Shoot.Edit.Deliver

SI-2K

Digital Cinema Camera

SiliconImaging P+S TECHNIK
Professional Cine Equipment Manufacture

SI-2K Digital Cinema Camera

- 2K DCI-compliant CMOS sensor
- More than 10 F-stops of dynamic range
- Removable, remote-controllable camera head
- P+S Technik Interchangeable Mount System
- P+S Technik ultra-tough aluminum alloy chassis and accessories
- Direct-to-disk CineForm RAW™ portable recording solution
- Embedded IRIDAS SpeedGrade™
- Embedded SiliconDVR software

Modular Digital Cinema Camera System with Touchscreen Interface

Sensor & Sensibility

The all-in-one portable design of the Silicon Imaging SI-2K combines a digital cinema class 2048 x 1152 resolution camera head with unprecedented image quality and shooting flexibility. It's low-noise, high-dynamic range images, with over 10 f-stops of dynamic range via an on-chip 12-bit A/D converter, are freely manipulatable with user-generated Iridas .look files, creating a "blank slate" for the cinematographer to freely express his or her vision.

Lenses & Mounts

The SI-2K Mini uses a 16:9 format 2/3" CMOS sensor, and its single large image design enables the use of lower-cost 16 mm film-style lenses, eliminating the optical aberrations caused by a 3-chip prism assembly. Shooting flexibility is enhanced with the P+S Technik Interchangeable Mount System: an intermediate positive lock mount allows the exchange between different lens mounting rings within seconds. More than 10 different mounts are available to support the use of B4 2/3" video lenses, high-quality modern cinema PL-mount lenses as well as affordable F-mount and compact C-mount lenses and many more.

Support Accessories & Power Supply

The integral support for 15 mm lightweight rods and direct attachment of 19 mm Arri style bridge-plate adapters make the SI-2K an ideal platform for the latest in follow-focus attachments, matte boxes, and other cinema-style gear and accessories. An industry standard, Anton Bauer Gold Mount is used for battery power and portable operation.

Remote control for the camera head

For situations too extreme or space limited for the camera operator to maintain direct physical operation, the SI-2K features the ability to remotely tether the camera head via gigabit Ethernet over long distances while maintaining full control of the camera. The separable camera head's built-in power regulator allows battery operation from 5-17 V DC with a miniscule 6 Watt of power consumption. For very long distances, off-the-shelf fiber optic converters can be added to extend distances past the threshold of copperbased gigabit.

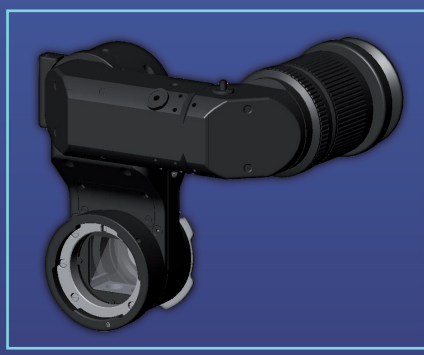
Data storage

Up to 4 hours of continuous recording on a 160 GB notebook hard drive round out an impressive array of digital cinema firsts in the industry. The exchangeable storage carrier is also available for flash memory or dual HDD Raid setups.

Viewing-Options

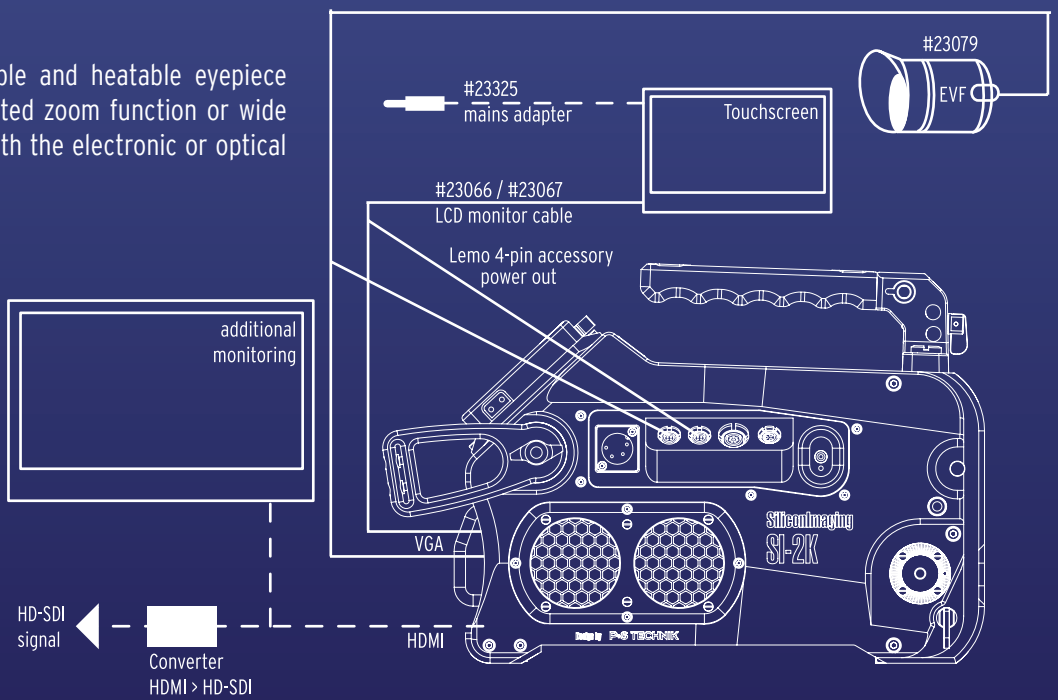
LCD Touchscreen Monitor
The LCD touchscreen is the main operating interface of the SI-2K Camera System. Large menu buttons provide extensive software functionality just one fingertip away.

