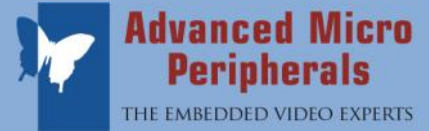


# H264-ULL-SD4

## Ultra Low Latency Quad H.264 Encoder



The H264-ULL-SD4 is an ultra low latency, quad channel, H.264 encoder on a single PCI/104 form factor board. The SLL-H264-SD4 provides a powerful and flexible solution for capturing and compressing up to 4 analog video inputs at full size and at full frame rate to the H.264/MPEG-4 AVC (Part 10) standard.



In addition to the ultra low latency full frame rate encoding of four NTSC/PAL analog video sources, the H264-ULL-SD4 can also perform stream duplication to provide multiple encodings of the same input. This allows streams to be created at different resolution, compression settings dependent on requirements and available bandwidth.

The high performance H.264 video compression and efficient bus utilization allows up to four H264-ULL-SD4 to be fitted in a PCI/104 system.

The H264-ULL-SD4 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

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40ms Ultra low latency

H.264 compression

Quad channel



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Ultra Low Latency Quad H.264 Encoder



## 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

- Ideal for -
- Surveillance
- Remote platform
- Real-time control
- Gaming
- Simulation

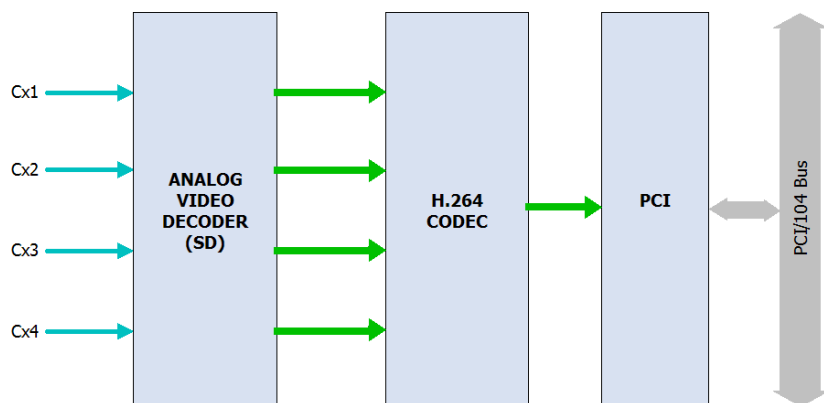
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Ultra Low Latency Quad H.264 Encoder



**SLL-H264-SD4 Block Diagram**

## Features

- Real time 4x full size H.264 encode at full frame rate
- Composite NTSC/PAL/RS-170 video input
- H.264/MPEG-4 AVC (Part 10) encoder
- Ultra Low Latency technology with a latency below 40ms
- Intra-refresh to improve bandwidth utilization
- Multiple encodes of same input with different settings
- Motion detection
- Video Masking
- Up to four H264-ULL-SD4 boards per system
- PCI/104 form factor
- Drivers for WinXP-E and Linux

Advanced bit rate  
control modes  
enhance bandwidth  
and storage  
capacity

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**PCI/104 Bus Interface**

Compliant with PCI Rev 2.1  
132 MBytes/sec bandwidth at 33.33 MHz bus speed  
Single +5 V supply

**Analog Video Input**

4 composite NTSC/PAL/RS-170 video input channels  
Anti-aliasing filters on inputs

**Video Input Formats**

Standard CCIR601-NTSC, CCIR-PAL  
NTSC-M, NTSC-N, NTSC-J, NTSC (4.43), RS-170  
PAL-B/G/N, PAL-D, PAL-H, PAL-I, PAL-M, PAL-NC, PAL-60

**Video Input Adjustments**

Contrast (or luma gain) adjustable from 0-200% of original  
Saturation (or chroma gain) adjustable from 0-200% of original  
Hue (or chroma phase) adjustable from -180° to +180°  
Brightness (or luma level) can be adjusted from -25 to +25 IRE  
Software adjustable Sharpness, Gamma and noise suppression

**Ultra Low Latency**

Less than 40ms encode latency

**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  
4 channel NTSC D1 (720x480) at 30fps  
4 channel PAL D1 (720x576) at 25fps

**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  
Stream duplication

**Configuration support per stream**

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

**System Requirements**

x86 PC-Compatible PCI/104 Computer  
Spare REQ/GNT on PCI/104 Bus  
3.3V signalling PCI/104 bus

**Mechanical**

Standard 3.6 x 3.8in PCI/104 form factor

**Operational characteristics**

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

**Software**

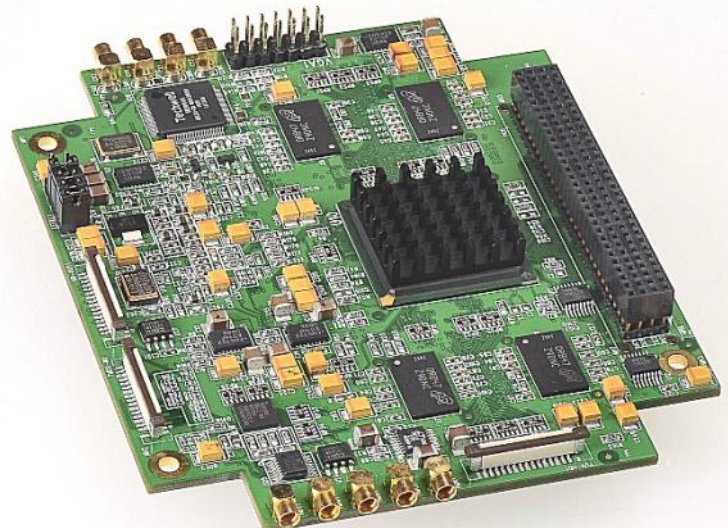
Drivers for Win-XP, Linux  
Comprehensive video recording SDK  
Sample video recording application in C/C++ source code

**Related Products**

H264-ULL-SD4-VStream RTSP Video Streaming SDK

**Ordering Information**

H264-ULL-SD4 Video Compression Card (0 to 60°C)  
H264-ULL-SD4-Ext Video Compression Card (-40°C to +85°C)

**H264-ULL-SD4**