SONY®

BETACAM SP ™

Editing Player
UVW-1600

VIDEOCASSETTE PLAYER UVW-1600

Betacam SP®
The Universal Choice

Soon after its introduction, the Betacam SP format quickly established itself as the preferred format for analog component recording in the broadcast and production industry. The wide spread acceptance of this format has been proven by the tremendous amount of Betacam® VTRs used for ENG (Electronic News Gathering), post production and on-air transmission around the world. Today the demand for component recording quality has greatly increased in both the industrial and professional video markets. In response, Sony successfully launched the PVW series VTRs in 1991 introducing the benefits of the Betacam SP format to these markets.

Now, to offer the superiority of this format to an even wider range of users, Sony introduces the UVW-1600 and its companion models which form the UVW series VTRs.
The UVW-1600 is an editing player equipped with a 9-pin (RS-422A) port. A built-in TBC and TC reader are incorporated for sophisticated editing. A variety of outputs including Y/R-Y/B-Y component, Y/C as well as composite are available.
The UVW-1600 offers an easy and economical way to enter the Betacam SP format, offering superior performance, versatility and reliability.

SUPERIOR AUDIO/ VIDEO QUALITY

Superior Picture Quality of the Betacam SP Component Recording Format

The UVW series adopts the Betacam SP format, well-known for its superior picture quality thanks to the use of a component recording scheme in which information on brightness (Y) is recorded on one track while information on color (R-Y/B-Y) is recorded on another track. This is accomplished by using the Sony CTDM (Compressed Time Division Multiplex) system. The use of these two separate tracks enables the Betacam SP component format to reproduce pictures with detailed chrominance and luminance information. This also eliminates the cross color and cross luminance effects inherent in composite recording. This recording scheme also results in the Betacam SP format's superb multi-generation picture performance.
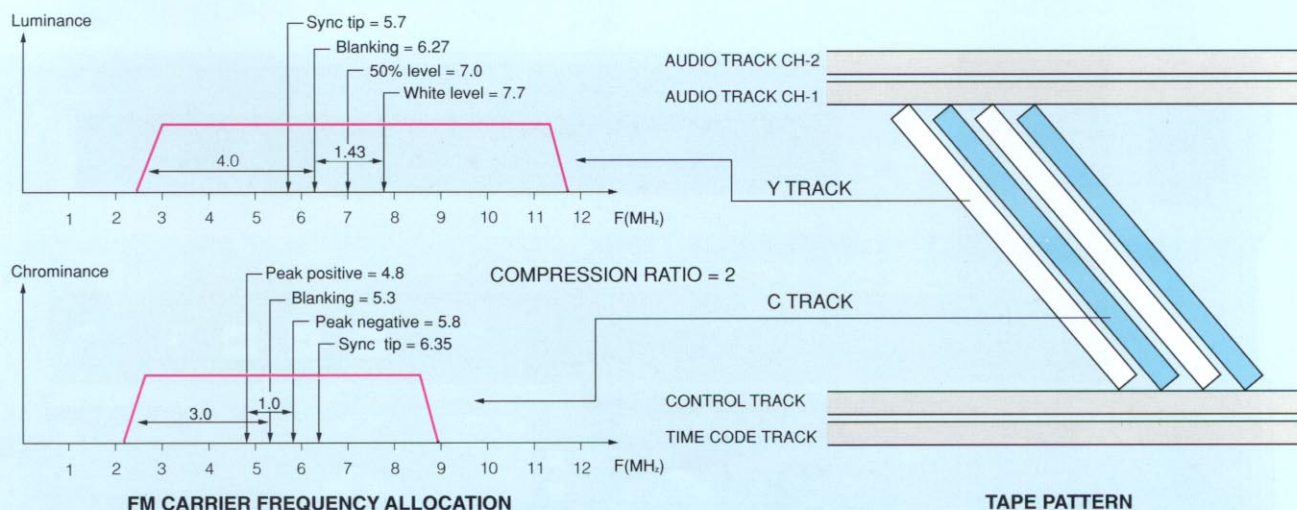
Long Operating Time

The UVW-1600 accepts both L-size and S-size cassettes, offering operating times of over 90 minutes and 30 minutes respectively. Sony UVWT series Betacam SP video cassettes are the new recommended metal tapes for use with the UVW series VTR.

