Video A/D Converter and Frame Sync (12 bit)

Description

Featuring high quality 12 bit A-D conversion with dual input options makes the C AD 5132 an excellent choice for component video to SDI conversion for the most demanding broadcast applications. The C AD 5132 utilizes the very latest analog and digital signal processing technology to provide unmatched performance and feature sets. The integrated frame synchronizer with 3.5 lines to 8 frames of programmable delay is ideal for timing asynchronous component analog sources into digital switchers, routers or other downstream digital equipment.

Flexible genlock capability provides high quality VCXO genlock for broadcast quality sources but also has a mode for lower quality consumer grade sources video (such as VHS and DVD). Combine this with the multi-standard capability (525/625) and integrated proc amp features providing adjustable Gain, Saturation, Hue

and Pedestal makes the C AD 5132 a very flexible conversion option for use in many broadcast applications.

Microprocessor control and on board flash ram enable configurations and settings to be stored within the module (through power cycles and module removal). Local control capability is provided via the integrated alphanumeric display and control switch. Access to extended feature sets, remote control, status monitoring and error reporting is possible when using the LYNX control system.

Features

- High Quality 12 bit A/D conversion - A/B inputs
- 54 MHz sampling (4x oversampling)
- 525 and 625 modes of operation - Auto detect
- Integrated frame synchronizer
- 3.5 to 8 frame delay adjustable in frame, line and pixel increments
- Delay output for external audio delay (e.g. P AD 5122)
- 2 x Y,Cr,Cb component video, or 2x S-Video (Y-C) inputs
- External reference input (with passive loop through)
- 1 x 10 bit SDI output SMPTE 259M-C
- Selectable Luma / Chroma filters

- VXCO Genlock, selectable external or internal reference plus low sensitivity genlock mode. (suitable for consumer grade component inputs)
- Proc amp with adjustable Gain, Saturation, Pedestal and Hue
- Integrated alphanumeric display and menu system for local configurations
- Microprocessor controlled with internal flash ram for storing configuration
- Remote control, status monitoring and error reporting possible when used with LYNX control system
- Full SNMP support when used with master controller option
- Hot Swappable

C AD 5132 - Video A/D Converter with Frame Sync
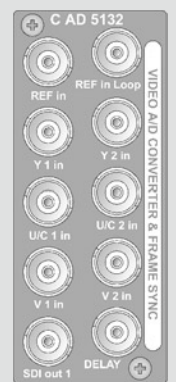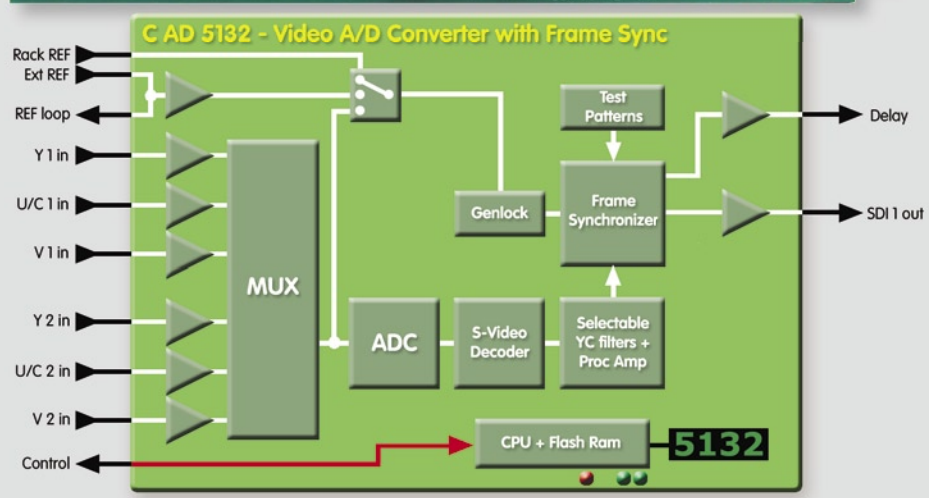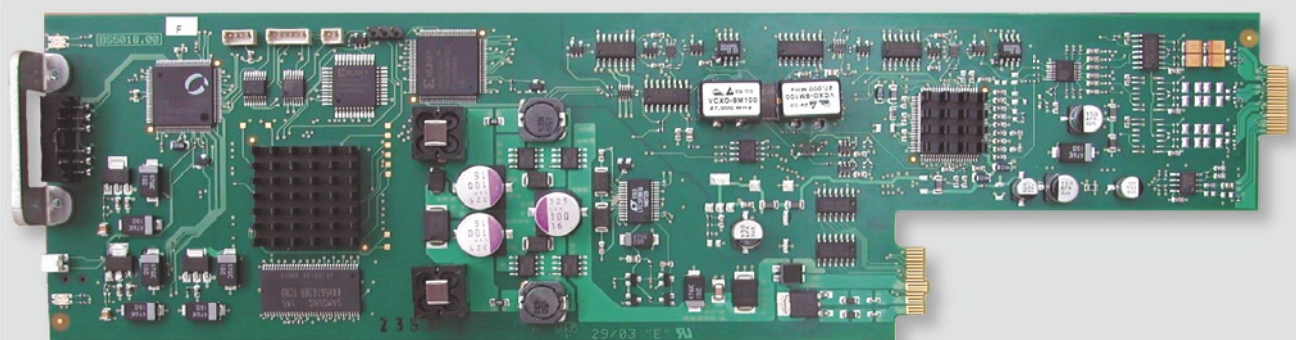
Backplane

