PRIME Switcher Quick Start User Guide Version 5.1

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Description

The PRIME Switcher is a fully software based switcher that can switch a variety of source types. The PRIME Switcher is an add-on to the Main PRIME application and supports all PRIME features and functions.

The PRIME Switcher is based on the Chyron PRIME technology. Built into the Switcher are many of the main PRIME's functionality.

For these features please refer to the main "PRIME User Guide".

- Graphics Players
- Clip Players
- Browsers
- Keyboard shortcuts
- Layouts
- Projects
- Automation
- Asset management
- Playlists
- And any other feature not described in this document

The PRIME Switcher main user interface





Switcher Basics

Video production switchers allow operators to switch between video sources, allowing for keying sources over other sources.

Switcher Bus

A bus is a row of buttons each representing a video source or graphic input.

Preset Bus

The Preset or Preview bus will show you what's about to go to air..



Program Bus

The program bus indicates what is selected and going to air.



Key Aux/delegation Bus

Allows for overlaying/compositing one source over another.





Switcher Bank

A Bank of switches consists of a Preset Bus, A Program Bus and a Key Aux Bus.



Mix Effects Bank

Allows additional bank to set up effects to be selected as a source on the Main bank





Switcher Channels

Sets the main channels to be used by the Switcher. These channel properties reference output channels that are configured in the Video Channels section

📲 Playout Configuration						
	File Switcher	- 🗋 New	🔻 🛗 Save As		License Swite	:her
BBE Switcher						
💶 Video Channels	Program Channel	Program	~		A	uto Config
🔛 Clip Players	Preview Channel	Preview	~			
🗎 Clip Recorders	Atlas Channel	Atlas	~			
💽 Playlists	Sources Transitio	ns Audio				
📲 External Data	🕅 Black 🔲 Vid	eo Input 💿 Clin F	laver 📕 Graphics 🎫 Mix I	Effects	Pass VANC from	Background
😓 Settings		compace on pr				buckground
🔆 Advanced	Ç iype	Name	Source			
		BLK	101-1-11 N			
		CAMI	Video Input I *			
	= Video Input	CAM2	Video Input 2 V			
	= Video Input	CAM3	Video Input 3 V			
	Video Input	CAM4	Video Input 4 V			
	Clip Player	CLP1	Clip Player 1 V			
		CLP2	Clip Player 2 V			
	⊟ Graphics	GFX1	Graphics 1 Y			
		GFX2	Graphics 2 ×			
	■ Mix Effects	ME1	Mix Effects 1 Y			
				ОК	Cancel	Apply
				UK	concer	עייאיר



Program Channel

Specifies the main switcher output channel that displays the background program bus along with any enabled key buses

Preview Channel

Specifies the preview channel that displays upcoming output that will be displayed on program after a cut or transition is performed

Atlas Channel

Specifies the atlas channel to be used to output proxies of all of the main switcher channels, plus all of the configured source channels. Typically this channel is configured in the Video Channels section to output an H264 stream that can be used to monitor the inputs and outputs of the switcher. This stream can be played back in a web browser or streaming applications, including certain Chyron products.

Sources

Use this section to specify and order the sources to be available for each switcher bus.

Source Types

- Black
- Video Input
- Clip Player Maximum 2 clip players
- Graphics Maximum 2 graphics channels
- Mix effects- Maximum 1 additional ME bank

Input types

- SDI
- NDI
- IP2110-IP2020-6
- H264 (RTMP)
- HDR Inputs





Output types

- SDI
- IP 2110-2020-6
- GPU
- 4K
- HDR outputs
- Clean feed

First time setup

Auto Config

It is highly recommended that users use the Auto Configuration!!

The Auto Config section will walk you through the setup of the PRIME Switcher. Use the Switcher Auto Config section to configure the playout configuration to start with the appropriate amount of input and output channels including starting points for the device types. After using the Auto Config section, the Switcher config and Video Channels can be further tuned for the required configuration. To open the Auto Config section, click the Auto Config... button at the top of the Playout Configuration window.

