# SONY

## Non-Linear Live Editing System

# DLE-110

ISR **Interactive Status Reporting**

# DLE-110 Live Editing System

*The Sony DLE-110 is an innovative non-linear editing system specifically designed for live program production. It provides rapid replay, slow motion playback, and quick editing of highlight scenes for live applications such as sports programs and outside broadcast events.*

*Quick assembly and play to air of highlight scenes from the hard drives take place while the system continues to record a live source and while new edit points are marked.*

*The live-oriented Graphical User Interface (GUI), together with the exclusive Motion Controller Unit, contribute to intuitive and speedy production with the minimal chance of operational errors.*

*Employing the Sony DNW Series Hybrid Recorder as its storage system gives the DLE-110 outstanding advantage. High quality 4:2:2 component digital signals can be simultaneously recorded on disk and tape for back-up and archiving. Tape material can be uploaded to disk at faster than real time for editing.*

*Combining a unique, live-oriented operation style and state-of-the-art disk/tape hybrid storage technology, the Sony DLE-110 offers a new concept for your live and sports program production.*

## Simultaneous Recording & Editing To Air

The DLE-110 Editing System takes full advantage of a dual-channel hard drive, enabling simultaneous playback and recording. This allows true random access replay, slow-motion playback, editing of highlight scenes, and transmission to happen at the same time as the live feed is being continuously recorded - a major improvement in live broadcast efficiency.

## Broadcast Quality Video & Audio

The DLE-110 system employs the DNW-A100/A50/A45 Betacam SX™ Hybrid Recorder as its storage component, achieving broadcast quality pictures. It records 8-bit, 4:2:2 component digital signals using the advanced compression algorithm of the MPEG2 4:2:2 Profile at Main Level. 4-channel, 16-bit/48kHz digital audio is recorded with no compression.

## Long Recording Time

In its basic configuration with the DNW-A100/A50, the DLE-110 system can store about 90 minutes of high quality digitized video and audio on its hard drive.
In addition, an Endless Recording function is supported for efficient hard drive operation in live production. The DLE-110 can record the live feed endlessly by automatically overwriting the hard disk, while protecting previously reserved scenes.

## Back-up Recording and Archiving on Tape

A special feature of the DLE-110 is simultaneous recording of the live feed on disk and tape. This produces a back-up reel without any dubbing.
A highlight program, edited on the hard disk, is easily downloaded to tape for archiving within the overall storage system.

## High Speed Uploading from Tape to Disk

With the DNW-A100 storage system, video and audio can be recorded from tape to hard drive at up to four times normal speed. Material on tape, shot with a Betacam SX camcorder in the field, can be uploaded to disk at faster than normal speed and edited on the DLE-110 system.

