Released: 05/01/2007
FOR-A Co., Ltd.

VPS-700OU

Important Note On USB Memory

Do not power on VPS-700OU **with a USB flash memory** inserted in the USB port of VPS-700OU.

If VPS-700OU is powered on with a USB memory inserted by mistake, VPS-700OU cannot start up properly, displaying such messages as "Now Initializing..." on the menu display.
In this case, make sure there is no memory access (access lamp is not flashing.) and remove the USB memory from the USB port. And then power off, then on VPS-700OU.

FOR.A®
INNOVATIONS IN VIDEO
and AUDIO TECHNOLOGY

OPERATION MANUAL

VPS-700 MU
Video Production System

VPS-700RPS MU
Video Production System

VPS-700OU
Operation Unit

5th Edition

FOR-A COMPANY LIMITED

Edition Revision History

Edit.	Rev.	Date	Description	Section
1	-	2005-10-25		
1	1	2005-11-04	Added Shutdown procedure.	
1	2	2005-12-28	Changed Startup screen. Added VPS-70DPUIF. Changed output signal description. Changed Memory management for OU and USB. Changed Event operation. Added Sequence Edit.	
2	-	2006-07-18	Added analog expansion card setup procedure. Corrects signal names, pattern pictures, still store and pre-combiner description.	
2	1	2007-01-17	Changed MU/OU control cable. Corrects USB port specification. Corrects Joystick Default procedure. Added default procedure for WIPE and DVE modify menu. Corrected and Added pre-combiner operation example. Corrected and Added event operations. Corrected other factual errors.	2-3-2 2-3, 16-1-2 5-3-2 9-1, 10-1 12 13
3	-	2007-05-31	Added Color Control. Added Defocus (Warp option). Added Strobe. Added Event Target. Added Remap Link. Corrected other factual errors.	10-5-2 10-5-3 10-6-10 13-2 12-3
4	-	2008-3-18	Added VPS-70FR Changed file management description Changed flash recorder (option) description Changed OU clearing and backing up description Corrected other factual errors.	13 4-5 13 17-2
4	1	2008-5-31	Changed VPS-700RPS rear panel illustration Changed the detailed drawing of VPS-700RPS	2-2 18-2-2
5	-	2010-2-1	Added information about setting graphic Wipes with Flash Recorder (option). Changed the title of section 17-2 Added Odd/Even/Any selection for button performances Changed the title, structure, and contents of section 5, 7 and 8 Corrected other factual errors	14-6 17-2 18-4-4 5, 7, 8

Precautions

Important Safety Warnings

[Power]

 Caution	Operate unit **only** on the specified supply voltage.
	Disconnect power cord by connector only. **Do not** pull on cable portion.
 Stop	**Do not** place or drop heavy or sharp-edged objects on power cord. A damaged cord can cause fire or electrical shock hazards. Regularly check power cord for excessive wear or damage to avoid possible fire / electrical hazards.

[Grounding]

 Caution	**Ensure** unit is properly grounded at all times to prevent electrical shock hazard.
 Hazard	**Do not** ground the unit to gas lines, units, or fixtures of an explosive or dangerous nature.
 Caution	**Ensure** power cord is firmly plugged into AC outlet.

[Operation]

 Hazard	**Do not** operate unit in hazardous or potentially explosive atmospheres. Doing so could result in fire, explosion, or other dangerous results.
 Hazard	**Do not** allow liquids, metal pieces, or other foreign materials to enter the unit. Doing so could result in fire, other hazards, or unit malfunction.
	If foreign material does enter the unit, turn power off and disconnect power cord **immediately.** Remove material and contact authorized service representative if damage has occurred.

[Transportation]

 Caution	**Handle** with care to avoid shocks in transit. Shocks may cause malfunction. When you need to transport the unit, use the original packing materials or alternate adequate packing.

[Circuitry Access]

	**Do not** remove covers, panels, casing, or access circuitry with power applied to the unit! Turn power off and disconnect power cord prior to removal. Internal servicing / adjustment of unit should only be performed by qualified personnel.
 Stop	**Do not** touch any parts / circuitry with a high heat factor. Capacitors can retain enough electric charge to cause mild to serious shock, even after power is disconnected. Capacitors associated with the power supply are especially hazardous. Avoid contact with any capacitors.
 Hazard	Unit **should not** be operated or stored with cover, panels, and / or casing removed. Operating unit with circuitry exposed could result in electric shock / fire hazards or unit malfunction.

[Potential Hazards]

 Caution	If abnormal smells or noises are noticed coming from the unit, turn power off immediately and disconnect power cord to avoid potentially hazardous conditions. If problems similar to above occur, contact authorized service representative **before** attempting to again operate unit.

[Rack Mount Brackets, Ground Terminal, and Rubber Feet]

 Caution	To rack mount or ground the unit, or to install rubber feet, **do not** use screws or materials other than those supplied. Otherwise, it may cause damage to the internal circuits or components of the unit. If you remove the rubber feet attached on the unit, **do not** reinsert the screws securing the rubber feet.

[Consumables]

 Caution	The consumables used in unit must be replaced periodically. For further details on which parts are consumables and when they should be replaced, refer to the specifications at the end of the Operation Manual. Since the service life of the consumables varies greatly depending on the environment in which they are used, they should be replaced at an early date. For details on replacing the consumables, contact your dealer.

Upon Receipt

Unpacking

The VPS-700 and any of its options you may have purchased are fully inspected and adjusted prior to shipment and can be operated immediately upon completing all required connections and operational settings. Check your received items against the packing lists below.

