SYSTEMS

User's Manual

Multi-Format Video Switcher

AV200HD

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions – All the safety and operating instructions should be read before this product is operated.
2. Keep these instructions – The safety and operating instructions should be retained for future reference.
3. Heed all warnings – All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow all instructions – All operating and use instructions should be followed.
5. Do not use this apparatus near water – The appliance should not be used near water or moisture – for example, in a wet basement or near a swimming pool, and the like.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacture's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding plug. A polarized plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and at the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart or rack is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug the apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.
16. Do not install this equipment in a confined or building-in space such as a book case or similar unit, and remain a well ventilation conditions at open site. The ventilation should not be impeded by covering the ventilation openings with items such as newspaper, table-cloths, curtains, etc.
17. **WARNING:** The mains plug/appliance coupler is used as disconnect device, the disconnect device shall remain readily operable.
18. This apparatus is for professional use only.

19. **WARNING:** To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that objects filled with liquids, such as vases, shall not be placed on apparatus.
20. This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of non-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

Warning: To reduce the risk of electric shock, do not remove cover (or back) as there are no user-serviceable parts inside. Refer servicing to qualified personnel.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.

21. Protective earthing terminals. The apparatus should be connected to a mains socket outlet with a protective earthing connection.

IMPORTANT NOTES

Read First!

Prior to the operation of this unit, please thoroughly read through the Owner's Manual in its entirety, these sections provide important and comprehensive information concerning the proper operation of this unit.

The Owner's Manual should be saved and kept for future use and references.

The digital version of this manual is available online at Asystems' website for download.

Power Supply

- Do not connect this unit to same electrical outlet that is being used by an electrical appliance that is controlled by an inverter or a motor (such as a refrigerator, washing machine, microwave oven, or air conditioner).

  Depending on the way in which the electrical appliance is used, power supply noise may cause this unit to malfunction or may produce audible noise. If it is not practical to use a separate electrical outlet, connect a power supply noise filter between this unit and the electrical outlet.

- To prevent malfunction and equipment failure, always make sure to turn off the power on all your equipment before you make any connections.

- Although the LCD and LEDs are switched off when the unit is turned off, this does not mean that the unit has been completely disconnected from the source of power. If you need to turn off the power completely, first turn off the unit's switch, then unplug the power cord from the power outlet. For this reason, the outlet into which you choose to connect the power cord's plug should be one that is within easy reach and readily accessible.

Placement

- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.

- Noise may be produced if wireless communications devices, such as cell phones, are operated in the vicinity of this unit. Such noise could occur when receiving or initiating a call, or while conversing. Should you experience such problems, you should relocate such wireless devices so they are at a greater distance from this unit, or switch them off.

- Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Excessive heat can deform or discolor the unit.

- When moved from one location to another where the temperature and/or humidity is very different, water droplets (condensation) may form inside the unit. Damage or malfunction may result if you attempt to use the unit in this condition. Therefore, before using the unit, you must allow it to stand for several hours, until the condensation has completely evaporated.

- Depending on the material and temperature of the surface on which you place the unit, its rubber feet may discolor or mar the surface. You can place a piece of felt or cloth under the rubber feet to prevent this from happening. If you do so, please make sure that the unit will not slip or move accidentally.

- Do not put anything that contains water on this unit. Also, avoid the use of insecticides, perfumes, alcohol, and nail polish, spray cans, etc., near the unit. Swiftly wipe away any liquid that spills on the unit using a dry, soft cloth.

Maintenance

- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a cloth impregnated with a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Additional Precautions

- This unit allows you to switch images or turn video effects on/off at high speed. For some people, viewing such images can cause headache, nausea, or other discomfort. Do not use this unit to create video that might cause these types of health problems. Asystems will accept no responsibility for any such health problems that may occur in yourself or in viewers.
- Unfortunately, it may be impossible to restore the contents of data that was stored in the unit's memory or SD card once it has been lost.

  Asystems assumes no liability concerning such loss of data.
- Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.
- When disconnecting all cables, grasp the connector itself - never pull on the cable. This way you will avoid causing shorts, or damage to the cable's internal elements.
- A small amount of heat will radiate from the unit during normal operation.
- When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.

Before Using SD Card

- Carefully insert the SD card all the way in---until it is firmly in place.
- Never touch the terminals of the SD card. Also, avoid getting the terminals dirty.
- The SD cards are constructed using precision components; handle the cards carefully, paying particular note to the following.
- To prevent damage to the cards from static electricity, be sure to discharge any static electricity from your own body before handling the cards.
- Do not touch or allow metal to come into contact with the contact portion of the cards.
- Do not bend, drop, or subject cards to strong shock or vibration.
- Do not keep cards in direct sunlight, in closed vehicles, or other such locations.
- Do not allow cards to become wet.
- Do not disassemble or modify the cards.

TABLE OF CONTENTS

V1.4 09/19/2017

INTRODUCTION

Congratulations on purchasing your multi-format video switcher, the AV200HD, by Asystems!

The AV200HD is a configurable multi-format, high definition video switcher, audio mixer and digital effect unit that supports 1080p/720p and 3G SDI formats. The intuitive control panel can stretch, crop and zoom as desired, and the input source mix ratio is flexible to adapt each unique setup requirement.

The model offers 2 independent 3G-SDI inputs that can be previewed with no frame drop in Multiview screen.

Before operating and exploring the capabilities of the AV200HD, it is highly recommended that you carefully read through the Safety Instructions section first for safe operation while avoiding hazardous situations.

OVERVIEW

The AV200HD offers an array of powerful features including a Multiview output preview, full HD processing, full multi formats inputs, expandable HD/SD architecture, with digital effects and picture-in-picture (PIP) capabilities. The AV200HD adds a host of new functionality, including a joystick camera control for pan/tilt/zoom operation of one remote camera via direct serial connection, transmitting long distance HD video via CAT5/6 cable and a full configurable cross-point button array.

The AV200HD's built-in Multiview screen can output up to 5 images from different sources to a single high-resolution display, eliminating the need for multiple HD source and preview monitors. For added creativity, the switcher offers a wide selection of wipe patterns and features a high-quality chroma key for green screen applications in broadcast and production.

AV200HD's CAT5/6 HD video transmits long distance uncompressed video without trading off quality. This allows for easier setups, neater installations, and infinitely more cost-effective audiovisual systems. It further helps in making audio/visual mapping much more flexible on all units, while the implementation of CAT5/6 HD video also allows 1080p video transmits up to 70 meters / 220 feet away with a standard CAT5/6 cable.

As a compact, full multi-format system, the AV200HD easily integrates into existing HD/SD workflows, flawlessly mixing HD and SD video sources.

FEATURES

- 6 multi-format inputs (4 HDMI and 2 3G-SDI)
- 3 AUX outputs (2 HDMI and 1 3G-SDI)
- 1 Multiview monitor output (1080p)
- 1ME (Key, PIP) + DSK
- 5 fully congurable cross-points
- 4 inputs can be congured as 4 1080p30, 1 1080p60 + 2 1080p30 or 2 1080p60
- Scalable input and output
- Supports SMPTE Timebase
- 8 User Dened Preset Memories

PRECAUTION FOR USE

- **Handle carefully**

  Do not drop the product, or subject it to strong shock or vibration.

  Do not carry or move the product by the T-Bar (fader lever). This is important to prevent trouble.

- **Use the product in an ambient temperature of 32 °F to 95 °F (0 °C to 35 °C)**

  Avoid using the product at a cold place below 32 °F (0 °C) or at a hot place above 95 °F (35 °C). Extremely temperatures will adversely affect the delicate parts of the unit. Room temperature of 77°F ± 5° (25°C ± 5°) is recommended operation temperature.

- **Power off before connecting or disconnecting cables**

  Be sure to switch the power off before plugging or unplugging the cables.

- **Avoid humidity and dust**

  Avoid using the product at a humid or dusty condition because much humidity and dust will cause damage to the parts inside the unit.

- **Maintenance**

  Clean the product using a dry cloth. To remove stubborn dirt, dip a cloth into a diluted solution of kitchen detergent, wring it out well, and wipe the product gently. After wiping the product with a moist cloth, wipe it again with a dry cloth.

  Caution

  - Avoid using benzene, paint thinners and other volatile fluids.
  - If a cleaning chemical is to be used, carefully read through the precautions for its use.

- **Precaution to be observed during production**

  This product's image switching and image effect functions can be used to produce images which flicker rapidly or images which change rapidly.

  However, bear in mind when using these functions in production that the kinds of images produced may have an adverse effect on the viewer's physical well-being.

- **Handling the optional boards**

  Be absolutely sure to turn off the power of the product before installing or removing any of the optional boards.

  Beware of sharp or pointy edges and metal parts of the boards when installing or removing the optional boards.

- **When the product is to be discarded**

  When the product is to be discarded at the end of its service life, ask a specialized contractor to dispose of it properly in order to protect the environment.

- **Concerning the consumable part**

  Cooling fan: This is a consumable part. As a general rule, replace it after about 30,000 hours of operation.

  Power supply unit: This is a consumable part. As a general rule, replace it every 5 years or so (when the unit has been operated for 15 hours a day).

  The period when the consumable parts need to be replaced will differ depending on the operating conditions.

  Ask your local dealer for the replacement service.

CHECK THE INCLUDED ITEMS

Upon unboxing the product, please carefully inspect the included items, in the unlikely event of any missing or damaged items, please contact your authorized retailer/distributor for replacements.

AV200HD

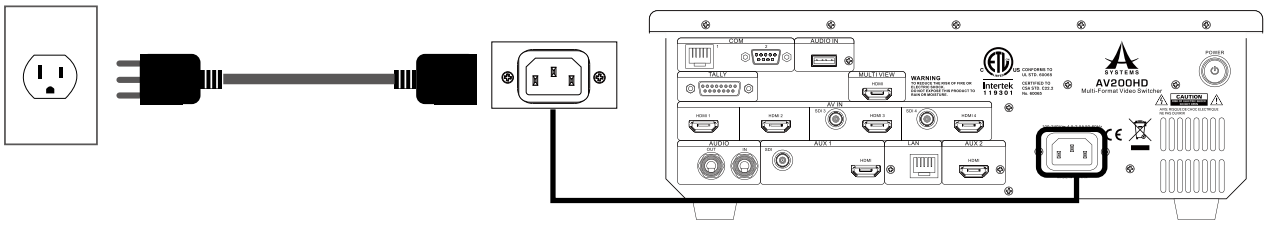
Power Cable

AV200HD Owner's Manual

BASIC SETUP

Power Supply

Connect the included power cord to AC IN connector on rear panel before use. Be sure to use the included power cord for AC connection.

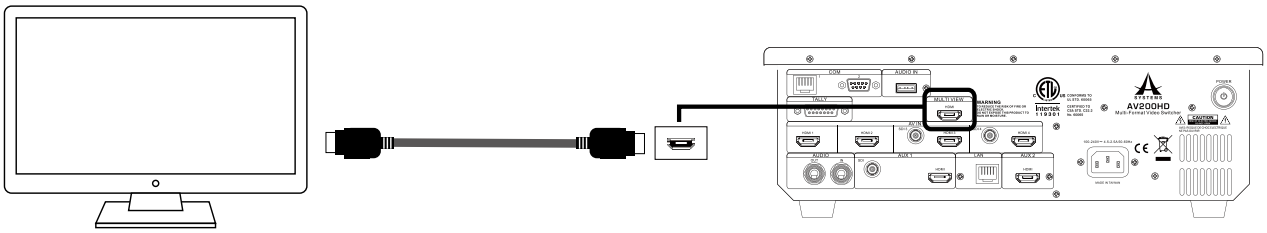


Ground Terminal

Depending on the circumstances of a particular setup, you may experience a discomforting sensation, or perceive that the surface feels gritty to the touch when you touch this device, video cameras connected to it, or the metal portions of other objects, such as projectors. This is due to an infinitesimal electrical charge, which is absolutely harmless. However, if you are concerned about this, connect the ground terminal with an external ground. When the unit is grounded, a slight hum may occur, depending on the particulars of your installation. If you are unsure of the connection method, contact the nearest Asystems Service Center or an authorized Asystems distributor for detailed information.

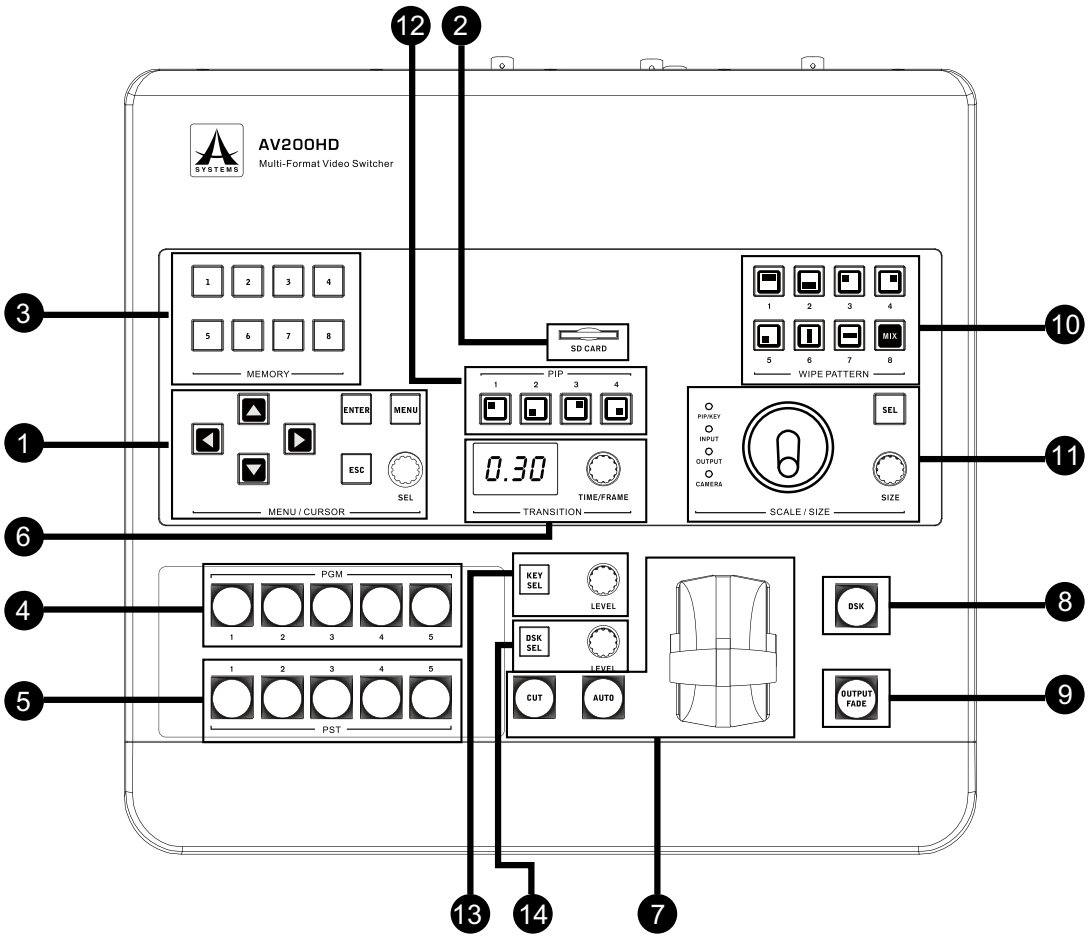
Connecting the Monitor

To begin operate the AV200HD, a monitor must be connected that supports HDMI input to the connector shown below.



