

Blackmagicdesign



Installation and Operation Manual

Blackmagic Web Presenter

February 2017



Welcome!

Thank you for purchasing your Blackmagic Web Presenter!

With Blackmagic Web Presenter, our design goal was to make Internet based broadcasting and even calling using video for presentations dramatically easier. Unlike our traditional capture cards, which are designed for post production, Blackmagic Web Presenter is quite different because it transforms the SDI and HDMI video inputs into USB video that uses the webcam driver that's built into your computer.

What this means is that any SDI or HDMI video source now looks the same as a regular webcam and any software that works with a webcam will now work with professional broadcast quality products. With webcam support built into all video streaming and calling software, it means that you have a very large choice of what streaming platform you can use.

Unlike capture cards that send all the pixels in the video source to the computer, Blackmagic Web Presenter actually reduces the video resolution down to 720p and can even reduce the video frame rate down to 20, 15, 10 or 5 frames per second when directed to by the software. This means you get very high quality HD video in 16:9 aspect ratio, but you also get the lowest data rate to ensure you can stream video reliably and with regular internet connections.

But Blackmagic Web Presenter is way more than a USB webcam source for SDI and HDMI video sources, as it also includes a 2 input live switcher so you can do simple multi camera broadcasts or presentations. All you need to do is add the optional Teranex Mini Smart Panel and you can then press the 1 and 2 buttons to live switch between sources. But the Teranex Mini Smart Panel also includes video preview, audio meters, input video standard and USB frame rate information too!

Please check the support page on our website at www.blackmagicdesign.com for the latest version of this manual and for updates to your Blackmagic Web Presenter's internal software. Also when downloading software, please register with your information so we can keep you updated when new software is released. We are continually working on new features and improvements, so we would love to hear from you!

A handwritten signature in black ink that reads "Grant Petty". The signature is fluid and cursive, with a large, stylized 'P'.

Grant Petty

CEO Blackmagic Design

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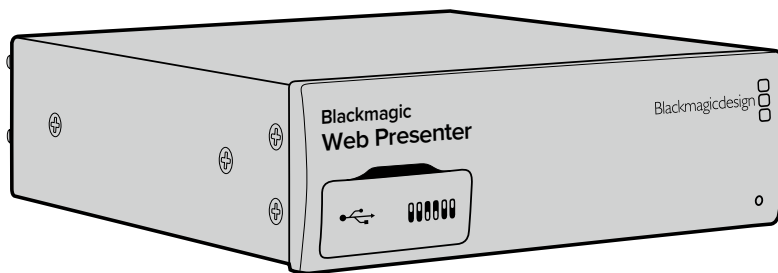
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Getting Started

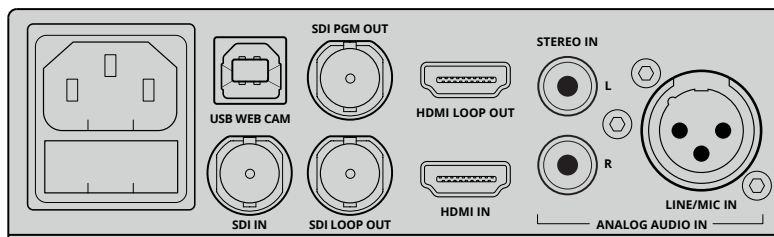
Plugging in Power

Getting started with your Blackmagic Web Presenter is quick and easy! All you need to do is connect power, connect your video and audio, then connect the unit to your computer.

To supply power, plug a standard IEC power cable into your Blackmagic Web Presenter's power input on the rear panel. When powered, the status indicator at the bottom right corner of your Web Presenter's front panel will illuminate.



Blackmagic Web Presenter supports 12G-SDI and will automatically switch between SD, HD and Ultra HD all the way up to 2160p60



Connect power to your Blackmagic Web Presenter's rear panel using a standard IEC power cable

Plugging in Video

Next, plug your source video into the Blackmagic Web Presenter's SDI or HDMI video inputs. You might notice there is both loop SDI and loop HDMI outputs and you can use these outputs if you want to connect Web Presenter in line with a video connection to other equipment. For example, you could loop the SDI output to a deck or monitor or you could connect Web Presenter in between a computer's HDMI output and the HDMI input of a video projector.

There is also a program SDI output and this will output video after the SDI and HDMI switch, but before the down conversion to 720p video. This SDI program output is the same resolution as the video inputs, so is perfect for connecting to a deck for master recording.

Blackmagic Web Presenter supports 12G-SDI and will automatically switch between SD, HD and Ultra HD all the way up to 2160p60 when the video input changes. This means you can input virtually any video signal and it will convert the signal to 720p video for the USB video, which is both high quality but also very low data rate for streaming video. What this means is you can do your production in higher resolution 1080 HD or Ultra HD but the web presenter will take care of lowering the resolution and frame rate for you, all within the single unit.

