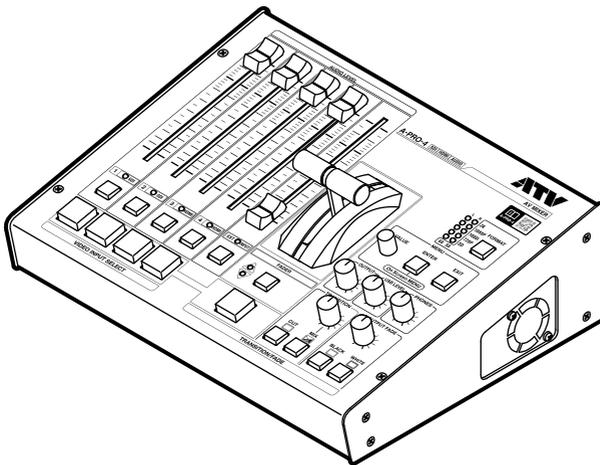




AV mixer

A-PRO-4 Ver.2.0

Start Up Manual



Introduction	1
Functionality and specifications	2
Names and functions of parts	3
Connecting external devices	4
Basic operation	5
Video and audio operation	6
Troubleshooting	7
Support	8

Please use your A-PRO-4 only after reading and understanding the content of this manual.

In particular, please be sure to read all precautions related to the safe use of this device.

Please be sure this manual is stored in a place where it is readily available to the operator for reference.

Precautions

Please be sure to follow all precautions related to the safe use of this device.

These precautions are intended to ensure that you use this device properly and to protect both you and others from personal injury as well as your property from damage.

Please read these precautions before using the device and store this manual in a safe place.

Please be sure to review and understand the meaning of the following terms and symbols before reading this manual.

 Warning	This symbol is used to indicate precautions which if ignored could potentially result in death or severe personal injury.
 Caution	This symbol is used to indicate precautions which, if ignored, could potentially result in either personal injury or property damage.

Meanings of pictorial symbols

	Caution	Caution: Indicates directions that must be followed, and is used to mark off a paragraph or illustration that provides detailed instructions.
	Prohibited	Prohibited: Indicates an action that is prohibited, and is used to mark off a paragraph or illustration that provides detailed instructions.
	Mandatory	Mandatory: Indicates an action that must always be performed, and is used to mark off a paragraph or illustration that provides detailed instructions.
	The use of this device in shower stalls or bathtubs is prohibited.	The use of this product inside a shower stall or bathtub could result in fire or electrical shock and cause serious damage. Refer to the illustration for detailed instructions on prohibited actions.
	Touching this device is prohibited.	Touching this product could result in fire or electrical shock and cause serious damage. Refer to the illustration for detailed instructions on prohibited actions.
	Disassembly prohibited	Disassembling this product could result in electrical shock or other cause of personal injury. Refer to the illustration for detailed instructions on prohibited actions.
	Unplug the adapter and cable	Indicates that the user should unplug the AC adapter from the wall socket or the USB cable from the computer. Refer to the illustration for detailed instructions.

⚠ Warning

	<ul style="list-style-type: none"> ■ In the event that any of the following were to occur, immediately unplug the power cord from the wall socket and the USB cable from the computer. In the event that the device emits smoke, a strange odor, or a strange sound: Continued use of the device under these conditions could result in fire or electrical shock. Please contact us to arrange for repairs, once the device no longer emits smoke, strange odors, or sounds. Never attempt to repair the unit yourself. To do so is dangerous. In the event that water or other liquid seeps into the device: Please contact us immediately. Using the device as it is could result in fire or electrical shock. In the event that foreign objects enter the device: Please contact us immediately. Using the device as it is could result in fire or electrical shock. (In particular, be careful when this device is used near children.) In the event that an abnormality, a malfunction, or a failure is found in the device, its AC adapter, or its electrical power cord: Please contact us to arrange for repairs. Using the device as it is could result in fire or electrical shock.
	<ul style="list-style-type: none"> ■ Do not disassemble or modify the machine. Doing so might lead to a fire and/or electric shock.
	<ul style="list-style-type: none"> ■ Always use the AC adapter that came with the device. Doing so might lead to a fire and/or electric shock. ■ Always use an electrical power cord and plug that are suitable for the area or region where the device is being used. Doing so might lead to a fire and/or electric shock.
	<ul style="list-style-type: none"> ■ Do not place heavy objects on top of the plug-in AC adapter, and be sure that the device does not sit atop the electrical power cord. Damage to the electrical power cord might lead to a fire and/or electric shock. If a carpet or rug is spread over the cord, a heavy object might inadvertently be placed on it. ■ Do not damage, rework, apply heat, or apply excessive force in bending, twisting, or pulling the plug-in AC adapter. Damage to the electrical power cord could result in fire or electrical shock. ■ Do not connect many devices to a single power outlet. Failure to do so might lead to fire.
	<ul style="list-style-type: none"> ■ Do not use the device in any of the following locations: Places where the cause of fires, electrical shock, malfunction, discoloration, or deformation is present. <ul style="list-style-type: none"> • Places where the temperature is extremely high due to causes such as being subject to direct sunlight or being in close proximity to a space heater or other device that emits heat. • Baths, sinks, wet floors, and other places with considerable moisture or high humidity. • Places subject to steam or smoke. • Places subject to salt corrosion. • Places exposed to rainfall. • Places where dust and sand accumulate easily. • Places subject to constant vibration or movement. • Tables, benches, or other places that are off-level, wobbly, or otherwise unstable.

 Warning	
	<ul style="list-style-type: none"> ■ Do not place this device anywhere that water or foreign objects can penetrate it or in a container that contains any kind of fluid. Doing so might lead to a fire and/or electric shock.
	<ul style="list-style-type: none"> ■ Do not subject the device to strong impact. To do so could result in damage or deformation of the device itself, in the device rupturing, or in the emission of fluid, heat, smoke, or flame.

 Caution	
	<ul style="list-style-type: none"> ■ If the unit is not to be used for a long period of time, unplug the plug-in AC adapter from the wall socket and the USB cable from the computer. Failure to do so might lead to fire.
	<ul style="list-style-type: none"> ■ Be sure the electrical power cord is plugged securely into a wall socket. Failure to do so could result in excessive heat or cause a fire if dust were to accumulate. ■ Connect and layout the cables properly. Tripping on the cables or otherwise causing the device to fall over or fall to the floor could result in personal injury.
	<ul style="list-style-type: none"> ■ When unplugging the plug-in AC adapter, do not pull on the electrical power cord. To do so could damage the electrical power cord and result in fire or electrical shock. Always grasp the plug-in AC adapter itself to unplug it. ■ Keep the plug-in AC adapter away from hot objects. The electrical power cord insulation might be melted, possibly resulting in a fire and/or electric shock. ■ Never attempt to unplug the plug-in AC adapter with wet hands. Doing so might lead to an electric shock. ■ Never use a wall socket that does not support the electric power plug securely even when fully inserted. To do so could cause heat and result in fire or electrical shock. In such a case, please request that the retailer or an electrician replace the wall socket.
	<ul style="list-style-type: none"> ■ Remove all connections before moving the device. Moving the device while external cables are connected could damage the electrical power cord and result in fire or electrical shock.
	<ul style="list-style-type: none"> ■ Do not place your weight or heavy objects on the device. In particular, be careful when using this device near children. Falling over or breaking could result in personal injury.
	<ul style="list-style-type: none"> ■ Take care to avoid burns. This device emits high heat, so take care to avoid burns.

Precautions for Use

■ Power supply

- Never connect A-PRO-4 to any electrical outlet that is used to power inverter-controlled devices or devices with an electric motor, such as refrigerators, washing machines, microwave ovens, or air conditioners. The use of other electrical devices in close proximity to A-PRO-4 could result in misoperation due to power noise or the generation of other electrical noise. In places where it would be difficult to provide the A-PRO-4 with an exclusive power outlet, please use an electrical power noise filter.
- The AC adapter will generate heat when used for long periods of time, but this is normal and does not indicate a malfunction.
- To prevent misoperation or malfunction, be sure that all power is turned off when connecting A-PRO-4 to other equipment.

■ Installation

- The installation of A-PRO-4 in close proximity to power amplifiers or other equipment with a large transformer could induce hum. If this happens, increase the separation between the devices or change their orientation to each other.
- The use of A-PRO-4 in close proximity to televisions or radios could interfere with the reception of audio or video signals. If this happens, increase the separation between the devices.
- The use of A-PRO-4 in close proximity to mobile phones or other wireless devices could result in noise or loss of image. If this happens, increase the separation between the devices or turn off the wireless devices.
- Whenever A-PRO-4 are moved to a location where the ambient temperature differs to an extreme degree, moisture (condensation) could form inside. Using an A-PRO-4 in this condition could result in malfunctions. In which case, it is best to wait several hours for the condensation to evaporate before use.