MU Box Contents

ITEM	QTY	REMARKS
VPS-700 MU or VPS-700RPS MU	1	VPS-700 main processing unit (Single Power Supply model) VPS-700RPS main processing unit (Redundant power supply model) * Note that the VPS-700MU units cannot be upgraded to VRP-700RPS MU. Be careful to select the right model.
AC Cord	1-2	For AC power connection One for VPS-700 MU and two for VPS-700RPS MU
Rack Mount Brackets	1 pr.	Rack mounting to EIA standard type

OU Box Contents

VPS-700OU	1	VPS-700 operation unit
Control Cable	1	For connection between MU and OU, 10m (RJ-45, 10Base-T/100Base-TX, Category 5, Cross-over cable)
AC Cord	1	For AC power connection
Operation Manual	1	

Internal Options

VPS-70SDI	1-2	For addition of 4 SD-SDI inputs (max 2 cards)
VPS-70SDO	1-2	For addition of 4 SD-SDI outputs (max 2 cards)
VPS-70AI	1-4	For addition of 2 analog inputs (max 4 cards)
VPS-70AO	1-2	For addition of 2 analog outputs (max 2 cards)
VPS-70DS	1-2	Pre-combiner card with16 channels of DVE (max 2 cards)
VPS-70FR	1-2	Flash Recorder (max 2 cards)
VPS-70CK	1	Chromakey module (hardware dongle)
VPS-70Warp	1	Advanced 3D DVE Warp module (hardware dongle)
VPS-70DPUIF	1	Display Interface Module (hardware dongle)

Refer to each card installation manual for how to install option card. After installation, refer to sections 4-6. "Input Expansion Option" and 4-7. "Output Expansion Option" to setup analog inputs and / or outputs.

External Options and Devices

VPS-70DPU	1	Touch Panel Display Unit
VPS-70DPUA	1	Touch Panel Display Unit
HVS-AUX8/16/32	1	Auxiliary control unit
Control cable	1	For VPS-700 and HVS-AUX16/32 connection (PC-3168-1, 10m)
Control cable	1	For VPS-700 and Virtual device (RS-422A cable)

Refer to sections 3-3 and 4-8 for HVS-AUX8/16/32 connection and setup. See the HVS-AUX8/16/32 operation manual for how to control the auxiliary units.

Check

Check to ensure no damage has occurred during shipment. If damage has occurred, or items are missing, inform your supplier immediately.

Rack Mounting

The VPS-700 can be mounted to EIA standard rack units. When rack mounting a unit, use the accessory rack mount brackets (rack ears).

Table of Contents

1. Prior to Starting

1-1. Welcome

Congratulations! By purchasing the VPS-700 switcher you have entered the world of FOR-A and its many innovative products. Thank you for your patronage and we hope you will turn to FOR-A products again and again to satisfy your video and audio needs.
FOR-A provides a wide range of products, from basic support units to complex system controllers, which have been increasingly joined by products for computer video based systems. Whatever your needs, talk to your FOR-A representative. We will do our best to be of continuing service to you.

1-2. VPS-700 Overview

FOR-A VPS-700 1M/E switchers are versatile, cost-effective and integrated solutions that support SDI SDTV video signals. They are ideal for operations in limited space such as relay vans.

- Standard system configuration provides 8 SD-SDI inputs. Up to 8 SD-SDI or 8 analog inputs can be added to the system. All inputs are freely assignable.
- Standard system configuration provides 8 SD-SDI outputs (2 Programs, Preview, Clean program and 4 AUX outputs). Up to 8 SD-SDI or 4 analog outputs can be added to the system. All outputs are freely assignable.
- Every input is provided with a frame synchronizer to allow asynchronous input and the frame memory of the frame synchronizer can be used to store or freeze live video, or store still images.
- Accepts synchronous or non-synchronous video inputs with a built-in frame synchronizer provided for each input. The FS provides not only synchronous live input, but also frozen live video or still image stored in its frame memory. The optional VPS-70WARP enables the addition of up to six versatile 3D-DVE channels. This module can also add two light sources for each channel (total: 12).
- A total of 6 keyers, Key1-Key4 for the M/E bus and DSK1-DSK2 for the down stream are provided. DVEs can be assigned to each keyer and various effects can be added to the keyers as Line DVEs. Since the number of DVE engines is 6, the total number of effects and DVEs assigned to the keyer/transition line must be 6 or less. (For example, Page Turn uses two warp engines.) The optional VPS-70CK can provide 10-bit 4:4:4 processing chromakey to all 6 keyers.
- Key masks, edge, shadow, outline and extrude features are provided in the standard configuration. The keys priority order can be changed between keyers and between DSKs.
- Analog black burst input signal for system synchronization and two reference outputs.
- CUT, MIX, WIPE and DVE transitions available for background and keys. CUT and MIX transitions are available for DSKs.
- Two still stores and 4 matte colors are supported for the M/E bus.
- Versatile 6-channel DVE modify operations are possible and 3D Warp engine is available with the DVE option.
- Standard and bevel edged borders are available for both inside and outside DVE pictures.

