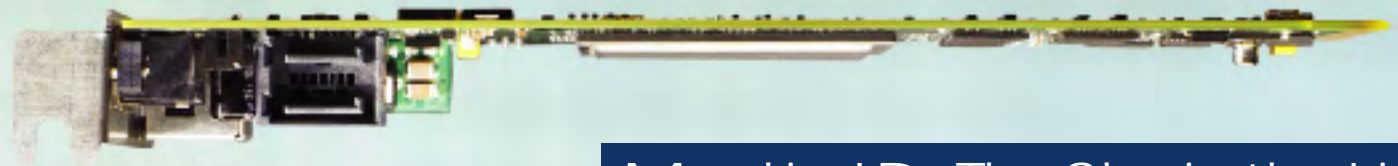




(Actual Size)



MerlinIP The Sky is the Limit

The **MerlinIP** is designed to support your most challenging projects. Small, fast, and customizable, the MerlinIP sets a new standard for an Audio/Video hosting platform. Featuring the powerful Xilinx™ Virtex™-5 FPGA, the MerlinIP provides unparalleled IP Core integration and development possibilities with scalable Virtex-5™ models and pricing, giving you just the capacity you need.

Using the same drivers as Skymicro's earlier Merlin PCI cards, the MerlinIP brings the Merlin family's reliable features and platform compatibility with a new Multi-Tiered SDK interface. Multi-card applications, hardware level control, and class level programming interfaces are all available.

Skymicro's MerlinIP gives you what you need to host your video software or firmware application. **With Skymicro, the sky is the limit!**

Skymicro MerlinIP PCI-E Board

Features – Video

- Dual Link SDI Supports HD 10-12 bit 4:2:2:4, 4:4:4:4; 720p, 1080i, 1080p (24, 25 & 30fps). NTSC and PAL SD 4:2:0 and 4:2:2 Formats Supported
- RED One™ 720p 23.98 Monitoring Format supported
- 3Gb HD/SDI Support Available*
- Perform HD Operations simultaneous with SD Operations*
- Programmable control over card operation and all video/audio data
- Multi-board control from a single application.
- SATA™ (Serial ATA) connectors allow multiple boards to cooperatively process a single image for high resolution images.
- Flexible OEM Hardware Integration Options via Daughterboard Design
- Ability to host Xilinx™ IP-Core custom applications on Xilinx™ Virtex-5™ chip.
- Simultaneous Playback and Record.
- MPEG-2 HD & SD Variable and fixed bitrates encoding & decoding from below 1 Mbs to over 200 Mbs available.
- FCP Ready DVCPro100 encoding & decoding with back-to-back playout queuing available.
- Fully programmable pixels per line, lines per field and frames per second, exceeding current SMPTE Standards.
- Retrieve & Insert any VANC information and lines in the blanking interval.
- Bi-directional Video Play Speed at Variable Resolutions as Low as 1% Normal Speed.
- HD/SD-SDI Digital video, tri-level sync or Composite/Black Burst Selectable as Genlock Source.
- Ability to genlock sync to signal or clock.
- Hardware clocked for low SDI jitter.
- Logo Inserter, Video Scaler and Video Color Space Converter built in.
- VITC and LTC reader/generator on input & output – usable on pass-through video.
- Realtime Chroma Fill / Key playback applications supported.
- Closed-Caption capture and insertion supported.
- Field upgradeable and Customizable via FPGA update.
- Battery Backup Key support for encrypted bitstreams.

Standard Features – Audio:

- 2 programmable/bidirectional AES3 digital audio connections.
- Support for PCM, S/P-DIF, SMPTE-302M, MPEG and AC-3 & other Dolby™ formats
- Up to 12 channels of embedded audio per SDI video connection.

Standard Features – Software:

- Drivers available for Windows™ Vista / 2K / XP, Linux and Solaris™.
- 64-bit Windows & Linux Driver Available
- Windows™ SD & HD batch encoding utility with VTR control, Confidence Monitor, Proxy Generation & Other Features.*
- Record/playback software available on all platforms.
- Multi-layered Software Development Kit Designed for Rapid Development
- Support for End-User Xilinx Virtex-5 Pro™ Programming.
- Multiple board installations supported across all platforms.

Specifications: Merlin/IP

- Half-Sized, Half-High PCI-E Form Factor for Space-Constrained Applications.
- PCI-E 8-Lane bus interface; 8x & 16x bus slot compatible
- Operating temperature 0-70 C
- Infiniband™ Connector to HD/SD-SDI for high-speed I/O with low space requirement
- 2-SATA connectors onboard allow multiple boards to be interconnected for high-capacity processing
- JTAG upgrade and debug port
- Programmable Xilinx™ Virtex-5™ (Optional 110LXT, 155LXT, 220LXT, 330LXT) chip.
- Connectors and mounting for daughterboard support
- Total board I/O capacity 24Gbps
- Total I/O capacity to host 4Gbyte/s (2GB in/2 GB out concurrently)

Video I/O Specifications

- Variable HD Resolutions supported including 10-12bit 4:2:2:4, 4:4:4:4; 720p, 1080i, 1080p (24, 25 & 30fps)
- Variable SD Resolutions supported including NTSC 720x512 and PAL 720x608
- A-Frame Cadence Adjustment via Field Insertion
- NTSC & PAL, CIF, SIF, Half-D1, 2/3 D1 & D1 Resolutions
- VBI & Closed Caption
- Genlock Support
- Embedded programmable genlock terminator and downstream termination detector

Audio I/O Specifications

- AES/EBU Digital Audio In/Out*
- PCM In/Out*
- S/PDIF In/Out*
- SDI Embedded In/Out* up to 12 tracks
- Audio Hardware Routing and Mixing

Expansion Panel Lite

- 2x Input and 4x output HD/SD-SDI - Can Capture 2 Video/Audio streams at one time and play up to 4 streams at once.*
- Data Connection via High-Speed Infiniband™ Adapter
- 1/4 RU; install up to 4 in 1RU space
- Combined 1 RU Panel supports up to 8 HD/SD-SDI in and 16 HD/SD-SDI out
- External Connectors via Panel lite:
 - Genlock In/Out
 - HD/SD-SDI In (2*) 10-bit
 - HD/SD-SDI Out (4*) 10-bit
 - AES/EBU In/Out (2) (programmable)
 - RS422 via RJ44 jack*
- Digital Audio Input / Output Compliant with AES3id
- LTC control from any audio channel input

* Please review current firmware release notes for available board capabilities

Custom Expansion Panel and Interface Designs Available

