Live Event Protection Delay

Video Masking

Make Live Television Safe

Eliminate nudity, offensive language and obscene gestures from live broadcasts while maintaining program continuity with a flexible, feature-rich digital delay that offers a variety of video and audio masking techniques.

The built-in masking techniques such as variable video defocus and unique audio Jumble eliminate the requirement for auxiliary content and simplifies production workflows.

The simple set up, operation and personalization minimizes operator errors for concealing undesirable video and/or audio content.

Keep it Clean
- Provides an industry-leading solution used by major broadcasting networks in various global markets
- Avoids penalties from obscenities, wardrobe malfunctions and offensive gestures
- Provides insurance with digital video and audio delay

Hide Content Smoothly
- Masks video with variable defocus, luminance matte and auxiliary "safe" input
- Masks audio with unique audio jumble, mute and auxiliary "safe" input
- Provides more elegant and less noticeable concealments for audiences than "video switch" and "beep tone"

Share the Load
- Includes unique Dual-User operations, to ensure offensive content is eliminated during critical, high-profile broadcasts
- Easily divides delay time between two users by simply adding a second "Panic Button Panel"
- Minimizes operator error with simple set up and personalization

KEYBENEFITS

Masking Choices
Apply unique "Video Defocus" and "Audio Jumble" concealments, internal matte and mute, or choose "Switch to AUX" for alternative "safe" sources

Dual-User Operation
Enable a second user, to provide additional flexibility and security during high-profile broadcasts

Quick Response
Straight-forward to control with "Press & Hold" button actions, featuring "Reaction Time" compensation

Dedicated Control Panel
Robust control panel with two large "Panic Buttons" requires very little desk space

Audio Masking

Eliminate Undesirable Content

The immediacy of news gathering and the nature of live programming increases your risk of airing an obscenity, "wardrobe malfunction," or offensive gesture which can result in fines or other penalties. AirCleaner™ is the leading digital video and audio delay solution that eliminates this risk, by easily concealing all unwanted content. Installed in hundreds of live television facilities around the world, AirCleaner provides a digital insurance policy against broadcasting offensive content.

Easy Masking Operations

AirCleaner provides a variety of features for you to seamlessly eliminate the possibility of costly content violations, and supports HD or SD SDI video, and multi-channel audio.

AirCleaner can be programmed to produce a number of masking effects for both video and audio—either simultaneously or independently—to deliver the utmost in production flexibility. Unlike other delay systems, AirCleaner can mask offensive live content while maintaining program continuity, so your viewing audience is hardly aware that an offense has been masked. To achieve this, an integrated effects engine provides variable defocus to blur out visual obscenities. The unique Jumble feature scrambles audio in such a way that all speech becomes unintelligible—but audio continuity and levels are maintained, effectively masking any offensive language.

AirCleaner can also switch to an internally generated luminance matte and/or muted audio. Alternatively, auxiliary "safe" sources for video and/or audio can be used as a switched feed. AirCleaner handles AES and embedded audio and has a stereo analog audio output for monitoring purposes. AirCleaner even compensates for audio/video synchronization errors by offsetting video and audio timing.

Video Masking Effects:
• Variable defocus through built-in effects engine
• Internal luminance matte
• Auxiliary "safe" input

Audio Masking Effects:
• Unique audio Jumble
• Mute
• Auxiliary "safe" input

The custom-designed control panel requires very little desk space and features two large trigger buttons: one each for video and audio. Operators can easily mask video, audio, or both offenses simultaneously.

Simple configuration and programming of AirCleaner are managed via the LCD panel on the front of the chassis or from a web browser through the integrated Ethernet port. Delay settings and other set-up parameters are saved in up to three non-volatile memories.

Flexible System Architecture

AirCleaner employs two separate delay circuits consisting of an audio and video delay for up to two outputs, with independently adjustable delay times. Since AirCleaner has separate audio and video pathways, each element can be masked independently from the other, providing more operational flexibility than competing products. The flexible architecture of AirCleaner also uniquely provides dual-user capability.

