HDCAM-SR VTR Family Brochure

SONY
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SRW-5800/SRW-5500/SRW-5000

HD Digital Videocassette Recorder

SRW-5100

HD Digital Videocassette Player

HDCAM SR™ CINE ALTA™ 3D world Created by Sony

CineAlta – Liberating Movie Makers

CineAlta™ a name that proudly symbolizes the bond between cinematography and digital high-definition (HD) imaging. It distinguishes a family of products and systems from Sony that offers new levels of creativity in the production, postproduction, and exchange of motion pictures. It also brings together the quality and universality of 24-frame cinematography with the real-time capabilities, efficiency, and flexibility of digital high-definition technology. And it stimulates the convergence of motion picture film and digital high-definition production on a global basis.

CineAlta products, delivering cinema-quality pictures at selectable frame rates, are simplifying international program exchange by minimizing the need for standards conversion. They are also opening up entirely new possibilities for international co-production. Movie making has been liberated by the creative empowerment of the cinematographer. It is facilitated by real-time HD image evaluation on-set, instant replay of full-color high-resolution digital "takes", real-time image optimization while shooting, a 50-minute shooting load, and, most importantly, by the significant cost benefits associated with this digital medium.

CineAlta products provide a seamless bridge between 24-frame film originals and a final 24p digital master, giving each frame of film a one-to-one correspondence with progressive HD frames. The CineAlta environment readily interfaces with the computer graphics world, liberating postproduction. And the final liberation is achieved through the direct color conversion of progressive 24p masters to film, and to a host of other international digital HDTV and SDTV distribution formats.

HDCAM-SR VTRs – Solid

Today's Environment

Today, content is distributed in diverse formats and via diverse channels such as D-Cinema, cell phones, and international content syndication. In this environment, it is critical that the content owner produces and stores valuable content at the highest possible quality levels in order to guard against multi-compression artifacts and to prolong content longevity. It is also important to store prime content on optimum media. Video tapes remain the most cost-effective and extremely reliable digital storage medium. The HDCAM-SR™ VTR - at the pinnacle of Sony's digital HD VTR lineup - meets all of these vital criteria, and is a highly popular and powerful choice for today and tomorrow.

Digital Cinema Innovation

The epoch-making launch of Sony's HDW-F900 CineAlta camcorder introduced a new and innovative way to produce movies using 24-frame-based video. Today, many films are produced digitally using this method. Premium digital cinema cameras including the Arriflex D21, the Panavision Genesis, and Sony's F35/F23 cameras all record on the HDCAM-SR portable VTR. 3D live action content such as features and concerts are also recorded onto HDCAM-SR recorders with 3D camera rigs based on Sony's camera technology, which has made the current trend of 3D D-cinema expansion possible.
The combination of RGB imaging and the operational convenience of real-time recording and playback has empowered cinematographers and directors to create images that could not be achieved with traditional technologies.

SRW-5800

Choice for Today and Tomorrow

For Broadcasters

Over 7,000 HDCAM-SR VTR units are in use worldwide. Key factors in this widespread adoption are visually lossless compression (4:2:2) and 12-channel audio recording. Also, despite extremely high bit-rate HDCAM-SR recording, these decks are exceptionally robust, and as equally ruggedized as other 1/2-inch VTRs from Sony such as the proven BETACAM™ and Digital BETACAM™ Series. In fact, a host of stations now go on-air directly from the HDCAM-SR deck. In nonlinear-based environments, the HDCAM-SR deck plays a vital role, enabling double-speed material transfer via a dual-link HD-SDI interface or a 3G-SDI interface, as well as transfer of materials in industry-standard MXF via the Gigabit Ethernet interface. The HDCAM-SR VTR combines historically-reliable tape media and file-based material handling on an open-standard format, making it ideal for bridging base-band and file-based environments.

Future Productions

Right now, 3D is the hottest trend in the production market. HDCAM-SR VTRs enable Dual Stream recording on a single tape, and even realize this feature in high-quality 4:4:4 recording*1. As third-party NLE support for Dual Stream mode expands, 3D production with the HDCAM-SR VTR is heading for new heights now and in the future.

Looking ahead, Sony has for many years held the vision of providing a total 1080 50p/60p production tool set, comprising everything from camera and switcher to VTR and display. With the latest remarkable developments in consumer display technology, the general public can now watch 1080 50p/60p progressive imagery in the living room. Due to limitations in aerial transmission bandwidth, it's likely that 1080-interlaced and 720-progressive transmission standards will co-exist in the foreseeable future. With this in mind, Sony is giving on-going support to 1080 50p/60p-based production as the ideal production solution for premium content such as sports, concerts, and documentaries.

For ODS (Other Digital Stuff: alternative content to feature movies) - and in particular the recently discussed large-venue screening issues, including digital cinema - HDCAM-SR products offer key capabilities such as extreme image quality and 12-channel audio.
Last but not least, 4K/2K digital projection has been making in-roads into premium theaters. In the future, 4K/2K content production is likely to grow very rapidly. However, right now, 4K/2K Digital Intermediate (DI) is an engineering challenge for postproduction facilities that are struggling to secure processing power, network bandwidth, and storage space. HDCAM-SR VTRs provide the solution with outstanding capabilities such as 4K/2K uncompressed data recording onto tape, and the conversion of 4K/2K image file recording to HD video recording. Furthermore, as to 2K contents, it is possible to play back and record in real time. These capabilities serve to significantly lower the barriers to handling 4K/2K image files.

In conclusion, future cinema and TV production needs will be well served by choosing the HDCAM-SR VTR.

*1: Requires a future upgrade planned to be available in the first half of 2011.

SRW-5500

SRW-5000

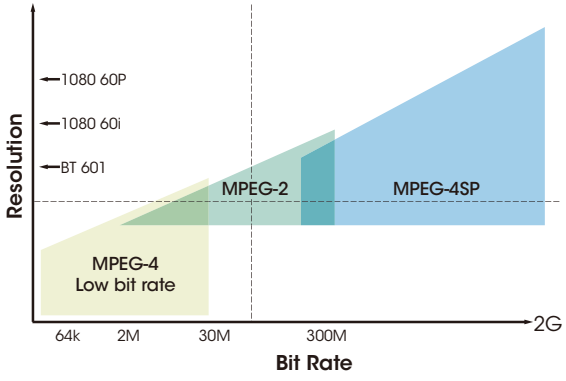
SRW-5100

Features and Benefits

HDCAM-SR Format Recording

Creating Visually Lossless Images: The MPEG-4 SStP Simple Studio Profile

Yet another industry first from Sony is an integrated video encoding/decoding chipset that conforms to MPEG-4 SStP Simple Studio Profile (ISO/IEC 14496-2). The Studio Profile was created to specifically address the requirements of high-resolution image-production applications. It is free from GOP (Group Of Pictures) structures, and is scalable in its pixel count (SDTV, HDTV, film-resolution data), bit depth (10- or 12-bit), and color resolution (component or RGB). In order to achieve maximum compression efficiency, the HDCAM-SR format uses intra-frame compression for progressive images and intra-field compression for interlaced images. Special attention has been paid to multi-generation dubbing performance and, in common with industry-standard Digital BETACAM VTRs, the SRW-5800/5500/5000 is capable of consistent dubbing without using a separate interface for a native stream. This is only possible thanks to the high performance of the MPEG-4 SStP Simple Studio Profile, which offers reproduction of visually lossless images.



1080 Recording and Playback

The SRW-5800/5500/5000/5100*1 can record and play back full HD images with exceptionally high picture quality using 1080 x 1920 active pixels, as specified by the ITU Common Image Format (CIF). The entire range of both interlaced and progressive frame rates is available, from 50i/60i and 24p/25p through to 50p/60p*2, covering high-end HDTV production applications, and commercial and cinema productions. The SRW-5800/5500/5000/5100*1 can also record and play back top-quality 4:2:2 Y/Cb/Cr component or full-bandwidth 4:4:4 (RGB) 10-bit recordings, both with very mild compression. The SRW-5800/5500/5000/5100*1 offers up to 12 channels of 24-bit audio at 48 kHz or 96 kHz*3, to meet the needs of the most demanding audio recording tasks in digital-content mastering. Each channel is independently editable. HDCAM-SR VTRs are the optimal VTR for any movie-making task - from acquisition and editing to telecine transfers and digital mastering.

*1: The SRW-5100 is playback only.
*2: The 1080/50p or 60p mode is available on the SRW-5800/5100.
*3: With the SRW-5800/5100 only. 96 kHz audio sampling is up to six channels for 440 Mbps mode and up to 12 channels for 880 Mbps mode.

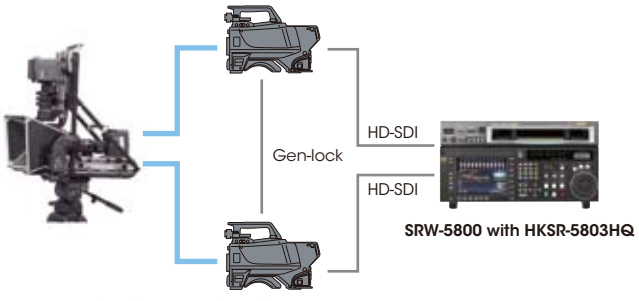
4:2:2/1080/60p and 50p Mode

The 4:2:2/1080/60p and 50p recording mode is highly compatible with computer graphics, games, and other progressive-based programs such as demonstration reels for flat-panel displays. Events with a lot of fast-moving images, such as a sports match, are well suited to the 4:2:2/1080/60p and 50p mode. Also, when converting material originated in 1080/60p or 50p format to 720p format, this mode offers exceptional picture performance due to the original high resolution of 1920 x 1080. Another benefit of using the 4:2:2/1080/60p and 50p recording mode is that it enables image creation with extremely high-quality slow-motion effects when a tape recorded in these modes is played back in 23.98p, 24p, 25p, or 30p mode.

