Operation Manual

SmartView Duo

Blackmagicdesign

Mac OS X™

Windows™

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Welcome to SmartView Duo.

We hope you share our dream for the television industry to become a truly creative industry by allowing anyone to have access to the highest quality video.

Video monitoring is needed everywhere in a facility. SmartView Duo provides two beautiful 8 inch LCD displays in a 3RU rack housing less than an inch thick. The two monitors are completely independent and support SD, HD and even 2K video via 3 Gb/s SDI! Video monitoring is designed to work straight out of the box and our free utility provides the user with an easy and intuitive configuration tool.

This instruction manual should contain all the information you'll need on installing your SmartView Duo, although it's always a good idea to ask a technical assistant for help if you are not sure what IP addresses are, or if you don't know much about computer networks. SmartView Duo is easy to install, however, there are a few slightly technical preferences you may need to set after you install it.

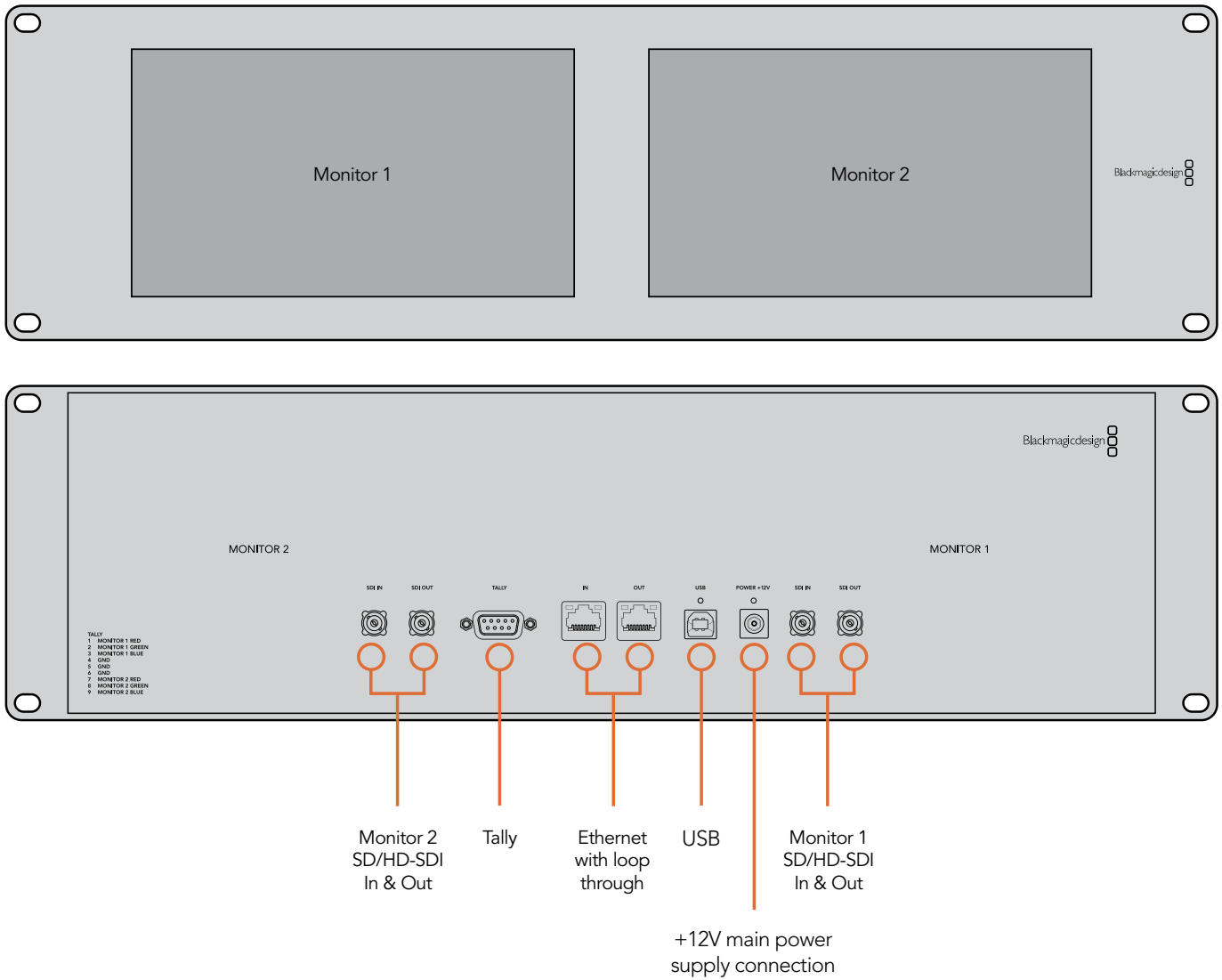
We think it should take you approximately 5 minutes to complete installation. Please check our web site at **www.blackmagic-design.com** and click the support page to download the latest updates to this manual and SmartView Duo software. Lastly, please register your SmartView Duo when downloading software updates so we can keep you updated when new software is released. We are constantly working on new features and improvements, so we would love to hear from you!

Grant Petty

CEO Blackmagic Design

How to Install

SmartView Duo



6 Installation

SmartView Duo pre-installation overview and planning

SmartView Duo is perfect for any facility which requires rack-based monitoring. It features two monitors with 8" LCD screens, 2 SDI inputs, 2 SDI loop-through outputs, 2 Ethernet ports, tally connector, USB 2.0 connector and configuration software for Mac OS X and Windows.

SDI input connections support auto-detection of SD, HD or 3 Gb/s SDI including 2K video. Loop-through outputs are reclocked. Simultaneous display of different video formats is supported on the two, independent monitors.

The Blackmagic SmartView Utility can be used to change network settings and monitor settings. The computer display resolution needs to be 1280 x 800 or higher to display the Blackmagic SmartView Utility.

While SmartView Duo displays video without needing any configuration, any network settings needs to be configured prior to deployment. Network configuration is performed using a direct USB 2.0 connection to a computer. You will need to provide a standard USB 2.0 type A-B male cable to connect SmartView Duo to your computer. A laptop computer with a USB 2.0 port would be ideal for this task.