CONFIGURATION

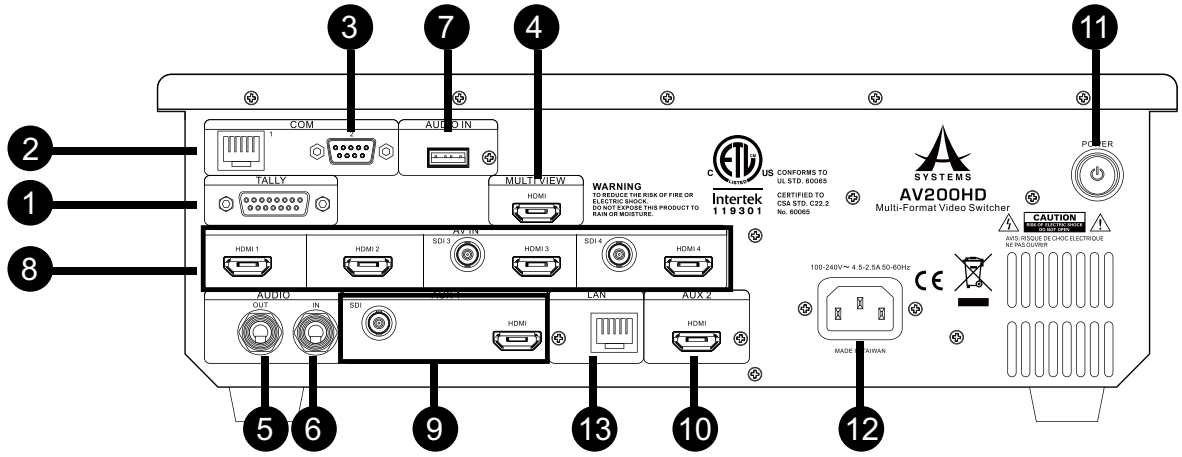
Top View (Button Layout)



1. **Setup Menu & Cursor Controls:**
   - Menu Button: Open or Close Setup Menu OSD.
   - Directional Buttons (Up, Down, Right & Left): Use as cursor navigation control in Setup Menu.
   - Enter Button: Confirm menu selection.
   - ESC (Escape) Button: Cancel menu selection or go to previous menu level.
   - SEL (Select) Knob: Scroll through menu options.
2. **SD Card Slot:** Still image input for DSK and Output Fade; also use for preset backup and firmware upgrade. Suppor SDXC, downward compatible.
3. **Memory Section:**
   - Buttons 1 to 8: Select or save to memory location.
4. **Cross-Point Buttons, PGM (Program)**
   - Buttons 1 to 5: Use to assign program output, main PIP source and KEY background source.
5. **Cross-Point Buttons, PST (Preset/Preview):**
   - Button 1 to 5: Use to assign preview output, secondary PIP source and KEY foreground source.
6. **Transition Time Adjustment:**
   - Time/Frame Knob: Adjust the AUTO transition time.
   - LED: Shows current transition time and format.

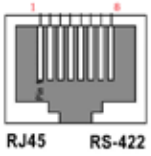
7. **Transition Controls**
   - AUTO Button: Perform auto transition.
   - T-Bar: Performs manual transition.
   - CUT Button: Performs instant transition.
8. **DSK (Downstream Key)**
   - DSK Button: Toggle DSK on and off.
9. **Output Fade**
   - Output Fade Button: Toggle Output Fade on and off.
10. **Wipe Pattern Section**
    - Button 1 to 8: Select the wipe pattern; enable Wipe Pattern Transition Mode.
11. **Joystick Controls**
    - PIP/KEY LED: Controls in PIP or KEY mode.
    - Input LED: Controls in input scaling mode.
    - Output LED: Controls in output scaling mode.
    - Camera LED: Controls in camera mode.
    - SEL (Select) Button: Select the available joystick modes.
    - Position Joystick:
    - PIP: PIP positon placement.
    - KEY: Key filter color selection.
    - Input: Input scaling area select.
    - Output: Output scaling area select.
    - Camera: Pan and tilt controls.
    - Size Knob:
    - PIP: PIP size adjust.
    - KEY: Key filter range select.
    - Input: Input scale size adjust.
    - Output: Output scale size adjust.
    - Camera: Zoom control.
12. **PIP Enable**
    - Button 1: Enable PIP form upper-left corner.
    - Button 2: Enable PIP from lower-left corner.
    - Button 3: Enable PIP form upper-right corner.
    - Button 4: Enable PIP from lower-right corner.
13. **KEY Sectio**
    - KEY SEL (Select) Button: Toggle KEY mod on and off.
    - Level Knob: Adjust KEY background transparency level.
14. **DSK Section**
    - DSK SEL (Select) Button: Toggle DSK Setup Menu on and off; enable DSK level control.
    - Level Knob: Adjust DSK transparency level.

Rear Panel (Input/output Ports)



1. **Tally 1**
   - Tally 1 (CH 1~5)
2. **COM 1**
   - RJ-45; for MK20HD camera PTZ controls (RS422).

PIN	Da
1	Common GND
2	NC
3	TX- (422-Z)
4	RX- (422-B)
5	RX+ (422-A)
6	TX+ (422-Y)
7	NC
8	NC



RJ45 Connector Pinout Diagram

3. **COM 2**
   - DB-9; RS232 communication port for remote control application.
4. **Multiview**
   - Multiview monitor output; HDMI.
5. **Audio Out**
   - Stereo analog PGM audio output.
6. **Audio In**
   - Stereo analog audio input.
7. **Audio In**
   - USB digital audio input.
8. **AV IN 1 to 4**
   - HDMI Inputs 1 to 4.
   - 3G/HD-SDI Inputs 3 and 4.

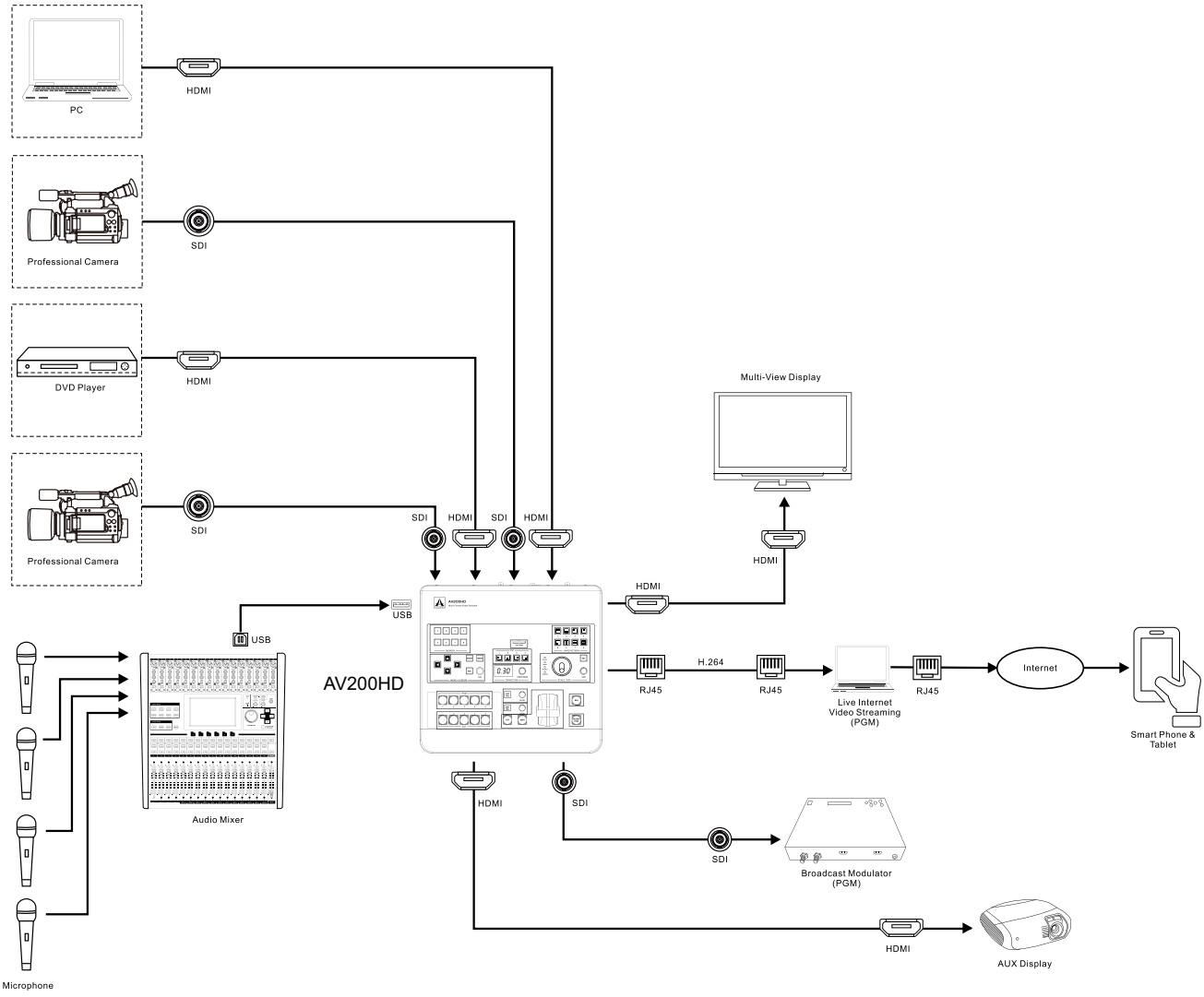
   Note 1: Supports HD SDI x2 or 3G SDI x2 (Need to disable both HDMI 1 & 2 for 2 3G SDI mode).

   Note 2: HDMI 3 & 4 share input with SDI; priority= HDMI when both HDMI and SDI are connected.
9. **AUX 1 Out**
   - AUX 1 output ports; one HDMI and one 3G SDI; can be configured as PVW, PGM or CH 1 to 5.
10. **AUX 2 OUT**
    - One HDMI, can be configured as PVW, PGM or CH 1 to 5.

    Note: The internal audio signal is set to AUX 1, unless PGM is set to AUX 2 only, else, the audio signal remains in AUX 1. If AUX 1 and AUX 2 both set to PGM, AUX 1 takes priority, and the audio signal remains in AUX 1.
11. **Power Buttor**
    - Turn the unit on and off.
12. **AC Power Inlet**
    - To connect with the power cord included.
13. **LAN**
    - RJ45 for LAN video streaming and remote control applications.

CONNECTING EXTERNAL EQUIPMENT

Connect external equipment as shown in this chapter. For information on specific connection methods, refer to the following pages.



About Input Formats

Signals of the formats shown below can be input from source equipment.

SDI
480i 59.94, 576i 50, 720p 50, 720p 59.94, 1080i 25, 1080i 29.97, 1080p24, 1080p 29.97, 1080 50p, 1080 59.94p

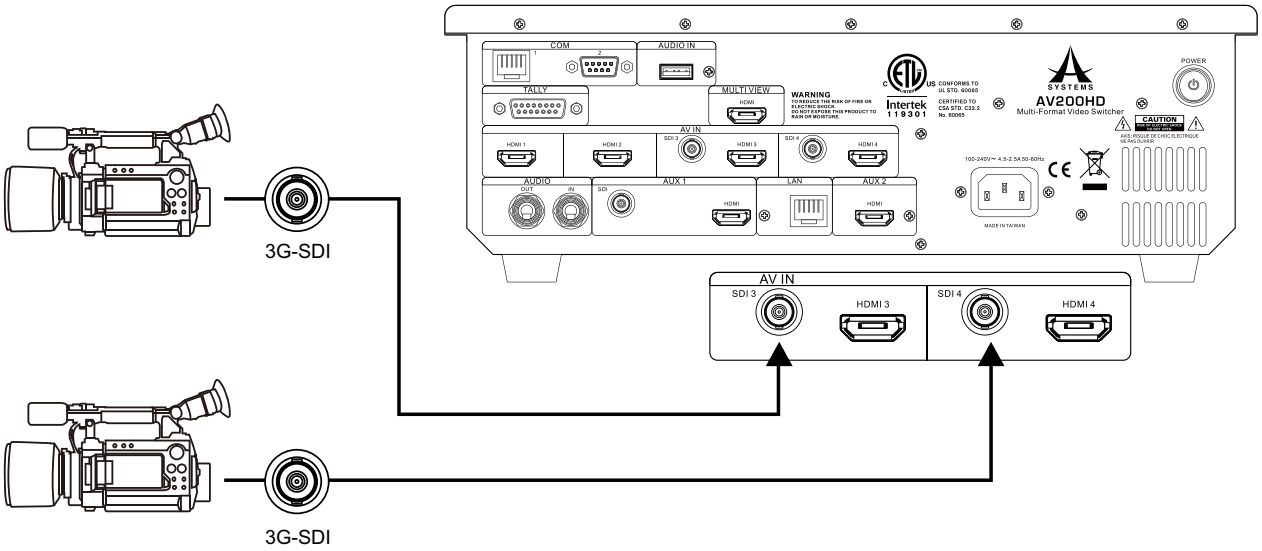
HDMI
PC:
640x480@60 Hz, 800x600@60 Hz, 1024x768@60 Hz, and 1920x1080@60Hz.

CE:
480i 59.94, 576i 50, 720p 59.94, 720p 50, 1080i 59.94, 1080i 50, 1080p 24, 1080p 29.97, 1080p 59.94 and 1080p 50.

CONNECTING SOURCE EQUIPMENT

Making SDI Connections

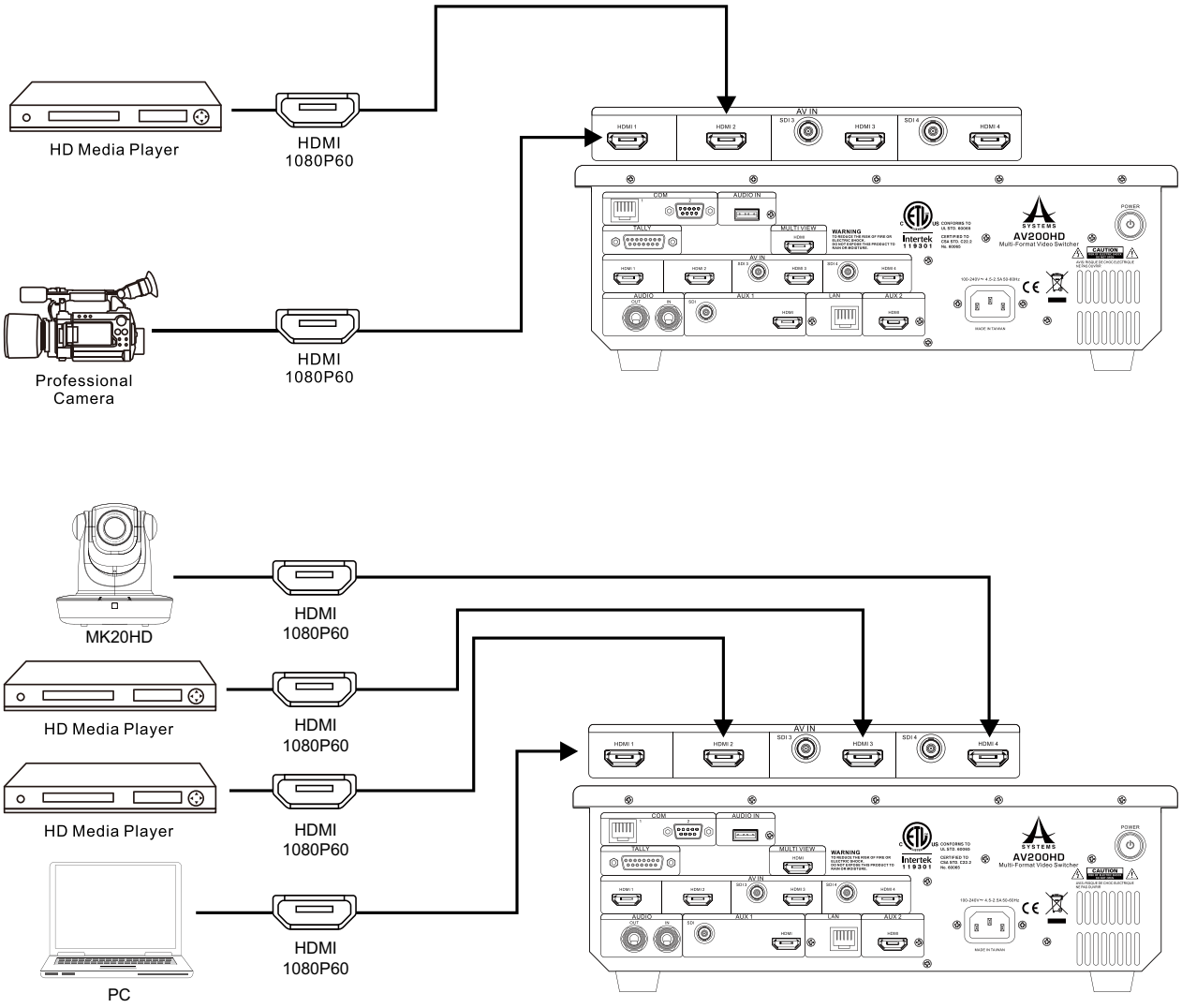
AV200HD supports up to 2 3G-SDI. Connect SDI equipment such as video cameras or video decks to the SDI IN connectors. SDI inputs are default to cross-point channels 3 and 4 (Can be reconfigured to other cross-point channels).



CONNECTING A COMPUTER OR HDMI EQUIPMENT

Making a HDMI Connection

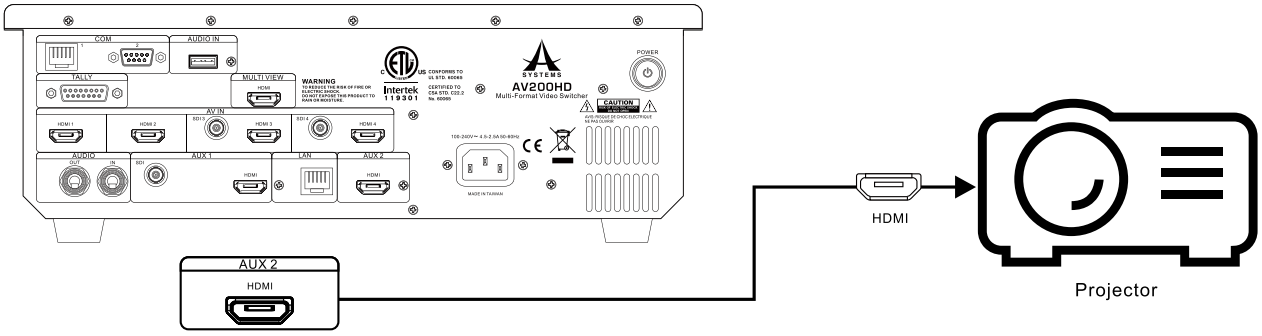
Connect computers and video cameras capable of HDMI output to the HDMI IN connectors. Inputs are default to cross-point channels 1 through 4(Can be reconfigured to other cross-point channels).



