A New Dimension in Industrial Video Performance

The excellent performance of the Betacam SP™ format has led to its universal adoption as a high quality, flexible, recording standard throughout the broadcast and post production industries. This market performance, combined with the recording quality of the format, has made Betacam SP particularly attractive for use by corporate and institutional videographers. To meet this requirement, the long experience of Sony in the field of video recording and its commitment to continuous product development have led to the creation of a more affordable Betacam SP system – the Betacam SP 2000 PRO series.

The PVW-2800 Recorder/Player is one of the major products in this range. Inheriting the advanced performance of the Betacam SP format, the PVW-2800 assures maximum compatibility with BVW series Betacam SP products and a wide range of their peripheral equipment.

It is equipped with a built-in Time Base Corrector and Time Code Generator/Reader. In addition to composite and component video inputs and outputs, it offers S-video In/Out connectors, an RS-422A control port and an optional U-matic Dub Out capability. This comprehensive interfacing makes the PVW-2800 easy to integrate into current editing systems.

Together with the PVW-2800, Sony now has the PVW-2600 Player and the PVW-1/DXC-537 Camcorder to form the versatile Betacam SP 2000 PRO family.

Featuring the highest levels of professional performance, ease of operation, flexibility and reliability, they offer an easy and economical way to upgrade your current systems.
Superior Picture Quality
The adoption of the world standard Betacam SP recording format results in the superior picture quality of the PVW-2800. This format uses the component recording, in which the chrominance signals (R-Y, B-Y) are time compressed and recorded on one track, using the CTDM (Compressed Time Division Multiplex) system originally developed by Sony, while the luminance (Y) signal is recorded on a separate track. Therefore cross color and cross luminance effects do not exist in this system. This component two-track recording technology is combined with high frequency FM carriers for each track, providing very wide bandwidths for both the luminance and chrominance signals. Thus pictures with detailed luminance and chrominance information can be reproduced. These characteristics create the excellent multi-generation picture performance of the Betacam SP format.

In order to obtain the maximum performance of the Betacam SP format, the PVW-2800 uses metal particle tapes exclusively for recording. Of course, it can play back both metal and oxide tapes and assures the two-way playback compatibility with BVW series Betacam SP VTRs.

High Audio Quality
The PVW-2800 provides two longitudinal audio channels. Thanks to the tape speed of the format and the adoption of the proven Dolby™ C-type NR (Noise Reduction), the PVW-2800 offers high quality audio with a wide dynamic range even at high frequencies, minimum distortion and excellent S/N ratio.

Longer Operating Time
The PVW-2800 accepts both L-size and S-size cassettes, giving operating times of over 90 minutes and over 30 minutes respectively.

Both grades of Sony Betacam SP videocassettes, the BCT series and the SBT series, can be used in the PVW-2800. For the highest possible performance, the BCT series is recommended.

Compact and Lightweight
Compactness and light weight are key factors designed into the PVW-2800, which weighs approximately 25kg (55 lb 2 oz), and is 5 units high (19-inch rack mountable). The power consumption is 150 W.
**VTR to VTR Comprehensive Editing Facility**

The PVW-2800 provides a comprehensive, built-in VTR to VTR editing facility.

In addition to the insert and assemble edit functions which are equipped with auto preview/preview, the PVW-2800 also provides an audio split editing capability with independent IN and OUT memories. The PVW-2800 meets the requirements of a modern editing system, having frame-by-frame editing point trim, selectable pre-roll time and auto edit in/out functions, delivering frame accurate editing without any additional control hardware.

Thanks to the DMC (Dynamic Motion Control) editing function, the PVW-2800 can perform slow motion editing when a DT™ equipped VTR such as the BVW-65 or BVW-75 with RS-422A communication is used as the player VTR.

**Built-in Time Base Corrector**

The PVW-2800 is provided with a built-in TBC (Time Base Corrector) as standard. A superior quality output video is obtained directly from the PVW-2800, with no additional time base correction required. Advanced high quality digital dropout compensation also ensures consistent picture performance.

**TBC Remote Control**

In addition to the built-in TBC adjustment of the PVW-2800, remote adjustments may be performed using the optional BVR-50 connected via the D-sub 15-pin cable to the rear panel connector (TBC REMOTE).

**Built-in Time Code Generator/Reader**

The generation and reading of both VITC (Vertical Interval Time Code) and LTC (Longitudinal Time Code) to the SMPTE format, together with user bits, come as standard in the PVW-2800. LTC can be automatically recorded on the dedicated time code track. Time code or user bits settings can be easily executed using the HOLD/SET button and the search dial located on the control panel. External/Internal time code, REGEN/PRESET, or REC-RUN/FREE-RUN selections are available on the subcontrol panel.

