

# SONY®

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CINE ALTA™

**HDCAM SR**™



HD Digital Video Cassette Recorder

**SRW-5800**

Preliminary

# A New, Great Addition to the Sony HDCAM-SR Studio

Sony HDCAM-SR™ VTRs – the RGB 4:4:4 full-bandwidth high-definition VTRs at the top of the Sony HD VTR lineup – have been well received, especially in movie-making, commercial productions, and high-end television production applications, due to their unprecedented picture quality and system functionalities.

As HD-based program origination has become more commonplace, demand has steadily escalated for increased levels of quality criteria: even more video bit rates, higher frame rates, and greater format flexibility.

Reflecting these new criteria, Sony has announced a new HDCAM-SR studio recorder, the SRW-5800, capable of recording at an amazingly high video bit rate of 880 Mb/s. The new SRW-5800 HDCAM-SR Studio Recorder is equipped with the same key features\* as the SRW-5500 and SRW-5000 recorders in the series, but exclusively provides the outstanding capability of 1080/60P and 50P recording through the use of 880 Mb/s data. The 1080/60P and 50P recording system is equally ideal for origination of progressive-based programs, 720P programs, and high-quality slow-motion programs.

With the support of an extensive range of signal formats, including 1080/60P and 50P, plus outstanding system versatility and reliability, the SRW-5800 HDCAM-SR Studio Recorder should be the universal choice for high-end content creation today and in the future.

\*Key features available on each model of the HDCAM-SR lineup are as follows:

		Recording Format	Playback Format	Double-speed Recording
Studio Recorder	SRW-5800	HDCAM-SR	HDCAM-SR, HDCAM, Digital Betacam	Yes
	SRW-5500	HDCAM-SR, HDCAM	HDCAM-SR, HDCAM, Digital Betacam	No
	SRW-5000	HDCAM-SR	HDCAM-SR, HDCAM, Digital Betacam	No
Portable Recorder	SRW-1	HDCAM-SR	HDCAM-SR	Yes

- Pre-read editing and audio cross-fade function are not available on the SRW-5800.

## Features

### HDCAM-SR Format – For Exceptionally High Picture Quality Recording

The SRW-5800 recorder adopts the HDCAM-SR format, which records 1920 x 1080 resolution high-definition signals using the MPEG-4 Studio Profile compression scheme with a very mild compression ratio of 2.7:1 (4:2:2)/4:1 (4:4:4) and 10-bit color depth. It enables both full-bandwidth 4:4:4 RGB and high-quality 4:2:2 Y/Cb/Cr recording, delivering optimal picture performance to suit many different production requirements.

### Double-speed Recording For 1080/60P and 50P Mode and HQ Mode

The SRW-5800 recorder provides its recording capability at a high data rate of 880 Mb/s, which was only previously available on the SRW-1 HDCAM-SR Portable VTR. With this high bit rate of 880 Mb/s, high-quality recording is available in two different recording modes: 4:2:2/1080/60P and 50P mode, and 4:4:4 High Quality (HQ) 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. It also offers exceptional picture performance when converting material originated in 1080/60P or 50P format to 720P format, due to its 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.

The 4:4:4 High Quality (HQ) mode enables 880 Mb/s 4:4:4 RGB recording with a milder compression ratio of 2:1. This achieves much greater picture quality compared with recording at 440 Mb/s. This is ideal when highest possible image quality is the top priority.

System Format		Recording mode	
Signal Format	Frame Rate	Standard	Double-speed
1080	4:2:2	60/59.94/50	○
		30/29.97/25/24/23.98	○
	4:4:4 HQ	30/29.97/25/24/23.98	○
	4:4:4 SQ	30/29.97/25/24/23.98	○
720	4:2:2	59.94/50	○



# VTR Lineup – the SRW-5800

## Twice-speed Material Transfer

The SRW-5800 allows 4:2:2 material to be transferred to servers and nonlinear editing systems at twice the normal speed using a standard Dual-link HD-SDI interface. This is achieved by playing back tapes at 880 Mb/s (double the normal 440 Mb/s speed) and transferring the data using two linked HD-SDI cables. This capability can greatly reduce the time required for material transfer.

## Multiple Frame Rates

With the SRW-5800, the entire range of both interlace and progressive frame rates are available, ranging from 24-frame progressive imaging, to 60-frame interlace for high-end HDTV production applications. This includes 60P, 59.94P, 50P, 60i, 59.94i, 50i, 30PsF, 29.94PsF, 25PsF, 24PsF, and 23.98PsF.