CONNECTING OUTPUT EQUIPMENT

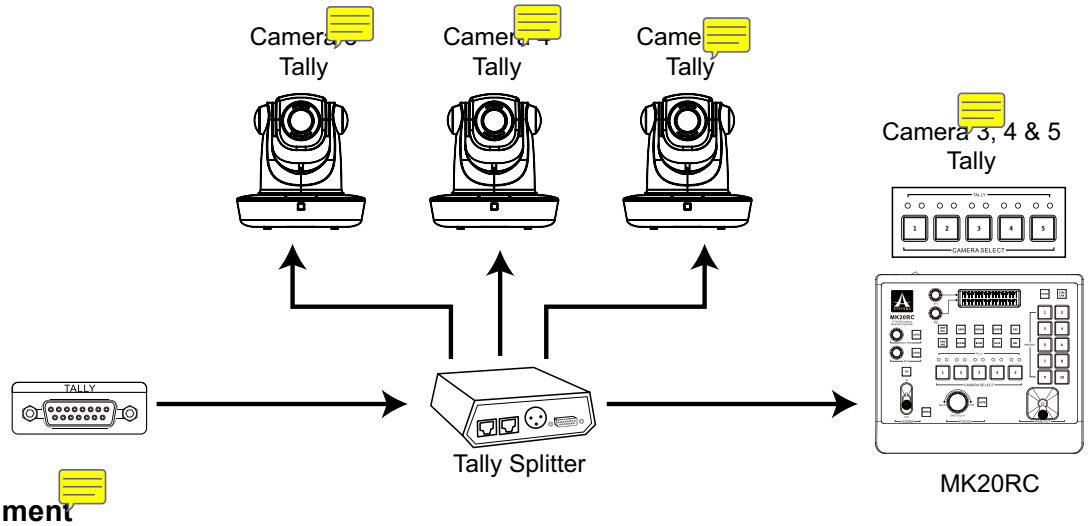
Connecting a Projector

Use the HDMI AUX Out connector to connect to the input connector on the projector



Tally Output

The tally connector comes with tally output, output enable, power supply or fan alarm output pins.
The output signals from the tally output pins are for lighting the tally lamps, and these outputs are open collector outputs.
(D-sub 15-pin male)



Pin Assignment

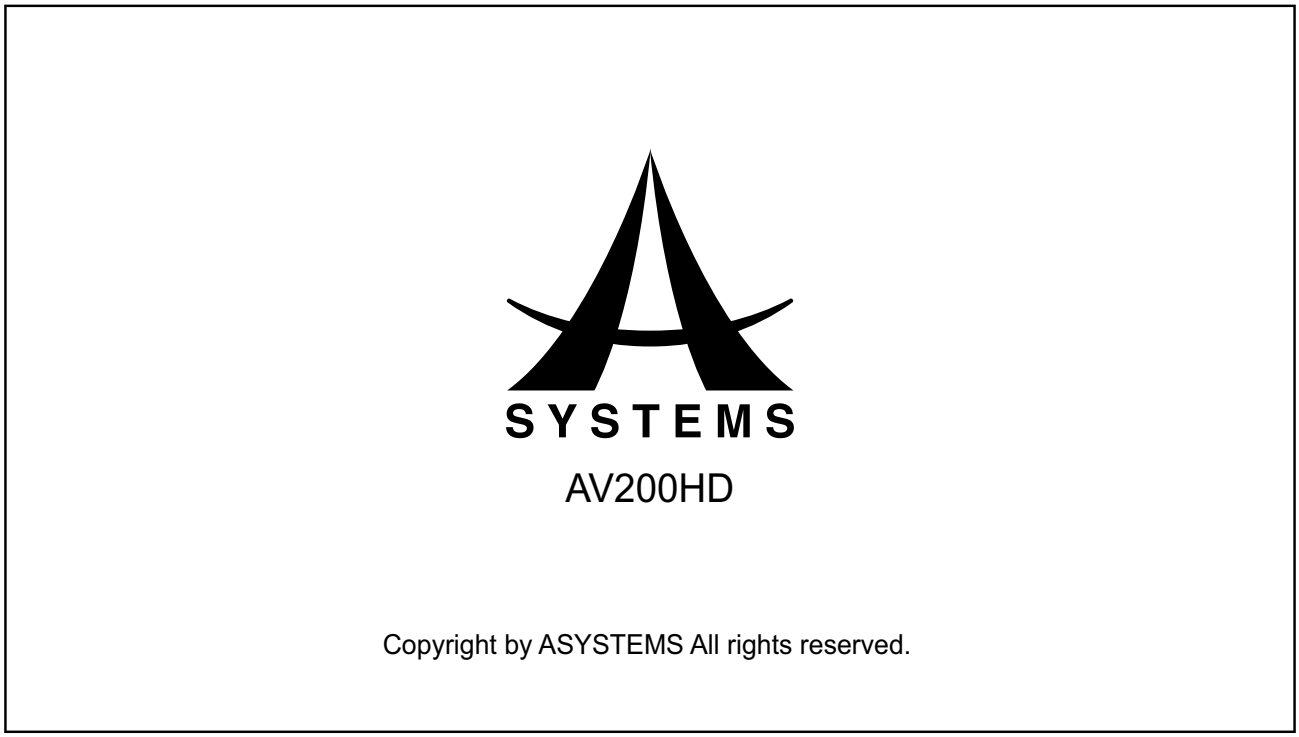
Tally Connector

Pin No.	Signal Name	Input/output	Description
1	PVW 1	Open collector output	Tally output of CH 1 PVW
2	PGM 1	Open collector output	Tally output of CH 1 PGM
3	PVW 2	Open collector output	Tally output of CH 2 PVW
4	PGM 2	Open collector output	Tally output of CH 2 PGM
5	PVW 3	Open collector output	Tally output of CH 3 PVW
6	PGM 3	Open collector output	Tally output of CH 3 PGM
7	PVW 4	Open collector output	Tally output of CH 4 PVW
8	PGM 4	Open collector output	Tally output of CH 4 PGM
9	PVW 5	Open collector output	Tally output of CH 5 PVW
10	PGM 5	Open collector output	Tally output of CH 5 PGM
11-15	NC		No Connection

BASIC OPERATION

In this section, you will be shown the essential controls and operations of each function, it serves as a basic tutorial for beginners, as well as a guideline for how to properly execute these commands.

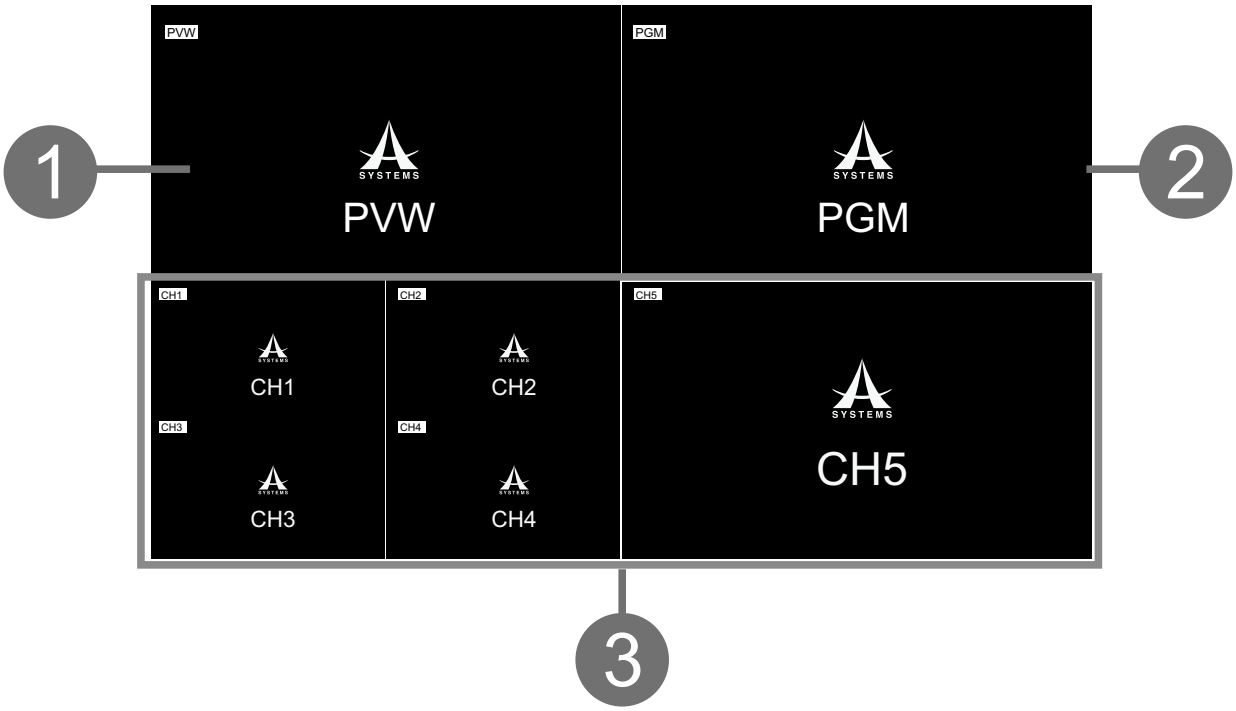
Power on Sequenc



Starting Up

Connect a 1080p TV or computer monitor via HDMI to Multiview output. Use a HDMI adapter for HDMI connection. Multiview output is fixed to 1080p 59.94. Please disable TV's over scan option for full screen viewing.

Multiview Screen



Multiview Screen:

At completion of system start up, Multiview screen will be displayed.

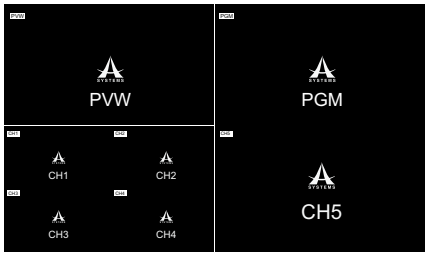
1. **PVW Section (Preview Output):**
   Depend on the mode of operation, PVW section has different function.
   - Wipe Pattern Transition Mode: The video selected on the inactive bus (standby) is shown here. If that bus becomes active, the selected video will become the new program output.
   - PIP Mode: PIP Preview Screen. PIP composing and preview is performed in this section.
   - KEY Mode: KEY Composing Screen. KEY composing is performed in this section.
2. **PGM Section (Program Output):**
   The final output is displayed here. This is the program output sent to the display (or broadcast output). Depend on the mode of operation, PGM has different form of output.
   - Wipe Pattern Transition Mode: PGM output with no special effect. PGM content is directly from channel source.
   - PIP Mode: PGM output with PIP. PGM contents consist of two channel sources (Main and PIP) in PIP format.
   - KEY Mode: PGM output with KEY effects. PGM contents consist of two channel sources (Foreground and Background) in Key binding format.
3. **CH 1 to 5 Section (Source Monitors)**
   Monitor the video from source equipment connected to channel 1 to 5. Red and Green borders around channel screen have different function depending on the mode of operation.
   - Wipe Pattern Transition Mode:
     Red Border: Channel that is sent to the final output (PGM).
     Green Border: Channel that is on standby (PVW).
   - PIP Mode:
     Red Border: Channel that is assigned as the Main Source.
     Green Border: Channel that is assigned as the PIP Source.
   - KEY Mode:
     Red Border: Channel that is assigned as the Background Source.
     Green Border: Channel that is assigned as the Foreground Source.

Multiview Screen Specs

Multiview screen is your main system control screen, it recommended that you familiarize yourself with the following layout and operation procedures for optimal system performance.

The Multiview Monitor splits the screen into ten windows to show multiple sources on a single monitor. You can check sources on the same monitor at the same time.

The sub-screen with a red frame contains the video that is currently on air.



Inactive Screens

- The Asystems logo will be displayed on each channel screen without an active input source.

PGM Label

- Location: Upper left corner of PGM screen.

PVW Label

- Location: Upper left corner of PVW screen.

Channel 1 to 5 Label

- Location: Upper left corner of Channel screen.

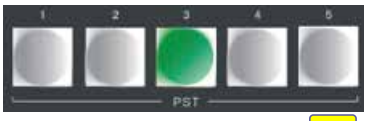
Top Panel Operations

- **Transition Operation Mode (Operating Mode 1**

Transition Operation Mode is the default mode at the beginning of each start u

- **Assign a Channel to PVW**

PST Buttons



Channel 3 selected

Green Boarder indicates Channel 5 is being displayed in PVW

Channel 3 in PVW

1. Use PST button to assign a channel to PVW.

2. Selected PST button will light up in green; corresponded Multiview screen will have a green border around; selected channel content will be displayed in PVW screen.

Note 1: DSK is permanently assigned to Channel 5.

Note 2: If transition is performed prior a source is assigned to PGM, PVW will be transferred to PGM and PVW will become blank screen (Asystems logo screen).

Assign a Channel to PGM

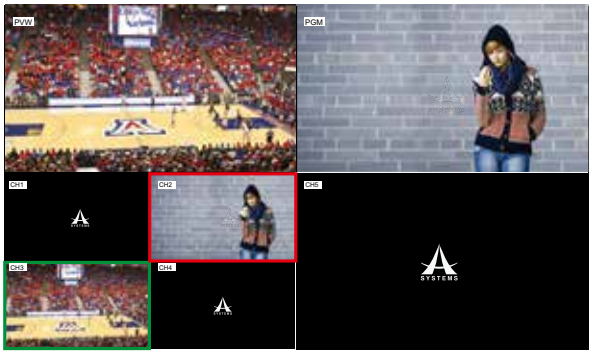
PGM Buttons

1. Use PGM button to assign a channel to PGM.

Channel 2 selected

Red Boarder indicates Channel 2 is being displayed in PGM

2. Selected PGM button will light up in red, corresponded Multiview screen will have a red border around; selected channel content will be displayed in PGM screen.



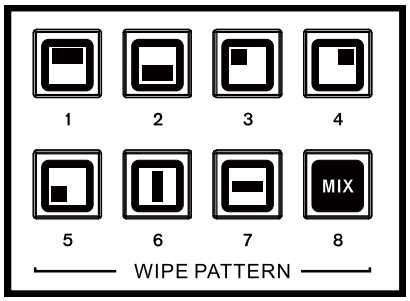
Channel 3 in PVW; Channel 2 in PGM

Note 1: DSK is permanently assigned to Channel 5.

Note 2: If transition is performed prior a source is assigned to PVW, PGM will be transferred to PVW and PGM will become blank screen (Asystems logo screen).

Wipe Patterns

By selecting a wipe pattern will switch the operating mode to Transition Operation Mode. By default, after system power up, it will automatically assumes default to Transition Operation Mode.



Wipe Pattern Buttons

1. MIX is the default wipe pattern upon first power up or system reset, otherwise, the last wipe pattern used prior to shut down will be the default wipe pattern for the next power up.

   If system is shutdown prematurely or unexpectedly, MIX will be the default pattern.

2. Select one of wipe pattern buttons on the top panel to enable the new wipe pattern or switch back transition mode.

Note: See Setup Menu for more wipe patterns setup and selection.

Transition Time/Frames Adjustment

Transition time defines the time interval when AUTO transition is used. Default transition format is in Time Mode or the last mode used in previous shutdown; other formats can be selected from the Setup Menu.

Transition in time

Transition in frames

Transition in time-frame

1. Transition Time Adjustment: When in Time Adjustment Mode, the LED is displayed in second format with a decimal point after the 1st MSB.

   Use TIME/FRAME knob to adjust. (Range: 0.00 to 9.99 seconds)

2. Transition Frames Adjustment: When in Frame Transition Mode, the LED is displayed in frame format, with no decimal points. Use TIME/FRAME knob to adjust. (Range: 000 to 999 frames)

3. Transition Time-Frame Adjustment: When in Time-Frame Transition Mode, the LED is displayed in Time-Frame format with two decimal points. MSB is time in second format (0 to 9 seconds); the two LSB are frame. Use the TIME/FRAME knob to adjust. (Clockwise to adjust the frame and counterclockwise to adjust the time).

Note: The number of frames per second is determined by PGM Output Video System and Frame Rate in the Setup Menu (i.e. NTSC 30P will have 30 frames per second).

