

H264-2SDI-XMC

Quad-channel XMC Mezzanine HD H.264 Encoder



The H264-2SDI-XMC is an ultra low latency, quad channel, H.264 encoder on a XMC Mezzanine form factor board. The H264-2SDI-XMC provides a powerful and flexible solution for concurrently capturing and compressing high definition HD-SDI inputs and standard definition PAL/NTSC/RS-170 inputs to H.264/MPEG-4 AVC (Part 10) standard.



40ms Ultra low latency

1080p High Definition

H.264 compression

Quad channel

The H264-2SDI-XMC is ideal for time-critical, low latency IP streaming applications as it offers Ultra Low Latency encoding of below 40ms across the entire capture resolution range. The flexible H.264 engine allows low latency encoding of all 4 channels and has a maximum throughput of 1080p60. This allows combinations such as; single channel @ 1080p60, dual channel @ 1080p30, or, quad channel encode of 1x 1080p30, 1x720p30, and 2x PAL/NTSC/RS-170 concurrent encodes.

The H264-2SDI-XMC supports extraction of KLV (MISB 0605.3 compliant) embedded data contained within the HD-SDI signal. The video and metadata are synchronized and transferred to the host system over the PC/104-Express bus for processing.

The H264-2SDI-XMC is supported by a set of well-documented and established SDKs that minimize development risk and shorten time to market for applications requiring video recording or streaming.

PRELIMINARY INFORMATION (Rev A.00)
Subject to change without notification

Advanced Micro Peripherals Ltd
Cambridge, CB6 2HY, England
Tel (+44) 1353 659500
Fax (+44) 1353 659600
sales@ampltd.com
<http://www.ampltd.com>

Advanced Micro Peripherals Inc
New York, NY10007, USA
Tel (+1) 212 951 7205
Fax (+1) 212 658 9073
sales@amp-usa.com
<http://www.amp-usa.com>



H264-2SDI-XMC

Quad-channel XMC Mezzanine HD H.264 Encoder



**Advanced Micro
Peripherals**

THE EMBEDDED VIDEO EXPERTS



Applications

Remote moving platforms
Remotely guided vehicles
UAVs
Vehicle cameras
Remote video surveillance
Electronic news gathering
Multi-camera systems
Traffic monitoring and control
Solid-state digital video recorder
Intranet/Internet video streaming

Real-time
IP streaming
of
HD-SDI
and
PAL/NTSC/RS170

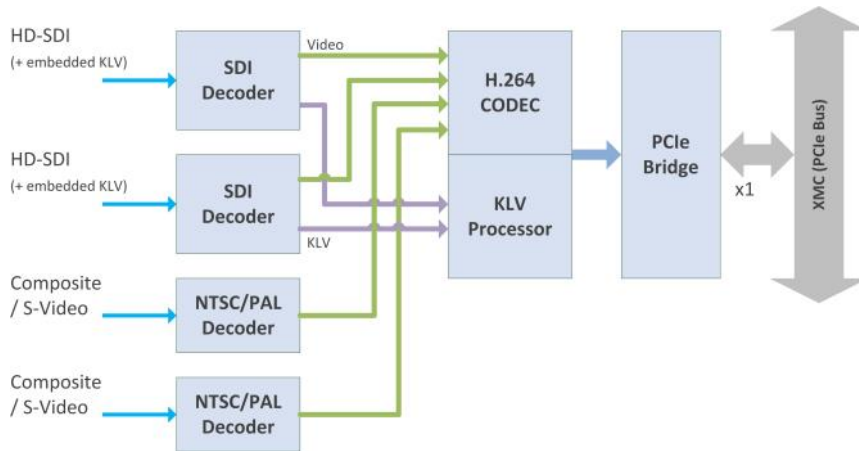
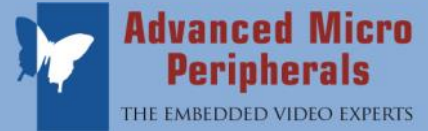
Advanced Micro Peripherals Ltd
Cambridge, CB6 2HY, England
Tel (+44) 1353 659500
Fax (+44) 1353 659600
sales@amp ltd.com
<http://www.amp ltd.com>

Advanced Micro Peripherals Inc
New York, NY10007, USA
Tel (+1) 212 951 7205
Fax (+1) 212 658 9073
sales@amp-usa.com
<http://www.amp-usa.com>



H264-2SDI-XMC

Quad-channel XMC Mezzanine HD H.264 Encoder



H264-2SDI-XMC Block Diagram

Features

- Single channel encode at up to 1080p60
- Dual channel encode at up to 1080p30
- Quad channel encode at up to:
 - 1x1080p30, 1x720p30, 2xNTSC/PAL/RS-170
- 2x HD-SDI inputs
- 2x Composite/S-Video NTSC/PAL/RS-170 inputs
- Ultra Low Latency encoder (below 40ms)
- H.264/MPEG-4 AVC (Part 10) encoder
- Intra-refresh to improve bandwidth utilization
- Motion detection with motion vector information
- XMC Mezzanine form factor
- Drivers for Windows and Linux

Advanced bit rate
control modes
enhance bandwidth
and storage
capacity

XMC Interface

PCI Express 2.0 compliant
x1 PCI Express port

Ultra Low Latency Technology

Less than 40 ms encode latency

Video input ports

2 x high definition HD-SDI input ports
2 x PAL/NTSC/RS-170 video input ports, from:
Composite
S-Video

Video capture resolutions

Flexible capture resolutions, 16x16 pixel granularity.
Standard resolutions supported include:
1080p60, 1080i60, 1080p50, 1080i50
720p60, 720i60, 720p50, 720i50
480p60, 576p50

Video Encoding

H.264 ISO/IEC 14496-10 baseline and Main Profile up to L4.2
Interlaced and progressive video encode support
Real-time multi stream H.264 Ultra Low Latency capture
Encoding up to 1080p60 (or equivalent multi channel encode).
Single channel encode at up to 1x 1080p60
Dual channel encode at up to 2x 1080p30
Quad channel encode (example):
1x HD-SDI @ 1080p30,
1x HD-SDI @ 720p30
2x PAL/NTSC/RS-170

Bit rate control

Constant bit rate (CBR)
Variable bit rate (VBR)

Motion detection

Motion detection at macroblock granularity
Motion vector information

Pre- and post-processing

Trans-rating and trans-sizing
Selective blocking of video input regions

Configuration support per stream

Frame rate
Resolution
Bit rate control
Key frame interval
Intra-refresh mode

System Requirements

X86 Host Computer with XMC site

Mechanical

Standard 2.91 x 5.87 Single-width CMC Mezzanine form factor
IEEE 1386 form factor

Operational characteristics

Operating temperature 0°C to 60°C
Extended temperature -40°C to +85°C (option)

Software

Drivers for Windows, Linux
Comprehensive video recording SDK
Sample video recording application in C/C++ source code

Related Products

H264-2SDI-XMC-VStream RTSP Video Streaming SDK

Ordering Information

H264-2SDI-XMC	Video Encoder (0 to 60°C)
H264-2SDI-XMC-EXT	Video Encoder (-40°C to +85°C)

