

Thank you for choosing PLAYDECK! We are convinced that with PLAYDECK you will significantly increase your productivity, whether you produce live events, stadium TV, theatre performances, museums, TV broadcasts or virtual and hybrid streaming events. You can run PLAYDECK both on-site and cloud-based.

PLAYDECK provides you with 8 completely independent output channels in which you can organise your videos, graphics, audio files, live inputs, streams or YouTube clips simply by dragging and dropping.

PLAYDECK supports almost any codec and converts all content to the selected output format in real time. The output is completely flexible via dedicated output cards (e.g. from Blackmagic, AJA, Bluefish, ...), via the extended desktop, via NDI or via Streams.

In the Studio Edition, your recording channel can be edited while the recording is still running (edit-while-ingest, e.g. highlight editing), played back with a time delay or streamed. For maximum flexibility you can choose from a wide range of different recording formats.

But PLAYDECK (depending on your licence) is much, much more than a simple playout system: You can trim and crop your content, you can automatically adjust the volume, you can schedule the start of your contributions, you can control the playlist externally, you can start playback via your video switcher, you can transfer closed captions, you can completely customise PLAYDECK with advanced scripting functions, you can...

You are welcome to inform yourself about the incredible functionality of PLAYDECK in the following chapters. We are sure you will love it!

Your PLAYDECK PC Build

PLAYDECK can be installed on any Windows 64-bit machine. This includes Windows Server Versions or Custom Cloud Builds.

PLAYDECK needs fast modern Hardware, if pushed to the Limit. It has to transcode any given Video Format and Framerate in Real-time into your selected Output Format. Ideally without any Frame Drops.

As with all Tasks, it all depends on your use case: Are you using the LITE Edition to operate one Full HD Channel in a Live Event for some Hours? Or are you using STUDIO to broadcast multiple UHD Channel to several receiver eg Streams, NDI, and all in a 24/7 manner?

One thing is certain: Without a powerful modern NVIDIA GPU you will likely be disappointed. Dont try to run PLAYDECK over a Intel Onboard GPU, it is not designed for that. Your NVIDIA GPU should have ideally at least a Score of 8000 on the Passmark Scale.

All other PC components should not be much older than 2 years, just to meet modern driver standards, as we update PLAYDECK at least 4 times a year with the latest driver. You will want to utilize and profit from that, as all PLAYDECK updates are free of charge, as long as you have a valid license.

Here a the Specs we use for our own PLAYDECK production builds:

- BeQuiet Straight Power 11 750W
- Gigabyte Z790 AORUS Elite AX So.1700 Dual Channel DDR5 ATX Retail
- Intel Core i7 13700F 16 (8+8) 2.10GHz So.1700 TRAY
- Noctua NH-U9S Tower Cooler
- 32GB Corsair Vengeance black DDR5-5200
- 500GB Samsung 970 EVO Plus M.2
- 1TB Samsung 970 EVO Plus M.2
- 12GB Gigabyte Geforce RTX 4070 Windforce OC Active PCIe 4.0 x16 (Retail)
- Blackmagic Design DeckLink SDI 4K

Some additional informations about Hardware in relation to PLAYDECK:

Output Card

IF you use a dedicated Output Card (eg BM Decklink), you will not only offload ressources to the Card and reduce overall System GPU/CPU load, but you will also benefit from:

- More "true" Colors
- Nearly Zero Frame Drops due to Frame Rate Control
- Overall higher Picture Quality
- Much more stable than HDMI over Desktop (no Windows-interference)

We support Output Cards from these Manufacturers (see complete List):

- Blackmagic Design
- AJA
- Deltacast
- Bluefish444
- DekTect
- Magewell
- Osprey
- Stream Labs
- Yuan
- ASIO Devices (eg DANTE)

CPU Codecs, Keying and Alpha Channel

Please note, that these Video Codecs can not be decoded via GPU currently. PLAYDECK will fall back to CPU for these Codecs, so plan a strong CPU, if you use these Codecs regulary:

- ProRes
- HAP
- DNxHD

If you are using Keying or Alpha Channel in genereal, and you do not need the extreme high quality of ProRes, try to use the HAP-A Codec instead. It will still be decodec on the CPU, but use alot less CPU power.

Notebooks

If you are aiming for mobile productions, we go with the Razor Blade Notebook and extend it with a Blackmagic Ultra Studio card via the thunderbolt interface. If in doubt, which manufactorer to go for, decide for a Gamer Notebook. Those are designed to run at maximum performance. Avoid buying Office-type Notebooks like Dell, which are designed for power saving and can seriously limit your playout performance.

Supported Input/Output Devices

We basically support all cards of the following manufacturers, since we always include the latest drivers. But because of the vast amount of cards out there, we only tested the most common ones.

Blackmagic Design

Important: Needs Version 14.5+ of Blackmagic Desktop Video Setup.

- DeckLink 4K Extreme 12G
- DeckLink 8K Pro
- DeckLink Duo 2
- Intensity Pro 4K
- DeckLink Mini Monitor / Mini Recorder
- DeckLink Quad 1 / 2 / HDMI Recorder
- DeckLink SDI 4K
- DeckLink Studio 2 / 4K
- Ultra Studio HD Mini / 4K Mini / 4K Extreme 3 / Monitor 3G
- DeckLink IP/SDI HD

AJA

- Corvid 24 R1
- Corvid 44
- Corvid 88
- KONA LHi
- KONA IP

Deltacast

- DELTA-3G-e 22
- DELTA-3G-elp-d 8c
- DELTA-3G-elp-key 11

Bluefish444

- Epoch 4K Neutron
- Epoch 4K Supernova S+

- Epoch Neutron
- Epoch Supernova CG
- KRONOS K8

DekTec

• DTA-2144B

Magewell

- Pro Capture Quad HDMI
- Pro Capture Quad SDI

0sprey

- Osprey 915
- Osprey 925
- Osprey 927
- Osprey 935
- Osprey 945
- Osprey 914
- Osprey 924
- Osprey 944
- Osprey 1214
- Osprey 1215
- Osprey 1225
- Osprey 1227
- Osprey 1245
- Osprey 1285
- Osprey M15
- Osprey M14
- Osprey M24
- Osprey M25

Stream Labs

- Alpha HD
- MH4LM
- MS4
- MSP2

Yuan

• SC550N1

Internal and External Keying

PLAYDECK supports both Internal and External Keying, given that the Output card supports it too. You can also output the key or fill signal seperatly.

Internal Keying

In Internal Keying mode, PLAYDECK will superimpose the video over an incoming signal on the same card:



Lets take the Decklink Duo 2 for example: It has 4 SDI Ports. We need to tell the Card, which 2 Ports will be used for Internal Keying with the help of Desktop Video Setup (Blackmagic's own Setup-App):



The Decklink will now operate like this:



If we start PLAYDECK now, the INTERNAL Option becomes selectable as Device Output:



Once you activate the Device for Keying, PLAYDECK will automatically change your Background to TRANSPARENT and your Color Space to ARGB32 (to support Alpha Channel):



The Image shows PLAYDECK Overlays Sample: Create Overlay > HTML > Screen-Title.html.

External Keying

In External Keying mode, PLAYDECK generates both Fill and Key signals and the keying is made by an external keyer:



Lets take the Decklink Duo 2 for example: It has 4 SDI Ports. We need to tell the Card, which 2 Ports will be used for External Keying with the help of

Desktop Video Setup (Blackmagic's own Setup-App):



The Decklink will now operate like this:



If we start PLAYDECK now, the EXTERNAL Option becomes selectable as Device Output:

Device Output:	Device	DeckLink Duo 2	~
	Line	SDI	~
	? Keying	external Straight Alpha	~
	Options 	internal Show external fill key	<u>Help</u>

Once you activate the Device for Keying, PLAYDECK will automatically change your Background to TRANSPARENT and your Color Space to ARGB32 (to support Alpha Channel):



The Image shows PLAYDECK Overlays Sample: Create Overlay > HTML > Screen-Title.html.

PiP with Internal Keying

This article will show how to utilize Internal Keying as means of overlaying Video over Video (Picture in Picture).

Setup of Internal Keying

We need to setup PLAYDECK to have a BG FEED and a PIP FEED and mix them into the MAIN FEED. For this we use Internal Keying. See this article for more info on Internel Keying.

Use any Device that is capable of Internal Keying. In our example we use the Blackmagic DeckLink Duo2. Open the Dektop Video Setup and combine and first 2 SDI Outputs. Leave the other Outputs solo:



Next we enable Internal Keying in Channel 1 in PLAYDECK:

🇱 Settings	Channel ID:	1√ 2√ 3√	45678	Ů Refresh Page ► Preview
🖺 Playlist		Output is runnin		
Application	Output Scaler:	Position	• • • • • ; / • ;	Pixel X/Y
🧌 Subtitles / CC				
📺 Video		Scale type	 Original Size Fixed Size 1920 2 / 1 	080 € Pixel X/Y –
📺 Channel			● Percental 100 🛟 / 1	00 ‡ % X/Y _ Lock X/Y
Outputs	Device Output:	Dovico	Dard High Dave 2	
🛏 Inputs	Device Output.		DeckLink Duo 2	<u> </u>
Director View		Line	SDI	
Streaming		[?] Keying	internal ~	Straight Alpha 🗸
Recording		Options		Show Help
📢 Audio	? Desktop Output:	Monitor	<window mode=""></window>	~
		Audio	<no audio=""></no>	~

Setup of BG FEED

Now we need to send our BG FEED to SDI 1. For this we use Channel 2 and send it via SDI Loop from SDI 3 to SDI 1. Please note, that because we combined

Settings Channel ID: 1√ 2√ 3√ 8 Ů Refresh Page ► Preview 4 5 6 7 🖺 Playlist 差 Application Output Scaler: Position • • • 0 1 / 0 1 Pixel X/Y Subtitles / CC \bullet \bullet Scale type Original Size Video 1920 🛟 / 1080 🛟 Pixel X/Y Fixed Size Lock X/Y 100 ‡ / 100 ‡ % X/Y 苗 Channel Percental Outputs Device Output: DeckLink Duo 2 (2) \sim 🛏 Inputs SDI < Director View ? Keying \sim \sim <None: Straight Alpha Streaming Recording

SDI 1+2, SDI 3 is now designated as "Decklink Duo 2 (2)":

Then we start any video content on Channel 2:



If you have a SDI Monitor on SDI 2, you can already see the BG FEED playing there now.

We could now go ahead and play any Content with Alpha on Channel 1, which is keyed over the BG FEED, e.g. Alpha Videos (ProRes, HAP-A) or simple Overlays. But since we need our PIP FEEDBACK scaled and positioned, we need to set it up on another Channel.

Setup of PIP FEED

We use Channel 3 as PIP FEEDBACK, so we can play regular Video Content here. We want to send it via NDI from Channel 3 to Channel 1 and activate the Output Scaler, so that our PIP is in the UPPER RIGHT Corner:

🇱 Settings	Channel ID:	1√ 2√ 3√	4 5 6 7 8 ひRefresh Page ► Preview
🖺 Playlist		Output is runnin	
Application	Output Scaler:	Position	● ● ● ● 0 🛟 / 0 🛟 Pixel X/Y
🦚 Subtitles / CC			
📺 Video		Scale type	● Original Size ● Fixed Size 1920 ↓ 1080 ♀ Pixel X/Y
苗 Channel			● Percental 40 🛟 / 40 🛟 % X/Y 🗍 🎽 LOCK X/Y
Outputs	Device Output:	Dovico	
🛏 Inputs	Device Output.	Device	
Director View		Line	
Streaming		[?] Keying	
Recording		Options	Show Help
Audio	? Desktop Output:	Monitor	<window mode=""></window>
		Audio	<no audio=""></no>
苗 Channel Audio			
🖬 Input Audio	? NDI Output:	🔽 Name	PlaydeckCh3 Group:
Normalization		Options	Show Help
Network	? Additional Audio:	Device	Default Audio Device

We now insert a Video Clip on Channel 3, but this could also be Live Video, Streams or anything else:

:54:36	block end 00:54:36	BLOCK REMAIN 00:00:01	-0-			-	/	
REC	Speaker_220505.m	p4 00:01	-8- -12- -16-		8	35		Γ
			-20- -24- -28-			21		,
LINK ~	STOP FADE		-32- -36-					
	CUE		AUDIO IS ON		CH4	ANNEL 3	-//6	
		ℚ *⁄/_			× -		Ľ	≺×
`≦ ⊳	1 2 3 4 5	5678		Duration C	Cut Loop Audi	o Trans. Overl. Com.	Planned	1
	🗹 #1 BLOCK			I Clip				V
:	 I. Speaker_22 	20505.mp4		00:01 0	} # 0,0 dl	3	1	0
	PAUSE			00:01				
- 								
[]]1⊽								

We loop this NDI Feedback to Input 1:



Then insert Input 1 into the Playlist of Channel 1:



We now downscaled the Channel 3 Playlist into Channel 1, which will be keyed over the BG FEED of Channel 2.

FINAL OUTPUT / MAIN FEED

The MAIN FEED is send to SDI 2 and this is the result on the SDI Monitor of SDI 2 (photographed):



ST 2110 Device Setup

Most 2110 Devices can be configured with the Tools given by their manufacturer. For example the "Blackmagic DeckLink IP/SDI HD" can be setup with the Blackmagic Desktop Video Setup:

🛄 Blackmagic Desktop	video Setup				– 🗆 X
Help					_
Deskto	First DeckLink IP/SDI HD Video Output Video I	gicdesign O			
	Network				
	Protocol:	O DHCP			
		O Static IP			
	IP address:	192.168.11.94			*
	Subnet mask:	255.255.255.0			
	Gateway:	192.168.11.1			
	Primary DNS:	192.168.11.1			
	Secondary DNS:	192.168.11.174			
	2110 Multicast Output				
	Stream address:	239.0.0.1			
			Cancel	Save	

For high quality and lag-free network operation, we recommend using high end network hardware (router, switch) as well as high speed ethernet cables (cat6+).

The specific network configuration will not be covered in this article, as there is too much diversity.

AJA 2110 Cards

{

PLAYDECK allows to assign a network configuration file, which will be loaded upon PLAYDECK start.

```
Structure of Configuration File (JSON)
```

```
"protocol":"2110",
"network2110":
```

```
{ // this part configures the parameters of the device itself, the
connectors (SFP) with IP configurations
        "ptpPreferredGMID": "00-00-00-00-00-00-00",
        "ptpDomain":0,
        "setup4k":"false",
        "multiSDP":"false",
        "audioCombine":"false",
        "rxMatchOverride":0,
        "sfps":
            // the configuration itself for each of the connectors
        ſ
            {
                 "designator":"sfp1",
                 "ipAddress":"192.16.45.8",
                "subnetMask":"255.255.0.0",
                "gateWay": "255.255.255.255",
                "enable":"true"
            },
            {
                "designator":"sfp2",
                 "ipAddress":"192.16.45.9",
                "subnetMask":"255.255.0.0",
                "gateWay": "255.255.255.255",
                "enable":"true"
            }
        1
    },
    "receiveVideo2110":
    [ // this part is to receive a video feed where you set the connector,
the source address
      // and its port for both the connectors.
        {
            "stream":"video1",
            . . .
        },
        {
            "stream":"video2",
            . . .
        }
    ],
    "receiveAudio2110":
    [ // this part is to receive an audio feed where you set the connector,
the source address
      // and its port for both the connectors.
        {
            "stream":"audio1",
            . . .
        },
        {
            "stream":"audio2",
            . . .
        }
```

```
],
    "receiveAnc2110":
    [ // this part is to receive the ancillary data where you set the
connector, the source address
       // and its port for both the connectors.
        {
             "stream":"anc1",
             . . .
        },
        {
             "stream":"anc2",
             . . .
        }
    ],
    "transmitVideo2110":
    [ // this part is to send a video signal where you set the connector,
the destination address
       // and its port for both the connectors.
        {
             "stream":"video3",
             . . .
        },
        {
             "stream":"video4",
             . . .
        }
    ],
    "transmitAudio2110":
    [ // this part is to send an audio signal where you set the connector,
the destination address
       // and its port for both the connectors.
        {
             "stream":"audio3",
             . . .
        },
        {
             "stream":"audio4",
             . . . .
        }
    ],
    "transmitAnc2110":
    [ // this part is to send ancilary data where you set the connector, the
destination address
       // and its port for both the connectors.
        {
             "stream":"anc3",
             . . .
        },
        {
             "stream":"anc4",
             . . .
```

```
}
]
}
```

Sample Configuration File

You can download this sample JSON File.

Assign Configuration to PLAYDECK

The Configuration will be loaded while starting PLAYDECK and will be assigned to all Inputs and Outputs (if assigned).

For INPUTS, edit the full path to your JSON File in this Registry Key: HKEY_CURRENT_USER\Software\Medialooks\MFormats\MFLive\AJA2\aja.ip_config

For OUTPUTS, edit the full path to your JSON File in this Registry Key: HKEY_CURRENT_USER\Software\Medialooks\MFormats\MFRenderer\AJA2\aja.ip_config

Deltacst 2110 Cards

PLAYDECK allows to assign a network configuration file, which will be loaded upon PLAYDECK start.

Structure of Configuration File (JSON)

```
{
    "tx2110Setup":
    {
        "ethPort":0,
        "DHCP":"true",
        "ipAddress":"127.0.0.1",
        "subnetMask":"255.255.255.0",
        "gateWay":"127.0.0.1",
        "ipAddressMulticast":"239.1.32.32",
        "udpPort":16
    },
    "rx2110Setup":
    {
        "ethPort":0,
        "DHCP":"true",
        "ipAddress":"127.0.0.1",
        "subnetMask": "255.255.255.0",
        "gateWay":"127.0.0.1",
        "ipAddressMulticast":"239.1.32.32",
        "udpPort":16
    }
}
```

Sample Configuration File

You can download this sample JSON File.

Assign Configuration to PLAYDECK

The Configuration will be loaded while starting PLAYDECK and will be assigned to all Inputs and Outputs (if assigned).

For INPUTS, edit the full path to your JSON File in this Registry Key: HKEY_CURRENT_USER\Software\Medialooks\MFormats\MFLive\MFDeviceDC\dc.ip_config

For OUTPUTS, edit the full path to your JSON File in this Registry Key: HKEY_CURRENT_USER\Software\Medialooks\MFormats\MFRenderer\DC\dc.ip_config

Setup Device Reference Signal (GenLock)

Introducing a Reference Signal will force the Output Hardware to send Frames based on the Reference Clock.

Multichannel SYNC as a use case

If you plan to synchronize multiple channel, you should connect an external clock to your device, then CUE all Channel via LINK (or Commands) and UNPAUSE all Channel. This will start all Channel (almost) SYNC, while the Reference Clock will make sure, that all Channel STAY SYNC. This is only guaranteed for all Channel, that output over the same Device.

This article shows, how to use Action Buttons to start multiple Channel in SYNC.

Providing a Reference Signal (GenLock)

Please check with your manufacturer, if your Output Card supports a Reference Input. In this example we use "Blackmagic DeckLink Duo 2":



If none of your other hardware generates a Clock Signal, you can use separate hardware to generate such a signal, like the Blackmagic Sync Generator.

Setting the Reference Input in PLAYDECK

Some Devices need specific reference input settings, like AJA Devices. In this Example, we set the AJA Reference Input to "external" for the Device:



If you click on SHOW HELP, you will see all other Options, that can be set for each device manufacturer.

Best Video Codecs for Playback

PLAYDECK can play almost any Codec out there. If the Codec is not supported by your GPU, it always falls back to CPU to make it work. There are very view exception: NotchLC for example cant be played with PLAYDECK.

We understand, that most of you have not much control over the Video Codec selection, as you receive your Video Files from Customer right before the show.

But if you have the Time to transcode the Video Files or even more are part of the production process, then you have more options than just H.264 MP4 Files.

We recommend going with AV1, if your NVIDIA supports it, except when you need Alpha-channel, than switch to HAP. In all other cases fall back to H.265/HEVC. ProRes has the best image quality, but is not really suited for real-time playback, as it is more of an editing and post-production codec.

There is also a Feature in PLAYDECK to quickly transcode your Video Files to a GPU-supported Codec. Please see this article.

H.265/HEVC

General-purpose codec. Use, if your NVIDIA GPU does not support AV1 and if you dont need Alpha-channel.

- Developer: JCT-VC
- GPU Decoding: Yes, but depends on NVIDIA GPU, see this List
- Quality: Good quality at all bitrates
- Alpha-channel: No
- Features: HDR, 10-bit color, 8K

AV1

Most efficient Codec. Use, if you your GPU supports it and you dont need Alpha-channel. Near-lossless quality and significantly smaller file sizes than ProRes.

- Developer: Alliance for Open Media (Open Source)
- GPU Decoding: Yes, but depends on NVIDIA GPU, see this List
- Quality: Better quality than H.265/HEVC, esp. at lower bitrates
- Alpha-channel: No
- Features: HDR, 10-bit color, 8K

Very universal Codec. Use, if you need Alpha-channel, and preferred over ProRes because of lower CPU load.

