XForm Systems

AV Bridge 3000

Conversion Platform

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(local control panel not included with the base configuration)

Standards Conversion with Motion Vector

The base unit includes a linear 4 field standards converter. The proprietary algorithm with selectable apertures guarantees state of the art professional quality.
With option /MV, the conversion gets supported by motion vectors resulting in a world leading image quality. Configurable scene detection is also provided with this option.

Aspect Ratio Conversion

Converts aspect ratios with freely definable factors, zoom and pan/scan settings. Predefined Presets are available for conversion from/to 4:3, 16:9 and 14:9.
WSS, VideoID, Video Indexing and AFD are supported.

Color Correction

The option /CC provides an RGB color corrector.
Black level, white level and gamma can be controlled independently.

Legalization

The unit features an RGB legalizer.
Upper and lower limits can be controlled independently for each RGB color channel.

Frame Synchronization & Timebase Correction

A full frame TBC feature is included with adjustable and flexible system timing using the analog genlock reference inputs.

Video Noise Reduction

Powerful recursive video noise reduction and median filtering eliminate random video noise in luminance and chrominance components with a minimum of artifacts. Our long experience in video noise reduction technology ensures that the best results can be derived from impaired input signals.

Detail Enhancement

Horizontal and vertical enhancement (aperture correction) allows significantly improved pictures, even from degraded sources.

Gain, Amplitude and Color Control

The system includes a Proc Amp that gives full control of video gain, black level, hue (NTSC) and Y/C timing.

Timecode

- timecode generation and regeneration
- accepts VITC in all VBI lines with auto detection of lines or manual line selection
- accepts SMPTE RP188 and RP196 via SDI
- accepts LTC
- accepts timecode via optional DV interface
- supports VITC, LTC, RP188, RP196 and DV timecode at output

Audio

The unit processes video signals as well as the associated audio data. The system supports the full set of 16 embedded audio channels and, additionally, provides the embedding / deembedding of four external analog and AES signals.
The delay of the audio channels can be adjusted independently. This is a powerful feature to deal with differences in the processing delay of video and audio and correct potential lip sync problems.

The following list of features illustrates the overall flexibility of the audio subsystem.

- support for all 4 SDI audio-groups (16 channels)
- embedding and deembedding of analog/AES audio signals, embedding also supports SPDIF
- delay adjustable from 4ms to 1023ms for each channel individually
- automatic delay correction
- level adjustable from -∞ to +18 dB for each channel individually
- fully configurable routing matrix
- support for sampling rates of 32 / 44.1 / 48 kHz
- DV embedder and de-embedder
- DV resampling between 32 kHz and 48 kHz

VBI and Test pattern generator

The unit features a test pattern generator and a configurable VBI-area.
Transparent processing of VBI and test line insertion for online measurement of signal quality are both supported.

Presets

In addition to the presets provided for several groups of functions, full panel presets are also supported. They allow storing and recall of complete panel setups.
Presets can also be saved and recalled to/from a PC via the remote control software.

Remote Control

All functions can be controlled remotely.
The unit features serial (RS232), USB and Ethernet interfaces.
A MS Windows remote control software is available
It comes with SNMP support for generation of traps for input or reference signal loss and status queries like unit name or network configuration.
Additionally a GPI interface is included for System Integration.

