

# 608 and 708 Captions



When closed captions appear on a television screen, a decoder inside the TV is translating raw caption data from the broadcast location and displaying it as text that is understandable to the human eye.

The method of decoding has evolved alongside television as technology has shifted from analog to digital, resulting in two main formatting standards for encryption and decryption of closed captioning data based on FCC regulations: CEA-608 and CEA-708.

Below we'll break down exactly how 608 and 708 closed captions work, their practical applications for broadcast television, and how to choose what's best for your program.

## 608

608 closed captions, or CEA-608, are transmitted via Line 21 captioning data. This is a transmission data stream that carries closed captioning data and V-Chip data. Line 21 itself is not viewable on television or videos, but the hidden data is decoded to make captions appear overlaid on a video stream.

608 captions are the standard for analog television, but are also compatible with digital television. The formatting options are limited in that 608 can only display regular Latin language characters in languages such as English, Spanish, and French. Extended character sets have been added over the years to 608 to better support Western languages. Styles such as placement, italics, and capitalization are supported, but they must be implemented by the person creating the captions; the user does not have control over the customization options. CEA-608 formatted captions most commonly appear as white text over a black box.

## 708

708 closed captions, or CEA-708, are a newer digital standard transmitted via MPEG-2 video streams in MPEG user data, which carries information such as the aspect ratio in addition to 708 captioning data.

708 captions are the standard for digital/DTV television and are not compatible with analog television. 708-supported digital encoders have higher processing power and bandwidth, allowing for broader character recognition based on Unicode, which supports a wider array of languages beyond 608's Latin-based characters, such as Korean, Japanese, Chinese, and more. Greater functionality also exists for color and font customization in CEA-708 captions, which can be controlled by the user. Styles such as placement, italics, and case are supported just like in 608 captions, and the closed captioner will implement best style practices based on the program, but the viewer can make further customizations to font, color, backgrounds, etc. in order to best meet their personal needs. These settings are often adjustable via the channel box in cable or satellite TV.



# 608 and 708 Captions



## Which Standard is Better?

608 = old, 708 = new. So that means 708 is better, right? Unfortunately, the answer isn't actually that simple.

Despite the advancements in technology, CEA-608 is still the primary format for NTSC (National Television Standards Committee) transmissions in the United States. In fact, most existing industry-standard caption data formats, such as SCC files, only store CEA-608 caption data by design. These files are "up-converted" to include 708 data where appropriate when they are run through a decoder or used to embed caption tracks into a master video file.

608 captions may be old-school, but they're still very relevant for digital video today because of their flexibility and ability to conform to modern specs; 608 data can be used as a substitute for 708 data, but 708 data cannot be used in analog systems that are only set up to receive 608. Most broadcast networks require files with 608 data for compatibility with older devices, rather than assuming all audiences have upgraded.

## Which Captions Do I Want?

Choosing 608 vs. 708 captions is largely dependent on the end destination for your caption files. If you are planning to deliver files directly to a television broadcast network, always request the network's spec sheet. If a spec sheet does not list a specific standard, but it does list a specific file type (common types include SCC or MCC), Captionmax experts can interpret that for you and provide files that will meet the appropriate standard.

Captionmax is also able to embed 608 and 708 tracks into your broadcast master for compatibility with most major networks.

## Other Considerations

It is important to note that while all broadcast television closed captions meet 608 or 708 standards, this is not always the case for web-based platforms. While many standalone web videos do align with FCC regulations and use 608 and 708 formatting standards, the revolution and continuous development of web closed captioning for various conferencing platforms or social media applications has resulted in formats that provide accessibility services for all viewers, but are supported by different caption application delivery methods such as HTTPS. This has created for greater versatility, but also allows for some inconsistency with caption delivery due to platform and player limitations.

