

# Closed Captions / Subtitles

This article will show how to use Closed Captions and Subtitles.

In this article:

- Introduction
- Testing
- Add new CC/Subtitles to Video

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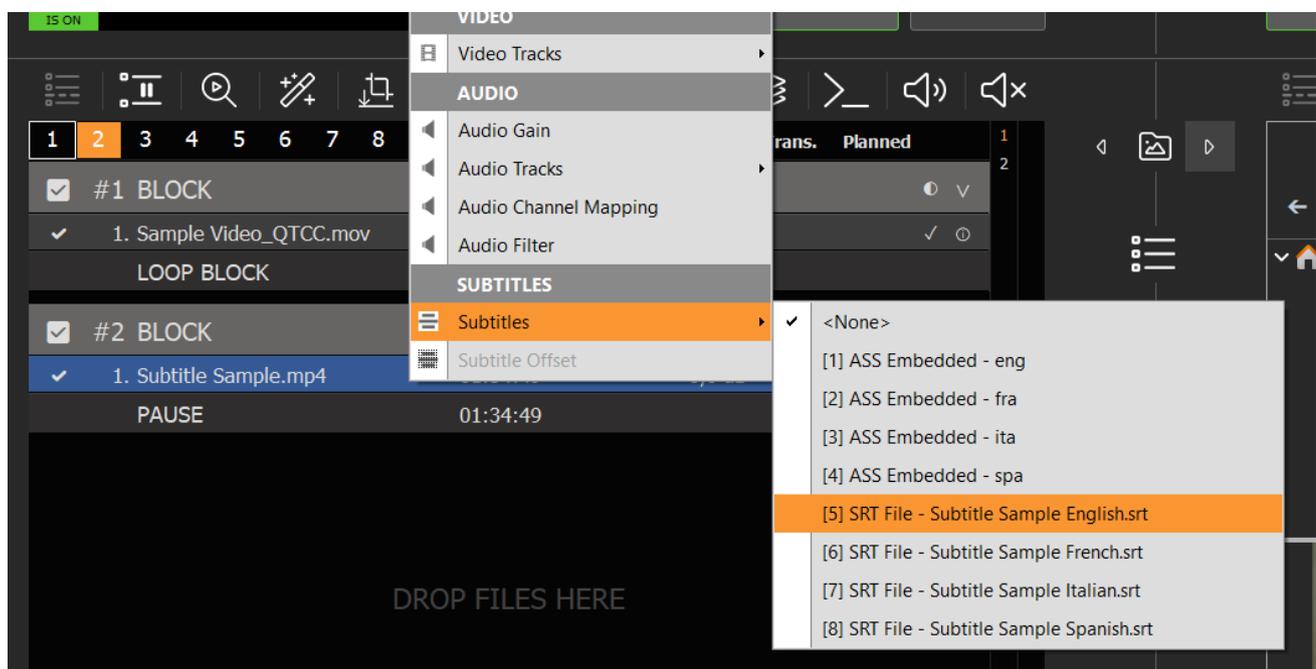
## Introduction

PLAYDECK supports **Closed Captions** CEA-608 (NTSC) and CEA-708 (digital television) and **Subtitles**.

They work differently in PLAYDECK. Here is how:

### 1. Subtitles

They can only be sourced from Video files and are ALWAYS burned onto the picture. You can select them via right-click on the Clip. The Subtitle track is disabled by default:



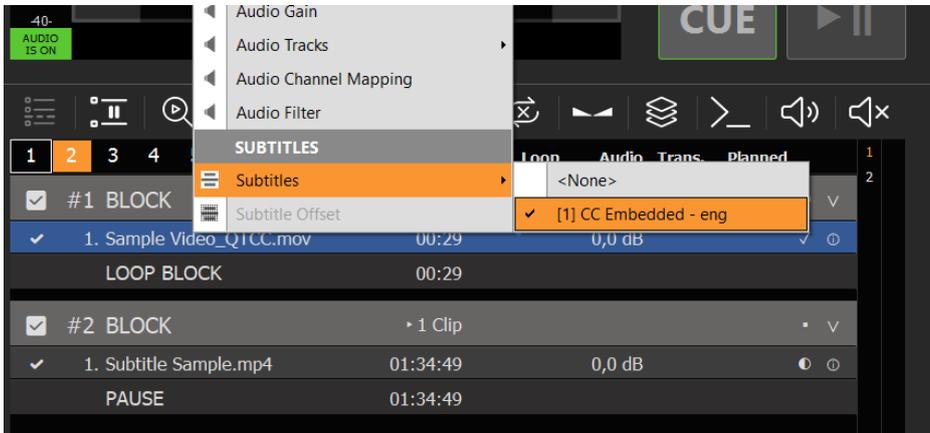
Subtitles can be embedded into the Clip, they are called “ASS Embedded”. They can also be an external SRT-file. This File must have the same Filename (except the extension .srt). The SRT-file can be in the same folder or in any of the sub-folders “Subs” or “Subtitles”.

If you send your video feed to anywhere (SDI, NDI, Stream), the Subtitles will be rendered in the picture frame. You can change the optics like font type etc. in the settings.

## 2. Closed Captions

CC can have many different sources and are either **Burn-In** or **Pass-Through only**.

In Video files the CC track can be embedded and is shown as “CC Embedded” when right-click the Clip:



The option to switch between Burn-In and Pass-Through can be found in the settings. Burn-In means, that the CC text will be rendered onto the picture frames, just like Subtitles. If in Pass-Through Mode, the CC Text will only be shown in the Preview, but not on any Output. The task of rendering the CC Text is therefore “passed on” to the next receiver, e.g. YouTube Live Stream.

Besides video files, CC is supported by the following input and output methods, meaning PLAYDECK can read, preview and send CC with:

- SDI Device (If Device supports it)
- Streams with MPG-2 or H.264 Video Codec (any protocol e.g. UDP, RTMP, SRT)
- NDI Device

Please note that NDI support for CC is not universal, therefore only PLAYDECK can send and receive CC via NDI (Loops).

Please also note, that CC contains information about text position and animation, which can't be changed by PLAYDECK for previewing or burn-in. It is hard-coded into the CC Tracks. The animation names typically are “Roll-Up” or “Pop-On”. They may be changed after pass-through by another receiver.