- **Developer**: Vidvox
- GPU Decoding: No, but lower CPU load than ProRes
- Quality: Better quality than H.265/HEVC, but less than AV1
- Alpha-channel: Yes (with HAP Alpha and HAP Q)
- Features:

ProRes

Offers highest image quality with ProRes 4444. Preserves fine details and colors exceptionally well, at the cost of high CPU load. Use only, if you can afford the CPU load and need highest possible visual quality. This is an editing codec and no real-time codec.

- Developer: Apple
- GPU Decoding: No. High CPU load
- Quality: Better quality than all other, esp. at higher bitrates
- Alpha-channel: Yes (with ProRes 4444)
- Features: HDR, 10/12-bit color, 8K

Transcode Clips for GPU Decoding

For a general overview of best possible Video Codecs for Playout, please see this article.

While PLAYDECK is able to transcode all Clips in realtime to your selected Output Format, this can put a heavy toll on your system during Playout, depending on your use case.

If your CPU usage reached critical level and you get playout lags (mostly perceived as audio stutter), you may want to make sure, that all Clips are decoded via the GPU, because most modern Graphic Cards can handle much more load than the CPU alone, thus making it possible to run multiple output channel with PLAYDECK.

Using the integrated transcoder

PLAYDECK has an integrated transcoder for video/audio files. It will make it more easy for you to QUICKLY transcode multiple files at once, e.g. if your show starts soon and you just don't have the time to transcode them via 3rd party tool like Adobe Media Encoder.

In your example we have a Block of Files, that only can be decoded via CPU, like ProRes, and HAP-A Video Codec. We now select any Clip, then press CTRL+A to select all Clips in the Block. You could also use SHIFT to select a Clip range or just CTRL to select individual Clips.

Now we right Clip one of the selected Clips and select "Transcode Clips":

AUDIO IS ON	1		CUE	▶
= : Q / ½ / <u>斗</u>		Za () (Z) (Z)		し、 し、 し、 と、 し、 し、 し、 し、 し、 し、 し、 し、 し、 し
1 2 3 4 5 6 7 8		Duration Cut	Loop Audio Trans. Overl.	Com. Planned ¹
✓ #1 BLOCK		► 11 Clips		• v
 1. A003C025_150830_R0D0.mov 		00:20		• (1)
 2. A003C025_150830_R0D0-PD.mp4 		LIST ITEM		• ①
 3. A003C025_150830_R0D0-PD-PD.mp4 	茴	Delete		• 0
 4. BL_Opener_NAT_15sec_2017_18_ProRes_Stere 	аA	Rename	0,0 dB	• 0
 5. Logos_HAPA_normal.mov 	χ	Cut	0,0 dB	0 0
✓ 6. Chris Woods 1080p50 test (ProRes).mkv	G)	Сору		• 0
✓ 7. Intro_Stadion_TV_17_18_FullHD_ProRes (2).ml		Paste	0,0 dB	• 0
 8. Intro_Stadion_TV_17_18_FullHD_ProRes.mkv 		Color +	0,0 dB	• (i)
 9. ProResRecording.mov 		Show in Explorer/Browser	0,0 dB	• 0
 10. Test_1080-50p_ProRes-422.mov 		EDIT	0,0 dB	0 0
 11. Encoder 1 TC-Test_Playdeck.mxf 	B	Change File/URL/Input	0,0 dB	0 0
PAUSE	0	Rescan Clip		
	0	Reset Clip Settings		
	\Leftrightarrow	Transcode Clip		
		VIDEO		
	В	Video Tracks		

You will not get a list of pre-defined target video codecs, which all support GPU decoding:



If you are in a hurry or have a huge number of clips to transcode, pick the first option "MPEG-4", as this options gives you incredibly fast results, while still maintaining a good quality. In all other cases go with the 2nd option "AV1", as this produces fairly small files on SSD/HDD, while producing extrem high quality files, and also support HDR. The last option is unnervingly slow, but also takes quality and compression a nodge higher, but the time/quality ratio is bad in this case. Use this for overnight-transcodings.

Note: Sadly, we can not offer transcoding in H.264 or H.265 because of license reasons.

4003C025 150830 R0D0	00.00.20	13 10 2015 16:41:12
A003C025_150830_R0D0_transcoded	00:00:20	20.05.2025 03:17:35
	00:00:20	12.04.2025 10:23:06
A003C025_150830_R0D0-PD_transcoded	00:00:20	20.05.2025 03:17:36
A003C025_150830_R0D0-PD-PD	00:00:20	12.04.2025 10:23:34
A003C025_150830_R0D0-PD-PD_transcoded	00:00:20	20.05.2025 03:17:37
BL_Opener_NAT_15sec_2017_18_ProRes_Stereo_R128	00:00:15	26.06.2017 10:42:59
BL_Opener_NAT_15sec_2017_18_ProRes_Stereo_R128_transcoded	00:00:15	20.05.2025 03:17:37
Chris Woods 1080p50 test (ProRes)	00:00:10	08.05.2025 15:20:03
Chris Woods 1080p50 test (ProRes)_transcoded	00:00:10	20.05.2025 03:17:45
Intro_Stadion_TV_17_18_FulIHD_ProRes (2)	00:00:19	08.05.2025 14:49:22
Intro_Stadion_TV_17_18_FulIHD_ProRes (2)_transcoded	00:00:20	20.05.2025 03:17:46
Intro_Stadion_TV_17_18_FulIHD_ProRes	00:00:19	02.05.2025 01:51:10
Intro_Stadion_TV_17_18_FullHD_ProRes_transcoded	00:00:19	20.05.2025 03:17:48
ProResRecording	00:00:13	21.02.2021 23:35:00
ProResRecording_transcoded	00:00:13	20.05.2025 03:17:48
Test_1080-50p_ProRes-422	00:01:11	13.06.2019 11:17:40
Test_1080-50p_ProRes-422_transcoded	00:01:11	20.05.2025 03:17:50

The transcoder will save the new file next to the old file and add "_transcoded" to the filename:

The new Files will be automatically replaced and re-scanned in your Playlist:

1	2	3	4	5	6	7	8			Duration	Cut	Loop	Audio	Tran
						_				burución	out	Loop	nuulo	
\sim	#1	BLC	DCK							► 11 Clips				
~	1	A00	3C025	5_15(0830_	_R0D	0_t	ranscoded.mp4		00:20				
~	2.	A00	3C025	5_15(0830_	_R0D	0-P	D_transcoded.mp4		00:20				
~	3.	A00	3C025	5_15(0830_	_R0D	0-P	D-PD_transcoded.mp4		00:20				
~	4	BL_(Opene	er_NA	AT_1	5sec_	_ 20 :	17_18_ProRes_Stereo_R128_transcoded	l.mp4	00:15			0,0 dB	
~	5.	Logo	os_HA	APA_I	norm	al_tra	anso	coded.mp4		00:30			0,0 dB	
~		Chri	s Woo	ods 1	080p	50 te	est (ProRes)_transcoded.mp4		00:10				
~	7.	Intro	o_Sta	dion_	_TV_1	17_18	3_Fi	ullHD_ProRes (2)_transcoded.mp4		00:20			0,0 dB	
~	8	Intro	o_Sta	dion_	_TV_1	17_18	3_Fi	ullHD_ProRes_transcoded.mp4		00:19			0,0 dB	
~		ProF	ResRe	cord	ing_t	ranso	code	ed.mp4		00:12			0,0 dB	
~	10	Test	_108	0-50p	o_Pro	Res-	422	_transcoded.mp4		01:11			0,0 dB	
~	11	Enco	oder 1	L TC-	Test_	Play	dec	k_transcoded.mp4		02:46			0,0 dB	
		PAU	ISE							06:45				

If you need to at any time return to an earlier version of your Playlist, you can use the "Restore Project Backup" function:



What Files are being decoded on CPU in PLAYDECK

ProRes

This high quality video codec has it's roots on MAC computers, as it also was developed by Apple. Sadly, Apple never released any codec informations for Windows Systems, so it's still fairly impossible to decode ProRes via the GPU. If you need the Alpha Channel, we recommend using HAP-A video codec.

HAP and variants like HAP-A

These video codecs also support Alpha Channel and have very low CPU consumption.

DNxHD, MXF

The codecs also cant be decoded via GPU in PLAYDECK.

What GPU are recommended?

We refer to this article for PC Building for PLAYDECK.

Insert YouTube Videos into Playlists

This article will show how to load and edit YouTube Videos.

Load YouTube into PLAYDECK

You can directly Drag Drop any YouTube URL from your Browser to PLAYDECK:



Or you can use the Stream Drag Drop Icon to paste/edit the URL:

40- AUDIO IS OF	D- IO N	IANNEL 1		CUE	▶	
0-			×		දා» දැ×	
1	2 3 4 5 6 7 8	Duration	Cut Loop Audio	Trans. Overl. Com.	Planned 1	< ≦ ▷
	#1 BLOCK	► 7 Clips			• ∨	
~	1. TOP 25 HIKES & PLACES TO VIS	TT IN COLORAD 20:06	0,0 dB		• ①	•
~	2. Grand_Jam_220505.mp4	00:30	0,0 dB		• ①	
~	3. Intro_Liveshow.png	ω			0	
~	4. L-Wrapper_Marketing_223505.m	ov 00:15			✓ ©	E A
~	5. Mitglieder_220505.mp4				0 0	
~	6. Mitgliedergrafik_220505.pn				• ①	
~	7. Trailer_WestHam_220505.	Enter or Paste your S	stream URL		• ①	
	PAUSE	YouTube, SRT, RTMP, UDP, W	ebsites,		4	(4.3)
	#2 BLOCK	https://www.youtube.com	n/watch?v=KKeZPA-	Gvs4	• •	((*))
~	1. 02-let_s_groove_256_lame		·	·	0 0	
	PAUSE			Show Help		Ø
				OK Cancel		

Your YouTube Videos is ready to play out-of-the-box. The quality will be preselected dependend on your Playlist Vidoo Format and the Formats provided from YouTube.

Update YouTube Driver

Should the added YouTube Clip be shown as UNPLAYABLE/RED in PLAYDECK, please update the integrated YouTube Driver. Chances are, YouTube made changes to its platform and you need a newer driver from us:



Change Quality, Video and Audio

YouTube Videos are always available in different qualities. You can switch Video Tracks by right-clicking the YouTube Video:



Note: YouTube provides combined Video+Audio Tracks, which are much faster. If you switch to non-combined Video Track, caching can take much longer and seeking can desync video/audio.

Prepare/Import Playlists externally

This article will show options to prepare your Playlists on another System or import Playlist from other Apps.

Use Free Channel

You have some spare Channel in PLAYDECK? Use them to prepare and test new Contents, then copy them to your Main Feed Channel. You can DRAG DROP Blocks from Channel to Channel, or copy them with pressing CTRL after starting DRAG DROP.

You can also copy, overwrite or append whole Playlists, by right-clicking the CHANNEL NUMBER:

40- AUDIO IS ON		CHANNEL 1		
1 2 3	45678		Duration	Cut Loop
#	CHANNEL		►8 Clips	
✓	Clear		00:30	
 	Dorto		00:32	
 	Swap		00:30	
 ✓ ✓ 	SWAP		00:30	
× .	Import Diavlist via VMI		00:30	
✓ ([™])			02:43	
✓	Export Playlist to XML		03:44	
✓ :	Import Clips via CSV		00:20	
	Export Clips to CSV		09:20	
✓ #2 A	d Break 🕚		► 2 Clips	

If you paste new Content on an existing Playlist (or Import XML), you get the option to overwrite or append:

1	2	3	4	5	6	7	8		Duration	Cut	Loop
	#1	Ma	in P	rogra	am				► 8 Clips		
~	1	. Gra	nd_J	am_2	205()5.mp	4		00:30		
~	2	. Elte	en_2(Dact		1			00:32		
>	3	. Joy	_15	rusu	C				00:30		
~	4	. Mai	N_19	?		Past	e Plavlist #2		00:30		
~	5	. Mot	oau_						00:30		
~	6	. Tor	_des			Overv	write everything		02:43		
~	7	. Foy	erfilı			Over	write everything write Blocks/Clips only		03:44		
~	8	. Flye	erala			Over	write Overlays/Actions only		00:20		
		PAL	JSE			Abbe	na biocks/cnps only	_	09:20		
	#2	Ad	Bre	ak	()				► 2 Clips		

Use Playlist Trial Edition

You can install PLAYDECK on any other machine and edit your Playlists there. Except the Watermark of the Trial Edition, there are no other restrictions, so you can prepare Playlists and send them to your Main System.

Append Playlist during Broadcast

You want to import new Playlists and don't want to interrupt your Broadcast? No problem: Use the APPEND PROJECT Option in the FILE MENU:



This will load any PLAYDECK Project, but instead of replacing the Playlists, all Playlists will be extended by the Clips found in the Project. You can then safely remove any old Content.

You can apply this procedure to individual Playlists by Exporting a Playlist to XML and Importing that XML on the other Machine. This is done by right-clicking the CHANNEL NUMBER:

1	2		34	5	6	7	8		Duration	Cut	Loop
	#	<i>.</i>	CHAI	NNEL					► 8 Clips		
~			Clear						00:30		
~		~	Paste						00:32		
~			Swan						00:30		
~		:196.23	EXPO	рт					00:30		
~			LAFC	rt Diaul	int uin	VAL			00:30		
~			impo	i Piayi			2	,	4 02:43		
~		<u>.</u>	Expo	rt Playl	ist to X	ML			03:44		
~			Impo	rt Clips	via CS	SV			00:20		
		0	Expo	rt Clips	to CS	V			09:20		
	#	2 /	Ad Br	eak	(► 2 Clips		

This workflow is perfect for any day-to-day schedule, where you add new days and remove old ones.

Automatically Detect and Reload new Playlist

You can also OVERWRITE the current load Project File on your Main System and let PLAYDECK detect this and reload the Project, after which the Playout will resume. Enable this functionality in the Application Settings:



Note: RESUME PLAYOUT only works, if the current Playing Clip exists in the newly re-loaded Project, otherwise Playout stops for that Channel. The Clip is identified by a UNIQUE ID, so it could have moved to another Block in the re-loaded Project.

This workflow is best suited for any automated systems, where Project Files are generated automatically and uploaded to the Main System. Or when the Content Editor does not have access to the Main System and uploads the new Playlist to the NAS/Cloud Storage.

Interface with 3rd party Apps

We dont support the Playlist Format of other 3rd party Apps, as there is just too much diversity on the market, and alot Playlist Function (Mixing, Overlaps, Schedules) would not be compatible with PLAYDECK.

If you like to prepare your Playlist in a 3rd Party App, you need to export your Playlist to CSV, then Edit that CSV to work with PLAYDECK, then Import that CSV into PLAYDECK.

Why CSV? Because it is the most easy List Format, which support multiple values per Item. It can be edited with any Text or Table Editor, from Notepad to Excel.

Lets's have a look at our CSV. For this we build ourself a Sample Playlists with 2 Blocks. We mixed in different Content Types: Video Clips with IN/OUT Points, Device Inputs, YouTube Videos, UDP Input Stream, GFX with Runtime, a Note. We also added a Schedule to the 2nd Block:

1	2	3	4	56	7		8									Duration	Cut	Loop		Audio	Trans	. Ove	rl.	Com.	Planne	d	
~	#1	. Ma	in Pro	gram												► 8 Clips										٥	
~	1	. Gra	nd_Jar	n_220	505.m	p4						>				00:14	0		0),0 dB						~	(j)
~	2	. Joy	_1508	22.mp	1											00:30			0),0 dB						۰	
~	3	. CBC	News	: The I	Vation	al	Car	nada Po	ost w	orkei	rs issue	e strik	e notice			45:09											
~		. INP	UT 1													8											
~	5	. Eve	rest Fi	ull Clim	b Su	ırvi	iving	Everes	t Es	scapi	ng Thir	n Air	Predict	ted Dea	ac	01:33:04			0),0 dB							
~	6	. udp	://225	.0.0.1:	5001											∞			0),0 dB							
		Thi	s is a	Samp	le No	te																					
~	7	. Key	ingTes	t.png												02:30											
~	8	. Mol	au_18	1021.r	np4											00:30			0),0 dB							
		PAl	JSE													∞											
~	#2	Ad	Breal	(()												► 2 Clips									11:30:0	0 0	V
~	1	. Ald	ers_18	0825.n	np4											00:10			0),0 dB					11:30:0	0 0	
~	2	. Son	epar_1	.90817	.mp4											00:10			0),0 dB					11:30:1	0 🗸	0
		BRI	EAK													00:20											

We now right-click the CHANNEL NUMBER 2 and select EXPORT TO CSV:

1	2	3	3 4	5	6	7	8		_	Duration	(
~	#	m	CHAN	NEL	-	-		-		► 8 Clips	
~		ш ГС-	Ciear							00:14	
~		~	Сору							00:30	
~		NU)	Paste						a Post workers issue strike notice	45:09	
~		No	Swap	_	_	_		_		∞	
~			EXPO	RT					rest Escaping Thin Air Predicted Deac	01:33:04	
~			Impor	t Playl	ist via	XML				œ	
			Expor	t Playl	ist to 2	XML					
~			Impor	t Clips	via C	SV		13		02:30	
~			Export	t Clips	to CS	V				00:30	
		P	AUSE							ου.ου ∞	
	#	2 A	d Bre	ak	()					► 2 Clips	

We then open the saved CSV File in Notepad (click here to download/open in new Tab):



As you can see, its not "too" much Text Lines. Since the first Lines are just HEADER, it looks even more clear in a Table Editor:

	Α	В	С	D	E	F	G	Н	I	J	К	L
1	Туре	Active	Playable	Enumeration	Caption	Duration	Planned	Played	Filename	CutIn	CutOut	Schedule
2	Block	Y	Y	1.	Main Program							
3	File	Y	Y	1.	Grand_Jam_2205	00:14		15:34:24	F:\Media\Ordner	9,04	23,96	
4	File	Y	Y	2.	JOY_150822.mp4	00:30		23:54:42	F:\Media\Ordner	0	0	
5	YouTube	Y	Y	3.	CBC News: The N	45:09			https://www.youtu	0	0	
6	Input1	Y	Y	4.	INPUT 1					0	0	
7	YouTube	Y	Y	5.	Everest Full Climb	01:33:04			https://www.youtu	0	0	
8	Stream	Y	Y	6.	udp://225.0.0.1:50	01			udp://225.0.0.1:50	0	0	
9	Note				This is a Sample N	lote						
10	File	Y	Y	7.	KeyingTest.png	02:30			F:\Media\Testing\	0	0	
11	File	Y	Y	8.	Mobau_181021.m	00:30			F:\Media\Ordner	0	0	
12	Block	Y	Y	2.	Ad Break	00:20	11:30:00					21.05.2025 11:30:00
13	File	Y	Y	1.	Alders_180825.mp	00:10	11:30:00	23:54:28	F:\Media\Ordner	0	0	
14	File	Y	Y	2.	Sonepar_190817.	00:10	11:30:10	23:54:31	F:\Media\Ordner	0	0	

And this is how you write/generate CSV Files: You export your Content in any 3rd party app, open any editor and bring it in PLAYDECK FORMAT. But WHAT IS PLAYDECK FORMAT.

These are the REQUIRED COLUMNS. They can be it ANY POSITION (any column #): **Type** = Block, File, YouTube, Input#, Stream, Note **Caption** = Any Text to display in PLAYDECK **Filename** = The Path/File or the URL (YouTube and Streams)

These are the OPTIONAL COLUMNS. They can be it ANY POSITION (any column #): Active = The Checkbox in the first Column in PLAYDECK Duration = Only used be File-Types that are Images. Leave empty or 0 for endless CutIn / CutOut = IN- and/or OUT-Point for Trimming Schedule = Only used by Block-Types

Note: More advanced Properties (e.g. Audio Gain) are not supported, as to keep our CSV Format clean and easy. To import/export ALL Properties, please use XML instead of CSV.

Creating a Diashow Single-Monitor

This article will show how to create a Diashow with Transitions and output on the same Monitor.

