

Crystal Vision

ViPA Video Proc-Amp

ViPA is a 10 bit video proc-amp allowing flexible independent adjustments of a digital signal image in the YUV colour space.

ViPA offers an unparalleled set of features for a processing amplifier at this price level. Tools provided to fine tune the YUV channels include:

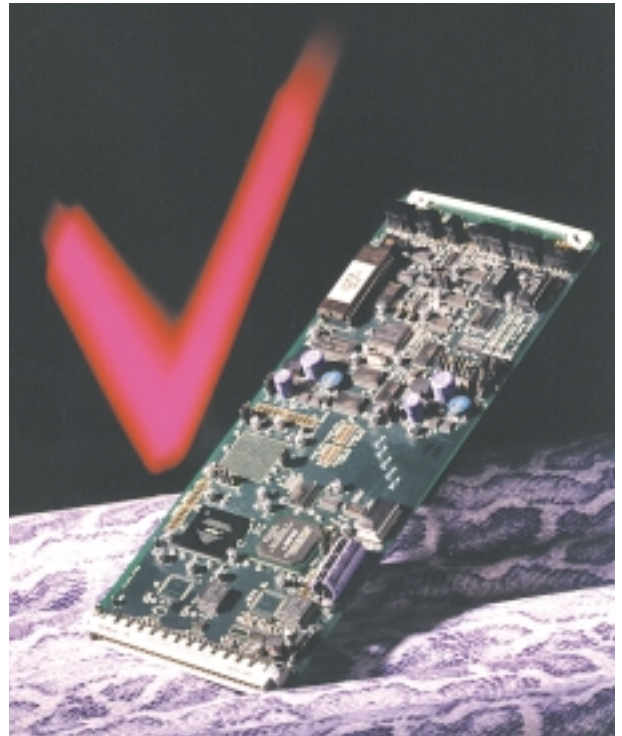
- ✓ **Independent lift:** increase or reduce the black level for Y or the colour difference offset for U and V.
- ✓ **Independent gain:** amplify or attenuate the Y, U and V signals.
- ✓ **Overall gain and lift:** adjust Y, U and V together.
- ✓ **Hue phase adjustment:** correct for NTSC colour shift errors on the U and V channels.
- ✓ **Independent YUV adjustable soft clipping:** ensure colours do not overrun the CCIR601 specification by forcing the picture to remain within the valid dynamic signal range. Choose the severity of the clipping level and therefore avoid the unpleasant picture artefacts caused by hard clipping.
- ✓ **Horizontal picture position correction.**
- ✓ **Luminance and chrominance timing correction** in 148ns steps.
- ✓ **Adjustable horizontal and vertical cropping** to clean up picture edges. Use the vertical crop, for example, to remove widescreen signalling information now part of the active picture following aspect ratio conversion.

If no correction is required processing is completely transparent, preserving signal integrity.

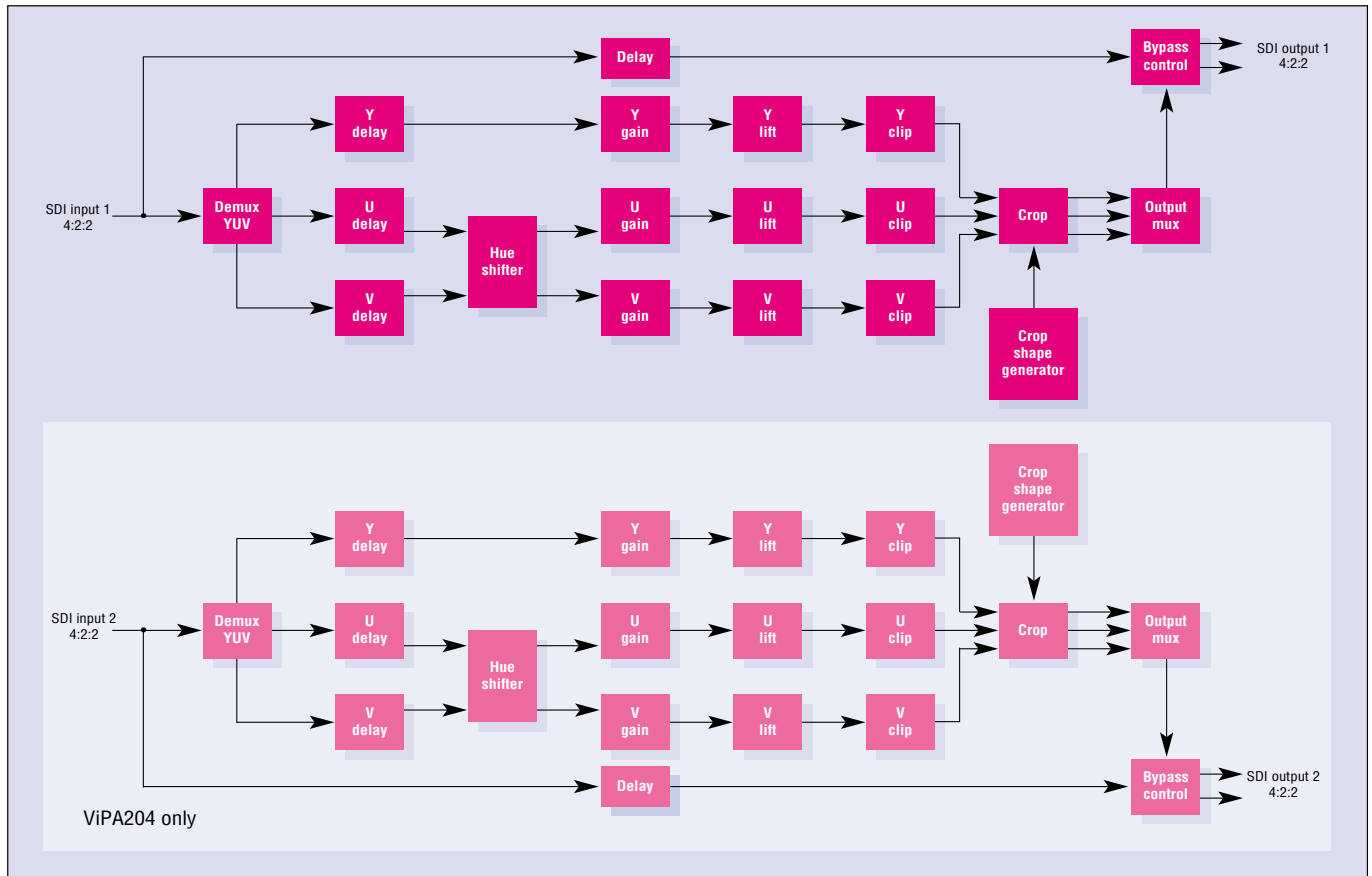
ViPA is available in two versions. ViPA102 has one input and two outputs, while the dual ViPA204 - useful for limited space applications - has two inputs with two outputs of each. Both versions should be used with the RM01 frame rear module.