- By installing an optional DVE Input Card, Basic 2.5D-DVEs (position, size, rotation, border) can be added to each input, and two precombiners can be added. The precombined video signals can be assigned as primary signals or materials for keyers. One DVE input card has 16 lines of DVEs. Since up to 2 cards can be installed, DVE can be assigned to all Combiner A/B inputs even at the most number of inputs.
- Up to 8 configurable signal layers, including PGM, PST, 4 Keys and 2 DSKs, are supported in the standard system. The optional pre-combiners enable to create the pre-combined image with up to17 layers and the program output with up to 25 layers.
- Optional Flash Recorder card is available. Up to a total of two Flash Recorder cards and DVE cards are installable into two shared slots. One flash recorder card can store approximately 120 seconds of D1 uncompressed images in non-volatile memory and also supports simultaneous playback of up to two channels with a key. Playback is available in different modes such as loop play mode, and trigger play mode.
- The internal event memory for saving and reading 96 events (setting data).
- 100 sequences with up to 31 keyframes each can be saved.
- Built-in USB ports for flash drive for uploading and downloading setting files and image sources.
- Standard system includes three RS-422 ports and 8 GPI inputs and 24 tally outputs capabilities (Remote connector) for various remote controls.
- An optional SVGA (800 x 600) Touch Panel LCD display is available for the intuitive menu operation using GUI.
- VPS-700 unit is housed in a compact EIA 2RU standard size. VPS-700RPS is EIA 3RU.
- Redundant power supply (VPS-700RPS only).

1-3. About This Manual

This manual is intended to help users easily operate the VPS-700 and make full use of its functions during operations. Before connecting or operating your unit, read this operation manual thoroughly to ensure you understand the product. After reading, it is important to keep this manual in a safe place and available for reference.

Font Conventions
The following conventions are used through out this manual:

- Circled text (such as AUTO) is used for buttons.
- Text in square brackets (such as [SYSTEM] - [GPI]) is used for menu and submenu titles.
- Shaded text (such as ON) is used for the setting items and values in the menus.

1-4. Basic Switcher Operations

This chapter explains important information that you need to know before using the VPS-700. This includes points related to transition, key setup, DVE key and sequence operations.

1-4-1. Background Transitions

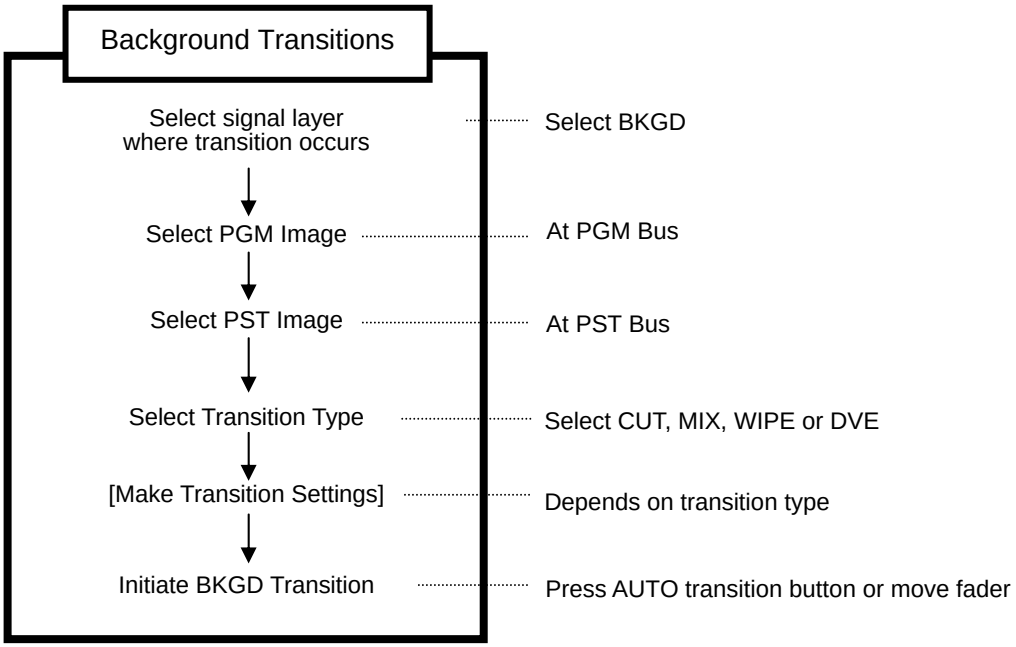
The background is the lowest signal layer during switcher productions, and a background transition switches over the signal used for that layer to a new signal when a background transition is performed.
For example, assume image A below is currently selected on the PGM bus. This is the background signal currently displayed on the PGM line output. Also assume that image B shown below is selected on the PST bus. When you perform a background transition, image B is transitioned onto the PGM line output and replaces image A at output.

Background Signal Transition to PGM Output Line

Image A out (before transition)

Image B out (after transition)

The flow chart below illustrates how a background transition is performed using the VPS-700. Operations in the flow chart refer to further operational explanations/examples that are indicated in [ ] marks.



Refer to section 8-1-1. "Transition Rate" for details.