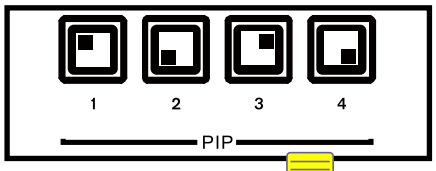
Program Transition Control

Program Transition Control is used to swap contents between PVW and PGM channels. There are three ways of performing the transition, Auto transition and manual transition, giving you the total control and creative freedom to transition between input sources.

1. Auto: Press “AUTO” button to perform a transition with selected wipe pattern and transition time
2. Manual: Use transition T-Bar to perform a manual transition with selected wipe pattern.
3. Cut: Press “CUT” button to perform an instant transition.

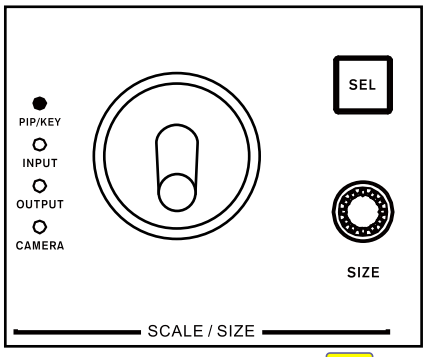
PIP Operation Mode (Operating Mode 2)

Enable PIP preview will switch the top panel controls to PIP operating mode.



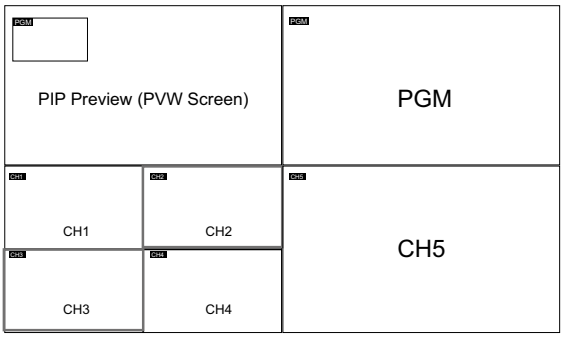
PIP Buttons 1-4

Press PIP 1-4 to determine starting location; these buttons also serve as 4 PIP preset memory locations.



Scale/Size Joystick

Scale/Size Joystick will switch to PIP Mode (PIP/ KEY LED lit); press SEL button to toggle joystick controls between PIP and Camera.

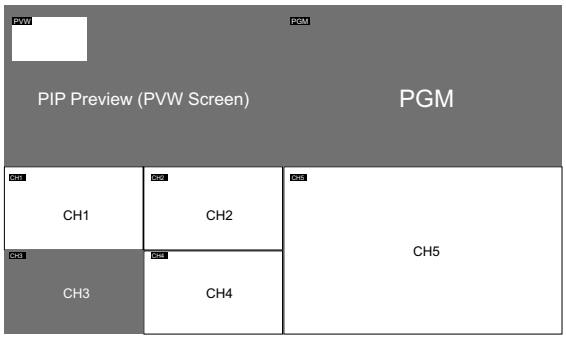


PIN Multiview Screen

Multiview screen will switch to PIP mode

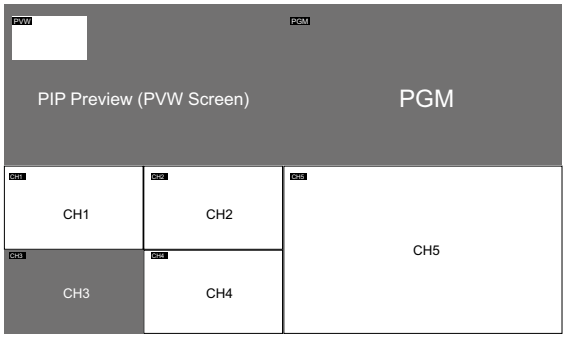
Note: Double click on PIP button (LED starts to flash) then press ENTER button to revert PIP size and position back to original startup condition of PIP button.

Assign PIP Source



Assign main PIP source

Use PGM cross-point buttons to assign main PIP source. Channel 5 cannot be used.

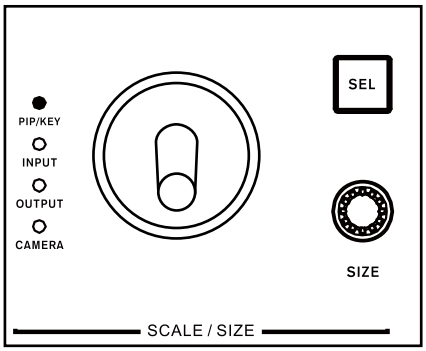


Assign PIP source

Use PST cross-point buttons to assign PIP sub source. Channel assigned to DSK cannot be used.

Adjust PIP Size and Position

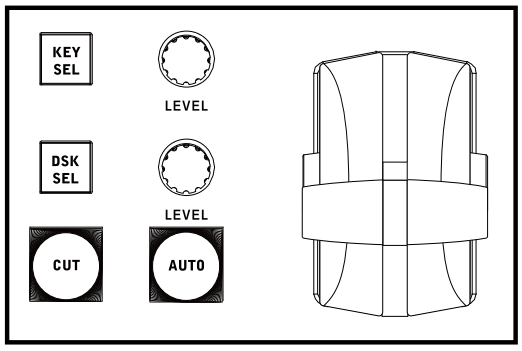
The size and position of the picture-in-picture can be manipulated through PIP Adjustment using the joystick and Size Knob.



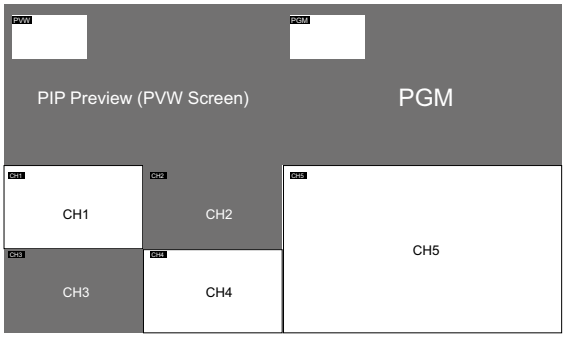
1. PIP starting location always follow button's default position (Upper-right, upper-left, lower-right and lower-left); use the joystick to position the PIP location and Size Knob for PIP size (From 10~100% of main screen size).

2. PIP composing will be performed in PVW screen. New PIP position and size will be memorized in selected PIP preset button.

PIP Transition Operation



PIP Transition Controls



PIP Transition Complete

1. Use T-Bar, AUTO and CUT buttons to perform PIP transition.
2. Exit PIP Transition Operation:

• Press one of Wipe Pattern button exit the PIP transition to Wipe Pattern transition.

• Press KEY SEL button exit the PIP transition to KEY transition.

*Note: AV200HD utilizes a precision digital encoder, therefore, whenever AV200HD is powered on, please push the T-Bar beyond its center location once for calibration to guarantee smooth video transitions,

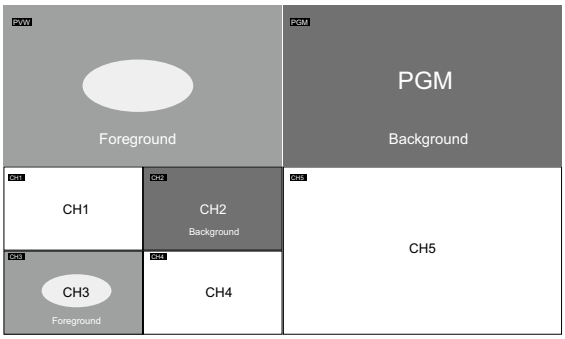
PIP Transition Types

PIP transition follows the same rule as Wipe Pattern transition.

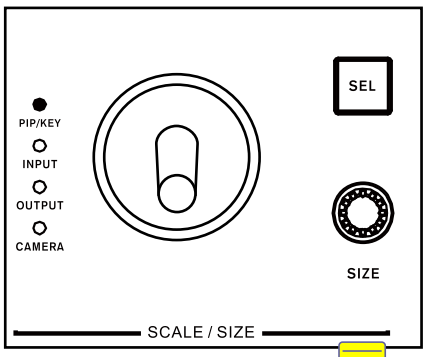
1. AUTO: PIP fades into PGM according to defined transition time.
2. Manual: PIP fades into PGM according the T-Bar movement speed.
3. CUT: PIP instantly appears in PGM.

KEY Operation Mode (Operating Mode 3)

Enable KEY Mode



KEY MultiView Screen



Joystick in KEY Mode

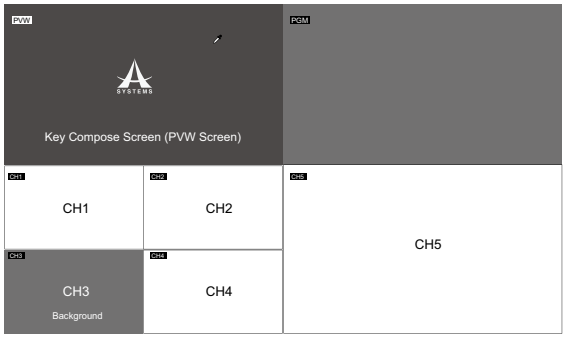
Press KEY SEL to enable Key Preview Mode.

Multiview screen will switch to KEY Mode

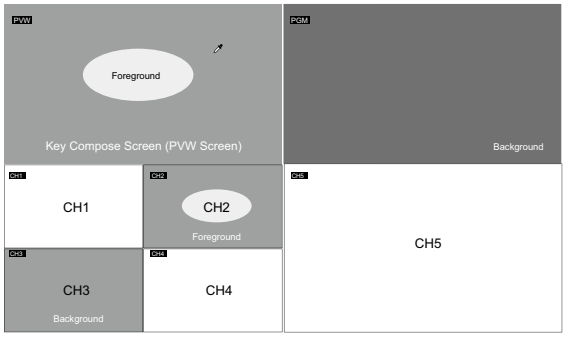
Scale/Size PIP/KEY LED is lit (Controls in KEY mode)

Press SEL to toggle joystick controls between KEY an Camera.

KEY Source Selection



Assign background



Assign foreground

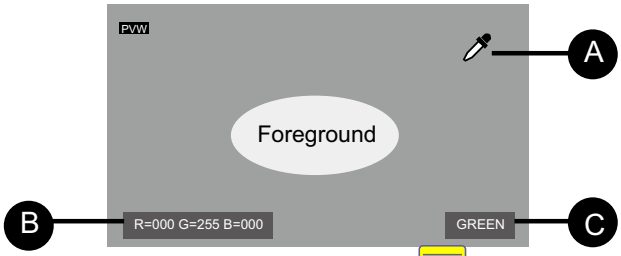
1. Use PGM cross-point buttons to assign Background Source. Channel 3 cannot be used.

2. Background is displayed in PGM screen

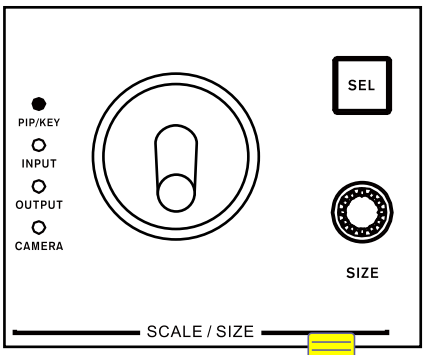
3. Use PST cross-point buttons to assign Foreground Source. Channel 5 cannot be used.

4. Foreground will be displayed in PVW screen (with eyedropper); KEY effect will only apply to PGM when transition is completed.

Custom KEY Filter Color Pick Up

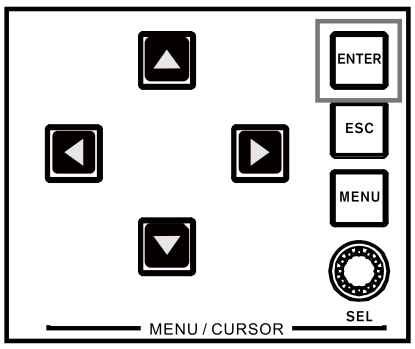


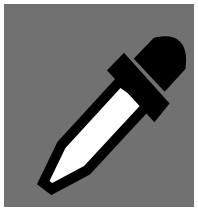
KEY Preview Screen



Eyedropper Control

Eyedropper, currently empty





Select Custom KEY Color

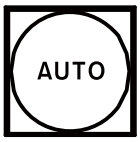
1. KEY Preview consists of 3 items
   - A: Eyedropper; use to pick up custom key filter color.
   - B: Custom Key Color indicator; illustrated in RGB format.
   - C: Current Key Filter Color; default to Green; other preset colors can be selected in Setup Menu (Refer to KEY Setup section).

2. Ensure the Scale/Size Joystick LED is on PIP/KEY, press SEL to if the LED is not lit to PIP/KEY.

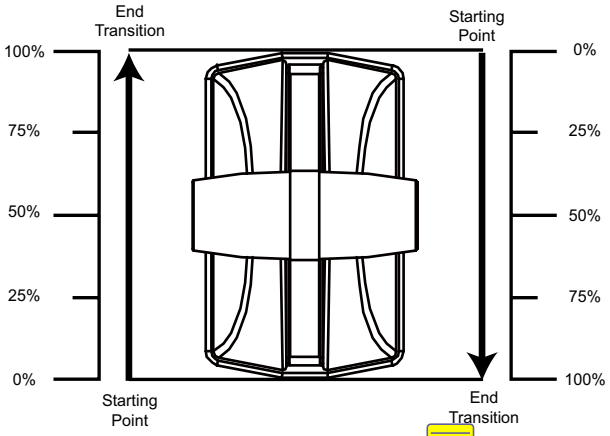
3. Use the Position Joystick to move the eyedropper around the KEY Preview screen; the content of eyedropper shows the current custom color and color value is listed (current filter color; default is pure Green) on lower left corner (RGB) of KEY Preview.

4. Press ENTER button to select custom key color from the KEY Preview Screen. New color value is shown at lower left corner and KEY Filter will switch to CUSTOM.

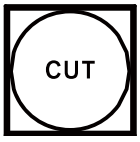
KEY Transition Types



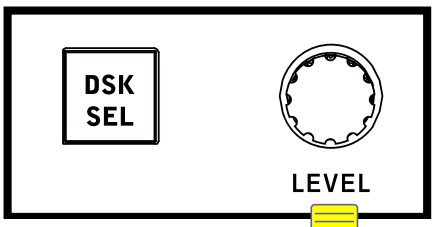
AUTO KEY Transtion



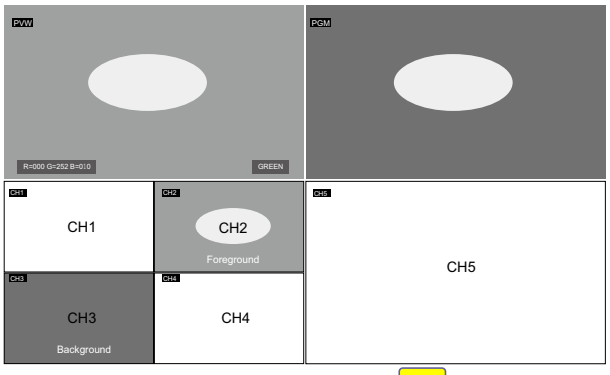
Manual KEY Transition



CUT KEY Transition



KEY Level Adjust



KEY Level Adjust

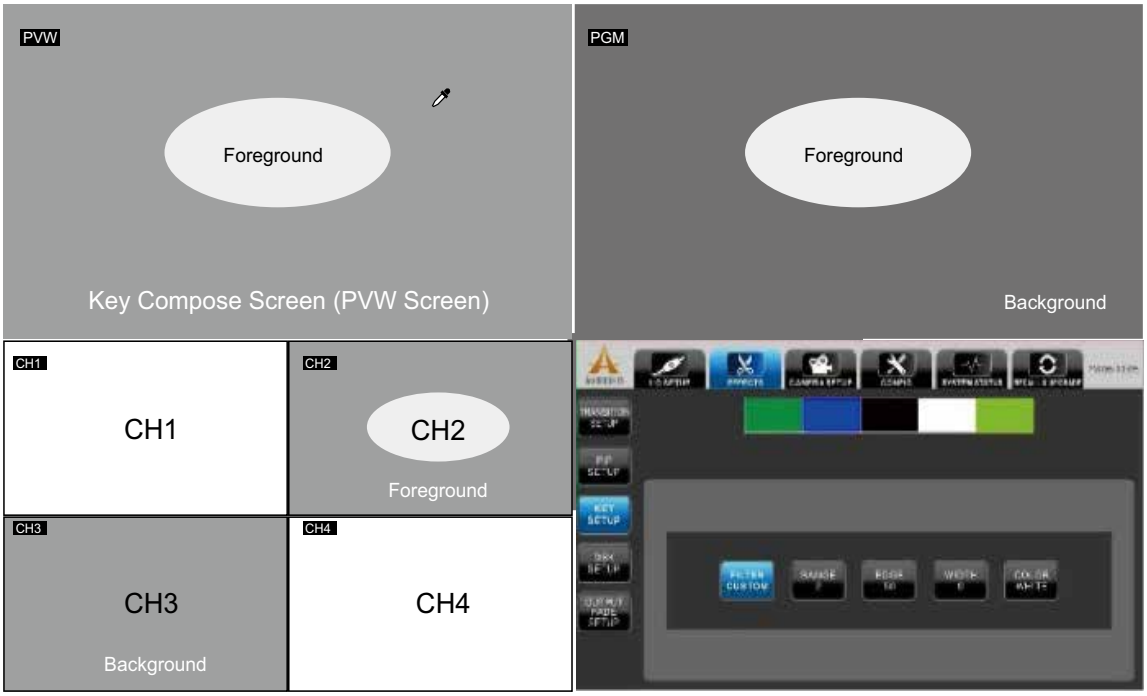
1. AUTO: Foreground fades into PGM according to defined transition time.