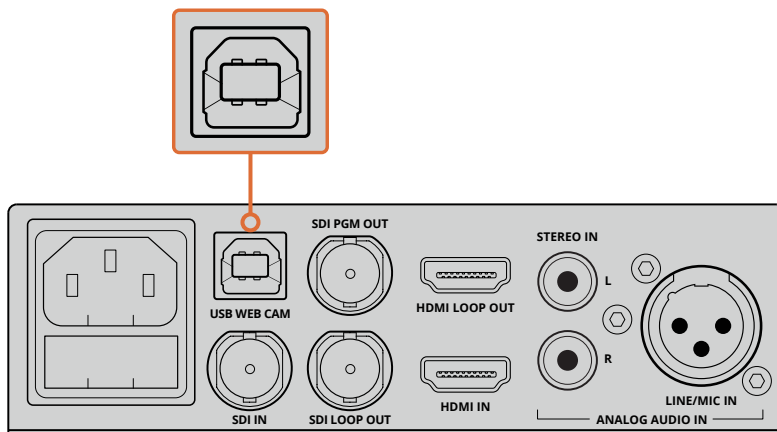
Plugging in Audio

The SDI and HDMI inputs include audio, however there are also 2 additional analog audio inputs. The XLR audio input is a mono input that lets you plug in microphones. It's a single channel mono input because microphones are mono and when you connect to this balanced XLR audio input the audio will be sent to both left and right audio channels internally. The second analog audio input is a HiFi input using RCA connectors. This input is good for computer audio or audio from a music source such as smartphone, music player, audio mixer or even a CD player.

All audio sources will be connected to an internal stereo audio mixer and all blended together. If you don't want audio to be included from any specific audio source, then please ensure you disconnect the analog audio sources, or turn down audio from HDMI sources such as computers. Otherwise any audio on any of the inputs will be blended together and sent to the USB audio output.

Connecting to your Computer

Now that you have plugged in your video and audio sources, connect your Blackmagic Web Presenter to your computer via its USB port. Your computer will instantly recognise the unit as a USB webcam video source.



Connect your Blackmagic Web Presenter to your computer via the USB port on the rear panel

Setting Blackmagic Web Presenter as your Webcam

Finally, choose your Blackmagic Web Presenter as your webcam using your desired video conferencing or third party streaming software, such as Skype, Open Broadcaster, XSplit Broadcaster or Periscope.

For information on using Blackmagic Web Presenter with Skype and YouTube Live, refer to the 'Using Blackmagic Web Presenter with Skype' and 'Using Blackmagic Web Presenter to Stream with YouTube Live' sections in this manual.

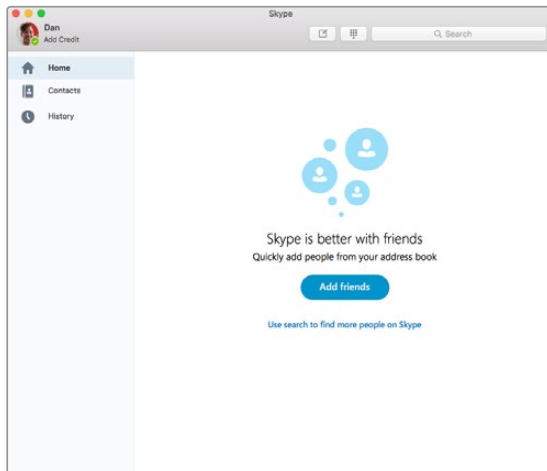
That's all there is to getting started! You are now ready to start broadcasting amazing high quality video with mixed audio online! Please keep reading this manual for more information such as tally features, changing settings and installing an optional Teranex Mini Smart Panel.

Using Blackmagic Web Presenter with Third Party Software

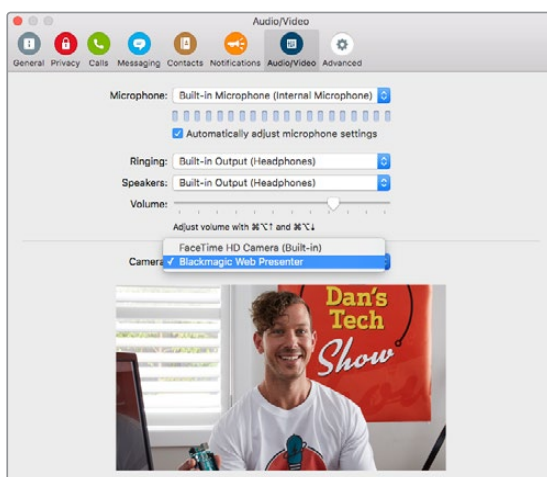
Using Blackmagic Web Presenter with Skype

To use Blackmagic Web Presenter with Skype, first download the Skype software and install it on your computer. The Skype software is free and can be downloaded from www.skype.com

- 1 Once installed on your computer, launch Skype.

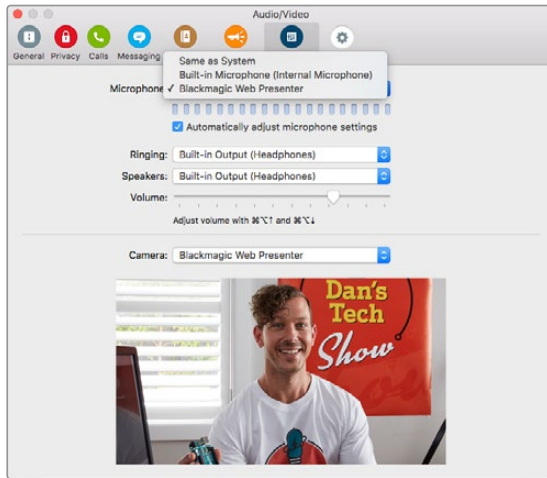


- 2 Open the preferences under Skype>Preferences and select 'audio/ video'.
- 3 If your computer has a webcam it will be selected by default, and the Skype preview window will show the image from the webcam. By clicking on the 'Camera' drop down menu, you can select Blackmagic Web Presenter from the list. Once selected, you will see the source video connected to your Web Presenter appear in the Skype preview window.



