

# C MX 5710

SDTV / HDTV

SERIES 5000

CardModules

## HD/SD Video / Audio A/D Converter and Embedder

### Description

The C MX 5710 provides high quality composite / component SDTV and HDTV video A/D conversion, audio A/D conversion plus frame synchronisation and audio embedding functionality in a single, versatile self contained module.

Video conversion capabilities includes high quality 12 bit A/D conversion with 54 MHz sampling. 5-line adaptive comb filter decoder plus a choice of CVBS / RGB / YUV / YC SDTV analog video inputs or RGB / YUV HDTV analog inputs. The module provides the quality and versatility for use in the most demanding applications.

Audio capability includes support for 2 sets of analog stereo pair inputs 24 bit A/D conversion and selectable full scale

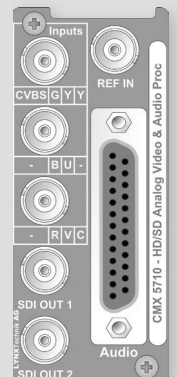
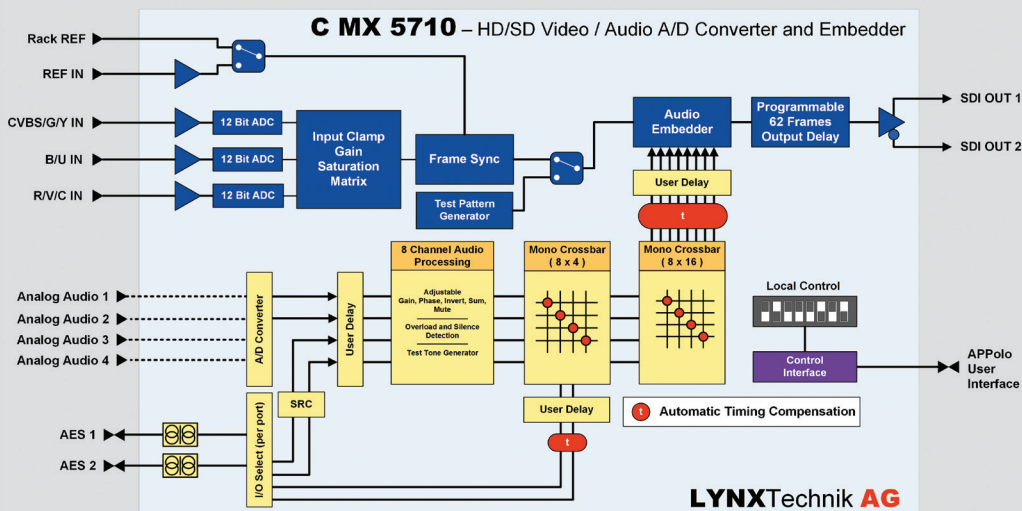
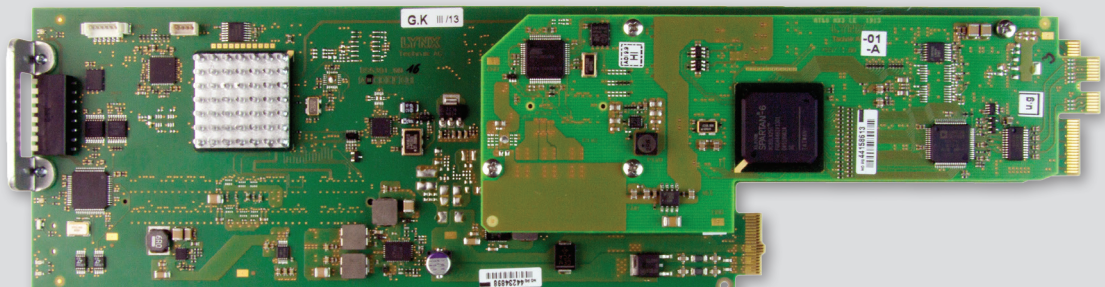
range. In addition 2 x digital AES audio ports are provided which can be individually configured as inputs or outputs. Integrated audio processing includes adjustable gain, phase, invert and a sum function. Audio channels can also be shuffled using the integrated audio crossbar. Automatic timing compensation is provided with a user adjustable offset. A fully featured audio embedder includes a 8 x 16 audio crossbar for audio assignments.

An adjustable video delay of up to 62 frames adjustable in frame, lines and pixels increments is provided for system timing.

Full remote control is provided via the APPolo control system.

### Features

- Selectable SDTV analog video inputs (CVBS / RGB / YUV / YC)
- Selectable HD analog video inputs (RGB / YUV)
- Supports 525 / 625 / 1080i / 720P SDI formats
- 59.94Hz/50Hz/60Hz operation (auto detect)
- Frame Synchronizer
- 2 x 270Mbit / 1.5Gbit SDI outputs with embedded audio
- 12 bit, 4 x (54MHz) video over sampling
- 5-line comb filter decoder
- Selectable Luma / Chroma Filters.
- Video test pattern generator with selectable patterns.
- 2 x balanced analog stereo pair inputs
- 2 x AES Ports configurable as inputs or outputs
- 24 bit audio A/D conversion
- Audio processor with adjustable gain, phase, invert and sum function plus audio shuffle
- Automatic audio timing compensation with user adjustable delay offset
- Fully featured audio embedder with 8 x 16 audio crossbar
- 62 Frame programmable video delay in frame / line / pixel increments
- Remote control, status monitoring and error reporting possible when used with the APPolo control system
- Hot Swappable