During dual-user operations, AirCleaner effectively becomes two separate delay systems connected in series inside a single machine—with each delay time assigned to two operators. This feature permits one operator to monitor the incoming live feed to react to any inappropriate content. If the first operator fails to conceal any part of the incident, then the second operator—who receives the feed with additional delay—is able to react accordingly. In this configuration, AirCleaner provides extra insurance to you as a broadcaster by providing two opportunities to conceal any violation before it reaches the airwaves.
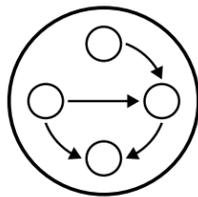
Variable Reaction Time

Depending on the desired operation, AirCleaner works with one or two operators. As humans have differing reaction times and respond differently to visual and aural cues, AirCleaner includes AutoClean™, a feature that compensates for the reaction time of human operators to respond to an observed visual or aural event.

With AutoClean, four separate reaction times (two for each operator) can be programmed to automatically "back up" the trigger point of the masking. This gives each operator the time to recognize a violation prior to the concealment button press, so the masking starts *before* that point, and will continue to be masked for the entire duration the button is held down.
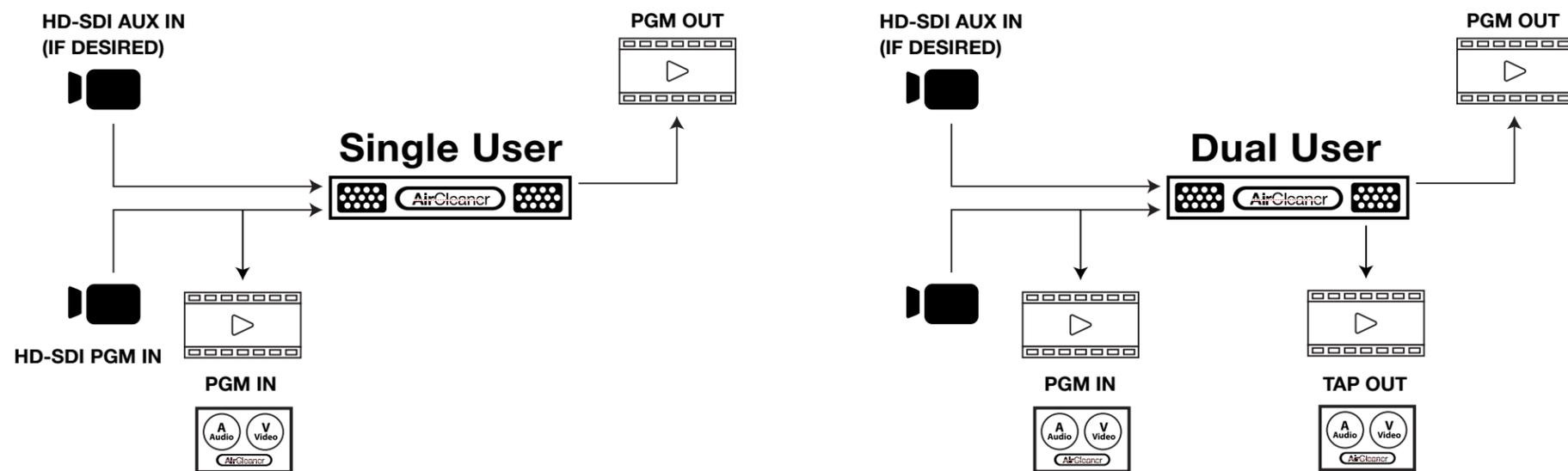
As one example, with the overall delay time set to five seconds and the reaction time set to two seconds, it will take three seconds from the point at which the operator presses the trigger button for the concealment to begin at the output. The total program delay will still be five seconds—but the content will be masked two seconds *before* the button was pressed—and will remain masked for the entire duration the button is held down. Concealment is removed from the live feed at the point at which the button is released.
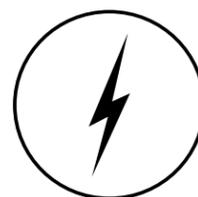
System Redundancy

AirCleaner features solid-state technology and is equipped with a bypass relay circuit to further ensure the integrity of your live television broadcasts. This bypass can be operated manually from a "protected" front panel push button, or will trigger automatically in the event of a complete loss of power. To help protect against such a power loss, redundant power supplies are a standard feature in AirCleaner.