Select Blackmagic Web Presenter from the 'Camera' drop down menu

- 4 In the 'Microphone' drop down menu, select Blackmagic Web Presenter as your audio source.



That's all you need to do, and if you make a Skype call you will be using the source video that you have connected to Blackmagic Web Presenter.

NOTE The process of setting up Skype to work with Blackmagic Web Presenter is the same on both a macOS and Windows computer. For more information refer to the Skype website: www.skype.com

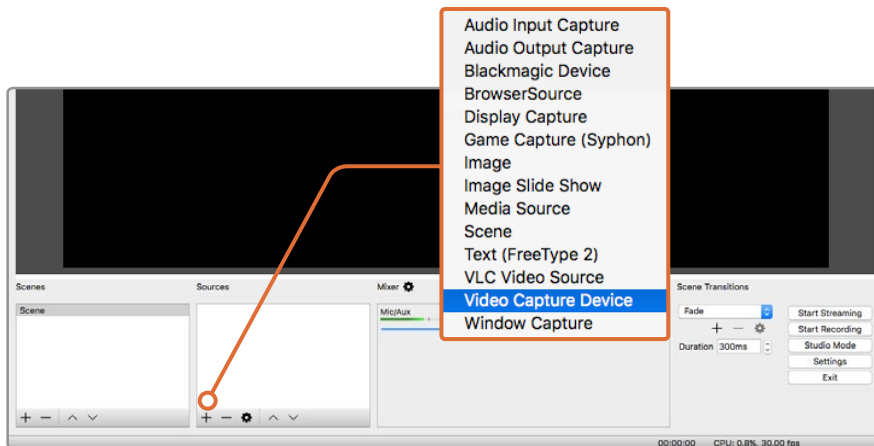
Using Blackmagic Web Presenter to Stream with YouTube Live

Open Broadcaster is free software that works very well for streaming to YouTube Live and can be downloaded from: <https://obsproject.com/>

To set your Web Presenter as a new device

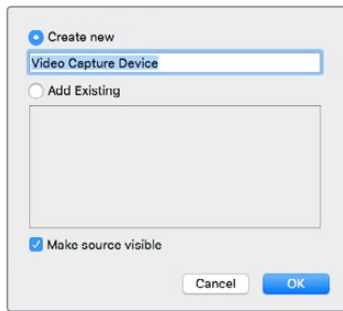
Once installed on your computer, launch the software.

- 1 Click on the '+' button in the sources box to add a source and select 'video capture device'. A pop up dialog box will give you the option to create a new source.

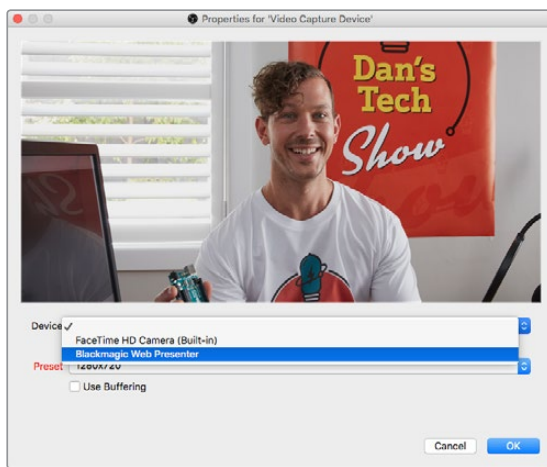


Select 'video capture device' from the list of sources and create a new source for your Blackmagic Web Presenter

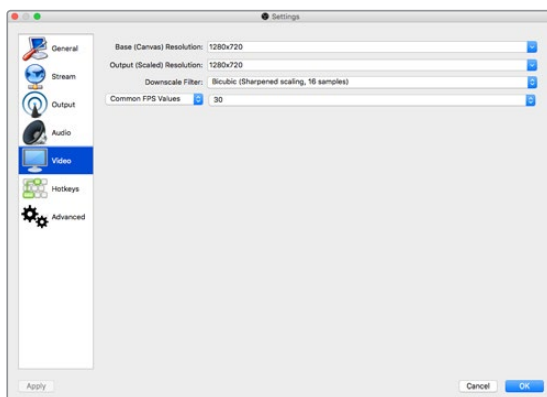
- 2 Select 'create new' in the pop up dialog box and click 'ok'.