1-4-2. Key Transitions

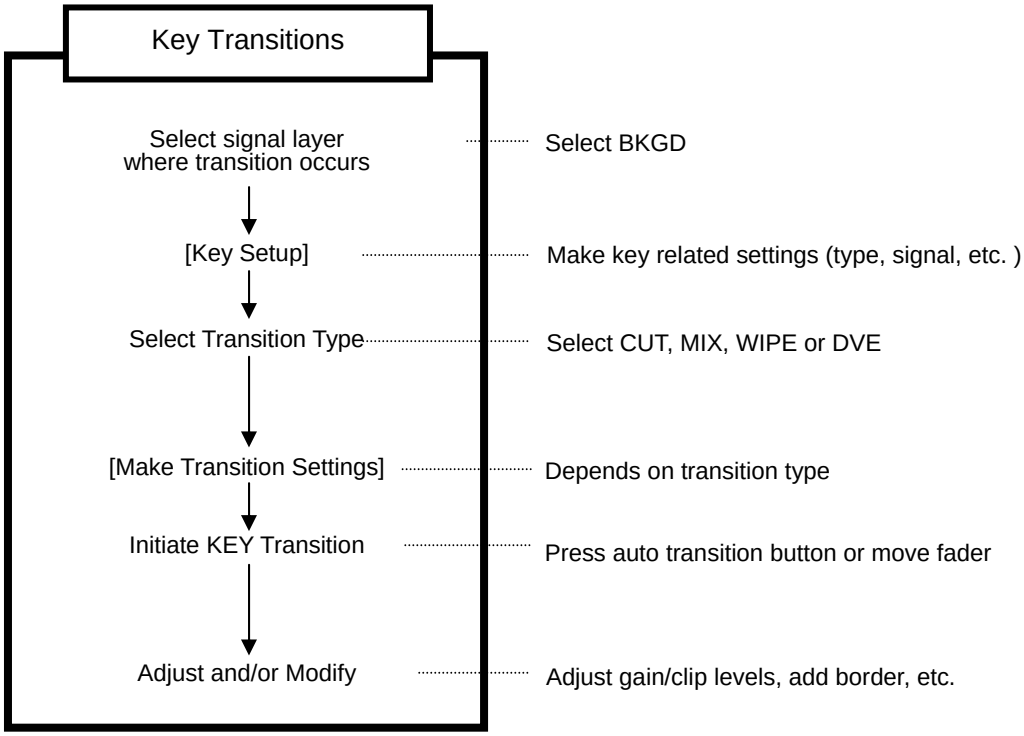
Now that you have an idea of how a background transition is performed on the lowest video layer, this section provides a basic idea of how to perform a key layer transition onto the PGM line output over the output background layer. Keys are often used to add or remove titles during video productions. The VPS-700 lets you add up to 4 key and 2 DSK signal video layers over your background video layer.

For example, assume you need the title shown below added over the background video currently on the PGM line output. When you perform a key only signal transition, the key title appears over the background layer on the line output after the key transition is complete.

Transitioning Key Over Background on PGM Output Line

Without key layer (Before transition) With key layer (After transition)

The flow chart below illustrates how a key transition is performed using the VPS-700. Operations in the flow chart refer to further operational explanations/examples that are indicated in [ ] marks.



Refer to section 9. "Keyer / DSK Setup" for details about key setup.
Refer to section 8-2-4. "Fader Limit" for details about key transitions.

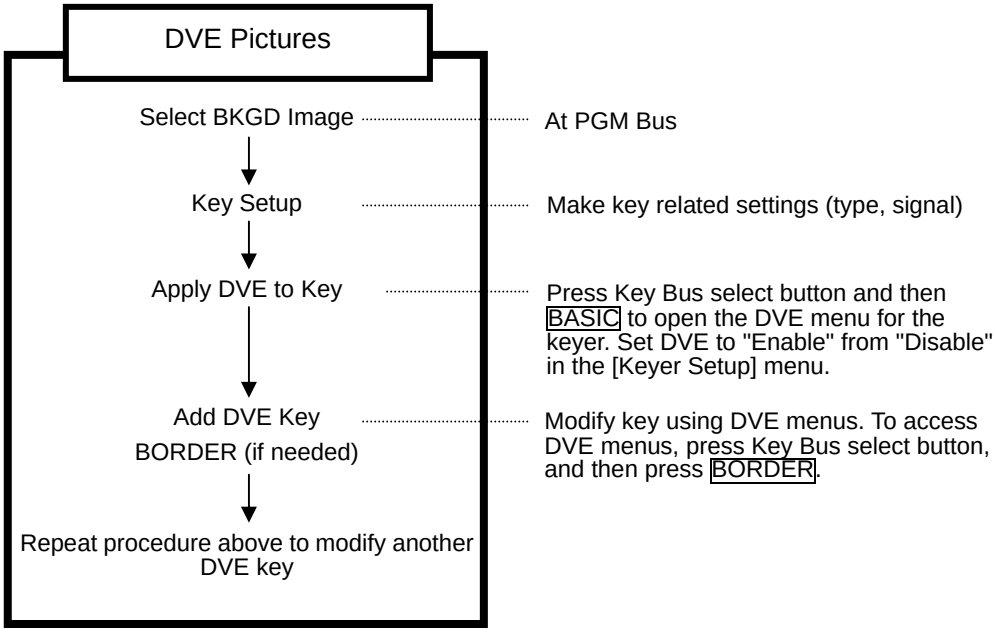
1-4-3. DVE Pictures

The VPS-700 has DVE features that allow the user to apply manually adjustable DVEs to all key layers including the DSK layers. The switcher has six DVE channels, so a combined image containing up to 6 DVE key layers can be composed as illustrated in the figures below. Addition of optional pre-combiners allows a pre-combined image with up to16 live DVE key images for each, and more complex and detailed images can be produced.