Electronic Viewfinder
An electronic viewfinder is available for the SI-2K Digital Cinema Camera System. It is based on OLED technology and reproduces a stunning sharp electronic image. The viewfinder is fed with a VGA signal with a resolution of 800 x 600 pixel and can show the complete camera control menu.



Optical Viewfinder
P+S Technik exploited it's vast knowledge about optical viewfinders and created a solution for the SI-2K Digital Cinema Camera, which includes a 50/50 prism, left eye usability and eyesight adjustment. The unit is compatible with the P+S Technik Interchangeable Mount System and can be added within seconds. It is part of the modular accessory structure for the SI-2K camera to offer a maximum of flexibility. The optical viewfinder block will first be available with a fixed B4 Mount.

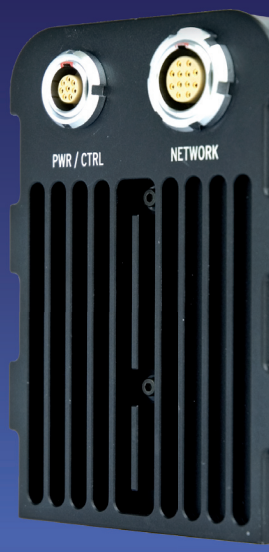
Further Accessories
Useful accessories such as non-heatable and heatable eyepiece cups, viewfinder extension with integrated zoom function or wide angle eyepiece can be used together with the electronic or optical viewfinders for the SI-2K.



Monitoring setups
The SI-2K Recorder delivers a VGA signal (800x600) and an HDMI signal (1280x720) for monitoring. The VGA signal can be splitted for two devices

SI-2K Mini Camera Head

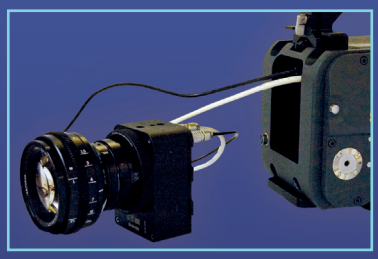
- 2K Resolution
- Single CMOS Sensor
- DCI compliant
- 10+ F-stops of dynamic range
- Interchangeable Mount System (IMS)
- Lightweight
- Modular Extensibility
- Multi-Camera Head Setups for Stereoscopy and Special Effect Cinematography



Technical Specifications

Subject to technical change without notice.

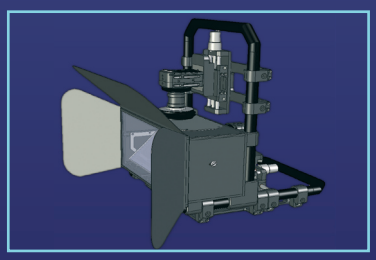
Lens Mount	P+S Technik Interchangeable Mount System (IMS)
Data Transfer	Gigabit Ethernet
Power Input	12 V, Lemo 12 pin connector
Dimensions (SI-2K Mini camera head only)	105 x 70 x 45 mm
Weight (SI-2K Mini camera head only)	600 grams / 1.32 lbs
Best Operating Temperature	0 - 40° C | do not leave in direct sunlight



Various Configurations

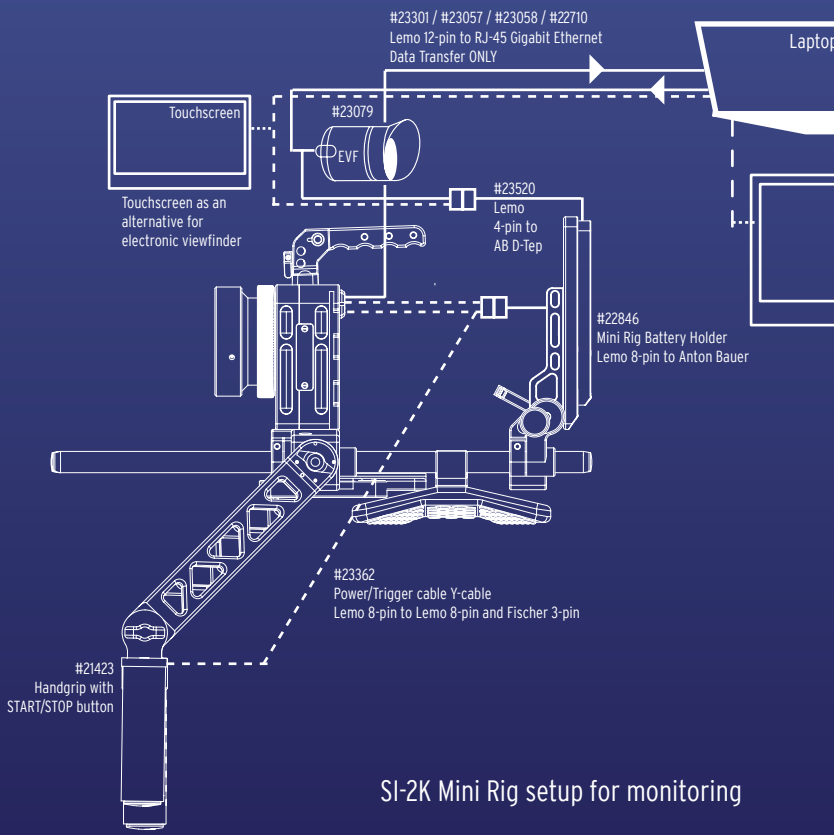
1) SI-2K Mini camera head cabled to SI-2K Recording Unit