This same USB cable can be used for applying occasional firmware updates downloaded from the Blackmagic Design website. Programmable firmware can provide new features, compatibility with new hardware and support for new formats. The SmartView firmware update utility runs on a Mac OS X or Windows computer and uses the USB 2.0 connection to update SmartView Duo.

Local monitor configuration can be performed with a direct USB 2.0 connection between your computer and a SmartView Duo unit.

Remote monitor configuration can be performed via an Ethernet network switch. The network switch also enables multiple computers to configure SmartView monitor settings. Additional SmartView Duo units can be daisy-chained together using the active loop-through Ethernet OUT port on each unit so as to only use a single port on your switch. Daisy-chaining SmartView Duo via Ethernet also avoids having to run Ethernet cables back to the network switch for each SmartView Duo unit. Power must be supplied to all units for Ethernet daisy-chaining to work.

Remote monitor configuration can also be performed via a direct Ethernet connection between your computer and SmartView Duo. No network switch is required in this configuration which is great if you need to install and set up SmartView Duo fast. Additional SmartView Duo units can be daisy-chained together using the active loop-through Ethernet OUT port on each unit. Power must be supplied to all units for Ethernet daisy-chaining to work.

7 Installation

A tally connector is provided for use with switcher and automation systems. The 9-pin D connector wiring description is printed on the rear of the unit showing contact closures to display red, green or blue tally borders on each, independent monitor.

If SmartView Duo is to be installed high up in an equipment rack, you may wish to physically invert the LCDs for the optimum viewing angle. The images on the LCDs will automatically flip to the correct orientation when they sense an inversion. A number 02 size Pozidriv screwdriver is required to disconnect and reconnect the faceplate from its rear assembly. This is a simple procedure and does not involve opening the rear assembly.

SmartView Duo is 3 RU (rack units) high and less than an inch deep. You will need to leave enough space in your equipment rack to install the SmartView Duo hardware.

SmartView Duo includes a universal power supply with international power socket adapters for all countries.

To stop power from being accidentally disconnected, a cable tie point is included just below the power socket to lock down the power connection. You will need to provide a mains power socket for the universal power supply.

You may wish to perform a test inversion, to check the optimum viewing angle, before bolting SmartView Duo high up in a rack.

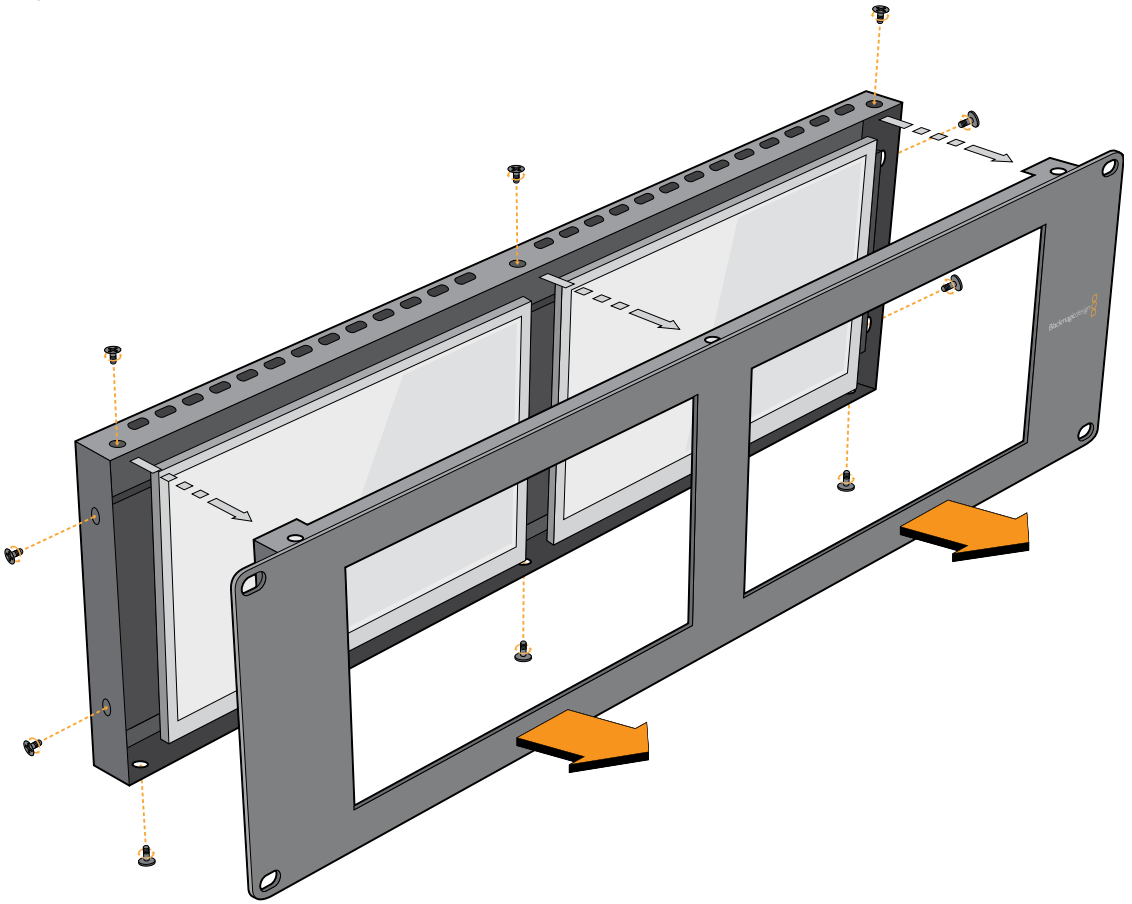
Hardware: Optimizing the viewing angle

Before you install SmartView Duo high up in a rack, it is a good idea to check the optimum viewing angle by connecting an SDI video signal and then temporarily inverting the unit. The unit will automatically sense the inversion and flip the video images to the correct orientation.

The following procedure describes how to invert the unit while keeping any labelling in the correct orientation on the front face plate. A number 02 size Pozidriv screwdriver is required.

Step 1. Remove the screws from the top, bottom, left and right sides of SmartView Duo. There are a total of 10 screws as indicated in the accompanying illustration.