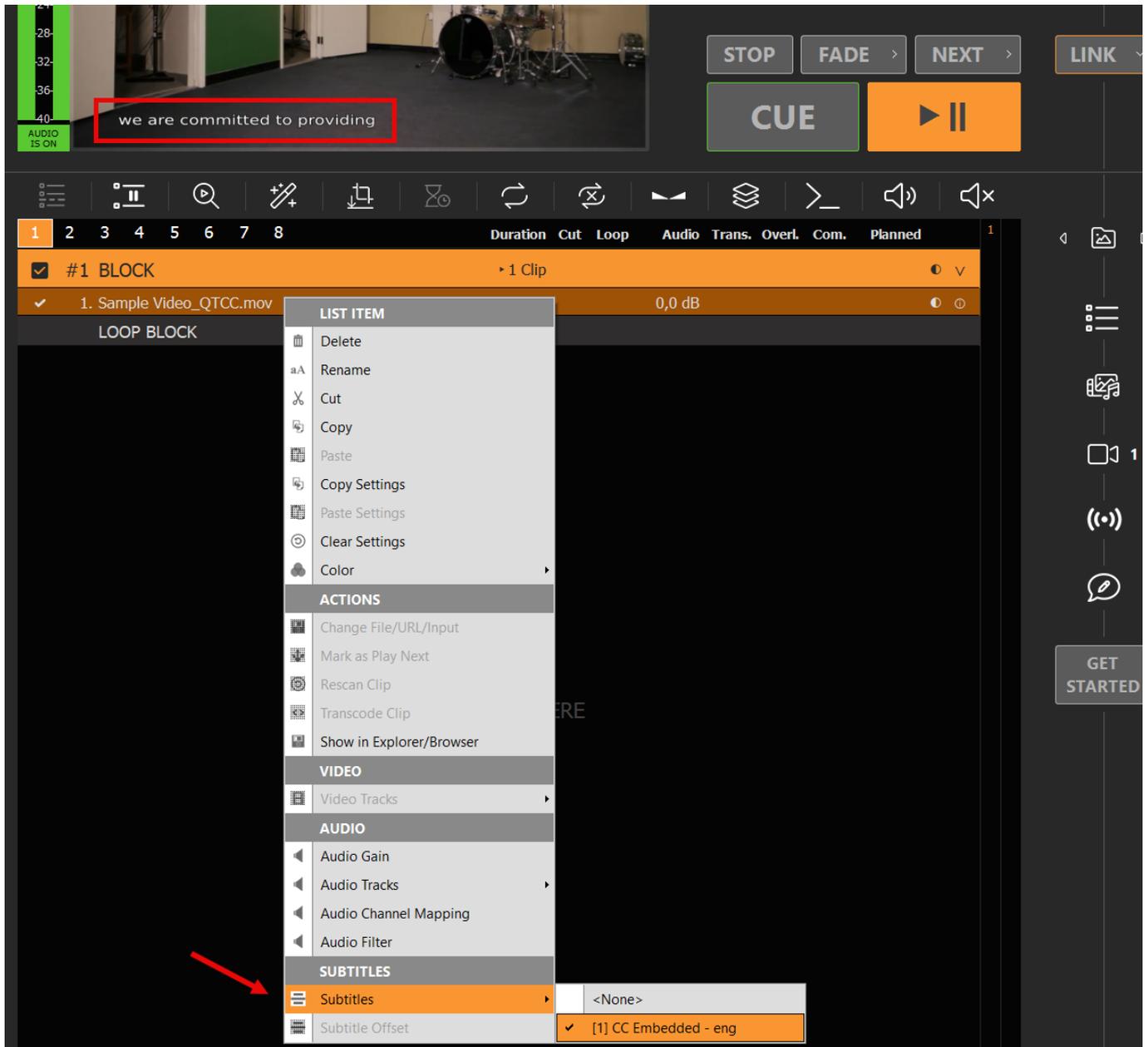
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## Testing

We provide this Sample Clip for, so you can test Closed Captions in action:  
[https://downloads.playdeck.tv/assets/Sample\\_Video\\_QTCC.mov](https://downloads.playdeck.tv/assets/Sample_Video_QTCC.mov)

### 1. Add Clip and select CC Track

Add the Video Clip to Channel 1. Right-click the Clip and select the CC Track. Also set the Block to Loop. You should now be able to see the CC Text in the lower Preview. You can disable the “CHANNEL 1” Overlay by right-clicking the Preview.



## 2. Output the Stream via SDI and NDI

Activate any SDI Device and loop the Signal to another SDI Port for testing (if available). Also active NDI with default settings:

The screenshot displays the OBS Studio settings window, specifically the 'Outputs' section. The left sidebar shows a navigation menu with categories: Settings, Playlist, Application, Subtitles / CC, Video, Channel, Outputs, Inputs, Director View, Streaming, Recording, Audio, Channel Audio, Input Audio, Normalization, Network, Incoming, and Outgoing. The main area is titled 'Channel ID:' with a row of buttons numbered 1 through 8. Button 1 is selected and has a checkmark. Below this, it says 'Output is running'. There are 'Refresh Page' and 'Preview' buttons. The 'Output Scaler' section includes a 'Position' grid, 'Scale type' options (Original Size, Fixed Size, Percental), and 'Lock X/Y' checkbox. The 'Device Output' section is highlighted with a red box and includes fields for Device (DeckLink Duo 2), Line (SDI), Keying (<None>), and Alpha (Straight Alpha). The 'Desktop Output' section includes Monitor (NVIDIA GeForce RTX 3080 (2) - NOT CONNECTED) and Audio (<No Audio>). The 'NDI Output' section is also highlighted with a red box and includes Name (PlaydeckCh1) and Group. The 'Additional Audio' section includes Device (Default Audio Device).