■ Maintenance

- Ordinarily, you should keep an A-PRO-4 clean by wiping it down with a soft, dry cloth or a tightly wrung damp one. If the A-PRO-4 is heavily soiled, wipe it clean with a cloth dampened in a mild detergent and then wipe it down with a soft, dry cloth.
- Never use benzene, paint thinner, or alcohol-based solvents to clean A-PRO-4. Doing so could result in discoloration or deformation.

■ Repair

- We cannot warranty the performance of any device or AC adapter that has been disassembled or modified by the user. Also, we reserve the right to refuse to repair devices or AC adapters.
- When repairing any device, the data stored in memory is sometimes lost. Be sure to back up your data prior to repair. Please understand that we can neither restore nor provide compensation for lost data.
- We retain an inventory of the functional parts needed to repair A-PRO-4 for a period of six years after discontinuation of manufacture. Repairs for A-PRO-4 are available only while repair parts are available. Please feel free to inquire about repairs, however, even after this period is past, since some repairs are still possible, depending upon the nature of the malfunction.

■ Other precautions

- Data stored in an A-PRO-4 memory could be lost due to malfunction or misoperation. Be sure to back up your data prior to using an A-PRO-4. Please understand that we can neither restore nor provide compensation for lost data.
- Never apply excessive force to the input and output connectors. To do so could result in malfunctions.
- Always adjust the volume settings so that you do not disturb people who are nearby.
- When transporting an A-PRO-4, wrap it in packing material and place it in its box or otherwise provide equivalent protection.
- If you do dispose of the box and packing that came with the A-PRO-4, be sure to follow all local regulations pertaining to the sorting of waste materials.
- Do not use this device to create video images that could adversely affect human health. Image switching at extremely high speeds could cause headaches, nausea, or seizures in persons already susceptible to illness. We cannot be held responsible for the effects of video images created with this device.

■ Intellectual property rights

- The names of products and companies shown in this manual are the trademarks or registered trademarks of their respective owners.
- Never use A-PRO-4 for any application that violates the copyrights of a third party. We cannot be held responsible for instances in which A-PRO-4 are used to violate the copyrights of a third party.

■ Table of Contents

1	Introduction -----	7
	Overview -----	7
	Checking the contents of the package -----	7
2	Functionality and specifications -----	8
	Block Diagram -----	8
	Program (PGM) output and preview (PVW) output --	9
	Product specifications -----	9
	Connection specifications -----	10
3	Names and functions of parts -----	13
	External View -----	13
	Names and functions of top panel parts -----	14
	Names and functions of rear panel parts -----	15
	Onscreen menu names and functions of parts-----	16
4	Connecting external devices -----	17
	Connecting to a video input connector -----	17
	Connecting to a video output connector -----	18
	Connecting to an audio/GPI input/output connector ----	19
	Other connections -----	20
5	Basic operation -----	21
	Turning the power on and off. -----	21
	Change or verify the System Format -----	22
6	Video and audio operation -----	23
	Switching video-----	23
	Switching audio -----	28
7	Troubleshooting -----	29
8	Support -----	31

1 Introduction

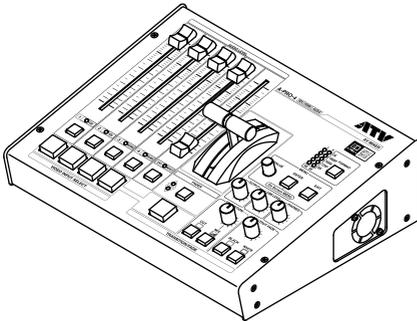
Overview

- The A-PRO-4 is a video mixer that is capable seamlessly switching four separate video signals.
- It is also capable of switching and mixing audio embedded in video.
- It is equipped with input for two SDI channels and two HDMI channels, and one of the HDMI channels is capable of being switched to analog video signal input.
- HDMI 1 has built-in scaler functionality and is capable of receiving input at resolutions that differ from other input/output.
- It is equipped with input and output connectors for external audio and is capable of mixing audio from an external source or outputting mixed audio to other devices.
- It is equipped with USB audio video output connectors and can be connected to a PC for live streaming, teleconferences, or other similar uses.
- It is equipped with a REF IN connector and capable of operation with a GENLOCK system.

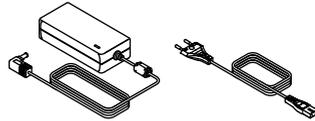
Checking the contents of the package

The following content is packaged with this product.

Please contact a retail seller should you find that any of the following items are not included with your purchase.



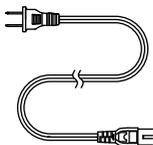
A-PRO-4



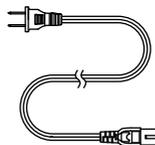
AC adapter and EU two-prong electrical power cord



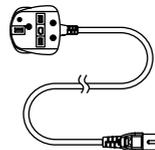
Start Up Manual (this document)



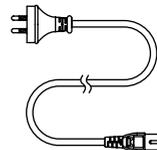
PSE
for Japan



US
for North America



UK(BSI 3A)
for UK



AU(SAA 2pin)
for Australia

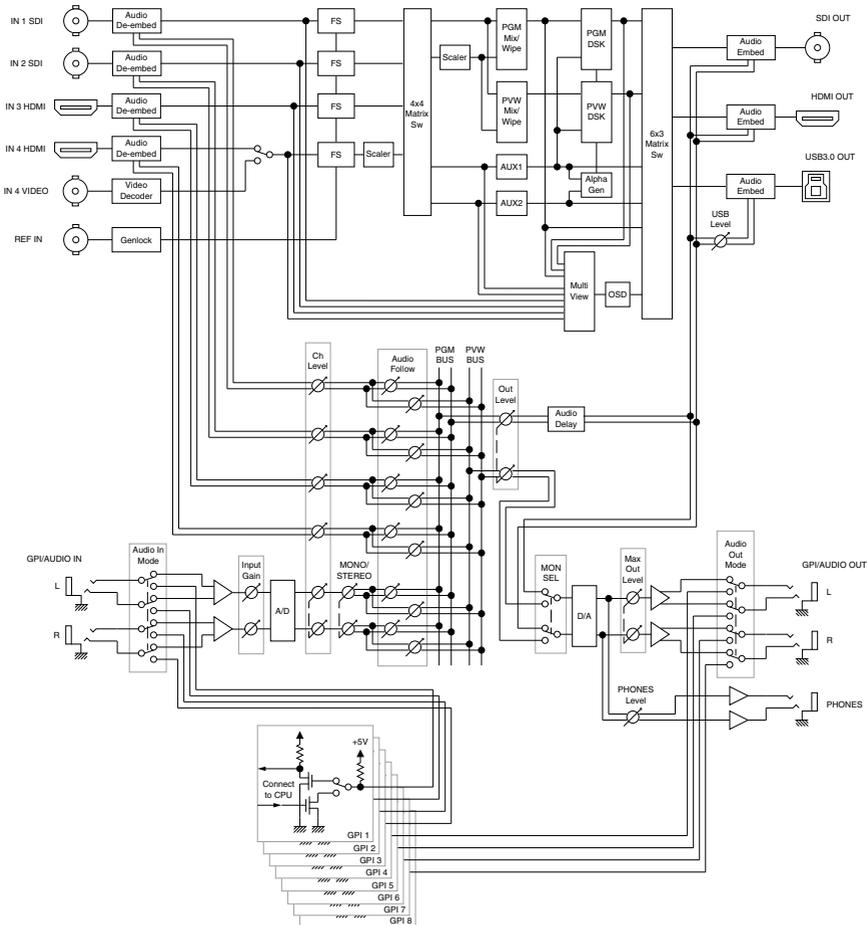
Electrical power cords x 4

2 Functionality and specifications



In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

Block Diagram



2

Functionality and specifications

Program (PGM) output and preview (PVW) output

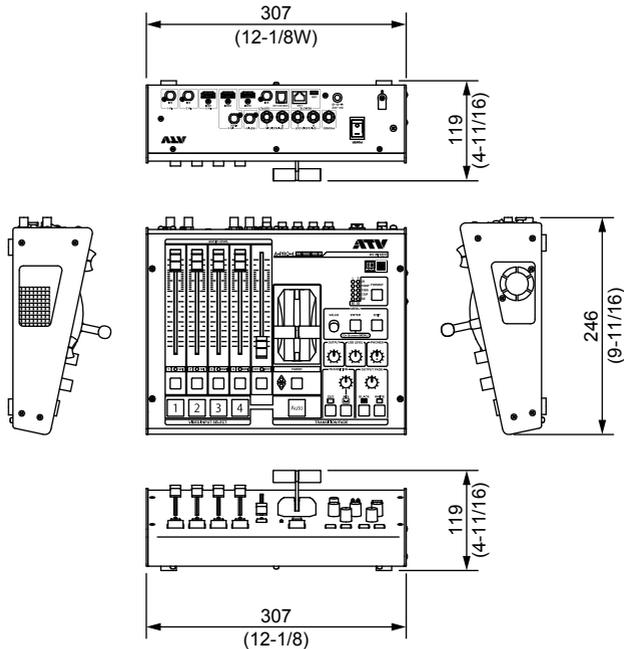
Program (PGM) output

- The red VIDEO INPUT SELECT button outputs an input signal.
- PGM output default settings are SDI and USB output.
- No onscreen menu is displayed.

