H.264 Compatible Video Capture, Encoding & Streaming XMC Card with up to 4 Video Inputs

The Condor VC102x is a rugged High Definition (HD) or Standard Definition (SD) H.264/M-JPEG Encoding and Streaming card with simultaneous Raw Video Capture. This versatile XMC form factor card serves as a frame grabber as well as H.264 encoder and is designed for use in various applications such as surveillance, video recording and transmission, target tracking, unmanned vehicles (UAV) and other camera based video recording/analysis applications.

The Condor VC102x sends the captured raw video data to the host machine over PCIe with extremely low latency to allow for real time viewing, processing, analysis or display from a local graphics card. This data is available to customer applications for processing, analysis or display on a local graphics card. Video data is also compressed and delivered in an MPEGTS container to the dedicated on-board 1Gb Ethernet outputs as a UDP/RTSP stream so it can be viewed at a remote location or recorded. This card does H.264 or M-JPEG encoding in hardware to minimize CPU usage. 4 composite video (CVBS) inputs or 2 HD/SD-SDI video inputs are supported. Various input formats (NTSC/PAL/RS-170/HD-SDI/SD-SDI) are selectable through an API. Two stereo audio and two SDI audio inputs are supported for muxing and streaming.

With low power consumption (≈10 W), this product is ideal for applications such as UAVs and other systems where SWaP (size, weight and power) considerations are critical. A full SDK is provided to manage captured video and audio data. Condor VC102x is available in various levels of ruggedization and has air or conduction cooled variants.

Key features of this product:

- H.264 (AVC) Baseline, Main or High Profile
- M-JPEG (Motion JPEG)
- Raw Video Capture over PCIe
- Video Inputs: Two HD-SDI or SD-SDI
              Four CVBS (NTSC/PAL/RS-170)
- Two Stereo or SDI Audio Inputs
- Dedicated Ethernet Outputs (Video Streaming)
- MPEGTS Stream Packetized as UDP/RTSP
- XMC Form Factor (PCIe carrier available)
- Low Power (≈10 W)
- Two Channels up to 1080p30
  or Four Channels of CVBS
- Rear XMC I/O or PMC I/O w/ board mounted SDI
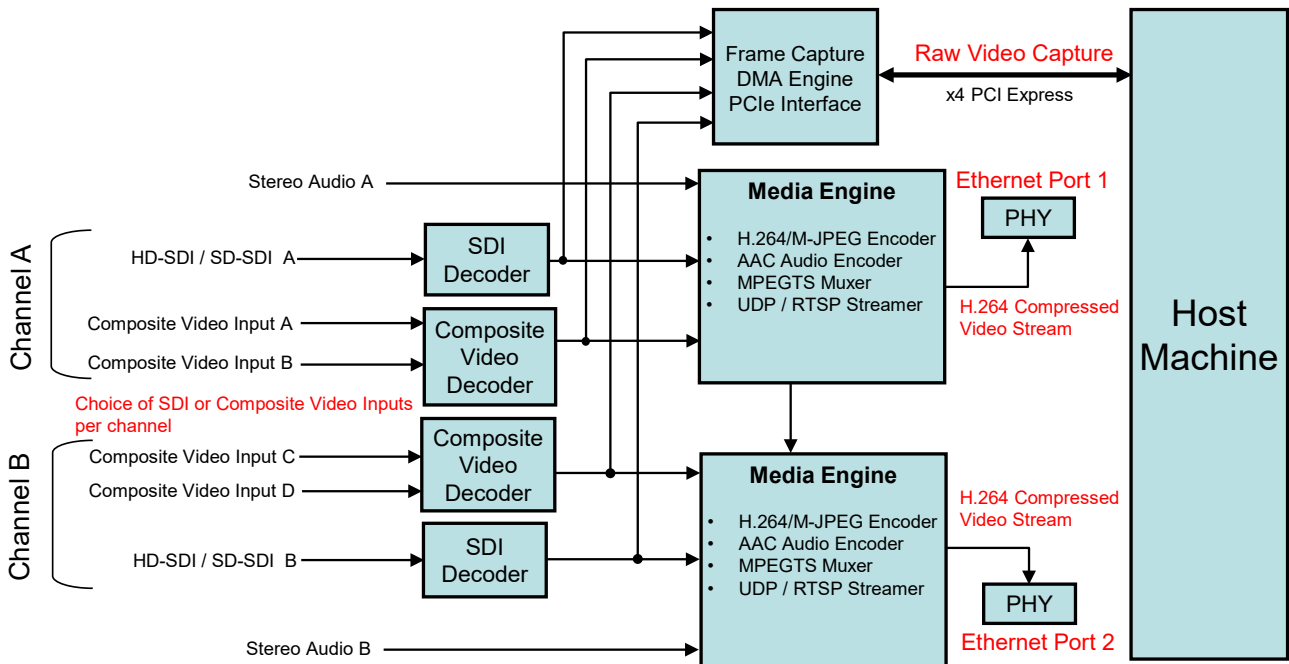- MIL-STD-810
- Conduction Cooled & Air Cooled

Fully Ruggedized

Condor VC102x Specifications

Interface	XMC 1.0 or XMC 2.0 4 Lane PCIe 2.0 Rear XMC I/O or PMC I/O with Board Mounted SDI Cables
Capture Format	Raw Video Capture over PCIe H.264/AVC Baseline, Main or High Profile up to L4.1 M-JPEG (Motion JPEG)
Video Inputs	Two HD/SD-SDI (up to 1080p30 / 1080i60) Interfaces: SMPTE 292M(HD), SMPTE 259M-C(SD). Four CVBS (NTSC/PAL/RS-170). 75 Ω (2 SDI, 4 CVBS or 1 SDI + 2 CVBS simultaneously)
Audio Inputs	Two SDI audio inputs (SMPTE 272M-C and SMPTE 299M), Two Stereo Line In, 20 kΩ Supported for Muxing and Streaming but not DMA over PCIe
Output Type	Raw Video Capture over PCIe MPEGTS Stream Packetized as UDP/RTSP IP Streams Sent over Two Dedicated On-board 1 Gb Ethernet Outputs
Power Consumption	≈10 W
Operating Temperature (MIL-STD-810)	-40°C to 70°C (Rugged Air Cooled) -40°C to 85°C (Rugged Conduction Cooled)
Vibration (MIL-STD-810)	0.1 g^2/Hz
Shock (MIL-STD-810)	40 g
Humidity (MIL-STD-810)	95% Without Condensation
Software & Platform Support	Windows or Linux on x86 RTOS Support - VxWorks (others as needed) VME, cPCI, VPX & PCIe (with adapter board)

Condor VC102x Block Diagram

EIZO Rugged Solutions

Rev A