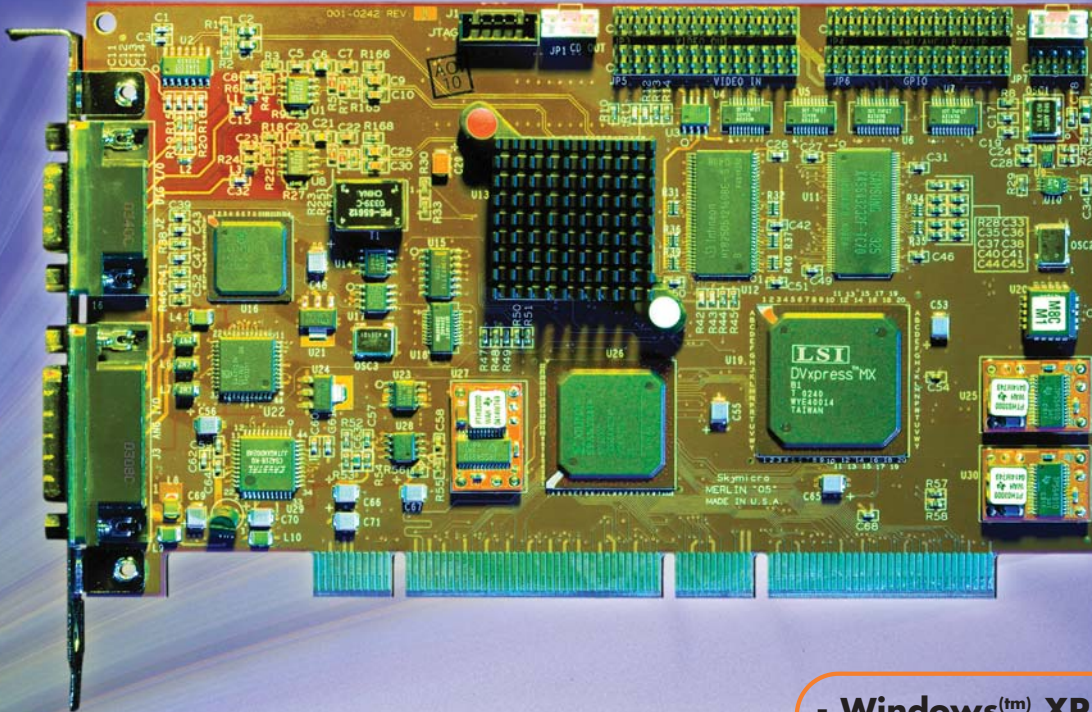


The **Merlin05** - the most flexible and highest quality MPEG-2 and DV encoding/decoding solution available.



- Windows<sup>(tm)</sup> XP/2K -OS/X
- Linux -Irix -Solaris

**High quality video encoding and decoding, programmable capability and robust performance – it's all in the Merlin05. The Merlin05 enables your PC, Mac or Unix video system to perform amazing feats of video magic – all under your control.**

**The Merlin05's encode features include IMX, DVCPRO<sup>®</sup> 50, MPEG-1, MPEG-2 (4:2:0) and (4:2:2), up to 50mbps, for the most demanding applications. The Merlin05 is also an uncompressed capture board, supporting 10-bit uncompressed play and record.**

**For playback, the Merlin05 delivers dual stream SDI decoding with transition effects and graphics insertion. Or, play out two SDI video streams at the same time. Need a Frame Buffer or custom processing? The Merlin05 delivers via the Xilinx<sup>™</sup> Virtex-II Pro<sup>™</sup> "System on a Chip". Frame accurate playback, jump to frame capability, smooth slow motion as low as 1% and fill/key playout capability – the Merlin05 does it all!**

**Let's talk audio – The Merlin05 supports up to 8 embedded SDI channels of audio, along with AES-3, AC3, balanced and unbalanced. Audio can be locked to the video clock for drift-free capture and playback, plus audio files are processed separately, providing complete flexibility. Need variable audio sample rates? The Merlin05 has you covered, supporting 32k, 44.1k and 48k.**

**The Merlin05 features the Virtex-II Pro<sup>™</sup> FPGA chip. Three million gates of programmable logic and two embedded 300MHz PowerPCs enable programmable signal processing previously unimagined. Now, the speed of ASIC processing has been combined with power of programmable logic. Didn't think it was possible? Try it with a Merlin05.**

**The Merlin05 upgrades with a quick firmware download, enabling you to perform upgrades when and how you desire. The Merlin05 is also 100% software compatible with its predecessor, the Merlin2003. With an SDK that doesn't get in your way and upgrades that won't ruin your day, you could say the magic of Merlin...is here to stay.**

# Merlin05

## DV and MPEG-2 Recorder and Dual Stream Decoder

### Specifications:

- Half-sized PCI Form Factor
- 3.3v and 5v PCI Interfaces Supported
- 64-bit PCI interface (works in both 32-bit and 64-bit PCI slots)
- Operating temperature 0-70 C
- External connectors:
  - DB9 (via breakout cable):
    - SDI In
    - SDI Out (X2)
    - AES/EBU In
    - AES/EBU Out
  - DB15 (via breakout cable):
    - L/R Audio / Timecode In
    - L/R Audio / Timecode Out
    - S-Video / YUV / Composite Video In
    - S-Video / YUV / Composite Video Out