Preview (PVW) output

- In Direct mode, the red VIDEO INPUT SELECT button outputs an input signal.
(→ Refer to P.23 Toggling switching modes)
- In Preview mode, the green Video Input Select button outputs an input signal.
(→ Refer to P.23 Toggling switching modes)
- MultiView output default setting is HDMI output. (MultiView displays on one screen PGM and PVW outputs)
- Onscreen menu is displayed only MultiView output.

Product specifications



Item	Description
Dimmensions	307(W) x 246(D) x 119(H) [mm] 12-1/8(W) x 9-11/16(D) x 4-11/16(H) [inch]
Weight	2.9 kg 6 lbs 7 oz (without AC adaptor & Electrical power cord)
Operation Temperature	+0 to +40 degrees Celsius +41 to +104 degrees Fahrenheit
Accessories	AC adaptor Electrical power cords x 5 Startup Manual

2
Functionality and specifications

Connection specifications

Input Connectors

Item	Description		
SDI IN	Connector	BNC type x 2	
	Signal Standards	SMPTE ST2081 SMPTE ST424 (SMPTE ST425-AB) SMPTE ST292 SMPTE ST259-C	
	Video Format	2048x1080	60p/59.94p/50p/48p/47.95p/30p/29.97p/25p/24p/23.98p/30PsF/29.97PsF/25PsF/24PsF/23.98PsF (Conforms to SMPTE ST2048)
		1920x1080	60p/59.94p/50p/30p/29.97p/25p/24p/23.98p/60i/59.94i/50i/30PsF/29.97PsF/25PsF/24PsF/23.98PsF (Conforms to SMPTE ST274)
		1280x720	60p/59.94p/50p/30p/29.97p/25p/24p/23.98p (Conforms to SMPTE ST296)
		720x480	59.94i (Conforms to ITU-R BT.656-3/5)
		720x576	50i (Conforms to ITU-R BT.656-3/5)
Color Format	10 bits YCCA:2:2, 12 bits YCC/RGB4:4:4, 10 bits RGBA/YCCA4:4:4:4, 12 bits YCCA4:2:2:4		
Audio Format	Linear PCM, 24/20 bits, 48 kHz, 16 ch (Conforms to SMPTE ST299, ST272-C)		
HDMI IN (IN3)	Connector	Type A (19 pins) x 1	
	Signal Standards	HDMI1.4	
	Video Format	2048x1080	60p/59.94p/50p/48p/47.95p/30p/29.97p/25p/24p/23.98p (SMPTE ST2048 Timings)
		1920x1080	60p/59.94p/50p/60i/59.94i/50i/30p/29.97p/25p/24p/23.98p (Conforms to CEA-861-F)
		1280x720	60p/59.94p/50p (Conforms to CEA-861-F)
		720x480	59.94p (Conforms to CEA-861-F)
		720x576	50p (Conforms to CEA-861-F)
		720(1440)x480	59.94i (Conforms to CEA-861-F)
	720(1440)x576	50i (Conforms to CEA-861-F)	
	Color Format	10/12 bits YCCA:2:2, 8/10/12 bits YCC/RGB4:4:4	
Audio Format	Linear PCM, 16 to 24 bits, 32 to 48 kHz, 2 to 8 ch		
HDMI IN (IN4)	Connector	Type A (19 pins) x 1	
	Signal Standards	HDMI1.4	
	Video Format	2048x1080	60p/59.94p/50p/48p/47.95p/30p/29.97p/25p/24p/23.98p (SMPTE ST2048 Timings)
		1920x1080	60p/59.94p/50p/60i/59.94i/50i/30p/29.97p/25p/24p/23.98p (Conforms to CEA-861-F)
		1280x720	60p/59.94p/50p (Conforms to CEA-861-F)
		720x480	59.94p (Conforms to CEA-861-F)
		720x576	50p (Conforms to CEA-861-F)
		720(1440)x480	59.94i (Conforms to CEA-861-F)
		720(1440)x576	50i (Conforms to CEA-861-F)
		640x480	60/72/75/85 (Conforms to VESA DMT)
		800x600	56/60/72/75/85 (Conforms to VESA DMT)
		1024x768	60/70/75/85 (Conforms to VESA DMT)
		1152x864	75 (Conforms to VESA DMT)
		1280x768	60/75/85 (Conforms to VESA DMT)
		1280x800	60/75/85 (Conforms to VESA DMT)
		1280x960	60/85 (Conforms to VESA DMT)
		1280x1024	60/75/85 (Conforms to VESA DMT)
		1360x768	60 (Conforms to VESA DMT)
		1400x1050	60/75 (Conforms to VESA DMT)
		1440x900	60/75/85 (Conforms to VESA DMT)
1600x1200	60 (Conforms to VESA DMT)		

2

Functionality and specifications

Item		Description		
HDMI IN (IN4)	Video Format	1680x1050	60 (Conforms to VESA DMT)	
		1920x1200	60 Reduced Blanking (Conforms to VESA DMT)	
	Color Format	10/12 bits YCC4:2:2, 8/10/12 bits YCC/RGB4:4:4		
	Audio Format	Linear PCM, 16 to 24 bits, 32 to 48 kHz, 2 to 8 ch		
VIDEO IN	Connector	BNC type x 1		
	Signal Standards	ITU-R BT.470-6		
	Video Format	NTSC, NTSC-J, PAL		
REF IN	Connector	BNC type x 1		
	Signal Standards	B.B. (SMPTE ST318), Bi-Level (ITU-R BT.1358-1), HD Tri-Level (SMPTE ST274, ST296)		
	Signal Format	1920x1080	59.94p/50p/59.94i/50i (Conforms to SMPTE ST274)	
		1280x720	59.94p/50p (Conforms to SMPTE ST296)	
		720x480	59.94p (Conforms to ITU-R BT.1358-1)	
		720x576	50p (Conforms to ITU-R BT.1358-1)	
		720x480	59.94i (Conforms to SMPTE ST318)	
720x576	50i (Conforms to SMPTE ST318)			
AUDIO IN	Connector	1/4" TRS phone type (balanced) x 2		
	Input Level	-50 to +4 dBu		
	Maximum Input Level	+24 dBu		
	Impedance	150 k / 600 ohms selectable		

*0dBu=0.775Vrms

Output Connectors

Item		Description		
SDI OUT	Connector	BNC type x 1		
	Signal Standards	SMPTE ST2081 SMPTE ST424 (SMPTE ST425-AB) SMPTE ST292 SMPTE ST259-C		
	Video Format	2048x1080	59.94p/50p/29.97p/25p/24p/23.98p (Conforms to SMPTE ST2048)	
		1920x1080	59.94p/50p/29.97p/25p/24p/23.98p/59.94i/50i (Conforms to SMPTE ST274)	
		1280x720	59.94p/50p (Conforms to SMPTE ST296)	
		720x480	59.94i (Conforms to ITU-R BT.656-5)	
		720x576	50i (Conforms to ITU-R BT.656-5)	
Color Format	10 bits YCC4:2:2, 10 bits YCC/RGB4:4:4			
Audio Format	Linear PCM, 24/20 bits, 48 kHz, 2 ch (Conforms to SMPTE ST299, ST272-C)			
HDMI OUT	Connector	Type A (19 pins) x 1		
	Signal Standards	HDMI1.4		
	Video Format	2048x1080	59.94p/50p/29.97p/25p/24p/23.98p (SMPTE ST2048 Timings)	
		1920x1080	59.94p/50p/29.97p/25p/24p/23.98p/59.94i/50i (Conforms to CEA-861-F)	
		1280x720	59.94p/50p (Conforms to CEA-861-F)	
		720(1440)x480	59.94p/59.94i (Conforms to CEA-861-F)	
		720(1440)x576	50p/50i (Conforms to CEA-861-F)	
Color Format	10 bits YCC4:2:2, 8/10 bits YCC/RGB4:4:4			
Audio Format	Linear PCM, 24 bits, 48 kHz, 2 ch			