Step 2. Lift the front face plate away from the rear assembly as illustrated.



Step 3. Invert the rear assembly.

Step 4. Reinstate the face plate on the inverted rear assembly.

Step 5. Reinstate the 10 screws in the SmartView Duo chassis.

SmartView Duo is now ready to be installed in a high position in a rack. Once bolted into a rack, SmartView Duo will continue to display the optimum viewing angle, even if bumped, as there are no external knobs or adjustments to mishandle or to come loose.

Hardware: SDI monitoring

SmartView Duo features regular BNC connectors to make it easy to connect cables from other SDI equipment including switchers, cameras, capture cards, decks and disk recorders. After powering on the SmartView Duo and connecting an SDI video source to one of the SDI In connectors, the video should immediately be visible on the corresponding monitor and no configuration is required.

Each monitor has its own, independent, 3 Gb/s SDI input as well as a loop-through output. SD, HD and 2K signals are automatically detected and supported by the SDI input and loop-through connections. When multiple SmartView Duo units are daisy-chained together via SDI, all units must be powered on to support the loop-through SDI output.

The independent monitors on each SmartView Duo enable one monitor to display a YUV 4:2:2 signal while the other receives RGB 4:4:4. One monitor could be showing NTSC while the other shows PAL. One monitor could be showing HD while the other shows 2K. There are many possible combinations but it is all as simple as connecting a single SDI cable to each monitor. Following are two examples of different SDI signals connecting to SmartView Duo simultaneously.

Example 1: Connecting a 4:2:2 SDI or HD-SDI source

The illustration on the following page shows the SDI output of an HyperDeck Shuttle disk recorder connected to an SDI IN port on SmartView Duo. The HyperDeck Shuttle can send standard definition or high definition YUV 4:2:2 video to SmartView Duo.

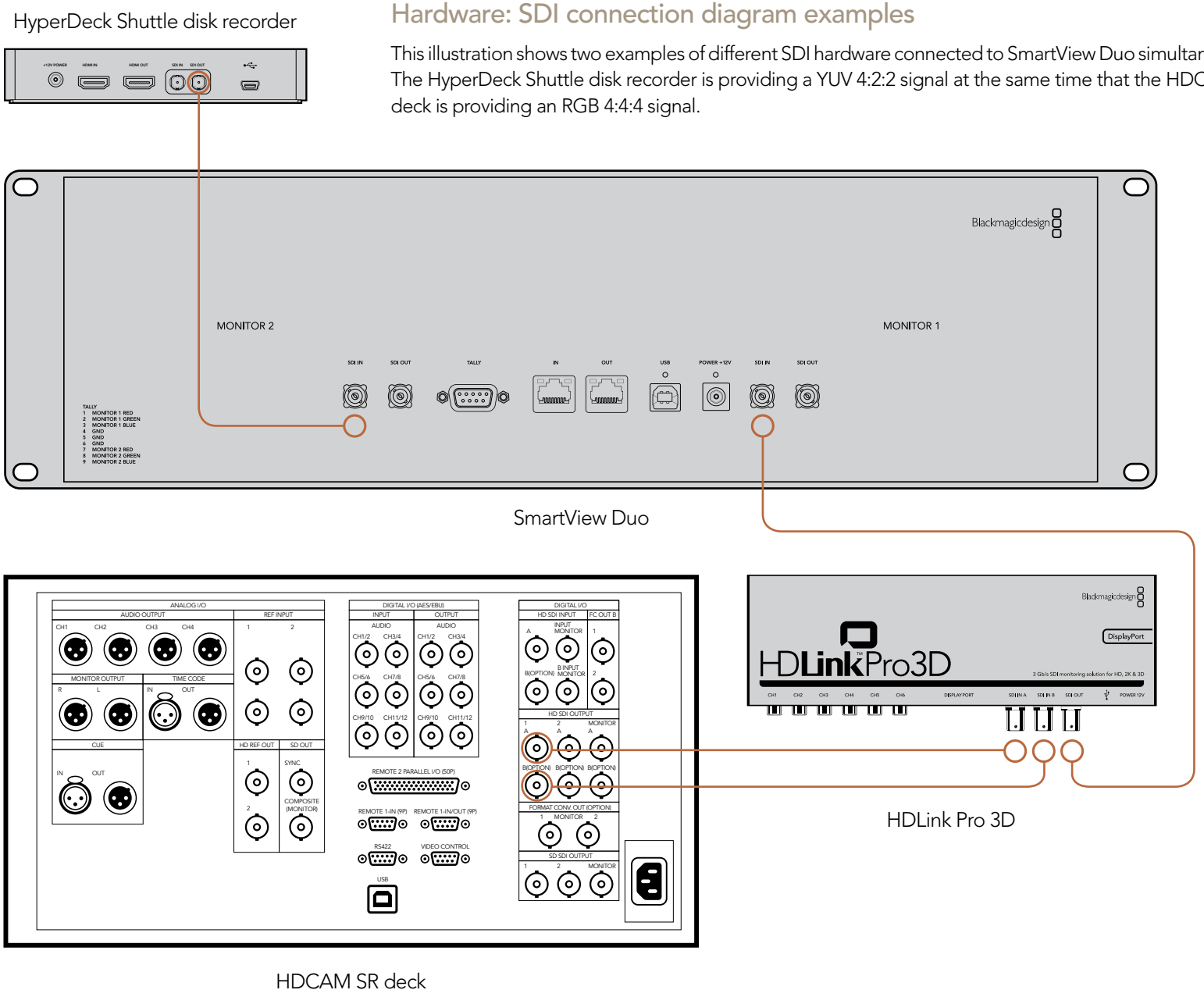
Example 2: Connecting a dual-link 4:4:4 HD or 2K-SDI source

If you wish to view an RGB 4:4:4 dual-link HD-SDI or dual-link 2K-SDI signal on SmartView Duo, you will need to use a dual-link to single-link SDI converter such as an HDLink Pro from Blackmagic Design.

The illustration on the following page shows the dual-link HD-SDI outputs of a Sony HDCAM SR deck converted to a 3 Gb/s SDI signal, by HDLink Pro, and then connected to an SDI IN port on SmartView Duo.

