

# KayakDD

## DIGITAL PRODUCTION SWITCHERS

Sophisticated switching in an affordable system.



Grass Valley™ products offer the most comprehensive, multi-format solutions for acquisition, production, storage, and playback—and a strong foundation for centralized, proactive status and activity monitoring.

The Grass Valley KayakDD™ digital production switcher family is an affordable, compact, and flexible system that offers an array of high-end features for everything from live studio and mobile production to small corporate studios and editing applications.

The KayakDD switcher leverages many of the features found in the Grass Valley Zodiak™ and XtenDD™ switchers. The result is a compact system with superior

image quality and features not found in any other product.

Switchable between 525-line and 625-line formats, the KayakDD system includes a powerful mix/effects (M/E) architecture with four high-quality keyers, six wipe generators and a utility bus per M/E, plus optional chroma keying capabilities.

To create even higher levels of production value, the KayakDD switcher supports up to four transform engines for sophisticated digital video effects. It also supports an optional RAMRecorder™ for internal clip and still storage as well as optional RGB color correction.

For easy recall of complex operational sequences, the KayakDD switcher includes the integrated Macro Key Memory (MakeMemo) feature. You can easily create these sequences.

The KayakDD switcher supports a wealth of machine-control protocols for VTRs, servers—including the Grass Valley Profile® line—routers and routing control systems, control systems, under monitor displays, and other production equipment. It also supports the Grass Valley M-Series™ iVDR line of intelligent disk recorders.

For ease of operation, the KayakDD system features an intuitive menu using an integrated touch-screen color display.

## KEY FEATURES

- Switchable between 525-line and 625-line formats
- Fully digital 10-bit, 4:2:2 inputs, outputs, and video processing
- Compact, lightweight frame: 2 RU for 1 M/E, 3 RU for 2 M/E
- Low power consumption
- Intuitive menu with touch screen
- Inputs: 16 for 1 M/E, 32 for 2 M/E
- Fixed outputs per M/E: PGM (2x), Clean, PVW, CleanPVW
- 10 timed auxiliary buses
- Internal RAMRecorder holds short clips and stills and works as frame synchronizer
- Supports extensive list of control protocols, including those for:
  - VTRs (BVW-75)
  - Servers (Louth VDCP, Odetics Broadcast Video Server)
  - Routers/Routing Control Systems (Trinix™, Venus™, Triton™, and third-party routers; Jupiter™ and Encore™ router control systems)
  - Control Systems (Grass Valley Andromeda and third-party systems)
  - Grass Valley under monitor displays
  - Grass Valley external auxiliary panels (CP300, CP330)
  - ESAM II for audio-follow-video applications
  - Edit controllers (native and Grass Valley Model 200 and Grass Valley Model 100)
- Four keys for 1 M/E and eight keys for 2 M/E, each with linear, luminance, and optional Chromatte™ chroma key functionality
- Optional RGB color correction
- Up to four channels of high-end digital effects for 1 M/E system and eight channels for 2 M/E
- Supports NetCentral™ SNMP-based monitoring (future)
- Optional source name displays for NameFollowVideo in 2 M/E control panel

## PRODUCT DATA SHEET

The lightweight KayakDD switcher is designed to be highly portable, enabling it to be transported easily. The 1 M/E control panel is less than 19 inches wide, but has the largest number of direct crosspoints of any 1 M/E switcher available. The 2 M/E control panel has 24 crosspoint buttons and is designed to fit in small control room spaces.

### Powerful M/E Architecture

With four keyers each in M/E 1 and PGM/PST, the KayakDD switcher offers plenty of power for compositing keys such as logos and graphics. In addition, each keyer in the M/E can optionally perform chroma keys using the Grass Valley Chromatte advanced chroma keyer.

KayakDD features a utility bus for enhancing a teleproduction's look by inserting a video signal as a wipe border, mask source, or wipe signal. Each keyer has its own wipe pattern generator for preset patterns and masking applications while still leaving the two main pattern generators for wipe transitions.

### Enhanced Effects and Transitions

With up to eight channels (four channels for 1 M/E, eight channels for 2 M/E) of built-in digital effects, the KayakDD switcher enables you to perform 2D transforms in 3D space, page turns, splits, mirrors, modulation effects, and more.

## MORE POWER IN EVERY M/E

**With four keyers, two backgrounds, a utility bus, and up to four chroma keyers, the KayakDD switcher gives you more power in one M/E than any other switcher in its class.**



### Powerful Internal Effects Add Punch to Your Productions



Slab



Slits



Modulation



Page Turn

### Integrated RAMRecorder

An optional four-channel RAMRecorder is available for internal clip and still storage with sixteen seconds of memory for clips and stills. You can import and export stills and video clips using the side-panel GUI on a networked PC. These four channels of video can be output in any combination. Each channel can have independent timeline control and readout in Play or Still.

