

AirCleaner

AirCleaner-2 User Manual

v01

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1. Provide a Superior Customer Experience
 - offer the best product quality and support
2. Make Cool Practical Technology
 - develop great products that customers love

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If anything at all with your Ross experience does not live up to your expectations be sure to reach out to us at solutions@rossvideo.com.



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Ross Video Code of Ethics

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2. We will do our best to understand our customers' requirements.
3. We will not ship crap.
4. We will be great to work with.
5. We will do something extra for our customers, as an apology, when something big goes wrong and it's our fault.
6. We will keep our promises.
7. We will treat the competition with respect.
8. We will cooperate with and help other friendly companies.
9. We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis - do what you know in your heart is right. (You may rent helicopters if necessary.)*

Document Information

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FCC Compliance and User Information

The following information has been provided to clarify FCC requirements for operation of this device. These requirements are found in the FCC rules for radio frequency devices, Part 15.

Compliance

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

EMC Notices

United States of America — FCC Part 15

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



Important: Changes or modifications to this equipment not expressly approved by Ross Video Limited could void the user's authority to operate this equipment.

Canada

This Class “A” digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe “A” est conforme à la norme NMB-003 du Canada.

Europe

This equipment is in compliance with the essential requirements and other relevant provisions of **CE Directive 93/68/EEC**.

International

This equipment has been tested to **CISPR 32:2015** along with amendment **AMD1:2019** and found to comply with the limits for a Class A Digital device.



Important: This is a Class A product. In domestic environments, this product may cause radio interference, in which case the user may have to take adequate measures.

Important - Modifications & Shielded Cables

Changes or modifications to this product not authorized by Ross® Video Limited could void the FCC Compliance and negate authority to operate the product.

This product was tested for FCC compliance under conditions that included the use of Ross® Abekas® peripheral devices and Ross® Abekas® shielded cables and connectors between system components. It is important that Ross® Abekas® peripheral devices are used, and shielded cables and connectors are used between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices. Ross® Abekas® peripheral devices and the properly shielded cables and connectors can be obtained directly from Ross® Abekas®, or through a Ross® Abekas®-authorized dealer.

Safety and First Aid

Ross® Abekas® equipment is designed to the highest standards of quality and reliability. However, no matter how these systems are designed, operators and maintenance personnel can be exposed to electrical shock hazard when protective covers are removed for maintenance or the installation of options. With this caution in mind, each operator and engineer must observe all safety regulations, and have a clear understanding of first aid procedures related to electrical hazards.

Safety and Compliance Certifications

- Certified to EN-55032, IEC/EN 61000-3-1, IEC/EN 61000-3-2, and IEC/EN 62368-1



Power Information

To ensure safe operation and to guard against potential shock or risk of fire, ensure your AC power source for the system is within the required voltage range and frequency.

- Input AC Power Requirement: 100 to 240VAC / 8 to 4A / 47 to 63Hz



Warning: This device uses open-module power supplies with: **UNUSUALLY HIGH CURRENT and VOLTAGES!** The power supplies should NEVER have external AC power connected when the chassis top cover is removed. Risk of **DEADLY electrical shock is EXTREMELY HIGH!** Always remove all AC power from main chassis BEFORE removing the chassis top cover. For units fitted with the redundant power supply option, be sure to remove BOTH AC power cords

Operating Environment

The optimum operating environment is within the following ranges:

- Recommended Operating Temperature: 20°C to 35°C (68°F to 95°F)
- Recommended Operating Humidity: 20% to 80% non-condensing

Note: High temperature/humidity should be avoided at all times.

Safety Information

Important Safety Notices

This system complies with safety standard EN-55032. To ensure safe option and to guard against potential shock hazard or risk of fire, the following must be fulfilled:

- This system features auto-ranging power supplies. Ensure that your power source is within the correct range of voltage and frequency, as required by the system.
- Each chassis in this system must be electrically grounded by connecting the input power cord(s) to a correctly wired and grounded power outlet.



Warning: Completely disconnect all input AC power cords from the chassis before removing the top cover from the chassis. Failure to do so will expose dangerous electric currents and voltages. Physical contact with these electric currents and voltages is extremely dangerous and may result in severe physical injury or death! Only qualified service personnel should remove the top cover from the chassis.



Warning Hazardous Voltages: Modules marked with this symbol may be removed while the system is operating (powered). After removing a module, beware of dangerous electric currents and voltages that are exposed on the module receptacle connector inside the chassis. Please keep fingers, tools, and foreign metal objects away from the exposed receptacle connector while the chassis has input AC power applied. Physical contact with these electric currents and voltages is extremely dangerous and may result in severe physical injury or death! Only qualified service personnel should remove these modules.

Environmental Information

The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.



If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You can also contact Ross Video for more information on the environmental performances of our products.

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Technical Support

At Ross Video, we take pride in the quality of our products, but if a problem does occur, help is as close as the nearest telephone.

Our 24-Hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support are provided directly by Ross Video personnel. During business hours (eastern standard time), technical support personnel are available by telephone. Outside of normal business hours and on weekends, a direct emergency technical support phone line is available. If the technical support personnel who is on call does not answer this line immediately, a voice message can be left and the call will be returned shortly. Our Technical support staff are available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

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Overview

AirCleaner® is a solid-state, all-digital video and audio delay machine for use in live-to-air television broadcasts. AirCleaner® is designed as a protection against "wardrobe malfunctions", spoken profanities, or any type of unwanted broadcast content. AirCleaner® offers multiple operating modes with the ability to mask video offenses with an auxiliary safe video source or a defocused live image. AirCleaner® will mask audio offenses with an auxiliary safe audio source or a mute.

AirCleaner® can be operated with either one or two screeners (operators that censor the live audio/video feed). In the case of two-screener operation, the total program delay internal to AirCleaner® can be divided between the two users (in any proportion desired).

AirCleaner-2™ operates in HD (1.5Gb/s and 3Gb/s) and UHD TV1 (12Gb/s) video formats and is equipped with 2 HD-BNC video inputs, 2 HD-BNC video outputs, and 1 looping reference. AirCleaner® handles 8 channels (4 stereo pairs) of AES/EBU audio for each video I/O stream and can also utilize embedded audio in the SDI I/O streams.

AirCleaner-2™ also features a single stereo analog audio monitoring output on a 3.5mm jack.

AirCleaner-2™ comes in a number of configurations.

Table 1: AirCleaner-2™ Configurations

	720p/1080i (1.5G)	1080p (3G)	UHD TV1 (12G)
Model-A	80s	40s	10s
Model-B	160s	80s	20s
Model-C	360s	180s	45s

Options

All AirCleaner® models support the Redundant Power, Panic Button Control Panel, and Panel Button Y Cable options.

Redundant Power Supply

This option provides an additional power supply to guard against complete system failure in the event of a single power supply failure. Both power supplies operation in a load sharing configuration but AirCleaner® will run on a single power supply. In the event that one of the power supplies fails, the remaining operational power supply will automatically take over the complete power load.

Panic Button Control Panel

The Panic Button Control Panel provides a simple two-button interface (one button for Video, the other for Audio) that sits on a desktop and is connected to the AirCleaner® chassis via a DB9 cable.

Tip: A Soft Panic Button Panel is available in DashBoard for Operator 1.

The Panic Button Control Panel is used to trigger the video and/or audio mask in the event of a visual or aural offense. Pressing the specific button (**AUDIO** or **VIDEO**) will tell AirCleaner® to mask the content according to how the AirCleaner® is programmed. The masking will continue for the duration the button is held down.

The Panic Button Control Panel communicates to the AirCleaner® chassis over a standard GPI connection. The Panic Button Control Panel ships with a 33-foot shielded cable for connection to the GPI connector on the AirCleaner® chassis.

Panic Button Control Panel Y-Cable

AirCleaner® can be operated in a two screener mode that requires a second Panic Button Control Panel. This customized Y-cable is required to connect two Panic Button Control Panels to the AirCleaner® chassis. The Y-cable is connected to the rear of the AirCleaner® chassis and then the control cables for each of the two Panic Button Control Panels are connected to the Y-cable.

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Operation

The unique architecture of AirCleaner® allows for multiple user modes consisting of one or two screeners, multiple trigger options and the ability to have two completely independent delay paths through the system with independent control of audio and video delay.

Although AirCleaner® was designed primarily as a device to screen out visual and aural obscenities and profanities, it also features an adjustable delay to offset audio relative to video and therefore may also find uses as an audio-to-video synchronization device.

Realizing that every broadcast facility is designed for a unique work-flow, AirCleaner® in turn is designed with maximum flexibility in mind. AirCleaner® provides the flexibility required to meet a multitude of needs.

AirCleaner® can be quickly and easily configured by the user to provide either one-screener or two-screener operation. With two-screener operation, the internal delay can be split between the two screeners in any proportion desired; each of these screeners also has their own parameters for reaction time, individually adjustable for both audio and video. AirCleaner® also offers a simple way to offset the audio and video delay to compensate for timing or synchronization errors in the incoming audio/video feed.

Theory of Operation

The basic operation of AirCleaner® is described below. Only the video pathway is described, and the basic increment of time is one second (the number of frames depends on the video format).