3D Stereoscopic (Dual Stream) Mode

Dual Stream mode provides the SRW-5800 with the capability to record the images of two cameras simultaneously with in-sync audio and time code in both 422 and 444 mode, making it possible for users to shoot two different scenes simultaneously or achieve 3D stereo shooting. The materials shot in Dual Stream mode with the SRW-1 HD Portable Digital Video Recorder can be played back with the SRW-5800/5100. The SRW-5500/5000 can play back either channel A or channel B of the Dual Stream recording.

Two-camera Operation (3D Application)



4:4:4 High Quality (HQ) Mode

The 4:4:4 High Quality (HQ) mode enables 880 Mbps 1080/4:4:4 RGB recording with a milder compression ratio of 2:1. This is ideal when highest possible image quality is the top priority.

720p Recording and Playback

In standard configuration, the SRW-5800/5500/5000/5100*1 can record and play back in 4:2:2 720/59.94p or 720/50p formats. These formats can be used for DTV programming and transmission applications. As with 1080 format, users still have up to 12 channels of independently editable 24-bit audio available when operating in 720p format. In addition, 720p/1080i and 720p/480i or 576i bidirectional format conversion can be accomplished in these VTRs.

*1: The SRW-5100 is playback only.

2K Real-time Recording and Playback

The SRW-5800/5100 can record and play back in 2K (2048 x 1080, 2048 x 1556) mode via 3G-SDI or HD-SDI dual-link, with 12-channel audio, which allows high-quality 2K content to be handled in real time. The playback signal can be downsized*1 to HD or SD, which enables users to view the material using conventional monitors.

*1: Requires the optional HKSR-5001 board.

2K Recording Playback Format

Resolution	Color	Bit rate	System	Audio Format	Interface
2048 x 1080	XYZ 12 bit 4:4:4 HQ	880 Mbps	23.98/24/25PsF	12 channel, 48 kHz or 96 kHz	3G-SDI or dual-link HD-SDI (DC-SDI: SMPTE 372M/428)
	RGB 10 bit 4:4:4 HQ	880 Mbps	23.98/24/25PsF	12 channel, 48 kHz or 96 kHz	3G-SDI or dual-link HD-SDI
2048 x 1556*1	RGB 10 bit 4:4:4 HQ	880 Mbps	23.98/24/25PsF	12 channel, 48 kHz or 96 kHz	3G-SDI or dual-link HD-SDI

*1: Planned to be available in the first half of 2011

Supported Signal Format

System Format			Recording Mode	SRW-5000 SRW-5500	SRW-5800 SRW-5100*1
Signal Format		Frame Rate			
1980 x 1080	4:2:2	60/59.94/50p	Double-data-rate (880 Mbps)	–	○
		30/29.97/25/24/23.98PsF 60/59.94/50i	Standard (440 Mbps)	○	○
		Dual Stream: 30/29.97/25/24/23.98PsF 60/59.94/50i	Double-data-rate (880 Mbps)	–	○*2
	4:4:4 HQ	30/29.97/25/24/23.98PsF 60/59.94/50i	Double-data-rate (880 Mbps)	–	○*2
	4:4:4 SQ	30/29.97/25/24/23.98PsF 60/59.94/50i	Standard (440 Mbps)	○	○
		Dual Stream*3 30/29.97/25/24/23.98PsF 60/59.94/50i	Double-data-rate (880 Mbps)	–	○*2
1280 x 720	4:2:2	59.94/50p	Standard (440 Mbps)	○	○
		Dual Stream: 59.94/50p	Double-data-rate (880 Mbps)	–	○*2
2048 x 1080	4:4:4 HQ	23.98/24/25PsF	Double-data-rate (880 Mbps)	–	○*2
2048 x 1556*3	4:4:4 HQ	23.98/24/25PsF	Double-data-rate (880 Mbps)	–	○*2

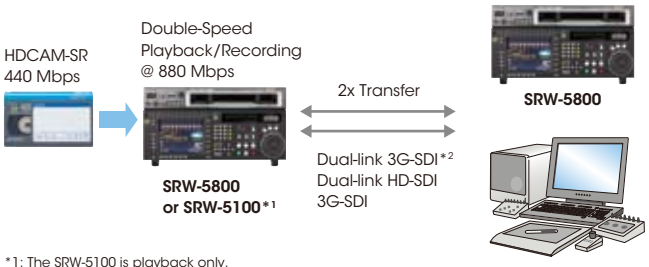
*1: SRW-5100 is playback only.
*2: SRW-5800 requires optional HKSR-5803HQ board. SRW-5100 requires optional HKSR-5103 board.
*3: Planned to be available in the first half of 2011.

Double-speed Material Transfer and Recording (SRW-5800/5100*1 only)

The SRW-5800/5100 allows single-stream video material, 12-channel audio, time code, and VANC metadata to be transferred to another SRW-5800, and to servers and nonlinear editing systems at twice normal speed using a dual-link 3G-SDI, dual-link HD-SDI, or 3G-SDI interface. This is achieved by playing back tapes at 880 Mbps - double the recorded 440 Mbps speed. This capability can greatly reduce the time required for material ingest.

*1: The SRW-5100 is playback only.

Double-speed Transfer and Recording



*1: The SRW-5100 is playback only.
*2: Planned to be available in the first half of 2011.

Transfer Speed

Signal	Frame Rate	Transfer Speed	Interface	Transferable Signals
1080/4:2:2	30/29.97/25/24/23.98PsF 60/59.94/50i	x 2	dual-link HD-SDI, 3G-SDI	Video, Audio, Time code, VANC
1080/4:4:4 SQ	30/29.97/25/24/23.98PsF 60/59.94/50i	x 2*1	dual-link 3G-SDI	
720/4:2:2	59.94/50p	x 2	dual-link HD-SDI, 3G-SDI	

*1: Planned to be "x 2" in the first half of 2011. Until then "x 1".

3G-SDI Interface (SRW-5800/5100 only)

The SRW-5800/5100*1 comes equipped with 3G-SDI (2.97 Gbps) interfaces, which allow users to transfer 4:2:2/1080p or 4:4:4/1080i materials via a single SDI connection, for less complexity in system configuration. Users can select either dual-link HD-SDI, or 3G-SDI via the menu. Furthermore, dual-link 3G-SDI is also supported for transferring 4:4:4 signals in double-speed mode and 3D stereoscopic mode.

*1: The SRW-5100 provides outputs only.

HDCAM Format*1 Recording (SRW-5500 only)

In addition to the HDCAM-SR format, the SRW-5500 enables HDCAM™ recording and playback in all frame rates specified by the HDCAM format, including 1080/23.98, 24, 25, 29.97, 30PsF, and 1080/50, 59.94, 60i. It supports the full editing capability of HDCAM format recordings, including independent editing of the four audio channels. This HDCAM recording capability offers a cost-effective yet high-quality alternative, operating in the full quality of the industry-standard Common Image Format (CIF).

*1: The HDCAM format does not support 720p recording and RGB 4:4:4/1080 recording.

Internal Format Conversion

The SRW-5800/5500/5000/5100 is equipped with an internal down converter that provides SDTV outputs from 1080 and 720 recordings. By adding optional plug-in boards, users can give the SRW-5800/5500/5000/5100 extended format-conversion capabilities such as 2-3 pull-down, conversion from 1080 to 720 and vice versa, and 4:2:2 to 4:4:4 and vice versa. For further details, please refer to the format conversion chart on page 10.

Legacy Playback

Not only is the SRW-5800/5500/5000/5100 an affordable VTR for use in digital cinematography and high-end HD production, it also provides a smooth migration path for organizations with legacy systems by retaining current acquisition tools and archives in action. The SRW-5800/5500/5000/5100 can play back HDCAM and Digital BETACAM*1 tapes, making it an ideal and cost-effective solution for facilities involved in demanding high-end film and HD work.

*1: Please refer to the Supported Formats table.

Supported Formats

	Recording Format	Playback Format (Standard)	Playback Format (Option)
SRW-5000	HDCAM-SR	HDCAM-SR HDCAM	Digital BETACAM (HKSR-5002)
SRW-5500	HDCAM-SR HDCAM		
SRW-5800	HDCAM-SR	HDCAM-SR	HDCAM Digital BETACAM (HKSR-5802)
SRW-5100	—		
SRW-1	HDCAM-SR	HDCAM-SR	—

Long Recording Time on a Single Cassette*1

Utilizing the technologically advanced HDCAM-SR format's high-density recording capability and compression technology, the SRW-5800/5500/5000 is capable of recording up to 155 minutes at 1080/24PsF and up to 124 minutes at 1080/59.94i or 720/59.94p on a single L-sized cassette. S-sized cassettes can also be used, offering up to 50 minutes of recorded material at 1080/24PsF and up to 40 minutes at 1080/59.94i or 720/59.94p.

*1: When the SRW-5500 records in HDCAM format, it provides the same recording times as in HDCAM-SR format.

Easy Maintenance

Drum maintenance is always a concern for VTR users. So, just like the majority of VTRs from Sony, the SRW-5800/5500/5000/5100 drum assembly has been designed with an auto-adjustment function that simplifies and reduces maintenance time.

User-friendly Controls

The front control panel of the SRW-5800/5500/5000/5100 is extremely user friendly, with a design and functionality inherited from the widely used HDW-F500. In addition, the control panel has a large 6.4-inch*1 type LCD display that provides comprehensive information, including color thumbnails for quick location of parameters, which is used in combination with eight menu buttons placed along the side of the display.

*1: Viewable area measured diagonally.