Creating the Show

Open the integrated File Explorer by clicking the right-arror between the Playlists. The search for your images folder, select all images and add the to the Playlist by Drag Drop:



Select any Clip in the Playlist and press CTRL+A to select all Clips, then select the Icon for DURATION and enter a suitable duration for each image, e.g. 15 seconds:



While al Clips are still selected, click the Icon TRANSITION next and add any transition. In this case we use a smooth long Fade Transition:
40- AUDIO IS ON				l,	(CHAN	NEL	1							CU	E			11	
		<u>. II</u>			+ ` /}+			Zo			(X					>_)»		⊲	
1	2	3 4	56	7	8				Du	uration	Cut	Loop	Audio	Trans.	Overi	. Com.	Planneo	i		1
	#1	BLOCK							▶ 5() Clips									v	
~		. img_0.pn	g							00:15								0	0	
×		. img_1.pn	g							00:15								0	(î	
~		. img_2.pr	Transi	tion															,	
~	4.	. img_3.pr	2	Dian		nton 7	Turne	ition P												
~	5.	. img_4.pr	ě	Plea	ise e	nter	iransi	Ition L	Jetai	IS										
~	6.	. img_5.pr																		
~	7.	. img_6.pr			o Fran	nsition														
~	8.	. img_7.pr		💽 U:	se	Fade			✓ for	or 1,	5	(s)								
~	9.	. img_8.pr											0,1 0,5	1,0 1,5	2,0	2,5 3,0	3,5 4,0			
~	10.	. img_9.pr																		
~	11.	. img_10.p					_													
							Sot t	to all Clin	0.000		Dof	ault for	new Clir	S		OK	Canc	el		
~	12.	. img_11.r							IS NOW			unicitoi	nen en	<u> </u>		OR				

At the bottom of the Playlist you can see the total duration of your Diashow:

×	48. Img_47.png	00:13	1,55	• ①
~	49. img_48.png	00:13	1,5s	• 0
~	50. img_49.png	00.12	1,5s	• ①
	PAUSE	11:16		

Playing the Diashow

You simply double-click the first Clip (or use Buttons CUE+PLAY), then double-click the Preview Area (or right-click and select FULLSCREEN). Your Playout will now be maximized to your Monitor Size, at maximum Quality. And the Mouse Cursor will be hidden. Use ESC to exit Fullscreen.

-0- -4-	111 111 111	1		BLOCK END 14:57:32	block remain 00:11:11
-8-				img_0.png	00:05
-16- -20-	DI ANDECK		OREV/IEW	_	
-24- -28-		Ţ	Fullscreen		
-32- -36- 40-	CHANNEL 1	E	Take Screenshot Start Video Capture	CUE	
AUDIO IS ON	CHANNEL I		Open Export Folder		
::::		* *	Channel Name Tally Lights	≩ ≻_	<]» <]×
1 2	2 3 4 5 6 7 8 Dura		AUDIO	s. Overl. Com.	Planned 1
	#1 BLOCK • 50 0		Mute		• v
×	1. img_0.png 0		Mute Preview	;s	0 0
~	2. img_1.png 0	0:13		1,5s	14:46:29 ● ◎
~	3. img_2.png 0	D:13		1,5s	14:46:42 • ©
~	4 ima 3 nna O	0.13		1 55	14.46.56 ■ ①

Note: During Fullscreen, you can use the SPACE Key to pause/unpause Playback.

You can also output the video signal on a second monitor, or send it to your TV. You could also send it via NDI to another PC and open the signal with PLAYDECK (use the free Backup License), or VCL Mediaplayer or any other 3rd

party app:

🗱 Settings	Channel ID:	1 2 3 4 5 6 7 8 ♡ Refresh Page ► Preview
🖺 Playlist		Output not started yet
Application	Output Scaler:	■ Position ● ● ● 0 ; / 0 ; Pixel X/Y
🧌 Subtitles / CC	~	
📺 Video		Scale type ● Original Size ● Fixed Size 600 1 / 338 🐳 Pixel X/Y ㄱ
📺 Channel		Percental 66 : / 66 S % X/Y Lock X/Y
Outputs	Device Output:	Device Dediction 2
🛏 Inputs	Device output.	
Director View		
Streaming		? Keying <none> ✓ Straight Alpha ✓</none>
Recording		Options <u>Show Help</u>
	? Desktop Output:	Monitor NVIDIA GeForce RTX 3080 - 3840x1600@144,00 - PRIMARY V
		Audio <no audio=""> 🗸</no>
📺 Channel Audio	_	
🖬 Input Audio	? NDI Output:	Name PlaydeckCh1 Group:
Normalization		Options Show Help
Network	? Additional Audio:	Device Dante Virtual Soundcard (x64) (ASIO)

External Overlays with ClassX (and other)

This article will show how to trigger external Overlay Engine during your Playout.

Create external Overlay with ClassX

We use ClassX Liveboard as an example to show, how to work with external Overlays. This sample can be easily copied to any other solution, like: CasparCG, Singular.live.

ClassX Liveboard is a professional CG Playout Solution for automating dynamic overlay contents. You can register for a Demo Version on their website.

After installation of LiveBoard, you can simply add Videos, GFX and other Contents via the user interface. There you also name the Contents with a unique identifier, e.g. "MyLowerThird" for later reference.

LiveBoard allows to connect via TCP and send Commands to show/hide certain Contents. A complete list of Commands is always found in the Window installation path: C:\Program Files\...\ClassX_Applications_v6\remotecontroltester\commands

For now, these 2 Commands are enough for us:

- LBC_PLAYCONTENT "MyLowerThird"
- LBC_STOPCONTENT "MyLowerThird"

Lets enable our TCP in PLAYDECK to talk to LiveBoard. The default Port of LiveBoard is 301. Enabling this will show CONNECTED, if the LiveBoard Server is running. Otherwise PLAYDECK will try to connect every 5 seconds, so you can start LiveBoard before or after PLAYDECK:

Settings	? TCP Commands Out:	🛛 🗹 Enabled	Show Help
🖺 Playlist	Connected	Port:	301
差 Application		IP address:	127.0.0.1
🐢 Subtitles / CC			
📺 Video	Not started yet	Port:	11376 C
苗 Channel		IP address:	127.0.0.
🖵 Outputs			
🖬 Inputs	Running (0 Clients)	Enabled	<u>Snow Help</u>
L Director View			
Streaming			
Recording			
م العام (الع			
苗 Channel Audio			
🖬 Input Audio			
Normalization			
Network			
← Incoming			
→ Outgoing			

You can now add the above Commands to:

- Clips
- Blocks
- Actions
- Other Overlays

For our Sample we want the external Overlay to show together with a specific Clip. We select this Clip in the Playlist and click the COMMANDS Icon, then add our 2 LiveBoard Commands from above. In this case with start the Overlay 5 seconds into the Clip and show it for 10 seconds in total:

<u>≔</u> ∷ © <u>*/</u>	<u>ユーン(</u>	ž 🛏 😫	<u>>_</u>	⊲»
1 2 3 Edit Command				
✓ #1 PRE: ✓ 1. Intro Please enter	er Command Details			
✓ 2. Intro ✓ 3. L-Wr. Select a Comm	nand: [1] Command	×	+ Add	new 🗙 Remove this
 ✓ 1. Filing ✓ 5. Mitgl 	e: 💿 Play Time 🛛	0 5 0 0	(HH:MM:SS	:FF)
 ✓ 6. Traik PAU: 	Clipend minus	0 🛟 0 🛟 (SS:FF)		
COMMANDS - 1	Internal within PLAYDECK	Show Commands List	SCT 1	e - Sdi/Srt/Udp/dvb <u>s</u>
		<u>Test</u> <u>Clear</u>		
COMMANDS - 1 LBC_PLA	External via TCP Show Help YCONTENT "MyLowerThird"			
LT BG		<u>Test</u> <u>Clear</u>	Sam	ples: <u>SCTE-35</u> <u>SCTE-104 (</u>
Select a Command: [2] comma	ind	✓ + Add new		
Execution Time: 💿 Play Tim	e 0 0 0 15 0	(HH:MM:SS:FF)		
Clipend	minus 0 0 (SS:	FF)		
COMMANDS - Internal within PLAN	YDECK <u>Show Commands Lis</u> <u>Test</u> <u>Cl</u>	scte - SDI	/SR1	
COMMANDS - External via TCP S	how Help			
1 LBC_STOPCONTENT "MyLowerT	hird" Test Cl	ear Samples:	SCTE	

Mixing Video Content and Overlays

If you dont use an external Mixer to mix the Overlays with Alpha Channel over your PLAYDECK playout, you can also use Internal Keying, where you feed the Overlay Signal into PLAYDECK, and have your Output Hardware mix both Layer. See this article on Internal Keying.

If you want to mix on a software level, you can use vMix on the same System as ClassX and PLAYDECK.

Dante Virtual Soundcard

If you dont know DVS yet: It's an Audio connection system for Ethernet (LAN).
https://www.getdante.com/products/software-essentials/dante-virtual-soundcard
/

You can use DVS via ASIO or WDM:

- With ASIO you can transmit up to 64 Audio Channel across all PLAYDECK output channel.
 - It is the recommended method to use DVS with PLAYDECK.
- With WDM you can transmit up 16 Audio Channel with one Stero Pair per PLAYDECK output channel.

DVS via ASIO

Start the ASIO Device by opening DVS, selecting ASIO and click START:



You can select the ASIO Device in PLAYDECK now:

🔅 Settings	Channel ID:	1 2√ 3	3 4 5 6 7	8 U Refresh Page	e Preview
🖺 Playlist		Output not star			
Application	Output Scaler:	Position	• • • • • • • / •	Pixel X/Y	
🦔 Subtitles / CC					
📺 Video		Scale type	 Original Size Fixed Size 	/ 338 🗭 Pixel X/Y	
苗 Channel			Percental	/ 66 🖨 % X/Y	
Outputs	Device Output:	Device	Decklink Duo 2		×
🖬 Inputs	beries sutput	Lino			`
Director View			SDI		~
Streaming		[?] Keying	<none></none>	✓ Straight Alpha	~
Recording		Options		Shov	<u>v Help</u>
Audio	? Desktop Output:	Monitor	NVIDIA GeForce RTX 3080 - 3	3840x1600@144,00 - PRIM	ARY 🗸
		Audio	<no audio=""></no>		~
苗 Channel Audio					
🖬 Input Audio	? NDI Output:	Name	PlaydeckCh1 (Group:	
Normalization		Options		<u>Shov</u>	<u>v Help</u>
Network	? Additional Audio:	Device	Dante Virtual Soundcard (x64	I) (ASIO)	~

PLAYDECK will now start to send all Audio Channel you have selected for that Output Channel, which can be up to 32 Audio Channel:

🇱 Settings	Channel ID:	1 ✓ 2 ✓ 3 ✓ 4 ✓ 5 ✓ 6 ✓ 7 ✓ 8 ✓ [U Refresh Page] ► Preview
🖺 Playlist		Channel is running
Application	Activate:	► Start Now ✓ Channel is always active
subtitles / CC	Channel Name:	CHANNEL 1
📺 Video	GPU Selection:	NVIDIA GEForce RTX 3080
苗 Channel	Video Format:	HD1080-25p HDYC 1920x1080@25.00p 16:9 Custom
Outputs	? HDR/10 bit:	Enable HDR and 10 bit video playback
🛏 Inputs		
L Director View	Preview Audio:	Default Audio Device 🗸
Streaming	Audio Format:	Channel: 32 🗸 Sample rate: 96.0 kHz 🗸 Bit depth: 16-bit 🗸
Recording	? Background:	colorbars-hd V Color: File: F:\Media\Ordner E\Bitburg &
		C Keep File Audio

To use the ASIO Device for more than one Output Channel, you need to activate ASIO Device Splitting:

🌞 Settings	Gain Settings	? Left	Right	? Mixdown	? Mute	? Mute Preview
🖺 Playlist	Channel 1:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		•
差 Application	Channel 2:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
🐢 Subtitles / CC	Channel 3:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		•
	Channel 4:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
Video	Channel 5:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
 .	Channel 6:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
📺 Channel	Channel 7	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
🖵 Outputs	Channel 8:	0,0 ‡ dB	0,0 🛟 dB	No Mixdown 🗸		•
🖬 Inputs	Miving Settings	2 Mann	ina	2 Filter Show	Samples	
L Director View	Finding Settings				Sumples	_
Streaming	Channel 1:	Edit				
Describer	Channel 2:	Edit				
 Recording 	Channel 3:	Edit				
- Audia	Channel 4:	Edit				Update to
	Channel 5:	Edit				
Channel Audio	Channel 6:	Edit				
	Channel 7:	Edit				
🖬 Input Audio	Channel 8:	Edit				
Normalization						
D. Maharada	ASIO Device Spl	itting				
	? 🗖 Enable Splittin	g of all ASIO De	evices into Logical I	Devices per selected Au	dio Channel	

You will now receive multiple ASIO Devices, so you can assign one Device per PLAYDECK Output Channel:

? Additional Audio:	Device		~
		Default Audio Device	
		Lautsprecher (Vanatoo T0)	
		Dell AW3821DW (NVIDIA High Definition Audio)	
		Lautsprecher (Blackmagic DeckLink Duo 2 (2) Audio)	
		Lautsprecher (Blackmagic DeckLink Duo 2 (4) Audio)	
		Realtek Digital Output (Realtek USB Audio)	
		Lautsprecher (Blackmagic DeckLink Duo 2 (1) Audio)	
		Lautsprecher (Blackmagic DeckLink Duo 2 (3) Audio)	
		Blackmagic Audio 1-8 (ASIO)	
		Dante Virtual Soundcard (x64) 1-8 (ASIO)	
		Dante Virtual Soundcard (x64) 9-16 (ASIO)	45
		Dante Virtual Soundcard (x64) 17-18 (ASIO)	
		Dante Virtual Soundcard (x64) 19-20 (ASIO)	
		Dante Virtual Soundcard (x64) 21-22 (ASIO)	
		Dante Virtual Soundcard (x64) 23-24 (ASIO)	
		Dante virtual Soundcard (x64) 25-26 (ASIO)	
		Dante Virtual Soundcard (x64) 27-28 (ASIO)	

The Splitting will be done by the Audio Channel you selected per Output Channel. So in the above example, we have set PLAYDECK Output Channel 1 and 2 to 8 Audio Channel and all other Output Channel to 2 Audio Channel.

Audio Format:	Channel: 8 🗸	Sample rate: 96.0 kHz 🗸	Bit depth: 16-bit 🗸
Audio Format:	Channel: 2 🗸	Sample rate: 96.0 kHz 🗸	Bit depth: 16-bit 🗸

DVS via WDM

Start the WDM Driver by opening DVS, selecting WDM and clicking on START:

🚯 Dante	Virtual Sou	ndcard			_		×
Settings	Licensing	Device Lock	Domains	About			
_	- Au	idio Interface:	WDM	~	Options		
	Au	dio Channels:	16 × 16	\sim			
	D	ante Latency:	6 ms	\sim			
	Netw	ork Interface:	Ethernet			\sim	
	Ne	etwork Status:	1Gbps				
		IP Address:	192.168.17	8.42			
-⊱Do	ante		_			Start	•

This is the product page:

https://www.audinate.com/products/software/dante-virtual-soundcard

Once you installed DVS on the PLAYDECK machine, select WDM as Audio Interface and START:



You can now assign on DVS Audio Device (Stereo Pair) per PLAYDECK Output Channel:

🌞 Settings	Channel ID:	1 2√ 3 Output not start	4 5 6 7 8 U Refresh Page	e Preview
Playlist				
Application	Output Scaler:	Position	• • • • 0 ‡ / 0 ‡ Pixel X/Y	
🤏 Subtitles / CC				
📺 Video		Scale type	 Original Size Fixed Size 600 / 338 Pixel X/Y 	☐ <mark>⊂</mark> Lock X/Y
📋 Channel			 Percental 66 1 / 66 2 % X/Y 	
Outputs	Device Output:	Device	Dackt ink Dup 2	
🖬 Inputs	Device output.	- Device	DeckLink Duo 2	•
L Director View		Line	SDI	~
Streaming		? Keying	<none> Straight Alpha</none>	\sim
Recording		Options	Show	<u>v Help</u>
🛋 Mudio	? Desktop Output:	Monitor	NVIDIA GeForce RTX 3080 - 3840x1600@144,00 - PRIM	ARY ~
📺 Channel Audio		Audio		•
🕞 Input Audio	? NDI Output:	Name	PlaydeckCh1 Group:	
Normalization		Options	Show	<u>v Help</u>
 Network Incoming Outgoing 	? Additional Audio:	Device	DvS Transmit 1-2 (Dante Virtual Soundcard) Default Audio Device DVS Transmit 3-4 (Dante Virtual Soundcard) Lautsprecher (Vanatoo T0) Dell AW3821DW (NVIDIA High Definition Audio) Lautsprecher (Blackmagic DeckLink Duo 2 (2) Audio) Lautsprecher (Blackmagic DeckLink Duo 2 (4) Audio) DVS Transmit 1-2 (Dante Virtual Soundcard) DVS Transmit 1-14 (Dante Virtual Soundcard) DVS Transmit 1-14 (Dante Virtual Soundcard) Realtek Digital Output (Realtek USB Audio) DVS Transmit 7-8 (Dante Virtual Soundcard) DVS Transmit 15-16 (Dante Virtual Soundcard) DVS Transmit 15-10 (Dante Virtual Soundcard) DVS Transmit 15-10 (Dante Virtual Soundcard) DVS Transmit 15-10 (Dante Virtual Soundcard) DVS Transmit 15-10 (Dante Virtual Soundcard) DVS Transmit 15-10 (Dante Virtual Soundcard) DVS Transmit 15-10 (Dante Virtual Soundcard) Lautsprecher (Blackmagic DeckLink Duo 2 (1) Audio) DVS Transmit 15-10 (Dante Virtual Soundcard)	Ċ,

Only the first to Audio Channel of that Output Channel are send, so make sure to have set your Audio Channel to 2:

🗱 Settings	Channel ID:	1 ✓ 2 ✓ 3 ✓ 4 ✓ 5 ✓ 6 ✓ 7 ✓ 8 ✓ O Refresh Page ► Preview
🖺 Playlist		
✤ Application	Activate:	► Start Now Channel is always active
Subtitles / CC	Channel Name	CLANNEL 1
	GPU Selection:	NVIDIA GeForce RTX 3080
🗂 Channel	Video Format:	HD1080-25p HDYC 1920x1080@25.00p 16:9 Y Custom
Dutputs	? HDR/10 bit:	Enable HDR and 10 bit video playback
🖬 Inputs		
Director View	Preview Audio:	Default Audio Device V
Streaming	Audio Format:	Channel: 2 🔽 Sample rate: 96.0 kHz 🗸 Bit depth: 16-bit 🗸
Recording	? Background:	colorbars-hd 🗸 Color: File: F:\Media\Ordner E\Bitburg 😂
🛋 🔊 Audio		Keep File Audio

Troubleshooting

Stuttering Video

If you assigned DANTE to the Channel in PLAYDECK and your Playback does not start or stutters very slow: You need DANTE CLOCK in your Network.

The Playout in PLAYDECK will not continue, unless the DANTE CLOCK is triggering the Playout. This behaviour CAN NOT be avoided.

Most Audio Mixer, which support DVS, will have a Clock integrated. Maybe it needs to be activated. Please also watch this Official Video from Dante for Dante clocking.

You can also create an artificial DANTE CLOCK by installing DANTE VIA on a SECOND PC in the Network (cant be installed on the same System as PLAYDECK). Once installed, it will automatically designate itself as the Leader Clock and connect to the DVS by itself without further user intervention.

hat everything is working as expected. It is simply a controlling and reporting tool:

🧕 Dante Controller - Network Vi	ew										-		×
File Devices View Help													
📔 🖌 📾 🕀 💩 😂 🚳 🛛 Primary Leader Clock: DanteVia 🚽 📀													
1		Routing D	evice Info	Clock Statu:	s Network	Status Ever	nts						
Clear All		Device Name	Sync	Mute	Clock Source	Domain Status	Primary v1 Multicast	Primary v2 Multicast	Secondary v1 Multicast	Secondary v2 Multicast	Preferred Leader	Enable Syn To Externa	c I
Device Lock		DanteVia			Dante		Leader	N/A	N/A	N/A	N/A	N/A	
	1	PLAYDECK	< 📃		Dante	N/A	Follower	N/A	N/A	N/A	Follower Only	N/A	
🗄 Media Type													
Audio Sample Rate													
Sync to External													
P: 🧱 S: 🛄						2 device	s	Multica	ast Audio Bandw	idth: Obps Event	Log: 🧮 Clock	Status Monitor:	

If everything is setup correctly, you will see a GREEN LIGHT in the bottom right corner, indicating that your DVS is Clock-enabled and ready to use in PLAYDECK.

Once you see this GREEN LIGHT, PLAYDECK will now play all Clips correctly.

Bad Audio Quality

This most likely happens with the WDM Driver and different Audio Settings. Make sure to adjust the PLAYDECK Channel Audio Setting and DVS Audio Device Setting to the same Format. This avoids transcoding auf Audio and will result in a higher overall Audio Quality.