## Video Effects Option

When the DLE-110 system is connected to the DEP-100 Digital Effects Processor, real-time digital effects can be performed. By using the single output of the Hybrid Recorder, A/A Roll effects can be realized by freezing the last frame of a scene in the internal frame memory of the DEP-100 and making a transition to the next scene. When another Hybrid Recorder is connected to the system, effects such as picture-in-picture and split screen are available. The DEP-100 also provides a Downstream Keyer.
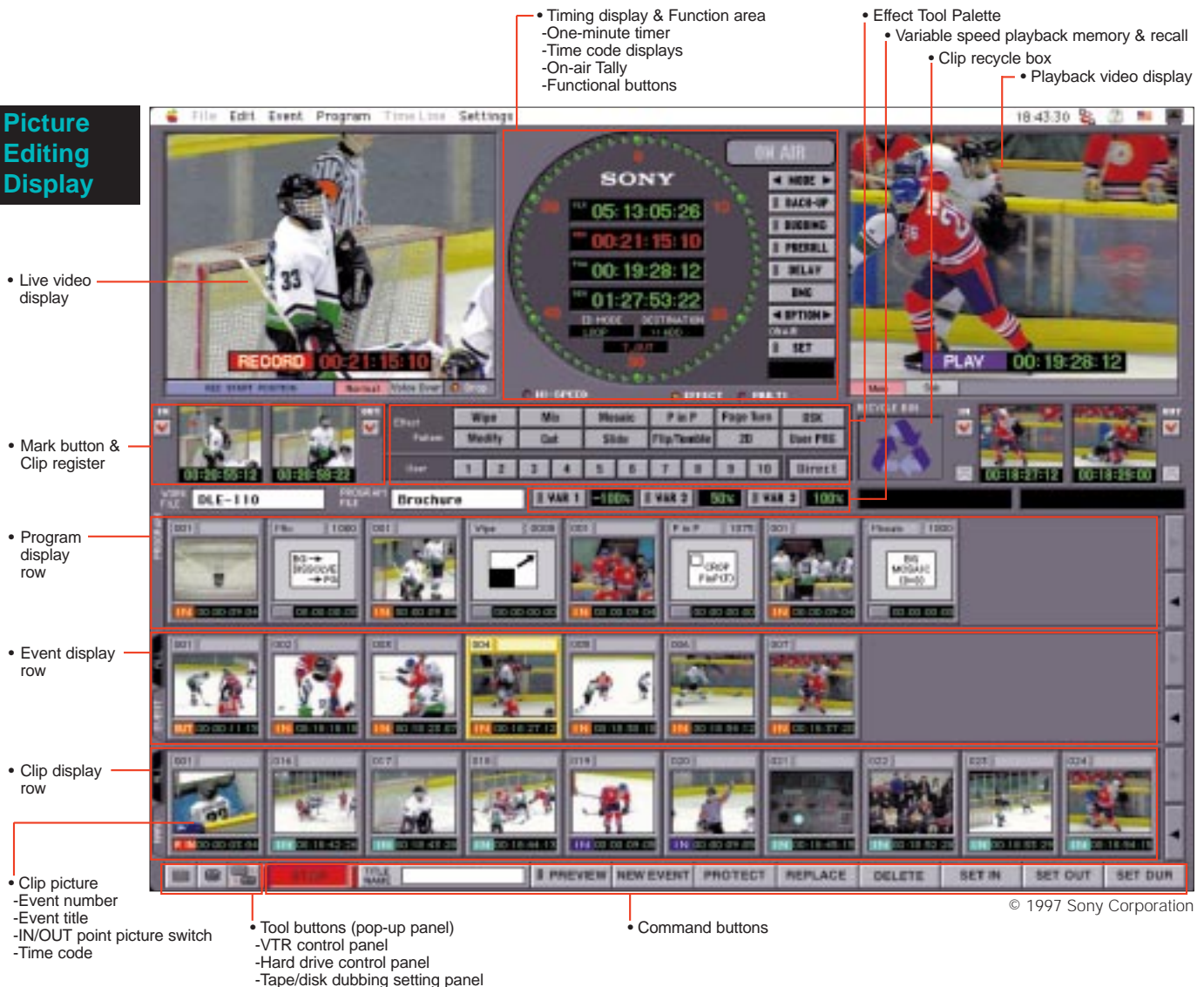
## Live-Oriented GUI

Specifically designed for live applications, the GUI features large, separate source viewers for live and playback video. Clock, time codes, remaining storage time, and on air program segment timings are shown, while IN and OUT points are marked by clicking on the GUI as well as by pressing buttons on the Motion Controller. In total, these features enable quick, user-friendly, and accurate operation.

**Picture Editing Display**

- Timing display & Function area
  - One-minute timer
  - Time code displays
  - On-air Tally
  - Functional buttons

- Effect Tool Palette
  - Variable speed playback memory & recall
  - Clip recycle box
  - Playback video display

- Live video display
- Mark button & Clip register
- Program display row
- Event display row
- Clip display row
- Clip picture
  - Event number
  - Event title
  - IN/OUT point picture switch
  - Time code
- Tool buttons (pop-up panel)
  - VTR control panel
  - Hard drive control panel
  - Tape/disk dubbing setting panel
- Command buttons

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## Two Editing Modes

Two alternative editing modes are available for use, dependent on the user's application.

- **Picture Editing Mode** - This mode is intended for simple and fast cut editing. All IN/OUT point clips and event clips are sequentially displayed in their respective rows. A program can be made by simply rearranging the event clips.
- **Time-Line Editing Mode** - Split editing for audio and video is available in this mode*. A program is created by dragging and dropping event clips onto the Program Timeline.

Note: Audio split editing is available when the recording of live feed is paused.

## Versatile Playback Modes

Variable-speed, slow motion playback is over a range of -1 to +1 times play speed.
A time delay playback function allows the delayed transmission of recorded material.
DMC playback sequences can be memorized by using the DMC Learn Playback function for subsequent one-touch recall.
The Program Playback function allows the playback speed to be modified so that a program segment can fit into a pre-set time slot, thus maintaining correct audio pitch.

## Compact System

Although the hybrid storage unit of the DLE-110 system stands only 5U high, it includes External Timecode Interface and Video Level Control capability, freeing the system from the necessity of such external devices. With all of these features, the DLE-110 system is suitable for OB van application.