Modified DVE Keys

DVE Keys (Line DVE applied)
(Before modification)

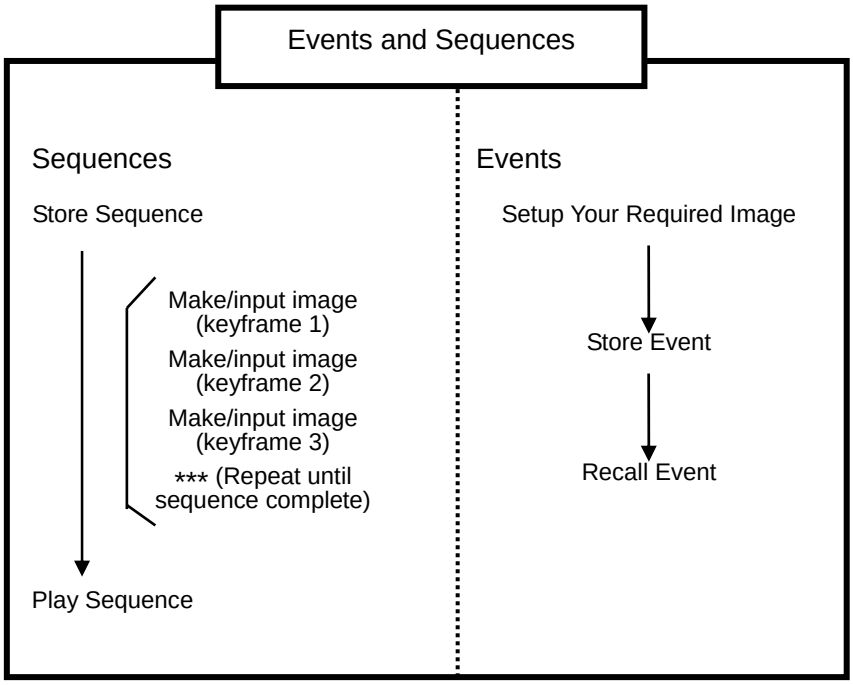
DVE Key (Line DVE applied)
(After modification)



Refer to section 9-5. "Assigning DVEs to Keyers" for details on DVE keys.
Refer to section 11. "DVE Modify" for details on how to modify DVEs.

1-4-4. Sequence Operation

The VPS-700 also has event and sequence memory features that allow the user to preset commonly needed video setups for repeated use during productions, or program a series of setups into memory for the smooth transition from one image to another. All sequences are written (stored) to memory as they are made and can be recalled and applied as needed. The basic flow for sequence operations is as shown below.



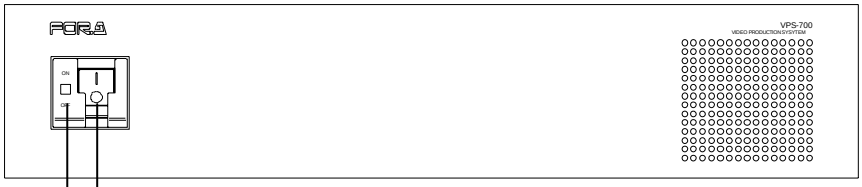
See section 16. "Sequence Operations" for more detailed information about making, storing and using sequences.

2. Panel Description

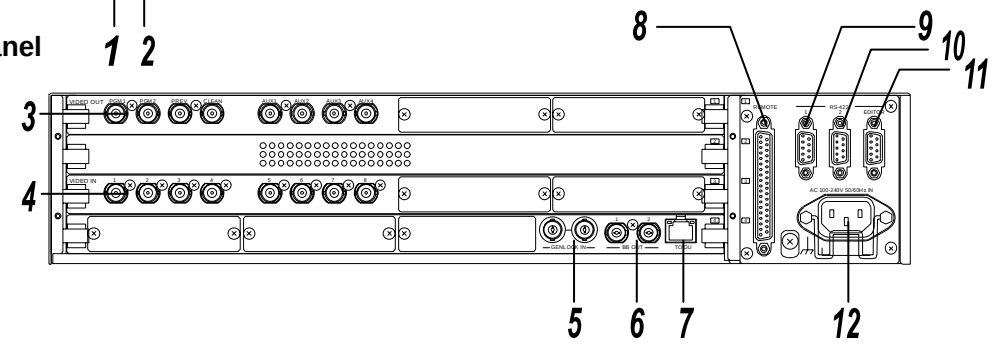
This section describes the locations and general functions of the controls, switches and connectors on the VPS-700. VPS-700 has two models: VPS-700 MU; the single power supply model, and VPS-700RPS MU; the redundant power supply model. Both of them are controlled by the VPS-700OU.

2-1. VPS-700 MU (Single PS Model)

