datavideo

HD VIDEO SWITCHER

SE-2600

Instruction Manual

www.datavideo.com

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Disclaimer of Product & Services

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FCC Compliance Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

Warnings and Precautions

1. Read all of these warnings and save them for later reference.
2. Follow all warnings and instructions marked on this unit.
3. Unplug this unit from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this unit in or near water.
5. Do not place this unit on an unstable cart, stand, or table. The unit may fall, causing serious damage.
6. Slots and openings on the cabinet top, back, and bottom are provided for ventilation. To ensure safe and reliable operation of this unit, and to protect it from overheating, do not block or cover these openings. Do not place this unit on a bed, sofa, rug, or similar surface, as the ventilation openings on the bottom of the cabinet will be blocked. This unit should never be placed near or over a heat register or radiator. This unit should not be placed in a built-in installation unless proper ventilation is provided.
7. This product should only be operated from the type of power source indicated on the marking label of the AC adapter. If you are not sure of the type of power available, consult your Datavideo dealer or your local power company.
8. Do not allow anything to rest on the power cord. Do not locate this unit where the power cord will be walked on, rolled over, or otherwise stressed.
9. If an extension cord must be used with this unit, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord rating.
10. Make sure that the total amperes of all the units that are plugged into a single wall outlet do not exceed 15 amperes.
11. Never push objects of any kind into this unit through the cabinet ventilation slots, as they may touch dangerous voltage points or short out parts that could result in risk of fire or electric shock. Never spill liquid of any kind onto or into this unit.
12. Except as specifically explained elsewhere in this manual, do not attempt to service this product yourself. Opening or removing covers that are marked "Do Not Remove" may expose you to dangerous voltage points or other risks, and will void your warranty. Refer all service issues to qualified service personnel.
13. Unplug this product from the wall outlet and refer to qualified service personnel under the following conditions:
    a. When the power cord is damaged or frayed;

b. When liquid has spilled into the unit;

c. When the product has been exposed to rain or water;

d. When the product does not operate normally under normal operating conditions. Adjust only those controls that are covered by the operating instructions in this manual; improper adjustment of other controls may result in damage to the unit and may often require extensive work by a qualified technician to restore the unit to normal operation;

e. When the product has been dropped or the cabinet has been damaged;

f. When the product exhibits a distinct change in performance, indicating a need for service.

Warranty

Standard Warranty

- Datavideo equipment is guaranteed against any manufacturing defects for one year from the date of purchase.

- The original purchase invoice or other documentary evidence should be supplied at the time of any request for repair under warranty.

- The product warranty period beings on the purchase date. If the purchase date is unknown, the product warranty period begins on the thirtieth day after shipment from a Datavideo office.

- All non-Datavideo manufactured products (product without Datavideo logo) have only one year warranty from the date of purchase.

- Damage caused by accident, misuse, unauthorized repairs, sand, grit or water is not covered under warranty.

- Viruses and malware infections on the computer systems are not covered under warranty.

- Any errors that are caused by unauthorized third-party software installations, which are not required by our computer systems, are not covered under warranty.

- All mail or transportation costs including insurance are at the expense of the owner.

- All other claims of any nature are not covered.

- All accessories including headphones, cables, batteries, metal parts, housing, cable reel and consumable parts are not covered under warranty.

- Warranty only valid in the country or region of purchase.

- Your statutory rights are not affected.

Three Year Warranty

- All Datavideo products purchased after July 1st, 2017 qualify for a free two years extension to the standard warranty, providing the product is registered with Datavideo **within 30** days of purchase.

- Certain parts with limited lifetime expectancy such as LCD panels, DVD drives, Hard Drive, Solid State Drive, SD Card, USB Thumb Drive, Lighting, Non-PCIe Card and third party provided PC components are covered for 1 year.

- The three-year warranty must be registered on Datavideo's official website or with your local Datavideo office or one of its authorized distributors within 30 days of purchase.

Disposal
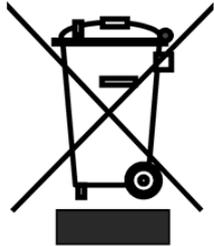
For EU Customers only - WEEE Marking

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

CE Marking is the symbol as shown on the left of this page. The letters "**CE**" are the abbreviation of French phrase "Conformité Européene" which literally means "European Conformity". The term initially used was "EC Mark" and it was officially replaced by "CE Marking" in the Directive 93/68/EEC in 1993. "CE Marking" is now used in all EU official documents.

Chapter 1   Introduction

The SE-2600 is an HD 8-channel digital video switcher that supports full 1080p/60 (3G) high definition videos. It features 8 digital inputs, including 4 SDI and 4 HDMI inputs with embedded audio, as well as 3 SDI and 3 HDMI outputs for connecting HD recorders, external monitors, and other devices.

The SE-2600 also provides powerful and easy-to-use effects, including Chroma Key, Luma Key, DSK, PIP, DVE/wipe generator, still stores, and logo insertion.

Features

- FHD 1080P signals on input and output
- 8 live channels: 4x 3G-SDI + 4x HDMI
- 6 outputs: 3x 3G-SDI +3x HDMI
- Support 1080p SDI input Level A/B
- 2 x audio XLR (6.3mm) Combo Socket selectable between MIC and Line IN audio inputs
- 1 x stereo RCA audio input
- 1 x stereo RCA audio output
- Each output can be used as an AUX designated output signal
- 4 x Upstream Keyers and 2 x Downstream Keyers
- 4 x Picture-in-Picture
- Built-in CG title overlay system
- 2 Logo insertion (Animation logo, X/Y size)
- Any Input (1-8) can be used as a Frame store (Stills Store)
- Crosspoint assignment (XPT)
- Wipe, Mix, DVE, Cut and Stinger Transitions
- Tally output
- Analogue Gen-Lock supporting Black Burst and Tri Level cross reference

1.1 Main Unit Overview

TALLY OUT
The SE-2600 Tally Output port provides bi-colour tally information to a number of other Datavideo products, such as the ITC-100 eight channel talkback system or the Datavideo TLM range of monitors.

See *Appendix 1* and *Section 4.7* for more details.

AUDIO OUT
Supports a stereo RCA output pair.

AUDIO IN
Supports two channels of the XLR combo sockets (MIC/LINE IN) for balanced audio input and a stereo RCA input pair.

See *Section 4.8 Audio* for audio setup.

GPI OUT
The *GPI socket* can be used for simple external control.

See *Appendix 2* for more details.

RS-232/422 REMOTE
In addition to the Ethernet port for remote control, you can also connect a custom keyboard controller to this port.

See *Appendix 3* for details or contact your local Datavideo distributors.

DC IN
Connect the supplied 12 V PSU to this 4 PIN XLR socket
Pin 1 = GND (-)
Pin 2 = NC
Pin 3 = NC
Pin 4 = VCC (+)

HDMI Video Inputs 5 – 8
The HDMI inputs are labelled 5 – 8.

Power Button
The power button powers ON/OFF the control panel.

SYNC I/O
The SE-2600 can be synchronized with other studio equipment such as cameras. **REF IN** accepts Tri-level or Black Burst sync. **REF LOOP** can be used to pass the sync signal to other studio equipment such as cameras or recorders.
See the section on *Genlock* for details.

SDI Video Inputs 1 – 4
The SD/HD-SDI inputs are labelled 1~4.

SDI/HDMI Video Outputs
The SDI/HDMI video outputs are user-defined outputs. Each of these outputs has the option to be:
- Multiview
- Program
- Preview
- Program + DSK
- Clean Program
- Clean Preview
- Input 1 – 8
- Still 1/2
- Flex Src 1

Ethernet Port
Used to connect the switcher to the PC or laptop so that the unit can be controlled remotely via PC software (*Switcher Image Import/Export Software*).

USB FW Upgrade Port
Connect the USB drive containing the switcher's latest firmware files to this port and start the firmware upgrade process on the OSD MENU.

Note: See *Firmware Update* for details.

Grounding Terminal
When connecting this unit to any other component, make sure that it is properly grounded by connecting this terminal to an appropriate point. When connecting, use the socket and be sure to use wire with a cross-sectional area of at least 1.0 mm².

1.2   Control Panel Overview

Perform video switching and other relevant controls on the **Control Panel**.

Video Switching

1. Program row   Selection of a program video source (**see *Section 5.1 Video Switching* for detailed instructions**).

2. Preview row   Selection of a preview video source (**see *Section 5.1 Video Switching* for detailed instructions**).

3. SHIFT Button

While pressing and holding down the **SHIFT** button, press the Channel 1/2/3 buttons to switch the Preview/Main Program view to still 1 picture, still 2 picture or **Flex™** output.

See *Flex Output* and *Still Button* for detailed instructions.

4. AUX Button

Press the AUX button to activate the Preview row for assigning a video source to an output channel.

See *6.5 Shortcut Keys for assigning Output Sources* for detailed instructions.

WIPE/DVE Transition Effects

5. WIPE Button

Press to enable WIPE transition effect (**See the *WIPE/DVE Button* section for detailed instructions**).

6. DVE Button

Press to enable animated transition effect (**See the *WIPE/DVE Button* section for detailed instructions**).
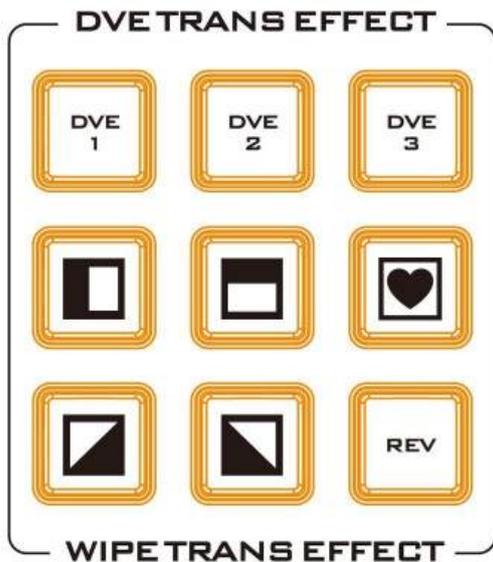
7. WIPE/DVE Selection Pane

There are 32 different 2D WIPE effects and 3 different 3D WIPE effects to choose from when using the SE-2600 switcher. To select a different WIPE transition, either select a WIPE style in the **TRANS EFFECT** area of the SE-2600 Control Panel or the **Start** Item of the OSD Menu. Before you make the selection, make sure the **TRANS BG** and **WIPE/DVE** buttons are enabled.

When the **REV** Button is **OFF** the selected WIPE or DVE transition will operate in its default direction only. When the **REV** Button is **ON** then the selected transition will operate in the reverse direction.

See the *WIPE/DVE Button* section for detailed instructions.

Transitions

8. MIX Button

Selection of MIX transition effect (**See the *Mix Button* section for detailed instructions**).

9. CLIP Button

Press to enable animated transition effect (**See the *Clip Button* section for detailed instructions**).

10. TRANS BG Button

Turning on the Trans BG button allows you to activate the MIX, WIPE or Stinger transition with the background image/video (**See the *TRANS BG Button* section for detailed instructions**).

11. TRANS PVW Button

Once enabled, you can then test the effect of a chosen **MIX**, **WIPE** or **Stinger** transition on the Preview Monitor (**See the *TRANS PVW Button* section for detailed instructions**).
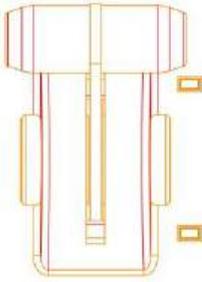
12. T-Bar (Manual Transition)
Move the T-Bar up or down to switch between Preview and Program videos (**See the _T-Bar_ section for detailed instructions**).

13. CUT Button
A hard cut between video sources (**See the _CUT Button_ section for detailed instructions**).

14. AUTO Transition
Press to trigger automatic transition (**See the _AUTO Button_ section for detailed instructions**).

15. FTB Button (Fade to Black)
Fades the program view to black once pressed (**See the _FTB Button_ section for detailed instructions**).

Keyers
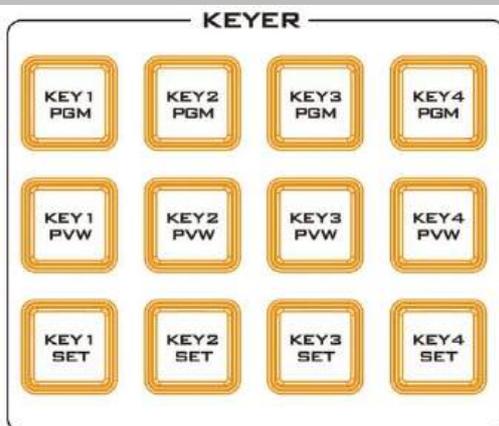
16. Keyer Selection
Enabling the pre-assigned keyers (Chroma, Luma, Linear, DSK and PIP) on Program and Preview views.

Note: See _Chapter 6 Advanced Operation_ for detailed descriptions of various keyer functions.

Logo
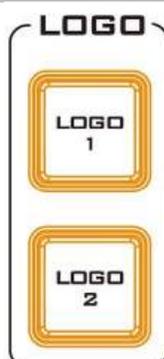
17. Logo 1 & 2
Logo insertion on preview and program outputs once enabled.

Note: Logos will not be transitioned as the CUT or AUTO button is pressed, nor will it be transitioned as the T-Bar is pushed. See _Section 5.5 Enabling Still Logo_ and _Section 5.6 Enabling Logo Animation_ for detailed descriptions of the logo function.

DSK
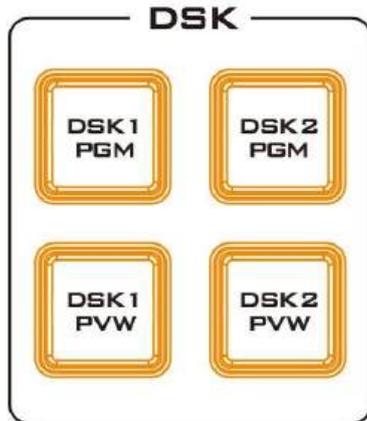
18. DSK Selection
Enabling DSK on preview and program outputs.

Note: See *Chapter 6 Advanced Operation* for detailed descriptions of the DSK function.

Still Picture Grab and Save

19. FS (Frame Store) Button
While pressing and holding down the FS button, press a channel button along the Preview row to switch the selected channel to a pre-loaded still picture.

Note: See *Section 5.3 Managing Still Pictures* for detailed instructions.

20. Grab Button
Press to capture images from the Program output to Still 1 or 2 buffer temporarily.

Note: See *Section 5.3 Managing Still Pictures* for detailed instructions.

Internal Settings
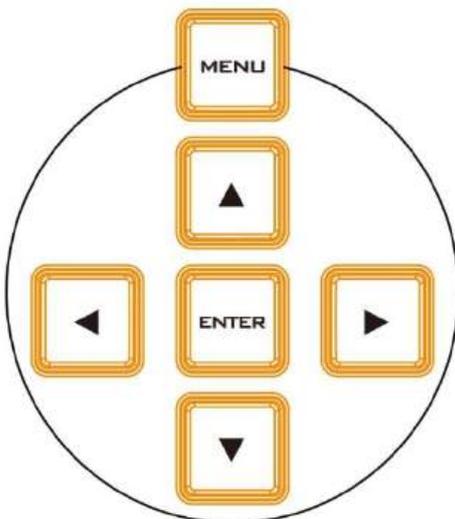
21. OSD Menu Control
Menu control buttons for opening the OSD menu on the connected Multiview monitor and navigating through the OSD menu. See *Chapter 4 OSD MENU* for descriptions of various sub menus and options.
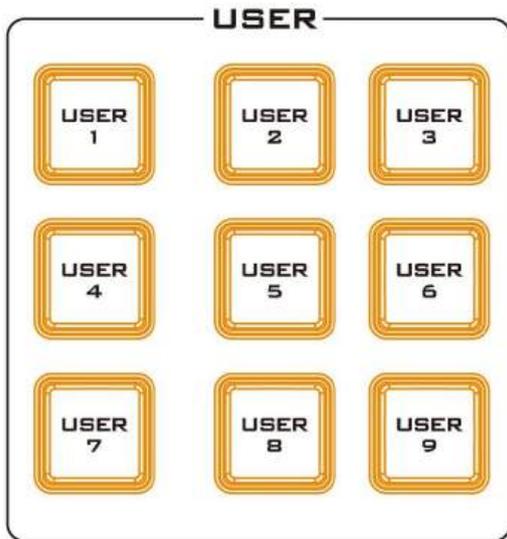
22. User Memory Buttons
User 1-9 Button allow the user to recall and load pre-saved switcher settings. There are 9 presets in total. See *User Mems* for methods for saving to the 9 presets.

1.3   Connecting the Power Supply

Connect the DC output plug of the supplied AC adapter to the DC IN 12V connector on the rear of the switcher and then connect the AC adapter to a wall socket.
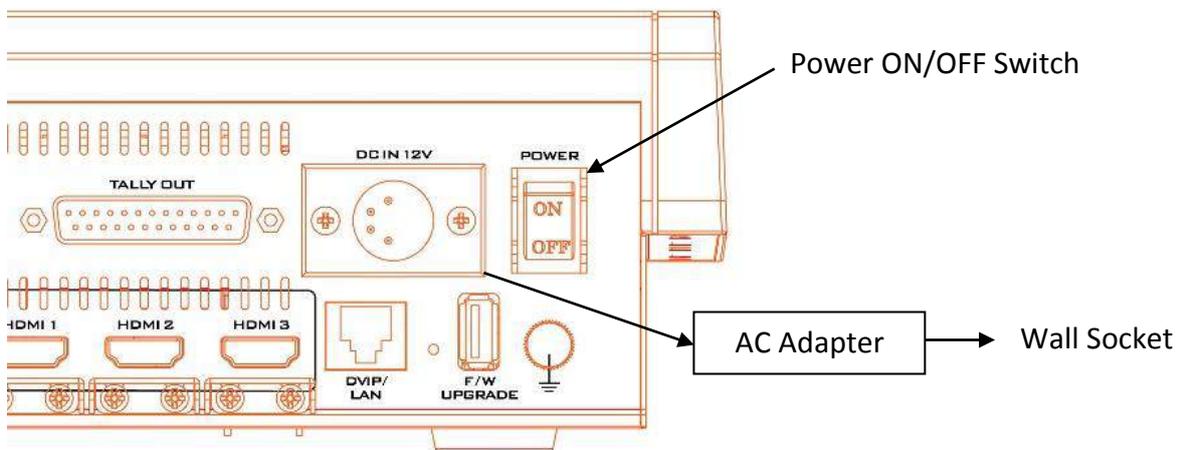
Chapter 2   Preparation

In this chapter, we will describe various essential devices to be connected to the switcher in order to complete the system setup. If you possess the skills for setting up the production system, feel free to skip this chapter and proceed to *Chapter 5: Basic Operation*.

2.1   Connecting Devices

Connecting the Video and Audio Input Devices

Connect cameras, computers and other video input devices to the video input connectors on the rear of the unit and connect an audio mixer to audio input connectors.

Computer for text input

Computer for remote control of the switcher
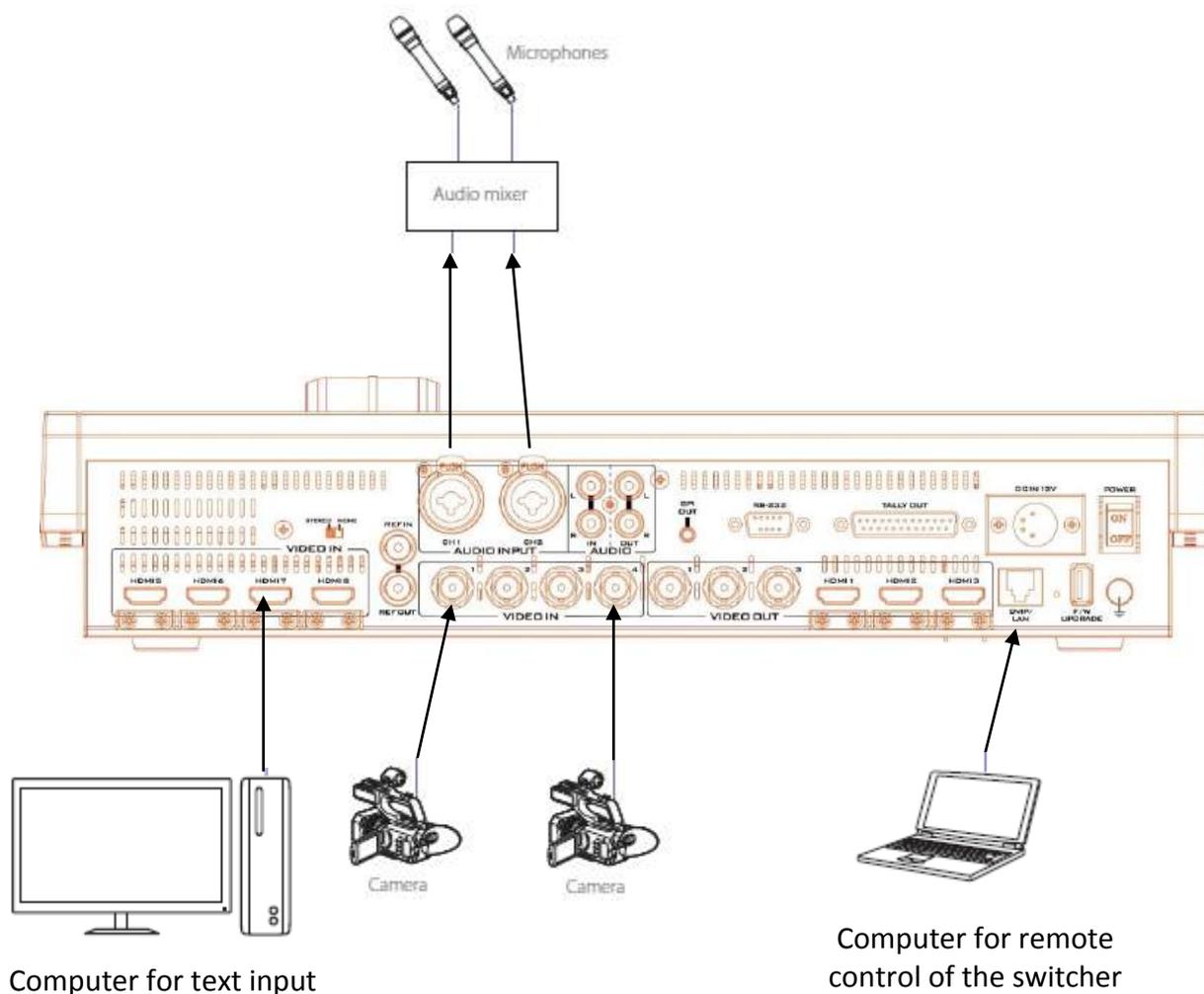
When linking via tally connection

Connect the switcher's tally connector to the tally connector on a commercially available tally box.

Tally Box
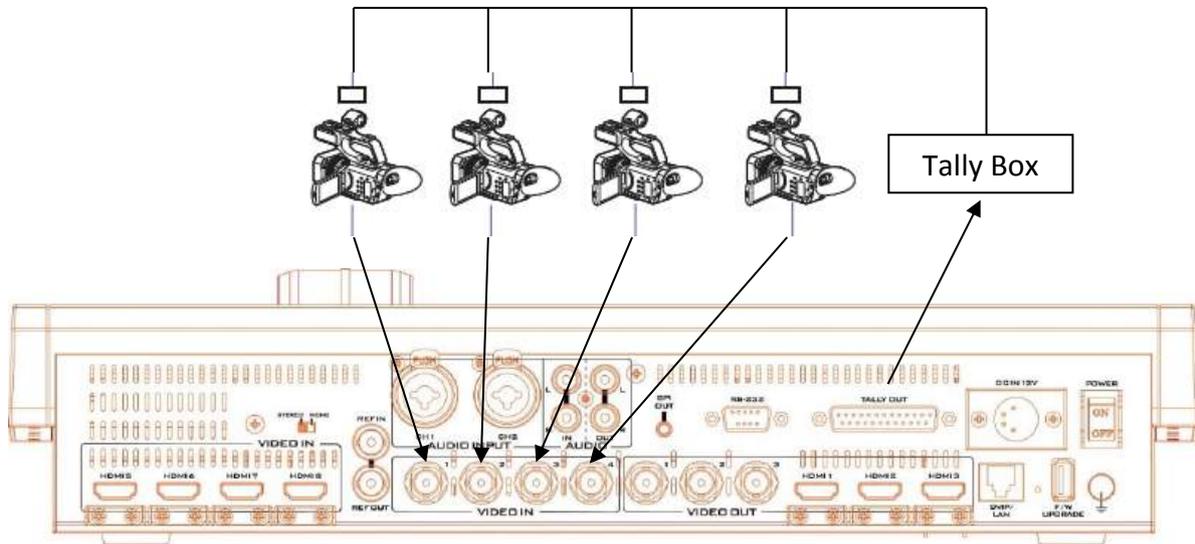
Connecting the Video and Audio Output Devices

Connect projectors, large displays and other video output devices to the video output connectors on the rear of the switcher.

SDI-to-HDMI Converter

Projector

External monitor used for the multi-viewer

Large display
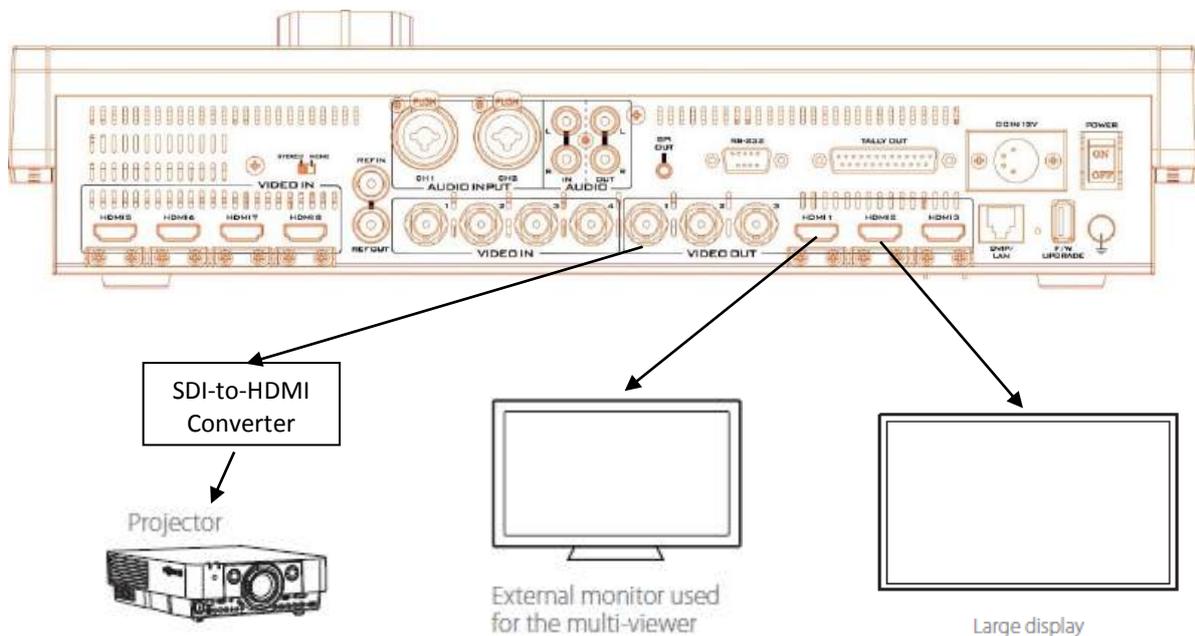
Connecting to a Network

Use the Ethernet Port to connect the switcher to the PC with the Image Import/Export Software installed.

For details on the Switcher Image Import/Export Software, see *Chapter 3*.

PC UI computer
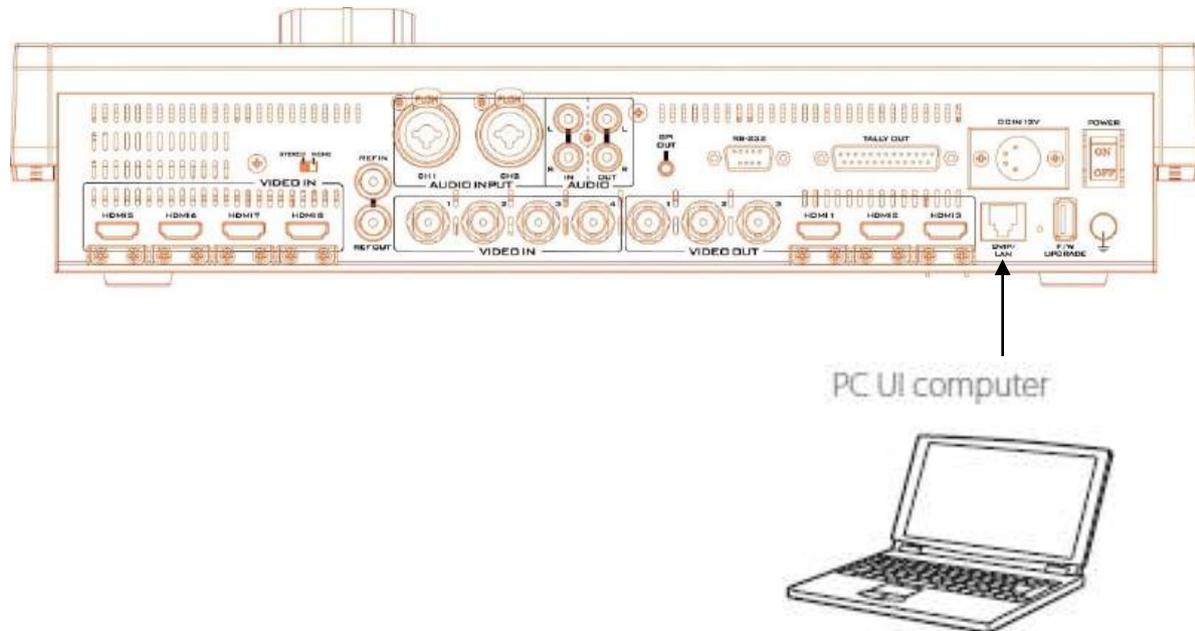
2.2   Multi View

The SE-2600 Multi view output can be supplied from the HDMI or SDI outputs, see Chapter 4 (4.7) for configuring the outputs. The Multi view shows monitoring images for **Preview** (PVW), **Program** (PGM) and **Inputs 1~8**. The Multi view can also show **audio level bars** overlaid on the Program image. This confirms the analogue XLR audio input is being received and embedded to the selected Program output(s).