In this example, AirCleaner® is programmed with the following parameters:

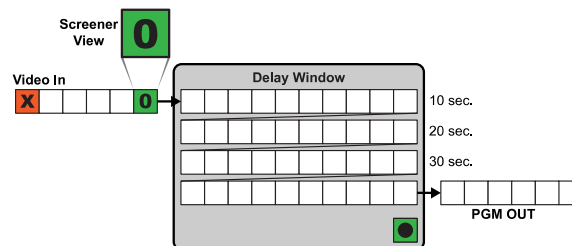
- Screeners = One
- Total PGM Delay = 40:00
- Video Reaction 1 = 2:00
- On Video Trigger = Defocus
- Defocus Ramp = 0:00

This example begins at an arbitrary time zero (00:00) as shown by the stop watch timer. As this example progresses, the stop watch timer advances as the violation segment of video shifts rightward through the video pipeline.

The real-time defocus engine is positioned at the end of the video pipeline in AirCleaner®, and is normally switched out of the video pathway. As you will see, when the first video frame that is marked as the start of violation reaches the end of the delay pipeline, AirCleaner® then automatically switches the video output to the processed output of the real-time defocus engine

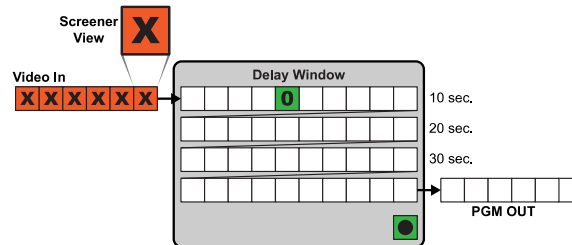
Time 00:00

The current video that the screener is looking at is safe, with no violations. There are violations coming (marker with an X) in the next 5 seconds. Each box in the figures below represent 1 second. The 0 frame will also advance through the delay.



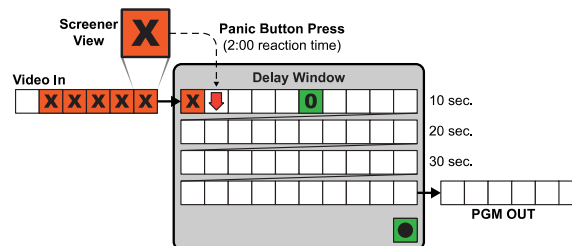
Time 05:00

Five seconds have elapsed and the first frame of the violation appears on the screener's video monitor as it enters the AirCleaner®. The screener must now react and press the panic button.



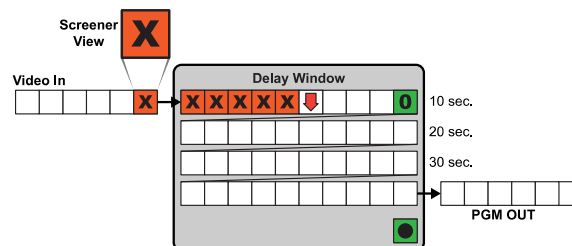
Time 06:00

After another second the screener recognizes the violation and pushes the panic button and holds it. Since the Reaction Time for this screener is set for 2:00 seconds, the button trigger is advanced forward in time, and is marked in the video one second before the violation.



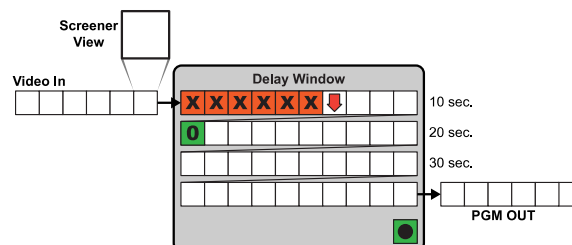
Time 10:00

After four more seconds the screener is still seeing a violation on their monitor and is still pressing the panic button.



Time 11:00

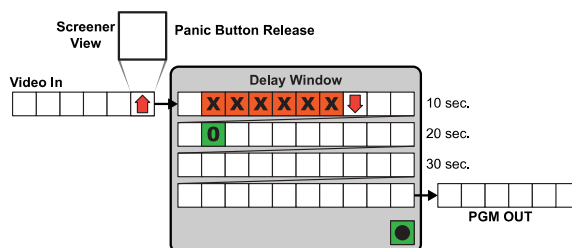
After another second the violation is over. The screener must now react and release the panic button.



Time 12:00

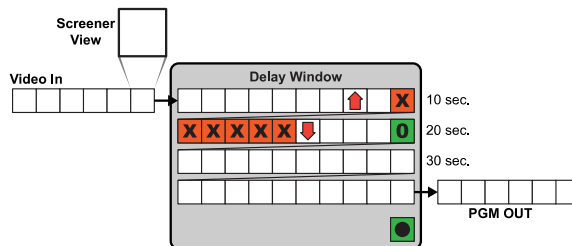
Another second later and the screener has released the panic button. AirCleaner® marks that frame of video as the end of the violation (as shown by the upward arrow).

Note: The button release is not advanced by the Reaction Time parameter.



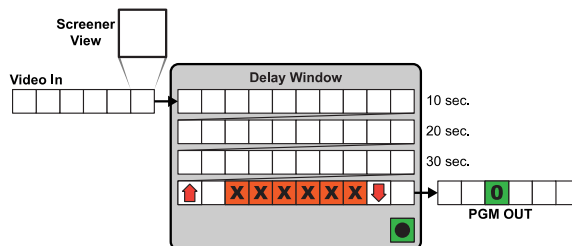
Time 20:00

Eight seconds later the violation is progressing through the video pipeline delay. The start and end of the violation (as depicted by the two arrows) are marked to tell the system when to switch to the real-time defocus engine or aux in video feed.



Time 43:00

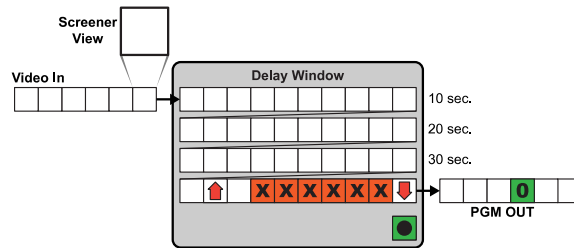
After twenty-three more seconds the violation is near the end of the video pipeline delay. The first frame that was marked as the start of the violation is just one second away from triggering the system.



Time 44:00

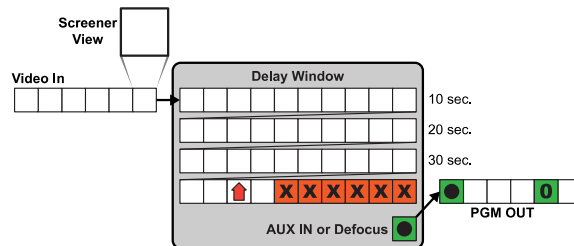
One second later the first frame of the violation has arrived at the trigger point. If the defocus is being used the video is routed to the real-time defocus engine.

Tip: If the Defocus Ramp is set, AirCleaner® starts the fade (ramp) to the defocus level before the frame marked as the start of the violation so that the defocus is fully applied for that frame.



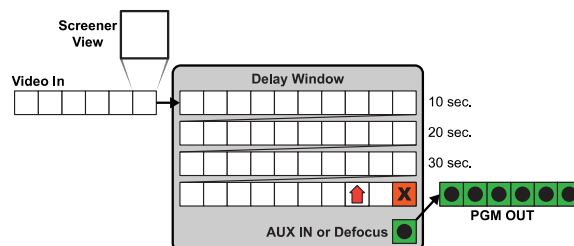
Time 45:00

After another second the aux in video feed is cut in or the video is exiting the defocus engine. The first second of the video before to the violation is now defocussed or replaced and is fed out the PGM OUT.



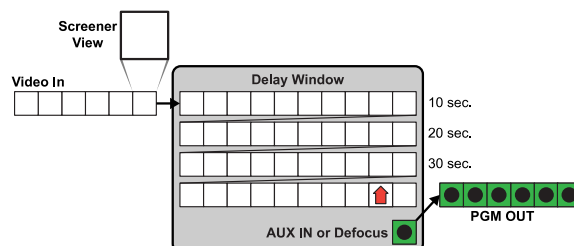
Time 50:00

After five more seconds the end of the violation is nearing the trigger point. The previous six seconds of video have been defocussed or replaced and fed out the PGM OUT.



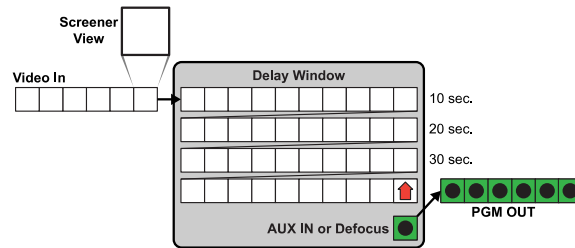
Time 51:00

One second later the first non-violation frame arrives at the trigger point. However, the panic button release marker (as depicted by the upward arrow) has not reached the trigger point yet. The video is still masked or replaced.



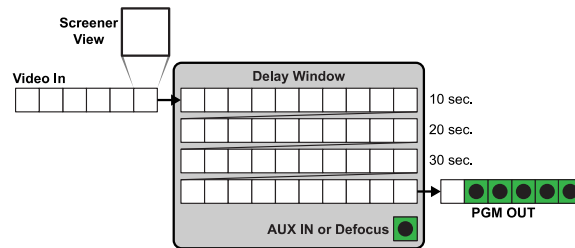
Time 52:00

After another second the panic button release marker has reached the trigger point and if a defocus is being applied the real-time defocus engine starts to fade out.