**Character Display**

The PVW-2800 is provided with a built-in character generator and characters can be superimposed on the signals from Video Output 3 or the Monitor Output. It displays time code generator/reader data (VITC/LTC/U-BIT) and CTL timer data. VTR function status, including shuttle tape speed, can also be displayed by accessing the setup menu. Furthermore, error number and status can be automatically displayed when the error is detected. Character display is On/Off switchable from the subcontrol panel. When the PVW-2800 is operated under the setup menu mode, the initial setup menu is automatically displayed from the character generator.

**High Speed Picture Search**

By using the search dial incorporated in the PVW-2800, picture search can be made at various speeds over a range of up to 24 times normal speed in forward and reverse. A recognizable color picture can be obtained at up to ten times (24 times in monochrome) normal speed in forward and reverse. In the jog mode, tape movement accurately follows the rotation of the search dial in both directions.

**Versatile System Interface**

- **RS-422A serial interface (9-pin)**
  An RS-422A serial interface is provided for versatile editing system expansion and flexible system control. The PVW-2800 will interface with other RS-422A equipped Sony machines.

- **Y/R-Y/B-Y Component Video Signal Input/Output**
  The PVW-2800 provides two types of connectors for both Y/R-Y/B-Y component signal input and output: two sets of three BNC connectors or a Betacam 12-pin DUB connector. This component signal interface facility allows full advantage to be taken of the superb performance of the Betacam SP format.

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**Subcontrol Panel**

![Subcontrol Panel Image](image-url)
• **Composite Video Signal Input/Output**
  In addition to the component connectors, the PVW-2800 is equipped with the composite video signal input/output connectors. The PVW-2800 employs new digital LSIs for video signal processing, including Y/C separation and decoding, so that the composite video input signals can be decoded faithfully.

• **U-matic DUB Signal Output**
  With the optional BKW-2020 U-matic DUB Out Kit installed, the PVW-2800 can transfer Betacam SP material to a U-matic VTR through its 7-pin U-matic DUB output connector with minimum picture degradation. This transfer is made without being affected by the performance of the Y/C separator in the U-matic VTR.

• **S-video Signal Input/Output**
  S-video signal input/output connectors are also provided so that other equipment with S-video connectors can easily be interfaced to the PVW-2800.

**Improved Serviceability**
For easy maintenance and servicing, the PVW-2800 is provided with comprehensive self-diagnostics. A digital hour meter is also fitted to indicate the accumulated times of power on, drum rotation and tape running. It can also display the number of threading/unthreading operations.

**Detachable Control Panel**
The control panel of the PVW-2800 can be tilted at up to 90 degrees. Alternatively, the control panel can be removed from the machine to provide remote control from a distance of up to 5m by using the optional BKW-2010 Control Panel Extension Kit and BK-803 Control Panel Case.

**19-inch EIA Standard Rack Mountable**
With the optional RM-100, the PVW-2800 can be mounted into a 19-inch EIA standard rack without taking off the side panel.
OPTIONAL ACCESSORIES

BVR-50
TBC Remote Controller

BVX-10
Component Color Corrector

BKW-2010
Control Panel Extension Kit

BKW-2020
U-matic DUB Output Kit

BK-803
Control Panel Case

RMM-100
Rack Mount Kit

BCT-5M/10M/20M/30M
(Small Cassette)
BCT-5ML/10ML/20ML/30ML/60ML/90ML
(Large Cassette)
Metal Particle Videocassette Tapes

SBT-10M/20M/30M
(Small Cassette)
SBT-60ML/90ML
(Large Cassette)
Metal Particle Videocassette Tapes

RCC-5G/10G/30G
(5m)(10m)(30m)
Remote Control Cable

VDC-C5 (5m)
12-pin Dubbing Cable
1) VTR to VTR Editing System

2) A/B Roll Composite Editing System

3) A/B Roll Component Editing System
### Specifications

#### General

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power requirements</td>
<td>AC 90 to 265V, 48 to 64Hz</td>
</tr>
<tr>
<td>Power consumption</td>
<td>150W</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>5°C to 40°C (41°F to 104°F)</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-20°C to 60°C (-4°F to 140°F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>Less than 80% (relative humidity)</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 25 kg (55 lb 2 oz)</td>
</tr>
<tr>
<td>Tape speed</td>
<td>11.86 cm/sec</td>
</tr>
<tr>
<td>Recording/playback time</td>
<td>More than 90 min. with BCT-90ML</td>
</tr>
<tr>
<td>Fast forward time</td>
<td>More than 30 min. with BCT-30M</td>
</tr>
<tr>
<td>Rewind time</td>
<td>Less than 3 min. with BCT-90ML</td>
</tr>
<tr>
<td>Search speed</td>
<td>19 steps, still to 24 times normal speed, forward and reverse</td>
</tr>
<tr>
<td>SHUTTLE</td>
<td>Frame by frame, forward and reverse</td>
</tr>
<tr>
<td>JOG</td>
<td></td>
</tr>
</tbody>
</table>

