C MX 5110

Audio & Video A/D Converter + Embedder

Description

The CMX 5110 is a versatile solution providing high quality video A/D conversion, audio A/D conversion and also digital embedding functionality in a single self contained module.

Featuring high quality 12 bit A-D conversion with 54Mhz sampling, a 5-line adaptive comb decoder and a choice of CVBS composite, Y.Cr.Cb or YC component analog inputs the module provides high quality analog video conversions suitable for the most demanding broadcast applications.

2 x sets of analog stereo pair inputs are converted featuring 24 bit conversion with selectable full scale ranging and adjustable audio gain levels. The digital audio is provided as external AES outputs and can also be embedded into one of 4 selectable audio groups.
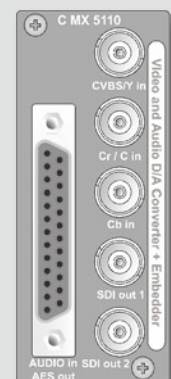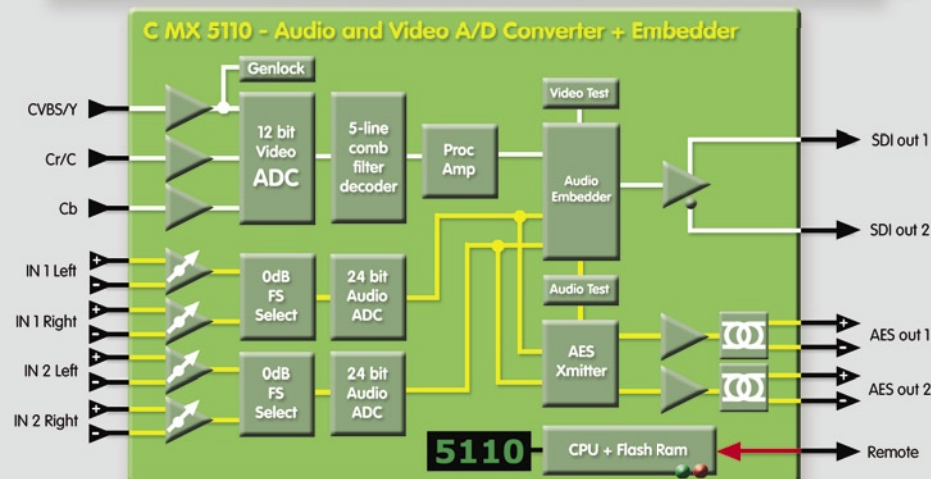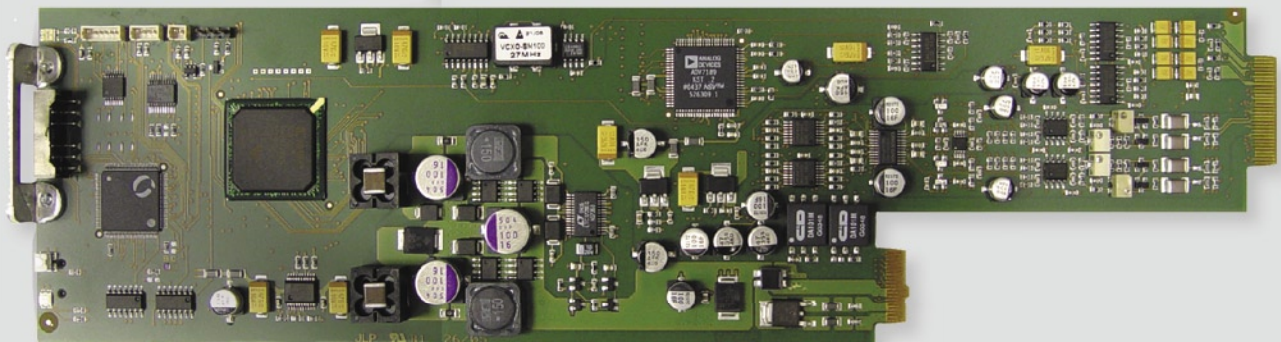
Internal video test patterns, selectable audio test tone as well as an integrated proc amp providing for adjustable video gain, saturation, hue and pedestal rounds out the features packed into this compact "all in one" A/D and embedding solution.

The C MX 5110 is an excellent choice for analog facilities converting to a digital infrastructure who require high quality performance and versatility in a small form factor.