Hardware: SDI connection diagram examples

This illustration shows two examples of different SDI hardware connected to SmartView Duo simultaneously. The HyperDeck Shuttle disk recorder is providing a YUV 4:2:2 signal at the same time that the HDCAM SR deck is providing an RGB 4:4:4 signal.



Hardware: Setting Up the Network

It is not necessary to connect SmartView Duo to a computer in order to view SDI video and you can skip this section if you simply want to view video without making any adjustments. However if you wish to remotely adjust the monitor settings, a network connection will be required.

SmartView Duo has two 10/100Base-T Ethernet ports. You can connect the IN port to a network switch or directly to an Ethernet port on your computer. The OUT port can be connected to additional SmartView Duo units or to other network devices such as a Videohub router. Power must be supplied to all SmartView Duo units for Ethernet daisy-chaining to work.

If you want to connect several SmartView Duo units without using IP addresses from your existing studio network, or if you don't have an existing network, simply connect them directly to the Ethernet port on your computer. This is also a fast way to connect SmartView Duo units via Ethernet as you don't need to run any cables back to a network switch.

If you want to connect several SmartView Duo units to your studio's network, you only need to connect one SmartView Duo to the network switch and the rest can be daisy-chained to each other so you don't have to run multiple cables back to a network switch. Power must be supplied to all units for daisy-chaining to work. Connecting SmartView Duo to a network switch means that any Mac or Windows PC on the network can change SmartView settings. Any Mac or Windows laptop computer can also change SmartView settings via a WiFi connection if your network includes a wireless access point.

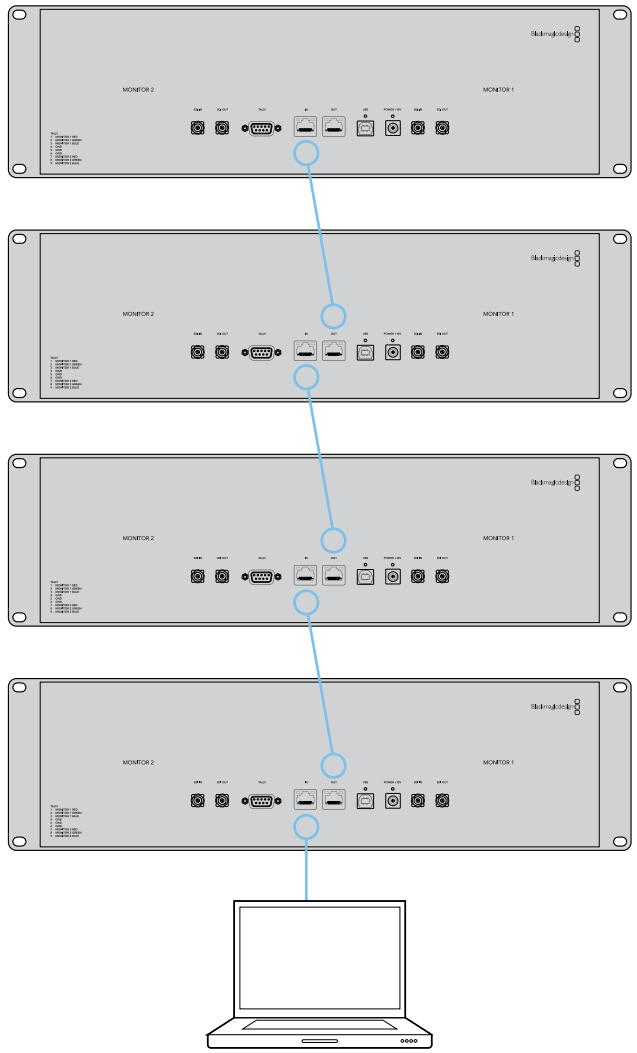
You will need to carry out the following steps to connect SmartView Duo to a local area IP based network.

Step 1. Securely connect and switch on the power supply included with your SmartView Duo.

Step 2. Connect the SmartView Duo to a network switch, or directly to a computer, with a standard RJ45 Ethernet cable.

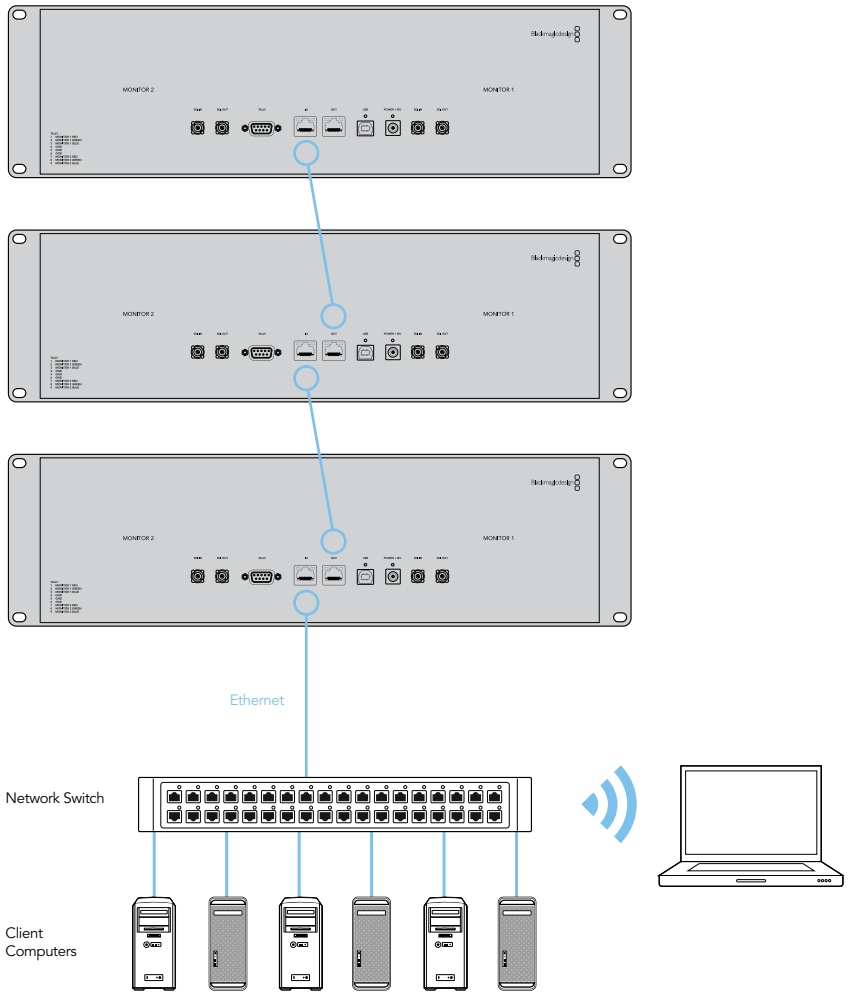
Hardware: Networking SmartView Duo with a direct Ethernet connection