2) SI-2K Mini Camera Head Ethernet wired to a Laptop



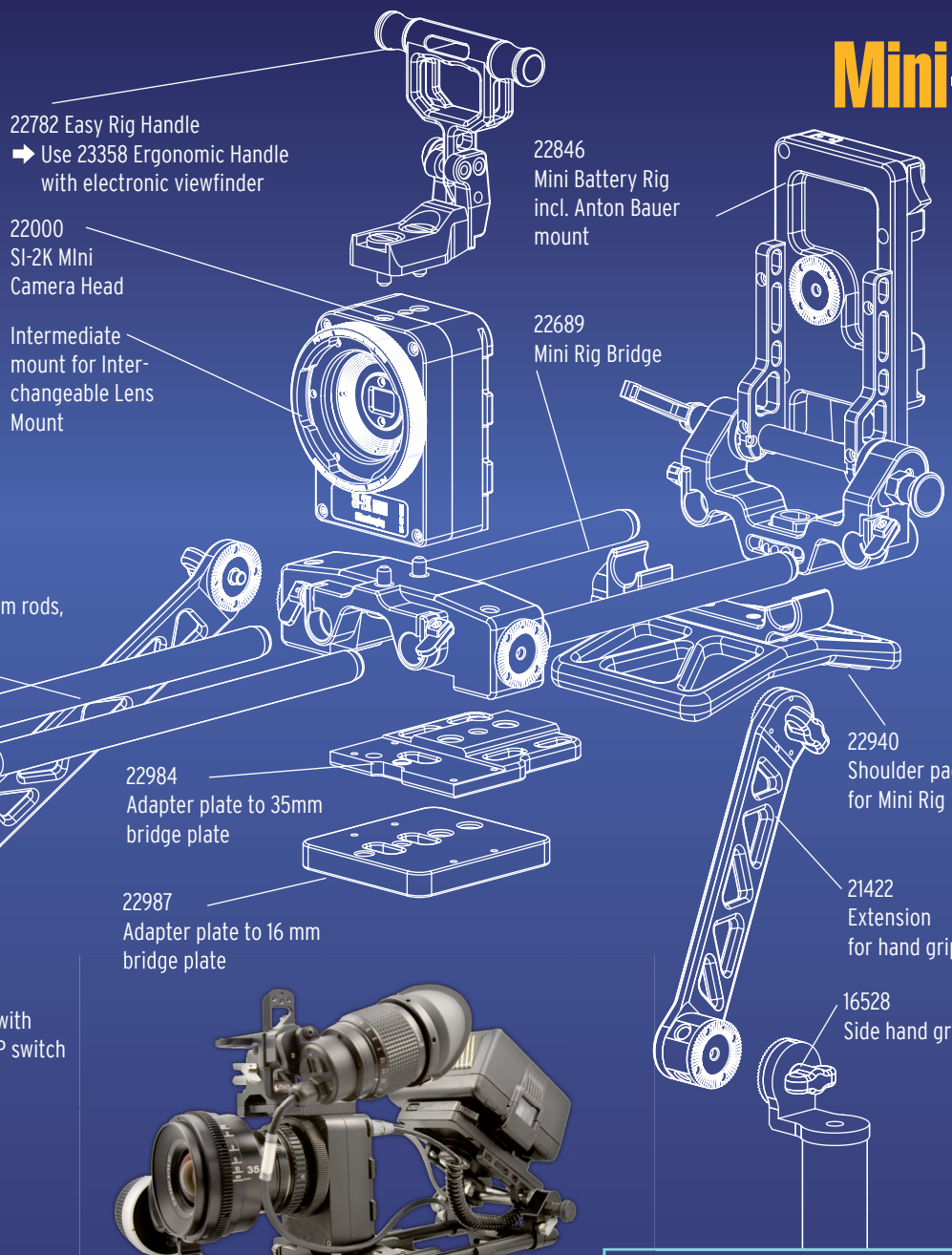
3) 3D Rig for stereoscopic recording with two SI-2K camera heads