**Time-Line Editing Display**

• Tool buttons
  (switching the panel display)
  -Simple time delay panel
  -Timeline panel

• Event display row

• Program timeline display
  -DSK
  -Effect
  -Video
  -4 channels of audio

• Timeline editing tool buttons

• Program line viewer

## Functions

- Simultaneous Recording and Replay
- Loop Recording with File Protection
- Marking
  (from GUI, BKLE-102 and optional Mark Control Pad)
- Event Creation
- Event Modification
- Remarking
- Event Information
  (TITLE/SUBTITLE/SCRIPT/SYMBOL CLIP)
- Event Management
- Slow Motion Event (LINEAR/LEARN)
- DIRECT LEARN (from BKLE-102)
- Program Creation
- Program Modification
- Program Information
  (TITLE/SUBTITLE/SCRIPT/SYMBOL CLIP)
- EDL Storage (Floppy Disk)
- Preview
- Cue Up

- On-Air
  Event On-Air
  Program On-Air
  Loop On-Air
  Automatic On-Air
  Triggering On-Air
  Multi-speed On-Air
  Time Delay On-Air
- DNW-A100/A50/A45 Hybrid Recorder Control (up to 5 channels)
- Simultaneous Recording on Disk and Tape
- High Speed Uploading from Tape to Disk (DNW-A100)
- Effects (with DEP-100)
  A/A Roll Effects
  Split Screen and Picture-in-Picture (with Dual Hybrid Recorders)
  Downstream Keyer
- Audio Split Editing
- 4 Channels of Audio Control
- Digital Jog Sound
- Video Phase Adjustment
- Audio Level Adjustment

## 1. Quick Event Replay with Slow-Motion Effects

Due to its fast editing and ability to quickly re-cue material, the DLE-110 can readily be utilized in the coverage of live events for action replays.

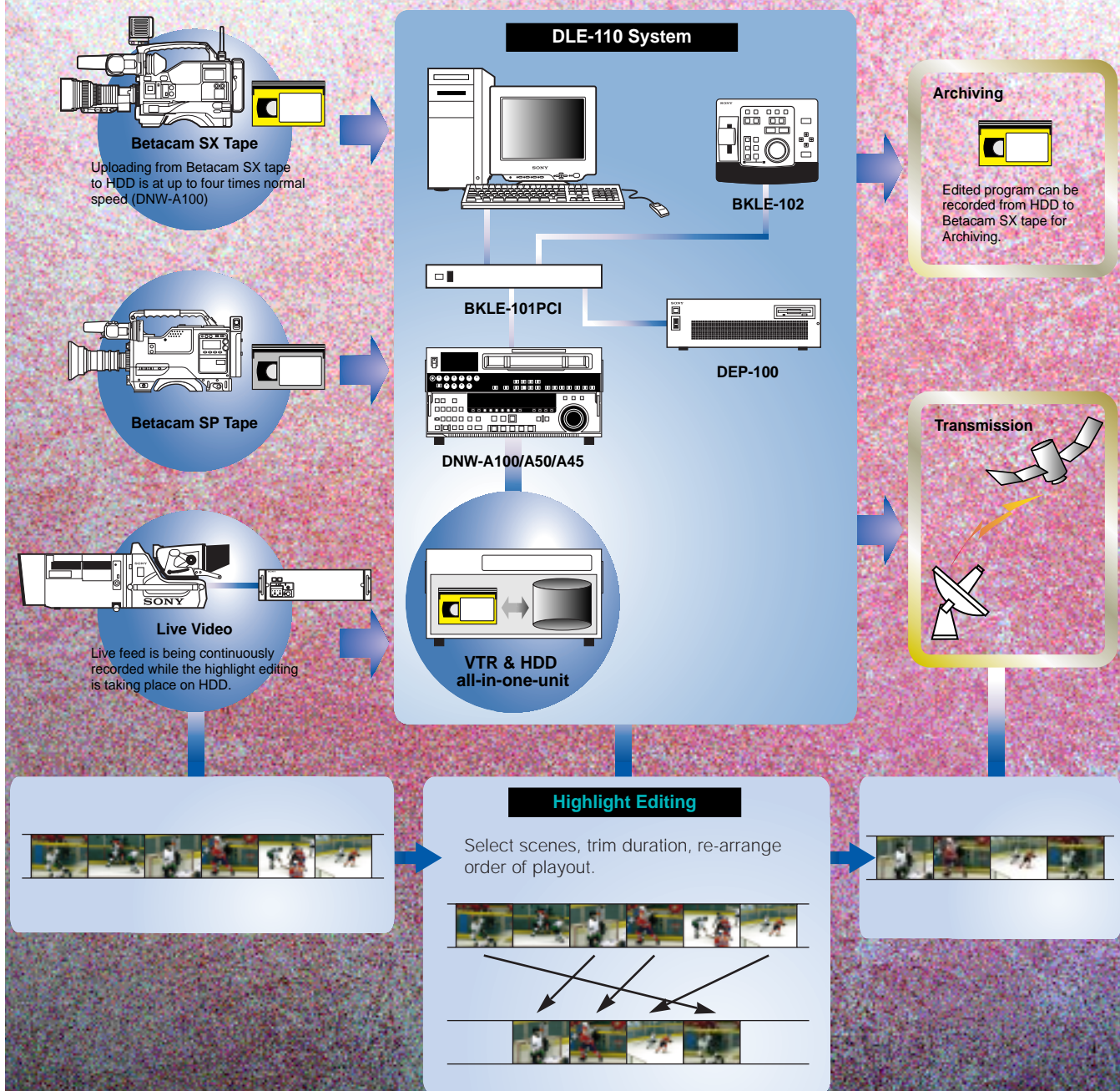## 2. Highlight Editing by using Continuous Loop Recording with File Protection