🗱 Settings	Channel ID:	1√ 2√ 3√ 4√ 5√ 6√ 7√ 8√ (C) Refresh Page (► Preview)
🖺 Playlist		
Application	Activate:	▶ Start Now Channel is always active
🦘 Subtitles / CC	Channel Name:	CHANNEL 1
Ŭ Video	GPU Selection:	NVIDIA GEForce RTX 3080
苗 Channel	Video Format:	HD1080-25p HDYC 1920x1080@25.00p 16:9 Custom
Outputs	? HDR/10 bit:	Enable HDR and 10 bit video playback
🖬 Inputs		
Director View	Preview Audio:	Default Audio Device
Streaming	Audio Format:	Channel: 2 🗸 Sample rate: 96.0 kHz 🗸 Bit depth: 16-bit 🔽
Recording Audio	? Background:	colorbars-hd ✔ Color: File: F:\Media\Ordner E\Bitburç 😂

Audio Channel Mixing and Routing

If you work with Multichannel Audio, you might have to mix down your Audio Channel. See this article for how to work with multichannel audio.

Multichannel Audio and Mixing

PLAYDECK support 32 Audio Channel per Output Channel. You can pass-thru Audio Channel (via SDI, NDI, Streams, ASIO), Mix-down to Stereo/Mono or Mix-up to Multichannel. Please note, that we have a sperate Post for Dante Virtual Soundcard.

Pass-thru

Enable Multichannel Audio by simply setting more than 2 Audio Channel in your Output Channel Settings. In this example we set 16 Audio Channel, as this is the native number of Audio Channel for SDI Output Cards:

🔅 Settings	Channel ID:	1√ 2√ 3√ 4 5 6 7 8 O Refresh Page ► Preview
🖺 Playlist		
Application	Activate:	► Start Now Channel is always active
🦚 Subtitles / CC	Channel Name	CHANNEL 1
Mideo	GPU Selection:	NVIDIA GEForce RTX 3080
Channel	Video Format:	HD1080-25p HDYC 1920x1080@25.00p 16:9
Outputs	? HDR/10 bit:	Enable HDR and 10 bit video playback
🖬 Inputs		
L Director View	Preview Audio:	Default Audio Device 🗸
Streaming	Audio Format:	Channel: 16 💙 Sample rate: 96.0 kHz 🔻 Bit depth: 16-bt 🗸
Recording	? Background:	colorbars-hd V Color: File: F:\Media\Ordner E\Bitburg
🛋 🔊 Audio		C Keep File Audio

Now you are good to go already. Your VU Meter will switch automatically to 16 Audio Channel:



Multichannel Audio is not also active for all Inputs and Outputs: SDI, NDI, Streams. You can check, if you click PREVIEW after activating your Device.



All Previews have VU Meter as Overlays:

Here is another Example for Input Preview:



Mix-down

If you have Multichannel-Audio Content (or SDI Inputs) and want to Mix-down

your Audio to MONO/STEREO, you would also need to increase the Audio Channel. In this case we use 16. This is important to tell PLAYDECK to process 16 Audio Channel (from Source eg SDI), otherwise all Audio Channel above 2 would be CUT/SILENT:



You can now select different ways to Mix-down your Audio. Please note, that there are seperate Settings for CHANNEL (Clips, Input Streams) and INPUTS (Device Input):

🗱 Settings		Gain Settings	? Lef	t	Rigl	nt	? Mixdown	? Mute	Mute Preview
🖺 Playlist		Channel 1:	0,0	dB	0,0	‡ dB	Stereo		
🖌 Application		Channel 2:	0,0 🛟	dB	0,0	‡ dB	No Mixdown Mono		
🐢 Subtitles / CC	:	Channel 3:	0,0 🛟	dB	0,0	‡ dB	Mono (-6dB) Dual-Mono		
	- 1	Channel 4:	0,0	dB	0,0	‡ dB	Stereo		
Video		Channel 5:	0,0 🛟	dB	0,0	‡ dB	No Mixdown		
		Channel 6:	0,0	dB	0,0	‡ dB	No Mixdown	∽ □	
📺 Channel		Channel 7:	0,0	dB	0,0	‡ dB	No Mixdown	∽ □	
🖵 Outputs		Channel 8:	0,0 🛟	dB	0,0	∶ dB	No Mixdown	⊻ □	
🛏 Inputs									
Director View	,	Mixing Settings		марріг	ıg		Filter Si	<u>ow sampies</u>	
Strooming		Channel 1:		Edit					
a Streaming	_	Channel 2:		Edit					
Recording		Channel 3:		Edit					
		Channel 4:		Edit					Update to
🛋 Audio		Channel 5:		Edit					Playlist ➤
Channel Aud		Channel 6:		Edit					
Channel Audi	0	Channel 7:		Edit					
🖬 Input Audio		Channel 8:		Edit					

Multiple Audio Tracks

If your File has more than one Audio Tracks, you can switch the Audio Tracks by right-clicking the File and selecting AUDIO TRACKS:



To play ALL Audio Tracks at once, select ALL AUDIO TRACKS. Alle Audio Channel will be concatenated. In our example this would result in 6 Audio Channel for Output. So make sure to set your Channel to 8 Audio Channels, otherwise everything above 2 Channel will not be processed:



Note: Use any of the other Mixing Options to Mix-down to STEREO or similar.

Custom Mixing

For more advanced Mixing, you can click EDIT under MIXING SETTINGS. In this example we Mix-down 16 incoming Audio Channel to 4 outgoing Audio Channel. Please note, that there are seperate Settings for CHANNEL (Clips, Input Streams) and INPUTS (Device Input):

🗱 Settings	Gain Settings	? Left	Right	? Mixdown	? Mute	? Mute Preview
🖺 Playlist	Channel 1:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		•
🖌 Application	Channel 2:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
🦔 Subtitles / CC	Channel 3:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
	Channel 4:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
Video	Channel 5:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
	Channel 6:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
📺 Channel	Channel 7:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		•
🖵 Outputs	Channel 8:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸	-	•
🖬 Inputs	Mixina Settinas	? Mappi	ng	? Filter Show:		
Director View	· · · · · · · · ·					_
Streaming	Channel 1:	Edit				
Decording	Channel 2:	Edit				
 Recording 	Channel 3:	Edit				



You can refine your Mixing even more by moving to the Content Level: Rightclick any Playlist Item and select AUDIO CHANNEL MAPPING:

-74-					
20		VIDEO			
-28-		Video Tracks	•		бъто
-32-		AUDIO			
-36-	•	Audio Gain			
40- AUDIO		Audio Tracks	•		
IS ON		Audio Channel Mapping			
:=		Audio Filter	3	<u>ج</u>	
_ <u>∺</u> = . <u>∎</u> ♥				<u>بې</u> ا	
1 2 3 4 5 6		SOBTILES		oop A	udio Trans.
		Subtitles	•		
✓ #1 BLOCK		Subtitle Offset			
 ✓ 1. Nums_7dot1_24 	_48	000.wav 00:09		0,0) dB
PAUSE		00:09			

Audio Delay / Filter

Sometimes, in Live Productions, you have to send the Audio delayed compared to the Video, to compensate for the processing Lag of huge LCD Screens (Lipsync). Or add a Limiter/Gate to the Microphone Input Audio.

Simple Audio Delay

This is actually pretty fast to implement in PLAYDECK. You add the ADELAY Audio Filter to the Channel like this. In this example we set 600ms Delay for Audio Channel 1 and 2:

🏶 Settings	Gain Settings	? Left	Right	? Mixdown	? Mute	? Mute Preview
🖺 Playlist	Channel 1:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
差 Application	Channel 2:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
🐢 Subtitles / CC	Channel 3:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown V		
	Channel 4:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
Mideo	Channel 5:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
	Channel 6:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
📺 Channel	Channel 7:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		
🖵 Outputs	Channel 8:	0,0 ‡ dB	0,0 🛟 dB	No Mixdown 🗸		•
🛏 Inputs	Mixing Settings	? Mapp	bing	? Filter Shows		
Director View	Channel 4		adoby (001000		1
Streaming	Channel 1:	Ealt	adelay=0	001000		
Recording	Channel 3:	Edit				
5	Channel 4:	Edit	=			
🛋 🔊 Audio	Channel 5:	Edit				Playlist >
•••	Channel 6:	Edit				
📺 Channel Audio	Channel 7:	Edit				
🛏 Input Audio	Channel 8:	Edit]

This can also be set to INPUTS to compensate for any incoming Lipsync Issue.

Copy Audio and Delay

You can also COPY the Audio Channel 1 and 2 to Audio Channel 3 and 4 and delay those. The use case here is, that the Audio Mixer Person has Live Preview Audio.

This needs to be done on the Playlist Level, so clear any Audio Filter in the Settings.

First, make sure to increase the Audio Channel for your Output Channel, otherwise all Audio Channel above 2 will not be processed:

🏶 Settings	Channel ID:	1√ 2√ 3√ 4 5 6 7 8 U Refresh Page ► Preview
皆 Playlist		
🖌 Application	Activate:	▶ Start Now ✓ Channel is always active
🧌 Subtitles / CC		
	Channel Name:	CHANNEL 1 T
📺 Video	GPU Selection:	NVIDIA GEForce RTX 3080
🗂 Channel		
	Video Format:	HD1080-25p HDYC 1920x1080@25.00p 16:9
Outputs	? HDR/10 bit:	Enable HDR and 10 bit video playback
🖬 Inputs		
L Director View	Preview Audio:	Default Audio Device 🗸
Streaming	Audio Format:	Channel: 4 💙 Sample rate: 96.0 kHz 💙 Bit depth: 16-bit 🗸
Recording	2 Background	colorbare-bd
	- Duckground.	

The Right-Click any Playlist Item and select AUDIO CHANNEL MAPPING:



This will copy Audio Channel 1 and 2 to Audio Channel 3 and 4:



Now right-click the Playlist Item again, select AUDIO FILTER and add the ADELAY Filter, but only for Audio Channel 3 and 4:



More Audio Filter

A Calling and

For a complete List of all Audio Filter, click SHOW SAMPLES. This will open a TEXT FILE with Examples.

Settings	Gain Settings	? Left	Right	? Mixdown	Mute	24
🗎 Playlist	Input 1:	0,0 dB	0,0 1 dB	No Mixdown 🗸		25 ========== Audio Filter Samples 26
Application	Input 2:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸	•	27 Compressor: A compressor is mainly used to reduce the dynamic range of a signal.
🤹 Subtitles / CC	Input 3:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸		29 - acomptessor = cm eshotu = -2100 m acto = 9. accack = 200.1 e1ease=100
	Input 4:	0,0 C dB	0,0 C dB	No Mixdown 🗸		30 Delay: Delay one or more audio channels. 31 - adelay=0 1500 0 1500
📺 Video	Input 5:	0,0 dB	0,0 t dB	No Mixdown		32
ča Channel	Input 7:	0,0 t dB	0,0 1 dB	No Mixdown		33 Echo: Apply echoing to the input audio. 34 - aecho=0.6:0.3:1000:0.5
	Input 8:	0,0 dB	0,0 dB	No Mixdown 🗸		
Outputs	Input 9:	0,0 dB	0,0 dB	No Mixdown 🗸		Gate: A gate is mainly used to reduce lower parts of a signal.
њ Inputs	Input 10:	0,0 dB	0,0 dB	No Mixdown 🗸		38
L Director View	Input 11:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸	• /	39 Limiter: The limiter prevents an input signal from rising over a desired threshold. 40 - alimiter=level in=1:level out=1:limit=0.5:attack=7:release=100:level=disabled
ລ Streaming	Input 12:	0,0 🛟 dB	0,0 🛟 dB	No Mixdown 🗸	•/	
Recording						 42 Equalizer: Apply a two-pole peaking equalisation (EQ) filter. 43 - equalizer=f=100:t=q:w=1:g=8
-	Mixing Settings	; ? Mappi	ng	? Filter Show		
🛋 🔊 Audio	Input 1:	Edit				45 Dynamic Equalizer: Apply dynamic equalization to input audio stream. 46 - adynamicequalizer=threshold=50:tfrequency=10
	Input 2:	Edit				
📋 Channel Audio	Input 3:					48 Multiband Equalizer: High-order parametric multiband equalizer for each channel.
🖬 Input Audio	Input 4:	Edit				50
II Normalization	Input 5:				_	51 DynAudNorm: Dynamic Audio Normalizer.
	Input 6:	Edit			_	52 - uyhauunon m-1-200-g-1 53
Network	Input 7:				_	54 Highpass: Apply a high-pass filter with 3dB point frequency.
	Input 8:	Edit				55 - n1gnpass=t=200 56
 Incoming 	Input 9: Input 10:	Edit			_	57 Lowpass: Apply a low-pass filter with 3dB point frequency.
→ Outgoing	Input 10.	Edit			_	58 - Lowpass=f=3000
	Input 12:	Edit	-			60 StereoWiden: This filter enhance the stereo effect.
						61 - stereowiden=delay=100:drymix=1.0:crossfeed=0.8:feedback=0.9
						63 Contrast: Simple audio dynamic range compression/expansion filter.
						64 - atomerast=10

Insert Input Streams into Playlist

This article will show how to insert Streams into your Playlist.

Insert Stream into PLAYDECK

You can directly Drag Drop any YouTube URL from your Browser to PLAYDECK:



To insert a new Stream into your Playlist, simply Drag Drop the STREAM Icon onto the Playlist. A new Popup will appear, where you can enter the Stream URL:

-32-			
-36-			
40- CHAN	NEL 1	CUE ►	
IS ON			
iii 🎦 🔍 🏌 🏚	<u>-</u> Zo ¢ 😒 🛏	😣 │ ≻_ │ ◁» │ 弌×	
1 2 3 4 5 6 7 8	Duration Cut Loop Audio	Trans. Overl. Com. Planned 1	< ⊠ ▷
🖌 #1 BLOCK	►7 Clips	0 V	
✓ 1. srt://187.84.32.27:15665?mode=calle	r ∞ 0,0 dB	• ①	_
✓ 2. Grand_Jam_220505.mp4	00:30 0,0 dB	0 0	8
✓ 3. Intro_Liveshow.png		0	
 4. L-Wrapper_Marketing_220505.mov 			₩ <u>P</u>
 5. Mitglieder_220505.mp4 	2 Enter or Paste your Stream I	URL 🔍	
 6. Mitgliedergrafik_220505.png 	VouTubo SPT DTMD LIDD Wabsitor	٥	
 7. Trailer_WestHam_220505.mp4 	Tourube, SKT, KTMF, ODF, Websites,	٥	
PAUSE	srt://187.84.32.27:15665?mode=ca	aller	4.3
		Chan Unit	((•))
		<u>Snow Help</u>	
		OK Cancel	Ø

Your Stream will be scanned by PLAYDECK now. If the PLAYDECK could connect to your Stream successfully, the Text will be shown in WHITE. You can now play the Stream and/or can double-click the INFO icon to view more information about the Stream, like Video format and codec:



If the Stream can NOT be connected, it will appear in RED:

	#1 BLOCK	⊥ 1 Clip		0 V
	1. srt://182.84.32.27:15665?mode=caller			⚠
~	2. Grand_Jam_220505.mp4	00:30	0,0 dB	0 0
~	3. Intro_Liveshow.png	ø		0 0
~	4. L-Wrapper_Marketing_220505.mov	00:15		
~	5. Mitglieder_220505.mp4	01:18	0,0 dB	0 0
	6 Mitaliodorarafik 220505 ppg	~		

If you made a typo, you can quickly re-edit the URL by right-clicking and selecting CHANGE URL:

✓ BLOCK						\vee
srt://182.84.32.27:15665?mode=caller				1	L	$\underline{\wedge}$
 Grand_Jam_220505.mp4 			-),0 dB		D
✓ Intro_Liveshow.png		Delete				D
 L-Wrapper_Marketing_220505.mov 	aA	Rename				D
✓ Mitglieder_220505.mp4	- X ⊛	Cut),0 dB		D
✓ Mitgliedergrafik_220505.png		Сору				Ð
✓ Trailer_WestHam_220505.mp4	EQ.	Paste),0 dB		D
PAUSE		Color	+			
		Show in Explorer/Browser				
		EDIT				
		Change File/URL/Input				
	9	Rescan Clip	3			
	(6)	Reset Clip Settinas				

Insert YouTube

You can insert YouTube Links via Drag Drop or in the same manner as insert as Input Stream. See this article on more information about YouTube.

Insert Website

You can insert some Websites per Drag Drop directly into the Playlist or via the STREAM Icon. We use TWITCH in this example. Click SHOW HELP to get more info about what Websites can be used:



Setup of DVB compatible Streams

This article will show how to properly setup a new DVB compatible Stream.

Setup of basic Stream Settings

At first, DVB Streams are created like any other Stream in PLAYDECK, by going into the Settings and entering the appropriate Stream Info. In this case we use a local UDP URL for Testing, a High Framerate of 60 FPS, a medium Video Bitrate of 6 MBit/s, the standardized MPEG-2 Video Codec, a High Quality Audio with AAC Codec and 96 KHz Sample Rate and 320 KBit/s Bitrate:

🇱 Settings	Stream ID:	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
🖺 Playlist		Stream not started yet O Refresh Page > Preview
Application	Activate:	► Start Now Stream is always active
 Subtitles / CC 		
Tideo	Stream Source:	Channel Channel ✓ Input Input 1 ✓ Director View Director 1 ✓
📺 Channel		
🖵 Outputs	Stream Protocol:	DVB Compatible Streaming
🖬 Inputs		Options Show Help
Director View	Stream URL:	udp://127.0.0.1:5001 Show Help
a Streaming	Preview URL:	
Recording		
Audio	Video Format:	HD1080-60p HDYC 1920x1080@60.00p 16:9
	Video Codec:	MPEG-2 Video Vibro Bitrate: 6 C MBit/s
📋 Channel Audio		Options Show Help
🖬 Input Audio	Audio Eormati	Channels D. W. Campela rates Of 0 kWz W. Dit denths 16 ht W
Normalization	Audio Codeer	
Network	Audio Codec:	Options Show Help

There are 2 types of DVB Streaming:

- Regular DVB Streaming via UDP (udp://...)
- SRT DVB Streaming via SRT (srt://...)

Stream Protocol:	DVB Compatible Streaming	~
	<auto detect=""></auto>	
	RTMP Streaming	
	UDP Streaming	
	DVB Compatible Streaming	N 1
	SRT - Secure Reliable Transport	5
Stream URL:	SRT - Secure Reliable Transport (DVB Compatible)	
	RTP	
	RIST Streaming	
Preview URL:	RTP (Pro-MPEG)	
	Icecast Streaming	
	RTSP Streaming (beta)	
	IIS Live Smooth Streaming	
Video Format:	Apple HTTP Live Streaming	
	MPEG-DASH Streaming	
Video Codec:	RTMP (FMLE) Streaming - H.264	
video couce.	RTMP (FMLE) Streaming - VP6	
	Windows Media Streaming	
	Options	Show Help

Additional DVB Settings

DVB Streams rarely work out-of-the-box like other Stream Formats (e.g. RTMP), because the need specific additional Settings, which we walk-thru now. You can also use this official DVB Spec PDF as Reference.

PCR

PCR stands for "Program Clock Reference", which is send by our DVB encoder. It's kinda a "heartbeat" for the DVB Stream. If your network connection between PLAYDECK and DVB receiver is not reliable and stable, you will easily get PCR errors on your receiver. The PING from PLAYDECK to DVB receiver should never be higher than 20ms, even in peak times (e.g. other traffic).

MUXRATE

You should always set the Muxrate with this Formula:

MUXRATE = (VIDEO BITRATE + AUDIO BITRATE) * 1.25

So in our Sample above with have (rounded): 8 Mbit/s. We set the MUXRATE to PLAYDECK via the OPTIONS field of our Video Codec:

Video Format:	HD1080-60p HDYC 1920x1080@60.00p 16:9	Custom
Video Codec:	MPEG-2 Video Bitrate: 6	MBit/s
	Options muxrate=7M	<u>Show Help</u>

As a result, the resulting Bitstream will be of the MUXRATE value and nonvideo and non-audio parts are filled with null-packets.

CLOSED CAPTIONS + SCTE-35

Both dont need to be activated specifically, as they are automatically enabled by PLAYDECK.

INFORMATION TAGS

There are several informative fields, which are unique to DVB:

- service_name (any text value)
- service provider (any text value)
- service id (any number default is 1)
- service_type (possible values: digital_tv, mpeg2_digital_hdtv, advanced_codec_digital_sdtv, advanced_codec_digital_hdtv, hevc digital hdtv - default is digital tv)
- transport stream id (any number default is 1)
- original network id (any number default is 1)
- pmt_start_pid (numbers between 16 to 7936 default is 129)
- start pid (numbers between 256 to 3840 default is 1024)
- pes_payload_size (any number default is 2930 bytes)
- mpegts_flags (possible values: resend_headers, pat_pmt_at_frames, latm)

- *start_timecode* (possible values: auto, disabled, local_time OR custom text like "10:00:00:00" default is auto)
- tables_version (any number default is 0)

These values are also entered into the OPTIONS field of our Video Codec. You simply use a SPACE between options. Add as many options as you like/need:

Video Format:	HD1080-60p HDYC 1920x1080@60.00p 16:9	tom
Video Codec:	MPEG-2 Video Video M	lBit/s
	Options muxrate=7M service_type=mpeg2_digital_hdtv service Show	<u>Help</u>

High-end SRT Streams to Cloudflare CDN

This article will give pointers on how to improve your Streams even more. In this example we use Cloudflare, but this can be any provider.