## 720P Recording Capability

The SRW-5800 recorder can also record in 720/59.94P or 720/50P formats, meeting different needs for DTV programming and transmission.

## 12-channel Independently-editable Audio

The SRW-5800 recorder offers up to 12 channels of 24-bit audio at 48 kHz in both 1080- and 720-line recordings, to meet the most demanding audio recording requirements in digital content mastering.

The SRW-5800 can also record non-audio data streams within the audio recording area by packaging this data within an AES/EBU wrapper.

Furthermore, the SRW-5800 can accept AES/EBU data with 44.1, 32-kHz audio, or unsynchronized with video in audio tracks.

## Legacy Playback Capability

The SRW-5800 recorder can play back HDCAM™ and Digital Betacam™ format tapes for more flexible operations.

## Internal Format Conversion

The SRW-5800 is equipped with a powerful internal format converter that enables many different types of conversion such as 3-2 pull-down, up-conversion, down-conversion, cross-conversion, color-space conversion, and P-to-i conversion. This powerful built-in converter makes the SRW-5800 very versatile in post-production.



Front Panel



Rear Panel

## Easy Management of Setup/System Menus

The SRW-5800 offers a highly effective way to manage its System Menu. Up to eight groups of parameters in the System Menu and Setup Menu can be individually saved as bank memory onto the internal memory of the VTR. They can also be saved onto Memory Stick™ media, enabling them to be copied onto other SRW-5800 VTRs for quick and consistent setup of multiple VTRs.

Furthermore, equipped with an Ethernet interface, the SRW-5800 allows operators to remotely view the setup parameters saved in the VTR's memory bank, and to select a bank they want to use through a PC.

## Other Features

- Long recording time: up to 155 minutes on BCT-124SRL cassette
- Frame-accurate insert/assemble editing
- Digital jog sound
- Confidence playback
- Large 6.4-inch type\* color LCD that displays both playback pictures and various information such as timecode, audio level meters, and operational menus
- Audio output channel exchange
- Dual-sync feature for pull-down operation
- Off-speed playback capability
- Selectable picture modes: SQUEEZE, LETTER BOX, and EDGE CLOP

\* Viewable area measured diagonally

# SRW-5800 Specifications

General	
Power requirements	100 to 240 V AC (50/60 Hz)
Operating temperature	+5 °C to +40 °C (+41 °F to +104 °F)
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)
Operating humidity	25% to 80% (relative humidity)
Dimensions (W x H x D excluding protrusions)	427 x 218 x 544 mm (16 3/4 x 8 5/8 x 21 1/2 inches)
Tape speed	HDCAM-SR: 94.2 mm/s (24 Hz) HDCAM: 77.4 mm/s (24 Hz) Digital Betacam: 96.7 mm/s
HDCAM-SR recording/playback time	155 min with BCT-124SRL cassette (24 Hz)
HDCAM playback time	155 min with BCT-124HDL cassette (24 Hz)
Digital Betacam playback time	124 minutes with BCT-D124L tape
Fast-forward/rewind time	Approx. 4 min with BCT-124SRL cassette
Search speed range	
Shuttle mode	HDCAM-SR: Still to ±50 times normal playback speed (24 Hz) HDCAM: Still to ±60 times normal playback speed (24 Hz) Digital Betacam: Still to ±50 times normal playback speed
Variable mode	HDCAM-SR: -0.5 to 1 times normal playback speed HDCAM: -1 to 2 times normal playback speed Digital Betacam: -1 to 3 times normal playback speed

Input/Output	
HD-SDI input A	BNC (1 + 1 for monitoring loop-through)
HD-SDI input B	BNC (1 + 1 for monitoring loop-through)
HD/SD reference video input 1	BNC (1 + 1 for loop-through), Tri Level sync
HD/SD reference video input 2	BNC (1 + 1 for loop-through), Tri Level sync
Digital audio input	BNC (x6, AES/EBU)

(CH1/2, CH3/4, CH5/6, CH7/8, CH9/10, CH11/12)

Input/Output	
Timecode input	XLR-3-pin type, (female x1)
HD-SDI output A	BNC (2 + 1, with character out)
HD-SDI output B	BNC (2 + 1, with character out)
Format converter output A	BNC (x2, with character out)
Format converter output B	BNC (x2, with character out)
SD-SDI D1 output	BNC (2 + 1 with character out)
Analog composite output	BNC (x1, with character out)
Analog SD reference output	BNC (x1), Black Burst
Analog HD reference output	1125 Sync: BNC (x2), Tri Level sync
Digital audio output	BNC (x6), AES/EBU