Playout Configuration						– 🗆 X
	File Switcher	🝷 🗋 Nev	v 🔻 📙 Save As			License Switcher
Switcher Video Channels Clip Players	Program Channel Preview Channel	Program Channel Program v Preview Channel Preview v				Auto Config
🔘 Clip Recorders	Atlas Channel	Atlas	¥			
Playlists	Clean Feed Channel	Clean Feed	¥			
📲 External Data	Sources Transitions	Audio				
😓 Settings	Black III Video	Innut 💿 Clin	Player E Graphics EX	Mix Effects	Remove	Pass VANC from Background
🔆 Advanced		, input 🖉 ciip		IVIA Effects	s 🔨 Kentove	
	C lype	Name	Source			
		LK	Video Innut 1			
	Video Input	AIVI1	Video Input 2	~		
	Video Input C		Video Input 3	~		
		AM4	Video Input 4	~ ~		
	Clip Player	LP1	Clip Player 1			
	E Clip Player	LP2	Clip Player 2	~		
	≡ Graphics 0	FX1	Graphics 1	~		
	≡ Graphics 0	FX2	Graphics 2	~		
	⊟ Mix Effects M	4E1	Mix Effects 1	~		
					ОК	Cancel Apply



For Program, Preview, Atlas and Clean Feed, choose the starting Device type for each output channel. Note: Clean Feed is optional and can be set to None.

For Resolution, choose the resolution to be set for each input and output channel. For Video Inputs, choose the number of input channels to be created, including device type.

For Clip Players, Graphics and Mix Effects choose the number of output channels to be created, including device type. Note: if only an application proxy of the channel is required, then using the Sub Channel device type will give the best performance.

Switcher Auto Configure								
Program	Matrox SDI	v						
Preview	Matrox SDI	v						
Atlas	Network Str	ream ~						
Clean Feed	Matrox SDI	v						
Resolution	1080i 59.94	Hz ×						
Video Inputs	4 🜩	Matrox SDI	~					
Clip Players	2 🜩	Sub Channel	~					
Graphics	2 🜩	Sub Channel	~					
Mix Effects	1 🖍	GPU	~					
✓ Audio Bus Channels	2 🗘							
		OK	Cancel					



Transitions



Setup-Creating

Use the Transition configurator;

Sources Transitio	ns Audio									
Dissolve Dissolve Custom Remove										
🗘 Туре	Name	Properties								
\equiv Dissolve	DISS	rames 25 🜩								
📃 Wipe	WIPE	rames 25 🜩 Dir	rection Right Y	Feather 0 🌩						
📃 Wipe	WIPE1	rames 25 🜩 Dir	rection Right Y	Feather 0 🌩						
\equiv Custom	CSTM	ile								

Dissolve

Performs a dissolve transition

Wipe

Performs a full screen hard or soft wipe in one of the fou directions, Left, Right, Up or Down.

Custom

Transitions can be created and saved in PRIME's Designer and then imported into the Switcher.







Cut

Cuts any preset transitions from preview to program

Auto

Transitions any selected sources based on the selected transition type, (ex: Dissolve).

Preset Black

Preset black is a special type of transition that allows a dissolve transition to fade the program source to black before fading up the preset source

Transition selections can be:

Background

Flip flops the Program bus and the Preset bus



Keyers

Key Types

Main	
	KEY1
Key Mode	Linear 🗹
D	Linear
	Chroma
	BLK

Auto Select Linear Key

Use the video and alpha source from the selected source.

Chroma Key

Removes the chromanance value from the selected source.

Key Mode	Chroma	×
Color		▼ <i>P</i>
Gain	40.0 ≎	— — —
Softness	8.0 🜩	-
Shape	0.0 🗢	
Despill	100.0 🔶	
	Matte	

For best results use the Matte property to dial in the chroma key. Once set, uncheck the Matte property.

There are two ways to key sources

- 1. Key bus
- 2. Downstream key panel





Key bus

The key bus allows keying any of the existing inputs plus graphics and clips



Each key bus has 4 keyers:

Key Priorities



Key1 is top priority Key 2 is behind Key 1 Key 3 is behind Key 2 Key 4 is behind Key 3

All keys sit on top of the program bus.



Downstream key panel

Each key bus source has a dedicated downstream panel to toggle the keyers on/off.



Clicking the middle green buttons allows key assignment



Clicking cut or auto will toggle the keyer on/off





Mix Effect Memory System

Store and recall memories (setups or configurations) within the ME bank.





Clean Feed Output

The Clean Feed is a separate and dedicated output that allows an output channel to be created. The clean feed output is only the source on the main program bus of the switcher. No key sources will be applied to the Clean Feed output.



Graphics Players



PRIME Switcher comes with two channels of graphics internally. Graphics can be controlled a few different ways:

- Drag and drop from the graphics/clips Asset Browser
- Using the graphic recall input box at the top of the Switcher UI. (See below)
- Another PRIME application. This can be an offline PRIME system
- A Chyron Panel. Can be requested by Chyron Professional services
- PRIME Commander application

These methods can be configured in the Switcher "Automation" section. Both clips and graphics can use "The Chyron Intelligent Interface" as the protocol. Clips supports VDCP. Both also support WebSocket using a JSON protocol.