Item		Description		
USB3.0 OUT	Connector	USB Type B (Super Speed USB) x 1		
	Standards	USB 3.0 Super Speed (SS) / USB 2.0 High Speed (HS) USB Video Class 1.1, USB Audio Class 1.0		
	Video Format (SS)	2048x1080	59.94p/50p/29.97p/25p/24p/23.98p	
		1920x1080	59.94p/50p/29.97p/25p/24p/23.98p/59.94i/50i	
		1280x720	59.94p/50p	
		720x480	59.94p/59.94i	
	Video Format (HS)	720x480	59.94i	
		720x576	50p/50i	
Color Format	8 bits YCC4:2:2			
Audio Format	Linear PCM, 16 bits, 48 kHz, 2 ch			
AUDIO OUT	Connector	1/4" TRS phone type (balanced) x 2		
	Output Level	-20 to +4 dBu		
	Maximum Output Level	+24 dBu		
	Minimum Load Impedance	20k ohms		
PHONES OUT	Connector	1/4" TRS phone type (stereo) x 1		

*0dBu=0.775Vrms

Other Connectors

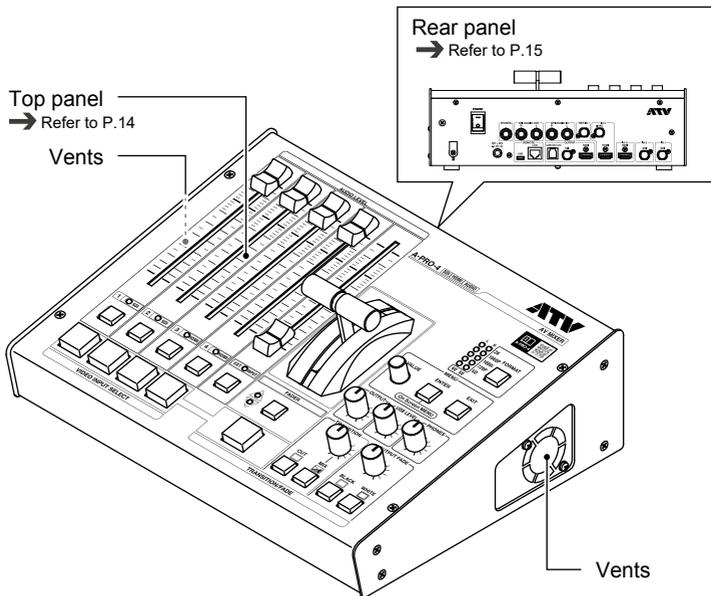
Item		Description
USB2.0	Connector	Micro USB Type B (Hi-Speed USB) x 1
	Standards	USB 2.0 High Speed (HS)
LAN	Connector	RJ45
	Standards	10/100Base-T
DC IN	Power Voltage	12 to 20 V
	Power Consumption	35 W

Processing

Item	Description
Video Processing	10 bits YCC4:4:4
Audio Processing	24 bits 48 kHz

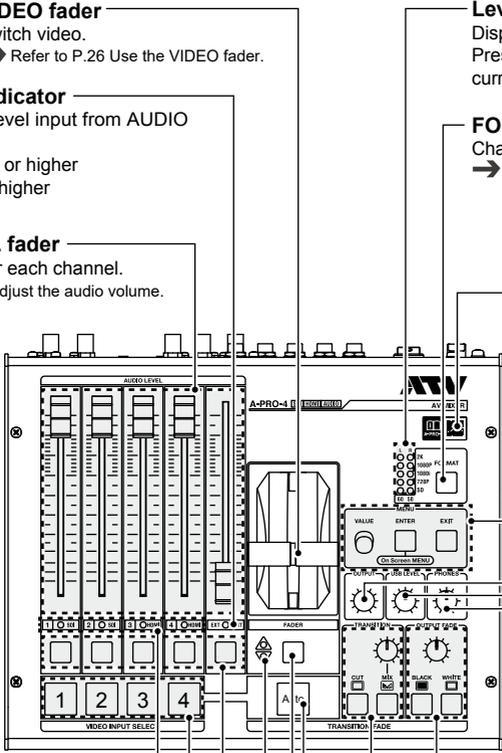
3 Names and functions of parts

External View



Do not block the vents.

Names and functions of top panel parts



VIDEO fader
Switch video.
→ Refer to P.26 Use the VIDEO fader.

EXT INPUT indicator
Displays audio level input from AUDIO IN connector.
Green: -48 dBFS or higher
Red: -6 dBFS or higher
Off: No input

AUDIO LEVEL fader
Adjust volume for each channel.
→ Refer to P.28 Adjust the audio volume.

Input indicator
Displays input status for each channel.
Green: normal input
Off: No input

VIDEO INPUT SELECT button
Switch video input.
→ Refer to P.23 Switching video

AUDIO INPUT SELECT button
Switch audio follow.
→ Refer to P.28 Synchronize the audio to the video and switch. (Audio follow function)

FADER indicator
Displays switching direction for video fader.
→ Refer to P.26 Use the VIDEO fader.

FADER button
Toggle switching modes.
→ Refer to P.23 Toggling switching modes

Level meter / format indicator
Displays audio output level.
Press the **FORMAT** button to light the current System Format indicator.

FORMAT button
Change or verify the System Format.
→ Refer to P.22 Change or verify the System Format

QR code
Read this QR code into your smartphone or other device to access our product support website.

MENU
Operate the onscreen menu.
→ Refer to P.16 Onscreen menu names and functions of parts

OUTPUT LEVEL knob
Adjust audio output level.
→ Refer to P.28 Adjust the audio volume.

USB LEVEL knob
Adjust USB audio output level.
→ Refer to P.28 Adjust the audio volume.

PHONES knob
Adjust headphone output level.
→ Refer to P.28 Adjust the audio volume.

OUTPUT FADE knob
Adjust time needed for video fade out/fade in.

OUTPUT FADE button
Fade in or fade out the video.
BLACK: Fade to black.
WHITE: Fade to white.
→ Refer to P.27 Fade in or fade out the output video.

TRANSITION knob
Adjust time needed for switching video.

TRANSITION button
Select video switching effect.
CUT: Video switches instantly.
MIX: Current video fades out as next video fades in.
→ Refer to P.23 Switch video using the dissolve effect. Refer to P.25 Switch video using the cut effect.

Auto button
Switch videos in TRANSITION settings.
→ Refer to P.23 Switch video using the dissolve effect. Refer to P.25 Switch video using the cut effect.

Names and functions of rear panel parts

GPI/AUDIO OUT connector

Output analog audio signal.
Can be used as GPI connector.
→ Refer to P.19 Connecting to an audio/GPI input/output connector

PHONES connector

Connect headphones.

Power switch

Switch electrical power on or off.
→ Refer to P.21 Turning the power on and off.

Function ground terminal

Connect to ground.

Cord holder

(Used to hold electrical power cord.)

DC IN connector

Connect the AC adapter.