HDCAM-SR VTR Lineup

<table>
<tr><th></th><th>SRW-5000</th><th>SRW-5500</th><th>SRW-5800</th><th>SRW-5100</th></tr>
<tr><td></td><td>  </td><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Recording Format</td><td>HDCAM SR</td><td>HDCAM SR
HDCAM™</td><td>HDCAM SR</td><td>No</td></tr>
<tr><td rowspan="3">Playback Format</td><td colspan="4">HDCAM SR</td></tr>
<tr><td colspan="2">HDCAM
standard</td><td colspan="2">HDCAM
with HKSR-5802</td></tr>
<tr><td colspan="2">Digital BETACAM™
with HKSR-5002</td><td colspan="2">Digital BETACAM
with HKSR-5802</td></tr>
<tr><td>RGB SQ (440 Mbps)</td><td colspan="3">Yes</td><td rowspan="3">Yes
playback only</td></tr>
<tr><td>4:2:2/1080/60p and 50p</td><td>No</td><td>No</td><td>Yes</td></tr>
<tr><td>Double-speed Material Transfer and Recording</td><td>No</td><td>No</td><td>Yes</td></tr>
<tr><td>RGB HQ (880 Mbps)</td><td>No</td><td>No</td><td rowspan="3">Yes
with HKSR-5803HQ</td><td rowspan="3">Yes
with HKSR-5103
playback only</td></tr>
<tr><td>2K Real-time Recording and Playback</td><td>No</td><td>No</td></tr>
<tr><td>3D Stereoscopic (Dual Stream) mode</td><td>No</td><td>No</td></tr>
<tr><td>Network File Transfer</td><td>No</td><td>No</td><td>Yes
with HKSR-5804</td><td>No</td></tr>
<tr><td>HDMI Output</td><td>No</td><td>No</td><td>No</td><td rowspan="2">Yes
with HKSR-5105</td></tr>
<tr><td>i.LINK (HDV) Output</td><td>No</td><td>No</td><td>No</td></tr>
</table>

Operational Features

Frame-accurate Insert/Assemble Editing

The SRW-5800/5500/5000/5100*1 is capable of insert or assemble editing with frame accuracy. Each video and audio channel is independently editable, and users can execute precise editing on HDCAM-SR or HDCAM*2 tapes in machine-to-machine or A/B roll configurations.

*1: The SRW-5100 is playback only.
*2: SRW-5500 only

High-Speed Color Picture Search

The SRW-5800/5500/5000/5100 provides recognizable color pictures in Shuttle mode at speeds of up to 42 times normal playback for the HDCAM-SR format*1, and at speeds of up to 50 times normal playback for the HDCAM and Digital BETACAM formats.

*1: When recorded in double-data-rate mode, the speed is 1/2.

Noiseless Picture Playback

The SRW-5500/5000 comes with a Dynamic Tracking™ playback capability that provides high-quality pictures in a range of -1 to +2 times normal playback speed during the playback of HDCAM-SR tapes, while the SRW-5800/5100 provides -0.5 to +1 with Non Tracking.

Noiseless Picture Playback Capability

	SRW-5500/5000	SRW-5800/5100
HDCAM-SR	-1 to +2 (DT)	-0.5 to +1 (NT)
HDCAM	-1 to +2 (DT)	
Digital BETACAM	-1 to +3 (DT)	

DT : Dynamic Tracking NT : Non Tracking

Digital Jog Sound

In Jog mode, all 12 audio digital channels of the HDCAM-SR format or all four channels of the HDCAM format can be reproduced with a responsiveness and sound quality reminiscent of analog audio. This feature is essential to quickly and precisely establish an editing point while monitoring digital audio signals that remain synchronized with the pictures.

Dynamic Motion Control (DMC) Playback*1

The SRW-5500/5000 also provides a DMC playback capability, memorizing tape-speed trajectory over the dynamic tracking-speed range (-1 to +2 times normal speed).

*1: The SRW-5800/5100 does not support this capability for HDCAM-SR format.

Pre-read Editing*1

The SRW-5500/5000 is equipped with advanced playback heads that allow pre-read editing, enabling functions such as titling and voice-over with a single VTR.

*1: The SRW-5800/5100 does not support this capability.

Confidence Playback*1

Separate dedicated playback heads immediately follow the recording heads so that actual audio and video recorded to tape can be monitored while recording. Confidence playback can be used to verify the quality of a recording without interrupting production.

*1: The SRW-5100 does not support this capability.

Program Play Function with Audio Pitch Correction*1

The SRW-5500/5000 has a Program Play function*2 that allows video recordings to be played back at up to ±5% normal speed, with appropriate audio pitch correction. These VTRs also perform audio pitch correction at up to ±5% when playing back tapes recorded at a frequency different to the one set for system playback in the VTR*3.

*1: The SRW-5800/5100 does not support this capability.
*2: The Program Play function requires the optional HKSR-5001 board, and is available when the VTR is set to 4:2:2/1080/59.94i or 4:2:2/720/59.94p mode.
*3: Available only when the difference of these frequencies is within 5% (23.98 frames ⟷ 24 frames, 23.98/24 frames ⟷ 25 frames, or 29.97 frames ⟷ 30 frames).

Audio Output Channel Selection

The SRW-5800/5500/5000/5100 is equipped with a unique internal audio-output router, which enables flexible audio-output channel routing without the use of an external audio-routing device. Any channel from the 12*1 available on HDCAM-SR tape can be assigned to the embedded HD-SDI (Ch 1-12) and SDI (Ch 1-8) audio-output channels. This feature provides the flexibility needed when recording audio to different tape formats.

*1: Four channels on HDCAM/Digital BETACAM tape.

Dual-sync Operation

A unique feature of the SRW-5800/5500/5000/5100 allows users to seamlessly integrate the VTR into a 59.94 editing environment. In doing so, users can directly perform insert editing – from a 23.98PsF master tape to either a 1080/59.94i or a 525/59.94i recording – without having to first dub the master to 59.94 format. This is achieved by supplying dual reference signals, one to lock the servo of the SRW-5800/5500/5000/5100 to a 23.98-Hz signal and one to lock the playout circuitry to a 59.94-Hz reference signal.

Off-speed Playback Capability

In order to play back material at different speeds for applications such as slow-motion or fast-motion, the SRW-5800/5500/5000/5100 is equipped with a built-in off-speed playback capability.

HDCAM-SR Off-speed Playback Capability

4:2:2 mode

Playback Tape \ System Setting			HD-SDI OUTPUT										
			1080								720		
			23.98PsF	24PsF	25PsF 50i	29.97PsF 59.94i	30PsF 60i	50P	59.94P	60P	50P	59.94P
1080	4:2:2 10bit	23.98PsF	●	○	▲	▲	▲	◇	◇	◇	–	–
		24PsF	○	●	▲	▲	▲	◇	◇	◇	–	–
		25PsF 50i	▲	▲	●	▲	▲	◇	◇	◇	–	–
		29.97PsF 59.94i	▲	▲	▲	●	○	◇	◇	◇	–	–
		30PsF 60i	▲	▲	▲	○	●	◇	◇	◇	–	–
		50p	◆	◆	◆	◆	◆	●	▲	▲	–	–
		59.94p	◆	◆	◆	◆	◆	▲	●	○	–	–
		60p	◆	◆	◆	◆	◆	▲	○	●	–	–
720		50p	–	–	–	–	–	–	–	–	●	▲
		59.94p	–	–	–	–	–	–	–	–	▲	●

4:4:4 mode

Playback Tape \ System Setting			HD-SDI OUTPUT											
			1920 x 1080					2048 x 1080						
			4:4:4 RGB 10bit					4:4:4 XYZ 12bit			4:4:4 RGB 10bit			
			23.98PsF	24PsF	25PsF 50i	29.97PsF 59.94i	30PsF 60i	23.98PsF	24PsF	25PsF	23.98PsF	24PsF	25PsF	
1920 x 1080	4:4:4 RGB 10bit	23.98PsF	●	○	▲	▲	▲	–	–	–	–	–	–	
		24PsF	○	●	▲	▲	▲	–	–	–	–	–	–	
		25PsF 50i	▲	▲	●	▲	▲	–	–	–	–	–	–	
		29.97PsF 59.94i	▲	▲	▲	●	○	–	–	–	–	–	–	
		30PsF 60i	▲	▲	▲	○	●	–	–	–	–	–	–	
2048 x 1080	4:4:4 XYZ 12bit	23.98PsF	–	–	–	–	–	●	○	▲	–	–	–	
		24PsF	–	–	–	–	–	○	●	▲	–	–	-	
		25PsF	-	-	–	–	–	▲	▲	●	–	–	–	
	4:4:4 RGB 10bit	23.98PsF	–	–	–	–	–	–	–	–	●	○	▲	
		24PsF	–	–	–	–	–	–	–	–	○	●	▲	
		25PsF	–	–	–	–	–	–	–	–	▲	▲	●	

● : Normal playback
○ : 0.1% offspeed playback
▲ : Video and Audio off-speed playback
◆ : Video off-speed playback
◇ : Video off-spped playback with (23.98/24/25/29.97/30 PsF recorded tape only)
RGB 4:4:4 HQ mode and RGB 4:4:4 SQ mode are incompatible.
SRW-5500/5000 does not support RGB 4:4:4 HQ mode.

Playback of Tapes Recorded by SRW-1

The SRW-5800/5500/5000/5100 VTR is capable of playing back tapes recorded by the SRW-1 recorder in the following unique modes:

- 3D Stereoscopic (Dual Stream) mode: The SRW-5800/5100 can play back material shot by the SRW-1 in Dual Stream mode. The SRW-5500/5000 can play back either channel A or channel B of the Dual Stream 4:2:2 recording. Users can select the stream to be played back via the menu.

- 1080/4:2:2/60p mode: The SRW-5800/5500/5000/5100 can play back a 1080/60p tape in 24p, 25p, and 30p mode, producing the desired slow-motion effect in playback at normal speeds. It is also possible to play 60p recordings in normal speed by playing back every other frame, so only 30 frames in total are played back. The SRW-5800/5100 can also play back in 1080/60p mode, offering smooth pictures for playing back fast-moving scenes.

- Select FPS mode: The SRW-5800/5500/5000/5100 can play back a tape recorded with the Select FPS function at 24p, 25p, and 30p mode, both in 4:2:2 and 4:4:4, producing the desired slow- and fast-motion effect in playback at normal speeds.

Storage of Setup/System Menus in VTR Memory Banks

The SRW-5800/5500/5000/5100 VTR allows operators to effectively manage its menus using VTR memory banks. Up to eight groups of parameters in the System Menu and Setup Menu can be individually saved in the VTR's internal memory as a bank memory. The setup parameters can also be saved onto Memory Stick™ media, enabling these groups of parameters to be copied onto other SRW-5800/5500/5000/5100 VTRs*1. The operator can select a suitable name for each bank memory.