(CH1/2, CH3/4, CH5/6, CH7/8, CH9/10, CH11/12)

Analog audio monitor output (L/R)	XLR-3-pin type, (male x2)
Analog audio (cue) output*	XLR-3-pin type, (male x1)
Timecode output	XLR-3-pin type, (male x1)
Phones	JM-60 stereo phone jack
Remote 1 input	D-sub 9-pin, (female x1), Sony 9-pin remote interface
Remote 1 input/output	D-sub 9-pin, (female x1), Sony 9-pin remote interface
Video control	D-sub 9-pin, (female x1), (for optional HKDV-900)
Parallel remote	D-sub 50-pin, (female x1)
Ethernet	10Base-T modular jack

Digital Video Performance	
Sampling frequency	HDCAM-SR: Y: 74.25 MHz, Cb/Cr: 37.125 MHz, G/B/R: 74.25 MHz
Quantization	10 bits/sample
Compression	MPEG-4 Studio Profile

Digital Audio Performance	
Sampling frequency	48 kHz (synchronized with video)
Quantization	24 bits/sample

\*HDCAM and Digital Betacam playback only

## Internal Format Conversion (FC)

REC/PLAY TAPE FORMAT			HD-SDI OUT		SD-SDI OUT	FC OUT
HDCAM-SR	1080/4:4:4 (SQ/HQ)	23.98PsF	1080/4:4:4	23.98PsF	—	1080/4:2:2/23.98PsF
					525/59.94i	1080/4:2:2/59.94i 720/4:2:2/59.94P
		24PsF	24PsF	—	1080/4:2:2/24PsF	
				—	1080/4:2:2/60i	
		25PsF	25PsF	625/50i	1080/4:2:2/25PsF 720/4:2:2/50P	
				—	—	
		29.97PsF	29.97PsF	525/59.94i	1080/4:2:2/29.97PsF 720/4:2:2/59.94P	
				—	—	
		30PsF	30PsF	—	1080/4:2:2/30PsF	
				—	—	
		50i	50i	625/50i	1080/4:2:2/50i 720/4:2:2/50P	
				—	—	
		59.94i	59.94i	525/59.94i	1080/4:2:2/59.94i 720/4:2:2/59.94P	
				—	—	
60i	60i	—	1080/4:2:2/60i			
		—	—			
1080/4:2:2	50P	1080/4:2:2	50P	625/50i	1080/4:2:2/50i 720/4:2:2/50P	
				59.94P	525/59.94i	1080/4:2:2/59.94i 720/4:2:2/59.94P
				60P	—	1080/4:2:2/60i
720/4:2:2	50P	720/4:2:2	50P	625/50i	1080/4:2:2/50i	
				59.94P	525/59.94i	1080/4:2:2/59.94i

REC/PLAY TAPE FORMAT			HD-SDI OUT		SD-SDI OUT	FC OUT
HDCAM-SR or HDCAM	1080/4:2:2	23.98PsF	1080/4:2:2	23.98PsF	525/59.94i	1080/4:2:2/59.94i 720/4:2:2/59.94P
					—	1080/4:4:4/23.98PsF
		24PsF		24PsF	—	1080/4:2:2/60i
					—	1080/4:4:4/24PsF
		25PsF		25PsF	625/50i	720/4:2:2/50P 1080/4:4:4/25PsF
					—	—
		29.97PsF		29.97PsF	525/59.94i	720/4:2:2/59.94P 1080/4:4:4/29.97PsF
					—	—
		30PsF		30PsF	—	1080/4:4:4/30PsF
					—	—
50i	50i	625/50i	720/4:2:2/50P 1080/4:4:4/50i			
		—	—			
59.94i	59.94i	525/59.94i	720/4:2:2/59.94P 1080/4:4:4/59.94i			
		—	—			
60i	60i	—	1080/4:4:4/60i			
		—	—			
Digital Betacam	625	50i	1080/4:2:2	50i	625/50i	720/4:2:2/50P 1080/4:4:4/50i
					—	—
	525	59.94i		50P	625/50i	1080/4:2:2/50i
					525/59.94i	720/4:2:2/59.94P 1080/4:4:4/59.94i
525	59.94i	50P	59.94P	525/59.94i	1080/4:2:2/59.94i	
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