◆ **Front Panel**



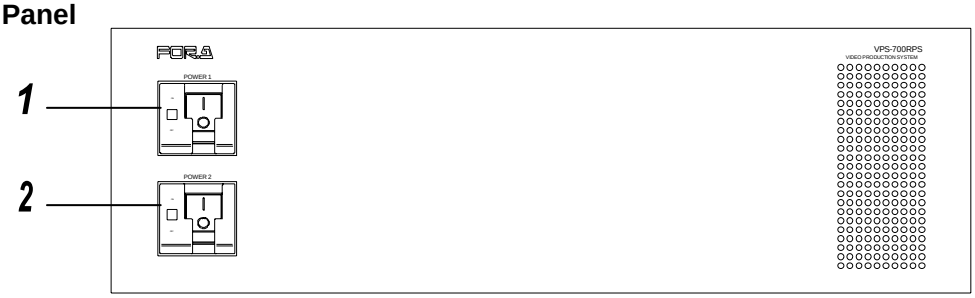
◆ **Rear Panel**



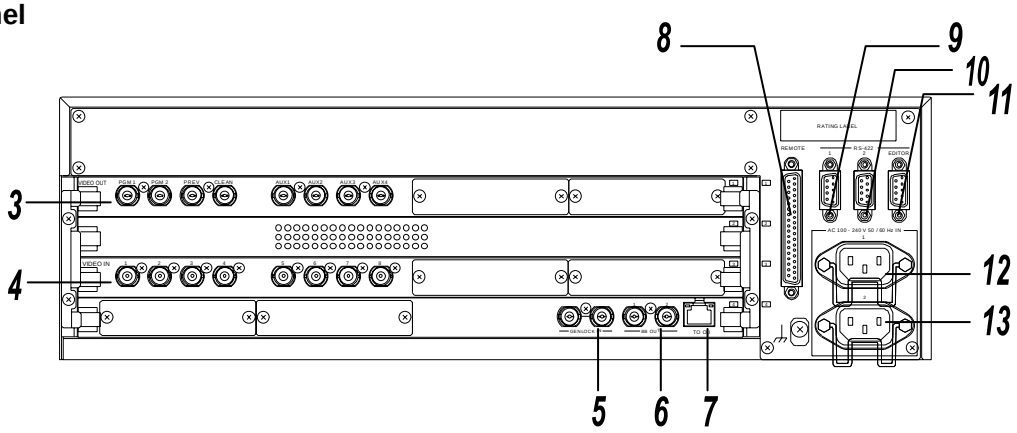
No.	Name	Description
1	Power indicator	Power indicator lights up green whenever the power switch is set to ON and power is applied to the unit.
2	Power switch	Switch used to turn unit power ON / OFF.
3	VIDEO OUT	For standard definition serial digital output signal connection. 2 Program, 1 Preview, 1 Clean, 4 Auxiliary outputs in the standard configuration. Adds up to 8 Auxiliary outputs with optional output cards.
4	VIDEO IN	For standard definition serial digital component input signal connection. 8 primary standard inputs. Adds up to 8 inputs with optional input cards
5	GENLOCK IN	One connector is used to input analog black burst signal for reference. The other connector is used for loopthrough output connection to other equipment (Switchable connectors). If not looped through input signal, 75 ohm termination is required.
6	BB OUT	Used to output reference signal to other system equipment. 2 outputs
7	TO OU	For OU connection. (RJ-45, 10Base-T/100Base-TX).
8	REMOTE	For GPI operation control input and GPI and tally operation output, 37-pin D-sub (female)
9	RS-422 -1	For RS-422 control connection, 9-pin D-sub (female)
10	RS-422 -2	For RS-422 control connection, 9-pin D-sub (female)
11	RS-422 - EDITOR	For editor connection, 9-pin D-sub (female)
12	AC IN	Used for connection to AC power source via supplied cable.

2-2. VPS-700RPS MU (Redundant PS Model)

◆ **Front Panel**



◆ **Rear Panel**

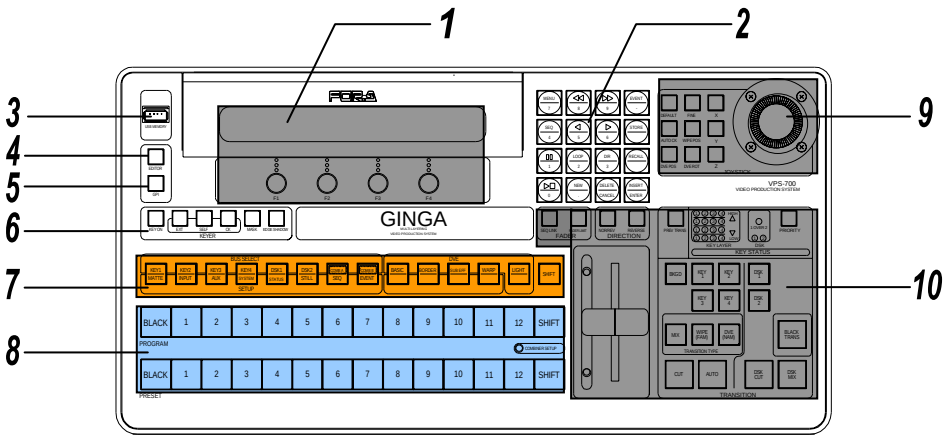


No.	Name	Description
1	Power 1 indicator Power 1 switch	Power indicator lights up green whenever the POWER 1 switch is set to ON and power is applied to the unit.
2	Power 2 indicator Power 2 switch	Power indicator lights up green whenever the POWER 2 switch is set to ON and power is applied to the unit.
3	VIDEO OUT	For standard definition serial digital output signal connection. 2 Program, 1 Preview, 1 Clean, 4 Auxiliary outputs in the standard configuration. Adds up to 8 Auxiliary outputs with optional output cards.
4	VIDEO IN	For standard definition serial digital component input signal connection. 8 primary standard inputs. Adds up to 8 inputs with optional input cards
5	GENLOCK IN	One connector is used to input analog black burst signal for reference. The other connector is used for loopthrough output connection to other equipment (Switchable connectors). If not looped through input signal, 75 ohm termination is required.
6	BB OUT	Used to output reference signal to other system equipment. 2 outputs
7	TO OU	For OU connection. (RJ-45, 10Base-T/100Base-TX).
8	REMOTE	For GPI operation control input and GPI and tally operation output, 37-pin D-sub (female)
9	RS-422 -1	For RS-422 control connection, 9-pin D-sub (female)
10	RS-422 -2	For RS-422 control connection, 9-pin D-sub (female)
11	RS-422 - EDITOR	For editor connection, 9-pin D-sub (female)
12	AC IN 1 (Power1)	Used for connection to AC power source via supplied cable.
13	AC IN 2 (Power2)	Used for connection to AC power source via supplied cable.

2-3. Operation Unit

2-3-1. Control Panel

Buttons, indicators and other operational tools located on the front panel of the VPS-700 OU units are as shown and described in the figure and text below.