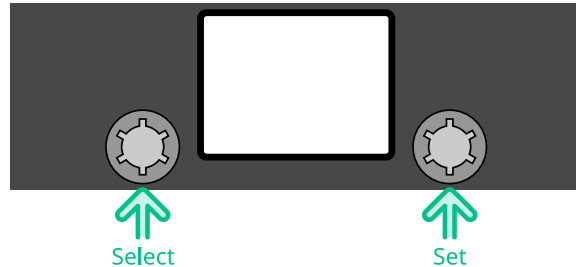
Time 53:00

One second later the aux in video feed has been cut out or the real-time defocus engine has been removed from the video pathway. The video output now shows the normal unprocessed video. The 40 seconds video delay is still applied.



Menu System

The menu system is accessed using a 2.4 in black and white TFT touchscreen display with two knobs on the front of the chassis. The left knob is the **Select** knob and the right knob is the **Set** knob.



Menu Navigation

The menu system allows you to access all of the setup and configuration information on the AirCleaner®. When navigating the menus, the left knob is used to select the menu item you want to adjust and the right knob is used to adjust the value of the menu item.

Note: Changes made on the **Main Menu** are applied immediately but changes made on the **Options Menu** are only applied after they are saved. Keep this in mind when using AirCleaner® during a live production.

Menu Lock

You can lock the menu system to prevent the accidental selection or change of parameters using the knobs. The menu lock only turns off the functionality of the knobs and does not prevent changes from other menu interfaces.

To Lock/Unlock the Menu System

The procedure to lock or unlock the menu system is the same.

Use the **SELECT** knob to select **Menu Lock Now** and press the **SET** knob.

Tip: You can also press the **SELECT** and **SET** knobs at the same time.

To Turn the Menu Auto-lock On

1. From the **Main Menu**, use the **SELECT** knob to select **Options Menu** and press the **SET** knob.
2. Use the **SELECT** knob to select **Menu Lockout**.
3. Use the **SET** knob to turn the auto-lock on and set the sleep time.
 - **OFF** — the menu will not lock automatically.
 - **XX Seconds** — the menu will lock automatically after the set amount of time. (10 to 60 Seconds)
4. Use the **SELECT** knob to select **Save Changes** and press the **SET** knob to select **OK**.

DashBoard Interface

Use DashBoard to connect to your AirCleaner® remotely for setup and monitoring.

The DashBoard interface allows you to configure AirCleaner-2™ remotely and without having to access the menu system on the front of the chassis.

Note: DashBoard requires a remote computer on the same subnet as AirCleaner-2™ and running the latest version of the DashBoard software.

Under the **Abekas** node in DashBoard there is a **Settings** and **Buttons** node.

Settings Node

The **Settings** node provides a graphical user interface to many of the AirCleaner-2™ settings. Along the top of the menu are listed to the model and software/firmware versions installed on the system.



Buttons Node

The **Buttons** node provides a graphic representation of a Panic Button Control Panel. This Soft Panic Button Panel operates similarly to the physical panel. Refer to [Soft Panic Button Panel](#) for information on using the Soft Panic Button Panel.



Soft Panic Button Panel Setup

You can set reaction times and how you want to use the Soft Panic Button Panel.

1. From the DashBoard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
2. Click **Control Panel**.

The screenshot shows the 'Control Panel' tab of the AirCleaner-2 interface. It displays two side-by-side preference sections for 'User 1' and 'User 2'. Each section includes settings for 'AUDIO Conceal Reaction Time', 'VIDEO Conceal Reaction Time', 'Chassis BYPASS Control' (with 'HIDE Control' and 'SHOW Control' radio buttons), 'Conceal Button Mode' (with 'Press & HOLD' and 'Toggle ON | OFF' radio buttons), and 'END Concealment' (with 'After Reaction Time' and 'Immediately' radio buttons). The 'Apply' and 'Cancel' buttons are at the bottom right.

3. In the **User 1 Preferences** section, configure the Soft Panic Button Panel as required.

Setting	Description
AUDIO Conceal Reaction Time	Enter the amount of reaction time in seconds (0 to max) for aural panic button triggers.
VIDEO Conceal Reaction Time	Enter the amount of reaction time in seconds (0 to max) for visual panel button triggers. The maximum amount of time available depends on the model of AirCleaner® you have and the video format you are working in. The higher the format, the less time is available.
Chassis BYPASS Control	Select whether the manual bypass control is visible (SHOW Control) on the Soft Panic Button Panel or is hidden (HIDE Control).
Conceal Button Mode	Select whether a panic button must be clicked and held (Press & HOLD) or clicked on and off again (Toggle ON/OFF).
END Concealment	Select whether the reaction time interval is also applied after a panic button is release or toggled off (After Reaction Time), or if the concealment is removed immediately (Immediately).

To Connect to the Server from DashBoard

1. Click **File > New > TCP/IP DashBoard Connect or openGear Device**.

The screenshot shows a wizard window titled 'New TCP/IP DashBoard Connect/openGear Device'. It contains the following fields and options: 'IP Address' (with a 'Detect Frame Information' button), 'Display Name' (set to 'Frame'), 'Protocol' (radio buttons for 'OGP' and 'JSON', with 'JSON' selected), 'Port' (set to '5254'), and a checked checkbox for 'Remember connection settings for this frame'. Navigation buttons '< Back', 'Next >', 'Finish', and 'Cancel' are at the bottom.

2. In the **IP Address** field, enter the IP address of the server. The default IP address is 192.168.0.1.
3. In the **Display Name** field, enter the name you want to use to identify the server in DashBoard. This should be a unique name for the server you are setting up.
4. Select **JSON**.

5. In the **Port** field, enter 5254.

6. Click **Finish**.

The server appears in the **Tree View**.

Video Reference

AirCleaner® accepts Tri-Level analog reference. Video formats can be locked to reference as long as the frame rate of the video and the reference signal are matched.

The reference signal will lock both the **PGM OUT** and **TAP OUT** together in time with the reference signal. The reference input is non-terminating with loop-through.

Reference can also be set to lock to the **PGM IN** or **AUX IN** video signal or set to free run.

The input video format must be at the same frame-rate as the input reference signal.

To Set the Video Format from Dashboard

You can set the reference type and SDI video output timing in Dashboard.

1. From the DashBoard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
2. Click **Video**.

3. In the **Video Reference Source** area, select the reference type you want to use.
 - **Free Run** — audio/video outputs are not locked to any reference signal.
 - **PGM Input** — audio/video outputs are locked to the SDI video signal present on the PGM IN BNC.
 - **AUX Video In** — audio/video outputs are locked to the SDI video signal present on the AUX IN BNC.
 - **Bi-Level** — audio/video outputs are locked to the Bi-Level sync analog video signal present on the REF IN BNC.
 - **Tri-Level** — audio/video outputs are locked to the Tri-Level sync analog video signal present on the REF IN BNC.

Tip: The **Reference Status** area shows if the system has locked to a valid reference signal.

4. In the **Video SDI Output Timing** area, adjust the video output timing.
 - **Horizontal Phase** — adjust the horizontal position of the PGM OUT and TAP OUT SDI video signals, in pixels, relative to the reference source. (0 to max)
 - **Vertical Phase** — adjust the vertical position of the PGM OUT and TAP OUT SDI video signals, in lines, relative to the reference source. (-10 to 10)
 - **Video Image Shift** — adjust the vertical picture position of the PGM OUT and TAP OUT SDI video signals relative to the reference source. (0 to 50)
5. Click **Apply**.

To Set the Video Reference Type

All audio/video outputs from the system will be locked to the reference source.

1. From the **Main Menu**, use the **SELECT** knob to select **Options Menu** and press the **SET** knob.
2. Use the **SELECT** knob to select **Genlock**.
3. Use the **SET** knob to select the reference type you want to use.
 - **Free Run** — audio/video outputs are not locked to any reference signal.
 - **PGM Video IN** — audio/video outputs are locked to the SDI video signal present on the PGM IN BNC.
 - **AUX Video IN** — audio/video outputs are locked to the SDI video signal present on the AUX IN BNC.
 - **Bi-Lvl REF IN** — audio/video outputs are locked to the Bi-Level sync analog video signal present on the REF IN BNC.
 - **Tri-Lvl REF IN** — audio/video outputs are locked to the Tri-Level sync analog video signal present on the REF IN BNC.
4. Use the **SELECT** knob to select **Save Changes** and press the **SET** knob to select **OK**.

To Adjust Video Timing

You can adjust the timing of the output video for both the PGM OUT and TAP OUT.

1. From the **Main Menu**, use the **SELECT** knob to select **Options Menu** and press the **SET** knob.
2. Use the **SELECT** knob to select **H OUT Timing**.
3. Use the **SET** knob to adjust the horizontal position of the PGM OUT and TAP OUT SDI video signals, in pixels, relative to the reference source. (0 to max)
4. Use the **SELECT** knob to select **V OUT Timing**.
5. Use the **SET** knob to adjust the vertical position of the PGM OUT and TAP OUT SDI video signals, in lines, relative to the reference source. (-10 to 10)
6. Use the **SELECT** knob to select **Pix Vert. Shift**.
7. Use the **SET** knob to adjust the vertical picture position of the PGM OUT and TAP OUT SDI video signals relative to the reference source. (0 to 50)
8. Use the **SELECT** knob to select **Save Changes** and press the **SET** knob to select **OK**.