Quality

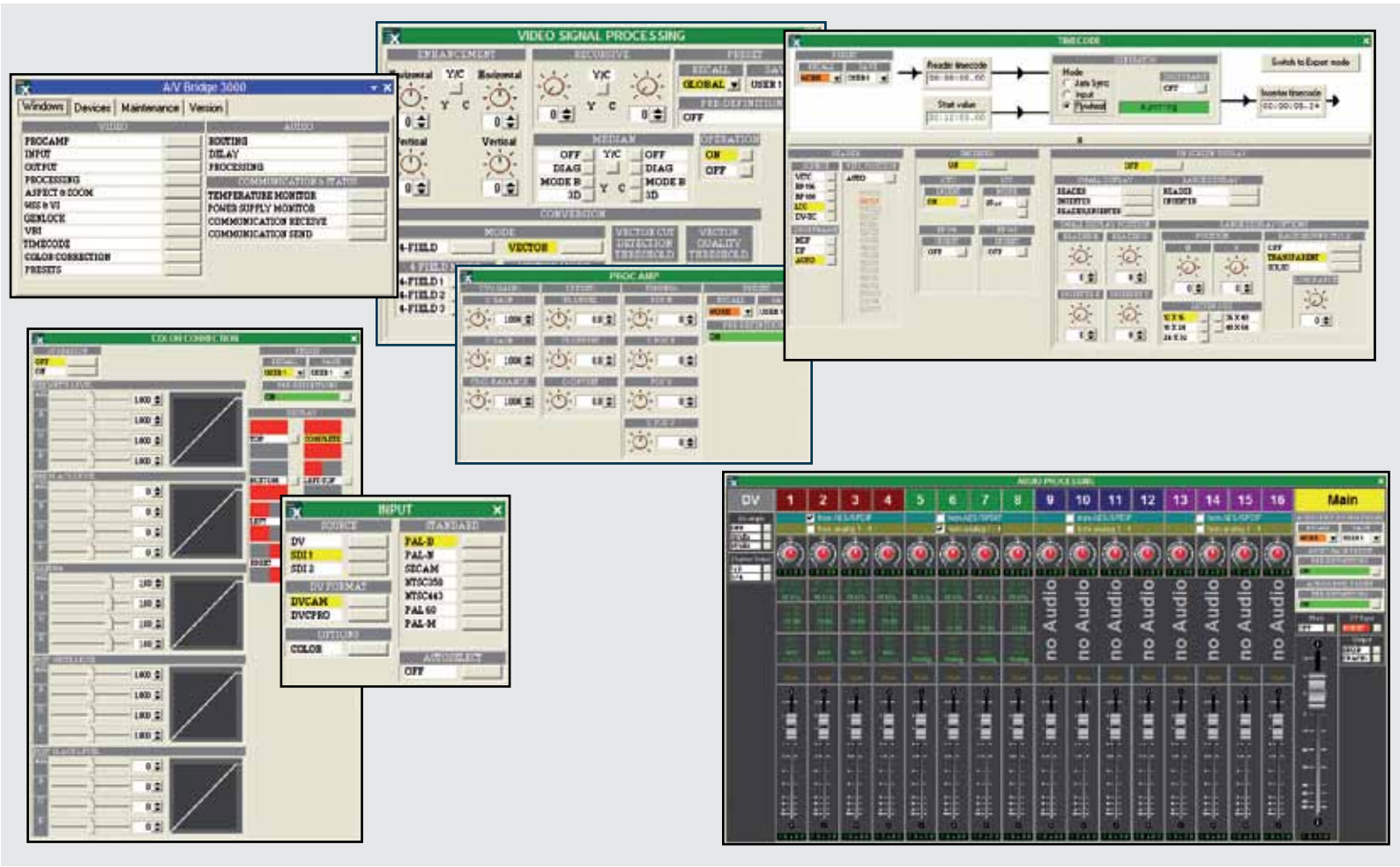
XForm Systems is proud to manufacture high quality equipment for the demanding broadcast and studio facilities markets for a long time.
Quality is paramount in our design and manufacturing facilities.

MS Windows based Remote Environment

A remote control application for MS Windows based PCs is available. Every function of the unit can be controlled and monitored via the PC, especially those that are not accessible via the local control panel. A single PC can control multiple units.
The software allows to monitor the complete state of the unit in several windows, one for each group of functions, and provides a highly intuitive environment for the operation of the system.