High Quality Audio

The UVW-1600 provides two longitudinal audio channels. Thanks to the high tape speed (118.6 mm/s) of the format and the adoption of the proven Dolby™ C-type Noise Reduction System, the UVW-1600 offers high quality audio with a wide dynamic range even at high frequencies, minimum distortion and an excellent signal-to-noise ratio.

◆ **CTDM System of Betacam SP Format**

Luminance
- Sync tip = 5.7
- Blanking = 6.27
- 50% level = 7.0
- White level = 7.7

4.0   1.43

1 2 3 4 5 6 7 8 9 10 11 12   F(MHz)

Chrominance
- Peak positive = 4.8
- Blanking = 5.3
- Peak negative = 5.8
- Sync tip = 6.35

3.0   1.0

1 2 3 4 5 6 7 8 9 10 11 12   F(MHz)

FM CARRIER FREQUENCY ALLOCATION

AUDIO TRACK CH-2
AUDIO TRACK CH-1

Y TRACK

COMPRESSION RATIO = 2

C TRACK

CONTROL TRACK
TIME CODE TRACK

TAPE PATTERN

USER FRIENDLY OPERATION

Character Superimposition

The UVW-1600 is provided with a built-in character generator which superimposes characters on the output signal obtained at the Video Output (Super). This allows time code data (LTC, U-bit), CTL and VTR function status

to be shown on a monitor. Menu items can also be put on a display for system setup. In addition, warning and error indications can also be displayed.

Initial Setup Menu for Convenient Operation

The UVW-1600 is provided with an initial setup menu system. The setup menu is programmed in the form of a layer structure. By simply going through the menu using the subcontrol panel, users can easily initialize the VTR.
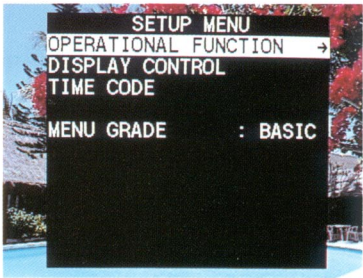
This setup menu allows many detailed operational parameters to be preset. Once the menu is set, the UVW-1600 will memorize the options and retain them in memory even after the power is turned off.

High Speed Picture Search

The UVW-1600 offers high speed picture search which provides a recognizable picture at various speeds over a range of up to 5 times normal speed in color and up to 16 times normal speed in monochrome in both forward and reverse. In JOG mode, the tape movement precisely matches the rotation of the search dial in both directions. These functions are available using the optional SVRM-100 Remote Control Unit or with an editing controller equipped with RS-422A capability.

Optional Remote Control Unit

With the optional SVRM-100 Remote Control Unit, fundamental controls such as JOG, SHUTTLE, playback,

fast forward and rewind can be controlled (FREEZE, INDEX, ERASE and MARK functions of the SVRM-100 are not available for the UVW-1600.)

Warning Indication

A warning indicator would be displayed if a misconnection or misoperation occured.
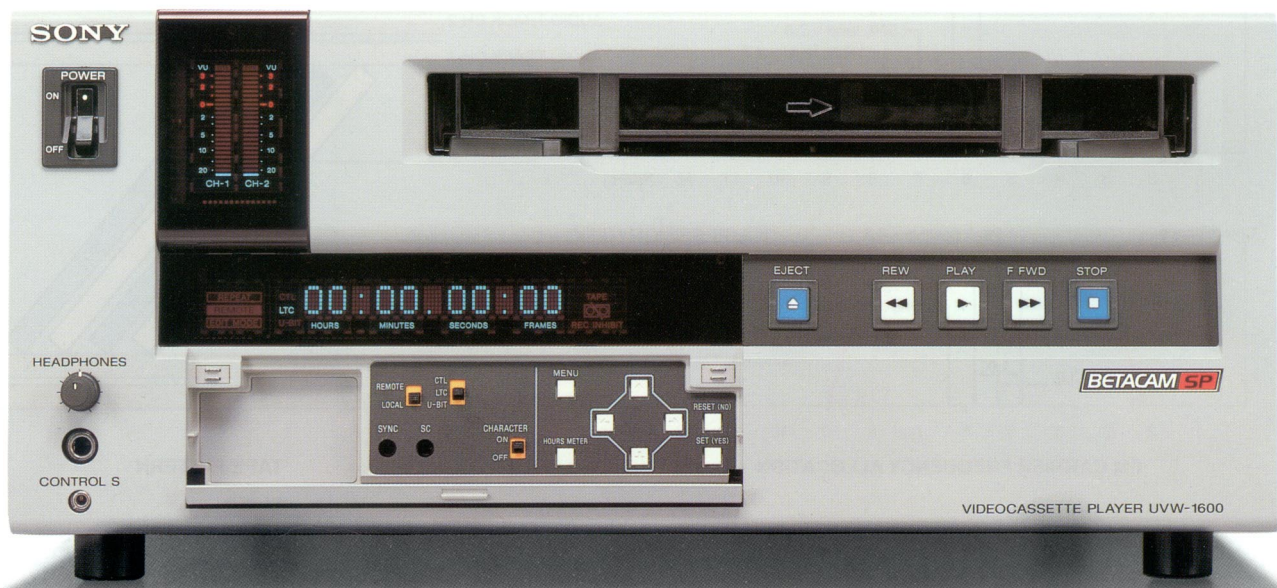
Built-in
Time Base Corrector