SE-2600 Multi-view is supplied from the HDMI connection(s) on the rear panel and available across multiple HDMI monitors (not supplied). Since a variety of multi-image layouts is available, these HDMI outputs can be used to monitor video and audio in a number of different configurations. The layout of the multi view can also be changed. The sources can be swapped around using the cross point section of the Inputs menu. For each setup, embedded audio level indication is available on the Preview and Program windows.

See *Multiviewer* in *Section 4.7* for nine different multi-view layouts available on the SE-2600.

Note: A Red tally indication box will be shown around the sources selected for Program OUT and these selected sources should be displayed at the switcher's selected Program output(s). **A Green tally indication box** is shown around the sources selected for Preview. These are the next image sources to be mixed to, wiped in or cut to the Program OUT depending on the user's preference.

Chapter 3   Network and Software Setup for Switcher

The Ethernet port on the back panel of the SE-2600 allows the user to import still images, clips for stinger transition, still logos, animated logos or user memories using the Switcher Image Import/Export software. This chapter discusses direct connection between the SE-2600 and your Windows computer as well as the remote setup in detail. **Please download the Switcher Image Import/Export software to your PC or laptop from the product page (https://www.datavideo.com/tw/product/SE-2600) before using this feature.**

Section 3.1 discusses how you can establish direct connection between the SE-2600 and a Windows computer. In Section 3.2, we will show you how to access the SE-2600 remotely on your PC or laptop with the **Switcher Image Import/Export software**.

3.1   Static IP Configuration

When new from the factory the SE-2600 will initially have a static IP address of 192.168.100.101. The unit can be directly connected to a Windows-based computer using an RJ-45 ethernet cable. The following set up should allow you to initially configure the unit's static IP settings.

System requirements and setup are provided as follows:

- **An RJ-45 Ethernet cable.**
- **Windows 7/8/10 laptop or PC.**
- **The Datavideo Switcher Image Import/Export software.**
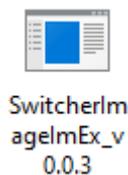
Instructions

1. First physically connect the SE-2600 to a Windows computer using an RJ-45 Ethernet cable.
2. Turn on the Windows computer and set it to **static IP setup** within the **Windows Network and Sharing Centre**. In our example, the computer is given the following IP settings so that the computer matches the same IP range as the switcher.
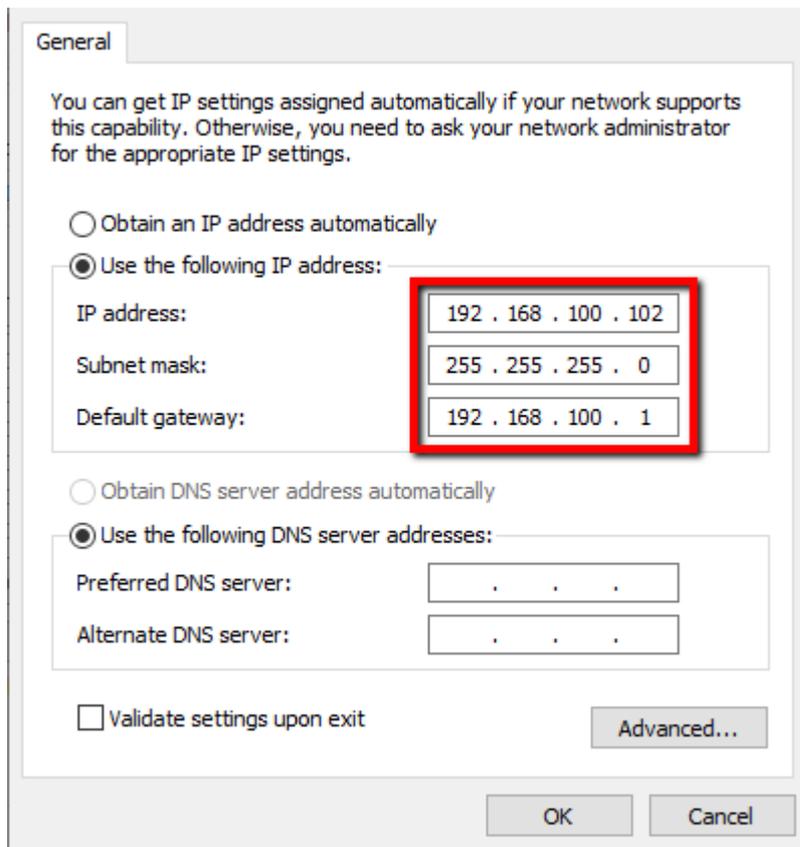
3. Now open the **Switcher Image Import/Export software** to establish connection with the switcher.

Tip: The switcher's IP address can also be modified in the OSD menu such that it matches the network IP range or the IP assigned to your PC. See the *Network* Section for details. This is also the place where you will be able to check or reset your device IP address.

Note: After changing your network settings, always reboot your switcher for the new settings to become effective.

3.2 DHCP Mode

The computer software can also access the SE-2600 over an existing TCP/IP LAN type network. In order to initially set up the SE-2600, you may need the assistance of your local I.T. specialist to help with the network settings. To help guide you, we have included a quick network setup guide as well as a simplified network setup example below; further advice may be available through your dealer locally or your Datavideo regional office.
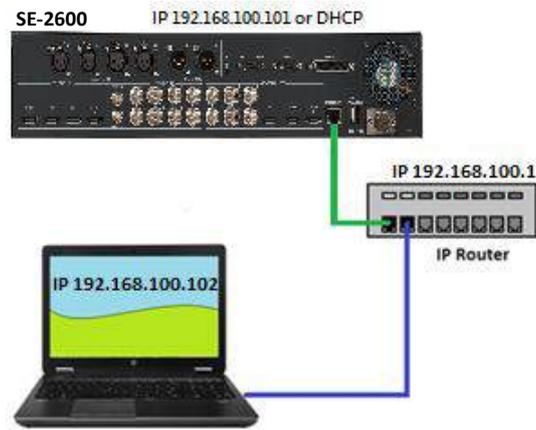
To create this simple dedicated SE-2600 IP network you will need:

- **An IP router which can assign/give IP addresses.**
- **Two RJ-45 patch leads.**
- **Windows 7/8/10 laptop or PC.**
- **The IP router Administrator login and password.**
- **The Datavideo Switcher Image Import/Export software.**

SwitcherIm
ageImEx_v
0.0.3
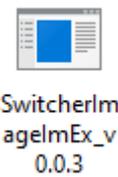
Instructions

1. First connect the router to the SE-2600 and the Windows computer using two RJ-45 patch leads.

2. Turn on the Windows computer and set it to **DHCP setup** within the **Windows Network and Sharing Centre**.
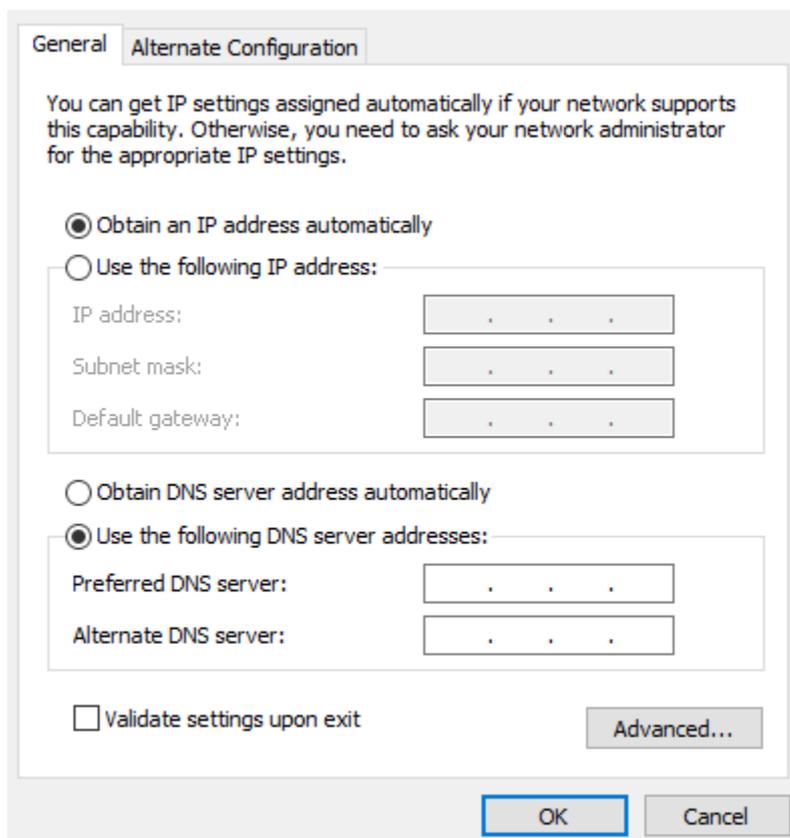
3. Press the **MENU** button on the SE-2600 control panel to open the OSD menu on the connected Multiview monitor. Open the OSD menu → **Setup** → **Network** and then change the **Addr Mode** to **DHCP** from the default **Static IP**. Move to the **SAVE** option and press the **ENTER** button to save new settings.

4. Reboot the SE-2600 and after the machine is rebooted, open the **Network** sub menu by following the instructions outlined in the previous step. The **IP Addr** option should show an IP address assigned randomly by the router thus having the same IP range as the router. If you see an IP address of 0.0.0.0 in the **IP Addr** field, it is likely that the router requires longer time to assign an IP address to the connected devices. Close the **Network** sub menu and reopen after 30-60 seconds, you should be able to see the newly assigned IP address. If problems still exist, contact any IT specialists for assistance.

3.3   Switcher Image Import/Export Software

After configuring your connection mode, download and unzip the **Switcher Image Import/Export software** then in the unzipped folder, double click the software icon to open the program.

The **Switcher Image Import/Export software** has a built-in IP finder, which is designed for PC with multiple Ethernet cards or DHCP network environment. Upon launch of the **Switcher Image Import/Export software**, you will be prompted to select one Ethernet Interface Card. **Please note that the IP finder can only find devices connected to the same network as the PC.**
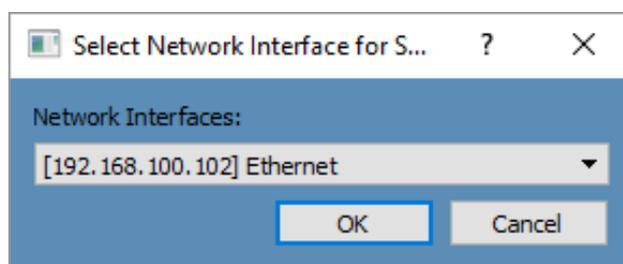
Once selected, click **OK** to start the scanning process.

Note: Please make sure the selected interface card is on the same network as the SE-2600 device.

Once the SE-2600 device is found, the software will connect with the switcher over the IP set up described in the previous section. If the connection is successfully established, on the software user interface as shown in the diagram below, the **Connect Status** will show "**Connected**" (will display **Not Connected** if disconnected).

Brief descriptions of buttons on the **MENU SELECT** pane are outlined as follows:

- **Home:** Interface main page showing connection status and transition time settings.

- **User:** User memory import

- **Still:** Still image import

- **Clip:** Clip file import

- **Logo:** Still logo import

- **Ani-Logo:** Animated logo import

- **Setup:** Software settings

Home

As soon as the program is opened, you will see the interface home as shown in the diagram below. The function items are described as follows:

- Connect Status: Shows "**Connected**" if the program establishes connection with the switcher successfully; shows "**Not Connected**" otherwise.
- ME Trans: Sets MIX EFFECT transition time in frames. See also OSD Menu → *Start* → **M/E**.
- DSK Trans: Sets DSK transition time in frames. See also OSD Menu → *Start* → **DSK**.
- FTB Trans: Sets Fade-to-Black transition time in frames. See also OSD Menu → *Start* → **FTB**.
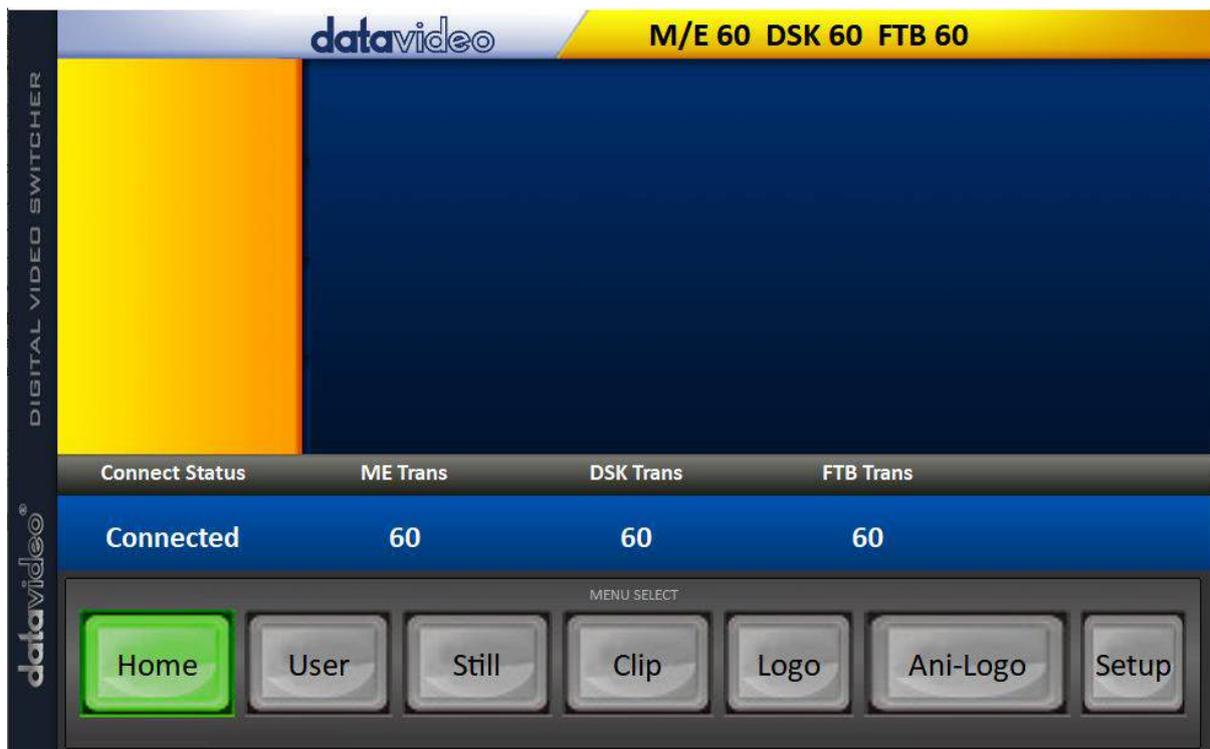
User

Click the **User** button to view all the .mem files saved on the switcher.

To import .mem files from your PC, click "**User**" then enter a memory location. Click "**Import User**" to browse your hard drive and select the user memory file that you would like to import.

See section 4.9, *User Mems*, for more details.
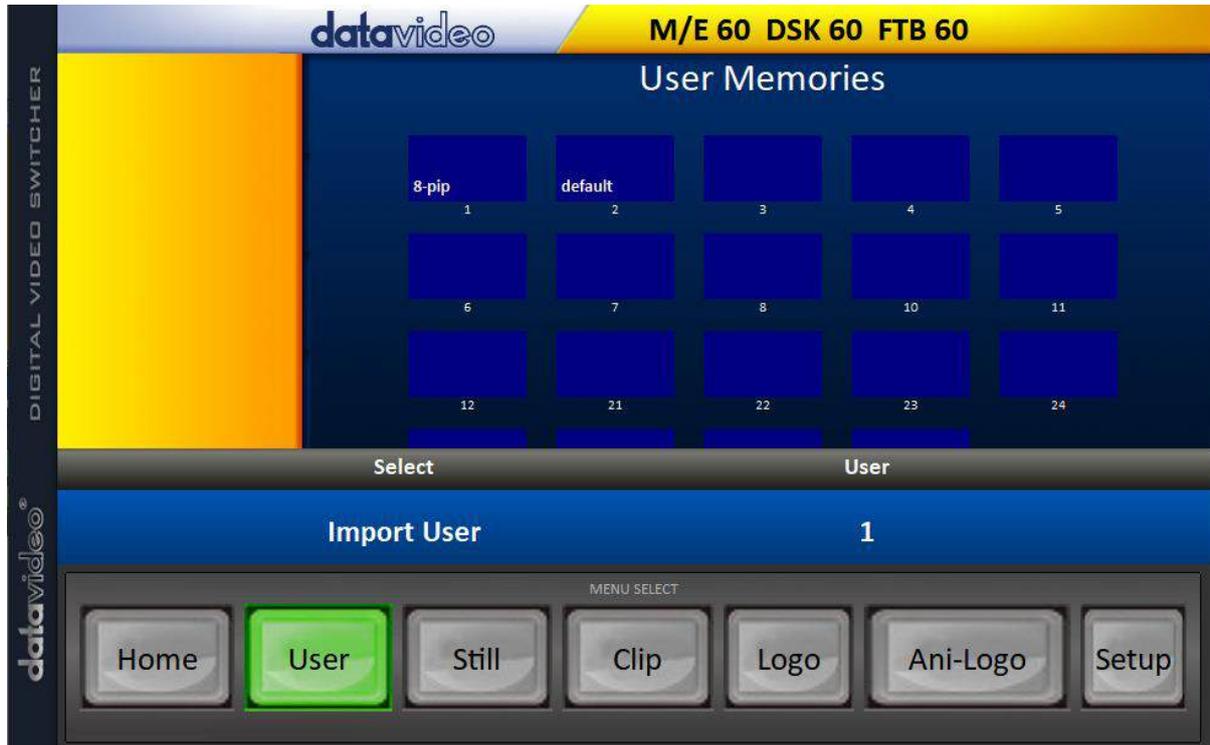
Still

Click the **Still** button to view all the still images saved on the switcher.

To import still image files from your PC, click "**Still**" then enter a memory location. Click "**Import Still**" to browse your hard drive and select the image file that you would like to import.

See section 4.9, *Still*, and section 5.3, *Managing Still Pictures*, for more details.

Clip

Click the **Clip** button to view all the clips saved on the switcher.

To import clip files from your PC, click "**Clip**" then enter a memory location. Click "**Import Clip**" to browse your hard drive and select the clip file that you would like to import.

See section 4.9, *Clip*, and section 5.4, *Performing a Stinger Transition*, for more details.

Logo

Click the **Logo** button to view all the still logo images saved on the switcher.

To import still logo image files from your PC, click "**Logo**" then enter a memory location. Click "**Import Logo**" to browse your hard drive and select the logo image file that you would like to import.

See section 4.9, *Logo*, and section 5.5, *Enabling Still Logo*, for more details.

Ani-Logo

Click the **Ani-Logo** button to view all the animated logos saved on the switcher.

To import animated logo files from your PC, click "**Ani-Logo**" then enter a memory location. Click "**Import Ani-Logo**" to browse your hard drive and select the animated logo that you would like to import.

See section 4.9, *Ani-Logo*, and section 5.6, *Enabling Logo Animation*, for more details.

Setup

On the **Setup** page, you will be able to view the software version, network connect status, firmware version installed and the available space on the switcher.

The **Setup** page allows you to reset the software to its defaults, and change the interface language. The available languages are **English**, **Traditional Chinese**, and **Simplified Chinese**. Click **Save Setup** to apply the new settings.

The **Target IP Address** is the IP address of the switcher that you would like to connect. Enter the IP then click **SCAN** to connect to the switcher.

Chapter 4   OSD MENU

The switcher's OSD menu allows the user to perform several configurations of image effects, such as Picture-in-Picture, chroma key, subtitle overlay, still pictures and etc. The user can also configure the I/O by selecting different input and output options. In addition, in the setup menu, the user is allowed to set the menu color, size, position and language.

The OSD Menu can be opened in basic or advanced mode. The basic mode is generally a condensed version of the advanced menu mode. The following sub-sections will show you the various options available in these two modes.

Overview

Main Menu	Sub-Menu	Options	
Start	Transition (Duration)	M/E	Mix Effect (0 - 9999 Default: 15)
		DSK	Downstream Key Effect (0 - 9999 Default: 15)
		FTB	Fade-to-Black Effect (0 - 9999 Default: 60)
	Type	DVE	
		Clip	
		Wipe	
		Mix	
	Wipe Effects	Wipe	Wipe Effect Presets (1 - 32 Default: 1)
		Soft	Border Softness (0 - 100% Default: 0%)
		Width	Border Width (0 - 100% Default: 1%)
	Border	Luma	Border Color Luma (0 - 100% Default: 100%)
		Sat	Border Color Saturation (0 - 100% Default: 80%)
		Hue	Border Color Hue (0 - 355 +/-5 Default: 0)
	Position	X	Horizontal Position (0 - 1600% Default: 0%)
		Y	Vertical Position (0 - 1600% Default: 0%)
	Matte	Luma	Background Matte Luma (0 - 100% Default: 100%)
		Sat	Background Matte Saturation (0 - 100% Default: 80%)
		Hue	Background Matte Hue (0 - 355 +/-5)
Keyer	Keyer	DSK 2 DSK 1 Key 4 Key 3 Key 2 Key 1 Flex Key 1	Keyer Selection (Default: Key 1)

		Fine / Normal		Fine: High keying quality Normal: Original keying quality
	Keyer Ctrl	Full Chroma Luma Linear		Type of Keyer (Default: Linear)
		Select one	P-in-P Self Split	Self: One input keyer (Default) Split: Dual input keyer P-in-P: Applying the keying effect to PIP window.
		Lift		Parameter for dark/black areas of the overall foreground key image, ranging from -100% to +100% (Default: 0%).
		Gain		Parameter for light/white areas of the overall foreground key image, ranging from 0 to 16.0 (Default: 1.0).
		Opac		Parameter for transparency of the overall foreground key image, ranging from 0% to 100% (Default: 100%).
		Invert		OFF: Luma key removes black background by default ON: Luma key removes white background after **INVERT** is turned **ON**.
	Key Source	Bars Matte Flex Src 1 Still 2 Still 1 Input 8 Input 7 Input 6 Input 5 Input 4 Input 3 Input 2 Input 1 Black		Key Source Selections (Default: Input 1)
		Fill		Fill Source Selection from Bars / Matte / Flex Src 1 / Still 2 / Still 1 / Input 8 / Input 7 / Input 6 / Input 5 / Input 4 / Input 3 / Input 2 / Input 1 / Black (Default: Black)
	Mask	Left		Left sets the left edge of the keyer mask (Default: 0%).
		Right		Right sets the right edge of the keyer mask (Default: 0%).
		Top		Top sets the top edge of the keyer mask (Default: 0%).
		Bottom		Bottom sets the bottom edge of the keyer mask (Default: 0%).
Chroma	Keyer	Flex Key 1 DSK 2 DSK 1		Keyer Selection (Default: Key 4)

		Key 4 Key 3 Key 2 Key 1	
		Fine / Normal	Fine: High image quality Normal: Original image quality
	Key Source	Bars Matte Flex Src 1 Still 2 Still 1 Input 8 Input 7 Input 6 Input 5 Input 4 Input 3 Input 2 Input 1 Black	Key Source Selections (Default: Input 4)
	Key Tie	ON/OFF	Still 1/2 Input 1 – 8 Flex Src 1 Off
	CK Setup	CK Auto	Calculation of the best Hue & Luma values for the current Keyer source
		Hue	Parameter for color of the chroma key, ranging from 0 to 355 (Default: 110).
		Luma	Parameter for luma of the chroma key, ranging from 0 to 100% (Default: 80%).
		K Range	Setting the range of colors that match the background color to be keyed, ranging from 0 to 355 (Default: 160).
		K Fgnd	Adjusts the performance of the chroma key in dark or black areas, ranging from 0% to 100% (Default: 10%).
		K Bgnd	Adjusts the performance of the chroma key in light or white areas, ranging from K Fgnd value (min = 0) to 100% (Default: 20%).
		Hi-Light	Boosts the foreground key in high luminance area, ranging from 0 to 100% (Default: 0%).
		Lo-Light	Boosts the foreground key in low luminance area, ranging from 0 to 100% (Default: 0%).
		Bg-Supp	Bg-Supp turns ON/OFF background suppress (Default: OFF).
		Left	Trims the left edge of the key object (0 - 100% Default: 0%).
		Right	Trims the right edge of the key object (0 - 100% Default: 0%).
		Soft	Distinctiveness of key edge (0 - 100% Default: 0%)

	Mask	Left	Left sets the left edge of the keyer mask (Default: 0%).
		Right	Right sets the right edge of the keyer mask (Default: 0%).
		Top	Top sets the top edge of the keyer mask (Default: 0%).
		Bottom	Bottom sets the bottom edge of the keyer mask (Default: 0%).
P-in-P	P-in-P	Key 1 Key 2 Key 3 (Default) Key 4 Flex PinP 1 Flex PinP 2 Flex PinP 3 Flex PinP 4	Selection of PIP windows
		Fine	Normal Fine
	Position	X	Horizontal PIP Position (-100 - 100% Default: -20%)
		Y	Vertical PIP Position (-56 - 56% Default: 10%)
		Size	PIP Size (2 - 100% Default: 40%)
	Border	Border Off Normal Shaded 3D Bevel Bevel Shaded Dual Bevel Bevel Flat Flat Bevel 3D Glass Dual Glass Glass Flat Flat Glass Circle Circle Shaded Rounded Rounded Shaded	Selection of border style (Default: Normal)
		Luma	PIP Border Luma (0 - 100% Default: 100%)
		Sat	PIP Border Color Saturation (0 - 100% Default: 80%)
		Hue	PIP Border Color Hue (0 - 355 +/-5 Default: 0)
		Width	PIP Border Width (0 - 100% Default: 2%)
		Soft	Distinctiveness of Border Edge (0 - 100% Default: 0%)
		Opac	Border transparency (0 - 100% Default: 100%)
	Shade Matte	Luma	Shade Matte Luma (0 - 100% Default: 100%).
		Sat	Shade Matte Saturation (0 - 100% Default: 80%).
		Hue	Shade Matte Color (0 - 355 +/-5 Default: 60).
		Shade Soft	This blurs or softens the Shade Matte area (0 - 100% Default: 2%).

		Shade Pos	Sets position of the boundary line between Shade Matte and Border Matte (0 - 100% Default: 50%).	
		Direction	Direction of light source (0 - 355 +/-5 Default: 35).	
	Crop	Left	Left Edge of the Crop (0 - 100% Default: 0%).	
		Right	Right Edge of the Crop (0 - 100% Default: 0%).	
		Size	Size of the Crop (0 - 100% Default: 0%).	
		Top	Top Edge of the Crop (0 - 100% Default: 0%).	
		Bot	Bottom Edge of the Crop (0 - 100% Default: 0%).	
		Soft	Transparency and range of the crop edge (0 - 100% Default: 0%).	
Flex Src	Flex Src	Flex Src 1		
	Flex Src Bgnd	Bars	Selection of Flex Screen sources and default is Black. Set **ON** to enable the respective P-in-P window, and **OFF** to disable.	
	P-in-P 1 Src	Matte		
	P-in-P 2 Src	Flex Src		
	P-in-P 3 Src	Still 2		
	P-in-P 4 Src	Still 1		
		Input 1-8		
		Black		
	Keyer 1	**Key Source:** Bars Matte Still 2 Still 1 Input 1-8 Black	**Fill Source:** Bars Matte Still 2 Still 1 Input 1-8 Black	Enable: ON/OFF
	Keyer 2	**Key Source:** Bars Matte Still 2 Still 1 Input 1-8 Black	**Fill Source:** Bars Matte Still 2 Still 1 Input 1-8 Black	Enable: ON/OFF
	Flex Preset	Preset 1 Preset 2 Preset 3 Preset 4 Preset 5 Preset 6	Selection of Flex Screen layout.	
Inputs	Input	Input 1-8	Selection of an input to set the mode (Default: Input 1).	
		Mode	Three input modes are Live, Freeze, and Still (Default is Live).	
		Mode	OFF	Mode disabled
			CG Md	Enables CG mode **Note: CG mode is only available when a CG image source is connected to one of the HDMI ports (Inputs 5 to 8).**
	Proc Amp	Black	Black level (0 - 100% Default: 0%)	

		White	White level (0 - 100% Default: 100%)
		Chrom	Chroma level (0.0 - 16.0 Default: 1.0)
	Audio	Gain	Audio volume of a selected video input (-60 - 24 dB Default: 0 dB).
		Delay	Audio delay of a selected video input (0 - 340 ms Default: 0 ms).
	Crosspoint	Input 1-8 Off	Assign the selected input source to an input button (Default is Input 1).
	Audio XPT	Input 1-8 External Follow	Associate the audio component of a selected input source to an input button (Default is Follow).
Outputs	Output	SDI 1	Flex Src 1 Still 2 Still 1 Input 1 – 8 CLN PVW (Clean PVW) CLN PGM (Clean PGM) PG + DSK PVW PGM MultiV (Multi view) (SDI default: PGM / HDMI default: MultiV)
		SDI 2	
		SDI 3	
		HDMI 1	
		HDMI 2	
		HDMI 3	
	Multiviewer	AutoNum	Auto number input labels (ON/**OFF (Default)**)
		Label Inf	Input label is followed by information which describes the input as still, live or frozen image (ON/**OFF (Default)**). **Please note that the label content cannot be modified.**
		Trns Lab	Turn the background of the label from a solid colour to transparent (ON/**OFF (Default)**).
		MV1	Multiview Layout Modes User 1 – 8 Preset 1 – 9 **Default: Preset 3**
		L: PGM / R: PVW L: PVW / R: PGM	**Default: L: PVW / R: PGM**
	Tally Mode	Audio Mixer	Selection of tally light mode (Default: Normal)
		Normal	
	GPI Out	ON/OFF	GPI Enable/Disable (Default: OFF)
		Mode	Level/Pulse (Default: Pulse)
		Width	Pulse width (Default: 1)
		Input 1-8	GPI-out assignment (Default: Input 1)
		Delay	0-99 (Default: 0)
Audio	Audio	Mode	Turns **ON/OFF** embedded component at SDI-out and HDMI-out.
		Src	Selection of audio out source: **PGM Audio (Default)** / Follow / Input 1-8
	PGM Audio	Mode	Audio transition style: X Fade / **V Fade (Default)**
		Gain	Audio volume of a selected video input

			Range: -60 - 24 (dB) with **default = 0 dB**
		Delay	Audio delay of a selected video input Range: 0 - 340 ms with **default = 0 ms**
	Analog Out	Src	Selection of audio out source: **PGM Audio (Default)** / Follow / Input 1-8
		Gain	Audio out volume Range: -60 - 24 (dB) with **default = 0 dB**
		Delay	Audio out delay Range: 0 - 340 ms with **default = 0 ms**
Files – Stills	Load Still	Load	Pressing this button loads the selected still picture source
		Still Num	0-999 (Default = 1)
		Destination	Still 1 (Default) Still 2 Input 1 – 8
		Thumbnail Picture - 1	Preview of the previous image
		Thumbnail Picture	Preview of the image to be loaded
		Thumbnail Picture + 1	Preview of the next image
	Save Still	Save	Pressing this button saves the selected still picture
		Source	Still 1 (Default) Still 2 Input 1 – 8
		Still Num	0-999 (Default = 1)
		Delete	Remove still from a memory location
	Grab Still	Grab	Press this button to grab the current program view
		Grab Destination	Still 1 (Default) Still 2
Files – User Mems	Load Mem	Memory	Memory Selection from 1 to 999 (Default: 1)
		Load	Selection of this button loads the selected memory
	Save Mem	Memory	Memory Selection from 1 to 999 (Default: 1)
		Save	Selection of this button saves to the selected memory
Files – Clip	Load Clip	Load	Selection of this button loads the selected clip
		Clip Memory Location	Memory locations from 0 to 999 (Default = 0)
		Clip Settings	Sets the clip's start and end frames and the transition frame. Start Frm End Frm Mid Frm
		Thumbnail Clip - 1	Preview of the previous clip
		Thumbnail Clip	Preview of the clip to be loaded
		Thumbnail Clip + 1	Preview of the next clip
		Clear Clip	Clear the loaded clip
		Delete Clip	Remove clip from a memory location

Files – Logo	Load Logo	Load	Loads the selected logo
		Logo Memory Location	Memory locations from 0 to 999
		Destination	Logo 1 Logo 2
		Thumbnail Logo - 1	Preview of the previous logo
		Thumbnail Logo	Preview of the logo to be loaded
		Thumbnail Logo + 1	Preview of the next logo
		Clear Logo	Clear the loaded logo
		Delete Logo	Remove logo from a memory location
	Logo 1	X	X coordinate from -50 to +50
		Y	Y coordinate from -50 to +50
	Logo 2	X	X coordinate from -50 to +50
		Y	Y coordinate from -50 to +50
Files – Ani-Logo	Load Ani Logo	Load	Loads the selected animated logo
		Logo Memory Location	Memory locations from 0 to 999
		Destination	Logo 1 Logo 2
		Thumbnail Logo - 1	Preview of the previous animated logo
		Thumbnail Logo	Preview of the animated logo to be loaded
		Thumbnail Logo + 1	Preview of the next animated logo
		Clear Ani Logo	Clear the loaded animated logo
		Delete Ani Logo	Remove animated logo from a memory location
	Logo 1	X	X coordinate from -50 to +50
		Y	Y coordinate from -50 to +50
	Logo 2	X	X coordinate from -50 to +50
		Y	Y coordinate from -50 to +50
Setup	Standard	1080p/50/59.94/60 1080i/50/59.94/60 720p/60/59.94/50	Resolution Selection
		Level	Audio Standards EBU SMPTE AUTO (Default)
		Save Setup	Saves the selected resolution
	Genlock	On/Off	
		H Phase	-2190 – 2190 ms
		V Phase	-1124 – 1124 ms
	OutConv	Off 1080i50/59.94 720p50/59.94	Resolutions available for downconvert at SDI Out 5
	Menu Mode	Advanced	Full (Default)
		Basic	Reduced
		Brightness	1 – 7 (Default: 5)
	Menu Pref	Blue / Grey	Selection of menu color
		Transp	Menu transparency level of 0/1/2 (Default: 1)

			This option sets the menu position Bottom (Default) Right Left Top Centre
	Position		
Auto Save	ON / OFF		Automatically saves the last settings before the machine is shut down; once turned ON auto save also occurs upon every Still Load.
Factory Def	Restore		Factory Default Reset loads the default configuration from memory point 0 for all configuration options except for the Setup.
	Restr Names		Resets the Multiviewer labels to the default settings
Language	English Traditional Chinese Simplified Chinese		
Network	Addr Mode		DHCP (Default) / Static
	IP Addr		
	Network Mask		
	Cancel / Save		
	Network Def		Yes / No
Software	Upgrade		This starts the FW upgrade process See the ***Firmware Upgrade*** section for the USB firmware update process.

