

BrightEye Mitto™

High Performance Scan Converters



ENSEMBLE

D E S I G N S

Purveyors of Fine Video Gear—Loved by Engineers Worldwide

YouTube and Skype Video Made Easy

The BrightEye Mitto™ family of high performance scan converters provide a new way to take just about any source to 3G, HD or SD SDI video. Computer video can now be used for the most demanding applications including broadcast, high-end military, medical, classroom, church and corporate. All Mitto units accept VGA, DVI and HDMI input signals from PC and Mac computers.

Choose the Functionality You Need

Five different BrightEye Mitto units, each with varying types of outputs and capabilities, allow you to choose the best one for your particular video application. All BrightEye Mitto units convert YouTube, Skype video, weather radar, emails and maps to video. Just a small part of the screen, such as a Skype window, can be selected with a mouse and converted to full screen HD. Ensemble uses the latest technology in its proprietary upconversion and filtering and that means you have the best looking video. Compare Mitto to any other scan converter and see the difference!

Features

- High performance scan converters for PC and Mac
- Best way to bring YouTube™, Skype™, weather radar, maps and emails to video for production use
- Superior video output – flicker-free, fine detail
- Use with all types of Macs and PCs including laptops, iPhone® and iPad™
- Auto-senses DVI or VGA
- Use a mouse to select the part of the video you want to output
- Choose a Mitto with adjustable audio delay for Skype and broadcast applications
- DVI I/O, VGA and HDMI to SD, HD, 3G, and composite
- Easily adjust video parameters and select video output format
- Genlock and time to house reference, fully timeable
- Rackmountable
- Memory presets for your favorite settings
- 5-Year warranty and free software upgrades forever

Five BrightEye Mitto Models to Choose From

Select the perfect combination of features and price for your video facility

	BrightEye Mitto 3G BEM-1	BrightEye Mitto 3G Fiber BEM-1F	BrightEye Mitto HD BEM-2	BrightEye Mitto HD Fiber BEM-2F	BrightEye Mitto Pro 2 BEM-4
DVI, VGA, or HDMI inputs	★	★	★	★	★
HD or SD video outputs	★	★	★	★	★
3 Gb/s video output	★	★			
Optical output		★		★	
Analog or embedded audio input	★	★	★	★	★
AES audio input and output	★	★	★	★	
Full control of audio levels, channel mixing	★	★	★	★	
Adjustable audio delay	★	★	★	★	
RS-232/GPI control	★	★	★	★	