These are the optimized Settings as overview. We will explain them in detail:

Stream ID:	1	2	3 4	5	6	7	8	9	10	11	12	13	14	15
	Stream	not sta	arted yet							ບ Ref	resh Pa	age	► Pre	eview
A _ 1 ² 1						Chara		_1						
Activate:	► Sta	rt Now	= St	op Now		Stre	am is i	always	s activ	e				
Stroom Sourcou	Cha	nnal	Ch	annal 1										
Stream Source:		nnei	In		×									
		ul ator Mi		out I	×									
	Ulre	ector vie	ew Dr	ector 1	×									
Stream Protocol	SRT - S	Secure R	eliable Tran	sport							×			
offean Protocoli				isport							•			
	Option	S								<u>Show H</u>	<u>Help</u>			
Stream URL:	srt://live	e.cloudfla	are.com://	/8?passp	hrase=	xxx&st	reamid	=XXX		Show H	<u>Help</u>			
Preview URL:														
Video Format:	HD108	0-25p H	DYC 1920	x1080@	25.00p	16:9			~	Custo	om			
Video Codec:	NVIDIA	NVEnc H	H.264 Enc	oder			~ [Bitrate	8	‡ M	lb/s			
	Option	s minr	ate=8M m	axrate=	8M a=1	00				Show H	Help			
					5									
Audio Format:	Channe	el: 2	✓ Sa	ample r	ate: 9	6.0 kHz	z 🗸	Bit de	epth:	32-bit	~			
Audia Cadaa	446 (4		Audia Cau	, lin a)):LL.		• •	h / -			
Audio Codec:	AAC (A	uvanceo		ung)				ontrate	224	- K	bys			
	Option	s aac_	_coder=0 I	minrate=	224K m	naxrate	=224K	bufsize	=22	Show H	<u>Help</u>			

Video Format

It is recommended to select a specific Video Format instead of using AUTO, just to avoid any problems with automatic detection.

Video Codec

We know that Cloudflare support H.264 Encoding, so we can use our GPU. If you dont have NVIDIA or your GPU is maxed with other Tasks already, select "Intel QuickSync SW H.264 Encoder", which will try to use your Onboard Intel-GPU and falls back to CPU otherwise.

We then pick 8 Mb/s as Bitrate, which is a Cloudflare CDN requirement.

With the Options "minrate=8M maxrate=8M" we basically force CBR (Constant Bit Rate) to our Stream. Click this Link on more Info about CBR with H.264.

We also add the Option "g=100", which sets the Key Frame Interval, also know as "GOP (Group of Picture) length" or "IDR period". The rule-of-thumb here is to set the GOP twice as high as your framerate, which would be 50 in this case. We use 100 here to compress even more, resulting in less used bandwidth, which in turn makes your Stream more stable. A higher value also reduces buffering, but not all provider can process high values. Reduce your GOP, if you Content has alot of Action and your need more key frames. The default GOP is 15, which is a failsafe to ensure, that there are no artifacts in the picture.

Audio Format

We use 96 kHz Sample-rate and 32-bit as Bit-depth, which will make absolutely sure, that all possible audio sources are processed at high quality. Since the Audio Stream has a very low impact on the overall bandwidth, it would be unwise to go low.

Audio Codec

There is not much choice here for the Encoder, as AAC delivers high quality low compression audio. Since we picked a higher Sample-rate and Bit-depth, we need to provide a bit more Bitrate here, so we set this to 224 kb/s.

As Options, first we set our AAC Encoder to the "TLS" mode by entering "aac_coder=0". The Options here are: 0 - Two loop searching (TLS) method 1 - Average noise to mask ratio (ANMR) 2 - Fast constant quantizer method TLS will have the highest quality with most audio contents. The default here is "2 (fast)", which is also good, but can lead to crushing sounds at lower bitrates.

Next we also force CBR for our Audio Stream by setting "aac_coder=0 minrate=224K maxrate=224K bufsize=224K". Click this Link for more info on CBR for AAC.

Ad Breaks to interrupt Playout

This article will show how to use a BREAK BLOCK to create Ad Breaks, that interrupt your regular Playout, and wil return after.

Using Break Blocks as Ad Breaks

This is fairly simple: You create a new Content Block in your Playlist with one difference: The Block ends as BREAK BLOCK (instead of STOP or PAUSE). For this we select the Block and click on the BLOCK END Icon (or Double-Click the Block end). Then we select BREAK BLOCK and choose RETURN TO LAST POSITION (or any other):



This BREAK BLOCK behaves like this: Once it reaches its end, it will return to the clip and position (or other), which was playing BEFORE entering the BREAK BLOCK from OUTSIDE. Meaning: You can jump from anywhere to anywhere in the BREAK BLOCK, and it will remember where to return to.

Schedule Break Block

You can schedule the Break Block like an other Block Type by selecting the Block and clicking the SCHEDULE Icon:



In this example we start our Break Interruption every day at 11:00 o'clock and will repeat this every 2 and half hours for the remaining of the day. There will be no Ad Breaks between 0:00 and 11:30.

Using Action Buttons for Ad Breaks

Instead of scheduled Break Blocks, you can also use Action Buttons. For this simply click and empty Action Buton and select to play the related Ad Block:



You get the same selection for "returning" as for Block Ends. If you select "<Do nothing>", the Block End will be used, like in our example above. If you select any other Option, the Return method of the Action will be used over the Block End method. This gives new options:

- You could use both return methods, depending if the Break Block starts via scheduling or via Action Button
- If started via Action Button, you can leave the Break Block EARLY and still return

The second option is perfect for looping Break Blocks, as your return to the previous playout, if you click the Action Button a second time.

Attach Overlays to the Break Block

Oftentimes you want Overlays to start automatically together with your Break Block Content. We therefore recommend the following articles:

- Automate Overlay Lower Third with Clips
- Create L-Band Ads via second Channel
- External Overlays with ClassX (and other)

Attach SCTE Marker to the Break Block

If you want to signal your Streaming Server or Broadcasting System to insert Ads for the duration of your Break Block, we recommend to following articles:

- Using SCTE for Inputs and Outputs
- Sending SCTE-35 to Stream Server

Automate Overlay Lower Third with Clips

This article will show how to use how to create Overlays Groups and bind them to Clips or schedule them.

Create some Overlays

Lets create our own custom "lower third" composed of a background GFX and Text and group them together.

Click on an empty Overlay Button to open the Editor, then add some Background GFX. Close the Editor, right-click the Overlay Button and position your Background to the bottom area. We also right-click in the video preview and disable "Channel Name":



We add another Text Overlay and use {blockname} as text placeholder for our title text. Then add another Text Overlay and use {clipname} as text placeholder. Then some positioning and it looks like this:



Now lets group then together: Right-click an empty Overlay Button and select "Create Overlay Group". Then add our 3 previous Overlays and order them bottom-up:

28- 32- 36-	Edit Overlay Group	STOP FADE > JUMP CLIP + END	б
AUDIO ISON	? Please enter Ove	erlay Group Details	
I 2 3 4 5 6 7 8	All Overlays List:	[3] LT Text	+ Add to Group
✓ #1 PRE-SHOW	Used in this Group:	[3] LT Text	× Remove
 ✓ 1. Introducing the Participants 		[2] LT Title	× Remove all
 ✓ 2. Intro_Liveshow.png 		[1] LT BG	1 Move up
 ✓ 3. L-Wrapper_Marketing_220505.mov 			↓ Move down
 ✓ 4. Mitglieder_220505.mp4 			
 ✓ 5. Mitgliedergrafik_220505.png 			
 ✓ 6. Trailer_WestHam_220505.mp4 			
PAUSE			
		Note: Overlays are shown bottom up, e.g. first Overlay will be above all others. Move Overlays around to achieve the desired layering.	
			OK Cancel

We now have a functioning Overlay Button for the Lower Third with dynamic Text Content. Not lets automate this Group with the Clip. Select the related Clip and click on the Overlays Icon, then add our Overlay Group to that Clip, starting 5 Seconds into the Clip and showing for 10 Seconds:

	・ 、 」 は 「 る 「 つ	弦 🛌 袋 入 弌» 弌×
1 2 3 4 5 6 7 8	Duration	Cut Loop Audio Trans. Overl. Com. Planned ¹ d
🗹 #1 PRE-SHOW	►6 Clips	o v
 Introducing the Participants 	00:30	0,0 dB • 0
 2. Intro_Liveshow.p 	Overlays	00.47.0F @
✓ 3. L-Wrapper_Marke	ovenays	
✓ 4. Mitglieder_22050	Please enter Clip Overlay De	etails
✓ 5. Mitgliedergrafik_2		
✓ 6. Trailer_WestHam	All Overlays List: [4] LT	→ + Add to Clip
PAUSE		Edit
· · · · · · · · · · · · · · · · · · ·	Jsed in this Clip: [1] LT	✓ X Remove this X Remove all Edit
	Start Time:	0 0 10 0 (HH:MM:SS:FF after Clip start)
	Duration:	Show for 0 0 20 0 (HH:MM:SS:FF)
		Show until Clipend minus 0 (SS:FF)
		• Show until Blockend

Automate Overlay with Blocks

Since there is no Overlay Icon with Blocks, you use a Command to start/stop the Overlay:

1 2 3 4 5 6 7 8 Duration Cut Loop Audio Trans. Overl. Com. Planned	1 ∢ 🖄 ▷
✓ #1 PRE-SHOW Edit Command	
 I. Introducing the Part 	
2. Intro_Liveshow.png	
✓ 3. L-Wrapper_Marketin	
✓ 4. Mitglieder_220505.n Select a Command: [1] Block Start	
✓ 5. Mitgliedergrafik_220	
✓ 6. Trailer_WestHam_2 Execution Time: First Clip of Block is being played (not cued)	
PAUSE	
COMMANDS - Internal within PLAYDECK Show Commands List	SCTE - SDI/SRT/UDP/DVB
1 <startoverlay 1 4=""></startoverlay>	1
<u>Test</u> <u>Clear</u>	
COMMANDS - External via TCP Show Help	

Schedule Overlay

You can show/hide Overlays indendent of Content by entering start time and duration. Right-click on the Overlay and click "Autostart" and later "Change Duration":



Create L-Band Ads via second Channel

This article will show how to use how to utilize the second Channel to create L-Band avertisements.

L-Band Specifications

Every Station has their own specs on the size, so we just borrow this sample from News18:



The principal is always the same: We "shrink" our main content proportionally to make room for Ads in the remaining area. After shrinking, we leave some overlap to not risk black background. Our final shrink-size is: 1520×855 Pixel.

Scale Channel 1 and send to Channel 2

We assume with have our Main Video Content on Channel 1. So we enable the Output Scaler in the Settings to our shrinked size of 1520×855 Pixel. Then we send our scaled Content as NDI signal:


We now loop our NDI signal to Input 1:



We then add Input 1 to the Playlist of Channel 2, by Drag Drop of the Input Icon to the Playlist. We now have the Video Content in L-Band size:

-0-		BLOCK END BLOCK F 15:46:26 00:0	^{кемаім} 15:42:06 4:20	BLOCK END BLOCK REMA	IN -0- -4-	
-8- -12- -16- -20- -24- -28- -32- -36- -40- AUDIO IS ON	CHANNEL 1	Grand_Jam_220505.mp4 0 STOP FADE → JUM CUE ►	0:15	INPUT 1 0 STOP FADE → PLAY NEX CLIP CUE ►	2 4- 20 20 24 28 32 32 32 40 40 40 40 40 40 40 40 40 40	CHANNEL 2
:		ů ► ⊗ <u>≻</u> <)	Ц×	ःः । ∵ ∣© ½ j	<u>+</u> 2 ¢ × -	▲ ⊗ >_ <) <)×
1	2 3 4 5 6 7 8 Duration Cut Lo	op Audio Trans. Overl. Planned	1 4 🛆 D	1 2 3 4 5 6 7 8	Duration Cut Loop Au	dio Trans. Overl. Planned 1
	#1 BLOCK • 3 Clips		v	🗹 #1 BLOCK		0 v
× .			o	 1. INPUT 1 		• •
~	2. Foyerfilm_220505.mp4 03:44	0,0 dB 15:42:21 •	•	PAUSE		
×	3. Flyeralarm_220505.mp4 00:20	0,0 dB 15:46:05 •	Ø			
	PAUSE 04:34		E E			

Add the Clean Feed for Switching

Since our Final Output will run over Channel 2, we also want our Clean Feed to be selectable in the Channel 2 Playlist. For this, we can simply copy the Channel without the Output Scaler. Use another Input and set Channel 1 as Source:

🗱 Settings	Input ID:	1 🖌 2 🖌 3 4 5 6 7 8 9 10 11 12
🖺 Playlist		Input is running O Refresh Page > Preview
🎽 🔑 Application	Input Name:	INPUT 2 Update to Playlist >
🧌 Subtitles / CC	Crop/Aspect:	> 0
Tideo	Time shifting:	■ Active Delay: 0 10 0 0 HH:MM:SS
📋 Channel	Device Input:	Device Y
Outputs		Line
ъ Inputs		Format
Director View		Audio
a Streaming		? Background V Image:
Recording		Options Show Help
📢 Audio	Desktop Input:	Monitor NVIDIA GeForce RTX 3080 - 3840x1600@144,00 - PRIMARY V
苗 Channel Audio		Audio
🛏 Input Audio		Mouse Hide 🗸
Normalization	NDI Input-	Source V
Network	nor input.	Bandwidth Highest
← Incoming		Tally Flag Do not send any Taly Flags
→ Outgoing		Options <u>Show Help</u>
	Channel Input:	Source Channel 1

Then also add that Input to Channel 2. I already renamed both Inputs in the Playlist to be more distinguishable:

-0- -4-	BLOCK END BLOCK REMAIN 15:53:20 00:04:20	15:49:00	BLOCK END BLOCK REMAIN	-0-	
	Grand_Jam_220505.mp4 00:15		Clean Feed 🛛 🔿	-8- 112 116 20- 24	
28 30 CHANNEL 1 40 THE CHANNEL 1	STOP FADE → JUMP CUP → END CUE	LINK ~	STOP FADE → PLAY NEXT → CUE	28 32 36 40 40 40 5 cm	ANNEL 2
🏥 🎞 🔍 🎢 🔔 🖾 ⊅ 🕸	► 😂 >_ <\» <\×		☶ ː☴ Q ½ ⊉	8 0	😂 >_ <)» <)×
1 2 3 4 5 6 7 8 Duration Cut Loop	Audio Trans, Overl. Planned 📐 1	4 🖾 Þ	1 2 3 4 5 6 7 8	Duration Cut Loop Audio Tra	ans. Overl. Planned 1
✓ #1 BLOCK • 3 Clips	• v		🗹 #1 BLOCK		0 v
✓ #1 BLOCK *3 Clips ✓ 1. Grand_Jam_220505.mp4 00:30	● ∨ 0,0 dB ● ⊙		#1 BLOCK1. L-Band Feed	► 2 Clips ∞	• v • •
Image: system * 3 Clips Image: system 1. Grand_lam_220505.mp4 00:30 Image: system 2. Foyerfilm_220505.mp4 03:44	0,0 dB 0 0 0,0 dB 15:49:15 • 0		✓ #1 BLOCK ✓ 1. L-Band Feed ✓ 2. Clean Feed	+ 2 Clips ∞ ∞	0 V 0 0 0 0
#1 BLOCK * 3 clups • 1. Grand_Jam_220505.mp4 00:30 • 2. Foyerfilm_220505.mp4 03:44 • 3. Flyeralarm_220505.mp4 00:20	0,0 dB 052:59 € 0 0,0 dB 15:49:15 € 0 0,0 dB 15:52:59 € 0		 ✓ #1 BLOCK ✓ 1. L-Band Feed ✓ 2. Clean Feed ✓ PAUSE 	+ 2 Clips co co co	0 V 0 0 0 0
✓ #1 BLOCK •3 clips ✓ 1. Grand_Jam_220505.mp4 00:30 ✓ 2. Foyerfilm_220505.mp4 03:44 ✓ 3. Flyeralarm_220505.mp4 00:20 PAUSE 04:34	0,0 dB 0 0 0,0 dB 15:49:15 • 0 0,0 dB 15:52:59 • 0		 ✓ #1 BLOCK ✓ 1. L-Band Feed ✓ 2. Clean Feed ✓ PAUSE 	• 2 Clips © © ©	0 v 0 0 0 0

You can now quickly switch between L-Bands and Clean Feed.

Use Overlays for L-Bands

You can use PLAYDECK Overlays for your L-Bands. For simplicity, we use this transparent PNG over the Video signal. But these can be more complex. See this article on how to create Overlay groups and fade them together.

Click on any empty Overlay Button, then add our Sample PNG:

🔹 Overlay	Image File:	F:\/-band-ad.png	ŝ
🖬 Image 🔽		BMP, JPG, TGA, GIF, WMF, EMF, PNG, TIF	
🖵 Video 🗌			

We now want our Overlay to ONLY play with the Playlist Clip for the "L-Band Feed" Input. For this we select the L-Band Clip and click the Overlay Icon, then add our new Overlay for the whole duration of the Clip:



Our L-Band Overlay will now automatically start together with the L-Band

Feed:

BLOCK END ∞ L-Band Feed	BLOCK REMAIN	-0- -4- -8- -12- -16- -20-			
STOP FADE	E > PLAY NEXT > CLIP	24- 28- 32- 36- 40- AUDIO IS ON	Are Report for Cl	For Content HANNEL 2 of should be filled with the Bo	Tamit & Assam
: <u>-</u> : <u>-</u> @	2 🎶 ቯ	\mathbb{Z}		``````````````````````````````````````	ム» ヘ×
1 2 3 4 5	5678	Duration Cut Lo	oop Audio Ti	rans. Overl. Pla	nned ¹
✓ #1 BLOCK		► 2 Clips			0 v
✓ #1 BLOCK✓ 1. L-Band Fee	łd	►2 Clips ∞		E	• v • •
 #1 BLOCK 1. L-Band Fee 2. Clean Feed 	ed	►2 Clips ∞ ∞		≣	0 V 0 0 0 0
 #1 BLOCK 1. L-Band Feed 2. Clean Feed PAUSE 	ed	► 2 Clips ∞ ∞ ∞		=	0 V 0 0 0 0
 #1 BLOCK 1. L-Band Feed 2. Clean Feed PAUSE 	ed	► 2 Clips ∞ ∞ ∞			
 ✓ #1 BLOCK ✓ 1. L-Band Feed ✓ 2. Clean Feed PAUSE 	ed	 2 Clips ∞ ∞ ∞ DROP HERE Overlay 4 	Overlay 5	∃ Overlay 6	

Note: Overlays that are assigned to Clips always have a slight reaction delay. This can be overcome by finetuning Playlist and Overlay Fade Times. You could also split the L-Band Feed and Clean Feed to Channel 2 and 3 and use an external Mixer for Transitions.

Using SCTE for Inputs and Outputs

This article will explain how you can use SCTE for your projects. PLAYDECK supports SCTE-35, which are exclusively used in Streams and SCTE-104, which are exclusively used in SDI Device signals.

Scroll down for SCTE-104. We also recommend to follow-up with this article on sending SCTE-35 to Streaming Server.

Using SCTE-35 in Streams

SCTE-35 Facts

- Supported for Stream Inputs as well as Stream Outputs. Tested Stream Formats are UDP, DVB and SRT. The selection of the Video Codec does not influence SCTE transport. SCTE transport is always active and does not need to be enabled somewhere.
- PLAYDECK can detect and display incoming SCTE-35 Marker. All incoming and outgoing Marker will be written to an Event Log.
- PLAYDECK can forward incoming SCTE-35 Marker from Stream Input to Stream Output. Cross-Forwarding between UDP, DVB and SRT is supported, e.g. receiving SRT and forwarding to UDP.