While recording live material, the DLE-110 simultaneously allows editing to proceed. This enables highlight sequences to be prepared during recording and aired during breaks in the sports action. File protection helps secure desired material,

while freeing up valuable space for continuous recording of the event.

## 3. Time Delay Playout

By setting a fixed amount of delay, the DLE-110 can be used in Time Delay applications to cope with time zone delays or fitting program schedulings.

**Highlight Editing**

**DLE-110 System**

**Betacam SX Tape**

Uploading from Betacam SX tape to HDD is at up to four times normal speed (DNW-A100)

**BKLE-102**

**Archiving**

Edited program can be recorded from HDD to Betacam SX tape for Archiving.

**BKLE-101PCI**

**DEP-100**

**Betacam SP Tape**

**DNW-A100/A50/A45**

**Transmission**

**Live Video**

Live feed is being continuously recorded while the highlight editing is taking place on HDD.

**VTR & HDD all-in-one-unit**

**Highlight Editing**

Select scenes, trim duration, re-arrange order of playout.

### • BKLE-101PCI RS-422 System Control Interface

Consists of a plug-in board for a Macintosh® computer and an interface unit. The BKLE-101PCI provides communication between the Macintosh computer and controlled devices such as the DNW Series Digital Video Hybrid Recorder, the DEP-100 Digital Effects Processor and the BKLE-102 Dynamic Motion Controller.

### • BKLE-102 Dynamic Motion Controller

Supplements the point-and-click GUI operation of the DLE-110 system. This control unit provides tactile control of the storage system in VARIABLE, JOG, and SHUTTLE modes. PREVIEW, MARK IN/OUT, REC START, STOP, and DIRECT LEARN functions can also be controlled.

### • BZLE-102 Operating Software
### • Apple® Power Macintosh Series Computer
(with keyboard and mouse)
### • Truevision® TARGA®2000PS Dual Channel Color Video Board
### • Computer Monitor
(20″ recommended)



## Hybrid Storage System

### • DNW-A100/A50/A45 Digital Video Hybrid Recorder

The DNW-A100 Series is the latest innovation that combines tape and disk in a single unit. The hard drive of the DNW-A100/A50 records approximately 90 minutes of 4:2:2 component digital signals and 4 channels of 16-bit digital audio, while that of the DNW-A45 records approximately 45 minutes of video and audio. The VTR portion records these high quality video and audio signals onto a video cassette tape using the Betacam SX format. High-speed signal uploading from tape to hard drive is available at up to 4 times normal speed with the DNW-A100.
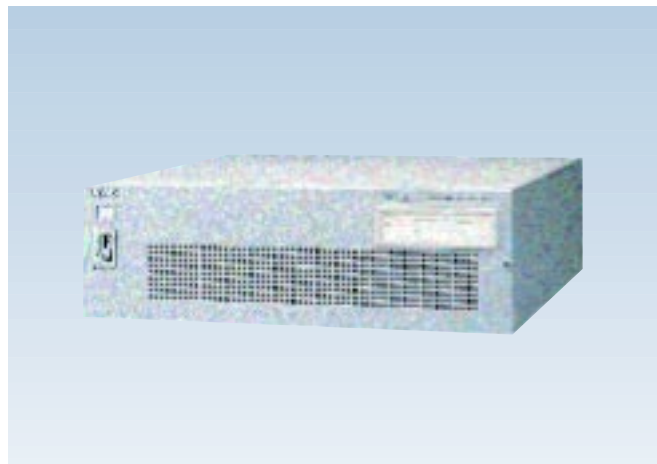
## Digital Effects Option