ViPA passes all ancillary data without modification with any adjustments affecting the active picture only. It offers ten user memories to store commonly used adjustments and has GPI output indication of clipping. The flexible control options include active frame front panel, remote panel and the Statesman PC Control System.

Ideal uses include correcting errors caused by methods of transmission and storage or errors caused by colour space and A to D conversions. Sharing the standard frames system, ViPA can be easily integrated with the full Crystal Vision product range.



- ✓ **Digital video processing amplifier**
- ✓ **Space-saving: 100mm x 266mm module allows 12 proc-amps in 2U (six in 1U and two in desk top box)**
- ✓ **Allows independent digital image adjustments in YUV domain**
- ✓ **Wide range of tools to adjust level, gain, clipping and timing**
- ✓ **Bypass control**
- ✓ **Passes ancillary information**
- ✓ **Ten user memories**
- ✓ **Two versions: single channel ViPA102 and dual channel ViPA204**
- ✓ **Flexible control**



SPECIFICATION

MECHANICAL

Standard Crystal Vision modules 266mm x 100mm
 Weight: 180g
 Power consumption: 8 Watts (ViPA102); 8.4 Watts (ViPA204)

VIDEO INPUTS

270Mbit to EBU 3267-E and SMPTE 259M
 One SDI input with ViPA102; two independent SDI inputs with ViPA204
 Cable equalisation >200m Belden 8281 or equivalent
 Auto 625/525 line selection
 Minimum input to output delay approx. 1us

VIDEO OUTPUTS

270Mbit to EBU 3267-E and SMPTE 259M with inserted EDH
 Two SDI outputs (ViPA102); two SDI outputs of the first channel and two SDI outputs of the second channel (ViPA204)

CONTROL

RS485 multi-drop 19200 baud, 8 bits, no parity
 Control from frame active front panel and remote panel
 Statesman allows control from any PC on a network

GPI INPUT LEVELS

Active: connect to ground
 Inactive: high impedance, or 5 volts
 Input current <50uA

GPI INPUTS

Memory recall

GPI OUTPUTS

Picture clipped

ANCILLARY DATA/EMBEDDED AUDIO

All data in the vertical and horizontal blanking interval is passed through unprocessed with full 10 bits. Therefore the units will pass through embedded audio and any ancillary data with a delay that matches the default processing delay of 1us

PROCESSING MODES

The following are available independently on each channel:

- ✓ Advance/retard Y channel delay
- ✓ Advance/retard U and V channels delay
- ✓ Hue shift UV channels
- ✓ Increase/decrease overall lift
- ✓ Increase/decrease Y channel lift
- ✓ Increase/decrease U channel lift
- ✓ Increase/decrease V channel lift
- ✓ Increase/decrease overall gain
- ✓ Increase/decrease Y channel gain
- ✓ Increase/decrease U channel gain
- ✓ Increase/decrease V channel gain
- ✓ Set and soft limit Y channel positive and negative excursions independently
- ✓ Set and soft limit U channel positive and negative excursions symmetrically

- ✓ Set and soft limit V channel positive and negative excursions symmetrically
- ✓ Set horizontal and vertical active picture area cropping region on final output
- ✓ EDH generation
- ✓ 10 non-volatile user memory areas

LED INDICATION OF:

Power supplies on board
 SDI input present
 625/525 input standard
 RS422 active
 GPI input status
 Picture clipped

ORDERING INFORMATION

ViPA102	Single channel video proc-amp
ViPA204	Dual channel video proc-amp
CoCo104	Colour corrector and legaliser. See separate leaflet
FR2AV	2U frame for up to 12 Crystal Vision modules
FR1AV	1U frame for up to six Crystal Vision modules
DTB-AV	Desk top box for up to two Crystal Vision modules
RM01	Single slot frame rear module. Allows maximum number of ViPAs in frame (12 in 2U, six in 1U, two in desk top box). Gives access to two outputs with ViPA102 and two outputs of each channel with ViPA204
FP2-LF	Active front control panel for 2U frame
FP1-LAV	Active front control panel for 1U frame
FP1-SAV	Active front control panel for desk top box
REM1U	19" remote control panel
REM1US	Narrow 1U remote control panel
Statesman	PC Control System

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