Clips are identified by user-specified names for easy recall and can be played back at standard or variable speeds, either forward or backwards. The RAMRecorder extends these capabilities with clip trimming (Mark In and Out), looping, single-frame grabbing and sequence recording, and variable delay. When in E/E mode the RAMRecorder frame synchronizes incoming asynchronous video signals.

### RGB Color Correction

Each keyer, background bus, and utility bus comes standard with solarization, posterization, mosaic, pseudocolor and YUV color correction. For more creative control, you can add optional RGB color correction.

### Powerful Macro Capabilities

The integrated Macro Key Memory (MakeMemo) feature of the KayakDD switcher lets you store either single-button strokes or complex sequences from a switcher panel for easy, one-button recall.

Using the switcher's macro editor in the side-panel GUI on a networked PC, you can easily edit and combine macros to create even more complex effects. Macros can call timelines and vice-versa. You can also attach a macro to a completely different function key to speed your workflow.

### Powerful Machine Control

Machine control is available directly from the KayakDD control panel for interfacing to a wide range of VTRs; disk recorders; laser disk players; servers, including the Grass Valley Profile line; routers, including the Grass Valley Trinx, Venus, Triton, and third-party routers.

The KayakDD switcher also supports a wide range of device-control protocols, including Louth VDCP, Odetics, ESAM II, and others. You can, for example, use it to play, stop, rewind, and fast forward devices; set time codes; mark in/out points; perform cue (GoTo) operations; jog and shuttle; and execute slo-motion and clip-selection commands.

The KayakDD switcher also interfaces with the Grass Valley Jupiter control system, the Grass Valley Encore control system, and third-party facility-control systems. Also supported are Grass Valley external auxiliary panels, Grass Valley under monitor displays through the Grass Valley Andromeda logical signal processing system, and edit controllers that support the Grass Valley Model 200 or Model 100 protocol.

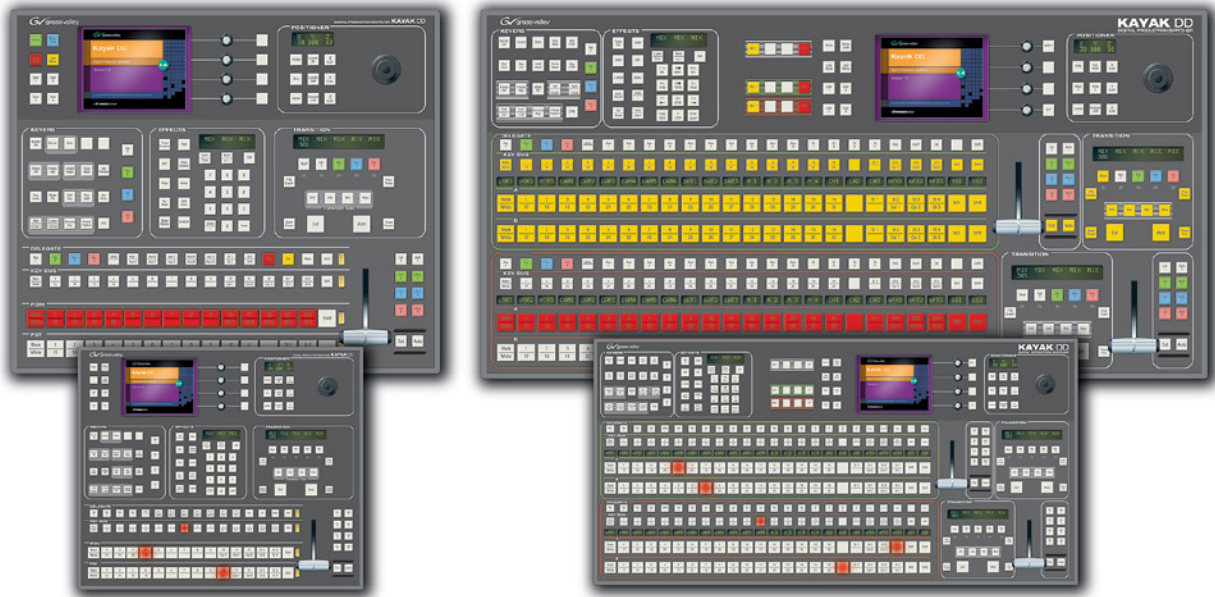
### Smooth Installation

With a familiar Grass Valley interface, you'll feel right at home with the KayakDD switcher. Its intuitive, straightforward design makes it easy to integrate into existing production facilities. In fact, the KayakDD 1 M/E control panel is less than 19 inches wide and can be installed in a 19" rack drawer. The 2 M/E control panel is also designed to fit in small control spaces. The compact, two rack unit (RU) or three RU frame frees up space for other equipment.