2. MANUAL (T-Bar): Foreground fades into PGM according the T-Bar movement speed.

3. CUT: Foreground instantly appears in PGM.

4. Level: Adjust Foreground transparency level KEY Level Knob.

Key Menu Setup



1. KEY Setup Menu will open automatically when KEY Mode is enabled.
2. Press MENU button or switch to other operating modes to close Setup Menu.

Please refer to Setup Menu section for KEY Setup options.

DSK Operation

A DSK or downstream key is the ability to key independently or downstream from the switching buses, thus allowing the ability to mix and fade signals behind keyed lyrics or graphics. Using this feature, you can overlay logos, texts and subtitles onto the existing picture to produce videos that are high quality and professional.

Apply DSK

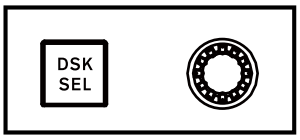
DSK on Multiview

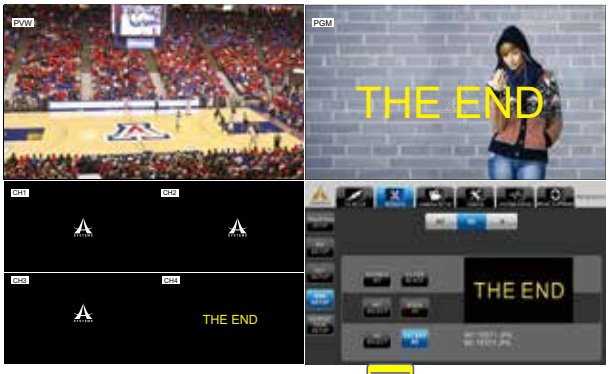
Applying the DSK to PGM

1. DSK is fixed to Channel 5, internal storage location with lower right corner DSK label displayed; refer to Setup Menu DSK Setup section for in depth DSK setup.

2. Press DSK button to apply DSK on PGM output; DSK button is lit in amber when it is active; press DSK button again to remove DSK from PGM (LED will be dimmed).

DSK Set up





DSK Setup

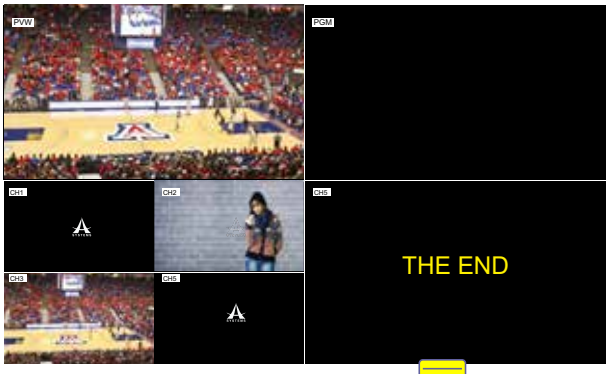
1. Press DSK SEL to open DSK Setup Menu, the button will light up in amber.

2. Adjust DSK transparency level with DSK Level Knob. Please refer to Setup Menu DSK Setup for more in depth DSK settings.

3. Press DSK SEL or MENU to close Setup Menu (LED will be dimmed).

Output Fade Operation

By performing the Output Fade Operation you will be able to fade out the broadcast program with a preset output fading screen. The system default output fade is set to black.



Applying Output Fade

1. Press OUTPUT FADE button to apply output fade to PGM; button will flash in amber.

2. Output fade will overcast all PGM contents, including the DSK channel. The default Output Fade is set to Black.

3. Press OUTPUT FADE button again to remove output fade (LED off).

Input Scaling

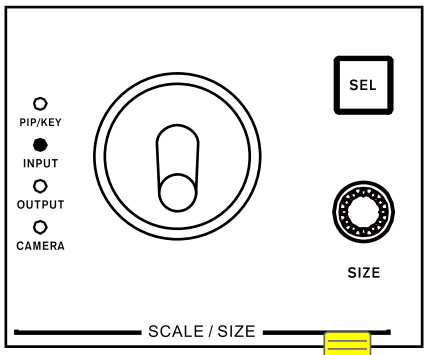
The AV200HD will automatically configure the sources of the input signals to fit the output format, manual input scaling is also available for fine tweak non-standard input formats.

Setup Conditions

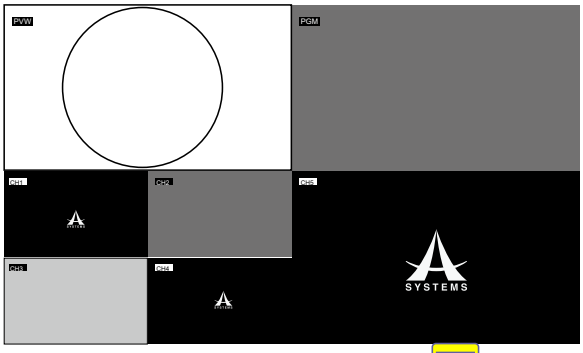
The prerequisite conditions for input scaling adjustment are as follow:

- System must be in Wipe Pattern Transition Mode.
- Setup Menu is closed.
- Input sources are channel 1 - 4.

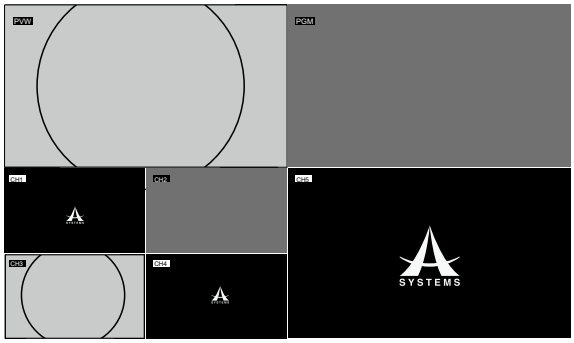
Input Scale Adjustment

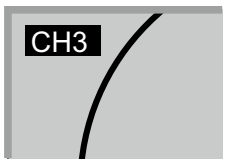


Input Scaling Adjustment



Select Input Scale Source





Input Scale Completion

1. Press Scale/Size “SEL” button to select INPUT, INPUT LED indicator is lit.

Note: Scale size will automatically change to default size when input scale is enabled.

2. Press a PST button to select an input source to be adjusted. Channel selected will be displayed in the PVW screen; Preview screen will be replaced by Scaling Adjustment Screen (Refer to Scaling Adjustment Screen section).

3. Use the “SIZE” knob to adjust image size.
   - Clockwise: Increase size. Maximum up original image.
   - Counter Clockwise: Decrease size. Minimum up to 10% of original image size.

4. Use the “POSITION” joystick to position the viewing center location.
   - Over-scaled: Viewable area window can be moved around the total image area.

5. Press “ENTER” to complete and exit the adjustment. Image of CH5 will now convert to modified effect with PVW screen returns to normal and Scale/Size Input LED is dimmed. CH5 label border will change to Red to indicate the input scaling has been applied to image.

6. Hold down the ESC button for 3 seconds to cancel input scale adjustment.

Output Scaling

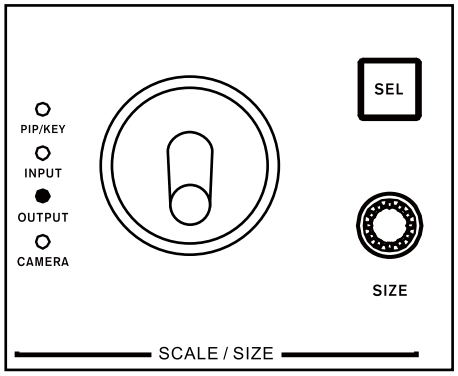
As to input scaling, you can manually adjust the output scaling by following the steps listed bel

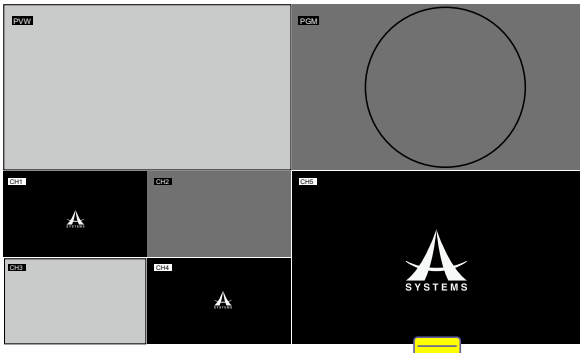
Setup Conditions

The prerequisite conditions for output scaling adjustment are as followed:

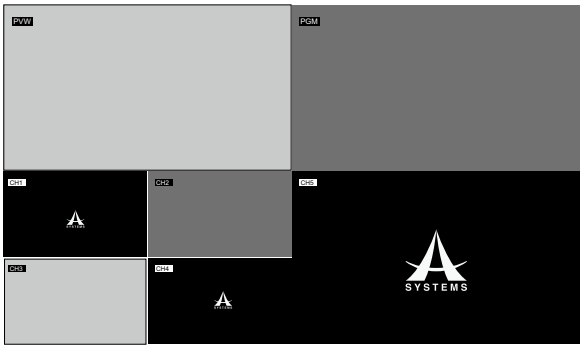
- Set joystick to output scale mode by pressing Scale/Size SEL button to “OUTPUT”.
- Setup Menu is closed.

Output Scale Adjustment





Output Scaling Adjustment



Output-Scale Completion

1. Press Scale/Size “SEL” button until “OUTPUT” LED indicator is lit; PGM screen will be replaced by Scaling Adjustment Screen (See Scaling Adjustment Screen section).

Note: Scale size will automatically change to defa size when output scale is enabled.

2. Use the “SIZE” to adjust image size.
   - Clockwise: Increase size. Maximum up to 10X of original image.
   - Counter Clockwise: Decrease size. Minimum up to original image size.

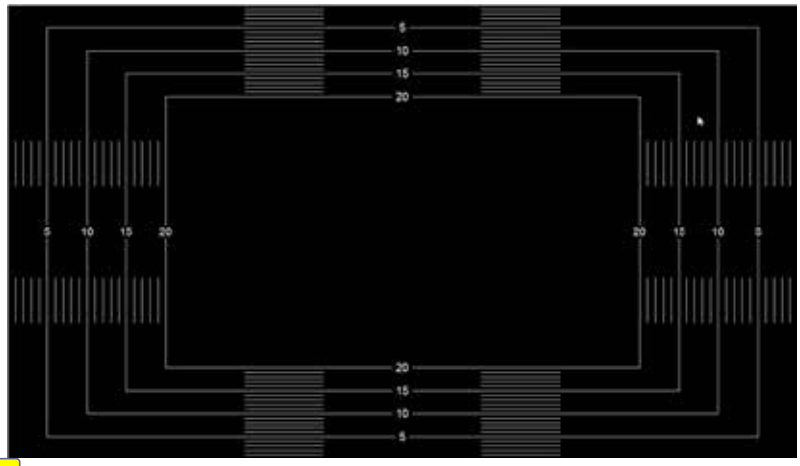
3. Use the “POSITION” joystick to position the viewing center location.
   - Over-scaled: Viewable area window can be moved around the total image area.

4. Press “ENTER” to complete and exit the adjustmen image of PGM output will now convert to modified effect with PGM label border changed to red.

5. To cancel output scaling just hold down the ES button for 3 seconds during output scale adjustment and the PGM label border will return to Black.

Scaling Adjustment Screen

To resize an image, you can apply a scaling adjustment screen to the input to accurately make minute image sizing changes that produces the best video quality and screen ratio.

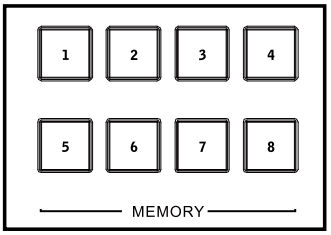


Preset Memory

The AV200HD stores up to 8 custom memory settings that you can easily switch on the fly depending on the situation. Memory contents that will be save are as described below, for detailed information, please refer to the Preset Memory Specifications.

I/O Setup	Effect Setup	Configuration Setup	Camera Setup
PIP Presets	I/O Scale		

Memory Operation

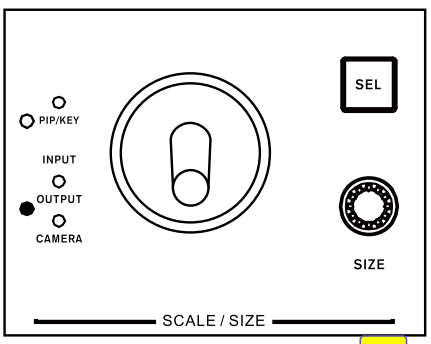


Preset Memory Allocation

- Recall Preset Memory
  Select and press the desired memory location, then press the ENTER button to confirm the selection.
- Save Memory
  Double tap the number button (1-8) to save the custom settings; the LED Page Indicator will flash 3 times to signaling the save is completed.

Camera Control

External camera can be controlled via RS422 port. The RS422 port configuration is located in the Setup Menu.



Camera Control Enabled

Camera control can be accessed in all operation modes.

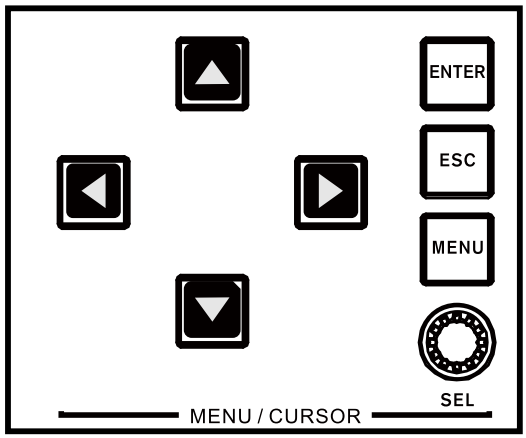
- Press joystick “SEL” until “CAMERA” LED is lit.
- Use the “POSITION” joystick for camera motion movement (Pan & Tilt); use “SIZE” knob for zooming control.

SETUP MENU OPERATIONS

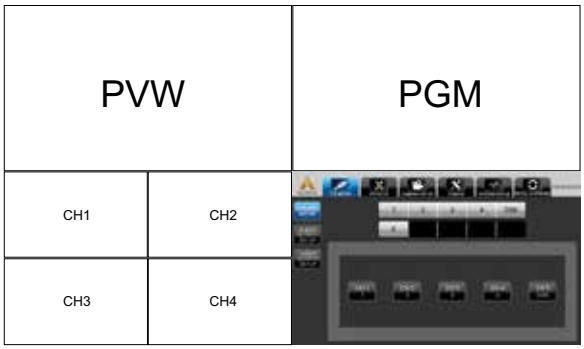
The AV200HD's setting menus are displayed on the Multiview monitor. This section covers all the menu and sub-menu operations of the system settings, please refer to this section for any setting changes, the menu operations follow the flow described below.

Main Controls

Menu controls are used in menu operation, the button layout and definitions are defined here.



Menu Controls



Setup Menu Locati

Button Definitions:

- Press the MENU Button to bring up the menu, press it again to close the menu.
- Press the MENU Button in a sub-menu or adjustment menu will close the Menu screen.
- Enter: Selection confirmation.
- ESC: Cancel input; returns to previous menu.
- Navigation Keys: Cursor control up, down, left and right.
- SEL Knob: Select the item from menu list.

Main Menu

Main Menu Slider Selections:

I/O Setup	Effects	Camera Setup
Configuration	System Statu	Recall & Upgrad

1. Press "MENU" to open Main Menu.
2. Press "MENU" again or "ESC" to close Main Menu.
3. Use ← → buttons to navigate through Main Menu selection.
4. Press ↑ ↓ buttons to navigate through sub-menu selection.

I/O Setup Menu

I/O Setup Menu manages your input/output source signals to their corresponding channels, please refer to the following steps for manual setup or adjustments

- Use ← → to select I/O SETUP optio
- Use ↑ ↓ to select “CHANNEL SETUP”; press “ENTER” to confirm selection.

Channel Setup

Default Channel assignment

The CH1 to B matches cross-points button 1 to B.

