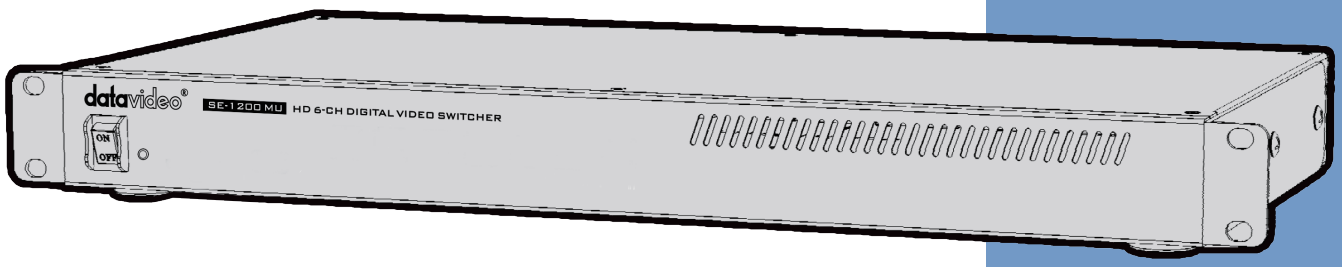
datavideo



HD 6 CHANNEL DIGITAL VIDEO SWITCHER

SE-1200MU

Instruction manual

www.datavideo.com

Table of Contents

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;

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

Warranty

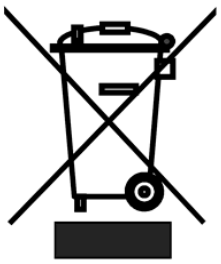
Standard Warranty

- 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 begins 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.

Chapter 1 Introduction

The Datavideo SE-1200 MU is a small, cost-effective, HD digital video switcher with easy-to-use professional features. The SE-1200 MU can be controlled over a network and can even display a multi view over the same network connection. This allows the SE-1200 MU operator to have the option of working in a different room, or a different building, or even a different city!

The SE-1200 MU switcher offers four HD SDI and two HDMI inputs. Supported video formats include 1080i/50, 1080i/59.94, 1080i/60, 720p/50, 720p/59.94 and 720p/60. Output options include; two user assignable HD SDI and two HDMI outputs. These user defined output options can be set up to provide Clean Preview, Clean Program, Program with DSK overlay, Preview Out or Multi-view as well as Inputs 1~6. The SDI or HDMI outputs can be taken to other Datavideo products (separate purchase) such as the HDR-70 HD recorder, TLM-170G HD monitor and can also be streamed to web based viewers using the Datavideo NVS-25 Video Streaming Server.

The SE-1200 MU also features two analogue balanced XLR audio inputs for connecting an external audio mixer such as the Datavideo AM-100 or AD-200. Tally and RJ-45 connections allow the switcher to be connected to a Windows PC as well as providing tally light indications to crew and on screen talent via Datavideo's ITC-100 talkback system.

The SE-1200 MU is also capable of HD Chroma Key, Luma Key, Down Stream Key, Picture In Picture, up to 32 Wipe transitions and user defined still frame stores. In addition, it also allows the user to connect an external physical switcher keyboard controller such as Datavideo's RMC-260. It really is a small, powerful, HD video switcher!

1.1 Features

Video

- 6 video inputs (SDI x 4 + HDMI x 2)
- Flexible Mix/Effects Processor with
  - HD Chroma Key / Linear / Luma Key
  - Picture-In-Picture
  - Wipe Generator with 32 wipe patterns including circle and heart wipes plus Border & Softness Controls
  - Traditional Mix & Cut Transitions
  - User defined Down Stream Key for use with external CG text overlay
  - Full M/E Preview function
- Assignable Outputs (SDI & HDMI)
- Cross Point Assignment (XPT)

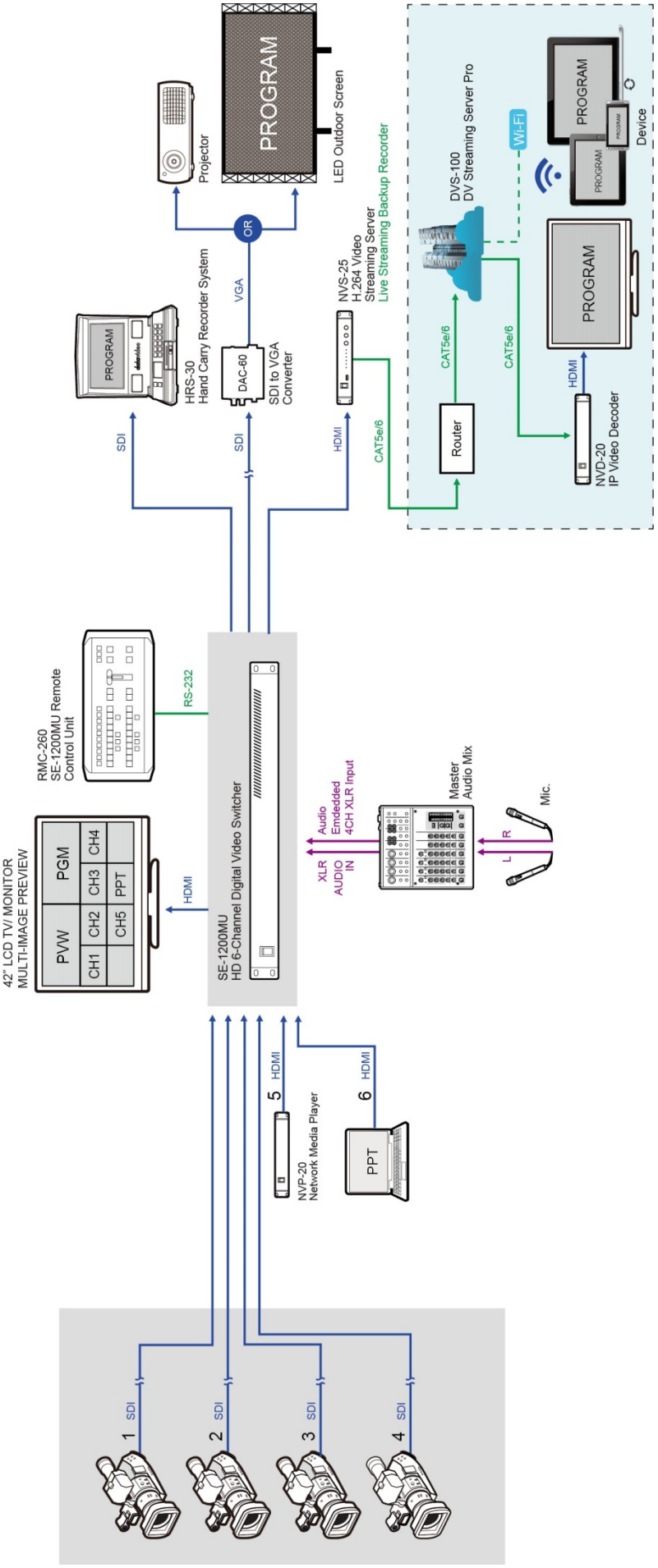
Audio

- 2 audio inputs (XLR x 2 for connecting external audio source to be embedded in SDI video signal)

Control

- PC control and setup available (for Windows/iOS) over a standard RJ-45 IP connection
- Tally output compatible with Datavideo ITC-100 talk back system
- GPI Output
- Supports physical switcher keyboard controller such as RMC-260

1.2 System Diagram

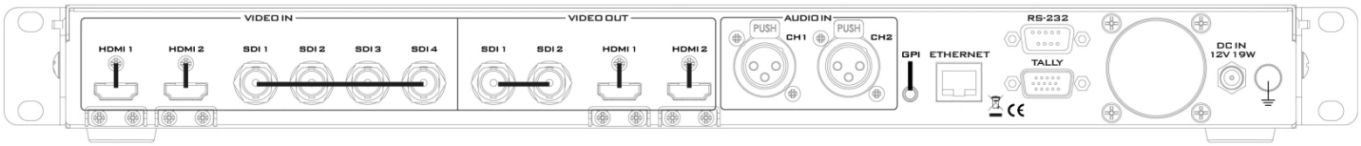


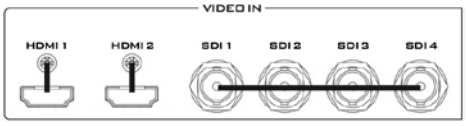
Chapter 2 Hardware Connections

2.1 Front Panel

Power ON /OFF switch

2.2 Rear Panel

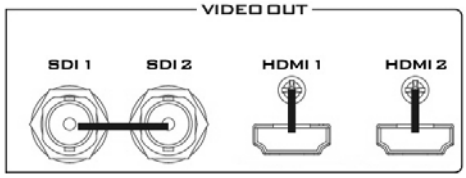




Video IN

The SE-1200 MU is equipped with six video input channels.

Video Input set is comprised of four SDI connectors and two HDMI ports.

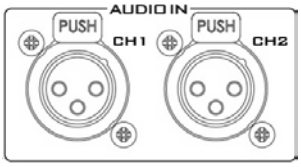


Video OUT

HDMI 1 and the two SDI outputs can be used for monitoring video in a number of different configurations including Program, Preview and or Multi-view. See Section 4.2.

HDMI 2: Multi-view Output **ONLY**

Note: *Both HDMI output ports operate at 1080i, 1080p or 720p depending on the chosen video standard.*



Audio Input

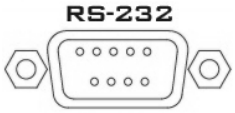
Supports two XLR Balanced Audio Input channels.

GPI

GPI output connection for basic control of other externally-connected devices.

Ethernet Ports

For connection of the Main Unit to the PC such that the SE-1200 MU can be remotely controlled on a graphical user interface.



RS-232

For remote control interface such as RMC-260.

TALLY Output

The SE-1200 MU Tally Output Port provides bi-colour tally information (Red and Amber); Red indicates On-Air and Amber indicates next camera source.

DC IN

Connect the supplied 12V / 19W PSU to this socket. The connection can be secured by screwing the outer fastening ring of the DC In plug to the socket.

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 mm^2.

2.3 Control the SE-1200 MU by Physical Keyboard

For Windows/iOS PC Users

Users can control the SE-1200 MU for some basic functions and setups by the physical keyboard of the Windows/iOS systems. Please see the diagrams and descriptions on the following for more detail.

AUX : Q W E R T Y U I

Program: A S D E F G H J

Preset : Z X C V B N M

Space bar: Cut

Return: MIX / WIPE

Chapter 3 Network Setup

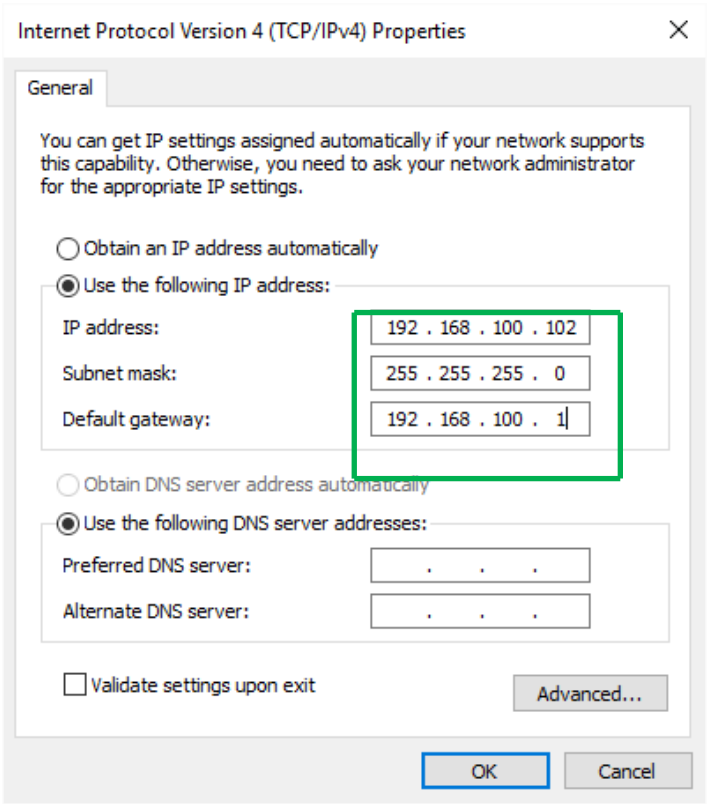
3.1 Initial SE-1200 MU Setup with a Windows Computer

The SE-1200 MU switcher is not supplied with a traditional hardware based control panel. Instead it is controlled using a software user interface installed on your Windows-based computer. **When new from the factory the unit 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 before moving it to an existing DHCP / LAN network.

- **An RJ-45 ethernet cable.**
- **Windows 7/8/10 laptop or PC.**
- **The Datavideo SE-1200 MU controller software.**

Instructions

1. First connect the SE-1200 MU and the Windows computer together using an RJ-45 ethernet cable.
2. Turn on the Windows computer and set it to **static IP set up** 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.

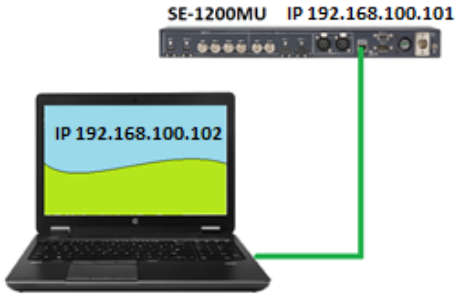


3. Now install the supplied SE-1200 MU controller software to the computer.

3.2 Initial SE-1200 MU Setup with an iOS Computer

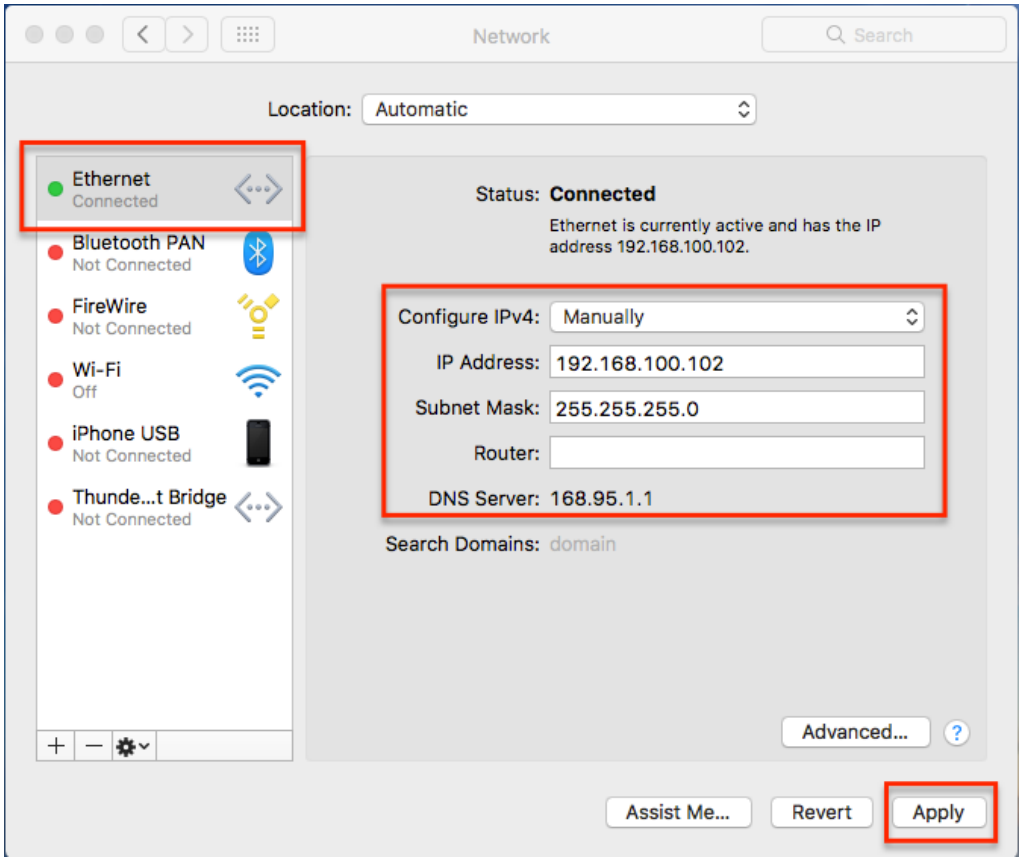
The SE-1200 MU switcher is not supplied with a traditional hardware based control panel. Instead it is controlled using a software user interface installed on your iOS-based computer. **When new from the factory the unit will initially have a static IP address of 192.168.100.101.** The unit can be directly connected to an iOS-based computer using an RJ-45 ethernet cable. The following set up should allow you to initially configure the unit before moving it to an existing DHCP / LAN network.

- **An RJ-45 ethernet cable.**
- **Apple iOS-based laptop or PC.**
- **The Datavideo SE-1200 MU controller software.**



Instructions

1. First connect the SE-1200 MU and the iOS computer together using an RJ-45 ethernet cable.
2. Turn on the iOS computer and then click the **system preferences** icon. After that, click the **Network** icon to set the **static IP.** Please refer to following chart to set the static IP of the iOS computer. After that, the iOS computer will be within the same IP range as the SE-1200 MU switcher.



3. Please install the SE-1200 MU control software after setting the static IP of the iOS computer.

3.3 Installing the SE-1200 MU Controller Software

For Windows PC Users

The SE-1200 MU can be connected to a simple IP network and controlled using Windows-based software. If you have not already set up the SE-1200 MU with a computer then please follow the instructions on the previous page.

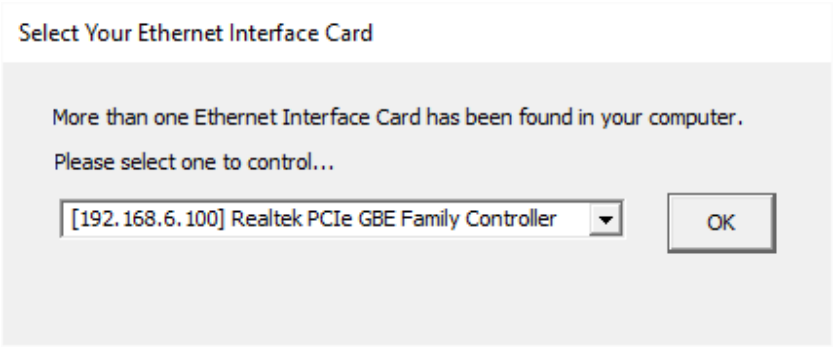
The SE-1200 MU comes with an accessory software CD. If this CD has been lost or has not been supplied then please download the latest software from the Datavideo SE-1200 MU web page. See: www.datavideo.com

The install executable file [.exe] will be called **SE1200 Control v.x.x.x.x**
The v.x.x.x.x represents the latest version number.

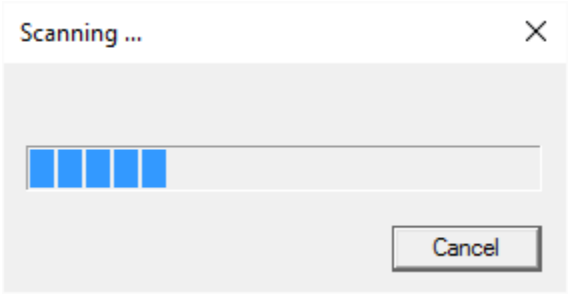
Double click this .exe file then **follow the on screen install wizard prompts**.

Once installed launch the **SE-1200 MU controller software**.

The SE-1200 MU controller software has a built-in IP finder, which is designed for PC with multiple Ethernet cards or DHCP network environment. Please note IP finder can only find devices that are on the same network domain as the PC. If you cannot remember your device IP, please contact your local Datavideo distributor for assistance as there is currently no reset function for network settings. Upon launch of the SE-1200 MU controller software, you will be prompted to select one Ethernet Interface Card.



Once selected, click OK to start the scanning process.



If the SE-1200 MU control software cannot find the SE-1200 MU device, the software will continuously prompt you for an appropriate interface card. Again, please make sure the selected interface card is on the same network domain as the SE-1200 MU device.

Once the SE-1200 MU device is found, the software will connect with the switcher hardware over the IP set up described on the previous page.

As the program buttons are clicked the SE-1200 MU program output and multi view output will show changes.

For iOS PC Users

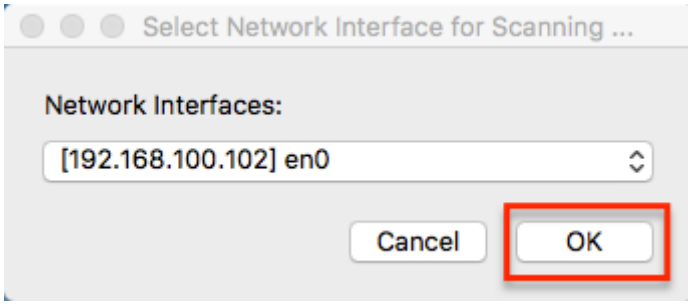
The SE-1200 MU can be connected to a simple IP network and controlled by using iOS-based control software. If you have not already set up the SE-1200 MU with a computer then please follow the instructions on the previous page.

The SE-1200 MU comes with an accessory software CD. If this CD has been lost or has not been supplied then please download the latest software from the Datavideo SE-1200 MU web page. See: www.datavideo.com

panelControl1200

The name of the install file is **Panel Control 1200 v.x.x.x.x**
The v.x.x.x.x represents the latest version number.
Double click this .exe file then **follow the on screen install wizard prompts**.
Once installed launch the **SE-1200 MU controller software**.

The SE-1200 MU controller software has a built-in IP finder, which is designed for PC with multiple Ethernet cards or DHCP network environment. Please note IP finder can only find devices that are on the same network domain as the PC. If you cannot remember your device IP, please contact your local Datavideo distributor for assistance as there is currently no reset function for network settings. Upon launch of the SE-1200 MU controller software, you will be prompted to select one Ethernet Interface Card.



After the right Ethernet card is selected, please press OK to open the SE-1200 MU software control interface for iOS.

If the SE-1200 MU control software cannot find the SE-1200 MU device, the software will continuously prompt you for an appropriate interface card. Again, please make sure the selected interface card is on the same network domain as the SE-1200 MU device.

Once the SE-1200 MU device is found, the software will connect with the switcher hardware over the IP set up described on the previous page.

As the program buttons are clicked the SE-1200 MU program output and multi view output will show changes.

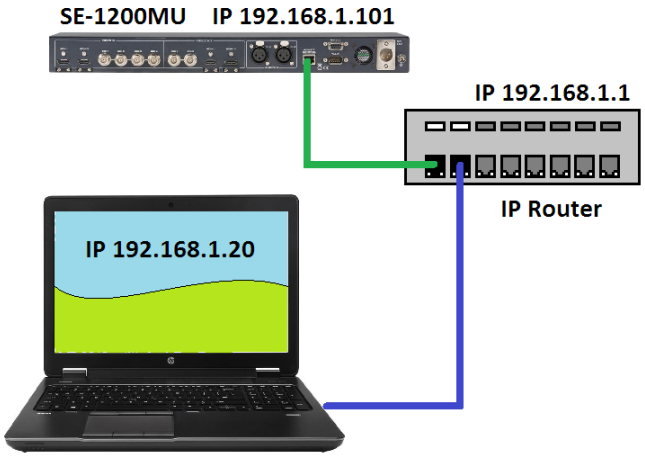
3.3.1 Router Based DHCP Setup

The computer software can also access and control the SE-1200 MU over an existing TCP/IP LAN type network. In order to initially set up the SE-1200 MU, 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 simplified network set up example below, further advice may be available through your dealer locally or your Datavideo regional office.

For Windows PC Users

To create this simple dedicated SE-1200 MU 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 SE-1200 MU controller software.**



Instructions

1. First connect the router to the SE-1200 MU 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. Now click the Windows start button and run the CMD prompt window.
4. At the command line **> : _** type **IPCONFIG** and press enter.
5. The **DEFAULT GATEWAY** number displayed should be the router's current IP address.
6. Enter the **DEFAULT GATEWAY IP address** into the address bar of the computer's web browser.
7. The web browser should display the login window for the router. Enter the router's login and/or password.
   The login details may be written on a sticker on the router itself or noted in the manual for the router.
8. Once logged into the router we need to change the router to supply IP addresses in the **192.168.100.xxx** range. Use the router's **LAN Setup** or **Configure LAN** option to set the router's IP address as **192.168.100.1** and click **save / apply**.
9. Now reboot the router and power ON the SE-1200 MU.
10. Log into the router again using the web browser and the router's new IP address **192.168.100.1**
11. Use the router's **LAN Setup** or **Configure LAN** option again, within this option there should be another option called **Address Reservation** or **Client List**.
12. The two devices connected to the router should be listed here, the computer and the SE-1200 MU.
13. The computer, because it is set for DHCP, will already have an IP address automatically assigned to it in this list.

14. The SE-1200 MU may only show its MAC address **(1E:ED:19:27:1A:B3)**. Copy and Paste the SE-1200 MU's MAC address into the MAC address reservation box. Now enter the following IP address **192.168.100.101** into the reservation box next to the SE-1200 MU's MAC address.
15. The router should now give the IP address **192.168.100.101** to the SE-1200 MU when it is connected to the router.
16. Click **save / apply** then reboot the router again.
17. Close the web browser and CMD windows.
18. Now install the supplied SE-1200 MU control software to the computer.