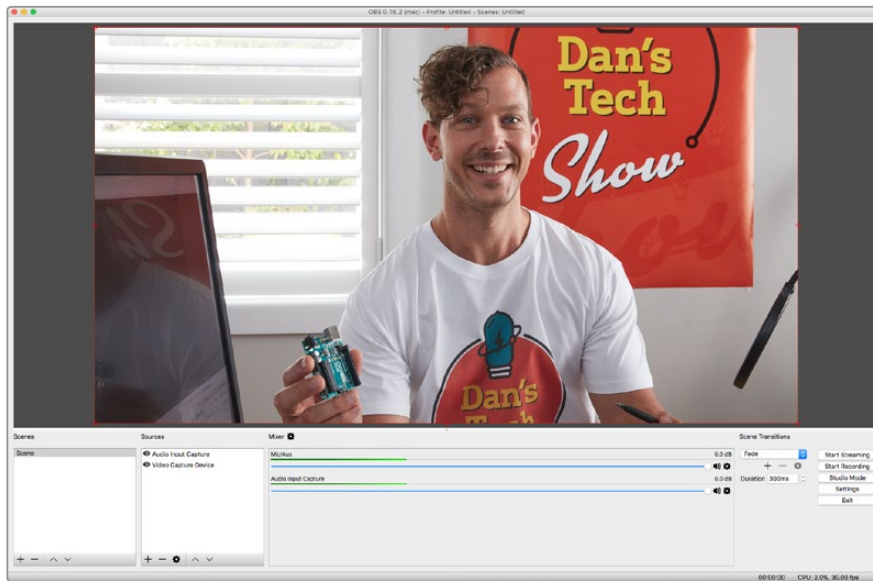


- 3 In the properties window for the new device, select your Blackmagic Web Presenter from the 'device' drop down menu and click 'ok'.



- 4 Follow the same process for audio. Click on the '+' button in the sources box to add a source and select 'audio input capture'. Select 'create new' in the pop up dialog box and click 'ok'. In the properties window for the new device, select 'Blackmagic Web Presenter' from the 'device' drop down menu and click 'ok'.
- 5 Now open the preferences located under OBS>Preferences and click on the 'video' tab.
- 6 Set your base 'canvas' resolution to 1280 x 720 and your output 'scaled' resolution to 1280 x 720. Click 'ok'. This will allow you to see the input video full screen.



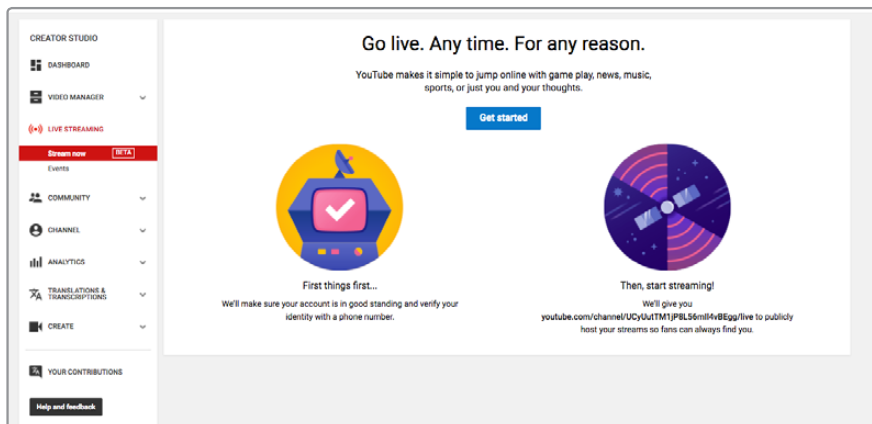


Setting the base 'canvas' and 'scaled' resolution to 1280 x 720 lets you view the input video full screen

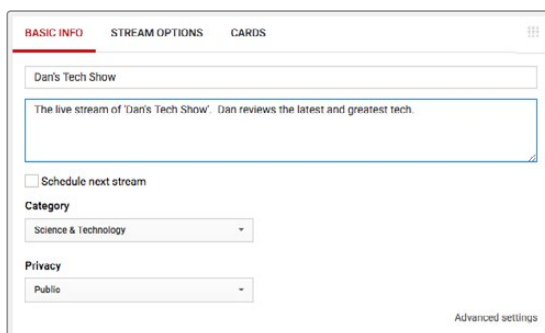
Setting up a YouTube Live streaming channel

Now you need to create a YouTube live streaming channel. In your browser, go to www.youtube.com/live_dashboard and sign in or create a new Google account.

- 1 Select live streaming on the left hand side, and then click 'get started'.



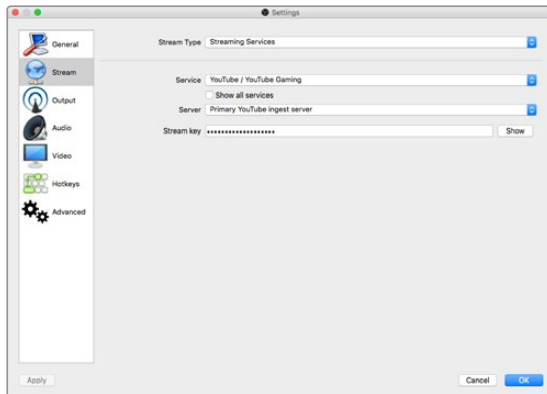
- 2 Type in the details about your stream and choose if you would like to make it a public or a private stream.



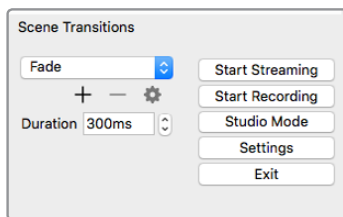
- 3 Click 'reveal' at the bottom of the page. Highlight the stream key, right click and select copy. It's important to copy this information because in the next step we will paste this key into the Open Broadcaster software.



