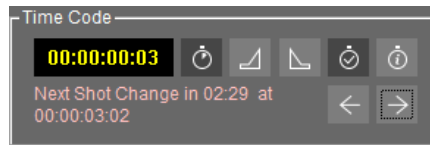
**Time Code Properties.**  Opens the Time Code Reader Properties dialog. See [Time Code Reader Properties](#) for information on the dialog options.

**Seek Previous and Next Shot Change.**  These buttons become active after the shot change information has been detected for a file. To run the shot change detection operation, select Tools > Find Shot Changes. A status bar in the bottom of the CaptionMaker window indicates the progress:








The Previous and Next Shot Change buttons are now active. The display text is red when less than 10 seconds from the next shot change, as shown in the following:



See [Find Shot Changes](#) for more information on using the shot change finding options.

## Manual Time Stamping

Manual time stamping allows you to associate a time code to each block of text so it will be in sync with the dialog. Manual time stamping is needed for various situations, such as videos that are not in English or that have loud music. To perform manual time stamping:

1. Rewind the video all of the way to the beginning by dragging the slider, that's just below the video, all of the way to the left.
2. Click the Time Stamp button . Playback starts, but the captions do not play along.
3. Click the Send Caption, or In Point button  each time you hear the first word of a caption. Or you can press the + key on your extended keyboard number pad.
4. Every time you press the + key, or the In Point button, time code appears in Start for that row and the next row is automatically selected. Continue until you have set the start time for each row of captions.
5. To stop video playback, press the Play/Pause button .


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**Note:** If you don't have an extended keyboard, such as on a typical laptop, you can change the default + key shortcut for Send Caption Line(s). See [Customize Keystrokes](#) for information on changing the default keyboard shortcuts.

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## Creating a Pause in Caption Display

Typically, closed captions are back-to-back to allow the reader enough time to read the text on the screen. But if there is a significant pause in the dialog, or credits and other information is displayed, there should be a pause in caption display.

To create a pause, you can press the Out Point/End Time button  during a manual time stamping process.

After setting an Out Point/End Time, you must press the In Point/Start Time button  when you want the next caption to appear in the video.

## Check Your Timing




After you have performed a manual time stamping you should check the timing by using the Preview Play button . For more information see [Preview Play](#).

# Adjusting the Timing

Several timing adjustment options are available when you need to synchronize captions to a video, correct for changes over time, or create different versions for various delivery requirements.

## Adjusting Specific Caption Timing

During playback you may have discovered some captions that need to have their timing adjusted. The following describes some methods for adjusting specific captions:

- **New In Points.** Click on the row where you want to make the change, then move back a couple of captions before that. Click the Time Stamp button , and press the In Point button  when at the point you want to synchronize the caption to the dialog. Continue for any captions you want to fix.
- **New Out Point.** When you want to create a space before the next caption displays, press the Out Point button . Then you will need to set a new In Point when you want the next caption to display.
- **Manual Time Entry.** You may also enter new times manually by typing into the Start or Stop columns. The time just before or after it is automatically adjusted.
- **Right-Click Menu.** Right-click in the Start or Stop column to open a menu. You can select Mark "In" Time Code or select Mark "Out" Time Code.

## Clock Time vs. Time Code

The numbers for the clock time and the time code of a caption can sometimes be different. The following provides a brief explanation of how these time measurements relate to each other.

### Clock Time

Clock Time is also referred to as Media Time or Real-World Time. This is the time that an event occurs relative to the start of the video. Imagine you start a stopwatch at the same time the video starts. At the time a caption is supposed to appear, the time shown on the stopwatch is the clock time (or media time) of the caption. The clock time of a caption is independent of the video frame rate. For example, if a section of dialogue occurs exactly 60 seconds after the start of the show, it will always occur at 60 seconds regardless of whether the video frames update at 10 frames per second, 25 fps, 100 fps, or any other frame rate.

The only case where a clock time of a caption might change is if the video speed is changed. This sometimes happens when converting film sourced material to TV formats—the video is slightly slowed down or sped up, and now the video version has a different duration than the original film (without any other edits to the content). This results in the dialogue and its associated caption clock time occurring slightly earlier or later than before.

## Time Code

Also called SMPTE time code. Time Code is a system used to uniquely label each video frame with a time-based identifier in HH:MM:SS:FF format. Time code is the value displayed in the Time Code section on the CaptionMaker interface. Due to some peculiarities of different video systems, you cannot always take a time code at its face value—the numbers shown in the time code are not always equivalent to the number of hours, minutes, and seconds that it actually represents. Thus it is important to keep in mind that the time code of a caption will sometimes appear to be a different number than the clock time of a caption, even though both they both reference the exact same moment in time.

Further complicating things is that time codes come in different modes, and so a given clock time can be represented by different time codes depending on which time code mode you are using. The [Convert Time Code](#) dialog allows you to switch modes depending on your needs.

For more information on time codes, see the Telestream knowledge-base article: [Time code for 23.976 / \(23.98\) frames per second video](#).

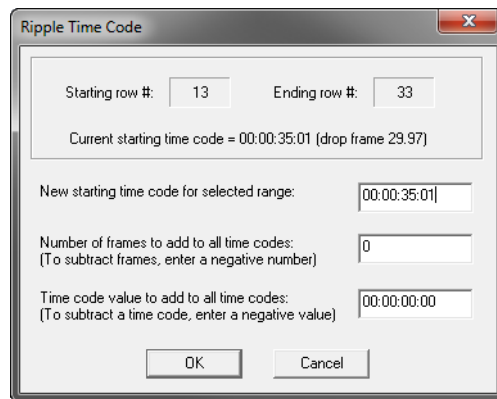
## Applying Ripple Time Code Offsets

Ripple Time Code changes the time code within a currently selected range, or from a selected row to the end of the file. Use this when you want to change the time stamp of all the selected rows by a few frames, or if you want set a new start time for the selected range.

To make a Ripple Time Code adjustment:

1. Use one of these selection methods—
  - a. Select a range of rows that you want to adjust.
  - b. To adjust all the way to the end, select the row where you want to start performing the Ripple Time Code offset.
  - c. If you want to create offsets for the entire file, select the Start column header to highlight all the Start time cues.
2. Right-click on the time code cell of the very first selected row and choose Ripple... from the menu.

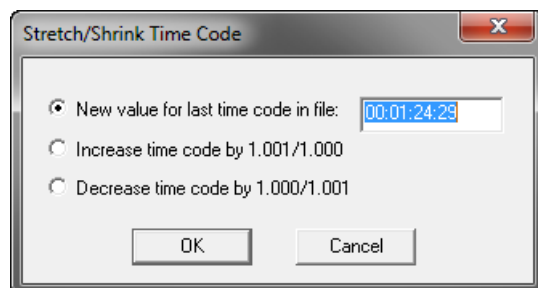
3. The Ripple Time Code dialog opens, and displays the starting and ending row that the operation will be performed on.



4. Enter the adjustments you want to make into the fields provided.

## Stretch/Shrink Time Code

If your caption timing is right on time at the start but is off a few seconds from the video at the end, you have “captioning drift”. This can be corrected by using the Stretch/Shrink Time Code option. Choose Time Code > Stretch/Shrink Time Code.



The time code value is in the HH:MM:SS:FF format.

Use the “Increase time code by 1.001/1.000” option when you want to convert 23.976 fps to 24 fps, 29.97 fps to 30 fps, or 59.94 fps to 60 fps. This difference is 3 seconds per hour of video.

Use the “Decrease time code by 1.000/1.001” option when you want to convert 24 fps to 23.976 fps, 30 fps to 29.97 fps, or 60 fps to 59.94 fps. This difference is 3 seconds per hour of video.

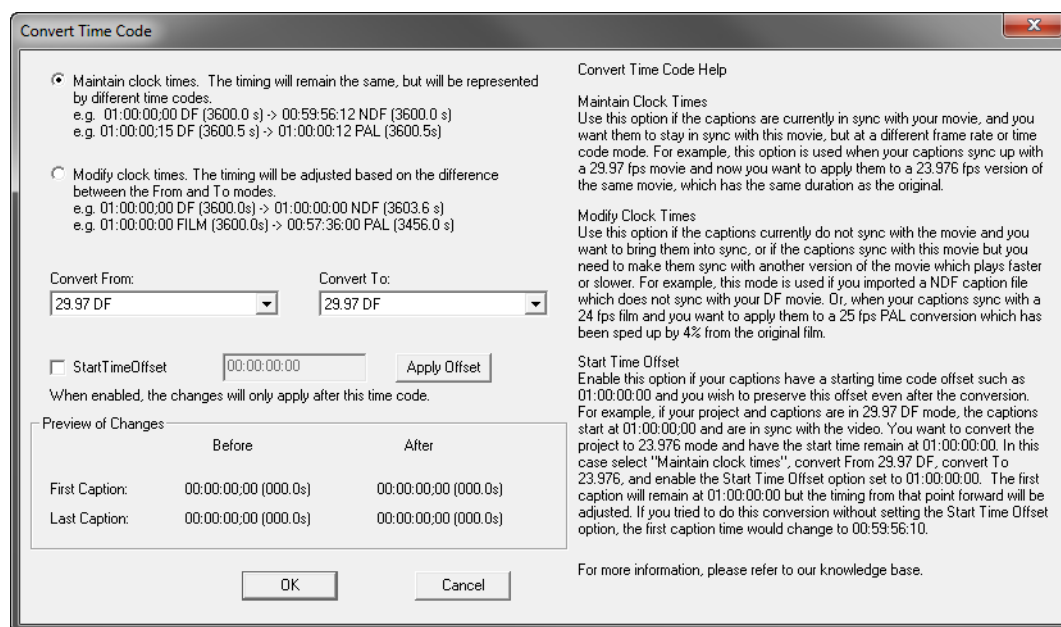
This option is also useful when you use a “proxy movie” to do all the captioning and then need to match the time coded file with the master copy of the video, which may have a slightly different code by the end of the video. One reason this could happen is due to a drop frame/non-drop frame issue. To match the time code of the caption file with the video, make sure the first time code of the caption file matches with the master copy. Then choose this option and enter the last time code from the master

copy. This will stretch or shrink all the time codes in the caption file to match the master copy.

You can also use the [Convert Time Code](#) dialog to match the time code of the master copy of the video.

## Convert Time Code

The Convert Time Code dialog provides several options so you can adjust the time code to match other versions or delivery destinations of the movie, or you can change the timing when captions do not sync up with the video. To open the dialog, go to Time Code > Convert Time Code.



### Maintain Clock Times

Use Maintain Clock Times if the captions are currently in sync with your movie (the clock times are correct), and you want them to stay in sync, but at a different frame rate or time code mode. For example, this option is used when your captions sync up with a 29.97 fps movie and now you want to apply them to a 23.976 fps version of the same movie, which has the same duration as the original, so that you can deliver a 23.976 fps caption file. When the time code or frame rate changes, the clock times that they represent will be unchanged.

### Modify Clock Times

Use Modify Clock Times if the captions currently do not sync with the movie (the clock times are not correct) and you want to bring them into sync. Or, if the captions sync with this movie but you need to make them sync with another version of the movie which plays faster or slower. For example, this mode is used if you imported a Non-Drop

Frame (NDF) caption file which does not sync with your movie which is in Drop Frame (DF) mode. Or, when your captions sync with a 24 fps film and you want to apply them to a 25 fps PAL conversion which has been sped up by 4% from the original film. The time code modes are:

- 23.976 FILM
- 24.0 FILM (SMPTE 24)
- 25 PAL, 50 PAL (SECAM, SMPTE 25, 50)
- 29.97 DF, 59.94 DF: Drop Frame (SMPTE DF)
- 29.97 NDF, 59.94 NDF: Non-Drop Frame (SMPTE 30, 60)

---

**Note:** In some cases, when changing from one time code mode to another, Modify Clock Times might appear to leave the time codes unchanged. This is due to the fact that the same time code (in a different mode) can represent a different clock time. Thus the clock time actually did change, even though the time code appears unchanged.

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## Start Time Offset

Enable Start Time Offset if your captions have a starting time code offset such as 01:00:00:00 and you wish to preserve this offset even after the conversion.

For example, if your project and captions are in 29.97 DF mode, the captions start at 01:00:00:00 and are in sync with the video. You want to convert the project to 23.976 mode and have the start time remain at 01:00:00:00. In this case, select Maintain Clock Times, choose Convert From 29.97 DF, and Convert To 23.976. Then, enable the Start Time Offset option and set it to 01:00:00:00. The first caption will remain at 01:00:00:00 but the timing from that point forward will be adjusted. If you tried to do this conversion without setting the Start Time Offset option, the first caption time would change to 00:59:56:10 and not be in sync.

## Preview of Changes

In the Preview of Changes section, each time is provided as both a video time code (in the given mode) in format HH:MM:SS:FF, and also as a clock time in the format NNNN.N s (seconds), so that you can see what adjustments will be made.

## Setting the Time Code Mode

It is important to know the time code mode when working with video time codes, because if you don't know the mode then the actual time they represent can be uncertain. This is the leading cause of synchronization issues, such as caption text that doesn't quite line up with the audio.

First, let's distinguish between video frame rate and time code mode:

- **Video frame rate**—the rate at which the image is updated.
- **Time code mode**—the numbering or labeling system used to uniquely identify each video frame.

Sometimes, these two items have a simple relationship. For example, PAL video uses 25.0 frames per second frame rate, and 25 fps time code. In other cases the relationship can be more complicated, which is the case for film-like digital videos that run at 23.976 frames per second but count time code as if they were 24.0 frames per second.

Here is how video systems, such as closed captioning software, correlate these two different measurements:

- Both 23.976 and 24.0 fps videos use the same type of time code (SMPTE 24). When using 24.0 fps video and SMPTE 24 time code, it syncs with a real time clock (similar to drop frame time code).
- When using 23.976 fps video with SMPTE 24 time code, it does not sync with a real time clock (similar to non-drop frame time code).

In CaptionMaker, you set the time code counter mode (SMPTE 30 non-drop frame, SMPTE 29.97 drop frame, SMPTE 24 Film, and SMPTE 25 PAL) via the Time Code > Time Code Mode menu. If your video is 24.0 fps or 23.976 fps and you're using SMPTE 24 time code, you'd select Time Code Mode > Film (24 fps) for both cases because they both use the same time code counting system.

The video frame rate is set separately in the Video Properties dialog (the dialog that opens after you go to File > Open Movie, or drag-and-drop the video into the CaptionMaker window).



## Making Two Captions Appear Simultaneously

You may wish to have two or more captions appear on the screen at once, but in different positions (the top and bottom of the screen, for example). The need for this may arise in a program where two people say different things at the same time, such as a translation. This feature is also known as “Split Captions”.

To do this, make two captions have the same Start Times, and both will appear on the screen simultaneously. The easiest way to do this is to skip over one of the rows while assigning time code, and later cut and paste the Start Time from the row where you did assign time code to the row that you did not assign a time code to. Of course, you should assign different positions to these captions so they will both be visible.

---

**Note:** You can use the function Same Start Time to assign the same time code to multiple rows. Highlight multiple rows with time code, right-click on any highlighted row and choose Same Start Time from the menu.

---

The following image shows an example of two captions appearing at the same time:



## Error Checking

CaptionMaker provides various options for checking errors, such as missing time codes, non-sequential time codes, incorrect words per minute, and so on. A Nexidia XML QC report file can also be imported, to help locate errors with associated .SCC files.

## AutoSync Error Checking

This option performs automatic time code error checking. When Caption > AutoSync Error Checking is selected, CaptionMaker checks the whole file to make sure there are no missing time codes or the time codes are not in ascending order before running AutoSync. With this option checked as you work, errors are caught quickly and when running AutoSync it finds errors faster and stops at the point of the error.

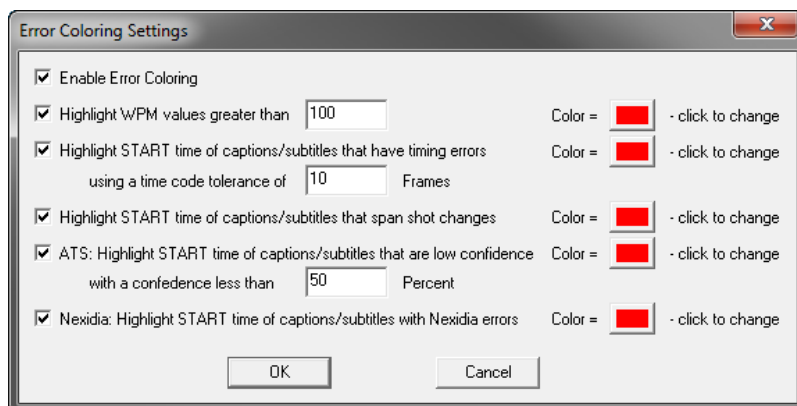
## Error Color Settings

When you enable the Error Coloring Settings, a variety of error checking issues can be highlighted in the colors you select. When an error occurs, the time code value changes color in the affected row.

When you caption/subtitle a video, it is very important that you conform to recommended maximum words per minute for captions, depending on your audience. Similarly, it is customary not to have a pop-on caption covering a shot change. And finally, if you do not allow enough time for a pop-on caption to build up, the caption does not appear at the time you assigned.

For example, pop-on captions take about one second for every 50 characters of text. If the difference of time codes of the previous caption and the current caption is less than one second for a caption of 50 characters, the caption appears later than the assigned time code.

To check all of these errors on the fly, you can enable specific settings by selecting Caption > Timing Error Settings or Subtitle > Timing Error Settings to open the Error Coloring Settings dialog. You can check any one of the items, adjust values, and assign different colors for each error in the dialog box. The Enable Error Coloring option, at the top of the dialog, must be checked for coloring settings to be active.



## Using a Nexidia XML QC Report to Locate Errors

CaptionMaker can import a .XML report file generated by Nexidia's QC automation software, then use this file to locate errors in an associated .SCC file. This report can be obtained through the Vantage connector to Nexidia's QC tool. The report can include timecode specific synchronization issues, as well as notes regarding missing words from the caption project. Nexidia's software engine can use a .SCC file and automatically compare timing and words to the audio of a video file.

Before importing the Nexidia XML report, a caption project must be open and the corresponding .SCC file should be imported into the CaptionMaker project. The notes column in CaptionMaker grid must be visible in order to see the report from the XML file. In addition, the "Nexidia: Highlight START time of captions/subtitles with Nexidia Errors" check box must be selected in the Error Coloring settings dialog of CaptionMaker. Once the XML file is imported, a captioner can quickly locate the errors found by the automated Nexidia analysis.

To import a Nexidia QC report .XML file:


1. Import the associated .SCC file into CaptionMaker, or open the appropriate caption project.
2. Enable viewing the Notes column by opening the Visible Columns dialog from the View menu. Highlight "Notes/Descriptions" and click OK.
3. Enable Nexidia error coloring in the Error Coloring Settings dialog. Open this from either the Captions or Subtitle menu by selecting Timing Error Settings. You can change the color, if desired. See the previous Error Color Settings topic for more information.
4. Go to File > Import to open the Import File dialog.
5. Select Text Documents under File Type.
6. From the drop-down list select Nexidia XML Report File (\*.xml).
7. Click the Browse button under File Name and locate the Nexidia report file.
8. Click Finish to import the file.

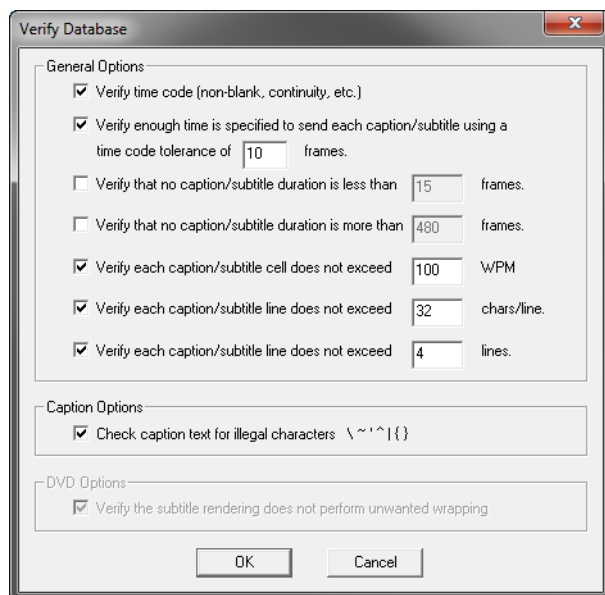
Once imported, CaptionMaker can use the XML report to highlight the problem timecodes with a color and populate the notes section with the details.

## Final Checking

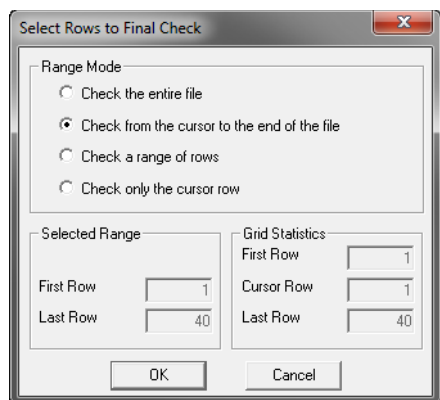
Final Checking is a very important function to check all timing and formatting errors before you do the final encoding.

To perform Final Checking:

1. In the Caption menu choose Final Checking. Or click the  button in the Main toolbar. The Verify Database dialog opens.



2. Make your selections and adjust any default values, if needed.
3. Click OK and the Select Rows to Final Check opens.



4. Select the range of rows you want to check.
5. Click OK to start running the Final Check.
6. Error message dialogs will open that provide information about any errors found.

# Format and Edit Captions/ Subtitles

The topics in this chapter describe how to format and position captions/subtitles, perform row operations, adjust display modes, and includes some tips for creating captions.

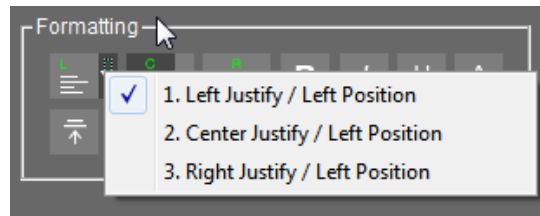
- **Formatting and Positioning**
  - Additional Position Adjustments
  - Upper, Lower, or Sentence Case
  - Insert Music Symbol
- **Row Operations**
  - Selecting Multiple Rows
- **Display Modes**
  - Pop-On
  - Paint-On
  - Roll-Up
  - Block Roll-Up
  - Pass Through Captioning
  - Changing the Display Mode
- **Captioning Tips**
  - Suggestions for Breaking Lines
  - On-Screen and Off-Screen Speakers
  - Centering or Not
  - General Captioning Guidelines

## Formatting and Positioning

CaptionMaker provides a wide variety of tools to format and position your captions. The tools apply to the currently selected row, or to all text in any range you select.



Additional options are available for the Left, Center, and Right formatting buttons. Click the down-arrow on a button to open a menu to select from three options, as shown in the following:



**Left Position.** Sets the caption to the left position, with Left Justify, Center Justify, and Right Justify options.

**Center Position.** Sets the caption to the center position, with Left Justify, Center Justify, and Right Justify options.

**Right Position.** Sets the caption to the right position, with Left Justify, Center Justify, and Right Justify options.

**Bold/Flash.** Applies bold formatting to the row(s) selected, or only to specific selected text.

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**Note:** It is not recommended to use bold formatting since in most TV display situations the text will flash.

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**Italic (Control+I).** Applies italic formatting to the row(s) selected, or only to specific selected text.


**Underline (Control+U).** Applies underline formatting to the row(s) selected, or only to specific selected text.


**Color.** Changes the color of the text in the row(s) selected, or only to specific selected text.


**Top.** Moves the caption(s) to the top in the row(s) selected.

**Bottom.** Moves the caption(s) to the bottom in the row(s) selected.


**Pull First Word.**  Pulls the first word of the next caption into the currently selected caption.

**Push Last Word.**  Pushes the last word of the currently selected caption to the next caption.

**Compress Text Block.**  Compresses the text block in the selected row(s).

**Expand Text Block.**  Expands the text block in the selected row(s).

Compress and Expand perform a word wrap to increase or decrease the number of caption lines, ranging from 1-4 lines. It is recommend to have 1-2 lines for most captions.

**Alternate Break Formatting.**  Adjusts the way words are distributed in the text block. Multiple clicking provides different arrangements. It is better to make the text bottom heavy (shorter lines towards the top, longer lines towards the bottom).

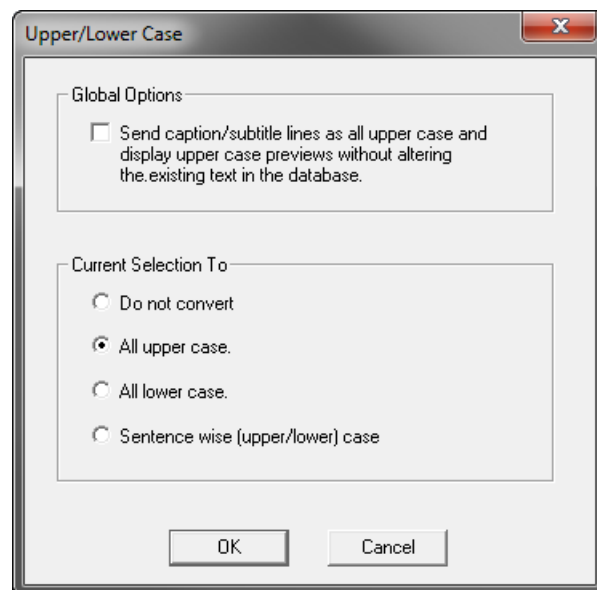
## Additional Position Adjustments

When you have the Ancillary toolbar open, it provides additional options to move up or down one line at a time, or move one character to the right or left:



## Upper, Lower, or Sentence Case

Use the Upper/Lower Case dialog options to send selected captions as all upper case, or to change the current selection to all upper, all lower, or sentence case. To open the dialog go to Format > Upper/Lower case.



## Insert Music Symbol


To insert a music symbol, open the Attribute menu > Insert Music Symbol(s) > Single Music Symbol, or Surrounding Music Symbols. Press Control+M for the single music symbol.


The Single Music Symbol is inserted where the cursor is located, or at the beginning of the text when a row is highlighted. The Surrounding Music Symbols are placed at the start and end of the text in the selected row, or the row the cursor is in.


## Row Operations


The Row Operations tools provide a quick way to insert, delete, merge, split, and select rows.




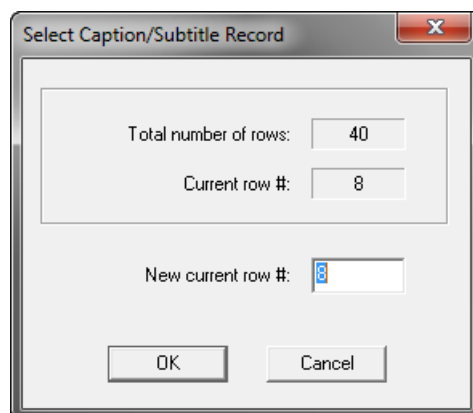
**Insert Row(s).**  Create a new blank row before the currently selected row. When you have multiple rows selected it inserts that number of rows.

**Delete Row(s).**  Delete the currently selected row(s).

**Merge Rows.**  Combine two selected rows into one row.

**Split Row.**  Splits the current row at the position of the text cursor.

**Select Row.**  Click to open the Select Caption/Subtitle Record dialog. Type the row you want to go to and click OK.





## Selecting Multiple Rows

The following describes some methods to select multiple rows:

- **Click and drag.** Select one row, hold down the left mouse button and drag to select more rows.
- **[ # ].** Click the hash/pound symbol in the upper-left corner of the Text Panel to select all rows and columns.

---

**Note:** Turn off the Auto Shuttle button  first, before using any of the following Shift or Control row selection methods.

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- **Shift+click.** Select one row, hold Shift and select the row you want for the end of the range.
- **Shift+arrow keys.** Hold the Shift key, then use the Up, Down, Right, or Left arrow keys to select additional rows or cells.
- **Control+click.** Hold Control and click to select individual rows.

## Display Modes

Display Modes control the way captions appear or move onto the screen.

### Pop-On

Pops 1 to 4 lines of captions or subtitles onto the screen simultaneously. It is the most commonly used mode for subtitling, and is typically the preferred option for closed captioning. It is virtually impossible to use the Pop-On mode without using time code or the PC System Timer. The technical reason for this is that it takes time (roughly 1/60th of a second) to process each character of a caption line. Only when this processing has been completed is the caption line loaded onto the screen. Since this delay is variable (because the number of characters in each cell varies) it is almost impossible for a person to compensate for this delay. CaptionMaker precisely compensates for this delay when used with time code or the PC System Timer.

### Paint-On

Paints characters on the screen one after another, from left to right, so that the screen looks like the output of a human typist. When the first word of the next caption appears, the entire previous caption is erased.

### Roll-Up

Scrolls up captions from the bottom of the screen one line at a time. Two to four lines normally appear on the screen at any given time. Television news is a frequent user of Roll-Up captioning (often in conjunction with a teleprompter that generates captions).

## Block Roll-Up

Combines the Paint-On and Roll-Up modes. Two to four lines of captions scroll onto the screen from the bottom. When the next caption appears, one line of caption disappears from the top.

## Pass Through Captioning

Enables Pass Through mode for a segment of the video which has been previously captioned. This mode lets the captions previously existing on the video pass through.

Right-click on the cell in the Display column and choose Pass Through for the time codes for which you want to let the existing captions pass through the encoder. Then resume captioning at the time code you want to stop Pass Through. In the following example, existing captions from the video pass through the encoder at time code 01:03:35:13 and CaptionMaker starts captioning again at time code 01:04:15:18.

01:03:31:08 Pop-On NOW I'M AT THE RIGHT OF THE SCREEN

01:03:33:07 Pop-On SO MY CAPTIONS APPEAR AT THE RIGHT

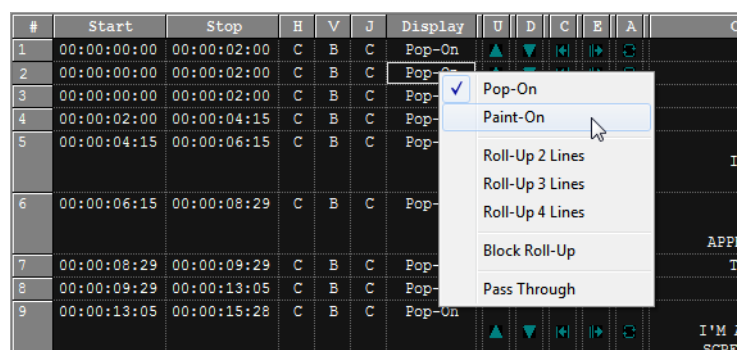
01:03:35:13 Pass Through

01:04:15:18 Pop-On NOW I AM GOING OFF-SCREEN

## Changing the Display Mode

To change the Display Mode for one row, or multiple rows:

1. Select one row, or multiple rows.
2. Right-click in the Display column in one of the highlighted rows and choose a display mode from the menu.
3. The new display mode is now active in that row or rows.



To change the Display Mode for all captions:

1. Click Display in the text panel header to highlight all cells in the Display column.
2. In the Attribute menu go to Display Mode and choose the display mode you want from the menu that opens. Or right-click a row in the Display column and choose a display mode from the menu.
3. The new display mode is now active for all captions.

# Captioning Tips

The following tips provide suggestions for the best ways to break lines of text, how to represent on-screen and off-screen speakers, centering text, and various general captioning guidelines.

## Suggestions for Breaking Lines

Professional captioning methods include creating the best text break points, positioning the captions properly, and the use of time sequencing. Captions should be adjusted to provide uniform readability.

The following are common places to break lines into separate captions:

- End a caption at the end of a sentence. The Import File option can make these breaks automatically using the end-of-sentence punctuation marks ".", "?", and "!".
- End captions at commas and semicolons if they come at a natural pause in the dialog and conclude a phrase. The Import File option can make these breaks automatically as well, but there are many commas in English that are *not* good places to break text.

When you break text into individual captions, they should make grammatical sense. Here is an example:

### Unformatted, Raw Text:

On the way to the airport, I got caught in traffic and ended up being late for my flight. I had to wait around for five hours to catch the next available flight.
---

### A poor way to caption it:

On the way to the airport, I got caught in
traffic and ended up being late for my flight. I had to wait
around for five hours to catch the next available flight.

### A good way to caption it:

On the way to the airport, I got caught in traffic
and ended up being late for my flight.
I had to wait around for five hours
to catch the next available flight.

## On-Screen and Off-Screen Speakers

One basic convention concerns the difference between how you represent on-screen and off-screen speakers. The words spoken by off-screen speakers (commonly narrators) appear in italics, but italics can be skipped if the speaker comes in and out of view. The words of on-screen speakers appear in the normal font.

## Centering or Not

Another convention concerns centering and not-centering. Captions can indicate the location of the speaker, and should appear under the speaker. However, if the speaker is in the center but centering the caption interferes with a graphic and/or important on-screen visual information, then the caption should be moved to another location.

## General Captioning Guidelines

The main objective is to have each caption represent a single thought. There is no single right way to caption a video, but a few additional guidelines may help:

- Your captioning style should be consistent throughout the video.
- Whenever possible, you should break captions into logical phrases. Captions randomly broken up may convey a different meaning than intended.
- Captions can indicate the location of the speaker. For instance, a caption on the left side of the screen indicates the speaker is on the left, while a centered caption shows that only one person is speaking throughout a scene.
- Words can be emphasized with underlining.
- Use Attribute > Insert Music Symbol(s) to place a musical note at the beginning and end of musical lyrics.
- Never paraphrase lyrics. Also include the title of the song when possible.
- Indicate sound effects in parentheses and in lower case, for example (boom) and (applause).

# Subtitle Mode

The topics in this chapter describe subtitle operation and how to change the look of subtitles.

- [Subtitling Overview](#)
  - [Subtitle Mechanisms](#)
  - [Subtitle Export](#)
- [Converting Between Captions and Subtitles](#)
- [Adjusting Colors and Styles](#)
  - [Setting the Font Image Properties](#)
  - [Adjusting Font Color or Appearance](#)
  - [Changing Backgrounds and Outlines](#)

## Subtitling Overview

Subtitles are text that appears on a video or in a movie and typically contains only a translation of the dialogue, usually because the dialogue is in a foreign language, or because the dialogue was difficult to hear clearly. Unlike captions, subtitles usually do not convey non-dialogue sounds such as background noise, sound effects, or music cues, because it is presumed that the viewer is able to hear them. Subtitles have fewer rules and limitations than closed captions, and generally have more fonts, styles, and colors available to choose from.

Subtitles can be burned into the video so they can't be turned off. This is called "open subtitles", "burn-in subtitles" or "hard subtitles," and is used when the subtitles must always be available, such as when translating foreign language dialogue for a general audience. This is also useful when working with a video format or player that doesn't support soft subtitles or closed captions.

Some formats, such as DVD, Blu-ray, many web-based players, and a few other video formats, can contain one or more tracks of subtitles which can be selected and turned on or off by the player. This is called "soft subtitles" or "separate subtitles".