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

- Selectable analog video inputs (CVBS / Y,Cr,Cb / YC).
- 525/625 operation (auto detect).
- 12 bit, 4 x (54MHz) video sampling.
- 5-line comb filter decoder.
- Selectable Luma / Chroma Filters.
- Selectable video test patterns.
- 2 x analog stereo pair inputs.
- 24 bit audio conversion.
- Selectable full scale audio range.
- Adjustable audio gain (+/- 3dB from full scale range)
- Test tone generator.
- Audio embedder (group selectable 1...4).

- 2 x SDI outputs with embedded audio.
- 2 x balanced AES3 digital outputs.
- Local matrix display with embedded menu system for local control.
- 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.

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Specifications

Video Inputs

Signal Type	• NTSC (MN) according to SMPTE 170M. • PAL (B/D/G/H/I/M/N) according to CCIR624 . • Component analog Y,Cr,Cb (525 or 625) • YC (S-VHS) 525 or 625
Input coupling	AC differential
Input standard detection	Automatic or Manual (Selectable)
No. Of inputs	1 set provided (Selectable)
Connector	75 Ohm BNC connection with passive loop through
Return Loss	> 35dB to 5.5 MHz

Audio Inputs

Signal Type	Balanced analog audio
No.of inputs	2 x stereo pairs
Connector	25 pin SubD connector (female)
Input impedance	15K Ohms
Max input level	24 dBu
Input full scale range	Selectable 12 dBu,15 dBu,18 dBu,21 dBu or 24 dBu
Adjustable gain level	+/- 3Db from full scale setting

SDI Video Outputs

No. Of Outputs	2
Signal Type	Serial component digital video conforming to SMPTE 259M-C
Connector	75 Ohm BNC Connection
Return Loss	>15dB to 270MHz
Jitter	< 0.2ui

AES Audio Outputs

No. Of outputs	2 x AES
Signal Type	Balanced AES3
Connector	SubD 25 pin (female)
Impedance	110 Ohms
Coupling	Transformer coupled outputs (isolated)

Video 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
Filters	5 Line adaptive comb filter (for Chroma and Luma) plus various fixed luminance and chrominance filter profiles (selectable)
Chroma Transient filter	CTI mode which improves chroma transient processing (selectable)
Signal to Noise	< -61 dB (unweighted to 5.75 MHz)
Internal Test Signals	Color Bars, Color Bars w Red, EQ/PLL Pathological, and Black
Proc Amp Adjustments	Hue, Gain, Pedestal and Saturation

Audio Performance

AD Quantization / sampling	24 bit / 48KHz
Noise floor	<-90dB "A" weighted
Freq Response	+/- 0.2dB (20Hz to 20 KHz)
Embedding	Select one of 4 audio groups for embedding

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	Composite / Y,Cr,Cb / YC
Analog input filter selection	Off / Flat / ENH
Input standard select	PAL / NTSC / AUTO
Luminance filter	Select between 23 preset Luma shaping filters
Chroma filter	0.7M / 1.3M / 1.5M / 1.8M / 2.2M
Luminance comb filter	5H / 3H / Adaptive + 5H / OFF
Chrominance comb filter	5H / 3H / Adaptive + 5H / Adaptive + 3H / OFF
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)
CTI improvement	OFF / 1 / 2 /3 / 4
Audio full scale level	12dB / 15dB / 18dB / 21dB / 24dB
AES test tone	ON / OFF
Audio Input 1 left gain	Adjust 0..255 (max +/- 3dB from full scale level)
Audio Input 1 right gain	Adjust 0..255 (max +/- 3dB from full scale level)
Audio Input 2 left gain	Adjust 0..255 (max +/- 3dB from full scale level)
Audio Input 2 right gain	Adjust 0..255 (max +/- 3dB from full scale level)
Embedded audio group	Select 1 / 2 / 3 / 4 / none
Video Test	Off / Color Bars / Color Bars w-Red / EQ – PLL Pathological / Black
Video 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 / Video White Peak / Video Average / Freeze Luma Gain
Chroma AGC mode	None / Auto (burst) / 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
PAL / NTSC
General Alarm Indicator – 3 Color

Ordering Information

Model #	Part Number	Description	Includes
C MX 5110	TBA	Audio & Video A/D Converter + Embedder	CardModule, Rear termination Panel, + Mounting Screws, and Reference Manual