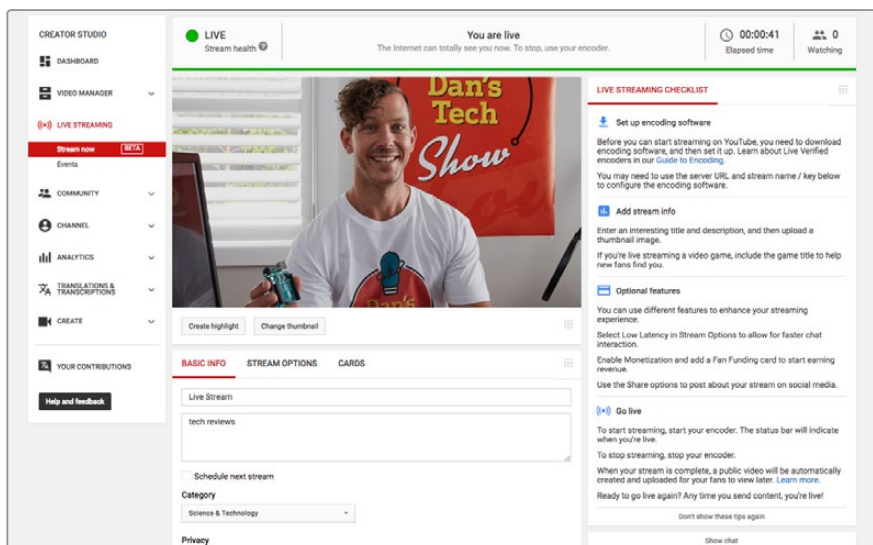
- 4 In the Open Broadcaster software, go to preferences and select the stream tab. Select YouTube as your service and paste the stream key into the 'stream key' text field.



- 5 Click the start stream button in the main window of the Open Broadcaster software and you should now be broadcasting your stream.



- 6 Back in your web browser, your stream's status will change to 'online' and you can now see your live stream.



NOTE The process of setting up the Open Broadcaster software to work with Blackmagic Web Presenter is the same on both a macOS and Windows computer. For more information refer to <https://obsproject.com/>

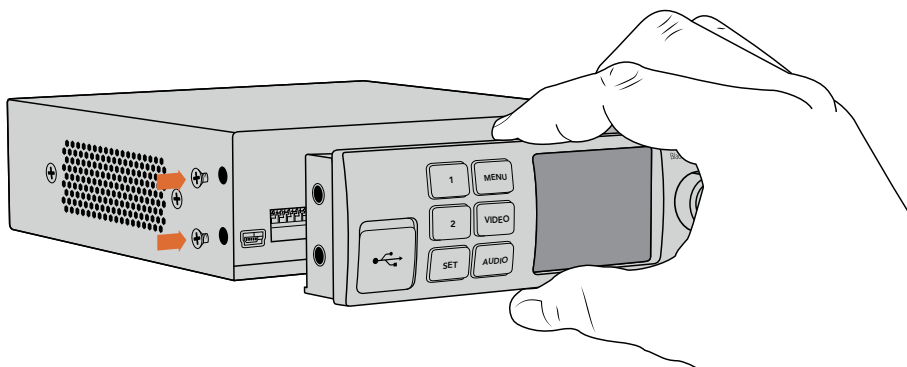
Using Teranex Mini Smart Panel

An optional Teranex Mini Smart Panel can be mounted to the front of your Web Presenter, replacing the original front panel. The Smart Panel buttons allow you to switch sources, together with a built in LCD so you can monitor the input video and status information such as the input video source, video format, plus the USB output frame rate.

Installing Teranex Mini Smart Panel

Installing your optional Smart Panel is easy and because the panels are hot swappable you don't even need to turn off your Blackmagic Web Presenter when installing it.

- 1 Remove the two M3 screws on each side of your Web Presenter's basic front panel using a Pozidriv 2 screwdriver and gently pull the panel away from the front of your Web Presenter.
- 2 Remove and retain the light tube connecting the LED to the indicator at the bottom of the basic panel. This tube is necessary to illuminate your Web Presenter's status indicator when the Smart Panel is not installed.
- 3 Align the connector on the rear of the Smart Panel with the adjoining connector on the face of your Blackmagic Web Presenter and gently push the Smart Panel towards the unit until the connectors are firmly seated. The Smart Panel should make a firm connection and fit neatly inside the face of your Web Presenter.
- 4 Re-insert the M3 screws from the original panel.



When installing the Teranex Mini Smart Panel to your Blackmagic Web Presenter, holding the panel with your fingers and thumb aligned with the panel's rear connector will help guide it into place

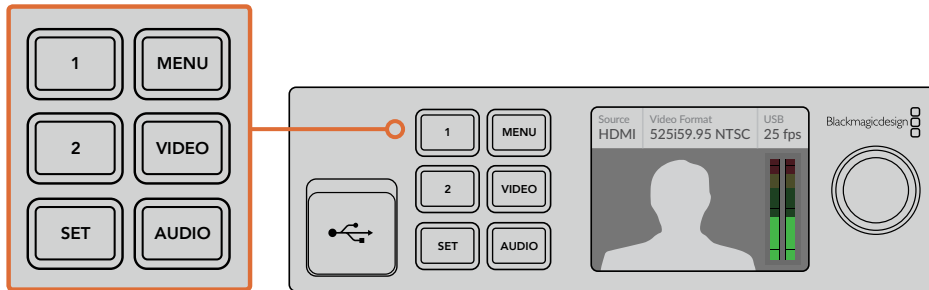
If your Blackmagic Web Presenter is installed in a Teranex Mini Rack Shelf, you will need to remove the Web Presenter from the rack shelf to access the front panel screws. See the 'Teranex Mini Rack Shelf' section for more information. Your Web Presenter's USB port is still accessible with the Smart Panel attached. To access the port, simply open the rubber USB dust cover.

