



# The ideal portal to the open MPEG world

The new MPEG IMX™ Digital Multi Player, MSW-M2100/M2100P, provides a total replay capability for your 1/2-inch standard-definition Betacam™ format family cassettes – Betacam, Betacam SP™, Betacam SX™, Digital Betacam™ – as well as MPEG IMX recordings. Equipped with an SDTI-CP\* interface as standard, material in any of these formats is output as an MPEG Elementary Stream at 50 Mb/s. From there, a wide range of MPEG products is waiting to be connected. For example, non-linear editors and servers with SDTI-CP I/O are being produced by Sony and by other leading manufactures so you have maximum freedom of choice.

The MSW-M2100/M2100P, with its exceptional playback capability, provides you with the master key that unlocks the doors to the open world of MPEG and the future of SDTV program production.

*\* SDTI-CP is defined by SMPTE 326M*





**BETACAM SP**



**BETACAM SX**

## Highlights

- All features and functions of studio editing players
- Playback of Betacam, Betacam SP, Betacam SX, Digital Betacam and MPEG IMX cassettes
- SDTI-CP output
- Optional HD Upconverter Board  
(525: 1080i/59.94 Hz or 1035i/59.94 Hz,  
625: 1080i/50 Hz)
- Compact (4U), light-weight (23 kg/50 lb 11 oz)  
and low power consumption

# Main Features of Digital Multi Player

## ■ Powerful playback capabilities

The MSW-M2100/M2100P plays back MPEG IMX tapes as well all Betacam family standard-definition tapes – Betacam, Betacam SP, Betacam SX and Digital Betacam.

This feature makes the MSW-M2100/M2100P an ideal portal for your MPEG migration, offering you total connectivity via an industry-standardized SDTI-CP interface to a full range of MPEG-based products from Sony and from other manufacturers.

## ■ MPEG bit stream data over SDTI-CP

SDTI-CP (Serial Digital Transport Interface-Content Packages) is an industry-standard interface that is defined by SMPTE 326M. With SDTI-CP, an MPEG Elementary Stream output can be openly interfaced to compatible products with no signal deterioration. There are a number of SDTI-CP equipped non-linear editors and servers available from leading manufacturers as well as Sony for the widest possible choice.

Furthermore, by adding the optional High Speed Feed Board BKMW-105, an MPEG Elementary Stream can be transferred at twice normal speed, which speeds up the digitizing process.

## ■ Future HDTV migration

An optional plug-in HD upconverter board, BKMW-104, is available to provide 1080/1035i outputs from a playback-compatible 1/2-inch format; BETACAM, BETACAM SP, BETACAM SX, and Digital BETACAM. This option enables smooth migration to future HDTV operations.

## ■ DMC

Equipped with Dynamic Motion Control, the MSW-M2100/M2100P provides slow-motion playback from its control panel or from external controllers such as Sony BVE Series editors or the DTR-3000 Slow Motion Controller.

## ■ 525/60, 625/50 switchable operation

The MSW-M2100/M2100P provides 525/625 switchable operation for all playback-compatible 1/2-inch formats.

*For playback of 625-line Betacam and Betacam SP tape in 525 machines and vice versa, the video outputs are for monitoring purposes only.*

## ■ Audio Jog Sound

Complete reproduction of eight channels (four channels when playing back Digital Betacam and Betacam SX) of digital audio is maintained from normal play speed forward to normal play speed in reverse, even in Jog mode. This feature is helpful in quickly and precisely establishing an editing point while monitoring the digital audio signals, which remain in absolute sync with the pictures.

## ■ Shot Mark handling

The MSW-M2100/M2100P can scan tapes with Shot Marks and automatically detect their positions. After scanning, a list of all the marks can be displayed on a monitor, allowing easy cueing to any mark.

## ■ Content Information Management (Tele-File™ System and JZ-1 Videocassette Logging Software)

The Tele-File system is a non-contact read/write system for storing production-related data on an IC memory embedded in a 1/2-inch cassette label. This system allows operators to efficiently manage cassette content information such as Shot Marks, scene numbers, and cassette numbers. MSW-M2100/M2100P players are equipped with a built-in reader/writer module, enabling data to be read from and written to Tele-File labels (option: MLB-1M-100) within the VTR. This system is especially useful for managing cue-up points, which increases the efficiency of locating editing points in subsequent operations. For further enhanced Tele-File system operations, JZ-1 Videocassette Logging Software provides an easy-to-use GUI environment for creating edit logs as well as facilitating the creation of content-related Tele-File data. This is available by connecting a PC\* running the JZ-1 software to the MSW-M2100/M2100P.

*\*An appropriate video capture card must be installed in the PC.*



**BETACAM SP**



**BETACAM SX**

# Functions of Digital Multi Player

## ■ High-speed color picture search

(B/W for Betacam SP and Betacam tapes)

The MSW-M2100/M2100P offers high-speed shuttle search:

- Digital Betacam tape: ±50 times
- MPEG IMX tape: ±78 times
- Betacam SX tape: ±78 times
- Betacam SP tape: ±35 (525)/±42 (625)times
- Betacam tape: ±35 (525)/±42 (625)times

Figures are relative to normal play speed.

## ■ Variable speed control

- Digital Betacam tape: -1 to +3 times
- MPEG IMX tape: -1 to +3 times
- Betacam SX tape: -1 to +2 times
- Betacam SP tape: -1 to +3 times
- Betacam tape: -1 to +3 times

With noiseless image and digital jog sound.

Figures are relative to normal play speed.