Screeners

AirCleaner® can be operated with either one or two screeners (operators that censor the live audio/video feed). In the case of two-screener operation, the total program delay internal to AirCleaner® can be divided between the two users (in any proportion desired).

Related information

[Delays and Offsets](#) on page 24

To Set the Number of Screeners

Either one or two screeners are supported. All screeners share the total delay time provided by the system.

1. Use the **SELECT** knob to select **Screeners**.
2. Use the **SET** to select the number of screeners.
 - **One** — the total program delay is applied to this single user. Screener 1 monitors the incoming audio/video.
 - **Two** — the total program delay is split between the two screeners. Screener 1 monitors the incoming audio/video and screener 2 monitors the audio/video output from the TAP OUT BNC.

When you select two screeners, separate delay and reaction times are available for each screener.

Delays and Offsets

Delays are used to set the amount of time each screener has to catch a violation. The system has a total amount of delay (Total PGM Delay) that can be divided up between the two screeners. Each screener can also be assigned a video and audio reaction time offset to compensate for that particular user.

An audio offset is also available to compensate for any audio/video synchronization issues.

To Configure the Delay Settings from DashBoard

You can set the number of screeners as well as the individual delays from DashBoard.

1. From the DashBoard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
2. Click **Delay**.

The screenshot shows the 'AirCleaner-2' settings window with the 'Delay' tab selected. The 'Number of Operators' section has 'Two' selected. The 'Total PROGRAM Delay' is set to '05.00'. The 'Screener 2 Delay' is set to '00:00'. The 'PGM OUT Audio-Video Offset Delay' is set to '0.00.0'. The interface includes a top bar with 'Model: A', 'ACL Version: 3.2', 'OGP Version: 2.1', and 'FW Version: 72'. The bottom right has 'Apply' and 'Cancel' buttons.

3. In the **Number of Operators** area, select the number of screeners.
 - **One** — the total program delay is applied to this single user. Screener 1 monitors the incoming audio/video.
 - **Two** — the total program delay is split between the two screeners. Screener 1 monitors the incoming audio/video and screener 2 monitors the audio/video output from the TAP OUT BNC.
4. In the **Total PROGRAM Delay** area, enter the amount of delay you want to use. (0 to max)
The maximum amount of time available depends on the model of AirCleaner® you have and the video format you are working in. The higher the format, the less time is available.
5. In the **Screener 2 Delay** area, enter the amount of delay you want to assign to screener 2. (0:01 to Total PGM Delay)
6. In the **PGM OUT Audio-Video Offset Delay** select the amount of offset you want to apply to the audio.
 - **-X.XX.X** — to advance the audio relative to video (which decreases the audio delay) a value up to the value of the current Total PGM Delay can be selected, or to a maximum of -10 seconds (whichever is smaller).
 - **+X.XX.X** — to delay the audio relative to video (which increases the audio delay) a value up to the value of the current Total PGM Delay parameter can be selected, or to a maximum of +10 seconds (whichever is smaller).
7. Click **Apply**.

Total PGM Delay

The Total PGM Delay is the total delay, in seconds, applied to the audio/video stream by the system between the PGM IN and the PGM OUT. If you have a single screener, they get the entire delay interval. If you have two screeners, the delay interval is divided between the two screeners with the Screener 2 Delay parameter determining how much of the total delay is allocated to screener 2.

To Set the Total PGM Delay

This parameter has a variable range that depends on the video format of the system is operating in, as well as the amount of delay memory installed.

1. Use the **SELECT** knob to select **Total PGM Delay**.
2. Use the **SET** knob to select the amount of delay you want to use. (0 to max)

The maximum amount of time available depends on the model of AirCleaner® you have and the video format you are working in. The higher the format, the less time is available.

Audio PGM Offset

The PGM Audio Offset is used to correct any audio-to-video synchronization errors on the incoming audio/video. If an upstream device causes the audio to be 'slipped' in time with respect to the video, this parameter can correct the audio/video synchronization.

The maximum possible audio offset that can be programmed is +/-10 seconds, depending on the current Total PGM Delay value. The range of the audio offset will decrease if the total program delay is set below 10 seconds.

To Set the PGM Audio Offset

This adjusts the offset applied to the audio relative to video in tenths of a second to correct synchronization errors.

1. Use the **SELECT** knob to select **PGM Audio Offset**.
2. Use the **SET** knob to select the amount of offset you want to apply to the audio.
 - **-X** — to advance the audio relative to video (which decreases the audio delay) a value up to the value of the current Total PGM Delay can be selected, or to a maximum of -10 seconds (whichever is smaller).
 - **+X** — to delay the audio relative to video (which increases the audio delay) a value up to the value of the current Total PGM Delay parameter can be selected, or to a maximum of +10 seconds (whichever is smaller).

Screener 2 Delay

The Screener 2 Delay is the amount of the total delay that is assigned to screener 2. This delay is applied for screener 2 on the TAP OUT feed.

If Total PGM Delay is set to 8:00 seconds, and the Screener 2 Delay is set to 3:00 seconds, then the PGM IN feed is delayed by 3:00 seconds before arriving at the TAP OUT for screener 2. It then takes an additional 5:00 seconds for the audio/video to arrive at the PGM OUT.

To Set the Screener 2 Delay

This adjusts the delay between the audio/video on the PGM IN feed versus the TAP OUT by selecting how much of the total delay is allocated to screener 2.

1. Use the **SELECT** knob to select **Screener 2 Delay**.

Tip: The number of screeners must be set to two for this menu item to appear.

2. Use the **SET** knob to select the amount of delay you want to assign to screener 2. (0:01 to Total PGM Delay)

The maximum amount of time available depends on the model of AirCleaner® you have and the video format you are working in. The higher the format, the less time is available.

Video Reaction Times

The Video Reaction selects the reaction time delay for a screener when the Video Panic Button for that screener is pressed. In a two-screener system there are separate reaction times for both screeners. This will back-time the button press to compensate for the time it takes the screener to see a violation and then press the VIDEO panic button.

To Set the Video Reaction Time

This allows the system to compensate for the amount of time it takes for a screener to see a violation and press the panic button. The inpoint for the violation is set back this amount to compensate for the reaction time.

1. Use the **SELECT** button to select the video reaction you want to set.
 - **Video Reaction 1** — the video reaction offset for screener 1.
 - **Video Reaction 2** — the video reaction offset for screener 2. (Screeners must be set to TWO)
2. Use the **SET** knob to select the amount of reaction time in seconds. (0 to max)

The maximum amount of time available depends on the model of AirCleaner® you have and the video format you are working in. The higher the format, the less time is available.

Tip: Although it may be tempting to program an extremely large reaction time, there are pitfalls of doing so. A very large reaction time can cause the violation trigger to be advance so far ahead of the actual violation that a large amount of non-violation content will be lost.

Audio Reaction Times

The Audio Reaction selects the reaction time delay for a screener when the Audio Panic Button for that screener is pressed. In a two-screener system there are separate reaction times for both screeners. This will back-time the button press to compensate for the time it takes the screener to hear a violation and then press the Audio panic button.

To Set the Audio Reaction Time

This allows the system to compensate for the amount of time it takes for a screener to hear a violation and press the panic button. The inpoint for the violation is set back this amount to compensate for the reaction time.

1. Use the **SELECT** button to select the audio reaction you want to set.
 - **Audio Reaction 1** — the audio reaction offset for screener 1.
 - **Audio Reaction 2** — the audio reaction offset for screener 2. (Screeners must be set to TWO)
2. Use the **SET** knob to select the amount of reaction time in seconds. (0 to max)

The maximum amount of time available depends on the model of AirCleaner® you have and the video format you are working in. The higher the format, the less time is available.

Tip: Although it may be tempting to program an extremely large reaction time, there are pitfalls of doing so. A very large reaction time can cause the violation trigger to be advance so far ahead of the actual violation that a large amount of non-violation content will be lost.

Trigger Stretch

The Trigger Stretch setting works with the Video and Audio Reaction Time settings to extend the masking of the violation after a panic button is released. This works in the same way as the Video and Audio Reaction Time to back-time the button release to compensate for the time it takes the screener to see or hear the end of a violation and then release either the Video or Audio Panic Button.

Note: Ross Video recommends leaving this setting on **(YES)**.

Video Setup

AirCleaner® provides 2 SDI BNC video inputs with embedded audio (**PGM IN** and **AUX IN**) and 2 SDI BNC video outputs with embedded audio (**PGM OUT** and **TAP OUT**). A single **REF IN** BNC provides external reference to the system.

Video Connections

All SDI inputs operate in the same video format that the associated output is set to.

Tip: The LED next to the PGM IN, AUX IN, and REF IN is on if an input signal is detected and locked on that input. If the LED is flashing or off there is a problem with the video signal. The LEDs next to the PGM OUT and TAP OUT are always on.