CH1: HDMI IN 1	CH2: HDMI IN 2	CH3: HDMI / SDI IN 3	CH4: HDMI / SDI IN 4	CH5: DSK

Corresponding Button/Channel to Channel Source Selection

Available Selections:

- Digital HDMI In 1~4: HDMI Input source 1 through 4.
- SDI IN 3 & 4
- DSK: Contents of this channel will be displayed when DSK is activated.
- Disable (X): The cross-point button is not assigned (No function).

Channel Setup:

1. Use directional buttons (←→) to select a channel for configuration, cursor location is identified with the Blue button or directly pressing corresponding PST/EFFECT keys.

2. Use SEL knob to select input source from the top menu; if selected source is already taken by other channel, overriding will leave the other channel input blank; press ENTER to confirm selection.

Audio Output Setup

Audio output setup defines the source of PGM audio. 3 audio sources are available for PGM, if both external analog and USB audio are connected, USB will override external analog.

- Default: Embedded audio from input video source.
- External Analog: External stereo analog audio.
- External USB: External digital USB audio.

AV IN Setup Menu

Audio Source Selection

Audio Delay Adjustment

Cursor Location

Use ↑↓ to select Audio Output Setup, press “ENTER” to sub-menu selections.

Audio Source Select

1. Use SEL knob to scroll through top menu bar:
- EXT Analog
- EXT USB
- Default
- X (No audio)

Press ENTER to confirm audio source selection.

Audio Delay Setting

1. Use ← → to place cursor to Delay button.
2. Use SEL knob to set audio delay time (0.00 to 9.99 seconds).
3. Press ENTER to confirm change.

NOTE: If no USB audio is inserted, EXT USB will default to EXT Analog.

Video Output Setup

Use ↑↓ to place cursor to Video Output Setup button, system will reboot each time a resolution change is executed. Press Enter to sub-menu selection.

Use ←→ to select sub-menu options.

The default system settings are:

- AUX 1 Resolution: 1080
- AUX 1 Source: PGM
- AUX 2 Resolution: 1080
- AUX 2 Source: PVW
- Frame Rate (PGM): 60P
- Video System: NTSC

AUX 1 Output Resolution Selection

AUX Source Selection

AUX 1 and AUX 2 Output Resolution Selection

(PAL)

- 1080
- 720
- 480 (576)

AUX 1 and AUX 2 Source Selection

-PVW

-PGM

-CH 1 - CH 5

NTSC Frame Rate Select

PAL Frame Rate Select

Video System Select

Frame Rate Selection

Selection only applies to PGM (PAL)

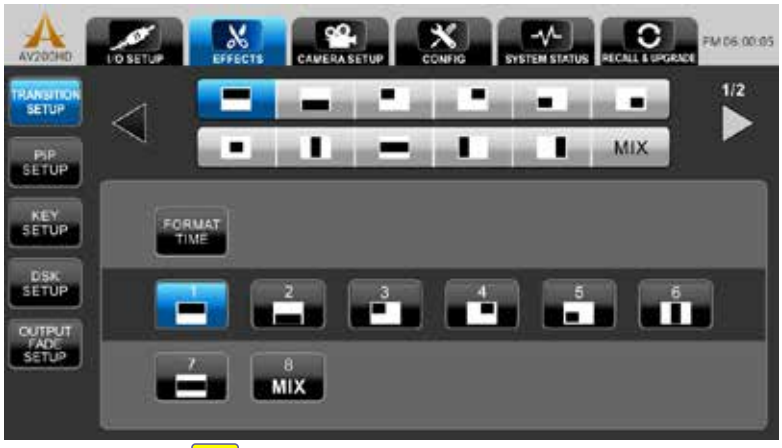
- 60P (50P)
- 30P (25P)
- 30i (25i)

Video System

- NTSC
- PAL

Effects Setup Menu

You can mix and edit effects in the Effect Menu to your preference and make smooth transitions between channels to make your program look professional. In the Effect Setup Menu you can edit the following settings:

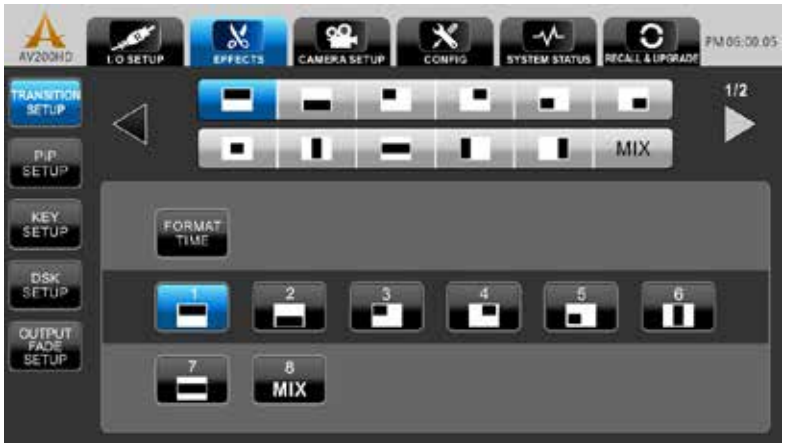


Menu Selection

- Transition Setup
- PIP Setup
- Key Setup
- DSK Setup
- Output Fade Setup

Transition Setup

The 8 wipe pattern buttons which are used as the basis for wiping and transitioning into another input source image, you can manually adjust how long the wipe patterns will take effect in time or frames, program and assign wipe patterns.



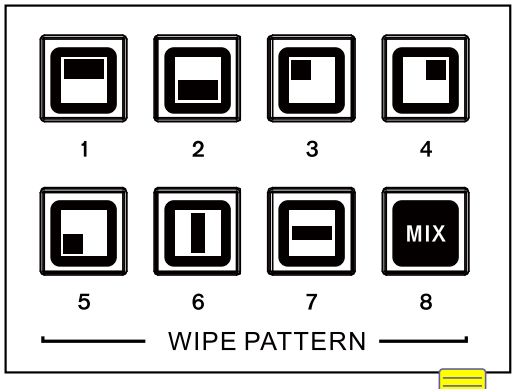
Change Transition Format

Transition Time Format Adjustment

Transition Frame Adjustment

Transition Time-Frame Adjustment

Wipe Pattern Button Select



Wipe Pattern Button Placement

1. Transition Setup Me

2. Format: Press “ENTER” button to transition “FORMAT” selection; use ←→ buttons to navigate between selections Time, Frame and Time-Frame format.

3. At each format selection, use SEL knob to adjust transition period:

- Time (0-9.99 seconds)
- Frame (0-999 frames)
- Time-Frame (0-9 seconds, 0-30 frames); max frame interval will be limited by output frame rate:

30 frames= 30 and 60 Hz (NTSC)
25 frames= 25 and 50 Hz (PAL)

- Use SEL knob to adjust, clockwise (CW): frame, counter clockwise (CCW): time.

4. Define Wipe Pattern Buttons

Use↓button to move cursor to Wipe Pattern Button icon; use ←→ buttons to select a Wipe Pattern Buttons.

At each Wipe Pattern button use SEL knob to scroll through pattern list; push “ENTER” confirm new pattern selection.

Default Settings:

- Wipe Pattern 1: 1
- Wipe Pattern 2: 2
- Wipe Pattern 3: 3
- Wipe Pattern 4: 4
- Wipe Pattern 5: 5
- Wipe Pattern 6: 8
- Wipe Pattern 7: 9
- Wipe Pattern 8: 12

“X”: No pattern assigned.

PIP Setup

In PIP setup, you are allowed to change the border width and color.

PIP Setup Menu; Width Adjustmen

PIP Border Color Selec

1. Selection:
   - Width: PIP border width. 0~2 lines (Default 0, no border).
   - Color: PIP border color. White, black, red, blue or green (Default white).

2. Width

Use SEL knob to adjust PIP border width.

Key Setup

Key Setup can be called up by Setup Menu selection or directly by top panel Key SEL button.

Key Filter Selec

Key Filter Range Adjustment

Key Filter Edge Adjustme

Key Border Width

Key Border Color Select

Function Selections

- Filter color: Key extraction color.
- Filter Range: Use SEL knob to select 0-100 (Default: 25).
- Edge Sharpness: Use SEL knob to adjust 0-100 (Default: 0). Define foreground and background joining edge sharpness.

2. Key Filter Selection

- Use SEL knob to select Blue, Green, White, Black or Custom. Default: Green. Custom color can only be changed when Key SEL button is enabled, by using the eyedropper function.
- Press ENTER to confirm selection.

3. Key Filter Range Adjustment

- Use SEL knob to adjust range; push “ENTER” to confirm selection.

4. Edge Adjustment

- Use SEL knob to adjust; push “ENTER” to confirm selection.

5. Key Border Width Adjustment

- Use SEL knob to adjust; push “ENTER” to confirm selection.

6. Key Border Color Selec

- Use SEL to select; push “ENTER” to confirm selection.

Note: Key border can only apply to green and blue ke filters.

7. Key Level: Foreground transparency level (100%, 100%=solid); use top panel Key level knob to adjust.

DSK Setup

DSK channel is fixed to Cross-Point Channel 5 (In Ext Key mode, it is the Key Fill), and can not be assigned to other Cross-Point Channels. DSK menu will also pop-up when DSK SEL button is enabled.

Press ENTER to go to sub-menu selection. Available DSK options are:

- Source (DSK): Select source content of DSK; source can be both still and motion images.
- Filter Color: Key off color select.
- INT (Internal Storage): Still image selection in internal storage.
- Edge: DSK border width adjust.
- SD (SD Card): Still image selection in SD card.
- Ext Key: Enable External DSK Key and source selection.

DSK Setup Menu; Source Selection

Assign CH 1 to DSK

1. Source Selection

Default is set to INT. For source selection, INT, SD and CH1-4.

- INT (Internal Storage): Accepts still image file input only. Right window shows the current image file in use.
- SD Card: Accepts still image file only.
- CH 1-4: Video source from Cross-Point button 1-4; can also be directly assigned by PST button 1-4.

Note: Motion DSK can be applied through CH 1-4 inputs.

2. INT File Selection: Select a still image file within internal storage.

When option is selected, a list of available image files will be shown in bottom menu and image can be previewed in the lower left window.

Use the select knob to scroll through the file list and use “ENTER” to confirm selection.

Internal Storage File Selection

SD Card File Selection

DSK Color Filter Selection

DSK Edge Adjustment

3. SD File Selection: Follows the same steps as I file select.

4. DSK Color Filter Selection: Black or white

5. Edge Sharpness: 0-100 (Default: 0); joining edge sharpness.

6. EXT KEY: When enabled, the EXT KEY button wi become solid.
EXT KEY will share the same settings with SOURCE and same input selection (DSK and EXT KEY cannot be the same source).

7. DSK Level: Use the top panel DSK level knob to adjust the transparency level.
DSK transparency level: (10-100%, 100%=solid)

NOTE: When using EXT KEY, the background file m be stored in the INT (Internal Storage), and foreground file must be stored in the SD card.

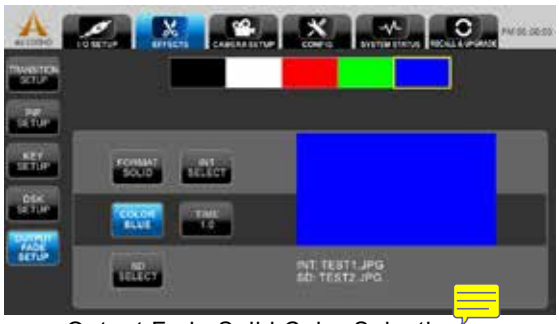
EXT KEY Source Selection

Output Fade Setup

In Output Fade Setup menu, you can edit and adjust the type of fade out screen of the output. Lower left corner displays the current output fade image, use SEL to make selection and adjustment.

Output Fade Format Select

1. Format (Solid Screen):
- Solid Screen: Built-in patterns.
- Int: Internal storage loading.
- SD: Files from SD card.
- Freeze: Press to capture current PGM frame.



Output Fade Solid Color Selection

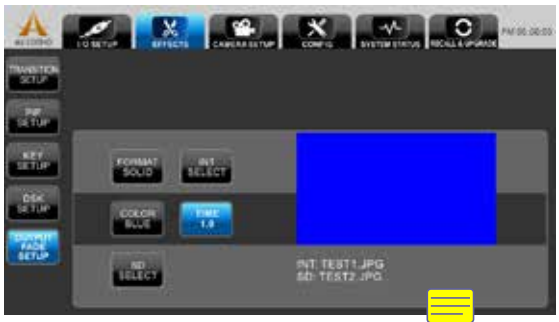
2. Solid Screen Color: Black, white, red, green and blue.

Output Fade SD Card File Selection

3. SD: jpg and bmp files located in SD card can be used. The selection method is same as DSK.

Output Fade Internal File Selection

4. Internal Storage: Captured image (From Freeze function) stored in internal storage can be used. The selection method is same as DSK.



Output Fade Time Adjustment

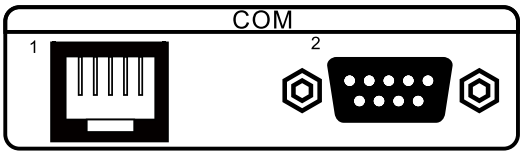
5. Fade Time: Default: 0.5 sec. Manually adjust between 0.1-5 sec.

Camera Setup

Menu Selections

- COM1 Camera: RS422 camera control communication port
- Invert Y-Axis: Camera tilt control
- COM 2: RS232 remote control protocol port

COM Port Configuration



Camera COM 1 Setup

Camera Input Select

Baud Rate Select

Data Bit Sele

1. Please wait 30 seconds for the system to recognize the converter before any setting change begins.

2. Baud Rate Selection
- 9600 (Default)
- 115200
- 384000

3. Data Bit Selection
- 5, 6, 7 & 8 (Default)

Parity Sele

4. Parity Selecti
- None (Default)
- Odd
- Even

Stop Bit Select

5. Stop Bit Selecti
- 1 (Default) & 2.

Flow Control Select

6. Flow Control Selection
- None (Default)
- Xon/Xoff
- Hardware

Invert Y-Axis

Invert Y-Axis Setup

To invert joystick's Y-Axis direction, Default at NORMAL. Use SEL knob to make selection.

- Normal (UP=UP, DOWN=DOWN)
- Inverted (UP=DOWN, DOWN=UP)

COM 2 (RS232) Setup

COM 2 (RS232) Setup

The Com 2 (RS232) Setup remains the same as Camera COM 1 setup, but without the input setting.

Configuration Menu

In the Configuration Menu, you can change the following settings.

Menu Selections

- Time Setup
- File Management
- Network Setup
- System Setup

Time Setup

Time Setup Menu

- Press ENTER to sub-menu.
- Use ←→ to select adjustment item.
- Use ↑↓ to make adjustment.
- Press ENTER to conclude adjustment.

File Management

The AV200HD comes equipped with 5GB of internal storage, you can also connect external storage devices for file storage and video streaming.

File Management Functions

1. Internal Storage (5 GB reserve space)

INT is the root directory for internal storage.

- Press “ENTER” to enter file management; use ← → to go to Next or Previous page (When available).
- Use ↓↑ to browse through file selection.

Press “ENTER” to:

- Text: Open file functions; bottom menu options open.
- File Management Functions: Use ← → select function; press “ENTER” to execute function.
- Delete: Delete a file or folder.
- Copy: Copy a file or folder.
- Paste: Paste a file or folder.
- New Dir: Create a new directory; directory name is automatically created (mmddyyA~Z).
- Undo: Undo the last operation (Max one).

2. SD Card & External Storage

The file management the operation remains unchanged.

Network Setup

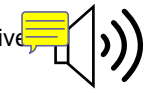
Network Setup

1. Press “ENTER” or → to Format select and from bottom menu select the format type. (Default: H.264)

2. DHCP: Enable or disable DHCP.
The default IP address is 192.168.0.200
The default Subnet: 255.255.255.0
Manual IP setting is enabled when DHCP is turned on.

3. Manual IP Setup for LAN video streaming.

4. Adjust the audio fader for audio level (Default: 75%); press speaker icon to mute the audio output.

- Mute 
- Active 

System Setup

HDCP ON / OFF

1. Press “ENTER” and use the “SEL Knob” to turn HDCP On and Off.

When HDCP is not turned on, HDCP encrypted video sources will not be allowed to pass through PGM.

***NOTE1:** During streaming and recording, PGM content is HDCP encrypted and SDI output is disabled.

***NOTE2:** When HDCP is already enabled and user attempts to connect other HDCP devices into an HDMI ports that was previously unoccupied, please turn the HDCP function off and then on again to decode the signal. Otherwise, it will be able to display in the multiview screen. User must do this for all HDCP devices, unless devices were connected to AV200HD first and then turn on the HDCP function.

System Status

The System Status menu gives a you glance of the entire system setup of your AV200HD. This is a where you'll have a complete system setup information right on the screen and go back to corresponding sub-menus for adjustments, if necessary.