The UVW-1600 is equipped with a built-in TBC (Time Base Corrector), providing stable pictures without any additional equipment. Advanced, high quality digital dropout compensation also ensures consistent picture performance.

TBC
Remote Control

Video parameters of the UVW-1600's output signal can be remotely controlled with Sony's optional BVR-50 connected to the rear panel via a 15-pin cable.

Built-in
Time Code Reader

The Betacam SP format has an independent time code track so that a longitudinal audio track does not have to be sacrificed for time code. A time code reader is built into the UVW-1600. The time codes conform to the SMPTE standard in which LTC (Longitudinal Time Code) and User-bits are provided. LTC is used to identify the absolute address of a frame, while User-bits are reserved for operator's convenience.

Remote
Interface

• **RS-422A serial interface (9-pin)**
An RS-422A serial interface is provided for sophisticated system control. The UVW-1600 interfaces with other RS-422A equipped Sony machines such as the PVE-500 Editing Controller, PVW-2800 Betacam SP 2000 PRO™ Series VTR and the BVU-950 U-matic SP VTR.

Analog
### Interface

• **Y/R-Y/B-Y Component Video Signal Output**
The UVW-1600 provides Y/R-Y/B-Y component signal output through BNC connectors and a 12-pin DUB connector. Using this component signal interface takes full advantage of the superb performance of the Betacam SP format.

• **Composite Video Signal Output**
In addition to the component connectors, the UVW-1600 is equipped with composite video signal outputs.

• **S-video Signal Output**
An S-video output connector is also provided so that other equipment with S-video connectors can easily interface with the UVW-1600.
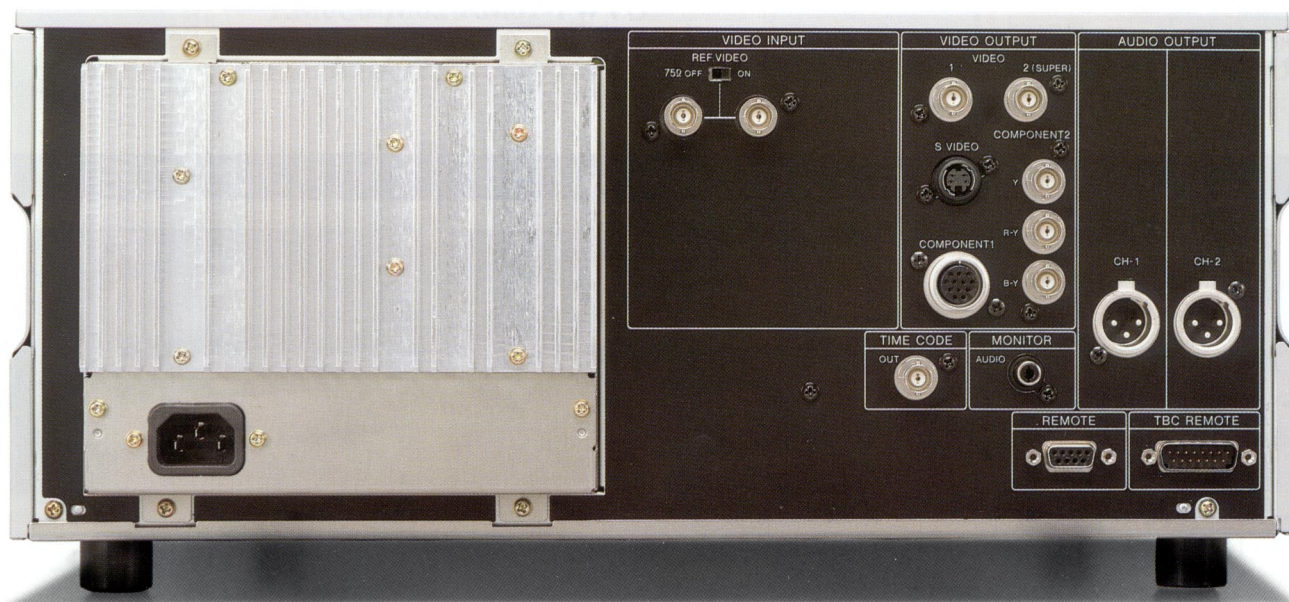
EASY SERVICING & MAINTENANCE