To help maximize uptime, the KayakDD switcher will support the Grass Valley NetCentral application for Simple Network Management Protocol (SNMP)-based monitoring.

## KAYAKDD CONTROL PANEL

The easy-to-use, intuitive KayakDD 1 M/E and 2 M/E control panels are available with colored or white keys to fit the production style of your operators.



### KAYAKDD 1 M/E SPECIFICATIONS

#### Video Inputs

16 ITU-R656 component serial digital video or key

#### Video Outputs

- ITU-R656 serial digital video.
- Five M/E outputs: (2) program video, clean feed, clean PVW, and preview video
- 10 timed auxiliary bus outputs

**Video Processing:** 10-bit, 4:2:2; video delay <1 line

#### KayakDD Frame Control Connectors

**Serial Ports:** Six RS-422/RS-485

**Tally/GPI:** Eight inputs, 32 outputs programmable for tally or GPI

**LAN:** RJ-45 10/100Base-T Ethernet

#### KayakDD Control Panel Control Connectors

**Serial Ports:** One RS-422/RS-485, one RS-232

**LAN:** RJ-45 10/100Base-T Ethernet

**Other:** Two USB

#### Power Supply

**Power:** 200W (max) including control panel

**Voltage:** 100-240V

**Frequency:** 50/60 Hz

**Redundancy DC Input:** 48V DC

**DC Output for KayakDD Control Panel:** 48V DC

#### Mechanical Data

##### KayakDD-1 Control Panel

Dimensions	mm	in.
Width	448	17.6
Depth	418	16.5
Mounting depth	33-81	1.3-3.2

**Cutout:** 430 x 400 mm, 17 x 15.75 in.

##### KayakDD-1 Frame

Dimensions	mm	in.
Height 2 RU	89	3.5
Width	482	19
Depth	430	17

### KAYAKDD 2 M/E SPECIFICATIONS

#### Video Inputs

32 ITU-R656 component serial digital video or key

#### Video Outputs

- ITU-R656 serial digital video.
- Five M/E outputs – program video (2), clean feed (2) and preview video
- Five PGM/PST outputs – program video (2), clean feed (2) and preview video
- 10 timed auxiliary bus outputs

**Video Processing:** 10-bit, 4:2:2

**Video Delay:** <1 line

#### KayakDD Frame Control Connectors

**Serial Ports:** Six RS-422/RS-485

**Tally/GPI:** Eight inputs, 32 outputs programmable for tally or GPI

**LAN:** RJ-45 10/100Base-T Ethernet

#### KayakDD Control Panel Control Connectors

**Serial Ports:** One RS-422/RS-485, one RS-232

**LAN:** RJ-45 10/100Base-T Ethernet

**Other:** Two USB

#### Power Supply

**Power:** 310W (max) including control panel

**Voltage:** 100-240V

**Frequency:** 50/60 Hz

**Redundancy DC Input:** 48V DC

**DC Output for KayakDD Control Panel:** 48V DC

#### Mechanical Data

##### KayakDD-2 Control Panel

Dimensions	mm	in.
Width	809	31.8
Depth	418	16.5
Mounting depth	33-81	1.3-3.2

**Cutout:** 790 x 400 mm, 31.2 x 15.75 in.

##### KayakDD-2 Frame

Dimensions	mm	in.
Height 2 RU	134	5.25
Width	482	19
Depth	430	17

**ORDERING INFORMATION**

**KayakDD-1 1 M/E Switcher and Options**

**KAYAK-DD-1**

KayakDD 1 M/E Production Switcher with 16 inputs, five dedicated outputs, 10 aux buses, two chroma keyers (Key1 and Key2) and one DVE channel with 2D plus perspective, MakeMemo macros and key/fill stores. 20 meter control/data cables standard. Specify KDD1-WHITEKEYS or KDD1-COLORKEYS with order.

**KDD1-DPM**

KayakDD-1. Three additional DVE channel plus Kurl effects package

**KDD1-RGB**

KayakDD-1. Seven RGB color correctors

**KDD1-CHROMA**

KayakDD-1. Two additional chroma keyers (Key3 and Key4)

**KDD1-RAMREC**

KayakDD-1. Four-channel RAMRecorder

**KDD1-NETCEN**

KayakDD-1 Net Central Agent – Order one per KayakDD-1 being monitored.