For iOS PC Users

1. At first, use two RJ-45 cables to connect the router to one SE-1200 MU switcher and one iOS-based PC.
2. Turn on the i-OS PC and then click the system preferences icon. After that, click the Network icon and then choose the Ethernet item. Finally, choose "Use DHCP" from the **IPv4 Setting** drop-down menu.
3. Input the preset router IP address in the browser address bar. It's possible that this preset IP address can be found on the router itself or in its user manual.
4. Input the account and the password for logging into the router.
5. After logging, we must modify router's setup and then the router can provide the IP address range of **192.168.100.xxx.** Enter router's LAN setting page to set the router's IP address as **192.168.100.1**. After that, please press the **SAVE/APPLY** button.
6. After rebooting the router and then power on butSE-1200 MU again.
7. Logging into the router by the web browser and then reconfirm the router's new IP address is **192.168.100.1.**
8. Enter the DHCP setting page of the router again. And then you will see address presetting or DHCP customer list options.
9. From the DHCP customer list options, users can see the MAC addresses and the assigned IPs for the Apple iOS PC and the SE-1200MU. The MAC address of the SE-1200 MU is 1E-ED-19-27-1A-B3. And the assigned IP address of the SE-1200 MU is192.168.100.101.
10. In the DHCP address presetting options, fill the MAC address of the SE-1200 MU "1E-ED-19-27-1A-B3" into the MAC address blank. After that, fill the SE-1200 MU's IP address 192.168.100.101 into the blank of the assigned IP address.
11. Click **Save/Apply** button to reboot the router again.
12. Close the web browser and the command prompt window.
13. Install the SE-1200 MU control software to the iOS-based PC.

3.3.2 How to control the SE-1200 MU from another building or city

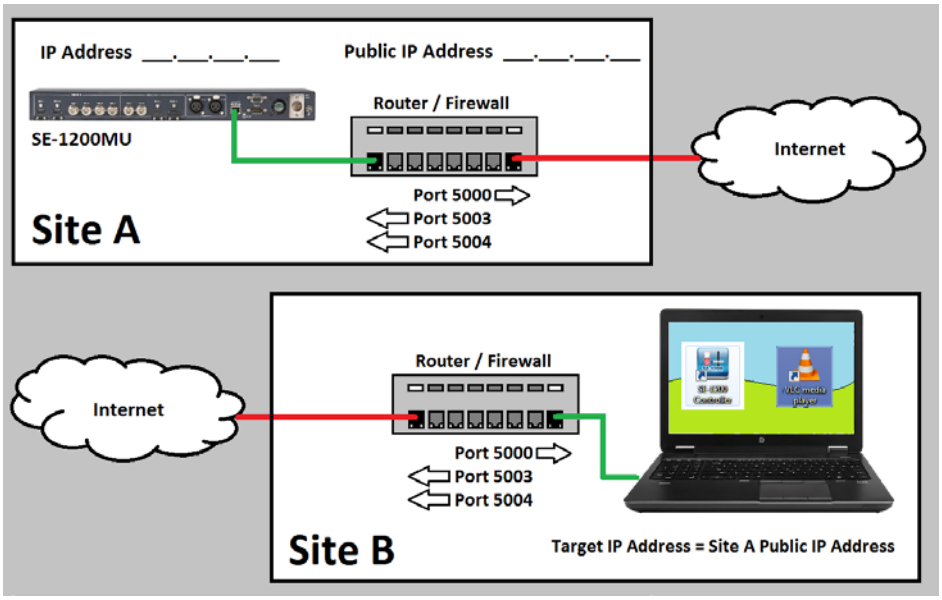
For Windows/iOS PC Users

Once you are familiar with the SE-1200 MU you may want to control the switcher from another building or even a different city. This requires certain internet and network access that may not already be present at both sites.

Note: It is best to discuss your planned SE-1200 MU set up beforehand with your local I.T. or network support manager as this process will involve 'opening' or 'forwarding' TCP/IP ports.

To create this dedicated SE-1200 MU IP set up you will need:

- **Two sites with internet access. We will call these site A and site B.**
- **Site A will have the same SE-1200 MU set up as Section 3.1 but with no local computer connected.**
- **Site B will have a Windows 7/8/10/ or an iOS computer connected to the internet with VLC Player and the Controller software.**
- **Port 5000 will allow streaming of the SE-1200 MU multi view from site A to VLC Player at site B.**
- **Incoming commands on Ports 5003 and 5004 at Site A will be port forwarded to the internal private IP address of Datavideo SE-1200 MU at site A to allow control from site B.**
- **The Public IP address for site A needs to be discovered, this will be used as the Target IP address for both VLC player and the SE-1200 MU Controller software at site B.**



3.3.3 Setting the Target IP Address with the Controller Software

For Windows PC Users

Click Setup in the **MENU SELECT** panel and the current IP Network settings are shown alongside the software version.

If the network settings are wrong then you may not be able to control the SE-1200 MU. Always keep a note of the last IP settings used and change these settings carefully to avoid problems.

Target IP address – This IP address is the location on the local network, or the internet, where the software can talk to the SE-1200 MU. By clicking the **Target IP address** you can enter a new address, once entered click **Save Setup**. The next time the software controller is opened, it will try to contact the switcher on this new Target IP address.

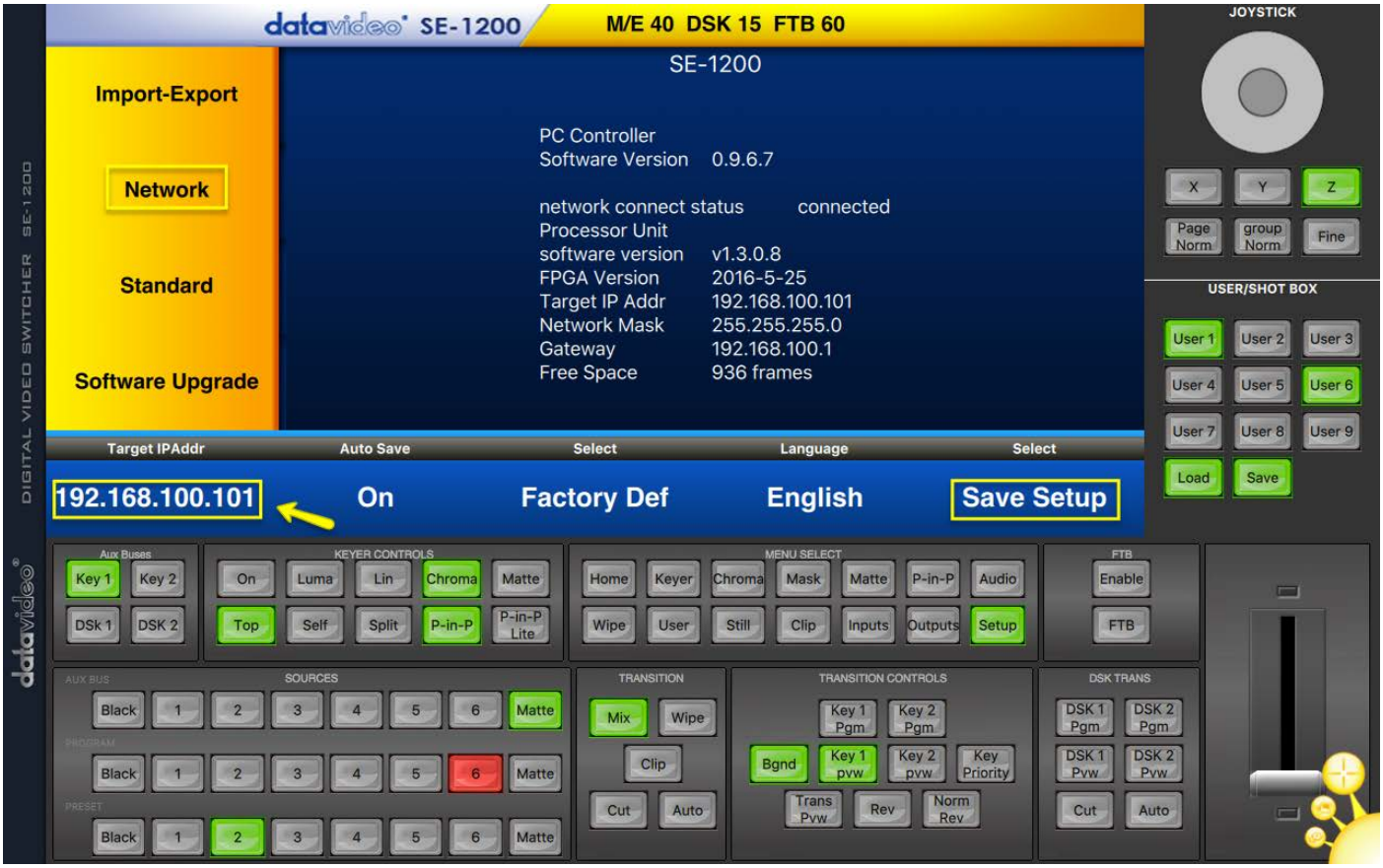
Network – This option in the yellow menu column allows you to change the network options on the SE-1200 MU. When delivered from the factory **the default static IP settings should be:**

> **Set up:** Static (a manually set IP address that does not change even after power cycling the SE-1200 MU unit)
> **IP address:** 192.168.100.101
> **Subnet Mask:** 255.255.255.0
> **Gateway:** 192.168.100.1

DHCP Setup - If the IP set up method is changed to DHCP then each time the SE-1200 MU is started, it may be given a different IP address by the network. Only use this method if you know how to find the SE-1200 MU on the internal IP network. A device on the network (usually a router or server) will automatically give a spare or fixed IP address to the SE-1200 MU. The other settings such as IP address, Subnet Mask and Gateway may appear blank within the controller software as these would be automatically set by network router/DHCP server.

For iOS PC Users

Click Setup in the **MENU SELECT** panel and the current IP Network settings are shown alongside the software version.



If the network settings are wrong then you may not be able to control the SE-1200 MU. Always keep a note of the last IP settings used and change these settings carefully to avoid problems.

Target IP address – This IP address is the location on the local network, or the internet, where the software can talk to the SE-1200 MU. By clicking the **Target IP address** you can enter a new address, once entered click **Save Setup**. The next time the software controller is opened, it will try to contact the switcher on this new Target IP address.

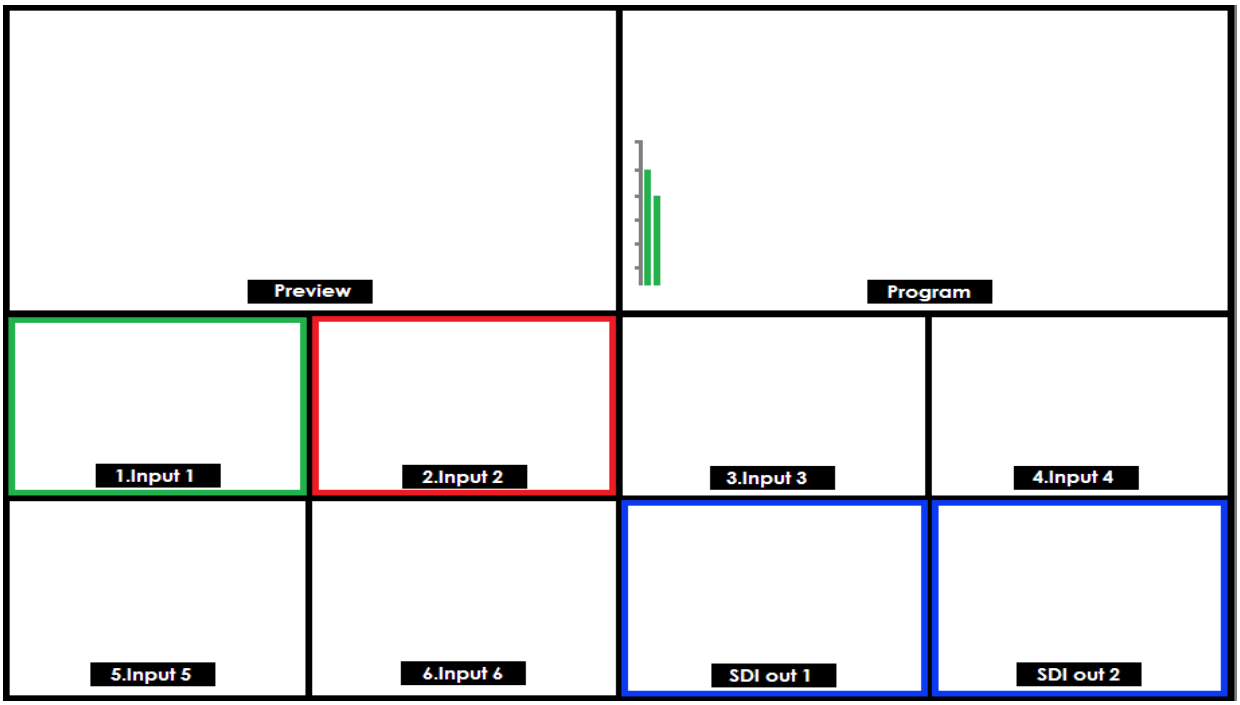
Network – This option in the yellow menu column allows you to change the network options on the SE-1200 MU. When delivered from the factory **the default static IP settings should be:**

Set up: Static (a manually set IP address that does not change even after power cycling the SE-1200 MU unit)
IP address: 192.168.100.101
Subnet Mask: 255.255.255.0
Gateway: 192.168.100.1

DHCP Setup - If the IP set up method is changed to DHCP then each time the SE-1200 MU is started, it may be given a different IP address by the network. Only use this method if you know how to find the SE-1200 MU on the internal IP network. A device on the network (usually a router or server) will automatically give a spare or fixed IP address to the SE-1200 MU. The other settings such as IP address, Subnet Mask and Gateway may appear blank within the controller software as these would be automatically set by network router/DHCP server.

Chapter 4 SE-1200 MU Video Setup

4.1 SE-1200 MU Multi View Output



The SE-1200 MU multi view output can be supplied locally, from either the HDMI1 or SDI outputs 1 and 2 on the unit's rear panel, see section 2.2 (Chapter 2). The multi view can also be streamed over a LAN/internet connection, see section 3.2.2 (Chapter 3).

The default multi view output, when new, is from HDMI output 1. This HDMI output operates at 1080P, 720P or 1080i depending on the video standard chosen, see section 4.3 (Chapter 4).

The Multi view shows monitoring images for **Preview** (PVW), **Program** (PGM), **Inputs 1~6**, as well as **SDI outputs** 1 and 2.

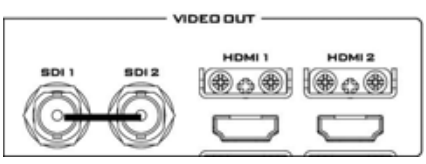
The SE-1200 MU can also show **audio level bars** overlaid on the Program image within the multi view. This confirms if analogue XLR audio input is being received and embedded to the selected Program output(s).

A Red tally indication box is shown around the selected Program source(s). This video image is also seen at the switcher's selected Program output(s). **A Green tally indication box** is shown around the selected Preview source. This will be the image source to be mixed to, wiped in, or cut to next depending on the user's preference.

Images **SDI out 1** and **SDI out 2** confirm what is being sent from those SDI outputs. These outputs can be configured differently by the user, see section 5.2.1 (Chapter 5).

4.2 Setting the Video Outputs

These rear panel video outputs are initially set as follows when shipped from the factory.

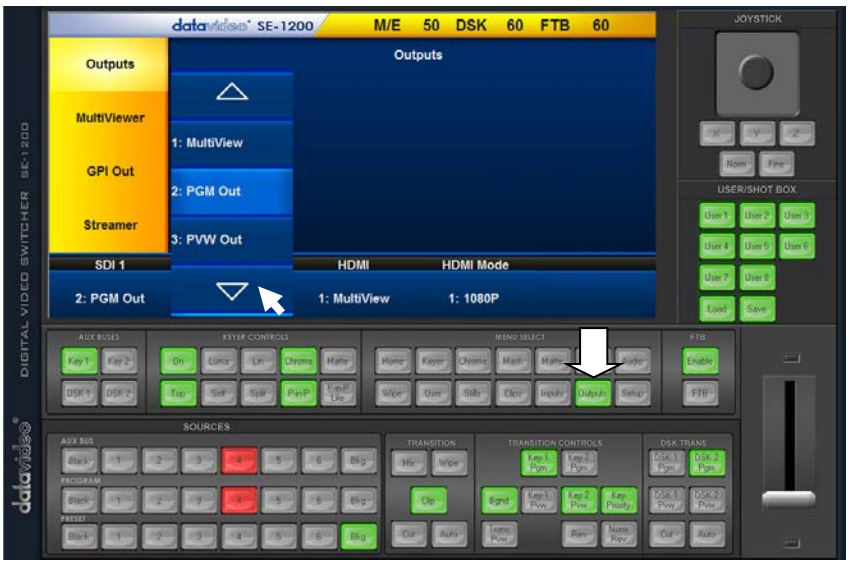


SDI 1 Factory default – Program out
SDI 2 Factory default – Program out
HDMI 1 Factory default – Multi view output
HDMI 2 Factory default – Multi view output

Each of the outputs can be reconfigured to one of the settings below by using the menu option **Outputs**

For Windows PC Users

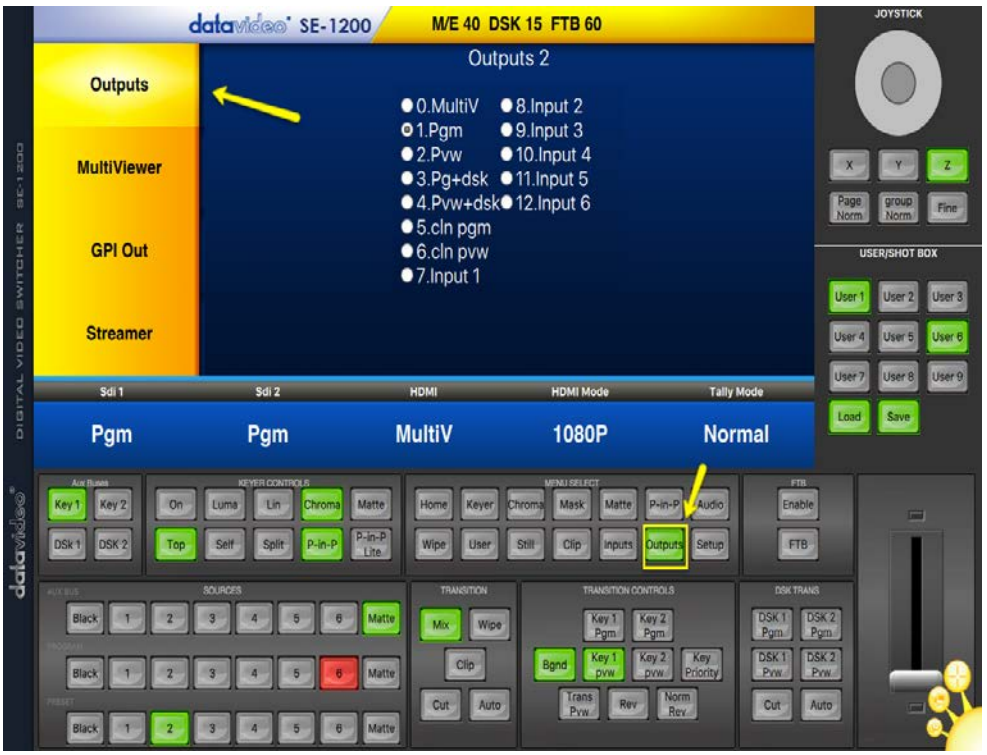
1: Multiview
2: PGM Out
3: PVW Out
4: PGM DSK1
5: PVW DSK1
6: Clean PGM
7: Clean PVW
8: Input 1
9: Input 2
10: Input 3
11: Input 4
12: Input 5
13: Input 6



Note: Ensure at least one output is left set as Multi View so the Main Menu can still be accessed.

For iOS PC Users

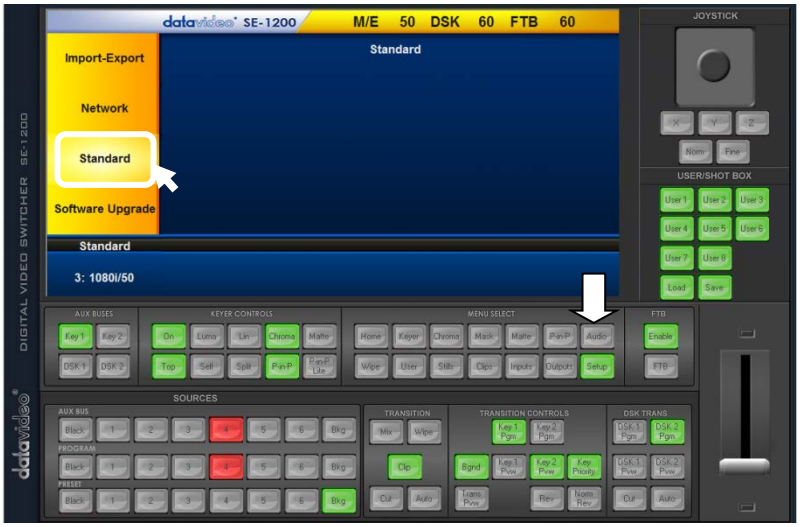
0: Multiview
1: Pgm
2: Pvw
3: Pg+dsk
4: Pvw+dsk
5: cln pgm
6. cln pvw
7: Input 1
8: Input 2
9: Input 3
10: Input 4
11: Input 5
12: Input 6



Note: Ensure at least one output is left set as Multi View so the Main Menu can still be accessed.

4.3 Setting the Video Standard

For Windows PC Users



The SE-1200 MU video standard can be changed by using the menu path **SETUP > STANDARD**.

The SE-1200 MU is initially set up for the 1920 x 1080 i50 or i60 video standard when shipped from the factory depending on your country's video standard.

As with most HD video switchers, the SE-1200 MU will expect all video inputs to be operating at the same video standard as the switcher itself. If a connected device is supplying a different video format/standard then the switcher may not display the video for that input. Change the source equipment settings to match the switcher's video standard or vice versa.

The SE-1200 MU can support the following HD video standards: 1080i/50, 1080i/59.94, 1080i/60 and 720p/50, 720p/59.94, 720p/60.

For iOS PC Users

The SE-1200 MU video standard can be changed by using the menu path **SETUP > STANDARD**.

The SE-1200 MU is initially set up for the 1920 x 1080 i50 or i60 video standard when shipped from the factory depending on your country's video standard.

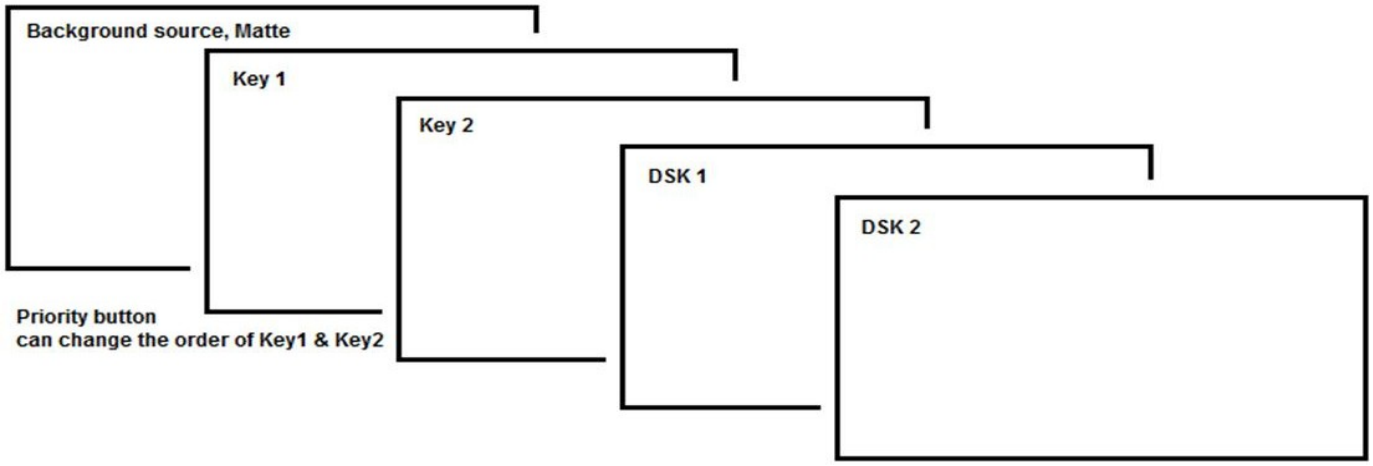
As with most HD video switchers, the SE-1200 MU will expect all video inputs to be operating at the same video standard as the switcher itself. If a connected device is supplying a different video format/standard then the switcher may not display the video for that input. Change the source equipment settings to match the switcher's video standard or vice versa.

The SE-1200 MU can support the following HD video standards: 1080i/50, 1080i/59.94, 1080i/60 and 720p/50, 720p/59.94, 720p/60.

4.4 SE-1200 MU Video Layers

The SE-1200 MU is a High Definition Digital Video Switcher and as well as mixing video sources and embedding analogue audio, it has additional functions such as Picture in Picture (PIP), Chroma Key, Luma Key and Down Stream Key (DSK).

Before attempting to use the SE-1200 MU's PIP, Chroma, Luma and Down Stream Keying functions, it may help to first understand the order of the video layers at the SE-1200 MU Program outputs.



The **background video layer** is used for transitioning between Preview and Program sources. This layer also includes any selected wipe transitions. This layer can be hidden or partly hidden by the PiP, Keyer or DSK video layers in front of it.

For Windows PC Users

The **Key 1** and **Key 2** layers can be used for ***PiP, Chroma, Linear*** or ***Luma Key*** applications. The KEY video signal (foreground) is shown in this layer and the FILL video signal is displayed in the background video layer. If set up incorrectly, these key layers can stop the video behind from being displayed.

The **Picture in Picture (PiP)** feature of the **Key 1** & **Key 2** 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 SE-1200 MU has four dedicated keyers, **Key1**, **Key2**, **DSK1** and **DSK2**. All four keyers can be active simultaneously. **Key 1** and **Key2** can be set as Upstream or Downstream keyers.

The Layer priority, or order, of **Key 1** and **Key 2** can also be changed by the user using the **Priority button** in the **Transitions Control** area. **DSK 1** & **DSK 2** can only be used as Downstream keyers. See the diagram above for an example of keyer layering with the SE-1200 MU.

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-350 and CG-500. If set up incorrectly these DSK layers can also stop the video layers behind them from being displayed properly.

For iOS PC Users

The **Key 1** and **Key 2** layers can be used for ***PiP, Chroma, Linear*** or ***Luma Key*** applications. The KEY video signal (foreground) is shown in this layer and the FILL video signal is displayed in the background video layer. If set up incorrectly, these key layers can stop the video behind from being displayed.