SCTE-35 Testdrive

Let us dive into those topics a bit. As a testrun we setup our own UDP signal loop. We stream Channel 1 to "udp://225.0.0.1:5001" via UDP:



And play the Stream in Channel 2:

	STOP FAD	E > PLAY NEXT > CLIP	LINK ~	STOP FADE > PLAY NEXT > CLIP	20- 24- 32- 36- 40- NU00 15 ON	CHANNEL 2
$\bigcirc \otimes$	\sim \otimes $>$	_		= :王 ② 採 <u>井</u>	2 2 2	► 8 * >_
on Cut Loop	Audio Trans. Overl.	Planned 1		1 2 3 4 5 6 7 8	Duration Cut Loop	Audio Trans. Overl. Pla
ps		0 v		🗹 #1 BLOCK	► 1 Clip	
30	0,0 dB	0 0	•	✓ 1. udp://225.0.0.1:5001	ø	0,0 dB
32	0,0 dB	01:35:07 • •		PAUSE	ø	
30	0,0 dB	01:35:39 • •				
30	0,0 dB	01:36:09 • ©	1 E E			
30	0,0 dB	01:36:39 • ©				
43	0,0 dB	01:37:09 • ©				
14	0,0 dB	01:39:53 ● ◎				
20	0,0 dB	01:43:37 • ©				
20			((•))		DROP HERE	

Now we only need a way to send a SCTE-35 marker in Channel 1. So we setup a new Command Action and use the smallest detectable SCTE-35 Marker (of course you can use any other):

<SpliceInfoSection><SpliceInsert></SpliceInsert></SpliceInfoSection>

-28-				-/11		STO		, PLA			· J [STOP			-28-
-32-		Edit C	ommand	l i					í.						
-36- 40- AUDIO IS ON		?	Pleas	e enter Co	mmand Details	;									
	<u>8 –</u>		Select	a Command:	[1] Action Start	:	×								
1	2 3		Execut	tion Time:	Action Button is o	licked									
	#1 Ma														
~	1. Gra		сомм	ANDS - Intern	al within PLAYDEC	K Show Comm	ands List	SCTE -	SDI/SRT/U	IDP/DVB	<u>Show Help</u>	Open Event	Logs	Type: SCTE	-35 🔽
~	2. Elt		1					1	<spliceinfo< th=""><th>Section><</th><th>SpliceIns</th><th>ert><th>insert><th>eInfoSection></th><th></th></th></th></spliceinfo<>	Section><	SpliceIns	ert> <th>insert><th>eInfoSection></th><th></th></th>	insert> <th>eInfoSection></th> <th></th>	eInfoSection>	
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~	5. Mo					I	est <u>Clear</u>								
~	6. To		сомм	ANDS - Extern	al via TCP Show	Heln									
~	8 Flv		1												
	PA														
						I	est <u>Clear</u>	Sample	s: <u>SCTE-35</u>	SCTE-104	4 (single)	SCTE-104 (mu	<u>ti) ANC</u>		<u>Test</u> <u>Clear</u>
														ОК	Cancel
Ove	rlav 1		verlay 2	Overlay 3	Overlay 4	Overlay 5	Overlay 6					Overlay 1	Overlay 2	Overlay 3	Overlay 4
Con	mand		ction 2	Action 3	Action 4	Action 5	Action 6					Action 1	Action 2	Action 3	Action 4
											U				

Make sure Channel 1 and Channel 2 are playing, then hit the Action Button. Then open the SCTE Event Log over the Main Menu > Documentation > SCTE:

🜔 New Project.xml	[Studio Edition, I	Marc Köster]						
File Settings Sho	ortcuts View	Documentation Support License	_		1			
-0- -4-		DOCUMENTATION Default Shortcuts ONLINE	ND :02	block remain 00:09:19	01:42:43	BLOCK END	BLOCK REMAIN	-0-
-8- -12. -16 -20- -24- -28- 		Video Tutorials Online Manual Troubleshooting Guide Advanced How-To's STREAMING Stream Input - Import SRT, UDP, RTMP, Website, VODs Stream Output - Send SRT, UDP, RTMP, HLS FILTER Audio Filter List - Filter for Inputs, Outputs and Clips NETWORK INCOMING	FADE	.mp4 00:01	LINK V	udp://225.0.0.1:5001 STOP FADE CUE	<pre>> PLAY NEXT > CLIP > </pre>	-8- 122 166 204 244 288 322 366 40-
1 2 3 ✓ #1 Mair		TCP Commands In - Receive PLAYDECK Commands Commands List - All PLAYDECK Commands ATEM Switcher - Start playback via ATEM Switcher vMix - Start playback via vMix Software COM / USB / GPI - Start playback via Closed Circuit TSL UMD - Start playback via external Mixer (eg Ross) NDI Tally - Start playback via NDI Tally Flag) Overt.	_ ᠿ》 ᠿ× Planned 1 € ∨	 م 	I 2 3 4 5 I 2 3 4 5 I 8LOCK I udp://225.0.0	6 7 8 0.1:5001	Duration Cut Lo
 ✓ 2. Elten ✓ 3. JOY_ ✓ 4. MAN 	1_200125.mp4 _150822.mp4 _190126.mp4	NETWORK OUTGOING TCP Commands Out - Send Custom Commands TCP Event - Send PLAYDECK Events		01:43:12 • • 01:43:44 • •		PAUSE		œ
 ✓ 5. Moba ✓ 6. Tor_c ✓ 7. Foyet ✓ 8. Eber 	au_181021.mr des_Jahrzehn rfilm_220505.	API / WebSocket - All PLAYDECK EVENIS API / WebSocket - Develop your own User Interface HTML-Templates HTML-Overlays Director-View		01:44:44 • 0 01:45:14 • 0 01:47:57 • 0				
PAUS	se	Event Logs Clip-Run SCTE		1.51.42 • 0	((•))			DROP HERE
		HTML-Scripts			Se la construction de la constru			

You will see the outgoing Marker of your Action Button Click on Channel 1, and the detected incoming Marker on Channel 2:



We even go one step further and setup ANOTHER Stream from Channel 2 to Channel 3 to test the SCTE Forwarding and Cross-over Detection (UDP to SRT). We send Channel 2 to "srt://127.0.0.1:5000?mode=listener" and receive in Channel 3 at "srt://127.0.0.1:5000?mode=caller":

🗱 Settings	Stream ID:	1√ 2√ 3	4 5	6	7 8	9	10	11	12 13	14	15
🖹 Playlist		Stream is running)					D Refres	h Page	► Pr	eview
Application	Activate:	► Start Now	■ Stop No	w 🗖	Stream is	always	active				
🦔 Subtitles / CC											
🞽 Video	Stream Source:	 Channel Input Director View 	Channel 2 Input 1 Director 1	>							
📺 Channel											
🖵 Outputs	Stream Protocol:	SRT - Secure Reliab	le Transport						~		
🖦 Inputs		Options					<u>S</u>	<u>how He</u> l			
L Director View	Stream URL:	srt://127.0.0.1:500	0?mode=liste	ner					Shov	v Help	
Streaming	Preview URL:										
Recording											
and the Annualize	Video Format:	<same as="" source=""></same>		_					✓ Cu:	stom	
	Video Codec:	NVIDIA NVEnc H.26	4 Encoder	_	✓ Bi	trate:	5	MBit/			
苗 Channel Audio		Options					<u>S</u>	how He			
🖦 Input Audio	A 11 17 1										
Normalization	Audio Format:	Channel: 2 🔽	Sample	rate: 96.	.0 KHZ ~	Bit de	pth: 1	.6-bit	<u>~</u>		
B	Audio Codec:	AAC (Advanced Aud	dio Coding)		∽ Bi	trate:	128	KBit/s			
Network		Options					<u>S</u>	how He			

	LINK ~	STOP FADE > NEXT >	-32-		
CUE ► II		CUE	-36- 40- AUDIO IS ON	CHANNEL 3	
- 😂 ≻_ ⊲» ⊲×		i= I:I Q / ½ / <u>1</u>	8		(» <
lio Trans. Overl. Planned 1	< ⊠ ⊳	1 2 3 4 5 6 7 8	Duration Cut Loop	Audio Trans. Overl.	Planned
0 v		✓ #1 BLOCK	► 1 Clip		
dB ● ⊙	•—	✓ 1. srt://127.0.0.1:5000?mode=cal	œ	0,0 dB	0
dB 01:57:54 ● ⊙		PAUSE	œ		
dB 01:58:26 € ⊕					
dB 01:58:56 • ①	E C				
dB 01:59:26 • ①					
dB 01:59:56 • ①					
dB 02:02:40 € ⊕					
dB 02:06:25 • ①					
	((•))		DROP HERE		

If we now press our Action Button to send the SCTE-35 Marker, we detect it also in Channel 3:

19.05.2025 01:45:02 - Ch 2 SCTE-35 - <SpliceInfoSection protocolVersion='0' ptsAdjustment='0' tier='0'> <
SpliceInsert spliceEventId='0' spliceEventCancelIndicator='0' outOfNetworkIndicator='0' program_splice_flag='0'
spliceImmediateFlag='0' uniqueProgramId='0' availNum='0' availsExpected='0'/> </SpliceInfoSection>
19.05.2025 01:54:46 - Ch 2 SCTE-35 - <SpliceInfoSection protocolVersion='0' ptsAdjustment='0' tier='0'> <
SpliceInsert spliceEventId='0' spliceEventCancelIndicator='0' outOfNetworkIndicator='0' program_splice_flag='0'
spliceImmediateFlag='0' uniqueProgramId='0' availNum='0' availsExpected='0'/> </SpliceInfoSection>
19.05.2025 01:54:48 - Ch 3 SCTE-35 - <SpliceInfoSection protocolVersion='0' ptsAdjustment='0' tier='0'> <
SpliceImmediateFlag='0' uniqueProgramId='0' availNum='0' availsExpected='0'/> </SpliceInfoSection>
19.05.2025 01:54:48 - Ch 3 SCTE-35 - <SpliceInfoSection protocolVersion='0' ptsAdjustment='0' tier='0'> <
SpliceInsert spliceEventId='0' spliceEventCanceIIndicator='0' outOfNetworkIndicator='0' program_splice_flag='0'
spliceInsert spliceEventId='0' spliceEventCanceIIndicator='0' outOfNetworkIndicator='0' program_splice_flag='0'
spliceInsert spliceEventId='0' spliceEventCanceIIndicator='0' availSExpected='0'/> </SpliceInfoSection>

Using SCTE-104 in SDI

SCTE-104 Facts

- Supported for SDI Device Inputs as well as SDI Device Outputs, e.g. Blackmagic DeckLink. SCTE transport is always active and does not need to be enabled somewhere.
- PLAYDECK can detect and display incoming SCTE-104 Marker. All incoming and outgoing Marker will be written to an Event Log.
- PLAYDECK can forward incoming SCTE-104 Marker from SDI Input to SDI Output.

SCTE-104 Testdrive

Let us dive into those topics a bit. As a testrun we setup our own SDI signal loop. We use our DeckLink Duo 2 and an SDI Loop Cable:



And play the SDI Input in Channel 2:



Now we only need a way to send a SCTE-104 marker in Channel 1. So we setup a new Command Action and use the smallest detectable SCTE-104 Marker (of course

you can use any other): <SCTE104><single_operation_message><data>data string</data></single_operation_message></SCTE104>

-28-	-		1	111		STO		PLAY			STOP			-28-
-32-		Edit C	ommand				- FATTE			, index ,				
-36- -40- AUDIO IS ON		?	Please	enter Com	mand Details									
	° <u>−</u>		Select a	Command:	[1] Action Start		×							
1	2 3		Executio	on Time:	Action Button is cli	icked								
	#1 Ma												_	
×	1. Gra		COMMA	NDS - Internal	within PLAYDECK	Show Comm	<u>ands List</u>	SCTE -	SDI/SRT/U	JDP/DVB <u>Shi</u>	<u>ow Help</u> <u>Open Event</u>	<u>Logs</u>	Type: SCTE	-104 ~
~	2. Elt		1					1	KSCTE104><	single_operat:	ion_message> <data></data>	data string <th>ata><th>eration_me</th></th>	ata> <th>eration_me</th>	eration_me
~	3. JO													
~	4. MA													
~	5. Mo					I	<u>est</u> <u>Clear</u>							
~	6. To													
~	7. Fo		COMMA	NDS - Externa	I via TCP <u>Show H</u>	<u>lelp</u>								
~	8. Fly		1											
	PA													
						I	<u>est</u> <u>Clear</u>	Sample	s: <u>SCTE-3</u>	<u>5 SCTE-104 (si</u>	ngle) <u>SCTE-104 (m</u> u	<u>ilti) ANC</u>		<u>Test</u> <u>Clear</u>
													ОК	Cancel
Ove	rlay 1 🚽	•	verlay 2	Overlay 3	Overlay 4	Overlay 5	Overlay 6				Overlay 1	Overlay 2	Overlay 3	Overlay 4
Com	mand	A	ction 2	Action 3	Action 4	Action 5	Action 6				Action 1	Action 2	Action 3	Action 4

Make sure Channel 1 and Channel 2 are playing, then hit the Action Button. Then open the SCTE Event Log over the Main Menu > Documentation > SCTE:

🜔 New	Project.xml [Studio Edition,	Marc Köster]						
File Se	ettings Shortcuts View	Documentation Support License						
-0-		DOCUMENTATION			02.21.12			-0-
-4-		Default Shortcuts	30	00.00.10	02.51.12	co c		-4-
-8-	The second second	ONLINE Video Tutorials		00.05.15		~		-8-
-12-		Online Manual	_22050	5.mp4 00:01		INPUT 1	8	-12-
-16-		Troubleshooting Guide						-16-
-20-		Advanced How-To's						-20-
-24-		STREAMING						.24.
.28.		Stream Input - Import SRT, UDP, RTMP, Website, VODs						.28
.22.		Stream Output - Send SRT, UDP, RTMP, HLS	FADE		LINK ~	STOP FADI		.22
26		FILTER						36
-50-		Audio Filter List - Filter for Inputs, Outputs and Clips	-			CUE	N II	-30-
AUDIO IS ON		NETWORK INCOMING	-			CUE		AUDIO IS ON
		Commands List - All PLAVDECK Commands						1501
:	° - (>	ATEM Switcher - Start playback via ATEM Switcher						
	•	vMix - Start playback via vMix Software					<u>∧</u> ∅+ <u>⊎-</u>	
1	2 3 4 5 6	COM / USB / GPI - Start playback via Closed Circuit	Overl.	Planned ¹	< ⊠ ⊳	1 2 3 4	5 6 7 8	Duration Cut L
	#1 Main Program	TSL UMD - Start playback via external Mixer (eg Ross)		• v		🗹 #1 BLOCK		I Clip
~	1. Grand_Jam_22050	NDI Tally - Start playback via NDI Tally Flag		• •	• <u> </u>	 1. INPUT 1 		œ
~	2. Elten_200125.mp4	NETWORK OUTGOING		02:31:40 • •	:	PAUSE		œ
~	3. JOY_150822.mp4	TCP Commands Out - Send Custom Commands		02:32:12 • •				
~	4. MAN_190126.mp4	ICP Event - Send PLAYDECK Events	(02:32:42 • 0	162			
~	5. Mobau_181021.mp	ADI / WebSocket - Develop your own Liser Interface		02:33:12 • ①				
~	6. Tor_des_Jahrzehn	HTML-Templates		02:33:42 • 0				
~	7. Foyerfilm_220505.	HTML-Overlays		02:36:26 ● ◎	1 1 ⊽			
~	8. Flyeralarm 22050:	Director-View		02:40:10 • ①				
	PAUSE	Event Logs			((•))			DROP HERE
		Clip-Run						
		SCTE						
		HTML-Scripts			Se la			

You will see the outgoing Marker of your Action Button Click on Channel 1, and the detected incoming Marker on Channel 2:



We even go one step further and setup ANOTHER SDI Loop from Channel 2 to Channel 3 to test the SCTE Forwarding:



	STOP FAI	DE > PLAY NEXT > CLIP	LINK ~	STOP FADE	→ NEXT →	-32-	
					N 11	-36-	CHANNEL 3
	CUE			CUE		40- AUDIO IS ON	
\bigcirc	►	<u>>_</u> (ネ) く		::: :: ©		2 🗘	
on Cut Loop	Audio Trans. Overl.	Planned 1	< ⊠ ▷	1 2 3 4 5	6 7 8	Duration Cut Loop	Audio Trans. Overl. Planned
os		• •		🗹 #1 BLOCK		 ▶ 1 Clip 	
80	0,0 dB	• •	•	✓ 1. INPUT 2			
32	0,0 dB	02:40:10 🔍 🗊	: <u></u>	PAUSE		ø	
80	0,0 dB	02:40:42 🔍 🗇					
80	0,0 dB	02:41:12 • ©	1 Big				
80	0,0 dB	02:41:42 • ©					
13	0,0 dB	02:42:12 • O					
14	0,0 dB	02:44:55 ❶ ◎					
20	0,0 dB	02:48:40 • ©					
20			((•))			DROP HERE	

If we now press our Action Button to send the SCTE-104 Marker, we detect it also in Channel 3:

19.05.2025 02:29:49 - Ch 2 SCTE-104 - <single_operation_message> <opid>0</opid> <messagesize></messagesize></single_operation_message>
20 <result>0</result> <result_extension>0</result_extension> <protocol_version></protocol_version>
0 <as_index>0</as_index> <message_number>0</message_number> <dpi_pid_index></dpi_pid_index>
<pre>0 <data> <general_response_data></general_response_data> </data> </pre>
19.05.2025 02:40:28 - Ch 2 SCTE-104 - <single_operation_message> <opid>0</opid> <messagesize></messagesize></single_operation_message>
20 <result>0</result> <result_extension>0</result_extension> <protocol_version></protocol_version>
0 <as_index>0</as_index> <message_number>0</message_number> <dpi_pid_index></dpi_pid_index>
0 <data> <general_response_data></general_response_data> </data>
19.05.2025 02:40:28 - Ch 3 SCTE-104 - <single_operation_message> <opid>0</opid> <messagesize></messagesize></single_operation_message>
20 <result>0</result> <result_extension>0</result_extension> <protocol_version></protocol_version>
0 <as_index>0</as_index> <message_number>0</message_number> <dpi_pid_index></dpi_pid_index>
0 <data> <general_response_data></general_response_data> </data>

Sending SCTE-35 to Stream Server

SCTE Marker are mainly used to insert Ads into the Video Output by signalling the Receiver (e.g. Streaming Server) at what time to insert Ads and with what Duration. This allows 3rd Party Systems to dynamically pick Ads from a Database. You can read more about SCTE-35 in general on this website.

We also recommend our general article on SCTE.

You can attach SCTE Marker to 4 different Objects in PLAYDECK:

- Clips (any Position)
- Blocks (Start and End)
- Overlays (Show and Hide)
- Actions Buttons

Instead of providing your with predefined SCTE Marker, we picked a different approach: You have to write your own SCTE Marker. This could mean a bit of a learning curve, but in the end, it is much more flexible. The advantage is, that you will always be compatible to all receiver. For gathering Clip duration and other "variables" we provide certain "placeholder".

SCTE-35 Marker Examples

Let's look at some SCTE-35 Sample. It represents the most used form of SCTE-35 called "Splicing".

Note: The SCTE-35 Format presented here works best with Nimble Streamer (see below). Depending on your Stream Server, the Format might be different. Ask your Provider.

```
<SpliceInfoSection>
<SpliceInsert
spliceEventId="4157"
outOfNetworkIndicator="1"
spliceImmediateFlag="1">
<Program />
<BreakDuration
autoReturn="1"
duration="{clipduration}" />
</SpliceInsert>
</SpliceInfoSection>
```

This will insert an Ad and return to your Program automatically after the given duration. The duration will be set automatically by PLAYDECK for your current running Clip. This can be exchanged with {blockduration} or a manual value. If you pick a manual value for duration, the formula is: CLIP DURATION multiplied by 90000 and rounded. The reason behind this is, that 90000 is default Timescale most SCTE Systems use. Example: The Clip is 12.4 seconds,

so the SCTE duration would be 1116000.

Instead of sending a duration, you could also send 2 seperate SCTE Marker to Start/End the Ad. Those are called CUE-OUT (leaving your Program for Ad) and CUE-IN (return to your Program).

```
<SpliceInfoSection>
<SpliceInsert
spliceEventId="4157"
outOfNetworkIndicator="1"
spliceImmediateFlag="1">
<Program />
</SpliceInsert>
</SpliceInfoSection>
```

```
<SpliceInfoSection>
<SpliceInsert
spliceEventId="4157"
outOfNetworkIndicator="0"
spliceImmediateFlag="1">
<Program />
</SpliceInsert>
</SpliceInfoSection>
```

As you most likely have observed already, the only difference is "outOfNetworkIndicator" being 1 (CUE-OUT) and 0 (CUE-IN). The SCTE System itself will pair both Marker based on the "spliceEventId".

Note: The supported placeholder are: {timestamp} {timestampunix}
{airtimenext} {airtimenextunix} {plannednext} {plannednextunix} {clipid}
{blockid} {blockduration} {clipduration}

Test SCTE-35 Marker locally

Open PLAYDECK. You dont need to load any Clips yet. Right-Click on any ACTION Button, create a new Action and select COMMANDS/SCTE:

Action								
?	Please ente	r Action Details						
	Only execut	te Commands/SCTE						
	Play Block	[#1] BLOCK		~				
		and execute Comm	ands/SCTE (if	any)				
		and after Block (or	Button Click)	<do nothi<="" th=""><th>ing></th><th></th><th>~</th><th></th></do>	ing>		~	
			•					
					Edit Command	ds/SCTE	OK Cane	cel
Overlay 3	Overlay 4	Overlay 5	Overlay 6				Overlay 1	Ove
Action 3	Action 4	Action 5	Action 6				Action 1	Ac

Insert the SCTE-35 Sample Tag by clicking SCTE-35. Close the Popups with OK (twice):



We are now able to send a SCTE-35 Tag to any compatible Stream (UDP, DVB, SRT). If you click the Action now, nothing will happen, as we dont have a Stream yet.