REMOTE USB connector

Connect to the PC.
→ Refer to P.20 Other connections

REMOTE LAN connector

Connect to the network.
→ Refer to P.20 Other connections

GPI/AUDIO IN connector

Input analog audio signal.
Can be used as GPI connector.
→ Refer to P.19 Connecting to an audio/GPI input/output connector

REF IN connector

Input a reference signal for frame synchronization.
→ Refer to P.20 Other connections

VIDEO IN connector

Input a composite video signal.
→ Refer to P.17 Connecting to a video input connector

SDI IN connector

Input 6G/3G/HD/SD-SDI signals.
→ Refer to P.17 Connecting to a video input connector

HDMI IN connector

Input an HDMI signal.
→ Refer to P.17 Connecting to a video input connector

HDMI OUT connector

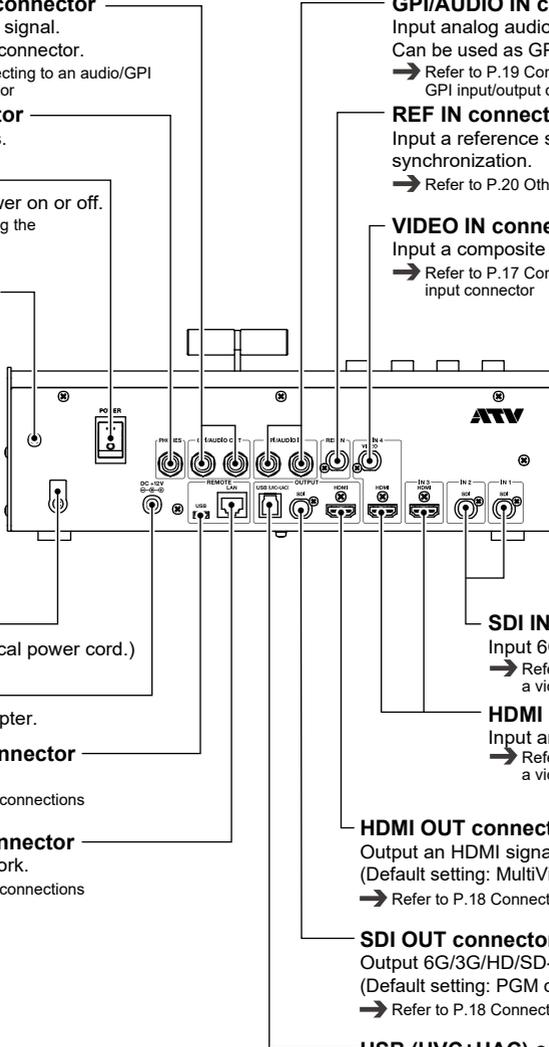
Output an HDMI signal.
(Default setting: MultiView output)
→ Refer to P.18 Connecting to a video output connector

SDI OUT connector

Output 6G/3G/HD/SD-SDI signals.
(Default setting: PGM output)
→ Refer to P.18 Connecting to a video output connector

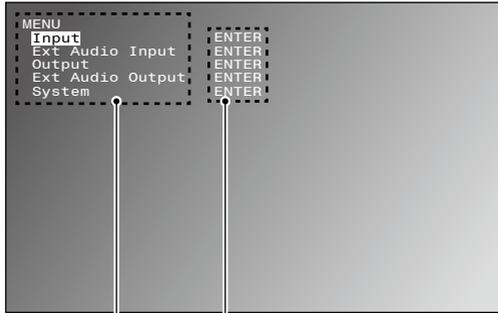
USB (UVC+UAC) connector

Output USB video and USB audio signals.
(Default setting: PGM output)
→ Refer to P.20 Other connections



Onscreen menu names and functions of parts

Output video: PVW output



Parameter name

Display parameter groups and parameter names. The selected item is highlighted.

Parameter value

Display the parameter value.

ENTER: Press the Enter button to display menu for that group.

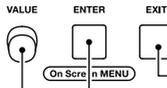
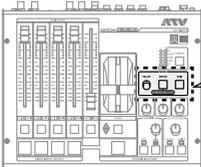
RESET: Press the Enter button to reset the parameter values for that group to default.

3

Names and functions of parts

Operating the onscreen menu

Top Panel



MENU EXIT button

When at the top of the hierarchy: Hide the onscreen menu.
When a parameter name is selected: Move up one level.
When a parameter value is selected: Cancel editing.

MENU ENTER button

When the onscreen menu is hidden: Display the onscreen menu.
When a parameter name is selected: Edit the parameter value.
When a parameter group is selected: Move down one level.
When a parameter value is selected: Store the current value.

MENU VALUE button

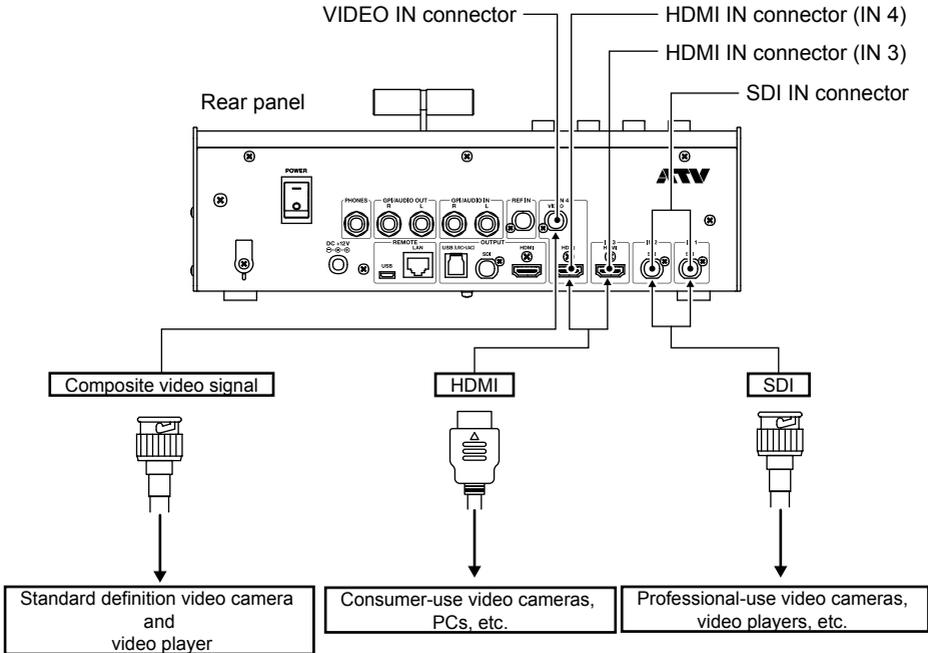
When a parameter name is selected: Select an item.
When a parameter value is selected: Select the value.

4 Connecting external devices

Connecting to a video input connector

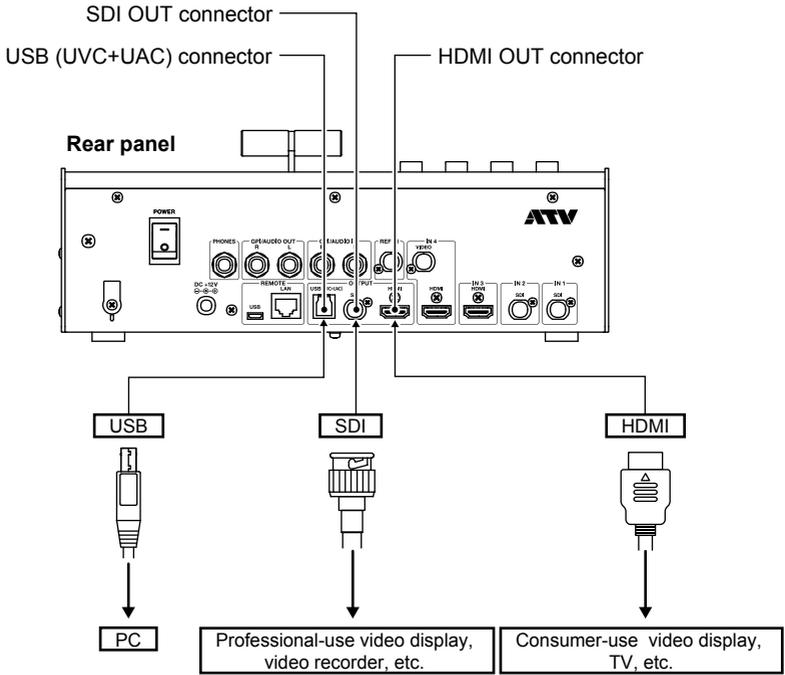


HDMI connectors on this device are not HDCP compliant.



Connection	Name of connector	Description
Connecting SDI devices	SDI IN connector	Connect to a professional-use video camera, video player, or other SDI device. Match the input format to the system format of this device. ➔ Refer to P.22 Verify the System Format
Connecting HDMI devices	HDMI IN connector (IN 3)	Connect to a consumer-use video camera, PC, or other HDMI output device. Match the input format to the system format of this device. ➔ Refer to P.22 Verify the System Format When connecting a plug-and-play device, the system format is automatically specified by the device's EDID information.
	HDMI IN connector (IN 4)	Connect to a consumer-use video camera, PC, or other HDMI output device. Irrespective of the system format of this device, input is possible in the format given the connection specifications. ➔ Refer to P.10 Connection specifications
Connecting a composite video device	SDI IN connector	Connect to a standard definition video camera or video player. When inputting a video signal, do not connect to HDMI connector IN 4. HDMI connector IN 4 is prioritized. For video devices with RCA connectors, use commercially available RCA-BNC conversion.