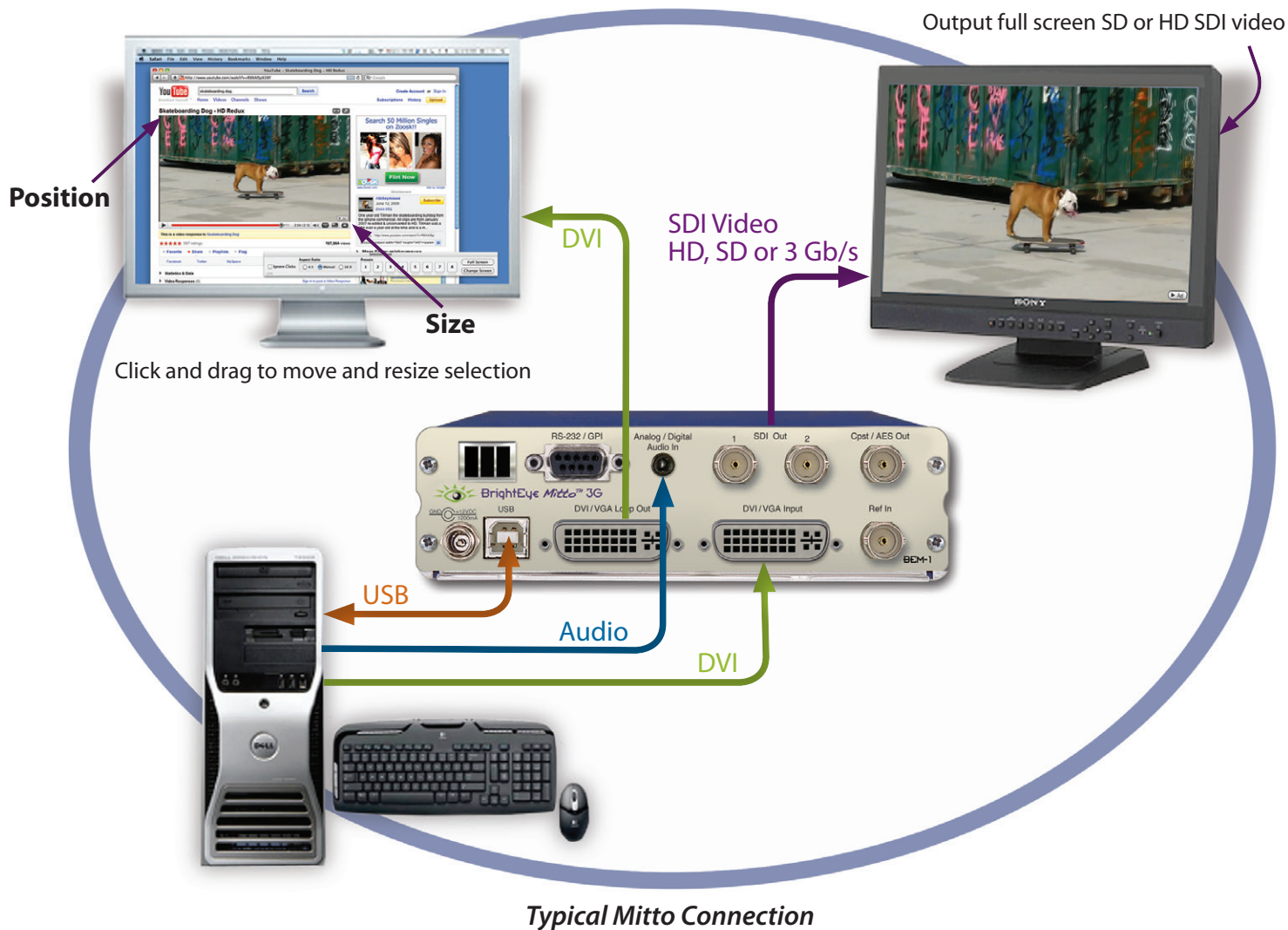


BrightEye Mitto Scan Converters



"Regardless of how quickly we need to take Mitto to air, it works famously every time. And it looks spectacular. When we covered the blizzards last winter, all of our user-generated content submissions and Skype came through Mitto."

*~ John Schilberg, VP of Technology, Griffin Communications
KWTW, KOTV and KQCW*



Typical Mitto Connection



TVB EUROPE ☆ Editors' Awards
Best of IBC2010

Additional Control with BrightEye Mac and PC Software

BrightEye Mac and PC Software

Adjusting video levels, output timing, audio delay, and mixing audio channels is so easy with BrightEye control software. From your desktop you have complete and intuitive control of timing, video format, and video level adjustments. You can easily time BrightEye Mitto into a video production switcher or router.

Easy To Use

BrightEye PC/Mac software runs overtop of any video, website or software. The Selection Tool shows up as a colored box around your selection and shows the portion of the video that will be output from BrightEye Mitto.

Use a Mouse to Select What's Output to Video

BrightEye PC and BrightEye Mac software let you simply use your mouse to click and drag over the specific portion of computer video that you want to output. The perspective of seeing the whole screen gives you the ability to choose exactly which portion of the video you want to output. It's easy to output the entire screen or just a selected portion.