User Workflows

Single User

HD-SDI AUX IN (IF DESIRED)

PGM OUT

HD-SDI PGM IN

PGM IN

Audio / Video — AirCleaner

Dual User

HD-SDI AUX IN (IF DESIRED)

PGM OUT

PGM IN

TAP OUT

SPECIFICATIONS

KEY FEATURES

- Two independent delay circuits, each consisting of an audio and video delay. Total program delay time is variable and can be programmed by the User
- Dual-user configuration supports separate operators in series to provide extra insurance for removing unwanted content from your live broadcasts
- Video masking choices: variable defocus; luminance matte; and auxiliary safe input
- Audio masking choices: audio jumble; mute; and auxiliary safe input
- High reliability with bypass relay circuit with power loss fail-safe and manual switch, as well as redundant power supplies
- Optional custom-designed control panel with two large color-coded trigger buttons for video and audio masking
- Programmable operator reaction time parameters for each of the concealment trigger buttons
- Audio support for AC-3 and Dolby-E bit streams
- Compact 1 RU chassis

SUPPORTED VIDEO FORMATS

HD 4:2:2 YUV at 1.5Gb/s with 10-Bit Resolution:
- 1080i & 720p: 59.94 / 50
- 1080p: 23.98p / 23.98psf

SD 4:2:2 YUV at 270Mb/s with 10-Bit Resolution:
- 525 & 625

ANALOG REFERENCE INPUT...(1) Female BNC

Tri-level HD or Composite Analog Bi-Level SD; Terminating

SAFETY & EMISSIONS COMPLIANCE

- TUV (United States and Canada)
- BSMI / VCCI / GS Mark / CE Mark
- EN55103-01 / EN55103-02

DATA / CONTROL

- Ethernet LAN Control...(1) F RJ45
- GPI Input Control...(1) F 9D

CHASSIS PHYSICAL & ELECTRICAL

- Rack-Mount Configuration Dimensions:
  - W = 17.0 in / H = 1.75 in / D = 10.5 in
  - W = 43.18 cm / H = 4.45 cm / D = 26.67 cm
- Weight: ~10 lbs. (~4.55 kg.)
- AC Power: 100 to 240 VAC / 3 to 1.5 Amps / 50-60Hz (Auto-sensing power inputs)

DIGITAL VIDEO INPUT (PGM IN)...(1) FEMALE BNC

HD Video:
- HD-SDI SMPTE 292M (10-bit at 1.5 Gb/s)

SD Video:
- SD-SDI SMPTE 259M (10-bit at 270 Mb/s)

DIGITAL VIDEO INPUT (AUX IN)...(1) FEMALE BNC

HD Video:
- HD-SDI SMPTE 292M (10-bit at 1.5 Gb/s)

SD Video:
- SD-SDI SMPTE 259M (10-bit at 270 Mb/s)

DIGITAL VIDEO OUTPUT (PGM OUT)...(1) FEMALE BNC

HD Video:
- HD-SDI SMPTE 292M (10-bit at 1.5 Gb/s)

SD Video:
- SD-SDI SMPTE 259M (10-bit at 270 Mb/s)

DIGITAL VIDEO OUTPUT (TAP OUT)...(1) FEMALE BNC

HD Video:
- HD-SDI SMPTE 292M (10-bit at 1.5 Gb/s)

SD Video:
- SD-SDI SMPTE 259M (10-bit at 270 Mb/s)

DIGITAL AUDIO INPUT...(8) FEMALE BNC

SDI inputs support embedded audio on PGM IN and AUX IN:
HD-SDI = 16-Tracks / SD-SDI = 4-Tracks

HD Audio:
- AES / EBU 48kHz at 24-bit resolution
- 8-tracks (4 stereo pairs) PGM IN
- 8-tracks (4 stereo pairs) AUX IN