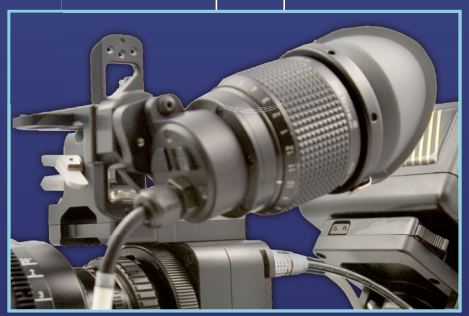
4) 180° recording setup with four SI-2K camera heads and C-mount lenses



SI-2K Mini Rig setup for monitoring

Mini-Rig





SI-2K Mini Rig

The Mini Rig offers you the possibility to outfit the SI-2K Mini camera head according to your actual needs. Modularity of the system includes options to expand or change the setup for different projects. The P+S Technik Interchangeable Mount System (IMS) enables the use of hundreds of lenses like e.g. B4 mounted 2/3" video lenses, 16 mm and 35 mm cine PL lenses, 35mm still photography lenses.

The integrated 15mm support interface follow focus, lens control systems and matte boxes can be attached and operated as shown.

Using the ergonomic handle with the Mini Rig, you can easily attach the electronic OLED viewfinder equipped with the 3-axis adjustable holder.

➡ Use the adjustable battery holder to counter-balance the weight of camera head and lens system.

SiliconDVR software and Work-Flow

SiliconDVR Software

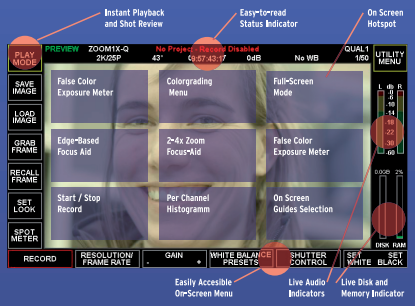
SiliconDVR features a number of innovative design elements, designed with the demands of digital cinema production in-mind. Industry-leading features such as direct recording to CineForm's 10 bit full-raster and visually loss less RAW codec along with a 12 bit uncompressed RAW option, a fully embedded color management interface powered by 3D LUT technology from IRIDAS, mobile recording capabilities, and seamless IT integration demonstrate it's ability to perform as a best-in-class tool that exceeds the standards of the most demanding productions. Furthermore the software-extensibility of the SiliconDVR platform ensures an upgrade-path and new feature integration that no other firmware-based camera can compete with.

User Interface Design

The industry-leading feature-set of SiliconDVR doesn't stop with just a set of core functionality. Re-thinking the paradigm of GUI design, SiliconDVR's touchscreen-driven interface places the key controls at the fingertips of the camera operator while also enabling full custom functionality without an endless array of cumbersome non-descriptive step-down menus that are typical of most broadcast camera systems. The GUI has been designed to get what you want fast, and features an extensive array of utilities to analyse the incoming camera RAW data to get the best picture possible.

Features

Items like per-channel histograms, centre zoom modes, an exposure-based zone system display, edge-enhanced focus aids, spot meters, separate view LUT's, and an on-screen 4x loupe are among a number of key factors that the SiliconDVR interface features, and allows the cinematographer to be in complete control of the image. Other enhancements such as a full-screen mode, and full-screen dual-monitor supported with independent full-resolution real-time displays, allow for integration with standard on-set systems while allowing the camera operator to display only the most critical information in their viewfinder for unobstructed use and minimal clutter.