The UVW-1600 has built-in self-diagnostics for ease of servicing and maintenance, plus, this information can be displayed on both the monitor and the VTR's character display.

◆ **Self-Diagnostics**
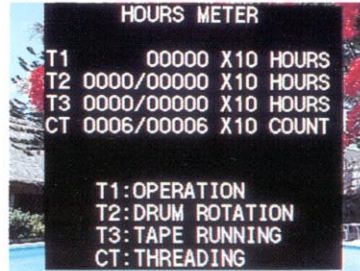
Should an error be detected, an error message will be displayed which will identify the problem area. This way down time will be minimized.

◆ **Hours Meter**

An hours meter is also provided to indicate elapsed time on time critical operations such as accumulated drum rotation time. It can be easily displayed with the push of a button.

COMPACT, LIGHTWEIGHT AND LOW POWER CONSUMPTION

The UVW-1600 has a compact, lightweight design and is engineered for low power consumption. The unit weighs approximately 18 kg (39 lb 10 oz), is 4 units high (19-inch rack mountable with optional RMM-130) and consumes only 65 W.

```
            HOURS METER
T1       00000  X10 HOURS
T2  0000/00000  X10 HOURS
T3  0000/00000  X10 HOURS
CT  0006/00006  X10 COUNT


        T1:OPERATION
        T2:DRUM ROTATION
        T3:TAPE RUNNING
        CT:THREADING
```

OPTIONAL ACCESSORIES

TBC Remote Controller
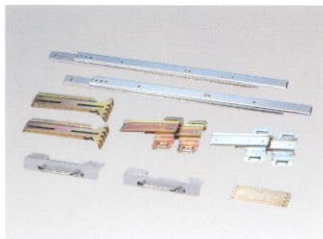**BVR-50**

Component Color Corrector
BVX-10

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

12-pin Dubbing Cable
VDC-C5 (5 m)

Remote Control Unit
SVRM-100

Rack Mount Unit
RMM-130

Metal Particle Videocassette Tapes
(Small Cassettes)
UVWT-10MA/20MA/30MA
(Large Cassettes)
UVWT-60MLA/90MLA