Subtitle tracks which contain non-verbal audio cues and mimic the look and feel of closed captions are called "SDH" (Subtitles for the Deaf and Hard of Hearing) tracks. SDH tracks are often used to emulate closed captions on formats that don't support closed captioning due to technical limitations, such as Blu-ray.

## Subtitle Mechanisms

Just as closed captions can exist embedded in a video file or in a separate sidecar file, there are several ways you can export subtitles:

- **Burn-in.** This permanently combines the subtitles and the video. They can't be turned off, but you never have to worry about whether they will work or not.
- **Overlay for Later Burn-in.** If you're working with a video editor that wants to burn-in the subtitles, you can send them an overlay file. They put the overlay into their NLE system and render the burn-in video from there. This way, the captioner doesn't need the full resolution master video from the editor.
- **DVD/Blu-ray.** Several prosumer and professional software packages for authoring DVD and Blu-ray discs can accept subtitle files. In this case the viewer can turn the subtitle tracks on or off. The type of file to export depends on which authoring software is being used to author the DVD or Blu-ray.

## Subtitle Export

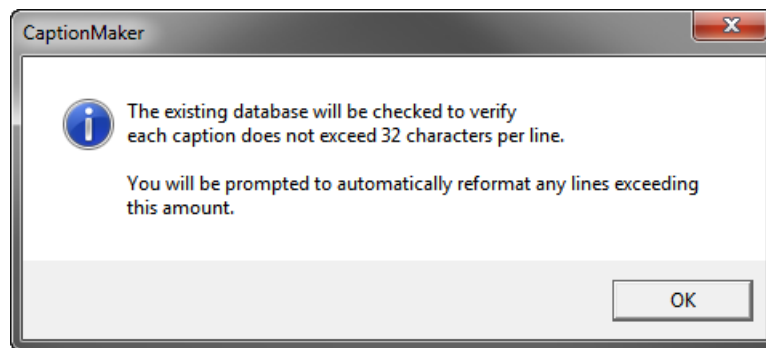
For information about subtitle export see [Exporting Subtitles](#) in the Exporting / Encoding chapter.

## Converting Between Captions and Subtitles

CaptionMaker has the ability to convert closed captions into subtitles and vice versa. When converting closed captions to subtitles, there isn't too much you need to worry about, because subtitles are generally much more capable than closed captions.

Where you need to be careful is when converting subtitles into closed captions. The subtitles might break some of the rules of closed captioning, for example, by having more than 32 characters per line. In this case, some manual reformatting needs to be done when conforming the subtitles into closed captions.

When switching from subtitle mode to caption mode, the following dialog appears to let you know that the database will be checked to make sure each caption is not over 32 characters per line.



Making sure you are in the right mode when you start your project helps you avoid some extra work.

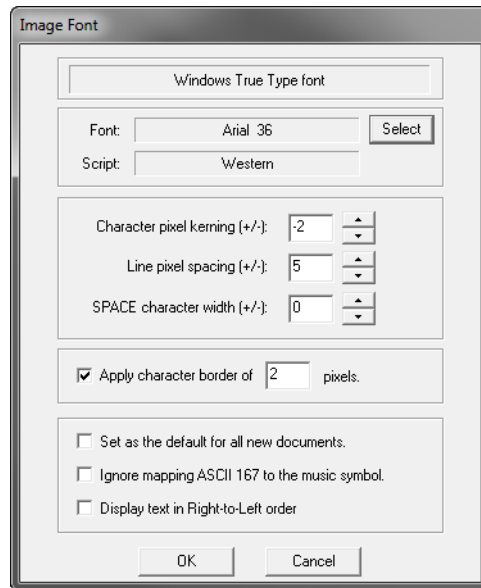
## Adjusting Colors and Styles

Subtitles have many options available to choose font styles and colors.

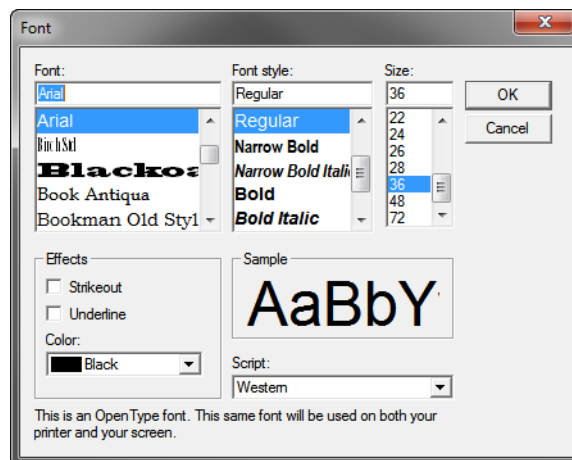
### Setting the Font Image Properties

To change the font style, size, and properties for the whole project:

1. Choose Subtitle > Set Subtitle Image Font. The Image Font dialog opens.



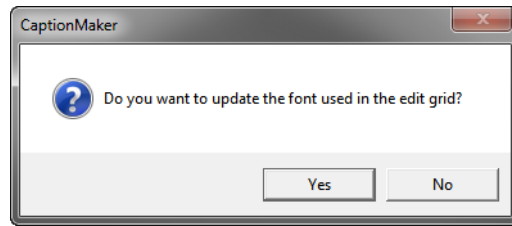
2. To change or adjust the font, click the Select button. The Font dialog opens.



3. Choose a font and settings, then click OK.




4. Make any additional adjustments or selections in the Image Font dialog and click OK. A dialog opens asking if you want to update the fonts used on the edit grid.

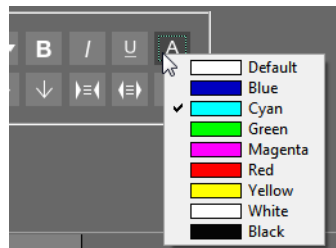


5. Select Yes to change the font style in both the Text Edit Panel and the Video Preview Panel. Select No to change the font only in the Video Preview Panel.

## Adjusting Font Color or Appearance

To change the font color, or select bold, italic, or underline:

1. Select the text you want to change. Either specific words, certain rows, or click the Caption/Subtitle header to select all rows.
2. Click the text color button  from the Formatting tools, and select a color.

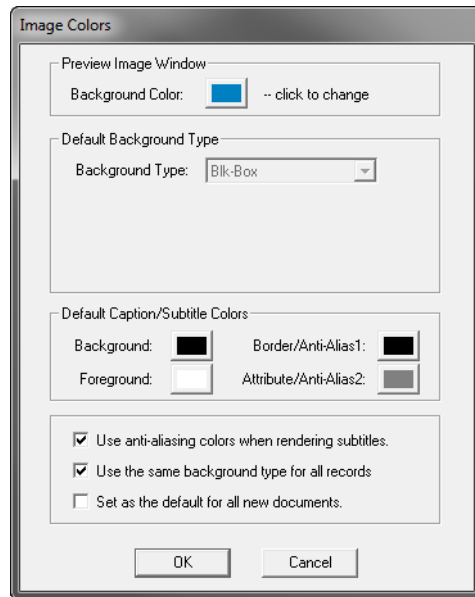


3. Click the Bold, Italic, or Underline button if you want to add those formats.

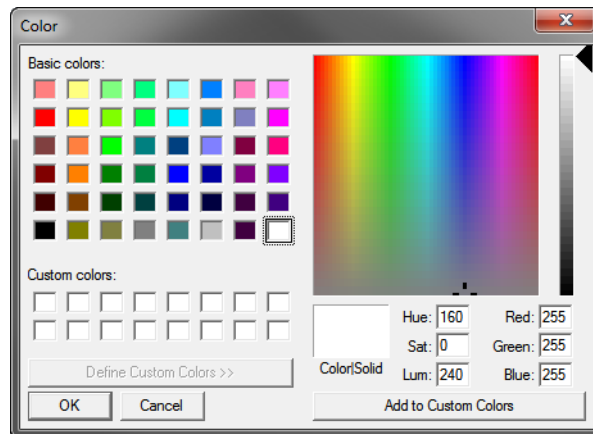
## Changing Backgrounds and Outlines

When in subtitle mode, you can change the subtitle background, foreground, outlines and related properties for the entire project:

1. Choose Attribute > Background Translucency. The Image Colors dialog opens.



2. Click a colored button for any of the properties you want to change. The Color dialog opens.



3. Choose or set the color you want and click OK.
4. Make any additional changes in the Image Colors dialog and click OK to close the dialog and make the changes.

# Exporting / Encoding

This chapter describes CaptionMaker exporting and encoding options.

CaptionMaker has a variety of export options, including formats for web and mobile video, DVD/Blu-ray, Web, broadcast video formats for SD and HD, and so on. Depending on which version of the software you purchase, different features are available.

See [Comparing CaptionMaker Versions](#) for a summary of the exporting/encoding features in each version. See [Export File Types](#) for a detailed listing of all formats available for the different versions of CaptionMaker.

Topics in this chapter:

- [Embedding Captions into Video](#)
- [Exporting Standalone Caption Files](#)
- [File-Based Delivery for Broadcast TV](#)
- [Tape Delivery for Broadcast TV](#)
- [Exporting Subtitles](#)
- [MXF Export Workflow](#)
- [Avid AAF Export](#)
- [H.264 and MPEG-2 Exports](#)
- [QuickTime Podcast Captions](#)
- [Export a Subtitle Overlay for Vantage®](#)

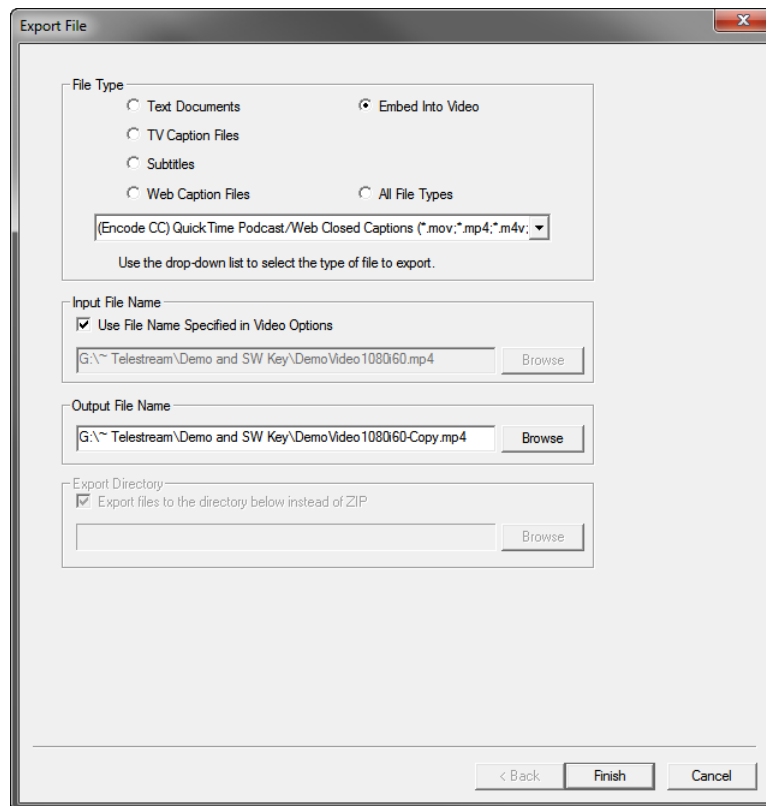
## Embedding Captions into Video

Captions embedded in video are typically used for broadcast video files such as ProRes, MPEG-2, and MXF. The captions are embedded directly into the video file instead of being saved to a separate file. CaptionMaker does not convert one type of video to another. This conversion is called transcoding and can be done in other Telestream software such as Episode Pro or Vantage.

If you want to output, for example, an MPEG-2 file with embedded captions, you must provide an MPEG-2 video file in the desired format, and then CaptionMaker can embed captions into it.

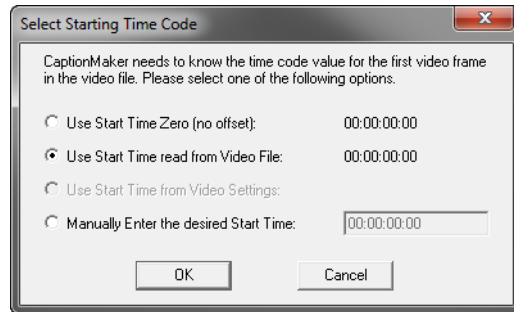
To embed captions into a video file:

1. Have the video file loaded into CaptionMaker, and the associated captions edited, formatted, and finished.
2. Choose File > Export. The Export File dialog opens.



3. Select Embed Into Video.
4. Choose the type of file you want to export.
5. The Input File Name is already populated when you are exporting a video that is loaded into CaptionMaker.
6. Click Browse to choose a destination and create a name for the file.

7. Click Finish. The Select Starting Time Code dialog opens.



8. Accept the default selection, or enter a desired start time, and click OK.

9. The status bar on the bottom of the CaptionMaker window indicates the progress, and the export is complete.

## Exporting Standalone Caption Files

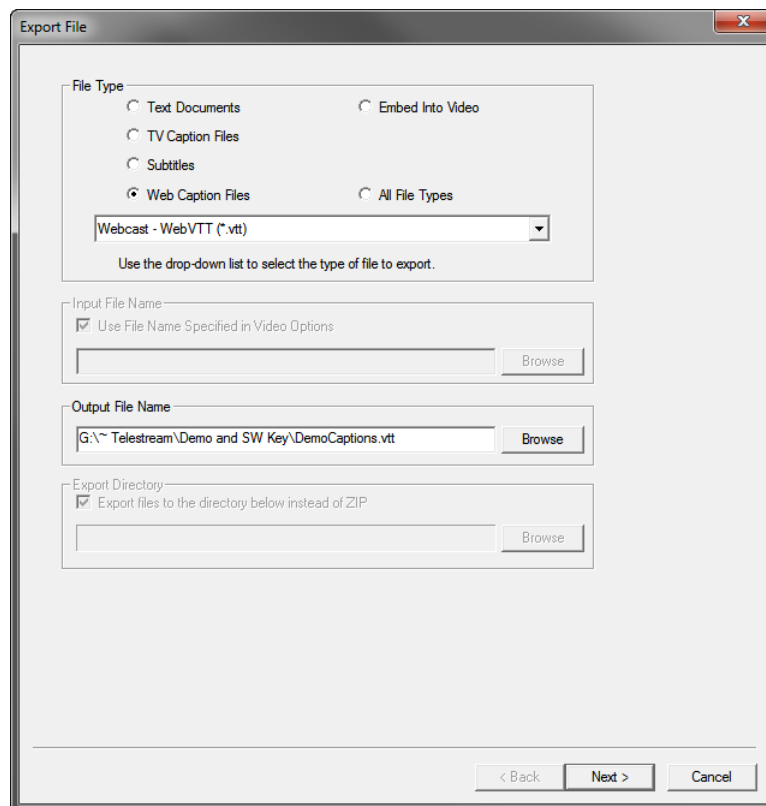
Many types of caption files are standalone, meaning the captions are in a separate file and not embedded into the video file. There are many different types of standalone caption files:

- For use on the web, such as Timed Text, WebVTT, and SRT (.srt) files. The type depends on the player being using on the web.
- Some are used in broadcast workflows, such as SCC (.scc) and MCC (.mcc). (SCC is also used for DVD closed captioning.)
- Some are used for working with an NLE system, such as Final Cut Pro, Avid, and Adobe Premiere Pro.
- Some are used for interchange with other captioners or captioning software, such as Cheetah, CAP, TDS, Ultech ULT, and so on.

See [Export File Types](#) for a full listing of all types of files.

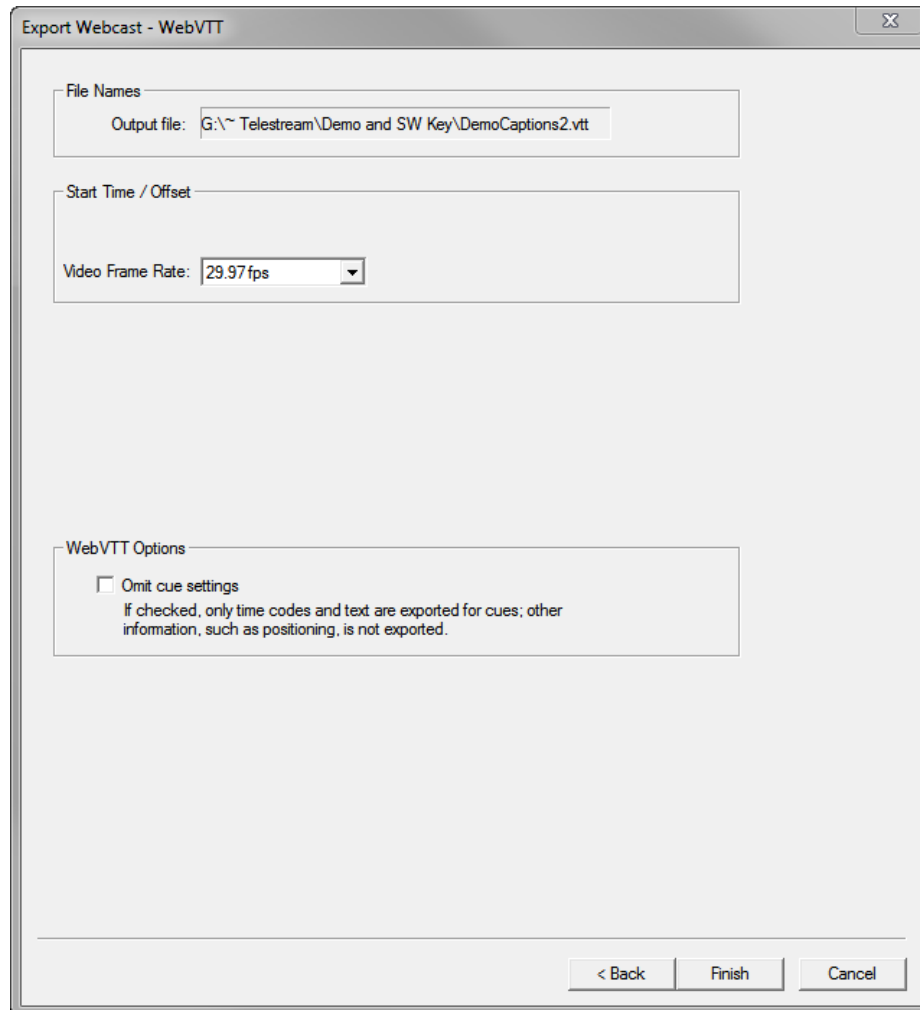
To export captions as a standalone file:

1. Have the captions loaded into CaptionMaker, edited, formatted, and finished.
2. Choose File > Export. The Export File dialog opens.



3. Select the File Type. Typically TV Caption or Web Caption Files.
4. From the drop-down menu choose the type of file you want to export.

5. Click Browse under Output File Name to choose a destination and create a name for the file.
6. Click Next. The dialog opens for the file type you selected.



7. The options vary, depending on file type. Make adjustments, such as changing the Frame Rate if needed, then click Finish to export the file.

## File-Based Delivery for Broadcast TV

TV stations used to receive shows on tape, but most stations now use digital video files instead. Just as there were many different tape formats back in the day, such as BetaSP, DV, HDCAM, and so on, there are many different file formats that can be used for file-based delivery, such as QuickTime, MPEG-2, and MXF. Most formats support closed captions in one way or another, but each workflow is slightly different. It also depends on what the TV station is using to play back the file.

For example, many video servers installed at TV stations support playing back QuickTime video files, but this does not guarantee that they support the closed captions in QuickTime video files. Even if the captions seem to work on your end (such as playing them in QuickTime Player), this doesn't mean that the TV station can see the captions when played back on their server.

There are actually several different types of captions that can be inserted into QuickTime files. Your station might accept all of them (if they use Telestream Vantage, for example), or only some of them, or maybe even none of them. You might have to use a different type of video file other than QuickTime, such as MPEG-2 or MXF, to ensure that they can read the captions.

### Get the TV Station Spec Sheet

It is best to ask your TV station for a "spec sheet" and confirm with its engineers that the format you're using works for them. Make sure the spec sheet mentions specific types of captions that they support. Saying "QuickTime file" or "MPEG-2 file" isn't always sufficient, because there are many different types of captions that can be inserted into QuickTime files and MPEG-2 files.

### Get a Sample Captioned Video File

If the TV station can't provide you a spec sheet, ask them for a sample file that contains closed captions which work for them. You can then examine the file to determine what types of captions are known to work.

### Use Switch to Perform a Test

It is always a good idea to send the station a short captioned sample video and ensure that they can read the captions from your sample before proceeding with the full delivery.

We recommend using Telestream Switch to check that your video has captions, before sending to the station. Get it at <http://www.telestream.net/switch/overview.htm>

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**Note:** Common video players such as VLC, Windows Media Player, QuickTime Player, Sony XDCAM Viewer, and so on, do NOT display most types of closed captions. So even if your video will play in one of these players, it may not show the captions.

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## Overview of TV Formats

Here is an overview of the types of captions that can be used for broadcast TV files:

- **Captions embedded into the video file:**
  - **Closed Captioning track.** An extra track of closed captions is added to the file. This is most often used with QuickTime files (QuickTime CC track) and MXF files (SMPTE 436m VANC track). However, not every server that can play QuickTime or MXF files is able to read this closed captioning track.
  - **User data captions.** Captions are added as metadata into the contents of the file. This is often used with MPEG-2 (ATSC DTV 608/708 captions), and occasionally with H.264 video (NAL SEI 608/708 captions), or DV video for standard definition (DV VAUX captions).
  - **Line 21 VBI.** This is used for standard definition video only. The VBI line 21 "Morse Code" dots-and-dashes are embedded into the top line of the video. The video resolution must be 720x486 for most QuickTime and AVI formats (rather than 720x480, which excludes the extra 6 lines of VBI where the captions go), or sometimes 720x512 for certain MPEG-2 formats.
- **Sidecar caption file - a standalone file containing just the captions:**
  - SCC files are commonly used, but they contain 608 (analog) captions only. Make sure the station has a system that can upconvert this data into CEA-708 digital captions, such as using Telestream Vantage.
  - MCC files are a next-generation improvement on SCC files, and contain native CEA-708 digital captions. They are supported by Adobe Premiere Pro CS5.5 and later, Blackmagic Hyperdeck, Manzanita muxers, Harris Nexio, and some other systems.
  - If the station uses Avid systems, they may want an Avid AAF caption track file.
  - Rarely, a station might ask you for a different type of caption interchange file, such as Cheetah .CAP, TDS, and so on.
  - If the video will be shown on the internet, you may be asked to provide a web format caption file, such as SMPTE Timed Text (TTML), DFXP, WebVTT, and so on.

## Next Steps for Delivery to the TV Station

Once you have confirmed with a TV station what kinds of video files they can accept with captions, you need to export that type. Keep in mind that CaptionMaker is not transcoding software - that is, it does not convert one type of video file into another.

If you're editing your video in NLE software, you may be able to export directly to the format you need (without captions), but not every NLE can export to every format. If you're starting with a QuickTime file and need to deliver a MPEG-2 file, you need to do some steps outside of the captioning software to create the MPEG-2 file first. Only then can CaptionMaker insert the captions into the MPEG-2 file.

For transcoding, we recommend Telestream Episode or Vantage software. Make sure you select the right bit rate and other specifications as required by the TV station.

## Tape Delivery for Broadcast TV

Some TV stations still rely on tape formats for their receivables. CaptionMaker can be used together with your NLE system, such as Adobe Premiere, Avid, or Final Cut Pro, and a tape deck such as DV, BetaSP, or HDCAM to deliver a closed captioned video tape to the TV station.

Note that the following descriptions only apply when outputting to a tape deck via your capture card. These instructions do not apply when exporting a video file from your NLE system. For more information on file-based workflows for TV please refer to the previous section.

### Adobe Premiere

Premiere versions CS 5.5 or later can use an MCC file to output HD digital captions via your capture card (such as AJA, Blackmagic, Matrox, and so on) to a tape deck, or a SCC file to output SD analog captions via your capture card or DV digital video via Firewire.

### Sony Vegas

Sony Vegas accepts an MCC file for HD digital caption output via your capture card (such as AJA or Blackmagic) to a tape deck, and can author DVDs with closed captions using an SCC file.

### Avid Media Composer

Media Composer version 5 or later can use an Avid AAF file to output HD digital captions via your Mojo DX or Nitris DX hardware. For SD analog output, you can use the CaptionMaker 720x486 line 21 overlay workflow.

### Final Cut Pro

Final Cut Pro version 7 can use a QuickTime CC track to output HD digital or SD analog captions via your capture card such as AJA, Blackmagic, Matrox, or DV via Firewire.

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**Note:** Final Cut Pro X does not support closed captioning output.

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### Other NLEs and More Information

Most other NLEs that output SD analog video can use the 720x486 line 21 overlay workflow.

For more information on tape based workflows and how to check your captions after outputting to tape, please refer to the Telestream Knowledge Base. See the [Support](#) page in this guide for the web links.

# Exporting Subtitles

There are several ways you can export subtitles:

- **Burn-in.** This permanently combines the subtitles and the video. They can't be turned off, but you never have to worry about whether they will work or not.
- **Overlay for Later Burn-in.** If you're working with a video editor that wants to burn-in the subtitles, you can send them an overlay file. They put the overlay into their NLE system and render the burn-in video from there. That way, the captioner doesn't need the full resolution master video from the editor.
- **DVD/Blu-ray.** Several prosumer and professional software packages for authoring DVD and Blu-ray discs can accept subtitle files. In this case the viewer can turn the subtitle tracks on or off. The type of file to export depends on which authoring software is being used to author the DVD or Blu-ray.

## Alpha-Channel Subtitle Overlay

### PRO

When in Subtitle mode, CaptionMaker can export a MOV QuickTime file with just the subtitle graphics. This can be exported using the Animation codec, with Millions of Colors+, to provide the Alpha channel overlay capability.

## Subtitling vs. Teletext

### PRO

EBU Subtitling Data Exchange Format STL (EBU-STL) is a widely used subtitle file type in Europe. It is designed to be used for both burn-in subtitle or to insert Teletext data into broadcast signals. Therefore, there are two varieties of this file and two separate exports in CaptionMaker.

EBU-STL imports and exports have support for Teletext Level 1 encoding, including Double Height characters and text foreground color.

## Creating the Open-Captions Look for Burn-In Subtitles

### PRO

Subtitles can be created that look very similar to standard open captions. CaptionMaker can convert SCC or STL, and a variety of caption and subtitle formats, to burn-in subtitle-only graphics using QuickTime Animations with Alpha channel. After the subtitle graphics are created as part of a MOV video file, they can be used with a non-linear editing system, or a transcoding platform such as Vantage, to render them on top of corresponding video files.

The following are recommended choices and settings to make subtitles look similar to open captions, for a 1920 x 1080 video:

1. Set the resolution by going to the Video Mode menu and selecting HD1080. This insures that the subtitle graphics are rendered in the corresponding resolution to the video file.
2. Switch to Subtitle Mode by choosing Subtitle > Device.
3. In the Subtitle Device dialog choose a device that can support 1920 x 1080 subtitle graphics, such as the Generic Subtitles device. Click OK. (Once selected, the font size and color becomes editable.)
4. Set the font by selecting Subtitle > Set Subtitle Image Font. The Image Font dialog opens.
5. Click the Select button and choose Courier New font, Regular, size 42, or similar. Then click OK, and click OK again in the Image font dialog.
6. Create a black box around the text to give the look and feel of standard closed captions on TV:
  - a. Select the Image Colors button in the Ancillary toolbar. The Image Colors dialog opens.
  - b. In Default Background Type select Blk-Box and set the Translucency to 255.
  - c. Click OK to close the dialog.
7. Export the subtitle graphic as .mov black QuickTime movie:
  - a. Go to File > Export and select Subtitles.
  - b. From the drop-down menu choose "(Encode Subtitles) HD Black QuickTime for NLE (\*.mov)".
  - c. Set the Output file Name and destination.
  - d. Click Next.
  - e. Set the start time to match your project or incoming STL or SCC files. If your files start at 1 hour then you should set Start Time Code to 01:00:00:00. If this is not set properly you could have 1 hour of blank video without titles.
  - f. Set the background color to something other than black, such as green or yellow so you can visually check the final QuickTime .mov file.
  - g. Click Finish. The Compression Settings dialog opens.
8. In the Compression Settings dialog set Compression type (or codec) to Animation.
9. In Compressor Depth choose Millions of Colors +. This creates an alpha channel around the subtitle graphics.
10. Click OK to export the video. The status bar in the bottom of the window indicates the progress.
11. Play the exported file to verify the placement and look of the subtitles.

# MXF Export Workflow

## PRO

This export is specific to XDCAM HD MXF files. When exporting this file type you need an input file that has the correct codec and HD resolution based on XDCAM HD. CaptionMaker supports both 720P 59.94 and 1080i 29.97 XDCAM HD MXF OP1a clips.

The export clones the MXF and inserts a SMPTE-436M caption track in the MXF wrapper of the exported file. There is no transcode happening in this operation. The MXF files can then be played via Sony XDCAM VTR, Telestream Switch 1.5 or above, Adobe Premiere Pro CC, and many video playback servers such as Harris and Omneon.

In addition, V-chip, AFD, and XDS data can be added to the SMPTE-436M track during export.

If you need to transcode (convert) some other type of video file to XDCAM HD MXF, consider using Telestream's Episode or Vantage (or another 3rd party transcoding software).

To embed your caption into an MXF file:

1. Prepare and finish your captions project.
2. Go to File > Export. The Export File dialog opens.
3. Select Embed Into Video and choose MXF (\*.mxf) from the drop-down menu.
4. Under Input File Name, select your source MXF file.
5. Under Output File Name, select a new name for the new captioned MXF file.
6. Click Finish.
7. You will be prompted to select the starting time for the MXF. If your captions begin relative to zero (for example, the first caption appears 1 minute after the start of the video, and the time code for that caption is 00:01:00:00), then select 00:00:00:00. On the other hand, if your captions are relative to the MXF's time code track (for example, the MXF starts at 01:00:00:00 and the first caption is at 01:01:00:00), then select the MXF's starting time of 01:00:00:00.

## Using OP-47 Teletext with MXF Files

For information on using OP-47 Teletext data with MXF files see [OP-47 Teletext Workflows](#) in the Example Workflows chapter.

## Checking the Captions in an MXF File

To play the video and captions together and verify for timing/sync, you can use the Telestream Switch application. Switch (version 1.5 and above) is one of the few applications that can play a wide range of captioned files.

Note that common video players such as VLC, Windows Media Player, QuickTime Player (any version), Sony XDCAM Viewer, and so on, do NOT display MXF closed captions of any type. So even if your MXF video will play in one of these players, it will not show the captions.

## Playing XDCAM HD MXF files in the Preview Panel

CaptionMaker supports DirectShow and QuickTime 7. To play MXF files, certain conditions must be met:

You must have a "MXF decoder" plug-in installed for QuickTime or DirectShow. Some examples are Sony Cinémon, Calibrated MXF Import, and MXF4Mac. These plug-ins allow QuickTime or DirectShow-based applications to play MXF files.

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**Note:** Even if the MXF file cannot be viewed in the CaptionMaker Preview Panel, you can still use the MXF file for caption embedding and extraction. In other words, you can still put captions into it or read captions from it even if you can't play it.

---

## Playing MXF Video in CaptionMaker with Captions in Sync

If you want to confirm that all of the captions were inserted correctly, you can re-import the captions back into CaptionMaker. Start by saving and closing any open project so you have a fresh blank project.

If the MXF can be played in the CaptionMaker Preview Panel, then you can use the following process to view the captions in sync with the movie:

1. Drag and drop the movie into the CaptionMaker Preview Panel.
2. Import the captions by going to File > Import. The Import File dialog opens.
3. Select Extract From Video and choose QCC Multi-format Input from the drop-down menu.
4. Browse to select the file.
5. Click Next, then make other selections if needed, or accept the defaults and click Finish. The captions are extracted and imported.
6. Click the Preview Play button to play the movie in sync with the captions.

If the MXF file cannot be played in the Preview Panel, then you can use a proxy movie to check the timing and sync. See [Using a Proxy Movie](#) for information on creating a proxy movie.

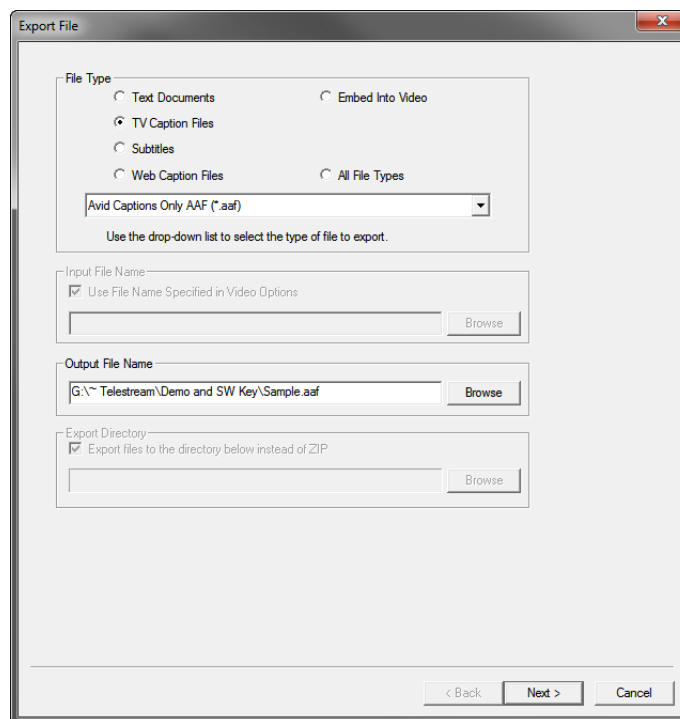
# Avid AAF Export

## PRO

The Avid AAF workflow is designed to export a captions-only MXF file wrapped in the AAF container. This can then be imported into Avid Media Composer 5 or above. In Avid, the captions-only data file can be imported into the DATA-track on the Avid timeline. The Avid AAF file contains an MXF with SMPTE 436M data and includes CEA-608/CEA-708, V-chip, XDS, and AFD data.

To export to AAF:

1. Once captions are ready for export, go to File > Export. The Export File dialog opens.



2. Select the TV Caption Files group, and then select "Avid Captions Only AAF (\*.aaf)" from the drop-down menu.
3. Under Output File Name, enter or browse to a location and enter the name to save the new file.

