

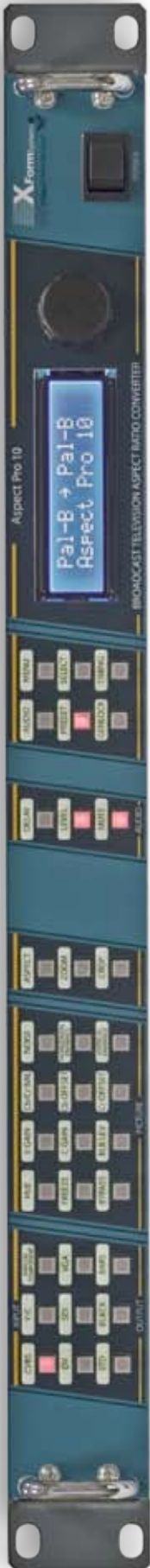
Aspect Pro 10

Aspect Ratio Converter



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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. Aspect Ratio Signaling/WSS and Video Indexing is fully supported.

A key signal for controlling other equipment is available at output.

Color Correction

The unit features 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 via SDI
- accepts LTC (option /LTC)
- accepts timecode via optional DV interface
- supports VITC, LTC (option /LTC) 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 or 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 $-\infty$ 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 via a serial (RS232) port.

A MS Windows remote control software is available.

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.



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

CVBS & Y/C	PAL-B, PAL-M, PAL-N, PAL-60, NTSC, NTSC-J, NTSC-4.43, SECAM Sampling 27MHz
YPbPr/RGB	525/625 N10, MII or Betacam Sync on Y/G or external Sampling 27MHz
Genlock	Analog Black Burst/CVBS
SD SDI	Serial Digital Component, 10 Bit ITU BT.656 / SMPTE 259M

Input Video Connectors

CVBS	2 x BNC
Y/C	4 pin female S-Video connector
YPbPr/RGB	3 x BNC
Genlock	1 x BNC
SDI	1 x BNC

Output Formats and Video Standards

CVBS & Y/C	PAL-B, PAL-M, PAL-N, NTSC, NTSC-J, NTSC-4.43, SECAM Sampling 27MHz
YPbPr/RGB	525/625 N10, MII or Betacam Sync on Y/G or external Sampling 27MHz
SD SDI	Serial Digital Component, 10 Bit, ITU BT.656 / SMPTE 259M

Output Video Connectors

CVBS	2 x BNC
Y/C	4 pin female S-Video connector
YPbPr	3 x BNC
SDI	2 x BNC

Aspect Ratio Signalling

Input	WSS via CVBS, Y / C and SDI in Video Indexing via SDI in
Output	WSS via CVBS, Y / C and SDI out Video Indexing via SDI out

Audio Processing

internal processing 32 Bit
Audio Delay Time 4...1023 ms
Audio Gain $-\infty$... +18 dB
Number of Embedded Channels: 16
channel swap via routing matrix

Timecode

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

Video Processing

Quantizing Scheme 4:2:2 conforming to
ITU BT656, SMPTE 259M
Aspect Ratio Conversion with variable Zoom H/V
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
SECAM Ident Horizontal + Vertical
RGB Legalizer, RGB Color Corrector

Frequency Response

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

Remote Control

RS232C Remote Control 9 D-Sub
Windows Control Software available

Power Requirements

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

Physical

Dimensions 44 x 483 x 366mm (H x W x D)
Weight 6 kg approx
Chassis 1 RU 19" Rack mounting
Cooling Forced air - cross flow (side to side)
Temperature $0^\circ\text{C} - 35^\circ\text{C}$ (operation)
 $-20^\circ\text{C} - 75^\circ\text{C}$ (storage)
Humidity 10% - 90% non condensing

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 4 x Mini-XLR (balanced)
Analog In	2 x BNC
Digital In	4 x Mini-XLR (balanced)
Analog Out	2 x BNC
Digital Out	4 x Mini-XLR (balanced)

Option /DV

supports IEEE1394, DV / DVCAM / DVCPRO25 525 / 625 lines
Firewire connector (6 Pin), common I / O

Option /VGA

VGA Input up to 2048 x 1536
15 D-Sub-Min looping input

Option /LTC

LTC Input	BNC
LTC Output	BNC
LTC Format	EBU or SMPTE



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