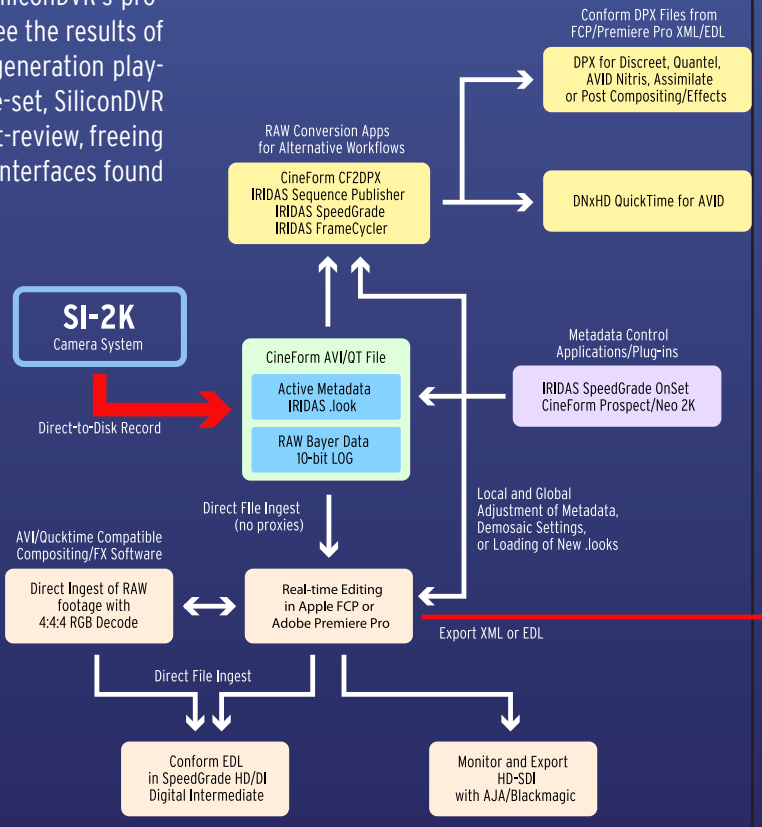


Direct-to-Disk Recording & Playback

The advantages in direct-to-disk recording are an inherent part of SiliconDVR's production workflow, allowing the director and other crew members to see the results of any shot immediately after recording. When combined with a next-generation playback interface with an integrated timeline and shot-list review feature-set, SiliconDVR provides an industry first for in-camera non-linear clip access and shot-review, freeing the process from the linear restraints of tape and simple play/pause interfaces found on other camera systems.

Post Production Workflow

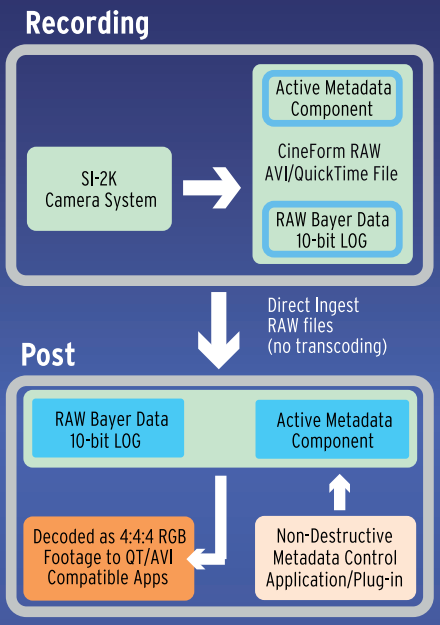
After CineForm RAW footage in either an AVI or QuickTime native file-wrapper is recorded direct-to-disk inside the SI-2K or host workstation. It can be transferred to the editing system, where direct ingest of the footage takes place with no requirements for passing through proxy stages, transcoding, or other intermediate steps. Because there are no proxy files associated in the CineForm RAW workflow process, after editing is complete and picture lock takes place, the editor can decide to finish the project inside the editing system and export directly to tape via HD-SDI I/O cards or they can export an EDL, and pass the edited footage into a SpeedGrade HD or DI system for the final digital intermediate colorgrading and finishing process, all without the need to transcode, process, or render in external RAW conversion applications. Every file is "online" at all times and contains the highest quality decode of the RAW footage.



DPX Workflow Solutions

For those requiring alternative workflow solutions based on DPX file sequences or other editing packages that do not support third-party codecs, IRIDAS SpeedGrade FrameCycler and Sequence Publisher can provide batch conversion processing of clips to a number of file formats as well as clip trimming, window-burn overlays, and basic one-light colour correction. Additionally, CineForm's free CF2DPX file conversion utility allows efficient command-line processing of RAW files to DPX file sequences on an unlimited number of render nodes.

Work-Flow



Metadata

At any time during the workflow process, metadata contained inside the RAW files, such as the white-balance, gamma, .look 3D LUT's, and other active metadata (e.g. the demosaic settings) can be changed on the fly through global metadata management tools and host application plug-ins from CineForm. Alternatively, IRIDAS's SpeedGrade OnSet can natively import CineForm RAW AVI and QT files and allow the user to generate new .look files which can then be non-destructively reapplied to groups of clips in order to generate new or refined versions of the director's vision.

CineForm RAW Codec

SiliconDVR records directly to CineForm RAW™ digital intermediate, a powerful, 10bit visually lossless codec that preserves and manages the RAW Bayer data at the codec level in industry-standard Quicktime or AVI formats, allowing applications to seems to work with RAW camera data through the same common workflows used for normal RGB or YUV-based camera codecs. Providing full-raster 4:4:4 RGB decoding from the RAW Bayer data in pristine quality is only the first part of the equation though. An active metadata colour management system combined with a 32bit floating point internal processing engine allows the complete tonal range of the captured image to be preserved through multiple passes while its light 4:1 wavelet-based compression maintains a visually lossless high quality image throughout the production pipeline. The codec enables post-production applications such as NLE's to natively support RAW camera data as application-native RGB data. The active metadata that defines the "look" of the RAW data (white-balance, colour profile LUT's, gamma curves, etc.) can be non-destructively accessed and changed in post after shooting.

IRIDAS Color Management

At the core of SiliconDVR is a powerful suite of colour correction tools and visualization features powered by IRIDAS and the .look XML format. Whether created in the SpeedGrade software family, or created internally in SiliconDVR's fully-featured and intuitive software colour correction mode, .look compatibility allows for an open exchange of an unlimited number of "look" possibilities between the camera and post-production tools that can then be previewed and applied to footage in-context of the SI-2K camera system.