### • DEP-100 Digital Effects Processor

The DEP-100 is a compact digital video effects unit offering a 1 mix/effects switcher/DME and a Downstream Keyer. The DEP-100 can enhance cut editing by performing A/A roll effects from a single source video and also add titles and logos with the DSK. Split screen and picture-in-picture can be performed with two video inputs.
- Superb picture quality of 8-bit, 4:2:2 digital processing
- Over 100 wipe patterns and more than 150 2D effects
- 32 internal background patterns and an matte generator
- Floppy disk drive to recall graphics files and/or store effects parameters

**DLE-110 Live Editing System**

| | | |
|---|---|---|
| **Power Requirements:** | AC 100V to 120V ±10% | |
| | AC 220V to 240V ±10% | |
| **Power Consumption:** | BKLE-101PCI | 10 VA |
| | BKLE-102 | 10 VA |
| **Weight:** | BKLE-101PCI | 4.5kg (9 lb 15 oz) |
| | BKLE-102 | 2.8kg (6 lb 3 oz) |
| **Dimensions:** | BKLE-101PCI | 482(w) x 44(h) x 350(d) mm |
| | | (19 x 1 3/4 x 13 7/8 inches) |
| | BKLE-102 | 265(w) x 85(h) x 222(d) mm |
| | | (10 1/2 x 3 3/8 x 8 3/4 inches) |
| **Connectors:** | BKLE-101PCI | REF. IN (BNC, loop-through) |
| | | CONTROLLER (15-pin D-sub) |
| | | REMOTE (9-pin D-sub x 5) |
| | | PARALLEL (36-pin) |
| | | Ext. TIME CODE (XLR) |
| | BKLE-102 | REMOTE (15-pin D-Sub, 2m) |



BKLE-101PCI

**DNW-A100/A50/A45 Digital Video Hybrid Recorder**

| | | |
|---|---|---|
| **Power Requirements:** | AC 100V to 240V ±10% | |
| **Power Consumption:** | DNW-A100:  320W | |
| | DNW-A50/A45:  300W | |
| **Weight:** | 38kg (83 lb 12 oz) | |
| **Dimensions:** | 427(w) x 237(h) x 524(d) mm | |
| | (16 7/8 x 9 3/8 x 20 3/4 inches) | |
| **Disk:** | | |
| Record/Playback time | DNW-A100/A50:  approximately 90min | |
| | DNW-A45:  approximately 45min | |
| Maximum Record/Feed speed | 4 times normal playback speed (DNW-A100 only) | |
| **VTR:** | | |
| Recording format | Betacam SX | |
| Digital Record/Playback time | Max. 180min with BCT-184SXL cassette | |
| **Video:** | | |
| Compression | MPEG2 4:2:2 Profile at Main level | |
| Compression rate | Approx. 10:1 | |
| Line/Frame | 507 lines (525/60), 608 (625/50) | |
| **Audio:** | | |
| Compression | None | |
| Sampling | 16bits/48kHz | |
| Audio | 4-ch audio | |
| **Connectors:** | | |
| Video In | SDI (BNC, active loop-through) | |
| | SDDI (option) (DNW-A100 only) (BNC) | |
| | Analog Component (option) (BNC x 3, Y/R-Y/B-Y) | |
| | Analog Composite (option) (BNC, loop-through) | |
| | Reference (BNC, loop-through) | |
| Video Out | SDI (BNC x 2) | |
| | SDDI (DNW-A100 only) (BNC x 2) | |
| | Analog Component (BNC x 3, Y/R-Y/B-Y) | |
| | Analog Composite (BNC x 3) | |
| Audio In | Analog (XLR 3-pin x 4) | |
| | AES/EBU (option) (BNC x 2) | |
| Audio Out | Analog (XLR 3-pin x 4) | |
| | AES/EBU (option) (BNC x 2) | |
| | Monitor (XLR 3-pin x 2, L/R) | |
| | Headphones (JM-60 stereo phone jack) | |
| Time Code | IN (XLR 3-pin) | |
| | OUT (XLR 3-pin) | |
| Remote | Remote 1 (D-sub 9-pin) | |
| | RS-232C (D-sub 25-pin) | |
| | Video Control (D-sub 15-pin) | |



DNW-A100



DEP-100

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