Connecting to a video output connector



4

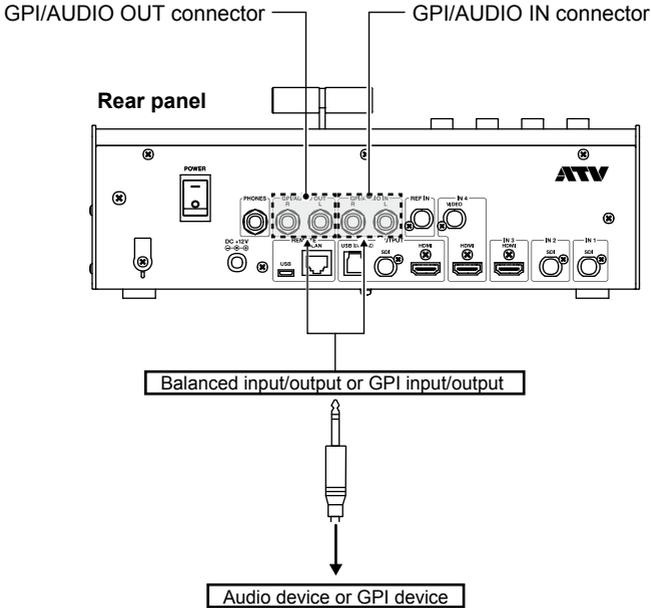
Connecting external devices

Connection	Name of connector	Description
Connecting SDI devices	SDI OUT connector	Connect to a professional-use video display, video recorder, or other SDI device. Use a device that is compliant with the system format of this device. ➔ Refer to P.22 Verify the System Format
Connecting HDMI devices	HDMI OUT connector	Connect to a consumer-use video display, TV, or other HDMI output connector. Use a device that is compliant with the system format of this device. *This device is not Plug-and-Play compliant.
USB (UVC+UAC) connector connection	USB(UVC+UAC) connector	This device can be connected to a USB 3.0 connector to output audio and video to a PC. It will be automatically detected as a USB camera and USB audio device and will operate on standard drivers for both Windows and Mac OS X operating systems, making it useful for a wide variety of applications. *We recommend specifying a 1080p or 720p system format when using a USB (UVC+UAC) connector.

Connecting to an audio/GPI input/output connector



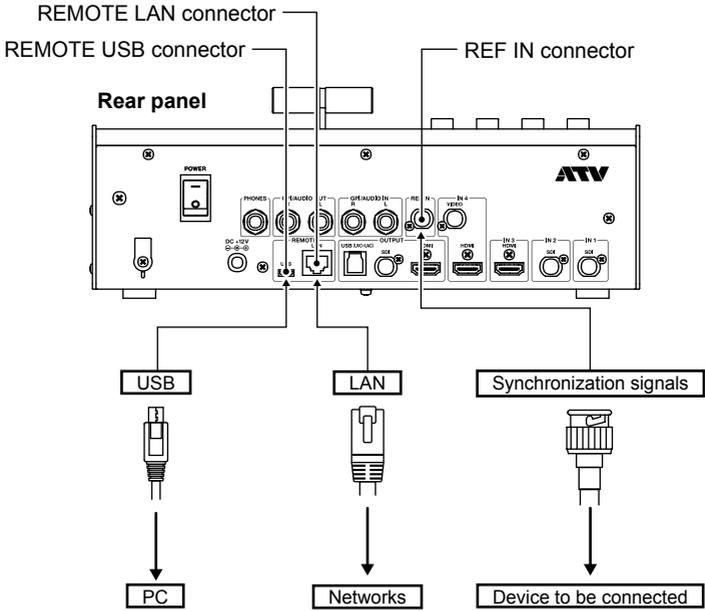
In order to protect speakers and other devices from damage when connecting audio devices, turn down the volume for all devices and turn off the electrical power before connecting.



4
Connecting external devices

Connection	Name of connector	Description
Connecting audio devices	GPI/AUDIO OUT connector GPI/AUDIO IN connector	This device features TRS-balanced I/O connectors. Use a cable suitable for the device to be connected. Default signal levels are +4dBu, which can be adjusted to match the device to be connected. See the reference manual for details on how to adjust this device.
Connecting GPI devices	GPI/AUDIO OUT connector GPI/AUDIO IN connector	GPI/AUDIO connectors can be used as GPI terminals based on internal parameter settings. Also, GPI can be toggled between input and output. See the reference manual for details on how to use this device.

Other connections



4

Connecting external devices

Connection	Name of connector	Description
Connecting to REF IN connectors	REF IN connector	This device is capable of operation with a GENLOCK system when a synchronization signal is input. Input is possible for synchronization signals described in the connection specifications. Input a reference signal with a frame rate identical to that of the system format of this device. → Refer to P.10 Connection specifications Refer to P.22 Verify the System Format
Connecting to REMOTE LAN connectors	REMOTE LAN connector	Connecting to a network will enable the user to control a wide range of this device's functionality from a browser. See the reference manual for details on how to use this device.
Connecting to REMOTE USB connectors	REMOTE USB connector	Connecting the remote USB connector of this device to the USB 2.0 port of a PC will enable the user to change parameter values and update software. See the reference manual for details on how to use this device.

5 Basic operation

Turning the power on and off.



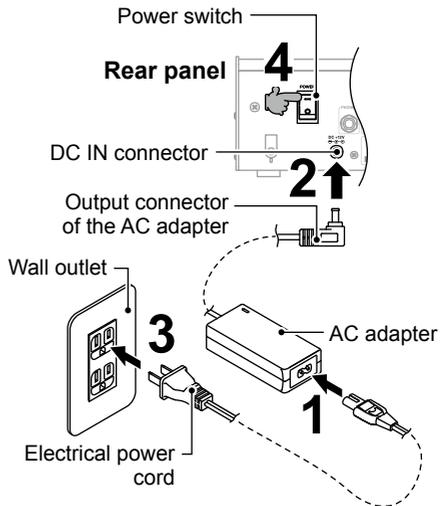
Always use an electrical power cord that is suitable for the area or region where the device is being used. Be sure to use only the electrical power cord and AC adapter that came with this device.

Turning on the power.



This device does require a brief amount of time to boot up after turning on the electrical power.

- 1** Connect the electrical power cord to the AC adapter.
- 2** Connect the output connector of the AC adapter to the DC IN connector of this device.
- 3** Connect the electrical power cord to a wall outlet.
- 4** Turn the power switch on (to the I position).

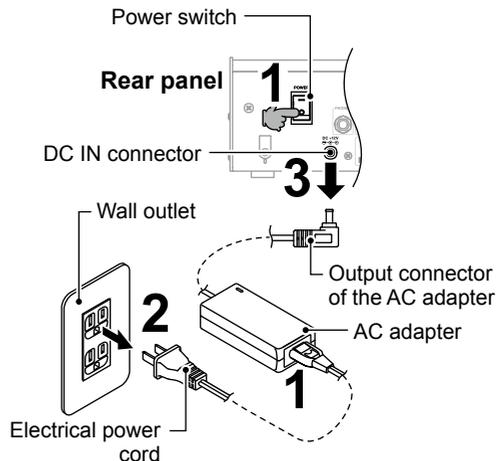


Turning off the power.



Hide the onscreen menu before turning off the power. The power is turned off while the onscreen menu is displayed, any changes made to parameter values will not be saved.

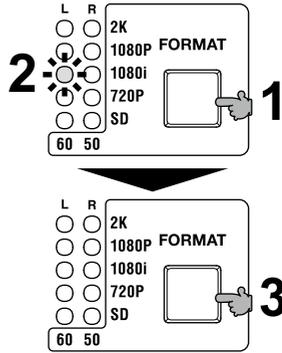
- 1** Turn the power switch off (to the O position).
- 2** Remove the electrical power cord from the wall outlet.
- 3** Remove the output connector of the AC adapter from the DC IN connector of this device.



Change or verify the System Format

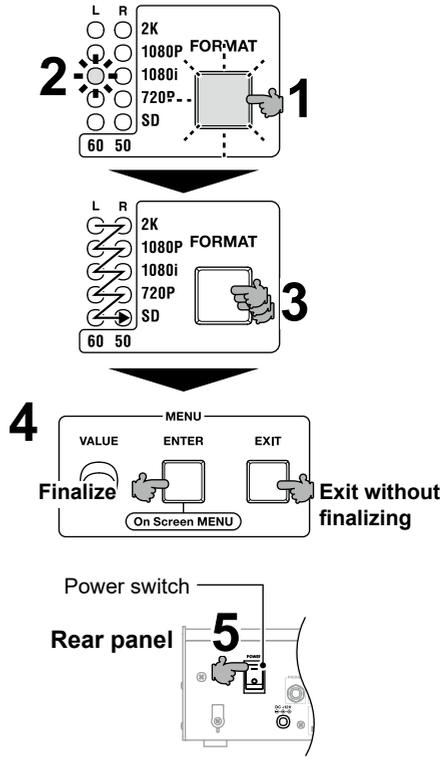
Verify the System Format

- 1 Press the FORMAT button.**
- 2 The level meter/format indicator comes on. (The current system format)**
- 3 Press the FORMAT button a second time.**
Return to the level meter indicator.