Embedded SpeedGrade OnSet module

.look Design

Colorizing and designing the "look" of a scene or setting the style for a movie is no longer subject to a dizzy array of confusing submenus and non-intuitive control panels, or the more complex workflows surrounding LUT preview boxes. Instead, the IRIDAS colour management technology in SiliconDVR allows for real-time, in-context colour correction of images from the SI-2K series of cameras, and WYSIWYG performance for complete accuracy and confidence in sculpting the look of your project.

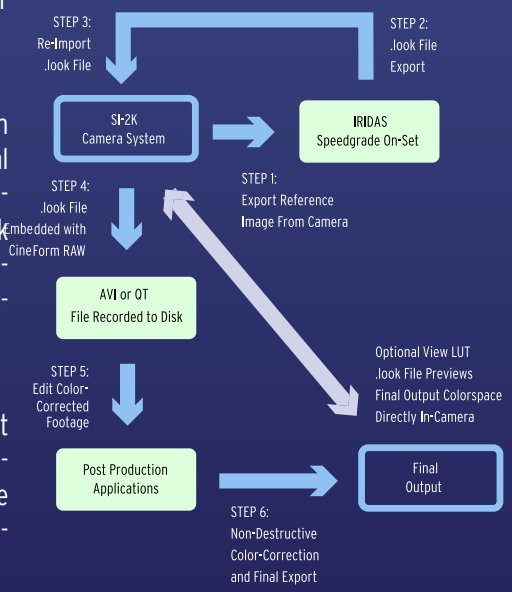
Iridas .look XML format

The IRIDAS .look XML format allows the seamless transfer of information room the set to post, such information as gain, saturation, gamma, temperature, and contrast adjustments on both a global scale, with increased granularity for just the highlights, mid-tones, and shadows of an image. Additionally, 3x3 calibration matrices and film calibration 3D LUT's can be incorporated into each .look file, creating an unprecedented ability for the manipulation of colour space, the adjustment of colours in context of the final film print or digital projection colour space, or to allow the SI-2K to accurately model and emulate the colorimetry of popular film stocks.

Consistent through complete workflow

Tight integration between IRIDAS and CineForm at the codec level means the era of "looks" being lost in translation between the set to post and editing is over. All files recorded with SiliconDVR are colour managed at the codec level, maintaining the look and vision of the DP from the set through the post-production chain. The user can get a comprehensive display and codec-based colour management tool set through support from CineForm and IRIDAS. If you can imagine it, you can capture it.

Iridas Color integration in Silicon DVR



Order Information

Art.No.	Description
22000	**SI-2K Mini Camera Head**
incl.	- P+S Technik IMS camera mount
	- License for CineformRAW™ Encoder, Iridas Speedgrade Embedded License, Silicon DVR Software
	- 10 m GigaBit Ethernet Cable (Lemo 12-pin to RJ45) (#22710)
	- 2 m power cable (Lemo 8-pin to XLR 4-pin) (#22711)

(Additionally needed: one IMS lens mount, recording PC & power supply)

19000	**SI-2K Recording Unit**
incl.	- Video & audio I/O interface
	- Top handle
	- Mains lead cleat
	- Sub-D Audio to XLR adapter (#23405)
	- SATA hard disk carrier with 160 GB hard disk
	- Interface for 15 mm rods and quicklock plate

(Additionally needed: Art.No. #22000, one IMS lens mount, rods, viewing option, power supply)

22732	**SI-2K Digital Cinema Camera and Recording System**
-only-, incl.	- SI-2K Mini Camera Head, incl. IMS camera mount
	- License for CineformRAW™ Encoder, Iridas Speedgrade Embedded License, Silicon DVR Software
	- SI-2K Recording Unit # 19000

(Additionally needed: one IMS lens mount, rods, viewing option, power supply)

22736	**SI-2K Digital Cinema Camera and Recording System**,
incl.	- SI-2K Mini Camera Head, incl. as in #22000
	- SI-2K Recording Unit, incl. as in # 19000
	- Connection cable #23059

(Additionally needed: one IMS lens mount, rods, viewing option, power supply)

P+S Technik Interchangeable Mount System

18431	PL Mount, Interchangeable Mount System
22600	B4 Mount, Interchangeable Mount System
22605	C Mount, Interchangeable Mount System
23499	Professional F Mount, Interchangeable Mount System
18381	Nikon F Mount, Interchangeable Mount System
18382	Canon EF Mount, Interchangeable Mount System
22646	Canon FD Mount, Interchangeable Mount System
18383	Contax Mount, Interchangeable Mount System
18380	Leica R Mount, Interchangeable Mount System
19906	Leica M Mount, Interchangeable Mount System
18384	Panavision Mount, Interchangeable Mount System
20506	BNC-R Mount, Interchangeable Mount System

Viewing Options

23079	SI-2K Electronic Viewfinder, incl. adjustable holder, cable
23065	7" LCD touchscreen monitor, incl. flex arm and cable
23066	LCD monitor cable, 1 m, to USB, VGA and Lemo 4-pin
23067	LCD monitor cable, 5 m, to USB, VGA and Lemo 4-pin
23325	LCD power cable, 5 m, to Lemo 4-pin, unregulated
23520	Power adapter cable for use of touchscreen or EVF with Mini Rig
24058	Flex arm, rosette to 1/4" screw

Software

For details on power supply and battery items, please contact us by email.