### 3. Output to UDP Stream

Setup a new local UDP Stream. Make sure the UDP protocol is selected and you use (any) **H.264** Video Codec. The Target URL is your local IP address: **udp://192.168.178.42:5000?pkt\_size=1316**. Click on **Parameter** and activate the **embed\_cc** flag.

**Settings**

- Application
- Playlist / Clips
- Subtitles / CC
- Video**
  - Channel
  - Outputs
  - Inputs
  - Director View
  - Streaming**
  - Recording
- Audio
  - Channel Audio
  - Input Audio
  - Normalization
- Network
  - Incoming
  - Outgoing

**Stream ID:** 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
Stream not started yet

**Activate:**    Start Stream on App-Start

**Stream Name:** STREAM 1

**Stream Source:**  Channel  Input  Director View

**Video Format:** HD1080-50i HDYC 1920x1080@25.00iT 16:9

**Audio Format:** Channel: 2 Sample rate: 96.0 kHz Bit depth: 16-bit

**Stream Protocol:** UDP Streaming  [== Parameter Info](#)

**Video Codec:** NVIDIA NVenc H.264 Encoder Bitrate: 5M  [== Parameter Info](#)

**Audio Codec:** AAC (Advanced Audio Coding) Bitrate: 128K

**Config String:** format='mpegs' protocol='udp://' merge\_tracks='true' embed\_cc='true' video:codec='n264' video:b='5M' audio:codec='aac' audio:b='128K' audio:ar='44100' [Update from String](#)  
[Config Samples](#)

**Stream URL:** udp://192.168.178.42:5000?pkt\_size=1316 [== URL Info](#)

**Preview URL:** "C:\Program Files\VideoLAN\VLC\vlc.exe" udp://@192.168.178.42:5000 [Preview](#)

#### 4. Add SDI and NDI Inputs

We now loop our outputs to new Inputs in PLAYDECK itself. We use INPUT 1 for SDI and INPUT 2 for NDI.

**Settings**

- Playlist
- Application
- Subtitles / CC
- Video**
  - Channel
  - Outputs
  - Inputs**
  - Director View
  - Streaming
  - Recording
- Audio
  - Channel Audio

