

# XStream-SD4

Ultra Low Latency Standalone 4xD1 H.264 Video Streamer



**Advanced Micro  
Peripherals**

THE EMBEDDED VIDEO EXPERTS

The XStream-SD4 is an intelligent, stand-alone, ultra low latency H.264 Streaming solution that accepts 4x NTSC/PAL/RS-170 composite video sources and records and streams them over 100/1000MBit Ethernet. This SWaP optimised solution is ideal for rapid deployment in demanding applications in Military, Communications, Transportation, Mining and Energy industries.



The XStream-SD4 features a dedicated hardware compression engine capable of encoding all 4 video channels at full size and full frame-rate with Ultra Low Latency (under 40ms). The flexible streaming engine can stream each channel direct from the on-board Ethernet port as well as save direct to locally attached storage for later retrieval. The XStream-SD4 also supports 4 channels of audio that can be captured and streamed with the video data.

The XStream-SD4 is an intelligent stand-alone device with it's own on-board CPU and does not require a host CPU or any driver or OS software. For mechanical convenience the module can be mounted on a PC/104 stack without consuming host CPU resources.

#### PRELIMINARY INFORMATION (Rev A.01)

Subject to change without notification

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Ultra low latency,  
Rapid Deployment,  
Rugged, solid-state  
multi-channel  
video streaming  
and  
recording

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## Applications

Real-time video feedback for remote platforms

Unmanned vehicles (UAV, ROV)

Real-time IP video distribution

Remote Video Surveillance

All-round Real-Time Situational Awareness

Rapid Deployment Video Recording solutions

Rugged video recorders for marine, aviation

Border Security

Traffic Monitoring and Control

Video Acquisition and Analytics

4-channel

real-time

IP video

distribution

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SWaP optimised for  
applications in the  
**Military,**  
**Transportation,**  
**Mining and**  
**Energy Industries**

## Features

- 4x PAL/NTSC/RS-170 composite video inputs
- Real-time 4x D1 H.264 encode at full frame rate
- Ultra Low Latency technology with video latency below 40ms
- 4 channels of audio encoding
- H.264/MPEG-4 AVC (Part 10) Encoder
- Single, rugged, real-time video streaming solution
- SATA support for extended local storage
- Stand-alone operation
- Operating system neutral
- Standard PC/104 mechanical form factor

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**Analog Video Input**

Up to 4 concurrent PAL / NTSC / RS-170 composite video inputs  
 Four 10bit Analog-to-Digital converters  
 Anti-aliasing filter on inputs

**Audio Input**

4x mono inputs  
 Provides audio/video synchronization

**H.264 Video Encoding**

ITU-T H.264 (ISO/IEC 14496-10), supported profiles:  
 Baseline profile,  
 Main profile (I, P frame coding only)  
 High profile (I, P frame coding only) at level 4.1  
 4x D1 encode @ full frame rate  
 Supports Variable Bit Rate (VBR)  
 Supports Constant Bit Rate (CBR)  
 Real-time multi stream H.264 Ultra Low Latency capture

**Ultra Low Latency**

Less than 40ms video encode latency <sup>(1)</sup>

**Network Interface**

100/1000MBit Ethernet for RTSP/RTP streaming and control

**Data Storage**

SATA - For external storage  
 SD-Card slot - On-board storage

**Mechanical**

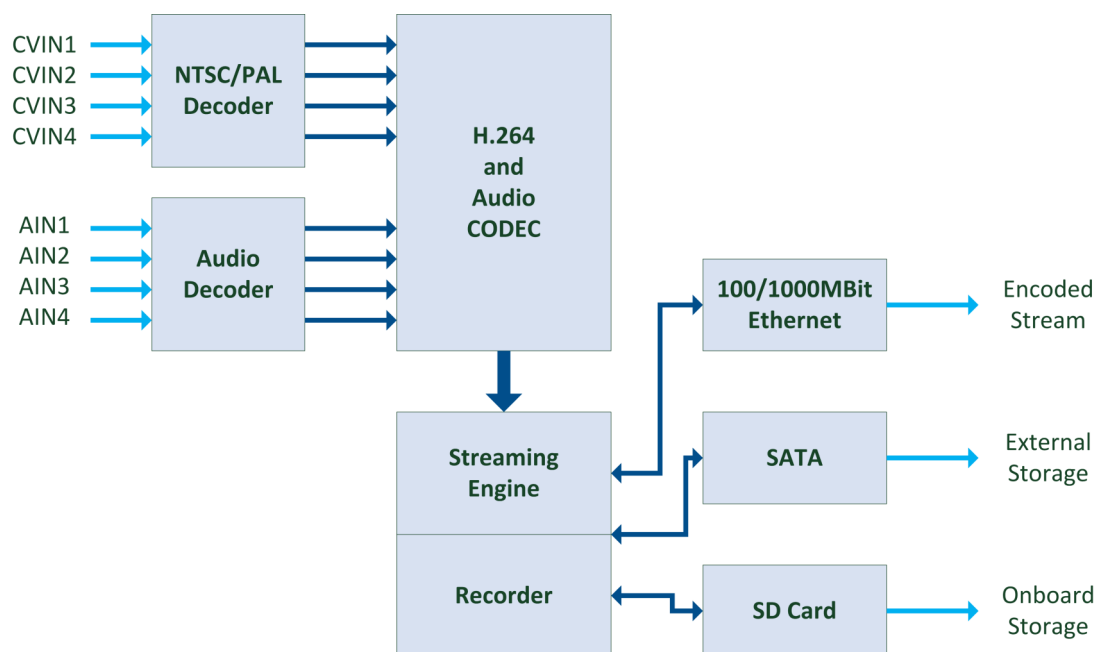
Intelligent stand-alone module, does not require host computer  
 Standard 4.55 x 3.775in PC/104 form factor  
 Mechanical mounting for PC/104 stack  
 Single +5V supply  
 Operating temp 0°C to 60°C  
 Operating temp -40°C to +85°C (extended temp option)

**Ordering Information****XStream-SD4**

H.264 Ultra Low Latency Video Streamer (0 to 60°C)

**XStream-SD4-EXT**

H.264 Ultra Low Latency Video Streamer (-40°C to +85°C)



**XStream-SD4 Functional Diagram**

<sup>(1)</sup> Streaming latency of XStream-SD4 is less than 40ms. When audio is included in the stream, overall system Glass-to-Glass streaming latency can be higher due to audio buffering at the remote client.

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