Art.No.	Description

Mini Rig Package

22689	Mini Rig Support Bridge incl. pair of 15mm rods (ONLY with one baseplate interface #22987 or #22984)
22987	Baseplate & Interface 16 to 16 mm cine bridge plate
22984	Baseplate & Interface 35 to 35 mm cine bridge plate
22846	Mini Rig Battery holder incl. Anton Bauer battery mount, power cable Lemo 8-pin
23358	Ergonomic Handle for SI-2K Mini incl. interface for EVF
22782	Easy Rig Handle for SI-2K Mini camera head

Cables for SI-2K Mini

23301	SI-2K Mini Gigabit Ethernet cable, 2 m
23057	SI-2K Mini Gigabit Ethernet cable, 5 m
22710	SI-2K Mini Gigabit Ethernet cable, 10 m
23058	SI-2K Mini Gigabit Ethernet cable, 25 m
23362	Power/Trigger cable, to battery holder & Fischer 3-pin
23296	Power/Trigger cable, to XLR 4-pin & Fischer 3-pin

SI-2K Recording Unit Accessories

23012	Adapter plate to 16 mm cine bridge plate
21842	Adapter plate to 35 mm cine bridge plate
23158	Hard disk carrier for 2.5" SATA HDD (no HDD)
23945	Hard disk carrier for 2.5" SATA HDD incl. 160 GB HDD
23922	RAID SATA Dual drive carrier for 2x 2.5" HDD (no HDDs)
23948	32 GB 2.5" SATA Flash drive and carrier
23949	64 GB 2.5" SATA Flash drive and carrier
23946	RAID SATA frame fits 3.5" drive slot in work station
23059	SI-2K to SI-2K Mini Connection cable, 5 m
23060	SI-2K to SI-2K Mini Connection cable, 10 m
23136	SI-2K to SI-2K Mini Connection cable, 25 m
23950	SI-2K Accessory power cable, 5 V, open end
23951	SI-2K Accessory power cable, 12 V, open end
23405	Sub-D Audio to XLR 3-pin Adapter, stereo I/O

Support Accessories

22940	Shoulder Pad for Mini Rig
23049	Shoulder Pad for SI-2K Recording Unit
21422	Extension for hand grip (one piece, two necessary)
16528	Side hand grip
21423	Hand grip with START/STOP switch and cable
21255	Pair of rods for light weight support, 15 mm, L=150 mm
18769	Pair of rods for light weight support, 15 mm, L=240 mm
16243	Bridge plate, S/N35, incl. pair of 19 mm rods, L=440 mm
16251	Pair of rods for bridge plate, 19 mm, 440 mm

Cases

23972	Small case for SI-2K Camera System, hand luggage size
23973	Large case for SI-2K Camera System and accessories
23974	Case for SI-2K Mini camera head, Mini Rig and Laptop

Power Supply Accessories

For information on power supply and battery options that we offer, please contact us by email.

Additional-Infos

Credits

Title	Film	Production / Director	Photography by
The Dark Country	3D Feature	Thomas Jane	Geoff Boyle
Two Flags	Feature	Lior Molcho	Danit Sigler
The Eagle Hunters Son	Feature	Stromberg Productions	Dixie Schmidle (bvk)
Good Luck	Feature	Alexander Barschak	Svyatoslav Bulakowski
Barking Through the Night	Feature	Concordia Pictures	Marc Hupfeld
Blood: A Butchers Tale	Feature	Michael George / Mark Tuit	Craig Powell
Hushove	TV Histo. drama	Alexander Morfov	Dimitar Gochev
Gogol	Detective Film	Dmitry Demin	Maksim Zhukov
Nazol	TV Commercial	Maxim Rozhkov	Alexey Andrianov
Toyota	TV Commercial	Maxim Rozhkov	Alexey Andrianov
Times Square	360° Shot	ParadiseFX	Max Penner
OK Stranger	Music Video	Coatwolf Productions	Evan Glodell
Dresden Dolls	Music Video	Highway 101/Andrew Bennett	Andy Strahorn

Ari Presler, CEO Silicon Imaging

"Our idea behind the SI-2K was to create a flexible, easy to use camera without compromising quality. By capitalizing on the skills of our partners, we were able to bring a camera to market that addresses the full spectrum of content creation-Shoot.Edit.Deliver."

Alfred Piffl, CEO P+S Technik

"We were convinced by the impressive image quality which Silicon Imaging generated from the 2K CMOS sensor. The RAW data workflow is a straight forward idea as well, because this process distinguishes the digital negative from video images. These are important steps towards digital cinematography."