4.1   Start

The Start menu allows the user to set the transition time, the transition type as well as various wipe effects. The menu options are shown below.

Advanced mode

Start	Transition	M/E	15	DSK	15	FTB	60
	Type	**MIX**					
	Wipe Effects	**Wipe**	1	**Soft**	0%	**Width**	1%
	Border	**Luma**	100%	**Sat**	80%	**Hue**	0
	Position	**X**	0%	**Y**	0%		
	Matte	**Luma**	100%	**Sat**	80%	**Hue**	0

Basic mode

Start	Transition	M/E	15	DSK	15	FTB	60
	Wipe Effects	**Wipe**	1	**Soft**	0%	**Width**	1%

Transition

The **Transition** option allows the user to set the transition duration, in frames, for switching the PGM view when using the **AUTO**, **DSK** and **FTB** buttons.

For example, if the **M/E** is set to a value of 50, then the transition will take effect over a period of 50 frames or roughly 2 seconds. When the **AUTO button** is pressed, the transition will take the current M/E value defined by the user setting.

Type
The SE-2600 provides three major types of transition effect, which are **DVE (3D), MIX**, **WIPE (2D)** and **Clip**. Please note in addition to selecting the transition effect on the OSD menu, you can also press **MIX button**, **WIPE/DVE button** or **CLIP button** to enable the respective transition effects.

- If **DVE** is selected, select the corresponding 3D WIPE effect by pressing the DVE buttons on the control panel. These DVE buttons are:
    DVE 1: Wipe from left to right
    DVE 2: Wipe from top to bottom
    DVE 3: Wipe from right to left

- For **MIX** effect, set the transition time in "**Start → Transition → M/E**."
- For **WIPE** effect, set the relevant WIPE settings in "**Start → WIPE Effects**."
- For **Clip**, also known as the **Stinger Effect**, please first load the clip in "**Files → Clip.**"

Wipe Effects
In "**WIPE Effects**," the user is allowed to select the Wipe style and configure the wipe's border softness and width.

- **Wipe** – Selection of a WIPE effect from a set of 32 WIPE transition effects.
- **Soft** – A low value results in a solid edge and a high value gives a soft diffused edge.
- **Width** – A low value results in a thin edge and a high value gives a wide edge.

WIPE Border
In this sub-option, the user will be allowed to fine-tune the border color by adjusting the **Luma**, **Saturation** and **Hue** values.

Note: Enable the WIPE border by setting the border width (Width) to a value greater than 0. The WIPE border is disabled when the border width is set to 0.

Position
Position allows the user to adjust the center position of certain wipes (e.g Circle & Elipse). **X** represents the horizontal position and **Y** is the vertical position.

Horizontal Position (X)
Positive value moves the wipe center to the right.
Negative value moves the wipe center to the left.
Zero value positions the wipe center at the screen center

Vertical Position (Y)
Positive value moves the wipe center up.
Negative value moves the wipe center down.
Zero value positions the wipe center at the screen center.

Matte

The user can open the Matte view by pressing the **BLK** button of the **Program** and **Preset** button rows. The color of the Matte is configurable in this sub-option by adjusting **Luma**, **Saturation** and **Hue**.

For **Hue** value, **Red** is 0, **Green** is approximately 120 and **Blue** is approximately 240. For secondary colors, **Yellow** is approximately 60, **Cyan** is approximately 180 and **Violet** is approximately 300.

The **Sat** or **Saturation value** refers to the intensity of the color selected in **Hue**. As the saturation increases, the color appears to be more pure. As the saturation decreases, the color appears to be more washed-out or pale.

The Luma value relates to how bright or dark the selected color or hue is. The higher the **Luma** value, the brighter the color selected in **Hue**.

4.2   Keyer

Keyer of the SE-2600 provides the user with the capability of image keying. In this sub menu, the user will be able to configure the eight keyers available on the SE-2600.

Advanced mode

Keyer	Keyer	Key 4		Normal		
	Keyer Ctrl	Chroma		Self		Opac	100%
		Lift	0%	Gain	1.0	Invert	Off
	Key Source	Input 4		Fill	Black		
	Mask	Left	0%	Right	0%		
		Top	0%	Bot	0%		

Keyer

The keyer options are **Key 1**, **Key 2**, **Key 3**, **Key 4**, **DSK 1**, **DSK 2** and **Flex Key 1**.

Key 1 – 4 are usually configured for luma and chroma keyers so select **Self** since only one source is enabled for such keyers.

The DSK keyer options are **Linear** and **Luma**. After the DSK keyer option is chosen, select **Self** if only one source is enabled for DSK keyer, which is the Key source. Select **Split** if two sources are enabled for the DSK keyer, which are Fill and Key sources. An example of a Linear DSK self setup could be using an HDMI input from a Windows laptop running Datavideo's CG-500 Character Generator software; see ***Character Generator*** for more information.

Once configured, the keyers can be activated by pressing the corresponding keyer buttons on the switcher's control panel except Flex Key 1 which can only be enabled in the Flex Src sub menu. Please note that the Flex Keys, once configured and enabled, are displayed along with the Flex Screen. See ***Flex Src*** → ***Keyer*** for instructions on setting Flex Keys.

Select **Fine** if you require high keying quality and **Normal** for original keying quality.

Keyer Control

There are three keying modes available: **Linear**, **Luma**, and **Chroma**.

Please note that if you select Full, the keying effect will be disabled, keeping the original source image. For example, if you select Full → PIP, the keying effect will not be applied to the PIP image source.

Linear keying mode is usually chosen for sharp images as it is usually used in professional graphic design. For non-sharp images, please select **Luma** keying for basic text images. **Chroma** keying mode allows you to remove the green or blue backdrop from the image and is usually used in overlapping talent on a background image.

After the keying mode is chosen, select **Self** if only one source is required for the keyer, which is Key source. Select **Split** if two sources are required for the keyer (DSK), which are Key and Fill sources. You can also select **P-in-P** to apply the keying effect to the PIP image source.

If **Luma** keying is selected, the key image (**Key Source**) is configured by adjusting **lift**, **gain** and **opacity** parameters.

Lift adjusts the dark/black areas of the key image. **Reducing the value of Lift** will make dark areas of the key image more transparent. The background image will be showing only through the transparent areas.

Gain adjusts the light/white areas of the key image. **Increasing the value of Gain** will make light areas of the key image more solid. The background image will be showing only through the transparent areas.

Opac adjusts the transparency of the overall foreground key image. **Increasing the value of Opacity** will make the overall key image less transparent.

Please note:
If Chroma is selected, adjust the Chroma Keyer parameters in the Chroma sub menu.

If P-in-P is selected, adjust its parameters in the P-in-P sub menu.

For example, if the user selects **Key 1 → Chroma → P-in-P**, you will then be able to apply the chroma key effect to the P-in-P window by configuring the corresponding chroma keyer parameters in the **Chroma** sub menu.

In the example below, after Keyer 1 is configured, by pressing **Key 1 PGM or PVW** button on the switcher's control panel, the user will thus be able to enable the P-in-P window on the respective display monitor with the chroma key effect applied.

Keyer	**Keyer**	**Key 1**		Normal		
	Keyer Ctrl	Chroma		P-in-P		**Opac** 100%
		Lift 0%	**Gain** 1.0			**Invert** Off
	Key Source	**Input 1**	**Fill** Black			
	Mask	**Left** 0%	**Right** 0%			
		Top 0%	**Bot** 0%			

Key Source

This option allows the user to assign the key source; various options are listed below:

- Bars: Color bars
- Matte: A configurable color screen and the Matte value can be set in **Matte** option of the **Start** menu
- Flex Src 1: Flex source view (See ***Flex Src*** option menu)
- Still 1/2: Still picture loaded to Still 1/2 buttons
- Input 8: Image source loaded to input button 8
- Input 7: Image source loaded to input button 7
- Input 6: Image source loaded to input button 6
- Input 5: Image source loaded to input button 5
- Input 4: Image source loaded to input button 4
- Input 3: Image source loaded to input button 3
- Input 2: Image source loaded to input button 2
- Input 1: Image source loaded to input button 1
- Black: Black Screen

Fill Source

This sub-option allows the user to assign the fill source; various options are listed below:

- Bars: Color bars
- Matte: A configurable color screen and the Matte value can be set in **Matte** option of the **Start** menu
- Flex Src 1: Flex source view (See ***Flex Src*** option menu)
- Still 1/2: Still picture loaded to Still 1/2 buttons
- Input 8: Image source loaded to input button 8
- Input 7: Image source loaded to input button 7
- Input 6: Image source loaded to input button 6
- Input 5: Image source loaded to input button 5
- Input 4: Image source loaded to input button 4
- Input 3: Image source loaded to input button 3
- Input 2: Image source loaded to input button 2
- Input 1: Image source loaded to input button 1
- Black: Black Screen

Invert

Configure the luma key color

OFF: Luma key removes black background by default.

ON: Luma key removes white background after **INVERT** is turned **ON**.

Mask

The Mask feature basically shrinks the source image by removing borders of the final image. In this option, the user is allowed to configure the Mask in chroma, luma or linear mode by adjusting **Left**, **Right**, **Top** and **Bottom** parameters.

- **Left** – Left sets the left edge of the keyer mask.
- **Right** – Right sets the right edge of the keyer mask.
- **Top** – Top sets the top edge of the keyer mask.
- **Bottom** – Bottom sets the bottom edge of the keyer mask.

4.3 Chroma

The Chroma Keyer removes the green background of the key image. If **Chroma** is selected in **Keyer**, this option menu allows you to configure the corresponding parameters.

Advanced mode options

Chroma	Keyer	Key 4		Normal			
	Key Source	Input 4					
	Key Tie	On		Input 6			
	CK Setup	CK Auto		Hue	110	Luma	80%
		K Range	160	K Fgnd	10%	K Bgnd	20%
		Hi-Light	0%	Lo-Light	0%	Bg-Supp	OFF
		Left	0%	Right	0%	Soft	0%
	Mask	Left	0%	Right	0%		
		Top	0%	Bot	0%		

Keyer

First of all, select the **Keyer** (**Key 1**, **Key 2**, **Key 3**, **Key 4, DSK 1, DSK 2 or Flex Key 1**) that you would like to apply the chroma key effect to and then select one **Key Source** from all available Key Sources listed below.

Select **Fine** if you require high keying quality and **Normal** for original keying quality.

Key Source

This sub-option allows the user to assign a key source to the keyer selected; various options are listed below:

- Bars: Color bars
- Matte: A configurable color screen and the Matte value can be set in **Matte** option of the **Start** menu
- Flex Src 1: Flex source view (See *Flex Src* option menu)
- Still 1/2: Still picture loaded to Still 1/2 buttons
- Input 8: Image source loaded to input button 8
- Input 7: Image source loaded to input button 7
- Input 6: Image source loaded to input button 6
- Input 5: Image source loaded to input button 5
- Input 4: Image source loaded to input button 4

- Input 3: Image source loaded to input button 3
- Input 2: Image source loaded to input button 2
- Input 1: Image source loaded to input button 1
- Black: Black Screen

Key Tie

Key tie is a feature that allows you to overlap a foreground image on a background image. The key tie image can then be opened by pressing the input button to which the background image is assigned. Note that the keyer button will be disabled if key tie is enabled for the corresponding keyer. Outlined below are steps to set key tie with the chroma keyer.

1. First, in the Keyer menu, select the keyer and set it to Chroma. We used Key 1 in this example.

Keyer	Keyer	Key 1	Normal	
	Keyer Ctrl	Chroma	Self	
		Lift 0%	Gain 1.0	Opac 100%
	Key Source	Input 3	Fill Input 8	Invert Off
	Mask	Left 0%	Right 0%	
		Top 0%	Bot 0%	

2. Open the Chroma menu and select Key 1. Assign a foreground image to the Key Source (the foreground image is usually a person or an object against a green backdrop). In this case, it's Input 3.

Chroma	Keyer	Key 1	Normal	
	Key Source	Input 3		
	Key Tie	Off	Off	
	CK Setup	CK Auto	Hue 110	Luma 80%
		K Range 160	K Fgnd 10%	K Bgnd 20%
		Hi-Light 0%	Lo-Light 0%	Bg-Supp OFF
		Left 0%	Right 0%	Soft 0%
	Mask	Left 0%	Right 0%	
		Top 0%	Bot 0%	

3. Enable Key Tie and on the right, select a background image.

Chroma	Keyer	Key 1	Normal	
	Key Source	Input 3		
	Key Tie	On	Input 6	
	CK Setup	CK Auto	Hue 110	Luma 80%
		K Range 160	K Fgnd 10%	K Bgnd 20%
		Hi-Light 0%	Lo-Light 0%	Bg-Supp OFF
		Left 0%	Right 0%	Soft 0%
	Mask	Left 0%	Right 0%	
		Top 0%	Bot 0%	

4. After key tie is configured, to open the key tie image, simply press the input button of the background image selected at Step 3. In this example, input 6 is selected as the background so press button 6 of either the Preset or Program row to open the key tie image on the respective views.

Below are available sources of the background image:

- Still 1/2
- Input 1–8
- Flex Src 1
- Off

Note: You will not be able to use the keyer button once key tie is enabled. Use the input button that is assigned to the background image to open the key tie image.

CK Setup

In this sub-option, the user will be able to find all the parameters needed to perform chromakeying of the green or blue backdrop.

CK Auto: This function automatically calculates the best Hue & Luma values for the current Keyer source. After applying the CK Auto effect, the result can be fine-tuned by adjusting the Luma and Hue values.

Hue: This parameter adjusts the color of the chroma key. A typical green screen value will be around 120. Blue screen value will be around 240.

Luma: This parameter adjusts the luma value of the chroma key

K Range (Key Range): Key Acceptance sets the range of hues or colors (0 – 360 degrees) that closely match the background color to be keyed. The user can start with a value of 120 degrees and this value can be fine-tuned up or down depending on the setup of the green or blue screen studio.

K Fgnd (Key Foreground): **Key Foreground** adjusts the performance of the chroma key in light or white areas. Apply more **Key Foreground** if the light areas are becoming too transparent.

K Bgnd (Key Background): **Key Background** adjusts the performance of the chroma key in dark or black areas. Apply more **Key Background** if the dark areas are becoming too transparent.

Hi-Light: Hi-light boosts the foreground key in high luminance area.

Lo-Light: Lo-light boosts the foreground key in low luminance area.

Bg-Supp: Background Suppress removes the Luma (Brightness) of the background from the final image. **Bg-Supp** turns ON/OFF background suppression.

Left: Trims the left edge of the key object.

Right: Trims the right edge of the key object.

Soft: Determines the distinctiveness of key edge

Mask

The Mask feature basically shrinks the camera image by removing the borders from the final image. This feature allows the user to configure the Mask in chroma, luma or linear mode.

- **Left** – Left sets the left edge of the keyer mask.
- **Right** – Right sets the right edge of the keyer mask.
- **Top** – Top sets the top edge of the keyer mask.
- **Bottom** – Bottom sets the bottom edge of the keyer mask.

4.4 P-In-P

The **P-in-P** option allows the user to adjust all related P-in-P parameters. Use this option to configure your PIP window if **P-in-P** is selected in the **Keyer Ctrl** sub-option of the **Keyer** option.

Note: The P-in-P image source can only be selected in **Key Source** option of the **Keyer** Sub Menu.

Advanced mode options

P-in-P	Keyer	Key 1				Fine	Normal
	Position	X	-20%	Y	10%	Size	40%
	Border	Normal					
		Luma	100%	Sat	80%	Hue	0
		Width	2%	Soft	0%	Opac	100%
	Shade Matte	Luma	100%	Sat	80%	Hue	60
		Shade Soft	2%	Shade Pos	50	Direction	35
	Crop	Left	0%	Right	0%	Size	0%
		Top	0%	Bot	0%	Soft	0%

Keyer

In this sub-option, the user will be allowed to select and configure the PIP window from the list below. Please note that Keyers 1-4 are active for PIP configuration only if P-in-P is selected in the Keyer sub-menu for the respective keyer.

- **Key 1**
- **Key 2**
- **Key 3**
- **Key 4**
- **Flex PinP 1**
- **Flex PinP 2**
- **Flex PinP 3**
- **Flex PinP 4**

Position

The user can adjust the P-in-P window position by adjusting values of **X**, **Y** and **SIZE**, where X is the horizontal position, Y is the vertical position and Size is the PIP screen size.

X-Value	Positive value: position the P-in-P window to the right.
	Negative value: position the P-in-P window to the left.
	Zero value: Position the P-in-P window at the center.

Y-Value	Positive value: move the P-in-P window up.
	Negative value: move the P-in-P window down.
	Zero value: Position the P-in-P window at the center.

Size	Ranges from 0 to 100 with 1% being the smallest and 100 being the largest. So 50% would represent a P-in-P window which is half the size of the background image. 100% would see the PIP image totally cover the background image unless offset to one side.

Fine
Once enabled, you will then be able to fine tune the position of the P-in-P window by adjusting **X** and **Y** vales as well as the **Size**. This feature allows you to move the P-in-P window more precisely to the desired location and adjust its size.

Border
The user is also allowed to add borders to the PIP window and the SE-2600 offers various border styles listed as follows:

- Border Off
- Normal
- Shaded*
- 3D Bevel**
- Bevel Shaded*
- Dual Bevel**
- Bevel Flat**
- Flat Bevel**
- 3D Glass**
- Dual Glass**
- Glass Flat**
- Flat Glass**
- Circle**
- Circle Shaded*
- Rounded**
- Rounded Shaded*

**See *Shade Matte/Hue for dual color border setting*.

****See *Shade Matte/Direction for border shadow setting.*

To turn the Border off, simply select the option "Border OFF."

In addition to assigning a style to the border, the user is also allowed to set border color by adjusting **Luma**, **Saturation** and **Hue** values. **Luma** and **Saturation** range from 0 to 100%. **Hue** value ranges from 0 to 355. The borders can also be widened or narrowed by adjusting **Width**. Please note that a width of zero (0) will turn the PIP border off.

Opac adjusts the transparency of the border, ranging from 0% to 100%

Softness defines the distinctiveness of the border edge. A low value results in a solid border edge and a high value gives a soft diffused border.

Shade Matte (Dual Color Border)

In order for the **Shade** effect to work, **Shaded Border (Dual Color)** must be first selected as the **Border** – see the previous section *Border*. Shade Matte determines the inner border. The boundary between the normal border matte and the shade matte can be determined by adjusting the **Shade Position** parameter.

```
┌─────────────────────────────────┐
│          Border Matte           │
│  ┌───────────────────────────┐  │
│  │        Shade Matte        │  │
│  │  ┌─────────────────────┐  │  │
│  │  │                     │  │  │
│  │  │                     │  │  │
│  │  │                     │  │  │
│  │  │                     │  │  │
│  │  └─────────────────────┘  │  │
│  │        Shade Matte        │  │
│  └───────────────────────────┘  │
│          Border Matte           │
└─────────────────────────────────┘
```
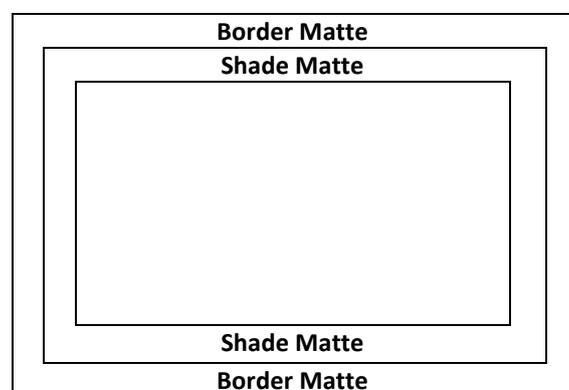
Luma, Sat and Hue
The color of the *Shade Matte* can also be controlled by adjusting the **Hue, Sat** and **Luma** values.

For **Hue** value, **Red** is 0, **Green** is approximately 120 and **Blue** is approximately 240. For secondary colors, **Yellow** is approximately 60, **Cyan** is approximately 180 and **Violet** is approximately 300.

The **Sat** or **Saturation value** refers to the intensity of the color selected in **Hue**. As the saturation increases, the color appears to be more pure. As the saturation decreases, the color appears to be more washed-out or pale.

The Luma value relates to how bright or dark the selected color or hue is. The higher the **Luma** value, the brighter the color selected in **Hue**.

Shade Softness, **Shade Position** and **Direction**
The *Shade Matte* can be further configured by adjusting its **softness (Shade Soft)** and **width (Shade Pos)**.

Shade Soft
This blurs or softens the *Shade Matte* area.

Shade Position

The position of the boundary line between *Shade Matte* and *Border Matte* is controlled by the **Shade Pos** value.

Increasing this value moves the boundary line such that the *Shade Matte* occupies less of the width of the border. Decreasing this value moves the boundary line such that the *Shade Matte* occupies more of the overall border width. When this value is 0, the *Shade Matte* occupies all of the border width.

Note: You will see dual colors only if options "Shaded" and "Bevel Shaded" are selected.

Direction

Direction sets the direction of the light source with the value of parameter ranging from 0 to 355. The default is 35, which indicates a direction of North East. You will see the border's color shadow changes as the Direction value is changed. The directions that specific parameter values correspond to are listed as follows:

- 0: North
- 90: East
- 180: South
- 270: West

Crop

The PIP image crop can be adjusted by modifying the following parameters:

- **Left** – Adjusts the position of the left edge of the PIP image.
- **Right** – Adjusts the position of the right edge of the PIP image.
- **Size** – Adjusts the PIP image crop size.
- **Top** – Adjusts the position of the top edge of the PIP image.
- **Bot** – Adjusts the position of the bottom edge of the PIP image.
- **Soft** – Adjusts the crop edge transparency.

Note: You will sometimes see black thin lines on your PIP image after setting the PIP border to Normal with a border width of zero. This is caused by using an image that differs from its original size. To remove these lines, turn the border off or use the crop function to shrink the image until the lines disappear.

4.5   Flex Src

The Flex™ output allows the user to show a variety of sources at the same time. These image sources are fed as one combined image to the Program and Preset outputs.

The Flex™ output consists of one background image and four smaller source images overlapped on the background image in four separate individual PIP windows.

The SE-2600 offers the user one Flex™ output, which can be selected in "**Flex Src**" as shown in the Flex Src sub menu below. After selecting the Flex output, you can then start setting the source of input for each FLEX window as detailed in the next section.

Flex Src	Flex Src	Flex Src 1				
	Flex Src Bgnd	Black				
	P-in-P 1 Src	Black	Enable	On		
	P-in-P 2 Src	Black	Enable	On		
	P-in-P 3 Src	Black	Enable	On		
	P-in-P 4 Src	Black	Enable	On		
	Keyer 1	Input 1	Input 2		Enable	On
	Flex Preset	Preset 1	Preset 2		Preset 3	
		Preset 4	Preset 5		Preset 6	

Flex Screen

To set the source of input for the respective FLEX windows, open the OSD menu and select FLEX Src. On the sub-menu that opens, you will be able to see the following options allowing you to select the image sources to be displayed in the FLEX windows.

- Flex Src Bgnd: The background image is the image on which the FLEX windows are stacked.
- P-in-P 1 Src selects the image displayed in FLEX window 1.
- P-in-P 2 Src selects the image displayed in FLEX window 2.
- P-in-P 3 Src selects the image displayed in FLEX window 3.
- P-in-P 4 Src selects the image displayed in FLEX window 4.

The available sources of inputs are listed as follows:

- Black: Black Screen
- Input 1: Image source loaded to input button 1
- Input 2: Image source loaded to input button 2
- Input 3: Image source loaded to input button 3
- Input 4: Image source loaded to input button 4
- Input 5: Image source loaded to input button 5
- Input 6: Image source loaded to input button 6
- Input 7: Image source loaded to input button 7
- Input 8: Image source loaded to input button 8
- Still 1: Still picture loaded to Still 1 button
- Still 2: Still picture loaded to Still 2 button
- Matte: A configurable color screen and the Matte value can be set in **Matte** option of the **Start** menu
- Bars: Color Bars

Keyer

The Flex Keyer can be set to **Chroma**, **Luma** or **Downstream keyer**. In the *Keyer* sub menu, first select **Flex Key**. Then if a Chroma or Luma Self key setup is selected, only one source is enabled for the keyer, which is key source. If you've selected a DSK Split setup, then two sources should be enabled for the DSK keyer, which are Key and Fill sources.

In *Keyer* of the *Flex Src* sub menu, the first field corresponds to the key source and the second field selects the fill source.

P-in-P 3 Src	Black	Enable	On	
P-in-P 4 Src	Black	Enable	On	
Keyer 1	Input 1	Input 2	Enable	On
Flex Preset	Preset 1	Preset 2	Preset 3	
	Preset 4	Preset 5	Preset 6	

First field = Key source   First field = Fill source

If you've selected **Chroma key setup**, the keyer can be configured in *Chroma* sub menu.

If you've selected **Luma key setup**, adjust Lift, Gain and Opac in *Keyer* sub menu.

For a Linear DSK self setup, a good example could be using an HDMI input from a Windows laptop that is running Datavideo's CG-500 Character Generator Software; see *Character Generator* for more information.

Key source and Fill source will be required for a DSK split setup. The steps outlined below will guide you through the configuration process of such.

System Hardware Setup

1. Connect the laptop (with CG-500 installed) to one of the HDMI input ports on the SE-2600 using an HDMI cable. In this example, we will be using HDMI input port 5 (Input Channel 5).

2. Open CG-500 on the laptop and create a CG image.

3. Switch ON the SE-2600's power button and after the boot up is complete, the Multiview should be displayed on the connected monitor.

4. The Input 5 window on the Multiview should show the CG image.

Menu Settings

5. Follow the menu path *Keyer* → *Keyer* and select **Flex Key 1**.

6. Follow the menu path *Keyer* → *Keyer Ctrl* and set the **Flex Key** to a **linear** or **luma** DSK **split** keyer.

7. Follow the menu path *Flex Src* → *Keyer 1* and set CG Overlay inputs by selecting *Input 5* **in both Key and Fill fields**.

Flex Src	Flex Src	Flex Src 1		
	Flex Src Bgnd	Black		
	P-in-P 1 Src	Black	Enable On	
	P-in-P 2 Src	Black	Enable On	
	P-in-P 3 Src	Black	Enable On	
	P-in-P 4 Src	Black	Enable On	
	Keyer 1	Input 5	Input 5	Enable On
	Flex Preset	Preset 1	Preset 2	Preset 3
		Preset 4	Preset 5	Preset 6

8. After the keyer is configured, enable the keyer and on the switcher's control panel, press and hold the **SHIFT** button then press the **3/FLEX** button on either the Preset or Program row to view the Flex screen with CG enabled.