4. Click Next. The Export MCC/AAF/MXF File dialog opens.

**Export MCC/AAF/MXF File**

**Database Reference Information**

Start Time Code of First Event in Database: 00:00:00:00  
 Start Time Code of Last Event in Database: 00:01:24:14  
 Database Time Code Mode: PAL (25 fps)

**Video File Reference Information**

Time Code of First Frame: 00:00:00:00  
 Time Code of Last Frame: 00:01:18:12  
 Duration: 00:01:18:12  
 Frame Rate: 29.97 fps  
 Time Code Mode: Drop Frame (29.97 fps)

**MCC/AAF Export Options**

Start Time Code: 00:00:00:00 (HH:MM:SS:FF)  
 End Time Code: 00:01:18:12 (HH:MM:SS:FF)  
 Frame Rate: 29.97 fps

**AAF Export Options**

Select the Video Type that the AAF file is being generated for:

☒ Interlaced or Progressive Segmented Frame (1080i, 1080PsF)  
☐ Progressive (720P, 1080P)

☐ Preserve intermediate MXF files generated during the AAF export operation

**Teletext OP47 Export Options**

Teletext Subtitle Page: 801 (100 - 899, default = 801)  
 VANC Line F1: 12 (9 - 41, default = 12)  
 VANC Line F2: 575 (571 - 583, 0 = Disabled) (default = 575) (note 575 = field 2 line 12)  
☒ Double Height

< Back Finish Cancel

5. In the MCC/AAF Export Options section, confirm the following:

- a. If your captions start at 00:00:00:00, you probably want the MCC/AAF Export Options Start Time Code field to contain 00:00:00:00 as well. If your captions start with a sequence time code such as 01:00:00:00, you want the Start Time Code field to have the same start time as your Avid sequence. This might be 01:00:00:00, or if you have bars/tone/slate on your sequence, it might be 00:58:30:00 or similar.
  - b. The Frame Rate selector should match your Avid sequence (typically 29.97fps for 1080i video, or 59.94fps for 720p).
6. Under AAF Export options, select Interlaced or Progressive Segmented Frame if you are working with an "i" format (such as 1080i) or a PsF format (such as 1080PsF 23.98). Or select Progressive if you're working with a true "p" format (such as 720p).
7. Click Finish to complete the AAF export.



# H.264 and MPEG-2 Exports

## PRO

The following H.264 and MPEG-2 exports are only available in the Pro and Enterprise versions of CaptionMaker.

## SEI H.264 608/708

This export is sometimes referred to as "NAL SEI 608/708 captions" or "ATSC A/72 DTV 608/708 H.264 captions". For this export, caption data is inserted into the H.264 codec. This is especially useful for customers delivering MP4 with embedded captions to Akamai's Sola platform. This is used for streaming H.264 files. The wrapper can be MOV, TS, or MP4. These extensions need to be specified when saving the output file. TS is Transport Stream, MOV is the QuickTime container, and the MP4 wrapper is good for multiple player compatibility. The extension tells CaptionMaker how to multiplex the media and is not just an extension naming convention on export.

This export can create MP4 (ISO Base Media Format) files if the output file is named .mp4; M4V format if the output file is named .m4v; and QuickTime MOV files if the output file is named .mov. These formats are all closely related but have some minor differences. In these cases, the source video prior to captioning can be any of the above formats, but it can not be a Transport Stream.

This export creates an MPEG-2 Transport Stream (with H.264 codec) if the output file is named with a .ts or .m2t extension. In this case the source video must also be a Transport Stream (not a MP4, MOV, and so on). This export creates a generic profile Transport Stream that is sufficient for many uses such as web streaming, however it does not meet the strict specifications required by some broadcasters, such as the CableLabs spec. Users who need strict control over the Transport Stream parameters should use another multiplexing solution such as Manzanita MP2TSME.

## MPEG-2 User Data

This export is similar to the "ATSC DTV 608/708 MPEG-2" export, in that it exports the same type of caption data into MPEG-2 Elementary, Program, and Transport streams. The resulting Closed Caption data is the same, but each export has some pros and cons, discussed below, which is why they are both available. The export extensions should be either .mov, .ts, or .mpg.

This is a faster mechanism than MPEG-2 ATSC export. There is only one pass required to insert the captions into the MPEG-2 user data or A/53 style. The extension affects the multiplexing mechanism on export.

This export creates a generic profile MPEG-2 Transport Stream without the use of Manzanita multiplexer software. These Transport Streams do not meet the strict specifications required by some broadcasters, such as those that require the CableLabs spec. However, for users who just need a generic Transport Stream, it may be sufficient.

Users who need strict control over the Transport Stream parameters (including PIDs, muxrate, descriptors, and so on) should use the Manzanita-based workflow, that is,

export "ATSC DTV 608/708 Captions to MPEG-2" export together with a Manzanita multiplexer such as MP2TSMS.

## MPEG-2 ATSC Export and Manzanita

This export adds userdata in A/53 into MPEG-2 Program streams or Transport Streams. Both 608/708 data are included in the export. If Manzanita Multiplexer is installed in the same computer (MP2TSMS, MP2TSME) then CaptionMaker can hand off the multiplexing part of the export operation to Manzanita. This is specially useful to deliver CableLabs compliant streams.

When creating Transport Streams there are three critical pieces of information to know: The video and audio PID numbers from the source file, and a Manzanita configuration file that matches your delivery spec. (Configuration files for CableLabs-compatible HD and SD files are included with CaptionMaker.)

The Video ID and Audio ID are determined by the source Transport Stream file. The configuration file depends on your delivery requirements. In many cases the default "CableLabs HD" configuration file works unless your target system requires a different setting.

- If you know your source file is already encoded for CableLabs, set and enable "Use Video ID" to 481 and set and enable "Use Audio ID" to 482. The source MPEG video must have already been encoded using these values, otherwise Manzanita will fail to demux the file. If your file was encoded with different IDs and/or you do not know the Video ID or Audio ID of your transport stream, please download MPEG Streamclip from [www.squared5.com](http://www.squared5.com) or use Manzanita MPEG ID to find the correct parameters. When you open the Transport Stream in MPEG Streamclip, you see the Video ID and Audio ID reported in the lower left corner of the window. These are the values you must set inside CaptionMaker.
- If you have a Manzanita configuration file it can be applied by selecting "Encode using user specified Manzanita config file" and clicking "Choose". This feature is optional, and if left disabled Manzanita multiplexer will use the default CableLabs HD configuration for the multiplexing.
- Make sure your caption time codes match your MPEG-2 file. If you made the MPEG-2 file from an NLE system then it might start at 01:00:00:00 or 00:00:00:00. If it was captured from tape or video server it could have an odd starting time code such as 02:03:04:05. In any case your caption time codes need to match the MPEG-2 time codes within the file, otherwise the captions won't line up.

### Setting the Manzanita Path Variable

CaptionMaker can use Manzanita's software (such as MP2TSMS) for remuxing MPEG-2 Transport stream files. On Windows computers it is necessary to set your Path environment variable so that CaptionMaker can find the Manzanita software.

To configure the Windows Path for Manzanita:

1. Open Control Panel and double click the System icon.

2. Select Advanced System Settings, then select the Advanced tab.
3. Click Environment Variables.
4. The folders containing the Manzanita executables must be included in the "User Variables" PATH (to enable transport stream encoding for the current user) or in the "System Variables" Path (to enable transport stream encoding for all users).

For example (add the following to the end of the PATH variable):

```
;C:\Program Files\Manzanita Systems\MP2TSMS 6;C:\Program Files\Manzanita Systems\MPEGId 3
```

---

**Note:** You need to use the actual folder names where the Manzanita software is installed on your system. The item for "MPEG ID" is optional and only needed if you have Manzanita's MPEG ID software installed and intend to use it within CaptionMaker.

---

## MPEG-2 720x512 422P@ML Extreme Reach SD Delivery

This export is for a special 720x512 4:2:2 MPEG-2 format used by some distributors such as DG (DG Fast Channel), Pathfire, and Extreme Reach, and possibly others who use hardware made by Vela.

This export is for SD video only and incorporates the Main Concept engine to add VBI (Vertical Blanking Intervals) to the video. This is a render intensive process for these SD videos which are already in the MPEG-2 codec. There is a generation loss, but this can be minimized by using a higher bitrate option during export. This export is used by ad agencies to deliver to Extreme Reach.

For detailed instructions on implementing this export, see the Telestream Knowledge Base. The web link is on the [Support](#) page in this guide.

## QuickTime Podcast Captions

The QuickTime Podcast option embeds 608 caption tracks into MP4, MOV, 3GP, and M4V video containers. These containers are typically used for playing captions in QuickTime Player, iTunes, and iOS devices. It is recommended to apply the Podcast option to files that have the H.264 codec, but can be added to other codecs in the MOV container wrapper.

## Export a Subtitle Overlay for Vantage®

### PRO

Rendering burned-in subtitles (also known as open subtitles or open captions) into a video requires recompressing or transcoding the video, because the images are being changed. If you need to transcode the video anyway, it is ideal to insert the subtitles during the transcode step, instead of transcoding the video once to add the subtitles and then transcoding it again to the final format. Vantage has a Movie Overlay filter (listed under Video Filters) within the Flip action which can overlay subtitles on top of the source video during a transcode.

First, you need to create a subtitle overlay video. This is a QuickTime MOV that contains the subtitles only (no video) with an alpha channel transparent background so that it can be overlaid on top of the video image. This can be exported from CaptionMaker using the "(Encode Subtitles) HD Black QuickTime for NLE" export. Make sure the resolution and frame rate of your subtitles video matches that of your source video. Also, you must pick a QuickTime codec which supports alpha channel (Millions of Colors Plus). Typically we recommend using the Animation codec.

The movie can then be used in the Movie Overlay filter in Vantage. Set the Overlay Left and Top values to 0, with Width and Height values that match the source video. The path to the video can be hard-coded, or it can come from a variable.

If you use the "Work Order" feature to submit a spreadsheet to Vantage, the variable that points to the subtitle overlay file can be one of the columns in the work order. This feature is handy if you want to transcode different versions of the same source video with and without subtitles, or multiple versions with different subtitle languages.

# Automated Workflow

## ENT

All of the features described in this Automated Workflow chapter are only available in the Enterprise version of CaptionMaker.

### ■ Overview

- [Batch Processing vs Command Line Interface](#)

### ■ Command Line Interface (CLI)

- [Run a CLI .bat File on a Folder's Contents](#)
- [Embedding Closed Captions into Media using the CLI](#)
- [Extract Caption Data for Re-Purposing and Internet Media](#)
- [Bulk Frame Rate Conversion of Caption and Subtitle Data](#)
- [Flip Caption Documents between Various Broadcast or Internet Types](#)
- [Converting Caption and Subtitle Files to Burn-In Subtitles](#)

### ■ Batch Processing

- [File Types Supported on Import](#)
- [File Types Supported on Export](#)
- [Naming of Exported Files](#)

### ■ Vantage plus CaptionMaker Workflow Example

- [Using Vantage to Convert .SCC Files to WebVTT](#)
- [Troubleshooting the Vantage Notify Action](#)

## Overview

Automation is a great time saver and can handle much of the manual video file analysis, conversion, and repetitive tasks when you need to make sure content is properly transcoded and aired with accurate closed captioning.

You can automate many high volume caption processing tasks, such as:

- Caption insertion and extraction.
- Format conversion.
- Time and frame-rate adjustment.
- Sub-clipping and clip assembly.
- Processing archives of video files.
- Analyzing for quality assurance.
- Captioning data reporting.
- Combining with Vantage for powerful automated captioning workflows.

## Batch Processing vs Command Line Interface

The following describes some differences between Batch Processing and using the Command Line Interface (CLI) option of CaptionMaker:

- Batch Processing runs only within the CaptionMaker user interface, whereas the Command Line Interface can operate standalone and interface with and be initiated from other applications, such as Telestream's Vantage platform.
- Batch Processing only performs some basic and simple linear functions, but the Command Line Interface can perform complex multiple operations.
- The Command Line Interface can be operated with no interaction needed with the CaptionMaker user interface. This means that operators can perform a wide range of captioning operations and never need to learn how to use the CaptionMaker interface.

## Command Line Interface (CLI)

The Enterprise version of CaptionMaker provides the option to operate in command line mode. A typical use for this is to execute CaptionMaker from another program and instruct it to import caption data from one file and export the data into another file. Another use is operating the command line interface in QC Mode (Quality Control), so that an operator can inspect the captioning in a file from another program.

Once a Command Line Interface .bat file is created, the functions it is set to perform can be easily initiated by any operator or from other applications. This means that operators do not need to learn to use the CaptionMaker interface, but can take advantage of its powerful features by simply clicking on a .bat file.

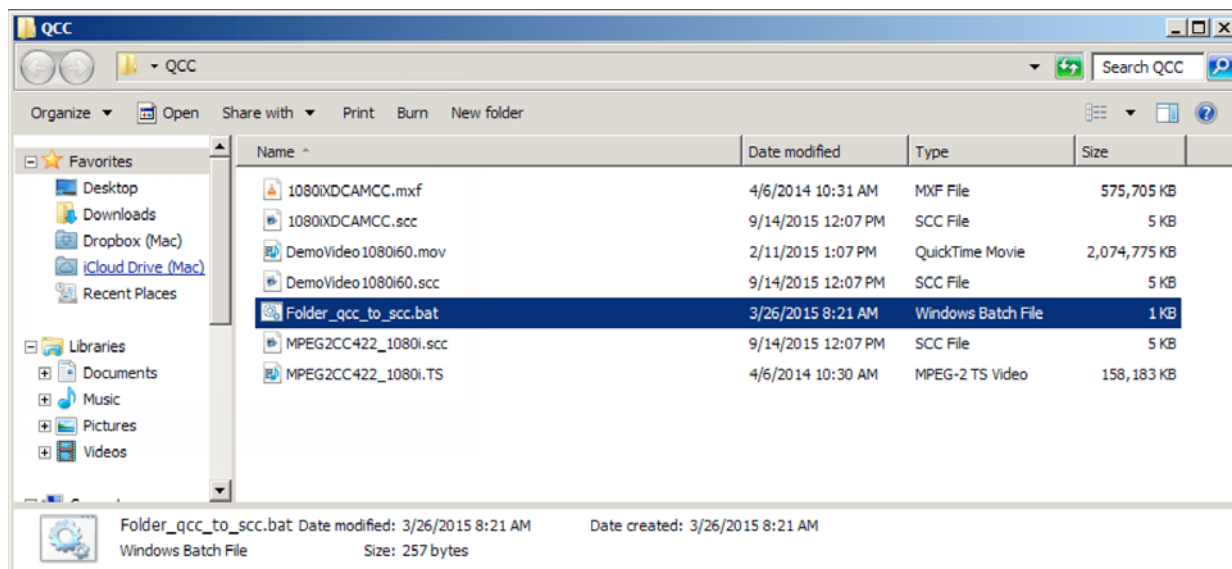
You can use the CaptionMaker Command Line Interface features to combine with Telestream Vantage for powerful automated captioning workflows.

For details on using the Command Line Interface (CLI) feature, see the CaptionMaker CommandLine Options document. Open this document from Help > CommandLine Documentation (Local).

## Run a CLI .bat File on a Folder's Contents

A very powerful and simple method of using a Command Line Interface .bat file is to have it set to run on a certain folder, then whatever files are placed in that folder are processed when you double-click the .bat file to run it. A CLI .bat file will process all of the file types that it is set to work on that are in the target folder, which can be one or thousands of files. Other types of files can also be in the same folder, and they will just be ignored by the CLI operation.

You can also place the CLI .bat file in the folder that it is set to run on. The following image shows a .bat file set to run on the folder it is in, and set to process .scc files:



## Embedding Closed Captions into Media using the CLI

Using the Command Line Interface (CLI) can simplify the process of inserting caption data into media files, such as MP4, MXF, and WMV. A script can be created to take a caption data file, such as .MCC or .SCC, and insert the data into a media file.

This script must define the input caption file location, input media file location, and the type of caption data that needs to be inserted. Finally, the script must define the export file location of the media with the inserted captions.

---

**Note:** Embedding caption data does not convert the media file to a different format. It is imperative that the format of the input file matches the output file.

---

### Commands for Embedding Closed Captions into Media

The following commands are available to embed closed captions into input media files. The input media files must be in the same format as the export type.

Type Identifier	Description
42	DV AVI (*.avi)
72	MXF (*.mxf)
51	SD ATSC MPEG2 (*.mpg, *.mpeg)
52	HD ATSC MPEG2 (*.mpg, *.mpeg)
86	QuickTime Podcast/Web
87	H.264 SEI 608/708
56	Windows Media Player [embedded captions] (*.wmv)

### Sample Script to Embed Captions into MP4 Media

The following sample script can be saved as a stand-alone .bat file for embedding QuickTime Podcast (type 86) caption data into MP4 media.

```
@echo off
for %%f in (*.scc) do (
    "C:\Program Files (x86)\CPC\CaptionMaker\CapMaker.exe" /
    ImportType=04 /ImportFile="%%f" /
    ExportInFile="C:\Users\Administrator\Desktop\SCCtoPodcast\DemoVide
o1080i60.mp4" /ExportType=86 /ExportOutFile="output.mp4"
    if errorlevel 1 (
        echo Fail! Error = %ERRORLEVEL%
    ) else (
        echo Success!
    )
)
```



## Extract Caption Data for Re-Purposing and Internet Media

A Command Line Interface (CLI) script can be configured to find and extract various types of caption data and convert it for multiple uses. There are two basic ways to set up a CLI script to extract caption data from a media file:

- a. Specific format.** The script can specify the type of data it needs to find. For example, if a media file is MXF HD with a SMPTE 436M caption track as the known input file type, then the script can look for that specific data.
- b. Multiple formats.** If the media files are in multiple formats and resolutions then the QCC Multi-Format Import option can find caption data from a variety of video formats including, but not limited to, SD VBI, MPEG-2, and DV VAUX.

---

**Note:** If the incoming video format can be identified and is consistent, then specifying the caption data type in the CLI script will speed up the time it takes CaptionMaker to read the caption data.

---

### Commands for Extracting Caption Data from Media Files

The following commands are available to extract caption data from media files.

Type Identifier	Description
72	MXF (*.mxf)
51	SD ATSC MPEG2 (*.mpg, *.mpeg)
52	HD ATSC MPEG2 (*.mpg, *.mpeg)
85	QCC Multi-format Import

### Sample Script to Extract Captions from Media Files

The following sample script can be saved as a stand-alone .bat file to use the QCC Multi-format Import to capture all of the caption data from a variety of media.

```
@echo off
for %%f in (*.*) do (
    "C:\Program Files (x86)\CPC\CaptionMaker\CapMaker.exe" /
    ImportType=85 /ImportFile="%%f" /ExportType=04 /
    ExportOutFile="%%~nf.scc"
    if errorlevel 1 (
        echo Fail! Error = %ERRORLEVEL%
    ) else (
        echo Success!
    )
)
```

## Bulk Frame Rate Conversion of Caption and Subtitle Data

Automation and caption data frame rate adjustments can be applied to an entire archive of caption/subtitle files using the Command Line Interface (CLI), such as .SCC and .CAP. This can be very useful when the input media files do not match the timing of the caption data.

Caption files are generally timed for TV broadcast at 29.97 DF. When the media needs to be delivered in 23.98 fps then the caption files will not be in sync with the deliverable unless there is a timecode adjustment to change the frame rate of the caption file to match the 23.98 fps time base.

Using the CLI for this process is extremely fast and hundreds of files can be processed in under a minute. In certain cases, caption data can be extracted from media files which contain sync issues and fixed using this automation.

## Flip Caption Documents between Various Broadcast or Internet Types

TV caption data files, such as .SCC, can be converted to typical Internet caption files, such as SMPTE 2052 TTML and WebVTT, using the Command Line Interface or [Batch Processing](#).

Furthermore, caption data can also be extracted from media files and converted to Internet caption files. The main use of this automation is to do the conversion to Internet captions during a transcode, in a format that is acceptable to the content provider, such as iTunes, Netflix, and so on.

The key point is that automated conversions can retain the positioning and formatting of TV captions, which is required by many video distribution services and United States legislation under the Communications and Video Accessibility Act (CVAA).

## Converting Caption and Subtitle Files to Burn-In Subtitles

Caption and subtitle files contain timecode, positioning, and text that can be converted by a Command Line Interface script to graphics for subtitle overlay, or burn-in. See [Exporting Subtitles](#) for a description of overlay and burn-in files.

The resulting black QuickTime movie with subtitle graphics can be used in your NLE to combine with the video, or use Vantage to perform this operation in an automated workflow.

### Command for Exporting a Black Movie with Subtitles

The following export function creates a black QuickTime movie with subtitle graphics that can be used for overlay onto a video for burn-in.

Type Identifier	Description
89	HD Black QuickTime movie with subtitles for NLE (*.mov)

**Note:** The Type 89 export provides a wide variety of options for colors, fonts, formats, and more. For details, see the topic *"Exporting type 89 (HD Black QuickTime movie with subtitles)"* in the Command Line Interface document. To open this document, select CommandLine Documentation (Local) from the Help menu.

### Sample Script to Convert Captions or Subtitles to Graphics

The following is a sample .bat file script to convert caption or subtitle files to subtitle graphics for overlay.

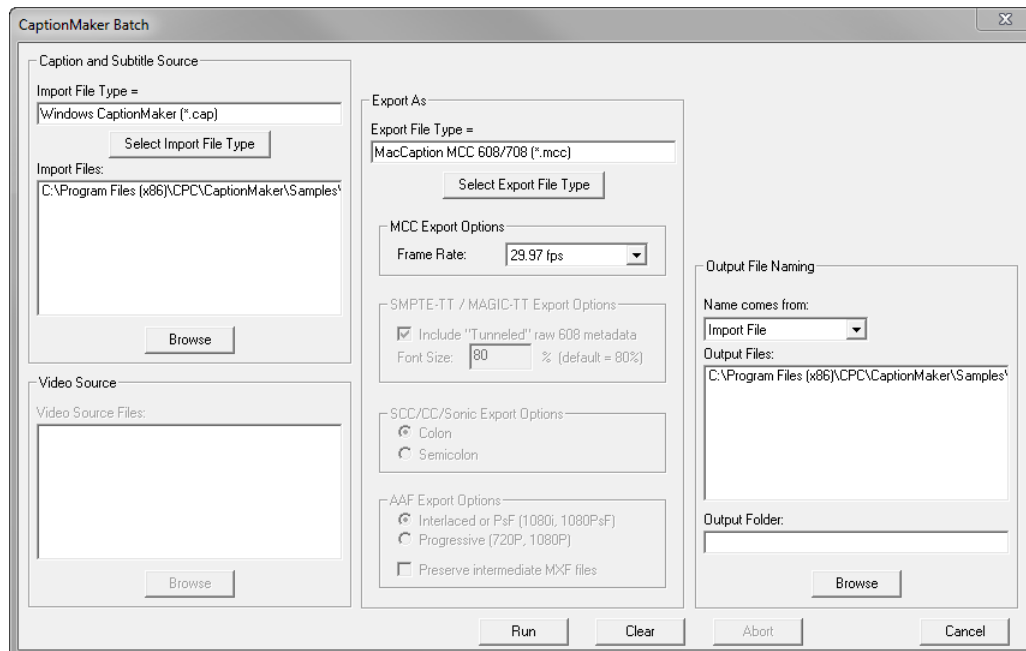
Vantage can add this command script into an automated workflow and then use an overlay filter to do the burn-in of subtitles into media.

```
SETLOCAL ENABLEDELAYEDEXPANSION
for %%f in (*.stl) do (
    "C:\Program Files (x86)\CPC\CaptionMaker\CapMaker.exe" /
    ImportType=76 /ImportFile="%%f" /ExportType=89 /VideoMode=3 /
    FontName="Arial" /VideoBlankColor=000000 /SubFgColor=FFFF00 /
    SubCharOutlineWidth=10 /FontSize=42 /SubBgOpacity=255 /
    ExportOutFile="%%~nf.mov"
    if errorlevel 1 (
        echo Fail Error !ERRORLEVEL!
    ) else (
        echo Success
    )
)
pause
```

## Batch Processing

Batch processing is a feature that allows users to convert and embed multiple caption files with a single operation. A collection of standard caption documents can be selected and converted to a different format, and placed into a user specified folder. One example is described in a previous topic: [Flip Caption Documents between Various Broadcast or Internet Types](#).

To access the Batch dialog, go to File > Batch.



## File Types Supported on Import

When clicking the Select Import File Type button the same Import File dialog opens as when selecting File > Import. However, some of the import file types are grayed-out and not available for batch processing.

## File Types Supported on Export

When clicking the Select Export File Type button, the Export File dialog opens. Some of the export file types are grayed-out and not available for batch processing.

## Naming of Exported Files

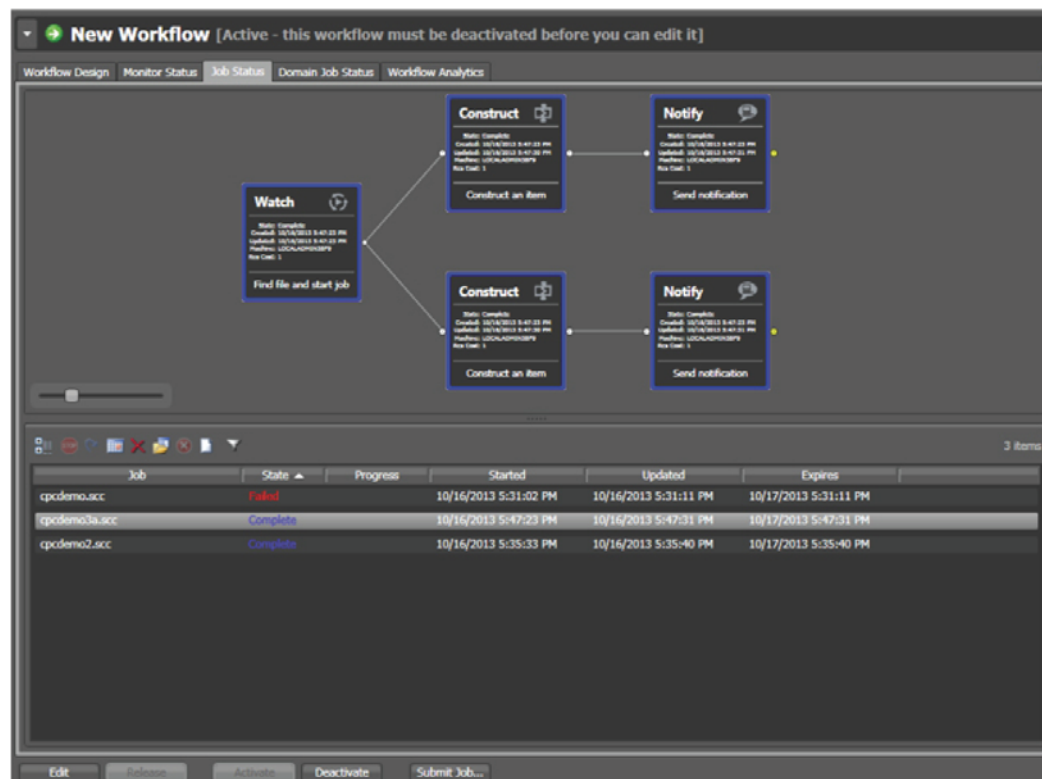
The Name Comes From selection under Output File Naming provides two options:

- **Video Source.** Uses the name of the input media or video source file.
- **Import File.** Maintains the name of the input file and applies that to the export file.

# Vantage plus CaptionMaker Workflow Example

Vantage users can easily set up CaptionMaker functionality in an automated workflow with a “Construct” and “Notify” module in Vantage. This operation is extremely helpful for broadcasters who need to repurpose TV captioning archived to an Internet caption file such as SMPTE 2052 Timed Text .xml. In addition, CaptionMaker offers a variety of other commands that can be automated such as framerate conversion, support for caption files not supported in Vantage, timecode offset of SCC files, and quicker closed caption extraction for input video files to SCC.

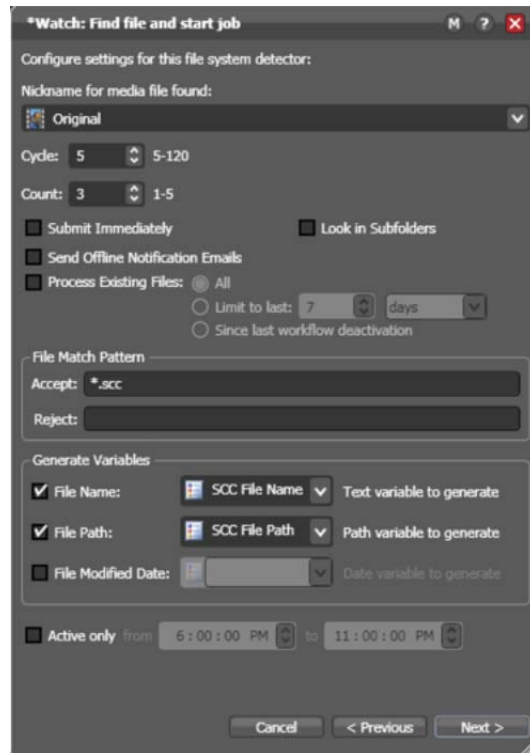
The following example screen capture shows two actions branching from the same .SCC file: Convert to SMPTE-TT, and Convert to WebVTT. You can have any number of actions apply to each source file.



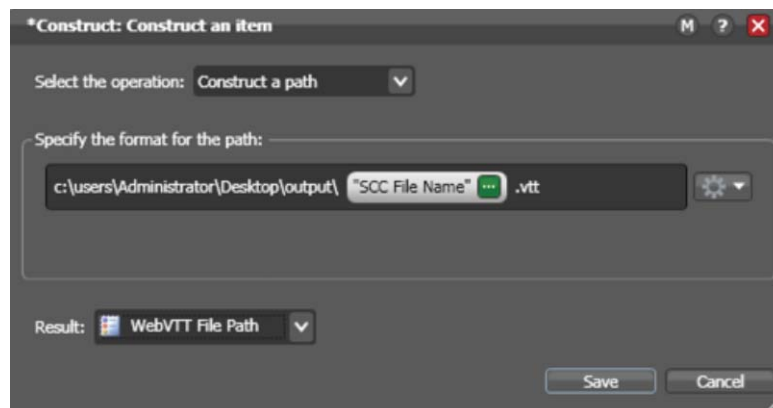
## Using Vantage to Convert .SCC Files to WebVTT

The following steps describe how to create this example workflow to make a Watch action in Vantage that will automatically convert .SCC files to WebVTT.

1. Create a Watch action in Vantage. Set it to look for \*.SCC files, and create two variables: .SCC File Path (complete path to file), and .SCC File Name (this is used to create the output file names).



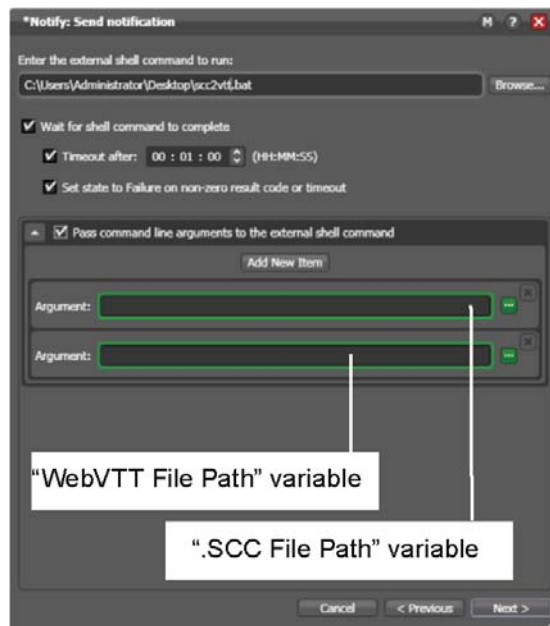
2. Connect this Watch action to a Construct action, using the "Construct a Path" operation. This action takes the .SCC file name and uses it to create an output file path/name for the new WebVTT file. The result is stored in the new variable called "WebVTT File Path".



3. Connect this Construct action to a Notify action. This is where CaptionMaker comes into play. First select the "External Shell Notifier" action type.



4. Point the external shell command to a .BAT batch file which has been prepared with the right arguments for CaptionMaker. (See the [Sample .bat CommandLine Batch File](#) below.) Then add two new argument items. The first argument is the variable ".SCC File Path" from Step 1 (path to source .SCC file). The second argument is set to the variable "WebVTT File Path" from Step 2 (path to the output WebVTT file).



5. Enable the “Set state to failure on non-zero result code or timeout” option.
6. The “Timeout after:” setting is optional and, if desired, should be set to three minutes or so, which should allow enough time for CaptionMaker to finish even a long conversion job, unless you are reading/writing from the video media, which can take longer.
7. When the workflow is complete, Release and Activate the workflow. Now when you put a .SCC file in the watch folder, the workflow should activate and convert it to WebVTT.

You can create an additional Vantage workflow to encode and deliver a web media file, accompanied by the WebVTT file created in this procedure.

## Sample .bat CommandLine Batch File

The following is a sample CommandLine batch file’s contents for converting .SCC to WebVTT via CaptionMaker. This file must reside locally on the Vantage node:

```
"c:\Program Files (x86)\cpc\CaptionMaker\CapMaker.exe" /  
ImportType=04 /ImportFile=%1 /ExportType=91 /ExportOutFile=%2  
EXIT /B %ERRORLEVEL%
```

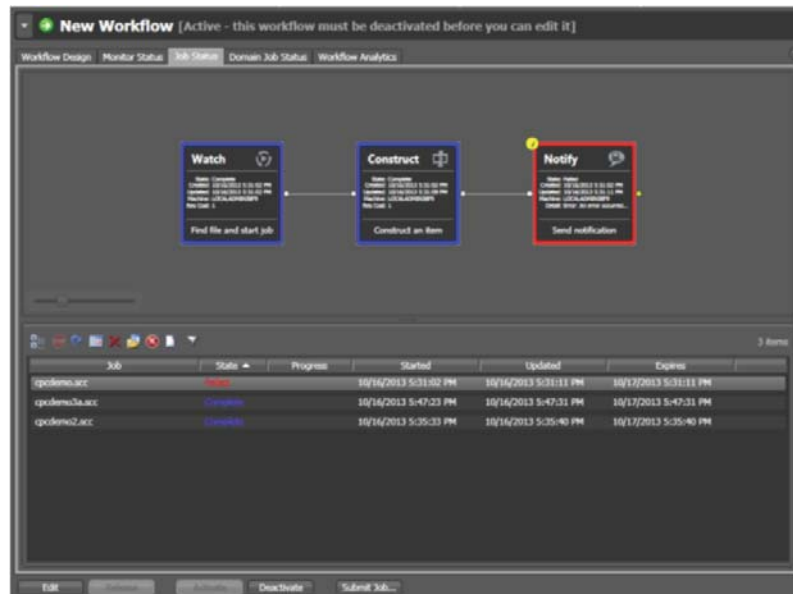
### Notes about the above CommandLine .bat file content:

- ImportType and ExportType numbers are listed in the CaptionMaker Help > CommandLine Documentation document. In the above example, ImportType=04 is for .SCC files, and ExportType=91 is for WebVTT output.
- %1 and %2 are the two arguments supplied in the Vantage Notify action. These are the source file input path and output file path variables, respectively.
- The last line (“EXIT /B %ERRORLEVEL%”) ensures that the CaptionMaker status result code is passed back up to Vantage.