*1: This capability is not fully supported when exchanging data between different models.

Ethernet-based Bank Memory Selection

An Ethernet interface is provided on the SRW-5800/5500/5000/5100 VTR, enabling operators to remotely set up VTRs using a standard web browser on a PC. The VTR automatically generates SRW.html files that indicate the bank settings currently saved on the VTR. By accessing the VTR via an Ethernet interface, operators can see the parameters in each of the listed bank memories, and select a bank they want to use.

Internal Format Conversion Capability

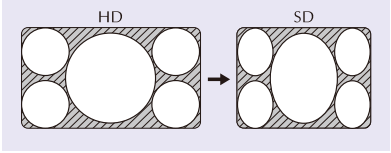
REC/PLAYBACK Tape Format			HD-SDI OUT		SD-SDI OUT	HD-SDI Format Conv. Out *1
HDCAM-SR	2048 x 1080 /4:4:4 XYZ HQ	23.98PsF	2048 x 1080 /4:4:4 XYZ	23.98PsF	–	2048x1080/4:4:4(RGB)/23.98PsF
						1920 x 1080/4:4:4(RGB)/23.98PsF
						1920 x 1080/4:2:2/23.98PsF
					525/59.94i*1	1920 x 1080/4:2:2/59.94i
						1920 x 1080/4:2:2/59.94p
		24PsF		24PsF	–	2048x1080/4:4:4(RGB)/24PsF
						1920 x 1080/4:4:4(RGB)/24PsF
						1920 x 1080/4:2:2/24PsF
						1920 x 1080/4:2:2/60i
						1920 x 1080/4:2:2/60p
		25PsF		25PsF	–	2048x1080/4:4:4(RGB)/25PsF
						1920 x 1080/4:4:4(RGB)/25PsF
					625/50i*1	1920 x 1080/4:2:2/25PsF
						1920 x 1080/4:2:2/50p
	2048 x 1080 /4:4:4 RGB HQ	23.98PsF	2048 x 1080 /4:4:4 RGB	23.98PsF	–	1920 x 1080/4:4:4/23.98PsF
						1920 x 1080/4:2:2/23.98PsF
					525/59.94i*1	1920 x 1080/4:2:2/59.94i
						1920 x 1080/4:2:2/59.94p
		24PsF		24PsF	–	1920 x 1080/4:4:4/24PsF
						1920 x 1080/4:2:2/24PsF
						1920 x 1080/4:2:2/60i
						1920 x 1080/4:2:2/60p
		25PsF		25PsF	–	1920 x 1080/4:4:4/25PsF
					625/50i*1	1920 x 1080/4:2:2/25PsF
						1920 x 1080/4:2:2/50p
	1920 x 1080/4:4:4 SQ HQ*2	23.98PsF	1920 x 1080/4:4:4	23.98PsF	–	1920 x 1080/4:2:2/23.98PsF
					525/59.94i*1	1920 x 1080/4:2:2/59.94i
						1920 x 1080/4:2:2/59.94p*3
						1280 x 720/4:2:2/59.94p
		24PsF		24PsF	–	1920 x 1080/4:2:2/24PsF
						1920 x 1080/4:2:2/60i
						1920 x 1080/4:2:2/60p*3
		25PsF		25PsF	625/50i*1	1920 x 1080/4:2:2/25PsF
						1920 x 1080/4:2:2/50p*3
						1280 x 720/4:2:2/50p
		29.97PsF		29.97PsF	525/59.94i*1	1920 x 1080/4:2:2/29.97PsF
						1920 x 1080/4:2:2/59.94p*3
						1280 x 720/4:2:2/59.94p
		30PsF		30PsF	–	1920 x 1080/4:2:2/30PsF
						1920 x 1080/4:2:2/60p*3
		50i		50i	625/50i*1	1920 x 1080/4:2:2/50i
						1280 x 720/4:2:2/50p
		59.94i		59.94i	525/59.94i*1	1920 x 1080/4:2:2/59.94i
						1280 x 720/4:2:2/59.94p
		60i		60i	–	1920 x 1080/4:2:2/60i
	1920 x 1080/4:2:2*2	50p	1920 x 1080/4:2:2	50p	625/50i*1	1920 x 1080/4:2:2/50i
						1280 x 720/4:2:2/50p*3
		59.94p		59.94p	525/59.94i*1	1920 x 1080/4:2:2/59.94i
						1280 x 720/4:2:2/59.94p*3
		60p		60p	–	1920 x 1080/4:2:2/60i
	1280 x 720/4:2:2	50p	1280 x 720/4:2:2	50p	625/50i	1920 x 1080/4:2:2/50i
						1920 x 1080/4:2:2/50p*3
		59.94p		59.94p	525/59.94i	1920 x 1080/4:2:2/59.94i
						1920 x 1080/4:2:2/59.94p*3
HDCAM-SR or HDCAM	1920 x 1080/4:2:2	23.98PsF	1920 x 1080/4:2:2	23.98PsF	–	1920 x 1080/4:2:2/23.98PsF
					525/59.94i*1	1920 x 1080/4:2:2/59.94i
						1920 x 1080/4:2:2/59.94p*3
						1280 x 720/4:2:2/59.94p
		24PsF		24PsF	–	1920 x 1080/4:2:2/60i
						1920 x 1080/4:2:2/60P*3
						1920 x 1080/4:4:4/24PsF
		25PsF		25PsF	625/50i	1280 x 720/4:2:2/50p
						1920 x 1080/4:2:2/50p*3
						1920 x 1080/4:4:4/25PsF
		29.97PsF		29.97PsF	525/59.94i	1280 x 720/4:2:2/59.94p
						1920 x 1080/4:2:2/59.94p*3
						1920 x 1080/4:4:4/29.97PsF
		30PsF		30PsF	–	1920 x 1080/4:2:2/60p*3
						1920 x 1080/4:4:4/30PsF
		50i		50i	625/50i	1280 x 720/4:2:2/50p
						1920 x 1080/4:4:4/50i
		59.94i		59.94i	525/59.94i	1280 x 720/4:2:2/59.94p
						1920 x 1080/4:4:4/59.94i
		60i		60i	–	1920 x 1080/4:4:4/60i
Digital BETACAM*4	625	50i	1920 x 1080/4:2:2	50i	625/50i	1280 x 720/4:2:2/50p
						1920 x 1080/4:4:4/50i
			1280 x 720/4:2:2	50p		1920 x 1080/4:2:2/50i
	525	59.94i	1920 x 1080/4:2:2	59.94i	525/59.94i	1280 x 720/4:2:2/59.94p
						1920 x 1080/4:4:4/59.94i
			1280 x 720/4:2:2	59.94p		1920 x 1080/4:2:2/59.94i

*1: Requires optional HKSR-5001 board.
*2: SRW-5800 and SRW-5100 only. The SRW-5800 requires optional HKSR-5803HQ board. The SRW-5100 requires optional HKSR-5103 board.
*3: SRW-5800 and SRW-5100 only.
*4: Requires optional HKSR-5002 board for SRW-5500/5000 or HKSR-5802 board for SRW-5800/5100.

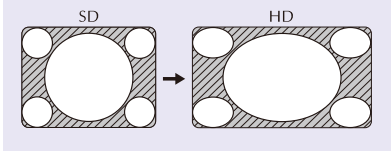
Selectable Picture Modes

Three modes of operation – SQUEEZE, LETTER BOX, and EDGE CROP – are available to provide the correct presentation for each application type.

SQUEEZE mode

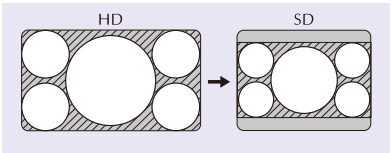


HD to SD, 16:9 HD picture is down-converted and output as a 4:3 SD picture.

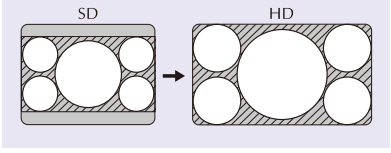


SD to HD, 4:3 SD picture is up-converted, then output as a 16:9 HD picture.

LETTER BOX mode

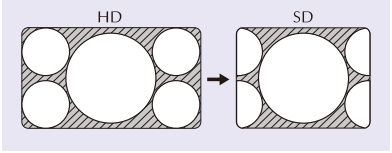


HD to SD, 16:9 HD picture down-converted to SD and output is presented in Letter-box on a 4:3 monitor.

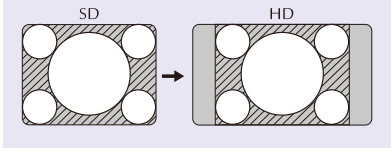


SD to HD, 4:3 SD picture is cropped and presented as a 16:9 picture.

EDGE CROP mode



HD to SD, edges of a 16:9 HD picture are cropped in the down-converted 4:3 SD picture.



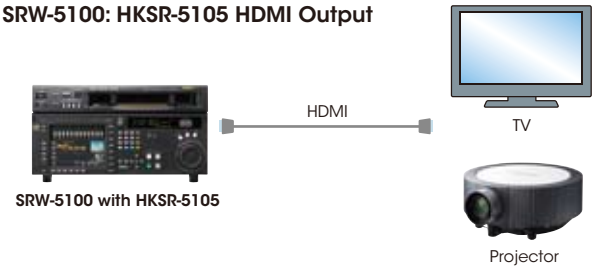
SD to HD, 4:3 SD picture up-converted as a 16:9 HD picture, however the sides are cropped.

HDMI Output

The SRW-5100 can output materials in 4:4:4/1080i*1 and 4:2:2/1080p*1,1080i, or 720p formats via its HDMI*2 port. This allows users to instantly view the HDCAM-SR contents in their native signal format on a wide range of displays such as televisions and projectors. This capability enables the SRW-5100 player to be used at exhibitions and conferences for simple viewings, screenings, and presentations.

*1: Requires the optional HKSR-5103 board.
*2: Requires the optional HKSR-5105 board.