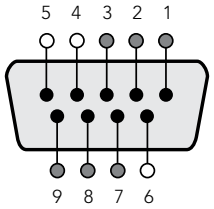
You can connect the Ethernet port of a computer directly to a SmartView Duo without needing a network switch. Additional SmartView Duo units can be daisy-chained to each other so you don't have to run multiple cables back to a network switch. Power must be supplied to all units.



Hardware: Networking SmartView Duo with an Ethernet network switch

If you want to connect several SmartView Duo units to your studio's existing network, you only need to connect one SmartView Duo to the network switch. The rest can be daisy-chained to each other so you don't have to run multiple cables back to a network switch. Power must be supplied to all units.





SmartView Duo tally port

Pin	Function
1	Monitor 1 Red
2	Monitor 1 Green
3	Monitor 1 Blue
4	Ground
5	Ground
6	Ground
7	Monitor 2 Red
8	Monitor 2 Green
9	Monitor 2 Blue

SmartView Duo tally pin connections.

Hardware: Tally port pin connections

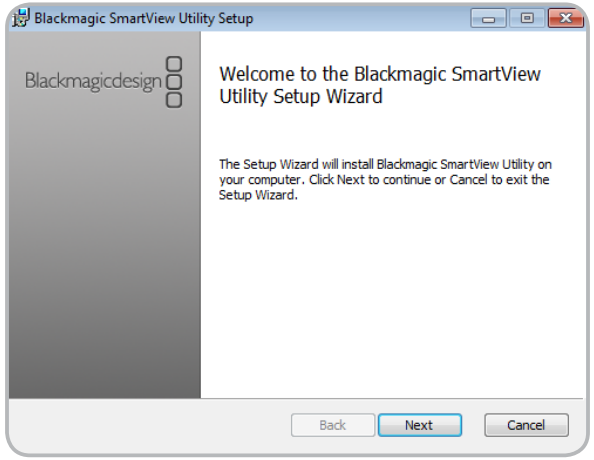
It is not necessary to connect the tally port of SmartView Duo and you can skip this section if you do not intend to use the tally feature.

Each SmartView Duo screen features independent tally borders in red, green or blue which can be used to indicate the status of a video signal such as on-air, preview or recording.

The 9-pin D-sub tally port on SmartView Duo accepts contact closure signals from switchers and automation systems. Please refer to the accompanying SmartView Duo tally pin connections diagram for information about wiring the tally port for use with your switcher or automation system.

SmartView Duo showing green and red tally borders

Mac OS X installation: Drag the Blackmagic SmartView Utility to the Applications folder



Windows installation: Follow install prompts.

Software: Installing the Blackmagic SmartView Utility software

It is not necessary to install any software in order to view SDI video and you can skip this section if you simply want to view video without making any adjustments. However if you wish to adjust the network or monitor settings, you will need to install the Blackmagic SmartView Utility software.

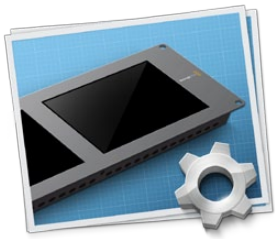
The Blackmagic SmartView Utility software runs on the latest Snow Leopard version of Mac OS X. On the Windows platform, Videohub software runs on both 32 and 64-bit versions of Windows XP, Windows Vista and Windows 7 with the latest service packs installed. Testing on previous versions of these operating systems is not conducted and so it is always best to keep up to date with the latest versions of Mac OS X and Windows.

The Blackmagic SmartView Utility software only needs to be installed on one computer but can be installed on multiple, networked computers if desired.

While the CD supplied with SmartView Duo contains the software installer, we recommend you visit **www.blackmagic-design.com** to ensure you have the latest version.

On Mac OS X, open the supplied CD, or downloaded disk image, and drag the Blackmagic SmartView Utility to your Applications folder.

On Windows, open the supplied CD, or downloaded disk image, and double-click on the SmartView installer. Follow the onscreen prompts to install the software.



Blackmagic SmartView Utility application icon

This message will appear if a firmware update is required.

The update will take about 4 or 5 minutes to complete.

Software: Updating the firmware in your SmartView Duo

Once the software installation has been completed and SmartView Duo is powered on, it is a good idea to check that the firmware in the SmartView Duo is up to date.

Step 1. Launch the Blackmagic SmartView Utility.

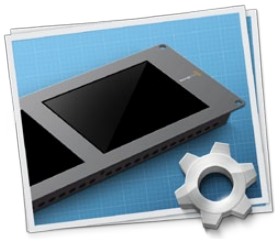
Step 2. Connect your SmartView Duo unit to the computer via USB 2.0.

Step 3. If no firmware update is required, you will simply see the settings used by your SmartView Duo. Settings can be changed now if desired and this is a good opportunity to give each SmartView Duo a unique "Device Name". Please skip the rest of the steps in this section as your SmartView Duo is already up to date.

If a firmware update is required, the following message will appear: "Firmware Update Required. The firmware on this device is out of date. Would you like to update it now?" Click `Yes`. The update will take 4 or 5 minutes to complete.

Step 4. The message, "The firmware has been successfully updated," should appear at completion of the update. Click `OK` to dismiss the message. Settings can be changed now if desired and this is a good opportunity to give each SmartView Duo a unique "Device Name".

