

Instruction manual

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Disclaimer of Product and Services

The information offered in this instruction manual is intended as a guide only. At all times, Datavideo Technologies will try to give correct, complete and suitable information. However, Datavideo Technologies cannot exclude that some information in this manual, from time to time, may not be correct or may be incomplete. This manual may contain typing errors, omissions or incorrect information. Datavideo Technologies always recommend that you double check the information in this document for accuracy before making any purchase decision or using the product. Datavideo Technologies is not responsible for any omissions or errors, or for any subsequent loss or damage caused by using the information contained within this manual. Further advice on the content of this manual or on the product can be obtained by contacting your local Datavideo Office or dealer.

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 are 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.
- 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.
- Cables and batteries 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 are qualified 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, Camera module, PCIe Card 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.

Product Overview

Although live HD production is now popular in the world there are still lots of reasons for good quality SD based productions. Datavideo understand that our customers need a cost effective and flexible SD switcher. Our solution to this need is the Datavideo SE-600 Digital Video Switcher.

The Datavideo SE-600 is an eight input Standard Definition digital switcher with useful broadcast grade effect and functions as well as a simple four channel audio mixer. It has six Composite video inputs and two computer based DVI-D inputs. The switcher also offers a two PIP function and Luma key as well as Composite, DV* and SDI* program outputs. A Multi-image preview output provides combined Source, Preview and Program screens to one monitor. Other features include an Audio Peak Meter, a Clock and a dual Logo store. The SE-600 enables you to switch seamlessly between video and audio sources and blends high-quality digital content on the fly, even without external gen-lock, thanks to a built in time base corrector.

We believe the Datavideo SE-600 is designed to meet your needs whether you're working in Worship, Education, conducting a live Outside Broadcast or shooting inside a production Studio. That's Datavideo, sharing the value!

*optional DV & SDI board - please check with your dealer

Features

Inputs:	Six Composite video inputs (BNC)
	Two DVI computer based inputs Two XLR balanced Audio inputs (Chl 1/L & Chl 2/R with MIC (48V Phantom Power) switch)
	Two Aux RCA / Phono Line level inputs
Outputs:	 DVI-D based Multi-Viewer with Video Sources, Preview and Program images Multi-Viewer also includes menu selection area, countdown timer and audio level indicator Multiple Program outputs (recorder/ program out/ streaming) Two Auxiliary Composite outputs (User selectable) Two 6pin IEEE-1394 DV Program outputs (*optional board – please check) Two SDI Program outputs (*optional board – please check) Two XLR balanced Mixed Audio outputs (Stereo/Mono) Two Line level RCA / Phone Mixed Audio outputs (Stereo/Mono)
Effects:	Choice of 14 Wipes with optional border or A/B Dissolve Single or Dual PIP window effects Luma key x1 LOGO: display up to two logos on the mixed program output One frame still store memory as a source SMPTE pattern out (colour bars)
Audio Mixer:	LED audio Peak Meter / audio-level indicator Audio follows video button (A+V) Headphone Audio Monitoring button Audio faders for simple mixing of XLR and RCA inputs
Controls:	Rubber keys for quiet and confident operation T-Bar for manual transitioning Brightness, Contrast, Saturation and RGB correction Special control keys Fade to solid colour (background colour can be selected) Transition speed keys (speed of transition can be programmed) AUX source keys RS422 GPI Trigger out: trigger the external video player with delay transition effect GPI trigger in Tally out
SD Card Slot: Power Input:	5 - 5 - 5

Connections & Controls Keyboard Overview



** Please check with supplier if this board is fitted or not - can be purchased separately

Rear Panel Connections



DVI Inputs

DVI-D (Input 7) digital signal input connector. DVI-I (Input 8) digital or analogue signal input connector. Resolutions of 1280x1024 @ 60Hz or 1024x768 @ 60Hz should be compatible depending on your graphics card or computer.





Composite (CVBS) Inputs

Composite video input: takes a BNC connector from the composite output of a VCR, camera, DVD player, etc.

MAIN and AUX (BNC) Outputs

Two Composite (CVBS) outputs are provided for user defined AUX1 and AUX2 outputs. Four BNC connectors are provided for MAIN / Program outputs. Menu option allows choice of YUV + 1x CVBS or Y/C with 2x CVBS as outputs.



Multi View Outputs

DVI-D digital signal preview output connector. See pages 10 and 34 also.



Tally Outputs

Tally output sockets. These supply tally light information for up to eight connected sources. See page 38 for more information.



GPI IN / OUT

The GPI socket can be used for simple external control.



RS-422 Remote

9-pin serial port standard RS-422 interface.



POWER

Switches the power On / Off.