**Input ID:** 1 ✓ 2 ✓ 3 4 5 6 7 8 9 10 11 12  
Input is running

**Input Name:** INPUT 1

**Crop/Aspect:** 0 0 0 0 Letterbox / Pillarbox

**Time shifting:**  Active Delay: 0 10 0 HH:MM:SS

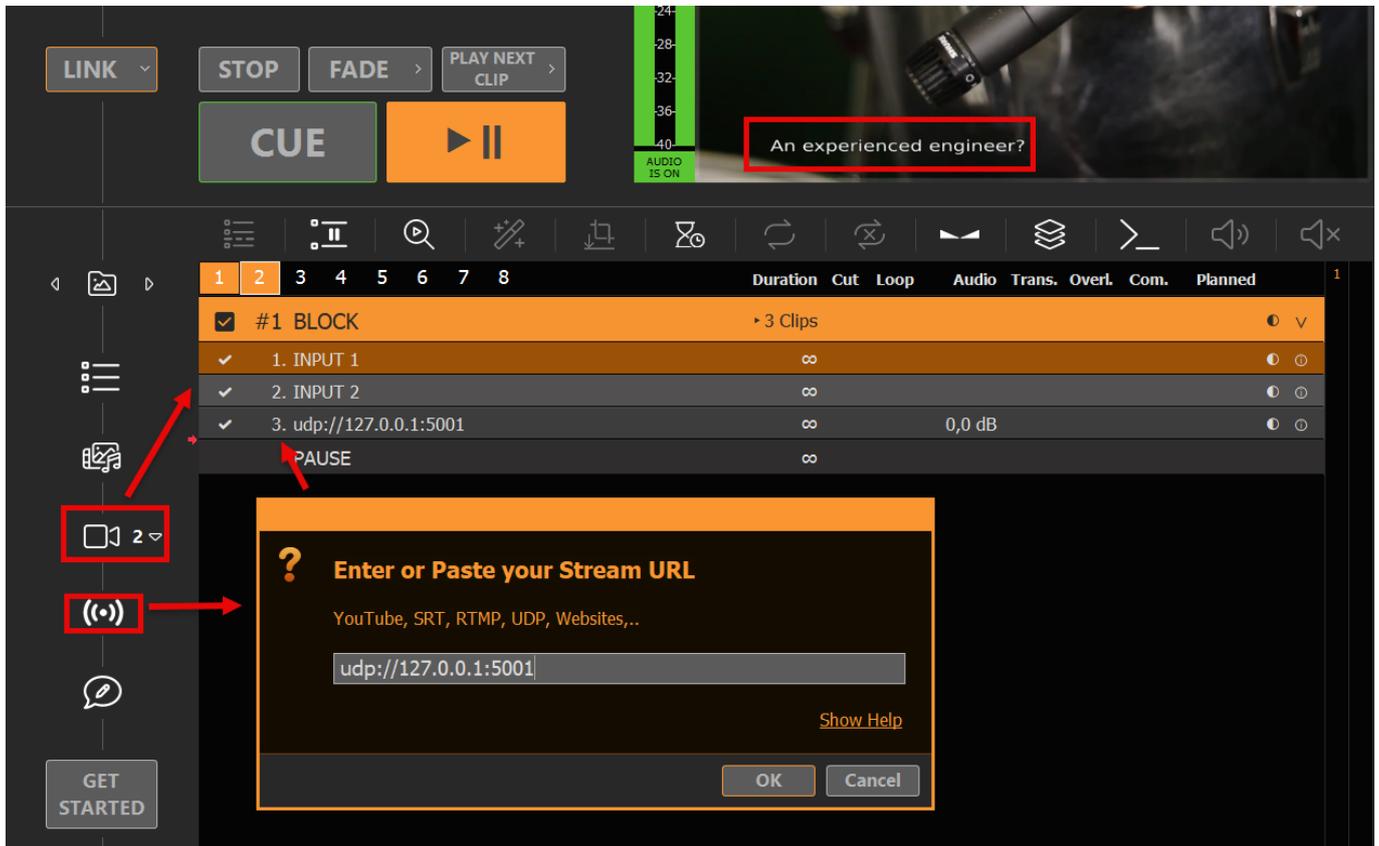
**Device Input:**  Device DeckLink Duo 2 (2)   
Line SDI Video & SDI Audio  
Format <Auto/Variable>  
Audio <Same as Video Device>  
Background <Black> Image:

**Desktop Input:**  Monitor NVIDIA GeForce RTX 3080 - 3840x1600@144,00 - PRIM  
Audio <No Audio>

The screenshot displays the settings for an input in a video production software. The left sidebar shows a menu with categories like Settings, Playlist, Application, Subtitles / CC, Video, Channel, Outputs, Inputs (selected), Director View, Streaming, Recording, Audio, Channel Audio, Input Audio, Normalization, Network, Incoming, and Outgoing. The main settings area is for 'Input ID: 2', which is marked as 'Input is running'. Below this, the 'Input Name' is 'INPUT 2'. The 'Crop/Aspect' is set to 'Letterbox / Pillarbox'. The 'Time shifting' section has 'Active' unchecked and a delay of 0:10:00. The 'Device Input' section has 'Device' unchecked and various dropdowns for Line, Format, and Audio. The 'Desktop Input' section has 'Monitor' unchecked and dropdowns for Monitor (NVIDIA GeForce RTX 3080), Audio (<No Audio>), and Mouse (Hide). The 'NDI Input' section is checked and set to 'MKO-OFFICE (PlaydeckCh1) NDI Source at 192.168.178.', with 'Bandwidth' set to 'Highest' and 'Tally Flag' set to 'Don't send any Tally Flags'. A red box highlights the NDI Input section.