The **Picture in Picture (PiP)** feature of the **Key 1** & **Key 2** 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 SE-1200 MU has four dedicated keyers, **Key1**, **Key2**, **DSK1** and **DSK2**. All four keyers can be active simultaneously. **Key 1** and **Key2** can be set as Upstream or Downstream keyers.

The Layer priority, or order, of **Key 1** and **Key 2** can also be changed by the user using the **Priority button** in the **Transitions Control** area. **DSK 1** & **DSK 2** can only be used as Downstream keyers. See the diagram above for an example of keyer layering with the SE-1200 MU.

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Note: Where possible, prepare and position the upper video layers in advance of the live production starting to avoid appearing on the program output incorrectly. These can be saved as user setups in the shot box area of the software control interface for quick and easy recall.

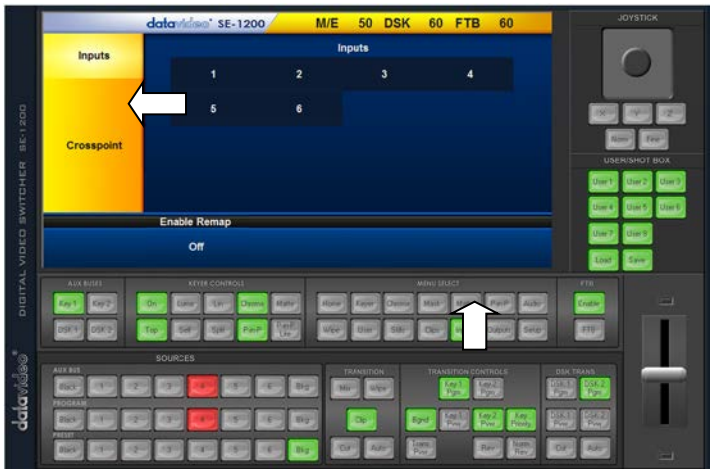
Copyright: Most broadcast networks have guidelines and advice on the use of video, images, music, logos and on screen text so it is best to check beforehand when planning a production. Do not use copyright protected content until you have the relevant permissions. Information on royalty free video, images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

Chapter 5 Video Connection Setup

5.1 Inputs – Setup

5.1.1 Crosspoint

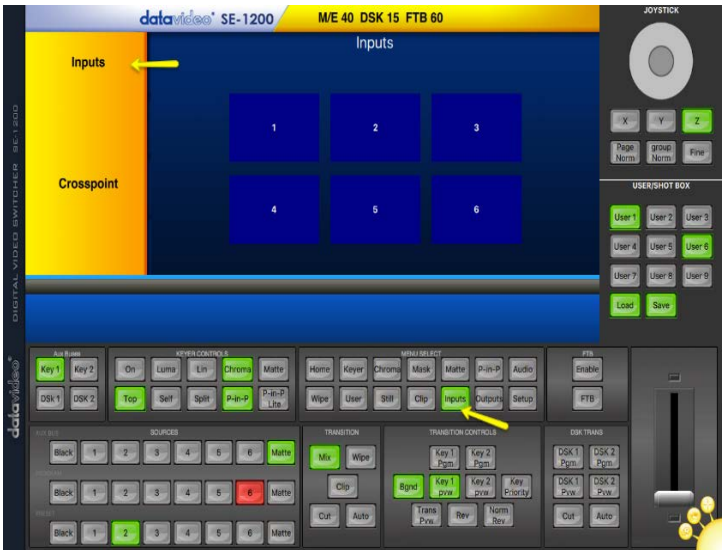
For Windows PC Users



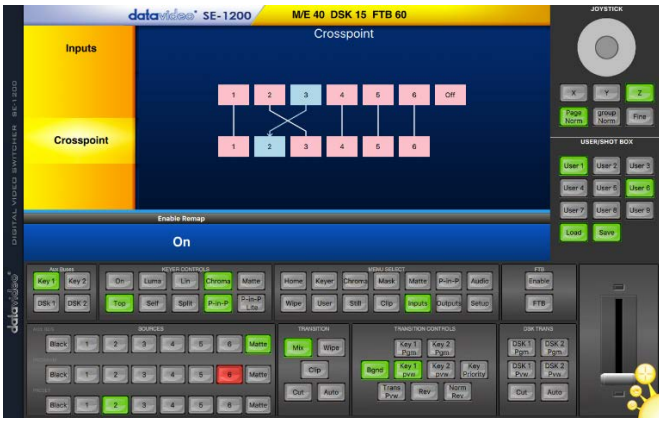
The physical input sources can be swapped around within the SE-1200 MU by using the **cross point** section of the **Inputs menu**.

Click a crosspoint (lower row) then click again on the required input (upper row) to link them. The example above shows inputs 2 and 3 swapped.

For iOS PC Users



The physical input sources can be swapped around within the SE-1200 MU by using the **cross point** section of the **Inputs menu**.



Click a crosspoint (lower row) then click again on the required input (upper row) to link them. The example above shows inputs 2 and 3 swapped.

5.1.2 Source Labels

For Windows PC Users

The multi view source labels can be changed. First **click Inputs** menu then **choose the input** you wish to **name**. Then use the pop up keyboard to edit the selected input name. Press **Enter** to store the change, the new Multi view label should now be displayed.

Note: The label will accept up to 16 characters but only the first 10 are displayed.

A **Freeze option** is provided for use when you wish to grab and save a still image from a selected input, see **Stills – Grab and Save** section.

A **ProcAmp option** is provided for adjustment of an input's white, black or chroma level. It may be easier or better to adjust an incoming image at the source equipment, please seek advice before changing these settings.

For iOS PC Users

For the iOS control software for the SE-1200 MU switcher, there is no option for changing the Multiview video source label as the Windows version control software.

A **Freeze option** is provided for use when you wish to grab and save a still image from a selected input, see **Stills – Grab and Save** section.

A **ProcAmp option** is provided for adjustment of an input's white, black or chroma level. It may be easier or better to adjust an incoming image at the source equipment, please seek advice before changing these settings.

5.2 Setting up the SE-1200 MU Video Stream Based Multi View

The SE-1200 MU is able to send, or stream, its multi view image over the same IP network connection used for controlling the switcher. This allows the user to see the multi view on the same computer that is remotely controlling the switcher.

This streamed multi view can then be viewed using a third party software application called VLC Media Player, version 2.1.5 or later is recommended. To download the latest free version of VLC Media Player please visit http://www.videolan.org/

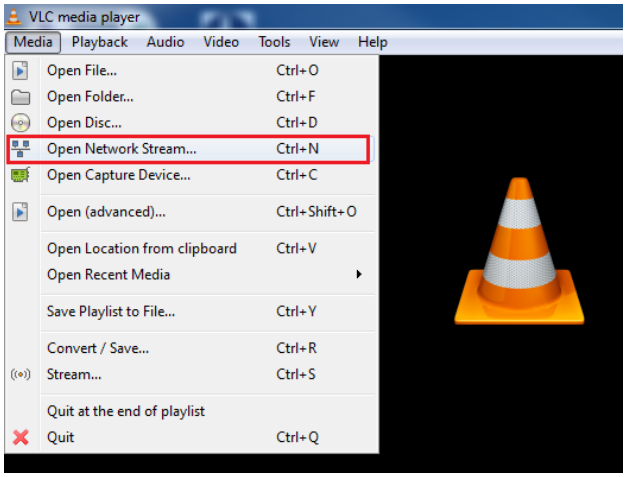
5.2.1 Preparing the SE-1200 MU Stream Output

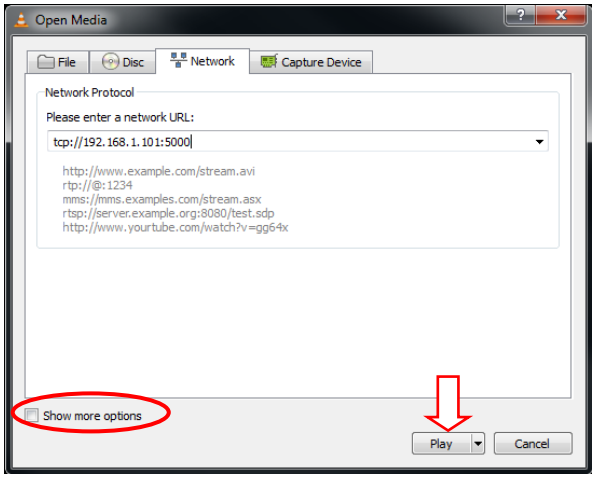
For Windows PC Users

First click the **OUTPUTS** menu button in the SE-1200 MU software control interface. Then select the **STREAMER option in the yellow menu panel** on the left hand side. The user can now select the size of the multi view being streamed. Options are **Full, Half, Quarter** and **Sixth**.

By choosing HALF instead of FULL you are using less bandwidth to support the multi view stream being sent across the IP network.

Reducing the size of the multi view stream may also help overcome delay/latency issues over the network. Click **Stream Start** then **open VLC Media Player** on the computer. Click **Media** on the VLC menu bar and navigate to the **Open Network streaming** settings.





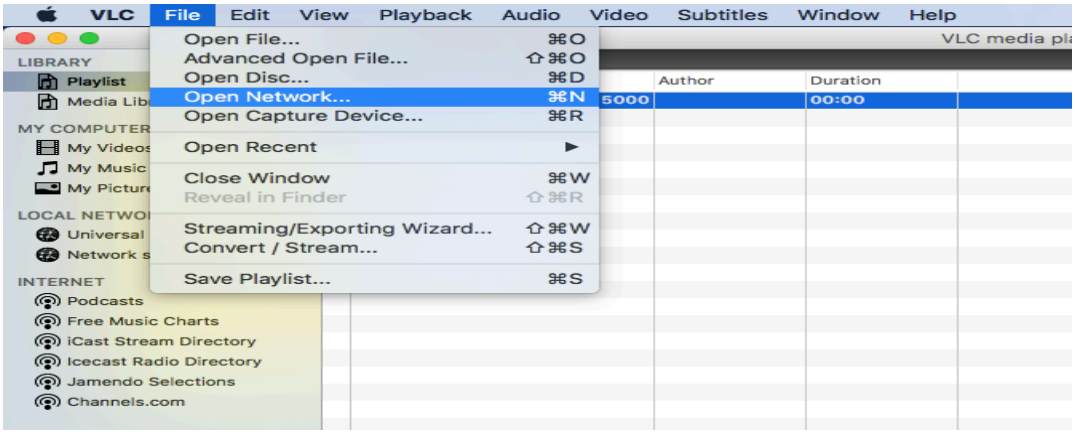
Enter the stream URL as **tcp://192.168.100.101:5000** and click **Play**. The Multi view stream will now be displayed in the VLC window.

For iOS PC Users

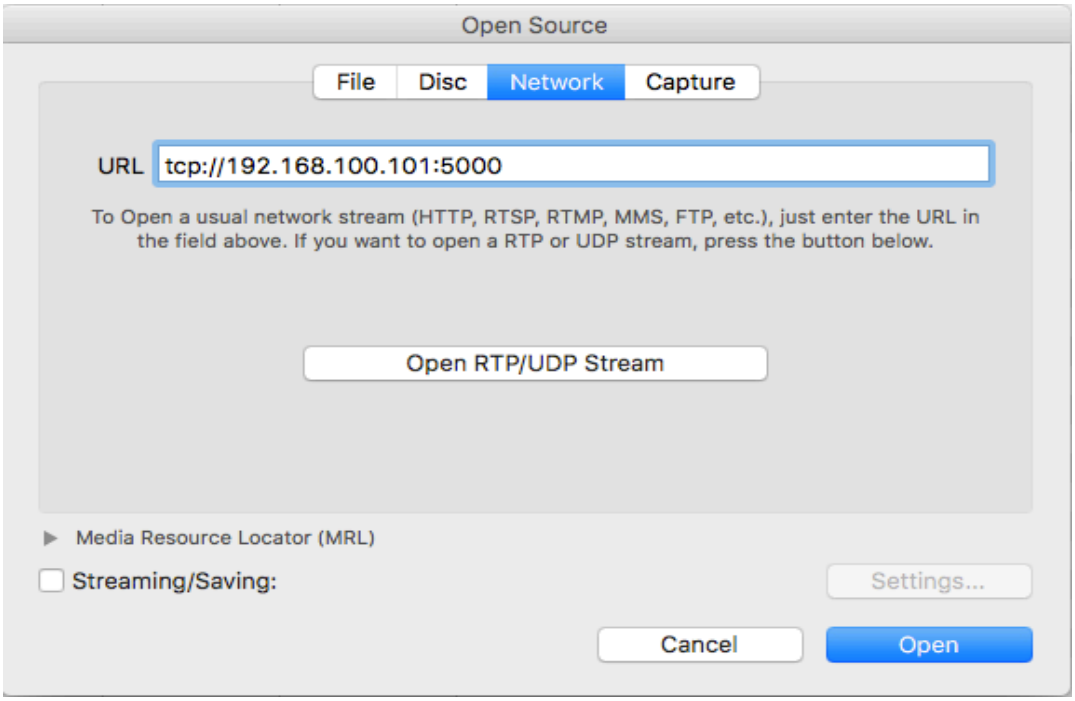
At first, please click the “OUTPUT” button on the SE-1200 MU control software interface. After that, please click the “Streamer” button in the yellow column on the lower-left side. After that, users can select the streaming multiview video size as they wish. Options are **Full, Half, Quarter** and **Sixth** as shown in following pictures.

Note: The streamed SE-1200 MU multi view is video only, no audio is sent over this IP connection. If users choose Half rather than Full, it means that the streamed multiview video is transferred through IP network with less bandwidth.

Try to reduce the multiview streaming video can help to overcome the network delay problem. Click **Stream Start** to open the VLC multimedia player on your PC. Click the “**File**” drop-down menu from and then click the “**Open Network**” option to open the setting page.



After entering into the "**Open Network**" option, input the streaming website address "tcp://192.168.100.101:5000" in the URL blank. After that, press the "**Open**" button and then the Multiview screen will be played in the VLC player window.



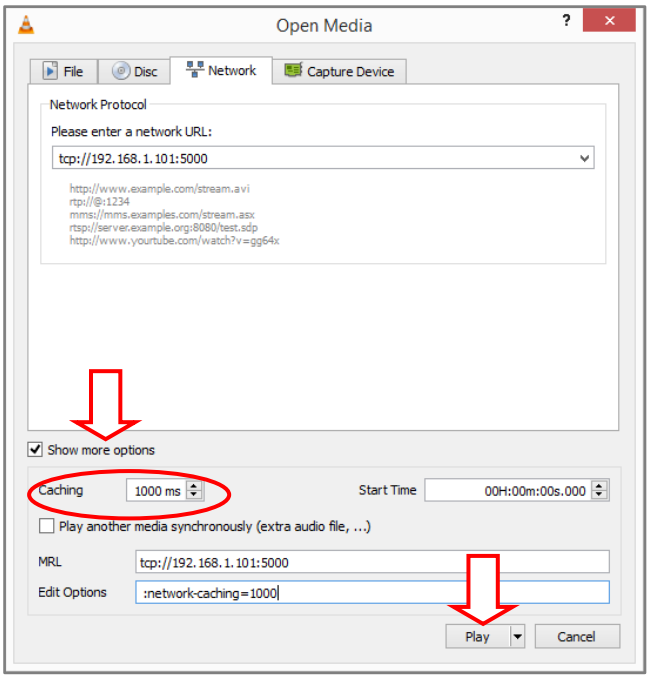
5.2.2 VLC Media Player - Stream Caching

For Windows PC Users

The stream caching feature within **VLC media player** is there to allow enough time for the data being received to be converted to a stable or smooth video feed.

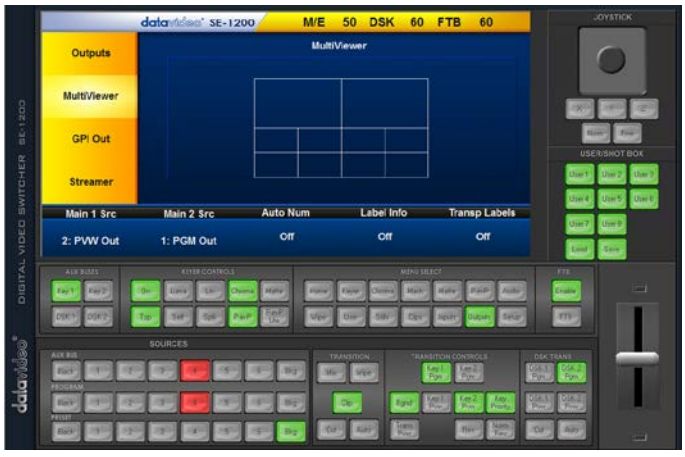
The default caching value is a 1000ms (milliseconds) or 1 second. This delay behind the live performance may be unacceptable but this value can be changed and the delay reduced.

If sending the stream over an office network or LAN, this caching value can be reduced to around 50ms. If the video in the multi view is unstable then slowly increase this caching value in 50 or 100ms steps until you have a smooth video feed.

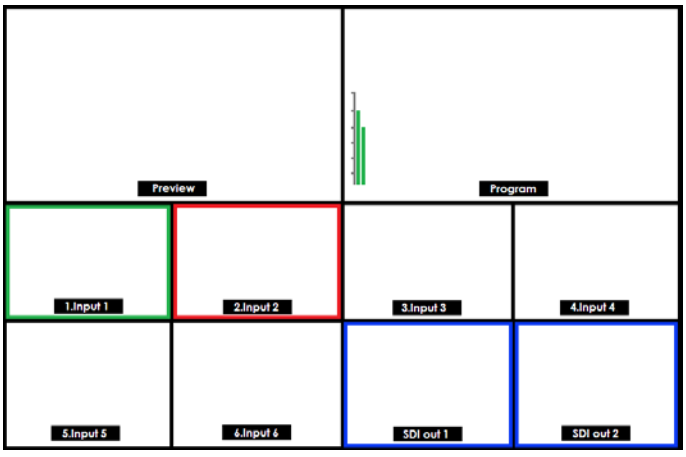


Note: The VLC caching value and multi view stream size are also related to latency. Reducing the SE-1200 MU streamer size may also help reduce the multi view delay or latency across the IP network. The quality of the multi view image will also be affected by these settings.

The VLC media player window (with SE-1200 MU multi view) can be displayed on a second computer monitor using the Windows extended desktop feature. The main computer screen can then be used for the SE-1200 MU control panel software.

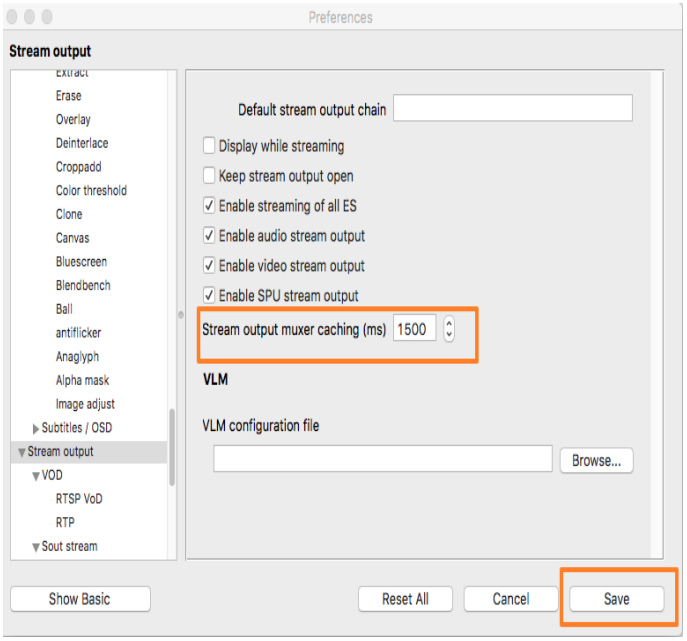


PC monitor 1 – SE-1200 MU Control software



PC monitor 2 – Streamed Multi view on VLC

For iOS PC Users



The stream caching feature within **VLC media player** is there to allow enough time for the data being received to be converted to a stable or smooth video feed.

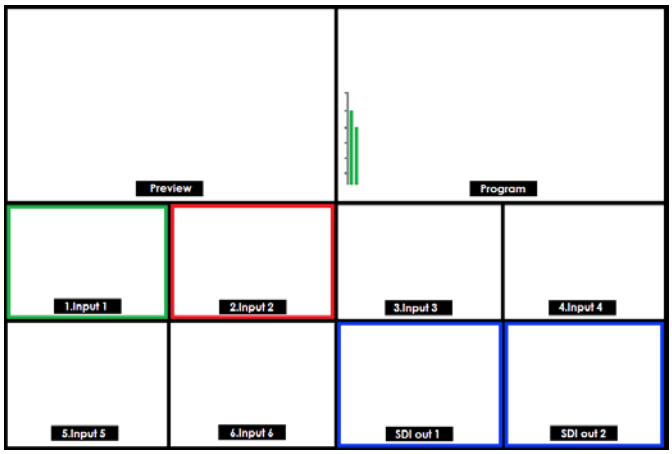
The default caching value is a 1500ms (milliseconds). This delay behind the live performance may be unacceptable but this value can be changed and the delay reduced.

If sending the stream over an office network or LAN, this caching value can be reduced to around 50ms. If the video in the multi view is unstable then slowly increase this caching value in 50 or 100ms steps until you have a smooth video feed.

Note: The VLC caching value and multi view stream size are also related to latency. Reducing the SE-1200 MU streamer size may also help reduce the multi view delay or latency across the IP network. The quality of the multi view image will also be affected by these settings.

The VLC media player window (with SE-1200 MU multi view) can be displayed on a second computer monitor using the Windows extended desktop feature. The main computer screen can then be used for the SE-1200 MU control panel software.

PC monitor 1 – SE-1200 MU Control software



PC monitor 2 –Streamed Multi view on VLC

5.2.3 Port Forwarding for the SE-1200 MU (For Windows/iOS PC Users)

So that the SE-1200 MU Multi view stream can be seen and the unit can be controlled over the internet (or beyond the default gateway), certain 'ports' should be opened on your network firewall or gateway device.

TCP port 5000 is used for the VLC based multi view stream. Ports 5003 and 5004 are used for controlling the switcher. These three ports should be forwarded to the SE-1200 MU internal private IP address.

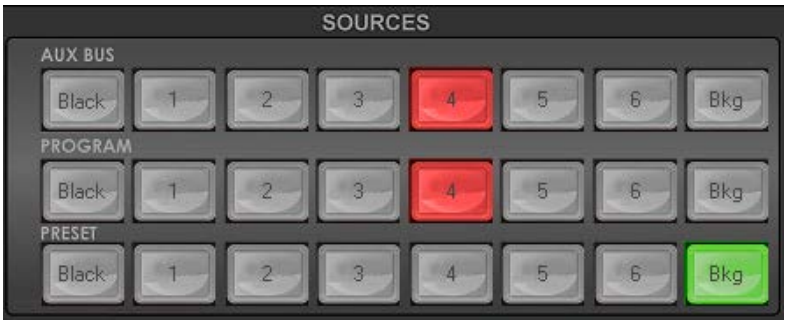
Your local network administrator or I.T. support should be able to help you with this. For further information please see Chapter 3 Network Setup.

Chapter 6 PC Control Panel

6.1 Sources Panel

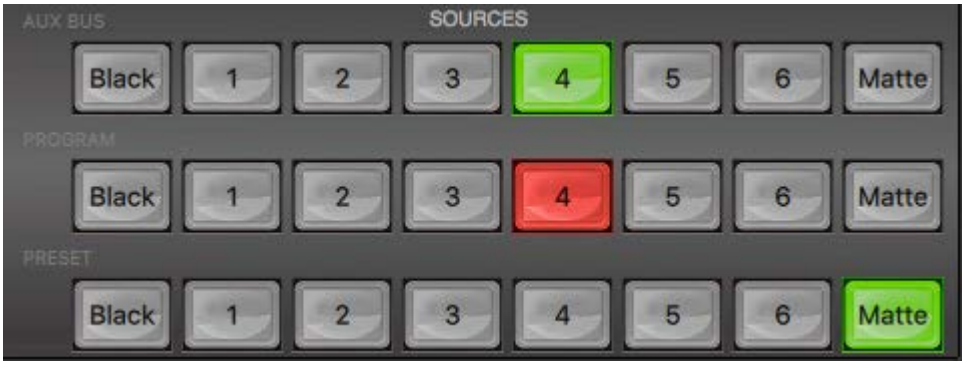
For Windows PC Users

This panel on the SE-1200 MU control software consists of three identical rows of buttons and is used to assign sources or select images for Program or Preset outputs. The buttons are labelled from left to right as **Black**, sources **1 to 6**, and **Bkg**.



For iOS PC Users

This panel on the SE-1200 MU control software consists of three identical rows of buttons and is used to assign sources or select images for Program or Preset outputs. The buttons are labelled from left to right as **Black**, sources **1 to 6**, and **Matte**.



6.1.1 AUX BUS

For Windows/iOS PC Users

This row of buttons is typically used to assign sources for the setup of the PIP, Linear, Chroma and Luma Keyer functions. If a keyer or PIP function is active/ON then the selected AUX button will be backlit red.

6.1.2 PROGRAM

For Windows/iOS PC Users

This row of buttons is typically used to select sources or images for the SE-1200 MU main Program output. The currently selected source being sent to the Program output will be **backlit Red**. Simple cuts between sources can be performed on this row by clicking on the source number required for the next shot.

6.1.3 PRESET

For Windows/iOS PC Users

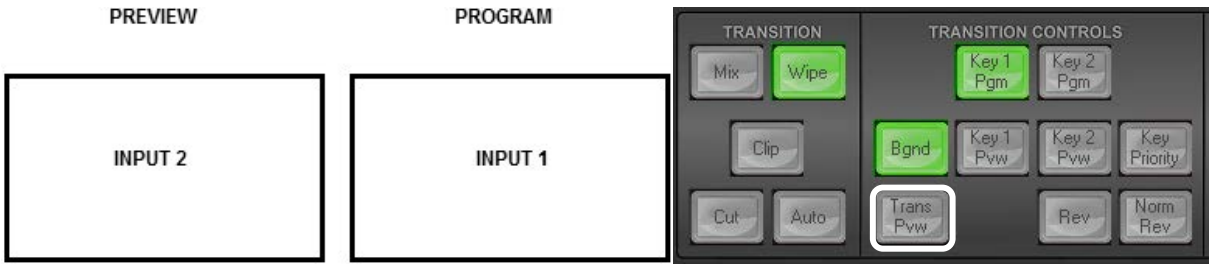
This row of buttons is typically used to select sources or images for the SE-1200 MU Preview output. The currently selected source will be **backlit Green**. The selected button on the Preset row will change from Green to Yellow during Preview-Program transitioning using T-Bar.