Let's create a Test UDP Stream, where we simply send the Output to a File, so we don't have to hassle with Server Stuff (yet). Copy the Settings as follows and start the Stream with START NOW.

🌞 Settings	Stream ID:	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
🖺 Playlist		Stream not started yet © Refresh Page > Preview
🖌 Application	Activate:	► Start Now Stream is always active
🦚 Subtitles / CC	Ct	
📺 Video	Stream Source:	Channel Channel V Channel V Channel V Channel V View Director 1 V
苗 Channel		
🖵 Outputs	Stream Protocol:	UDP Streaming
🛏 Inputs		Options Show Help
L Director View	Stream URL:	c:\Users\Public\Documents\test.ts Show Help
Streaming	Preview URL:	
Recording		
Audio	Video Format:	HD1080-25p HDYC 1920x1080@25.00p 16:9
	Video Codec:	MPEG-4 part 2 Video 🖌 Bitrate: 5 🛟 MBit/s
🗂 Channel Audio		Options Show Help
🖬 Input Audio	Audio Cormati	Channell 2
Normalization		Channel: 2 V Sample Fate: 96.0 kHz V Bit depth: 16-bit V
Network	Audio Codec:	AAC (Advanced Audio coding) Bitrate: 128 KBit/s Options Show Help

We want to send our Sample SCTE-35 Tag to the Stream now. So close Settings and click your Action Button several Times, then go back to Settings and stop your Stream with STOP NOW.

Your SCTE-35 Tags have been logged by PLAYDECK. You can check the Logs, if you go back to your SCTE-35 Code on the Action Button and click OPEN EVENT LOGS:

<u>mmands List</u>	SCTE ·	- SDI/SRT/UDP/DVB	<u>Show Help</u>	Open Event Logs		Type:	SCTE-35	×
k	1	<spliceinfosection< th=""><th>></th><th></th><th></th><th></th><th></th><th></th></spliceinfosection<>	>					
	2	<spliceinsert< th=""><th></th><th></th><th></th><th></th><th></th><th></th></spliceinsert<>						
	3	spliceEventId=	"{timestamp}'					
	4	outOfNetworkIn	dicator="1"					
	5	spliceImmediat	eFlag="1">					
<u>Test</u> <u>Clear</u>	6	<program></program>	_					
	7	<breakduration< th=""><th></th><th></th><th></th><th></th><th></th><th></th></breakduration<>						
	8	autoReturn="	1"					
	9	duration="{c	lipduration}'	" />				
	10	<th>n></th> <th></th> <th></th> <th></th> <th></th> <th></th>	n>					
<u>Test</u> <u>Clear</u>	Sample	es: <u>SCTE-35</u> <u>SCTE-</u>	<u>104 (single)</u>	<u>SCTE-104 (multi)</u>	ANC		Test	<u>Clear</u>

You can also make the SCTE-35 Tags visible, which are in your recorded Stream. For this, we need a separate Tool called "DVBInspector". This Tool also needs JAVA Runtime, so download both:

- JAVA Runtime
- DVDInspector

This Tool requires JAVA Runtime. If it is not installed already, you can download here: https://www.oracle.com/java/technologies/downloads/

Now unzip your "DVBinspector-1.18.0-dist.zip" (or similar) and start "DVBinspector-1.18.0.jar". Then Drag+Drop your TS File onto the Application. Open the Tree as follows to view your SCTE Marker.

File Tree View View Settings Help		×
Tree EIT View BitRate View Bar View Grid View PCR/PTS/DTS View		
Tree EIT View BitKate View Bar View Grid View PCR/PTS/DTS View Transport Stream 1 file: C1Users/Public(Documents/stream.ts size: 0x766174 (7758196) modified: Tue Apr 09 13:33:46 CEST 2024 T5 packets: 0x4103 (41267) packet size: 0x86 (188) => (deteted) Fror packets: 0x0 (0) bitrate: 0x580315 (5808917) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x581699 (5772953) length (secs): 0x4 (10) bitrate based on TDT: 0x58169		

Test SCTE-35 Marker in Nimble Streamer

Nimble Streamer is our Streaming Service of choice. It is cost-efficient, easy to setup and maintain, but still has the depth of complexity for advanced use cases:

https://softvelum.com/nimble/

Install the 14-day Trial Version of Nimble to the same machine that PLAYDECK is running. This is not a necessity, but makes things simpler, as you don't have to put up with a network setup. You will also be asked by Nimble to create an account with WMSPanel, which is a web based setup tool for Nimble, as the Nimble Streamer itself installs without User Interface.

INFO: For this SCTE-35 Sample to work, you DONT need to have "Nimble Live Transcoder" or "Nimble Advertizer" PlugIns, if you test this on a Live Installation. They are disabled in the Trial Installation by Default.

Once you got Nimble running, there is one more configuration you need to do manually. Open the Nimble Server Configuration file here: c:\Program Files\Nimble Streamer\conf\nimble.conf

At the bottom of this file, add the following Lines and save the file.

scte35_processing_enabled = true
scte35_forwarding_enabled = true
hls_ad_scte35_forwarding_enabled = true
hls_ad_marker_format = cue
hls_ad_splice_out_cont_marker_enabled = true

Important: You need to restart Nimble now by either restarting your PC or restarting the Windows Service "Nimble Streamer" manually.

Here are the lines again, but with comments for you (dont use these):

scte35_processing_enabled = true // Enabled the SCTE module in general. Needed for all other Options scte35_forwarding_enabled = true // Allows passing through the SCTE-35 markers via Live Transcoder hls_ad_scte35_forwarding_enabled = true // Enables forwarding of SCTE-35 markers into HLS streams hls_ad_marker_format = cue // Sets Nimble to use CUE-OUT and CUE-IN markers hls_ad_splice_out_cont_marker_enabled = true // Enables automatic insertion of EXT-X-CUE-OUT-CONT

Now let's set up your Streams in WMSPanel: First we are going to define our incoming Stream. Goto "Nimble Streamer" in the Menu and select "MPEGTS In" and click the "Add UDP stream" Button, then add the incoming stream like this. You can use any other Port, should 5001 be in use already.

Incoming UDP stream		\otimes
IP Address	Port	
127.0.0.1	5001	
Alias		
e.g. Encoder 1		
Description		
playdeck		
Tags		
Add tag		* •
Advanced settings		
Apply to the following Nimble Streamer	r servers:	
■ DESKTOP-QDPO4T0 ×		~

Next we are going to setup the outgoing stream format. We want to use HLS here to demonstrate the conversion of SCTE Marker from UDP to HLS. On the same page, goto "MPEGTS Out" and click the "Add outgoing stream" Button, then add like this. Make sure you select you input streeam as video and audio source.

Ο	utg	oing	stream

Application name	Stream name				
mynewapp	mynewstream				
Description					
Tags					
Add tag		•			
Select programs O Raw MPEGTS source	e				
Video source	Video stream				
udp://127.0.0.1:5001	Default stream	~			
Audio source	Audio stream				
udp://127.0.0.1:5001	Default stream	~			
Advanced settings					
Language code (optional)					
e.g. eng					
Apply immediately *(Will disconnect cu	rrent connections)				
Apply to the following Nimble Streamer s	servers:				

■ DESKTOP-QDPO4T0 ×

Next we continue our setup in PLAYDECK. Got to the Stream Output Settings and change the Stream URL to "udp://l27.0.0.1:5001".

INFO: You can pick any preferred Video Codec. SCTE-35 will always be send. In this case I picked H.264 to let my NVIDIA GPU do the encoding, which will lower my CPU usage.

🗱 Settings	Stream ID:	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
🖺 Playlist		Stream not started yet O Refresh Page Preview
Application	Activate:	► Start Now Stream is always active
🦔 Subtitles / CC		
<u>~</u> ,,,,	Stream Source:	Channel Channel Cha
Video		Director View Director 1
苗 Channel		
Outputs	Stream Protocol:	UDP Streaming
🖬 Inputs		Options Show Help
Director View	Stream URL:	udp://127.0.0.1:5001 Show Help
Streaming	Preview URL:	
Recording		
and a suralize	Video Format:	HD1080-25p HDYC 1920x1080@25.00p 16:9 V Custom
Nucio	Video Codec:	NVIDIA NVEnc H.264 Encoder v Bitrate: 5 MBit/s
苗 Channel Audio		Options Show Help
🖬 Input Audio	A and the PT a surrough a	
Normalization	Audio Format:	Channel: 2 🗸 Sample rate: 96.0 kHz 🗸 Bit depth: 16-bit 🗸
	Audio Codec:	AAC (Advanced Audio Coding) V Bitrate: 128 KBit/s
Network		Options Show Help

INFO: Please note, that PLAYDECK is not capable to directly stream HLS. Tho you "could" select "Apple HTTP Live Streaming" as Streaming Format and write to File e.g. "c:\Users\Public\Documents\stream.m3u8". Then use that File to stream using any Streaming Server. But PLAYDECK is not able to write HLS SCTE Tags into the HLS Manifest file (the *.3u8 file).

Next we want PLAYDECK to automatically send SCTE, not just via a Button, but Clip related. So we insert any Clip and click the COMMANDS Icon in the Toolbar, then add a new Command, select PLAY TIME 0, then insert the SCTE-35 Sample:



INFO: You can also add SCTE Marker to Blocks, Overlays and Action Buttons.

Now let's get things rolling: CUE and PLAY the Clip and start the Stream in the PLAYDECK Settings. Hop over to the WMSPanel and open from the Menu "Nimble Streamer" the option "Live Streams". You will now see 1 running Live stream. Click on it and pick the question mark on the far right like this.

WMSPanel	anscoders Addenda Control Monitor	ing Create 🗸		
Full data slice Manage				
EESKTOP-QDP04T0	Live streams			ABR • DVR
Live streams / Live streams				
Live streams settings Hide "Publisher IP / Source URL"	column			
All No Tags			Q. Find in table	
□ o ^o ₀ ° Server ° Live stream	 Publisher IP / Source URL 	Source Video Audio	Options Uptime •	/
✓ DESKTOP-QDP /mynewapp/mynewstream		MPEGTS avc1.640028 mp4a.40.34	5.9Mbps 00:01:01	? ♀ ● ♂ @

From the list of "URLs to play" select the one with the "playlist.m3u8" ending and click "Copy". Now paste this URL into any Browser, that has an HLS Player integrated or installed. For this example we use the CHROME Browser with the follwing HSL Player Extension:

https://chromewebstore.google.com/detail/hls-player-m3u8-streaming/eakdijdofm nclopcffkkgmndadhbjgka

Once you posted that URL into CHROME, you will see your PLAYDECK stream playing immediatly. Now let me show you how to monitor your SCTE Marker. In Chrome press F12 to open the Developer Tools. Ontop click the "Network" Tab. You will now see several "chunks.m3u8", which are part of you stream. Click on one of the Chunk files (also called HLS Manifest) and select "Preview" next to it. You will now see the HLS SCTE Tag. If it isnt there, click on another chunk, as we send the SCTE only on Clip Start.

Elements Console Sources Network	Performance	Memory	Application	Security	Lighthou	use Record	der <u>⊿</u> >>
	e No throttling	▼ (ŝ 1	<u>г</u> т				
Filter 🛛 🗍 Iput 🗍 Hide data	URLs 🔲 Hide	extension URLs	All Fetch	h/XHR Doc	CSS JS	Font Img	Media Manifest
Blocked response cookies Blocked requests Blocked requests	rd-party requests						
20000 ms 40000 ms 60000 ms 80000 ms	100000 ms	120000 ms	140000 ms	160000 ms	180000 ms	200000 ms	220000 ms 24
			<u> </u>				
Name	▲ X Head	ers Payload	Preview	Response	Initiator T	iming	
chunks.m3u8?nimblesessionid=1	1 #	ехтмзи					
I_1_642040_128.ts?nimblesessionid=1	2 #	EXT-X-VERSIO	N:3				
chunks.m3u8?nimblesessionid=1	3 #	EXT-X-TARGETI	OURATION:6				
I_1_648040_129.ts?nimblesessionid=1	4 #	EXT-X-MEDIA-S	SEQUENCE:12	8			
C chunks.m3u8?nimblesessionid=1	5 " 6 1	1 642040 128	3.ts?nimble	sessionid=1			
L I_1_654040_130.ts?nimblesessionid=1	7 #	EXTINF:6,	Ji Communication	Jessionia 1			
L1_657640_131.ts?nimblesessionid=1	8 1	_1_648040_129	.ts?nimble	sessionid=1			
Chunks.m3u8?nimblesessionid=1	9 #	EXTINF:3.6,					
Chunks m3u8?nimblesessionid=1	10 1	_1_654040_130	3.ts?nimble	sessionid=1			
□ 1 1 660040 132.ts?nimblesessionid=1	12 #	EXTINF:2.4.	DONATION=	.00	-		
Chunks m3u8?nimblesessionid=1	13 1	_1_657640_131	L.ts?nimble	sessionid=1			

That's it! We reached our Test Goals. Upcoming are more information which

might be relevant to dig into.

Additional Information

Logging in PLAYDECK

We log Incoming and Outgoing SCTE Tags separately. This gives you also the opportunity to test your outgoing SCTE by simply Looping your Output to an Input (SDI as well as Streams), and let PLAYDECK detect your SCTE. You can open the Log Files via the Main Menu:



Logging in Nimble Streamer

If anything goes wrong or doesnt happen as expected, a good start is to review the Nimble Log Files. The Log can be found here on Windows: c:\Program Files\Nimble Streamer\log

Logging is enabled by default in the Nimble Trial addition, but in case you need to activate it, here are the flags for the "nimble.conf".

log_access = file
logging = debug

Now open the log file and scan for "SCTE". You might see something like this, which indicates you have a typo in your SCTE Marker in PLAYDECK:

[SCTE35] unsupported splice command type=6 for [mynewapp/mynewstream]

If your SCTE Marker parsed succesful in Nimble, it will look like this:

[SCTE35] splice_insert: event_id=4157 oon=1 immediate=1 pts_adjustment=0
pts=0 actual_pts=202593600 duration=2707200 data=0xfc....

Tool: TSDuck

This is a collection of tools and plugins with a large library to manipulate MPEG transport streams. With this you would be able to insert SCTE Marker outside of PLAYDECK based on an algorithm or other complex logic.

https://tsduck.io/

Tool: x9k3

This tool can also convert SCTE-35 Marker in UDP Streams or MPEG-TS Files into HLS SCTE Tags. This allows you to install a streaming server, which does not have automatic SCTE-35 to HLS conversion.

https://github.com/futzu/x9k3

Amazon EC2 Installation

PLAYDECK supports most Amazon EC2 server instances and the NVidia GPU Power they provide. This allows you to setup a cloud based infrastructure for NDI transport or other purposes.

We assume, you have a Amazon AWS Account and basic knowledge of EC2.

First, you pick a new EC2 instance, which supports a PLAYDECK installation: Windows Server with a virtual NVIDIA GPU and pre-installed NVIDIA driver: https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/install-nvidia-driver.htm l#preinstalled-nvidia-driver

A typical instance would be "Windows 2019 / g4dn.xlarge" – It has a Tesla virtual NVIDIA GPU and good enough Specs to run PLAYDECK: 16 vCPUs (Intel Xeon), 64GB RAM, 1 vGPU (NVidia T4) with 16GB GPU RAM.

Now install the Instance via those Links or your EC2 Management Console.

To connect to the instance via RDP you first have to open Port 3389 in the Instance Security Settings.

Once connected, you find yourself unable to download anything via the Browser. Therefore enable Downloads like this: START Menu > Server Manager > Local Server > IE Enhanced Security Configuration > Off

Now download and install PLAYDECK as usual: https://playdeck.tv/download/

Video from/to OBS Studio

The best way to connect OBS with PLAYDECK (both ways) is NDI. Multichannel Audio is also fully supported.

Since OBS does does not deliver NDI out of the box, you need to install an additional PlugIn, which is a quick and easy process. Download the PlugIn here (scroll down and click on "distroav-6.0.0-windows-x64-Installer.exe"). It is installed like any other Windows application via Installer.

Send Video from OBS to PLAYDECK

The NDI PlugIn inserts a new Option into the Tools Menu. Pick NDI Output and activate it:



Send Video from PLAYDECK to OBS

Activate NDI Output in PLAYDECK. The OBS NDI PlugIn inserts a new NDI Source, which you can add to your OBS Scene like this:



Video from/to vMix

The best way to connect vMix with PLAYDECK (both ways) is NDI. Multichannel Audio is also fully supported.

Send Video from vMix to PLAYDECK

You only need to activate NDI as External Output like this:

vMix Basic - 23.0.0.68 x	64										
Preset New	Open	•	Save	Last	G		Fullscr	een	-		
	NDI DES	KTOP-QI	DPO4T0 (P	li 📘 : 🖂 i 🐇	2		Quick	Play			
							Cu	t			
							Fade	•			
		-	_				Merge	• •			
							Wipe	• •			
							FTI	в			
1 Audi_A6_170422.mp4		2 N	DI DESKTOF	P-QDPO4T0 (F	Playdeck						
Audi Versprung durch Tech	nik	Γ									
						SRT					
Close Quick Play Cut	Loop 🕨	Close	Quick Play	Cut Loo	p	Output / NDI / SRT Set	ttings				
1 2 3 4 Audio	₽ \$			Audio	-	External Output Settin	gs				
Add Input +	🏶 Re	cord			*	External	*	Stream		*	MultiCo
576p25 Update Availabl	e EX FPS:	25 Rend	er Time: 0	ms GPU Me	em: 10 9	6 CPU vMix: 0% Tota	il: 13 %				

vMix Basic - 23.0.0.6	8 x 64						
Preset New	Open - Save	Last 💭	Fullscreen	-		Pause Inputs	Basi
	NDI DESKTOP-QDPO4T0 (Pli	: 🗆 I 🌞	Quick Play		Au	di_A6_170422.mp4	*
	Settings						×
	Display	_	Source		Overlays	Description	
	Outputs / NDI / SRT	1 Fullscreen	Output ~		All On	 Display 1 	
	Options						
	Performance	_				_	
	Decoders	1 Output	Output ~	NDI On 🏠	All On	 Record / Stream / External 	d ,
	Recording						
	External Output						
	Audio						
1 Audi_A6_170422.mp	Audio Outputs	Additional NDI Ou	itputs				ar (
	Web Controller	Cameras / Calls	; / Audio Inputs	NDI Off			<u>-</u>
	Tally Lights	Audio Outputs		NDI Off			Ē
Audi Versprung durch	Shortcuts	MultiView Layo	out				Ξ
	Activators						-
	About			Legacy)
Close Quick Play Cu			Customise Lavout				n
1 2 3 4 Aud			Customise Eujour				
Add Input •							ay
576p25 Update Avai	Import Export Default	Show Advanced Setting	gs		ок	Cancel	
	Import Export Berduit						

Send Video from PLAYDECK to vMix

Activate NDI Output in PLAYDECK and add the NDI as new Source in vMix like this:





Using Companion for Playout Control

This article will show how to use bitfocus Companion together with PLAYDECK. Companion has a ready-to-use module for PLAYDECK. This is the most comfortable way to connect PLAYDECK to your ATEM Mixer or STREAMDECK.

Installation

Enable TCP Commands in PLAYDECK to allow 3rd party apps to control PLAYDECK externally:

* Cottings	
👷 Settings	? TCP Commands In: C Enabled Show Help Show Commands List
🖺 Playlist	Running (0 Clients) Port: 11375 🚔
🖌 Application	
Subtitles / CC	? ATEM Switcher: ■ Enabled Show Help ○ Refresh Inputs
	Not started yet Connect via: Direct (USB)
Til Video	● IP address (LAN): <u>127 . 0 . 0 . 1</u>
	Channel 1-4 💙 💙 💙
📺 Channel	Channel 5-8
Outputs	

Download and install the latest Version of Companion. The PLAYDECK module is included in the installation:



https://bitfocus.io/companion

Note: The PLAYDECK Companion Module was developed by Semenov Nick. Visit his GitHub for the latest Module updates.

Start Companion, add a new connection and search for PLAYDECK to add the module:

+ Add connection	
Add connection	
Companion currently supports 584 different things, and the list grows every day. If you can't find the device you please <u>add a request</u> on GitHub	ı're looking for,
playdeck	×
Add JOY event & media: Playdeck with Feedbacks	Θ

Once connected, you can select typical PLAYDECK Actions to assign to Buttons, like CUE, PLAY, Start Overlay, and many more.

Using Commands for Playout Control

This article will show how to use Commands to control your Playout.

Example: CUE+PLAY multiple Channel

We want to create an Action Button, which will CUE several Output Channel and PLAY them simultaneously (almost synced).