Flex Preset

The SE-2600 offers the user three FLEX Screen layouts. The respective **default** layouts are shown in the diagrams below.

Preset 1

Flex Src – P-in-P 1 Src	Flex Src – P-in-P 2 Src
Flex Src – P-in-P 3 Src	Flex Src – P-in-P 4 Src

Preset 2

Flex Src – P-in-P 1 Src	Flex Src – P-in-P 2 Src	Flex Src – P-in-P 3 Src	Flex Src – P-in-P 4 Src

Preset 3

Flex Src – P-in-P 3 Src

Flex Src – P-in-P 2 Src

Flex Src – P-in-P 4 Src

Flex Src – P-in-P 1 Src
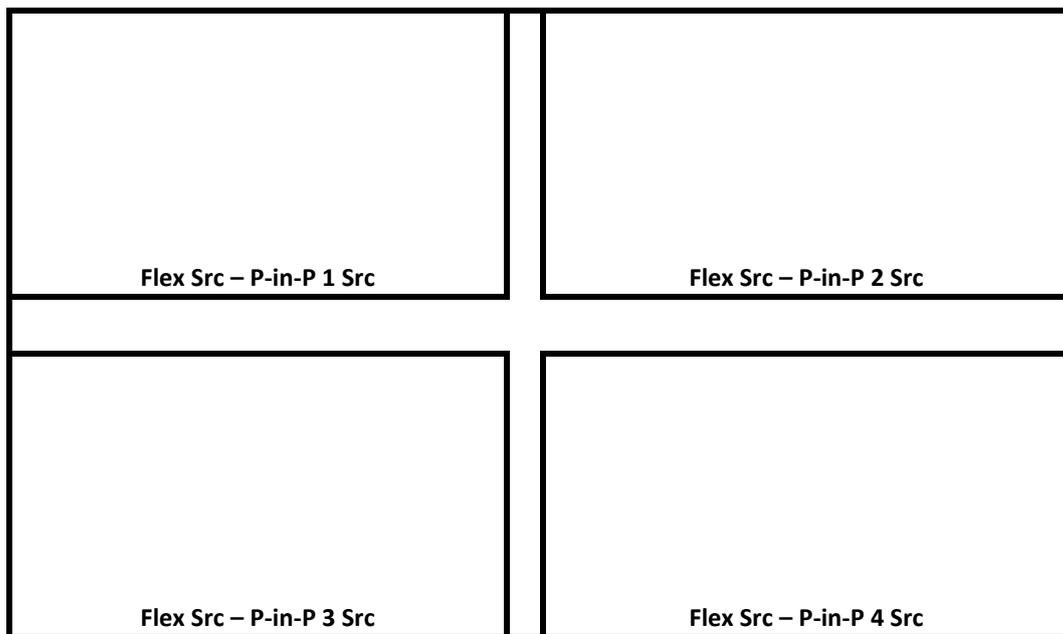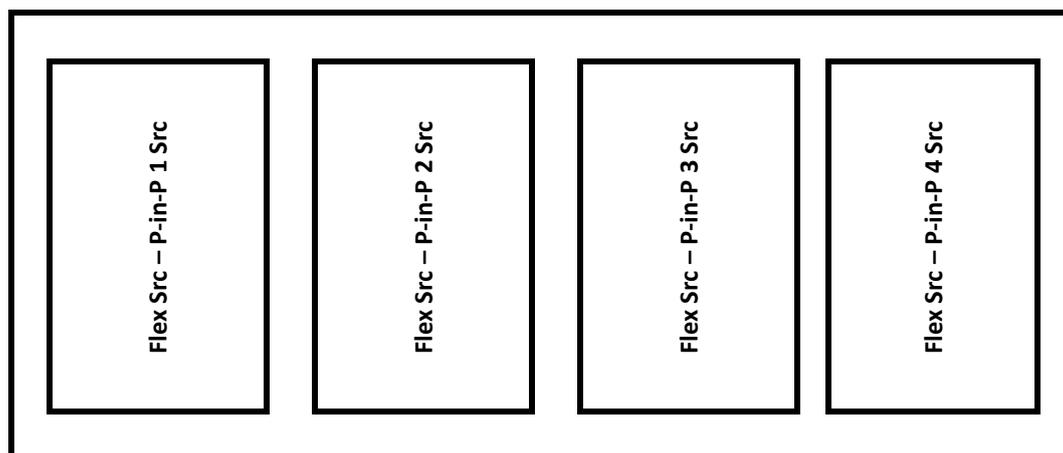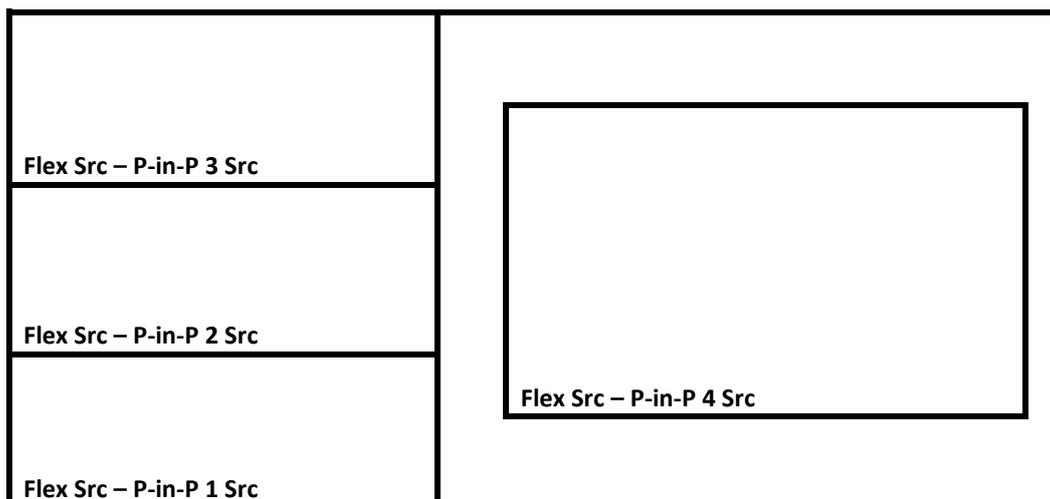
Note: Presets 4 to 6 are reserved for future developments.

Please note that positions of these PIP windows on the FLEX screen can be changed by adjusting the **x-y coordinates** in the **P-in-P** sub menu. In addition, the user is also allowed to adjust the size of the FLEX window, enable/disable the window's border, set the border color, and crop the window image.

After the FLEX source is properly configured, the user can activate **Flex Src 1** on either the Program or Preset screen by pressing the **SHIFT** key followed by the **3/FLEX** button (the button should illuminate blue) along the Program or Preview row.

Alternatively, you can also press the **BLK** button which should turn blue, then press the **3/FLEX** button to activate **Flex Src 1** (3/FLEX button flashing blue).

Note that the Flex Src window has an allowable size of up to 1080p full screen. If exceeded, one of the Flex Src windows will not be able to display the image correctly.

4.6   Inputs

This feature allows the user to select the mode of the selected input and then configure the input color by adjusting its **Black Level**, **White Clip** and **Chroma Gain** parameters. In addition, the Crosspoint function allows the user to shuffle contents of Inputs 1-8 without changing physical connections at the back of the machine.

Advanced mode options

Inputs	Input	Input 8		Mode	Live	Mode	CG Md
		Zoom	100%	X	0%	Y	0%
	Proc Amp	Black	0%	White	100%	Chrom	1.0
	Audio	Gain	0 dB	Delay	0 ms		
	Crosspoint	Input 8					
	Audio XPT	Off					

Input

In this option, you will be allowed to set the mode of display in the respective Input windows of the Multiview display. First select the input that you would like to configure and then for each selected input, set the mode of input by selecting one of the modes **from the first mode option**:

- Still – Displays the still picture loaded into Inputs 1-8 in the respective input window.
- Freeze – Freezes the current video played in the Input window.
- Live – Live view or video display in the Input window.

Mode of Operation

The second mode option allows you to select the mode of operation upon connection of a CG image source to either of the HDMI inputs 5 – 8.

OFF: HDMI input channels are regular video input ports.

CG Mode: Enable CG mode to allow keying of CG text or graphics (1080p60/59.94/50) over the live video (4K/60/59.94/50/30/29.97/25 and 1080p/60/59.94/50/30/29.97/25) via the switcher's HDMI input ports. See ***Character Generator*** for more detailed instructions.

Proc Amp

Proc Amp allows the user to configure the input color by adjusting its Black Level (0 – 100%), White Clip (0 – 100%) and Chroma Gain (0 – 16) parameters.

Audio

Gain (0 – 24 dB): adjustment of the input audio volume for a particular selected video input.

Delay (0 – 340 ms): sets the delay of the audio component of a particular selected video input.

Crosspoint

The crosspoint function allows the user to shuffle the contents of Inputs 1-8 without changing the physical connections at the back of the machine. For example, the user is allowed to assign the input 2 video source to input 1, after which the input 2 video will be displayed on the input 1 window. Select OFF if you would like to disable the input port.

- Input 1-8
- OFF

Audio XPT

The Audio XPT feature allows the user to associate the audio component of any input source to any of the input buttons (1 – 8), thus cross assigning audio input channels to program/preview row buttons. Available options are listed as follows:

- Input 1-8
- External
- Follow

"**External**" selects audio source from AUDIO IN ports.

Select "**Follow**" to set the audio to Audio-Follow-Video mode in which the PGM audio is played via **AUDIO OUT** port. Please note that there will be no audio delay.

4.7 Outputs

This option allows the user to configure various output settings such as video output, Tally mode and GPI connection.

Advanced mode

Outputs	Output	Sdi 1	Input 1	Sdi 2	Input 2	Sdi 3	Input 3
		Sdi 4	Input 4	Sdi 5	Input 5	Sdi 6	Input 6
		HDMI 1	Pgm	HDMI 2	MultiV	HDMI 3	MultiV
	Multiviewer	AutoNum	Off	Label Inf	Off	Trns Lab	Off
		MV1	Preset 3			L: PVW	R: PGM
	Tally Mode	Normal					
	GPI Out	Off		Mode	Pulse	Width	1
		Input 1		Delay	0		

Basic mode

Outputs	Output	Sdi 1	Input 1	Sdi 2	Input 2	Sdi 3	Input 3
		Sdi 4	Input 4	Sdi 5	Input 5	Sdi 6	Input 6
		HDMI 1	Pgm	HDMI 2	MultiV	HDMI 3	MultiV
	Multiviewer	AutoNum	Off	Label Inf	Off	Trns Lab	Off
		MV1	Preset 3			L: PGM	R: PVW

Outputs

In general, the SE-2600 offers 6 output ports (**SDI 1–3 / HDMI 1–3**) which can all be configured to output one of the following:

- Flex Src 1
- Still 2
- Still 1
- Input 1 – 8
- CLN PVW (Clean PVW)
- CLN PGM (Clean PGM)
- PG + DSK
- PVW
- PGM
- MultiV (Multi view)

Multiviewer

AutoNum: The Multiview windows can be automatically numbered, and this option turns ON/OFF automatic numbering.

Label Inf turns ON/OFF Label information. Input label indicates whether the input is still (stl), live (*), or a frozen image (frz). **Please note that the label content cannot be modified.**

Trns Lab turns ON/OFF the Label Background Transparency. Once enabled, the background of the label should turn from an opaque black to a transparent one.

MV1

The SE-2600 Multi-view monitoring is available in different multi-image layouts. These outputs can be used to monitor video and audio in a number of different configurations. For each setup, embedded audio level indication is also available on all inputs as well as the Preview and Program windows.

Preset 1	Preset 2

Preview		Program	
1	2	3	4
5	6	7	8

Preview / Program

1	2			
3	4	5	6	7
8	9	10	11	12

Preset 3	Preset 4

Preview / Program

1	2	3	4	5	6
7	8	9	10	11	12

Program

	1
	2
3	4	5

Preset 5	Preset 6

Program / Preview

9	10	11	12
Still 1	Still 2	Flex Src	Clip

Program / Preview

1	2	3
4	5	6

Preset 7	Preset 8

Program / Preview

7	8	9
10	11	12

1	2	3	4
5	6	7	8
9	10	11	12

Preset 9			
Program	Preview		
1	2	3	4
5	6	7	8
9	10	11	12

R/L

On the Multiview, by default, Preview window is positioned on the left and on the right is the Program window. This option allows you to switch their positions.

Tally Mode

Tally output port generally sends two tally signals to each channel. In Datavideo products, **Red** indicates On-Air, and **Green** indicates next video source. On the Multiview screen, the tally light is indicated by rectangular borders around the input sub windows.

The SE-2600 provides two tally modes:

Normal: If in normal mode, tally lights of all video sources enabled on PGM view will be turned ON (**Red**). These sources include PGM, PIP and Key sources. While transition is in progress, tally lights of all video sources enabled on PGM view do not change color. The tally light will only change color (**Red → Green**) after transition of PGM and PVW views is complete. However, for video sources on the Preview window, the tally lights will be enabled **Green**, and the color is changed to **Red** as soon as the transition is triggered.

Audio Mixer: If Audio Mixer mode is selected, tally lights of all video sources enabled on PGM view will be turned ON (**Red**). While transition is in progress, tally lights of all video sources enabled on PGM view do not change color. The tally light will only change color (**Red → Green**) after transition of PGM and PVW views is complete. However, for video sources on the Preview window, the tally lights will be enabled **Green**, and the color is changed to **Red** as soon as the transition is triggered.

GPI Out

GPI is designed to allow the user to trigger playback of an external playback device such as Datavideo's HDR-80/90. **GPI OUT** allows the user to configure your GPI connection.

First enable the GPI port and then set the GPI **mode**, which is either level or pulse. The pulse width can be configured in **Width** sub-option (1-9).

Once the GPI function is enabled, you can assign it to one of **Inputs 1-8 which can later be used to trigger external devices** and the **delay** can be set to a value between 0 and 99.

4.8 Audio

In the **Audio** menu, you will be able to start and shut off the embedded audio of **SDI** and **HDMI** videos.

Audio	Audio	Mode	On	Src	Input 1		
	PGM Audio	Mode	V Fade	Gain	0 dB	Delay	0 ms
	Analog Out	Src	Follow	Gain	0 dB	Delay	0 ms

Audio
External audio source can only enter the SE-2600 via the analog XLR input port found on the rear panel of the main unit. Ideally the user should use the SE-2600 with an audio mixer.

It is recommended to use the AD-200 audio mixer designed and manufactured by Datavideo. All external audio sources can be connected to AD-200 before entering the SE-2600 (for delay purpose). The external audio can be embedded into SDI video out.

Mode (ON/OFF): Setting Mode ON allows the SE-2600 to embed external audio component into SDI video out. Changing the **Mode** option from ON to OFF will mute the embedded audio.

Audio Src: This sub-option allows the user to select the audio source.

If "**External**" is selected, the external audio, i.e. audio from **AUDIO IN** port, will be played.

If "**Follow**" is selected, the audio will enter Audio follow Video mode, i.e. playback of the audio of the output video.

To play the audio of a particular input video channel, select an **input number** from Input 1-8.

PGM Audio
Mode (V Fade/X Fade)
While working in the Audio-F-Video mode, the audio sources will also change as the video sources are switched. We can choose how the audio changes sources, whether it be a clean cut (immediate switch) or some sort of transitioned change (cross fade or fade out & in). To do this we would need to set up with the following menu options.

- **X Fade:** PGM Audio / PVW Audio cross fade
- **V Fade:** Fade out PGM Audio then fade in PVW Audio

Gain (0 – 24 dB): adjustment of the PGM audio volume.

Delay (0 – 340 ms): sets the delay of the PGM audio volume.

Analog Out
You are also allowed to select a source of audio of your preference and output the selected audio via Audio OUT. Open the OSD menu and select Audio → Analog Out → Src where you may select a source of audio from the following list.

- PGM Audio
- Follow

- Input 1-8

If "**Follow**" is selected, the audio will enter Audio follow Video mode, i.e. playback of the PGM audio via Audio OUT **without audio output delay**. If "**PGM Audio**" is selected, the SE-2600 will only play the PGM audio via Audio OUT **with audio output delay**. You may also select to output one audio component of the 8 inputs via Audio OUT **without audio output delay**.

Gain (-60 – 24 dB): adjustment of the audio volume at the **AUDIO OUT**.

Delay (0 – 340 ms): sets the delay of the audio at the **AUDIO OUT**.

4.9 Files

In Files, you will be allowed to manipulate different files such as clips, still pictures, user memories and still and animated logos.

Still allows the user to load images from the memory, save images to the memory, and save the images captured. **User** allows you to **load** previously saved settings and **save** the currently configured settings. In **Clip**, you will be able to browse through the clip files and load the clips directly on the switcher. As for logo and ani logo menus, they allow you to load still and animated logos directly on the switcher.

All five file types will be discussed in the following sub-sections.

User Mems
In this option, the user is allowed to **load** previously saved settings and **save** the currently configured settings.

Advanced mode options

Files	User			
	Load Mem	Memory	1	Load	
	Save Mem	Memory	1	Save	

Load Memory
Use the up/down arrow to scroll to the desired memory location and load the saved setting by selecting "**Load**".

Note: The user can also press one of the USER memory shortcut buttons (1-9) on the control panel as a quick way of loading those previously saved User configurations.

Save Memory
Use the up/down arrow to scroll to the desired memory location and save the current setting by selecting "**Save.**"

Still
STILL image is an image pre-loaded to the SE-2600's input buffers (Input 1-8). The **Still** menu allows users to load still pictures from the machine's internal memory to the input buffer,

save still pictures to the machine's internal memory, view thumbnail pictures and grab program image to the specified still memory locations.

Files	File Type	Still		
	Load Still	Load	Still Num 1	Still 1
		Thumbnail Picture – 1	Thumbnail Picture	Thumbnail Picture + 1
	Save Still	Save	Still 1	Still Num 1
				Delete
	Grab Still	Grab	Still 1	

Load Still

Upon selecting "**Load Still**", the user can then choose the memory location from which the still image is loaded. The system memory can store up to 500 still images. The following are the destinations to which the still image can be loaded:

- Still 1: Still 1 button
- Still 2: Still 2 button
- Input 8: Input button 8
- Input 7: Input button 7
- Input 6: Input button 6
- Input 5: Input button 5
- Input 4: Input button 4
- Input 3: Input button 3
- Input 2: Input button 2
- Input 1: Input button 1

Select "**Load**" to load the still image to the chosen destination.

Image Preview is available below the "**Load Still**" row. "**Thumbnail Picture – 1**" allows the user to preview the previous image, "**Thumbnail Picture**" displays the image that will be loaded when "**Load**" is selected, and "**Thumbnail Picture + 1**" shows the next image.

Note: The user is allowed to import still picture files. It is recommended to use 24-bit without Alpha bmp, png and jpg formats.

Save Still

"**Save Still**" allows the user to save the still image to a specific memory location. The user should determine the source of the still image first. The available sources are listed below:

- Still 1: Still 1 button
- Still 2: Still 2 button
- Input 8: Input button 8
- Input 7: Input button 7
- Input 6: Input button 6
- Input 5: Input button 5
- Input 4: Input button 4

- Input 3: Input button 3
- Input 2: Input button 2
- Input 1: Input button 1

To complete the save, the user can simply select "**Save**" after determining the memory location.

To remove a still from a memory location, first scroll to the memory location, and select "**Delete**" then "**Yes**" to confirm the delete.

Grab Still
"Grab Still" function grabs an instant of the video image on the Program view to the destinations listed as follows:

- Still 1: Still 1 button
- Still 2: Still 2 button

After determining the destination to which an instant of the video image is captured, simply select "**Grab**" to trigger the image grab.

In the following sections, we will show you how to import still images from the PC to the switcher and load the imported file to the switcher.

Loading still images
The SE-2600 allows the user to load still images saved on the machine to the Multiview screen. Please follow the steps outlined below to load the still picture.

1. Press the **MENU** button to open the OSD menu on the Multiview display.

2. Open the **Stills** menu option as shown below.

Files	File Type	Still		
	Load Still	**Load**	**Still Num** 1	**Still 1**
		Thumbnail Picture – 1	**Thumbnail Picture**	**Thumbnail Picture + 1**
	Save Still	**Save**	**Still 1**	**Still Num** 1
				Delete
	Grab Still	**Grab**	**Still 1**	

3. In the **Load Still** sub-option, first select the still picture that you would like to load (**Still Num**). The still picture preview is shown in the row right below the **Load Still** row.

4. In the field next to **Still Num**, select a destination to which the still picture will be loaded. Once the destination is determined, select **Load** to load the still picture to one of the following destinations:

- Still 1: Still 1 button
- Still 2: Still 2 button
- Input 8: Input button 8
- Input 7: Input button 7
- Input 6: Input button 6

- Input 5: Input button 5
- Input 4: Input button 4
- Input 3: Input button 3
- Input 2: Input button 2
- Input 1: Input button 1

For more still functions such as file import from the PC or laptop, see *Section 5.3 Managing Still Pictures*.

Clip

The **CLIP** or Stinger Transition Effect is basically an animated effect added during transition of two video sources. The animated effect is generated by a clip file which consists of a series of sequential files in **bmp/jpg/png/pic** formats. In the next few sections, you will be shown how you can load the existing clip on the switcher, and import the clip to the switcher from the PC.

Advanced/Basic mode

Files	File Type	Clip		
	Load Clip	Load	Clip 0	Clip Settings
		Thumbnail Clip - 1	Thumbnail Clip	Thumbnail Clip + 1
		Clear Clip		Delete Clip

Load Clip

In this sub-option, use the Up/Down arrows on the physical keyboard of the switcher to browse the clip files. Once "Load" is pressed, the selected clip will be loaded into the clip buffer and replace the previously loaded clip. **As the clip is being loaded, you will be able to view its progress on the Preview window.**

Note: The SE-2600 comes with pre-loaded clip files. The SE-2600 also allows the user to import customized clip files. It is recommended to use 32-bit with Alpha png format.

You can preview three clip videos at the same time. "**Thumbnail Clip – 1**" allows the user to preview the previous clip, "**Thumbnail Clip**" displays the clip that will be loaded when "**Load**" is selected, and "**Thumbnail Clip + 1**" shows the next clip. **To enable the Clip (Stinger) transition mode, simply press the CLIP button.**

To clear the loaded clip from the buffer, simply select "**Clear Clip**." To remove clip from a memory location, select "**Delete Clip**."

Clip Settings

Clip Settings allow the user to set the Clip's Start/End & Mid (Transition points) frames. After users have imported a clip, they often find that it needs some small adjustments so with these settings the user can skip unwanted frames at the start and end of the Clip. They can also choose the frame at which the fade from PGM to PVW occurs.

The default is to do the fade in the middle of the clip but depending on the actual clip, the user may want to alter this position.

- **Start Frm:** Adjusts the start frame number of the Clip
- **End Frm:** Adjusts the end frame number of the Clip
- **Mid Frm:** Adjusts the PGM to PVW fade point of the Clip
- **Cancel:** Cancels any changes
- **Save:** Saves the changes for this clip as each clip is allowed to have different settings.

Note: Clip Settings will be enabled only after the clip is loaded.

Loading the existing Clip for Stinger Transition Effect

The SE-2600 allows you to generate the stinger transition effect. To do this, the user should load the clip saved on the machine first. Follow the steps outlined below to load the clip.

1. Press the **MENU** button to open the OSD menu on the Multiview display.

2. Open the **Clip** menu option as shown below.

Files	File Type	Clip		
	Load Clip	Load	Clip 0	Clip Settings
		Thumbnail Clip - 1	Thumbnail Clip	Thumbnail Clip + 1
		Clear Clip		Delete Clip

3. In the **Load Clip** option, first select the clip that you would like to load. The **Clip Preview** is shown in the row right below the Load Clip row.

4. Select **Load** to load the clip. The load progress prompt "**Loading Clip XX/XX ...**" will appear on the Preview window. Once loaded to the clip buffer, the previously loaded clip will be replaced.
   Note: The load process can take up to tens of seconds.

5. To enable the Clip or Stinger transition mode, simply press the **CLIP** button.

For more information about Stinger transition (importing clip files to the switcher), see *Chapter 5.4 Performing a Stinger Transition*.

Logo

Logo is a still image pre-loaded to the logo buffer (Logo 1/2). The **Logo** menu allows users to load logo pictures from the machine's internal memory to the logo buffer, save logo pictures to the machine's internal memory, view thumbnail logo pictures and adjust the logo positions.

Advanced/Basic mode

Files	File Type	Logo		
	Load Logo	Load	Logo 1	Logo 1
		Thumbnail Picture – 1	Thumbnail Picture	Thumbnail Picture + 1
		Clear Logo		Delete Logo
	Logo 1	X -37%	X 24%	
	Logo 2	Y 0%	Y 0%	

Load Logo

Upon selecting "**Load Logo**", the user can then choose the memory location from which the still logo image is loaded. The system memory can store up to 999 still logo images.

Logo Preview is available below the "**Load Logo**" row. "**Thumbnail Picture – 1**" allows the user to preview the previous logo, "**Thumbnail Picture**" displays the logo that will be loaded when "**Load**" is selected, and "**Thumbnail Picture + 1**" shows the next logo.

Select "**Load**" to load the logo to the chosen destination (Logo 1/Logo 2).

Note: To import custom logos from your computer, see *chapter 5.5 Enabling Still Logo* for instructions.

To clear the loaded logo from the buffer, simply select "**Clear Logo**."

To remove a still logo from a memory location, first move to the memory location, and select "**Delete**" then "**Yes**" to confirm the delete.

Positioning

The logo can be manually positioned by adjusting its XY coordinates. Note that the origin of the coordinate system is at the center of the screen.

X: A positive value indicates that the logo is in the right half of the screen and a negative value indicates that the logo is in the left half of the screen.

Y: A positive value indicates that the logo is in the top half of the screen and a negative value indicates that the logo is in the bottom half of the screen.

Ani Logo

Ani Logo is an animated logo pre-loaded to the logo buffer (Logo 1/2). The **Ani Logo** menu allows users to load animated logo from the machine's internal memory to the logo buffer, save animated logo to the machine's internal memory, view thumbnail images and adjust logo position.

Advanced/Basic mode

Files	File Type	Ani Logo		
	Load Ani Logo	**Load**	**Ani Logo 1**	**Logo 1**
		Thumbnail Picture – 1	**Thumbnail Picture**	**Thumbnail Picture + 1**
		Clear Ani Logo		**Delete Ani Logo**
	Logo 1	**X -37%**	**X 24%**	
	Logo 2	**Y 0%**	**Y 0%**	

Load Ani Logo

Upon selecting "**Load Ani Logo**", the user can then choose the memory location from which the animated logo is loaded. The system memory can store up to 999 logo animations.

Logo Preview is available below the "**Load Ani Logo**" row. "**Thumbnail Logo – 1**" allows the user to preview the previous animated logo, "**Thumbnail Logo**" displays the logo animation

that will be loaded when "**Load**" is selected, and "**Thumbnail Logo + 1**" shows the next animated logo.

Select "**Load**" to load the animated logo to the chosen destination (Logo 1/Logo 2).

Note: To import custom logo animations from your computer, see *chapter 5.6 Enabling Logo Animation* for instructions.

To clear the loaded logo animation from the buffer, simply select "**Clear Ani Logo**."

To remove an animated logo from a memory location, first move to the memory location, and select "**Delete**" then "**Yes**" to confirm the delete.

Positioning

The animated logo can be manually positioned by adjusting its XY coordinates. Note that the origin of the coordinate system is at the center of the screen.

X: A positive value indicates that the animated logo is in the right half of the screen and a negative value indicates that the animated logo is in the left half of the screen.

Y: A positive value indicates that the animated logo is in the top half of the screen and a negative value indicates that the animated logo is in the bottom half of the screen.

4.10 Setup

In the "**Setup**" menu, the user can change the **resolution**, switch between full and simplified menu versions, reset the SE-2600 to its **Factory Default** values, adjust the **menu preferences**, enable/disable **Auto Save**, choose the preferred OSD menu **language**, **upgrade firmware** and view the **current firmware versions** (Interface, Mainboard and Keyboard).

Advanced mode options

Setup	Standard	1080p/59.94	**Level**	Auto	Save Setup	
	Genlock	Off	**H Phase**	0	**V Phase**	0
	OutConv	Off				
	Menu Mode	Advanced	**Brightness**	3		
	Menu Pref	Blue	**Transp**	1	**Position**	Bot
	Auto Save	On				
	Factory Def	**Restore**	**Restr Names**			
	Language	**English**				
		Network	**Network Def**			
	SE-2600	s/w: v0.9.9.9	f/w: 2019-07-17		Kbd: v1.7.3	OS: v1.0

Addr Mode	**DHCP**			
IP Addr	**192**	**168**	**100**	**101**
Network Mask	**255**	**255**	**255**	**0**
		Cancel	**Save**	

Standard

This option allows the user to choose the appropriate output resolution such as 1080i/50. Once done, simply select "Save" to confirm the selected output resolution. The available resolutions are 1080p/60/59.94/50, 1080i/60/59.94/50, and 720p/60/59.94/50.

Note: If you've selected 720p for the output resolution, all inputs should have a resolution of 720p as well.

The menu option OutConv will be activated as soon as 1080p50 or 1080p59 is selected. OutConv allows you to downgrade the resolution of the SDI video port 5 to 1080i or 720p for connecting to the HDR-70 recorder, which is a crucial device in OBV-3200 HD 12-Channel Mobile Video Studio. See the section, *OutConv*, for details of this option.

Level
There are two different audio standards available for selection. The user can either select the EBU or SMPTE standard. By selecting AUTO allows the device to automatically detect the audio standard.

Note: When the image is 50 Hz, the audio follows EBU standard and when the image is 59.94/60 Hz, the audio follows SMPTE standard.

Genlock
Genlock is an external sync setting. **Ref IN/OUT** port receives external sync which can be either **Tri-Level** or **Black Burst** signal. **Please note that resolutions of 1080i and 720p are not appropriate for Black Burst Sync.**

Enable genlock to allow the switcher to receive external sync, then adjust its H and V phases accordingly. H phase ranges from -2190 to +2190 ms and V phase ranges between -1124 and +1124. A positive value sets sync signal leading and a negative value sets sync signal lagging.

OutConv
When the video output resolution is set to 1080p50 or 1080p59, OutConv allows you to downconvert the resolution of SDI video port 5 to 1080i or 720p for connecting to the HDR-70 recorder, which is a crucial device in OBV-3200 HD 12-Channel Mobile Video Studio.