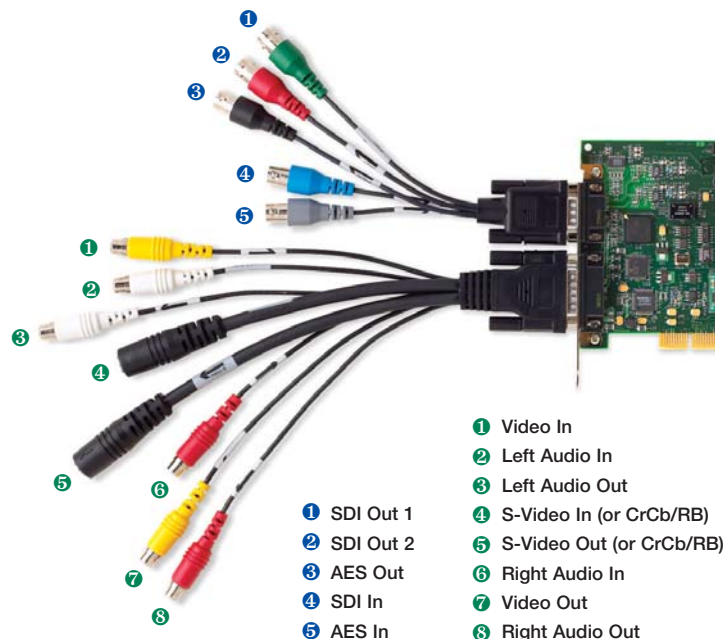
### Expansion Panel A (Connects via DB9 & DB15)

Supports two Merlin cards in 1RU  
SDI In / Out (X2) /Thru  
Genlock or Composite In/Thru  
AES/EBU In (X3) / Out (X3)  
L/R XLR Audio / Timecode In  
Composite Monitor

### Expansion Panel B (Connects via DB9 & DB15)

SDI In / Out (X2) / Thru  
Genlock or Composite In / Thru  
YCrCb or RGB In / Out  
AES/EBU In (X3) / Out (X3)  
4 Channel Analog Audio In /Out  
LTC In / Out  
RS-422 9 Pin Control Port

- SDI video input / output compliant with SMPTE 259M
- Analog video compliant with RS-170-A
- Analog audio output atten.(0 to 46.5 dB) programmable
- Digital audio input / output compliant with AES3id
- Analog audio input gain (0 to 22.5 dB) programmable



### Skymicro Inc.

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Thousand Oaks, CA 91362-1361  
Voice: 805 491-8995  
Fax: 805 491-8935  
Email: sales@skymicro.com

### Standard Features - Video

- Real Time DV25 Play and Record.
- Real Time MPEG-1, MPEG-2 Play and Record up to 50Mbps.
- Real Time 10 Bit Uncompressed Play and Record.
- MPEG-2 (4:2:0) and (4:2:2) Chroma sampling supported.
- DV (4:2:0), (4:1:1) and (4:2:2) Chroma sampling supported.
- MPEG-2 Variable and fixed bitrates from below 1 Mbs to 50 Mbs supported.
- I - Frame only, IP, IBBP and IB GOP structures supported.
- Variable resolutions supported up to 720x512(NTSC) or 720x608(PAL) including the ability to capture lines in the blanking interval.
- Bi-directional Video Play Speed at variable resolutions as low as 1% normal speed.
- Composite analog, S-Video analog, Component (YCrCb and RGB), or SDI Serial Digital video selectable as video input or genlock source.
- Composite analog, S-Video analog, Component (YCrCb and RGB), and SDI Serial Digital video simultaneous outputs.
- Analog video input is Time Base Corrected allowing Merlin to be used as a TBC when in pass through mode.
- SDI Serial Digital video input has jitter reduction allowing Merlin to be used as a SDI video Jitter reducer in pass through mode.
- Merlin can also be used as an Analog to SDI Serial Digital video converter and vice versa.
- Decodes two DV or MPEG-2 video streams with the ability to alpha blend the 2 video streams in Real Time for doing elaborate scene transitions such as fades, wipes, dissolves, etc.
- Two independent SDI video outputs that can play 2 separate video streams at the same time.
- Logo Inserter, Video Scalar and Video Color Space Converter built in.
- VITC and LTC reader/generator on input & output – usable on pass-through video.
- Transcoding between DV, MPEG-2 and Uncompressed at faster than real-time.
- Fill / Key playback applications supported.
- Closed-Caption capture and insertion supported.

### Standard Features - Audio:

- Supports 32K, 44.1K and 48K audio sample rates that can be locked to the video clock.
- Up to 3 AES3 digital audio connections supporting PCM, S/PDIF, DolbyE, etc. (1 AES3 max without Panel)
- Up to 8 channels of embedded audio per SDI video connection.
- Up to 4 channels of Balanced or Unbalanced analog audio. (2 channels max without Panel)

### Optional Features:

- DVCPRO® 50 Record and Play
- IMX Support providing Constant-byte GOP

### Standard Features - Software:

- Drivers available for Windows™ 2K/XP, OS/X™, Linux™, Irix™ and Solaris™.
- Windows™ batch recording utility with VTR control.
- Record/playback software available on all platforms.
- Software Development Kit with sample code included.
- Support for Xilinx Virtex II Pro™ field-upgradeable programming environment: 3 million FPGA logic gates, 128Mb of RAM and 2 embedded 300mhz Power PC processors.
- Multiple board installations supported across all platforms.