Create a new Action Button by clicking on it and select COMMANDS, then EDIT COMMANDS:

	Action										
k	? р	Please enter Action Details									
	۰	Only execut	e Commands/SCT	E +							
	•	Play Block	[#1] BLOCK		~						
			and execute Com	mands/SCTE (if	any)						
			and after Block (or Button Click)	<do nothing<="" th=""><th>></th><th></th><th>~</th><th></th></do>	>		~			
1					Ed	lit Commands/S	СТЕ	ок	Cancel		
Overlay 1	Overlay 2	Overlay 3	Overlay 4	Overlay 5	Overlay 6	Overlay 7	Overlay 8				
Action 1	Action 2	Action 3	Action 4	Action 5	Action 6	Action 7	Action 8		<>		

Add this Line for the first Click (ACTION START). <cue|1|1><cue|2|1><cue|3|1><cue|4|1>

This will cue the first Clip if Channel 1-4:

Edit C	ommand	
?	Please enter Con	nmand Details
	Select a Command:	[1] Action Start
	Execution Time:	Action Button is clicked
	COMMANDS - Interna	I within PLAYDECK Show Commands List SCTE - SDI/SR 2 1> <cue 3 1><cue 4 1> 1</cue 4 1></cue 3 1>
		<u>Test</u> <u>Clear</u>
	COMMANDS - Externa	al via TCP Show Help
	edit C	Edit Command ? Please enter Com Select a Command: Select a Command: Execution Time: COMMANDS - Internal 1 <cue 1 1><cue< td=""> COMMANDS - External 1</cue<></cue 1 1>

Add this Line for the second Click (ACTION END). <pause|1><pause|2><pause|3><pause|4>

This will un-pause Channel 1-4 and send the CUE into PLAY:



Lets test our new Button: Add a Clip to Channel 1-4 then press the Action Button. Not wait, until all Channel turn GREEN, indicating the Clip has been CUE'd:

1	2	3	4	5	6	7	8	
	#1	BL	OCK					
~	1	. Gra	ind_J	am_2	2050	5.mp	4	
~	2	. Inti	ro_Liv	vesho	w.pn	g		
~	3	L-W	/rann	er M	arket	ina 2	20505	5 mov

Then press the Action Button again to start playback of all channel.

List of all Commands and where to add them

The List of all Commands can be quickly opened over PLAYDECK's Main Menu:

•	New Project	t* [Trial Studi	o Editio	n]
File	Settings	Shortcuts	View	Documentation Support License
	0	_		DOCUMENTATION
				Default Shortcuts
	-4-			ONLINE
	-8-			Basic Video Tutorials
	-12-			How-To Guides
	-16-			Online Manual in Textform
	-20-			Troubleshooting Guide
	-24-			STREAMING
	20			Stream Input - Import SRT, UDP, RTMP, Website, VODs
	-20-			Stream Output - Send SRT, UDP, RTMP, HLS
	-32-			FILTER
	-36-			Audio Filter List - Filter for Inputs, Outputs and Clips
	40-			NETWORK INCOMING
A	S ON			TCP Commands In - Receive PLAYDECK Commands
				Commands List - All PLAYDECK Commands
				ATEM Switcher - Start playback via ATEM Switcher

Commands can be added to:

- Action Buttons (Start, End)
- Overlay Button (Start, End)
- Clips (Any Time)
- Blocks (Start, End)
Mostly via this Icon:



Send Commands from other Apps

We have a sparate article on how to control PLAYDECK with Companion.

But what, if it is not Companion, but a different 3rd party App? First, you would need to enable TCP Commands. This will open PLAYDECK up to receive and execute Commands from external sources:



In your 3rd party app, connect to PLAYDECK via TCP and send one or multiple Commands. In this Sample we use Hercules to send a Command, which will start Streams 1 and 2:

-CK	Settings	×
	🗱 Settings	Stream ID: 17 27 3 4 5 6 7 8 9 10 11 12 13 14 15
	🖺 Playlist	Stream is running V Refresh Page Preview
1	🖉 Application	Activate: Start Now Stop Now Stream is always active
	🦔 Subtitles / CC	
Duration C	🞽 Video	Stream Source: O Financi Channel V C
► 6 Clips	🗂 Channel	Received/Sent data
00:30	🖵 Outputs	Stream P Connected to 127.0.0.1 Module IP Fort 127.0.0.1 11375 00::
ω	🖬 Inputs	<pre><startstream 1><startstream 2>received Ping X Disconnet</startstream 2></startstream 1></pre>
00:15	L Director View	Stream U
۰۱.10 ∞	ন Streaming	Preview 1
02:01	Recording	2: 05060708 4: 0D0E0F10 02:0
œ	📢 Audio	Video Fo Video Co
	苗 Channel Audio	PortStore test
	🖬 Input Audio	□ NVT disable
	Normalization	Audio Fo
	Network	Audro Co
	← Incoming	HEX Send HUDgroup
DROP HERE	→ Outgoing	Hercales SETUP atility Version 3.2.8

Move License to another PC

This article will show how to move your License from one System to another System.

Shop License

You can move your License via a simple Check-In/Out System. On the System with the active License, go into your License Manager:

6	📎 New Project* [Studio Edition, Marc Köster]							
File	Settings	Shortcuts	View	Documentation	Support	License		
						LICEN	SE	
	-0-				_	Licens	e Manager	
	-4-					ABOU	T	
	-8-					About	PLAYDECK	
	-12-							

First, we want to free the active License, so we can move it. Select the TRIAL Edition and click ACTIVATE, then confirm the restart query:

Lice	nse Manager		×	
	Local Licenses (Availa	ble on this System)	Online License Pool (Available at playdeck.tv)	
	Edition	Status	Edition Status	
	Trial Studio Edition	Valid (unlimited)	(not connected)	
	Studio (Year)	Active (until 17.05.2026) Activate License	Check License from Pool to loguestion Check Lice ? Activate License To activate the License, PLAYDECK needs to restart. Do you want to continue? Yes No	
	Your System ID: W4CJJ4	IR5NB43WG24I1 <u>Copy</u>		
		Get new Licen	e Manage my Account/Licenses Use an Offline License Protect License Manager	

After restarting PLAYDECK, we can now move the free'd License back to your Online License Pool. Re-open the License Manager. Now login to your PLAYDECK ACCOUNT. Use the email adress and password, which you used during CHECKOUT in the SHOP. Use the FORGOT PASSWORD button, if you need to reset your password:

Lice	nse Manager				X
i	How to activa	te yoı	ur License		
	1. Login to your PLA 2. Select your license 3. Activate your Licen	YDECK a e and clic nse with	account by clickin :k "Check License "Activate License	ng "Login and view your licenses" from Pool to local PC" to move it from your pool to your system e"	
		Conne	ct and Update	Licenses	
	Local Licenses (Availe Edition	?	Please ent	ter your Login from playdeck.tv	
	Studio (Year)		Please use the Password, plea	Login of your order from playdeck.tv. If you forgot the se dick on "Forgot Password".	
			Email:	your.email@gmx.net	
			Password:	******	
				Remember Credentials and Auto-Login	
			Buy ne	ew License Forgot Password OK Cancel Login and view your licenses	
	Your System ID: W4CJJ	4R5NB4	3WG24I1 <u>Copy</u>		
				Get new License Manage my Account/Licenses Use an Offline License Protect License Manage	er

We can now move the License from you LEFT Side to the RIGHT Side with a Button Click (CHECK LICENSE BACK INTO THE POOL). This means, that the License becomes UNAVAILABLE on the current System and becomes AVAILABLE on ANY other System:

Licen	se Manager				×
i	How to activat	e your License DECK account by dicking "Login and view yo and dick "Check License from Pool to local P se with "Artivate License"	our licenses" C" to move it from your pool	to your system	
1	Local Licenses (Availat	ole on this System)		Online License Pool (A	wailable at playdeck.tv)
	Edition	Status		Edition	Status
	Trial Studio Edition	Active (unlimited)		(no license found)	
	studio (Year)		< Check License from Pool to local PC Check License back into the Pool >		
		Activate License			Update Licenses
	Your System ID: W4CJJ4			Logged in:	Logout current User Switch User
		Get new License	Manage my Account,	/Licenses Use an Offl	ine License Protect License Manager

The next Screen shows the OTHER PC after logging into the License Manager. You simply reverse the Process now: Select the License on the RIGHT Side and move it with the Button to the Left Side (CHECK LICENSE FROM POOL TO LOCAL PC). PLAYDECK will now offer to activate the License and restart:

License Manager	×
 How to activate your License 1. Login to your PLAYDECK account by dicking "Login and view y 2. Select your license and click "Check License from Pool to local 3. Activate your License with "Activate License" 	your licenses" PC" to move it from your pool to your system
Local Licenses (Available on this System) Edition Status Trial Studio Edition Active (unlimited) Image: Status in the state of t	Online License Pool (Available at playdeck.tv) Edition Status Studio (Year) Vaid (until 17.05.2026) Check License from Pool to local PC Check License back into the Pool > Update Licenses Ionguit current User Switch User
Your System ID: W4CJJ4R5NB43WG24I1 <u>Copy</u>	Logged in:
Get new Licen	ise Manage my Account/Licenses Use an Offline License Protect License Manager

Dongle License

Simply detach the USB Dongle and attach it to another PC, then start PLAYDECK on that PC. Please note, that if you detach the Dongle while PLAYDECK is still running, PLAYDECK will close immediatly and without prior notice. It is recommended to close PLAYDECK regulary to ensure, that all Data is saved properly.

Offline License

The Offline License is bound to the PLAYDECK System ID and can NOT be moved to another System by the Customer. Please write us at support@playdeck.tv to receive a new Offline License.

Backup License

We have a separate article on how to use the Backup License.

Send Log Files to Support Team

This article will show how to send you PLAYDECK Log Files to our Support Team.

Send via Internet

If you have an active Internet Connection on your PLAYDECK System, open the Main Menu and select SUPPORT and then SEND LOG FILES:



Then select the INTERNET Option:



After the upload is complete, please send us a message to support@playdeck.tv along with your System ID. If you seen the following Popup, the System ID is in your Clipboard already and you can simply paste it with CTRL+V into your email message:



Send offline via ZIP File

If you DONT have an active Internet Connection on your PLAYDECK System, open the Main Menu and select SUPPORT and then SEND LOG FILES:



Then select the ZIP FILE Option:



After you pick a destination Folder on your System, a 7-ZIP-file will be written there:

playdeck_logs.7z 197.594 29.05.2025 16:37

Please send us a message to support@playdeck.tv along with your ZIP-file.

If your Email-system doesnt allow sending Files or the ZIP-file itself is too large (> 5 MB), you can also use our Downloadportal to upload the File.

Upload Files to Support Team

This article will show how to upload Files and send them to the PLAYDECK Team.

Open our Downloadportal via this URL: https://download.joy-event-media.de/

You can add your Files now via Drag-drop or file-browser. In our example we already added some PLAYDECK Log-files and a sample video. If you are done adding, please click UPLOAD.

JOh	
Create upload	are caused for 7 days as standard and then sutemptically delated
opidad your mes nere. Opidaded mes	
	Drop files here or <u>click here</u>
	(up to 50GB per file)
Chosen files	
playdeck_logs.7z 0.19 MB	Roller Coaster.mp4 9.40 MB

After the Upload is complete, please click COPY to put the Download-link into the Clipboard. Then write us a message to support@playdeck.tv along with that Download-link:

JOh		
Create upload Upload your files here. Uploaded files are saved fo	r 7 days as standard and then automatically	y deleted.
Upload completed		
You can download the files here:		
https://download.joy-event-media.de/d/M5LPUL77		🗋 Сору
Change retention:	Password protection:	
7 days	•	
® Save changes		
Chosen files		
playdeck_logs.7z 0.19 MB	Roller Coaster.mp4 9.40 MB	
9		

Note: Without the Download-link we cant access your Files. This is to protect Customer data.

Free Backup License

This article will show how to use the Free Backup License, which comes with every PLAYDECK License. The Backup License functions as follows:

- Can be used with ANY PLAYDECK License (Dongle, Shop, Offline)
- Can be used on ANY PLAYDECK-PC in the same network
- Multiple Clients are supported
- 24/7 operation is NOT supported (max 24h per session)

Setup

On your MAIN System (the one WITH the License), you dont have to do anything: The BACKUP LICENSE SYSTEM is enabled by default. It will use the WebSocket Port 11411, so make sure this Port is not blocked:



On the CLIENT System (the one WITHOUT the License), you perform a regular PLAYDECK installation, nothing special here: PLAYDECK will not start in TRIAL MODE with the watermark:



Now we need to tell CLIENT PLAYDECK, where to find the MAIN PLAYDECK, by providing the IP adress of MAIN. To receive the IP adress of your MAIN, you can simply open the ABOUT BOX in PLAYDECK (Main Menu > License > About):



On your CLIENT, go to Application Settings, enter the IP adress of MAIN PLAYDECK and click TEST IP NOW. The CLIENT now tests the Network connection and searches for a valid License on MAIN. If you dont see the following INFO POPUP, please check your MAIN License and your Network connection between MAIN and CLIENT:



You can now enable the feature by clicking BACKUP-SYSTEM. PLAYDECK will restart now with the exact same License of MAIN. You can verify, the CLIENT

is using the Backup License correctly in several Displays:



Note: If the CLIENT has a valid License itself, the License of MAIN will NOT be used.

Rules of Backup-License

The Backup-License is not meant for 24/7 operation, but to provide a failsafe for immediate operation, e.g. in a live production, and without the need to buy a secondary license, just to have a backup system for some use cases.

For unattended 24/7 operation, you would need to purchase a secondary license. Please contact use at support@playdeck.tv, if your next License is for Backup only, and we will provide you with a appropriate discount.

The MAXIMUM RUNTIME of your BACKUP LICENSE will be: - 2 hours, if the MAIN gets disconnected or closed - 24 hours, if then MAIN stays online

PALYDECK will terminate the CLIENT without prior warning. So please make sure, to bring the MAIN back online within the 2 hour window, or to restart both MAIN and CLIENT within the 24 hour window.

You can control the remaining RUNTIME in the Settings of the CLIENT:

🗱 Settings	Settings for the Application
🖺 Playlist	? ✓ Check for Updates once a week
Application	? ✓ Restart PLAYDECK every Sunday ✓ at 00:00:00 ≑ Test Restart now
🤏 Subtitles / CC	? ✓ Activate Energy-Save-Mode after inactivity of 10 ; min
Mideo	? ■ Allow Shortcuts to work outside of Playdeck
📥	? ■ Suppress most Popups (except Errors)
	? 🗖 Disable Project File saving. If Filechange detected: 🛛 🗎 Reload Project and resume Playout
in Inputs	? ■ Disable Background Tasks for: Device Check, Clip Check, Stream Reconnect, Tally Check
L Director View	? ✓ Backup-System: Receive License via IP 192. 168. 178. 29 Test IP now (Valid until: 18:32:01)
Streaming	? GPU Selection for Video Assets NVIDIA GeForce RTX 3080 ▼

Setup RustDesk unattended Access for Remote Support

RustDesk is a free Remote Destop Software, which we use to login to remote systems. The main advantage of RustDesk over other Remote Desktop Connections is, that is does interfere with installed GPUs (eg. installing a Virtual GPU), therefore not interfering with PLAYDECK during Remote Access.

1. To get started, download our customized RustDesk from our website. This version will use our private RustDesk server (and not the public server) to protect your data and improve the connection speed. https://get.remote-joy-event-media.de/

2. Once you start RustDesk for the first time, you will need to install it. Please deactivate "Install virtual display driver", which might interfere with PLAYDECK.

0	≡ - □ ×
Your Desktop	
Your desktop can be accessed with this ID and password.	Control Remote Desktop
	525 Installation
One-time Password	
C 🔪	Installation Path: C:\Program Files\RustDesk Change Path
	Recent Se
Dura ta UAC Durat Dark ana	2. Create start menu shortcuts
not work properly as the	1 Create desktop icon
remote side in some cases. To avoid UAC, please click the butten below to install	Install virtual display driver which is used when you have no physical displays.
RustDesk to the system.	End-user license agreement
	By starting the installation, you accept the license agreement.
Install	Service Cancel Accept and Install Run without install

3. After re-starting RustDesk, you will not need to activate "Start Service". This is important to elevate priviliges to e.g. open the device manager. After that you need to setup a permanent password: Click on the Edit Icon next to "One-time Password".

0		≡ — □ ×
Your Desktop Your desktop can be accessed with this ID and password. ID	Control Remote Desktop	
2.	Recent Sessions Favorites Discovered Address Book	Q II =
	Service is not running <u>Start Service</u>	

4. Then click on "Unlock Security Settings" and scroll down.

🧿 🏫 Home	🔧 Settings	
Settings		Unlock Security Settings
🕸 General	Pe	ermissions
🔒 Security		Custom
🕒 Network		Enable Keyboard/Mouse
🖵 Display		Enable Clipboard
온 Account	×	Enable File Transfer
 About 		Enable Audio
🧿 🏫 Home	🗸 Settings	Enable Remote Restart
Settings		
	Pa	assword
🐯 General		Accept sessions via both
🔒 Security	C) Use one-time password
G Network		One-time password length: 💿 6 🔿 8 🔿 10
🖵 Display	0	Use permanent password
온 Account		Set permanent password
(i) About		Hide connection management window
	С) Use both passwords

5. Please send us your ID together with your permanent password to ${\tt support@playdeck.tv}$

0		≡ – □ ×
Your Desktop Your desktop can be accessed with this ID and password. ID 733 263 One-time Password - C /	Control Remote Desktop	
	Recent Sessions Favorites Discovered Address Book	Q II =
	Ready	

6. (Optional) If possible, please start RustDesk on a secondary PC (No need to install) and test the connection to the System you have setup for remote support. Now thru this remote connection, on the secondary system, please try to:

- Open Device Manager
- Open Task Manager
- Open NVidia Panel
- Copy any File to this Folder: c:\Program Files
- (x86)\JoyEventMedia\Playdeck\

These tests make sure, that all needed support actions can be done remotely. If is likely, that any Anti-Malware or other Protection software breaks the connection. In that case please de-activate those Tools temporarily for the remote support session.

Video Engine Logging

This article will show how to enable detailed Video Engine Logs for us to analyze.

1. Enable Logging

In PLAYDECK goto Application Settings and activate "Enable Video Engine Logging". PLAYDECK will now ask you to restart.

🌞 Settings	Settings for the Application
🖺 Playlist	? ✓ Check for Updates once a week
Application	? ✔ Restart PLAYDECK every Sunday ✔ at 00:00:00 🗣 Test Restart now
🤹 Subtitles / CC	? ✓ Activate Energy-Save-Mode after inactivity of 10 ; min
📺 Video	? ■ Allow Shortcuts to work outside of Playdeck
🚔 Channol	? 🔲 Suppress most Popups (except Errors)
	🕐 🗖 Disable Project File saving. If Filechange detected: 🛛 🗖 Reload Project and resume Playout
U Outputs	🕐 🗖 Disable Background Tasks for: Device Check, Clip Check, Stream Reconnect, Tally Check
🖬 Inputs	P = Backun-System: Poceiva Liconce via ID 127 0 0 1 Test IP now
Director View	
Streaming	PU Selection for Video Assets NVIDIA GeForce RTX 3080
Recording	Settings for Logging
📢 Audio	? ■ Enable Logging for HTML Overlays <u>Open Logs Folder</u>
苗 Channel Audio	? ■ Use Custom HTML Chromium Flags: Show Help
🖬 Input Audio	? ■ Enable Video Engine Logging

2. Reproduction

After restarting now please reproduce the Issue/Problem at hand. Please make a note of the current Date/Time (and let us know). After the Issue/Problem has occured, close PLAYDECK (or use Task Manager to terminate). Do NOT OPEN PLAYDECK again, otherwise the Logs will be lost, as they are being cleaned on every Start to reduce Upload Size.

Note: The shorter the Logs the better, as it is more easy to isolate the issue. Make sure to start PLAYDECK only to reproduce the issue and don't let PLAYDECK run for a long time.

3. ZIP'ing and sending the Logs

Create a new ZIP File and add the following Folders:

```
c:\ProgramData\JoyEventMedia\Playdeck\crashs
```

```
c:\ProgramData\JoyEventMedia\Playdeck\logs
```

c:\ProgramData\JoyEventMedia\Playdeck\sdklogs

Note: The ProgramData Folder is hidden in Windows. You have to enter it manually into your File Explorer.

Note: To create a ZIP File in Windows, mark the above Folders with CTRL, then right-click on any marked Folder and select "Compress to ZIP File".

Upload the ZIP to our Download Server: https://download.joy-event-media.de/

After uploading click the COPY Button and send the Link to support@playdeck.tv. Please dont forget to send the Date/Time of the Issue/Problem occurance, so we can easily find it in the Logs.

4. Clean Up

You can now safely delete your ZIP File.

Also make sure to deactive the Setting "Enable Video Engine Logging" in PLAYDECK, as it will slow down your PLAYDECK performance. This setting is not meant to be enabled all the time.