Smart Panel Features

Control Buttons

1 and 2 buttons

When the smart panel is attached, the switching feature is enabled on your Blackmagic Web Presenter. This means when you are broadcasting, you can press buttons 1 and 2 to switch between the SDI and HDMI input sources. Pressing '1' will select the SDI input, and pressing '2' will select the HDMI input.

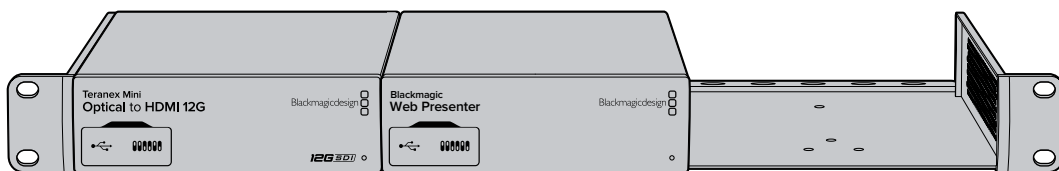


The Teranex Mini Smart Panel enables the switcher feature on your Web Presenter, so you can press buttons 1 and 2 to live switch between the SDI and HDMI input sources

Teranex Mini Rack Shelf

Teranex Mini Rack Shelf is a 1 RU shelf that lets you install your Blackmagic Web Presenter into a broadcast rack or road case. Your Web Presenter is so small, you can install it next to other Blackmagic Design equipment that shares a similar form factor, such as Teranex Mini converters, Blackmagic MultiView 4 and HyperDeck Studio Mini. For example, installing a Blackmagic Web Presenter together with two HyperDeck Studio Minis gives you one unit to play back your video sources, and provides another unit for recording the program output from your Web Presenter. This modular design lets you build your own custom video solutions that are portable and easy to use!

Installing your Blackmagic Web Presenter into a Teranex Mini Rack Shelf is as easy as removing the unit's rubber feet, if installed, and fastening the unit to the base of the shelf using the supplied screws. The Teranex Mini Rack Shelf ships with two original blank panels which you can use to cover gaps if you don't need to install additional Blackmagic Design equipment.



When installing your Blackmagic Web Presenter in the rack shelf, ensure the shelf is mounted in the rack by service personnel as the electrical rating on the underside of each unit will be covered. When installed in the rack shelf, all connectors are accessed from the rear of the unit as normal.

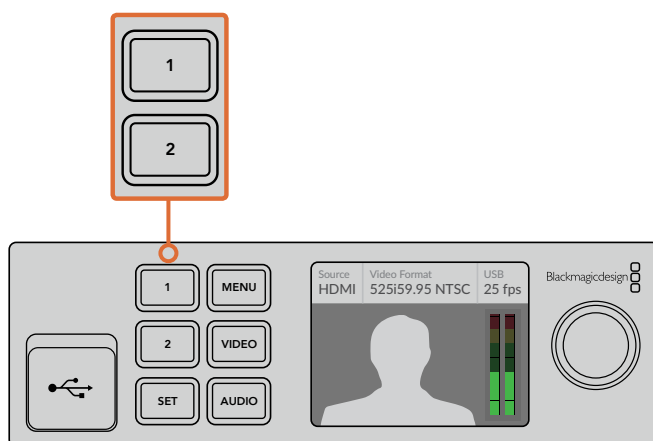
For more information check the Blackmagic Design website at www.blackmagicdesign.com

Using the Built In Switcher

Blackmagic Web Presenter features a built in 2 input live switcher. However, to take advantage of this feature you need to install the Teranex Mini Smart Panel. This panel adds an LCD screen and pushbutton controls that you can use to control the built in switcher. Once the Teranex Mini Smart Panel is installed, the switcher feature will be enabled.

When both SDI and HDMI video sources are connected, the HDMI input will be resynchronized so that both inputs can be transitioned without glitches. This is what makes the Web Presenter able to do live switching.

To operate the built in switcher, simply press the 1 on the front panel to select SDI as the video source or the button marked 2 to select the HDMI video source. Once selected, the Web Presenter will do a short half second cross dissolve. You could connect a computer with a slide show to the HDMI input and a camera to the SDI source and do very professional live presentation shows for your audience, simply by switching using the 1 and 2 buttons. You can also confirm the current input, the video preview and audio levels on the LCD screen.



