

Guide to Captioning for File-Based Broadcast TV Delivery

[Closed captioning software products MacCaption and CaptionMaker allow you to easily author, edit, encode and repurpose video captions for television, web and mobile delivery. Utilizing exclusive e-Captioning™ technology, MacCaption \(for Mac\) and CaptionMaker \(for Windows\) simplify the process of complying with FCC regulatory requirements, enabling greater access to broadcast content for television, online and mobile viewers.](#)

Introduction

We are often asked how to closed caption a video file (as opposed to tape) for delivery to a TV station for broadcast. Although it's a simple question, the answer can be complicated, because there are many different video formats. Most formats support closed captions in one way or another, but each workflow is different. It also depends on what the TV station is using to play back your file.

For example, many video servers installed at the TV stations will 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 (e.g. playing them in QuickTime Player), this doesn't mean that the TV station will see the captions when played back on its server. To dig even deeper, there is not only one type of closed captions that can be embedded in a QuickTime video file; there are actually several types of QuickTime captions! Your station might accept all of them, 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, for example MPEG-2 or MXF (all depending on the TV station), to ensure that it 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 will work for them. Make sure the spec sheet mentions specific types of captions that will work for them. 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 type of captions are known to work for them.

Perform a Test

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

Overview of Formats

Here is a brief overview of the types of captions that can be used for broadcast video 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 will be 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 Telestream Vantage.
 - MCC files are like 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 ask you for 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, etc.
 - If the video will also be shown on the Internet, you may be asked to provide a Web format caption file, such as SMPTE Timed Text (TTML), DFXP, WebVTT, etc.

Next Steps

Once you have confirmed with your TV station what kinds of video files they can accept with closed captions, you need to export that type. In terms of the video file itself, please keep in mind that Telestream CaptionMaker/MacCaption are not transcoding software - that is, they do 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 are 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 Telestream CaptionMaker/MacCaption software insert the captions into that MPEG-2 file. For transcoding, we recommend Telestream Episode Pro or Vantage software. Make sure you select the right bit rate and other specifications as required by your TV station.