## ■ Versatile interfaces

### Standard

- Analog composite output
- Analog component output
- SDI output
- SDTI-CP output
- Analog audio (4 ch)
- AES/EBU audio (16-bit – 8 ch/24-bit – 4 ch)
- Audio monitor (2 ch)

### Option

- HD-SDI output  
(requires the optional BKMW-104)

## ■ Remote interfaces

- RS-422A (Sony 9-pin Remote)
- RS-232C
- Parallel 50-pin (standard)

## ■ Optional accessories

- Remote control panel (BKMW-101)
- Remote control unit (BKMW-102)
- Control panel extension kit (BKMW-103)
- HD Upconverter Board (BKMW-104)
- High-speed Feed Board (BKMW-105)
- Remote cable (RCC-5G)
- Rack-mount kit (RMM-131)
- Maintenance manual
- Memory Label for Tele-File System (MLB-1M-100)
- Videocassette Logging Software for Tele-File System (JZ-1)



BKMW-101 w/BKMW-102



# Specifications

MSW-M2100/M2100P			
General	Power requirements	AC 100 V to 240 V, 50/60 Hz	
	Power consumption	2A (200 W)/AC 240 V	
	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	20% to 90% (relative humidity)	
	Mass	23.0 kg (50 lb 11 oz)	
	Dimensions (W x H x D)	427 x 174 x 544 mm (16 7/8 x 6 7/8 x 21 1/2 inches)	
	Tape speed	MPEG IMX	64.467(525)/53.776(625) mm/s
		Digital Betacam	96.7 mm/s
		Betacam SX	59.515 (525)/59.575 (625) mm/s
		Betacam/Betacam SP	118.6 (525)/101.51 (625) mm/s
	Playback time (MPEG IMX)	Max. 184 (525)/220 (625) min with BCT-184MXL cassette	
	Fast forward/rewind time	Approx. 3.5 min with BCT-184MXL cassette	
	Search speed range	MPEG IMX	±78 times normal playback speed
Digital Betacam		±50 times normal playback speed	
Betacam SX		±78 times normal playback speed	
Betacam/Betacam SP		±35 (525)/±42 (625) times normal playback speed	
Servo lock time	0.5 (525)/0.7 (625) s or less (from standby on)		
Load/unload time	6 sec or less		
Output signals	Analog composite output	BNC (x3, including one character out), 1.0 Vp-p, 75 Ω, sync negative	
	Analog component output	BNC (x3, for 1 set, Y/R-Y/B-Y), Y: 1.0 Vp-p, 75 Ω, sync negative, R-Y/B-Y: 0.7 Vp-p, 75 Ω	
	SDI output	BNC (x3, including one character out), SMPTE 259M (ITU-R BT.656-3), 270 Mb/s	
	SDTI-CP output	BNC (x2), SMPTE 326M (SDTI-CP)	
	Analog audio output	XLR (x4) (4CH: channel selectable)	
	Cue audio output	XLR (x1) (only Digital Betacam playback)	
	Digital audio output (CH 1/2, 3/4, 5/6, 7/8), AES/EBU	BNC (x4), 48 kHz fixed, Complies with AES-3id-1995	
	Remote control	Remote (RS-422A)	D-sub 9-pin (x2), Sony 9-pin remote interface
		RS-232C (ISR*)	D-sub 9-pin (x1), RS-232C interface
		Parallel Remote	D-sub 50-pin (x1)
		Video control (1)	D-sub 15-pin (x1)
	Control Panel	Circular Connector 10-pin	
	Time code output	XLR (x1)	
Memory card insertion slot	PCMCIA (x1)		
Monitor output L/R	XLR (x2) (channel selectable)		
Phones	JM-60 Stereo phone jack		
Processor adjustment range	Video level	±3 dB/ -∞ to 3 dB selectable	
	Chroma level	±3 dB/ -∞ to 3 dB selectable	
	Set up/Black level	±30 IRE/±210 mV	
	Chroma phase/hue	±30°	
	System sync phase	±15 μs	
	System SC phase	±200 ns	
	Y/C delay	±100 ns (Betacam/Betacam SP playback only)	
Digital video performance	Sampling frequency	Y: 13.5 MHz, R-Y/B-Y: 6.75 MHz	
	Quantization	MPEG IMX/Betacam SX: 8 bits/sample    Digital Betacam: 10 bits/sample	
	Error correction	Reed-Solomon code	
	Analog component output (Digital Betacam playback)	D/A quantization: 10 bits/sample Bandwidth: 0 to 5.75 MHz ±0.5 dB S/N ratio: 62 dB or more K-factor (2T pulse): 1% or less	
	Analog composite output (Digital Betacam playback)	D/A quantization: 10 bits/sample Bandwidth (Y): 0 to 5.75 MHz ±0.5 dB S/N ratio: 58 dB or more Differential gain: 2% or less Differential phase: 2° or less Y/C delay: 20 ns or less K-factor (2T pulse): 1% or less	
Digital audio performance	Sampling frequency	48 kHz (synchronized with video)	
	Quantization	MPEG IMX: 16 or 24 bits/sample (selectable) Betacam SX: 16 bits/sample Digital Betacam: 20 bits/sample	
	Analog output (Digital Betacam playback)	D/A quantization: 24 bits/sample Frequency response (0 dB at 1kHz): 20 Hz to 20 kHz +0.5 dB/-1.0 dB Dynamic range (at 1 kHz, emphasis ON): More than 95 dB Distortion (at 1 kHz, emphasis ON, reference level): Less than 0.05% Cross talk (at 1 kHz, between any two channels): Less than -80 dB Wow & flutter: Below measurable level	
	Head room	20 dB (18 dB selectable)	
Supplied accessories	PSW 4x16 Rack Mount Screw	x4	
	Operation manual	x1	
	Installation manual	x1	

\*ISR: Interactive Status Reporting

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