- **PGM IN** — the main video feed coming into the system that audio and video delays can be applied to. Audio delays are applied to the 16 channels of associated audio.
- **PGM OUT** — the main "Live to Air" video feed coming out of the system that the audio and video delays are applied to.
- **AUX IN** — the safe video feed that the system switches to when the video panic button is pressed. The system can be set to use a defocus instead of the aux video. The embedded audio from this video source can also be used.
- **TAP OUT** — the monitor out used in a two-screener work-flow. This video feed is downstream of the delay window used by the first screener and allows the second screener to monitor video coming into their own delay window.

Supported Video Formats

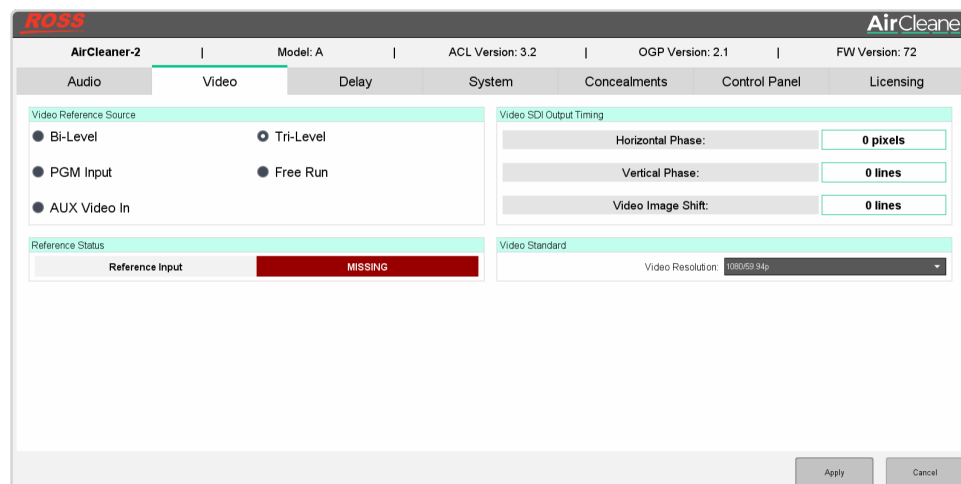
The system supports a number of video format.

- 720p 23.98, 24, 25, 29.97, 50, 59.94, 60Hz
- 1080i 50, 59.94, 60Hz
- 1080pSF 23.98, 24Hz
- 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60Hz
- 2160p (UHDTV1) 50, 59.94, 60Hz (software licence required)

To Set the Video Format from Dashboard

You can set the video format the system is operating in from Dashboard.

1. From the Dashboard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
2. Click **Video**.



-
3. In the **Video Standard** area, click the **Video Resolution** list and select the video format you want the system to operate in.
 4. Click **Apply**.

To Set the Video Format

The Video Format parameter determines the video format of all the video inputs and outputs of the system.

1. From the **Main Menu**, use the **SELECT** knob to select **Options Menu** and press the **SET** knob.
2. Use the **SELECT** knob to select **Video Format**.
3. Use the **SET** knob to select the video format you want the system to operate in.
4. Use the **SELECT** knob to select **Save Changes** and press the **SET** knob to select **OK**.

Audio Setup

AirCleaner® provides 16 channels of AES/EBU digital audio input and output. Embedded audio on the video inputs/output is also supported.

Audio Connections

All AES/EBU digital audio inputs and outputs operate at the same 48kHz @ 24bit rate. Each BNC supports 8 channels.

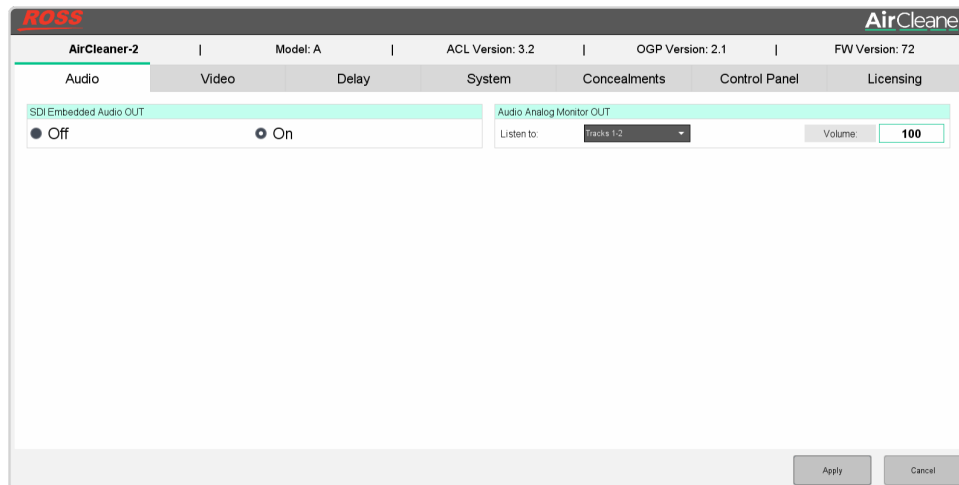
- **PGM IN** — the digital audio inputs that are associated with the PGM IN SDI video input.
- **PGM OUT** — the delayed "Live to Air" digital audio output that is associated with the PGM OUT SDI video output.
- **AUX IN** — the safe audio feed that the system switches to when the audio panic button is pressed. The system can be set to use a mute instead of the aux audio.
- **TAP OUT** — the audio out used in a two-screener work-flow. This audio stream is downstream of the delay window used by the first screener and allows the second screener to monitor audio coming into their own delay window.

A 3.5mm female stereo jack (**STEREO ANALOG AUDIO OUTPUT**) provides monitoring of analog audio output. You can monitor any stereo pair from the PGM OUT audio output. The output level is 0dBmV. The Analog Audio OUT parameter in the Main Menu controls the audio source selection for this output jack and the Analog Audio Vol parameter controls the volume.

To Configure Audio Setting from DashBoard

Some audio output setting can be configured from DashBoard.

1. From the DashBoard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
2. Click **Audio**.



3. In the **SDI Embedded Audio OUT** area, select whether the audio is embedded in the PGM and TAP SDI outputs (**ON**), or not (**OFF**).
4. In the **Audio Analog Monitor Area**, click the **Listen to** list and select the audio source for the headphones.
 - **Tracks 1/2** — monitor program audio channels 1 and 2.
 - **Tracks 3/4** — monitor program audio channels 3 and 4.
 - **Tracks 5/6** — monitor program audio channels 5 and 6.
 - **Tracks 7/8** — monitor program audio channels 7 and 8.

-
- **Tracks 9/10** — monitor program audio channels 9 and 10.
 - **Tracks 11/12** — monitor program audio channels 11 and 12.
 - **Tracks 13/14** — monitor program audio channels 13 and 14.
 - **Tracks 15/16** — monitor program audio channels 15 and 16.
5. In the **Volume** field enter the volume for the headphones. (0 to 255)
 6. Click **Apply**.

To Select the Audio Source for PGM IN

Select the source of the audio that is used for the PGM In.

1. From the **Main Menu**, use the **SELECT** knob to select **Options Menu** and press the **SET** knob.
2. Use the **SELECT** knob to select **PGM IN Audio**.
3. Use the **SET** knob to select the audio source for the PGM In.
 - **AES** — the TASCAM® Digital audio input.
 - **SDI Embedded** — the embedded audio in the PGM IN SDI video signal on the PGM IN BNC.
4. Use the **SELECT** knob to select **Save Changes** and press the **SET** knob to select **OK**.

To Select the Audio Source for AUX IN

Select the source of the audio that is used for the AUX In.

1. From the **Main Menu**, use the **SELECT** knob to select **Options Menu** and press the **SET** knob.
2. Use the **SELECT** knob to select **AUX IN Audio**.
3. Use the **SET** knob to select the audio source for the AUX In.
 - **AES** — the TASCAM® Digital audio input.
 - **SDI Embedded** — the embedded audio in the AUX IN SDI video signal on the AUX IN BNC.
4. Use the **SELECT** knob to select **Save Changes** and press the **SET** knob to select **OK**.

To Configure the Analog Audio Out Jack

You can select the source and audio level that is fed out of the analog audio headphone jack.

1. Use the **SELECT** knob to select **Analog Audio OUT**.
2. Use the **SET** knob to select the audio source for the headphones.
 - **PGM OUT 1/2** — monitor program audio channels 1 and 2.
 - **PGM OUT 3/4** — monitor program audio channels 3 and 4.
 - **PGM OUT 5/6** — monitor program audio channels 5 and 6.
 - **PGM OUT 7/8** — monitor program audio channels 7 and 8.
 - **PGM OUT 9/10** — monitor program audio channels 9 and 10.
 - **PGM OUT 11/12** — monitor program audio channels 11 and 12.
 - **PGM OUT 13/14** — monitor program audio channels 13 and 14.
 - **PGM OUT 15/16** — monitor program audio channels 15 and 16.
3. Use the **SELECT** knob to select **Analog Audio Vol**.
4. Use the **SET** knob to select the volume for the headphones. (0 to 255)

To Embed Audio in the SDI Outputs

You can embed the audio out into the SDI video output on the PGM OUT and TAP OUT output BNCs.

1. From the **Main Menu**, use the **SELECT** knob to select **Options Menu** and press the **SET** knob.
2. Use the **SELECT** knob to select **Embed. Audio OUT**.