6.2 TRANSITION CONTROLS Panel

6.2.1 Previewing a Selected Transition/Wipe

For Windows PC Users

It is possible to see, or test the effect, of a selected transition in the Preview output before applying it to the Program output. In our example below we want to test a selected wipe. Input 1 is being sent to Program and Input 2 in Preview will be shown next.



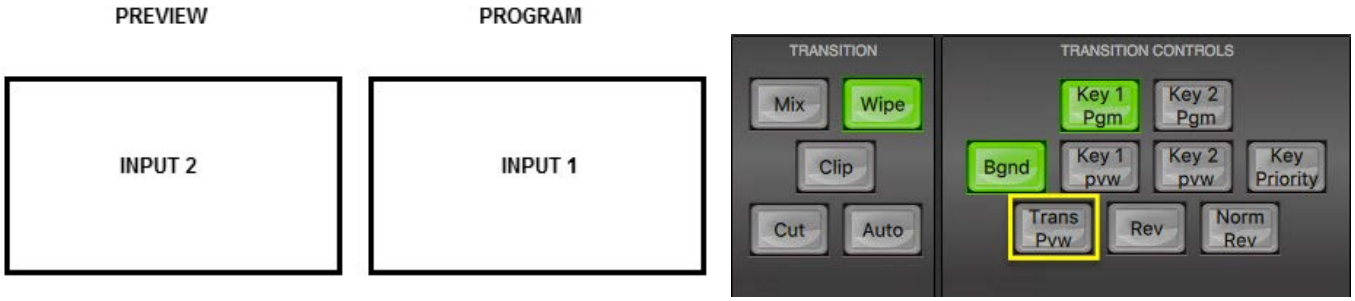
Using the **TRANSITION CONTROLS panel** click to select the **Trans Pvw button** (back lit green is ON). Next select and apply the transition or wipe that you would like to test on the Preview monitor.

You may also notice that the Preview Monitor changes to show the currently selected Program source (Input 1). Do not worry, the selected Preset source (Input 2) has not changed. Click the **Auto button** (TRANSITION panel) or move the **T-Bar** manually to preview the selected transition. You will now see the previewed transition between input 1 and input 2 using the selected wipe. Importantly this is only shown on the Multi view and Preview outputs but has not been shown on the Program output.

NOTE: Remember to disable the **Trans Pvw button** before attempting to use the selected transition on the live Program output.

For iOS PC Users

It is possible to see, or test the effect, of a selected transition in the Preview output before applying it to the Program output. In our example below we want to test a selected wipe. Input 1 is being sent to Program and Input 2 in Preview will be shown next.



Using the **TRANSITION CONTROLS panel** click to select the **Trans Pvw button** (back lit green is ON). Next select and apply the transition or wipe that you would like to test on the Preview monitor.

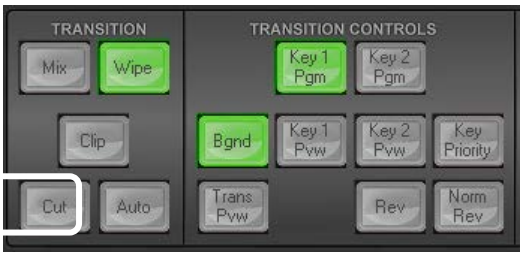
You may also notice that the Preview Monitor changes to show the currently selected Program source (Input 1). Do not worry, the selected Preset source (Input 2) has not changed. Click the **Auto button** (TRANSITION panel) or move the **T-Bar** manually to preview the selected transition. You will now see the previewed transition between input 1 and input 2 using the selected wipe. Importantly this is only shown on the Multi view and Preview outputs but has not been shown on the Program output.

NOTE: Remember to disable the **Trans Pvw button** before attempting to use the selected transition on the live Program output.

6.2.2 Rev and Nrm (NORM) / Rv (REV) Buttons

For Windows PC Users

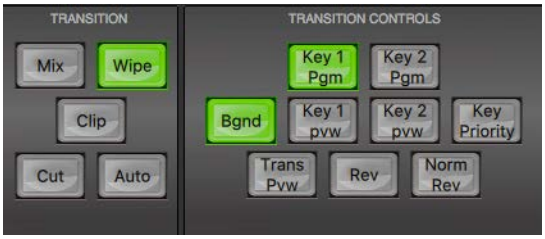
When the **Rev** and **Nrm / Rv** buttons are both **OFF**, the selected WIPE transition will operate in its default direction only.



When the **Nrm / Rv** button is **ON**, the selected WIPE transition will automatically switch directions as each transition is completed. The **Rev** button will switch on and off automatically to indicate the direction of the next transition.
When the **Rev** button is **ON** then the selected transition will operate in the reverse direction only.

For iOS PC Users

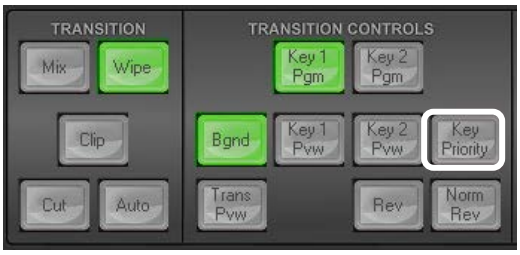
When the **Rev** and **Nrm / Rv** buttons are both **OFF**, the selected WIPE transition will operate in its default direction only.
When the **Nrm / Rv** button is **ON**, the selected WIPE transition will automatically switch directions as each transition is completed. The **Rev** button will switch on and off automatically to indicate the direction of the next transition.
When the **Rev** button is **ON** then the selected transition will operate in the reverse direction only.



6.2.3 Key 1 & Key 2 PRIORITY Key Function

For Windows PC Users

The PRIORITY button toggles the layer order or priority of **Key 1** & **Key 2**.



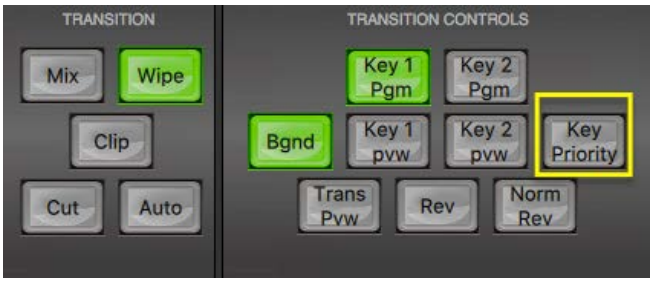
When Key 1 and Key 2 are both active in Preview (or Program), they may overlap each other on the screen. Using the Priority Button you can change the order of these keyers. The button acts in a toggle on/off way, i.e. Key1 over Key2 or Key2 over Key1.

NOTE: It is best to check and change the Priority of Key 1 and Key 2 when they are initially active on the Preview monitor/output.

For iOS PC Users

The PRIORITY button toggles the layer order or priority of **Key 1** & **Key 2**.

When Key 1 and Key 2 are both active in Preview (or Program), they may overlap each other on the screen.



Using the Priority Button you can change the order of these keyers. The button acts in a toggle on/off way, i.e. Key1 over Key2 or Key2 over Key1.

NOTE: It is best to check and change the Priority of Key 1 and Key 2 when they are initially active on the Preview monitor/output.

6.3 Transition Effects

The SE-1200 MU allows the user options for cutting or transitioning between the selected preset and program video sources.

6.3.1 CUTTING between Sources

For Windows PC Users

Cutting between sources is a clean switch from the current Program video to the next source image. This can be achieved in two ways:

1. Each button press on the **Program row** will cause an instant clean cut to the selected source. (Active selection is backlit red)

2. Selecting the next source on the lower **Preset row** of buttons and then pressing the **Cut** button.

For iOS PC Users

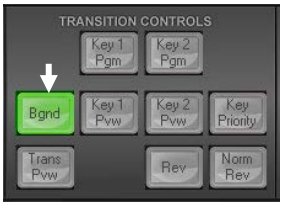
Cutting between sources is a clean switch from the current Program video to the next source image. This can be achieved in two ways:

1. Each button press on the **Program row** will cause an instant clean cut to the selected source. (Active selection is backlit red)

2. Selecting the next source on the lower **Preset row** of buttons and then pressing the **Cut** button.

6.3.2 Mixing between Sources

For Windows PC Users



In order to mix between two video sources, first ensure the Background Transition or **Bgnd** button is ON / backlit green in the **transition controls** area of the user interface.

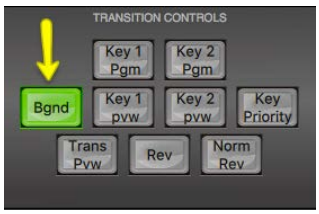
Pressing **Mix** will select a mix transition to use when moving from the current video source on the Program row to the selected next source on the Preset row.

To change the rate of transition for the **Auto button,** press the **Home** menu button and change the **M/E Trans** duration value in frames.

If this **M/E Trans** value is small then the transition will happen quickly. If this value is larger, then the transition will take longer to complete.

The timing of a **Mix** transition can also be manually decided when moving the **T-Bar** or completed over a set duration when using the **AUTO button**.

For iOS PC Users

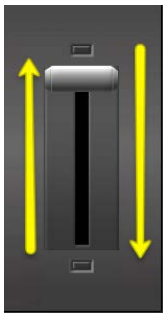


In order to mix between two video sources, first ensure the Background Transition or **Bgnd** button is ON / backlit green in the **transition controls** area of the user interface.

Pressing **Mix** will select a mix transition to use when moving from the current video source on the Program row to the selected next source on the Preset row.

To change the rate of transition for the **Auto button,** press the **Home** menu button and change the **M/E Trans** duration value in frames.

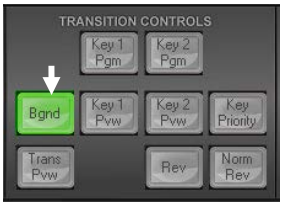
If this **M/E Trans** value is small then the transition will happen quickly. If this value is larger, then the transition will take longer to complete.



The timing of a **Mix** transition can also be manually decided when moving the **T-Bar** or completed over a set duration when using the **AUTO button**.

6.3.3 Wiping between Sources

For Windows PC Users



In order to wipe between two video sources first ensure the Background Transition or **Bgnd** button is ON / backlit green in the **transition controls** area of the user interface.

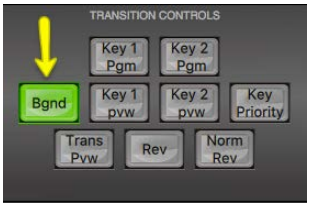
Clicking **Wipe** will select the current wipe transition in use when moving from the current video source on the Program row to the selected next source on the Preset row.

To change the rate of transition for the **Auto button** press the **Home** menu button and change the **M/E Trans** duration value in frames.

If this **M/E Trans** value is small then the transition will happen quickly. If this value is larger, then the transition will take longer to complete.

The timing of a **Wipe** transition can also be manually decided when moving the **T-Bar** or completed over a set duration when using the **AUTO button**.

For iOS PC Users

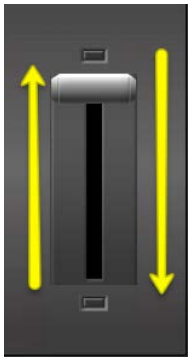


In order to wipe between two video sources first ensure the Background Transition or **Bgnd** button is ON / backlit green in the **transition controls** area of the user interface.

Clicking **Wipe** will select the current wipe transition in use when moving from the current video source on the Program row to the selected next source on the Preset row.

To change the rate of transition for the **Auto button** press the **Home** menu button and change the **M/E Trans** duration value in frames.

If this **M/E Trans** value is small then the transition will happen quickly. If this value is larger, then the transition will take longer to complete.



The timing of a **Wipe** transition can also be manually decided when moving the **T-Bar** or completed over a set duration when using the **AUTO button**.

6.3.3.1 Choosing a different wipe pattern

For Windows PC Users

If the current wipe pattern needs to be changed first select **Wipe** from the **MENU SELECT** area and then click on the required wipe pattern or enter its wipe number.

Each wipe pattern consists of blue and white colours. The white represents the current Program image (A) and the blue represents the WIPE-IN image (B). There are a total of 32 WIPE presets offered by the SE-1200 MU as shown below.

For iOS PC Users

If the current wipe pattern needs to be changed first select **Wipe** from the **MENU SELECT** area and then click on the required wipe pattern or enter its wipe number.

Each wipe pattern consists of blue and white colours. The white represents the current Program image (A) and the blue represents the WIPE-IN image (B). There are a total of 32 WIPE presets offered by the SE-1200 MU as shown below.

6.3.3.2 Wipe border options (For Windows/iOS PC Users)

Options in the yellow menu column

Wipe allows a wipe pattern to be selected by clicking on the required wipe pattern in the selection pane.

Wipe Border allows the user to choose the colour of the border from a palette window.

Options in the lower blue row

Wipe allows a wipe pattern to be selected by entering the required wipe number.

Soft allows the user to blend the leading and trailing limits of the border to remove the hard edge. A low value results in a solid edge border and a high value gives a soft diffused border.

Wipe Border switches the border effect on or off.

Wipe Shade allows the user to choose the shadow colour of the border from a palette **or assign a video source**.

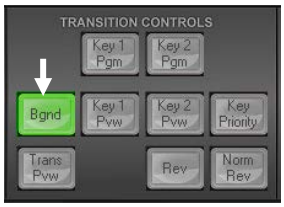
Wipe Position allows the user to adjust the centre position of some wipes (e.g Circle & Elipse).

Width changes the size of the border effect. A low value results in a thin border and a high value gives a wide border.

Level sets how far the wipe has travelled or where it is displayed in the video area.

6.3.4 Clip between Sources (Stinger Transition)

For Windows PC Users

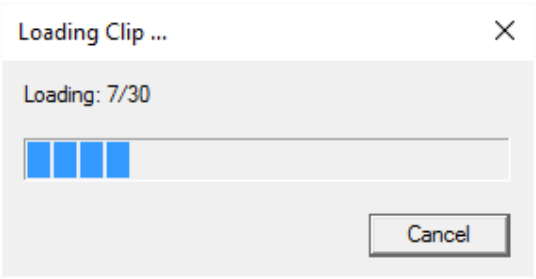


In order to enable clip transition between two video sources first ensure the Background Transition or **Bgnd** button is ON / backlit green in the **transition controls** area of the user interface.

Clicking on the **Clips** button on the **MENU SELECT** panel will open a menu screen (shown below) that allows the user to select the current clip transition to use when moving from the current video source on the Program row to the selected next source on the Preset row.

To load the clip, simply click on the **Clip** option and then select "**Load Clip**". The clip is always loaded to input 6 so anything loaded to input 6 before will be replaced by the clip.

A Delete Clip function is available in the clip menu.



Progress Dialog on Clip Load gives the user an idea where the load is currently at. It can be cancelled at any stage even before the load is complete.

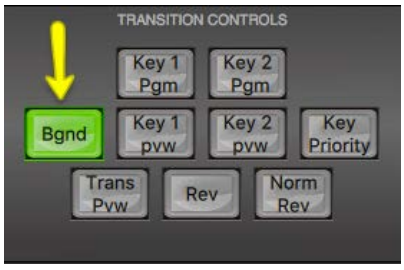
Clicking **Clip** will select the current wipe transition in use when moving from the current video source on the Program row to the selected next source on the Preset row.

To change the rate of transition for the **Auto button** press the **Home** menu button and change the **M/E Trans** duration value in frames.

If this **M/E Trans** value is small then the transition will happen quickly. If this value is larger, then the transition will take longer to complete.

The timing of a **Clip** transition can also be manually decided when moving the **T-Bar** or completed over a set duration when using the **AUTO button**.

For iOS PC Users

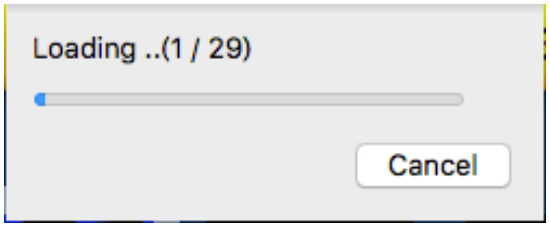


In order to enable clip transition between two video sources first ensure the Background Transition or **Bgnd** button is ON / backlit green in the **transition controls** area of the user interface.

Clicking on the **Clips** button on the **MENU SELECT** panel will open a menu screen (shown below) that allows the user to select the current clip transition to use when moving from the current video source on the Program row to the selected next source on the Preset row.

To load the clip, simply click on the **Clip** option and then select "**Load Clip**". The clip is always loaded to input 6 so anything loaded to input 6 before will be replaced by the clip.

A Delete Clip function is available in the clip menu.

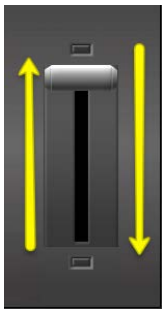


Progress Dialog on Clip Load gives the user an idea where the load is currently at. It can be cancelled at any stage even before the load is complete.

Clicking **Clip** will select the current wipe transition in use when moving from the current video source on the Program row to the selected next source on the Preset row.

To change the rate of transition for the **Auto button** press the **Home** menu button and change the **M/E Trans** duration value in frames.

If this **M/E Trans** value is small then the transition will happen quickly. If this value is larger, then the transition will take longer to complete.



The timing of a **Clip** transition can also be manually decided when moving the **T-Bar** or completed over a set duration when using the **AUTO button**.

6.4 FTB Key Function (For Windows & iOS PC Users)

6.4.1 Enable

Enable the Fade to Black function.

6.4.2 FTB

Fade to Black, this button fades the current video program source to black. When clicked again, it acts in reverse from complete black to the currently selected program video source.

6.5 DSK TRANS Panel (For Windows & iOS PC Users)

This panel is used to turn only the DownStream Keyers on or off. This can be done to show the chosen keyer in the Preview video output for configuration before live on-air use.

The labelled DSK 1 (Pgm/Pvw) or DSK 2 (Pgm/Pvw) buttons can be off or on. When a selected DSK button is green it is on and the active DSK result is seen in the multi view Preview video image.

Each DSK button has an LED above it. This LED can also be off or on (Green). When the selected DSK LED is on the active DSK settings are seen in the multi view Program video image and at the Program outputs.

With the selected DSK already active in the Preview output press either the Cut or Auto button. Using the Cut button will apply the current DSK settings to the live Program output immediately. Using the Auto button will bring in the current DSK with a gentle mix or fade type transition. If the DSK LED is on the program or preview outputs, clicking the AUTO button again will cancel the DSK with a fade out or mix transition.

To understand the relationship between the DSK button and the LED above, try the example set up with DSK 1 in section 7.1, the subsequent chapter.

Chapter 7 Applications

7.1 Luma Key - Quick DSK 1 Setup

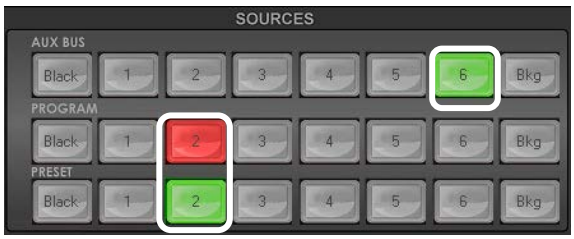
For Windows PC Users

Note: The **DSK 1** and **DSK 2 keyers** can only be used for **Linear** or **Luma** keying. Chroma keying is not supported on DSK 1 and DSK 2.

In this example, we are supplying the SE-1200 MU with an HD-SDI live video signal to input 2, this is selected on the Program row. We have also assigned a STILL image, with white text on a black background, to input 6. This still image, selected on the Aux Bus row, will be used for Luma keying the static white text over the live video from input 2.

Step 1: Choose the Keyer Bus that you wish to use. In our example, we will click the **DSK 1** button on the **AUX BUSES** panel.

Step 2: Choose the type of Keyer you want to use. In our example, we will click the **Luma button** on the **KEYER CONTROLS** panel.



Step 3: Select the foreground video source to be keyed.
In our example, we want to use a **still source** on input 6. Click **input 6** on the **Aux Bus Row** so it is **backlit Green**.

We have also chosen button 2 on the Program and Preview rows as our live background video.

DSK OFF

PVW ACTIVE

Step 4: To see the current keying effect on the Multi view **Preview image only** click on the **DSK 1 PVW button** in the **DSK TRANS panel** so it becomes backlit green.

Step 5: To adjust the Luma key settings. Click the **Keyer button** in the **MENU SELECT** panel and the menu screen will appear as shown on the left here.

The options in the blue bar along the bottom of the Screen will allow you to calibrate for a white or black key using the **Lift**, **Gain**, **Opacity** and **Invert Functions**. The **Keyer Control section (7.1.1)** will explain the effects of **Lift**, **Gain, Opacity** and **Invert.**

AUTO TRANS

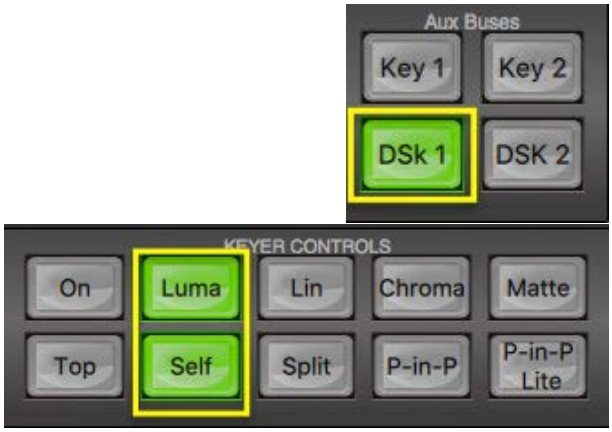
ACTIVE ON PGM

Step 6: Once you are happy with the settings of the key, you can take it to the program output with a fade transition. To do this, click the **Auto button** in the **DSK TRANS panel**.

For iOS PC Users

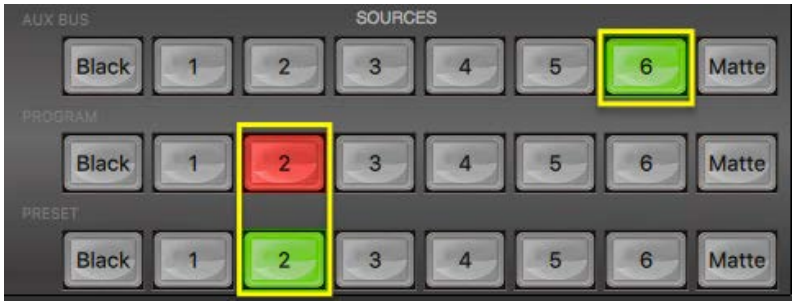
Note: The **DSK 1** and **DSK 2 keyers** can only be used for **Linear** or **Luma** keying. Chroma keying is not supported on DSK 1 and DSK 2.

In this example, we are supplying the SE-1200 MU with an HD-SDI live video signal to input 2, this is selected on the Program row. We have also assigned a STILL image, with white text on a black background, to input 6. This still image, selected on the Aux Bus row, will be used for Luma keying the static white text over the live video from input 2.



Step 1: Choose the Keyer Bus that you wish to use. In our example, we will click the **DSK 1** button on the **AUX BUSES** panel.

Step 2: Choose the type of Keyer you want to use. In our example, we will click the **Luma button** on the **KEYER CONTROLS** panel.



Step 3: Select the foreground video source to be keyed.
In our example, we want to use a **still source** on input 6. Click **input 6** on the **Aux Bus Row** so it is **backlit Green**.

We have also chosen button 2 on the Program and Preview rows as our live background video.

DSK OFF

PVW ACTIVE

Step 4: To see the current keying effect on the Multi view **Preview image only** click on the **DSK 1 PVW button** in the **DSK TRANS panel** so it becomes backlit green.

Step 5: To adjust the Luma key settings. Click the **Keyer button** in the **MENU SELECT** panel and the menu screen will appear as shown on the left here.

The options in the blue bar along the bottom of the Screen will allow you to calibrate for a white or black key using the **Lift**, **Gain**, **Opacity** and **Invert Functions**. The Keyer Control section (7.1.1) will explain the effects of **Lift**, **Gain, Opacity** and **Invert.**

AUTO TRANS

ACTIVE ON PGM

Step 6: Once you are happy with the settings of the key, you can take it to the program output with a fade transition. To do this, click the **Auto button** in the **DSK TRANS panel**.

7.1.1 Keyer Control

For Windows PC Users

Lift: Adjusts the **dark/black areas** in the key image.

Gain: Adjusts the **light/white areas** in the key image.

Opacity: Adjusts how transparent the overall foreground key image is.

Invert: Reverses the effect of the current Luma Key settings. If you can see the background video through the dark areas of the key image, then enabling Invert would make the background video seen through only the light/white areas instead.

For iOS PC Users

Lift: Adjusts the **dark/black areas** in the key image.

Gain: Adjusts the **light/white areas** in the key image.

Opacity: Adjusts how transparent the overall foreground key image is.

Invert: Reverses the effect of the current Luma Key settings. If you can see the background video through the dark areas of the key image, then enabling Invert would make the background video seen through only the light/white areas instead.

