## 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:

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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-				-/ 1	-	STO		, PLA			·	STOP			-28-
-32-		Edit C	ommand	l					í.						
-36- 40- AUDIO IS ON		?	Pleas	e enter Coi	mmand Details										
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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:

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-16		Troubleshooting Guide	-				-16-
.20		Advanced How-To's					20.
-20		STREAMING					24
-24		Stream Input - Import SRT, UDP, RTMP, Website, VODs	1				-24
-28		Stream Output - Send SRT, UDP, RTMP, HLS	FADE	PLAY NEXT			-28-
-32		FILTER		CLIP			-32-
-36		Audio Filter List - Filter for Inputs, Outputs and Clips	_				-36-
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~	2. Elten_200125.mp4	NETWORK OUTGOING	0	1:43:12 0 0		PAUSE	œ
~	3. JOY_150822.mp4	TCP Commands Out - Send Custom Commands	0	1:43:44 0 0			
~	4. MAN_190126.mp4	ICP Event - Send PLAYDECK Events	0	1:44:14 • ①	1		
~	5. Mobau_181021.mp	API / WebSocket - Develop your own liser Interface	0	1:44:44 • ①			
~	6. Tor_des_Jahrzehn	HTML-Templates	0	1:45:14 • ©			
~	7. Foyerfilm_220505.	HTML-Overlays	0	1:47:57 0 💿	2 ≥ ⊽		
~	8. Flyeralarm_22050	Director-View	0	1:51:42 • O			
	PAUSE	Event Logs			((•))		DROP HERE
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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":

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<b>B</b>	Audio Codec:	AAC (Advanced Aud	dio Coding)		∽ Bi	trate:	128	KBit/s			
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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>
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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>

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-36- 40- AUDIO IS ON		?	Please	enter Com	ımand Details									
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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:

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-16-		Troubleshooting Guide						-16-
-20-		Advanced How-To's						-20-
-24-		STREAMING						.24.
-28-		Stream Input - Import SRT, UDP, RTMP, Website, VODs						-28-
.32.		Stream Output - Send SRT, UDP, RTMP, HLS	FADE		LINK ~	STOP FADE		.32.
-36-	-	FILTER						-36-
40		Audio Filter List - Filter for Inputs, Outputs and Clips	-	► II		CUE	► II	40
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~	3. JOY_150822.mp4	TCP Commands Out - Send Custom Commands		02:32:12 • •				
~	4. MAN_190126.mp4	Events List - All PLAYDECK Events		02:32:42 • ©	1			
~	5. Mobau_181021.mp	API / WebSocket - Develop your own User Interface		02:33:12 • 0				
~	6. Tor_des_Jahrzehn	HTML-Templates	(	D2:33:42 • ©				
~	7. Foyerfilm_220505.	HTML-Overlays		02:36:26 • •				
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	PAUSE	Event Logs			((•))			DROP HERE
	-	Clip-Run						
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		HIML-Scripts						

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:



<b>STOP</b> FADE	E > PLAY NEXT > CLIP	LINK ~	STOP FADE	> NEXT >	-32-	
					-36-	CHANNEL 3
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20 0,0 dB 0	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>
0 <data> <general_response_data></general_response_data> </data>
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>