If the output resolution is 1080p50, you may downconvert the resolution to the following:

- Off
- 720p50
- 1080i50

If the output resolution is 1080p59.94, you may downconvert the resolution to the following:

- Off
- 720p59.94
- 1080i59.94

Menu Mode
The user is allowed to switch between full and simplified menu versions. Select "Advanced" for full menu display or "Basic" to display a condensed version of the OSD menu.

Brightness: This option allows you to adjust the keyboard brightness with 7 being the brightest and 1 being the dimmest.

Menu Preference

In menu preference, the user is allowed to set the menu color, menu transparency level, menu size and the display position.

Menu color: the available options are blue and grey

Options of **Menu Transparency** are listed below:
0: No Transparency

1: Background 50% Transparent (buttons not Transparent)

2: All Menu 50% Transparent

Menu Position
Menu Position gives the user ability to select several positions for the Menu area on the Screen. The current options are Centre, Top, Left, Right and Bottom.

Auto Save

When enabled, your last settings will be automatically saved within 5-10 seconds after shutting down the OSD menu. Do not shut down your machine during this time. At the next boot, the machine will automatically load the last saved settings. Note that **Still Load** also triggers auto save.

Note: The **Auto Save** function does not instantly save new settings; it is only triggered 5 to 10 seconds after the OSD menu is closed. This is to avoid adverse effects on the smoothness of operation.

The **Auto Save** function does not apply to the resolution setting. To change the SE-2600's resolution, go to "**OSD Menu/Setup/Standard**" and then select "Save Setup" to save the new setting.

Factory Default

Restore: This option resets the machine to the factory default settings.

Reset Names: This resets the Multiviewer labels (Input 1-8) to their default settings.

Language

The available languages for OSD menu are English, Traditional Chinese and Simplified Chinese.

Network

The Network option allows you to view the switcher's IP address through which the computer imports image files. See *chapter 3* for network configuration and software installation.

Addr Mode: The available network connection modes are **DHCP** and **Static.** The default connection mode is **Static** with an IP address of **192.168.100.101**.

IP Addr: Manually enter the IP address if **Static** is chosen.

Network Mask: Manually enter the network mask if **Static** is chosen.

Cancel: Select to cancel all changes made.

Save: Select to save all changes made.

Network Def: resets network settings to factory defaults. Default settings are listed below.

- Addr：Static

- IP Addr：192.168.100.101

- Network Mask：255.255.255.0

Software

This option is only available when the USB storage device containing the latest firmware file is inserted. Select Upgrade to start the firmware upgrade process. Refer to the ***FIRMWARE UPGRADE*** section for more details.

At the bottom of the menu, you will be able to view the version number of the latest firmware installed.

Chapter 5   Basic Operation

The switcher's control panel is the main control interface for the user to select video sources and take them to air during live production. On the control panel, the user will be allowed to select the transition style, enable/disable various keyers, and add logos to the program view.

The OSD menu allows the user to adjust transition settings, configure chroma keyers and PIP windows, assign inputs and outputs and modify audio parameters.

This section describes how you can switch video sources on the control panel using simple operations.

5.1   Video Switching

First let's learn the basics of video switching.

Program and Preview rows

This row of buttons is typically used to select the switcher's main Program output image. The selected source sent to the Program outputs will be **backlit Red** on this row. Simple cuts between sources can be performed on this row by pressing the source number required for the next shot.
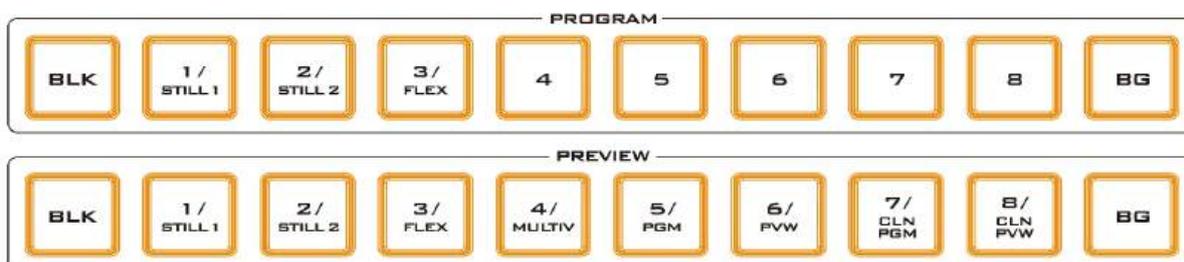
This row of buttons is typically used to select the switcher's Preview or Next source output image. The selected source will be **backlit Green** on this row. You can transition between Preview and Program using the **T-Bar**, the **CUT** button or the **AUTO** button.

Note: The keys on the Program and Preview rows will still be active while the T-Bar is moving.

Black and MATTE View

The **BLK** and **BG** buttons allow the user to respectively enable a black background and a matte colour on Program and Preview screens.

The MATTE color can be configured in the OSD menu. Simply go to '**Start**' → '**Matte**' and then adjust **Luma**, **Saturation** and **Hue**.

For **Hue** value, **Red** is 0, **Green** is approximately 120 and **Blue** is approximately 240. For secondary colors, **Yellow** is approximately 60, **Cyan** is approximately 180 and **Violet** is approximately 300.

The **Sat** or **Saturation value** refers to the intensity of the color selected in **Hue**. As the saturation increases, the color appears to be more pure. As the saturation decreases, the color appears to be more washed-out or pale.

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The Luma value relates to how bright or dark the selected color or hue is. The higher the **Luma** value, the brighter the color selected in **Hue**.

Flex Output

The **Flex™** output allows the user to show a variety of sources at the same time these can then be fed as one combined image to the SE-2600 Program or Preview output.

The **Flex™** output is basically a combination of one background image and four other Picture in Picture windows. While pressing and holding down the **SHIFT** button, press the **FLEX** button to activate the **Flex™** output. To deactivate, press the **FLEX** button again.

You will have the ability to place a user defined color border around the smaller PIP windows. You can re-size, crop, rotate and position the PIP windows in almost any manner that you wish. See *Section 4.5 Flex Src* for more details about Flex Output Configurations.

Still button

While pressing and holding down the **SHIFT** button, press the **STILL** button to switch the Preview/Main Program view to a still picture. Before pressing the Still button, make sure the still pictures are loaded to the still buffers (Still 1/2), which can be done in the **OSD** menu.

Tip: The still buffers can be used to store the image captured using the Grab button. See *Grabbing & Saving a Still to Memory* for detailed instructions.

5.2   Transitions

The **Transitions** group of buttons allows the user to decide how to bring the selected Preview source image to the Program output. The SE-2600 user can decide to use a **CUT, MIX, WIPE** or **DVE (Digital Video Effect)** transition. In order to use these transition options, the **TRANS BG** (Transition Background) button needs to be enabled (backlit Red).

AUTO Button

The **AUTO** button is used instead of the manually operated **T-Bar** and automatically performs the complete selected transition between Program and Preset over a set period. The **M/E** value in the **START** menu is used here. See *Section 4.1*.

CUT Button

The **CUT** button is used to immediately switch between the currently selected Program and Preset sources.

MIX Button

The **MIX** button is selected when a dissolve or fade transition between the selected Program and Preset sources is required. This **MIX** transition is produced by then moving the **T-Bar** manually or by pressing the **AUTO** button. To configure the mix transition time, open the OSD menu, then the **Start** menu, and modify the **M/E** value accordingly.

Program View Before Transition	Transition in Progress (MIX Effect)	Program View After Transition

WIPE/DVE Button

The **WIPE/DVE** button is selected when a 2D wipe or a 3D DVE transition between the selected Program and Preset sources is required. This WIPE or DVE transition effect is produced by then moving the **T-Bar** manually or by pressing the **AUTO** button. Select 2D WIPE in **OSD menu → Start → WIPE Effects → WIPE**. Select 3D WIPE by pressing **DVE 1/2/3** buttons.

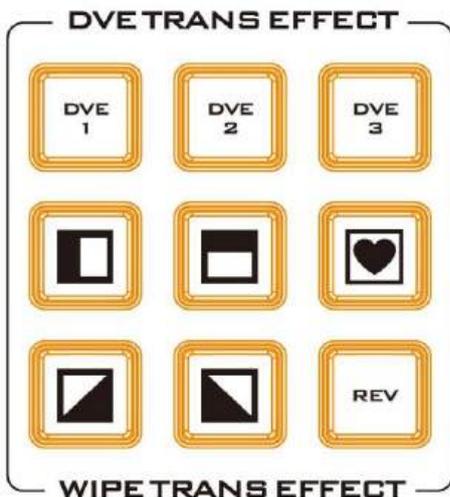| Program View Before Transition	Transition in Progress (WIPE Effect)	Program View After Transition

WIPE/DVE Selection Pane

There are 32 different 2D WIPE effects and 3 different 3D WIPE effects to choose from when using the SE-2600 switcher. To select a different WIPE transition, either select a WIPE style in the **TRANS EFFECT** area of the SE-2600 Control Panel or the **Start** Item of the OSD Menu (see the table below). Before you make the selection, make sure the **TRANS BG** and **WIPE/DVE** buttons are enabled.

Start	Transition	M/E	60	DSK	15	FTB	60
	Type	WIPE					
	Wipe Effects	Wipe	1	Soft	0%	Width	1%
	Border	Luma	100%	Sat	80%	Hue	0
	Position	X	0%	Y	0%		
	Matte	Luma	100%	Sat	80%	Hue	0

Note: Open the **OSD menu** by pressing the **MENU** button on the SE-2600 Control Panel.

To select a **WIPE** on the **OSD menu**, navigate to the **WIPE** option under **WIPE EFFECTS** and then select a **WIPE number**. Each WIPE transition also has flexible user options to tailor the look of the transition. All wipes have an optional colour border applied. The wipe border **width** and **colour** are also chosen within the menu system.

Soft Value
This value allows the 'inside' and 'outside' edge softness of the Wipe Border to be controlled. A low value makes a sharp or hard wipe edge. A large value results in a softer or diffused wipe edge.

Width Value
This value determines how wide the actual wipe effect is. A low value makes a narrow wipe. A large value makes a wider wipe.

Hue, Sat and Luma values
The colour of the Wipe Border Matte can also be controlled by adjusting the **Hue, Sat** and **Luma** values.

Wipe Position
Certain Wipes, such as the **Circle** and the **Oval Wipes**, allow the Wipe position to be controlled.

The **X value** allows the selected wipe to be offset to the left or right of the screen.

The **Y value** allows the selected wipe to be offset to the top or bottom of the screen.

REV Button

When the **REV** Button is **OFF** the selected WIPE or DVE transition will operate in its default direction only. When the **REV** Button is **ON** then the selected transition will operate in the reverse direction.

Clip Button

Press the **Clip** button to enable the Clip (Stinger) transition mode.

The Stinger Transition Effect is basically an animated effect added during transition of two video sources. The animated effect is generated by a clip file which consists of a series of sequential files in **bmp/jpg/png/pic** formats. The

Stinger transition is produced by then moving the **T-Bar** manually or by pressing the **AUTO TRANS** button. See *Section 5.4* for instructions on loading the clip on the switcher.

Trans BG

Turning on the **TRANS BG** button allows you to activate the MIX, WIPE or Stinger transition with the background image/video.

When on (backlit red), the background image/video will be included in any chosen transition from Preview to Program. When this button is toggled, or switched off, any Keyer transition chosen will not change the background Program image/video.

Trans PVW

It is possible to see or test the effect of a chosen **MIX**, **WIPE** or **Stinger** transition on the Preview Monitor before using it on the Program output.

Once the **TRANS PVW** button is ON, select and use the transition that you want to test on the Preview monitor. You will also notice that the Preview Monitor switches to the currently selected Program source when the **TRANS PVW** button is turned on. Do not worry, the chosen Preview source has not changed. Press the **AUTO** button or move the **T-Bar** manually to preview the chosen transition.

NOTE: Remember to turn off the TRANS PVW button before attempting to use the chosen transition on the Program output.

FTB Button

The **FTB** button (Fade To Black) fades the current video program source to black. When pressed again it acts in reverse from complete black to the currently selected program video source. To set the transition time, open the OSD menu, then the Start menu, and modify the FTB value accordingly.

T-Bar
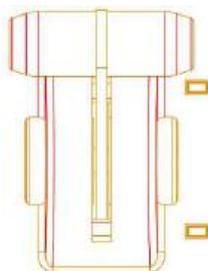
This performs a manually controlled transition from the current program source to the selected preset source. The selected transition wipe, dissolve or animation will be used. When the **T-Bar** has travelled as far as it can go, the transition between sources is complete. Please note that the **T-Bar** can be operated bi-directionally.

The **T-Bar** has indicators next to it, which light when the transition is in progress indicating the direction of operation and is off after the transition is complete.

5.3   Managing Still Pictures

On the SE-2600 Switcher, the user will be allowed to manipulate uncompressed still pictures with Grab and Frame Store functions. In this section, you will also be guided to load the stills saved on the switcher and display them on the monitor.

Each video channel of the SE-2600 has one frame store to which a still can be loaded, and the unit has enough storage space for up to 1000 uncompressed stills.

Grabbing & Saving a Still to Memory

The Grab & Save options of the OSD menu allow new Still Images to be created by grabbing & saving the **current Program video frame image** to two internal still buffers in the SE-2600.

1. Press the **MENU** button to open the OSD menu (shown below) on the Multiview display.

Stills	File Type	Still		
	Load Still	Load	Still Num 1	Still 1
		Thumbnail Picture – 1	Thumbnail Picture	Thumbnail Picture + 1
	Save Still	Save	Still 1	Still Num 1
				Delete
	Grab Still	Grab	Still 1	

2. Grab the Program output to a selected Still buffer (Still 1 or 2) by selecting '**Grab**' or pressing the Grab button.

Please note that you can also use the **Still** buttons on the control panel to select the Still buffer. Simply press and hold down the **SHIFT** button then press one of the **Still** buttons which are **Channel 1/2** buttons along the Program or Preview row of buttons.

3. The user can look at the Multi Image Preview and decide if this Still should be saved.

4. To save a Still from the currently selected Stills buffer, the user should select a Still number that has not been used yet, and select **'Save'**.

5. The save process takes about 15 seconds, after which the new thumbnail picture will be shown within the Still display under the chosen still number.

Loading an existing Still from Memory

The Still Load Menu allows stills already stored in the SE-2600 to be loaded to a Still buffer (Still 1 or 2) or an Input buffer (Inputs 1 – 8). Follow the steps below to load the still.

Files	File Type	Still		
	Load Still	Load	Still Num 10	Still 1
		Thumbnail Picture – 1	Thumbnail Picture	Thumbnail Picture + 1
	Save Still	Save	Still 1	Still Num 10
				Delete
	Grab Still	Grab	Still 1	

The Still menu screen (shown above) shows thumbnail pictures of up to 3 saved stills at a time. If there are more than 3 stills stored in the SE-2600 then the Menu Control's up/down arrow buttons can be used to move through the saved stills. The stills are shown in numerical order, and any numbers not used will be blank.

To load a still, simply browse to a Still number and select a still buffer then select **'Load'**. The selected still will be loaded into the selected buffer. In the above example, the still buffer will be loaded with the image in memory slot 10.

Deleting a saved Still from Memory

To delete a saved still, select a still number that is no longer required. Select '**Delete**' and you will be prompted to confirm the delete. Select '**YES**' to remove the still from the switcher's memory and '**No**' to cancel the delete.

Note: The deleted still, if pre-loaded to the current Still or Input buffer, will be kept until another still image is selected or grabbed to occupy this buffer.

FS – Frame Store Button

The SE-2600 has eight video channels and each of these channels has its own Frame Store, making a total of eight Frame Stores. Each of these Frame Stores can hold one still image. The FS button allows the user to call the still image into the production and toggle between that still image of the Frame Store and the live video input connected to that same video channel.

How to choose live video input or Frame Store
1. First press the FS button and the Preview row of input sources will flash green.
2. Press the required input on the Preview row. For example, pressing button 1 switches the video channel to the still picture mode.
3. To return to the live video mode, simply press the channel button again.

This selection will also be confirmed on the Multi-view output, with the selected channel showing the live input or frame store image.

Note: Before using the FS function, first make sure the still picture has been loaded to the input video channel. Refer to the section on *Loading an existing Still from Memory* for instructions on loading still pictures.

Import Still Images from PC

The Switcher Image Import/Export software (**SwitcherImageImEx_vx.x.x.msi**) allows the user to import still pictures from the PC to a designated Still number in the switcher. **The software installation package can be downloaded from the product page.** Features of the Import/Export software are listed as follows:

- Supported file formats are BMP, JPG, PNG, and PIC.
- Minimum resolution is 1280 x 720.

See *Chapter 3* for installation instructions and network configuration.

How to use
1. After the utility is successfully installed, double click the icon to run the program. Since the program is executed for the first time, it will automatically scan the network and if

multiple network interface cards are found, simply select the card that is on the same network as the device.
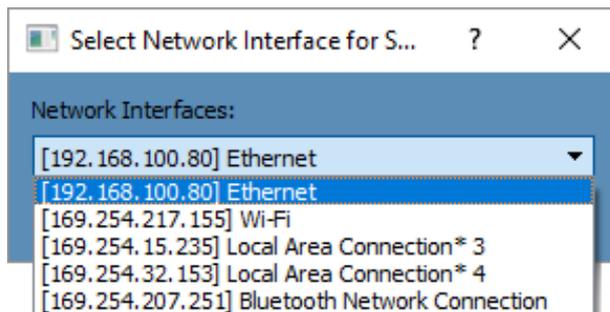
2. If the available device is scanned and found, the connection will be automatically established and the **Connect Status** will show "**Connected**" (will show **Not Connected** if disconnected).


3. After clicking the **Setup** button, you will see the network information as shown below.

4. Click the Still button to view thumbnails of still pictures and import still pictures from your PC.

5. Click the Still number first and enter a location for storing the still. Then click Import Still and the interface for selecting still files will appear. If the selected picture is not 1120x1080 or 1280x720, the interface shown below will pop up to allow you to crop or zoom in/out the picture.
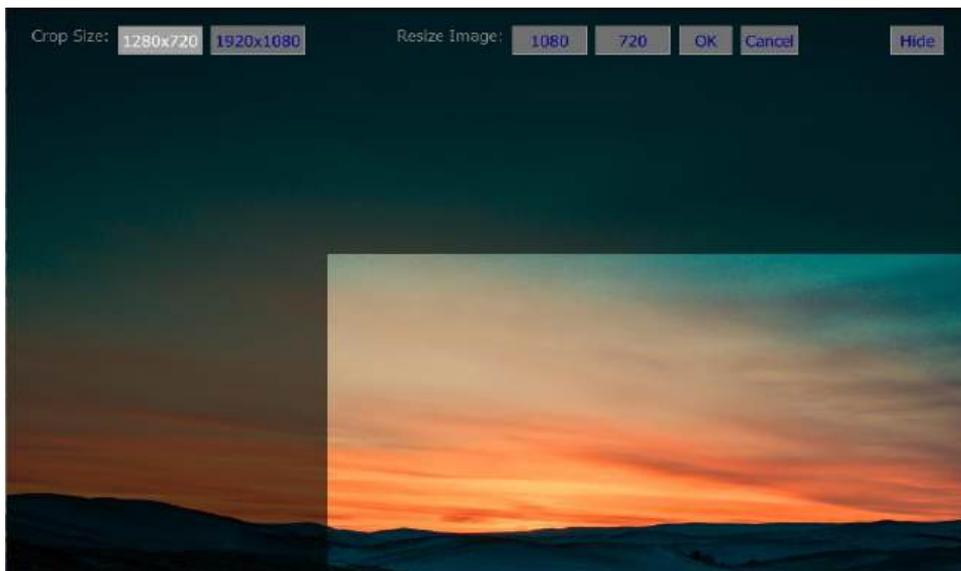
Crop Size: Select the right crop

Resize Image: You will be allowed to select two sizes, large (1080) or small (720), and zoom the picture to 1920 x 1080 or 1280 x 720.

OK: Apply the crop and start the import.

Cancel: Cancel the selection

Hide: Hide the interface

6. After the right crop is selected or the resolution is correctly configured, click OK to start importing the still picture to the switcher.

7. To confirm that the still picture is imported successfully, click the **Still** button on the **MENU SELECT** pane to view the thumbnails. OSD menu is another way to confirm the import, simply go to Files –> File Type → Still.

5.4 Performing a Stinger Transition

The Stinger Transition Effect is basically an animated effect added during transition of two video sources. The animated effect is generated by a clip which consists of a series of sequential files in **bmp, jpg, png or pic** format. This type of transition is very popular in sports productions for transitioning in and out of instant replays.

In this section, we will explain how to build and perform stinger transitions.

Loading a Clip from Memory

In **Clip**, use the Up/Down arrow buttons on the physical keyboard of the switcher to browse the clip files. Once "**Load**" is pressed, the selected clip will be loaded into the clip buffer and replace the previously loaded clip.

Files	File Type	Clip		
	Load Clip	Load	Clip 0	Clip Settings
		Thumbnail Clip - 1	Thumbnail Clip	Thumbnail Clip + 1
		Clear Clip		Delete Clip

Note: The SE-2600 comes with pre-loaded clip files. The SE-2600 also allows the user to import customized clip files. It is recommended to use 32-bit with Alpha png format.

Preview of clip videos is below the "**Load Clip"** sub-option. You can preview three clip videos at the same time.

After the clip video has been successfully imported, to enable the Clip (Stinger) transition mode, simply turn ON the Clip button.

Importing the Clip for Stinger Transition Effect from PC

On the SE-2600, besides using the existing clips on the machine, you are also allowed to import your own clip (a series of **bmp/png/jpg/pic** files) to the SE-2600 from the PC using the **Switcher Image Import/Export utility**. Simply select one of the sequential files numbered by the last five digits of the file name and the utility program will start linking all images (from the first selected file to the last) up into a sequential animation file. The optimal resolution is 1920x1080.

Instructions for importing the clips are provided below:

Click the **Clip** button on the **MENU SELECT** pane.

The clip number allows you to select a location where you can save the clip. To import a clip from the computer into the SE-2600, select **Import Clip**.

Tip: The **Switcher Image Import/Export utility** does the conversion from bmp/png/jpg to the .pic file format automatically. All you need to do is to give the utility a starting file location and it will give the utility an idea where to start linking all images up into a sequential animation file.

Importing Clips
Select "**Import Clip**" will open a file browser window. Browse to the directory where your clip files are saved and then select the file at the zeroth location, in our example on the right, the file name is ***frame-000.png***.
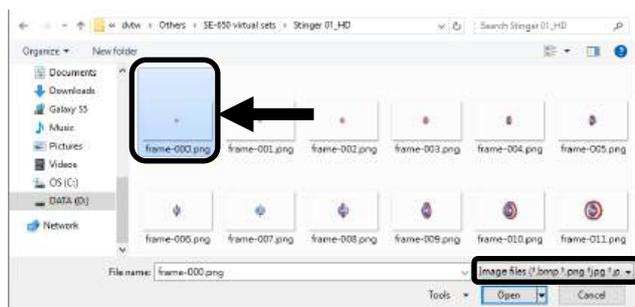
Click **Open** to start the clip import. If your files are not the .pic format, they will be automatically converted to .pic format by the **Switcher Image Import/Export utility** first.

After the file conversion, the clip import will then start. After the import is complete, the progress dialog will be automatically closed.

Note: Clip Conversion and Clip Import have progress dialogs that show progress & number of frames done. These dialogs also have a cancel button which allows the user to cancel the import at any stage. If the import is cancelled, then the partially imported data will be deleted.

## How to Create the PNG Sequence for Stinger Transition Effect

Adobe After Effects is a motion graphics application that can be used for creating the clip file for stinger transition effect. After the clip file is created, there are two ways to convert the file to the PNG sequence format readable by the SE-2600 switcher in Adobe After Effects. In this section, we will show you how you can create the PNG sequence for the Stinger transition effect.
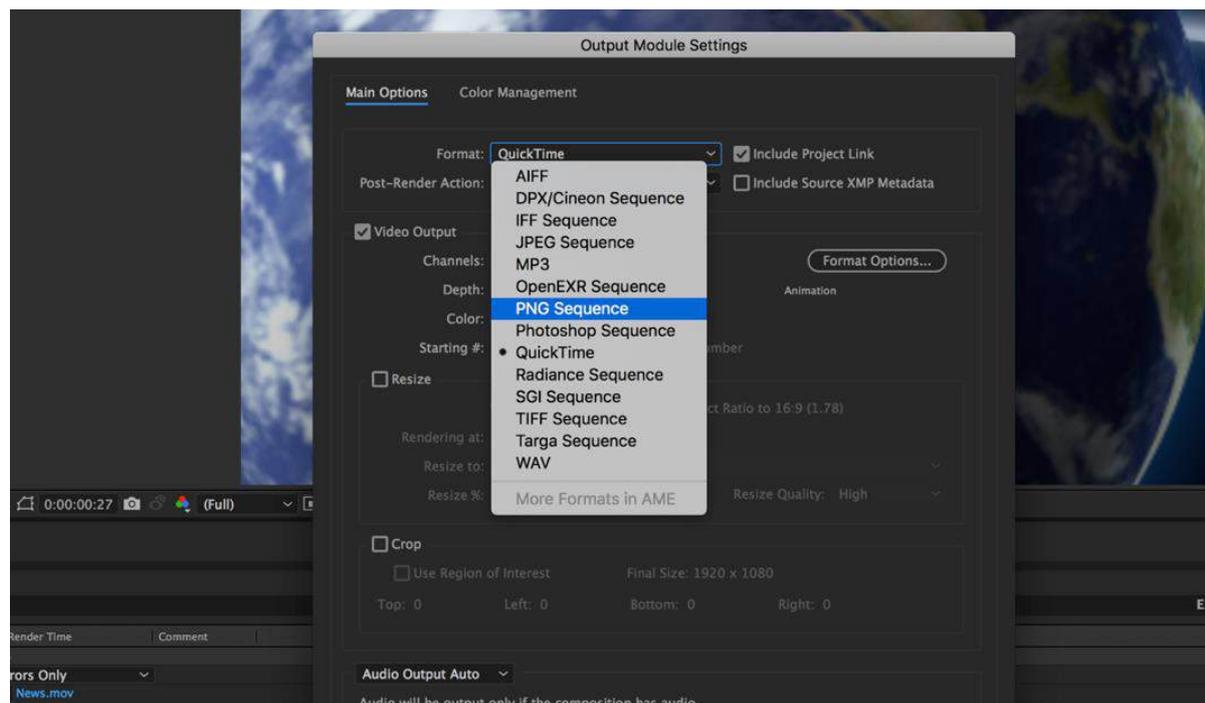
Adobe After Effects

1. Click **File → Export → Add to Render Queue** (or alternatively, you can also click **Composition → Add to Render Queue**).
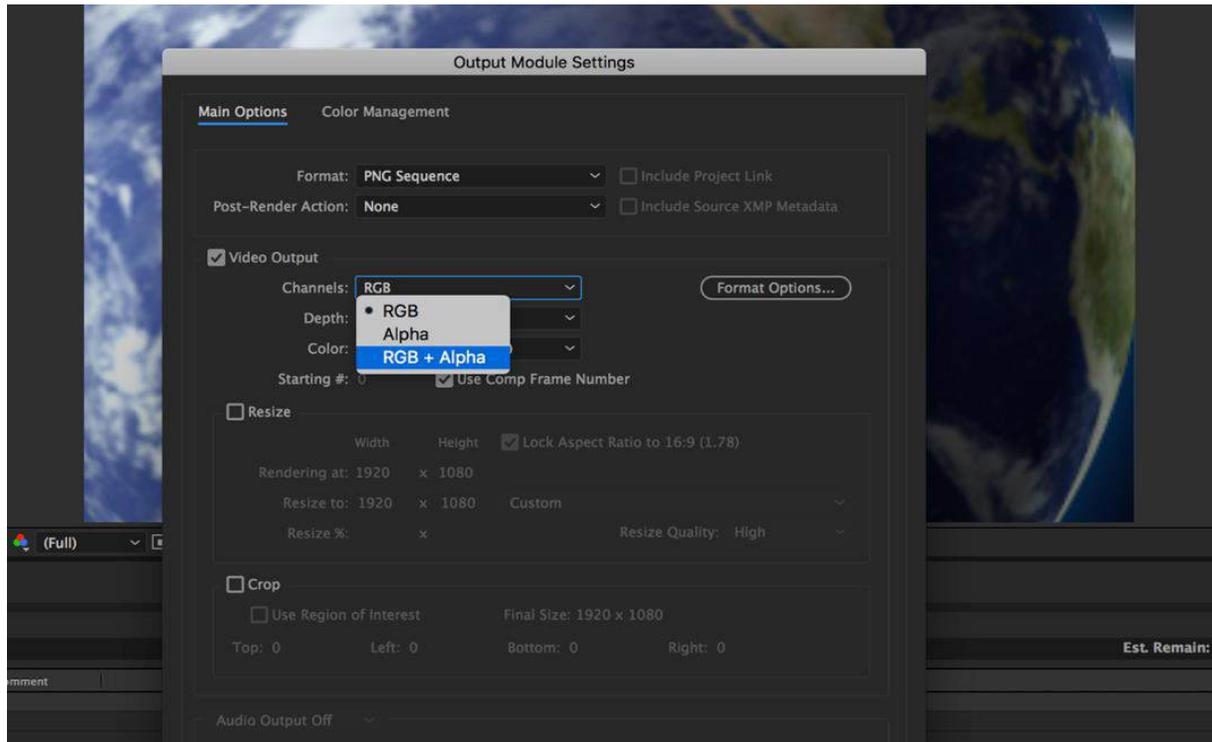
2. The Render Queue will be displayed in the bottom pane.
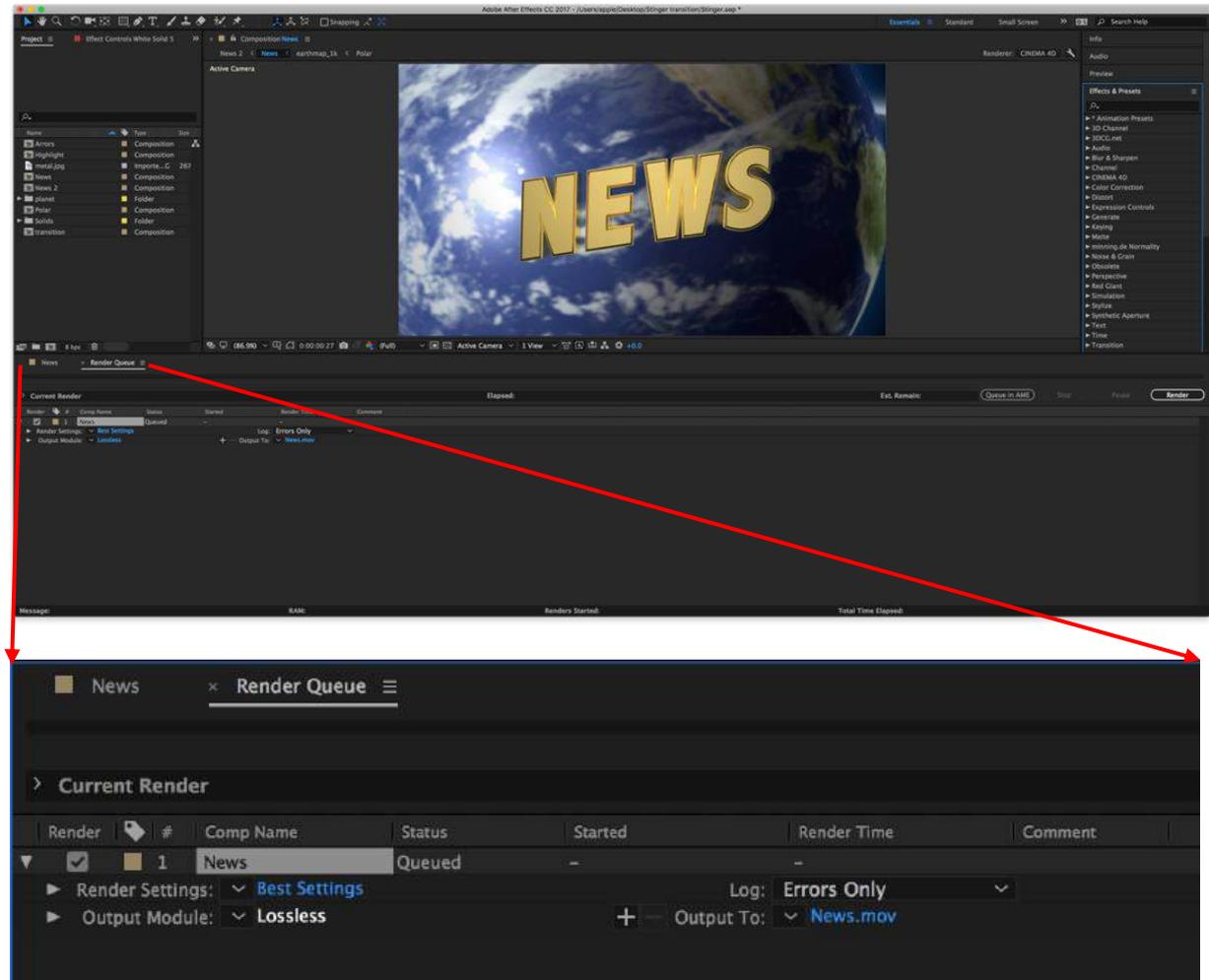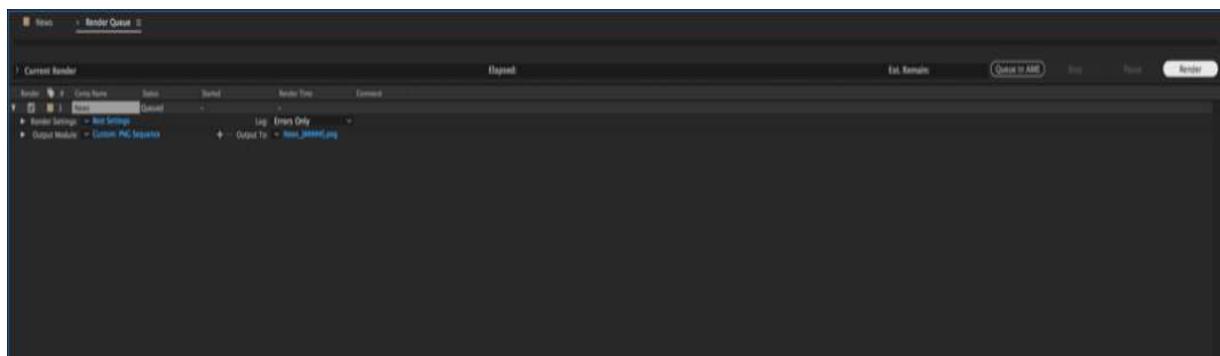

3. Click **Output Module** and on the **Main Options** window, click the **Format** dropdown list and select **PNG Sequence**.