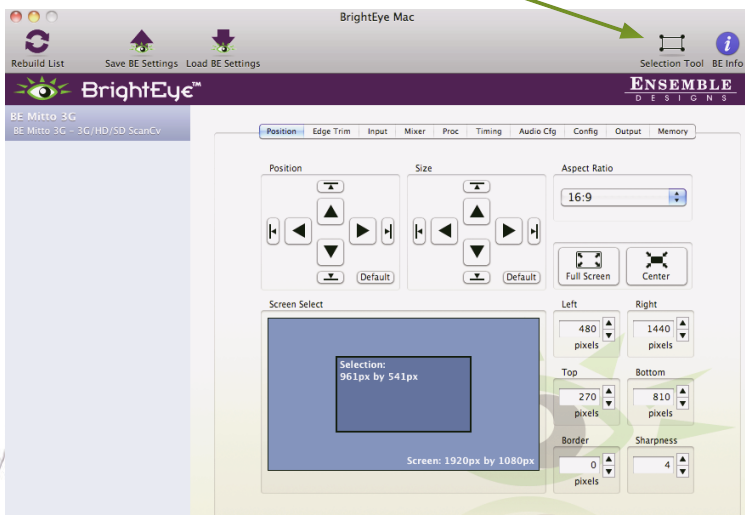
Resize the selection window by clicking and dragging with your mouse. Mitto's video output automatically goes to pillarbox or letterbox as needed. Mitto automatically maintains perfect aspect ratio.

Exclusive Filtering and Scaling Technology

A superior quality scan converter, BrightEye Mitto has the advantage of proprietary scaling technology and exclusive multi-tap filtering. Even a small part of the computer screen, such as a YouTube video, will be upconverted to full screen HD. The region selected for output determines if Mitto acts as an upconverter or downconverter. The filters automatically adjust in accordance with the conversion being performed. The result is that the output looks as good, or better, than the original and passes the most stringent testing.



Click the  Selection Tool button in BrightEye Mac or PC to bring up the Selection Tool.



Output Full Screen
SD or HD SDI Video





BrightEye Mitto Scan Converters

Digital and Analog Video and Audio

The intuitive front panel interface makes it easy to choose the desired video output format. The genlock reference input allows the video outputs to be timed to house.

The audio input accepts analog audio. AES is optional. Audio is embedded into the SDI outputs which is required for many high end applications. Audio delay controls let you adjust the audio with respect to video for perfect lip sync, which is crucial when using Skype video in a production environment.

Used Worldwide

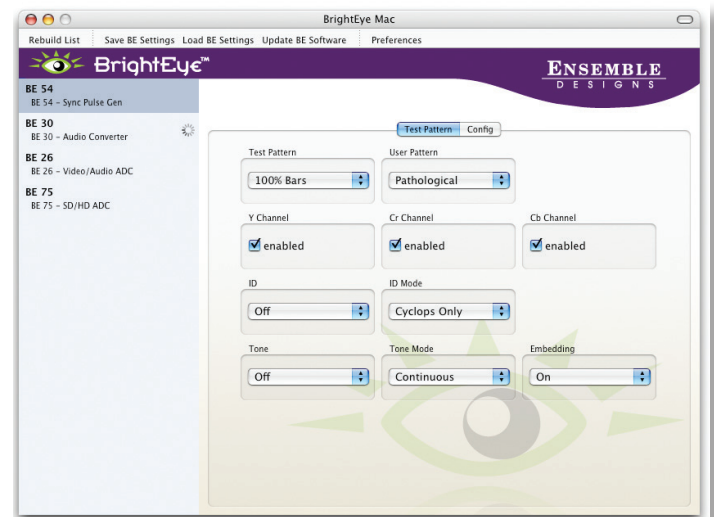
BrightEye's compact size lets you put conversion right where it's needed: in a remote truck, at a live venue, on a helicopter, in a production, or in a TV station. Reliable and easy to install, BrightEyes make your transition to HD simple. And they're affordable, too!