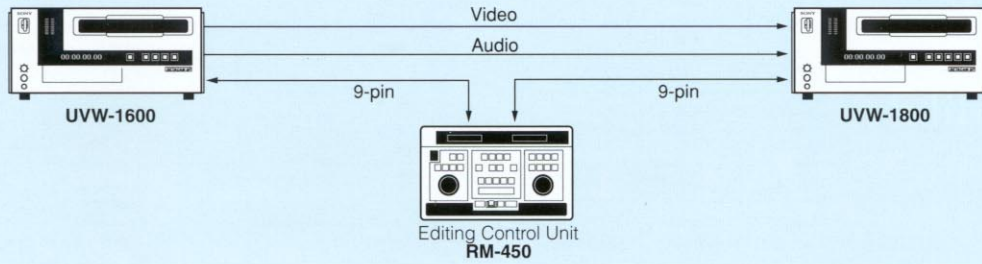## UVW SERIES FAMILY

Editing Recorder/Player
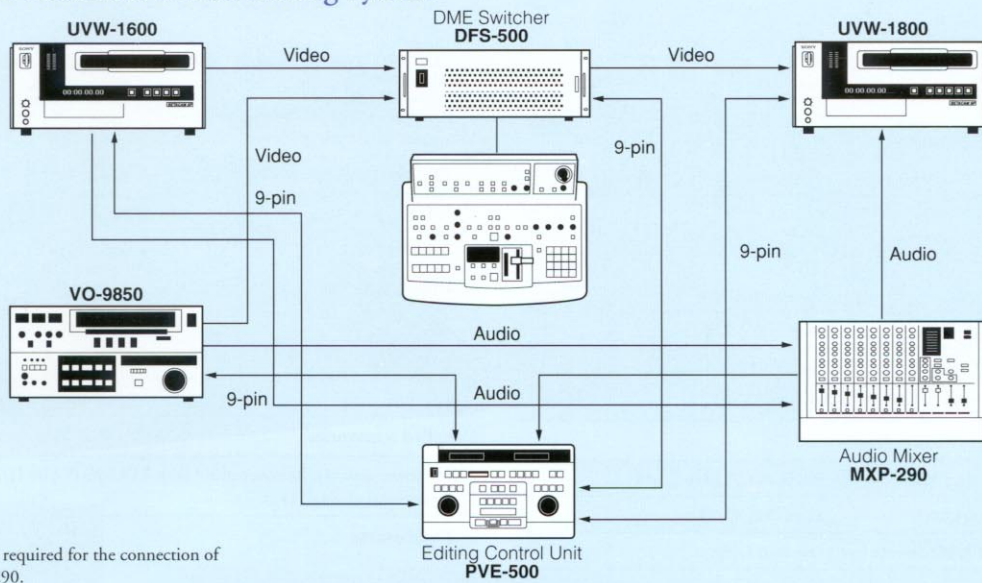**UVW-1800**

Recorder/Player
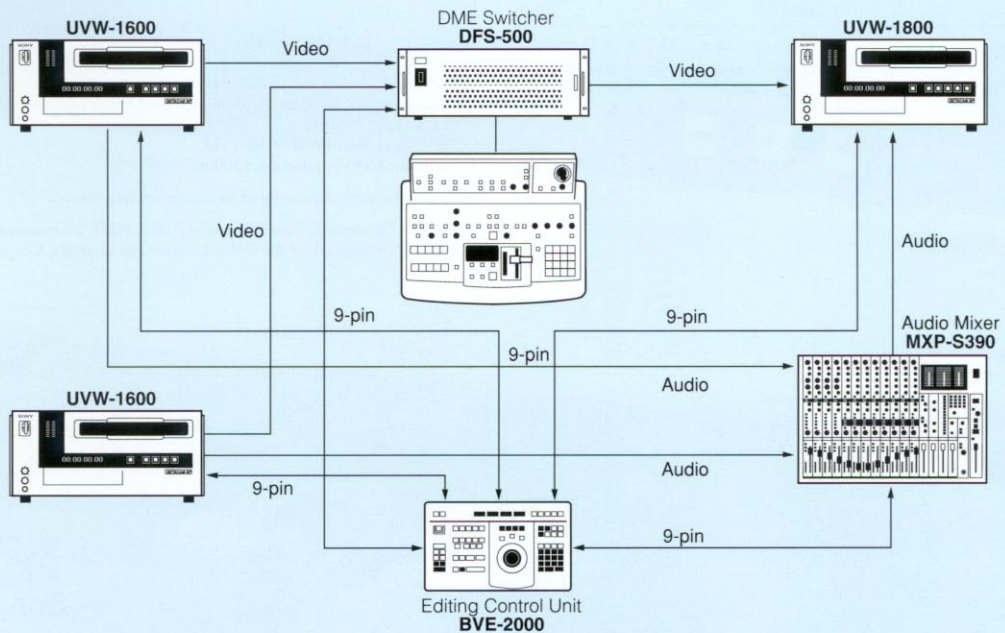**UVW-1400**

Player
UVW-1200

◆ Cuts Only System

Video
Audio
UVW-1600
9-pin
9-pin
UVW-1800
Editing Control Unit
RM-450

◆ Multi-VTR-Format A/B-Roll Editing System

UVW-1600
DME Switcher
DFS-500
UVW-1800
Video
Video
Video
9-pin
9-pin
9-pin
Audio
VO-9850
Audio
9-pin
Audio
Audio Mixer
MXP-290
Editing Control Unit
PVE-500

9-pin–15-pin cable is required for the connection of
PVE-500 and MXP-290.