SRW-5100: HKSR-5105 HDMI Output

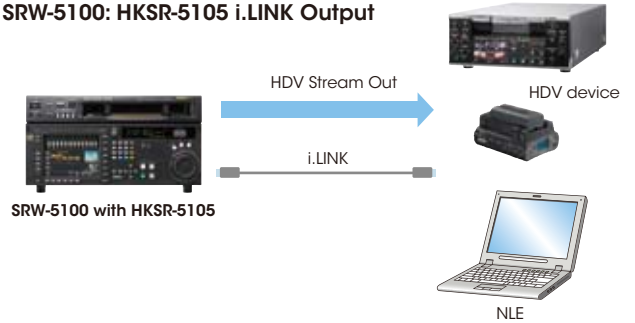


HDV1080i Output

The SRW-5100 can output a 25 Mbps HDV1080i stream (MPEG-2 TS) to HDV products or HDV-based nonlinear editors via its i.LINK™ port*1. It supports 59.94i/50i output, and 23.98PsF materials are output as 1080/59.94i signals via 2-3 pull-down conversion. 1080p and 720p materials can also be output as 1080i signals. This capability is useful for offline editing.

*1: Requires the optional HKSR-5105 board. i.LINK is a Sony trademark used only to designate that a product is equipped with an IEEE1394 connector. Not all products with an i.LINK connector may communicate with each other. Please refer to the documentation that comes with any device having an i.LINK connector for information on compatibility, operating conditions, and proper connection. .

SRW-5100: HKSR-5105 i.LINK Output



HKSR-5105 Format Conversion Capability

PLAYBACK Tape Format			HDV Output	HDMI Output
HDCAM-SR	1080/4:4:4*1 (SQ/HQ)	23.98PsF	1080/4:2:2/59.94i	1080/4:4:4/23.98PsF
				1080/4:2:2/59.94i
		24PsF	–	1080/4:4:4/24PsF
				1080/4:2:2/60i
		25PsF	1080/4:2:2/50i	1080/4:4:4/25PsF
				1080/4:2:2/50i
		29.97PsF	1080/4:2:2/59.94i	1080/4:4:4/29.97PsF
				1080/4:2:2/59.94i
		30PsF	–	1080/4:4:4/30PsF
				1080/4:2:2/60i
		50i	1080/4:2:2/50i	1080/4:4:4/50i
				1080/4:2:2/50i
		59.94i	1080/4:2:2/59.94i	1080/4:4:4/59.94i
				1080/4:2:2/59.94i
		60i	–	1080/4:4:4/60i
				1080/4:2:2/60i
	1080/4:2:2*1	50p	1080/4:2:2/50i	1080/4:2:2/50p
		59.94p	1080/4:2:2/59.94i	1080/4:2:2/59.94p
		60p	–	1080/4:2:2/60p
				1080/4:2:2/60i
	720/4:2:2	50p	1080/4:2:2/50i	720/4:2:2/50p
				1080/4:2:2/50i
		59.94p	1080/4:2:2/59.94i	720/4:2:2/59.94p
				1080/4:2:2/59.94i
HDCAM-SR or HDCAM*2	1080/4:2:2*2	23.98PsF	1080/4:2:2/59.94i	1080/4:2:2/23.98PsF
				1080/4:2:2/59.94i
		24PsF	–	1080/4:2:2/24PsF
				1080/4:2:2/60i
		25PsF	1080/4:2:2/50i	1080/4:2:2/25PsF
				1080/4:2:2/50i
		29.97PsF	1080/4:2:2/59.94i	1080/4:2:2/29.97PsF
				1080/4:2:2/59.94i
		30PsF	–	1080/4:2:2/30PsF
				1080/4:2:2/60i
		50i	1080/4:2:2/50i	1080/4:2:2/50i
		59.94i	1080/4:2:2/59.94i	1080/4:2:2/59.94i
		60i	–	1080/4:2:2/60i

The HKSR-5105 does not support output of 2K (2048 x 1080, 2048 x 1556) mode.
*1: Requires optional HKSR-5103 Advanced Processor Board.
*2: Requires optional HKSR-5802 Digital BETACAM and HDCAM Processor Board.

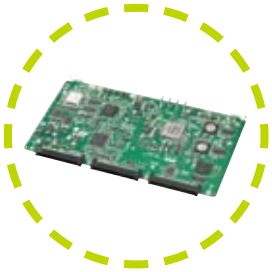
Versatile Interfaces

The SRW-5800/5500/5000/5100 features a wide range of interfaces including:

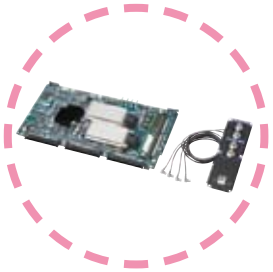
- 3G-SDI/HD-SDI I/O
- HD-SDI (format conversion) out (with HKSR-5001)
- SD-SDI out
- SD composite out
- AES/EBU digital audio I/O
- Analog audio out (one to four channel): SRW-5500/5000 only
- Analog audio monitor out
- Analog monitor out (cue)
- Analog audio in (cue): for SRW-5500 only
- Ethernet port
- RS-422 9-pin and 50-pin control interfaces
- Video control
- HDMI output: SRW-5100 only (with HKSR-5105)
- i.LINK output: SRW-5100 only (with HKSR-5105)

SRW-5000 Rear Panel

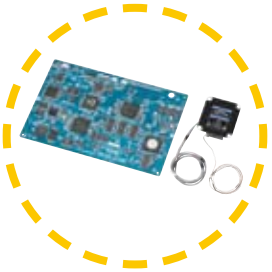
SRW-5500 Rear Panel



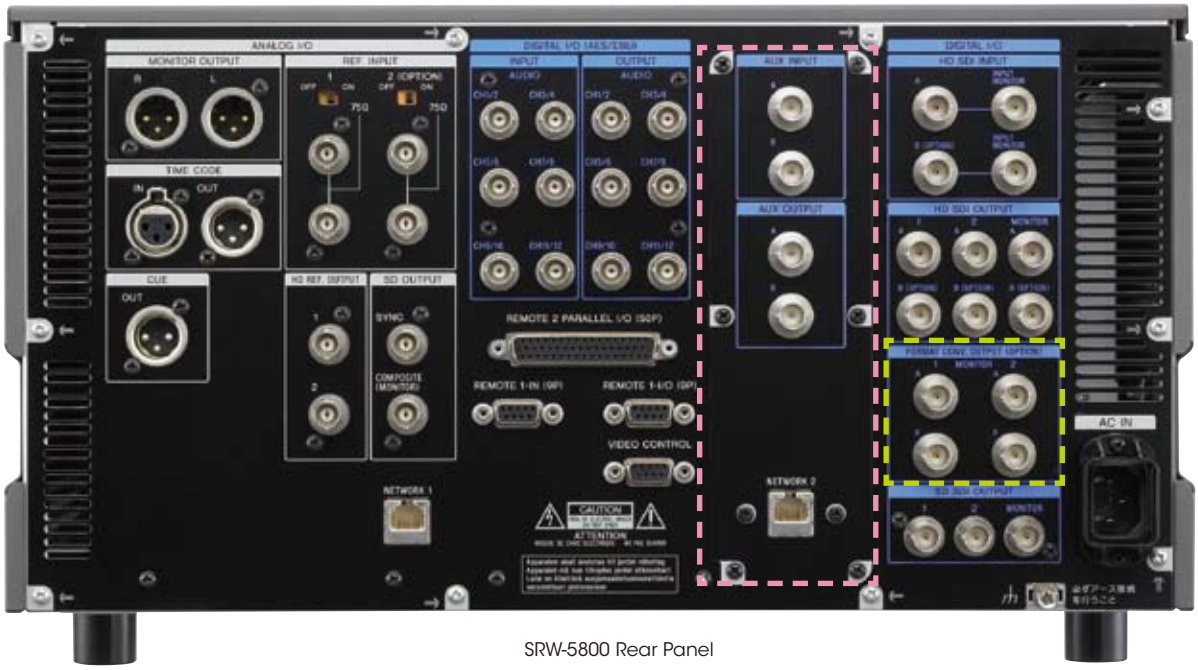
HKSR-5001
Format Converter Outputs
Connectors are Pre-installed



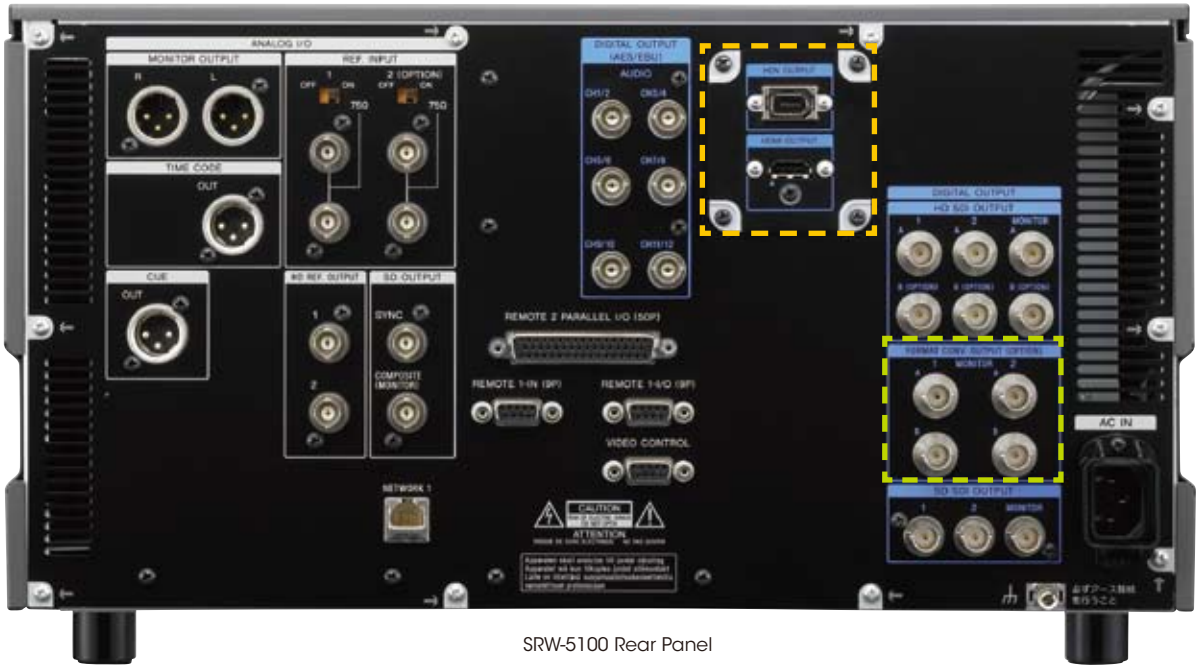
HKSR-5804
AUX Inputs
AUX Outputs
Gigabit Ethernet



HKSR-5105
HDMI Output
i.LINK (HDV) Output



SRW-5800 Rear Panel



SRW-5100 Rear Panel

SRW-5800 Network Capability

The SRW-5800 provides a highly advanced network capability with the addition of the optional HKSR-5804 board that introduces a new network-based workflow to the DI (Digital Intermediate) and BC (Broadcast) domain, along with higher levels of efficiency.