SD Audio:
- AES / EBU 48kHz at 20-bit resolution
- 4-tracks (2 stereo pairs) PGM IN
- 4-tracks (2 stereo pairs) AUX IN

DIGITAL AUDIO OUTPUT..(8) FEMALE BNC

SDI outputs support embedded audio on PGM OUT and TAP OUT:
HD-SDI = 16-Tracks / SD-SDI = 4-Tracks

HD Audio:
- AES / EBU 48kHz at 24-bit resolution
- 8-tracks (4 stereo pairs) PGM OUT
- 8-tracks (4 stereo pairs) TAP OUT

SD Audio:
- AES / EBU 48kHz at 20-bit resolution
- 4-tracks (2 stereo pairs) PGM OUT
- 4-tracks (2 stereo pairs) TAP OUT

ANALOG AUDIO MONITORING OUTPUT..(1) FEMALE 3.5mm

- Unbalanced, line-level at: -10 dBV
- 2-Tracks (1 stereo pair)
- User-selectable to monitor any stereo audio pair (on PGM OUT)

MODEL CONFIGURATIONS

- ACL Model A: Max Delay HD=5 sec;   SD=34 sec
- ACL Model B: Max Delay HD=11 sec;   SD=68 sec
- ACL Model C: Max Delay HD=35 sec;   SD=68 sec
- ACL Model D: Max Delay HD=70 sec;   SD=68 sec

ROSS VIDEO
Production Technology and Services

MOTION GRAPHICS

XPRESSION | Single, Triple, UHD Flex, Prime, Go!, Designer, Developer
XPRESSION CLIPS
XPRESSION TESSERA
XPRESSION MAPS
XPRESSION TELESTRATE
XPRESSION TOUCH FACTORY
XPRESSION TICK IT

2RU

4RU

CREATIVE SERVICES

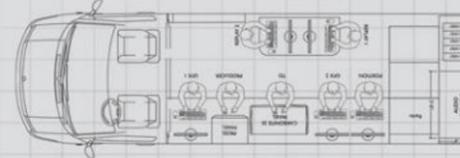**ROCKET SURGERY** | Graphics Creation

STUDIO IN A BOX

GRAPHITE | All-in-One Live Production Vehicle

OPENTRUCK

OPENTRUCK | Flight Case through to 40-foot Truck Designs

PRODUCTION SERVICES

ROSS MOBILE PRODUCTIONS

ASSET MANAGEMENT

STREAMLINE GRAPHICS
STREAMLINE PRODUCTION
STREAMLINE.CLOUD

MULTI-SCREEN IMAGE PROCESSING

CARBONITE MOSAIC

CAMERAS

ACID CAMERA | H200-UCHR, Z50-UCHR
PIVOTCAM | PivotCam SE

CHROMA KEYING

ULTRACHROME HR

CARBONITE BLACK

* Carbonite Black Chassis with UltraChroma HR Software

INFRASTRUCTURE

ULTRIX 12G & IP ROUTER | 16x - 144x
NK ROUTER | 16x4 -144x144
OPENGEAR | Modular Signal Processing, oGx Frame
MASTER CONTROL | MC1 openGear Card, MC1 Panel
NIELSEN | Watermarks Encoder

GATOR | 12G UHD Signal Processor
RAPTOR EDGE | IP Gateway & Processor
NEWT | IP Point of Use Gateway
GEARLITE | Point of Use Signal Processing
ULTRITOUCH | Soft Touch Control Panel
AUDIO MONITORING | MB-651, MB-652
MASTER SYNC & REFERENCE | SRG-2200, SRG-4400, ACO-4400

NEWS & SOCIAL MEDIA

INCEPTION NEWS | Academic, Express, Standard, Enterprise
INCEPTION LIVE
INCEPTION SOCIAL
INCEPTION.CLOUD
HORIZON

CONTROL SYSTEMS

OVERDRIVE | Express, Prime, Premium
OVERDRIVE + GRAPHITE
DASHBOARD
LIGHTNING CONTROL SYSTEM
ULTRITOUCH CONTROL PANEL

IP TECHNOLOGY

OEM PRODUCTS | Market Ready Modules & System-on-Chip

VIDEO SERVERS, REPLAY & DELAY

ABEKAS MIRA+ | Replay System
ABEKAS MIRA EXPRESS | Replay Server
ABEKAS TRIA+ | Production Server
ABEKAS TRIA EXPRESS | Video Clip Server