◆ Component A/B-Roll Editing System

UVW-1600
DME Switcher
DFS-500
UVW-1800
Video
Video
Video
9-pin
9-pin
9-pin
Audio
Audio Mixer
MXP-S390
UVW-1600
Audio
9-pin
Audio
9-pin
Editing Control Unit
BVE-2000

General

Power requirements	AC 90 to 132 V, 48 to 64 Hz
Power consumption	65 W
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	Less than 80% (relative humidity)
Weight	Approx. 18 kg (39 lb 10 oz)
Tape speed	118.6 mm/s
Playback time	More than 90 min with UVWT-90MLA More than 30 min with UVWT-30MA
Fast forward time	Less than 3 min with UVWT-90MLA
Rewind time	Less than 3 min with UVWT-90MLA
Search speed (with optional SVRM-100)*¹	
SHUTTLE	15 steps, still to 16 times normal speed, forward and reverse
JOG	Frame by frame, forward and reverse

Video performance (Metal Particle Tape)

Bandwidth	
Luminance (50% modulation)	30 Hz to 4.0 MHz $^{+1.0}_{-4.0}$ dB
Color difference (50% modulation)	30 Hz to 1.5 MHz $^{+1.0}_{-4.0}$ dB
S/N ratio	
Luminance (Component OUT)	More than 49 dB
Chrominance	
AM	More than 52 dB
PM	More than 52 dB
K-factor (2T pulse)	Less than 3%
Y/C delay	Less than 30 ns

Audio performance (Metal Particle Tape)

Frequency response	50 Hz to 12.5 kHz $^{+2.0}_{-3.0}$ dB
S/N ratio (at 3% distortion level)	More than 70 dB
Distortion T.H.D. (at 1 kHz reference level)	Less than 1.5%
Wow and flutter	Less than 0.18% rms

Signal inputs

REF VIDEO IN (BNC)	1.0 Vp-p, 75 Ω

Signal outputs

VIDEO OUT 1 (BNC)	Composite video, 1.0 Vp-p, 75 Ω, sync negative
VIDEO OUT 2 (BNC)	Composite video, 1.0 Vp-p, 75 Ω, sync negative, with or without character insertion

COMPONENT OUT 1 (12-pin male)	
Luminance	1.0 Vp-p, 75 Ω, sync negative
Color difference	R-Y: 0.7 Vp-p, 75 Ω, B-Y: 0.7 Vp-p, 75 Ω
COMPONENT OUT 2 (BNC x 3)	
Luminance	1.0 Vp-p, 75 Ω, sync negative
Color difference	R-Y: 0.7 Vp-p, 75 Ω, B-Y: 0.7 Vp-p, 75 Ω
AUDIO LINE OUT (XLR 3-pin male)	
CH1/2	+4 dBu*², 600 Ω, balanced
AUDIO MONITOR OUT (Phono)	
CH1/2	-6 dBu
S-VIDEO OUT	Y: 1.0 Vp-p, 75 Ω C: 0.286 Vp-p (burst), 75 Ω
TIME CODE OUT (BNC)	2.2 Vp-p, 600 Ω

Others

REMOTE IN/OUT	9-pin, female
TBC REMOTE	15-pin, male
CONTROL/S	Mini jack
HEADPHONES	JM-60 headphone stereo jack

Processor adjustment range (with Optional BVR-50)

Video level	±3 dB
Chroma level	±3 dB
Setup level	0 to +15 IRE
Hue	±15°
System SC phase	360° p-p*³
System sync phase	-1 to +3 μs*⁴
Y/C delay	±100 ns

Supplied accessories

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

Dimensions
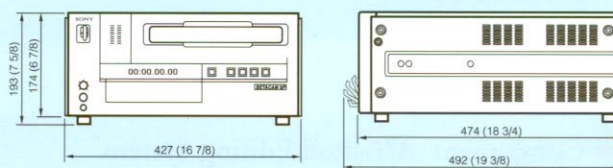
Unit: mm (inches)

*¹ Without SVRM-100 attached, search speed is 16 times forward and reverse.
*² 0 dBu = 0.775 Vrms
*³ With or without BVR-50 attached.
*⁴ Without BVR-50 attached: ±300 ns

Design and specifications subject to change without notice.

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