Refer to the main "PRIME Users Guide" for more information on PRIME Graphics.



Clip Players



Refer to the main "PRIME Users Guide" for more information on PRIME Clips.

PRIME Switcher comes with two Clips players internally. Clips can be controlled a few different ways:

- Drag and drop from the graphics/clips Asset Browser
- Using the graphic recall input box at the top of the Switcher UI. (See below)
- Another PRIME application. This can be an offline PRIME system
- A Chyron Panel. Can be requested by Chyron Professional services
- PRIME Commander application

Graphics/Clips channel select and recall

Works identical to PRIME proper.





Keypad Playout

The numeric keyboard keypad allows users to select a target component for playout.

Select the component by selecting one of the buttons above the keypad. (Graphics 1, Graphics 2, Clip Player 1, Clip Player 2 or ME1).

The very top buttons (M1 - M8) are for future Macro functionality.

Keypad			
M1	M2	M3	M4
M5	M6	M7	M8
Graphics 1	Graphics 2	Clip Player 1	Clip Player 2
ME1			
SAVE	CLEAR	PLAY	PREV
7	8	9	
			NEXT
4	5	6	
1	2	3	
			LOAD
)	DEL	



Audio

The PRIME Switcher includes an audio mixer with an array of functionality.

Setup

퉪 Playout Configuration						– 🗆 🗙					
	File Switcher	🝷 🗋 New 🝷 🔚 Sa	ve As	License Switcher							
Switcher Video Channels Clip Players	Program Channel Preview Channel	Program Preview	¥ ¥			Auto Config					
Clip Recorders	Atlas Y										
Playlists	Sources Transitions Audio										
📲 External Data	ta 🔹 🔹 Audio Bus 🗶 Remove Duck Frame Count 20 🖨										
Settings	Name	Source	Input Index	Input Count	Output Index	Output Count					
Advanced	≡ CAM1	Video Input 1 🛛 👻	0 🍣	2 🗢	0	2 🜩					
	≡ CAM2	Video Input 2 ×	0 🍨	2 🗘	0	2 🗘					
	≡ CAM3	Video Input 3 🛛 👻	0 🍣	2 🗘	0 🍨	2 😴					
	≡ CAM4	Video Input 4 👘 👻	0 🍣	2 🗘	0 🔷	2 😴					
	≡ CLP1	Clip 1 Y	0 🍨	2 🗘	0 🌩	2 🗢					
	≡ CLP2	Clip 2 v	0 🌩	2 🗘	0 🌩	2 😴					
	≡ GFX1	Graphics 1 Y	0 🗢	2 🗢	0 🍨	2 🗲					
	≡ GFX2	Graphics 2 ×	0 🔶	2 🗘	0 🍣	2 🗢					
				ОК	Cance	el Apply					

All inputs that have embedded audio will be supported. AES audio requires a specific hardware I/O board and needs to be purchased at time of sale.

The switcher supports "System Audio" as a source to support external audio products like Dante.

Name: User friendly name to be viewed on the audio mixer

Source: Select the source from the available input sources

Input Index: Channel index of the audio track. (Zero based)

Input Count: Number of audio channels.

Output Index: Output channel track (Zero based).

Output Count: Number of audio channels (Stereo pairs)



Note: The PRIME Switcher supports and external audio devices connected to the system via USB. These sources will show up as "System Audio" in the main PRIME Playout configuration window by selecting "Video Channels" in the above screen shot.. Example: An external Dante audio mixer.

🌃 Playout Configuration								
	File Switcher	🝷 🗋 New 🝷 🔚 Save As						
Bi Switcher	Video Channels 돈 Add	Output 🔻 🚬 Add Input 👻						
💶 Video Channels	Channel	🗹 Input 3 🛛 💥						
🔛 Clip Players	channel							
🔘 Clip Recorders	Device	System Audio 🗸 🗸						
Playlists	Туре							
📲 External Data	Connector							
Cettings	Nama	Missanhana lanuta						
🔆 Advanced	Name	wicrophone inputs						
	Video Standard							
	Video Shape							
	Downstream Input							
	Audio Mode	Enabled \sim						
	Audio Device	Microphone (UMC204HD 1! \sim						

The Dante audio inputs will be available to the PRIME audio mixer.