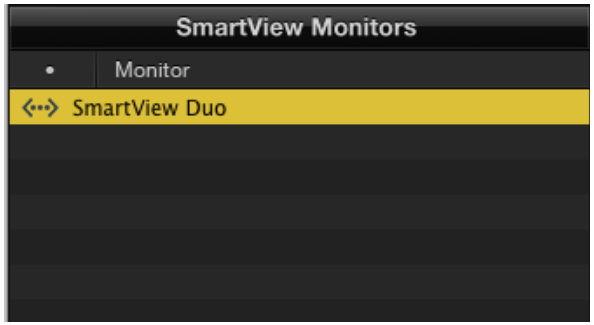
Step 5. You can now unplug the USB cable from your SmartView Duo.



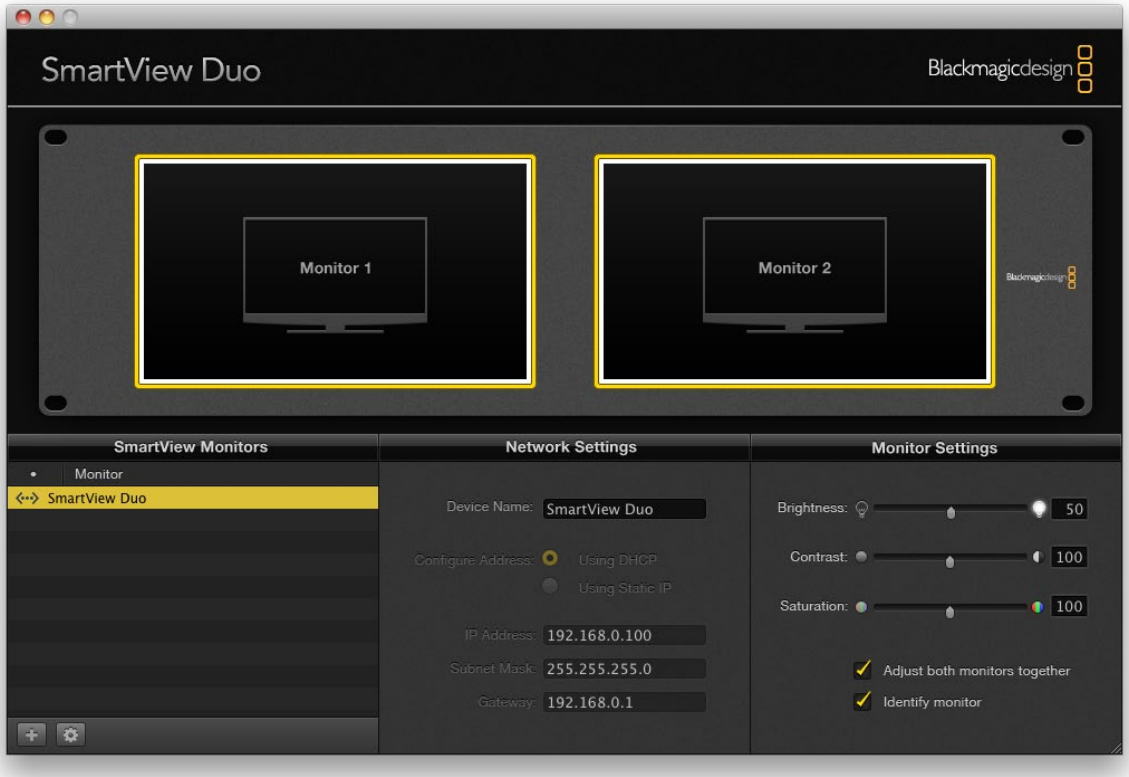
Blackmagic SmartView Utility application icon

Software: Configuring Blackmagic SmartView Utility software

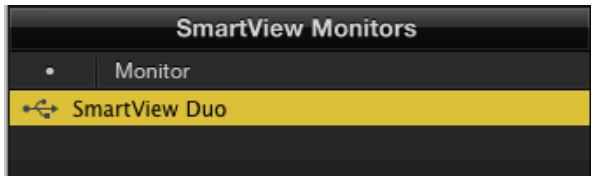
After installing the Blackmagic SmartView Utility software, launch the Blackmagic SmartView Utility and it should immediately search your network for any SmartView Duo units by using the Bonjour service discovery protocol. Any discovered units will be listed in the SmartView Monitors pane with an Ethernet network icon next to their name. Select the name of the desired SmartView Duo and you will be able to change the device name and also the monitor settings for each monitor on each SmartView Duo. Network settings will remain grayed out and can only be changed via USB.



SmartView Duo with an Ethernet network icon next to its name.

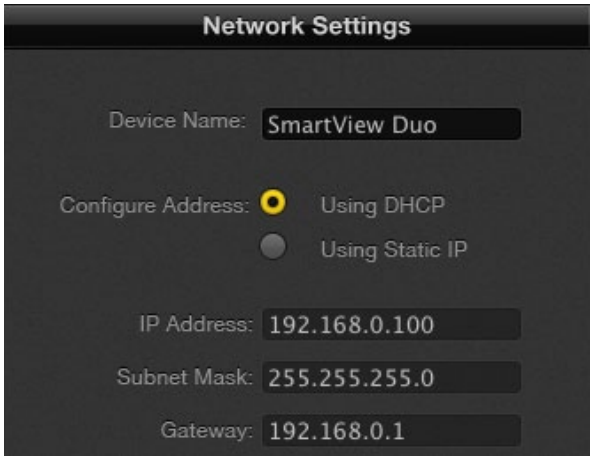


The Blackmagic SmartView Utility automatically searches your network for any SmartView Duo units. Only one unit has been found in this picture.



SmartView Duo with a USB icon next to its name.

The device name will turn red, if you type a space at the start or end of the name.



Network settings can be set to use DHCP or a Static IP address and can only be changed via USB.

If no SmartView monitors are found on the network, some units might not have received an IP address via DHCP and it will be necessary to manually configure each unit with appropriate network settings. To do so, connect a SmartView Duo to your computer via a standard USB 2.0 type A-B male cable and launch the Blackmagic SmartView Utility. If the utility prompts you to update the firmware, refer to the previous section named "Updating the firmware in your SmartView Duo". The USB-attached SmartView Duo unit will be automatically selected in the SmartView Monitors pane and will show a USB icon next to its name. You will be able to change all device name, network settings and monitor settings for the USB-attached unit.