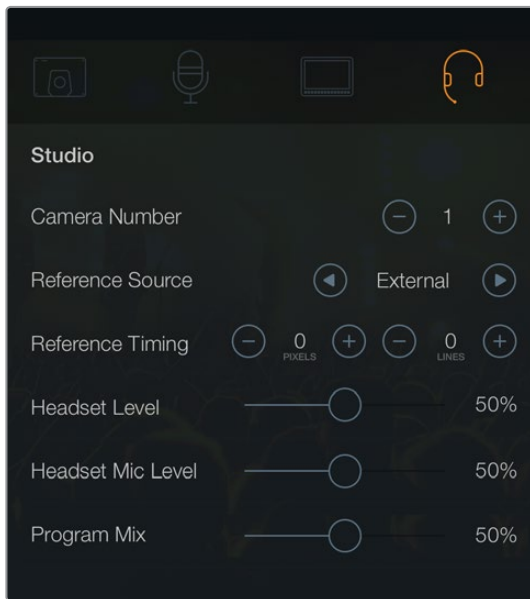
When switching a live broadcast using Blackmagic Web Presenter with a Teranex Mini Smart Panel attached, press the 1 and 2 buttons to switch between the SDI and HDMI inputs

Using Camera Tally

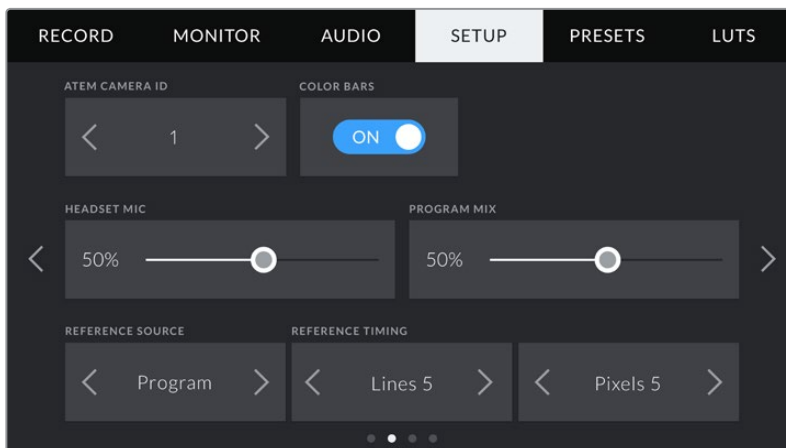
Blackmagic Design studio cameras and ATEM switchers include a tally feature where the tally information is sent from the switcher to the camera via the program return feed from the switcher to the camera. Your Blackmagic Web Presenter also includes this tally feature so you can see which camera is “on air” when you are using the switcher feature on the web presenter.

Using tally is quite simple and all you need to do is connect the SDI output of a Blackmagic Design Studio Camera to your web presenter as an SDI video source and then connect the program output of the web presenter back to the camera program SDI input. Now when you select the program button on the camera you can see the web presenter’s program video on the camera. But what’s even more exciting is the tally information is now being sent to the camera.

The SDI video input is tally “camera 1” and the HDMI input is tagged as “camera 2”. So what this means is that in your camera’s settings, you will need to set the camera number. In this case we are using the SDI input for the camera, then the camera should be set to camera 1. Once this has been set, and you press the 1 button on the front panel of the web presenter, you should see the tally illuminate on the camera.



Set the camera number to '1' for Blackmagic Studio Camera connected via SDI in the 'studio' tab of the LCD menu



Set the camera number to '1' for Blackmagic URSA Mini connected via SDI in the 'setup' tab of the LCD menu

If you are doing a presentation, it can be extremely helpful for the presenter to see a nice clear red tally indicator on the camera they are using when they are on air. This makes it easy for them to know when they are live. Imagine having a Blackmagic URSA Mini with Blackmagic URSA Studio Viewfinder combination and the presenter can see that big red tally indicator when they are on air. It's a very powerful combination!

The tally feature is supported on Blackmagic Studio Camera, Blackmagic Micro Studio Camera and Blackmagic URSA Mini models of cameras. For more details on setting up tally, refer to the 'Blackmagic URSA and URSA Mini' and 'Blackmagic Studio Camera' manuals which can be downloaded from www.blackmagicdesign.com/support

Appendix

Blackmagic Embedded Tally Control Protocol

Version 1.0 (30/04/14)

This section is for third party developers or users who may wish to add support for the Blackmagic Embedded Tally Control Protocol to their products or system. It describes the protocol for sending tally information embedded in the non active picture region of a digital video stream.

Data Flow

A master device such as a broadcast switcher embeds tally information into its program feed which is broadcast to a number of slave devices such as cameras or camera controllers. The output from the slave devices is typically fed back to the master device, but may also be sent to a video monitor.

The primary flow of tally information is from the master device to the slaves. Each slave device may use its device id to extract and display the relevant tally information.

Slave devices pass through the tally packet on their output and update the monitor tally status, so that monitor devices connected to that individual output may display tally status without knowledge of the device id they are monitoring.

Assumptions

Any data alignment / padding is explicit in the protocol. Bit fields are packed from LSB first.

Blanking Encoding

One tally control packet may be sent per video frame. Packets are encoded as a SMPTE 291M packet with DID/SDID x51/x52 in the active region of VANC line 15. A tally control packet may contain up to 256 bytes of tally information.

Packet Format

Each tally status consists of 4 bits of information:

```
uint4
    bit 0:    program tally status (0=off, 1=on)
    bit 1:    preview tally status (0=off, 1=on)
    bit 2-3:  reserved (0x0)
```

The first byte of the tally packet contains the monitor device tally status and a version number.