Change the System Format

- 1 Press the FORMAT button and hold for one second.**
- 2 The level meter/format indicator comes on, and the format button flashes. (The current system format)**
- 3 Press the Format button and select the desired System Format.**
Each time the button is pressed, a different indicator comes on.
- 4 Press the MENU ENTER button.**
Finalize the new system format.
To exit without finalizing, press the MENU EXIT button.
- 5 Turn off the power and turn on the power again.**
Changing the system format needs reboot the power.



5
Basic operation

6 Video and audio operation

Switching video

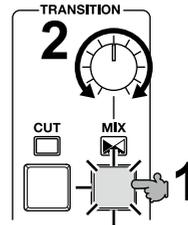
Toggle switching modes

There are two types of switching modes available: direct mode and preview mode. Press the FADER button to toggle the switching mode.

Buttons to use	Switching mode	Direct mode	Preview mode
FADER button / Indicator		Off	On
VIDEO INPUT SELECT button		Start switching PGM output video, PVW output video, and audio.	When the green light is on, switch the PVW output video only.
Auto button		Not available	Start switching PGM output video and audio.
VIDEO fader		Not available	Switch video and audio manually.

Switch video using the dissolve effect.

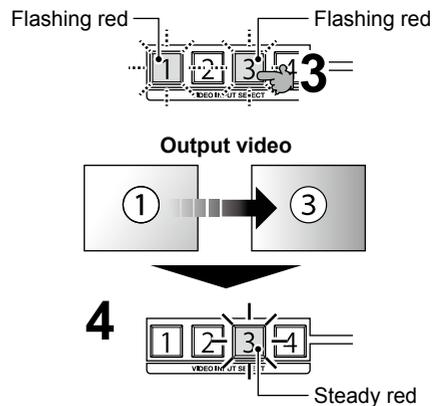
- 1 Press the MIX button.**
The indicator change to orange and the transition type change to MIX.
- 2 Specify a switching time using the TRANSITION knob.**



For direct mode

Example: For an original video [1] and an alternate video [3]

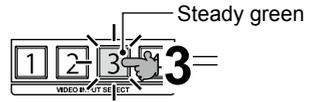
- 3 Press the alternate video [3] button.**
The output video slowly transitions within the switching time specified with the TRANSITION knob. During the transition, the original video [1] button and the alternate video [3] button both flash red.
- 4** Once the transition is complete, the alternate video [3] button stops flashing and is a steady red.



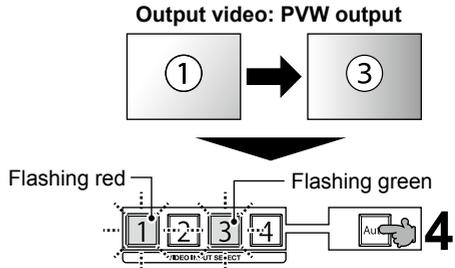
For preview mode

Example: For an original video [1] and an alternate video [3]

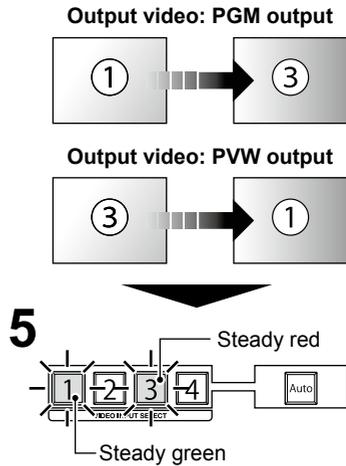
3 Press the alternate video [3] button.
The indicator is steady green.
The PVW output video switches.



4 Press the Auto button.
The PGM output video slowly transitions within the switching time specified with the TRANSITION knob. While at the same time, the PVW output video slowly transitions to the original video. During the transition, the original video [1] button flashes red and the alternate video [3] button flashes green.



5 Once the transition is complete, the original video [1] button stops flashing and is a steady green, while the alternate video [3] button stops flashing and is a steady red.



Change video switching/mixing effect.

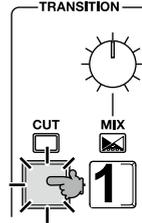
1 Press the MIX or CUT button and hold for one second.
Each time you press and hold the button, the color of the button will change and the video switching/mixing effect will change.

- Orange : Dissolve
- Green : Wipe
- Red : Picture in picture

Switch video using the cut effect.

Example: For an original video [1] and an alternate video [3]

- 1 Press the Cut button.**
The indicator comes on and the transitions are cut.



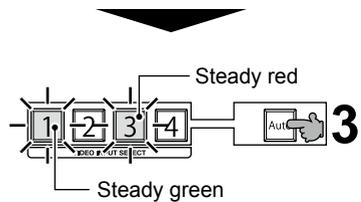
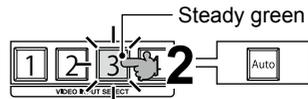
For direct mode

- 2 Press the alternate video [3] button.**
The output video switches.
The original video [1] button goes out and the alternate video [3] button is steady red.



For preview mode

- 2 Press the alternate video [3] button.**
The PVW output video switches, and the indicator is steady green.
- 3 Press the Auto button.**
The PGM output video switches.
The original video [1] button is steady green and the alternate video [3] button is steady red.



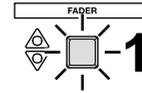
Use the VIDEO fader.

The VIDEO fader is available in preview mode. (→ Refer to P.23 Toggling switching modes)

Example: For an original video [1] and an alternate video [3]

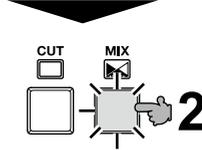
1 Verify that the FADER button indicator is on.

[If the indicator is not on]
Press the FADER button.
The indicator comes on.



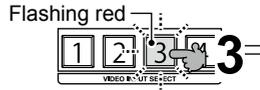
2 Press the MIX button.

The indicator comes on and the transitions are MIX or WIPE.

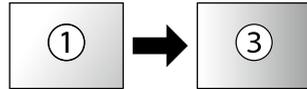


3 Press the alternate video [3] button.

The indicator is steady green.
The PVW output video switches.



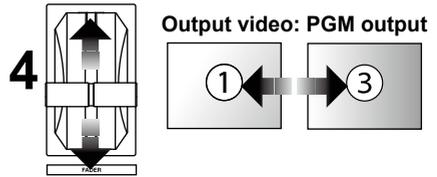
Output video: PVW output



4 Operate the VIDEO fader.

The PGM output video slowly transitions per the position of the VIDEO fader.

During the transition, the original video [1] button flashes red and the alternate video [3] button flashes green.
The switching direction can be verified from the FADER indicator.

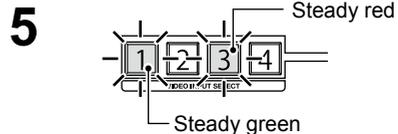


FADER indicator
Steady red: PGM output
Steady green: PVW output

Flashing red Flashing green



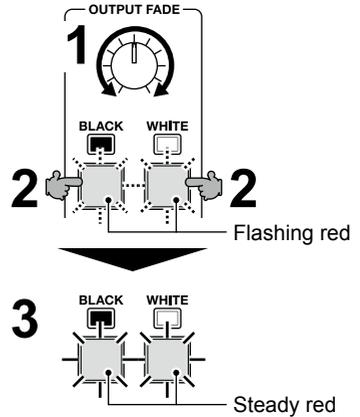
5 The original video [1] button is steady green and the alternate video [3] button is steady red. Switching is complete.



Fade in or fade out the output video.

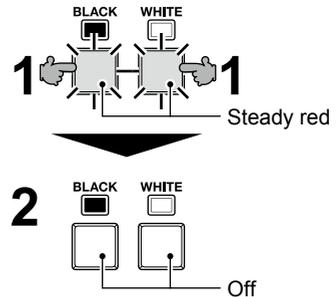
For fade out

- 1 Specify the fade time with the OUTPUT FADE knob.**
- 2 Press the button to be set.**
 BLACK button: black video image
 WHITE button: white video image
 The output video slowly fades out to the specified color within the specified time.
 During fade out, the specified button indicator flashes red.
- 3** When the indicator stops flashing and is steady red, the fade out is complete.