DC IN

DC in socket connect the supplied 12V 3A PSU to this socket. The connection can be secured by screwing the outer fastening ring of the DC In plug to the socket.



Supports two XLR Balanced Audio outputs. Two RCA / Phono audio output are also provided. User can select mixed Mono or Stereo output via a switch. For more audio mixer information see page 29 onwards.

AUDIO IN

Allows connection of two RCA / Phono connectors at line level. There is also two XLR Balanced Audio Inputs. Switches related to these XLR inputs allow for Line or Mic level sources to be used as well as supplying 48V Phantom power.

For more audio mixer information see page 29 onwards.

DVI-D Multi-Image Preview



The SE-600 Multi-Image Preview is supplied from the DVI-D connection on the rear panel. (See page 8, Rear Panel, item 6.) When connected to a compatible DVI-D monitor the above multi-image layout is seen. Alternatively you could use a DVI-D to HDMI cable and take this into a HDMI monitor instead. Please note not all monitors are compatible, please double check with your chosen monitor beforehand. Alternatively you could use a Datavideo TLM-170H, HR or HM type monitor instead.

The first two rows of images on this Preview show the live sources 1~8 coming into the mixer and also the assigned auxiliary outputs AUX1, AUX2. Below these two rows of images are two larger images. One for the Preview (PST_SUB) and one for the Program (PGM_MAIN) outputs.

In between the PST and PGM images is the SE-600 Status Display and below it the Settings Display. When the Settings Menus are not in use you will see audio peak meters here instead as shown above.

The SE-600 Multi-Image Preview also supplies basic tally information by highlighting the live Program source with a red border, and the cued next source with a yellow border. If BG (background colour), PIP (Picture in Picture) or Luma Key are enabled then these red or yellow tally indicators may not be present. In these situations the Status Display in the centre of the Multi Image Preview will confirm what image is being sent to Preview (PST) and Program (PGM). In the above example input 4 is being sent to PGM and PST is being fed with a PIP image, so only image 4 is highlighted with a red border.

For more information on changing the Multi-Image Preview see page 34.

Keyboard Controls – Video Switching

Main Source and Sub Source Rows

The Main Source Row of buttons is the active channel, this is the Live output. The active channel will appear as the Program Output (PGM). You can switch or CUT from one source to another directly on the Main Source Row. You will see the PGM Output change as you press different keys along this row of buttons.



The Sub Source Row is the Cued channel, this channel will appear in the PST or Preview window. The Sub Source selection determines which input will be transitioned to when using any of the transition controls.

N.B. The keys on the Main and Sub Source Rails will be inactive while the T-Bar is active. Only when the T-Bar is fully up or fully down will the keys respond.

BG

Background – shows the background colour selected for use on the Main and Sub Source Rails.

PIP

Picture In Picture – Can be set up manually set to any chosen position within the video area. See page 19.

FΖ

Freeze - The current PST or PGM image displayed is frozen until toggled off.

FTB

Fade To Black – This is on the Main Source Rail only. Pressing FTB will fade the PGM output to black. To fade back to video you need to press the FTB button again.

PVW

Preview – This is on the Sub Source Rail only. When you press the PVW Key you will see the active transition or effect previewed in the PST window of the Multi-Image display.

CUT

This performs a simple immediate switch from the current main source to the selected sub source. The selected transition wipe or dissolve is not used.

TAKE

This performs an automated switch from the current main source to the selected sub source. The selected transition wipe or dissolve will also be used. The timing of the transition is set by the chosen Speed/Level button.

T-Bar

This performs a manually controlled switch from the current main source to the selected sub source. The selected transition wipe or dissolve will also be used. When the T-Bar has travelled as far as it can go the transition between sources is complete. T-Bar will be indicated in the status display if the T-Bar is in use.

Keyboard Controls – Video Transitions

Transition Selection



The SE-600 features 14 programmable wipe patterns and an A/B dissolve or fade.

All wipes can have an optional colour border applied, and can be set to one of five preset speeds.

The active transition, speed, border width and colour are confirmed in the Multi-Viewer Status Display.

Transitions can be performed manually by using the T-Bar or automatically using the TAKE button.



Vertical Wipe Left to Right



Horizontal Wipe Bottom to Top



Horizontal Wipes from Centre to Top and Bottom



Vertical Wipes from Centre to Left and Right sides



Corner Wipe from Top Left to Bottom Right



Corner Wipe from Bottom Left to Top Right



B

Box Wipe from Centre to outside edges



Vertical Wipe Right to Left



Horizontal Wipe Top to Bottom

Horizontal Wipes from Top and Bottom to Centre



Vertical Wipes from Left and Right sides to Centre



Corner Wipe from Bottom Right to Top Left



Corner Wipe from Top Right to Bottom Left



Box Wipe from outside edges to Centre



A/B Dissolve or fade

BDR

Add a border to certain effects such as Wipes. You can select between three border widths, N (Narrow), M (Medium) and W (Wide), simply by repeatedly pressing the BDR Key. The active width and colour is indicated in the Multi-Image Preview Status Display.