-
3. Use the **SET** knob to select whether the audio is embedded in the PGM and TAP SDI outputs (**ON**), or not (**OFF**).
 4. Use the **SELECT** knob to select **Save Changes** and press the **SET** knob to select **OK**.

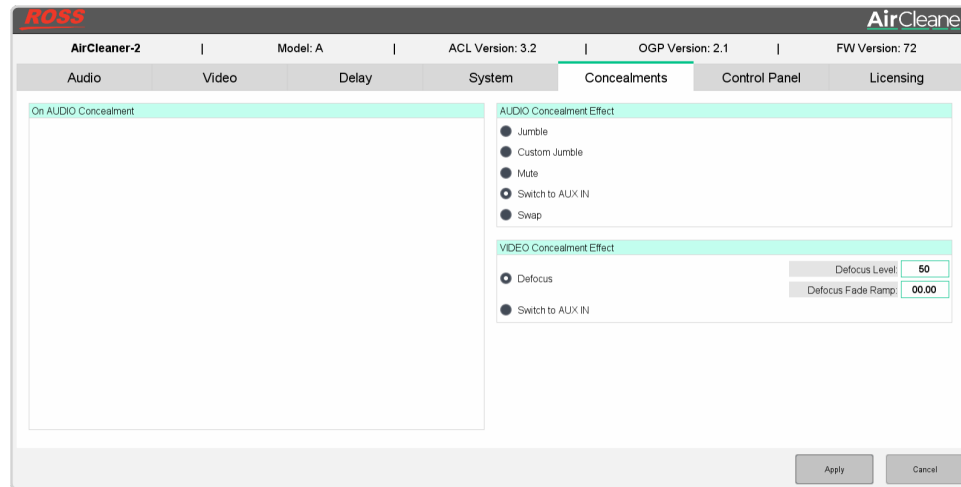
Panic Setup

AirCleaner® can be set up to either defocus any violation content or replace it with the aux in feed. This is applied to both audio and video violations.

To Configure Video Panic Setting from Dashboard

The video panic settings tell the system how to react when the video panic button is pressed.

1. From the DashBoard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
2. Click **Concealment**.



3. In the **VIDEO Concealment Effect** area, select how the system reacts to a video panic button trigger.
 - **Defocus** — visual violation is covered by defocusing the live image. The amount of defocus is determined by the Defocus Level parameter.
 - **Switch to AUX IN** — visual violation is covered by switching to the AUX IN video.
4. (Defocus Only) In the **Defocus Level** field enter the amount of defocus you want to apply to cover a video violation. (0 to 100)

Tip: To help determine the amount of defocus you need, feed sample video through the system and press the video panic button. While holding the video panic button you can adjust the amount of defocus.

5. (Defocus Only) In the **Defocus Fade Ramp** field enter the amount of time to fade the defocus effect in. (0 to max)

Note: The defocus ramp is applied along with the reaction time. This means, for example, that the defocus fade could start the value of the ramp time (1:00) before the value of the reaction time offset (2:00) is applied, resulting in the defocus fade starting the cumulative time (3:00) before the trigger point.

6. Click **Apply**.

To Configure Video Panic Setting

The video panic settings tell the system how to react when the video panic button is pressed.

1. Use the **SELECT** knob to select **On Video Trigger**.
2. Use the **SET** knob to select how the system reacts to a video panic button trigger.
 - **Defocus** — visual violation is covered by defocusing the live image. The amount of defocus is determined by the Defocus Level parameter.

- **Luma Matte** — visual violation is covered by switching to a flat-screen luminance matte image. The luminance value of matte image is determined by the Luma Matte Level parameter.
 - **Video AUX IN** — visual violation is covered by switching to the AUX IN video.
3. (Defocus Only) Use the **SELECT** knob to select **Defocus Level**.
 - a) Use the **SET** knob to select the amount of defocus you want to apply to cover a video violation. (0 to 100)

Tip: To help determine the amount of defocus you need, feed sample video through the system and press the video panic button. While holding the video panic button you can adjust the amount of defocus.

4. (Defocus Only) Use the **SELECT** knob to select **Defocus Ramp**.
 - a) Use the **SET** knob to select the amount of time to fade the defocus effect in. (0 to max)

Note: The defocus ramp is applied along with the reaction time. This means, for example, that the defocus fade could start the value of the ramp time (1:00) before the value of the reaction time offset (2:00) is applied, resulting in the defocus fade starting the cumulative time (3:00) before the trigger point.

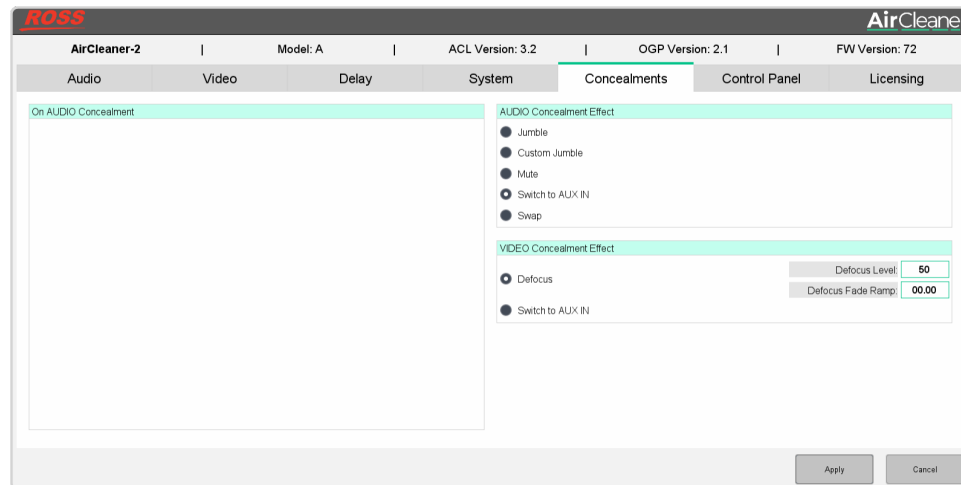
5. (Luma Matte Only) Use the **SELECT** knob to select **Luma Matte Level**.
 - a) Use the **SET** knob to select the amount of luma matte to apply. (0 to 100)

Tip: To help determine the amount of luma matte you need, feed sample video through the system and press the video panic button. While holding the video panic button you can adjust the amount of luma matte.

To Configure Audio Panic Setting from Dashboard

The audio panic settings tell the system how to react when the audio panic button is pressed.

1. From the DashBoard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
2. Click **Concealment**.



3. In the **AUDIO Concealment Effect** area, select how the system reacts to an audio panic button trigger.
 - **Jumble** — aural violation is masked by jumbling the audio signal.
 - **Custom Jumble** — aural violation is masked by jumbling the audio signal on selected tracks.
 - **Mute** — aural violation is masked by muting the audio.
 - **Switch to AUX IN** — aural violation is masked by switching to the Audio AUX IN audio signal.
 - **Swap** — aural violation is masked by swapping in the another audio track.
4. (Custom Jumble Only) In the **On AUDIO Concealment** area, select which tracks you want to jumble with an audio panic button trigger.

-
5. (Swap Only) In the **On AUDIO Concealment** area, select the audio track that you want to substitute for the track with the violation.



Important: When you select a different track to be output for the input track, you must select a different track to be used where the first track was taken from. For example, if you select Track 2 Out to output for Track 1 In, you must select Track 1 Out for Track In.

Tip: Click **Normalize** to reset the output track assignments.

6. Click **Apply**.

To Configure Audio Panic Setting

The audio panic settings tell the system how to react when the audio panic button is pressed.

1. Use the **SELECT** knob to select **On Audio Trigger**.
2. Use the **SET** knob to select how the system reacts to an audio panic button trigger.
 - **Mute** — aural violation is masked by muting the audio.
 - **Audio AUX IN** — aural violation is masked by switching to the Audio AUX IN audio signal.
 - **Jumble** — aural violation is masked by jumbling the audio signal.
 - **Custom Jumble** — aural violation is masked by jumbling the audio signal on selected tracks.
 - **Swap** — aural violation is masked by jumbling the audio signal.

Note: Configuration of the Custom Jumble and Swap can only be set from DashBoard.

User Profiles

The system can store up to three (3) complete snapshots of the current configuration. These user profiles can be loaded to easily reconfigure the system for different events, screener with custom reaction times, or work-flows.

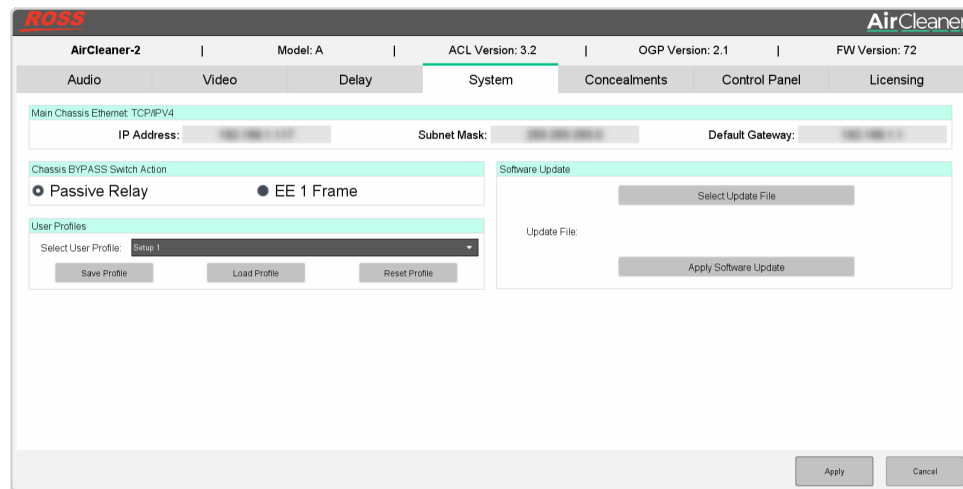


Important: Do not save or recall a setup while live on-air.