7.1.2 Keyer Matte

For Windows PC Users

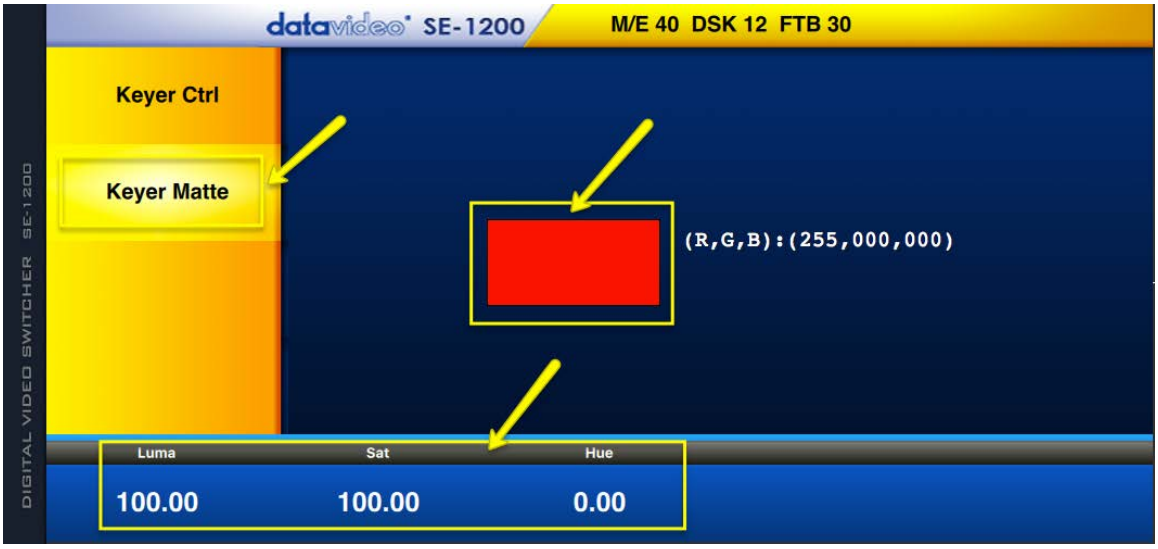
1. The **Colour Palette** allows selection of a colour for the **Keyer Matte**.
2. Click on the Colour Palette and the crosshair will move to display the currently selected colour where the mouse pointer was located. The selected colour RGB values will also be shown to the right.
3. **The Luma value** determines how bright or dark the selected colour or hue is. The **Luma** can be adjusted by clicking on the **Luma value** and using the **pop up keypad** to enter the new value.
4. The **Sat** or **Saturation value** moves the crosshair from the center of the colour palette to the outer edge. The **Sat** value can be adjusted by clicking on the **Sat value** and using the **pop up keypad**. If the **Hue** angle is set to 180 degrees then the **Sat** value determines how much Cyan is in the matte.
5. The **Hue parameter** moves the crosshair around the colour palette in the clockwise or anti-clockwise direction. The Hue value or angle can be adjusted by clicking on the **Hue value** and using the **pop up keypad**.

   Certain colour hues can be found at certain angles on the colour palette. For example, Red is 0 degrees (12 o'clock position), Green is approximately 120 degrees (4 o'clock position) and Blue is approximately 240 degrees (8 o'clock position).

   For Luma key purposes using zero values for Luma, Sat and Hue will allow a black keyer matte to be chosen as above.

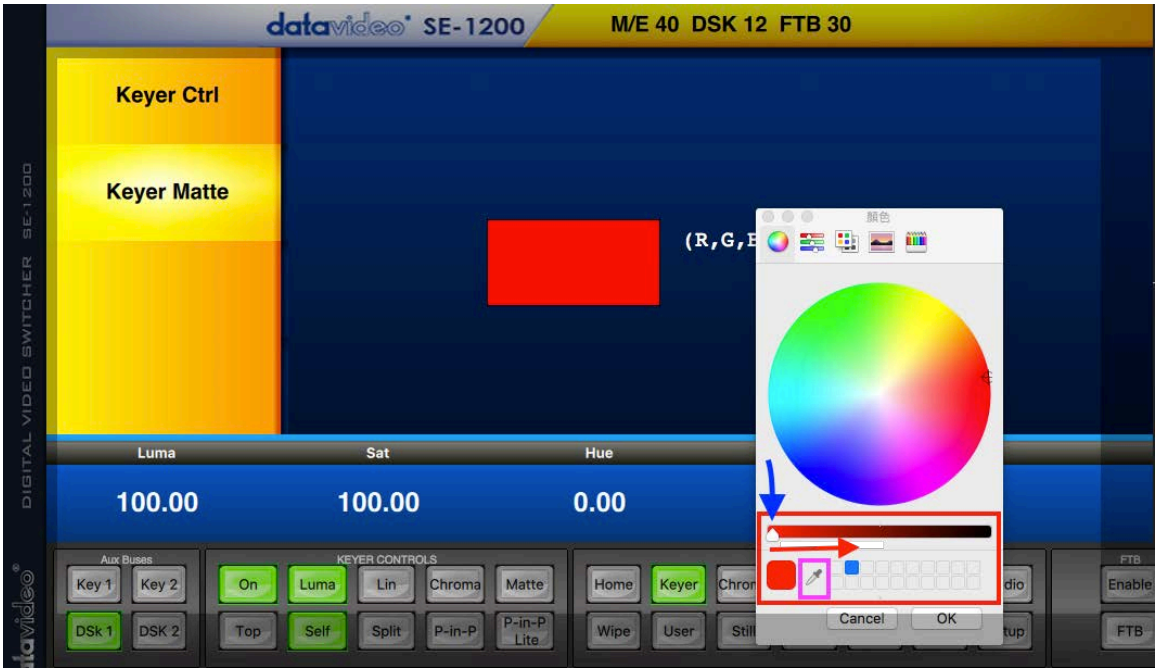
   A white keyer matte can be created from Luma 100%, Sat zero and Hue zero.

For iOS PC Users



1. Click the **Keyer Matte** from the left side column.
2. And then click one of the three items including **Luma**, **Sat** and **Hue** from the blue bar on the bottom.
3. After that, click the color block appearing on the center of the screen to enter the color selection area of the Keyer Matte.

Color Wheel

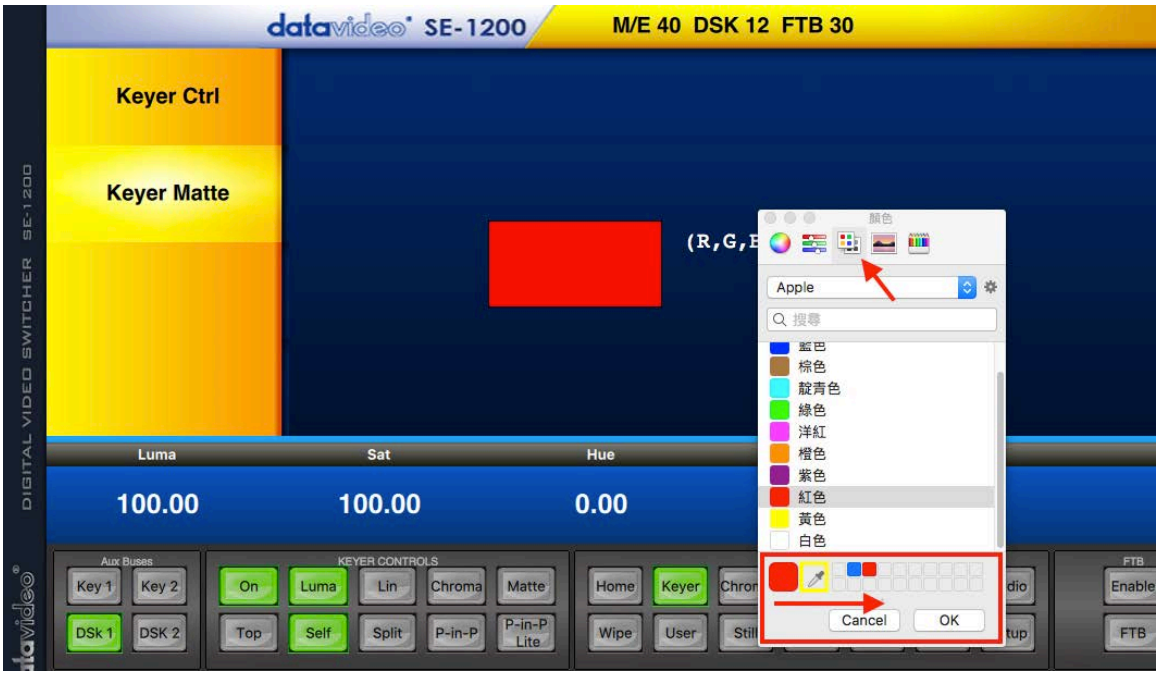


1. After entering the Keyer Matte color selection menu, the **color wheel** option will appear and then users can click directly on the needed color for color selection.
2. Users can click the dropper icon on the lower left side of the menu to select and enlarge the needed color for confirmation.
3. Users can also adjust the color from the color slider as pointed by the arrow.
4. Users can drag the color block on the lower left side of the menu to the small squares on the lower right side to store the user selected color.

Color Selection Ruler

1. Select the second option which is the **color selection ruler** as the arrow pointed. And then click the drop-down menu to select different color selection tool such as the **Gray Scale color slider**, **RGB color slider**, **CMYK color slider** and **HSB color slider**.
2. After selecting the needed color selection tool, users can adjust the needed color from color adjusting sliders below the drop-down menu.
3. Users can click the dropper icon on the lower left side of the menu to select and enlarge the needed color for confirmation.
4. Users can drag the color block on the lower left side of the menu to the small squares on the lower right side to store the user selected color.

Color Plate

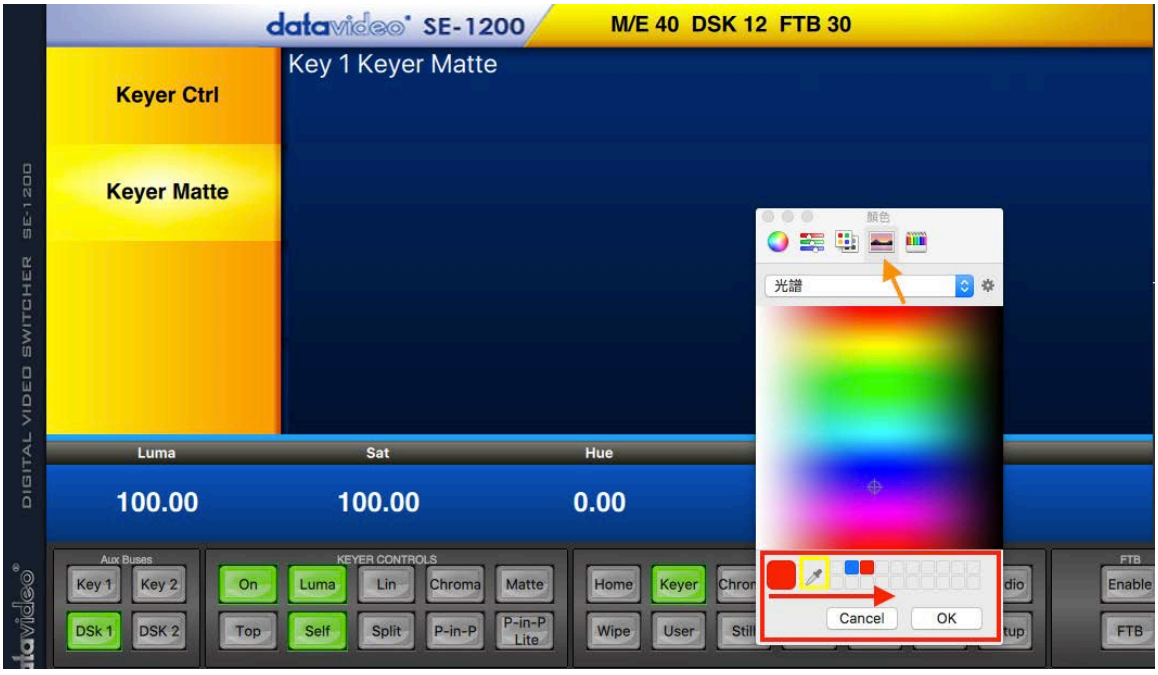


1. Select the third option which is the **color plate** as the arrow pointed and then users can select their needed colors from the color list as shown in the picture.

2. Users can click the dropper icon on the lower left side of the menu to select and enlarge the needed color for confirmation.

3. Users can drag the color block on the lower left side of the menu to the small squares on the lower right side to store the user selected color.

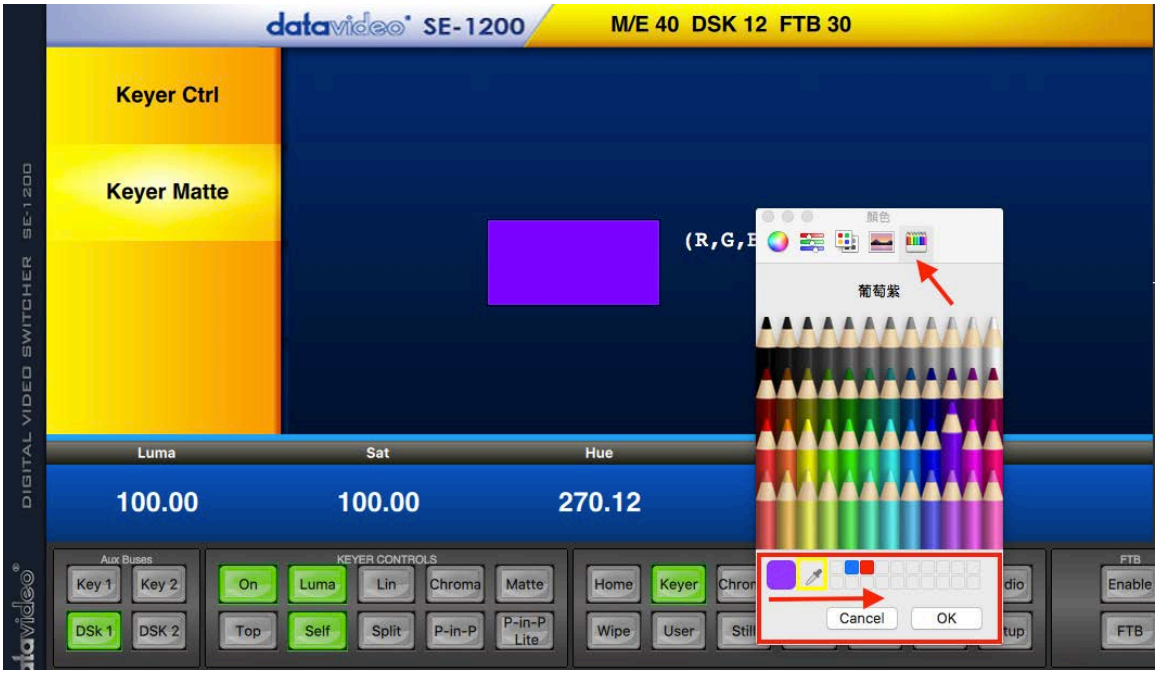
Image Color Plate



1. Select the fourth option which is the **Image Color Plate** as the arrow pointed.
2. Users can click the dropper icon on the lower left side of the menu to select and enlarge the needed color for confirmation.

3. Users can drag the color block on the lower left side of the menu to the small squares on the lower right side to store the user selected color.

Pencil



1. Select the fifth option which is the **Pencil** as the arrow pointed and then users can select needed color from different color pencils as shown in the picture.
2. Users can click the dropper icon on the lower left side of the menu to select and enlarge the needed color for confirmation.
3. Users can drag the color block on the lower left side of the menu to the small squares on the lower right side to store the user selected color.

7.2 Linear key - Quick DSK 2 Setup

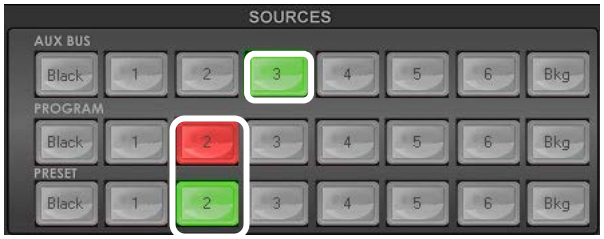
For Windows PC Users

Note: The **DSK 1** and **DSK 2** keyers can only be used for **Linear** or **Luma keying**. Chroma keying is not supported on DSK 1 and DSK 2.

In this downstream keying example, we are supplying the SE-1200 MU with a live video signal on input 2, this is selected on the Program and Preview rows. We have also connected a CG-350 Character Generator (separate purchase) which is supplying separate KEY and FILL signals to inputs 3 and 4. These two CG-350 inputs will be used for Linear keying the CG- text and graphics over the live video from input 2.

Step 1: Choose the DSK Keyer channel that you wish to use. In our example, we clicked the **DSK 2 button** on the **AUX BUSES** panel**.**

Step 2: We then choose the **Lin** or Linear **and Split buttons** from the **KEYER CONTROLS** panel to select a linear key.
Note: If the DSK input only has one source (FILL) for keying, press **Self** key button. **In our example** the DSK input has two sources for **Fill** and **Key**, so we select the **Split button** instead.



Step 3: The **Split button** is **backlit green**, select the CG **key source** on the **AUX BUS Row** (input 3).

Step 4: Click **Split button again**, now **backlit yellow**, this time select the CG **Fill source** on **AUX BUS Row** (input 4).

DSK OFF

PVW ACTIVE

Step 5: To see the current keying effect on the Multi view **Preview image only** click on the **DSK 2 PVW button** in the **DSK TRANS panel** so it becomes backlit green.

Step 6: To adjust the Luma key settings. Click the **Keyer button** in the **MENU SELECT** panel and the menu screen will appear as shown on the left here.

The options in the blue bar along the bottom of the Screen will allow you to calibrate for a white or black key using the **Lift**, **Gain**, **Opacity** and **Invert Functions**. The **Keyer Control section (7.1.1)** will explain the effects of **Lift**, **Gain, Opacity** and **Invert.**

AUTO TRANS

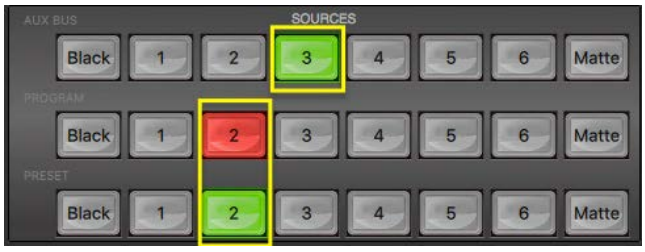
ACTIVE ON PGM

Step 7: Once you are happy with the settings of the key you can take it to the program output with a fade transition. To do this click the **Auto button** in the **DSK TRANS panel**.

For iOS PC Users

Step 1: Choose the DSK Keyer channel that you wish to use. In our example, we clicked the **DSK 2 button** on the **AUX BUSES** panel**.**

Step 2: We then choose the **Lin** or Linear **and Split buttons** from the **KEYER CONTROLS** panel to select a linear key.
Note: If the DSK input only has one source (FILL) for keying, press **Self** key button. **In our example** the DSK input has two sources for **Fill** and **Key**, so we select the **Split button** instead.



Step 3: The **Split button** is **backlit green**, select the CG **key source** on the **AUX BUS Row** (input 3).

Step 4: Click **Split button again**, now **backlit yellow**, this time select the CG **Fill source** on **AUX BUS Row** (input 4).

DSK OFF

PVW ACTIVE

Step 5: To see the current keying effect on the Multi view **Preview image only** click on the **DSK 2 PVW button** in the **DSK TRANS panel** so it becomes backlit green.

Step 6: To adjust the Luma key settings. Click the **Keyer button** in the **MENU SELECT** panel and the menu screen will appear as shown on the left here.

The options in the blue bar along the bottom of the Screen will allow you to calibrate for a white or black key using the **Lift**, **Gain**, **Opacity** and **Invert Functions**. The **Keyer Control section (7.1.1)** will explain the effects of **Lift**, **Gain, Opacity** and **Invert.**

AUTO TRANS

ACTIVE ON PGM

Step 7: Once you are happy with the settings of the key you can take it to the program output with a fade transition. To do this click the **Auto button** in the **DSK TRANS panel**.

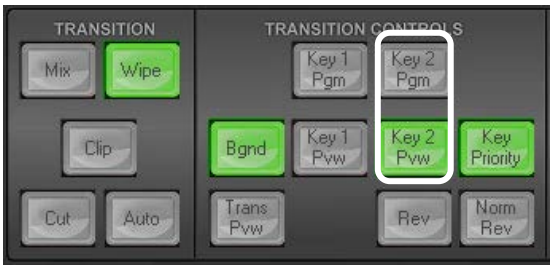
7.3 Picture in Picture (PinP) Function

The SE-1200 MU has an optional PiP function which can be sized, rotated, positioned and cropped. The PiP window can also have a user-defined coloured border too. To configure a PiP window please follow the steps below.

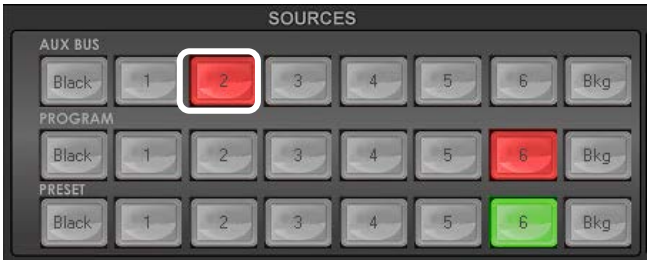
For Windows PC Users

Step 1: Choose the desired Keyer channel from **Key 1** or **Key 2** on the **Aux Bus panel**. For our example we will use the **Key 2** button for our PIP image.

Step 2: Select the Key 2 effect by clicking the **P-in-P button** (backlit green) in the **Keyer Controls panel**.



Step 3: Turn the Key 2 PIP effect on in the Multi view **Preview output** by clicking the **Key 2 PVW button** (backlit green) in the **Transition Controls panel**.



Step 4: Select the PiP image source on the **AUX BUS row** of the **SOURCES** panel**.** This will be shown over the chosen Preview image before being taken to Program/air with the next mix or wipe transition.

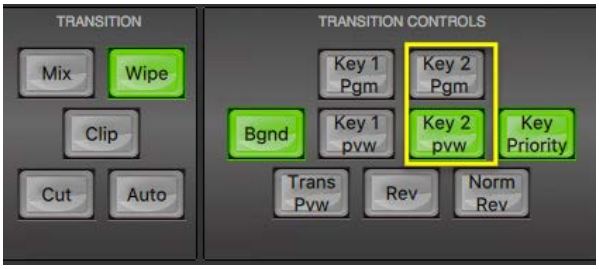
Step 5: Click the **P-in-P button** (backlit green) on the **MENU SELECT** panel to enter the Picture in Picture functions.

Step 6: PiP options displayed in the yellow menu area: **Position**, **Border** and **Crop**. The sections below will describe how Position, Border and Crop can be adjusted.

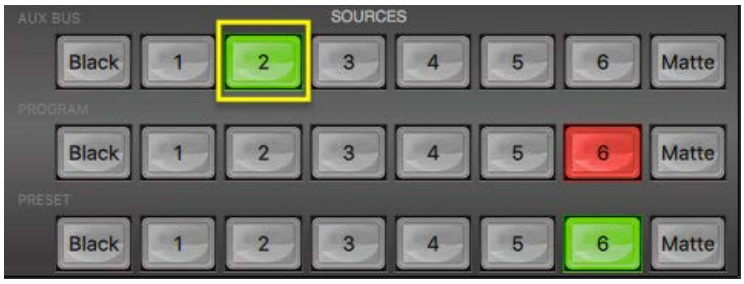
For iOS PC Users

Step 1: Choose the desired Keyer channel from **Key 1** or **Key 2** on the **Aux Bus panel**. For our example we will use the **Key 2** button for our PIP image.

Step 2: Select the Key 2 effect by clicking the **P-in-P button** (backlit green) in the **Keyer Controls panel**.



Step 3: Turn the Key 2 PIP effect on in the Multi view **Preview output** by clicking the **Key 2 PVW button** (backlit green) in the **Transition Controls panel**.



Step 4: Select the PiP image source on the **AUX BUS row** of the **SOURCES** panel**.** This will be shown over the chosen Preview image before being taken to Program/air with the next mix or wipe transition.

Step 5: Click the **P-in-P button** (backlit green) on the **MENU SELECT** panel to enter the Picture in Picture functions.

Step 6: PiP options displayed in the yellow menu area: **Position**, **Border** and **Crop**. The sections below will describe how Position, Border and Crop can be adjusted.

7.3.1 PIP Position

For Windows PC Users

Values are shown along the bottom of the screen.
The X and Y values change the location of the PiP image.

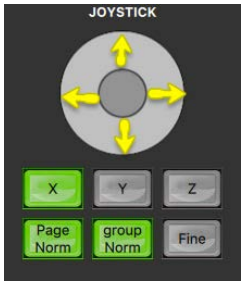
- The **X value** moves the image left and right.
- The **Y value** moves the image up and down.
- The **Z value** adjusts the image size. Where the value 1.0 makes the PiP occupy the whole screen (100%), and 0.5 reduces the PiP size to half screen (50%).

- **Click and hold the joystick circle** then drag the joystick circle in the desired direction.
- Left-mouse button Joystick dragging allows the PiP to be moved in the X & Y directions.
- Right-mouse button Joystick dragging to the left and right resizes the PIP (Z value).
- Click the **FINE** button to enable/disable fine adjustment in smaller/slower steps.
- Click the **NORM** button to return the selected PIP image to the factory default position and size values as shown above. The **Norm** button default for Z value (size) is 0.40 or 40%.

For iOS PC Users

Values are shown along the bottom of the screen.
The X and Y values change the location of the PiP image.

- The **X value** moves the image left and right.
- The **Y value** moves the image up and down.
- The **Z value** adjusts the image size. Where the value 1.0 makes the PiP occupy the whole screen (100%), and 0.5 reduces the PiP size to half screen (50%).



- **Click and hold the joystick circle** then drag the joystick circle in the desired direction.
- Left-mouse button Joystick dragging allows the PiP to be moved in the X & Y directions.
- Right-mouse button Joystick dragging to the left and right resizes the PIP (Z value).
- Click the **FINE** button to enable/disable fine adjustment in smaller/slower steps.
- Click the **NORM** button to return the selected PIP image to the factory default position and size values as shown above. The **Norm** button default for Z value (size) is 0.40 or 40%.

