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KayakDD-1 Digital Video Switcher

INTRODUCTION

This document describes the interface between Super Edit and the KayakDD-1 Digital Production Switcher using KayakDD protocol.

Detailed operational instructions for Super Edit are given in the Super Edit Operator's Guide. Detailed operational instructions for the KayakDD-1 are given in the KayakDD-1 Operator's Manual. This document discusses only those features that are unique to Super Edit control of the KayakDD-1 switcher.

CONNECTION TO THE SWITCHER

VPE and DPE control of the KayakDD-1 is accomplished via a standard RS-422 control cable to one of the six available ports on the rear of the switcher chassis (E-Box), labeled Port 1-Port 6. Connect a standard RS-422 control cable from the E-Box Port to the **VIDEO CTL** Port on the rear of the VPE or DPE editor.

SWITCHER SETUP

On the KayakDD-1 control panel:

- Press the **[HOME]** button.
- In the Graphical Display, select **Install** / **E-Box** / **Editor**.
- Under **Editor 1** select **Port**. Select the **Port 1-6** used to connect to the editor.
- Under **Editor 1** select **Type**. Select **dd35**. Press **OK**.
- Press the **[HOME]** button.
- In the Graphical Display, select **Config / E-Box / Misc**. Confirm that **Edit Enable** is selected.

EDITOR SETUP

Control Parameters
Confirm that the editor configuration in the Super Edit Assignment Page (**[SHIFT][ASGN]**) is for the **KAYAKDD**, and that it is set for **38.4** k baud, **Odd** parity. The control port should be the default **Port 9**.

PGM/PST or M/E Control
In **INIT #39**, **SWITCHER BANK=?** enter "**0**" to control the crosspoint selection on the **PGM/PST** Bus of the switcher. Enter "**1**" to control the crosspoint selection of the **M/E** (if available).

Crosspoint Selection
Crosspoints are assigned to Source keys as described in the Super Edit Operator's Guide. The following are the default crosspoint numbers for the KayakDD-1:

CROSSPOINT #	SWITCHER SOURCE	
0	Black	
1 through 16	Video Inputs 1 through 16	
144	Color Background 1	(Col 1)
145	Color Background 2	(Col 2)
146	Color Background 3	(Col 3)
137	Still Store 1	(St 1)
138	Still Store 2	(St 2)
139	Still Store 3	(St 3)
140	Still Store 4	(St 4)
160	Aux Bus PGM/PST Re-entry	
161	Aux Bus M/E Re-entry	

AUX BUS PREVIEWING AND PRE-SELECTOR

When Aux Bus Previews are enabled in Super Edit, previewing video on the AUX Bus of the KayakDD-1 replaces the Super Edit E-E or Preview Switcher type of previewing. AUX Bus previews are supported on any of the 10 AUX Busses of the KayakDD-1. See the Super Edit Operator's Guide for additional Preview information.

To enable Aux Bus previewing on the KayakDD-1:

▪ Set the editor **INIT# 73 PVW AUX BUS =?** to the corresponding **Aux Bus** number to be used on the switcher (**1**-**10**). Entering **0** disables Aux Bus previewing on the switcher, and subsequent previews would be handled by whichever default method is built into the Super Edit program.

▪ In the editor **INIT# 74 PGM OUT XPT=?** enter the **PGM OUT** crosspoint. Once enabled, the selected AUX Bus behaves as a video-only preview switcher, switching between the R-VTR crosspoint and the PGM OUT cross-point. The values for the PGM out cross-point will be one of the following:

KayakDD-1	160	PGM Out (PGM/PST Bus)

KayakDD-2	160	PGM Out (PGM/PST Bus)
	161	M/E Out

NOTE: Commands sent to the switcher Aux Bus can be advanced or delayed as needed to assure frame accurate preview switching. Use VPE/DPE INIT items # **84** and # **86** to make these adjustments.

NOTE: The **SWAP VTR** feature of Super Edit will interact with the AUX Bus as a preview pre-selector. The R-VTR cross-point assignment on the AUX Bus will follow any changes made with the SWAP function.

NOTE: Aux-bus preview uses the cross-point identified as BLK in the assignment page for the black during BVB or VBV AUX Bus previews.

NOTE: When using Aux Bus Preview, make sure that you have assigned the R-VTR a switcher crosspoint in the Super Edit Assignment Page.