Network Settings pane: Device Name

It is a good idea to change the default "device name" of "SmartView Duo" so each unit is easy to identify on a network, e.g. "Field Cameras 1&2", "HD edit suite", "2K feeds", etc.

To change the device name, select the desired SmartView Duo unit from the SmartView Monitors pane and then edit its device name from the Network Settings pane. You can use Blackmagic SmartView Utility to make changes to the device name when connected to the SmartView Duo hardware via Ethernet or USB.

The device name must not have a space character at the start or end of the name. If the software detects an invalid device name, the text will turn red as you are typing.

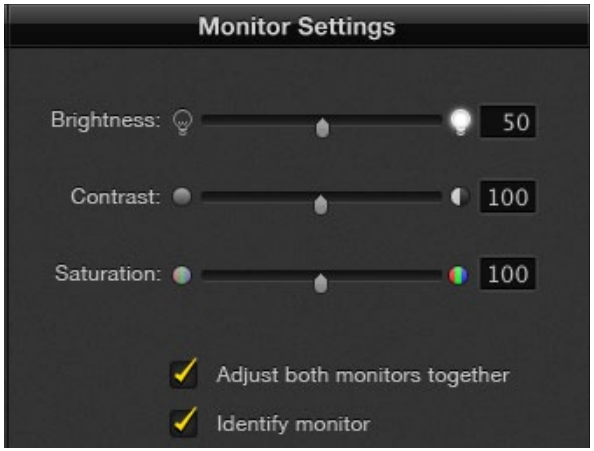
Network Settings pane: Configure Address

By default, SmartView Duo uses DHCP to automatically obtain an IP address from your network. You will probably want to leave the "Configure Address" option set to "Using DHCP" unless there is no DHCP server present.

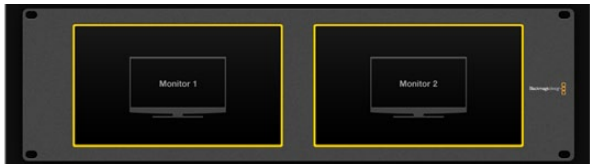
In the absence of a DHCP server, you may wish to enable the "Internet Sharing" feature of Mac OS X 10.6, or the "Internet Connection Sharing" feature of Windows 7, to provide DHCP addresses to any directly-attached SmartView Duo units. This will avoid having to manually assign static IP addresses to each unit. You can use this feature to provide DHCP addresses even though your computer might not have an Internet connection. Internet sharing is described in the Mac OS X and Windows 7 Help documentation.

If DHCP cannot be used in your configuration, choose to configure the address "Using Static IP". Please ask your system administrator for a spare IP address to avoid creating an IP conflict on your network. You will need to specify a unique IP address for each SmartView Duo unit as well as a common subnet mask. It is unnecessary to change the default value in the "Gateway" field unless you intend to connect your SmartView Duo units to a network gateway, such as an Internet router.

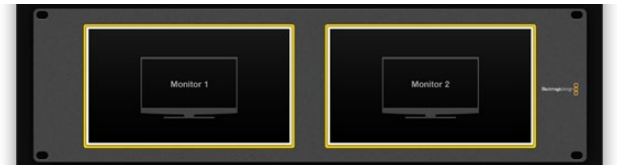
You can use Blackmagic SmartView Utility to make changes to the network settings when connected to the SmartView Duo hardware via USB. Network settings cannot be changed via Ethernet.



Monitor settings can be adjusted independently or together



A yellow border will appear around the selected monitor(s) in the Blackmagic SmartView Utility.



A white border will appear around the selected monitor(s) in the Blackmagic SmartView Utility, in addition to a yellow border, when the "Identify monitor" feature is enabled.

Monitor Settings pane: Brightness, Contrast, Saturation

You can use Blackmagic SmartView Utility to make changes to the brightness, contrast and saturation of the monitors when connected to the SmartView Duo hardware via Ethernet or USB.

Monitor Settings pane: Adjust both monitors together

When this setting is enabled, any changes made to the brightness, contrast and saturation will be applied to both SmartView Duo monitors. Yellow borders will surround both monitors in the software interface to indicate that changes to brightness, contrast and saturation will be applied to both monitors.

Deselect this setting if you wish to make independent changes to the two monitors. Click on Monitor 1 or Monitor 2 and a yellow border will surround the selected monitor, in the software interface, to indicate that changes to brightness, contrast and saturation will only be applied to the selected monitor.

You can use Blackmagic SmartView Utility to enable or disable the "Adjust both monitors together" setting when connected to the SmartView Duo hardware via Ethernet or USB.

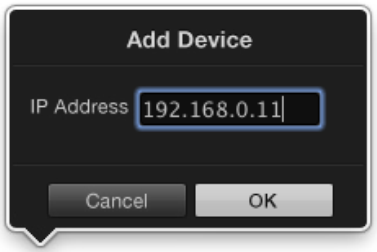
Monitor Settings pane: Identify monitor

Enable this setting to display a white border on the selected monitor of the SmartView Duo. If you have several SmartView Duo units on a network, this setting makes it easy to identify the selected monitor. The white border will appear both on the LCD monitor and in the Blackmagic SmartView Utility software interface.

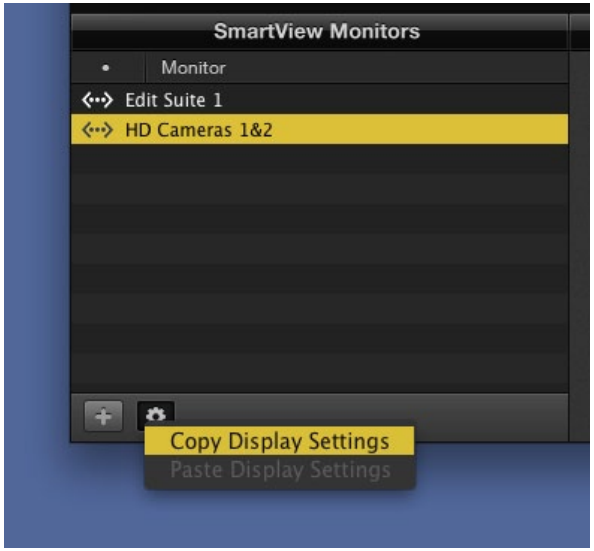
If this setting is used in conjunction with the "Adjust both monitors together" setting, the white border will be displayed on both monitors.