#### Video performance

<table>
<thead>
<tr>
<th>Performance Type</th>
<th>Metal Particle Tape</th>
<th>Oxide Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bandwidth</td>
<td>Luminance (50% modulation)</td>
<td>30Hz to 4.5MHz +1.0dB</td>
</tr>
<tr>
<td>Color difference</td>
<td>Luminance (50% modulation)</td>
<td>30Hz to 1.5MHz +1.0dB</td>
</tr>
<tr>
<td>S/N ratio</td>
<td>Luminance (Component IN/OUT)</td>
<td>More than 51dB</td>
</tr>
<tr>
<td>AM/PIM</td>
<td>More than 53dB</td>
<td>More than 50dB</td>
</tr>
<tr>
<td>Differential gain</td>
<td>Less than 3%</td>
<td>Less than 3%</td>
</tr>
<tr>
<td>Differential phase</td>
<td>Less than 3°</td>
<td>Less than 3°</td>
</tr>
<tr>
<td>K-factor (2T pulse)</td>
<td>Less than 2%</td>
<td>Less than 3%</td>
</tr>
<tr>
<td>Y/C delay</td>
<td>Less than 20 nsec.</td>
<td>Less than 20 nsec.</td>
</tr>
</tbody>
</table>

#### Audio performance

<table>
<thead>
<tr>
<th>Performance Type</th>
<th>Metal Particle Tape</th>
<th>Oxide Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency response</td>
<td>50Hz to 15kHz +1.0dB</td>
<td>50Hz to 15kHz +1.0dB</td>
</tr>
<tr>
<td>S/N ratio</td>
<td>(at 3% distortion level)</td>
<td>More than 72dB</td>
</tr>
<tr>
<td>Distortion T.H.D.</td>
<td>(at 1 kHz reference level)</td>
<td>Less than 1%</td>
</tr>
<tr>
<td>Wow and flutter</td>
<td>Less than 0.1% rms</td>
<td>Less than 0.1% rms</td>
</tr>
</tbody>
</table>

#### Signal outputs

- **VIDEO OUT 1 (BNC)**: Composite video, 1.0Vp-p, 75 ohms, sync negative
- **VIDEO OUT 2 (BNC)**: Composite video, 1.0Vp-p, 75 ohms, sync negative
- **VIDEO OUT 3 (BNC)**: Composite video, 1.0Vp-p, 75 ohms, sync negative, with or without character insertion
- **COMPONENT OUT 1 (12-pin male)**: Luminance 1.0Vp-p, 75 ohms, sync negative
  - Color difference: R-Y: 0.7Vp-p, 75 ohms, B-Y: 0.7Vp-p, 75 ohms
- **COMPONENT OUT 2 (BNC x 3)**: Luminance 1.0Vp-p, 75 ohms, sync negative
  - Color difference: R-Y: 0.7Vp-p, 75 ohms, B-Y: 0.7Vp-p, 75 ohms
- **AUDIO LINE OUT (XLR 3-pin male)**
  - CH1/2: +4dBu, 600 ohms, balanced
- **AUDIO MONITOR OUT (XLR 3-pin male)**
  - CH1/2: +4dBu, 600 ohms, balanced
- **U-matic DUB OUT**
  - (with an optional BKW-2020) Y: 1.7Vp-p, 51 ohms, C: 0.9Vp-p, 51 ohms
  - S-video OUT Y: 1.0Vp-p, 75 ohms, C: 0.286Vp-p (burst), 75 ohms
- **TIME CODE OUT (BNC)**: 1.2Vp-p, 75 ohms

#### Others

- **REMOTE IN/OUT**: 9-pin, female
- **TBC REMOTE**: 15-pin, male
- **MONITOR**: 8-pin, female
- **HEADPHONES**: JM-80 headphone stereo jack

#### Processor adjustment range

- Video level: ±3 dB
- Chroma level: ±3 dB
- Setup level: 0 to +15 IRE
- Hue: ±15°
- System SC phase: 360°±p-p
- System sync phase: +3 to -1 μsec.
- Y/C delay: ±50 nsec.

#### Supplied accessories

- AC power cord (1)
- Remote control cable RCC-5G (9-pin, 1)
- Operation manual (1)

#### Dimensions

![Image of the dimensions](image-url)

*The specifications of "video/audio performance oxide tape" were measured by playing back material on a standard PWW-2800 that had been recorded on a standard B/W series Betacam SP VTR.

Unit: mm (inches)

* 0dBu = 0.775 Vrms

Design and specifications subject to change without notice.

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