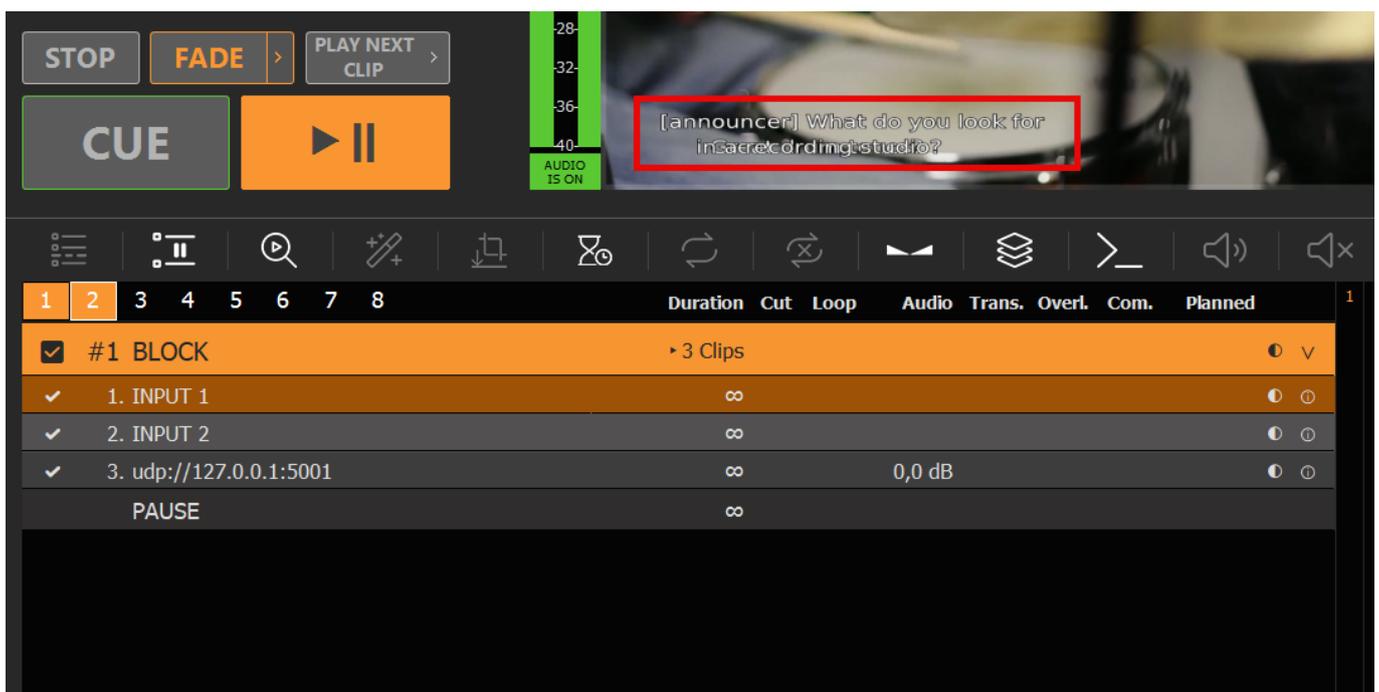
## 5. Insert Inputs and UDP Stream to Channel 2

We add Input 1 and 2 to the Channel 2 Playlist by Drag Drop of the Input Icon. We then add our UDP Stream by Drag Drop of the Stream Icon. The Stream URL is: `udp://127.0.0.1:5001`. You can now observe that all 3 new Clips will show their source CC in the Channel 2 Preview area. You have now successfully send and received CC Tracks via SDI, NDI and UDP.



## 6. Explaining Burn-in and Pass-Through

While playing any Clip on Channel 2, we observe double Text in the PLAYDECK Preview area of Channel 2. This is because Channel 1 is burning the CC onto the picture by default (rendering the Text on all Frames). In addition, Channel 2 detects a CC Track in the Input, that is being “passed through” from the Input. Channel 2 then shows the CC Tracks as Preview in the Channel 2 Preview area. We therefore have 2 CC Texts overlapping each other: One already in the input video feed and another from the CC Track that is passed-through:



## 7. Switching off Burn-in

As observed in the last paragraph, Closed Caption are burned onto the Picture and then send to SDI, NDI and Streams. We want to change this behavior to just pass-through the CC and have PLAYDECK render the CC in the Preview Area. We therefore activate the checkbox “Pass-Through” in the CC settings. After clicking “Update to Playlist”, we don’t observe double texts anymore on the Channel 2 preview.