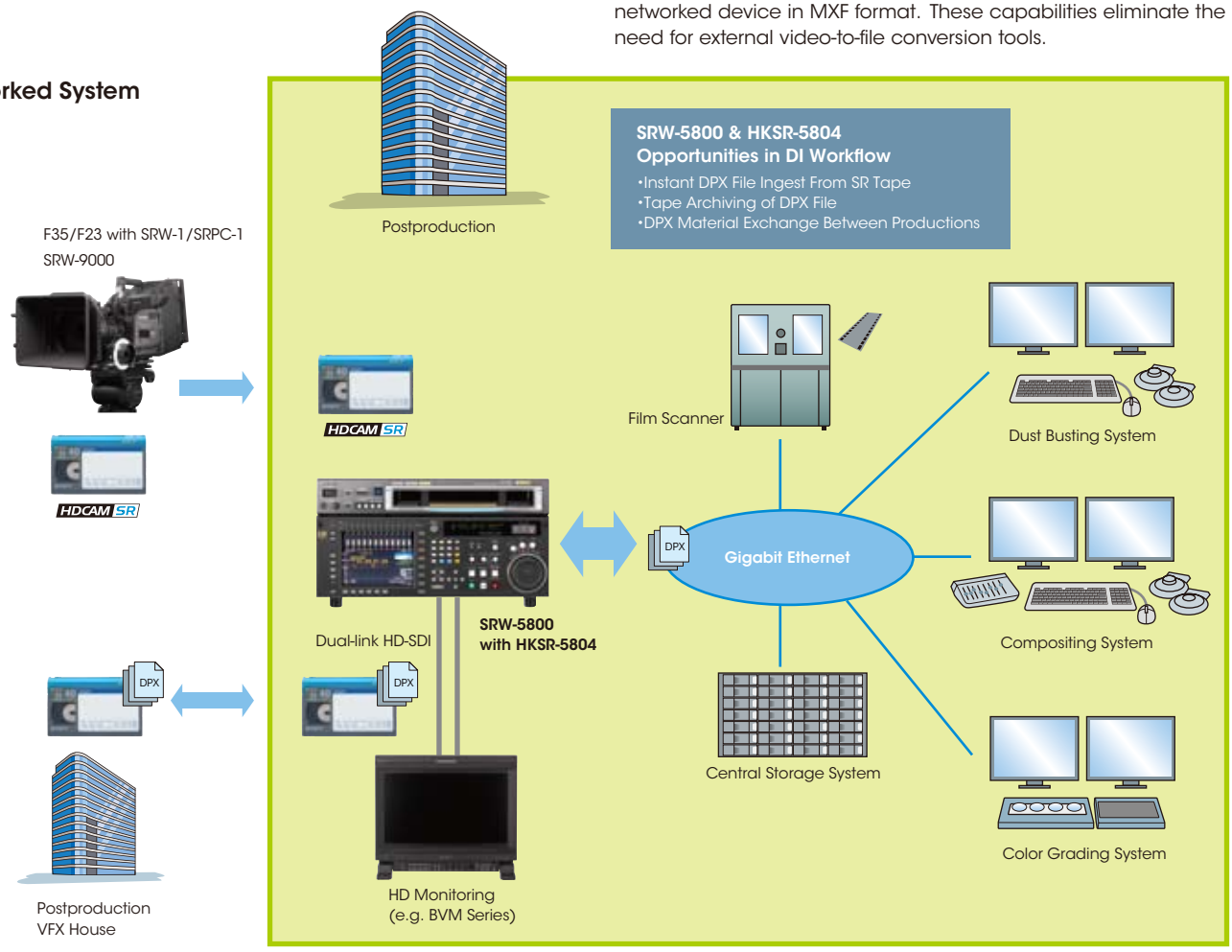
This capability comprises a variety of unique and powerful functions, such as DPX file conversion to and from the HDCAM-SR HD video format, 2K/4K uncompressed data recording, and MXF file conversion from HDCAM-SR and HDCAM tapes. Gigabit Ethernet (GbE) is supported on the SRW-5800, allowing fast transfer of even large files.

To connect the SRW-5800 with a server or NLE over a GbE network, no special driver software or application is required, and major operating systems including Microsoft Windows, Linux, and Macintosh are supported. Users can simply utilize a normal Internet browser for control.

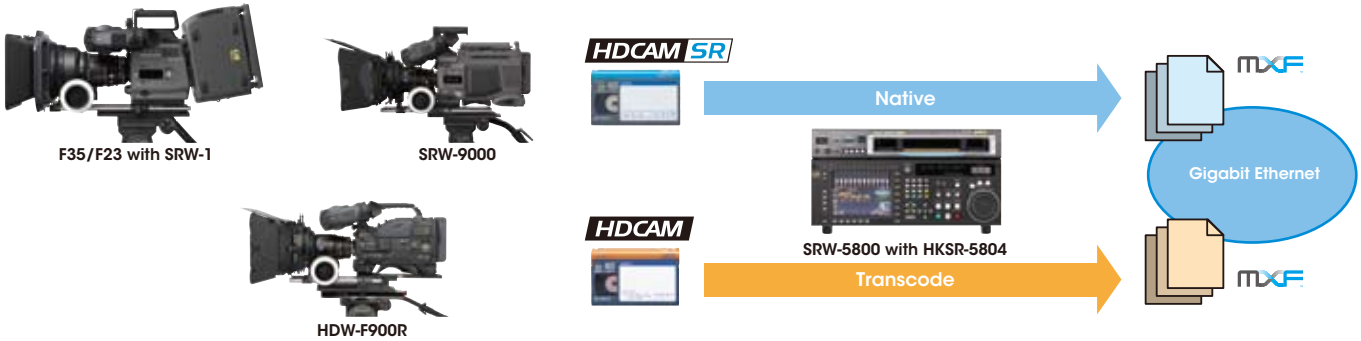
File Import/Export

The SRW-5800 in this configuration can create DPX/Cineon/TIFF files while playing back an HDCAM-SR tape, and can directly transfer these files to PCs, workstations, or servers on the network. Conversely, DPX files from a networked device can be recorded to the SRW-5800 in HDCAM-SR video format. Moreover, it can transfer materials recorded on HDCAM-SR or HDCAM tapes to a networked device in MXF format. These capabilities eliminate the need for external video-to-file conversion tools.

Networked System



SRW-5800 & HKSR-5804 MXF Transfer



4K/2K to HD Resizing
The SRW-5800 recorder allows 4K/2K files transferred from other devices to be resized to 1920 x 1080 and recorded in HDCAM-SR format.

4K/2K Uncompressed DPX Data Recording
The SRW-5800 can also record 4K/2K DPX files as uncompressed data onto an HDCAM-SR tape. It can record DPX data of flexible image size on the tape, from HD up to maximum 4K full-aperture (4096 x 3112) size. This enables the SRW-5800 to be used in a variety of DI operations, such as backup recording of film scanning or exporting for local archiving. And these tapes are suitable interchange media between DI facilities. While ingesting data files from the tapes, users can monitor the 4K/2K images on an HD display through an HD-SDI/dual-link HD-SDI/3G-SDI interface, thanks to the resizing function.

Web-based VTR Control and Content Management Application
The SRW-5800's file-transfer operations can be intuitively performed on commonly used web browsers. The control GUI offers the following functions:
- NFS/CIFS mounting
- VTR controls
- File import/export controls
- Proxy image display
- Resizing from 4K/2K to HD
- Bit assignment
- 1D LUT (e.g. S-Log)
- Batch import by EDL
- Import/Export log management

HKSR-5804 GUI

A Choice of Data Formats - DPX/Cineon/TIFF and MXF
The HKSR-5804 provides a variety of image data file formats including DPX and Cineon for cinema productions and the widely used TIFF format. In addition, the HKSR-5804 supports the industry-standard MXF, allowing materials to be handled with great flexibility in an IT-based environment.

HKSR-5804 Supported Formats

File Formats	Image Specification
DPX	RGB/YCbCr, 8 bit/10 bit/16 bit
Cineon	RGB, 8 bit/10 bit/16 bit
TIFF	RGB, 8 bit/16 bit

HKSR-5804 Supported MXF Formats

Tape Format			MXF			
Format	Compression	System	Max. Bit Rate (bps)	Resolution	Codec	Operational Pattern
HDCAM-SR	1080/4:2:2	23.98/24/25/ 29.97 PsF, 50/59.94i	440	1080/4:2:2	MPEG-4 Simple Studio Profile	OP-1a, SMPTE 381M
			220*1	1080/4:2:2		
	1080/4:4:4*1	23.98/24/25/ 29.97 PsF, 50/59.94i	440	1080/4:4:4		
HDCAM	1080/3:1:1	23.98/24/25/ 29.97 PsF, 50/59.94i	220	1080/4:2:2		

*1: Planned to be available in the first half of 2011.