4. Click the **Channels** dropdown list and select the "**RGB + Alpha**" option.

5. Click "**Output To**" and then change the location where your files are rendered. Click **Render** after that.
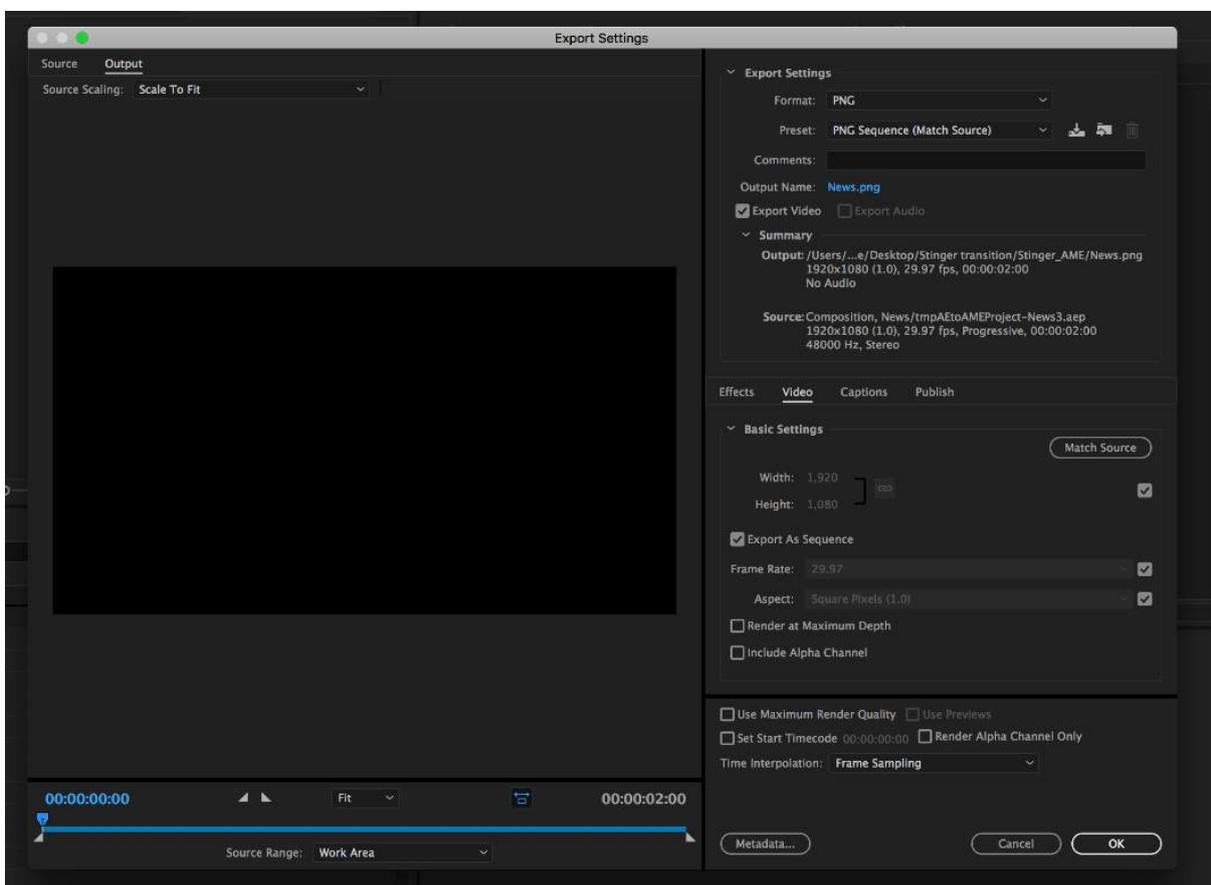

The next section outlines the file conversion procedure using the *Media Encoder CC*.

Adobe Media Encoder CC
1. Click **Composition → Add to Media Encoder Queue** (or alternatively, you can also click **File → Export → Add to Media Encoder Queue**).

2. Click blue fonts in **Format**/**Preset** fields to open the "**Export Settings**" window.
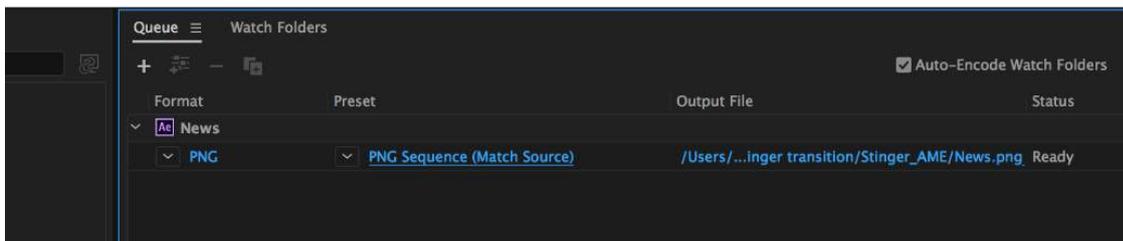
3. Click the **Format** dropdown list and then select **PNG**.
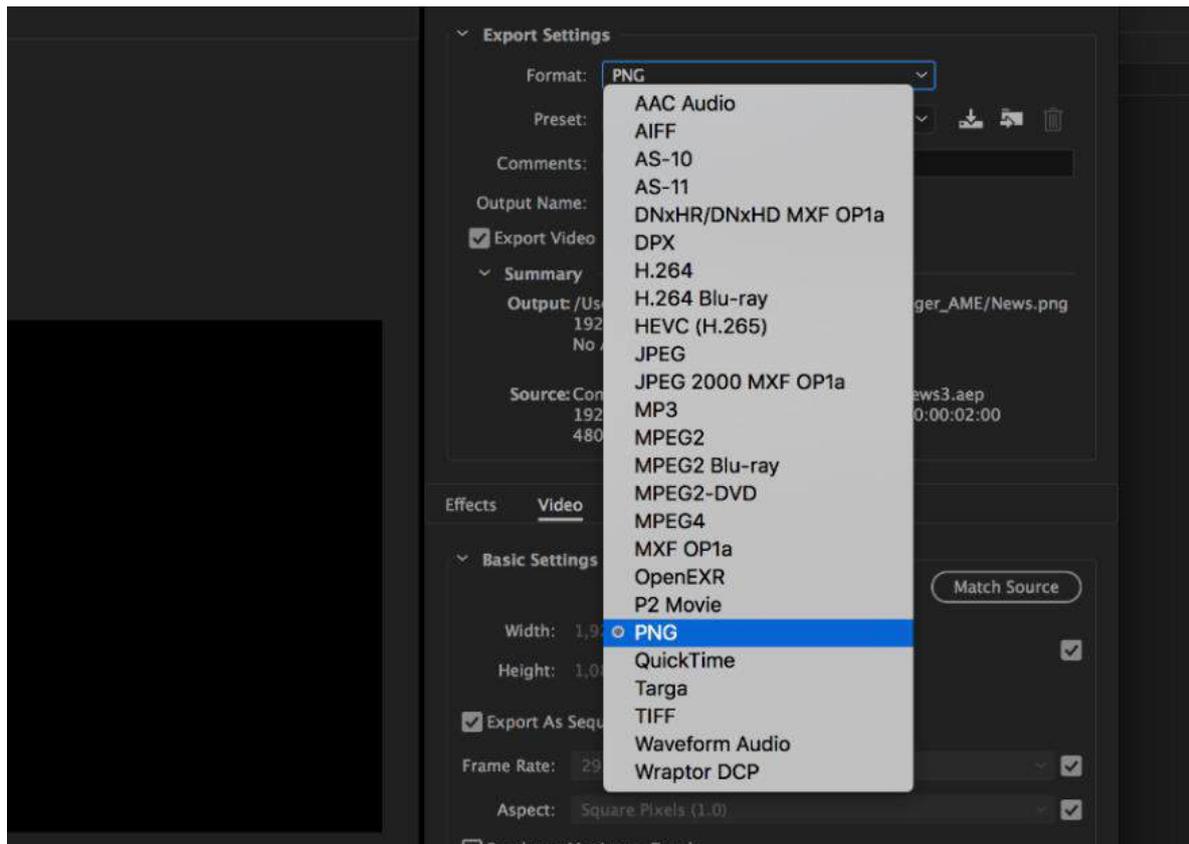
4. Click the **Preset** dropdown list and select "**PNG Sequence with Alpha**."
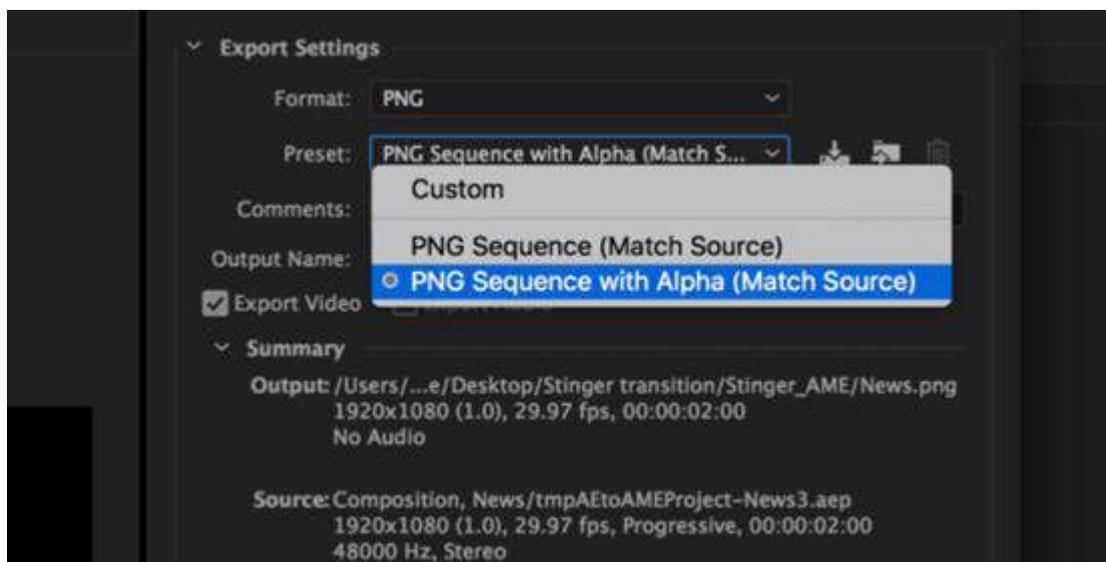
5. Make sure "**Export As Sequence**" and "**Include Alpha Channel**" are checked and then click **OK**.
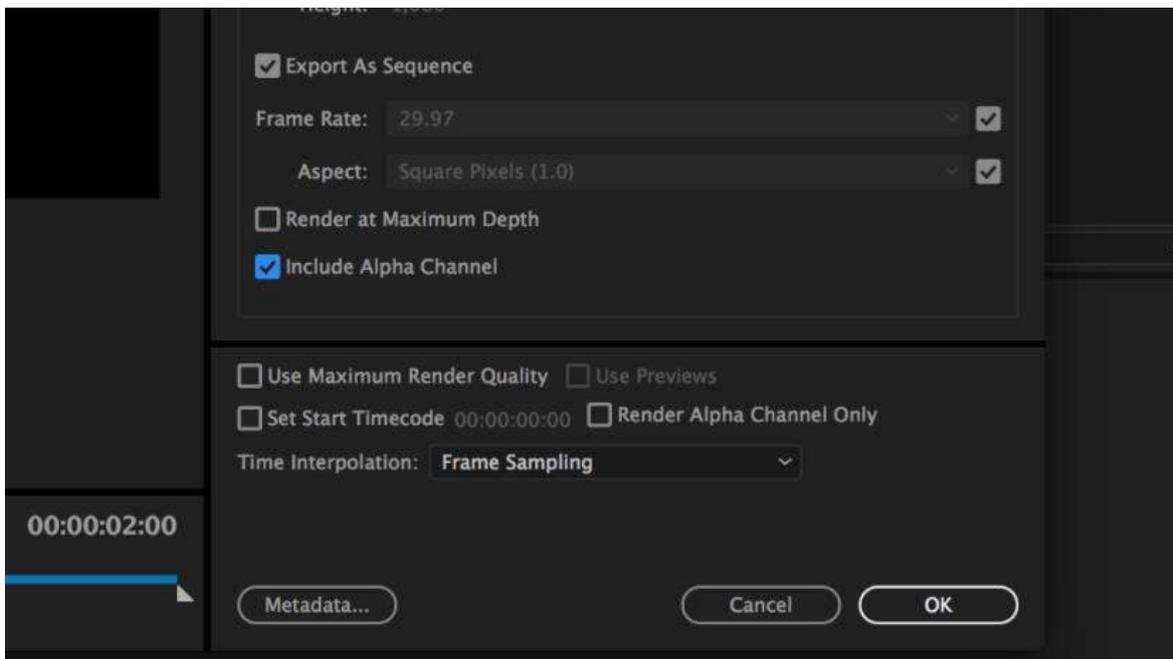
6. Select "**Output File**" to choose the render files destination. Click the green button to render.
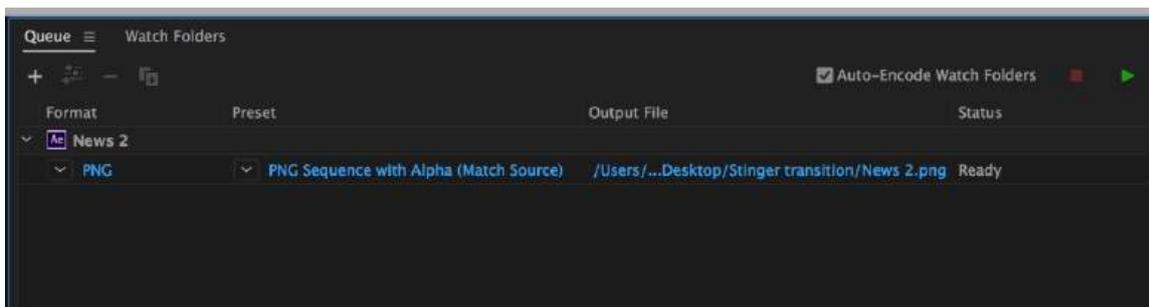
7. Once completed, the status will display "**Done**."
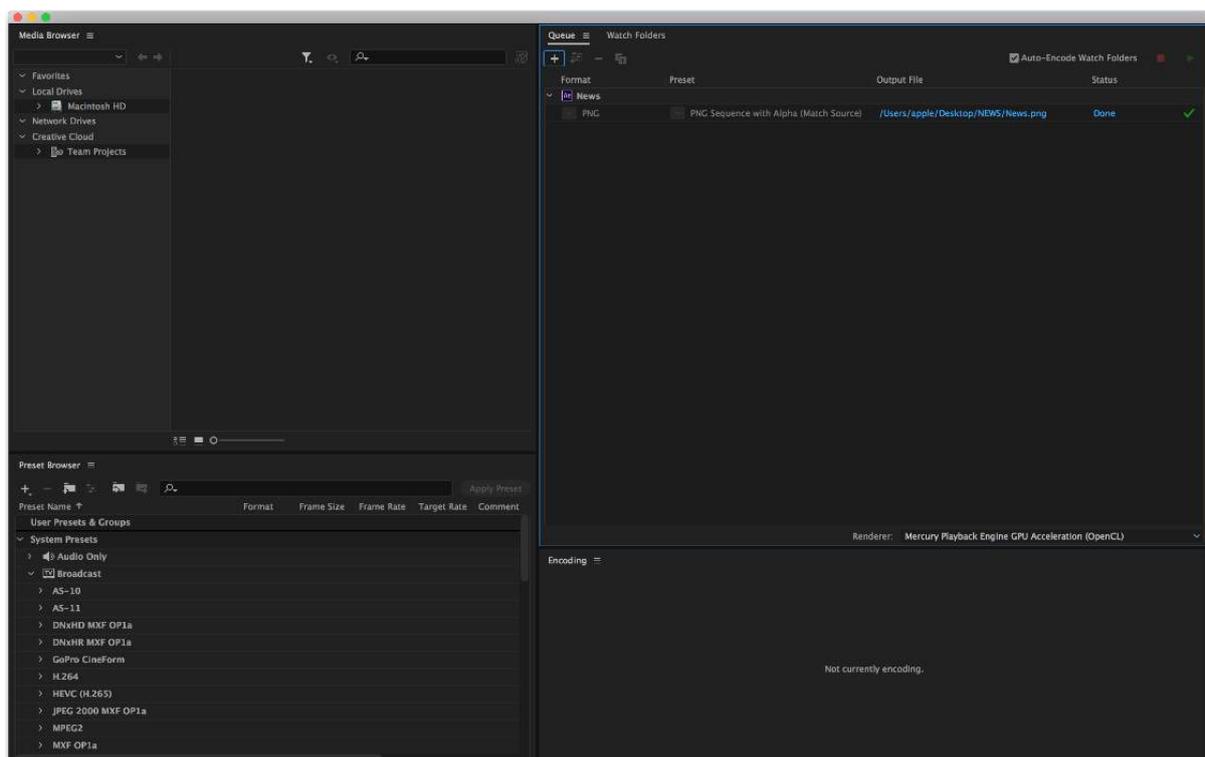
After the sequential files are created and ready, see the following sub-sections on how you can import the Clip file to the switcher.

Important things to note while creating Stinger Transition Effects

When using Datavideo's SE-2600 Multi-Channel Switcher to design and create the Stinger Transition Effects, in addition to being creative, there are a few things that you need to take into account of.

1. Length limit of the stinger transition animation

The length of a good stinger transition animation should be approximately 0.5 to 2 seconds.

2. The SE-2600 allows a maximum of 120 image files in an animation sequence

The number of image files will determine the length of stinger transition time.

3. While designing the animation, it is best to have an image that fills up the entire frame to create a satisfactory visual effect (please see the images below).

5.5　Enabling Still Logo

The SE-2600's logo function places a logo layer on your video. In this section, we will show you how to import still logo image to the switcher, load still logo image on the switcher as well as enabling the loaded still logo on Preview and Program Out.

The SE-2600 has enough storage space for up to 1000 uncompressed still logo pictures.
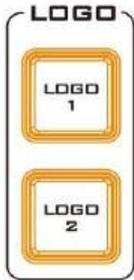
Loading an existing Logo from Memory

The SE-2600 allows the user to load still logo from the machine's memory to the logo buffer (Logo 1 or 2), then press either Logo 1 or Logo 2 button to enable the loaded logo on both the Preview and Program Out. Follow the steps outlined below to load the desired still logo from memory.

Files	File Type	Logo		
	Load Logo	**Load**	**Logo**　　13	**Logo 1**
		Thumbnail Picture – 1	**Thumbnail Picture**	**Thumbnail Picture + 1**
		Clear Logo		**Delete Logo**
	Logo 1	X　　　　-37%	X　　　　24%	
	Logo 2	Y　　　　0%	Y　　　　0%	

On the still logo menu, you should find a thumbnail view of three logos. Use the up/down arrow buttons to browse all other logos which are shown in numerical order. Black thumbnails are unused memory slots.

To load a still logo, simply browse to a still logo number and select a logo buffer then select **'Load'**. The selected still logo will be loaded into the selected buffer. In the above example, logo 1 will be loaded with the logo saved in memory slot 13.

To adjust the logo position, simply change the **X** and **Y** values of the respective logo buffer which can be found at the bottom of the **Logo** menu.

Selecting "**Clear Logo**" clears the logo buffer. Selection of "**Delete Logo**" removes the logo from the selected memory slot.

Importing Still Logo from PC

The Switcher Image Import/Export software (**SwitcherImageImEx_vx.x.x.msi**) allows the user to import still logos from the PC to a designated memory slot of the switcher. **The software installation package can be downloaded from the product page.**

Note: A standard still logo is basically a still picture with an aspect ratio limited to 480x1080.

See *Chapter 3* for installation instructions and network configuration.

How to use

1. Open the Switcher Image Import/Export Program and make sure the **Connect Status** shows "**Connected**" (shows **Not Connected** if disconnected).
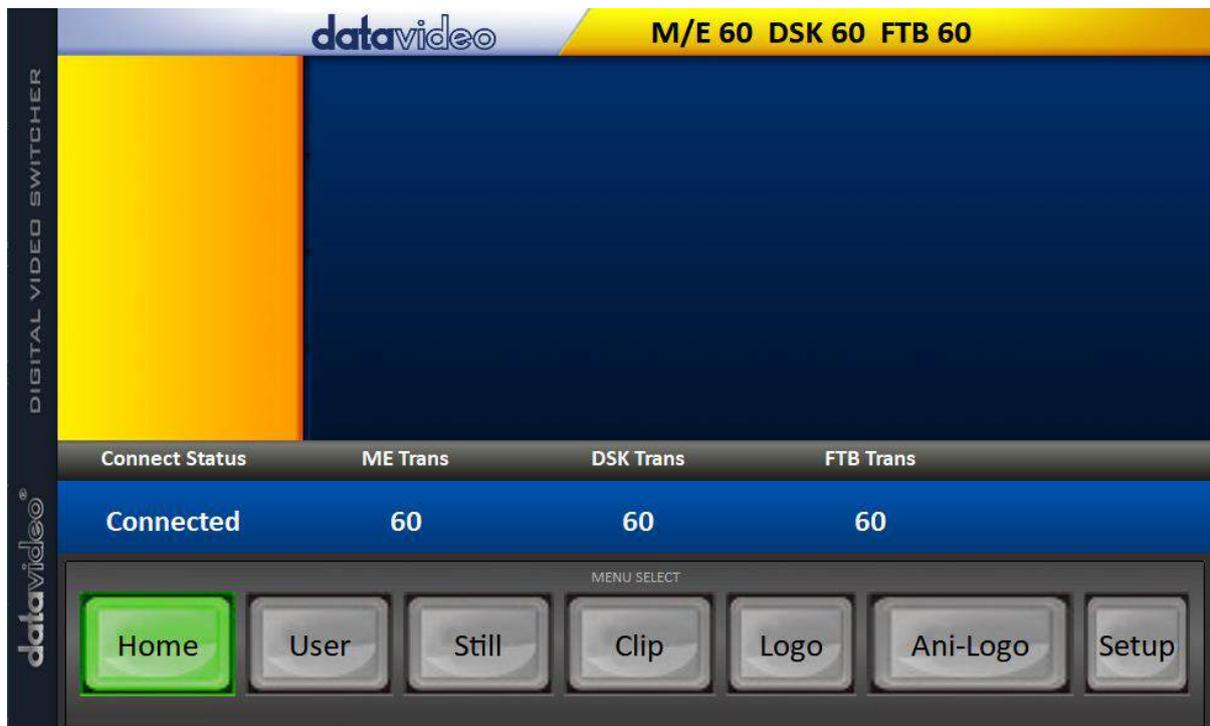
2. Clicking the **Logo** button to view logo thumbnails and import logos from your PC to the switcher.

3. Click "**Logo**" number then enter a memory slot number. Click **"Import Logo"** to open the file browser window and browse to the file that you would like to import.

4. Select the logo file that you would like to import. **Note that the aspect ratio is limited to 480x1080**.

5. Check on the program's Logo page to make sure that the logo has been imported successfully.
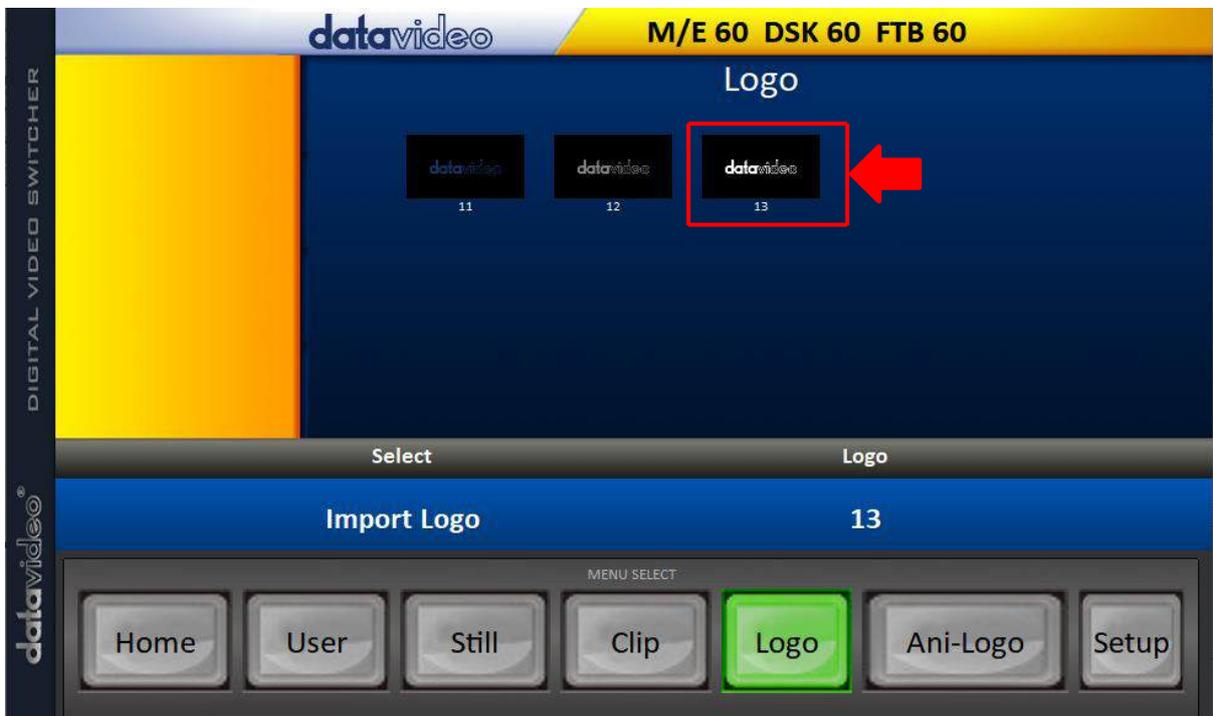
6. After successfully importing the logo into the switcher, you will then be able to start loading the new logo to the buffer. To enable the logo on Preview and Program Out, press the Logo button.

5.6 Enabling Logo Animation

The SE-2600's logo animation function places an animated logo layer on your video. Each animated logo consists of a series of 120 sequential files in bmp, jpg, png or pic format. Every image file is limited to an aspect ratio of 480x270.

In this section, we will show you how to import animated logo to the switcher, load animated logo on the switcher as well as enabling the loaded animated logo on Preview and Program Out.

Note: The SE-2600 has enough storage space for up to 1000 uncompressed animated logo.

Loading an existing Ani-Logo from Memory

The SE-2600 allows the user to load ani logo from the machine's memory to the logo buffer (Logo 1 or 2), then press either Logo 1 or Logo 2 button to enable the loaded ani logo on both the Preview and Program Out. Follow the steps outlined below to load the desired ani logo from memory.