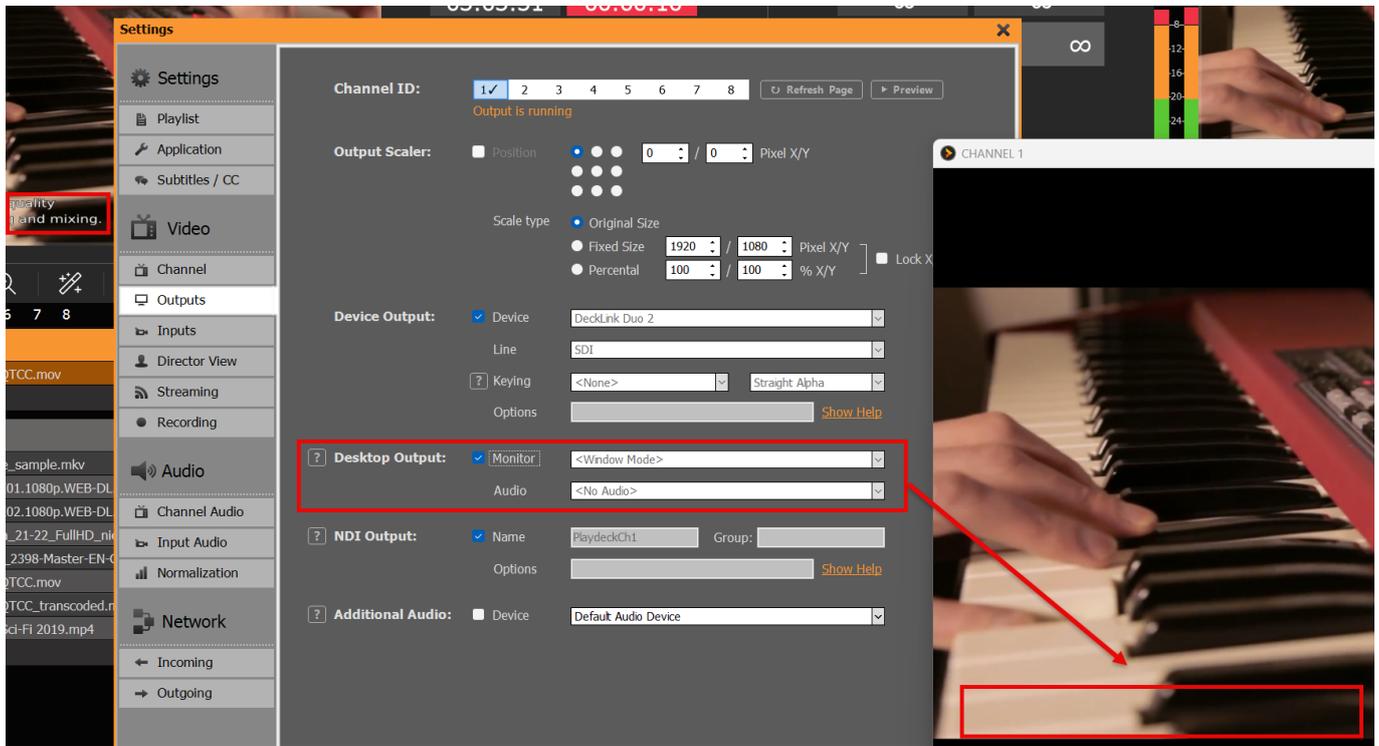
The screenshot shows the 'Settings for both Subtitles and CC (Closed Captions)' panel. The left sidebar contains categories: Settings, Playlist, Application, Subtitles / CC, Video, Channel, Outputs, Inputs, Director View, Streaming, Recording, Audio, Channel Audio, Input Audio, and Normalization. The main settings area includes:

- Font:** DejaVu Sans
- Color:** [White color swatch]
- Scale:** 100 %
- Outline:** 1 px, Color: [Black color swatch]
- Background:**  Show, Color: [Black color swatch], Alpha: 40 %
- Layering:**  Show on top of other Overlays
- Exclusive Settings for Subtitles:** Vertical Margin: 60 px from bottom
- Exclusive Settings for CC:**  **Pass-Through:** Dont burn CC onto picture and just pass it through
- Preview Type:** CEA-608 (NTSC) and ASS (Subtitles)
- CC Code Page:** 0, [Show Help](#)
- CC Channel:** 1

Two 'Update to Playlist >' buttons are visible. A red box highlights the 'Pass-Through' checkbox, and a red arrow points from it to the 'Update to Playlist >' button on the right.