For fade in

- 1 Press the button with the lit indicator.**
 The output video slowly fades in. During fade in, the pressed button indicator flashes red.
- 2** When the indicator goes out, the fade out is complete.



Fade in or out effects PGM output only.

How to use OUTPUT FADE buttons for DSK.

The OUTPUT FADE button can also be used as a Down Stream Keyer (DSK).

For details, please refer to the reference manual.

- 1 Press the BLACK button.**
 The indicator change to green and the PVW output change to key mixed signal.
 Please adjust key parameters.
- 2 Press the WHITE button.**
 The indicator change to red and the PGM output slowly change to key mixed signal.

Switching audio

Synchronize the audio to the video and switch. (Audio follow function)

Press any of the AUDIO INPUT SELECT buttons to synchronize the audio to the video and switch.

Audio follow function	AUDIO INPUT SELECT button	Description
On	Other than the steady orange indicators	Synchronize the audio to the video and switch.
Off	Steady orange	Output the audio channel with the steady orange indicator, irrespective of the video.

Adjust the audio volume.

Adjust the audio volume for each video input.

Adjust the audio volume using the AUDIO LEVEL fader of each channel.

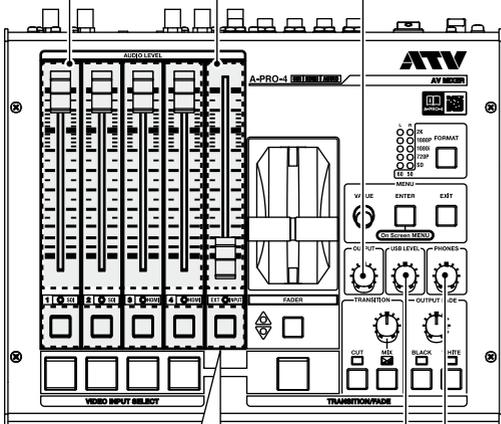
Adjust the audio volume for external audio input.

Adjust the audio volume using the AUDIO LEVEL fader.

Adjust the overall audio volume.

Adjust the overall audio volume using the OUTPUT LEVEL knob.

Turn the knob all the way to the right for unity gain (0dB).



Audio output

AUDIO INPUT SELECT button

- Steady red: Audio is being output.
- Steady orange: Audio is being output.
- Steady green: Audio is being output to PVW BUS.
→ Refer to P.8 Block Diagram
- Off: Audio is not being output.

Adjust the audio volume to the headphones.

Adjust the headphone output audio volume using the PHONES knob.

Adjust the USB output audio volume.

Adjust the USB audio output volume using the USB LEVEL knob.
Turn the knob all the way to the right for unity gain (0dB).

7 Troubleshooting

In many of the following cases, the problem is not due to a malfunction. Please double check before requesting repairs to your device.

If you are unable to resolve the issue yourself, please visit the ATV website. (➡ Refer to P.31)

Video

What should you do if . . .	Double check these items.	Countermeasures	Reference
No HDMI input.	Is the video signal being input copyright protected?	A-PRO-4 are not compliant with HDCP and does not accept input of copyright-protected video signals.	
	Is the A-PRO-4 compliant with the format being input?	Review the specifications and input a format with which the A-PRO-4 is compliant.	➡ P.10 Connection specifications
No SDI output video is displayed.	Is the connected SDI device compliant with 3G-SDI?	Either connect to a 3G-SDI-compliant device or, if using an HD-SDI-compliant device, specify the System Format as either 1080i or 720p.	➡ P.22 Change the System Format
	Have the 3G-SDI Out Type settings been specified correctly.	Depending upon the connected device, there are times when either Level-A or Level-B can be used but not both. Specify the 3G-SDI Type settings to match the connected device. See the reference manual for details on how to use this device.	➡ Reference manual
	Is the SDI Color set to RGB4:4:4 or YCC4:4:4?	There are few devices compliant with RGB4:4:4 or YCC4:4:4, so you should ordinarily specify YCC4:2:2.	➡ Reference manual

Audio

What should you do if . . .	Double check these items.	Countermeasures	Reference
Analog audio input volume is low.	Are the Input Impedance and Input Gain settings correct?	When connecting to a consumer product, it is necessary to specify the Input Impedance as Hi-Z and adjust the Input Gain. See the reference manual for details on how to use this device.	➡ Reference manual
Even after adjusting the Input Gain, the analog audio input is distorted.	Is the Input Impedance setting correct?	For certain types of professional equipment, it is necessary to specify the input impedance as 600 ohms. See the reference manual for details on how to use this device.	➡ Reference manual
Analog audio output volume is high.	Adjust the Maximum Output Level.	This device outputs at professional levels. When connecting to an ordinary consumer product, it is necessary to adjust the Maximum Output Level. See the reference manual for details on how to use this device.	➡ Reference manual

What should you do if . . .	Double check these items.	Countermeasures	Reference
Analog audio output volume is low.	Have you connected to a device with a low input impedance?	A-PRO-4 have an output load impedance of 20 kΩ or greater. Adjust the impedance as necessary by connecting via a direct box or other device.	→ Reference manual
There is no sound (embedded audio) from the HDMI IN or SDI IN connectors.	Is the audio data input from the SDI or HDMI connectors in linear PCM format?	A-PRO-4 are not compliant with Dolby or other non-PCM data.	→ Reference manual
	Are the SDI or HDMI input audio channel settings correct?	This device allows selection of any two from 16 SDI and eight HDMI channels. See the reference manual for details on how to use this device.	

Other

What should you do if . . .	Double check these items.	Countermeasures	Reference
Touching the housing produces a mild electrical shock.	/	Depending upon the layout, connected devices sometimes impart a slight electrical charge to the housing. Attach a ground to the housing as necessary to countermeasure this problem.	→ P.15 Names and functions of rear panel parts
The reference signal does not lock even when a REF IN signal is input.		Do the system format and the REF signal frame rates match?	Input a reference signal with a frame rate identical to that of the system format of this device.
	Is a composite signal that incorporates the video signal being input?	Synchronization sometimes becomes unstable, in which case input a REF IN signal comprising a BB, a two-value, or a three-value signal that does not incorporate a video signal.	
The onscreen menu is hidden for SDI output.	No onscreen menu is displayed for output connectors set to PGM output.	Specify PVW output instead of SDI output or use the onscreen menu for HDMI output.	→ Reference manual

8 Support

The latest support information is available at the ATV website shown below.

- ATV Corporation website
<http://www.atvcorporation.com/>

- Product page



<http://www.atvcorporation.com/products/videos/a-pro-4/>

For US

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

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

COMPLIANCE INFORMATION STATEMENT (DECLARATION OF CONFORMITY)

Model Name: A-PRO-4
 Type of Equipment: AV mixer
 Responsible Party: ATV Group Corp. USA
 Address: 16901 S.Western Ave. #101 Gardena, CA 90247
 Telephone: 424-329-3223

For EU Countries



This symbol on the product means that used electrical and electronic equipment should not be mixed with general household waste.

The correct disposal will help prevent potential negative effects on human health and the environment.

For proper treatment, recovery and recycling, please contact your city office, waste disposal servicer or the shop which you purchased the product.

For China

有关产品中所含有害物质的说明

本资料就本公司产品中所含的特定有害物质及其安全性予以说明。

本资料适用于 2016 年 7 月 1 日以后本公司所制造的产品。

环保使用期限



此标志适用于在中国国内销售的电子信息产品，表示环保使用期限的年数。所谓环保使用期限是指在自制造日起的定期限内，产品中所含的有害物质不致引起环境污染，不会对人体、财产造成严重的不良影响。

环保使用期限仅在遵照产品使用说明书，正确使用产品的条件下才有效。

不当的使用，将会导致有害物质泄漏的危险。

产品中有害有毒物质或元素的名称及含量

部件名称	有害有毒物质或元素					
	铅(Pb)	汞(Hg)	镉(Cd)	六价铬(Cr(VI))	多溴联苯(PBB)	多溴二苯醚(PBDE)
外壳(壳体)	×	○	○	○	○	○
电子部件(印刷电路板等)	×	○	×	○	○	○
附件(电源线、交流适配器等)	×	○	○	○	○	○

○：表示该有害有毒物质在该部件所有均质材料中的含量均在 GB/T26572-2011 规定的限量要求以下。
 ×：表示该有害有毒物质至少在该部件的某一均质材料中的含量超出 GB/T26572-2011 规定的限量要求。

For C.A. US (Proposition 65)

WARNING

This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.