7.3.2 PIP Border

For Windows PC Users

The PIP Border options and values are currently shown along the bottom of the display below.

Luma, Sat, Hue and Size values define the PIP border.

1. **The Luma value** determines how bright or dark the selected colour or hue is. The **Luma** value can be adjusted by the **Luma Function keypad**.
2. **The Sat or Saturation value** moves the crosshair from the center of the colour palette to the outer edge. The **Sat** value can be adjusted using the **Sat Function keypad**.
3. **The Hue parameter** moves the crosshair around the colour palette in the clockwise or anti-clockwise direction. The **Hue** value/angle can be adjusted using the Hue Function dial.
4. **Size** defines the width or thickness of the colour border surrounding the selected PiP. The **Size** value can be adjusted using the **Size Function Keypad**. Increasing the value makes the border thicker but less of the selected PiP image will be seen.

For iOS PC Users

The PIP Border options and values are currently shown along the bottom of the display below.

Luma, Sat, Hue and Size values define the PIP border.

1. **The Luma value** determines how bright or dark the selected colour or hue is. The **Luma** value can be adjusted by clicking the large color block as the arrow pointed to enter the color adjusting menu. For details, please refer to section **7.1.2**.
2. **The Sat value** determines the color saturation of the selected color. The **Sat** value can be adjusted by clicking the large color block as the arrow pointed to enter the color adjusting menu. For details, please refer to section **7.1.2**.
3. **The Hue value** determines the hue value of the selected color. The **Hue** value can be adjusted by clicking the large color block as the arrow pointed to enter the color adjusting menu. For details, please refer to section **7.1.2**.
4. **The Size value** determines the width of the border for the PIP window. Users can adjust the size value by the border size adjusting slider above the blue bar on the bottom of the screen. Users can increase the border width by increasing the size value. However, this will decrease the size of the PIP screen.

7.3.3 PIP Crop

For Windows PC Users

The PiP Crop values are displayed along the bottom of the screen as shown below.

The **Left, Right, Top** and **Bottom** edge values of the crop can be adjusted individually or together using the **Size value.** Click on a single value to adjust just that edge of the PIP.

Size value evenly crops all edges of the selected PIP at the same time and to the same value.

For iOS PC Users

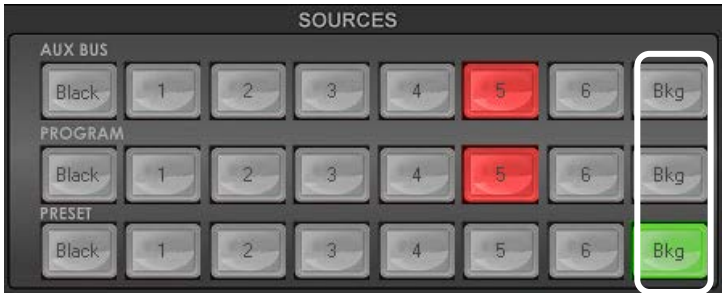
The **Left, Right, Top** and **Bottom** edge values of the crop can be adjusted individually or together using the **Size value.** Click on a single value to adjust just that edge of the PIP.

Size value evenly crops all edges of the selected PIP at the same time and to the same value.

7.4 Bus MATTE Setup

For Windows PC Users

Sometimes it is useful to be able to switch away from live video to a full screen, colour **Matte** rather than Black. For this reason a **Bkg button** is provided on the SE-1200 MU's **Aux**, **Program** and **Preset** bus rows.



The **Matte** option on the **MENU SELECT** panel allows the user to configure the matte image.

1. Click the **Matte** button on the **MENU SELECT** panel.

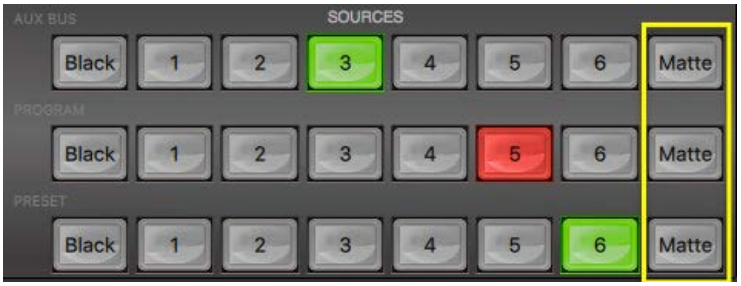
2. The **Bus Matte** parameters are shown in a row at the bottom of the screen.

3. The circular **Colour Palette** allows selection of a colour for the **Bus Matte**.
4. Click anywhere on the Colour Palette to move the **crosshair** and display the currently selected Hue or colour. The RGB values for the selected colour are then shown on the right.
5. The **Luma value** determines how light or dark the selected colour or hue is. Click on the **Luma value** and enter a new value. A small percentage value will make the colour dark and a larger value will make the colour brighter.
6. The **Sat** or **Saturation value** moves the crosshair from the center of the colour palette to the outer edge of the circle. The **Sat** value can be finely adjusted by clicking on the **Sat value** and entering a new value. If the **Hue** angle is set to 180 degrees (6 o'clock position) then the **Sat** value determines how much Cyan is in the matte.
7. The **Hue value** moves the crosshair around the colour palette in a clockwise or anti-clockwise direction. The Hue value/angle can be finely adjusted by clicking the **Hue value** and entering a new value.

Certain colour hues can be found at certain angles on the colour palette. For example, Red is 0 degrees (12 o'clock position), Green is approx. 120 degrees (4 o'clock position) and Blue is approx. 240 degrees (8 o'clock position).

For iOS PC Users

Sometimes it is useful to be able to switch away from live video to a full screen, colour **Matte** rather than Black. For this reason a **Matte button** is provided on the SE-1200 MU's **Aux**, **Program** and **Preset** bus rows.



The **Matte** option on the **MENU SELECT** panel allows the user to configure the matte image.

1. Click the **Matte** button on the **MENU SELECT** panel.

2. The **Bus Matte** parameters are shown in a row at the bottom of the screen.

3. Click the **Bus Matte** on the left hand side of the screen.

4. And then click one of the three items including **Luma**, **Sat** and **Hue** from the blue bar on the bottom.

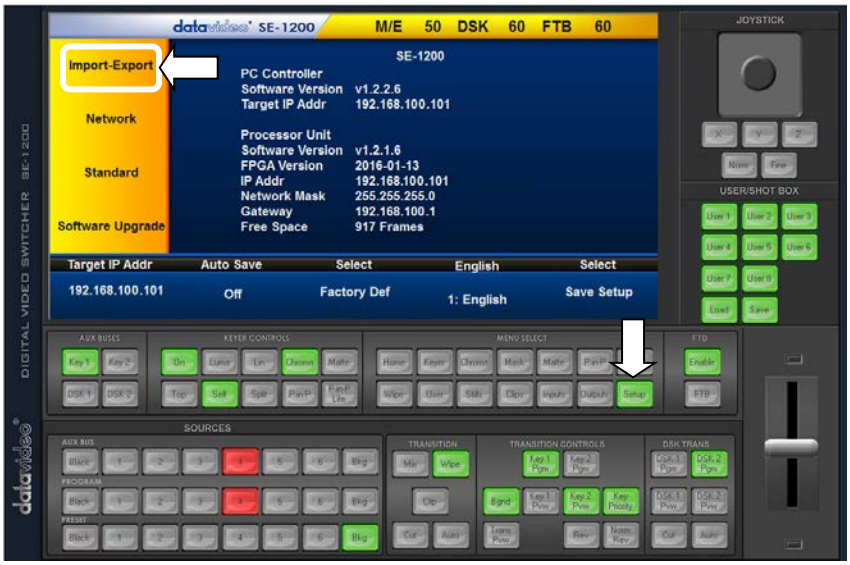
5. After that, click the color block appearing on the center of the screen to enter the color selection area of the Bus Matte.
6. **The Luma value** determines how bright or dark the selected colour or hue is. The **Luma** value can be adjusted by clicking the large color block to enter the color adjusting menu. For details, please refer to section **7.1.2**.
7. **The Sat value** determines the color saturation of the selected color. The **Sat** value can be adjusted by clicking the large color block to enter the color adjusting menu. For details, please refer to section **7.1.2**.
8. **The Hue value** determines the hue value of the selected color. The **Hue** value can be adjusted by clicking the large color block to enter the color adjusting menu. For details, please refer to section **7.1.2**.

7.5 Clips – Quick Setup

For Windows PC Users

The Clip function allows the user of the SE-1200 MU to add a clip between sources. Before this can be done, the clip (a series of bmp/png files) has to be imported into the SE-1200 MU.

Click **Setup** from the **MENU SELECT area** and select **Import-Export** from the yellow menu options.

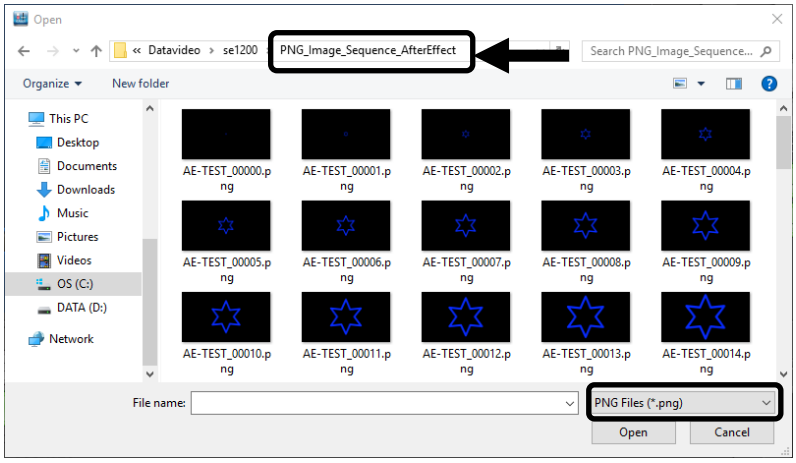


To import a clip from the computer into the SE-1200 MU select **Import Clip**.

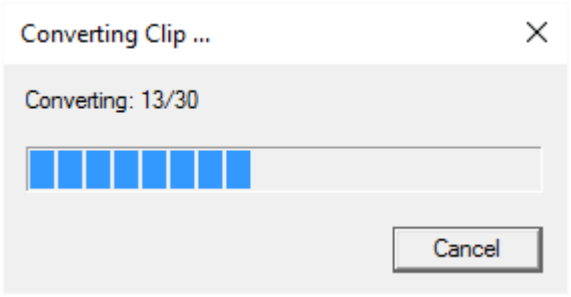
Caution: The PC Control App can now do the conversion from bmp/png/jpg to SE-1200 MU format .pic files. All you need is to give the PC control APP a starting file location and it will give the PC control APP an idea where to start linking all images up into a sequential animation file.

Importing Clips

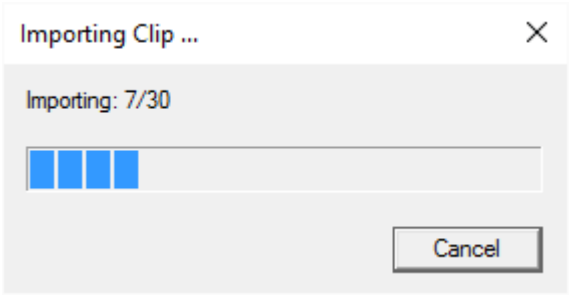
Select “Import Clip” will open a file browser window. Browse to the directory where your clip files are saved and then select the file at the zeroth location, in our example on the right, the file name is AE-TEST_00000.png.



Click open to start the clip import. If your files are not the SE-1200 MU’s .pic format, they will be automatically converted to .pic format by the SE-1200 MU PC Control APP first.



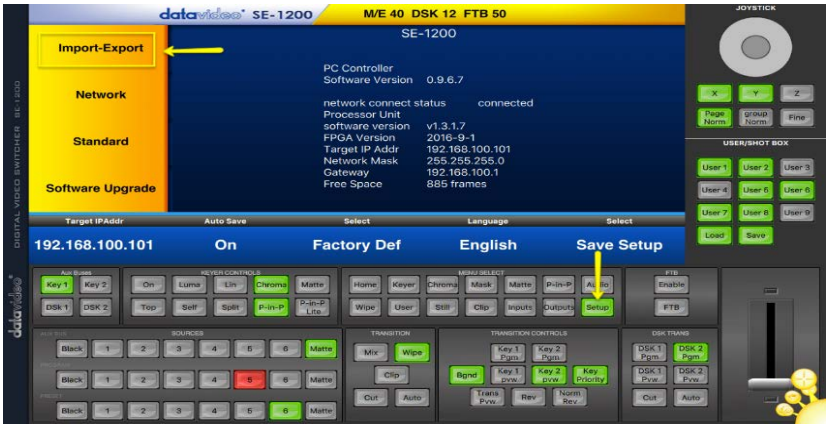
After the conversion, the clip import will then start. After the import is complete, the progress dialog will be automatically closed.



Note: The 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.

For iOS PC Users

Click **Setup** from the **MENU SELECT area** and select **Import-Export** from the yellow menu options.

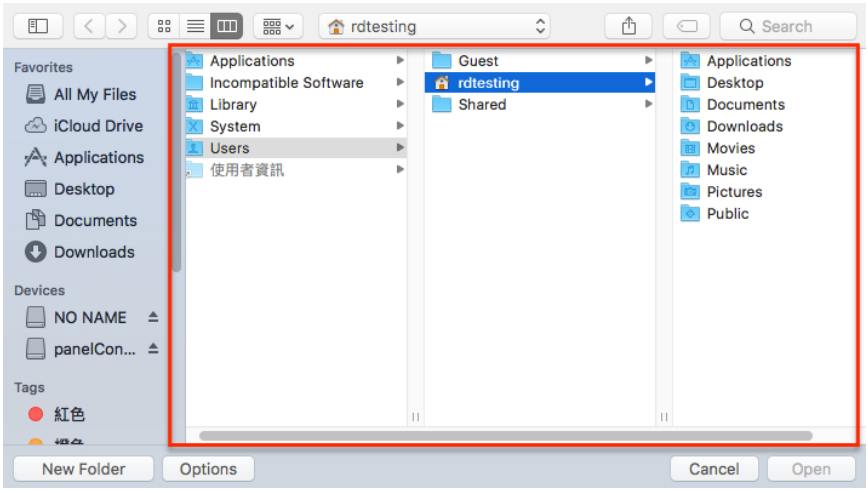


To import a clip from the computer into the SE-1200 MU select **Import Clip**.

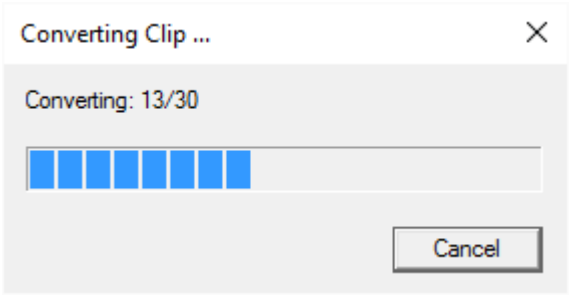
Caution: The PC Control App can now do the conversion from bmp/png/jpg to SE-1200 MU format .pic files. All you need is to give the PC control APP a starting file location and it will give the PC control APP an idea where to start linking all images up into a sequential animation file.

Importing Clips

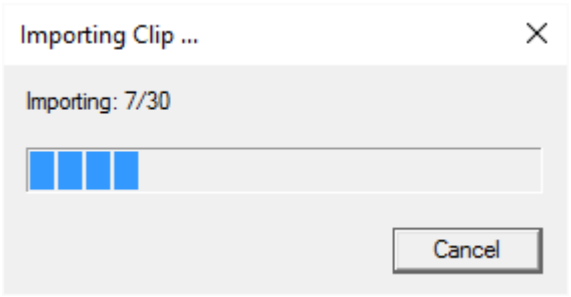
Select “Import Clip” will open a file browser window. Browse to the directory where your clip files are saved and then select the file at the location of the beginning.



Click open to start the clip import. If your files are not the SE-1200 MU's .pic format, they will be automatically converted to .pic format by the SE-1200 MU PC Control APP first.



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



Note: The 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.

Chapter 8 CHROMA Key Functions

8.1 Overview

The Chroma Key feature of the SE-1200 MU is easy to use. Typical Blue and Green screen studios can be quickly incorporated into an SE-1200 MU 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-1200 MU 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.

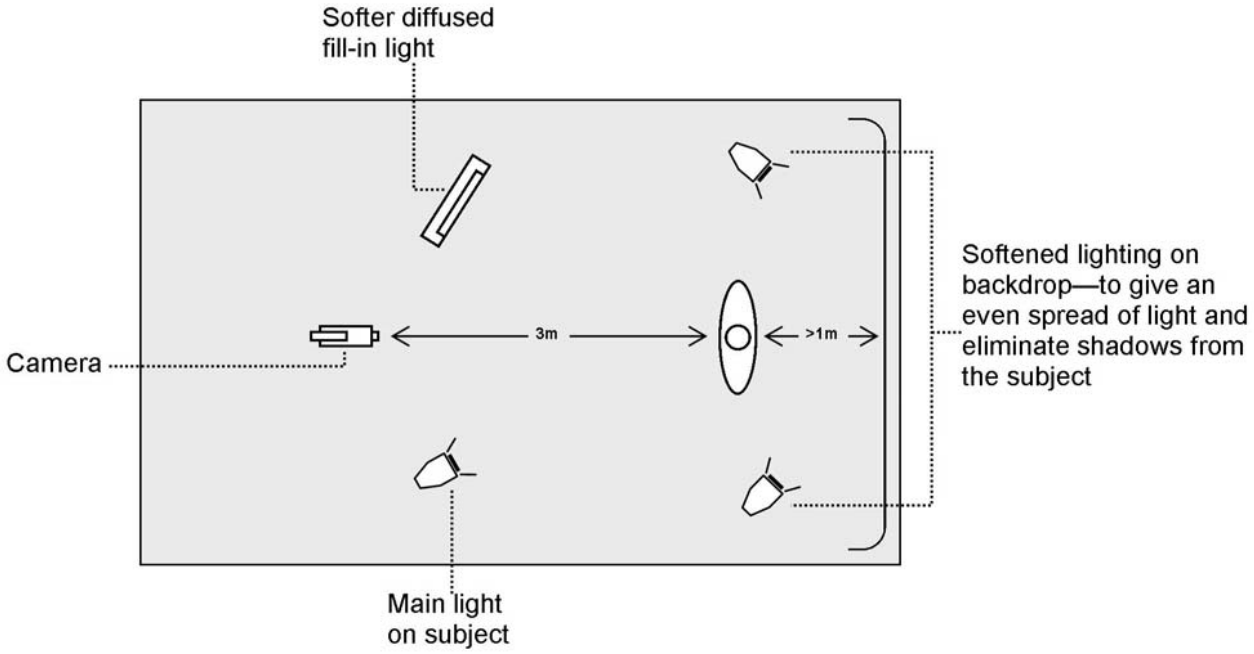
White Balance the Camera

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.

8.2 Chroma Matte

For Windows PC Users

This matte sets the center of colour range that will be used for keying.

The **Chroma Matte** parameters and the values are shown along the bottom of the display below.

The **Hue** can be changed by clicking on and dragging the crosshair around the colour palette with the mouse pointer. The Hue value can also be finely adjusted by clicking the **Hue degree value** in the lower bar and entering the required number.

Certain colour hues can be found at certain angles on the colour palette. For example, Red is 0 degrees (12 o'clock position), Green is around 120 degrees (4 o'clock position) and Blue is approx. 240 degrees (8 o'clock position). Secondary colours such as, Yellow at 60 degrees, Cyan at 180 degrees and Violet at 300 degrees.

The **Luma** value relates to how bright or dark the selected key colour or hue is. The **Luma** value can be adjusted by clicking the **Luma Function value** and entering a new value. The **Bgnd Suppress** or Background Suppress Control is used to remove 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.

The **Opacity** setting affects how transparent the foreground Chroma matte is.

For iOS PC Users

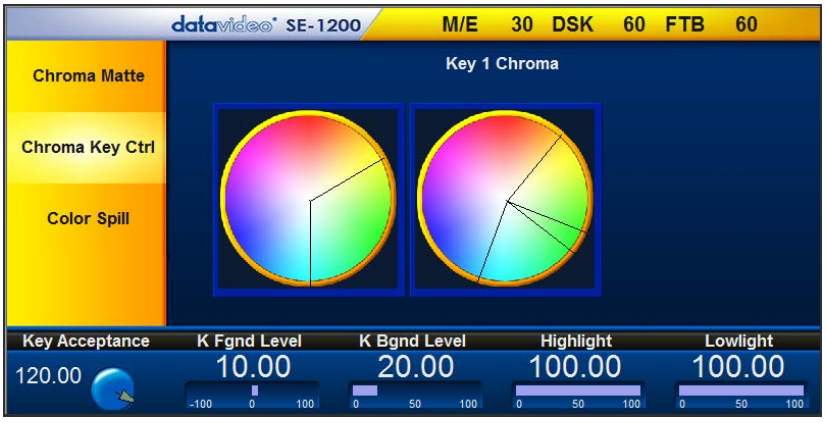
This matte sets the center of colour range that will be used for keying. The **Chroma Matte** parameters and the values are shown along the bottom of the display below.

Users can enter the color selection menu by clicking the large color block on the screen. After entering the color selection menu, users can adjust the corresponding Luma, Hue, Background Suppress and Opacity.

1. **The Luma value** determines how bright or dark the selected colour or hue is. The **Luma** value can be adjusted by clicking the large color block to enter the color adjusting menu. For details, please refer to section **7.1.2**.
2. **The Hue value** determines the hue value of the selected color. The **Hue** value can be adjusted by clicking the large color block to enter the color adjusting menu. For details, please refer to section **7.1.2**.
3. **Background Suppress** is used to suppress the background noise of the image, which is the brightness. If the output of the chroma key shows a bright edge, and then users can use the background suppress function for suppressing the background brightness penetrated through the edge.
4. The **Opacity** setting affects how transparent the foreground Chroma matte is.

8.3 Chroma Key Ctrl

For Windows PC Users



The **Chroma Key Ctrl** parameters and values are shown along the bottom of the display. Two colour palettes, **Main** and **Chroma,** are shown in the diagram.

The **Main** palette corresponds to values of **Key Acceptance** and **Key Lift**. The **Chroma** palette corresponds to the **Color Spill** settings.

Key Acceptance is represented on the **Main** Palette as a sector or area covering a range of hues or colours that closely match the background colour to be keyed as set in **Chroma Matte**. The user can start with a value of 120 degrees and this value can be fine-tuned up or down using the **Key Acceptance** depending on the setup of the green or blue screen studio.

Key Lift is represented on the **Main** Palette **as a line extending from the center point** in the direction of the **Key Acceptance sector**. This value affects the performance of the Chroma key in **dark or black areas**. If the dark areas of the video are becoming too transparent, then applying more **Key Lift** may help depending on the setup of the green or blue screen studio. This value can be fine-tuned up or down by changing the **Key Lift value.**

Key Gain affects the performance of the Chroma key in **light or white areas**. If the light areas of the video are becoming too transparent then applying more **Key Gain** may help depending on the setup of the green or blue screen studio. This value can be fine-tuned up or down by changing the **Key Gain value.**

For iOS PC Users

The Chroma Key control parameters and values are shown in the blue bar on the bottom of the screen. Users can control and adjust various parameters such as Key Range, Key Foreground Level, Key Background Level, Hi-Light and Lo-Light by using different sliders shown on the screen respectively.

8.4 Color Spill

For Windows PC Users

The **Color Spill** parameters and values are shown along the bottom of the display below. These settings are used to control/remove any unwanted Chroma or colour Spill from the background onto the foreground subject. There are two sectors drawn on the **Chroma** palette, one represents the wider **Chroma Acceptance** range and the narrower **Chroma Suppress** range.

Chroma Acceptance sets the amount of the available colour range or space that should be **Chroma suppressed**. Usually starting with a large value of 120 degrees should produce reasonable results. This value can then be fine-tuned up or down using the **Chroma Acceptance value** depending on the setup of your green or blue screen studio.

Chroma Suppress, when set to 0%, removes the hues or colours that lie only on the same axis as the **Chroma Matte** Hue angle. This setting has the effect of removing Background colour spill, but keeping the underlying hue. When set to 100% then all the Chroma values that are 'captured' within the **Chroma Acceptance Angle** are suppressed to greyscale – i.e. they have their Chroma removed. Usually starting with a value of 50%

should produce reasonable results. This value can then be fine-tuned up or down using the **Chroma Suppress value** depending on the setup of your green or blue screen studio.

Saving the Chroma Key Setup. Remember to **save your current user setup**. In this way, several Chroma Key setups can be saved to different user memory slots, thus allowing you to switch from a Blue screen setup to a Green screen setup instantly.

For iOS PC Users

The **Color Spill** parameters and values are shown along the bottom of the display below. These settings are used to control/remove any unwanted Chroma or colour Spill from the background onto the foreground subject. There are two kinds of ranges in the **Color Spill** option including the **Chroma Acceptance** range and the **Chroma Suppress** range. Users can adjust their needed value by using the **Acceptance** and the **Suppress** sliders.

Chroma Suppress, when set to 0%, removes the hues or colours that lie only on the same axis as the **Chroma Matte** Hue angle. This setting has the effect of removing Background colour spill, but keeping the underlying hue. When set to 100% then all the Chroma values that are 'captured' within the **Chroma Acceptance Angle** are suppressed to greyscale – i.e. they have their Chroma removed. Usually starting with a value of 50% should produce reasonable results. This value can then be fine-tuned up or down using the **Chroma Suppress value** depending on the setup of your green or blue screen studio.

8.5 Chroma Key - Setup

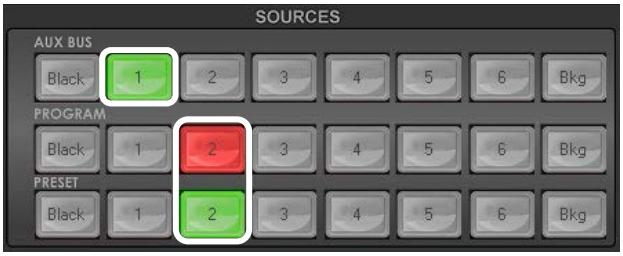
The SE-1200 MU offers two Chroma key channels in the **Key 1** and **Key 2** Aux buses. In the example below we will show you the steps for setting up the Chroma key.