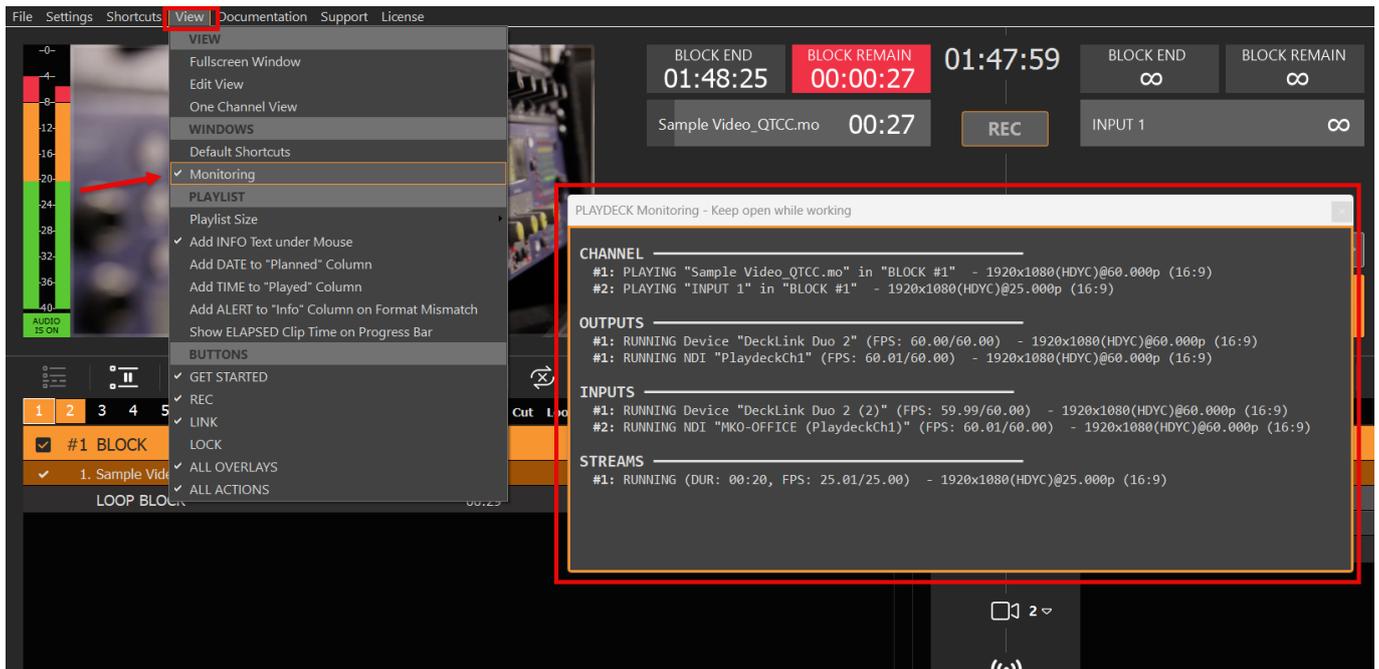
## 8. Controlling with Desktop Output

To check, if the CC is burned into the picture or not, we activate a Desktop Output in “Window Mode”. This always represents, how the video feed is send to devices and streams:



## 9. Monitoring

You can check the status of your input and output video feeds by enabling the MONITORING window:



## Add new CC/Subtitles to Video

PLAYDECK has no tools to add CC/Subtitles manually (by entering text) into videos or video feeds. But there are many tools available in the internet to add CC/Subtitles, e.g.

<https://www.veed.io/>

<https://studio.youtube.com/>