EMEM / TiM/E-MEMO INTERFACE

EMEMs can either be Snapshots or Timelines. A **Snapshot** is a single switcher state. A **Timeline** can contain a number of Snapshots along with duration, transition, and DPM information.

From the editor user perspective, recalling and triggering of EMEMs is similar, regardless of whether they are Snapshots or Timelines. The switcher can have up to 100 Snapshots or Timelines (0-99) saved in any combination.

Learn Memory
To learn a memory register from the editor keyboard, press **[SHIFT][L]**. The user is then prompted for the register number to learn:

LEARN EMEM *nnn* **?**

*… where **nnn*** can be any number described in the table below. The ranges are:

000 through 099	Register 0 through 99 of PGM/PST Bus
100 through 199	Register 0 through 99 of the M/E (if available)
600 through 699	Learn registers 0 through 99 of all selected M/Es

The areas of the switcher to be learned or recalled by a 600-699 EMEM from the editor are selected in a pop-up selection menu. This menu is activated by pressing **[SHIFT][VIDEO]**.

```
00  PGM/PST      ON
01  M/E          OFF
02  ENABLE       ALL
03  DISABLE      ALL
```

ENBL/DIS EFFECTS LEVELS?

EMEM Recall and Trigger
EMEMs, either Snapshots or Timelines, can be recalled and triggered using the VIDEO PEGS dialog. The 3-digit number 000-699 as described above, is the base EMEM number. An optional recall modifier is specified as the thousands digit, so EMEM 101 and 1101 are identical except for the recall method discussed next.

Multiple M/Es can be recalled and triggered using a memory number of 600-699, and the pop-up M/E selection Menu is activated by pressing **[SHIFT][VIDEO]**.

Snapshot EMEMs are normally Recalled and Cut to the PGM Bus. This case is specified by no thousands digit. Use the EMEM number 000-699.

Timeline EMEMs can also be selected in the same manner as Snapshots using numbers 000-699. Timeline EMEMs can also be recalled with associated operations. These memories should be recalled with EMEM numbers containing a thousands value. These values are:

1000 through 1699	Select, and operation **STOP**	Recalls but does not run
2000 through 2699	Select, and operation **CUT**	Recalls and runs using the durations specified in the EMEM keyframes
3000 through 3699	Select, and operation **AUTO**.	Recalls and runs using the total duration in AUTO time on the switcher control panel.

To select these functions, specify **FUNCTION= V** when entering the PEGS command. Select **[PEGS]** and answer the prompts as follows:

REGISTER # ?   Enter any register **1 through 16**, then press **[ENTER].**

FUNCTION= ?   Press **[V]IDEO,** then **[ENTER].**

COMMAND= ?   Enter the **Memory Register number (0-3699)** then press **[ENTER].**

TIME=?   Enter the **start time** for the Memory Recall, then press **[ENTER].**

*To preview a programmed PEG, at the **REGISTER=?** prompt, press the corresponding PEG register number followed by **[VVV]** or **[I]**.*

CONTROLLING THE KAYAKDD-1 TIMELINE (TIM/E-MEMO)

You can control the KayakDD-1 Timeline with the same basic control capabilities of a VTR; Play, Rewind, Fast- forward, Jog, Search, and Match.

VPE and DPE control of the switcher Timeline is accomplished via a standard RS-422 control cable to one of the six available ports on the rear of the switcher chassis (E-Box) labeled Port 1-Port 6. Connect the control cable from the E-Box port to an available Port on the rear of the VPE or DPE editor.

On the KayakDD-1 control panel (perform these functions in the order listed)**:**

- Press the **[HOME]** button.
- In the Graphical Display, select **Install** / **E-Box** / **VTR Emulat**. Select a VTR Emu **1-5**.
- Select **Type**. Select **bvw75_Vnnn** (where nnn is the current Version number). Press **OK**.
- Select **Port**. Select Port **1-6**.
- Select **Device**. Select **PPMemo**. Press **OK**.

In the Super Edit Assignment Page:

- Select the Source **A-VTR – F-VTR** to be used to control the switcher Timeline.
- Assign the VPE/DPE **Port** to be used to control the switcher Timeline.
- The driver "**MODEL**" should be **TIMELN**.
- The **QC** should be set to "**3**".
- No XPTs need to be assigned.