Menu Selections

- System Status
- Record/Playback

System Status Screen

Editing Channel Label

Display current system configuration.

1. Channel Info (CH 1 to 5)

- Current source
- Channel Label: Use Menu Directional Buttons to navigate; press enter to modify channel label text.

Label Length: 10 characters.

Select character: ←→buttons.

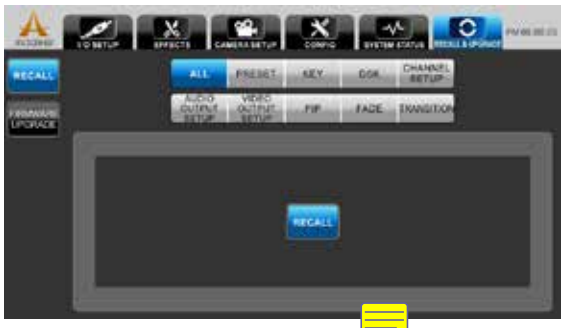
Text Input: Use MENU SEL knob to scroll through cap A to Z, space and number 0 to 9.

- Memory: Current memory location
- Transition type
- PIP status
- KEY status
- SD Card status
- HDCP status
- Current IP address
- Firmware Version

Recall/Upgrade

Within this menu, you'll have the ability to reset a particular setting or the entire system setting to its default factory state. You can use the ENTER button to confirm selection. A confirmation prompt screen will pop up. Use ← → to select between Yes and NO. Press ENTER again to confirm selection.

Recall



Recall Menu

Confirm Recall

Recall Selection

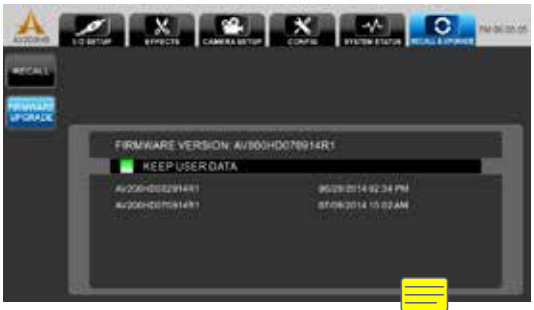
- All: Reset all data to original factory default
- Preset: Reset preset memory only
- Key: Reset current Key Setup Menu only
- DSK: Reset current DSK Setup Menu only
- Channel Setup: Reset current Channel Setup Menu only
- Audio Output Setup: Reset current Audio Setup Menu back to default values.
- Video Output Setup: Reset current Video Output Setup Menu back to default values.

Menu only

- PIP: Reset current PIP Setup Menu only
- Fade: Reset current Fade Setup Menu only
- Transition: Reset current Transition Setup Menu only

Firmware Upgrade

Asystems works diligently to keep improving our products and will release firmware updates periodically. This section describes the steps to perform the system updates.

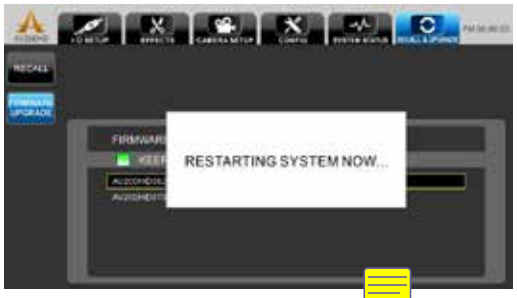


FW Upgrade Menu

Select FW

Confirm FW Upgrade

FW upgrading in progress



Restart System

Keep user data:

Use SEL knob to place cursor to Keep User Data. Press ENTER to select or deselect the option.

- ON (Default): All user data will be saved while performing FW upgrade.
- OFF: All data will be erased while performing FW upgrade.

Firmware Upgrade:

Place FW data in the SD card. If FW data exists in the SD card, it will be displayed. Use SEL knob to select the FW from the list.

Press ENTER to confirm selected FW data. Continue prompt screen will pop up. Use ← → to select between Yes and No. Press ENTER again to proceed.

When upgrade completes, it will automatic restart the system.

Asystems Virtual Webcam Emulation Setup Guide

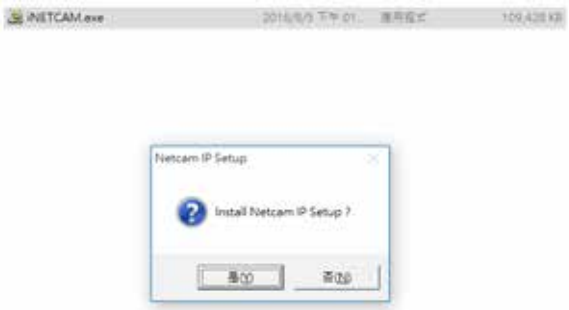
Webcam Emulation

In an age where everyday people are allowed to host their own channels talking about anything and everything of their interests by streaming videos live, a virtual webcam emulation has become an essential feature of compact video switchers. With Asystems' diverse video switchers, we grant user the ability to stream and broadcast video live via RJ-45 connector. When webcam emulation is established, user is able to use all streaming programs and services to stream and broadcast live recording through the internet with ease.

Please refer to the following steps to begin webcam emulation setup procedures.

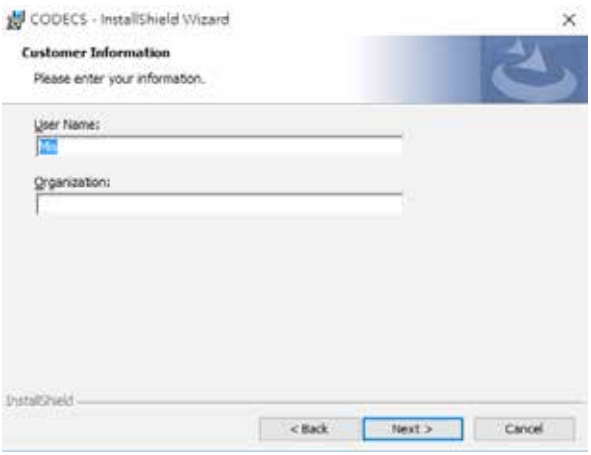
1. Connect the computer to the **RJ45 Video Streaming** connector in the back of the panel.
2. Turn off the private firewall & antivirus software
   - Open the **Control Panel** on your computer
   - Then open the **Windows Firewall**
   - Select Turn **Windows Firewall on or off**
   - Turn off the firewall within the **Private network settings** while leaving the Public network settings turned on
   - Turn off your antivirus software for installation to prevent installation being blocked.
   - Alternatively, you can add the **iNETCAM exe** as a trusted source and **NETCAM.X.86 AX** and N**ETCAM.X.64.AX** to the **exception list.**
3. Set up virtual webcam's IP address by automatic detection method (DHCP).
4. Auto IP address
   - Connect both video switcher's streaming output and broadcasting PC's LAN to a DHCP capable IP network router. (The Dynamic Host Configuration Protocol (DHCP) is a standardized network protocol used on Internet Protocol (IP) networks for dynamically distributing network configuration parameters, such as IP addresses for interfaces and services.)
   - In the **SYSTEM STATUS** menu of the video switcher, make sure the DHCP is set to **ON (Default at ON)**, when done so correctly, the IP address will be displayed.

5. Download the **NETCAM** pack on Asystems' website under the **Download** page (http://www.asystems-sys.com/en/help/downloads/).
   - First unzip the file and click **"Yes"** to install the **iNETCAM.exe** executable file.

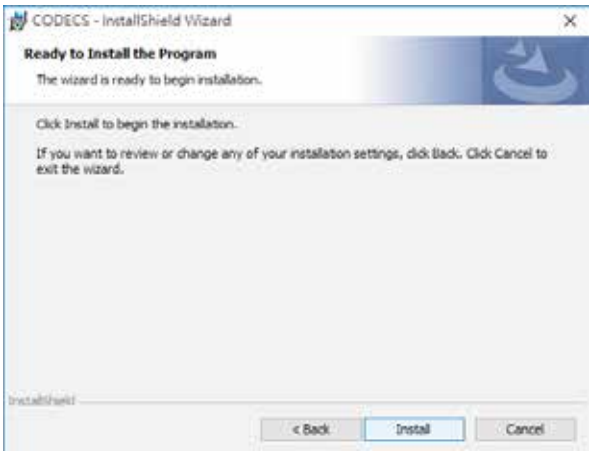


   - The InstallShield Wizard window will pop up, click **"Next"** to begin the CODECS installation.

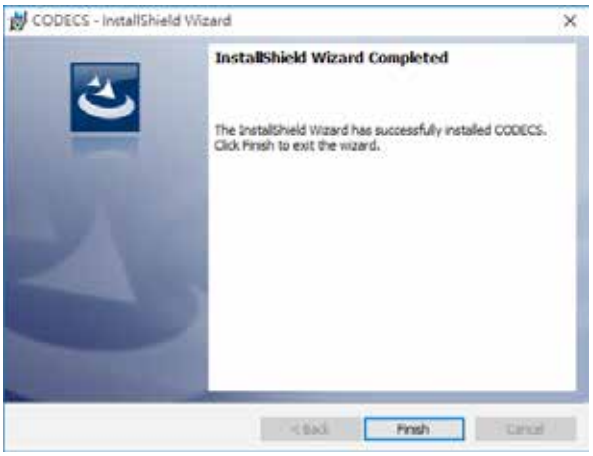
- You will then be asked to enter the **"User Name"** and **"Organization".**



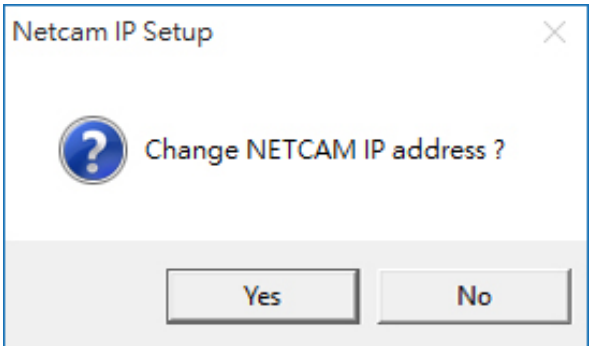
- Review your information and click the **"Install"** button to begin the installation.

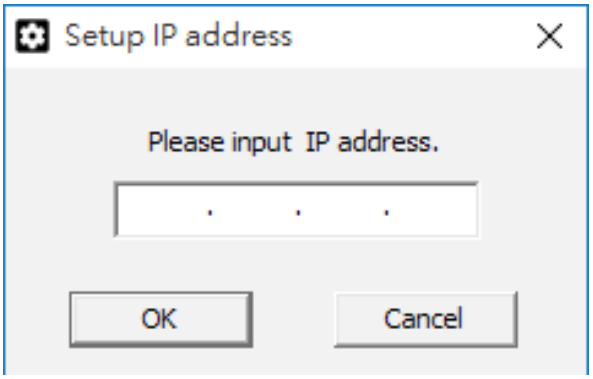


- Once the necessary files have all been successfully installed, click **"Finish".**



- The first time you installed the CODECS, a window will automatically pop up asking whether you would like to the NETCAM IP address. Click "Yes", and you will be prompted to enter the IP address that is assigned to your AV200HD in the System Status menu.





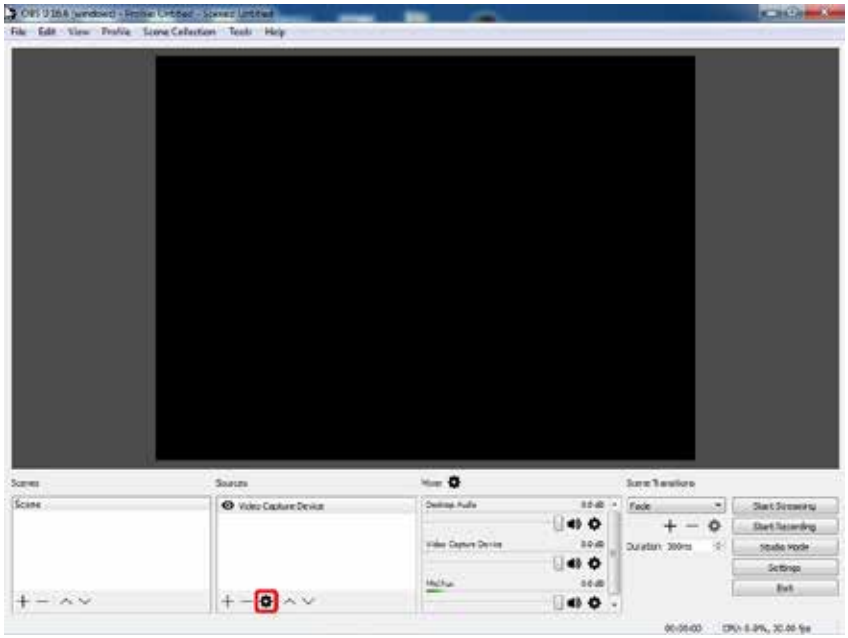
- Enter the **IP address** into the box and you are all set to go!
- A NETCAM **desktop icon** will be set after the installation, should you need to reset the IP address, just simply click on the desktop icon and repeat the last step again.

Asystems Direct Streaming Setup Guide

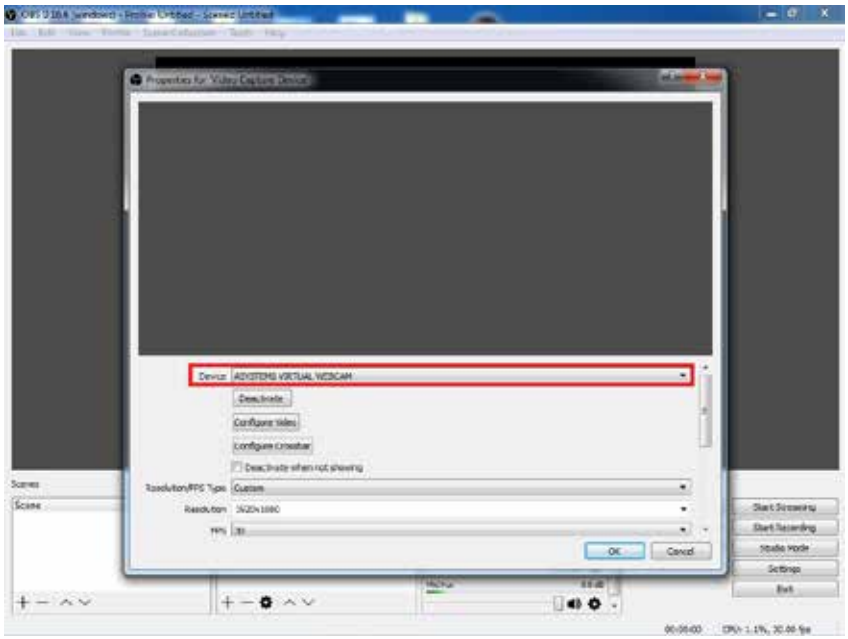
The AV200HD supports direct stream on video streaming platforms and it follows standard Real Time Streaming Protocol (RTSP), which is a network control protocol designed for use in entertainment and communications systems to control streaming media servers. The protocol is used for establishing and controlling media sessions between end points. Please refer to the following steps to begin webcam emulation setup procedures.

*For video streaming platform, Asystems suggests OBS (Open Broadcaster Software). OBS is an open source, free streaming platform that is easy to use and is compatible with most streaming services such as Youtube, Twitch, hitbox, etc.

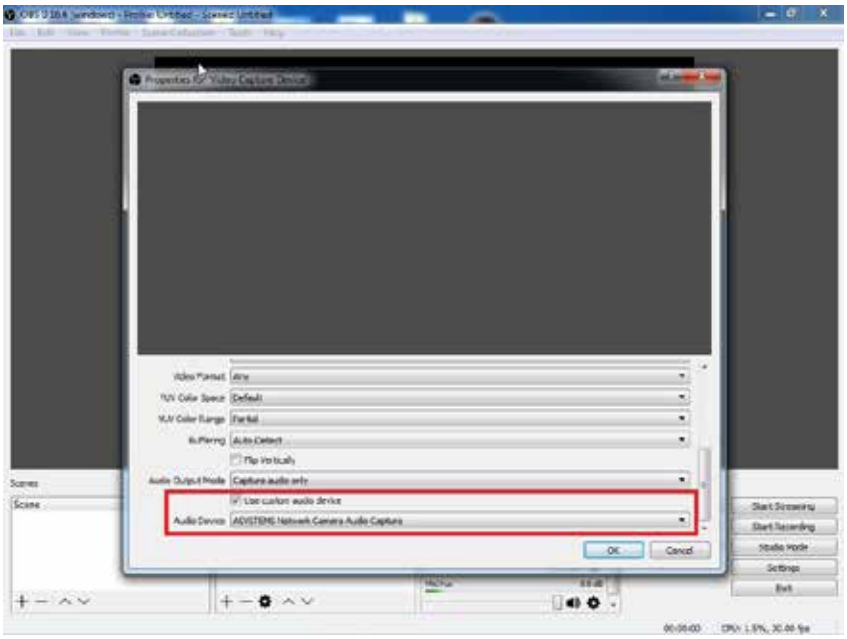
1. Open up OBS streaming platform and select **Properties** under the Source.