System Requirements

A PC running MS Windows Vista, MS Windows XP or MS Windows 2000 with at least 500 MHz and 256 MByte of RAM.
The software needs 6 MB of disk space. A screen resolution of at least 1024 x 768 pixels with 64 k of colors is recommended.
The communication with the unit is done via a RS232-port, USB or Ethernet.



The remote environment contains a complete audio control for embedded and external audio. It supports the adjustment of level and delay for all channels independently and additionally includes a fully loaded routing matrix for flexible channel swap.
The graphic control interface is especially helpful for the use of complex features as color correction, zoom, aspect etc. It assists the operator in a highly intuitive way and gives a quick and convenient overview of all parameters.

All Preset functions for the different groups of functions are concentrated by the Remote Environment in a single window.
Presets can be named and saved to a file for documentation purposes and later recall.
The timecode window allows the definition of timecode procedures with start condition, stop condition, jam sync and many other features. The input and output timecodes are monitored simultaneously in the remote or in the on screen display.

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Input Formats and Video Standards

Genlock Analog Black Burst/CVBS
SD SDI Serial Digital Component, 10 Bit, ITU BT.656 / SMPTE 259M

Input Video Connectors

Genlock 2 x BNC dual / looping input
SD SDI 2 x BNC

Output Formats and Video Standards

SD SDI Serial Digital Component, 10 Bit, ITU BT.656 / SMPTE 259M

Output Video Connectors

SD SDI 2 x BNC

Video Processing

Quantizing Scheme 4:2:2 conforming to ITU BT656, SMPTE 259M
Enhancement Horizontal and Vertical, Y/C separately
Noise Reduction Recursive Y and C up to 20 dB
Median Filter Y and C
Full Frame TBC
Aspect Ratio Conversion with variable Zoom H/V
4 Field linear Standards Conversion with spatio temporal adaptive interpolation
RGB Legalizer

Frequency Response

Luminance 5.5 MHz, 0.5 dB
Differential Phase <1°
Differential Gain <1%
Signal to Noise Ratio >68 dB CCIR Flat field

Control

RS-232 Dsub9, 38400, 8N1
USB Type B connector, USB 2.0
GPI Dsub9, 2 in, 3 out
Ethernet RJ-45, 10/100BaseT
Windows Control Software included

Timecode

LTC In- and Output, Mini-XLR, format EBU/SMPTE
VITC, RP188, RP196
59.94Hz DropFrame and non-DropFrame

Power Requirements

AC Voltage 90 - 260V, 50 / 60 Hz
Power Consumption <80VA (depending on options)

Physical

Dimensions 44 x 483 x 450mm (H x W x D)
Weight 6 kg approx
Chassis 1 RU 19“ Rack mounting
Cooling Forced air – cross flow (side to side)
Temperature 0°C - 35°C (operation)
-20°C - 75°C (storage)
Humidity 10% - 90% non condensing

Audio Processing

Audio Delay Time 4-1023ms
Audio Gain -∞ … +18dB
Number of embedded channels: 16
Internal processing 32 Bit
channel swap via routing matrix
S/N Ratio > 90 dB
THD < 0.1%

Option /CC

RGB Color Corrector

Option /DV

supports IEEE1394, DV / DVCAM / DVCPRO25 525 / 625 lines
2 Firewire connectors (6 Pin) I/O simultaneously

Option /MV

motion vector compensated standards conversion with scene / cut detection

Option /AEB

Analog / AES Audio Embedding / Deembedding

Digital Audio AES or SPDIF (input)
AES (output)
32kHz / 44.1kHz / 48kHz
24 Bit
Analog Audio ADC/DAC Quantization 24 Bit
Sample Rate 48kHz
Headroom up to 25dBu
Analog In 4 x Mini-XLR (balanced)
Digital In 2 x BNC
Analog Out 4 x Mini-XLR (balanced)
Digital Out 2 x BNC

Option /RP

Redundant Power Supply

Option /ETS

SNMP Monitoring and Traps

Option /KBAVB3000

local control panel

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