About the KayakDD Timeline control:

- The Timeline is created on the KayakDD, using the switcher's tools.
- When inserting a DPM effect into a Timeline, the currently displayed DPM effect is used. Multiple DPM effects can be inserted into the same Timeline, but they must be the currently displayed effect when inserted.
- You need not enter an In-time for the Timeline source in the Super Edit Mark Table. A "blank" In-time defines the beginning of the current Timeline.
- You may use the entire Timeline, as Super Edit will perform a "phantom" pre-roll of the Timeline.
- You may enter any existing In-time for the Timeline source. The Timeline will be "matched" at the edit IN.
- You may "Match" to an existing Timeline edit in the EDL.

X-PEGS COMMANDS

The Key1, Key2, Key3, Key4, Background, Preset Black, Key Priority and DSK FTB buttons on the KayakDD-1 panel are assigned numeric values by Super Edit. These values are used in combinations at the **COMMAND**

=? prompt of the PEGS dialog to define which functions to include when programming Auto-Transitions via PEGS.

The **first digit** of the 4-digit PEGS command code designates the area of the Video Switcher that is to be used in the Auto-Transition. The numeric values are sum additive, and the corresponding values and areas are as follows:

KayakDD-1 PEGS Code - 1st Digit (1000's digit)

M/E CODE #	DESCRIPTION
0	PGM/PST Bus
1	M/E (If available)

The **second digit** selects the type of Auto-Transition. The values and corresponding types listed in the table below:

KayakDD-1 PEGS Code – 2nd Digit (100's digit)

TRANS CODE #	DESCRIPTION
400	AUTO TRANS ONLY
500	MIX
600	WIPE GEN 1
700	WIPE GEN 2

The **third digit** selects the source(s) of the transition (Key, Bkgd, etc.). The values and corresponding sources are listed in the table below:

KayakDD-1 PEGS Code – 3rd and 4th Digit

KEY CODE #	DESCRIPTION
0**1**	KEY 1
0**2**	KEY 2
0**4**	KEY 3
0**8**	KEY 4
16	BKGD A
32	PST BLK
64	KEY PRIORITY

Example: If you want to do a Wipe on PGM/PST with keys 3 and 4, you would enter a PEG of 612. If you want to do a Mix on the M/E with PST BLK, enter 1532.

To select these functions, specify **FUNCTION= X** rather than FUNCTION= V when entering the PEGS command. I.e. Select [PEGS] and answer the prompts as follows:

REGISTER # ? Enter any PEGS register **1 through 16**, then press **[ENTER].**

FUNCTION= ?   Press **[X],** then **[ENTER].**

COMMAND= ?   Enter the **PEGS code** then press **[ENTER].**

TIME= ?   Enter the **start time** for the PEG, then press **[ENTER].**

Note: When entering codes for the PGM/PST bus, you need not enter leading "0"s.

A table of the PEGS command codes for the KayakDD-1 is shown below:

PGM Mix	PGM Wipe	M/E Mix	M/E Wipe	Function
500	600	1500	1600	Auto Trans Only
501	601	1501	1601	Key **1**
503	603	1503	1603	Key **1**, Key **2**
505	605	1505	1605	Key **1**, Key **3**
507	607	1507	1607	Key **1**, Key **2**, Key **3**
509	609	1509	1609	Key **1**, Key **4**
511	611	1511	1611	Key **1**, Key **2**, Key **4**
513	613	1513	1613	Key **1**, Key **3**, Key **4**
515	615	1515	1615	Key **1**, Key **2**, Key **3**, Key **4**
502	602	1502	1602	Key **2**
506	606	1506	1606	Key **2**, Key **3**
510	610	1510	1610	Key **2**, Key **4**
504	604	1504	1604	Key **3**
512	612	1512	1612	Key **3**, Key **4**
508	608	1508	1608	Key **4**
516	616	1516	1616	**B**kgd
517	617	1517	1617	**B**kgd, Key **1**
519	619	1519	1619	**B**kgd, Key **1**, Key **2**
521	621	1521	1621	**B**kgd, Key **1**, Key **3**
523	623	1523	1623	**B**kgd, Key **1**, Key **2**, Key **3**
525	625	1525	1625	**B**kgd, Key **1**, Key **4**
527	627	1527	1627	**B**kgd, Key **1**, Key **2**, Key **4**
529	629	1529	1629	**B**kgd, Key **1**, Key **3**, Key **4**
531	631	1531	1631	**B**kgd, Key **1**, Key **2**, Key **3**, Key **4**
518	618	1518	1618	**B**kgd, Key **2**
522	622	1522	1622	**B**kgd, Key **2**, Key **3**
526	626	1526	1626	**B**kgd, Key **2**, Key **4**
520	620	1520	1620	**B**kgd, Key **3**
528	628	1528	1628	**B**kgd, Key **3**, Key **4**
524	624	1524	1624	**B**kgd, Key **4**
558	N/A	1558	N/A	**DSK FTB**

CONTROLLING THE KAYAKDD-1 RAM RECORDER(S) AS A VTR TYPE DEVICE

You can control the KayakDD-1 RAM Recorder(s) with the same basic control capabilities of a VTR; Play, Rewind, Fast- forward, Jog, Search, Match, Fill and Variable speeds.