Subsequent bytes of the tally packet contain tally status for pairs of slave devices. The master device sends tally status for the number of devices configured/supported, up to a maximum of 510.

```
struct tally
    uint8
        bit 0:    monitor device program tally status (0=off, 1=on)
        bit 1:    monitor device preview tally status (0=off, 1=on)
        bit 2-3:  reserved (0b00)
        bit 4-7:  protocol version (0b0000)
```

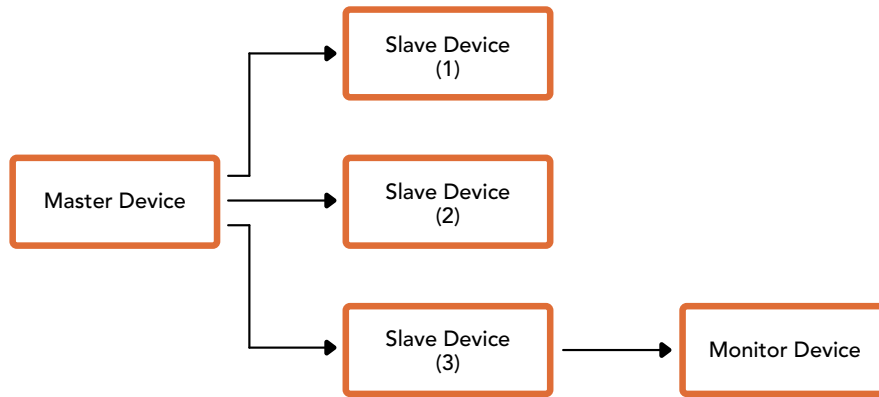
uint8[0]

- bit 0: slave device 1 program tally status (0=off, 1=on)
- bit 1: slave device 1 device preview tally status (0=off, 1=on)
- bit 2-3: reserved (0b00)
- bit 4: slave device 2 program tally status (0=off, 1=on)
- bit 5: slave device 2 preview tally status (0=off, 1=on)
- bit 6-7: reserved (0b00)

uint8[1]

- bit 0: slave device 3 program tally status (0=off, 1=on)
- bit 1: slave device 3 device preview tally status (0=off, 1=on)
- bit 2-3: reserved (0b00)
- bit 4: slave device 4 program tally status (0=off, 1=on)
- bit 5: slave device 4 preview tally status (0=off, 1=on)
- bit 6-7: reserved (0b00)

...



Byte	7 MSB	6	5	4	3	2	1	0 LSB
0	Version (0b0)	Version (0b0)	Version (0b0)	Version (0b0)	Reserved (0b0)	Reserved (0b0)	Monitor Preview	Monitor Program
1	Reserved (0b0)	Reserved (0b0)	Slave 1 Preview	Slave 1 Program	Reserved (0b0)	Reserved (0b0)	Slave 0 Preview	Slave 0 Program
2	Reserved (0b0)	Reserved (0b0)	Slave 3 Preview	Slave 3 Program	Reserved (0b0)	Reserved (0b0)	Slave 2 Preview	Slave 2 Program
3	...							

Help

Getting Help

The fastest way to obtain help is to go to the Blackmagic Design online support pages and check the latest support material available for your Blackmagic Web Presenter.

Blackmagic Design Online Support Pages

The latest manual can be found at the Blackmagic Design support center at www.blackmagicdesign.com/support.

Blackmagic Design Forum

The Blackmagic Design forum on our website is a helpful resource you can visit for more information and creative ideas. This can also be a faster way of getting help as there may already be answers you can find from other experienced users and Blackmagic Design staff which will keep you moving forward. You can visit the forum at <https://forum.blackmagicdesign.com>

Contacting Blackmagic Design Support

If you can't find the help you need in our support material or on the forum, please use the "Send us an email" button on the support page to email a support request. Alternatively, click on the "Find your local support team" button on the support page and call your nearest Blackmagic Design support office.

Regulatory Notices and Safety Information

Regulatory Notices



Disposal of waste of electrical and electronic equipment within the European union.

The symbol on the product indicates that this equipment must not be disposed of with other waste materials. In order to dispose of your waste equipment, it must be handed over to a designated collection point for recycling. The separate collection and recycling of your waste equipment at the time of disposal will help 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 recycling office or the dealer from whom you purchased the product.



This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Operation is subject to the following two conditions:

- 1 This device may not cause harmful interference.
- 2 This device must accept any interference received, including interference that may cause undesired operation.

Connection to HDMI interfaces must be made with shielded HDMI cables.

Safety Information

This equipment must be connected to a mains socket outlet with a protective earth connection.

To reduce the risk of electric shock, do not expose this equipment to dripping or splashing.

This equipment is suitable for use in tropical locations with an ambient temperature of up to 40°C.

Ensure that adequate ventilation is provided around the product and is not restricted.

When rack mounting, ensure the ventilation is not restricted by adjacent equipment.

No operator serviceable parts inside. Refer servicing to your local Blackmagic Design service centre.



Use only at altitudes not more than 2000m above sea level.

Warranty

36 Month Limited Warranty

Blackmagic Design warrants that Blackmagic Web Presenter will be free from defects in materials and workmanship for a period of 36 months from the date of purchase excluding connectors, cables, fiber optic modules, fuses and batteries which will be free from defects in materials and workmanship for a period of 12 months from the date of purchase. If the 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 charges, 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 personnel 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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