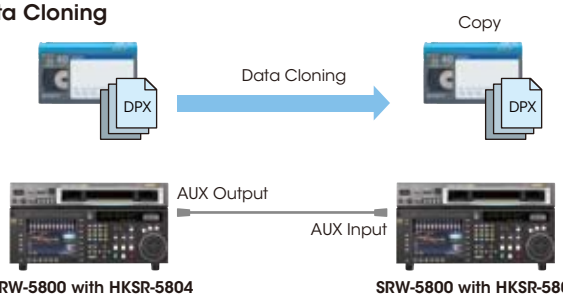
MXF Viewer Application
The HKSR-5804 comes with an application that allows users to browse MXF files on their PC platform.

An Efficient Ingest/Import Workflow Using Tele-File EDL
The HDCAM-SR tape has a nonvolatile type memory - named Tele-File - which can record metadata such as camera REC START/STOP information. The HKSR-5804 can create standard EDL files from the metadata, providing users efficient editing capabilities, including automatic-batch-partial ingest/import of materials.

Data Cloning via AUX Interface
The HKSR-5804 provides the SRW-5800 with a data material dubbing*1 capability via its AUX interface, offering users a high-speed and reliable loss-less recording capability.

*1: Data recording only. It does not support dubbing of HDCAM-SR video.

Data Cloning



SRW-5800 with HKSR-5804 **SRW-5800 with HKSR-5804**

HDCAM-SR Family

SRW-1 /SRPC-1

The SRW-1 HD Portable Digital Video Recorder with the SRPC-1 HD Video Processor is the one recorder in the HDCAM-SR lineup created specifically to support digital production. A major characteristic of the SRW-1 is its highly portable size, yet it has stunning recording capabilities: 1080 50p/60p, SR Motion™, and RGB 4:4:4 recording. This VTR is designed to be dockable on the F35 and F23 Digital Cinema Camera, establishing a cable-free and portable full-bandwidth 4:4:4 capturing system.

SRW-1
with SRPC-1

Features

- Full-bandwidth RGB 4:4:4 recording – double-data-rate recording (optional)
- 4:2:2 1080 50p/60p recording (optional)
- Dockable with the F35/F23*1 camera
- Supports SR Motion: Select FPS - variable frame rate image recording – from 1 fps to 60 fps*2 in both 4:2:2 and 4:4:4 modes (optional)
- 720p recording and playback
- 12 channels of 24-bit audio
- 3D Stereoscopic (Dual Stream) mode
- 1D LUT support for monitor output with User Gamma (customizable gamma) by CvpFileEditor V4.2
- ASC CDL workflow support by CvpFileEditor V4.2
  - Look management: applying ASC CDL setting pre-determined at postproduction to monitor LUT on the set
  - On-set grading: allows color grading on the set and uses the setting later at postproduction
- Highly compact and portable design
- Single optical connection with the F35/F23 (optional)
- Optional boards
  - HKSR-101 Optical Interface Board
  - HKSR-102 Picture Cache Board
  - HKSR-103 RGB 60p Processor Board

*1: When the SRW-1 is docked with the F35/F23 camera, the SRPC-1 is not connected.
*2: Up to 30 fps in 4:4:4 mode without the optional HKSR-103.

F35/F23 Digital Cinematography Cameras

The F35/F23 are Sony's inspiring digital cinematography cameras that provide impressive image quality with an intuitive operation familiar to film camera users. Both cameras can be docked directly onto the SRW-1 recorder, establishing a highly compact, lightweight, and cable-free camera for a high level of mobility in shooting.
The F35 uses one Super 35-mm sized CCD and utilizes the PL lens mount system, while the F23 uses three 2/3-inch type CCDs with the B4 (special made for F23) mount.

F23 with SRW-1

F35 with SRW-1

Features

- Full-bandwidth RGB 4:4:4 HD digital image capturing
- Dockable with the SRW-1
- Supports SR Motion: Select FPS – variable frame rate image capturing – from 1 fps to 60 fps in both 4:2:2 and 4:4:4 modes*1
- State-of-the-art imagers. Progressive 1920 x 1080 full HD resolutions
  - F35: One Super 35-mm sized CCD
  - F23: Three 2/3-inch type CCDs
- Lens mount system
  - F35: PL mount, a standard for film cameras, providing a broad range of film lenses
  - F23: Special B4 mount (using ruggedized and temperature-stable material to minimize back-focusing problems): a standard for 2/3-inch lenses
- Compact and lightweight
  F35/F23: 5 kg (11 lb) without a viewfinder
- 14-bit A/D converter
- ASC CDL workflow support by CvpFileEditor V4.2
  - Look management: applying ASC CDL setting pre-determined at postproduction to monitor LUT on the set
  - On-set grading: allows color grading on the set and uses the setting later at postproduction
- Direct lens metadata capture support for Cooke Optics /i series lenses
- Compatible with Arri film camera accessories

*1: Up to 50 fps with the F35.

SRW-9000 HDCAM-SR Camcorder

The SRW-9000 is the industry-first "one-piece" HDCAM-SR camcorder that integrates camera and VTR into one unit. In standard configuration, the SRW-9000 is capable of top-quality 4:2:2 Y/Cb/Cr 10-bit recording at 1080/23.98p, 24p, 25p, and 29.97p, and 1080/50i and 59.94i. In addition, the SRW-9000 can record 1080/50p and 59.94p signals, and 4:2:2 720/50p and 59.94p*1 signals, which can be used for DTV programming and transmission applications. For users who require further creative performance, a variety of option cards can be added, allowing users to benefit from full-bandwidth 1080 RGB 4:4:4 capturing, SR Motion variable frame rate capturing and recording, S-Log Gamma, and additional signal inputs and outputs.

*1: Requires a software upgrade planned to be available in the second half of 2010.

SRW-9000

Features

- Three 2/3-inch type 1920 x 1080 Progressive CCD
- Supports SR Motion: Select FPS – variable frame rate image capturing – from 1 fps to 60 fps (optional)
- RGB 4:4:4 capturing and recording (optional)
- S-Log Gamma (optional)
- Supported formats:
  - 1080/23.98p, 24p, 25p, 29.97p, 50p, 59.94p
  - 1080/50i, 59.94i
  - 720/50p and 59.94p (future software upgrade)
- Optional accessories
  - HKSR-9001 HD-SDI Expansion Board – Dual-link HD-SDI interface and 12-channel audio interface
  - HKSR-9002 Picture Cache Board – Select FPS (1 fps to 60 fps)
  - HKSR-9003 RGB 4:4:4 Processor Board – RGB 4:4:4 recording and S-Log Gamma
  - HKSR-9004 Filter Servo Unit - filter control via control panel
  - AP-1 Assistant Panel

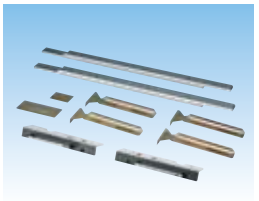
Optional Accessories

Common Options

BCT-6SR/33SR/40SR
BCT-64SRL/94SRL/124SRL
HDCAM-SR Video Cassette Tapes

BCT-6HD/12HD/22HD/40HD
BCT-34HDL/64HDL/94HDL/
124HDL
HDCAM Cassette Tapes

BCT-HD12CL
Video Head Cleaning Cassette



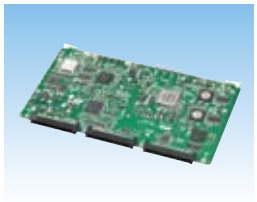
RMM-110
Rack-Mount Kit

HKDV-900,
HD Digital Video Controller

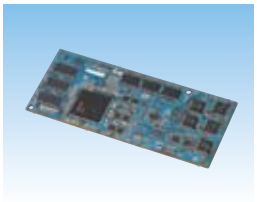
RM-280
Editing Controller

BVM Series
PVM Series
LCD Video Monitor

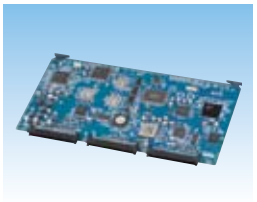
Optional Boards



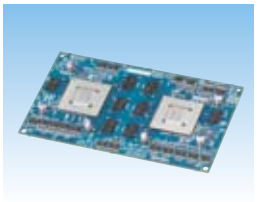
HKSR-5001
Format-Converter Board



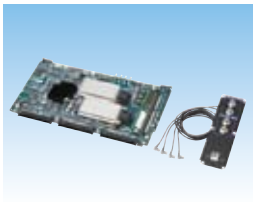
HKSR-5002
Digital BETACAM Processor Board



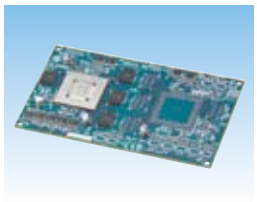
HKSR-5802
Digital BETACAM and
HDCAM Processor Board



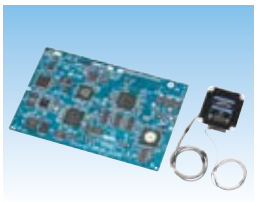
HKSR-5803HQ
Advanced HQ Processor Board



HKSR-5804
File Transfer Processor Board



HKSR-5103
Advanced Processor Board



HKSR-5105
HDMI/i.LINK (HDV) Output Board

	SRW-5000	SRW-5500	SRW-5800	SRW-5100
HKSR-5001	●	●	●	●
HKSR-5002	●	●		
HKSR-5802			●	●
HKSR-5803HQ			●	
HKSR-5804			●	
HKSR-5103				●
HKSR-5105				●