Speed / Level Selection

The user can chose one of five different speeds or levels for a transition effect. The timing value of each button can be programmed by the user in advance using the SE-600 Setting menu. **See page 17.**

Keyboard Controls – Video Effects

SETTING BUTTON

This button is used to enter the SE-600 configuration and settings menus. The menu options are displayed on the DVI-D based Multi-Image Preview output. Press the up, down, left, or right arrow buttons to navigate the menu choices or to change values. Use the ENTER button to confirm the current setting.

LOGO SETTING PIP SETTING LUMA KEY SETTING

These three buttons provide a short cut to the required menu set up which is then displayed on the Multi-Viewer output.

MOSAIC

Press the MOSAIC Key to activate the MOSAIC Effect.

The MOSAIC effect can be set to six different levels using the BDR Keys. You will see the effect change in the PST window.

PAINT

Press the PAINT Key to activate the Paint Effect.

The Paint effect can be set to six different levels using the BDR Keys. You will see the effect in the PST window.

B/W

Press the B/W Key to activate the black and white effect.

USER 1 / USER 2

Press the USER 1 Key to select PIP1 BG/PIP source. Press the USER 2 Key to select PIP2 BG/PIP source.

Press USER1 key can enter the quick switch PIP-1 source mode.
 Press USER2 key can enter the quick switch PIP-2 source mode.

In the quick switch PIP source mode , the main-souce key= background switch, the sub-source key= PIP source switch

Press USER1/USER2 key again to exit the mode.

BG CLR

You can select BG CLR if you want to display a background screen. The background can be set to one of eight different colours, colour bars or framing lines. The Multi-Viewer Status Display will indicate the active background. The background can be changed using the BG Colour Key.

BDR CLR

A wipe can be given a coloured edge or border. The border can be one of three widths, and one of eight colours.

The Border Width and Colour are indicated in the Multi-Image Status Display.

You can set the Border width by repeatedly pressing the BDR Key - The Status Display will show the following options:

BORDER =	No Border
BORDER = N "Color"	Narrow Border
BORDER = M "Color"	Medium Border
BORDER = W "Color"	Wide Border

You can set the Border Colour by repeatedly pressing the BDR CLR Key - The Status Display will show the following options in sequence:

BLACK - BLUE - RED - MAGENTA - GREEN - CYAN - YELLOW - WHITE

Keyboard Controls – Special Effects

LUMA KEY PVW

When this button is engaged, the LUMA key function will display in the preview output (PST) window.

LUMA KEY ON

When this button is engaged, the LUMA key function will display on the program output (PGM) window.

PIP 1 ENABLE PIP 2 ENABLE

Step.1 – Press PIP in the Sub Source row of buttons.

Step.2 – Press PIP 1 ENABLE and PIP 1 is now shown in PST Preview.

Step.3 – Press PIP SETTING in EFFECTS and adjust the PIP settings in the Multi-Viewer Status Display area.

Step.4 - If PIP 2 is required press PIP 2 ENABLE and adjust (see Step.3).

Step.5 – When happy with PIP layout in PST Preview then transition to PGM using T-Bar, TAKE or CUT button.

LOGO 1 / 2 ON

When this button is engaged, the LOGO 1 / 2 will display on PGM.

F1

This button is lock frame. You can lock the video frame on the Main or Sub Source. If you want to freeze a new video frame, please press F1 button, unlock last frame picture.

F2

Item by item reset function

AUX Source Selection

There are four Composite Auxiliary outputs on the rear of the SE-600. Two AUX1 outputs and two AUX2 outputs. It is possible to assign either a source input, background colour, Preview (PST) or Program (PGM) to these outputs.

To assign a video source input to the selected AUX channel.

- Step.1 Press AUX1 SEL or AUX2 SEL key Key will flash.
- Step.2 Press the input source number that you want to assign.
- Step.3 Press same AUX SEL key to stop key flash and exit Aux Source setting.

Alternatively to make the AUX output a dedicated Preview (PST) output.

- Step.1 Press AUX1 SEL or AUX2 SEL key Key will flash.
- Step.2 Press the SUB key to the right.
- Step.3 Press same AUX SEL key to stop key flash and exit Aux Source setting.

Or to make the AUX output a dedicated Program (PGM) output.

- Step.1 Press AUX1 SEL or AUX2 SEL key Key will flash.
- Step.2 Press the MAIN key to the right.
- Step.3 Press same AUX SEL key to stop key flash and exit Aux Source setting.

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-600