ABEKAS TRIA NEWS | News Playout Server
**ABEKAS AIRCLEANER** | Live Event Delay

ROBOTICS

FURIO SE LIVE | Live Head, SE Dolly and SE Lift; PanBar and Joystick Controls
FURIO SE STUDIO | VR100, VR600 Heads; SE & S2 Lifts; SE BlackBird; VR0| Manual Fluid Head with Tracking
CAMBOT | 520PT, 600PT, 700PT Heads; 600 BlackBird; 600XY & 700XY Free-Roaming Peds
SMARTSHELL | Robotic Camera Control System

VIRTUAL & AUGMENTED REALITY

TRACKLESS VIRTUAL
UX VIRTUAL TRACKING SYSTEM
UNREAL ENGINE

PRODUCTION SWITCHERS

ACUITY | Panel: A1s, A2m, A2x, A3m, A3, A4 Frame: 4RU, 8RU
CARBONITE BLACK | Panel: C1, C1s, C2, C2s, C3s, C3x Frame: 2RU
CARBONITE BLACK PLUS
CARBONITE BLACK PLUS 12G
CARBONITE BLACK SOLO
CARBONITE BLACK SOLO 13
CARBONITE ULTRA
ACUITY & CARBONITE IP SOLUTION
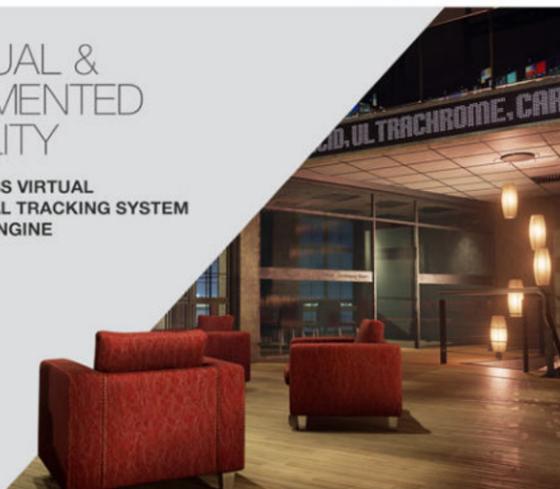
Abekas AirCleaner

Ross Video has a complete range of technical services available to ensure that your Abekas AirCleaner installation is a success.

Operational Training can be provided at Ross Video, on-site or on the web. Experienced Ross operators will teach your staff to get the most out of your new system, and enhance your productions.

Commissioning is a service to help get your Abekas AirCleaner system properly configured, connected and installed. This service is performed by factory trained Ross technical staff.

Technical Training can be provided at Ross Video, on-site or over the web. Technical training will teach your engineering staff the technical details of the system you have purchased. System configuration, interfaces, databases, and routine maintenance procedures are some of the topics covered.

Abekas AirCleaner comes standard with a 1 year comprehensive warranty. **Extended Warranties** on hardware and software maintenance are available for an annual fee.

Technical advice is available on-line, by telephone, or email to Ross Video – **Included for the life of your system.**

Contact Us

Global: +800 1005 0100
North America: 1-844-652-0645

Email: solutions@rossvideo.com

Technical Support
Emergency: +1 613 349-0006
Email: techsupport@rossvideo.com

www.**rossvideo**.com

ROSS VIDEO LIVING LIVE!

SOLUTIONS
Broadcast & Production
Augmented Reality & Virtual Sets
Sport & Live Events
Legislative
Mobile Production
House of Worship
Education
Corporate

PRODUCTS
Production Switchers
Motion Graphics & Clip Servers
Replay & Production Servers
Robotic & Camera Systems
Control Systems
Routing Infrastructure
Signal Processing Infrastructure
News, Live & Social Production Management
Media Asset Management & Storage

SERVICES
Creative Services
Mobile Production

ROSS®
LIVING LIVE!