Specifications

Video Inputs

Signal Type	Component Y, Cr, Cb or Y,C (S-Video) analog inputs
Input coupling	AC differential
Input Detection	Automatic or Manual (Selectable)
No. Of inputs	2 provided (Selectable A/B input)
Connector	75 Ohm BNC connection
Return Loss	> 35dB to 5.5 MHz

Reference Input

Signal Type	SMPTE 170M (525 line) or CCIR624 (625 line)
Connector	75 Ohm BNC with passive loop through
Return Loss	> 35dB to 5.5 MHz
Reference Sources	3 (Selectable). Input video (sync on Y), external reference or common rack reference.
Genlock capability	High quality VCXO plus a mode for low quality source material (selectable)

Outputs

No. Of Outputs	1
Signal Type	Serial component digital video conforming to SMPTE 259M-C
Connector	75 Ohm BNC Connection
Return Loss	>15dB to 270MHz
Jitter	< 0.2ui

Performance

AD Quantization	12 bits for Chrominance and Luminance
Sampling	54 MHz (4 x Over sampling)
Digital Processing Accuracy	12 bit digital Proc Amp Processing
Luma (Y) Freq. Response	+/- 0.15 dB to 5 MHz
Chroma (R-Y,B-Y) Response	+/- 0.3 dB to 1.3 MHz
Chroma / Luma Delay	< 2 ns
Luma Non Linearity	1 LSB
Signal to Noise	< -61 dB (unweighted to 5.75 MHz)
Vertical blanking (VBI)	VBI Filter mode and VBI chroma decode selectable
Internal Test Signals	Color Bars, Color Bars w-Red, EQ/PLL Pathological, and Black
Input Video Gain	Automatic gain control (configurable)
Proc Amp Adjustments	Hue, Gain, Pedestal and Saturation
Frame Sync Output Timing	3.5 to 8 frame delay adjustable in frames, pixels and lines (37ns steps)

Electrical Specifications

Operating Voltage	12 VDC
Power Consumption	< 7W
Safety	IEC 60950/ EN 60950/ VDE 0805

Mechanical

Size	283mm x 78mm
Weight	CardModule 120g, connector plate 50g

Ambient

Temperature	5°C to 40°C Maintaining specifications
Humidity	90% Max non condensing

Specifications subject to change

Settings and Control

Local Settings Using Alpha Numeric Display and Selection Switch

Input select	Input 1 / Input 2
Analog input filter selection	Off / Flat / ENH
Input mode select	Y, Cr, Cb component / YC (S-Video)
Input standard	Auto / 525 / 625
Clamp time constant	Fast / Slow
Genlock	Low Q / High Q
Input AGC	Auto / Man
Line sync reference	Ext / Int / Vid (Y)
Delay	Enter Delay in Frames / Lines and Pixels
Luminance filter	Select between 23 preset Luma shaping filters
Chroma filter	0.7M / 1.3M / 1.5M / 1.8M / 2.2M
Input luma gain	Auto / Man
Input chroma gain	Auto / Man
Proc amp Gain	Adjustable between 0 – 255 (default 128)
Proc amp Saturation	Adjustable between –42dB to +6dB (default 0dB)
Proc amp Pedestal	Adjustable between – 3dB to +3dB (default 0dB)
Proc amp Hue	Adjustable between -90 degrees to + 90 degrees (default 0 degrees)
Test	Off / Color Bars / Color Bars w-Red / EQ – PLL Pathological / Black
Test Standard	Auto / 525 / 625
Reset	Restore Factory Defaults

Additional Settings Available from Control System

Output bit depth	10 bit / 8 bit
Luma AGC time constant	Auto / 2s / 1s / 0.2s
Chroma AGC Time constant	Auto / 2s / 1s / 0.2s
Luma AGC mode	None / Auto / Active video / Freeze Luma Gain
Chroma AGC mode	None / Use Luma gain for Chroma / Freeze Chroma Gain
AGC update	Once per Field / One per line
Analog clamp	Current clamp / Voltage clamp
Filter VBI	Active video Only / All lines filtered and scaled
Blank Chroma in VBI	Blank during VBI / Decode during VBI
Chroma timing adjustment	Chroma + 2 pixels / +1 pixel / - 1 pixel / -2 pixels / - 3 pixels / None
Swap Cr/Cb	Yes / No
Brightness average sample	Lines 33 to 270 / Lines 33 to 310
Color kill	On / Off

On Board Indicators / LEDs

PLL Locked / PLL Unlocked
Input Present / Input Missing
525 / 625
General Alarm Indicator – 3 Color

Ordering Information

Model #	Part Number	Description	Includes
C AD 5132	5155007270	Video to SDI Decoder and Frame Synchronizer (12 bit)	CardModule, Rear termination Panel, + Mounting Screws, and Reference Manual