Specifications

		SRW-5000	SRW-5500	SRW-5800	SRW-5100
General					
Power requirements		100 to 240 V AC (±10%, 50/60 Hz)			
Power consumption		320 W (with all option boards installed)		380 W (with all option boards installed)	
Operating temperature		+5 °C to +40 °C (+41 °F to +104 °F)			
Storage temperature		-20 °C to +60 °C (-4 °F to +140 °F)			
Humidity		25% to 80% (relative humidity)			
Mass		30 kg (66 lb 2 oz)			
Dimensions (W x H x D) (excluding protrusion)		427 x 218 x 544 mm (16 7/8 x 8 5/8 x 21 1/2 inches)			
Tape speed		HDCAM-SR: 94.1 mm/s (24 Hz)			
		HDCAM: 77.4 mm/s (24 Hz)			
		Digital BETACAM: 96.7 mm/s			
Recording/ Playback time	HDCAM-SR	Recording & Playback: 155 min. with BCT-124SRL cassette (24 Hz)		Recording & Playback: 155 min. with BCT-124SRL cassette (24 Hz) *1	Playback: 155 min. with BCT-124SRL cassette (24 Hz) *1
	HDCAM	Playback: 155 min. with BCT-124HDL cassette (24 Hz)	Recording & Playback: 155 min. with BCT-124HDL cassette (24 Hz)	Playback: 155 min. with BCT-124HDL cassette (24 Hz)	
	Digital BETACAM	Playback: 124 min. with BCT-D124L cassette			
Fast forward/rewind time		Approx. 4 min. with BCT-124SRL cassette			
Search speed range	Shuttle mode	HDCAM-SR: -50 to +50 times normal speed (24 Hz)			
		HDCAM: -60 to +60 times normal speed (24 Hz)			
		Digital BETACAM: -50 to +50 times normal speed			
	Variable mode	HDCAM-SR: -1 to +2 times normal speed		HDCAM-SR: -0.5 to +1 times normal speed	
		HDCAM: -1 to +2 times normal speed			
		Digital BETACAM: -1 to +3 times normal speed			
	Jog mode	HDCAM-SR: -2 to +2 times normal speed			
		HDCAM: -2 to +2 times normal speed			
		Digital BETACAM: -3 to +3 times normal speed			
Noiseless picture playback	HDCAM-SR	-1 to +2 times normal speed (Dynamic Tracking Range)		-0.5 to +1 times normal speed (Non Tracking Range)	
	HDCAM	-1 to +2 times normal speed (Dynamic Tracking Range)			
	Digital BETACAM	-1 to +3 times normal speed (Dynamic Tracking Range)			
Servo lock time		1.0 sec or less (from standby on)			
Load/unload time		7 sec or less			
Video Performance					
Sampling frequency		Y: 74.25 MHz, Cb/Cr: 37.125 MHz, G/B/R: 74.25 MHz			
Quantization		10 bits/sample			
Compression		MPEG-4 SStP Simple Studio Profile			
Channel coding		S-NRZ			
Error correction		Reed-Solomon code			
Error concealment		Adaptive three-dimensional			
Digital Audio Performance					
Sampling frequency		48 kHz: up to 12 channel		48 kHz: up to 12 channel 96 kHz: up to 6 channel (440 Mbps) , up to 12 channel (880 Mbps)	
Quantization		24 bits			
Wow & flutter		Below measurable level			
Headroom		20/18/16/15/12/9 dB selectable			
Analog Audio Output Performance					
Quantization		24 bits			
Frequency response		20 Hz to 20 kHz, +0.5 dB/-1.0 dB (0 dB at 1 kHz)			
Dynamic range		More than 100 dB			
Distortion		Less than 0.05% (at 1 kHz)			
Crosstalk		Less than -80 dB (at 1 kHz)			

*1: 1/2 when double-data-rate recording/playback (880 Mbps).
*2: Planned to be available in the first half of 2011.

Specifications

	SRW-5000	SRW-5500	SRW-5800	SRW-5100
Inputs/Outputs				
HD-SDI input	A: BNC (x2) (including loop through), SMPTE 292M/SMPTE 372M/BTA S-004/ITU-R.BT 709 B: BNC (x2) (including loop through), SMPTE 292M/SMPTE 372M/BTA S-004/ITU-R.BT 709		A: BNC (x2) (including loop through), SMPTE 292M/SMPTE 372M/ SMPTE 424M/BTA S-004/ITU-R.BT 709 B: BNC (x2) (including loop through), SMPTE 292M/SMPTE 372M/ SMPTE 424M*2/BTA S-004/ITU-R.BT 709	–
Reference input	1: BNC (x2) (including loop through), HD Tri-level sync (0.6 Vp-p/75 Ω/negative) or SD blackburst/composite sync (NTSC: 0.286 Vp-p, PAL: 0.3 Vp-p/75 Ω/negative) 2: (Option: HKSR-5001), BNC (x2) (including loop through), HD Tri-level sync (0.6 Vp-p/75 Ω/negative) or SD blackburst/composite sync (NTSC: 0.286 Vp-p, PAL: 0.3 Vp-p/75 Ω/negative)			
Digital audio input (AES/EBU)	BNC (x6), 12 ch (2 ch each, 1/2 ch, 3/4 ch, 5/6 ch, 7/8 ch, 9/10 ch, 11/12 ch), AES-3id-1995			–
Analog audio input (Cue)	–	XLR 3-pin (female) (x1), HDCAM recording only	–	–
Time code input	XLR 3-pin (female) (x1), 0.5 to 18 Vp-p/10 kΩ/balanced			–
AUX input	–	–	(Option: HKSR-5804): A: BNC (x1), SMPTE 292M/SMPTE 372M/ ARIB S004B B: BNC (x1), SMPTE 292M/SMPTE 372M/ ARIB S004B	–
HD-SDI output	A: BNC (x3), 1 & 2: SMPTE 292M/SMPTE 372M/BTA S004/ITU-R.BT 709 3: character on/off, SMPTE 292M/SMPTE 372M/BTA S004/ITU-R.BT 709 B: BNC (x3), 1 & 2: SMPTE 292M/SMPTE 372M/BTA S004/ITU-R.BT 709 3: character on/off, SMPTE 292M/SMPTE 372M/BTA S004/ITU-R.BT 709		A: BNC (x3), 1 & 2: SMPTE 292M/SMPTE 372M/ SMPTE 424M/BTA S004/ITU-R.BT 709 3: character on/off, SMPTE 292M/ SMPTE 372M/SMPTE 424M/BTA S004/ ITU-R.BT 709 B: BNC (x3), 1 & 2: SMPTE 292M/SMPTE 372M/ SMPTE 424M*2/BTA S004/ITU-R.BT 709 3: character on/off, SMPTE 292M/ SMPTE 372M/SMPTE 424M*2/BTA S004/ITU-R.BT 709	A: BNC (x3), 1 & 2: SMPTE 292M/SMPTE 372M/ SMPTE 424M/BTA S004/ITU-R.BT 709 3: character on/off, SMPTE 292M/ SMPTE 372M/SMPTE 424M/BTA S004/ ITU-R.BT 709 B: BNC (x3), 1 & 2: SMPTE 292M/SMPTE 372M/ SMPTE 424M*2/BTA S004/ITU-R.BT 709 3: character on/off, SMPTE 292M/ SMPTE 372M/SMPTE 424M*2/BTA S004/ITU-R.BT 709
Format converter output	(Option: HKSR-5001): A: BNC (x2), character on/off, SMPTE 292M/SMPTE 372M/BTA S-004/ITU-R.BT 709 B: BNC (x2), character on/off, SMPTE 292M/SMPTE 372M/BTA S-004/ITU-R.BT 709		(Option: HKSR-5001): A: BNC (x2), character on/off, SMPTE 292M/SMPTE 372M/ SMPTE 424M/BTA S-004/ITU-R.BT 709 B: BNC (x2), character on/off, SMPTE 292M/SMPTE 372M/BTA S-004/ITU-R.BT 709	
SD-SDI output	BNC (x3), 1& 2: SMPTE 259M 3: character on/off, SMPTE 259M			
Analog composite output	BNC (x1), 1.0 Vp-p/75 Ω/negative SMPTE 170M, character on/off or 0.286 Vp-p/75 Ω/negative blackburst			
Reference output	1125 Sync: BNC (x2), Tri Level sync 0.6 Vp-p/75 Ω/negative			
Digital audio output (AES/EBU)	BNC (x6), 12 ch (2 ch each, 1/2 ch, 3/4 ch, 5/6 ch, 7/8 ch, 9/10 ch, 11/12 ch), AES-3id-1995			
Analog audio output	XLR 3-pin (male) (x4), +4 dBm, 600 Ω, Lo-z, balanced		–	
Analog audio output (Cue)	XLR 3-pin (male) (x1), +4 dBm, 600 Ω, Lo-Z, balanced, HDCAM/Digital BETACAM playback only.			
Analog audio monitor	XLR 3-pin (x2), L/R, +4 dBm, 600 Ω, Lo-Z, balanced			
Time code output	XLR 3-pin (male) (x1), 2.2 Vp-p, Lo-Z, balanced			
Headphone output	JM-60 stereo phone jack (x1), -∞ to 12 dBu, 8 Ω, unbalanced			
AUX output	–		(Option: HKSR-5804): A: BNC (x1), SMPTE 292M/SMPTE 372M/ ARIB S004B/SMPTE 424M B: BNC (x1), SMPTE 292M/SMPTE 372M/ ARIB S004B	–
i.LINK	–			(Option: HKSR-5105): IEEE1394 6-pin (x1), HDV1080i output
HDMI	–			(Option: HKSR-5105): (x1), output
Remote (9P) input	D-sub 9-pin (female) (x1), RS-422A			
Remote (9P) input/output	D-sub 9-pin (female) (x1), RS-422A			
Video control	D-sub 9-pin (female) (x1), EIA RS-423			
Parallel remote	D-sub 50-pin (female) (x1)			
Ethernet	RJ-45 (x1), 10Base-T: IEEE802.3		RJ-45 (x1), 10Base-T: IEEE802.3 (Option: HKSR-5804): RJ-45 (x1), 1000Base-T: IEEE802.3ab	RJ-45 (x1), 100Base-TX: IEEE802.3u 10Base-T: IEEE802.3
RS-232C	D-sub 9-pin (male) (x1), factory use		–	
USB	(x1), factory use		–	
Supplied Accessories				
	Operation manual (1), installation manual (1)			

*1: 1/2 when double-data-rate recording/playback (880 Mbps).
*2: Planned to be available in the first half of 2011.

Distributed by

MK10030V6OHB10MAR

The SRW-5800, SRW-5500, SRW-5000, and SRW-5100 are produced at Sony EMCS Corporation Kosai Tec, which has received ISO14001 the Environmental Management System certification.

ISO 14001 BUREAU VERITAS Certification