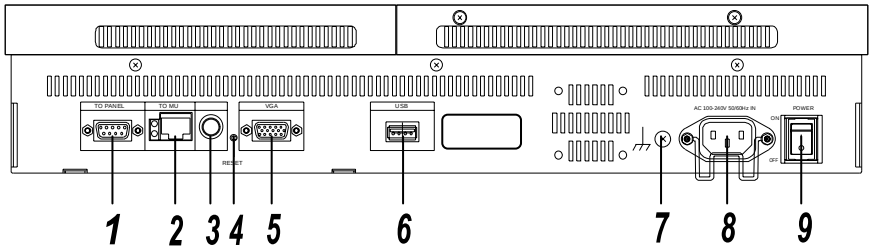
No.	Name	Description
1	Menu display / menu controls	Menu / parameters display (2 lines) and controls.
2	Keypad and operation mode buttons	Menu, Event, Sequence operation mode buttons
		For number input / operational data adjust.
		For event save / recall operations.
		For sequence save / play operations.
3	USB memory port	For data upload / download. (USB flash memory drive only, up to 2GB)
4	EDITOR button	For editor control ON/OFF
5	GPI button	For GPI IN control ON/OFF.
6	Keyer section	For keyer setup (signal and type selection and mask, edge and shadow settings).
7	Bus select, operational setup and DVE sections	For bus and/or menu selection.
8	M/E bus for background	For background signal source selection.
9	Joystick control section	For number input and auto chroma keying
10	Transition control section	For transition setup of background and key layers.

IMPORTANT
USB port can be used for USB flash memory drive only. Other USB devices are not recognizable. Do not insert USB memory drives into the USB connector on the top and rear of the control panel at the same time.

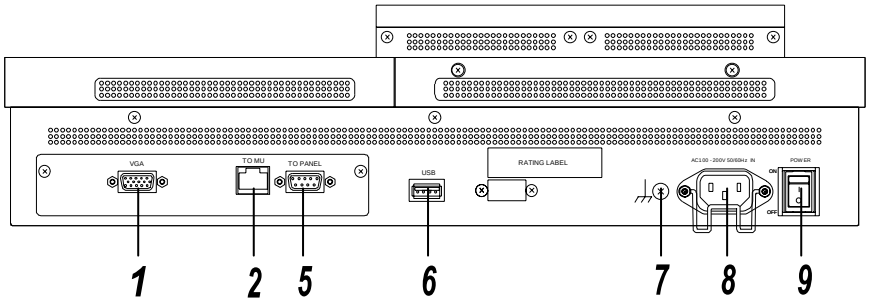
2-3-2. Rear Panel

Connectors and items located on the rear panel of the VPS-700 units are as shown and described in the figure and text below.

[S/N 10550001 - 10550300]
[S/N 11640001 - 11640008]



[S/N 10550301 - Higher]
[S/N 11640009 - Higher]

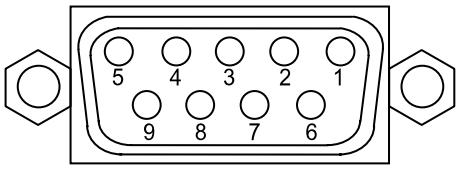


No.	Name	Description
1	TO PANEL	For optional Touch Panel display connection. (RS232C, 9-pin D-sub, male)
2	TO MU	For MU connection. (RJ-45, 10Base-T/100Base-TX, Cat5, Cross-over cable).
3	SERVICE	Do not use.
4	RESET	Reset switch for Operational Unit.
5	VGA	For optional Touch Panel display connection.
6	USB	For USB device connection. (USB flash memory drive only, up to 2GB)
7	Ground Terminal	Used to ground unit for electrical protection.
8	AC IN	For AC input connection (AC100V-240V 50/60Hz).
9	Power switch	Used to power ON/OFF.

IMPORTANT
USB port can be used for USB flash memory drive only. Other USB devices will not be recognized.

2-4. Interfaces

◆ **EDITOR Connector**



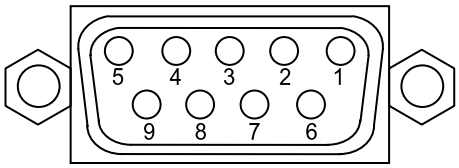
Pin Assignment Table (9-pin D-sub female)

Pin No.	Signal Name	Description
1	FG	Frame ground
2	T-	Transmit data (-)
3	R+	Receive data (+)
4	SG	Signal ground
5	-	Not used
6	SG	Signal ground
7	T+	Transmit data (+)
8	R-	Receive data (-)
9	FG	Frame ground

Cable Connectors

9-pin D-sub connector (male) with inch security lock screws.

◆ **RS-422 (1) (2) Connector**



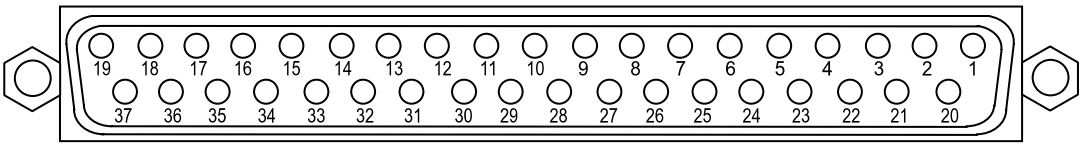
Pin Assignment Table (9-pin D-sub female)

Pin No.	Signal Name	Description
1	FG	Frame ground
2	R-	Receive data (-)
3	T+	Transmit data (+)
4	SG	Signal ground
5	-	Not used
6	SG	Signal ground
7	R+	Receive data (+)
8	T-	Transmit data (-)
9	FG	Frame ground

Cable Connectors

9-pin D-sub connector (male) with inch security lock screws.