Free Software Upgrades Forever

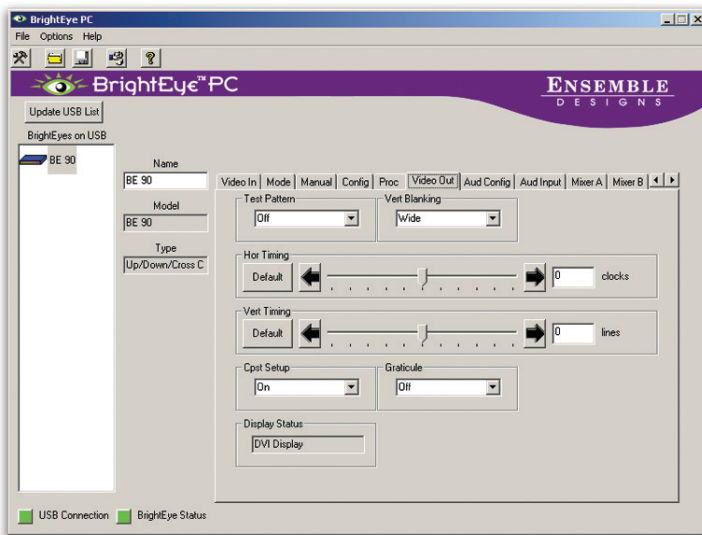
Use BrightEye Mac or PC software to control a single BrightEye unit or any number of units connected to a USB hub. BrightEye Mac and PC software are included with each unit at no charge.

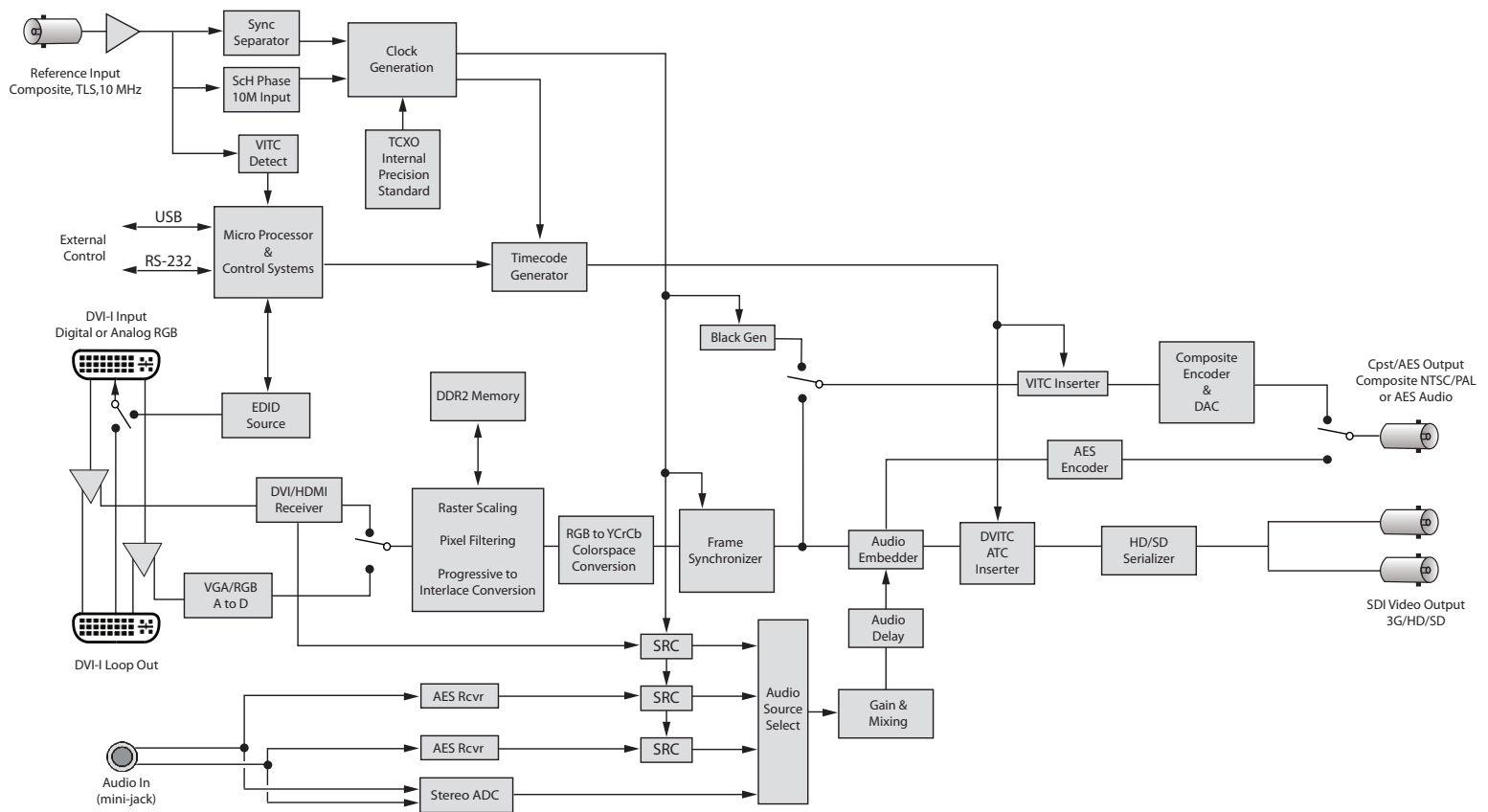
BrightEye Mitto's software is easily upgraded through the unit's USB port. Software upgrades are available at no charge for the life of the product and are conveniently downloadable from the Ensemble Designs' web site. Updates are free, forever. Every unit comes with a five-year warranty.