You can use Blackmagic SmartView Utility to enable or disable the "Identify monitor" setting when connected to the SmartView Duo hardware via Ethernet or USB.

A white border will appear around the selected LCD monitor(s) when the "Identify monitor" feature is enabled.



You can manually add a SmartView Duo, by IP address, to the list of SmartView Monitors



Copy and Paste Display Settings

Add Device

If you already know the IP address of a SmartView Duo but it hasn't automatically appeared in the SmartView Monitors pane, you can add the SmartView Duo manually. To do so, go to the Device menu and choose Add Device or alternatively click Add Device (+) at the bottom of the SmartView Monitors pane. Type in the IP address of the SmartView Duo and click OK. The software will verify the presence of the SmartView Duo unit and add it to the SmartView Monitors list. If the Blackmagic SmartView Utility does not find a SmartView Duo at the specified address, it will not add the unit to the list and will instead present a warning, "A SmartView Monitor could not be found."

You can use Blackmagic SmartView Utility to manually add a SmartView Duo when connected to the SmartView Duo hardware via Ethernet or USB.

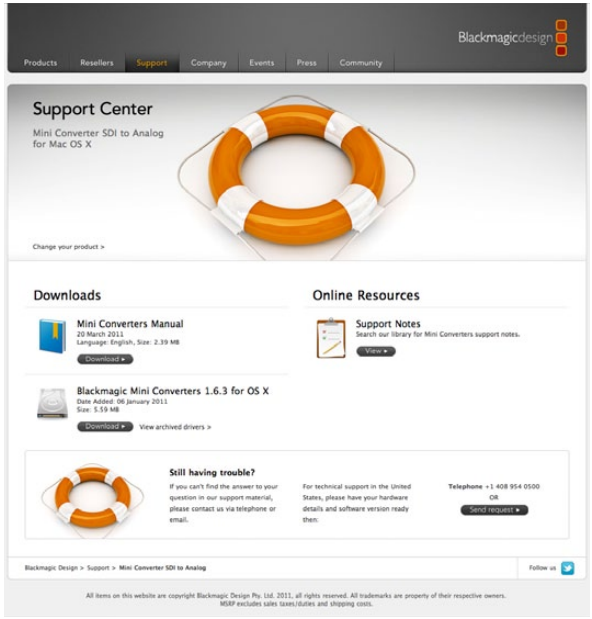
Copy/Paste Display Settings

If you have already set up one SmartView Duo unit with monitor settings that you would like to apply to other SmartView Duo units, you can copy and paste the settings to those other units. To do so:

- select the already configured unit from the SmartView Monitors pane
- go to the Device menu, or alternatively click the action button (gear icon) at the bottom of the SmartView Monitors pane, and choose Copy Display Settings (Ctrl-C, Cmd-C)
- select the unit, whose monitor settings you wish to change, from the SmartView Monitors pane.
- go to the Device menu, or alternatively click the action button (gear icon) at the bottom of the SmartView Monitors pane, and choose Paste Display Settings (Ctrl-V, Cmd-V)

You can use Blackmagic SmartView Utility to copy and paste the display settings when connected to the SmartView Duo hardware via Ethernet or USB.

Helpful Information



There are four steps to getting help.

Step 1. Check out the Blackmagic Design web site **www.blackmagic-design.com** and click on the "Support" page for the latest support information.

Step 2. Call your dealer.

Your dealer will have the latest technical updates from Blackmagic Design and should be able to give you immediate assistance. We also recommend you check out the support options your dealer offers as they can arrange various support plans based on your workflow requirements.

Step 3. The next option is to email us with your questions using the web form at **www.blackmagic-design.com/support/contact**

Step 4. Phone a Blackmagic Design support office. Check our web site for current support phone numbers in your area. **www.blackmagic-design.com/company**.

Please provide us with as much information as possible regarding your technical problem and system specifications so that we may try to respond to your problem as quickly as possible.

Warranty

25 Warranty

12 Month Warranty

Blackmagic Design warrants that this product will be free from defects in materials and workmanship for a period of 12 months from the date of purchase. If a product proves to be defective during this warranty period, Blackmagic Design, at its option, either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, you the Customer, must notify Blackmagic Design of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. The Customer shall be responsible for packaging and shipping the defective product to a designated service center nominated by Blackmagic Design, with shipping charges pre paid. Customer shall be responsible for paying all shipping changes, insurance, duties, taxes, and any other charges for products returned to us for any reason.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Blackmagic Design shall not be obligated to furnish service under this warranty: a) to repair damage resulting from attempts by personal other than Blackmagic Design representatives to install, repair or service the product, b) to repair damage resulting from improper use or connection to incompatible equipment, c) to repair any damage or malfunction caused by the use of non Blackmagic Design parts or supplies, or d) to service a product that has been modified or integrated with other products when the effect of such a modification or integration increases the time or difficulty of servicing the product. THIS WARRANTY IS GIVEN BY BLACKMAGIC DESIGN IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. BLACKMAGIC DESIGN AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. BLACKMAGIC DESIGN'S RESPONSIBILITY TO REPAIR OR REPLACE DEFECTIVE PRODUCTS IS THE WHOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES IRRESPECTIVE OF WHETHER BLACKMAGIC DESIGN OR THE VENDOR HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. BLACKMAGIC DESIGN IS NOT LIABLE FOR ANY ILLEGAL USE OF EQUIPMENT BY CUSTOMER. BLACKMAGIC IS NOT LIABLE FOR ANY DAMAGES RESULTING FROM USE OF THIS PRODUCT. USER OPERATES THIS PRODUCT AT OWN RISK.

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