For Windows PC Users

Step 1: Choose a Chroma Key channel (Key 1 or Key 2). In our example, we use **Key 1** button in the **AUX BUSES** panel area.

Step 2: Choose the type of Keyer you want to use in **KEYER CONTROLS** panel.

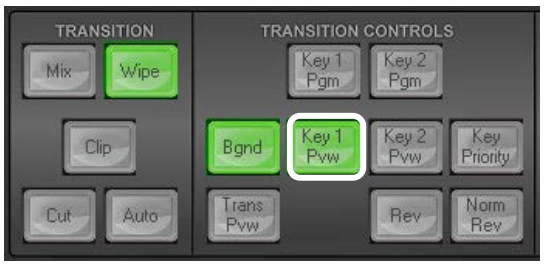
In our example, we have clicked the **Chroma button** on the **KEYER CONTROLS** panel.



Step 3: Select the **foreground video** source with the subject or talent to be keyed. In our example, we want to use a green screen source connected to **Input 1** on the **Aux Bus Row**.

We have also chosen a **background video** source to key in to this, from **Input 2** on the **Program row**.

The **Preset source does not matter at this stage** but would eventually replace the background video if a transition or cut is completed.



Step 4: The Chroma key effect with the current settings may already be shown in the **Preview output**. If it is not shown you can switch the preview on by clicking the **Key 1 PVW button** so it is back lit green in the **Transition Controls** panel.

Step 5: To quickly adjust the active Chroma key. Click **Chroma button** in the **MENU SELECT** panel**. Fine tune the key using Chroma Key Ctrl** and **Color Spill** options as described in previous sections (8.3 and 8.4).

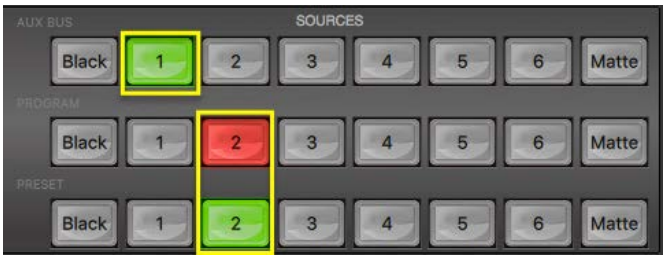
Once you are happy with the Chroma key settings click the **Auto button** in the **Transition panel** to make the key active in the Program output.

For iOS PC Users

Step 1: Choose a Chroma Key channel (Key 1 or Key 2). In our example, we use **Key 1** button in the **AUX BUSES** panel area.

Step 2: Choose the type of Keyer you want to use in **KEYER CONTROLS** panel.

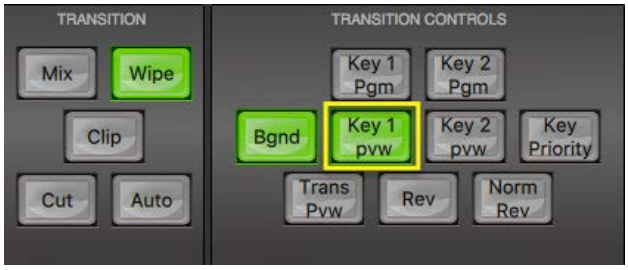
In our example, we have clicked the **Chroma button** on the **KEYER CONTROLS** panel.



Step 3: Select the **foreground video** source with the subject or talent to be keyed. In our example, we want to use a green screen source connected to **Input 1** on the **Aux Bus Row**.

We have also chosen a **background video** source to key in to this, from **Input 2** on the **Program row**.

The **Preset source does not matter at this stage** but would eventually replace the background video if a transition or cut is completed.



Step 4: The Chroma key effect with the current settings may already be shown in the **Preview output**. If it is not shown you can switch the preview on by clicking the **Key 1 PVW button** so it is back lit green in the **Transition Controls** panel.

Step 5: To quickly adjust the active Chroma key. Click **Chroma button** in the **MENU SELECT** panel**. Fine tune the key using Chroma Key Ctrl** and **Color Spill** options as described in previous sections (8.3 and 8.4).

Once you are happy with the Chroma key settings click the **Auto button** in the **Transition panel** to make the key active in the Program output.

8.6 Key MASK Function

A simple rectangular garbage mask can be quickly created within the SE-1200 MU. This Mask feature can be used when the Chroma key or Luma key modes are active.

Note: This mask's edges are fully transparent during the keying process. This can be helpful if the blue or green backdrop in a chroma key set up does not occupy the whole foreground shot. It is also helpful if only a small area of the foreground image is being Luma keyed, say a whiteboard or blackboard. Each mask value is based on a percentage of the screen width or height, thus 0% indicates no mask edge and 50% means masking to half of the screen area from the selected outside edge.

For Windows PC Users

1. To configure the Mask function, click the **MASK** button on the **MENU SELECT** panel.

2. The Mask parameters are displayed along the bottom of the screen.

3. The **Left, Right, Top & Bottom values** allow the user to set the inside **Left, Right, Top & Bottom** edges of the keyer mask.

   In our example, shown on the left, we have brought in the mask on the left, right and bottom edges only. These edges will be automatically keyed out leaving just the light centre area to be manually Luma or Chroma keyed.

   Note: A mask reduces the foreground area that an on screen actor/presenter can work within.

For iOS PC Users

1. To configure the Mask function, click the **MASK** button on the **MENU SELECT** panel.

2. The Mask parameters are displayed along the bottom of the screen.

3. The **Left, Right, Top & Bottom sliders** allow the user to set the inside **Left, Right, Top & Bottom** edges of the keyer mask.

   In our example, shown on the left, we have brought in the mask on the left, right and bottom edges only. These edges will be automatically keyed out leaving just the light centre area to be manually

Chapter 9 Freezing a Video Input for Stills Capture

This feature freezes a selected video Input (channels 1 to 6) in order for the user to capture a **Still image**. Usually a new SD card should allow 1000+ frames of available space. The input to be frozen is best displayed on the **Program monitor** by first selecting it on the Program source row. The video can then be displayed for the user to freeze the image at the right point.

For Windows PC Users

1. Click the **Inputs** button on the **MENU SELECT** panel.

2. Six video input channel selection buttons will be displayed. **Click on the input channel button that you wish to Freeze.**

3. The Freeze parameters will then be displayed along the bottom row of the screen.

   Click on the **Live Mode** option and then select the **Freeze** option from the pop up menu list. When Freeze is clicked here the video is immediately frozen at that point in time.

4. The Freeze Mode located at the bottom right of the screen can be set to a full **Frame** or one **Field**. In most cases **Frame** should be used.

   Note: Once finished remember to turn the Freeze function off by selecting Live mode again.

For iOS PC Users

1. Click the **Inputs** button on the **MENU SELECT** panel.

2. Six video input channel selection buttons will be displayed. **Click on the input channel button that you wish to Freeze.**

3. The Freeze parameters will then be displayed along the bottom row of the screen.

   After clicking the Freeze option on the left side yellow column, users can see there are four Freeze Modes including **Live**, **Freeze**, **Still** and **Clip** as shown in the left picture. When Freeze is clicked here the video is immediately frozen at that point in time.

4. The Freeze Mode located at the bottom right of the screen can be set to a full **Frame**, one **Field** or **Keyer**. In most cases **Frame** should be used.

   Note: Once finished remember to turn the Freeze function off by selecting Live mode again.

9.1 Stills – Grab and Save

On the previous page we learned how to Freeze a video input so we are now ready to **Grab and Save** that frozen image.

For Windows PC Users

1. The input that has been frozen ready for capture is best displayed on the **Program monitor** by selecting it on the **Program source row**. The video can then be displayed for the user to freeze the image at the right point.

2. Click the **Stills** button in the **MENU SELECT** panel.

3. Click **Grab and Save** from the yellow menu column on the left of the currently stored image matrix.

   Up to 1000+ images can be stored within the SE-1200 MU.

4. Click the **Still** value in the bottom row of options and enter the stills number for the new image you are about to capture.
   Note: Make sure this is an empty memory position otherwise the existing saved still could be overwritten and lost.
5. Click **Grab Still** to capture the freeze image from the SE-1200 MU's Program output into working memory.
6. Now click **Save Still** to move the captured image into the chosen Stills matrix number. The stills matrix will update and display a small thumbnail of the captured image at the chosen stills number.

For iOS PC Users

1. The input that has been frozen ready for capture is best displayed on the **Program monitor** by selecting it on the **Program source row**. The video can then be displayed for the user to freeze the image at the right point.

2. Click the **Stills** button in the **MENU SELECT** panel.

3. Click **Grab and Save** from the yellow menu column on the left of the currently stored image matrix.

Up to 1000+ images can be stored within the SE-1200 MU.

4. Click the **Still** value in the bottom row of options and enter the stills number for the new image you are about to capture.

> **Note:** Make sure this is an empty memory position otherwise the existing saved still could be overwritten and lost.

5. Click **Grab Still** to capture the freeze image from the SE-1200 MU's Program output into working memory.

6. Click **Save Still** to move the captured image to the previously entered image number in the stills matrix. After that, the stills matrix will be updated, and the thumbnail of the captured image

will be shown on the location of that image number.

Note: Remember to turn the Freeze function off after you have finished using it. To do this change the frozen input channel from **Freeze** back to **Live**. See previous page.

9.2 Assigning a Saved Still Image to an Input Channel

In the previous two pages we covered how to freeze a live input for capturing into the Stills matrix on the SE-1200 MU. Now we want to use that previously saved still image in our next production.

For Windows PC Users

1. Using the **Preset source row** select the input channel to be used for displaying the saved still image. This will also place that input channel onto the Preview window in the SE-1200 MU Multi view. Do not worry if at this stage it is still currently showing live or no images.

2. Next click the **Stills** button on the **MENU SELECT** panel.

3. Click **Still Load** in the yellow options area on the left.

4. Change the **Still Buf option** in the lower row of options **to match the desired bus channel** that you wish to use to display the still image. In our example we have chosen **Input 1**.

5. **Now select the required saved still within the stills matrix.** Use the up and down triangle buttons on the right to scroll through the matrix if necessary. Empty memory points will appear as blue thumbnail boxes without a number. Alternatively enter the **Still value** and then click **Load Still**.

6. The input channel will now display only the selected still image. To change the still to another follow step 5 again. To return the input channel to live video again see Chapter 9.

For iOS PC Users

1. Using the **Preset source row** select the input channel to be used for displaying the saved still image. This will also place that input channel onto the Preview window in the SE-1200 MU Multi view. Do not worry if at this stage it is still currently showing live or no images.

2. Next click the **Stills** button on the **MENU SELECT** panel.

3. Click **Still Load** in the yellow options area on the left.

4. Change the **Still Buf option** in the lower row of options **to match the desired bus channel** that you wish to use to display the still image. In our example we have chosen **Input 1**.

5. Now select the required saved still within the stills matrix. Use the up and down triangle buttons on the right to scroll through the matrix if necessary. Empty memory points will appear as blue thumbnail boxes without a number. Alternatively enter the **Still value** and then click **Load Still**.

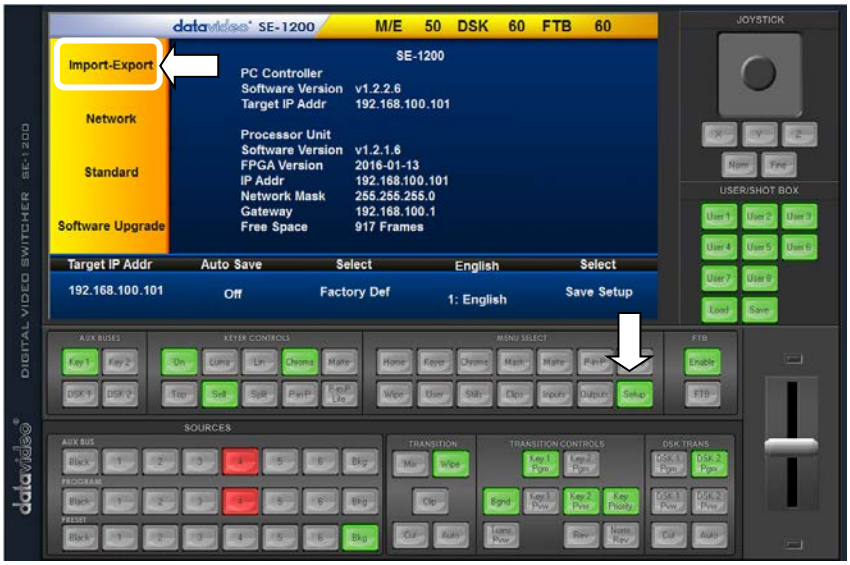
6. The input channel will now display only the selected still image. To change the still to another follow step 5 again. To return the input channel to live video again see Chapter 9.

9.3 Exporting and Importing Stills

A previously saved SE-1200 MU still image can be exported from the Switcher to the User's computer. This Still file can then be imported into another SE-1200 MU switcher or used in other ways such as event marketing or disc authoring. This can be useful if creatively branding productions the same way.

For Windows PC Users

Click **Setup** from the **MENU SELECT area** and select **Import-Export** from the yellow menu options.



To import a Still picture file from the computer into the SE-1200 MU select **Import Still**.

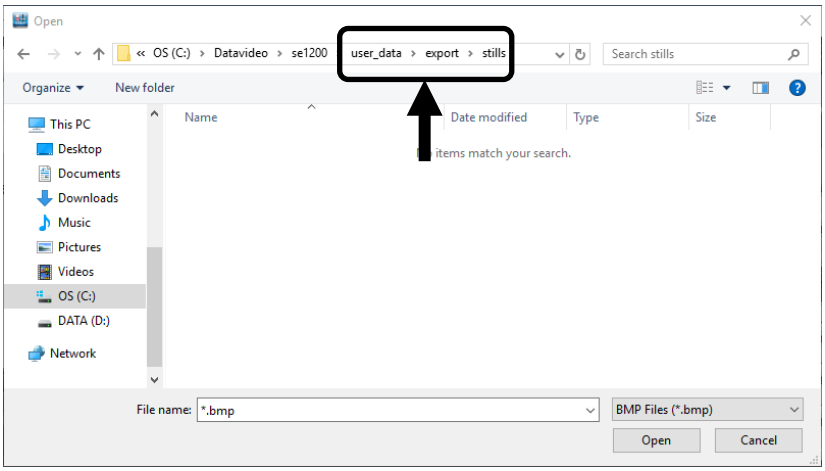
To export an existing Still file from the SE-1200 MU to the computer, select **Export** then **Export Still**.

Caution: When importing or exporting make sure the correct Still number is used.

Still picture files when exported from the switcher are stored on the computer within the following folders.

C: > Datavideo > se1200 > user_data > …

Exported Still picture files can be found in the **export** based **stills folder** (see opposite).



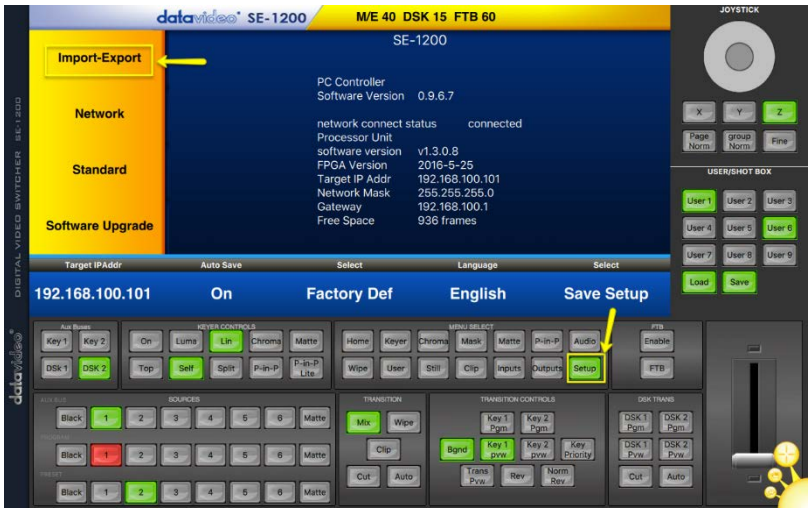
For each image exported, there will be two files, a thumbnail picture ending .mini and the full screen image ending .pic. These files can be then imported to another SE-1200 MU by pasting the files into the Import based stills folder on the second SE-1200 MU.

Importing Stills

For import type of bmp/png/jpg, the SE-1200 MU will do the conversion to .pic first, then import the .pic files.

For iOS PC Users

Click **Setup** from the **MENU SELECT area** and select **Import-Export** from the yellow menu options.



To import a Still picture file from the computer into the SE-1200 MU select **Import Still**.

To export an existing Still file from the SE-1200 MU to the computer, select **Export** then **Export Still**.

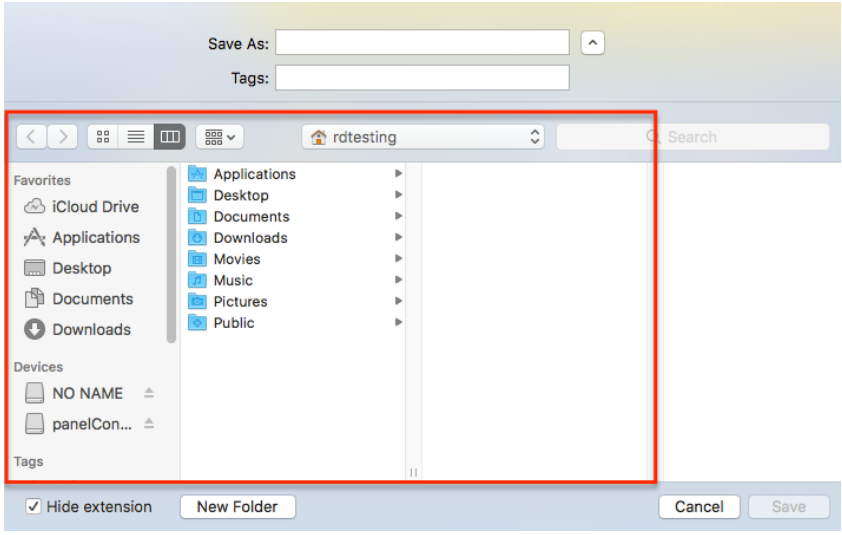
Caution: When importing or exporting make sure the correct Still number is used.

Select the still picture that you want to export, and then click **Export Still** button on the left-side yellow column. After that, you can select the location to store the exported still image.

Still picture files when exported from the switcher are stored on the computer within the following folders.

Take this testing PC's name rdtesting as an example.

The pictures exported from the switcher will be stored at the location under the name of the computer. And users can select the folder that they want to store the still pictures or they can create new folder for storing those exported pictures.



For each image exported, there will be two files, a thumbnail picture ending .mini and the full screen image ending .pic. These files can be then imported to another SE-1200 MU by pasting the files into the Import based stills folder on the second SE-1200 MU.

Importing Stills

For import type of bmp/png/jpg, the SE-1200 MU will do the conversion to .pic first, then import the .pic files.

Chapter 10 USER Memory Functions

The **USER** memory function allows you to **Save** and **Load** user setups within the SE-1200 MU. If you have standard configurations for your productions then this feature allows you to quickly re-configure the SE-1200 MU after someone else has used it. Up to 1000 User Setups can be stored within the SE-1200 MU, numbered from 0 to 999.

Note: User 0 is the **DEFAULT USER** preset. By changing User 0 you change the default start-up configuration of the SE-1200 MU.

10.1 Saving the Current Settings to a User Memory Slot

For Windows PC Users

1. First set up and configure the SE-1200 MU with the settings that you would like to keep for future use.

2. Click the **User** button on the **MENU SELECT** panel.

3. Click **Save Memory** and the screen below will appear.

4. Click **User Memory** to set the user memory slot value to which the user setup will be saved. **Be careful** to choose a User number which is not already in use, otherwise an existing memory slot will be over written.
5. Click **Name** to label the current user memory slot.

Note: The label can accept up to 16 characters but only the first 10 are displayed.

6. Click **Save Memory** to store the setup to the assigned user memory slot.

For iOS PC Users

1. First set up and configure the SE-1200 MU with the settings that you would like to keep for future use.
2. Click the **User** button on the **MENU SELECT** panel.

3. Click **Save Memory** and the screen below will appear.

4. Click **User Memory** to set the user memory slot value to which the user setup will be saved. **Be careful** to choose a User number which is not already in use, otherwise an existing memory slot will be over written.
5. Click **Name** to label the current user memory slot.

Note: The label can accept up to 16 characters but only the first 10 are displayed.

6. Click **Save Memory** to store the setup to the assigned user memory slot.

10.2 Labelling an Existing User Memory Slot

For Windows PC Users

In order to easily identify the stored User setup, the User memory slot can be labelled for future reference.

1. Click the **User** button on the **MENU SELECT** panel.

2. Select the required User memory slot that you wish to label.

3. Click **Name** in the lower row menu options an on-screen keyboard will be displayed. Enter a label name for the selected user memory slot. The label text can be up to 16 characters long but only the first 10 letters will be displayed.

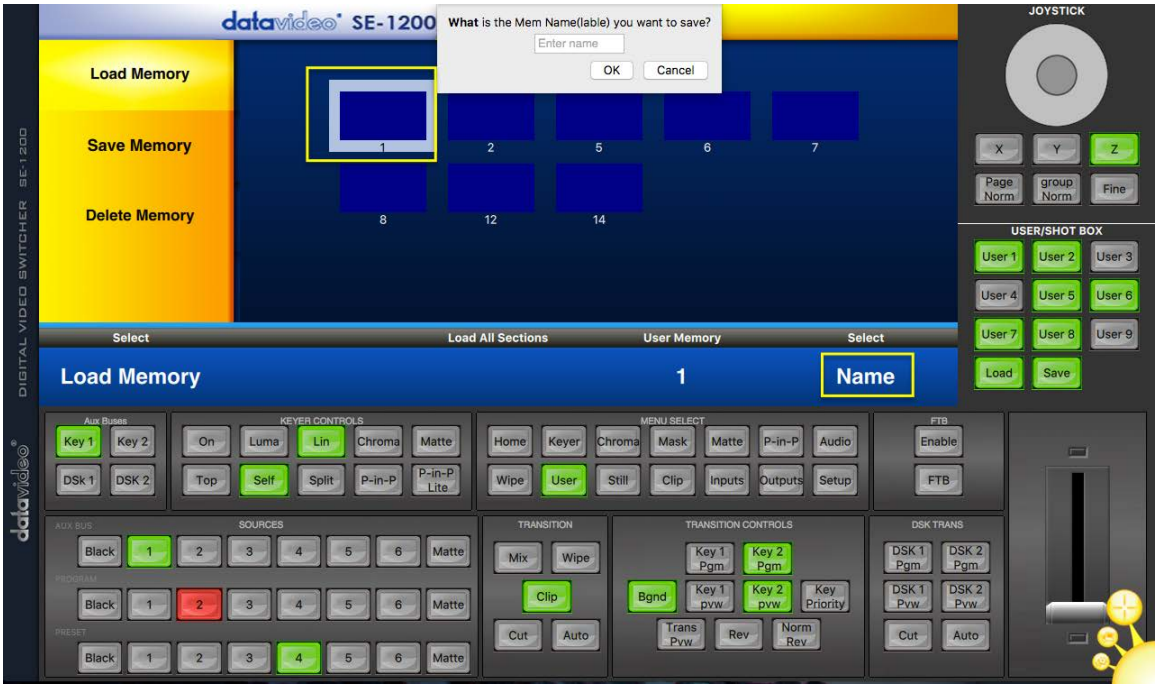
Note: If there are more than 16 User Setups stored in the SE-1200 MU, then use the up/down arrows to browse through all user memory slots. The user memory slots are displayed in numerical order; empty positions will have no number.

For iOS PC Users

In order to easily identify the stored User setup, the User memory slot can be labelled for future reference.

1. Click the **User** button on the **MENU SELECT** panel.

2. Select the required User memory slot that you wish to label.



3. Click **Name** in the lower row menu options an on-screen keyboard will be displayed. Enter a label name for the selected user memory slot. The label text can be up to 16 characters long but only the first 10 letters will be displayed.

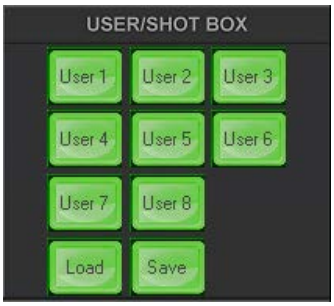
Note: If there are more than 16 User Setups stored in the SE-1200 MU, then use the up/down arrows to browse through all user memory slots. The user memory slots are displayed in numerical order; empty positions will have no number.

10.3 Loading a Previously Saved User Setup

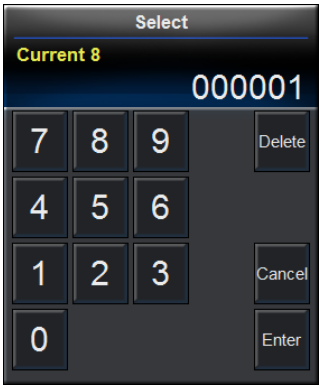
There are two ways to load a previously saved user setup.

For Windows PC Users

1. USER/SHOT BOX Panel



To load a previously saved SE-1200 MU Setup, simply click the **LOAD** button on the **USER/SHOT BOX** panel and an on-screen number pad will open.



Enter the number of the required User setup and then click **Enter.**

Note: If the required user setup is one of the first 8 memory slots, then simply click the corresponding button on the **USER / SHOT BOX** panel.

2. A second way to do the same thing is to enter the "**USER**" option on the "**MENU SELECT**" panel.

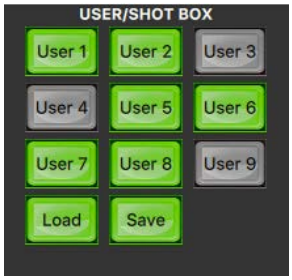
The screen then displays up to 16 user memory slots at a time. Click on a user memory slot and the selected user slot will have a yellow border.