Backplane

### HD/SD Video / Audio A/D Converter and Embedder

## Specifications

#### Analog Video Inputs

Signal Type	- PAL (B/D/G/H/I/M/N) according to CCIR624 - NTSC (MN) according to SMPTE 170M - HD/SD analog components RGB, YUV** (see table for supported formats) - YC (S-VHS) 525 or 625
Input coupling	AC differential
No. Of inputs	1 set (selectable)
Connector	75 Ohm BNC connections
Return Loss	> 35dB to 5.5 MHz

#### Analog Audio Inputs

Signal type	Balanced analog audio
No. of inputs	4 (2 stereo pairs)
Connector	25 pin SubD female connector
Input impedance	> 10K Ohms
Max input level	24dBu
0dB full scale range	(Selectable) 12,15,18,20,22 and 24dBu

#### AES Audio I/O

Signal type	Balanced AES3
Input / output coupling	Transformer isolated
No. of inputs	4 channels on 2 x AES channels configured as input or outputs
Output level	4V peak to peak nominal
Connector	25 pin SubD female connector

#### Reference Input

Signal Type	Analog bi-level (SDTV) or tri-level (HDTV) Auto-detect and cross lock compatible
Connector	75 Ohm BNC
Return Loss	> 35dB to 5.5 MHz
Reference Sources	External reference or common rack reference (selectable)

#### Video Outputs

No. Of Outputs	2
Signal Type	Serial digital video SMPTE 292M, 344M, 259M-C
Output format	Follows input format
Connector	75 Ohm BNC Connection
Return Loss	>15dB (270MHz)
Timing Jitter	< 0.2 UI @ 270Mbit/s, < 1.0 UI @ 1.5Gbit/s
Alignment Jitter	< 0.2 UI @ 270Mbit/s, < 0.2 UI @ 1.5Gbit/s

#### Audio Processing

Processing Functions	8 channel adjustable Gain, phase, invert, mute, sum plus overload and silence detection
Crossbars	- 8 x 4 channel (mono) output select crossbar - 8 x 16 channel (mono) embedder select crossbar
Sample Rate Converters	48kHz - one per AES input, selectable ON/OFF

#### Video and Audio Delay

Automatic	Automatic AV timing compensation
Video Output Delay	Up to 62 frames manually adjustable in frame / line / pixel increments
Audio Delay	Up to 1.3s (1300ms) total. Adjustable for each incoming and out going audio Note: These adjustments are offsets to the automatic processing compensation
Adjustment Offsets	Manual delay adjustments are offsets to the automatic processing compensation

#### Performance

Cable Equalization	- Cable Equalization 270Mbit: Up to 250m (820ft) using Belden 8281 - Cable Equalization 1.485Gbit: Up to 140m (459ft) using Belden 1694A
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Specifications subject to change

#### Electrical Specifications

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

#### Mechanical

Size	283mm x 78mm (11.14" x 3.07")
Weight	Each CardModule 120g, (4.2oz) connector plate 80g (1.8oz)

#### Ambient

Temperature	5°C to 40°C (41°F to 104°F) Maintaining specifications
Humidity	90% Max non condensing

## \*\* Supported Video Standards

#### Video Standards

SDTV	525/59.94Hz, 625/50Hz
HDTV (1.5Gbit)	720p 60/ 59.94 / 50 Hz 1080i 60/ 59.94 / 50 Hz

## Settings and Control

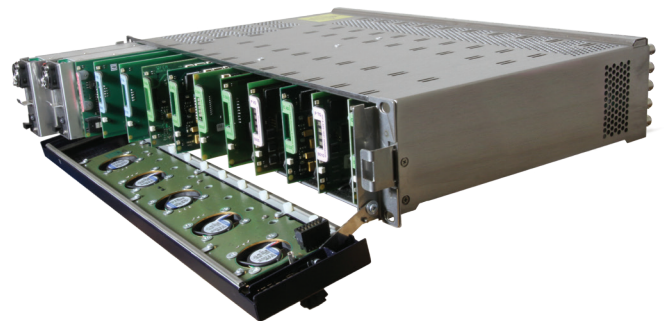
#### Local Settings (on module)

Dip Switch	1- Local Control: On/Off 2- Embed Group 1: On/Off 3- Embed Group 2: On/Off 4- Embed Group 3: On/Off 5- Embed Group 4: On/Off 6- Ref Source Select: Board/Rack 7- no function 8- Auto Test pattern On/Off
Push Button	Reset to factory defaults
LEDs	- General Status LED (indicates the general status of the I/O signals (visible through the rack frame front cover) - Video Input Status LED (indicates the Video Status) - Audio Status LED (indicates the Audio Status) - Power Status LEDs

#### Additional Setting using APPolo Control System

The use of the APPolo control system is highly recommended for the use of this module for access to additional features and intuitive setting and control. Adjustments include:

- AES Port Configuration
- Audio Shuffling (mono crossbar)
- Audio Delay
- Output Delay
- Audio Processing



## Ordering Information

Model #	Description	Includes
C MX 5710	SD/HD Video / Audio A/D Converter and Audio Embedder	CardModule, rear termination panel, mounting screws + reference manual on CD