

Sync 2000

Frame Synchronizer /
Noise Reducer





(local control panel not included with the base configuration)

Frame Synchronization & Timebase Correction

A full frame TBC and frame synchronization facility allows even low quality inputs to be interfaced and timed to your facility.

System timing is adjustable and flexible. Genlock reference inputs allow for optimum system integration.

Color Correction (Option /CC)

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

Legalization (Option /CC)

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

Video Noise Reduction

Powerful recursive video noise reduction, median filtering and transversal filtering eliminate random video noise in luminance and chrominance components with a minimum of artefacts. 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.

Time code (Option /TC)

- timecode generator 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, RP188 and DV timecode at output
- support for EBU and SMPTE standard at LTC input and 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)
- optional 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
- optional 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 available. These allow the store and recall of complete panel setups. Presets can also be saved and recalled to / from a PC via remote control software.

Remote Control

All functions can be controlled remotely via a serial (RS232) port.

A MS Windows remote control software is included.

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

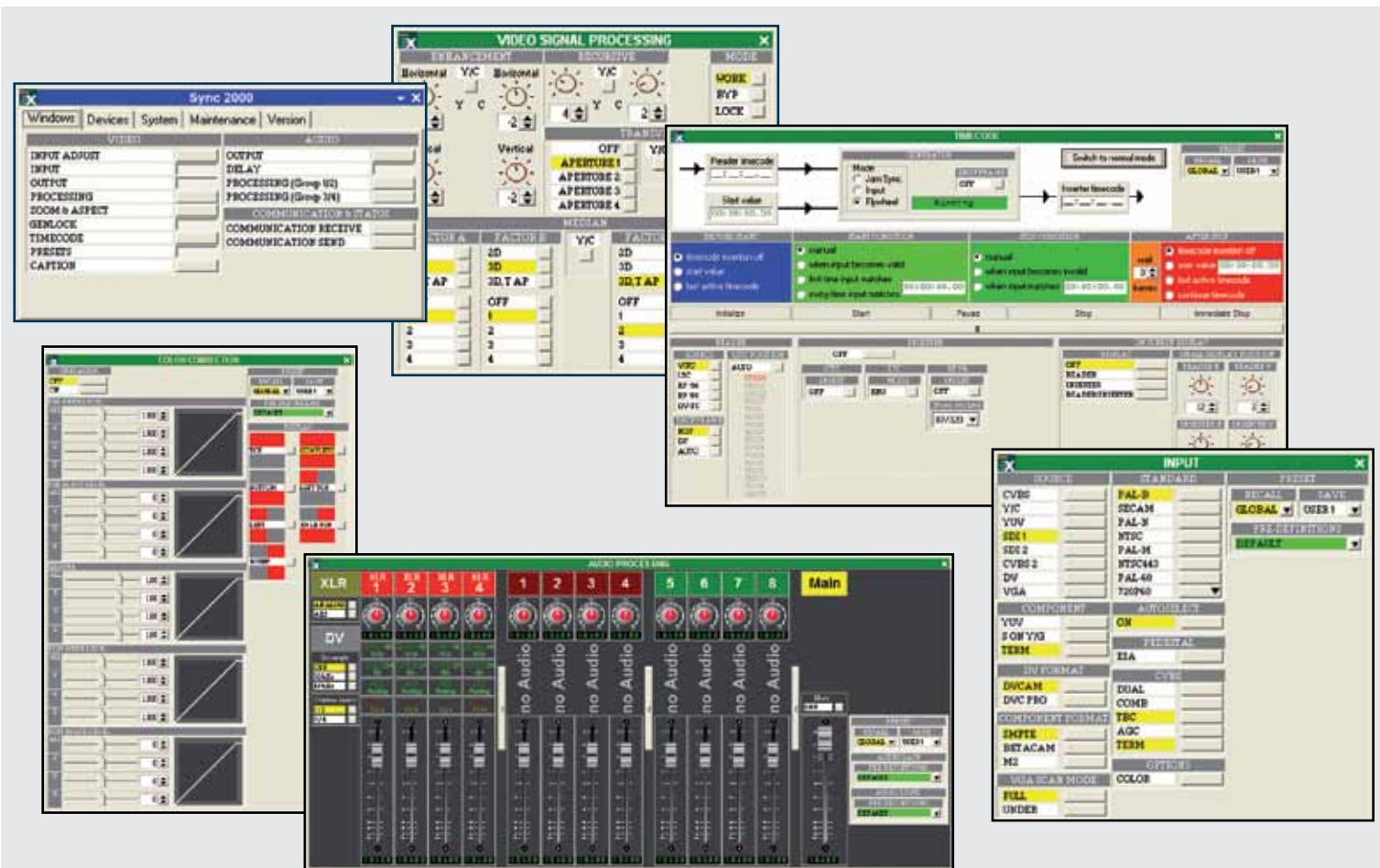
A remote control application for MS Windows based PCs will be delivered with the system. Every function of the unit can be controlled and monitored via the PC, especially those that are not accessible via the local control panel. A single PC can control multiple units.