## Troubleshooting the Vantage Notify Action

If the CaptionMaker operation fails (CaptionMaker times-out or returns a non-zero error code), then the Vantage Notify action will be notified of the failure. You can right-click on the Notify action to find the status code.



In the above screenshot, the result code is 500. Referencing the CaptionMaker Command Line Documentation document, we see that this error indicates:

500 CLI\_BAD\_HASP = no valid protection key was found

This error means that the dongle or software license is not valid. In other words, an expired or deactivated key.





# Example Workflows

This chapter describes various workflows, such as those used for the web, mobile devices, video servers, DVD, and Teletext.

- [Captioning for the Web and Mobile Devices](#)
  - [Post-Production \(VOD\) Web Captioning](#)
  - [Live Web Captioning](#)
  - [Web Formats with Closed Captions](#)
- [File-Based Workflows](#)
  - [Video Servers](#)
  - [Transcoding Software](#)
- [Creating a DVD or Blu-ray with Captions](#)
  - [Multiple Languages on DVD](#)
  - [Closed Caption File Format for DVD](#)
  - [Subtitle Format for DVD](#)
- [OP-47 Teletext Workflows](#)
  - [Extracting OP-47 Teletext from Source Video Files](#)
  - [Encoding OP-47 Subtitles into MXF Source Video Files](#)
  - [Importing and Exporting MCC Files with OP-47 Teletext Data](#)
  - [Inserting MCC Files with OP-47 Teletext into an MXF Source Video](#)

## Captioning for the Web and Mobile Devices

For web video, there are a number of different standards and types of video playback mechanisms: Flash, Silverlight, HTML5, QuickTime, HLS, HDS, MS Smooth Streaming, MPEG DASH, UltraViolet, and so on. To support a broad variety of different playback devices a provider may need to stream the video in multiple formats, because there is no single video format that is supported by every device. You may need to export the related captions into more than one of these formats.

Many mobile devices already support closed captions, although they require the captions in different formats depending on the device. With Telestream software it is easy to create captioned videos that work on multiple devices.

The iPhone and iPad are very common players for portable video and music media. The Apple devices support TV-style closed captioning in H.264 video files. Most Android-based phones which support Flash can display Flash closed captions.

For additional information on captioning for the web and mobile devices, see the Telestream Knowledge Base on the [Captioning Support page](#) of the Telestream web site.

## Post-Production (VOD) Web Captioning

CaptionMaker supports a large number of formats for captioning video files for video on demand (VOD) on the web, including:

- SMPTE Timed Text (SMPTE 2052): A new standard for captioning for both broadcast and the web, also for UltraViolet (DECE CFF format).
- WebVTT: Another new standard for captioning and subtitling web videos, frequently used with HTML5 and Apple HLS streaming.
- H.264 SEI Embedded CEA-608/708 Captions: Used for Akamai and Wowza VOD streaming, and other systems that support embedded 608/708 captions inside the video stream.
- DFXP (TTML): Used by many Flash players and providers such as Brightcove, Lime-light, Flowplayer, JW Player, and so on.
- iTunes Timed Text (iTT): Used for delivery to iTunes.
- SRT: Supported by many Flash players and also YouTube, however this format does not carry any positioning or formatting information, just plain text and timing.
- SCC: Supported by YouTube and some other web video players.
- QuickTime Closed Captions Track: Apple devices and browsers can play closed caption tracks embedded into QuickTime MOV and MP4 files, which mimics the look and feel of TV broadcast captions

With the exception of QuickTime Closed Captions Track and H.264 SEI Embedded CEA-608/708 Captions, all of the other above formats are sidecar files, meaning the captions/subtitles are delivered as a separate file rather than being embedded into the video file.

## Live Web Captioning

### PRO

The difficulty with live web captioning is how to get the caption data from the source (broadcast feed, and so on) to the end user. Most web streaming encoders and web technologies are designed to convey only video and audio, not captions. The following services provide captioning options.

### YouTube Live Captioning

Live captioning for a YouTube event must be configured in YouTube, using the control panel for the live event. When captioning is enabled, a "Captioning URL" is provided to you by YouTube.

---

**Note:** You must use a video streaming application, such as Telestream's Wirecast, to send the live video to YouTube. CaptionMaker sends only the text stream of the captions to YouTube. See YouTube help for instructions on merging the video and caption text streams, and other required settings.

---

Steps to configure CaptionMaker for live YouTube captioning:

1. Start CaptionMaker (requires Pro or Enterprise version).
2. Go to the Web menu and select YouTube Live Connection Options.
3. Copy and paste the "Captioning URL" provided by YouTube into the connection URL field.
4. The remaining options can be left at default. Click OK.
5. When ready to engage the connection to YouTube, go to Web > YouTube Live Connection. This is a toggle that, when enabled, will establish the connection to the YouTube servers.
6. Now, any live caption data input into CaptionMaker is forwarded to the YouTube servers. To create the data, see [Live Caption Data Input into CaptionMaker](#) below.
7. When the event has finished, go to Web > YouTube Live Connection to toggle the connection off.

### Roll-Up Captions Not Supported by YouTube Live

As of January 2016, YouTube Live does not support roll-up captions and instead automatically converts text streams to pop-on, 2-line captions. This means that CaptionMaker must format the captions in a way that does not cause two words to be put together during line breaks. The line breaks in normal roll-up captions and 2-line captions are different and therefore do not have an extra space between each line during conversion. CaptionMaker adds that space by default in order for the roll-up text stream to be converted without causing text errors.

---

**Note:** Regular YouTube uploaded videos do support roll-up captions.

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## Uvault Live Captioning

Uvault, a live streaming provider and content delivery network, has added closed captioning support to their network. CaptionMaker can send the captions to Uvault's servers, which then delivers them to the end users along with the video. To send live captions to Uvault, follow the steps provided in [YouTube Live Captioning](#), except using the Web > Uvault menu options.

## Live Caption Data Input into CaptionMaker

To create live caption data you need to configure CaptionMaker for the type of source being provided. The live caption data source can be anything supported by CaptionMaker. Typically, the source comes from one of the following methods:

1. If you are already captioning live for TV broadcast (baseband feed such as SDI), you can use the **Retrieve Captions** mode to retrieve the captions from the baseband feed. To accomplish this, CaptionMaker must interface with a hardware encoder (such as an Evertz 9084HD), or a caption decoder/retrieval device (such as a Link LEI-599).
  - a. Enable the YouTube Live Connection as described in [YouTube Live Captioning](#).
  - b. To configure the retrieval device and connection settings in CaptionMaker, go to Caption > Retrieve Caption.
  - c. Choose the device you want to use, then click the Configure button.
  - d. Configure the device settings, such as the COM port or IP address/port used to connect to the hardware device, and other options. Then click OK.
  - e. Once the device has been configured correctly, click the Start button to begin caption retrieval.
  - f. As caption data is read from the baseband feed, CaptionMaker will forward it to YouTube in real time.
2. Or, you can input text directly into CaptionMaker using the **Live Caption** mode.
  - a. Go to Caption > Live Caption Options to make any adjustments to the default settings, if needed. See [Live Caption Options](#) for more information.
  - b. Enable the YouTube Live Connection as described in [YouTube Live Captioning](#).
  - c. Go to Caption > Live Caption. The text panel is changed to live entry mode.
  - d. You can use a keyboard or any keyboard-like device to enter text into CaptionMaker in real time. Assuming the YouTube connection has been configured and enabled correctly, the live text entry will be sent to the YouTube servers.
  - e. Since it is not possible to type on a QWERTY keyboard as fast as most people speak, text entry is usually performed with either a stenograph keyboard, or using a speech recognition system such as Dragon Naturally Speaking.

## Web Formats with Closed Captions

There are many formats for the web that have the ability to display closed captions. CaptionMaker can easily extract and convert closed captions to any required format, frame rate, or time code adjustment. This can also involve editing the video to remove commercial breaks or shorten the duration. CaptionMaker can make use of an edit decision list (EDL) from your editing system to automatically conform the original captions to the new web version.

### Flash Closed Captioning

Adobe CC, Flex, Flow Player, JW Player, Hulu, and the Captionate plug-in support closed captioning files for the web. Flash video has a wide range of different custom video players. There are a variety of caption file formats that Flash video can support. They include .SRT, DFXP Timed Text .xml, SAMI .smi, Captionate .xml, and embedded .FLV with captions. Telestream software can export any of these file formats to support a variety of custom video delivery websites.

### QuickTime Closed Captioning

Telestream software provides the best workflow for inserting closed captioning or subtitle tracks into QuickTime files. These work not only in QuickTime Player on your desktop, but also in a web browser or on Apple mobile devices.

### YouTube Closed Captioning

It is easier than ever to caption web videos through YouTube. Not only does YouTube have a speech recognition engine to help transcribe your video, but also an automatic time stamping tool to synchronize an already existing script. If you need the transcription to be perfect it is best to type it out manually in a word processor and upload a .txt file alongside your video to YouTube. This will result in accurate captioning text. However, there are times when you may have a closed captioning file or tape that already has captions but needs to be converted to a video that can be uploaded to YouTube.

Telestream software can quickly convert your TV closed captioning file or tape to the .SRT format that is native to YouTube. YouTube accepts other captioning file formats, such as SCC, WebVTT, DFXP, SAMI, and EBU-STL.

### iTunes Closed Captioning

iTunes software for Mac and Windows has the ability to display closed captioning for iTunes videos, including video podcasts and iTunes U. All you have to do is add closed captions to a QuickTime .mov or .m4v file. The closed captioning in these iTunes files is called closed caption tracks for QuickTime. Create this closed caption track quickly and easily by embedding them from any caption document or already captioned video into the QuickTime .mov, without re-compression or generation loss. You can also take existing video podcast archives that you are hosting and add closed captions to them using batch processing.

## **Windows Media Closed Captioning**

If you are delivering captioning content to an all-Windows audience then Windows Media closed captioning could be the most compatible option. Windows Media can read the captioning either from a separate SAMI (.smi) file or from an embedded .wmv file with captioning. Telestream software can generate either one of these options for Windows Media servers needing to deliver accessible video content.

## **Akamai Sola Sphere Captioning**

Telestream software can automatically convert TV closed caption data to web closed caption data, which can then be streamed in HD quality by Akamai. Any organization with a large number of archived captioned video files can reduce captioning operational time and errors by using batch processing mode to convert all the files in a folder to desired web captioning formats.



# File-Based Workflows

CaptionMaker can embed closed captioning directly into files, including MPEG-2 Program and Transport Streams, MXF, QuickTime, MCC, and many more. It supports broadcast video servers, such as Harris Nexio, Omneon, SeaChange, Avid Airstream, as well as Manzanita's multiplexers for VOD CableLabs spec.

Delivering a closed caption file in the correct format depends on the kind of system or software that will be used to play or process the file on the receiving side. When confirming the delivery specs with your facility or client, here are some good questions to ask:

- What kind of server or software process will they be using to ingest (import) the file that you send them. Example answers could be: "We will be ingesting the file into our Omneon playback server", or "We are going to put the file in our Final Cut Pro system and output to tape", or "We use Telestream Vantage to transcode the file to XYZ format", and so on.
- What are the detailed specs of file type(s) they can accept with closed captions, such as wrapper/stream type, codec, resolution, frame rate, and bit rate.

## Video Servers

The following provides some information about typical video servers.

### Omneon

Omneon servers support different kinds of media files, depending on the options installed on the server:

- XDCAM HD-type MXF files with SMPTE 436M Closed Captions.
- XDCAM HD codec MOV files with internal MPEG-2 Closed Captions (MacCaption only).
- DVCPRO-HD codec MOV files with internal DVCPRO-HD VANC Closed Captions (MacCaption only).
- DV/DVCPRO (DV25/50) codec MOV files with internal VAUX Closed Captions.

### Harris Nexio

Harris Nexio servers, with the latest software updates, can use the MCC file format generated by Telestream captioning software for HD closed captioning.

### Seachange

Seachange servers can use XDCAM HD-type MXF files with SMPTE 436M Closed Captions, or DV25 (standard def) video with DV VAUX closed captions.

## **DG Fast**

Depending on your specific drop box for DG Fast, they may require either MPEG-2 Program or Transport streams with embedded closed captions for HD. For SD, they use the 720x512 MPEG-2 format, also supported by Telestream captioning software using the MainConcept plug-in.

## **MPEG-2 Files for CableLabs VOD**

Many VOD providers, such as Comcast, require MPEG-2 Transport Streams using the CableLabs spec (Transport Streams require the Manzanita plug-in, sold separately).

## **MPEG-2 for Generic or Unknown Servers**

Many file servers support MPEG-2 Program Streams or Transport Streams with embedded closed captioning (Transport Streams require the Manzanita plug-in, sold separately).

# **Transcoding Software**

Many facilities use a variety of transcoding solutions, such as Telestream Vantage or Episode, in order to accept a wide variety of file formats and convert them to the preferred format. You should check to see if the transcoder being used preserves the closed captions embedded into the video file. In many cases, it can accept an SCC or MCC file with closed captions as a separate file. Or, you may need to identify the "final destination" format used by the facility, and provide that file type with embedded closed captions.

## Creating a DVD or Blu-ray with Captions

When your video and caption files are exported and ready for the final DVD Master with closed captioning, you create the DVD using DVD authoring software. Many consumer DVD burning software products do not have the ability to make a captioned DVD, so special "prosumer" or professional authoring software must be used. For prosumer options we recommend Sony DVD Architect Pro (Windows) or Apple Compressor 4.2 (Mac). You can use Adobe Encore or Apple DVD Studio Pro (Mac), if you have them, but they are not currently released. All of these software packages can accept a SCC caption data file to merge with the DVD video.

The standard format for a caption data file is the SCC (Scenarist Closed Caption) file. This caption data file is created with CaptionMaker and can be imported into DVD authoring systems. The captioning text cannot be checked until the DVD is compiled and/or burned. For best results, it's important to use a set top DVD-Player connected via analog connections to a TV, such as S-Video or Composite (RCA), since HDMI and Component connections don't support closed captions.

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**Note:** The Blu-ray specification does not support closed captioning. However, you can create an SDH subtitle track to mimic the look and feel of closed captioning.

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## Multiple Languages on DVD

After you have subtitled or captioned a video in one language and obtained the time codes, the same time codes can be used for subsequent languages. A translation prepared in a captioning file format can then be used to subtitle or caption in additional languages.

A DVD can contain closed captions in up to six languages: English, Spanish, French, Portuguese, German, and Dutch. CaptionMaker can produce closed caption (.cc or .scc) files for all of these six languages.

For subtitles, a DVD disk can contain up to 32 different languages. Telestream software can produce subtitles in almost every language, from Arabic to Zulu, using any Unicode font. This gives you a large number of languages from which to choose.

## Closed Caption File Format for DVD

A DVD closed caption file is a binary file consisting of a number of lines - one line for each closed caption. Each line starts with a time code which is separated from the closed caption data (in binary format) by a tab character.

## Subtitle Format for DVD

CaptionMaker creates as many files as the number of subtitles, and also a navigation file. The navigation file lists details (time code, size, and position) of each subtitle.

The first item on a line is the name of the graphic file, which is a picture file of a subtitle using a TrueType Windows font. The next two items are the in and out time codes of a subtitle. The following two items after that are width and height of a subtitle. The last two items are the position of a subtitle on a 720X480 screen.

# OP-47 Teletext Workflows

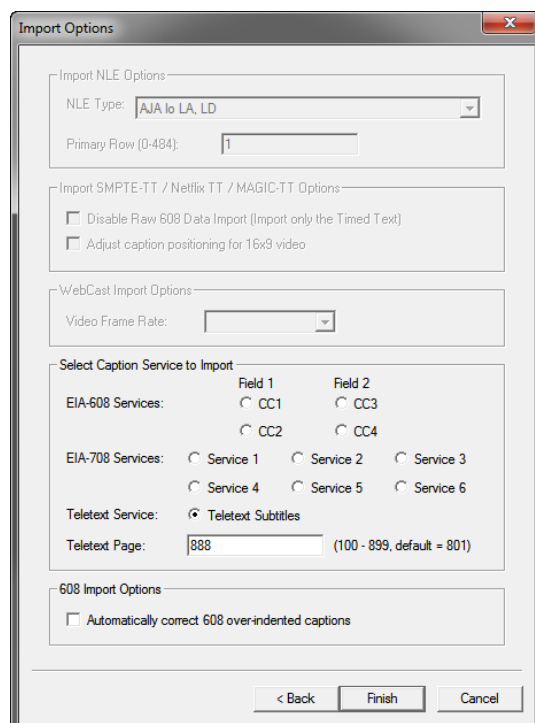
The following describes how to extract and encode OP-47 Teletext data, and provides information on using MCC files that contain OP-47 Teletext data. For additional information about OP-47 see [Teletext in OP-47](#) in the Overview chapter.

## Extracting OP-47 Teletext from Source Video Files

To extract OP-47 Teletext, you can use the QCC Multi-format import option. CaptionMaker can extract OP-47 Teletext from XDCAM HD and AVCINTRA100 .MXF OP1a file types.

To extract OP-47 Teletext:

1. Go to File > Import. The Import File dialog opens.
2. In File Type select Extract From Video.
3. Choose "(Retrieve CC) QCC Multi-format Input..." from the drop-down list.
4. Under File Name, click Browse to select the input file.
5. Click Next.
6. In the next screen select "Teletext Service: Teletext Subtitles" in the Select Caption Service to Import parameters.
7. In the Teletext Page field, you can enter the magazine and page number to extract from the MXF source file. The default is 801, and another common option is 888.



8. Click Finish to start the extraction process.

## Encoding OP-47 Subtitles into MXF Source Video Files

CaptionMaker can insert OP-47 Teletext subtitle data into the SMPTE 436M track of MXF OP1a files. The supported MXF files must be either 720P or 1080i/p with XDCAM HD specifications (MPEG-2 essence video). In addition, they must have a video frame rate of 25 fps or 50 fps, because Teletext only supports these frame rates. There is an export option to select in order to embed OP-47 Teletext data into MXF.

To embed your Teletext data into MXF files, follow these instructions:

1. Prepare and finish your subtitle project.
2. Go to File > Export. The Export File dialog opens.
3. Select File Type > Embed Into Video.
4. Choose "(Encode Teletext OP47) MXF (\*.mxf)" from the drop-down list.
5. Under Input File Name, click Browse to select your source MXF file.
6. Under Output File Name, select a path and set the name for the new captioned MXF file.
7. Click Next.
8. In the next screen you can select the Teletext Subtitle Page, VANC Line F1, VANC Line F2, and the option to have "Double Height" characters. See [Understanding the Teletext OP-47 Export Options](#) below for information on these settings.

**Export MCC/AAF/MXF File**

**Database Reference Information**

Start Time Code of First Event in Database:	00:00:00:00
Start Time Code of Last Event in Database:	00:01:24:14
Database Time Code Mode:	Drop Frame (29.97 fps)

**Video File Reference Information**

Time Code of First Frame:	00:00:00:00
Time Code of Last Frame:	00:01:18:12
Duration:	00:01:18:12
Frame Rate	29.97 fps
Time Code Mode:	Drop Frame (29.97 fps)

**MCC/AAF Export Options**

Start Time Code:		(HH:MM:SS:FF)
End Time Code:		(HH:MM:SS:FF)
Frame Rate:	29.97 fps	

**AAF Export Options**

Select the Video Type that the AAF file is being generated for:

☒ Interlaced or Progressive Segmented Frame (1080i, 1080PsF)

☐ Progressive (720P, 1080P)

☐ Preserve intermediate MXF files generated during the AAF export operation

**Teletext OP47 Export Options**

Teletext Subtitle Page:	801	(100 - 899, default = 801)
VANC Line F1	12	(9 - 41, default = 12)
VANC Line F2	575	(571 - 583, 0 = Disabled) (default = 575) (note 575 = field 2 line 12)
<input checked="" type="checkbox"/> Double Height		

< Back   Finish   Cancel

9. Click Finish to save your selections.

10. You are then prompted by the "Select Starting Time Code" dialog to select the starting timecode for the first frame in the video file. Choose the start time that corresponds to your CaptionMaker project, by selecting the starting time that will sync to your first caption/subtitle in the CaptionMaker text grid.
11. The last option is to add Active Format Description (AFD) to your SMPTE 436M track in your MXF. This is optional and should only be used if required by a broadcast facility.

## Understanding the Teletext OP-47 Export Options

The Teletext Subtitle Page value should be set to the standard magazine "8". This is the first digit in the parameter, so a setting of 801 will indicate magazine 8 and page 01. Samples of MXF files from broadcasters have included single language Teletext subtitles in either 801 or 888. Please refer to your TV station's delivery requirements to select the appropriate magazine and page number before embedding and delivery of OP-47 MXF files.

VANC Line F1 (field 1) is set to line 12 by default. This means that SDI hardware baseband playout of the Teletext OP-47 data will be mapped to line 12 (Line 9 is used for 608/708 captions). A different line for VANC data can be specified into the SMPTE 436M track of the MXF file, but is not standard and should only be used when it is required.

VANC Line F2 (field 2) should only be used with interlaced video that has field 2 data. Progressive video source files should set this parameter to "0", which is disabled. Setting VANC Line F2 is optional and should be done if required.

Double Height refers to the size of the characters. Selecting this option will result in bigger font size for the text when viewed with a Teletext decoder on a broadcast TV monitor.

## Importing and Exporting MCC Files with OP-47 Teletext Data

To import an MCC file containing OP-47 Teletext data: in the Import File dialog choose TV caption Files and select "MacCaption MCC 608/708 (\*.mcc)" from the File Type drop-down menu. Then select "Teletext Service: Teletext Subtitles" in the next screen.

When exporting an MCC file containing OP-47 Teletext data: in the Export File dialog choose the "TV Caption Files" file type and select "MacCaption MCC Teletext OP47 (\*.mcc)" from the drop-down File Type menu.

Under Export Options in the next screen, select the appropriate magazine and page number for the OP-47 data that will be added to the MCC file. See [Understanding the Teletext OP-47 Export Options](#) above for more information on the settings.

## Inserting MCC Files with OP-47 Teletext into an MXF Source Video

CaptionMaker can also directly insert OP-47 Teletext data from an MCC file that contains OP-47 data into an MXF OP1a source video. This means that it's a direct conversion and does not import the MCC OP-47 into the CaptionMaker project.

To insert the MCC OP-47 data into an MXF file: in the Export File dialog choose the "Embed Into Video" File Type and select "(Encode CC/Teletext) MCC to MXF (\*.mxf)" from the drop-down File Type menu.



# Menus

This chapter provides details about the CaptionMaker menus.

- [File Menu](#)
- [Edit Menu](#)
- [View Menu](#)
- [Attribute Menu](#)
- [Format Menu](#)
- [Caption Menu](#)
- [Subtitle Menu](#)
- [Time Code Menu](#)
- [Video Mode Menu](#)
- [VTR Control Menu](#)
- [Web Menu](#)
- [DV Menu](#)
- [Tools Menu](#)
- [Help Menu](#)

# File Menu

## New

(Control+N) Creates a new project file. If a project is open, you are asked to save the current project before creating a new one.

## Open

(Control+O) Opens a CaptionMaker project file. To open other file types, use the Import or Merge options.

## Save

(Control+S) Saves CaptionMaker project files. To save other file types, use the Export or Merge options.

## Save As

Save a new version of the current project.

## Open Movie

Opens the Video Properties dialog. See [Opening a Movie](#) for a description of the dialog and options.

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**Note:** You can also drag and drop a video file into the preview panel. This opens the Video Properties dialog.

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## Insert File

Opens the Import File dialog. You can import a new text file into the existing project at the currently selected row. Or, create a new project by selecting that option in the Import File dialog. See [Import Format Settings](#) for a description of the dialog options.

## Import

Opens the Import File dialog. See [Import Format Settings](#) for a description of the dialog options.

## Export

Opens the Export File dialog. See [Exporting / Encoding](#) for a description of the dialog options.

## Merge Import

Opens the Merge Import Options dialog. Replaces the "number markers" at the start of designated lines with time code values from the base file. The base file is the original file with time code assigned to key points in the text. You can import a merge formatted file which can have multiple languages in it.

## Merge Export

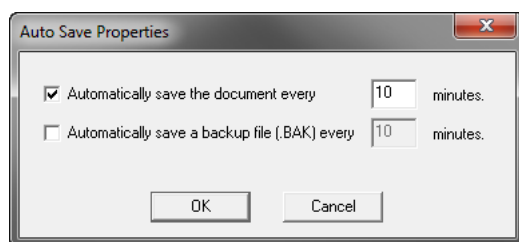
Opens the Merge Export Options dialog. Replaces the "number markers" at the start of designated lines with time code values from the base file. The base file is the original file with time code assigned to key points in the text. You can export a merge formatted file which can have multiple languages in it.

## Batch

Opens the CaptionMaker Batch dialog. Batch processing allows users to convert and embed multiple caption files with a single click. See [Batch Processing](#) for a description of the dialog options.

## Auto Save

Opens the Auto Save Properties dialog.



Offers the option of saving the file automatically, including the time interval (in minutes) desired. You can choose one option or both.

- Automatically save the document every [xx] minutes
- Automatically save a backup file (.bak) every [xx] minutes

If you choose the first option it is not possible to revert to a much earlier version if needed.

The second option saves automatically to a separate backup file with an extension .bak. This option can be advantageous because it ensures that the file is saved periodically, and also makes it possible to revert to a much earlier version if needed.

When you open a BAK file, you must re-save the file under a different name with the .cap extension before you start working with the file.

## Default File Folders

Opens the Default File Folders dialog. Allows you to choose default folders for when you open files, and you can choose a location for the Temp directory.

## Transcription Mode

Enable/disable transcription mode. When enabled, the cursor moves to the next caption cell when you press Enter. This is useful if you compose or transcribe captions within CaptionMaker. When this mode is disabled, pressing Enter produces a carriage return within the same caption cell.

## Print

(Control+P) Sends the Text Panel (any selected visible columns) to the printer.

## Print Preview

Lets you see how the Work Area will print.

## Print Setup

Opens a Print Setup dialog for your local printer.

## Page Setup

The Page Setup dialog lets you choose printing margins and options. Click the Print Columns button to choose which columns you want to print.



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**Note:** Printing the vertical and horizontal lines can take a long time. Avoid printing the vertical and horizontal lines if possible.

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## **Open Recent Documents**

A list of recently open documents, that you can choose from to re-open.

## **Exit**

Closes the CaptionMaker program.

# Edit Menu

## Undo

(Control+Z) Step back through your last actions to undo them.

## Redo

(Control+Y) Restore the states you just used Undo to roll back.

## Cut

(Control-X) Remove the highlighted text or selected object and store it in memory.

## Copy

(Control+C) Copy the highlighted text or selected object to memory.

## Paste

(Control+V) Place the previously copied or cut text or selected object from memory into the target component.

## Paste Options

Opens the Paste Options dialog.

## Find

(Control+F) Opens the Find dialog.

## Replace

(Control+R) Opens the Replace dialog.

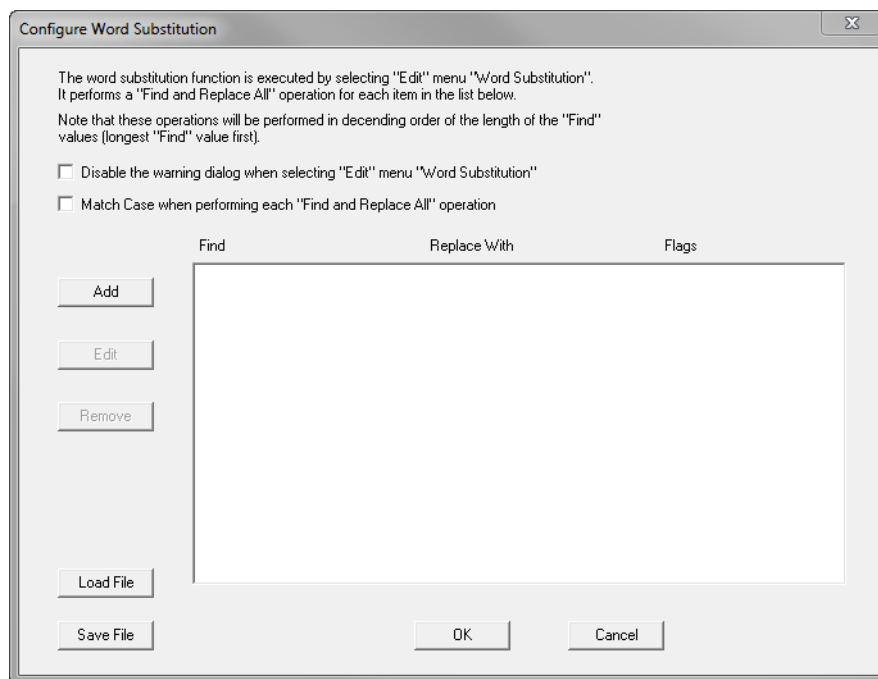
## Word Substitution

When selected, initiates the word substitution operation, using the “find and replace” words entered in the Configure Word Substitution dialog. All words found in the Configure Word Substitution list are replaced.

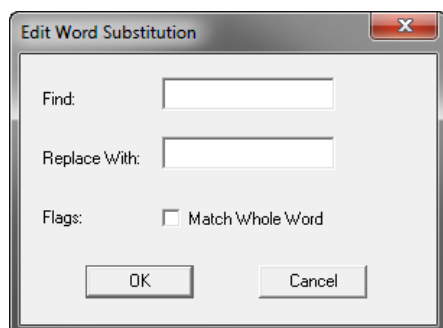
## Configure Word Substitution

Opens the Configure Word Substitution dialog. You can enter words that you want to substitute during a “Word Substitution” operation. After words are entered in this

dialog, the word substitution operation is initiated by going to the Edit menu and selecting Word Substitution.



- **Add.** When you click Add to enter new words for substitution, the Edit Word Substitution dialog opens.
- **Edit.** Select an item in the list and click the Edit button to open the Edit Word Substitution dialog so you can make changes.
- **Remove.** Select an item in the list and click the Remove button to delete that item.
- **Load File.** Opens a browse dialog so you can choose a saved word substitution list text file to load.
- **Save File.** Opens a browse dialog so you can choose a location to save the current word substitution list as a text file.



- **Match Whole Word.** Select this option in the Edit Word Substitution dialog when you want the find and replace operation to match the complete word, and not a portion of it.

# View Menu

## Visible Columns

Opens the Visible Columns dialog. Select the columns to display in the text panel, such as Start, Duration, Justification, and so on.

## Full Screen Spreadsheet

Toggle between displaying the text panel in the entire CaptionMaker window, or the normal view.

## Pop-Up Preview Window

Opens the video preview panel in a separate window. You can place this window wherever you like, and adjust the size using its Zoom menu.

## Anchor Current Row

Enables anchoring the current row to the 3rd row. The rows move so you can see a few rows of text below the current cursor location. If you do not anchor, the rows do not automatically move. You may set the anchoring for four different situations:

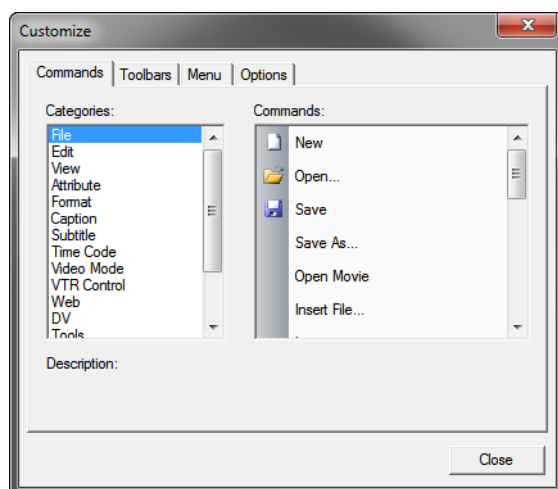
- **Anchor in Edit mode.** Turns on anchoring in the Edit mode.
- **Anchor on Send Caption/Subtitle.** Turns on anchoring when you send captions or subtitles using the [+] key.
- **Anchor in AutoSync.** Turns on anchoring in the AutoSync and Auto Preview Sync modes. This option is selected as a default.
- **Anchor in Live Caption.** Turns on anchoring in the Live Caption mode.



## Toolbars and Docking Windows

Open/close the toolbars and customize menu and toolbar settings.

- **Main**
- **Ancillary**
- **VTR**
- **Customize.** Opens the **Customize** dialog. You can change settings for the menus and toolbars. You can also reset menus or toolbars to the default settings when updates or changes in new versions are not appearing.



## Status Bar

The status bar is at the very bottom of the CaptionMaker window. De-select to hide it. It contains information about settings of caption/subtitle hardware, video and time code type (NTSC/PAL), status of CapsLock and NumLock keys, and a progress bar during export and some other operations. It also shows whether the time code is Non-Drop (N) or Drop (D) frame just before NTSC/PAL.

## Black Text on White Background

Select to switch the text panel to the CaptionMaker classic look of black text on white background.

# Attribute Menu

## Display Mode

For detailed descriptions of all of the modes, see [Display Modes](#).

- **Pop-On.** Pop-on mode is recommended for most post-production captioning projects.
- **Paint-On.** The characters are painted on the screen one after another, from left to right.
- **Roll-Up 2 Lines.** Sets a maximum of 2 lines to appear on screen at a given time.
- **Roll-Up 3 Lines.** Sets a maximum of 3 lines to appear on screen at a given time.
- **Roll-Up 4 Lines.** Sets a maximum of 4 lines to appear on screen at a given time.
- **Block Roll-Up.** This is a combination of the Paint-On and Roll-Up modes.
- **Pass Through.** Enables Pass Through mode for a segment of the video which has been previously captioned. This mode lets the captions previously existing on the video pass through.

## Text Color

Opens a menu to choose the color of the text from one of eight colors: default (white), blue, cyan, green, magenta, red, yellow, white, and black.

## Background Color

Opens a menu to choose the color of the background for the text from one of eight colors: black, blue, cyan, magenta, red, yellow, white, and green.

## Background Type

Select the background for the generated captions or subtitles. The default is black box for captioning, and transparent for subtitling.

- **Normal**
- **Black Box**
- **Fill Row**
- **Transparent**

## Background Translucency

Opens the Image Colors dialog, where you can set the background and foreground colors, style, translucency and other options.

## Bold/Flash

(Control+B) Makes the selected text bold for subtitling, and flashing for captioning.

## Italic

(Control+I) Makes the selected text italic. Italic is often used to indicate off-screen speakers in captioning or untranslatable words in subtitling.

## Underline

(Control+U) Underlines the selected text.

## Horizontal Justification

- **Left Justify** (Control+L)
- **Center Justify**
- **Right Justify**

## Horizontal Position

- **Left Position**
- **Center Position**
- **Right Position**
- **Other...** Opens a dialog to choose a specific position.
- **Move Left 1 Character**
- **Move Right 1 Character**

## Vertical Position

- **Top**
- **Center**
- **Bottom**
- **Other...** Opens a dialog to choose a specific position.
- **Repeat Last Other**
- **Move Up 1 Line**
- **Move Down 1 Line**

## Insert Music Symbol(s)

- **Single Musical Symbol.** (Control-M) Inserts a music symbol (the quarter note) into the caption text at the cursor location. The music symbol appears in the Preview Panel but not in the Text Panel. The section mark (§) represents the music symbol in the Text Panel. When the character is sent to the caption device it produces the music symbol.
- **Surrounding Musical Symbols.** Inserts a music symbol at the beginning and end of selected text. If you choose multiple cells and choose this option, it adds a pair of music symbols for all the captions being highlighted.

