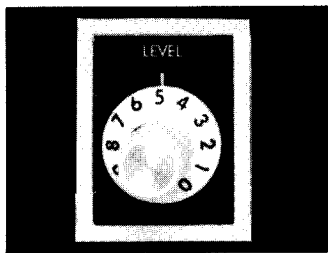
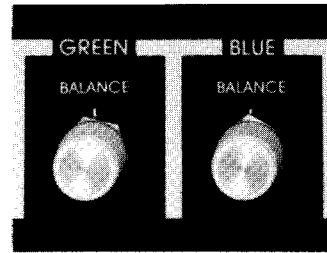


FEATURES



COLOR CORRECTION

Red, Green and Blue color re-mixing controls allow for individual adjustment of levels for desired saturation and color quality.

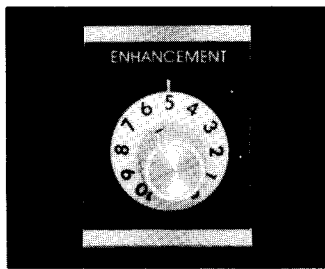


COLOR BALANCE

Adjusts the balance between primary and complementary colors for elimination of white balance errors.

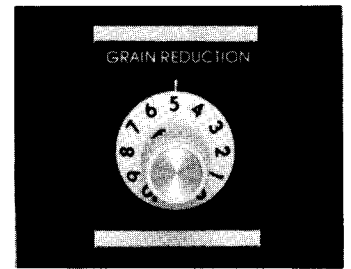
IMAGE ENHANCEMENT

A full two lines of delay for vertical and 200 nanoseconds of delay for horizontal enhancement, create extremely sharp pictures.



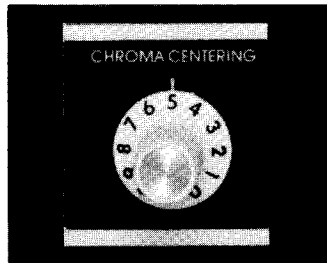
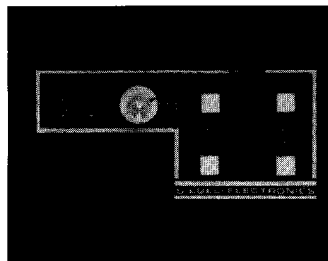
NOISE REDUCTION

Positive overshoot suppression, coring and comb filtering all combine to give grain and noise reduction in excess of 8 dB.



ELECTRONIC SWITCH & FADE

Accepts live camera input to accomplish vertical interval cut or automatic electronic fade to, or from, prerecorded tape. For titling and effects.

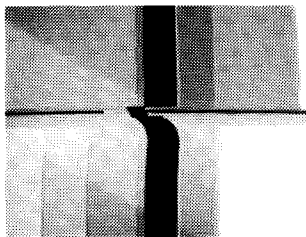


GROUP DELAY CORRECTION

For correcting color to monochrome registration errors.

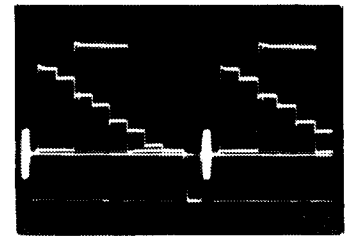
CROSS PULSE

Displayed through video output when front panel switch is on. Optional cross pulse output available for continuous observation if desired.



VIDEO PROCESSING

Reconstruction of sync, blanking and burst to EIA-RS170A FCC standards from self contained sync generator, genlocked to source or crystal.



PLUS

- **COLOR DECODER:** Outputs for Red, Green, or Blue. For chroma keying, or driving R.G.B. display.*
- **SYNC SEPARATOR:** Automatically adjusts to extract sync pulses from even the worst of video signals.
- **VIDEO LIMITING:** Automatically insures that luminance never goes higher than 100 I.R.E. units, without clipping the peaks.
- **BLACK BURST:** Available as an output to lock up title camera.*

- **ARTWORK POSITIVE/NEGATIVE SWITCH:** Reverses title camera's artwork polarity.
- **TITLE POSITIVE/NEGATIVE SWITCH:** Reverses the area that titles are added.
- **SELF CONTAINED SYNC GENERATOR:** With all outputs available on rear. All genlocked to input video, or crystal when no video is present.