Files	File Type	Ani Logo		
	Load Ani Logo	**Load**	**Ani Logo** 13	**Logo 1**
		Thumbnail Picture – 1	**Thumbnail Picture**	**Thumbnail Picture + 1**
		Clear Ani Logo		**Delete Ani Logo**
	Logo 1	X -37%	X 24%	
	Logo 2	Y 0%	Y 0%	

On the ani logo menu, you should find a thumbnail view of three animated logos. Use the up/down arrow buttons to browse all other animated logos which are shown in numerical order. Black thumbnails are unused memory slots.

To load an animated logo, simply browse to an ani logo number and select a logo buffer then select **'Load'**. The selected animated logo will be loaded into the selected buffer. In the above example, logo 1 will be loaded with the animated logo saved in memory slot 13.

To adjust the animated logo position, simply change the **X** and **Y** values of the respective logo buffer which can be found at the bottom of the **Ani Logo** menu.

Selecting "**Clear Logo**" clears the logo buffer. Selection of "**Delete Logo**" removes the animated logo from the selected memory slot.

Importing Animated Logo from PC

The Switcher Image Import/Export software (**SwitcherImageImEx_vx.x.x.msi**) allows the user to import animated logos from the PC to a designated memory slot of the switcher. **The software installation package can be downloaded from the product page.**

Note: Each animated logo consists of a series of 120 sequential files in bmp, jpg, png or pic format. Every image file is limited to an aspect ratio of 480x270.

See <u>*Chapter 3*</u> for installation instructions and network configuration.

How to use

1. Open the Switcher Image Import/Export Program and make sure the **Connect Status** shows "**Connected**" (shows **Not Connected** if disconnected).
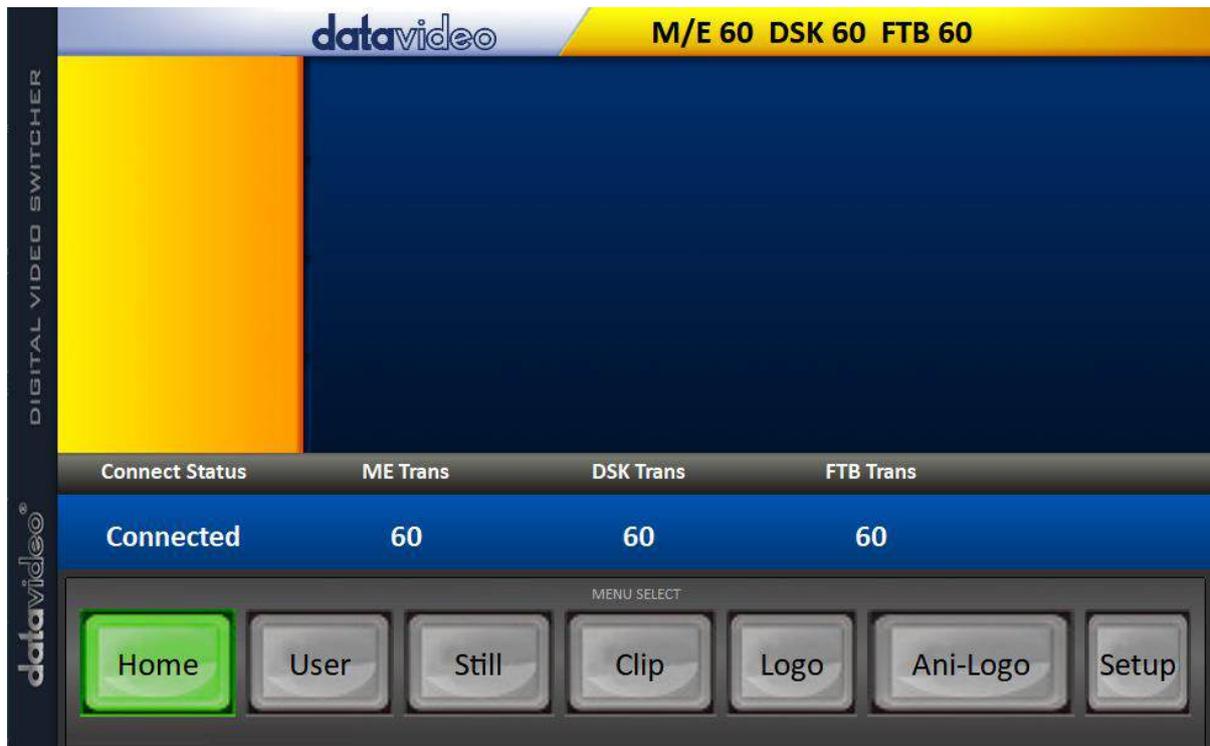
2. Clicking the **Ani-Logo** button to view animated logo thumbnails and import animated logos from your PC to the switcher.

3. Click "**Ani Logo**" number then enter a memory slot number. Click **"Import Ani-Logo"** to open the file browser window and browse to the file that you would like to import.

4. Select the animated logo file at the zeroth location so upon file import, the program will then link all images up into a sequential animation file. If your files are not the .pic format, they will be automatically converted to .pic format by the program first.

5. Check on the program's Ani Logo page to make sure that the animated logo has been imported successfully.

6. After successfully importing the animated logo into the switcher, you will then be able to start loading the new animated logo to the buffer. To enable the animated logo on Preview and Program Out, press the Logo button.

Chapter 6   Advanced Operation

The SE-2600 is a High Definition Digital Video Switcher. As well as mixing video and audio sources, it has additional functions such as Picture In Picture (PIP), DSK, LUMA KEY, Chroma Key and Logos.

Before attempting to use the SE-2600's PIP, DSK LUMA KEY and LOGO functions it may help to first understand the order of the video layers at the SE-2600 Program (PGM) outputs.
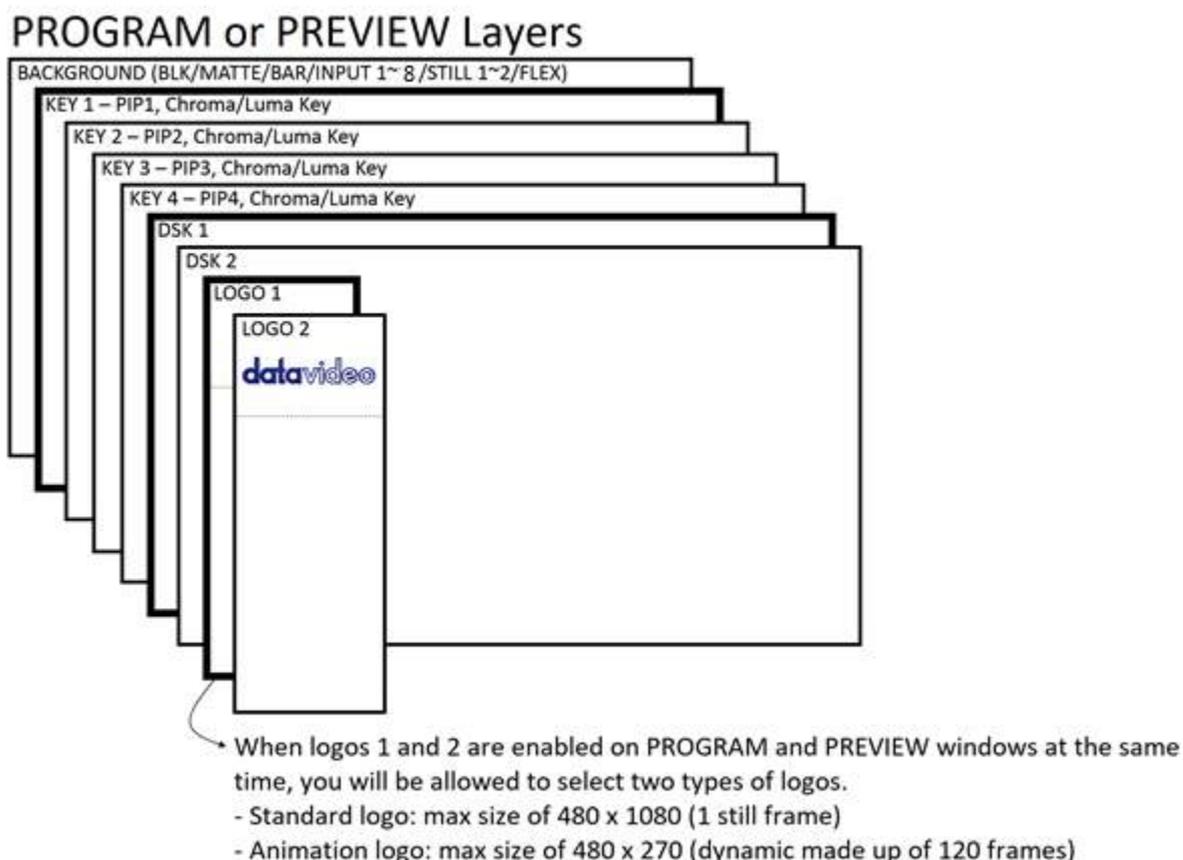
The **Background video layer** is the normal video layer **(black screen, color matte, color bars, inputs 1-8, still pictures 1 and 2 or Flex™ sources)** when mixing and switching with the SE-2600. It occupies the whole screen area of the Program output. This layer can be hidden or partly hidden by the PIP, DSK and LOGO layers in front of it.

The **Key 1 layer (PIP1, chroma key or luma key)** does not occupy the whole screen and is shown in front of the Background video layer when enabled.

The **Key 2 layer (PIP2, chroma key or luma key)** does not occupy the whole screen and is shown in front of the Background video and Key 1 layers when enabled.

The **Key 3 layer (PIP3, chroma key or luma key)** does not occupy the whole screen and is shown in front of the Background video, Key 1 and Key 2 layers when enabled.

The **Key 4 layer (PIP4, chroma key or luma key)** does not occupy the whole screen and is shown in front of the Background video, Key 1, Key 2 and Key 3 layers when enabled.

In some setups the Key image can be hidden behind other key images. This is not a fault. Change the position or size of the Key image if required.

The **DSK 1 layer** can occupy the whole screen. If set up incorrectly this layer can stop the video layers behind it from being seen properly. Re-adjust your DSK 1 settings or switch off the DSK1 function on the SE-2600 to restore the video behind it.

The **DSK 2 layer** can occupy the whole screen. If set up incorrectly this layer can stop the video layers behind it from being seen properly. Re-adjust your DSK 2 settings or switch off the DSK2 function on the SE-2600 to restore the video behind it.

The logo layer is the uppermost layer. If standard logo (still) is chosen, the maximum logo size will be restricted to 480x1080. If animation logo (dynamic) is chosen, the logo will be confined within 480x270.

Note: Where possible prepare and position the upper video layer elements in advance of the live production starting to avoid them appearing on the program output incorrectly.

Most broadcast networks have guidelines and advice on the use of video, images, music, logos and on screen text so it is best to check beforehand when planning a production. Do not use copyright protected content until you have the relevant permissions. Information on royalty free video, images and music is widely available, speak to your local dealer or search for advice on the internet.

6.1   Picture-in-Picture and Downstream Key

The **Picture in Picture (PIP)** feature of the **Key 1**, **Key 2, Key 3 and Key 4** layers can be used for displaying a smaller secondary image in front of the background video layer. This smaller PIP image can be resized, cropped, repositioned and even keyed by the user to avoid an important part of the background video layer being covered by it.

The **Down Stream Key layers** (**DSK 1** & **DSK 2**) are placed on top of all the previous layers. These layers are typically used with Character Generator inputs for displaying titles, graphics, lower thirds, clocks and logos. Datavideo offer several Character Generator products (additional purchase) such as TC-200, CG-250, CG-10 and CG-500. If set up incorrectly these DSK layers can also stop the video layers behind them from being displayed properly.

The SE-2600 has six dedicated keyers, **Key1**, **Key2**, **Key3**, **Key4, DSK 1 and DSK 2**. All six keyers can be active simultaneously.

Picture-In-Picture

In this example, we are supplying the SE-2600 with an HD-SDI live video signal to input 2; this is selected on the Program row. We have also assigned a STILL image to input 6. This still image, selected on the **Keyer** sub menu, will be displayed in the PIP window.

Note: See Section 5.3 for assigning a STILL image to input 6.
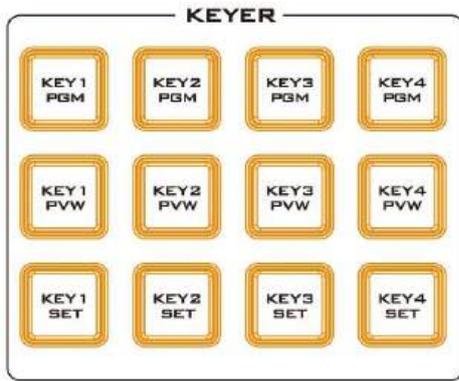
On the SE-2600 Control Panel / Keyboard there are eight **KEYER** keys. These are labelled Program and Preview. The upper **KEYER** keys relate to activating Picture-In-Picture images on the Program outputs. The lower **KEYER** keys relate to activating Picture-In-Picture images on the Multi-view or Preview outputs. Before activating Picture-In-Picture images on the output image, you should first set these **KEYER** keys to PIP mode.

Assigning a video source to a PIP window

On the **Keyer** sub menu you can assign a selected input to the chosen PIP video layer.

1. Open the **Keyer** sub menu and in the **Keyer Ctrl** option, set **Key 1** to the desired Key (**Luma**, **Chroma** and **Linear**) and PIP mode as shown below.

Keyer	Keyer	Key 1		Normal		
	Keyer Ctrl	Luma		PIP	**Opac**	100%
		Lift	0%	**Gain**	1.0	**Invert**	Off
	Key Source	**Input 1**		**Fill**	Black	
	Mask	**Left**	0%	**Right**	0%	
		Top	0%	**Bot**	0%	

2. In the **Key Source** option, assign an input source.

3. Activate PIP window on the Preview or Program output by pressing **Key 1 PVW** or **Key 1 PGM** button so that you can adjust the PIP window while viewing the changes made.

4. Open the **P-in-P** sub menu and adjust the PIP window settings (**positions**, **border**, **shade matte** and **crop**). For descriptions of the parameters, refer to the section on _P-In-P_ for more details.

P-in-P	Keyer	Key 1				**Fine**	Normal
	Position	**X**	20%	**Y**	10%	**Size**	40%
	Border	Normal					
		Luma	100%	**Sat**	80%	**Hue**	0
		Width	2%	**Soft**	0%	**Opac**	100%
	Shade Matte	**Luma**	100%	**Sat**	80%	**Hue**	60
		Shade Soft	2%	**Shade Pos**	50	**Direction**	35
	Crop	**Left**	0%	**Right**	0%	**Size**	0%
		Top	0%	**Bot**	0%	**Soft**	0%

Assigning a video source to a PIP window using shortcut keys

In addition to assigning a video source to a PIP window on the **OSD MENU**, the user can also use shortcut keys to easily switch between different PIP image sources. Press and hold **KEY 1-4 PGM** buttons, and the program and preview rows will start flashing. Press the program row buttons to switch the PIP image source.

Character Generator

CG mode allows you to linear key the CG text or graphics over the live video. Simply connect the laptop, with CG software installed, to one of the HDMI inputs (inputs 5 to 8) of the switcher. Ensure that your input image or video resolution matches the switcher's resolution set in **OSD menu** → **Setup** → **Standard**.

Then follow the steps below to set up the CG text or graphics:

1. Connect the laptop to one of the HDMI ports of the SE-2600 switcher using an HDMI cable. In this example, we will be using HDMI port 5 for illustration purpose.

2. Open CG-500 on the laptop and create a CG image.

3. Switch ON the SE-2600's power button and after the boot up is complete, the Multiview should be displayed on the connected monitor.

4. On the Multiview, Input 5 window should display the CG image.

5. Press the "**MENU**" button on the SE-2600's control panel to open the OSD menu on the Multiview display and then select the "**Inputs**" sub menu.

6. Select "**Input 5**" in the **Input** option and in the second mode option, enable CG mode.

Inputs	Input	Input 5	Mode	Live	Mode	CG Md
	Proc Amp	Black	0%	White	100%	Chrom	1.0
	Audio	Gain	0 dB	Delay	0 ms		
	Crosspoint	Input 9				
	Audio XPT	Off				

7. Open the "**Keyer**" sub menu.

8. Select "**DSK 1 or 2**" in the **Keyer** option and set both Key and Fill Sources to Input 5.

Keyer	Keyer	DSK1	Normal	
	Keyer Ctrl	Linear	Split	Opac	100%
		Lift	0%	Gain	1.0	Invert	Off
	Key Source	Input 5	Fill	Input 9	
	Mask	Left	0%	Right	0%
		Top	0%	Bot	0%

9. Locate DSK buttons on the switcher's control panel then depending on the settings selected at Step 8, press DSK 1 or 2 button to open your CG graphics on either of the preview and program windows or both.

DSK Preview and DSK Program
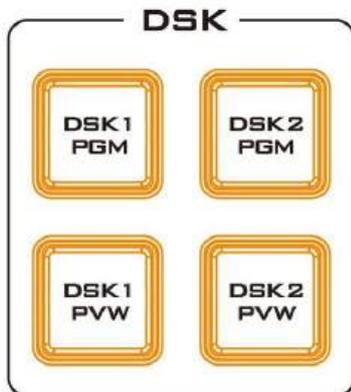
On the SE-2600 Control Panel / Keyboard there are four DSK keys. These are labelled Program and Preview. The upper DSK1 and DSK2 keys relate to activating Down Stream Keying on the Program outputs. The lower DSK1 and DSK2 keys relate to activating Down Stream Keying on the Multi-view or Preview outputs.

To display the CG subtitle configured previously, simply press the DSK 1 PGM or DSK 1 PVW button to enable the downstream key on the PGM or PVW screen.

6.2 Placing text on the video using luma key

The SE-2600 allows the user to place a logo or text image (ideally black and white) on the video using the luma key function. First of all, create a 1920x1080 (16:9) text image against a black or white background on a laptop. Once the text image is created, please follow the steps outlined as follows to insert the text image.

Note: If the text image is dark, choose a white background; if the text image consists primarily of bright colors, choose a black background.

1. Connect the laptop to the switcher's **HDMI Input Port 5**.

2. Press the **MENU** button to open the OSD Menu on the Multiview display.

3. Select **Keyer** to open the **Keyer** sub menu.

Keyer	Keyer	Key 1	Normal		
	Keyer Ctrl	Luma	Self	Opac	100%
		Lift 0%	Gain 1.0	Invert	Off
	Key Source	Input 5	Fill Black		
	Mask	Left 0%	Right 0%		
		Top 0%	Bot 0%		

4. Select Key 1.

5. In the **Keyer Ctrl** option, select "**Luma**" and "**Self**" to apply luma keying effect to the connected input. The luma key removes the background, in this case, the black component of the image.

99

6. In this example, the text image is against a black background so **reduce the Lift value to remove the black background**. Descriptions of the corresponding parameters are described below:

   - **Lift** (0 – 100%) adjusts the dark/black areas of the key image. **Reducing the value of Lift** will make dark areas of the key image more transparent. The background image will be showing only through the transparent areas.

   - **Gain** (0.0 – 16.0) adjusts the light/white areas of the key image. **Increasing the value of Gain** will make light areas of the key image more solid. The background image will be showing only through the transparent areas.

   - **Opac** (0 – 100%) adjusts the transparency of the overall foreground image, which is the text in this example. **Increasing the value of Opacity** will make the overall key image less transparent.

   - **Invert** (On/Off) sets the luma key color; luma key color is **white** if turned ON and **black** if turned OFF.

7. Set the "**Lift**" to 100% if the background is in total black.

8. **Opaque** logo can be created by setting the "**Opac**" parameter to 100%. Set "**Opac**" to 100% if an opaque logo is desired. **Semi-transparency** effect can be generated by setting the "**Opac**" parameter to a value between 0 and 100%.

9. Under the **Source** option, select an input source to which the luma key settings will be applied. In this example, select "**Input 5**" since this is the port to which the laptop is connected.

   Note: Since "Self" is chosen, Fill input will be ignored.

10. Exit the menu after the luma key settings are properly configured.

11. Press the **Key 1 PGM** or **Key 1 PVW** button to place the text image on the Program screen or the Preview screen respectively.

Luma Keying
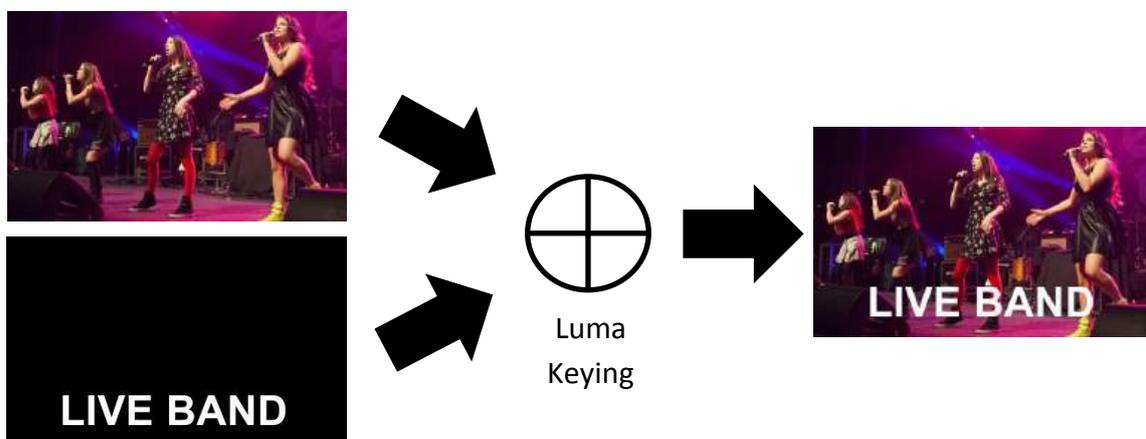
6.3 Insertion of People onto Backgrounds (Chroma Key)

The Chroma Key feature of the SE-2600 is easy to use. Typical Blue and Green screen studios can be quickly incorporated into an SE-2600 production.

The following is a quick overview of Chroma Key basics.

The **camera**, **backdrop** and **lighting** all play an important role in producing the optimal Chroma Key result. Although the SE-2600 is equipped with excellent keying controls, it is best to start with a good keyable image.

A good foreground image helps produce a good key

Three chip/Three sensor camera
We strongly recommend the use of a three chip or three sensor camera for Chroma Key shooting. If the camera has three chips or sensors then this usually means good colour separation within the camera. The optics on these cameras are usually better too. The extra image clarity and the good colour separation help improve the quality of the subsequent keying with the camera's output.

White Balance the Camera
White Balance is extremely important after setting up a chroma key studio. The camera must be correctly white balanced to minimize the subject picking up any colour cast (green or blue) from the background. Of course the white balance settings will vary according to the type of lighting you are using, but neutral whites and good skin tone colour are the all-important targets.

To set the white balance you will need a white reference card (or a sheet of white paper). Focus the camera on the reference card and light it evenly using the main light. Set the camera's iris / aperture so that the card is correctly exposed. Use the Auto White Balance (AWB) function, or set the white balance manually so that the card appears white. If you are in any doubt about how to white balance your camera, **please refer to your Camera's instruction manual for more details.**

Lighting
Lighting of your chosen green or blue backdrop is extremely important; the more even the lighting on the backdrop the better the finished result. Lighting setups for the foreground subject will vary according to the effect that you want. For chroma keying backdrops, balanced even lighting with no hotspots or shadow areas is the aim. The easiest way to achieve balanced Chroma key lighting is with a lighting setup that looks similar to this:
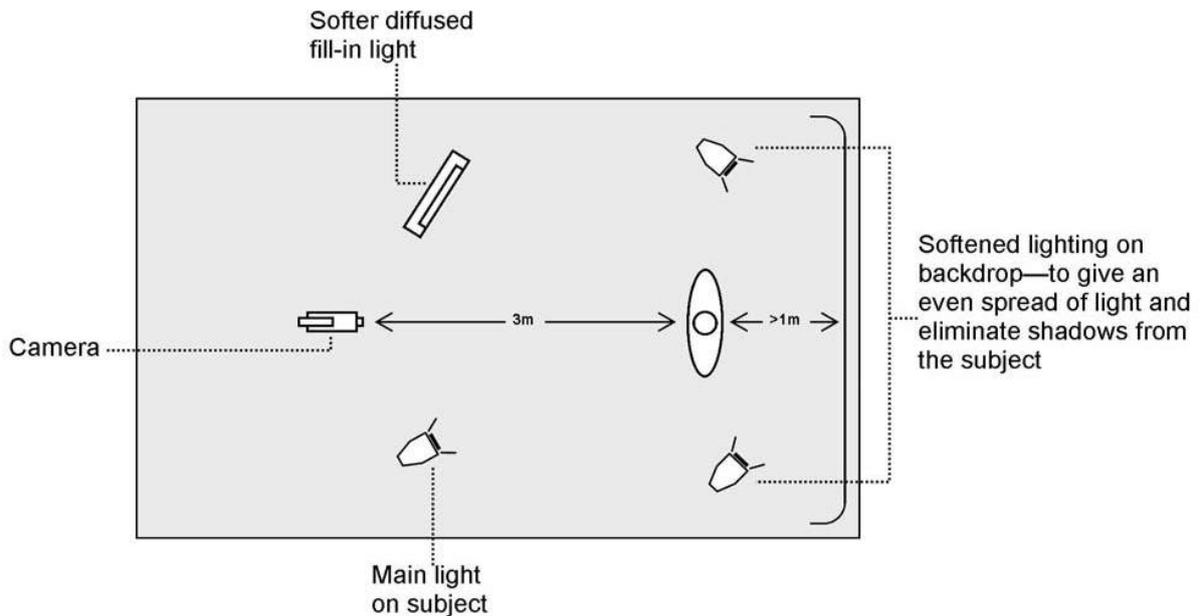
In the diagram, you will see that we recommend a **minimum** of four lights and we keep the subject **more than** 1m away from the backdrop. It is always easier to get more even lighting if the subject is farther away from the backdrop (no shadows). The foreground lighting on the subject will also vary according to the effect that you are looking for.

After the studio set up is complete, connect the camera shooting the speaker on a green backdrop to the SDI Input 1 at the rear of the switcher. To configure the settings that will be used for chroma keying, press the **MENU** button on your SE-2600 control panel to open the OSD menu on the monitor. Follow the steps below to configure the chroma key settings.

1. Open the Keyer sub menu and select Key 1.

Keyer	Keyer	Key 1	Normal		
	Keyer Ctrl	Chroma	Self	Opac	100%
		Lift 0%	Gain 1.0	Invert	Off
	Key Source	Input 1	Fill Black		
	Mask	Left 0%	Right 0%		
		Top 0%	Bot 0%		

2. Select "**Chroma**" and "**Self**" under "**Keyer Ctrl**" and then select the camera source under "**Key Source**." In this example, we have selected Input 1, which corresponds to the SDI Input 1 at the rear of the switcher and therefore the port to which the camera is connected.

3. Adjust the left, right, top and bottom values of "**Mask**" to set the chroma key range according to green or blue backdrop size.

4. Open Chroma Sub Menu and adjust the corresponding chroma key parameters. Again in this example, we have selected Input 1, which corresponds to the SDI Input 1 at the rear of the switcher.

Note: Selection of **CK Auto** automatically calculates the best Hue & Luma values for the current Keyer source.

Chroma	Keyer	Key 1	Normal		
	Key Source	Input 1			
	Key Tie	On	Input 6		
	CK Setup	CK Auto	Hue 110	Luma	80%
		K Range 160	K Fgnd 10%	K Bgnd	20%
		Hi-Light 0%	Lo-Light 0%	Bg-Supp	OFF
		Left 0%	Right 0%	Soft	0%
	Mask	Left 0%	Right 0%		
		Top 0%	Bot 0%		

The chromakeying parameters are described below:

- **Hue**: This parameter adjusts the color of the chroma key. A typical green screen value will be around 120. Blue screen value will be around 240.
- **Luma**: The **Luma** value relates to how bright or dark the selected key colour or hue is.
- **K Range** (Key Range): **Key Range** sets the range of hues or colors (0 – 360 degrees) that closely match the background color to be keyed. The user can start with a value of 120 degrees and this value can be fine-tuned up or down depending on the setup of the green or blue screen studio.
- **K Fgnd** (Key Foreground): **Key Foreground** adjusts the performance of the chroma key in light or white areas. Apply more **Key Foreground** if the light areas are becoming too transparent.
- **K Bgnd** (Key Background): **Key Background** adjusts the performance of the chroma key in dark or black areas. Apply more **Key Background** if the dark areas are becoming too transparent.
- **Hi-Light**: Hi-light boosts the foreground key in high luminance area.
- **Lo-Light**: Lo-light boosts the foreground key in low luminance area.
- **Bg-Supp:** Turn ON **Background Suppress** removes the Luma (Brightness) of the background from the final image. If the Chroma Key Output is showing Light Edges, then the **Bgnd suppress** can be used to suppress any background Luma that is showing through on these edges.

5. After Chroma Key configuration is complete, close the OSD menu and simply press **KEY 1 PGM** or **KEY 1 PVW** button on the switcher's control panel to place the speaker on **PGM** or **PVW** Screen as shown in the diagram below.

Chroma
Keying
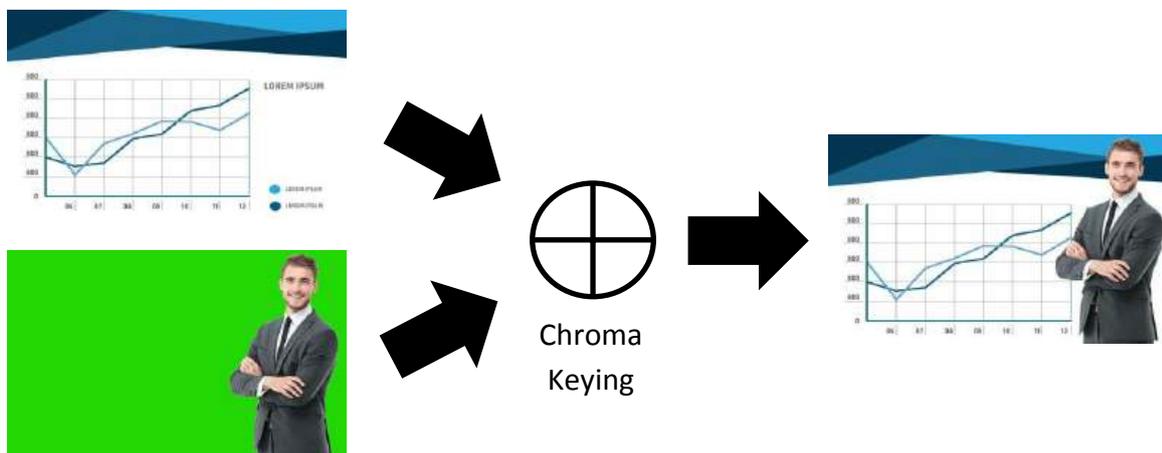
6.4 Displaying a variety of Sources at the same time

The Flex™ output allows the user to show a variety of sources at the same time and these sources can then be fed as one combined image to the SE-2600 Program or Preview outputs.