### **Insert Transparent Space**

Adds one transparent character space in the caption text at the location of the cursor.

### **Insert Black Box Space**

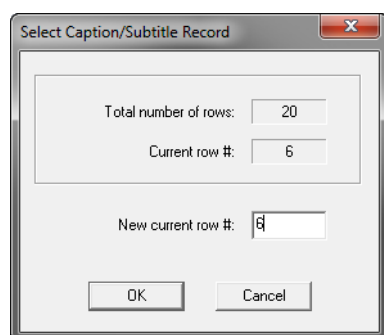
Adds one blank transparent box space in the caption text at the location of the cursor.

# Format Menu

**Note:** To access some of the functions from the Format menu, you can right-click in the Caption/Subtitle column to open a popup menu.

## Select Row

Opens the Select Caption/Subtitle Record dialog. Move to a specific row by typing the row number.



## Insert Row(s)

Adds a new row to the Text Panel in the row above the one currently selected. You can also use the Insert Row(s) button in the Row Operations tools. **Hint:** If you need to insert a row at the very bottom, click at the end of the text in the last cell and use the Split Row command or button to do so.

## Delete Row(s)

Removes the currently selected row from the Text Panel. You can also use the Delete Row(s) button in the Row Operations tools.

## Split Row

Splits the selected row into two rows at the cursor's current position. You can also use the Split Row button in the Row Operations tools.

## Merge Rows

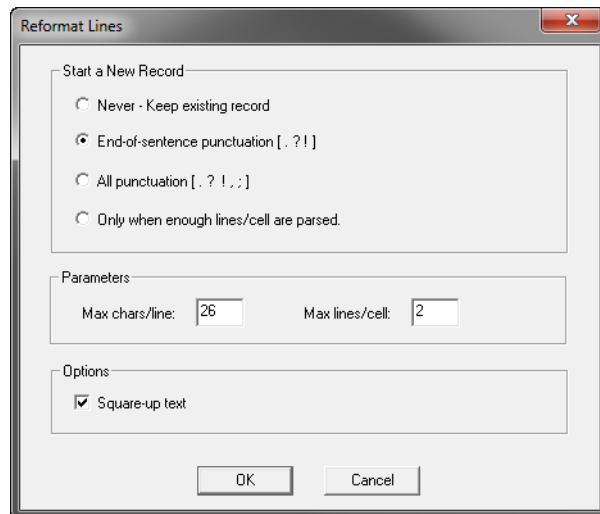
Merges all selected rows into a single row. You can also use the Merge Row(s) button in the Row Operations tools.

## Erase Blank Rows

Removes all blank rows in the Text Panel that do not contain timecode or text.

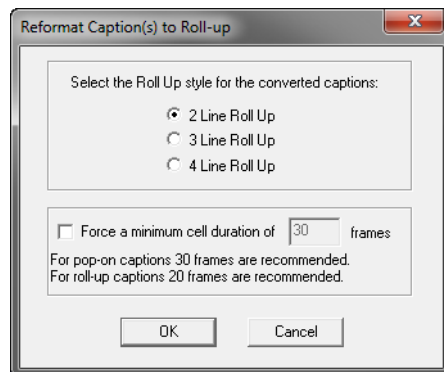
## Reformat Rows

Opens the Reformat Lines dialog, offering options for line break settings.



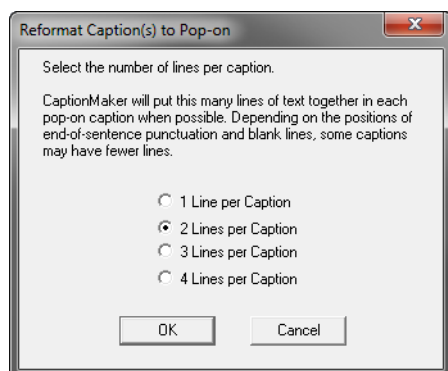
## Reformat Caption(s) to Roll-up

Reformats the selected rows to apply the roll-up style, based on settings you choose in the dialog.



## Reformat Caption(s) to Pop-on

Reformats the selected rows to apply the pop-on style, based on settings you choose in the dialog. This can also be used to adjust existing pop-on captions to provide a consistent look. For example, if your project is already in pop-on mode and you want a different number of lines per block, or if many blocks were edited and now have too many lines.



## Square Up Text Block

Squares up the text in the currently selected rows, making the lines closer to the same length.

## Compress Text Block

Compresses the line length of the currently selected captions, reducing the margins for the current cell. You can click multiple times to add incremental compression. You can also use the Compress Text Block button in the Formatting tools section, or the Compress button in column C of the Text Panel.

## Expand Text Block

Expands the line length of the currently selected captions. Increases the margins within a cell and decreases the number of lines. If you begin with a narrow or compressed caption, the Expand Text command adjusts the text into fewer rows that are wider. You can click multiple times to add incremental expansion. You can also use the Expand Text Block button in the Formatting tools section, or the Expand button in column E of the Text Panel.

## Alternate Break

Selects alternate line break words in the currently selected captions. Clicking multiple times toggles between possible line breaks. It is better to make the text bottom heavy (shorter lines towards the top, longer lines towards the bottom). You can also use the Alternate Break formatting button in the Formatting tools section, or the Alternate Break button in column A of the Text Panel.

## Upper/Lower Case

Opens the Upper/Lower Case dialog. See [Upper, Lower, or Sentence Case](#) for more information.

## **Pull First Word**

Pulls the first word of the next caption into the currently selected caption. You can also use the Pull First Word formatting button in the Formatting tools section, or the Pull First Word button in column U of the Text Panel.

## **Push Last Word**

Pushes the last word of the currently selected caption to the next caption. You can also use the Push Last Word formatting button in the Formatting tools section, or the Push Last Word button in column D of the Text Panel.



# Caption Menu

The Caption menu provides adjustment options and settings when in the Captioning Mode. If most of the selections are grayed-out, it means you are in Subtitle Mode.

## Send Caption(s)

- **Send Caption Line(s) (+ key).** Sends the currently selected line to the caption/subtitle device. Reads the time cue (from the time code reader or the PC System Timer) and puts the time stamp in the Start column.
- **Send Caption Erase (- key).** Sends an erase-line command to the caption/subtitle device to remove the currently selected caption line.
- **Beep When Sending Captions.** When selected, a beep occurs when captions are sent to a device.

## Clear Caption

Sends one blank caption to the video resulting in clearing any existing captions on the video.

## AutoSync

Performs automatic output to a caption device. After you have associated a time stamp with each row, AutoSync automatically outputs the text to the caption device. This process is driven by the timecode or the PC System Timer. The cursor does not need to be in a specific place in the text in order to start AutoSync.

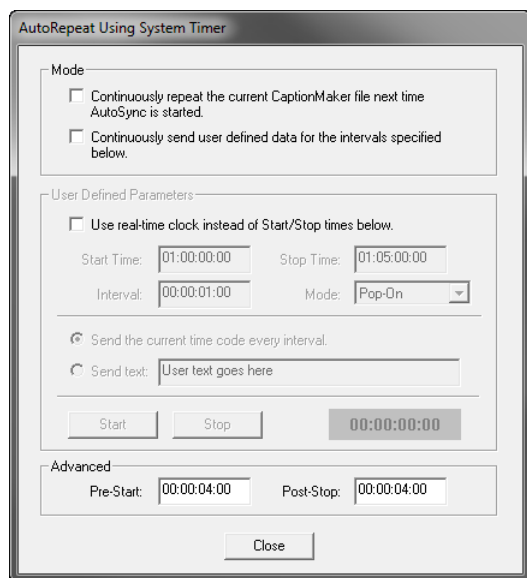
If you do not have a caption device attached to the computer, choose Virtual Encoder as your device. CaptionMaker does not send any data to the Virtual Encoder via serial port and you do not get any communication errors.

## AutoPreviewSync

Allows you to preview the output that is produced when you use AutoSync. After you have associated a time stamp with each row, AutoPreviewSync automatically outputs the text. If you are preparing a caption/subtitle file and do not have a captioning device attached to your system, you may check the positioning and timing of your file by invoking this option instead of using AutoSync.

## AutoRepeat

Opens the AutoRepeat Using System Timer dialog. This is used to loop playback to test connectivity to a device, or with the Internet. The text is sent out repeatedly. Use this on completed caption projects that have finished time codes.

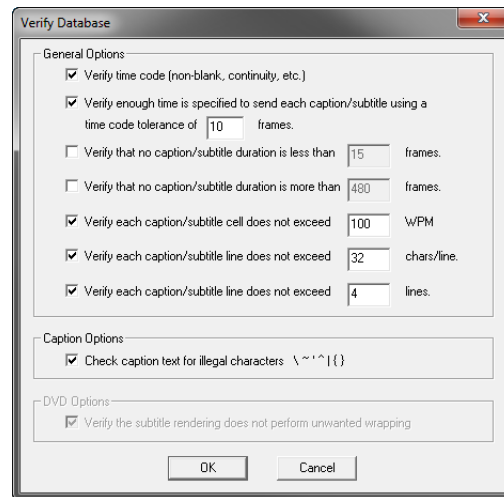


## AutoSync Error Checking

Performs automatic time code error checking as you work. When AutoSync Error Checking is selected, CaptionMaker goes through the whole file to make sure there are no missing time codes or the time codes are not in ascending order before starting AutoSync. With this option checked as you work, errors are caught quickly and AutoSync stops at the point of the error.

## Final Checking

Opens the Verify Database dialog, where you can check for many common errors with the file. It is typically invoked before AutoSync. You can choose options related to time code tolerance, reading speed of captions, maximum characters per line, unacceptable characters for captioning, and so on. You can choose any single item or combination of items.



## Timing Error Settings

Opens the Error Coloring Settings dialog. See [Error Checking](#) for details on error settings and operation.

## Jump to Next Timing Error

Takes the cursor to the next error from where it is currently positioned. Used for navigating from error to error, which was discovered by Timing Errors Settings, so you can make corrections.

## Jump to Previous Timing Error

Takes the cursor to the previous error from where it is currently positioned. Used for navigating from error to error, which was discovered by Timing Errors Settings, so you can make corrections.

## Preview Options

- **Display Preview Image.** When selected, the caption/subtitle is displayed in the Preview Panel.
- **Highlight Rows During AutoSync.** When selected, highlights the current row in the Text Panel that is being sent to the captioning/subtitling device (during both manual and AutoSync operations).

- **Blinking AutoSync Status.** When selected, an AutoSync indicator flashes green and gray in the bottom status bar when AutoSync is in operation.
- **Preview Image Matches Line(s) Sent.** When selected, the Preview Panel and an external video monitor show the same text when you press the [+] key. Otherwise the text on the video monitor will always lag one row behind the selected row on the computer screen.

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**Note:** When Preview Image Matches Line(s) Sent is selected, you can't drag and drop the text in the Preview Panel. After you press the [+] key, the text is sent to the video monitor via a caption/subtitle device. It cannot be repositioned.

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## Live Caption

Select to switch to live caption mode. Allows you to caption a non-scripted, live presentation by entering dialog as it is spoken. When you check this option, and set the captions to Roll-Up mode, you are ready to caption a live show in real time. See [Live Caption Data Input into CaptionMaker](#) for more information.

## Live Caption Options

- **Roll-Up Lines.** Choose 2, 3, or 4 lines of Roll-Up text.
- **Caption Length.** Sets the maximum length of caption lines. Maximum number of characters allowed per line is 32. You may choose any caption length from 12 to 32.
- **Left Indent.** Opens the **Left Indentation** dialog to set the left margin for the first character.
- **Fast Indent.** Allows you to set the left margin to preset values from 0 to 20.
- **All Attributes.** Opens the **Live Caption - All Attributes** dialog to set various options.
- **Send to Top.** Moves the caption(s) to the top in the row(s) selected.
- **Send to Bottom.** Moves the caption(s) to the bottom in the row(s) selected.
- **Roll Up 1 Blank Line.** Sends one blank caption line to the video, resulting in rolling up the existing caption on the video by one line. If you are using Roll-Up captions, this option can also be used to clear captions on the video by invoking it several times to roll up existing captions of more than one line.
- **Font Height.** Sets the font height in points. Enter the point size you prefer, from 9–24 points.

- **Send Options.** Opens the **Live Caption Send Options** dialog. You can choose to send the words to the encoder as soon as they are entered, or after a delay. You can also choose time-out options to flush the last word and close the encoder device.
  - To send immediately, uncheck all options and set all entries to 0. (Default)
  - To send at the end of a line, select *Send after each line*.
  - To send after a word or several words, check *Send after each word* and enter the number of words to delay.
  - To see what has been sent so far, you can turn on *Highlight sent live caption words/lines*.
  - To time-out sending, set either *Flush Last Word after* or *Close Caption Device after* to 0–10 seconds.
- **Debugging Options.** Opens the **Live Mode Debugging Options** dialog. Allows you to enable *Log all Live Mode Keystrokes to a file* and lets you browse to select the path where you want the log files stored.

## Live Bridge Mode

Allows a live captioner using CaptionMaker connected to a hardware encoder device on one serial port to temporarily allow other caption data received on a second serial port in the same computer to be "bridged" to the hardware encoder.

## Live Bridge Mode Options

Opens the Bridge Mode Options dialog. Shows the current device settings and allows you to choose the additional COM Port for Live Bridge Mode.

## Web-TV

- **Edit Web-TV Link.** Opens the **WebTV - Interactive Link** dialog. Settings allow a viewer using a WebTV box to click on an icon and link to a Web site associated with the content of the program they are watching.
- **Delete Web-TV Link.** Select to delete the WebTV - Interactive Link settings.

## Wink Trigger

Wink is a free, easy-to-use service that allows users to interact with television shows and advertisements.

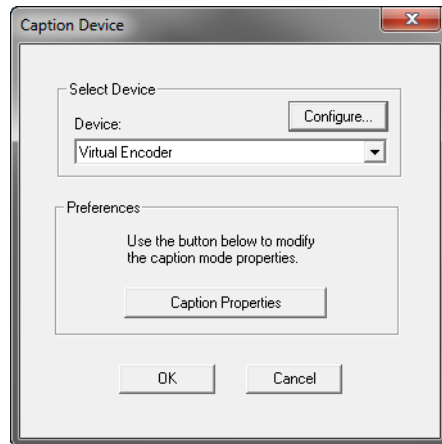
- **Edit Short Trigger.** Opens the **Wink Short Trigger** dialog to enter settings and information.
- **Delete Short Trigger.** Select to delete the Wink Trigger settings.
- **Wink Trigger Defaults.** Set default options for Wink Trigger.

## V-Chip

Use these settings to insert V-Chip Ratings onto line 21 of a video. When a home viewer watches a program with V-Chip information, their TV's V-Chip reads the broadcasted V-Chip rating information and either displays the program (with the rating visible) or blocks out the program if the rating exceeds the home television's customized settings. This way parents can block programs that are not suitable for their children.

## Device

Opens the Caption Device dialog which allows you to choose a device and configure its settings. The default caption device is Virtual Encoder, which is good for a typical file-based workflow. If you are using a specific hardware device, or different file type, you can select the appropriate device. See [Device Selection and Configuration](#) for more information.



The caption devices are all hardware, except for Virtual Encoder, with the specifications based on the device. See the device manufacturer for settings recommendations. The hardware devices are typically connected via modem, LAN, or serial COM port. When you need certain options you can also use devices for a file-based workflow that have hardware names, and you do not need to have the actual hardware device connected.

The following caption devices are available from the Device drop-down menu:

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DSP-1000

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EEG DE 241CG

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EEG DE 132/352

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EEG EN270 Smart Encoder II

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EEG EN370 Desk Top Encoder

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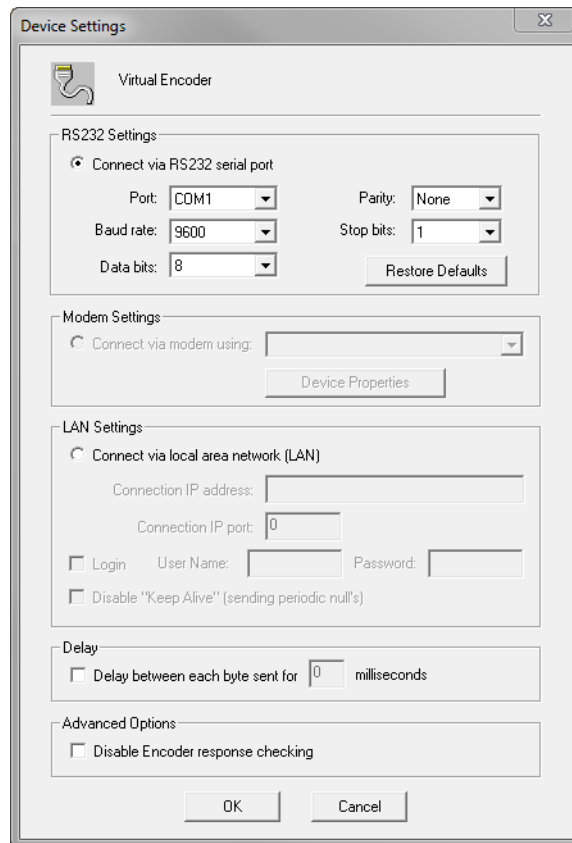
EEG EN470 Smart Encoder III

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Evertz Encoder
Evertz Encoder (XON)
Generic Decoders
Generic Encoder
Link Decoders
Link PCE-845D/PDR-885/PDP-886
Link PDE-890/ENC-896
Link PDR-885 V1.1L
Microvideo Encoder
Norpak Encoders
SkyMicro
Soft Touch Hubcap
Soft Touch Hubcap (Mag)
Special Encoder
Text Output
Ultech DisplayaCap
Ultech EDS400
Ultech InsertaCap
ULTECH SG401 (cap decoder mode)
Ultech UDE 400
vBrick
* Virtual Encoder
Wohler

\* See [Virtual Encoder and Generic Subtitles Default Devices](#) for more information on the Virtual Encoder device.

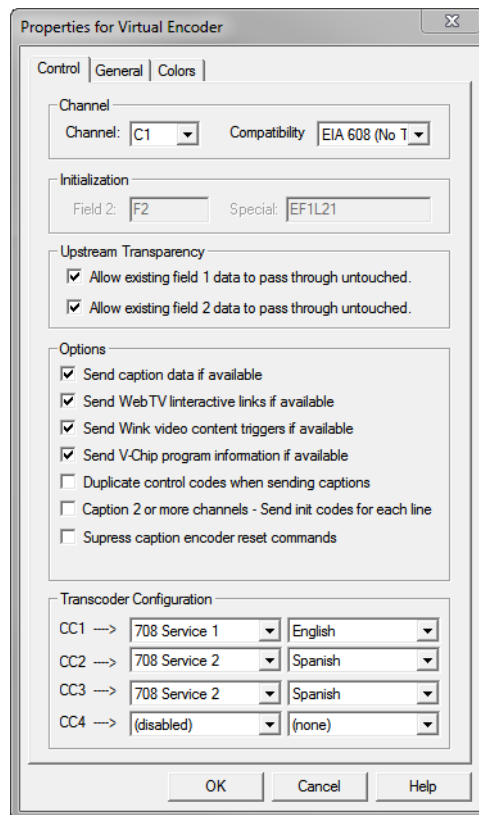
- To adjust configuration settings, select a device and click the **Configure** button. The **Device Settings** dialog opens.



- **RS232 Settings.** If you are captioning a video on-site, choose *Connect Via RS232 serial port* and select the settings.
- **Modem Settings.** To caption a video at a remote location via modem. The encoder must have a built-in modem or a modem attached to it. Choose *Connect via modem using* then select the modem from the list.
- **LAN Settings.** If your encoder device supports serial over ethernet LAN connections, you may choose *Connect Via Local Area network (LAN)*.
- **Delay.** This option delays the timing of each control code that is sent to a hardware encoder, by the number of milliseconds set. This may be valuable when a hardware encoder is having trouble keeping up with control codes for live encoding.
- **Advanced Options.** When a hardware encoder is connected to CaptionMaker it can have the ability to check its connection by using a response checking mechanism. This mechanism can interrupt certain operations. Selecting this option to "Disable Encoder response checking" will send a command to a hardware encoder to disable its response checking feature.



- To adjust properties, select a device and click the **Caption Properties** button. The **Properties (device name)** dialog opens.



### Control Tab

- **Channel.** Select the channel to use: C1, C2, C3, C4, T1, T2, T3, or T4.

C1 through C4 mean the same thing as CC1 through CC4 which are in the Transcoder Configuration section of this dialog, and in other CaptionMaker locations.

C1 through C4 (or CC1-CC4) is a service that can be selected for the project that is loaded in the CaptionMaker interface. If the user needs to create an alternate language caption channel, or service, then the channel option can be set to C3 or something other than the primary C1. If the user selects C3, then CaptionMaker will export caption data for that channel only. This is also true when using CaptionMaker connected to a hardware encoder. By selecting C3, the hardware encoder knows to only add a new language and not delete what is encoding in CC1.

T1-T4 is typically used to display text-only information, such as weather reports or stock quotes. Some broadcasters require data to be encoded as a text service

using hardware. Users can encode to channel T1 through T4 for these specific workflows.

- **Compatibility.** The Compatibility drop-down menu provides the choices EIA 608, TeleCap I, TeleCap II, and EIA 608 (No TeleCap).

To help understand the Compatibility choices, here's some history. Over the years, decoders have evolved through three different sets of standards:

1. TeleCap I decoders were produced by the National Captioning Institute (NCI) during the period 1980 to 1983. These decoders cannot recognize:
    - a.(a) Paint-on mode,
    - b.(b) Centering, and
    - c.(c) Captions without blinking between them.
  2. TeleCap II decoders were manufactured by NCI during the period 1984 to 1994. These decoders cannot handle:
    - a.(a) Captioning near the center of the screen,
    - b.(b) Color captioning, and
    - c.(c) Field 2 and EDS captioning.
  3. EIA 608. This is the current standard (as of 1999), which was formulated by the Electronics Industries Association (EIA) in 1994 and does not have any of the above limitations. New television sets with built-in decoders follow this standard.
- When you select a particular value for compatibility, the program does not send any characters or attributes that are not allowed by that compatibility, as incompatible characters can cause a TeleCap I or TeleCap II to display garbage characters. But this does not remove the characters from the CaptionMaker Text Panel.
- With older, external TeleCap I and II decoders, there are only 2 caption and 2 text channels available, but technical reasons precluded the use of the second channel in practice. With the new EIA 608 standard, it is possible to put two sets of captions on one video.
- **Initialization.** The Initialization Field 2 shows the control codes that are being sent to a hardware encoder when that device is initialized. The Special read-out is an indicator of the data that CaptionMaker is sending via hardware.
  - **Upstream Transparency.** These options are designed to add an additional language or caption service to a video signal using a hardware encoder. If you are adding CC3 data in field 2 then you would select "Allow existing field 1 data to pass through untouched". Then the hardware encoder will know to keep the existing CC1 data in field 1 during encoding.
  - **Options.** Select the options you want to use. Typically, the default options should remain selected: "Send caption data...", "Send Web TV...", "Send Wink...", and "Send V-Chip..."

Normally, leave "Duplicate control codes..." unchecked. There is no need to send the control codes twice.

A control code is data that triggers a caption to appear on a TV screen. Originally, TV signals were analog, and in areas of bad reception "snow on the TV screen" would display. This could cause control codes to be ignored due to interference.

By sending duplicate control codes the captions were less likely to be dropped due to interference.

- **Transcoder Configuration.** Up-converts the service selected above in Channel C1-T4 into 708 (HD). The menu choices map which 708 service channel is connected to each language.

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**Note:** Currently, if you want to caption a video in Spanish and in English, you must be using encoder equipment that is capable of changing Lines and Channels. You need only create one file, but you must run the AutoSync process twice, once for each language, due to speed limitations of the encoder.

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### General Tab

- **Pop-On.** When checked, blank frames are inserted between pop-on captions. The default value is 2 blank frames.
- **Live Caption Options:** For live captions, sets the number of lines for a roll-up caption, the left indentation in characters, and the number of characters per line.
- **Options.** Select *Convert to uppercase* to send all characters to the caption device as uppercase. Select *Mark time code...* to enable sending captions by pressing the plus (+) key on the numeric keypad.

### Colors Tab

Lets you choose the default foreground and background colors for captioning. You have the flexibility to change these defaults on each row, using the options under the Attribute menu. Note: Not all caption decoders have color capability.

- **Foreground.** Use the drop-down menu to set the default foreground color.
- **Background.** Use the drop-down menu to set the default background color. Opaque makes the color solid. Translucent lets you see some video through the color.

## Properties

Opens the Properties (device name) dialog for the captioning device currently active in CaptionMaker. Details of the Properties dialog are described above.

## Initialize Device

Initializes the currently active device. In case you power-off or change the caption/subtitle device in the middle of a session, you can use this option to ensure it initializes properly.

## Start in Pass-Through Mode

Select Start in Pass-Through Mode when you want the hardware encoder to not delete existing caption data. When selected and you are connecting to a hardware encoder for the first time, CaptionMaker will tell the encoder not to delete any existing captions. This is important when commercials or other content already has captions.

## Go to Pass-Through Mode

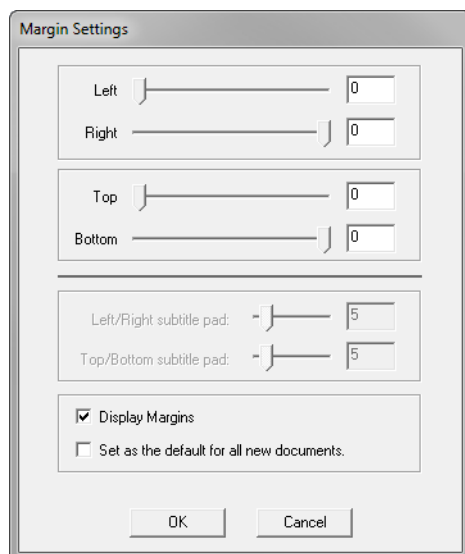
When using a hardware encoder, use this option to enable pass-through mode at anytime, if there is existing caption data in the live video feed. This will tell the hardware encoder to let it "pass-through" untouched.

## Close Device

Closes the caption/subtitle device. If your device is a CC encoder, it will free up the encoder. If a video with pre-recorded captions passes through the encoder, when the device is closed, the captions will pass through. This might be very helpful when you are captioning a live broadcast and the TV station airs some commercials with existing captions. If the device is not closed, the existing captions from the video will be stripped off.

## Set Caption Margins

Opens the caption Margin Settings dialog. Default caption margins are all zero. With this setting, you have a maximum of 32 characters in a row and 15 possible rows. Unless you are quite advanced in captioning, it is better to leave all the margins as zero. If you make margins other than zero, you will limit the number of rows and maximum allowable characters per row.



- **Display Margins.** Select to display a white frame that indicates where the margins are set. The frame only displays when captions are present. See example below.
- **Set as the default...** Select this option so that all new projects use these settings instead of the defaults.

The following image shows the display of the caption margin settings indicator frame.



## Retrieve Caption

Opens the Retrieve Caption dialog. Allows you to retrieve captions, along with time code and positioning information, from a previously captioned video, and store them in a file.

The Retrieve Caption command is implemented for a limited number of encoders. After retrieving the captions, you may use the file for the following purposes:

- To generate a DVD caption file.
- To generate a DVD subtitle file.
- To reinsert captions onto time-compressed video.
- To reinsert captions to a new, edited version of a previously captioned video.

You will need to edit the caption file to match the newly edited video.

Before retrieving captions, make sure to turn the AutoSave option off. Or, first save the blank screen to a file name before retrieving captions. Otherwise you will be asked to save the file every few minutes during the retrieval process.

If you chose to also retrieve time codes, connect the time code to the time code device. After retrieving caption data, run a final test to check the integrity of the data before you use the file for any other purpose.

## Dial Modem

Permits dialing out over a phone line using a modem connection. If you are captioning from a remote location, you may need to connect your modem to the encoder via a telephone line. Connect a telephone line to the modem and click on this option. You will see a dial-up screen. Type the telephone number including area code. Click on Dial to connect your modem to the remote Encoder.

## Hang up Modem

Disconnects from the phone line, terminating the modem connection

## Subtitle Menu

The Subtitle menu provides adjustment options and settings when in the Subtitle Mode. If most of the selections are grayed-out, it means you are in Caption Mode.

### Send Subtitle(s)

- **Send Subtitle Line(s) (+ key).** Sends the currently selected line to the caption/subtitle device. Reads the time cue (from the time code reader or the PC System Timer) and puts the time stamp in the Start column.
- **Send Subtitle Erase (- key).** Sends an erase-line command to the caption/subtitle device to remove the currently selected caption line.
- **Beep When Sending Subtitles.** When selected, a beep occurs when subtitles are sent to a device.

### Clear Subtitle

Sends one blank subtitle to the video resulting in clearing any current subtitles on the video.

### AutoSync

Performs automatic output to a subtitle device. After you have associated a time stamp with each row, AutoSync automatically outputs the text to the subtitle device. This process is driven by the timecode or the PC System Timer. The cursor does not need to be in a specific place in the text in order to start AutoSync.

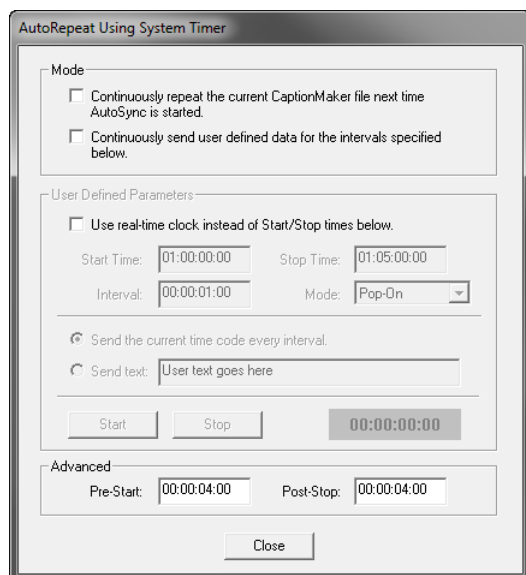
If you do not have a subtitle device attached to the computer, choose Generic Subtitles as your device. CaptionMaker does not send any data to the virtual device via serial port and you do not get any communication errors.

### AutoPreviewSync

Allows you to preview the output that is produced when you use AutoSync. After you have associated a time stamp with each row, AutoPreviewSync automatically outputs the text. If you are preparing a caption/subtitle file and do not have a subtitle device attached to your system, you may check the positioning and timing of your file by invoking this option instead of using AutoSync.

## AutoRepeat

Opens the AutoRepeat Using System Timer dialog. This is used to loop playback to test connectivity to a device, or with the Internet. The text is sent out repeatedly. Use this on completed subtitle projects that have finished time codes.

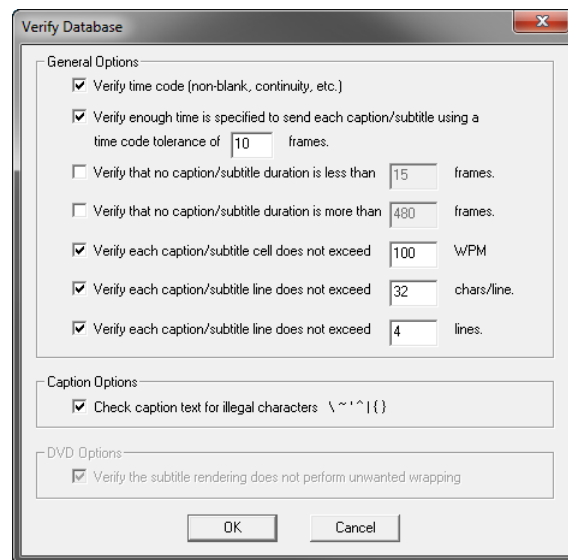


## AutoSync Error Checking

Performs automatic time code error checking as you work. When AutoSync Error Checking is selected, CaptionMaker goes through the whole file to make sure there are no missing time codes or the time codes are not in ascending order before starting AutoSync. With this option checked as you work, errors are caught quickly and AutoSync stops at the point of the error.

## Final Checking

Opens the Verify Database dialog, where you can check for many common errors with the file. It is typically invoked before AutoSync. You can choose options related to time code tolerance, reading speed of subtitles, maximum characters per line, unacceptable characters for subtitling, and so on. You can choose any single item or combination of items.



## Timing Error Settings

Opens the Error Coloring Settings dialog. See [Error Checking](#) for details on error settings and operation.

## Jump to Next Timing Error

Takes the cursor to the next error from where it is currently positioned. Used for navigating from error to error, which was discovered by Timing Errors Settings, so you can make corrections.

## Jump to Previous Timing Error

Takes the cursor to the previous error from where it is currently positioned. Used for navigating from error to error, which was discovered by Timing Errors Settings, so you can make corrections.

## Preview Options

- **Display Preview Image.** When selected, the caption/subtitle is displayed in the Preview Panel.
- **Highlight Rows During AutoPreview.** When selected, highlights the current row in the Text Panel that is being sent to the captioning/subtitling device (during both manual and AutoPreview operations).



- **Blinking AutoPreview Status.** When selected, an AutoPreview indicator flashes green and gray in the bottom status bar when AutoPreview is in operation.
- **Preview Image Matches Line(s) Sent.** When selected, the Preview Panel and an external video monitor show the same text when you press the [+] key. Otherwise the text on the video monitor will always lag one row behind the selected row on the computer screen.

---

**Note:** When Preview Image Matches Line(s) Sent is selected, you can't drag and drop the text in the Preview Panel. After you press the [+] key, the text is sent to the video monitor via a caption/subtitle device. It cannot be repositioned.

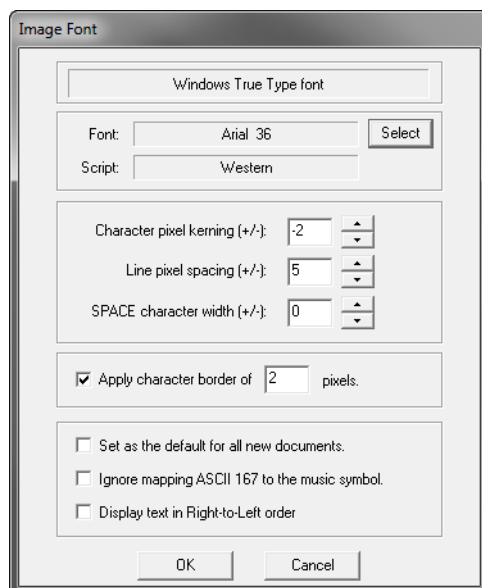
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## Set Codi Font

If you are using a Chyron Codi as your subtitling device, you can set the default fonts using this option.