Note: User 0 is the **DEFAULT USER** preset. By changing User 0 you change the default start-up configuration of the SE-1200 MU.

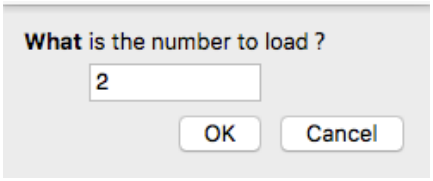
Click **Load Memory in the lower options row** to load the selected user memory slot.

For iOS PC Users

1. USER/SHOT BOX Panel



To load a previously saved SE-1200 MU Setup, simply click the **LOAD** button on the **USER/SHOT BOX** panel and an on-screen number pad will open.



Enter the number of the required User setup and then click **OK.**

Note: If the required user setup is one of the first 9 memory slots, then simply click the corresponding button on the **USER / SHOT BOX** panel.

2. A second way to do the same thing is to enter the "**USER**" option on the "**MENU SELECT**" panel.

The screen then displays up to 16 user memory slots at a time. Click on a user memory slot and the selected user slot will have a yellow border.

Note: User 0 is the **DEFAULT USER** preset. By changing User 0 you change the default start-up configuration of the SE-1200 MU.

Click **Load Memory in the lower options row** to load the selected user memory slot.

10.4 Deleting a User Setup

Warning: Be careful, deleted user set ups cannot be restored.

For Windows PC Users

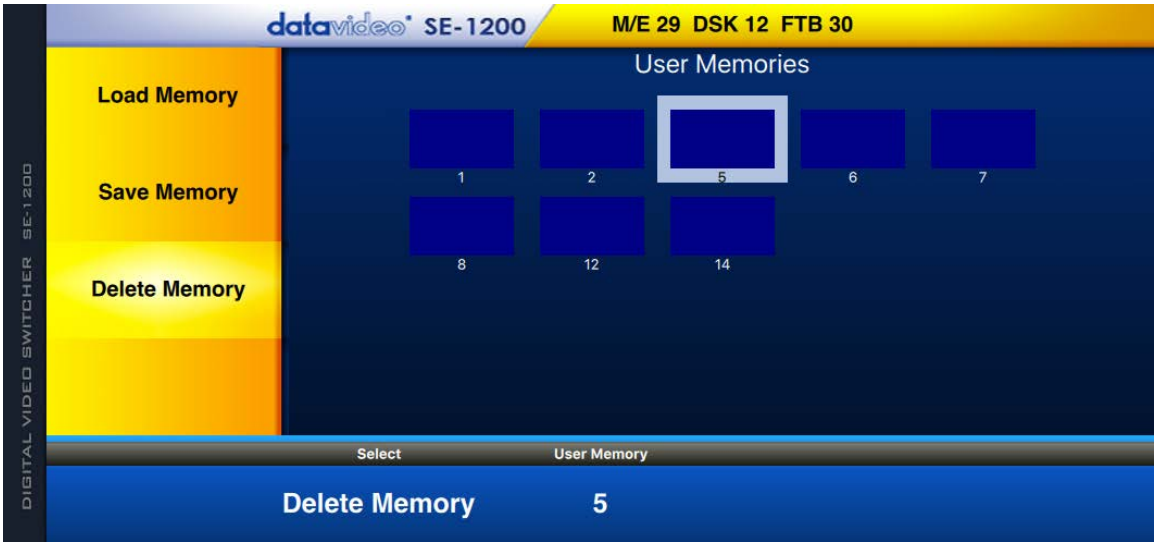
1. Click on **Delete Memory** from the yellow menu column on the left of the **User** menu screen.

2. Select the User-defined setup to be deleted from User Memory slot matrix. **Be careful to select only the User memory slot to be deleted**.

3. To confirm deletion of the selected User Memory click **Delete Memory** located at the bottom of the screen.

For iOS PC Users

1. Click on **Delete Memory** from the yellow menu column on the left of the **User** menu screen.



2. Select the User-defined setup to be deleted from User Memory slot matrix. **Be careful to select only the User memory slot to be deleted**.

3. To confirm deletion of the selected User Memory click **Delete Memory** located at the bottom of the screen.

10.5 Exporting and Importing User Setups

A previously saved SE-1200 MU User memory can be exported from the unit to the User's computer. This User file can then be imported into another SE-1200 MU switcher. In this way another SE-1200 MU can quickly be prepared for the same user with a known set up. A similar process can also be followed for importing and exporting still images with SE-1200 MU.

For Windows PC Users

Click **Setup** from the **MENU SELECT area** and select **Import-Export** from the yellow menu options.

To import a User file from the computer to the SE-1200 MU select **Import User**.

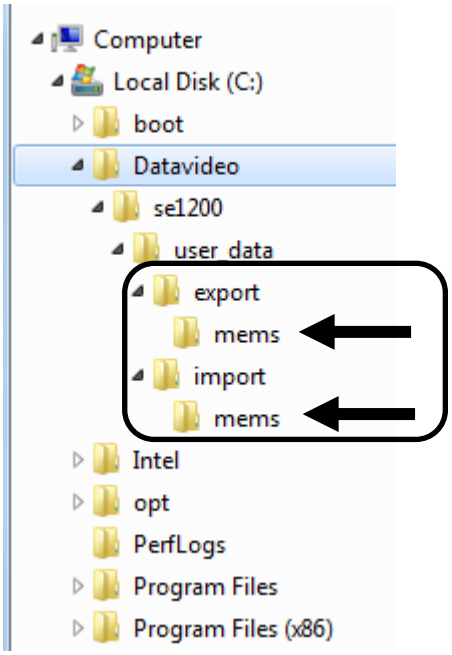
To export an existing User file from the SE-1200 MU to the computer, select **Export** then **Export User**.

The User files when exported from the SE-1200 MU are stored on the computer in the following folders.

C: > Datavideo > se1200 > user_data > …

Exported User files can be found in the **export** based **mems folder** (see opposite).

Prepared User files to be imported should be first copied and pasted into the **Import** based **mems folder** on the computer (see opposite). Then follow the **Import User** process within the SE-1200 MU Control software.



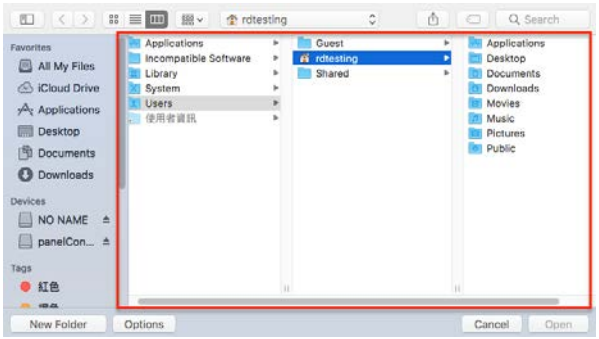
For iOS PC Users

Click **Setup** from the **MENU SELECT area** and select **Import-Export** from the yellow menu options.

To import a User file from the computer to the SE-1200 MU select **Import User**.
To export an existing User file from the SE-1200 MU to the computer, select **Export** then **Export User**.

The User files exported from the switcher can be stored in folder or location that is created by the users.

Users must copy the user setup files that they want to the PC in advance. After that, users can do the **user setup file import process** through the control software interface of the SE-1200 MU.



Chapter 11 Appendices

Appendix 1: Audio

The SE-1200 MU can only accept external audio using the analogue XLR inputs on the rear panel. Ideally a master audio mixer should be used alongside the SE-1200 MU. A Datavideo AM-100 audio mixer or AD-200 audio delay unit could be considered.

Changing the **Audio Mode** option from **Analog** to **OFF** will mute the incoming XLR audio from the external master audio mixer.

The Audio sub-options for SDI and HDMI allow the user to individually turn ON/OFF the audio at the **SDI 1, SDI 2** and **HDMI 1** outputs.

Audio Level relates to the preferred audio standard for the user. A choice of **SMPTE** or **EBU** is given.

Note: Audio is not supplied with the IP streamed multi view. Local SDI and HDMI outputs can provide the audio.

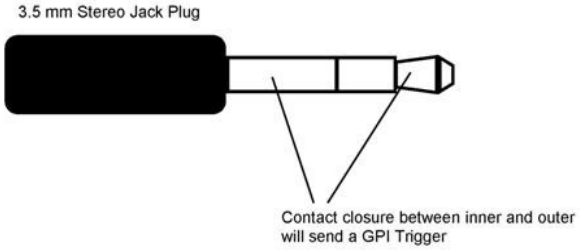
For Windows PC Software Control Interface

For iOS PC Software Control Interface

Appendix 2: GPI Out

The SE-1200 MU can control external recorder/playback devices via simple contact closure GPI switch.

The GPI interface is a 3.5mm Jack Socket which is situated on the rear panel of the SE-1200 MU. Contact closure between the Outer and Inner contacts on the jack plug will trigger a user selected event. Power is supplied by the SE-1200 MU and is less than 5V DC.



This GPI socket can also be used as a socket to trigger record or playback events with other equipment such as the Datavideo HDR-70 recorder.

SAFETY FIRST The cabling required needs to be designed specifically to connect the SE-1200 MU 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.

Outputs Menu

This allows the user to perform GPI configuration.

For Windows PC Users

After turning **On** the GPI **Enable**, select the GPI **Mode**, which is either set as **Level** or **Pulse**. The GPI signal **Width** can also be configured by setting a value (1~9).

The GPI out can then be assigned to one of the inputs 1~4 under **Source**. When the selected channel/source is taken to the Program output the GPI signal is triggered. A GPI **Delay** can be set between 0 and 99.

This feature could be used to trigger playback from units such as the Datavideo **NVP-20** or **HRS-30** or **HDR-60/70**.

For iOS PC Users

After turning **On** the GPI **Enable**, select the GPI **Mode**, which is either set as **Level** or **Pulse**. The GPI signal **Width** can also be configured by setting a value (1~9).

The GPI out can then be assigned to one of the inputs 1~4 under **Source**. When the selected channel/source is taken to the Program output the GPI signal is triggered. A GPI **Delay** can be set between 0 and 99.

This feature could be used to trigger playback from units such as the Datavideo **NVP-20** or **HRS-30** or **HDR-60/70**.

Appendix 3: Tally Outputs

The SE-1200 MU has a D-sub 15 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. The ports are open collector ports and as such do not provide power to tally light circuits.

The pin outputs are defined as follows:

Pin No.	Signal Name	Input/Output	Description of Signal
1	Program 1	Open collector output	Tally output of input video Program 1
2	Program 5	Open collector output	Tally output of input video Program 5
3	Preview 1	Open collector output	Tally output of input video Preview 1
4	RCOM (GND)	Ground	Ground
5	Program 4	Open collector output	Tally output of input video Program 4
6	Program 2	Open collector output	Tally output of input video Program 2
7	Program 6	Open collector output	Tally output of input video Program 6
8	Preview 2	Open collector output	Tally output of input video Preview 2
9	GND	Ground	Ground
10	Preview 5	Open collector output	Tally output of input video Preview 5
11	Program 3	Open collector output	Tally output of input video Program 3
12	Preview 6	Open collector output	Tally output of input video Preview 6
13	Preview 3	Open collector output	Tally output of input video Preview 3
14	YCOM (GND)	Ground	Ground
15	Preview 4	Open collector output	Tally output of input video Preview 4

Appendix 4: Firmware Upgrade

From time to time Datavideo may release new firmware to either add new SE-1200 MU features or to fix user reported bugs in the current switcher firmware. Customers can update the switcher firmware themselves if they wish, or they can contact their local supplier or Datavideo office for assistance, should they prefer this method.

This page describes the firmware update process, and it should take ***approximately 15 minutes total time to complete***.

Once started ***the update process should not be interrupted in any way*** as this could result in a non-responsive unit.

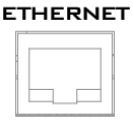
For Windows PC Users

As well as a working SE-1200 MU switcher you may need:

- A Windows 7/8/10 PC/Laptop
- The latest Control Panel program for the SE-1200 MU. This can be obtained from your local Datavideo office/supplier.
- A simple router IP network/Static IP set up, see example on Section 3.2.1.

Firmware Update Procedure

1. Install the latest SE-1200 MU Control Panel program on the Windows PC/Laptop.
2. Locate the Ethernet port on the rear panel of the SE-1200 MU and connect the Ethernet port to the router.



3. Open the SE-1200 MU Control Panel program.
4. Locate and click the **Setup button** in the **MENU SELECT Panel**.
5. Click the **Software Upgrade option** in the yellow menu column.

6. Click the **Upgrade Processor option** in the lower menu row, the upgrading notification will appear.
7. Wait for the SE-1200 MU to complete the upgrade process, the upgrade notification will disappear.
8. Restart the SE-1200 MU device. **Note:** The update may reset the IP address to the factory defaults, see Section 3.2.1.
9. Restart the SE-1200 MU Control Panel program on the Windows PC/Laptop.

10. Go to the **Setup Menu** again to confirm the FW version has updated and that control is still working.
11. Once control is working, **load a USER memory** to quickly return to your preferred SE-1200 MU setup.

For iOS PC Users

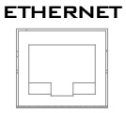
As well as a working SE-1200 MU switcher you may need:

- An Apple iOS-based PC/Laptop
- The latest Control Panel program for the SE-1200 MU. This can be obtained from your local Datavideo office/supplier.
- A simple router IP network/Static IP set up, see example on Section 3.2.1.

Firmware Update Procedure

1. Install the latest SE-1200 MU Control Panel program on the Windows PC/Laptop.

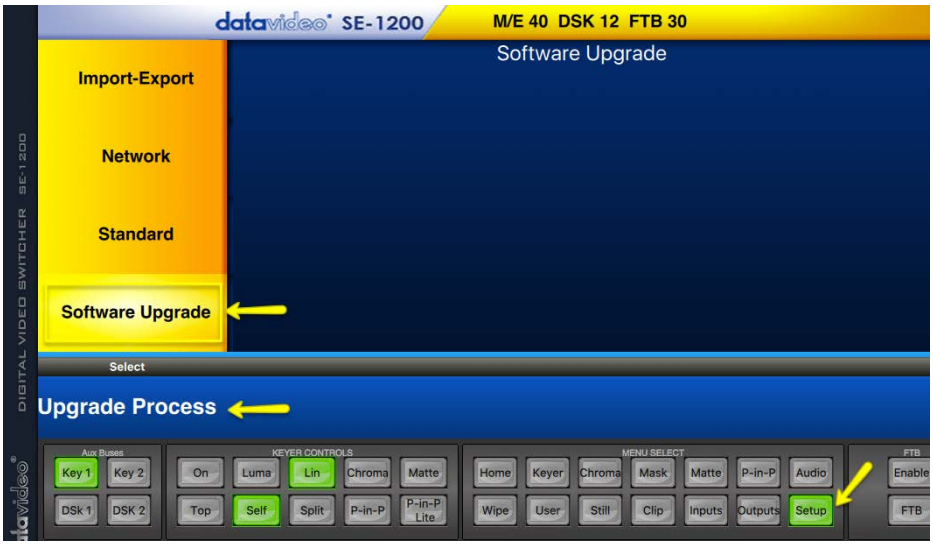
2. Locate the Ethernet port on the rear panel of the SE-1200 MU and connect the Ethernet port to the router.



3. Open the SE-1200 MU Control Panel program.

4. Locate and click the Setup button in the MENU SELECT Panel.

5. Click the Software Upgrade option in the yellow menu column.



6. Click the Upgrade Processor option in the lower menu row, the upgrading notification will appear.

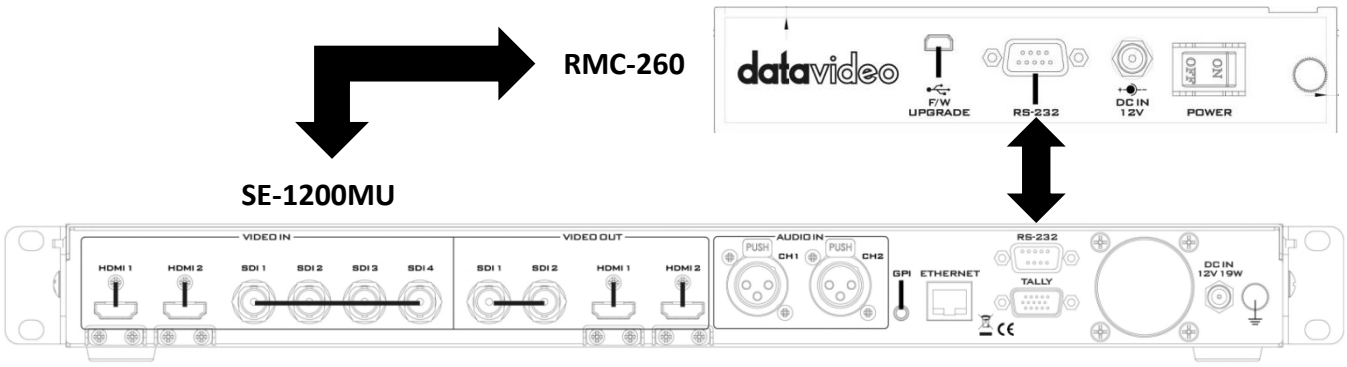
7. Wait for the SE-1200 MU to complete the upgrade process, the upgrade notification will disappear.

8. Restart the SE-1200 MU device. Note: The update may reset the IP address to the factory defaults, see Section 3.2.1.

9. Restart the SE-1200 MU Control Panel program on the Windows PC/Laptop.

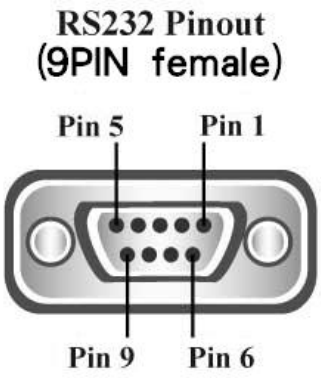
Appendix 5: How to Connect RMC-260 to SE-1200 MU

The user is allowed to connect a physical switcher controller keyboard to the SE-1200 MU. An example of the controller keyboard is the RMC-260, which communicates with the SE-1200 MU using RS-232 interface. The diagram below illustrates the physical connection between the two devices.

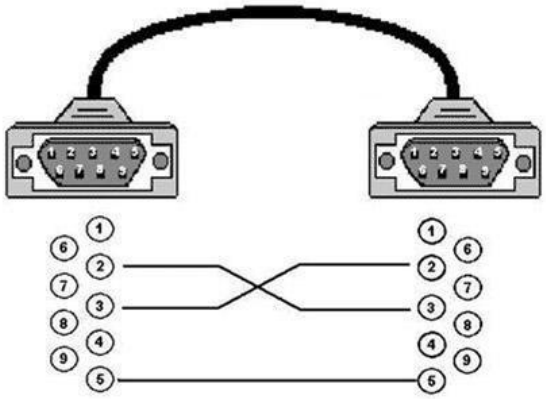


The table below provides details of RS-232 PIN definition on the device end, which is a female connector.

Pin 1	N/C
Pin 2	TXD
Pin 3	RXD
Pin 4	N/C
Pin 5	GND
Pin 6	N/C
Pin 7	N/C
Pin 8	N/C
Pin 9	N/C

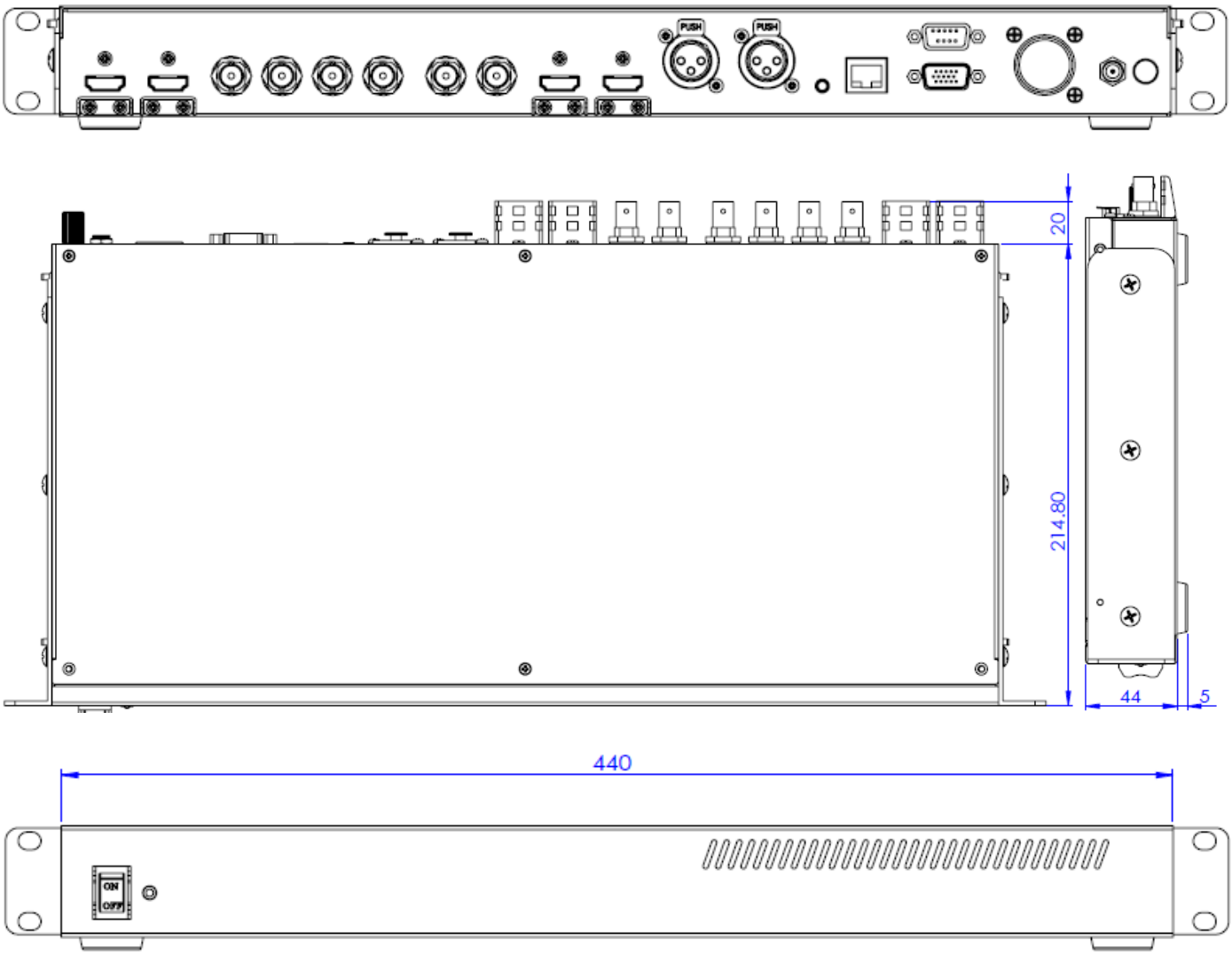


The user may establish the RS-232 connection between RMC-260 and SE-1200 MU using a male-to-male cable with the wiring scheme as depicted in the diagram below.



Note: All panel buttons will be backlit in white LED light after the RMC-260 is powered ON. As soon as the RS-232 connection is established, buttons will be backlit in its state color LED light. After the RS-232 connection is disconnected, it takes approximately 2-3 seconds for the RMC-260 panel buttons to return to white color.

Appendix 6: Dimensions



All measurements in millimetres (mm)

Appendix 7: Specifications

Connections	
Total Video Inputs	2 HDMI (Ver1.3a) + 4 SDI
Total Outputs	2 HDMI (Ver 1.3a) + 2 SDI
SDI Video Input	4 (1080i / 720p)
HDMI Video Input	2 x HDMI (RGB/YUV) 1080i / 720p
SDI Audio Output (PGM output)	2CH
Analog Audio Input	2CH XLR
Internal Frame Synchronizers	6 All Inputs
PGM Out	HDMI / SDI
Multi view Out	HDMI (720P -> 720P ; 1080i->1080i ; 1080P->1080P) SDI (720P -> 720P ; 1080i->1080i)
Output can select any of input source	PROGRAM (w/ DSK) Clean PROGRAM PREVIEW (w/o DSK) MULTISCREEN Input 1~4
Audio Indicator on Multi view	Y (output 2CH)
Tally Out	Y
GPI	Y (Level / Pulse Trigger selectable)
Software Updates	Ethernet
Standards	
HD Format Support	1080i/50, 1080i/59.94, 1080i/60 720p/50, 720p/59.94, 720p/60
SDI Compliance	SMPTE 292M (SDI output /PGM out)
Video Sampling	4:2:2 10 bit
Colour Precision	4:2:2 10 bit
Colour Space	4:2:2 YUV
HDMI Input Resolutions for Computers	1280 x 720 59.94Hz 50Hz (720P) 1920 x 1080 59.94Hz 50Hz (1080p & 1080i)
Processing	
Colourspace Conversion	Hardware based real time
Processing Delay	< 1 frame
Audio Mixer	selectable audio follow video master gain control
Extras	
Downstream Keyers	1
Linear/Luma Keyers	3 (M/E Keyer, PIP, DSK)
Chroma Keyers	2 (M/E Keyer & PIP)
Pattern Generators	Colour Bar
PIP	1
XPT	Y
Frame Store	Total 24 Stills on Internal SD Card. One dedicated still buffer, one dedicated freeze buffer. Also, any Input can be used as Frame store. 3 Still frames stored in local frame buffers for instant access.

Control Panel Compatibility	Use PC via Ethernet; Control panel
Input Voltage	12V
Power Consumption	23W
Control Protocol	DVIP
Operating Temperature	0°C to 50°C
Humidity	10% to 80%
Multi View Monitoring	
Number of Windows	2 (PGM, PVW) +6 (Inputs 1-4, Stills & Freeze) +2 Output windows (SDI1, SDI2)
Routable Windows	Y (Follow XPT)
Tally	Y
Windows Source Labels	Y

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.

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Please visit our website for latest manual update.
www.datavideo.com/product/SE-1200MU

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