**Keys style is mandatory selection for initial order**

**KDD1-WHITEKEYS**

KayakDD-1. White keycaps for multicolor illumination (Initial order only)

**KDD1-COLORKEYS**

KayakDD-1. GV style colorkeys (Initial order only)

**KDD1-FRAME**

KayakDD 1 M/E switcher (frame only, no control panel) incl. One ChannelDPM, Basic, wipes, 10 Aux buses, MakeMemo, four key/fill stores, two Chromatte chromakeyers (Key1 and Key2). Options KDD1-DPM, KDD1-RGB, KDD1-CHROMA, KDD1-RAMREC, KDD1-NETCEN and common options apply to this item.

**KDD1-PANEL**

KayakDD 1 M/E switcher control panel. When not operated with a KayakDD frame an external 48 VDC power supply e.g., KDD-PSU is needed. Specify: KDD1-WHITEKEYS or KDD1-COLORKEYS with the order.

**KayakDD-2 2 M/E Switcher and Options**

**KAYAK-DD-2**

KayakDD 2 M/E Production Switcher with two M/Es, all inputs and outputs, eight keyers (two fixed chromakeyers = M/E-1 Key1 and Key2), two V/K channels DPM (DVE) = one per bank), YUV color corrector, frame store (fill and key) per keyer, serial ports, all protocols, GPI/Tally. Control Panel: 2 M/E, 24 source buttons. TFT. 20 meter control/data cables standard. Specify KDD2-WHITEKEYS or KDD2-COLORKEYS with order.

**KDD2-DPM-1**

KayakDD-2. License to operate additional three DVE(DPM)

**KDD2-DPM-P**

KayakDD-2. License to operate additional three DVE(DPM) channels plus non-linear effects in PP

**KDD2-RAMREC**

KayakDD-2. License to operate the RAMRecorder

**KDD2-RGB**

KayakDD-2. License for RGB color correction for all M/E and PP buses = 14 color correctors

**KDD2-CHROMA**

KayakDD-2. License for all remaining chromakeyers

**KDD2-NETCEN**

KayakDD-2 Net Central Agent – Order one per KayakDD-2 being monitored.

**KDD2-MNEMO-KIT**

KayakDD-2. Source Mnemonics in control panel (Field install only)

**Keys style is mandatory selection for initial order**

**KDD2-WHITEKEYS**

KayakDD-2. White keycaps for multicolor illumination (Initial order only)

**KDD2-COLORKEYS**

KayakDD-2. GV style colorkeys (Initial order only)

**KDD2-FRAME**

Frame: 2 M/Es, all inputs and outputs, eight keyers (two fixed Chromakeyers = M/E-1 Key1 and Key2), two V/K channels DPM ((DVE) = one per bank), YUV color corrector, frame store (fill and key) per keyer, serial ports, all protocols, GPI/Tally. Options KDD2-DPM-1, KDD2-DPM-P, KDD2-RGB, KDD2-CHROMA, KDD2-RAMREC, KDD2-NETCEN and common options apply to this item.

**KDD2-PANEL**

Control panel: 2 M/E, 24 source buttons, TFT menu display w/touchscreen. Specify either KDD2-WHITEKEYS or KDD2-COLORKEYS. Specify also whether or not KDD2-MNEMO.

**KayakDD Common Options and Accessories (can be ordered anytime)**

**KDD-DC-CABLE-50**

50m DC power and LAN cable set (from mainframe to control panel, or KDD-PSU to control panel)

**KDD-DC-CABLE-100**

100m DC power and LAN cable set (from mainframe to control panel, or KDD-PSU to control panel)

**KDD-PSU**

KayakDD External Power Supply for Redundancy. 1 RU rack-mount frame. Wide-range AC input. External DC input (12-24V) for RAMRecorder backup voltage. Two 48 VDC-Out connectors. No DC power cable included.

**KDD-PSU-CABLE-5**

5m DC power cable from KDD-PSU to mainframe or control panel

**KDD-PSU-CABLE-20**

20m DC power cable from KDD-PSU to mainframe or control panel



The KayakDD 1 M/E switcher is extremely portable. With a 19-inch control panel, its easy to set up in a rackmount drawer for flight case production systems.

**PROFESSIONAL SERVICES**

Our professional services offerings ensure optimal system performance and maximize uptime. These services include call centers staffed around the clock; system planning, design, and commissioning; professional training courses; and technical maintenance programs and service agreements.

[www.grassvalley.com/support](http://www.grassvalley.com/support)