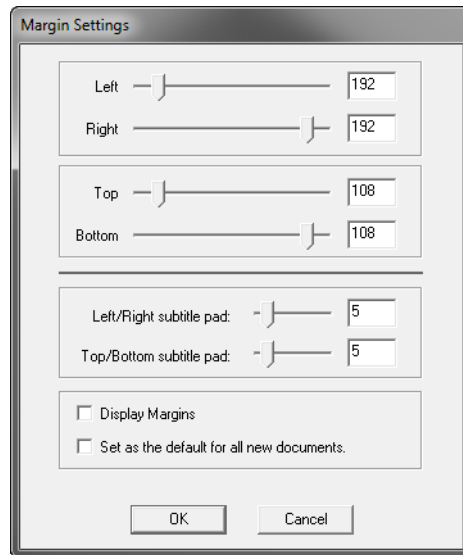
## Set Subtitle Image Font

Opens the Image Font dialog. See [Setting the Font Image Properties](#) for more details on setting choices.



## Set Subtitle Margins

Opens the subtitle Margin Settings dialog. Sets margins at the edges of the screen to ensure subtitles remain within the “title safe” area. The defaults are 192 for left and right, 108 for top and bottom, and 5 for the padding.



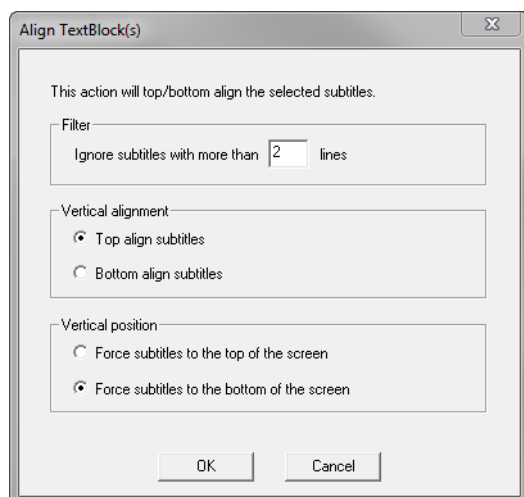
- **Display Margins.** Select to display a white frame that indicates where the margins are set. The frame only displays when subtitles are present.
- **Set as the default...** Select this option so that all new projects use these settings instead of the defaults.

The following image shows the display of the subtitle margin settings indicator frame.



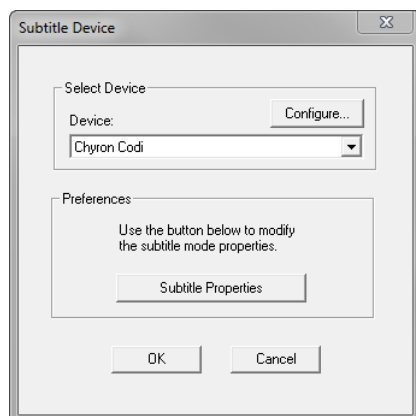
## Set Vertical Alignment

Opens the Align TextBlock(s) dialog. Sets the vertical alignment options for subtitles.



## Device

Opens the Subtitle Device dialog which allows you to choose a device to configure its settings. The default subtitle device is Generic Subtitles, which is good for a typical file-based workflow. If you are using a specific hardware device, or different file type, you can select an appropriate device. See [Device Selection and Configuration](#) for more information.



Some of the subtitle devices have target-specific graphic generation parameters for specific media, such as the DVD and Blu-ray options. Other devices are hardware, except for Generic Subtitles, with the specifications based on the device. See the device manufacturer for settings recommendations. The hardware devices are typically connected via modem, LAN, or serial COM port. When you need certain options you

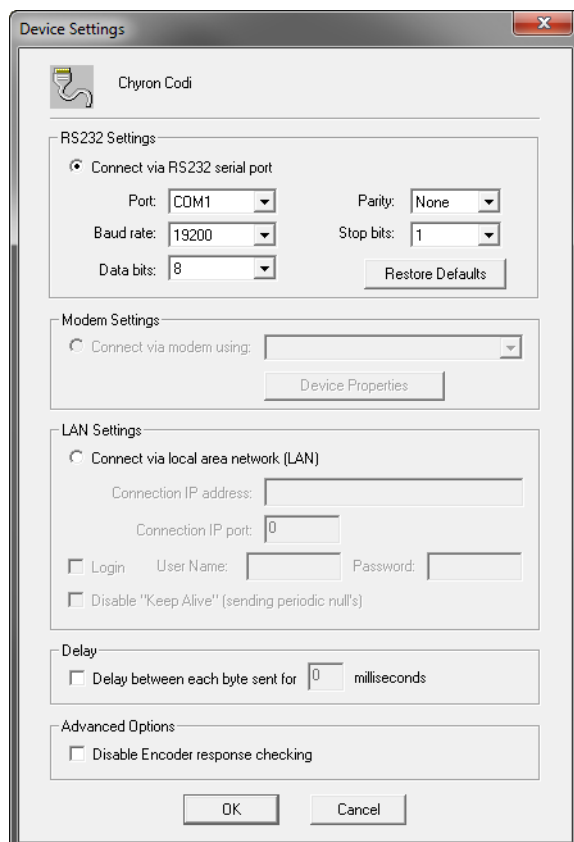
can also use devices for a file-based workflow that have hardware names, and you do not need to have the actual hardware device connected.

The following subtitle devices are available from the Device drop-down menu:

Apple DVD Studio Pro
Blu-ray
Chyron Codi
Chyron Digital PC-Codi
Chyron PC-Codi
Daikin Scenarist
DVD CVC
Generic DVD
* Generic Subtitles
Link HDE 3000 USF/UYC
MagniCoder Premier
MagniCoder Pro
Pinnacle Impression DVD Pro
Sonic Solutions
Spruce DVDMaestro
ULTECH DV2000/ITVinjector USF/UYC

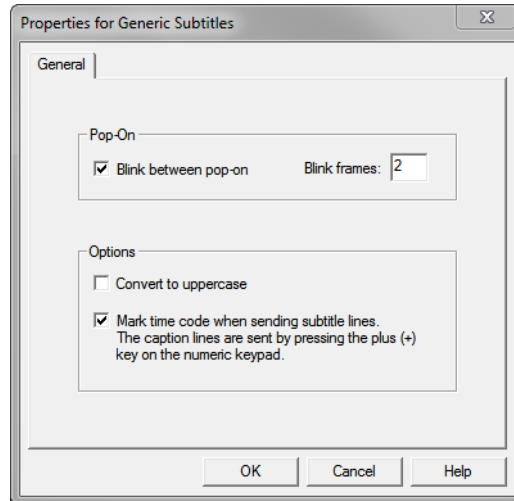
\* See [Virtual Encoder and Generic Subtitles Default Devices](#) for more information on the Generic Subtitles device.

- To adjust configuration settings, select a device and click the **Configure** button, if the selected device has configuration options. The **Device Settings** dialog opens. The options vary, depending on the device selected.



- **RS232 Settings.** If you are subtitling a video on-site, choose *Connect Via RS232 serial port* and select the settings.
- **Modem Settings.** To subtitle a video at a remote location via modem. The encoder must have a built-in modem or a modem attached to it. Choose *Connect via modem using* then select the modem from the list.
- **LAN Settings.** If your encoder device supports serial over ethernet LAN connections, you may choose *Connect Via Local Area network (LAN)*.
- **Delay.** This option delays the timing of each control code that is sent to a hardware encoder, by the number of milliseconds set. This may be valuable when a hardware encoder is having trouble keeping up with control codes for live encoding.
- **Advanced Options.** When a hardware encoder is connected to CaptionMaker it can have the ability to check its connection by using a response checking mechanism. This mechanism can interrupt certain operations. Selecting this option to "Disable Encoder response checking" will send a command to a hardware encoder to disable its response checking feature.

- To adjust properties, select a device and click the **Subtitle Properties** button. The **Properties (device name)** dialog opens. The options vary, depending on the device.



- **Pop-On.** When checked, blank frames are inserted between pop-on subtitles. The default value is 2 blank frames.
- **Options.** Select *Convert to uppercase* to send all characters to the subtitle device as uppercase. Select *Mark time code...* to enable sending subtitles by pressing the plus (+) key on the numeric keypad.

## Properties

Opens the Properties (device name) dialog for the subtitle device currently active in CaptionMaker. Details of the Properties dialog are described above.

## Initialize Device

Initializes the currently active device. In case you power off or change the caption/subtitle device in the middle of a session, you can select this option to ensure it initializes properly.

# Time Code Menu

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**Note:** To access some of the functions from the Time Code menu, you can right-click in the Start or Stop column to open a popup menu. Some of the options, such as Ripple, require you to highlight a number of cells before you invoke the option.

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## Start Time Code Reader

When selected, timing information displays from the timecode reader, video playback, or the PC System Timer.

## Pause Time Code Reader

Pauses the displayed timing information from the timecode reader, video playback, or the PC System Timer.

## Time Code Mode

Set the timecode mode to one of the frame rates listed. It is extremely important to make the right choice to match the video and caption/subtitle hardware you use.

## ATS Auto Time Stamp

Initiates the Auto Time Stamp operation. See [Using Automatic Time Stamp \(ATS\)](#) for details on operation and usage.

## Auto Time Stamp Options

Opens the Error Coloring Settings dialog. See [Error Color Settings](#) for details.

## Mark “In” Time Code

Choose this to set the In Point or Start Time of the first word of the currently selected caption to the current Movie Time. If multiple rows are selected, the start time is set for the first, or top row. This option is also available from a menu when you right-click in a Start or Stop time code field.

## Mark “Out” Time Code

Choose this to set the Out Point or End Time of the last word of the currently selected caption to the current Movie Time. This only needs to be set when a space is needed between captions, such as when there is a pause in the speech, or when the captions have ended. This option is also available from a menu when you right-click in a Start or Stop time code field.


## AutoAdvance after Mark Time Code

This function should normally be checked. The only reason to uncheck this is if you want to assign a timecode to an individual row without the software automatically moving the cursor to the next row, so that you may get the timecode a number of times in order to make sure it is precise.


## Mark Time Code on Send Line(s)

When selected (highlighted yellow), a time code is marked (from the time code reader or the PC System Timer) when you press the keyboard [+] key, as well as sending a caption or subtitle. If you are sending captions or subtitles manually (not using time code) you should not have this button selected.

## Enable Video File Auto Shuttling

When this is selected (toggled on), and you select a caption row, the video automatically jumps to the time of that caption. You can also quickly move through the caption rows using the up and down arrow keys, and the video follows along. This is the same as selecting the Auto Shuttle (Video Follows Captions) button  in the control bar below the video preview panel.

## Enable Auto Row Select

When this is selected (toggled on), the captions change along with the video, following the Start and Stop times that are set. This is the same as selecting the Auto Row (Captions Follow Video) button  in the control bar below the video preview panel.

## Same Start Time

When multiple rows are selected, the start time of the first row is applied to all of the remaining selected rows. This option is also available from a menu when you right-click in a Start or Stop time code field.

## System Timer Start Time

If you are using the PC System Timer, this option lets you choose the start time (the default is 00:00:00:00). This option is useful when time code is not available, then you can simulate time code using the PC System Timer.

## Set System Timer to Current Start Time

This option resets the PC System Timer to the same time as the time stamp on the current row. This option is extremely important to time-stamp a video with the PC System Timer. After resetting the PC System Timer, the action of pressing the [+] key to read time code or invoking AutoSync, makes the PC System Timer start running at that instant.

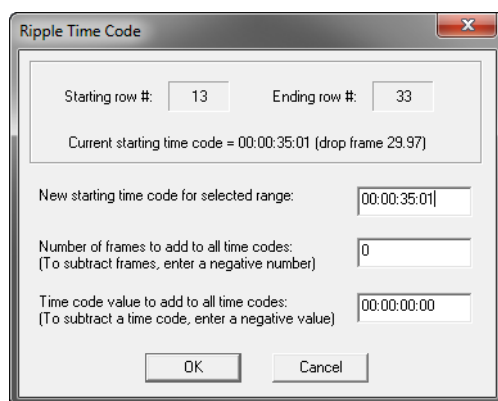


## Set Blank Frames

Opens the Blank Frames dialog, where you can set the number of blank frames between pop-on lines. When a new caption/subtitle replaces the previous one in Pop-On subtitling, a blink-like action takes places. There is a short interval where no caption or subtitle is on the screen. The standard interval that is commonly used is 2 to 6 frames. The default value is 2.

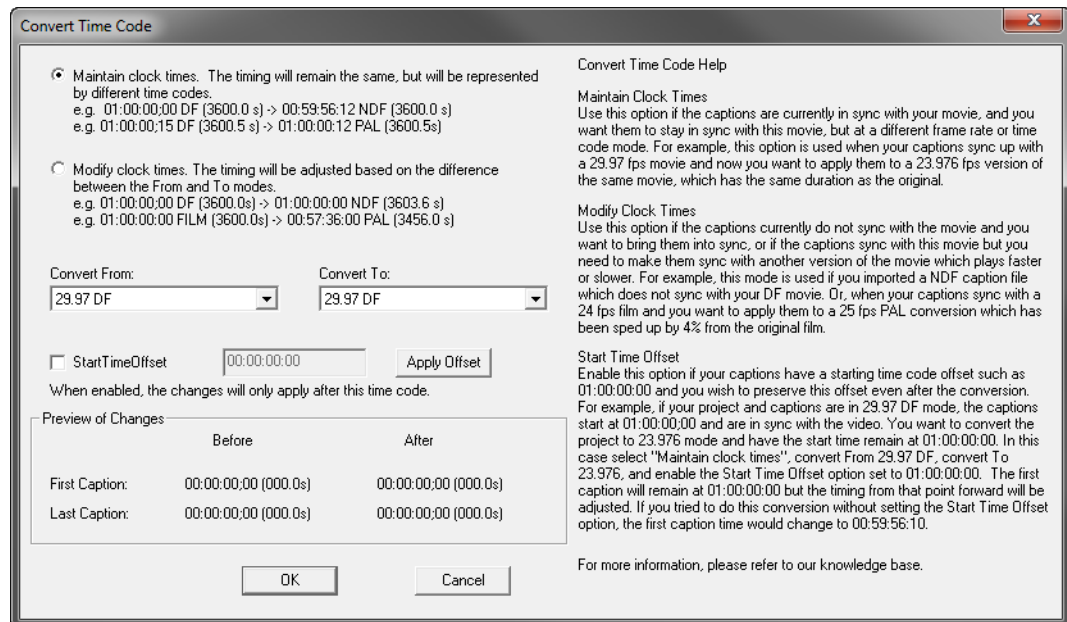
## Ripple Time Code

Opens the Ripple Time Code dialog. You can change the time code within the currently selected block, or from a selected row to the end of a file. See [Applying Ripple Time Code Offsets](#) for more information.



## Convert Time Code

Opens the Convert Time Code dialog. This feature allows you to maintain or modify the clock time, change the frame rate, convert from/to PAL and FILM, switch between drop frame (DF) and non-drop frame (NDF), and set a time offset. See [Convert Time Code](#) for more information.



## Stretch/Shrink Time Code

Opens the Stretch/Shrink Time Code dialog. If your caption timing is right on time at the start but is off a few seconds from the video at the end, you have "captioning drift". This can be corrected by using the Stretch/Shrink Time Code option. See [Stretch/Shrink Time Code](#) for more information.

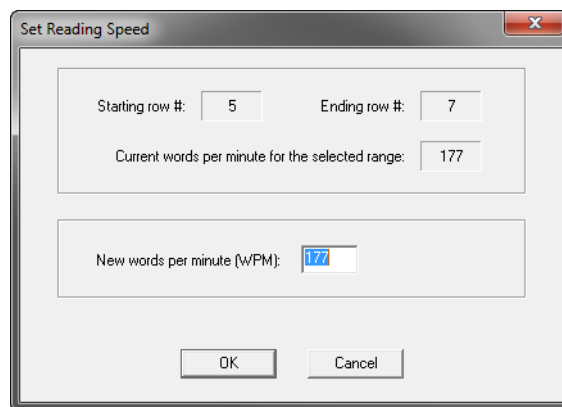
## Non-Linear Shrink Timecode

Opens a Windows dialog so you can choose a text file that contains the information to shrink the timecode.

## Reading Speed

Opens the Set Reading Speed dialog. This option is useful for generating captions for use by young children, since they may not read as fast as older children or adults, and for persons reading captions or subtitles in a non-native language. This option has two functions:

- a. You can check the average reading speed for selected rows, if they have time codes assigned. This *does not* change the actual time codes.
- b. You can also assign a desired words per minute reading speed to a block of selected rows. You need to assign time code only for the first row of the selected block. In this case, the reading speed of each row is going to be exactly the reading speed you assign. This option *does change* the actual time codes.



## Fill-In Time Code

Opens the Fill-In Time Code dialog. This feature has the following options:

- You can assign a time code to selected rows if a time code is set for the first and last line of the selected rows. This can be used when a person is speaking for a long period of time (a lecture or speech) at a fairly steady rate. This feature can save time when subtitling a video, since it does not require you to enter a time code for each row.
- Choose the second radio button when you have no start times in the selected range.
- Select *Force a minimum cell duration of \_\_\_ frames* so captions with a single or a few words do not end up with a duration of less than the number of frames entered. For pop-on captions 30 frames is recommended, and for roll-up captions 20 frames is recommended.

## Limit Caption/Subtitle Durations

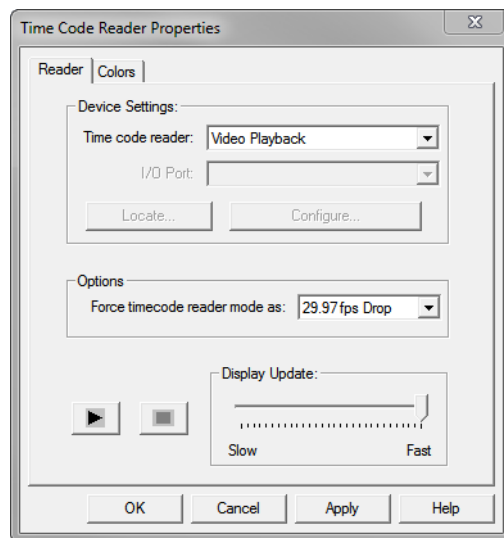
Opens the Limit Durations dialog, which allows you to enter a duration limit, in seconds, for the selected range.

## Sort Captions/Subtitles by Time Code

Sorts the selected caption/subtitle rows into time code order from lowest to highest.

## Time Code Reader Properties

Opens the Time Code Reader Properties dialog.



- **Reader Tab.** Allows you to select one of the several time code readers, or the PC System Timer. You can also change the display rate of the time code reader. When using a reasonably fast computer, the Display Update rate should probably remain at the default value of Fast.
- **Colors Tab.** Allows you to change the color of the time code display in Caption-Maker, but has no effect on any aspect of the appearance of the final captioned or subtitled video.

## Increment Selected Time Code Value

Increments the selected time code value by 1 frame (for example, 00:00:00:00 to 00:00:00:01).

## Decrement Selected Time Code Value

Decrements the selected time code value by 1 frame (for example, 00:00:00:01 to 00:00:00:00).

## Video Mode Menu

Use the Video Mode menu options to set CaptionMaker to the same mode as the video you are working with. The choices are:

### NTSC

NTSC (National Television Systems Committee) is the analog, standard definition (SD), television standard for North America, Japan, and some other parts of the world. NTSC supports closed captioning (608 only) on Line 21 of the video signal.

### PAL

PAL (Phase Alternating Line) is a system for analog television used in Europe, Asia, Australia, and most of South America and Africa. Broadcasting at 625-line / 50 field (25 frame) per second (576i).

### HD720

HD720 is a high-definition (HD) progressive HDTV signal format with 720 horizontal lines and a widescreen aspect ratio (AR) of 16:9 (1.78:1), with a resolution of 1280x720 pixels. Closed captioning for HD is sometimes called Line 9 or VANC, and is codified under the 708 standard.

### HD1080

HD1080 (also known as Full HD or FHD and BT.709) is a set of HDTV high-definition video modes characterized by 1080 horizontal lines of vertical resolution and progressive scan, as opposed to interlaced, as is the case with the 1080i display standard. The term usually assumes a widescreen aspect ratio of 16:9, and a resolution of 1920x1080 pixels. Closed captioning for HD is sometimes called Line 9 or VANC, and is codified under the 708 standard.

### UHD-1

UHD-1, also known as Ultra HD, has a resolution of 3840x2160 pixels.

# VTR Control Menu

Allows you to control a VTR using Sony BVU-800 protocol machines and Panasonic AG5700 series devices. The control button options are self-explanatory, being in common use on video recording and playback devices.

## Enable “JKL” Control

Enables use of the J, K, and L keys to play the video in the Preview Panel or VTR. Press J to rewind, K to stop, and L to play forward. Multiple presses of the J or L keys increases the speed.

## Configure “JKL” Control

Allows you to set the speed increments for the J and L keys. See [Advanced Playback Control](#) for more information on configuring the speed settings.

## Properties

Opens the VTR Properties dialog. You can select the device type and configure COM port options. You can also set the delay speed at which the controls function.

## Vpedal

Opens the Vpedal Properties dialog. You can set the V-pedal foot controller *release back* function. Release back time is the amount of automatic rewind that occurs when you resume playing after a pause. The default rewind is 2 seconds and then playing resumes. See [V-Pedal](#) for more information.

## Web Menu

### Retrieve Captions

Opens the Import File dialog. Allows you to choose the file type and browse to open it. Check the Options submenu to import the captions into the existing document at the current selected row, or uncheck to create a new document upon import. See [Import Caption or Subtitle Files](#) for more information on importing.

### Encode Captions

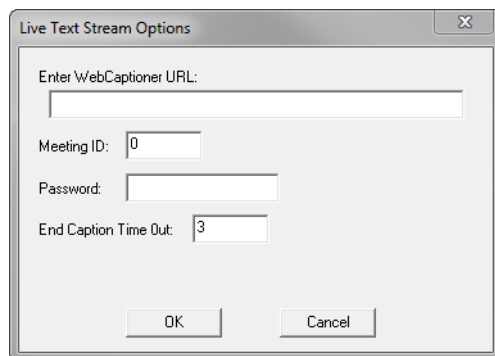
Opens the Export File dialog. Allows you to select the file type, the output file name and location. See the [Exporting / Encoding](#) chapter for more information on encoding.

### Live Text Stream

Enables output of a live caption text stream to the URL specified in the Live Text Stream Options dialog.

### Live Text Stream Options

Opens the Live Text Stream Options dialog, where you can enter the URL and other parameters of your live text streaming provider, a meeting number, and a password. The Live Text Stream feature (see above) must be disabled to edit the dialog fields.



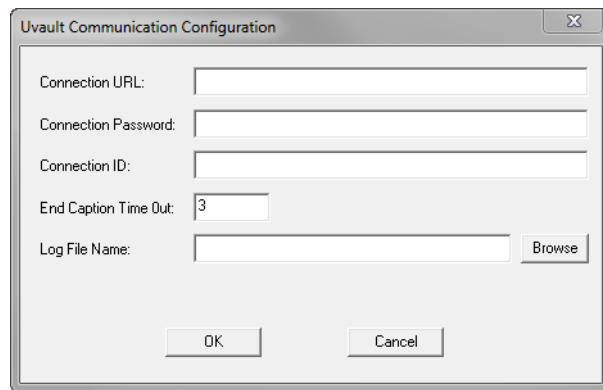
### UVault Connection

Enables output of a live caption text stream to the UVault URL you specify. Use the option below it to specify the URL and other parameters. See [UVault Live Captioning](#) for more information.



## UVault Connection Options

Opens the UVault Communication Configuration dialog, where you can enter the URL and other parameters of the UVault live connection. The UVault Connection feature (see above) must be disabled to edit the dialog fields.



The UVault Communication Configuration dialog box contains the following fields and controls:

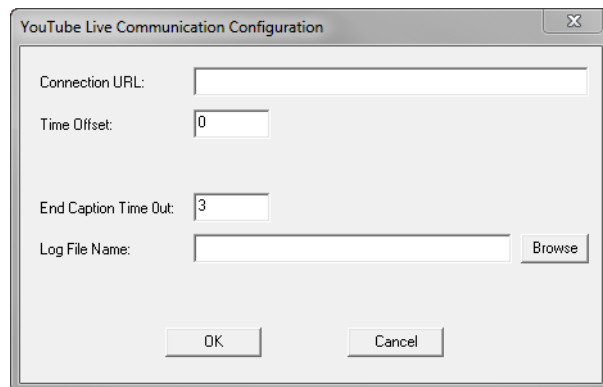
- Connection URL:
- Connection Password:
- Connection ID:
- End Caption Time Out:
- Log File Name:
- 

## YouTube Live Connection

Enables output of a live caption text stream to the YouTube URL you specify. Use the option below it to specify the URL and other parameters. See [YouTube Live Captioning](#) for more information.

## YouTube Live Connection Options

Opens the YouTube Live Communication Configuration dialog, where you can enter the URL and other parameters of the YouTube live connection. The YouTube Live Connection feature (see above) must be disabled to edit the dialog fields.



The YouTube Live Communication Configuration dialog box contains the following fields and controls:

- Connection URL:
- Time Offset:
- End Caption Time Out:
- Log File Name:
-

## DV Menu

### Retrieve Captions

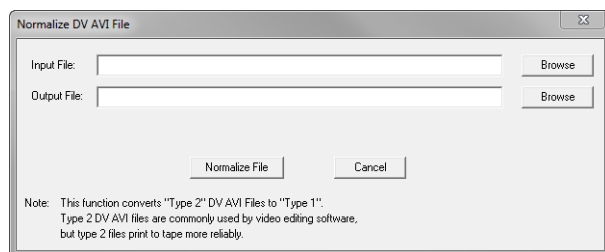
Opens the Import File dialog. Allows you to choose the file type and browse to open it. Check the Options submenu to import the captions into the existing document at the current selected row, or uncheck to create a new document upon import. See [Import Caption or Subtitle Files](#) for more information on importing.

### Encode Captions/Subtitles

Opens the Export File dialog. Allows you to select the file type, the output file name and location. See the [Exporting / Encoding](#) chapter for more information on encoding.

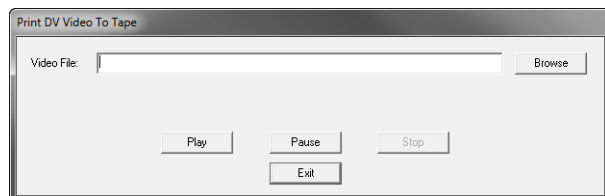
### Normalize DV AVI File

Opens the Normalize DV AVI File dialog. Converts Type 2 DV AVI files to Type 1. Type 2 files are commonly used by video editing software, but Type 1 files print to tape more reliably.



### Print DV Video to Tape

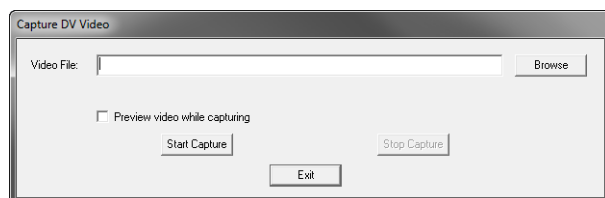
Opens the Print DV Video to Tape dialog. Transfers a captioned DV video via Firewire to a MiniDV, DVCAM, or DVCPRO tape. You can also dump a captioned DV video to an analog tape such as VHS or BetaSP using a digital to analog converter such as Sony DVMC-DA1 and DA2, or a captioned compatible DV deck which retains captions.



## Capture DV Video

Opens the Capture DV Video dialog. Captures a DV video (720x480) via Firewire (IEEE 1394) and creates a DV AVI file. Video may be captured from devices such as the Sony DVMC-DA1/DA2, a camcorder, or a DV deck.

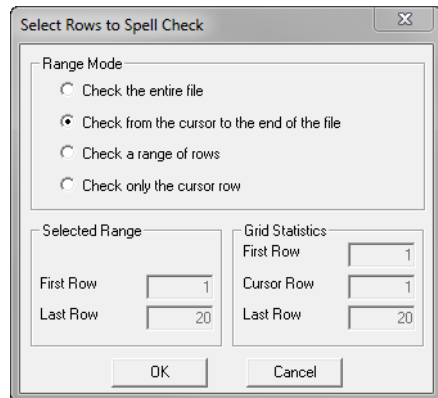
You can export a blank video (720x486) file with encoded closed captions or subtitles to be merged with the original video using an NLE system.



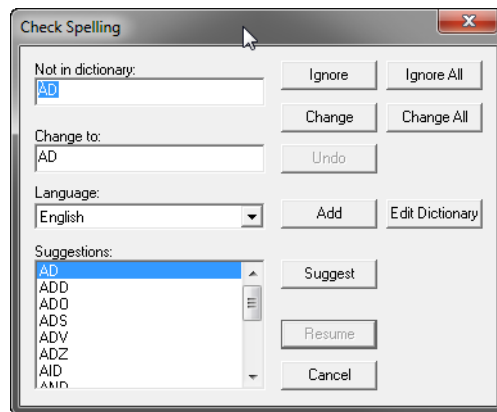
## Tools Menu

### Spelling

Opens the Select Rows to Spell Check dialog. You can select Range Mode options, then click OK to initiate the spell check operation.



CaptionMaker can check spelling in English, Spanish, French, German, and Portuguese. When the spell check finds words it does not recognize, it displays the Check Spelling dialog.



The Check Spelling dialog shows the word that it doesn't recognize in the *Not in dictionary* field. The *Change to* field shows the dictionary's suggestion for correcting the error. Click *Change* to accept the suggestion and correct the word, or select another choice from the *Suggestion* list and click *Change*.

You can also click *Ignore* to skip the word, or click *Ignore All* if you want to skip all instances of the word when multiple instances are present.

If the word is valid but not in the dictionary, click *Add* to enter it in the dictionary, or click *Edit Dictionary* to modify the dictionary file by selecting from various options for handling the word. When finished with a word, click *Resume* to continue spell checking.

## Find Shot Changes

Initiates the Find Shot Change operation. The status bar in the bottom of the window indicates progress. You can find the shot changes in any video (MP4, WMV, AVI, MOV, MPEG, M2V, and so on). It is a good idea not to have a shot change inside the duration of any caption in Pop-on mode, so this Find Shot Change operation helps to locate the changes.

When you save the CaptionMaker project, the shot change information is saved in the .cap file. When you reopen the .cap file, you do not need to find shot changes again.

After finding the shot changes, when you play the video, the next shot change indicator appears right below the Time code display in HH:MM:SS:FF format. Next shot change display color becomes RED when it is less than 10 seconds from the next shot change.

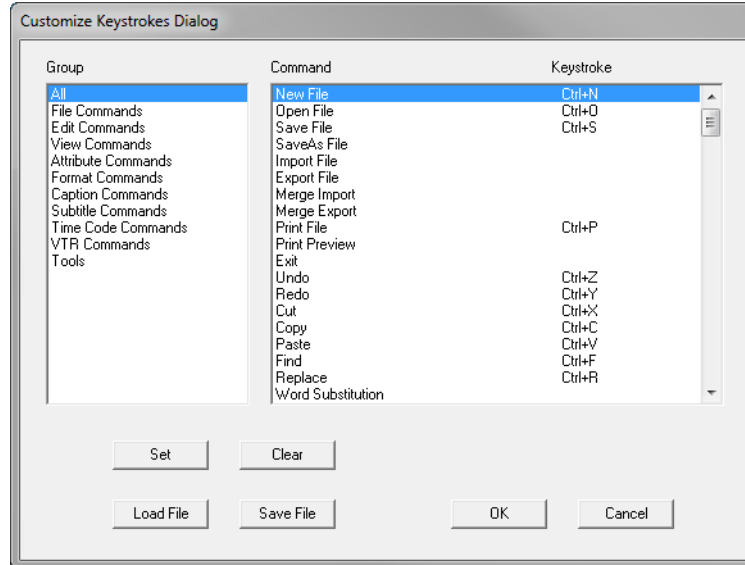
You can also click the two buttons next to the time code display area to move to the previous and next shot change locations. See [Time Code Controls](#) for button and display locations.

## Snap Time Codes to Shot Changes

After the Find Shot Change operation has taken place, you can initiate the Snap Time Codes to Shot Changes function. This automatically adjusts time codes so that captions/subtitles do not display during detected shot changes.

## Customize Keystrokes

Opens the Customize Keystrokes dialog. Most menu items and commands can also be accessed via keyboard.



You can customize the keyboard shortcuts to your preference. Double-click on the function you want to change, or click it once and click Set. In the New Keystroke dialog, simply type the keys you want to replace the existing assigned keys, and click OK.



Common typing characters, such as single letters, are reserved for text typing. Keystroke combinations will need to include the Alt, Control, Shift plus function keys, or extended keypad characters.

To clear any assigned keys without assigning new ones, select a function and click Clear.

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**Note:** To assign a key on the number keypad, you must have NumLock On.

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### Copy Custom Keystrokes to Another Computer

If you are running CaptionMaker on more than one computer you can copy the Customize Keystrokes settings from one computer to another. Do this by using the *Save File* button in the Customize Keystrokes Dialog to save the custom keystrokes to a file in any location you prefer. Name the file CapKeyMap.dat. Copy the file to the other computer and use the *Load File* button in the Customize Keystrokes Dialog to import the saved file.

## Comm Monitor

Select Comm Monitor to Open the Communications Error Messages dialog and start the error message function. Hardware encoders and decoders are connected to CaptionMaker via serial COM ports. This monitor can tell us if there are any communication errors during the connection to the hardware encoders.

## Comm Monitor Log File

Select this option to choose a location and file name for the Communication Monitor log file. Any errors detected with a connection to the hardware encoders via a serial COM port is saved to a .txt file when this option is enabled.

# Help Menu

## **Grid Tooltips**

Turns the tooltips off and on for the Text Panel.

## **Quick Start Guide (Local)**

Opens the Quick Start Guide that is installed with CaptionMaker. Adobe PDF reader is required to view the document.

## **User Guide (Local)**

Opens the CaptionMaker User Guide. Adobe PDF reader is required to view the document.

## **Command Line Documentation (Local)**

Opens the CaptionMaker CommandLine Options guide, installed with the product, that describes controlling the software via the command line. Adobe PDF reader is required to view the document.

## **Online Technical Support**

Takes you to the Telestream web site Closed Captioning Support page, where you can find a range of support information or enter a technical support ticket.

## **Purchase/Upgrade**

Takes you to the Telestream Online Store for the captioning products, where you can choose a version for purchase or to upgrade.

## **About CaptionMaker**

Displays the version number, copyright notice, and contact information for Telestream.

## **Downloads**

Opens the CaptionMaker Downloads dialog. You can select if you want automatic update checks, and can check for updates and download the latest version.

## **Manage License**

Opens the Manage CaptionMaker License dialog. Provides options to upgrade or deactivate the license and a field for reading or entering your license number.

## **Upgrade HASP4 License**

Opens a dialog so you can upgrade a HASP4 License.