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, alternatively an Ethernet adapter (XFS-Port 10) is available.



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 or legalizing. 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 timecode are monitored simultaneously in the remote or via the on screen display.

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Input Formats and Video Standards

CVBS PAL (I, B, G, D, M, N), NTSC (EIA, EIA-J, 4.43), SECAM, Pal60, Black / White
Y/C as CVBS
Genlock Analog Black Burst/CVBS
SDI Serial Digital Component
ITU BT.656 / SMPTE 259M

Input Video Connectors

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

Output Formats and Video Standards

CVBS PAL (I, B, G, D, M, N), NTSC (EIA, EIA-J, 4.43), SECAM
as CVBS
Y/C as CVBS
SDI Serial Digital Component
ITU BT.656 / SMPTE 259M

Output Video Connectors

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

Video Processing

Quantizing Scheme 4:2:2 conforming to ITU BT656, SMPTE 259M
Sampling – Luminance 13.5 MHz x 10 Bit
Sampling – Chrominance 2 x 6.75 MHz x 10 Bit
Digital Enhancement Horizontal and Vertical
Noise Reduction Recursive Y and C up to 20 dB
Full Frame TBC
SECAM Ident (input) Horizontal
SECAM Ident (output) Horizontal + Vertical
CVBS Chroma Modulation PAL R-Y/B-Y Axis
NTSC I/Q Axis

Frequency Response

Luminance (Y) 5.5 MHz, 1.5 dB
Chrominance (C) 0.5...1.5 MHz, 1.5 dB
Differential Phase <1°
Differential Gain <1%
Signal to Noise Ratio >68 dB CCIR Flat field

Remote Control

RS232 9pin D-Sub Connector
Windows Control Software included

Power Requirements

AC Voltage 90 - 260V, 50 / 60 Hz
Power Consumption <100VA

Physical

Dimensions 44 x 444 x 360mm (H x W x D)
Weight 6 kg approx
Chassis 1 RU 19" Rack mounting
Cooling Forced air – cross flow (side to side)

Audio Processing

Audio Delay Time 4-1023ms
Audio Gain -∞ ... +18dB
Number of embedded channels: 16
channel swap via routing matrix

Option /TC

LTC In- and Output, BNC, format EBU / SMPTE
VITC, RP188
60Hz DropFrame and non-DropFrame

Option /CC

RGB Color Corrector and Legalizer

Option /DV

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

Option /AEB

Analog / AES Audio Embedding / Deembedding
Digital Audio AES or SPDIF 32kHz / 44.1kHz / 48kHz
up to 24 Bit
ADC/DAC Resolution 24 Bit
Analog In 4 x Mini-XLR (balanced)
Digital In 2 x BNC (/AEB and /AER)
Analog Out 4 x Mini-XLR (balanced)
Digital Out 2 x BNC (/AEB and /AER)

Option /KBS2000

local control panel



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