VPE and DPE control of the RAM Recorder(s) is accomplished via a standard RS-422 control cable to one of the six available ports on the rear of the switcher chassis (E-Box) labeled Port 1-Port 6. Connect the RS-422 control cable from the E-Box Port to an available port on the rear of the VPE or DPE editor.

On the KayakDD control panel (perform these functions **in the order listed**)**:**

- Press the **[HOME]** button.
- In the Graphical Display, select **Install** / **E-Box** / **VTR Emulat**. Select **VTR Emu 1-5.**
- Select **Type**. Select **bvw75_Vnnn** (where nnn is the current Version number). Press **OK**.
- Select **Port**. Select Port **1-6**.
- Select **Device**. Select **RamRec 1-4**. Press **OK**.

In the Super Edit Assignment Page:

- Select the Source **A-VTR – F-VTR** to be used to control a RamRecorder.
- Assign the VPE/DPE **Port** to be used to control a RamRecorder.
- The driver "**MODEL**" should be **TIMELN**.
- The **QC** should be set to "**3**".
- Assign the appropriate crosspoints corresponding to **St 1-St 4**.

About the KayakDD RAM Recorder control:

- You can attach either a Still or a Clip to a RamRecorder channel, and they are created on the KayakDD, using the switcher's tools.
- A special driver called **TIMELN** comes with the KayakDD-1 protocol for control of the RamRecorder.
- There are no ballistics associated with the RamRecorder when in variable speeds, so frame accuracy can only be guaranteed when at PLAY speed.
- You need not enter an In-time for the RamRecorder in the Super Edit Mark Table. A "blank" In-time defines the beginning of the current Clip.
- You may use the entire Clip, as Super Edit will perform a "phantom" pre-roll of the RamRecorder.
- You may enter any existing In-time for the RamRecorder source. The RamRecorder will be "matched" at the edit IN.
- You may "Match" to an existing RamRecorder edit in the EDL.

SWITCHER TRANSITIONS

Mix and Wipe transitions, when programmed through the **DISS** or **WIPE** dialogs, allow rates of up to 255 frames.

Wipe numbers, when programmed through the **WIPE** dialog, allow a Wipe # range of 000 through 399. Forward wipes are 000 through 199. For reverse wipes, add the modifier **200**. Example: If you wish to program Wipe # 10 in reverse, enter **210** at the **WIPE # ?** prompt.

NOTE: Under some conditions, the switcher panel tally in the "Transition Type" area will show NO tally, although the switcher transitions are being done in the correct mode,

NOTE: When doing non-PEGS transitions, the MIX lamp <u>never</u> tallies for a MIX. The WIPE lamp <u>always</u> tallies for   a   WIPE.

NOTE: When doing a PEGs transition, the panel tally shows the transition mode <u>only</u> when the mode is changed (WIPE to MIX), or, alternately when doing back-to-back transitions of the same type. Thus if you are

doing back to back WIPE transitions, the WIPE lamp <u>will</u> illuminate for the <u>first</u> transition, **no** lamps will tally for the <u>second</u> transition, WIPE <u>will</u> illuminate for the <u>third</u> transition, and will continue in an alternate On/Off pattern. This is the normal operation of the KayakDD "transition type" tally, and in all cases the transition is done correctly.

RE-ESTABLISHING COMMUNICATIONS WITH THE KAYAKDD-1

To re-establishing communications with the switcher, or to remove any active Keys on the currently controlled M/E, press **[SHIFT][RESET].** This will also clear an active DSK/FTB.

ENABLING / DISABLING SWITCHER CONTROL IN SUPER EDIT

You can disable crosspoint control of the KayakDD-1 by pressing **[ALT][VIDEO].** The Status Line of the editor will display **VSWR-OFF** when disabled. In this mode, only **PEGS and EMEM** commands are allowed to pass through to the switcher, and pressing **[SHIFT][RESET]** will not reset the switcher or any active Keys.