## Upgrade HASP SRM License

Opens a dialog so you can upgrade a HASP SRM License.

## Open the HSRP SRM Admin Control Center

Opens <http://localhost:1947> in your browser. You should see the "Sentinel Admin Control Center" page appear. If you do not see this page, then either the HASP driver is not installed, or the driver is experiencing a problem. This could be caused by a firewall or anti-virus software which is blocking the HASP driver or blocking TCP/UDP port 1947. Please make sure TCP and UDP port 1947 are not blocked for internal communication (Internet access is not required, just local network). If you can't access this page in your browser, the problem MUST be resolved before the dongle can be used. For more information see [HASP Network Dongle](#).



# Toolbars

This chapter describes the CaptionMaker toolbars.

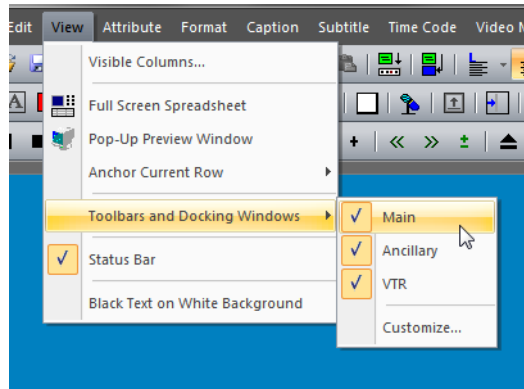
- [Accessing and Customizing the Toolbars](#)
  - [Show or Hide Toolbars](#)
  - [Add or Remove Buttons](#)
  - [Move a Toolbar](#)
  - [Detailed Button Descriptions](#)
- [Main Toolbar](#)
- [Ancillary Toolbar](#)
- [VTR Toolbar](#)

## Accessing and Customizing the Toolbars

Toolbars in CaptionMaker provide a quick and convenient way to change settings and access options.

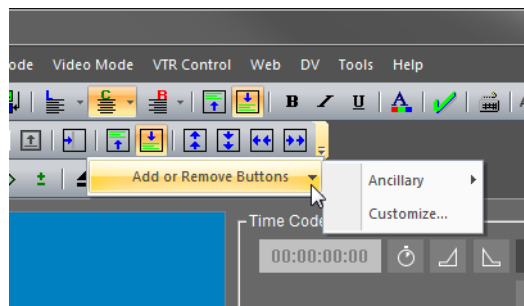
### Show or Hide Toolbars

To show or hide the toolbars, go to View > Toolbars and Docking Windows and select a toolbar to toggle on or off.



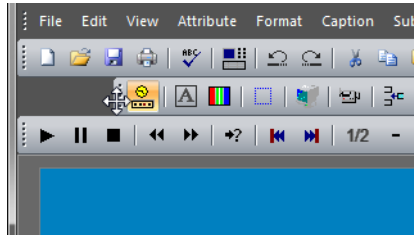
### Add or Remove Buttons

To change the buttons that are shown on a toolbar, click the down-arrow on the right side of a toolbar to open the Add or Remove Buttons menu. Button selections may then be toggled on or off based on which buttons you want to show or hide.



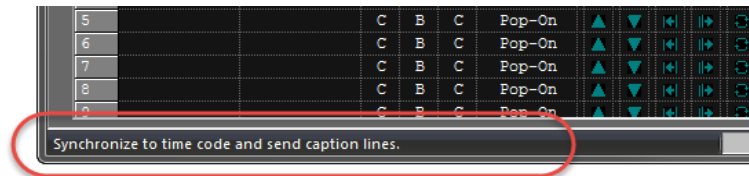
## Move a Toolbar

To move a toolbar to a new location, hover your mouse cursor over the left end of a toolbar and the cursor changes to double crossed arrows. Click to grab the toolbar and move it.



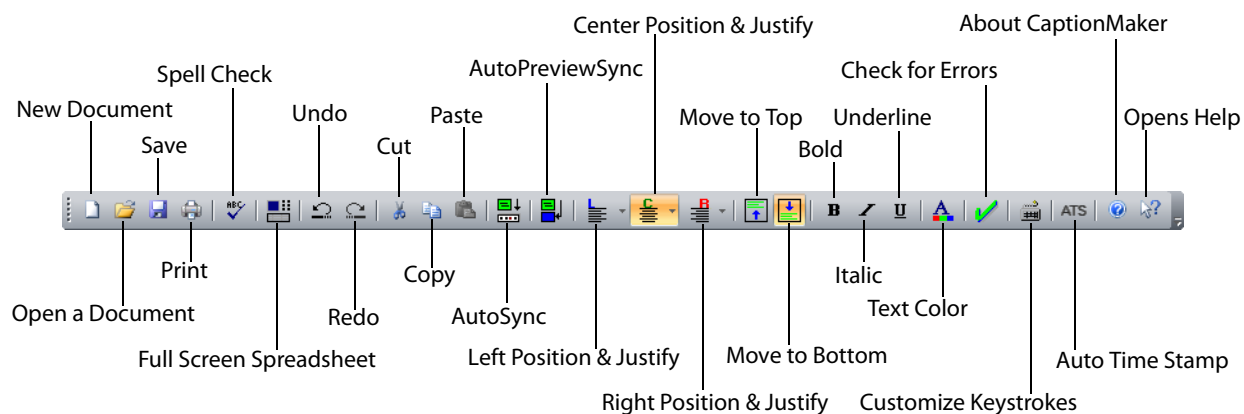
## Detailed Button Descriptions

Additional information for many toolbar buttons appears in the Status Bar in the bottom left of the CaptionMaker workspace. Hover your mouse cursor over a button to see the information.



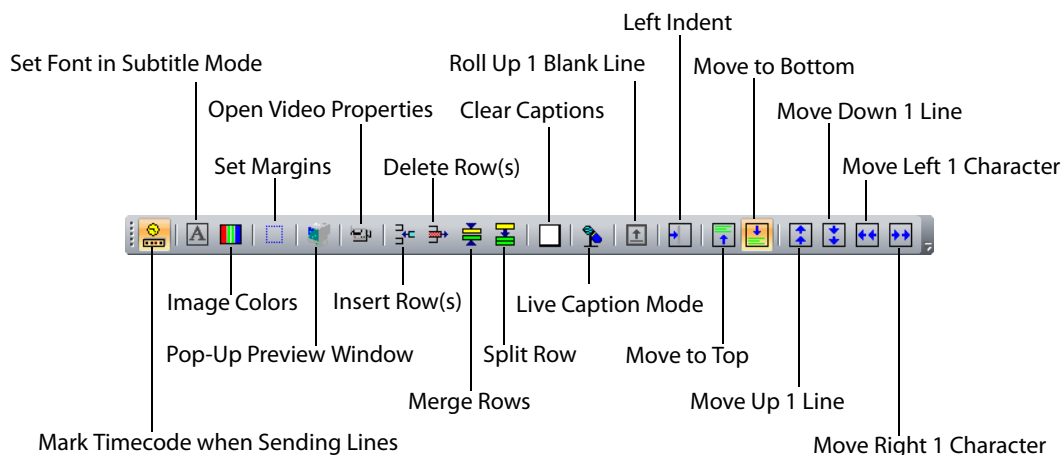
## Main Toolbar

The Main toolbar provides buttons for common operations.



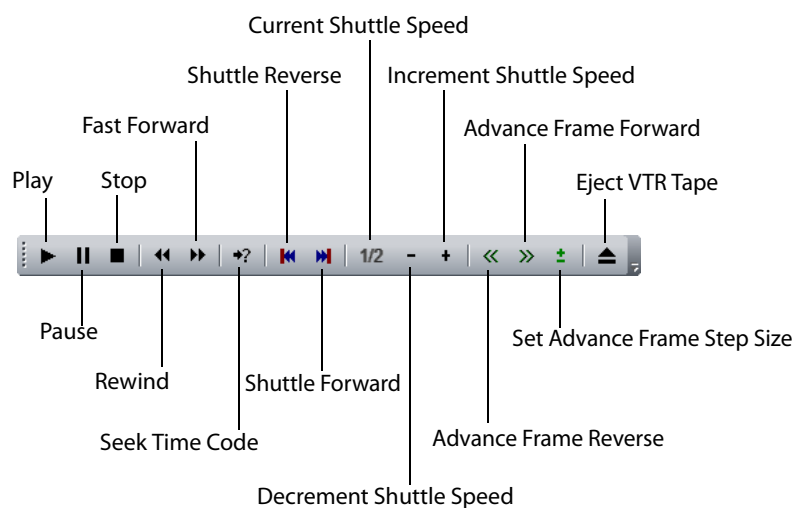
## Ancillary Toolbar

The Ancillary toolbar provides buttons for some formatting video operations.



## VTR Toolbar

The VTR toolbar controls the video in the Video Preview Panel or an external VTR hardware device.







# File Types for Import/Export

This chapter provides lists of all file types that CaptionMaker and MacCaption can import or export, categorized by purpose, and by what is available in the different versions of Desktop, Pro, and Enterprise.

- [Command Line Interface File Types](#)
- [Identifying MacCaption and CaptionMaker File Types](#)
- [Import File Types](#)
  - [Text Files](#)
  - [Extract Closed Captions from Media](#)
  - [Standalone Caption/Subtitle Import Files](#)
  - [Web and Mobile Standalone Import Files](#)
  - [Assemble Captions](#)
- [Export File Types](#)
  - [Text Files](#)
  - [Embed Closed Captions into Media](#)
  - [Broadcast Standalone Files](#)
  - [Web and Mobile Standalone Export Files](#)
  - [Subtitle and Open Caption Export Files](#)

## Command Line Interface File Types

Not all of the file types listed in this chapter are supported when using the CaptionMaker or MacCaption Command Line Interface (CLI).

- To see the files that are available when using the CLI in CaptionMaker, open the CLI document from Help > CommandLine Documentation (Local).
- To see the files that are available when using the CLI in MacCaption, open the CLI document from Help > Command Line Interface.

## Identifying MacCaption and CaptionMaker File Types

File type descriptions, in the tables in this chapter, for MacCaption and CaptionMaker are color coded and marked with asterisks to indicate which platform they work with. The following designations are used:

- **Blue and one asterisk (\*)**: Indicate file types that only work with MacCaption
- **Green and two asterisks (\*\*)**: Indicate file types that only work with CaptionMaker.
- **Black**: Works for both MacCaption and CaptionMaker.

# Import File Types

The following tables provide the import file types, along with relevant notes.

## Text Files

\* Indicates MacCaption only. \*\* Indicates CaptionMaker (Windows) only.

Desktop	Pro/Enterprise	Notes
	MacCaption Project (.cca)*	
	For Multiple Language*	
Plain Text File*	Plain Text File*	
ASCII Text (.txt)**	ASCII Text (.txt)**	
Rich Text Format (.rtf)**	Rich Text Format (.rtf)**	
Word Document (.doc)**	Word Document (.doc)**	
WordPerfect Document (.wpd, .doc)**	WordPerfect Document (.wpd, .doc)**	
	Translation (.rtf)**	

## Extract Closed Captions from Media

\* Indicates MacCaption only. \*\* Indicates CaptionMaker (Windows) only.

Desktop	Pro/Enterprise	Notes
	ATSC DTV 608/708 CC SD (to MPEG2, .ts .m2v)	MPEG2 data. Manzanita can add to Transport Stream. Cable station broadcast. XDCAM MOV.
	ATSC DTV 608/708 CC HD (to MPEG2, .ts .m2v)	Same as above note, but only looking at line 708.
	AVI 720x486 for NLE (.avi) - NLE 720x486 video/gray-scale	VBI importer, line 21 data, QuickTime, AVI.
	QCC Multi-Format Import (.mpg .mpeg .m2v .mpv .ts)	This is a catch-all import that includes many formats. See <a href="#">QCC Multi-Format Import</a> for more information.
	Apple ProRes 422 Metadata VANC Closed Captions*	For KiPro - puts caption data in VANC of ProRes.
	Ccube/LSI DVx 608 Linear Closed Captions	
	Ccube/LSI DVx 608 Temporal Closed Captions	
	DV AVI 720x480 (.avi)	

Desktop	Pro/Enterprise	Notes
	DV/DVCPRO 720x480 (DV25/50)	Not enough to do Closed Captions (CC) because it doesn't have enough resolution. Ancillary field.
	<a href="#">DVCPROHD (DV100)*</a>	Mac only. Can be FireWire. MOV wrapper.
DVD Closed Cap (from MPEG2)	DVD Closed Cap (from MPEG2)	MPEG2, not the same as SCC.
	<a href="#">DV QuickTime 720x480 (MOV)**</a>	
	<a href="#">MPEG2 720x480 New Tek TriCaster (.mpg, .mpeg)**</a>	
	<a href="#">MPEG2 720x512 422P@ML (.mpg, .mpeg)**</a>	
	<a href="#">Matrox 4VANC*</a>	Matrox MXO2 hardware, MOV, 16 channel audio, CC data in 16th channel, cross convert, currently uses SCC or MCC.
	Media eXchange Format .mxf	XDCAM MXF only, OP1A, HD. Support for 608/708 caption data or OP-47 Teletext from SMPTE-436M track.
	<a href="#">Nexidia QC report files .XML**</a>	These files contain notes that help CaptionMaker find errors. See <a href="#">Using a Nexidia XML QC Report to Locate Errors</a> .
	QuickTime DTV 608/708	CC 608 track only, for iDevice and desktop- viewable in QuickTime player.
QuickTime Podcast CC 608	QuickTime Podcast CC 608	CC 608 track only, for iDevice - viewable in QuickTime player.
	<a href="#">SCTE20 CC 608*</a>	Older insertion style for broadcast.
	<a href="#">SeaChange CC*</a>	Older SeaChange hardware, MOV specific area for caption.
	<a href="#">Sony XDCAM MOV*</a>	User data from Final Cut Pro XDCAM media.
<a href="#">QuickTime Subtitles (MOV, .m4v)*</a>	<a href="#">QuickTime Subtitles (MOV, .m4v)*</a>	Alternate for subtitle tech, multiple tracks, QuickTime player, iDevice.
<a href="#">QuickTime Text Track (MOV, .m4v)*</a>	<a href="#">QuickTime Text Track (MOV, .m4v)*</a>	Text played below video, low quality, mobile.

## Standalone Caption/Subtitle Import Files

\* Indicates MacCaption only. \*\* Indicates CaptionMaker (Windows) only.

Desktop	Pro/Enterprise	Notes
	Anystream .xml*	XML, not SMPTE.
	Avid DS .txt	Subtitle file for Avid. Time code and text only. Render using Avid tools.
	Caption Center .tds	Use WGTS software. Slightly encoded text file.
	Captions Inc. .cin	Caption file for captioning company - Captions Inc.
	CCaption Description File .asc*	Old version of CPC software encoding, for embedding caption data.
	Cheetah INT .asc	Uses less control coding interspersed with text.
	Cheetah INT .cap	Caption file used with hardware encoding, very popular.
	CPC/LeapFrog CCaption (.onl)/ CPC-715 File .onl	Online file for use with old CPC software, tape to tape.
	DLP Cinema DCI Iterop .xml	Digital light projection package. Used more for subtitles.
DOS CPC-600/CPC-700 (.)**	DOS CPC-600/CPC-700 (.)**	
DVD Caption File .cc	DVD Caption File .cc	Generic for Scenarist files. Very limited, only 29.97. Used by most products.
DVD Caption File .scc	DVD Caption File .scc	Generic for Scenarist files. Very limited, only 29.97. Used by most products.
	DVD Studio Pro .stl*	Subtitle for DVD Studio Pro.
	EBU Subtitling Data Exchange .stl	EU broadcasters standard format. Open subtitling - text file burn-in. Includes Teletext Level 1 encoding, Double Height characters, foreground color.
	Evertz ProCAP .txt	Software file that interacts only with Evertz hardware.
	EZTITLE Format (.txt)**	
	Inquirium InqScribe .txt*	Transcription software file. Import only.
iTunes .itt	iTunes .itt	Subtitling in iTunes market. XML file.
MacCaption VANC .mcc*	MacCaption VANC .mcc*	

Desktop	Pro/Enterprise	Notes
MacCaption MCC 608/708 .mcc	MacCaption MCC 608/708 .mcc	Allows for additional Active Format Description metadata. Support for OP-47 Teletext.
	National Captioning Institute .cap	NCI company proprietary format.
	National Captioning Institute .flc*	Additional format for NCI.
	PAC Subtitles .pac	Popular EU subtitle format, fairly new.
	PowerPixel Format (.txt)**	
	ProCap Author.doc (.doc)**	
	ProCap Transfer (.txt)**	
Windows CaptionMaker (.cap)**	Windows CaptionMaker (.cap)**	
Windows CaptionMaker V 1.xx (cap)**	Windows CaptionMaker V 1.xx (cap)**	
	QuickTime Text Track .txt*	Mobile text format from Apple. Text vs. embedded text, rare.
	Rhozet .xml*	Competitor file for Carbon Coder, 608 only.
SAMI Sync Accessible Media Interchange .smi	SAMI Sync Accessible Media Interchange .smi	Original web streaming file format, used for Windows Media Player, stand-alone file format.
	Same as Windows Media SAMI file .smi	Original web streaming file format, used for Windows Media Player, stand-alone file format.
	Sofni .sub	EU subtitler. Often used for DirecTV.
	Softitler .txt*	EU subtitler, text file format.
	Sonic Text .txt	Sonic solutions, for Sonic DVD.
	Sony Blu-ray Subtitles .txt*	Just for Sony Blu-ray platform. Blu-print file.
Subrip .srt	Subrip .srt	Format to optically pull subtitles from DVDs, simple time-in time-out. Different than YouTube. Works with Vimeo.
Timed Text DFXP .xml	Timed Text DFXP .xml	Catch-all import. All timed text files start the same.
	Ultech Caption .ult	From Ultech. Originally hardware, multi frame rate, multi platform.

Desktop	Pro/Enterprise	Notes
WebVTT .vtt	WebVTT .vtt	Next generation of Subrip .srt. Contains positioning and style. Popular with media players, web format.
YouTube .sbv, .srt	YouTube .sbv, .srt	.sbv is used solely for YouTube. .srt is slightly different from Subrip.

## Web and Mobile Standalone Import Files

\* Indicates MacCaption only. \*\* Indicates CaptionMaker (Windows) only.

Desktop	Pro/Enterprise	Notes
Google/YouTube Video Subtitle Script (.srt)	Google/YouTube Video Subtitle Script (.srt)	
SMPTE Timed Text / Magic Time Text .xml	SMPTE Timed Text / Magic Time Text .xml	Constraint of DFXP, follows SMPTE rule, strict formatting.
SubRip (.srt)	SubRip (.srt)	Simple text. Used for web.
WebVTT .vtt	WebVTT .vtt	Next generation of Subrip .srt. Contains positioning and style. Popular with media players. Web format.
Windows Media SAMI file .smi	Windows Media SAMI file .smi	Slight derivation of SAMI. Different than plain SAMI.
Windows Media Player [Embedded Captions] (.wmv)**	Windows Media Player [Embedded Captions] (.wmv)**	

## Assemble Captions

**PRO**

The Assemble Captions import formats are only available in the Pro and Enterprise versions of MacCaption.

\* Indicates MacCaption only.

Pro/Enterprise	Notes
CMX 3600 (.edl)*	
Final Cut Pro 7 (.xml)*	
Final Cut Pro X (.fcpxml)*	

## Export File Types

The following tables provide the export file types, along with relevant notes.

### Text Files

\* Indicates MacCaption only. \*\* Indicates CaptionMaker (Windows) only.

Desktop	Pro/Enterprise	Notes
For Multiple Language	For Multiple Language	
Plain Text File	Plain Text File	
ASCII Text (.txt)**	ASCII Text (.txt)**	
Rich Text Format (.rtf)**	Rich Text Format (.rtf)**	
Word Document (.doc)**	Word Document (.doc)**	
WordPerfect Document (.wpd, .doc)**	WordPerfect Document (.wpd, .doc)**	

### Embed Closed Captions into Media

\* Indicates MacCaption only. \*\* Indicates CaptionMaker (Windows) only.

Desktop	Pro/Enterprise	Notes
	ATSC DTV 608/708 CC SD (to MPEG2, .ts .m2v)	Adds user data to XDCAM or MOV.
	ATSC DTV 608/708 CC HD (to MPEG2, .ts .m2v)	Adds user data to XDCAM or MOV.
	AVI 720x486 for NLE (.avi)**	
	Black AVI 720x486 for NLE (.avi)**	
	CCIR 601/4:2:2P@ML Movie w/ CC	SD export to add line 21 to 720x512. Extreme Reach.
	CCube/LSI DVx 608 Linear CC	MPEG1 608 export, older.
	CCube/LSI DVx 608 Temporal CC	MPEG1 608 export, older.
	DV AVI 720x480 (.avi)**	
	DV/DVCPro 720x480 DV25/50 CC	Puts in the VAUX (vertical aux) to send to tape.
	DVCPro HD DV100 .mov CC	Add to the VANC of DVCPro file.
	DVD CC (to MPEG2)...	Not broadcast spec, but can be converted into spec.
	DVD Style CC (to MPEG2)	Not broadcast spec, but can be converted into spec.
	H.264 SEI 608/708 captions	User data for H.264, for V-Brick, SOLA streaming platform for Akamia.



Desktop	Pro/Enterprise	Notes
	MPEG-2 Userdata 608/708 captions	Different method than ATSC. Put data in Transport Stream without Manzanita. Not Cable Lab spec.
	QuickTime DTV 608/708 CC Track...	Track for broadcast. In wrapper of file MOV (ProRes or H.264).
QuickTime 608 CC (Final Cut Pro/Podcast/Web)	QuickTime 608 CC (Final Cut Pro/Podcast/Web)	Track for web content, iOS, and related.
	Sony Material eXchange Format .mxf/MXF	XDCAM MXF. Used for XDCAM decks, Omneon servers.  Support for 608/708 caption data or OP-47 Teletext into SMPTE-436M track.
Windows Media Player [Embedded Captions] (.wmv)**	Windows Media Player [Embedded Captions] (.wmv)**	
	YUY2 AVI 720x12 (.avi)**	
	SeaChange CC	Specifically for SeaChange hardware, MOV proprietary.

## Broadcast Standalone Files

\* Indicates MacCaption only. \*\* Indicates CaptionMaker (Windows) only.

Desktop	Pro/Enterprise	Notes
	Avid Advanced Authoring Format .aaf	Avid MC export either HD MXF or HD tape. Used with Nitris DX and MOJO DX.  Support for OP-47 Teletext.
	Avid DS .txt	Subtitle file for Avid. Time code and text only. Render using Avid tools.
	Black 720x486 movie w/ CC	To create line 21 black movie to add line 21 caption data in any NLE. SD only.
	Black 720x512 NTSC Movie for Matrox DigiServer	For Matrox server. Adds caption data. SD only.
	Caption Center .tds	Use WGTS software, slightly encoded text file.
	Captions Inc .cin	Caption file for captioning company - Captions Inc.
	Cheetah International .asc	Uses less control coding interspersed with text.

Desktop	Pro/Enterprise	Notes
	Cheetah International .cap	Caption file used with hardware encoding. This is a most widely used format.
	Convert MCC to Avid Captions Only AAF (.aaf)**	
	Convert SCC to Avid Captions Only AAF (.aaf)**	
	CPC/LeapFrog CCaption (.onl)/ CPC-715 File .onl	Online file for use with old CPC software. Tape to tape.
DOS CPC-600/CPC-700 (.)**	DOS CPC-600/CPC-700 (.)**	Works for various file extension types.
DVD Caption File (.cc)**	DVD Caption File (.cc)**	
DVD Caption File (Scenarist .scc)	DVD Caption File (Scenarist .scc)	Generic for Scenarist files. Very limited, only 29.97. Used by most products.
DVD T2 Links File (.scc)**	DVD T2 Links File (.scc)**	
	Evertz ProCAP .txt	Software file that interacts only with Evertz hardware.
	EZTITLE Format (.txt)**	
MacCaption VANC Data File .mcc	MacCaption VANC Data File .mcc	Text file that contains 608/708 data. Support for OP-47 Teletext.
MacCaption MCC V2 .mcc*	MacCaption MCC V2 .mcc*	Allows for additional Active Format Description metadata.
	Matrox 4VANC Closed Captions	Matrox MXO2 hardware, MOV, 16 channel audio, CC data in 16th channel, cross convert, currently uses SCC or MCC.
	Multiplexed File for Manzanita	Multi language data, SCC.
	PowerPixel Format (.txt)**	
	Ultech .ult	From Ultech, originally hardware. Multi frame rate, multi platform.
	Ultech ULT Caption (multi-language merge) (.ult)	
Windows CaptionMaker (.cap)**	Windows CaptionMaker (.cap)**	
Windows CaptionMaker Ver 1.xx (.cap)**	Windows CaptionMaker Ver 1.xx (.cap)**	

## Web and Mobile Standalone Export Files

\* Indicates MacCaption only. \*\* Indicates CaptionMaker (Windows) only.

Desktop	Pro/Enterprise	Notes
Crackle Timed Text .xml	Crackle Timed Text .xml	1 of 2 Sony XML TTL timed text. Used to output to Crackle only.
	Flash Text .txt	Old method of adding captions to Flash.
Flash XML for Captionate .xml	Flash XML for Captionate .xml	Used just for Captionate. Simple XML.
Flash XML for CS4 [Timed Text DFXP] .xml	Flash XML for CS4 [Timed Text DFXP] .xml	Designed for flash CS4. Still used frequently (DFXP).
Flash XML in Timed Text Authoring Format without header (.dfxp)**	Flash XML in Timed Text Authoring Format without header (.dfxp)**	
Generic DFXP w/o Positioning .xml*	Generic DFXP w/o Positioning .xml*	Very limited use. No positioning.
IMSC 1.0 TTML*	IMSC 1.0 TTML*	Also can process SMPTE-TT files.
MAGIC TT (timed Text) (.xml)**	MAGIC TT (timed Text) (.xml)**	
Mijo XML in seconds format (.xml)**	Mijo XML in seconds format (.xml)**	
PBS COVE (.sami)**	PBS COVE (.sami)**	
iTunes .itt*	iTunes .itt*	Subtitling for iTunes. XML file.
Netflix TT Captions .xml*	Netflix TT Captions .xml*	Netflix Timed Text. For closed captions and subtitles.
QuickTime .txt, .smi	QuickTime .txt, .smi	Text played below video. Low quality, mobile.
RealText .rt, .smi	RealText .rt, .smi	For RealPlayer. SAMI for RealPlayer.
	SAMI Sync Accessible Media Interchange .smi	Original web streaming file format. Used for Windows Media Player. Standalone file format.
SMPTE Timed Text .xml	SMPTE Timed Text .xml	Constraint of DFXP. Follows SMPTE rule, strict formatting.
SubRip (.srt)	SubRip (.srt)	Simple text. Used for web.
Sony Pic Timed Text .xml	Sony Pic Timed Text .xml	Constraint of DFXP.
Timed Text DFXP .xml	Timed Text DFXP .xml	Multipurpose. Least constrained of DFXP exports.
WebVTT .vtt	WebVTT .vtt	Next generation of Subrip .srt. Contains position and style. Popular for media players. Web format.
Windows Media SAMI file .smi	Windows Media SAMI file .smi	Slight derivation of SAMI. Different than plain SAMI.

Desktop	Pro/Enterprise	Notes
YouTube .srt	YouTube .srt	.srt is slightly different from Subrip. Only for YouTube.

## Subtitle and Open Caption Export Files

\* Indicates MacCaption only. \*\* Indicates CaptionMaker (Windows) only.

Desktop	Pro/Enterprise	Notes
(Burn Subtitles) Any Video File (.) to (.avi)**	(Burn Subtitles) Any Video File (.) to (.avi)**	
	(Encode Subtitles) Black AVI 720x486 for NLE (.avi)**	
	Black Movie with Open Captions	Open captions burned in. Uses alpha channel. SD only.
Movie with Open Captions	Movie with Open Captions	Burns in straight. No alpha channel. SD only.
	Black Movie with Subtitles	Alpha channel, any resolution subtitle. Can be made to look like captions.
Movie with Combined Subtitles	Movie with Combined Subtitles	Burned in, open subtitles. Flattens movie. Any resolution.
Movie with Separate Subtitles	Movie with Separate Subtitles	Burned in, open subtitles. Any resolution.
	HD Black AVI for NLE (.avi)**	Alpha channel, any resolution subtitle. Can be made to look like captions.
Adobe Encore V2 .txt	Adobe Encore V2 .txt	Subtitle for Encore. Simple - no formatting.
	Apple XML Interchange Format .xml	Subtitle format for working in Final Cut Pro.
	Avid DS .txt	Subtitle file for Avid. Time code and text only. Render using Avid tools.
	Blu-ray BDN .xml	Generates XML + PNG. Can choose colors. Indexed files.
	CFF-TT Image Subtitles .xml	Subtitles for UltraViolet platform. Text file + image file.
	CFF-TT Text Subtitles .xml	Subtitles for UltraViolet platform. Text file.
	Digital Cinema Distribution Master .xml	XML for package to distribute to theaters. Subtitle.
DVD Studio Pro 3 .txt	DVD Studio Pro 3 .txt	Text file for DVD Studio Pro.

Desktop	Pro/Enterprise	Notes
	DVD Studio Pro / Sonic Creator .son	Text file for DVD Studio Pro. For Sonic Creator. File + TIFF.
DVD Studio Pro .stl	DVD Studio Pro .stl	Text file for DVD Studio Pro. Native. Option for images.
	EBU Subtitling Data Exchange Format .stl	EU market. Used for open subtitles. Includes Teletext Level 1 encoding, Double Height characters, foreground color.
	NetBlender Blu-ray .DoST	Similar to Blu-ray, contains image files (PNG).
Netflix TT Subtitles .xml	Netflix TT Subtitles .xml	SMPTE XML for Netflix Timed Text.
QuickTime Subtitles Track	QuickTime Subtitles Track	Embedding into QuickTime. Subtitles. Multiple track capable.
QuickTime Text Track	QuickTime Text Track	3GP file for mobile devices.
	Rhozet .xml	Used for Rhozet Carbon Coder. Generates XML + PNG. Can choose colors. Indexed files.
	CVC DVD (.scr + .bmp)**	
	Daikin Scenarist TIF Graphics (.sst + .tif)**	
DVD Architect Pro (.sub)**	DVD Architect Pro (.sub)**	
DVD Caption File (.cc)	DVD Caption File (.cc)	
DVD Caption File (.scc)	DVD Caption File (.scc)	
DVD T2 Links File (.scc)**	DVD T2 Links File (.scc)**	
	DVDit Pro HD Subtitle Script (.txt)**	
	Generic DVD Subtitles (.txt + .bmp)	
	HD-DVD (.hdt + .tif)**	
	Pinnacle Impression DVD Pro (.txt + .bmp)**	
	Sonic Producer Text (.txt)**	
	Sonic Solutions Text (.txt)**	
	Sonic Solutions TIF Graphics (.nav + .tif)**	
	Spruce DVDMaestro TIF Graphics (.son + .tif)	
	Spruce STL Script (extended positioning) (.stl)	

Desktop	Pro/Enterprise	Notes
	Spruce STL Script (standard positioning) (.stl)	
DVD Caption File (Scenarist .scc)	DVD Caption File (Scenarist .scc)	Generic for Scenarist files. Very limited, only 29.97. Used by most products.
	Scenarist .sst	Used for subtitling. Text and image.
SubRip .srt	SubRip .srt	Simple text. Used for web.
	Texas Instruments DLP Cinema (DCI Interop) XML (.xml)	
	Ultech DV2000/3000 .usf, .uyc	Subtitle added to DV2000/3000 box. Real time subtitling (NBC).
<b>Korean Closed Captions</b>		
	NTSC DV 720x480 Video with Korean CC	708 Korean for special characters. SD only.
	Black 720x482 movie with Korean CC	708 Korean for special characters. SD only. Line 21 overlay.
<b>Remote Caption Encode</b>		
	Remote MPEG2 DTV 608/708 Closed Captions	
<b>Convert</b>		
	<a href="#">USF/Uyc to DECE CFF*</a>	
	<a href="#">USF/Uyc to Rhozet/PNG*</a>	
	<a href="#">USF/Uyc to Text/PNG*</a>	

# Installing CaptionMaker

The topics in this chapter provide system requirements, explain how to install or upgrade your captioning software, and describe how to use the HASP Network Dongle.

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**Note:** The Demo version of CaptionMaker can only run in trial mode. When you purchase a license, you must download and install a licensed version in order to activate CaptionMaker.

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The following topics are included:

- [System Requirements](#)
- [Available Subtitling and Captioning Characters](#)
- [Installing and Activating CaptionMaker](#)
  - [Buying and Activating CaptionMaker](#)
  - [Activating CaptionMaker Offline](#)
  - [Upgrading CaptionMaker](#)
  - [Deactivating a CaptionMaker License](#)
- [HASP Network Dongle](#)
  - [Troubleshooting HASP](#)

## System Requirements

The following describes the minimum operating system and computer requirements to run CaptionMaker.

Supported operating systems:

- Windows 7 (32/64-bit)
- Windows 8 and 8.1 (32/64-bit)
- Windows 10 (64-bit)
- Windows Server 2008 and 2012 R2

Computer requirements:

- 2GB RAM
- 5GB free Hard Disk space
- Minimum screen resolution: 1024x768 or 1280x720 (720p)
- One free USB port (only if using a dongle-based license)
- Internet access required for some online features
- PDF reader required to view documentation
- Auto Time Stamp requires 2GB RAM and Java Runtime Environment (JRE) version 6 or later
- QuickTime Player 7.6 or later is recommended

## Available Subtitling and Captioning Characters

For subtitling, you can generate any character or symbol that you can generate on the computer's screen, though you may have to download a font into the memory of your external device depending on which one you are using.

However, captioning is a different case. The closed caption encoder does not actually draw the characters, but tells the closed caption decoder which characters to display. The languages supported by typical closed caption decoders include the following:

- Dutch, English, French, German, Portuguese, and Spanish.



# Installing and Activating CaptionMaker

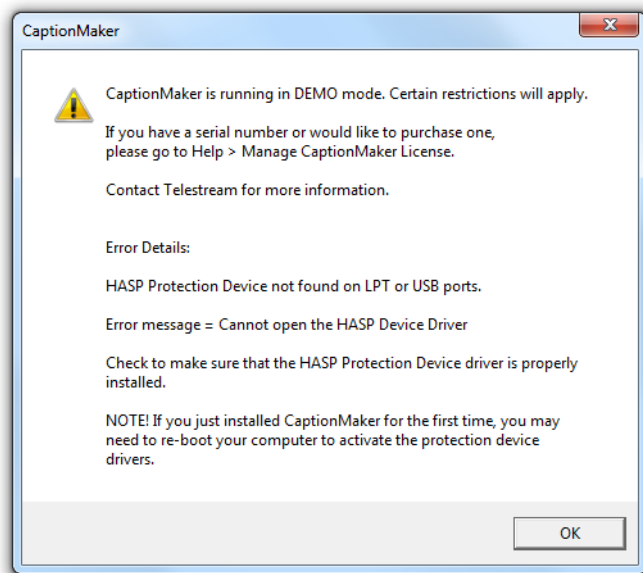
Follow these steps to install CaptionMaker:

1. Download the CaptionMaker installer and run the setup program.
2. Click Setup to start the CaptionMaker InstallShield Wizard. Follow the on-screen instructions in the installation dialogs.
3. When asked if you want to install the HASP USB dongle drivers:
  - a. Select *Yes* if you are using a USB dongle-based license.
  - b. Select *No* if you will enter your serial number directly in the application.
4. Click Finish to close the installer.