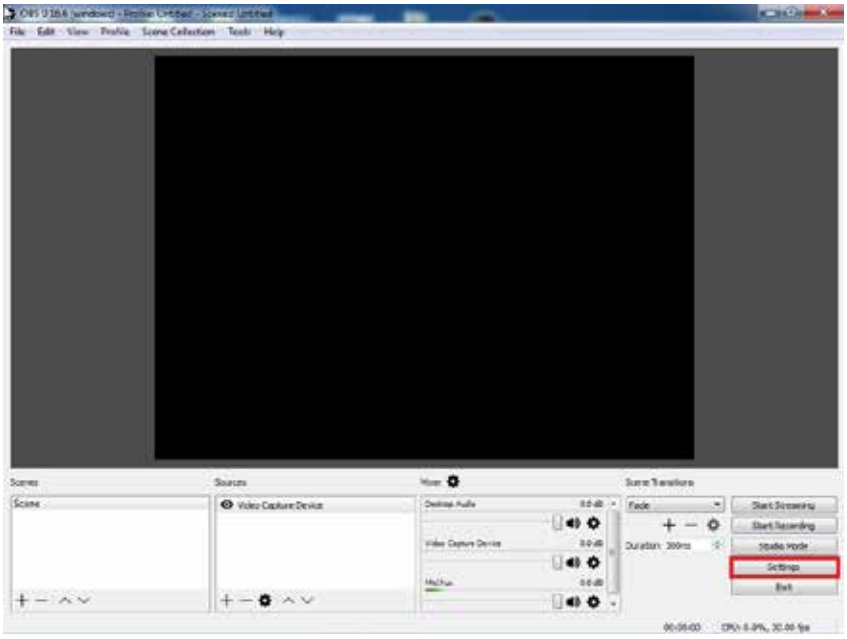
2. Select **ASYSTEMS VIRTUAL WEBCAM** in Device dropdown box.



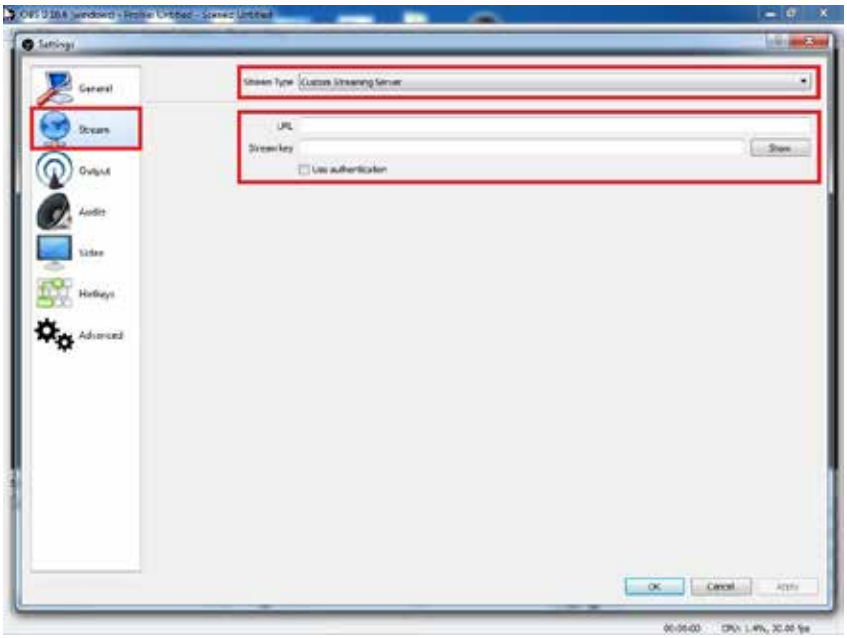
3. For Audio, scroll down and check the **Use custom audio device box** and select **ASYSTEMS Network Camera Audio Capture** as your audio source and click OK to exit the window.



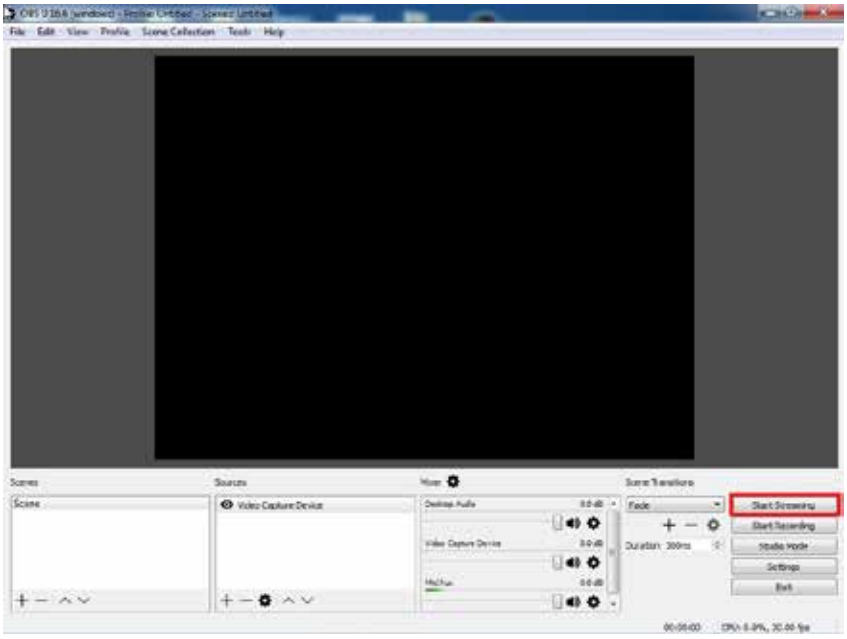
4. Click **Settings** in the lower-right hand corner and select **Stream** tab.



5. Select **Custom Streaming Server** in the **Stream Type** drop box and enter your stream **URL** and **Stream Key** in the respective boxes and click OK to exit.



6. On the main screen click **Start Streaming** to begin streaming your video content.



Please note that depending on the type of streaming platform you use, some of the setup options and selections may vary slightly, but the overall rules of this setup guide do apply.

SYSTEM SPECIFICATIONS

	Item	Type	Qty/Spec
CONNECTIVITY VIDEO INPUTS			
1	**HDMI**	HDMI Supports HDMI up to 1080p30	x4
2	**SDI**	BNC, 3G SDI Supports up to 1080p60 Note 1: Supports HD SDI x2 or 3G SDI x2 (Need to disable both HDMI 1 & 2 for 2 3G SDI mode). Note 2: HDMI 3 & 4 share input with SDI; priority= HDMI when both HDMI and SDI are connected.	x2
VIDEO OUTPUTS			
1	**AUX 1 OUT**	3G SDI HDMI Supports HDMI and SDI up to 1080p60	x1 x1
2	**AUX 2 OUT**	HDMI, up to 1080P60	x1
3	**MULTIVIEW**	HDMI; fixed to 1080P60.	x1
AUDIO I/O			
1	**USB 2.0 (Input)**	Type A Digital audio in	x1
2	**Stereo Phone Jack (Input)**	6.3mm Analog audio in	x1
3	**Stereo Phone Jack (Output)**	6.3mm PGM Analog audio out	x1
CAMERA & REMOTE CONTROL			
1	**COM-1**	RJ45, RS422 Onboard joystick for MK20HD PTZ camera remote control; connect directly to MK20HD RJ45 RS422 port via standard CAT5/6 cable.	x1
2	**COM-2**	DB-9, RS232 For remote control program access.	x1
3	**LAN**	RJ45, LAN For remote control program access. Note: Requires external Ethernet switch if both camera control and remote programming are used in the same time.	x1
EXTERNAL STORAGE			
1	**SD Card**	Standard SDHC slot For still image input and firmware upgrade.	x1
TALLY LIGHT			
1	**Tally 1**	DA-15 CH1 to 5 PVW & PGM Tally Out; 35VDC Max	x1
FEATURES			
1	**Input Channels**	Cross-point channels; for AV-IN and DSK	x5
2	**Configuration Memory**	Custom setup configuration settings	x8
3	**Wipe Pattern**	8 programmable wipe pattern buttons (from 23 patterns)	x8
4	**SMPTE Timebase**	Supports 29.97 and 59.94 fps	
5	**Audio Time Delay**	Adjustable to match video	
6	**Multi-Functions Joystick**	For PiP location, I/O scale and size control; remote camera control	x1
7	**Others**	Transition T-Bar; CUT, AUTO, DSK, OUTPUT FADE, PiP Select and Key Control	x8
DIMENSIONS			
1	**Physical**	W=370 mm x D=355 mm x H= 125 mm	
APPLICATIONS			
1		Small Broadcasting System, Church, School, Concert, Hotel and Video PA	

PRESET MEMORY SPECIFICATIONS

Top Panel Specifications

		Data	Default
I. Transition Time			
1	Time Data	Time: 0.00 to 9.99 sec; Frame: 000 to 999 frames; Time-Frame: 1.00 to 9.nn, nn= max frame/sec	Time: 1.00; Frame: 03; Time-Frame: 1.00.
II. Wipe Pattern			
1	Position Button	1 to 8	8
III. PIP			
1	Position Button	1 to 4	1
2	Size & Position	Last adjusted PIP size and position	Button 1 size and position
III. Input Scale			
A. Input Channel			
1	CH1	None, Scaled Data	None
2	CH2	None, Scaled Data	None
3	CH3	None, Scaled Data	None
4	CH4	None, Scaled Data	None
IV. Output Scale			
1	PGM	None, Scaled Data	None

SETUP MENU SPECIFICATIONS

		Data	Default
I. I/O Setup			
A. Channel Setup			
	i. Channel Input source		
1	CH1	CH1- 4, and X	CH1
2	CH2	CH1- 4, and X	CH2
3	CH3	CH1- 4, and X	CH3
4	CH4	CH1- 4, and X	CH4
5	CH5	CH1- 4, X and DSK	CH5
	B. AV IN Setup		
1	1, Frame Rate	P30 and P60	P30
	Audio Source	Default, USB and Analog	Default
	Audio Delay	0.00 to 9.99 seconds	0.00
2	2, Frame Rate	P30 and P60	P30
	Audio Source	Default, USB and Analog	Default
	Audio Delay	0.00 to 9.99 seconds	0.00
3	3, Frame Rate	P30 and P60	P30
	Audio Source	Default, USB and Analog	Default
	Audio Delay	0.00 to 9.99 second	0.00
4	4, Frame Rate	P30 and P60	P30
	Audio Source	Default, USB and Analog	Default
	Audio Delay	0.00 to 9.99 seconds	0.00
	C. OUTPUT Setup		
1	PGM Resolution (PAL)	1080, 720, 480 (576)	1080
2	AUX 1 Resolution	1080, 720, 480	1080
3	AUX 1 Source	PVW, PGM, CH1-5	PGM
4	Frame Rate (PAL)	60P(50P), 30P(25P) ~~AND~~ 30i(25i)	60P(50P)
5	Video System	NTSC and PAL	NTSC

II. Effects Setup Menu			
A. Transition Setup			
1	Format	Time, Frame and Time-Frame	Time
2	Wipe Pattern Button 1	1 to 24	1
3	Wipe Pattern Button 2	1 to 24	2
4	Wipe Pattern Button 3	1 to 24	3
5	Wipe Pattern Button 4	1 to 24	4
6	Wipe Pattern Button 5	1 to 24	5
7	Wipe Pattern Button 6	1 to 24	6
8	Wipe Pattern Button 7	1 to 24	7
B. PIP Setup			
1	Width	0 to 2	0
2	Color	White, Black, Red, Blue and Green	Red
C. Key Setup			
1	Filter	Green, Blue, Black, White and Custom	Green
2	Filter Range	0 to100	25
3	Edge Sharpness	0 to 100	0
4	Width	0 to 2	0
5	Color	White, Black, Red, Blue and Green	White
D. DSK Setup			
1	Source	Int, SD, CH1-8 and Ext Key	Int
2	Int file	Selected file.	“WELCOME” image file
3	SD file	Selected file.	Blank
4	Filter	Black and White	Black
5	Edge	0 to 100	0
6	Ext Key	Int, SD and X (Off)	Off
III. Config Menu			
Network Setup			
1	HDCP	On and Off	Off
2	Audio Output Level	0 to 100	50

IV. Camera Setup Menu			
A. Camera COM Setup			
1	Baud Rate	9600, 115200 and 000	9600
2	Data	5, 6, 7 and 8	8
3	Parity	None, Odd and Even	None
4	Stop	1 and	1
5	Flow Control	None, Xon/Xoff and Hardware	None
B. Invert Y-Axis Setup			
1	Directio	Normal and Inverted	Normal
C. COM 2 Setup			
1	Baud Rate	9600, 115200 and 000	9600
2	Data	5, 6, 7 and 8	8
3	Parity	None, Odd and Even	None
4	Stop	1 and 2	1
5	Flow Contr	None, Xon/Xoff and Hardware	None
V. System Status			
A. Input Labeling			
1	CH1	Input Text	Blank
2	CH2	Input Text	Blank
3	CH3	Input Text	Blan
4	CH4	Input Text	Blan
5	CH5	Input Text	Blan

GLOSSARY

Word	Data
Aspect Ratio	The ratio between the horizontal and vertical dimensions of an image or scree
AUX [Auxiliary Bus]	A spare bus which can be switched by signals other than the main line output signals
Background	The signals which are output from the internal color generator and used as the background image.
Border	The area or margin that is added to the edge of a wipe or key. Its width and color can be adjusted. The defocusing of the area around a border is referred to as the soft effect.
CAT5/6 [Category 5/6 Cable]	A twisted pair cable for carrying signals. This type of cable is used in structured cabling for computer networks such as Ethernet. The cable standard provides performance of up to 100 MHz.
Chroma Key	This refers to the function for creating the key signals based on the color information of the video signals and combining the keys.
Cut	This refers to the effect where the display is instantly switched to the next image.
DSK [Downstream Key]	This refers to the key combination process which is performed at the end of the mix effect. The key is always combined with the foremost image.
DVI [Digital Visual Interface]	A digital video interface standard. DVI-I can handle both digital signals and analog signals.
Frame Synchronizer	A function which matches the synchronization of non-synchronized video input signals.
Freeze	A function which continues the display of the same image, creating the impression that the image has been “frozen”.
FTB [Fade to Black]	This is the effect where the background image is faded out to the black screen
HDMI [High Definition Multimedia Interface]	A proprietary audio/video interface for transferring uncompressed video data and compressed or uncompressed digital audio data from an HDMI-compliant source device.
Key Edge	The border or shadow added to the edges of keys
Key Fill	The signal that uses key combination processing to fill in the areas left blank by the key signals.
Key Source	The video signals for creating the key signals.
ME [Mix Effect]	A video effect device which combines a number of video signals to create mix, wipe, key and other video signals
Mix	The picture-changing effect produced by overlapping one image with the next. It is also referred to as “dissolve”.
Multiview	This function combines multiple materials and displays them on one screen. PGM, PVW and the input material can be previewed at the same time on a single screen.
OSD [On Screen Display]	This function enables settings to be performed on the menu screens which are displayed in the monitor output.

PIP [Picture-in-picture]	This function combines a sub screen image with the background image.
PVW [Preview]	The function for checking ahead of time the image which will be output after the next transition. The image is output from the PVW system.
PGM [Program Bus]	The bus which always carries the program output signals.
PST [Preset Bus]	The bus which carries the program output signals after the next background transition.
Preset Memory	The memory in which the control panel statuses can be saved and recalled. The button selection statuses as well as the border, color and other setting information can be saved in this memory.
RS-232	A standard for serial communication transmission of data, which is commonly used in computer serial ports.
RS-422	A serial interface standard. It is the interface used to control the switcher from an editor or other external device.
SDI [Serial Digital Interface]	The standard by which video signals in various SD and HD formats are transmitted along a single coaxial cable.
SMPTE Time base	A set of cooperating standards to label individual frames of video or film with a time code defined by the Society of Motion Picture and Television Engineers in the SMPTE 12M specification.
Tally	The signal which outputs the program output statuses of the input signals to an external device. The LED that indicates the program output status on the control panel is also referred to as tally.
Transition	A function that switches from one image to another. Wipe, mix and other effects are available for the images during switching.
VGA [Video Graphics Array]	Refers to the display hardware first introduced with the IBM PS/2 line of computers in 1987, but through its widespread adoption has also come to mean an Amplitude Modulated computer display standard, the 15-pin D-subminiature VGA connector or the 640x480 resolution itself.
Wipe	A video effect in which one image is gradually replaced by another as the boundary between the two is moved using a preselected pattern.

NOTES

NOTES

NOTES

www.asystems-sys.com