* Optional

APPLICATIONS

IMAGE CORRECTIVE AMPLIFIER

SERIES 1100

The Image Corrective Amplifier Series 1100 combines the features of an Image Enhancer, R.G.B. Color Corrector and Sync Generator in one device along with many other useful features. It is designed for the correction of video images that have been degraded by recording on the 3/4" and 1/2" "color under" helical scan formats and/or for correcting the color errors that arise from incorrectly adjusted camera sensors or film tints in the case of a video film chain. This correction is achieved by a two line Comb Filter to extract the chroma from the video signal, which results in chroma noise reduction and elimination of border edge crawl (of importance when chroma keying). Then chroma coring is used to further decrease chroma noise. The ICA particularly improves that objectional "cotton candy" effect that moves back and forth throughout the picture caused by "color under" recording. After coring, the chroma is then demodulated to its three primary and complementary colors—red, green, blue and cyan, magenta, yellow, respectively. These demodulated colors are fed to the R.G.B. color mixing controls on the front panel to enable the operator to recombine the R.G.B. levels for correction of color errors. In addition, color balance controls are provided for correcting improper white balance already recorded on the tape. The common method of altering the hue (subcarrier phase) and saturation (chroma level) cannot correct the color errors that result from incorrect optical or white balance adjustments.

With our system, all forms of color errors can be corrected to an extremely high level of color accuracy. In fact, there is such a wide range of adjustment for color manipulation that even recordings that once seemed unusable—can now be recovered. The ICA's color correction system can be utilized for a variety of applications, such as closely matching the color level and balance of different tapes, boosting a weak color signal, converting a mono-chrome video signal to "old time" sepia tint, turning a color signal into black and white, and cross connecting R.G.B. inputs and outputs to create unusual effects. The Color Encoder/Decoder can be switched out for direct color processing when only enhancement is desired.

The luminance is also separated from the video signal by comb filtering which results in further noise reduction, elimination of edge crawl and the maintenance of the full bandwidth video signal for a high degree of picture sharpness. Portions of this circuit are then used to create the enhancement signals (two lines of delay for vertical and 200 nanoseconds delay for horizontal). Together they are combined and added back to the luminance portion of the video signal with the front panel enhancement control. Because enhancement circuitry does not know the difference between fine detail and grain (noise), coring is generally used to reduce the grain on the enhancement signal. However, SIEGEL-ELECTRONICS has developed a better system than cutting out the core of the enhancement signal, we found that the most noticeable and objectionable noise is contained in the positive portion of the enhancement waveform. Thus we developed Positive Overshoot Suppression (P.O.S.) noise reduction—a feature that is exclusive to the ICA. P.O.S. works so well that a higher level of enhancement is possible without undesirable effects, making the ICA well

suited for medical and scientific uses such as enhancement of microscope images. The ICA does provide for picture coring (i.e., Noise Reduction) for use when desired. However, this is at the expense of producing the slight plastic look that coring gives. For this reason, Noise Reduction can be switched off when it is not desired.

Before recombining the color corrected chroma with the enhanced luminance, they are set into horizontal registration by the Chroma Centering control. This increases the sharpness of the image and is especially useful for third and fourth generation recordings when the chroma and luminance become noticeably out of registration.

Correct video and pedestal levels are set with the Video Limit and Black Level controls. Once set, the Video Limit controls the video input level to insure that it does not go above 100 I.R.E. units, without clipping the peaks. Black Level is included in the luminance channel for manual adjustment of the black portions of the picture for true black—always maintaining at least 7.5 I.R.E. units setup. This improves contrast for exceptional photographic realism. An automatic Black Correct circuit is included, for correcting scenes shot in low light conditions.

For convenience, a Switcher-Fader is incorporated, so that a genlocked color or black and white camera can be connected directly to the ICA for the purpose of adding titles and credits during the editing process (or for switching and fading camera to camera). An electronic Speed Control allows the choice between a vertical interval cut, or three speeds of fading, plus a hold-fade setting for creating synthetic "A/B rolls" when editing tape to tape. Because artwork is easier to make with black lettering on white card, an Artwork Positive/Negative Switch allows for reversing the polarity of the title camera's video, thus superimposing white letters over the tape video. Also, a Title Positive/Negative Switch allows for the lettering to have picture around it—or through it—for more interesting effects. If this wasn't enough, a Dropout Compensator is built into most models that replaces dropouts with video from the previous line with correct color. Only a connection to the D.O.C. R.F. output of the feed recorder is needed to activate it. Outputs for Black Burst or Cross Pulse are additional options.

After all corrections have been done to the video signal, the old sync, blanking, and burst, are removed, and new reconstructed sync, blanking, and burst are added by the ICA's own Genlocked E.I.A. RS-170A self-contained Sync Generator. Outputs from this sync generator are available on the rear of all models of ICA's, for studio uses. Indeed, having an ICA is like having a studio inside a box, with the most up to date equipment inside. The ICA incorporates the most advanced electronic techniques such as Charge Coupled Devices, and digital processing, for the highest standards of excellence, so that your image will be the best possible.

To summarize, the ICA is a truly state of the art design concept which makes it possible to include many valuable and unique features into a single package costing only a small fraction of their combined value.