To Save a User Profile from Dashboard

Save the current settings as a user profile.

1. From the DashBoard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
2. Click **System**.



3. In the **User Profiles** area, click the **Select User Profile** list and select the **Setup X** that you want to save the profile to.
4. Click **Save Profile** to save the profile.

To Save a Setup

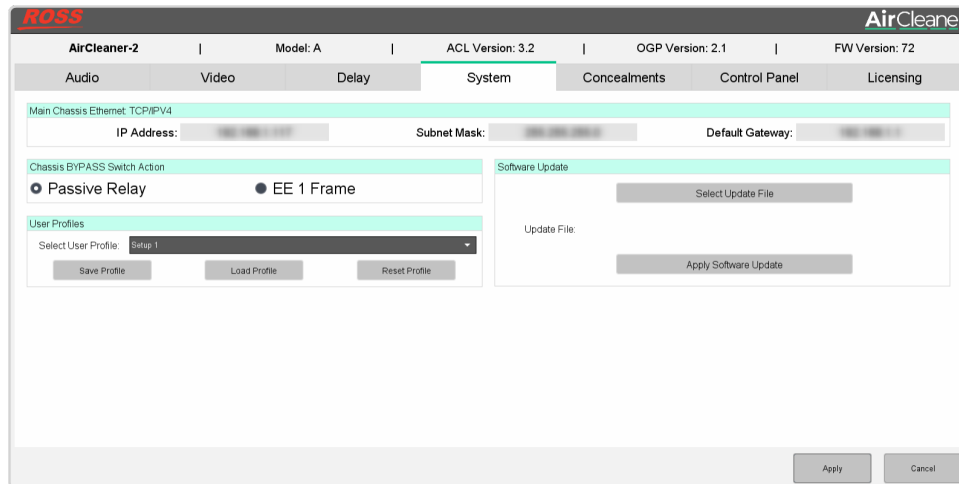
Save the current configuration of the system to a user memory register.

1. From the **Main Menu**, use the **SELECT** knob to select **User Memory Menu** and press the **SET** knob.
2. Use the **SELECT** knob to select the **Save Setup X?** memory register that you want to save the setup to.
3. Press **SAVE** and **OK** to save the setup to the selected memory register.
4. Use the **SELECT** knob to select **Finished** and press the **SELECT** knob to select **YES**.

To Load a User Profile from Dashboard

Load a user profile. The current configuration is lost.

1. From the DashBoard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
2. Click **System**.



3. In the **User Profiles** area, click the **Select User Profile** list and select the **Setup X** that you want to load the profile from.
4. Click **Load Profile** to load the selected profile.

Tip: Click **Reset Profile** to return the selected profile to the factory default settings.

To Load a Setup

Load a setup from a user memory register. The current configuration is lost.

1. From the **Main Menu**, use the **SELECT** knob to select **User Memory Menu** and press the **SET** knob.
2. Use the **SELECT** knob to select the **Load Setup X?** memory register you want to load the setup from.
3. Press **LOAD** and **OK** to load the setup from the selected memory register.
4. Use the **SELECT** knob to select **Finished** and press the **SELECT** knob to select **YES**.

Network Setup

AirCleaner-2™ is equipped with an ethernet port to allow remote access for DashBoard control.

To Set the IP Address

You can set the IP address and network setting from DashBoard.

1. From the DashBoard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
2. Click **System**.

The screenshot shows the 'AirCleaner-2' settings window with the 'System' tab selected. The window has a header bar with 'ROSS' and 'AirCleaner' logos, and a sub-header with 'Model: A', 'ACL Version: 3.2', 'OGP Version: 2.1', and 'FW Version: 72'. Below this is a navigation bar with tabs: 'Audio', 'Video', 'Delay', 'System' (selected), 'Concealments', 'Control Panel', and 'Licensing'. The main content area is divided into three sections: 'Main Chassis Ethernet TCP/IPV4' with fields for 'IP Address', 'Subnet Mask', and 'Default Gateway'; 'Chassis BYPASS Switch Action' with radio buttons for 'Passive Relay' (selected) and 'EE 1 Frame'; and 'User Profiles' with a 'Select User Profile' dropdown set to 'Setup 1' and buttons for 'Save Profile', 'Load Profile', and 'Reset Profile'. On the right, there is a 'Software Update' section with a 'Select Update File' button and an 'Update File' section with an 'Apply Software Update' button. At the bottom right are 'Apply' and 'Cancel' buttons.

3. In the **Main Chassis Ethernet TCP/IPV4** area, enter the new network setting for your system.



Important: If you change the IP address of the system, you will have to create a new DashBoard connection to the new IP address.

- **IP Address** — enter the new IP address for the chassis.
- **Subnet Mask** — enter the new subnet mask for the chassis.
- **Default Gateway** — enter the new default gateway for the system.

4. Click **Apply**.

Software Options

AirCleaner-2™ comes with all the hardware required for the available options. These options can either be licensed at the time you purchase your system, or purchased and installed later on.

To Add Software Licences

You can add software licences to AirCleaner-2™ to increase the delay capacity and support UHD TV1.

1. Contact your Ross Video sales representative to purchase a license for the option you want to install.

Tip: You can also email (solutions@rossvideo.com) or call (+1-613-652-4886) for sales options.

2. From the DashBoard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
3. Click **Licensing**.

The screenshot shows the 'Licensing' tab in the AirCleaner-2 interface. At the top, there's a header with 'ROSS' and 'AirCleaner-2'. Below this, a navigation bar includes 'Audio', 'Video', 'Delay', 'System', 'Concealments', 'Control Panel', and 'Licensing'. The main content area is divided into three sections: 'Model B License', 'Model C License', and '4K License'. Each section has a 'Request Code' field, a 'License Key' field, and an 'Install License' button. The 'Model B License' section shows 'MODEL B' and 'NOT INSTALLED'. The 'Model C License' section shows 'MODEL C' and 'NOT INSTALLED'. The '4K License' section shows 'UHD-4K' and 'NOT INSTALLED'. Below these sections, there's a 'Revert to Model A' section with a 'Deactivate Model License Upgrade' button. At the bottom right, there are 'Apply' and 'Cancel' buttons.

4. Copy the **Request Code** for the option(s) you have purchased.
5. Send the **Request Codes** to the Ross Video contact you were given when you purchased the options and they will send you the **License Keys** for the options.
6. Paste the corresponding key into the **License Key** field for each option you purchased and received a key for.
7. Click **Install License** for each option you are installing.

Maintenance

Refer to the following information for performing maintenance on your AirCleaner® or restoring factory defaults.

Manual Bypass

The system can be set into bypass mode for maintenance or troubleshooting. This turns off all delays and routes the inputs directly to the outputs.



Important: Depending on the bypass mode and whether you are going into or out of bypass, the video may freeze and the audio mute.

Manual bypass can be set to different modes, depending on kind of issue you may be experiencing.

- **Passive Relay** — the PGM IN audio and video are routed directly to PGM OUT with no delay in the pathway. Although there is no delay in the video path, a video and audio glitch can occur when going into and out of bypass.
- **EE** — in Electronic to Electronic mode, the PGM IN audio and video are passed through the delay buffers. There is a 1-frame delay in the video path, but no video or audio glitches will occur.

To Bypass AirCleaner®

The system can be set into bypass mode for maintenance or troubleshooting.

Swing the clear plastic cover over the **MANUAL BYPASS** button up and press the red button.

The **MANUAL BYPASS** button will light up, indicating that bypass is active.

To Set the Manual Bypass Mode

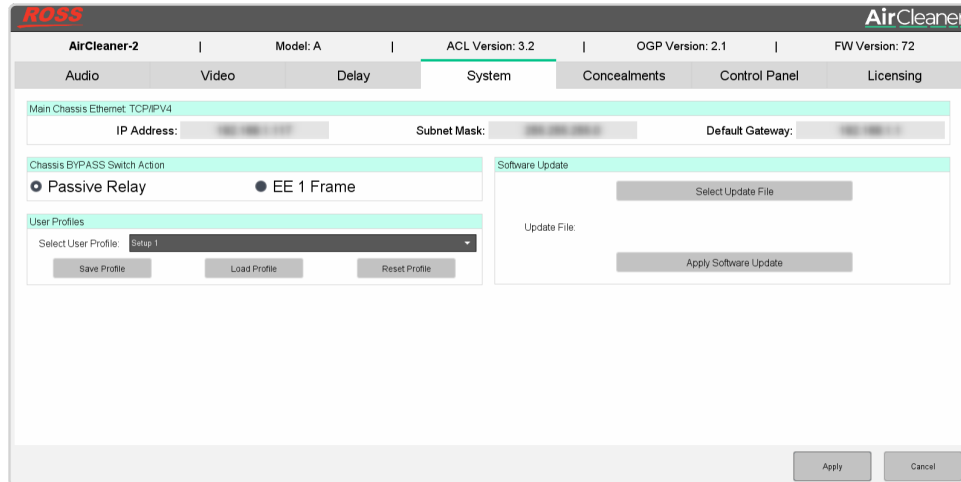
The manual bypass button can either trip an internal bypass relay, or put the system in EE mode.