Audio Mixing

Audio	Buses														
-17.	.7 dB	-00	dB	-00	dB	-00	dB	-00	dB	-00	dB	-00	dB		dB
-		-		-		-		-		-		-		-	-
-		-		-		-		-		-		-			-
-		-		-		-		-		-		-			-
-		-		-		-		-		-		-			-
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- 5		-		-		-		-		-		-			-
-		-		-		-		-		-		-			-
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-			-		-				-		-		-		-
-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
М	F	М	F	М	F	М	F	М	F	М	F	М	F	М	F
CA	M1	CA	M2	CA	M3	CA	.M4	CL	.P1	CL	.P2	GF	X1	G	FX2

Each source will have a fader bar to adjust audio levels. External audio sources using "System Audio" will also have fader bars.



Audio Follows Video

Right click in the source label and select "Follow sources". Audio can follow multiple sources. Audio levels will rise or mute based on Follow selections.



Auxiliary audio buses

An **aux bus** is a signal path that is **auxiliary** to the main audio path of the mixer.

The PRIME Switcher allows users to create as many auxiliary audio channels as necessary. The aux bus can be used for Mix Minus channels.

Setup

In the main Playout configuration add an "Auxiliary Audio Output"





腸 Playout Configuration			
	File Switcher	🕶 🗋 New 👻 🔚 Save As	
Bff Switcher	Video Channels	🔺 Add Output 🔻 🚬 Add Input 👻	
💻 Video Channels	Channel	👳 Add NDI Output	Input 2
Clip Players	Device	👳 🛛 Add Network Stream Output	
Clip Recorders	Device	👳 Add GPU Output	Ě
Playlists	Туре	Add Desktop Window Output	o In V 8 Bit
Settings	Connector	Add Application Window Output	m LOU-ALIE V Source Preview V
Advanced	Name	Add Sub Channel Output	o Input 2
	Video Standard	Add Remote Engine Output)i 59.94 Hz V Filter
	Video Shane	Add Render Output	
	Deventeere lee		
	20wiistream inpt	JL .	
Parent Progra Mix Minus	im	~	
System Audio	Jr/D) A. J	~	
speakers (Realte) •	
2 (Program 3-4)		~	

To configure aux channels go to Playout config->Switcher section -> Audio busses tab. Add as many audio busses as needed and configure each separately.



🎆 Playout Configuration							_	- 🗆	×
	File Switcher	- 🗋 New	🕶 🔚 Save As	🕻 Del	ete		License	Switcher	
Switcher Video Channels Clip Players	Program Chann Preview Channe	el Program el Preview	Program v Preview v					Auto Conf	ïg
📄 Clip Recorders	Clean Feed Cha	nnel Clean Feed	Clean Feed v						
💽 Playlists	Sources Trans	itions Audio Channe	ls Audio Buses						
🜐 Atlas	Audio Bus	X Remove							
⊶ External Data	O Name	Туре	Output		Output Count	Output Channel			
Contractings		Main	Program	~	2 🌲	Channel 1, 2	1		
The Advanced	≡ AUX1	AuxSend	Mix Minus	~	1 🜩	Channel 1			
	\equiv AUX2	AuxSend	Mix Minus	Ý	1 🜩	Channel 2			
						ОК	Cancel	Apply	r

The "Output" field in the list above will enumerate all the channels defined in the main Playout Configuration.

Output Count: 1=Mono, 2=Stereo

Output Channel: Defines the audio channel output. In the screenshot above AUX 1 Output Channel is set to Channel 1 of the "Main" audio bus. Aux2 is output to Channel 2 of the Main audio bus.

The result of the above configuration will create an audio mixer as shown in the screenshot below.

Audio Buses								
	-∞ dB	-∞ dB						
MAIN		: :	: :				<u>-</u>	
AUX1						 	 	
	-	-	- 📃 -	-		- 📃 -	- 📃 -	: _ :
AUX2	M F	MF	MF	M F	MF	M F	M F	M F
	CAM1	CAM2	MIC1	GTR1	CLP1	CLP2	GFX1	GFX2



ABOUT US

Chyron is ushering in the next generation of storytelling in the digital age. Founded in 1966, the company pioneered broadcast titling and graphics systems. With a strong foundation built on over 50 years of innovation and efficiency, the name Chyron is synonymous with broadcast graphics. Chyron continues that legacy as a global leader focused on customer-centric broadcast solutions. Today, the company offers production professionals the industry's most comprehensive software portfolio for designing, sharing, and playing live graphics to air with ease. Chyron products are increasingly deployed to empower OTA & OTT workflows and deliver richer, more immersive experiences for audiences and sports fans in the arena, at home, or on the go.

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