

Quattro 2000 Standards Converter



Quattro 2000

Standards Converter



Standards Conversion

The unit includes a linear 4 field standards converter. The proprietary algorithm with selectable apertures guarantees state of the art professional quality.

Color Correction (Option /CC)

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

Legalization (Option /CC)

The option /CC provides 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 input.

Video Noise Reduction

Powerful recursive video noise reduction eliminates 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 (Option /TC)

- 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
- accepts timecode via optional DV interface
- supports VITC, 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 (Option /RC)

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

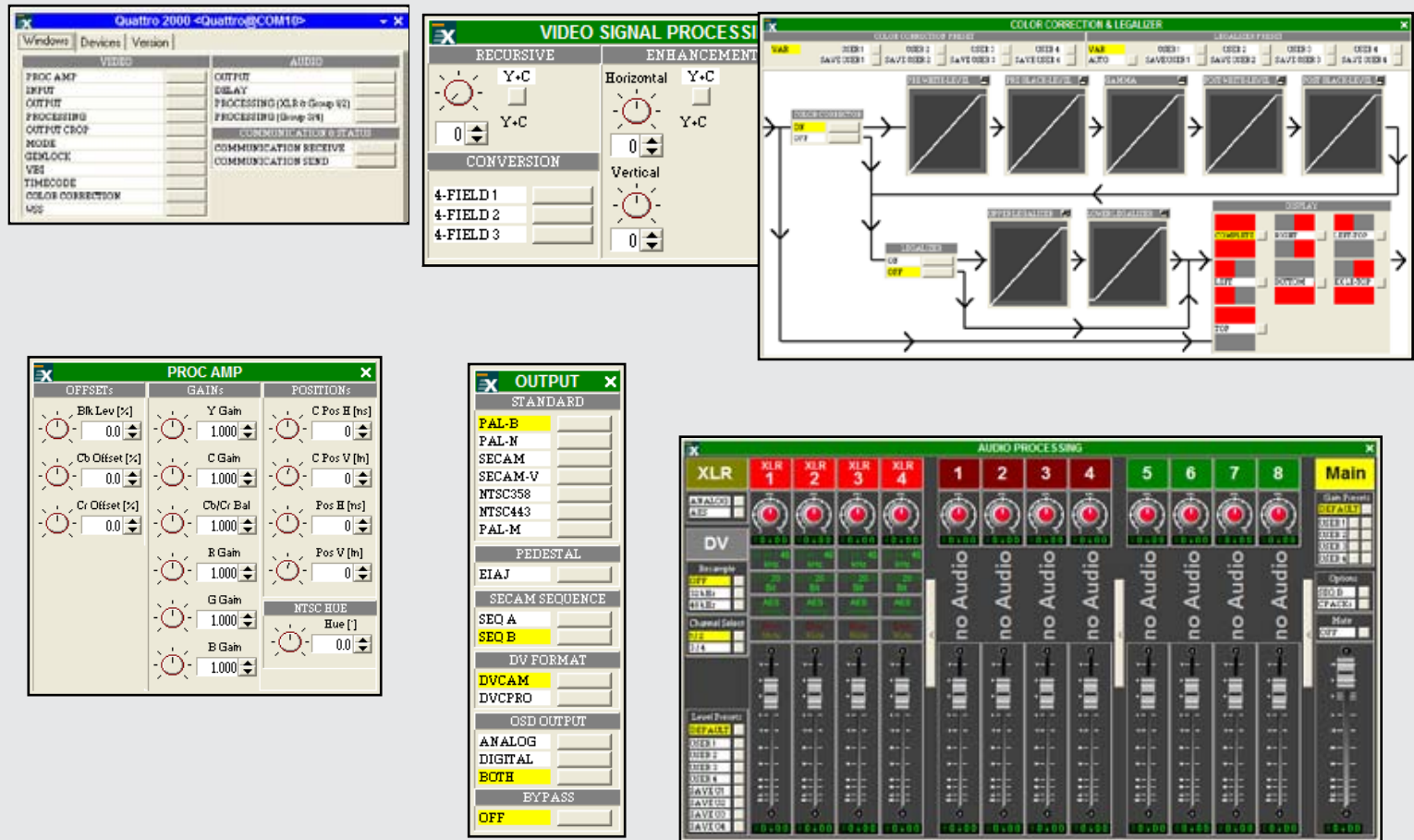
A remote control application for MS Windows based PCs is available. Every function of the unit can be controlled and monitored via the PC, especially those that are not accessible via the local control panel. A single PC can control multiple units.

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, audio, 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.

Quattro 2000

Standards Converter



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

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

Input Video Connectors

CVBS 2 x BNC – looping input
Y/C 4 pin female S-Video connector
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, 12 Bit
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
SDI 2 x BNC

Audio Processing

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

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
Full Frame TBC
4 Field linear Standards Conversion with spatio temporal adaptive interpolation
SECAM Ident Horizontal + Vertical

Frequency Response

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

Power Requirements

AC Voltage 90 - 260V, 50 / 60 Hz
Power Consumption < 50VA (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°C - 35°C (operation)
-20°C - 75°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

Analog Out 4 x Mini-XLR (balanced)

Digital Out 2 x BNC

Option /DV

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

Option /TC

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

Option /CC

RGB Color Corrector and Legalizer

Option /RC

RS232C Remote Control Dsub9
Windows Control Software



XForm Systems GmbH

Spechtweg 1, D-38108 Braunschweig
Telephone +49 531 302928 91
Facsimile +49 531 302928 99
E-Mail: info@xformsystems.de
Internet: www.xformsystems.de

This document gives a general description and shall not be used as part of any contract without formal confirmation by XForm Systems GmbH. XForm Systems reserves the right to make changes without notice. All mentioned trademarks are subject to their owners.

Copyright XForm Systems GmbH 2009
Version17 08.07.2009