1. From the **Main Menu**, use the **SELECT** knob to select **Options Menu** and press the **SET** knob.
2. Use the **SELECT** knob to select **Manual Bypass**.
3. Use the **SET** knob to select the manual bypass mode you want to use.
 - **Passive Relay** — direct bypass with no delay buffer.
 - **EE 1 Frame** — bypass through the delay buffer with a 1-frame delay.
4. Use the **SELECT** knob to select **Save Changes** and press the **SET** knob to select **OK**.

To Set the Manual Bypass Mode from DashBoard

The manual bypass button can either trip an internal bypass relay, or put the system in EE mode.

1. From the DashBoard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
2. Click **System**.



3. In the **Chassis Bypass Switch Action** area, select the manual bypass mode you want to use.
 - **Passive Relay** — direct bypass with no delay buffer.
 - **EE 1 Frame** — bypass through the delay buffer with a 1-frame delay.
4. Click **Apply**.

To Check the Model and Software Version

*Tip: The hardware and software information can also be found on the DashBoard **Settings** page.*

Press both the **SELECT** and **SET** buttons at the same time and release them.

The top line of the display shows the model and delay cache of the system and the second line of the display show the current version of software.

To Factory Default the System

All menus and settings can be returned to the settings when the system left the factory.

1. From the **Main Menu**, use the **SELECT** knob to select **User Memory Menu** and press the **SET** knob.
2. Use the **SELECT** knob to select **Factory Defaults** and press the **SET** knob.
3. Press the **SELECT** knob to recall the factory default settings.

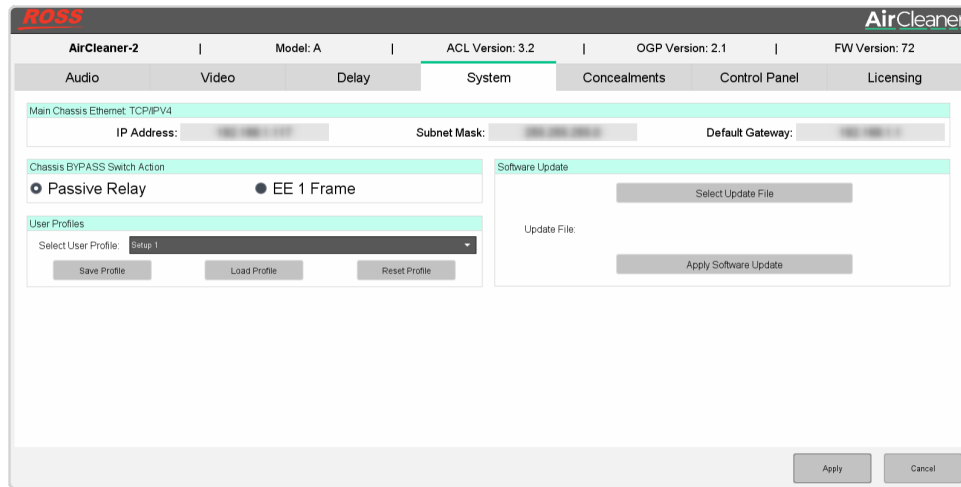
Software Upgrades

The software on the AirCleaner-2™ can be upgraded remotely from DashBoard.

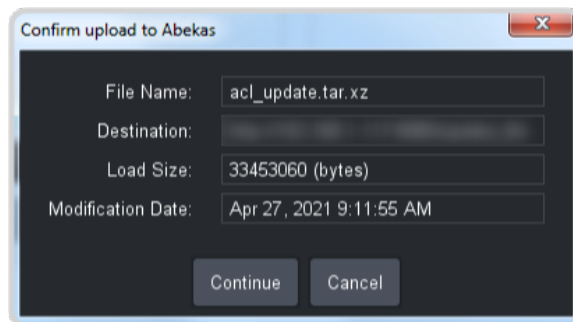
To Upgrade the Software and Firmware

Upgrade the firmware and software from DashBoard.

1. Download the `acl_update.tar.xz` file to your DashBoard computer.
2. From the DashBoard tree view for the AirCleaner-2™, expand the **Abekas** node and double-click **Settings**.
3. Click **System**.



4. In the **Software Update** area, click **Select Update File**.
5. On the **Select file for upload to Abekas** dialog box, click **Files of Type** and select **All Files**.
6. Locate and select the `acl_update.tar.xz` file and click **Open**.



7. Click **Continue** to upload the file to the server.
8. Click **OK** to confirm the upload was successful.
9. Click **Apply Software Update**.
10. Click **Yes** to confirm the update.

Specifications

Resources, video specifications, power rating, and port pinouts.
The information in this section is subject to change without notice.

Resources

The number of resources specific to your AirCleaner-2™ depends on the model.

Resource	Model-A	Model-B	Model-C
Video Inputs	2		
Video Outputs	2		
Audio Inputs per SDI I/O	16 channels (8 stereo pairs)		
Audio Outputs	16 channels (8 stereo pairs)		
Delay (UHD - 12G)	10 sec	20 sec	45 sec
Delay (HD - 3G)	40 sec	80 sec	180 sec
Delay (HD - 1.5G)	80 sec	160 sec	360 sec
Default IP Address	192.168.0.1		
Default Subnet Mask	255.255.255.0		
Default Gateway	255.255.255.0		

Operating Temperature

The system has been qualified at an operational temperature range of **20-35°C (68-95°F)** and a non-condensing humidity range of **20-80%**.

Note: Operator is responsible for providing sufficient ventilation to maintain surface temperature below 40°C (104°F) at the center of the top cover of the media drive.

Note: Non-condensing conditions should be maintained at all times.

Note: Maximum storage period inside shipping package is one year.

Video/Audio Input Specifications

Specification	Value
Video Inputs, SDI	UHD (12Gb/s): SMPTE ST-2082 10-bit at 12Gb/s serial digital
	HD (3Gb/s): SMPTE 424M 10-bit at 3Gb/s serial digital
	HD (1.5Gb/s): SMPTE 292M 10-bit at 1.5Gb/s serial digital
Video Inputs, IP	SMPTE® 2110
Embedded Audio	16 Tracks, AES/EBU 48kHz at 24-bit per SDI input.
AES Digital Audio (TASCAM®/AES-59)	8 Tracks (4 stereo pairs), AES/EBU 48kHz at 24-bit.

Video/Audio Output Specifications

Specification	Value
Video Outputs, SDI	UHD (12Gb/s): SMPTE ST-2082 10-bit at 12Gb/s serial digital
	HD (3Gb/s): SMPTE 424M 10-bit at 3Gb/s serial digital
	HD (1.5Gb/s): SMPTE 292M 10-bit at 1.5Gb/s serial digital
Video Outputs, IP	SMPTE® 2110
Embedded Audio	16 Tracks, AES/EBU 48kHz at 24-bit per SDI input.
AES Digital Audio (TASCAM®/AES-59)	8 Tracks (4 stereo pairs), AES/EBU 48kHz at 24-bit.
Analog Audio Monitoring Output	3.5mm headphone connector, unbalanced, line-level at -10dBv, 2 Tracks (1 stereo pair), user selectable to monitor any stereo pair (input or output)

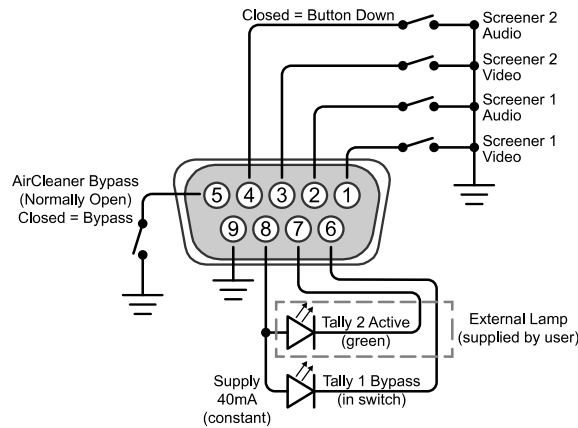
Power Rating

Input AC Power Requirement:

- 100 to 240VAC
- 8 to 4A
- 47 to 63Hz
- 500W Max (auto-sensing power inputs)

GPI Port

The GPI port on the back of the chassis is used to connect the external panic button panel. The four GPI inputs are fixed to a video and audio panic trigger for screeners one and two. All GPIs are level triggered and remain triggered for as long as the button is pressed (the circuit is closed).



Pin	Signal
1	Video Panic for Screener 1
2	Audio Panic for Screener 1
3	Video Panic for Screener 2
4	Audio Panic for Screener 2
5	Manual Bypass Switch
6	Tally 1 (Manual Bypass)
7	Tally 2 (External Lamp)

Pin	Signal
8	Tally Common
9	Ground

Pins 5 (Bypass Button) and 1 (Tally 1) are tied to the **Manual Bypass** button on the front of the AirCleaner[®] chassis and can be used to locate the functionality of this button remotely.

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