Hannes Stromberg, Director / Producer

"One of the main advantages against other digital cameras, is the possibility to detach the camera head from the recording unit. The lightweight SI-2K Mini camera head is ideal for crane or steadycam application. We took great advantage of the small unit when recording in restricted spaces like cars or lorries and were gaining focal length at the same time."

Further Accessories

35 Digital Lens Set

These Nikon F mounted lenses consisting of a 25 mm / T2.8, 35 mm / T2.0, 50 mm and an 85 mm lens, both T1.4. P+S Technik re-housed Zeiss lenses to fit them into the existing world of film and video accessories like follow focus', lens controls and matte boxes. Each lens is equipped with a standard 0.8 gear ring and has an 85 mm front lens diameter.

C-Mount Lens Set

P+S Technik offers a set of high quality C-mounted lenses that work especially well for stunning 3-D recording with SI-2K Mini camera head. The set includes a 12 mm / T1.8, 16 mm / T1.6, 25 mm / T1.6, 35 mm / T1.6 and a 50 mm / T1.6 lens. P+S Techhik offers also gear ring kits for the C-mount lenses.

Specifications

DCI-Compliant 2K Sensor
- 2/3" 16:9 high-dynamic range CMOS sensor with 5 ↔m pitch
- 12-bit A/D conversion and 48-bit digital signal processing
- 10+ F-stops of dynamic range
- 180 degree film shutter equivalent with variable speed control
- ISO 250 sensitivity at 0 db

Mutli-Format Capabilities
- Embedded SiliconDVR software interface with industry-leading feature-set, ease-of-use, and future upgradeable
- 2K Formats: 2K/23.976p, 2K/24p 2K/25p
- HD Formats: 1080/23.976p, 1080/24p, 1080/25p, 1080/29.97p, 1080/30p, 720p (variable)
- 720p/85fps and 540p/150fps for slow-motion special effects
- Overcranking and undercranking for special effects (12~72fps)
- Time-Lapse Recording with programmable images per minute

Silicon DVR Software
- Frame-store for image recall from image buffer or disk
- Per-channel live histogram display
- Edge-detection focus-aid mode
- Exposure meter with 6-level false-color zebra
- 2-4x Digital Zoom for fine focus adjustment
- 4x Loupe and integrated spot meter
- Safe-zone Markers for 16:9 / 4:3 / 1.85:1 / 2.35:1
- Instant playback and review via built-in virtual VTR interface
- Comprehensive file management and metadata capabilities

P+S Technik® Ergonomic Design
- Ultra-tough aluminum alloy chassis designed by P+S Technik®
- Interchangeable mount system with PL-, B4-, C-mount and more options
- Removable camera head with ethernet tether
- Full compatible with Anton Bauer Gold-Mount battery system (14.4 V nominal)
- Compatible with industry standard Arri or Chrosziel quick-lock base plate systems
- DC power regulation 11.5 ~ 19 V

CineForm RAW™ Direct-To-Disk
- Visually lossless CineForm RAW™ wavelet-based codec using SiliconDVR recording software
- Direct-to-Edit AVI and Quicktime files compatible with CineForm Prospect HD™
- Three variable bit-rate quality encoding CineForm RAW™ settings
- Auto-file naming and project management with metadata
- Up to 4 hours of recording on 160GB HDD in highest quality mode

Integrated IRIDAS Color Pipeline
- Industry's first complete color-managed pipeline from acquisition to post
- Integrated IRIDAS SpeedGrade controls for unlimited colorization possibilities in-camera
- IRIDAS looks are completely non-destructive and are fully integrated into CineForm RAW™ color pipeline
- Non-destructive user-selectable white balance modes: 3200K, 5600K, User and none
- Integrated keyer for green-screen special-effects
- Proprietary adaptive bayer processing for ultra-high quality output in Prospect 2K™
- 32-bit floating point rendering pipeline with support for super white and black points
- Non-destructive metadata adjustments and post-processing using Prospect 2K™ and IRIDAS toolset

Audio & SMPTE Timecode Support
- Balanced Line Level I/O with 16-bit / 48 KHz sampling
- Audio Recording multiplexed into the video file
- Speaker/Headphone output
- SMPTE timecode embedded into the video file
- SMPTE timecode syncing to external LTC USB devices
- On-screen Audio Level Left/Right indicators with overload warning

Revolutionary User Interface Design
- LCD touchscreen with advanced image-scaling technology
- 5-wire resistive interface with integrated USB controller
- Full resolution 2K and HD viewing output
- Dual independent video output with HD-SDI compatibility through DVI-to-HD-SDI converters

Power Consumption (SI-2K Camera Recorder incl. SI-2K Mini camera head)	5A / 12V
Dimensions (SI-2K Camera Recorder incl. SI-2K Mini camera head)	290 x 210 x 160 mm
Weight (SI-2K Camera Recorder incl. SI-2K Mini camera head)	7250 grams / 15.98 lbs
Best Operating Temperature (environmental)	0 - 40° C | Do not leave in direct sunlight.

Subject to technical change without notice.

SALES USA
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