## Buying and Activating CaptionMaker

Follow these steps to buy a license and activate the software:

1. After purchasing CaptionMaker, you will receive instructions to download the licensed (non-Demo) version of the software. You must install the *licensed version* of CaptionMaker in order to activate your license. See the previous section for instructions on installing CaptionMaker.
2. Start the program for the first time by clicking on the CaptionMaker icon on your desktop. The first time the software runs, you will see the following message indicating CaptionMaker is running in DEMO mode.

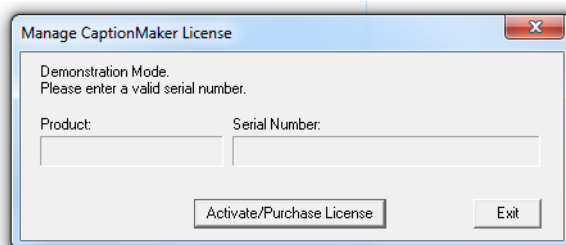


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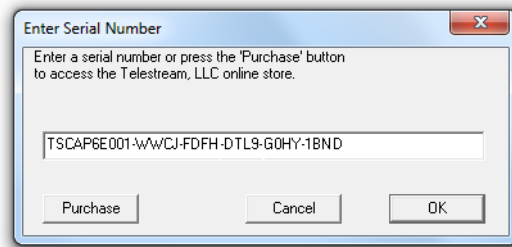
**Note:** To start the program, you can also go to the Start Menu, Telestream folder, and click CaptionMaker.

---

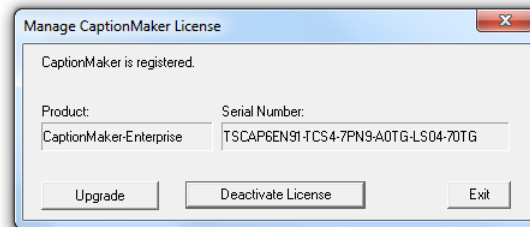
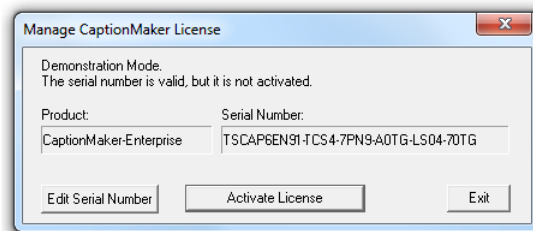
3. Click OK to continue.
4. Open the Help menu, and select Manage CaptionMaker License.
5. In the Manage CaptionMaker License dialog, click Activate/Purchase.



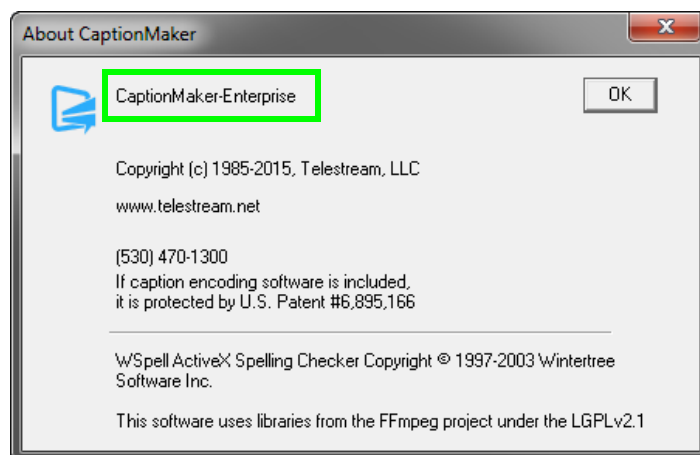
**6. Enter your serial number and click OK.**



**7. Click Activate License. If you have Internet access, activation will complete automatically. The Manage CaptionMaker License says, "CaptionMaker is registered."**

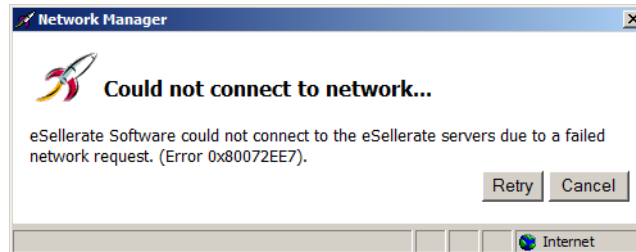


**8. Quit and restart CaptionMaker. Then go to Help > About CaptionMaker. Verify that the window reads CaptionMaker-Desktop, -Pro, or -Enterprise, matching the license you purchased (as shown below). You are now ready to use CaptionMaker.**

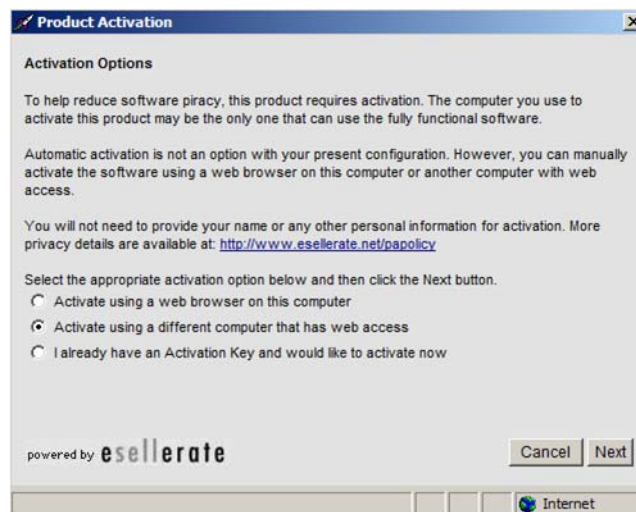


## Activating CaptionMaker Offline

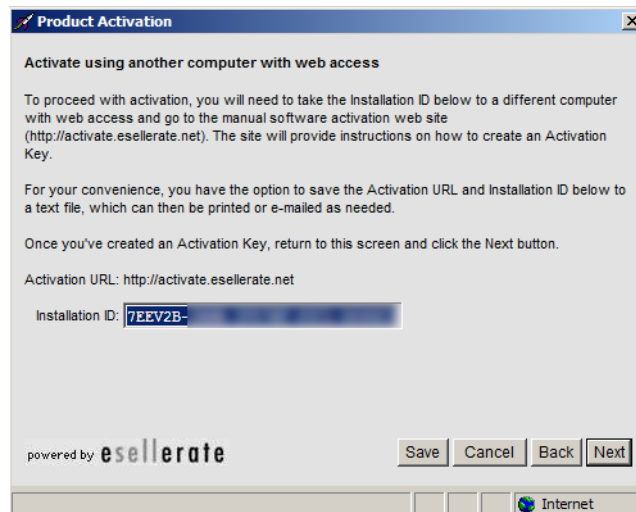
If you don't have Internet access during license activation, an error message will appear (shown below). Click Retry if you are able to connect to the Internet. Canceling the error message allows you to activate a license manually, using a different computer that has Internet access.



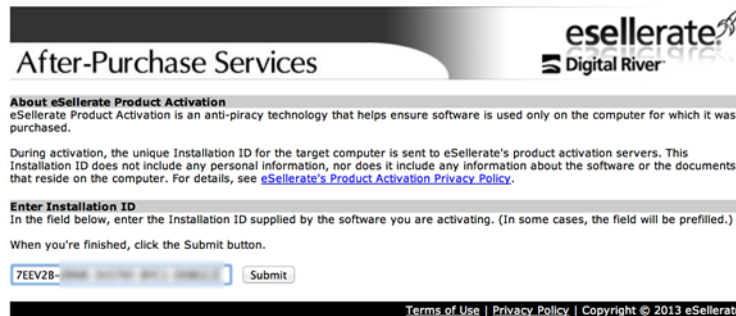
1. Click Cancel in the error message to continue manual license activation. The Product Activation dialog appears.



2. Select *Activate using a different computer that has web access*, and click Next. A new screen appears, providing you with an activation URL and an Installation ID.



3. Using another computer or device that has Internet access, open the URL that was provided in the Product Activation dialog. The essellerate services page appears.



4. Enter the Installation ID and click Submit. An Activation Key is displayed.

**After-Purchase Services**

**About eSellerate Product Activation**  
eSellerate Product Activation is an anti-piracy technology that helps ensure software is used only on the computer for which it was purchased.

During activation, the unique Installation ID for the target computer is sent to eSellerate's product activation servers. This Installation ID does not include any personal information, nor does it include any information about the software or the documents that reside on the computer. For details, see [eSellerate's Product Activation Privacy Policy](#).

**Enter Installation ID**  
In the field below, enter the Installation ID supplied by the software you are activating. (In some cases, the field will be prefilled.)  
When you're finished, click the Submit button.

7EEV28-... Submit

**Activation Key**  
Use the Activation Key below to activate your purchased software.

**Notes:**

- If you are activating the software on this computer, you can save time by copying the Activation Key from this page and then pasting it into the appropriate wizard screen.
- You may want to print out this page for future reference.
- Adding this page to Bookmarks or Favorites in your web browser will not save the Activation Key information.

On the computer that will use the software, bring up the Manual Product Activation Wizard. (If you've closed the wizard since beginning the activation process, you'll need to use the activation features of the software to bring it up again.) Navigate to the Enter Activation Key screen and follow the instructions provided to complete activation.

R8D64Q-T6VX-882F1J-...

Enter your e-mail address and press "E-mail Activation Code" to send via e-mail.  
... E-mail Activation Code

[Terms of Use](#) | [Privacy Policy](#) | Copyright © 2013 eSellerate

5. Enter the Activation Key on the CaptionMaker computer, as shown below, then click Activate.

**Product Activation**

**Enter Activation Key**

Enter your Activation Key in the fields below, using the Tab key to advance through the fields.

If you've copied the Activation Key to the Clipboard, you may paste the entire key in at once (using Ctrl+V).

When you've finished, click the Activate button.

Activation Key: A B C D E  
R8D64Q - T6VX -  
F G H I J  
59N3ZC - XYT6 -

powered by eSellerate Save Cancel Back Activate

Internet

6. The screen indicates Success. Click *Done* to finish licensing CaptionMaker. Now when you restart CaptionMaker, the About window indicates the type of license you purchased (as explained in the last step of the previous section).

**Product Activation**

**Success**

If you would like to save your installation ID and Activation Key to a text file for future reference, click the Save button below.

When you're finished, click the Done button.

## Upgrading CaptionMaker

If you need to use features that are in a higher level of the software, you can buy an upgrade.

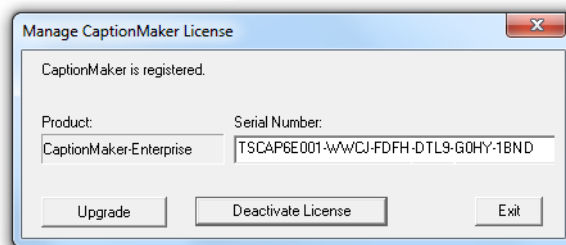
---

**Note:** If you are upgrading from a previous version and you work with external hardware, such as a caption encoder, VTR deck, or external time code interface, Telestream recommends that you write down your device configuration settings such as port, address, and so on, prior to upgrading, in case these settings need to be entered again.

---

To upgrade, you can select Help > Purchase/Upgrade to go to the Telestream Online Store web page, or follow these steps to upgrade your license using Help > Manage CaptionMaker License:

1. Open the Help menu, and select Manage CaptionMaker License.
2. In the Manage CaptionMaker License dialog, click Upgrade.



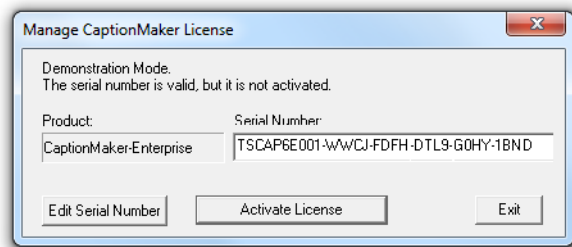
3. In the online store, select the license level you want to buy.
4. Follow the on-screen prompts to purchase the upgrade. The procedure that follows explains how to activate the upgraded license.

## Activating a CaptionMaker Upgrade

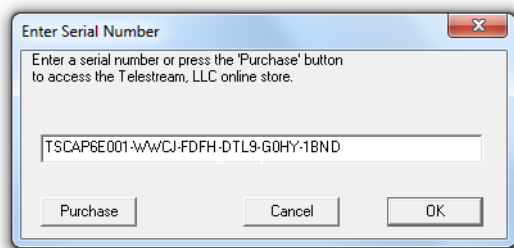
Usually the upgrade process will complete automatically, but in some cases you may receive the upgrade key via email. In that case you must deactivate your old key in order to enter the new key. To activate your upgraded license, follow these steps:

1. Open the Help menu, and select Manage CaptionMaker License.
2. Click Deactivate License. This requires an Internet connection.

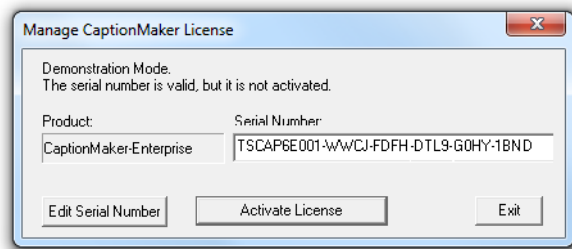
3. Confirm that the screen shows *The serial number is valid, but it is not activated.*



4. Click Edit Serial Number. A dialog box opens to allow serial number entry.



5. Enter the new serial number, and click OK.
6. Click Activate License.
7. Confirm that the screen shows CaptionMaker is registered and shows the upgraded license level.

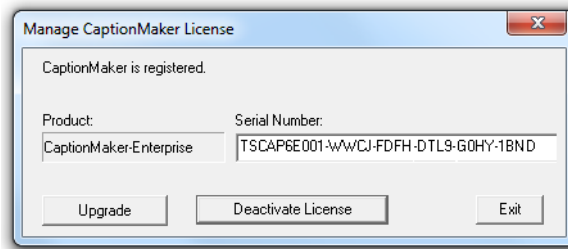




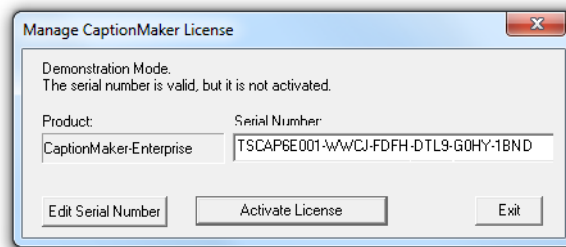
## Deactivating a CaptionMaker License

If you want to move the CaptionMaker license to another computer, you must first deactivate it on the current computer. This action requires Internet access. Follow these steps:

1. Open the Help menu, and select Manage CaptionMaker License. A dialog opens indicating that the product is registered and allowing you to deactivate the license.



2. Click Deactivate License.
3. Confirm that the screen shows *The serial number is valid, but it is not activated.*



4. After waiting 15 minutes for the server to update your license status, you can activate this serial number on another computer where you have installed CaptionMaker.

## HASP Network Dongle

The network dongle option avoids the need to physically keep or move standalone (single user) dongles around to individual machines. For example, if you need Telestream software for 4 concurrent users at your organization. Instead of receiving 4 single user dongles, you would receive one physical network dongle. It would be connected to any Windows or Mac physical machine on the LAN, and provides a floating license available to any physical or virtual machine on the LAN. Any computer on the LAN or VPN can make use of one of these licenses.

Another advantage is that the network licenses can be shared over the LAN or VPN (including over the Internet) without having to physically move the USB keys. This allows remote users to run the software on their computers while traveling or working remotely. Only the license itself is shared over the network, the actual software is running directly on the computer, so there are no speed issues like with "remote desktop" or screen sharing solutions.

The number of concurrent users of the software is limited to the number of licenses purchased. For example, if you have 4 licenses on your network dongle, any 4 machines can open the software at the same time; if a 5th machine tries to run the software, it will give an error until one of the other 4 open copies is closed.

If you are interested in upgrading your existing single user keys to a network key or have any questions about the network key option, please feel free to contact Telestream.

The network dongle uses TCP/UDP port 1947 for local (LAN only) communication. This port must not be blocked in order for a station to access the network license.

## Troubleshooting HASP

On any machine with Telestream captioning software (or just the HASP drivers) installed, you can check the status of HASP drivers and keys by going to:

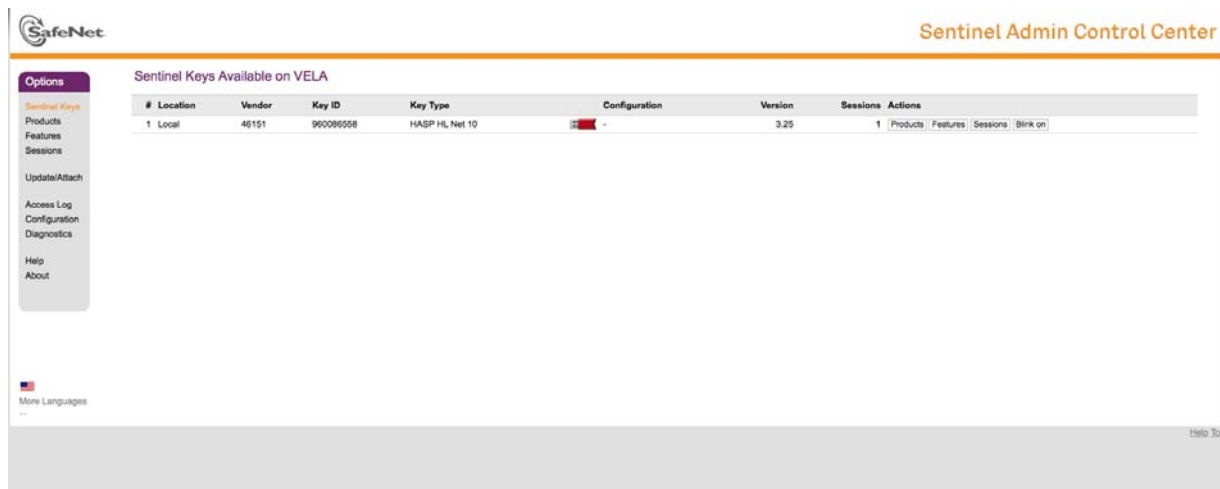
<http://localhost:1947>

If the web page doesn't open as "Sentinel Admin Control Center", then the HASP driver is not installed or not running. You can find troubleshooting tips in the Telestream Knowledge-Base article "HASP dongle troubleshooting".

If the page opens, click "HASP Keys" or "Sentinel Keys" (depending on the version) on the left.

### On the Server Machine

The network key will show up under Location: Local. If not, then the server is not recognizing the dongle.

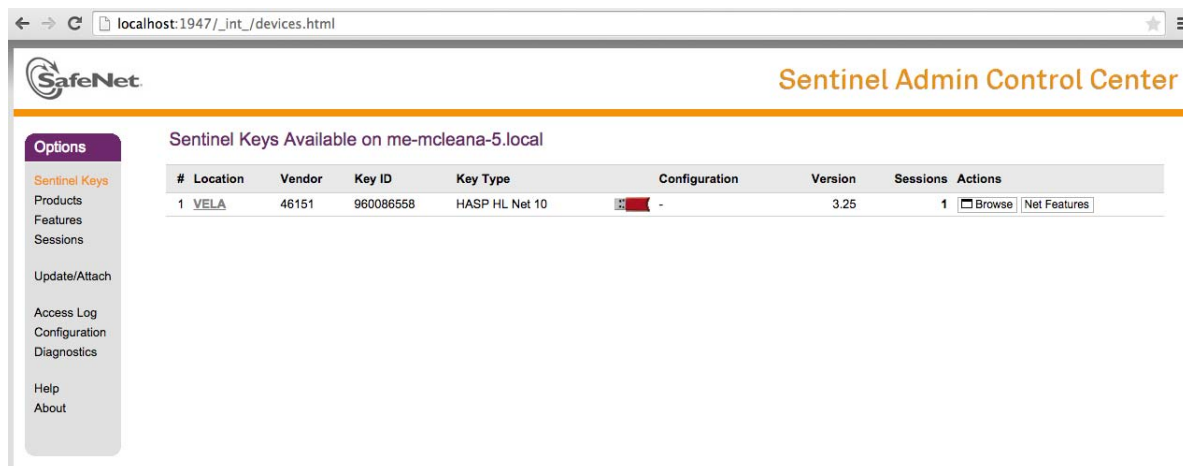


Click Configuration on the left, then go to the tab "Access from Remote Clients". Make sure "Allow Access from Remote Clients" is checked. If not, check it, then click Submit.

Click "Show Recent Client Access" to see IP addresses and client names that have communicated with the key. Under Access it should always say "allowed". On this list you should be seeing the names/addresses of clients that are trying to access the key.

## On the Client Machines

The server's network key should show up under Location, and contain the name or IP address of the server. For example, VELA in the following screenshot.



Click Configuration on the left, then go to the tab "Access to Remote License Managers". The following checkboxes must be checked: "Allow Access to Remote Licenses" and "Broadcast Search for Remote Licenses". You can also try checking "Aggressive Search for Remote Licenses".

## Pointing a Client to a Specific License Server

The following steps can be used if the client is not seeing the subnet broadcast packets from the license server, or if you have multiple license servers and want to restrict a specific client to only use a specific license server. Also, in general this may help if you are having trouble getting the server's key to show up on the client.

1. On each client, open <http://localhost:1947>.
2. Click Configuration on the left, then select the tab "Access to Remote License Managers".
3. Uncheck the checkbox "Broadcast Search for Remote Licenses", and check the checkbox "Aggressive Search for Remote Licenses".
4. Under "Specify Search Parameters", enter the IP address of the license server.
5. Click Submit. (You may need to wait a few minutes.)

## To Disable Remote Network HASP Keys on a Particular Client

If you have a client that you don't want to access a remote network key, you can disable access to remote keys. For example, a client has a single user HASP key and you don't want it to preferentially grab the network key instead.

To disable access to remote keys:

1. Click Configuration on the left, then go to the tab "Access to Remote License Managers".
2. Uncheck the option "Allow Access to Remote Licenses".

## If You're Still Having Trouble

If the network key still does not show up on the client, and/or if the client does not show up on the server under "Show Recent Client Access", then TCP/UDP port 1947 communication between the server and the client is getting blocked somehow. Unfortunately this opens up a wide range of possible issues specific to the network setup, and may require a networking guru to get involved.

# Glossary

This glossary provides information about terms used in captioning and subtitling.

## #

### Section 508

Section 508 refers to accessibility law, which requires video broadcasts and many webcasts to be made accessible to the deaf and hard of hearing. Please see the official Section 508 web site for more details. This is not directly related to CEA-608 and CEA-708, which are technical standards.

### CEA-608

CEA-608 refers to the technical standard for captioning standard-definition NTSC video. It is also commonly referred to as "Line 21 closed captioning". See [What is 608 and 708 Closed Captioning?](#) for an in-depth look at the difference between 608 and 708.

### CEA-708

CEA-708 refers to the technical standards for captioning high-definition video. It is also commonly referred to as the VANC data or "Line 9 closed captioning".

## A

### Active Format Description

Active Format Description (AFD): A standard for telling a receiving device how to best frame video. For example, without AFD, a 16:9 signal which contains a pillarboxed 4:3 video would then be letterboxed for display on a 4:3 TV, making a tiny image surrounded by black bars on all sides. With AFD, the TV knows that it can crop the video so that the actual picture fills the whole screen.

## ATSC

ATSC (Advanced Television Systems Committee) is the digital television (DTV) standard used by broadcasters for HDTV and the digital broadcast of SD in the United States and Canada. ATSC supports closed captioning (608 and 708) in the metadata of the video signal.

## B

### Burn-in

Burn-in refers to a graphic, text, or image that is superimposed on video, and thus becomes part of the video itself. Closed captions are not burned in, since they can be turned on and off, unlike open captions and many subtitles which cannot.

## C

### .CAP

A .cap file can refer to many different types of files, so you need to be careful when using them. Several formats of caption files have the .cap extension, including the popular Cheetah .cap format. A .cap file can also be a project file for CaptionMaker, which must be opened in CaptionMaker before exporting to another caption format.

### Capture Card

A capture card is a piece of hardware for your computer that allows you to bring video into your computer for editing and output back to a physical format like tape. Many capture cards support closed captioning for HD and SD, including ones from Matrox, AJA, and Blackmagic.

### Caption Decoder

A caption decoder is a device that enables closed captions to be turned on if they are present in the video signal, essentially turning closed captions into open captions. Typically a decoder is inside your TV or cable box and you can turn captions on using your remote or a setting in the menus. There are also hardware and software decoders available that allow you to preview captions on your computer or a master tape to ensure that they are present.

### CaptionMaker

CaptionMaker is closed captioning software by Telestream for the Windows platform. CaptionMaker reads and writes all major captioning formats and supports many traditional workflows involving hardware encoders. In addition to broadcast SD video, CaptionMaker encodes captions for web formats like Quicktime, Flash, YouTube, and Windows Media, and also tapeless workflows like MPEG-2 Program Streams.

## Closed Captioning

Closed Captioning is text that appears over video, and can be turned on and off using a decoder which is built into most consumer television sets and cable boxes. Closed Captions differ from subtitles in that they contain information about all audio, not just dialogue.

## Codec

Codec stands for "coder-decoder". It is a hardware or software technology which allows for the compression and decompression of video and audio in order to strike a balance between file size and quality. Different codecs have different data rates, aspect ratios, and methods of closed captioning in order to achieve this balance. Some examples of codecs are DV, MPEG-2, WMV, H.264, Uncompressed, and ProRes. To watch a video, your computer needs the specific codec that video uses, otherwise it will not play. Not all codecs are available for all operating systems, and they may not be free to use.

## Container Format

A container format is a way to encapsulate video so that it can be viewed in a video player, edited in a non-linear editor, or processed in some other way. Examples of container formats are QuickTime, AVI, and MXF.

## D

### Drift

"Drift" is a term used to describe a specific behavior of closed captions. It can either mean they are appearing progressively later than they should, or progressively earlier. Most often, this occurs slowly over the duration of a program, resulting in a discrepancy of over three seconds by the end of an hour. Drift is most often caused by a drop-frame / non-drop discrepancy, or frame rate differences.

### Drop-Frame

Drop-frame timecode refers to a method of counting timecode in 29.97 fps video. It does not refer to actual frames of video being dropped that would affect video quality. Since 29.97 fps is not exactly 30 fps, when counting in drop-frame certain numbers in the timecode counter are skipped in order to ensure that the timecode will reflect the real-time length of the program. The counterpart of drop-frame is non-drop which does not skip numbers when counting timecode. To prevent drift, it is important to timestamp in the correct mode (or convert your captions' timecode using Telestream software) when closed captioning a 29.97 fps program. Also see [Non-Drop Frame](#).

## DTV

DTV stands for "digital television" and is a general term encompassing digital television around the world to distinguish it from analog television (such as NTSC). In the US the standard for DTV is ATSC.

## E

### Elementary Stream

A data stream that contains either video or audio data, but not both. Usually associated with MPEG video files and given the extension .m2v for video, or .m2a or .ac3 for audio. Elementary MPEG-2 video streams can contain closed caption data. A Program or Transport stream can be demultiplexed, or separated, into its component Elementary streams.

### Encoder

The term "encoder" typically refers to a hardware encoder, but can refer to software encoders as well. A hardware encoder is usually a rack-mounted device that accepts a video signal, marries it to closed captions, and then outputs a new closed captioned video signal, usually resulting in generation loss. A software encoder, such as CaptionMaker or MacCaption, can add captions to video without a hardware encoder. You can simply encode captions to video files already present on your computer, or to file formats that will add captions as you output from your NLE with no generation loss.

## H

### High Definition (HD)

High Definition is a television standard with either 720 or 1080 lines in the video signal. Closed captioning for HD is sometimes called Line 9 or VANC, and is codified under the 708 standard.

## L

### Line 9

Line 9 refers to the location of the VANC closed captioning data in an HD video signal. In the full raster, it appears as the 9th line from the top of the frame.

### Line 21

Line 21 refers to the location of the VBI closed captioning data in an NTSC720x486 signal. It actually appears on lines 21 and 22 since line 22 is the second field of the closed captioning data.



## Live Captioning

Live captioning is a captioning process used for live webcasts or broadcasts to add captions to video on the fly. It requires several important tools. The first is a source of transcription such as a stenographer or speech recognition software. Please note, getting speech recognition software to usable levels of accuracy still requires an individual to operate it. The second item required for live captioning is a hardware encoder which will accept the video signal and the closed caption data and combine them for output. Also, you may need captioning software to tie these two things together (especially if you're using speech recognition software).

## M

### MacCaption

MacCaption is closed captioning software developed by Telestream for the Mac platform. MacCaption reads and writes all major captioning formats and supports the latest closed captioning workflows for Final Cut Pro. In addition to broadcast HD and SD video, MacCaption encodes captions for web formats such as QuickTime, Flash, YouTube, and Windows Media, and also tapeless workflows such as MPEG-2 Transport Streams, DVCPRO HD and XDCAM.

### .MCC

MCC is a MacCaption closed captioning file, and the only file format that supports both 608 and 708 (SD and HD) closed captioning, unlike SCC, which only can encode 608 (SD) closed captions. CaptionMaker can also use this format. This comprehensive format is being used by several companies for integration into their closed captioning workflows.

### MPEG-2

MPEG-2 can refer to not only a video codec, but also a container format. MPEG-2 can come in three different file types, Elementary Streams, Program Streams and Transport Streams. MPEG-2 files are becoming a more common form of video delivery because it allows a broadcaster to put it directly on their server instead of ingesting from tape. MacCaption can add captions to all three forms of MPEG-2 files.

## N

### Non-Drop Frame

Non-Drop Frame timecode refers to a method of counting timecode in 29.97 fps video. It does not refer to actual frames of video being dropped that would affect video quality. Since 29.97 fps is not exactly 30 fps, when counting in non-drop, the timecode will get progressively further and further behind "real time." For instance, after 2000 frames a drop-frame counter will display 00:01:06:22, while a non-drop counter will

display 00:01:06:20, but the content and real-time length of the video will be the same. The drop-frame counter is slightly ahead because it goes straight from 00:00:59:29 to 00:01:00:02. To prevent drift, it is important to timestamp in the correct timecode mode (or convert your captions' timecode using Telestream software) when closed captioning a 29.97 fps program. Also see [Drop-Frame](#).

## Non-linear Editor

A non-linear editor (NLE) is software that allows you to edit video by moving pieces of it around in a timeline with multiple layers of video. This is in contrast to linear editing, which forces you to add one piece of video after another to tape in a linear fashion. Many NLEs support closed captioning for HD, SD, or both. Examples of non-linear editors are AVID, Final Cut Pro, Premiere Pro, and Sony Vegas.

## NTSC

NTSC (National Television Systems Committee) is the analog, standard definition (SD), television standard for North America, Japan, and some other parts of the world. NTSC supports closed captioning (608 only) on Line 21 of the video signal.

## O

### Open Captions

Open captions are captions that do not need to be turned on, they are always visible. This is opposed to closed captions which must be turned on with a decoder. Open captions are actually part of the image itself. Open captions are also called burned-in captions.

## P

### Paint-on

Paint-on captions appear on the screen from left to right, one character at a time. This mode of displaying captions is uncommon, except as the first caption of many commercial spots to reduce lag.

## PAL

PAL (Phase Alternating Line) is a system for analog television used in Europe, Asia, Australia, and most of South America and Africa. Broadcasting at 625-line / 50 field (25 frame) per second (576i).

### Pop-on

Pop-on captions appear on the screen one at a time, usually two or three lines at a once. This mode of displaying captions is typically used for pre-recorded television.

## Program Stream

A data stream that multiplexes, or combines, a single video and a single audio stream together. Usually given the extension .mpg, and used for files to be played on a computer, some DVD authoring systems, and some tapeless distribution.

## R

### Roll-up

Roll-up captions appear from the bottom of the screen one line at a time, usually with only three lines visible at a time. This mode of displaying captions is typically used by live television, such as news broadcasts.

## S

### .SCC file

SCC stands for "Scenarist Closed Caption", a file type developed by Sonic. SCC files have become a popular standard for many different applications of closed captions. Some programs that use .scc files are Sonic Scenarist, DVD Studio Pro, Final Cut Pro, and Compressor.

### Shadow Speaker

When using speech recognition software, a shadow speaker is a person who repeats everything said in a program into a microphone so that the speech recognition software only has to interpret that shadow speaker's voice and not the multiple voices in the program. After training the software to the shadow speaker's voice (about 15 minutes), it can achieve accuracy rates up to 90-95% in a clean audio environment.

### Speech Recognition

Speech recognition software takes spoken word and translates it into text. State-of-the-art speech recognition technology can only achieve 60-80% accuracy without the use of a shadow speaker. Software that uses a shadow speaker can achieve up to 90-95% accuracy, but is limited to recognizing one person's voice at a time and needs to be used in a clean audio environment.

### Standard Definition (SD)

Standard Definition is a television standard with (typically) 480 lines in the video signal (486 when NTSC). Closed captioning for SD is sometimes called Line 21 and is codified under the 608 standard.

## Stenographer

A stenographer is a person who can transcribe audio into written form on the fly (like a court reporter). Stenographers can also dial-in to a hardware encoder remotely over a phone line so that closed captions can be added to a video signal for live broadcast. See also: [Live Captioning](#).

## Subtitling

Subtitling is text that appears on screen that normally only gives information about dialogue that is spoken. With the exception of DVD and Blu-ray, subtitles cannot be turned off, but are burned into the image.

## T

## Transport Stream

A data stream that multiplexes, or combines multiple video and audio streams together with other metadata. Usually given the extension .ts, .m2t, or .m2ts, and used for DTV broadcast, VOD, tapeless delivery, and other systems where multiple channels are mixed together.

## V

## VANC

VANC stands for "Vertical ANCillary data space" and refers to the data stored on Line 9 in HD video (outside the display area) that holds the 708 closed captioning data while it is going over an HD-SDI signal or on an HD tape format. VANC data appears on only the part of Line 9 towards the left, but VANC data can also carry different information, such as V-chip data.

## VBI

VBI stands for "Vertical Blanking Interval" and is the time between the last line or field drawn in a video frame and the first line or field of the next frame. This is usually measured with lines, in NTSC there are 40 lines for VBI. Closed Captioning data for NTSC video is stored on Line 21 of the VBI.

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