Mac Screen Shot



PC Screen Shot





Block diagram represents BEM-1. See specs for variations on other models.

Order Info

BEM-1	BrightEye Mitto 3G
BEM-1F	BrightEye Mitto 3G Fiber
BEM-2	BrightEye Mitto HD
BEM-2F	BrightEye Mitto HD Fiber
BEM-4	BrightEye Mitto Pro 2

Mitto Defined:

- Comes from the Latin root for **transmit** or **send**
- It's also the root word of **uncompromising**

Each unit comes with 1 USB cable, 2 VGA to DVI adapters,
1 modular power supply and BrightEye Software for Mac and PC



BrightEye Mitto Scan Converters

Computer Input

Number	One
Type	DVI (Supports HDMI or VGA with adapter)
Connector	DVI-I
Resolution	Up to 1920 x 1200

Reference Input

Number	One, BNC
Type	1 V P-P Composite Video PAL, NTSC, Tri-Level Sync
Impedance	75 Ω
Return Loss	>40 dB
Note: When no reference is provided, Mitto runs from an internal "sync gen grade" precision frequency reference.	

Analog Audio Inputs

Number	One stereo pair
Connector	1/8" mini jack
Impedance	>15K Ω
Max Input Level	24 dBu
Quantization	24 bits, 128 x oversampled
Sample Rate	48 KHz
Reference Level	-10 dBu or +4 dBu
Frequency Response	± 0.1 dB, 20 Hz to 20 KHz
Crosstalk	<106 dB
Dynamic Range	>106 dB

AES/EBU Digital Inputs (BEM-1, 1F, 2, 2F)

Number	Two (four channels)
Type	AES3id, S/PDIF
Connector	1/8" mini jack
Bit Depth	20 and 24 Bit
Sample Rate	30 KHz to 192 KHz (Sample Rate Converted Internally to 48 KHz)

Serial Digital Output

Number	Two, BNC
Signal Type	One for BEM-1F and 2F 270 Mb/s SD SDI, SMPTE 259M 1.485 Gb/s HD SDI, SMPTE 274M, 292M, 296M 2.97 Gb/s HD SDI (BEM-1 and BEM-1F only) SMPTE 424M, 425M
Processing	16 bit processing 12 and 14 bit upconversion
Delay	Adjustable from 16 msec to 40 msec
Note: Output is fully timeable with respect to the reference input.	
Audio	Embedded
Impedance	75 Ω
Return Loss	>15 dB to 1.485 GHz >10 dB to 2.97 GHz
Output DC	None (AC coupled)

Standards Supported

1080i (SMPTE 274M -4,5,6) 50, 59.94 or 60 Hz
720p (SMPTE 296M -1,2,3) 50, 59.94 or 60 Hz
525i, 625i (SMPTE 259M)
1080p (SMPTE 424M, 425M), 50, 59.94, 60, Level A (BEM-1 and BEM-1F only)

Optical Output (BEM-1F, 2F)

Number	One, LC/UPC
Type	Follows SDI configuration
Wavelength	1310 nm (non-CWDM) Wavelengths 170 nm –1610 nm at 20 nm CWDM spacing available. Call factory for price and details.
Power	-7 dBm
Max Cable Length	20 km (For greater distances, or higher power and larger loss budgets, please contact the factory)
Fiber Type	Single Mode Multi-mode compatible with attenuation at transmit end