The Flex™ output could be as simple as one background image and four smaller source images to make a basic Flex™ layout.

Alternatively it could be a lot more complex with a fifth image source making a fifth PIP window. You also have the ability to place a user defined color border around all PIP windows. You can re-size, crop, rotate and position the PIP windows in almost any manner that you wish. With the SE-2600, you will be allowed to enable up to eight PIP windows on the Flex™ output.

To configure the Flex™ settings, simply follow the steps outline below.

Basic Flex™ Output (Four PIP Windows)

1. To enable **Flex™** output on PGM or PVW window, simply press and hold down the **SHIFT** button then press the **FLEX** button. This will display the **Flex™** output layout on either the PVW or PGM screen so that you will be able to configure the **Flex™** output windows while viewing the changes.
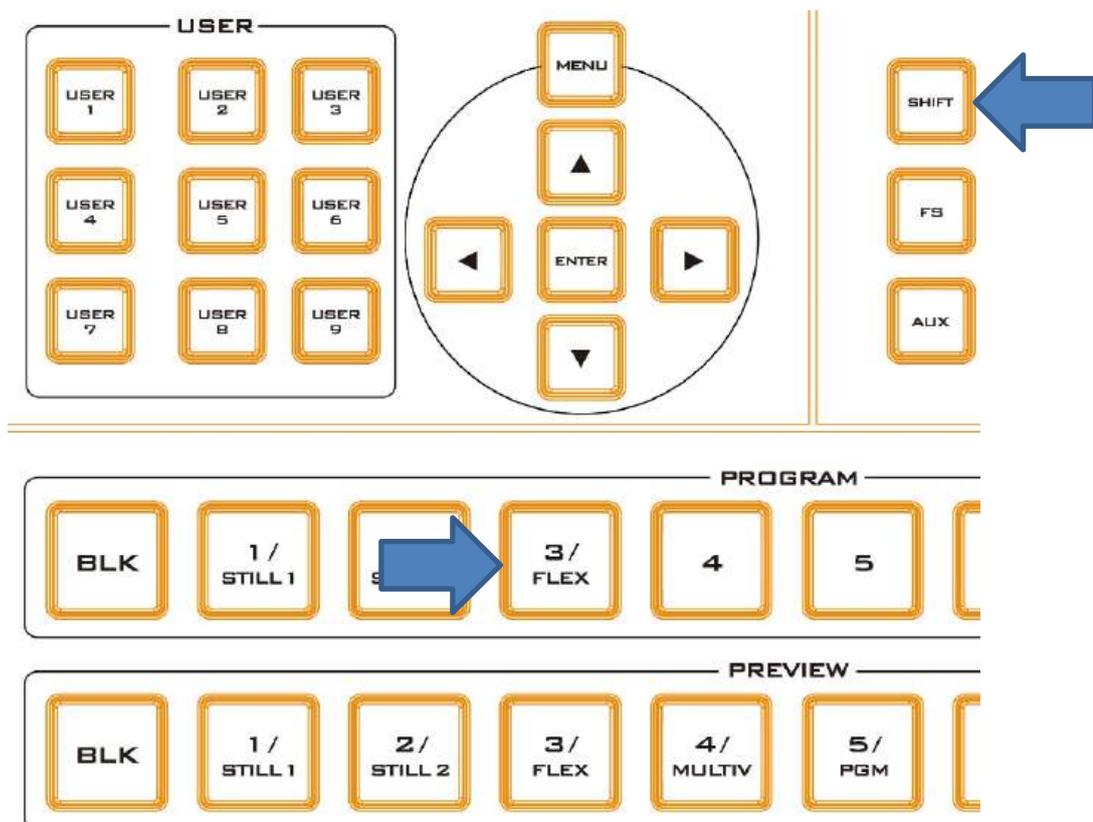
2. Press the **MENU** button on the switcher's control panel to open the OSD menu on the Multiview screen and select **Flex Src** sub menu. On the sub menu that opens, select any of the presets to enable the desired preconfigured layout on the screen.

Flex Src	Flex Src	Flex Src 1				
	Flex Src Bgnd	Black				
	P-in-P 1 Src	Black	Enable	On		
	P-in-P 2 Src	Black	Enable	On		
	P-in-P 3 Src	Black	Enable	On		
	P-in-P 4 Src	Black	Enable	On		
	Keyer 1	Input 1	Input 2		Enable	On
	Flex Preset	Preset 1	Preset 2		Preset 3	
		Preset 4	Preset 5		Preset 6	

3. The **Flex™** output consists of one background image and four smaller source images overlapped on the background image in four separate individual PIP windows. The options above the **Keyer** row allow you to select a source for the background (**FLEX Src Bgnd**) and then assign an input source to the respective **Flex™** output windows (**P-in-P 1 Src** to **P-in-P 4 Src**).

Flex Src	Flex Src	Flex Src 1				
	Flex Src Bgnd	Input 4				
	P-in-P 1 Src	Input 6	Enable	On		
	P-in-P 2 Src	Input 7	Enable	On		
	P-in-P 3 Src	Input 5	Enable	On		
	P-in-P 4 Src	Input 8	Enable	On		
	Keyer 1	Input 1	Input 2		Enable	On
	Flex Preset	Preset 1	Preset 2		Preset 3	
		Preset 4	Preset 5		Preset 6	

4. In order to configure the corresponding FLEX window's size, position, border style, border color, border width and the crop settings, open the P-in-P sub menu and in the **Keyer** option, you will be able to find options **Flex PinP 1 to 4**. Select one of them and adjust the **Flex™ P-in-P** windows accordingly.

P-in-P	Keyer	Flex PinP 1			Fine	Normal
	Position	X	20%	Y	10%	Size	40%
	Border	Normal				
		Luma	100%	Sat	80%	Hue	0
		Width	2%	Soft	0%	Opac	100%
	Shade Matte	Luma	100%	Sat	80%	Hue	60
		Shade Soft	2%	Shade Pos	50	Direction	35
	Crop	Left	0%	Right	0%	Size	0%
		Top	0%	Bot	0%	Soft	0%

5. Once configured, save the **Flex™** settings in User Memories for easy access.

After the **Flex™** settings are successfully configured, as depicted in the diagram below, each FLEX window will display the respective source images. Use the **Flex™** feature in different scenarios and apply the proper keying effect accordingly.

Flex™ and Downstream Key: Talk Show and Interview TV Show

Flex™ and Chroma Key: Educational Program

Flex™, Chroma Key, Luma Key and PIP: Cultural Program or Live Sports Program

Assigning a video source to a PIP window using shortcut keys

In addition to assigning a video source to a **Flex™ output window** using the **OSD MENU**, the user can also use shortcut keys to easily change the **Flex™ output window sources**. Press and hold down one of **KEY 1-4 PVW** buttons to select a **Flex™ output window**, and as the program row is backlit red, press the channel buttons to change the **Flex™ output window** content.

Simultaneously Enabling up to Eight PIP Windows

The SE-2600 allows you to enable up to eight PIP windows at the same time. This can be achieved by enabling the **Flex™ output along with the four keyers built into the SE-2600**.

Before using this feature, the four keyers must be set to PIP mode and the four FLEX windows must be adjusted and positioned accordingly. The steps outlined below will guide you in configuring the eight PIP windows.

1. To enable **Flex™** output on PGM or PVW window, simply press and hold down the **SHIFT** button then press the **FLEX** button. This will display the **Flex™** output layout on either the PVW or PGM screen so that you will be able to configure the **Flex™** output windows while viewing the changes.

2. Pre-configure the four **Flex™** output windows in the **P-in-P** sub menu by adjusting the size and position of the corresponding windows. Remember to modify the luma key parameters accordingly. Note that you can change the **Flex™** output window content in the **Flex Src** sub menu.

P-in-P	Keyer	Flex PinP 1			Fine	Normal
	Position	X	20%	Y	10%	**Size**	40%
	Border	Normal				
		Luma	100%	**Sat**	80%	**Hue**	0
		Width	2%	**Soft**	0%	**Opac**	100%
	Shade Matte	**Luma**	100%	**Sat**	80%	**Hue**	60
		Shade Soft	2%	**Shade Pos**	50	**Direction**	35
	Crop	**Left**	0%	**Right**	0%	**Size**	0%
		Top	0%	**Bot**	0%	**Soft**	0%

3. Open the **Keyer** sub menu, set Keyers 1 – 4 to **PIP** mode and enable **Luma Key**.

Keyer	Keyer	Key 1		Normal		
	Keyer Ctrl	Luma		P-in-P	**Opac**	100%
		Lift	0%	**Gain**	1.0	**Invert**	Off
	Key Source	Input 1		**Fill**	Black	
	Mask	**Left**	0%	**Right**	0%	
		Top	0%	**Bot**	0%	

4. Adjust the P-in-P windows in the P-in-P sub menu.

P-in-P	Keyer	Key 1			Fine	Normal
	Position	X	20%	Y	10%	**Size**	40%
	Border	Normal				
		Luma	100%	**Sat**	80%	**Hue**	0
		Width	2%	**Soft**	0%	**Opac**	100%
	Shade Matte	**Luma**	100%	**Sat**	80%	**Hue**	60
		Shade Soft	2%	**Shade Pos**	50	**Direction**	35
	Crop	**Left**	0%	**Right**	0%	**Size**	0%
		Top	0%	**Bot**	0%	**Soft**	0%

5. After the **Flex™** output and the four PIP windows are successfully configured, enable the **Flex™** output by pressing the **Flex™** button while holding down the **SHIFT** button, and then press **KEY1 PGM** to **KEY4 PGM** buttons to activate the four PIP windows on the **Program** Output. The diagrams below provide an example of an eight PIP window display.

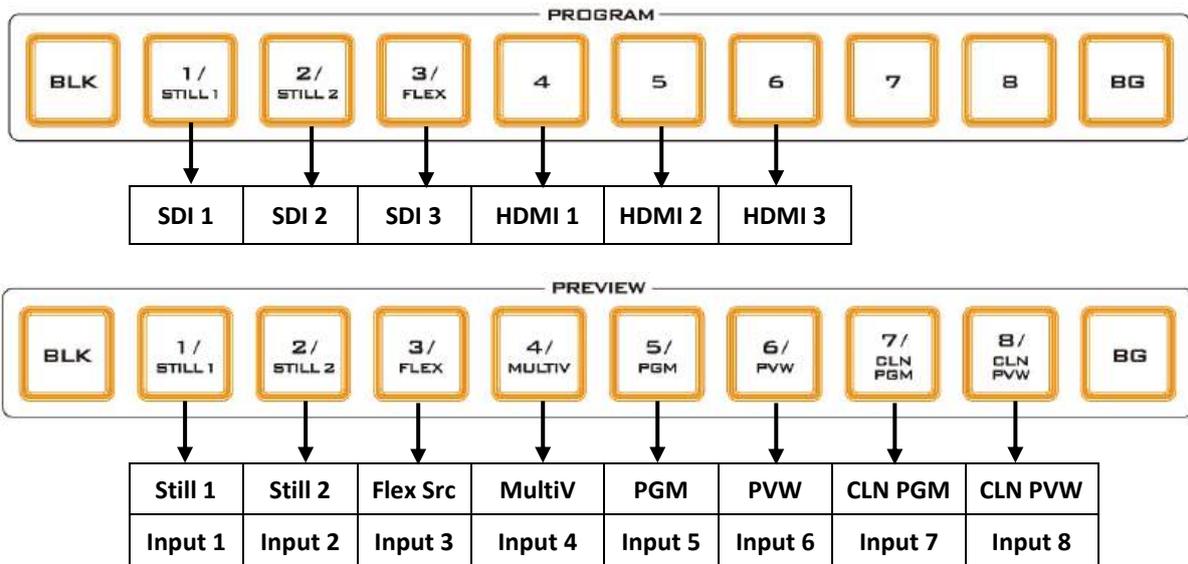## 6.5   Shortcut Keys to assigning Output Sources

In general, the SE-2600 offers 6 output ports (**SDI 1 – 3 / HDMI 1 – 3**) and all ports can be configured to output one of the following:

- Flex Src 1
- Still 2
- Still 1
- Input 1 – 8
- CLN PVW (Clean PVW)
- CLN PGM (Clean PGM)
- PG + DSK
- PVW
- PGM
- MultiV (Multi view)

In addition to setting the source of these 6 output ports in **OSD menu → Outputs → Output**, you can also use the shortcut keys on the control panel to assign the output sources. The instructions are outlined as follows:

1. The diagram below depicts the corresponding buttons for selecting the respective output ports as well as the video sources. The program row on the top allows you to first select the output port, and the preview row below allows you to then assign a video source to the selected output port.
    Note: Each button on the preview row is assigned to two video sources. Pressing the BLK button switches between the two video sources.

PROGRAM

| BLK | 1/ STILL 1 | 2/ STILL 2 | 3/ FLEX | 4 | 5 | 6 | 7 | 8 | BG |

SDI 1	SDI 2	SDI 3	HDMI 1	HDMI 2	HDMI 3

PREVIEW

| BLK | 1/ STILL 1 | 2/ STILL 2 | 3/ FLEX | 4/ MULTIV | 5/ PGM | 6/ PVW | 7/ CLN PGM | 8/ CLN PVW | BG |

Still 1	Still 2	Flex Src	MultiV	PGM	PVW	CLN PGM	CLN PVW
Input 1	Input 2	Input 3	Input 4	Input 5	Input 6	Input 7	Input 8

2. Upon pressing the AUX button, you will see the following button LED behavior:
   - Buttons 1 – 6 on the program row turn solid red except for Button 1 which should be flashing by default.
   - Buttons BLK – 8 on the preview row should turn solid blue except for one flashing button that is the video source assigned to the output port selected on the program row.

3. Press one of buttons 1 – 6 on the program row to select an output port. The selected button should turn flashing red.

4. Press one of buttons 1 – 8 on the preview row to select a video source; the corresponding video sources are listed as follows:

   1：Still 1

   2：Still 2

   3：Flex Src 1

   4：MultiV

   5：PGM

   6：PVW

   7：CLN PGM

   8：CLN PVW

   Once selected, the button should turn flashing blue.

5. To select input 1 – 8 video sources, you will need to press the **BLK** button to switch to another group of video sources. All buttons on the preview row should turn solid green. Press the corresponding button to select the video source and the selected button should turn flashing green, indicating that the assignment is successful. Button 1 corresponds to input 1, button 2 corresponds to input 2 and etc.

6. Press the **AUX** button to deactivate the shortcut keys.

Chapter 7   Appendices

Appendix 1   Tally Outputs

The SE-2600 has a D-sub 25 pin female tally output port. These connections provide bi-colour tally information to a number of other Datavideo products, such as the ITC-100 eight channel talkback system and the TLM range of LCD Monitors.

These ports are open collector ports and as such do not provide power to tally light circuits.

Dielectric strength: Max. DC 24V

Current: Max. 50mA

(D-sub 25-Pin Female)
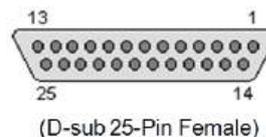
The pin outputs are defined as follows:

| Pin No.	Signal name	Input/Output	Signal Description
1	Program 1	Open collector output	Tally output of input video Program 1
2	Program 2	Open collector output	Tally output of input video Program 2
3	Program 3	Open collector output	Tally output of input video Program 3
4	Program 4	Open collector output	Tally output of input video Program 4
5	Program 5	Open collector output	Tally output of input video Program 5
6	Program 6	Open collector output	Tally output of input video Program 6
7	Program 7	Open collector output	Tally output of input video Program 7
8	Program 8	Open collector output	Tally output of input video Program 8
9	Program 9	Open collector output	Tally output of input video Program 9
10	Program 10	Open collector output	Tally output of input video Program 10
11	Program 11	Open collector output	Tally output of input video Program 11
12	Program 12	Open collector output	Tally output of input video Program 12
13	GND	Ground	Ground
14	Preset 1	Open collector output	Tally output of input video Preset 1
15	Preset 2	Open collector output	Tally output of input video Preset 2
16	Preset 3	Open collector output	Tally output of input video Preset 3
17	Preset 4	Open collector output	Tally output of input video Preset 4
18	Preset 5	Open collector output	Tally output of input video Preset 5
19	Preset 6	Open collector output	Tally output of input video Preset 6
20	Preset 7	Open collector output	Tally output of input video Preset 7
21	Preset 8	Open collector output	Tally output of input video Preset 8
22	Preset 9	Open collector output	Tally output of input video Preset 9
23	Preset 10	Open collector output	Tally output of input video Preset 10
24	Preset 11	Open collector output	Tally output of input video Preset 11
25	Preset 12	Open collector output	Tally output of input video Preset 12

Example of tally connections

TALLY OUTPUT

(Max. current: 50mA)

Tally LED

(Max. voltage:24V)
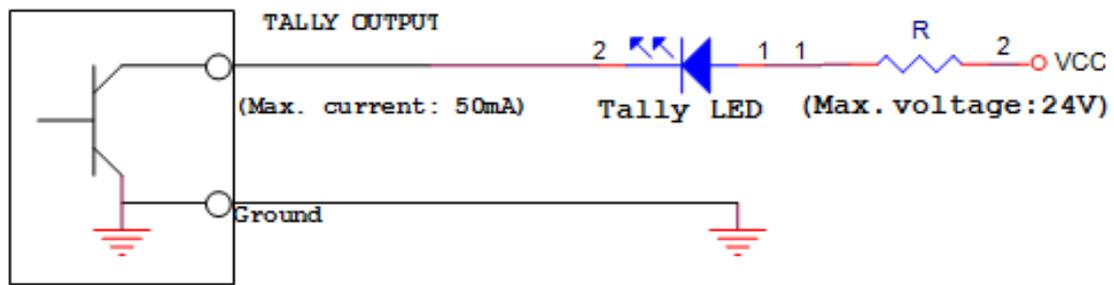
Appendix 2   GPI / GPO Connections

The SE-2600 can control external recorder/playback devices like the HDR-80 and HDR-90 via a simple contact closure GPI / GPO switch.

The GPI interface is a 3.5mm Jack Socket which is situated on the rear panel of the SE-2600. Contact closure between the Outer and Inner contacts on the jack plug will trigger a user selected event. Power is supplied by the SE-2600 and is less than 5V DC.

3.5 mm Stereo Jack Plug

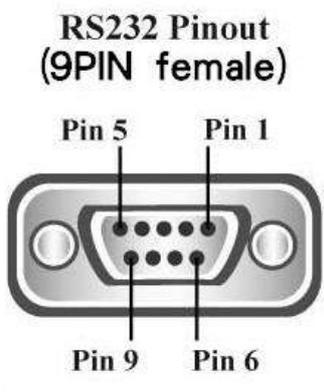Contact closure between inner and outer
will send a GPI Trigger
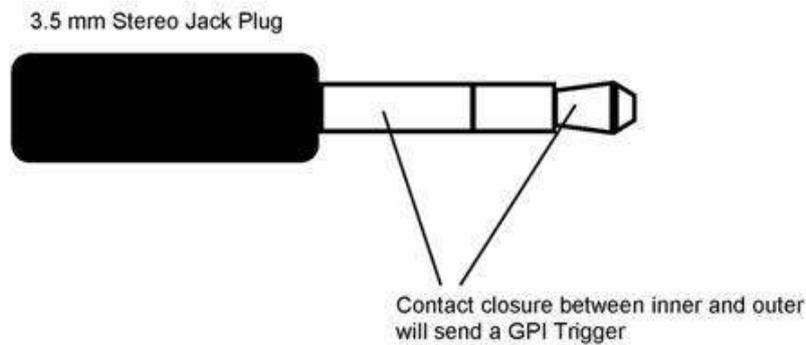
This GPI socket can also be used as a GPO socket to trigger record or playback events with other equipment such as the Datavideo HDR-80 or HDR-90 recorder.

SAFETY FIRST The cabling required needs to be designed specifically to connect the SE-2600 to the chosen record or playback device as they are not all the same. The cabling required can be made by yourself or a competent technician. Please speak with your Dealer or local Datavideo office to get further help and advice.

Appendix 3   RS-232 Serial Port Pinout

The user is allowed to connect a custom keyboard controller to the SE-2600 via RS-232 interface (the user may also enable RS-422 if necessary). The table below provides the RS-232 serial port pinout on the device end (SE-2600). Note that the RS-232 port is a 9 pin D-sub female connector.

Pin No.	Signal
Pin 1	GND
Pin 2	TXD (RS-232)
Pin 3	RXD (RS-232)
Pin 4	GND
Pin 5	GND
Pin 6	GND
Pin 7	TXD (RS-422)
Pin 8	RXD (RS-422)
Pin 9	GND

RS232 Pinout
(9PIN female)

Pin 5   Pin 1

Pin 9   Pin 6

You may download the RS-232 control protocol from the product page.

Appendix 4 Firmware Update

Datavideo usually releases new firmware containing new features or reported bug fixes from time to time. Customers can either download the SE-2600 firmware as they wish or contact their local dealer or reseller for assistance.

This section outlines the firmware upgrade process which should take *approximately 1 hour 20 minutes to complete*.

The existing SE-2600 settings should persist through the *firmware upgrade process, which should not be interrupted once started* as this could result in a non-responsive unit.

Successful firmware upgrade on SE-2600 requires:

➢ PC or laptop

➢ USB drive

➢ Access to the Internet for software download
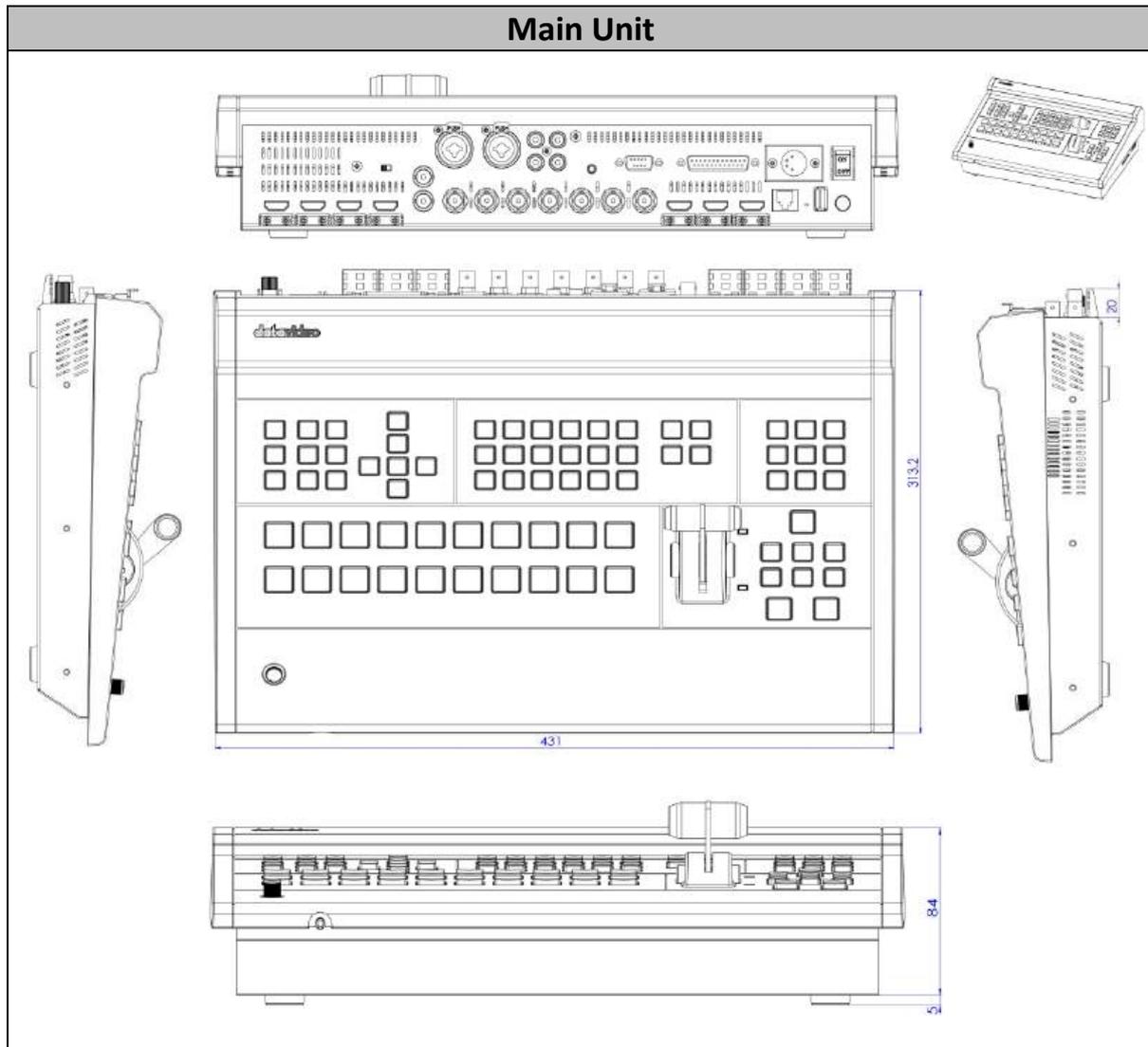
To update the SE-2600 firmware:

1. Download the latest firmware and the update tool from the path below.
www.datavideo.com ➔ **products** ➔ **Switchers** ➔ **SE-2600** ➔ **Downloads** ➔ **Latest Firmware**

2. Decompress the downloaded files.

3. Insert the USB drive into the PC or laptop and format the drive to FAT or FAT32 system. Save the latest firmware on the drive.

4. Remove the USB drive from the PC or laptop.

5. Insert the USB drive into the **F/W Upgrade** port at the rear of the SE-2600 switcher.

6. Press the **MENU** button on the SE-2600 control panel to open the OSD menu.

7. At the bottom of the **Main Menu**, enter the **SETUP** sub menu.

8. Under the **Software** option, select "**Upgrade**" and press the **ENTER** button to confirm.

9. If you see "**Upgrade**" against a red background, it means the switcher is being updated.

10. When you see red turned to green, it means the firmware upgrade is successful.

11. Reboot the SE-2600 switcher to complete the upgrade.

Appendix 5   Frequently-Asked Questions

This section describes problems that you may encounter while using the SE-2600. If you have any questions, please refer to related sections and follow all suggested solutions. If problem still exists, please contact your distributor or the service center.

No.	Problems	Solutions
1	**Grabbed picture is distorted or contains noise.**	Successfully grabbed pictures to Still 1 and 2 will be distorted or appear noisy if switched to different video standards.
2	**Loaded still picture contains noise.**	Still pictures will be distorted or appear noisy if switched to different video standards.
3	**What kind of files can be saved on the SE-2600 and is there any limitation?**	You can save still pictures, user memory, clips and logos to the SE-2600's memory but the maximum storage space is limited to 1000 frames.
4	**One of the FLEX sources is not displayed in the FLEX windows.**	The maximum **Flex^{TM}** output size is 1080p full screen. If exceeded, one Flex source will not be displayed.
5	**SE-2600 is unable to save the last settings into its nonvolatile memory.**	The Last Memory Auto Save feature automatically saves the last configured settings upon exiting the OSD menu. It takes approximately 10 seconds for the switcher to save the settings so wait for at least 10 seconds before shutting the machine.
6	**Why am I seeing black thin lines on PIP images?**	These black thin lines are caused by using an image that differs from its original size. To remove these black thin lines, turn the border OFF or use the PIP Crop function to shrink the image until they disappear.

Appendix 6　　　Dimensions & Weight

Main Unit

All measurements in millimeters (mm)

Appendix 7   Specifications

Model Name	SE-2600
Product Name	HD 8 Channel Digital Video Switcher
Video Standard	Full HD
Video Format	Output: 1080p 50/ 59.94/ 60Hz 1080i 50/ 59.94/ 60Hz 720p 50/ 59.94/ 60Hz Input: 1080p 50/ 59.94/ 60Hz 1080i 50/ 59.94/ 60Hz 720p 50/ 59.94/ 60Hz
Video Processing	SDI: 4:2:2 HDMI: YUV 4:2:2, RGB: 4:4:4
Input Routable / Crosspoint	Yes
Video Input	4 x SDI 4 x HDMI
Mix HD & SD Source	N/A
Computer Graphical Interface	4 via HDMI
Video Output	3 x SDI and HDMI outputs assignable: • Multiview • Program • Preview • Program + DSK • Clean Program • Clean Preview • Input 1 – 8 • Still 1 • Still 2 • Flex Src 1
Down-Converted Output	1 x SDI
Built-in Multi-View Monitoring Out	HDMI & SDI assignable
Analogue Audio Input	2 x XLR/MIC (6.3 mm) Combo Socket 1 x Stereo RCA set (L/R)
Analogue Audio Output	1 x Stereo RCA set (L/R)
Digital Embedded Audio Support	SDI Input/Output 4 Channels HDMI Input/Output 2 Channels
Audio Delay Calibration	up to 16 Fields or 8 Frames per Channel

A+V Switching	Yes
Chromakey	4
Title Creator	Yes
USK	4 Keyers supporting Chromakey & Linear/ Luma Key
DSK	2 x DSK supporting Lumakey & Linear key (Key / Fill)
Picture in Picture	4
Logo Insertion	2
Still Store	999+ (1080p)
Effects	Cut, Auto, Wipe, MIX, DVE and Stinger
Transition Preview	Full Transitions Preview
Sync / Reference In / Out	1 x BNC Ref IN 1 x BNC Ref OUT (loop-through)
Tally Output	1 x D-sub 25pin, Dual Color
PC Remote Control	RS-232 / DVIP (Ethernet)
Built-in Audio Mixer	N/A
Special Features	User Memory Presets Free Virtual Sets and Stinger Transitions included
Chassis	Unibody
Dimensions (LxWxH)	431 x 313.2 x 84 mm
Weight	3.8 kg
Power	DC 12V 82W
Operating Temperature	0°C - 40°C [32°F - 104°F]

Service & Support

It is our goal to make owning and using Datavideo products a satisfying experience. Our support staff is available to assist you to set up and operate your system. Contact your local office for specific support requests. Plus, please visit www.datavideo.com to access our FAQ section.

> Please visit our website for latest manual update.
> www.datavideo.com/product/SE-2600

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