BrightEye™

BrightEye 72 3G/HD/SD SDI to HDMI Converter

ENSEMBLE DESIGNS

In — Adjust: Bright, Contrast, Chroma, Hue — Display: CC, Aud VU, TC, Graticule — Enable: Test, H/V, Gain — Audio: VU — Mode ← → Pwr

3G/HD/SD SDI to HDMI Converter

Color Correcting On-Set Monitors

Diagram

- Graticule Gen
- Input Status Display
- Test Signal Gen
- On Screen Controls
- SDI In
- H & V Delay
- Hor Mirror
- Overlay Combiner
- Video Proc & Color Corrector
- HDMI Out
- Caption Reader
- Open Caption Decoding
- Timecode Reader
- Timecode Window Gen
- SDI Loop Out
- Audio Meter Overlay
- Analog Audio Out
- 16 Chan Audio Demux
- Audio Out Selection
- Audio Out Ch 1   Ch 2
  G - I + | G - I +

Our new BE 72 is
no ordinary converter.
It's much, much more.

It has a host of features --
Built-in Test Patterns,
Closed Caption Decoding,
Timecode Burn-in,
Audio Level Meters,
H&V Shift and Horizontal Mirror,
Graticule Overlay

And . . .
A complete Proc Amp
and RGB Color Corrector.

Here's a situation where that color
corrector makes a BIG difference.
Putting a television monitor on set,
where it will appear in the scene on
camera presents a difficult
challenge.

After the scene is lit and the
camera is white balanced to the
studio lighting, the on camera talent
will look correct. But unless the
color temperature of the monitor
matches the studio lighting, the
color in the images on the monitor
will be incorrect when in the
camera shot.

This white paper shows how easy it
is to fix this problem with our
BrightEye 72 converter.

The Setup:
1. Tungsten lighting with HD camera white balanced to a white card.
2. On-set LCD monitor fed by BE72 from still store.

Our 'talent', by the way, for this test that we ran in
our design lab is Chris Merrick, one of our
engineers. Some times you just have to work
with what you've got.

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Color Correcting On-Set Monitors

Without color correction, the monitor appears quite blue when viewed by the HD camera. Sure, some viewers (my Mom?) might not notice it. But if the signal on the monitor was taken full screen direct, the color shift would be very obvious.

Ouch. Wasn't 'digital' supposed to make hue shifts a thing of the past?!?
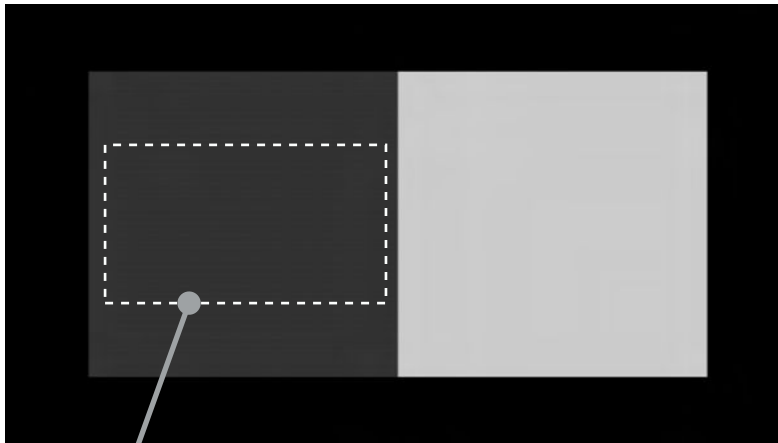
Before

BrightEye 72 is an attention hound and insisted on appearing on camera.

Using the BrightEye 72's built-in Color Corrector, you can color balance *any* HDMI monitor -- without ever touching a single control on the monitor itself.

After

These are straight image captures from a Canon HDV Camera - no retouching (scout's honor)

Color Correcting On-Set Monitors

E N S E M B L E
D E S I G N S

The adjustment process is straightforward.

Step 1
Select the 20/80 Test Pattern in BrightEye 72. With a built-in TSG you don't need to go looking for the right signal.

The 20% Gray and black regions will be used to set black balance.

The 80% Gray (nearly white) is used to adjust the gain of each of the Red, Green, and Blue channels.

Step 2
With the camera, compose a shot of the monitor with the 20% region filling the screen. If you are working with small monitors there are full screen 20 and 80 percent patterns, too.

Step 3
View the camera output on a vectorscope. Adjust the RGB offsets to collapse the chroma to a single dot.
NOTE: This is best done using just Red and Blue, leaving Green as the reference.

The controls are all accessible through the front panel using the On Screen Display. Or use BrightEye Mac or PC software to connect to the USB port.

20%
Gray
Before

Black
Balance
Achieved

After

Step 4
Frame the shot on the 80% segment. Repeat the adjustment procedure to collapse the chroma, but this time use the RGB Gain controls.

White
Balance
Achieved

After

80%
Gray
Before

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Color Correcting On-Set Monitors

ENSEMBLE
D E S I G N S

Step 5
Select the 10 step grayscale chipchart, or
SMPTE Bars on BrightEye 72's internal TSG.
(That TSG is handy, no?)

While viewing the monitor through the camera,
use BrightEye 72's Proc Amp controls
(Brightness, Contrast, Chroma) to achieve
proper exposure.

Remember: The face of the monitor is an actual
source of light, while everything else in the set is
reflecting light from the lighting instruments. It is
easy to make the monitor too bright. If you hold
a white card in front of the monitor, next to the
100% white flag in color bars, you can adjust the
monitor until they match.

Presto, Done !

Extra Credit:

You can check the results by comparing the
vector presentation of color bars.

Before
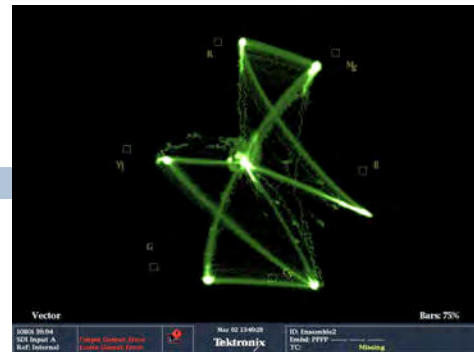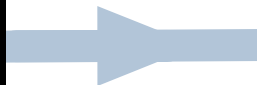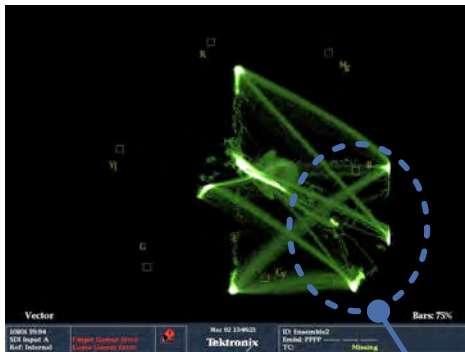
After

Remember how BLUE that monitor looked?

Official Disclaimer
(the fine print)

Lining up cameras and monitors is more Art than Science. We
are design engineers and we do not presume to dictate how
people with far more hands-on expertise than we have use this
equipment. Certainly there is more than one way to achieve
good results. Our job is to give you the tools to do it. Each
operator will develop their own, preferred technique. Do you
have some secret mojo in this area? Please contact us and let
us know how you do it, we'd love to hear about it.

The 'business' end of
BrightEye 72:

← About 5 1/2" wide. Sometimes *smaller* is better. →