Analog Video Output

Number	One, BNC
Type	Composite PAL or NTSC (when SD is selected on the SDI output)
Return Loss	>40 dB
Output DC	<100 mV

Computer Monitor Output

Number	One, looping
Type	DVI (Supports HDMI or VGA with adapter)
Connector	DVI-I
Format	Follows input

Control (BEM-1, 1F, 2, 2F)

Number	One
Connector	9 pin D
Type	RS-232, GPI

General Specifications

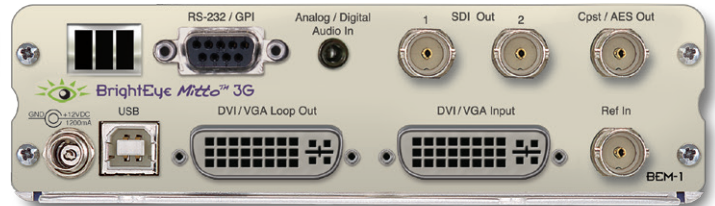
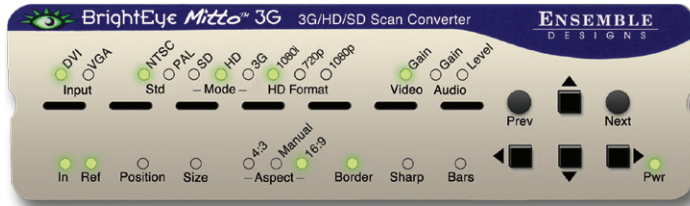
Size	5.63" W x 1.65" H x 6.01" D (143 mm x 42 mm x 153 mm) including connectors and flange
Weight	1 lb 6 oz
Power	12 volts, 12 watts (100-230 VAC modular power supply)
Temperature Range	0 to 40° C ambient (all specs met)
Relative Humidity	0 to 95° non-condensing
Altitude	0 to 10,000 ft.

Due to ongoing development, prices and specifications subject to change without notice.

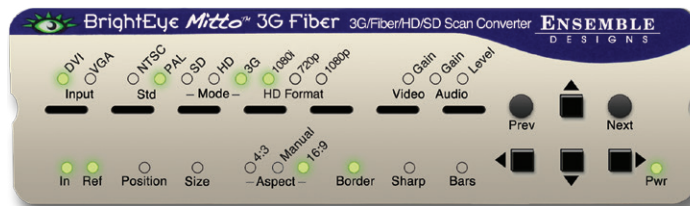
High Performance Scan Converters

The BrightEye Mitto™ family of high performance scan converters lets you use computer video in the most demanding applications, including broadcast, high-end military, medical, classroom, church and corporate. Proprietary scaling and filtering technology ensures that Mitto always delivers a pristine, detailed video output.

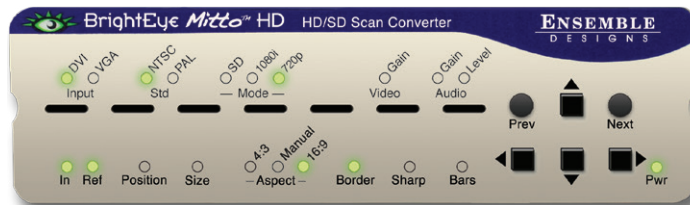
BrightEye Mitto 3G – BEM-1



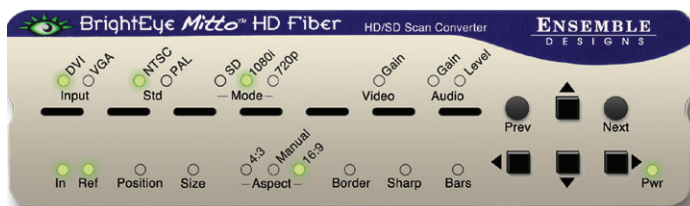
BrightEye Mitto 3G Fiber – BEM-1F



BrightEye Mitto HD – BEM-2



BrightEye Mitto HD Fiber – BEM-2F



BrightEye Mitto Pro 2 – BEM-4