◆ **REMOTE Connector**



Pin Assignment Table (37-pin D-sub, female)

Pin No.	Pin Function	Default Assignment
1	Tally Output 1	RedTallyInput01
2	Tally Output 2	RedTallyInput02
3	Tally Output 3	RedTallyInput03
4	Tally Output 4	RedTallyInput04
5	Tally Output 5	RedTallyInput05
6	Tally Output 6	RedTallyInput06
7	Tally Output 7	RedTallyInput07
8	Tally Output 8	RedTallyInput08
9	Tally Output 9	GreenTallyInput01
10	Tally Output 10	GreenTallyInput02
11	Tally Output 11	GreenTallyInput03
12	Tally Output 12	GreenTallyInput04
13	Tally Output 13	GreenTallyInput05
14	Tally Output 14	GreenTallyInput06
15	Tally Output 15	GreenTallyInput07
16	Tally Output 16	GreenTallyInput08
17	+5V	
18	+5V	
19	+5V	
20	Tally Output 17	None
21	Tally Output 18	None
22	Tally Output 19	None
23	Tally Output 20	None
24	Tally Output 21	None
25	Tally Output 22	None
26	Tally Output 23	None
27	Tally Output 24	None
28-29	GND	
30	GPI 1	PGMAutoTrans
31	GPI 2	PGMCutTrans
32	GPI 3	DSKAutoTrans<Mix>
33	GPI 4	DSKCutTrans
34	GPI 5	PGMMixType
35	GPI 6	PGMWipeType
36	GPI 7	PGMDVEType
37	GPI 8	BlackTrans

Cabling

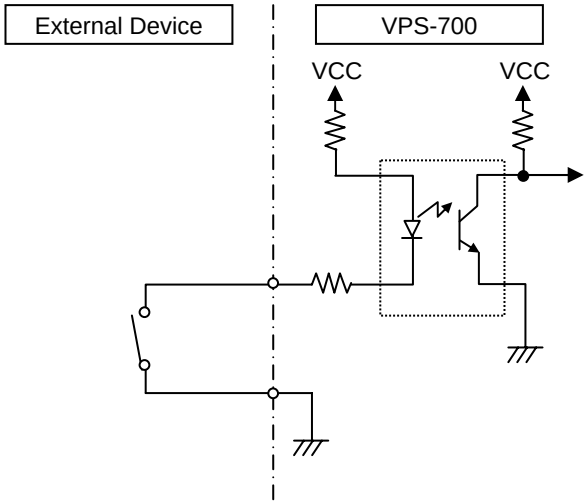
37-pin D-sub connector (male) with inch security lock screws. Max. load current of 0.1A DC.

Free Pin Assign

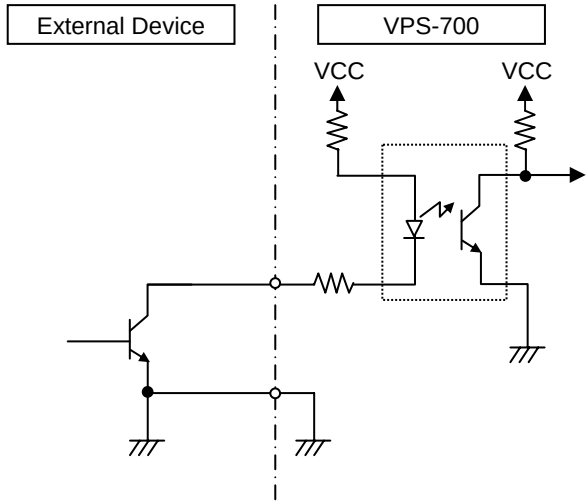
Pin signal assignments shown on the previous page are factory default settings. These assignments can be changed in operation menus. (See section 17-3. "Tally Outputs.")

GPI Input Circuit

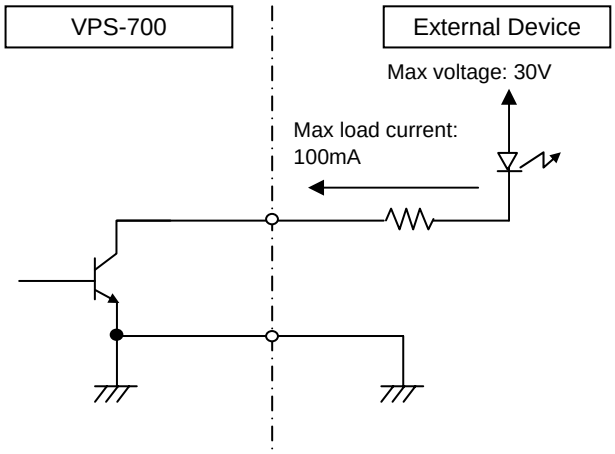
Switch or Relay



Open corrector

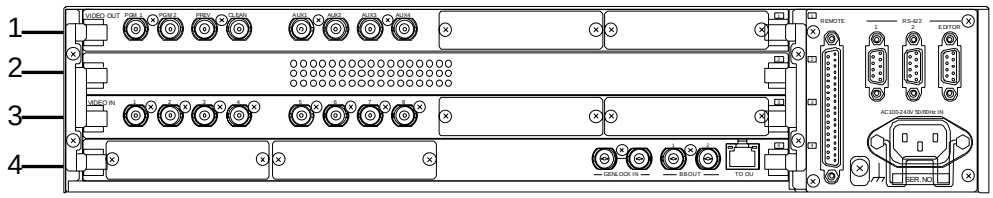


Tally Output Circuit



2-5. MU Rear Panel Cards

Panel edges of each internal card appears at the MU rear panel (either for VPS-700MU and VPS-700RPS MU) as shown below. The slot designations are described in the table below. The cards are secured by board stoppers. To remove cards from the MU, the board stoppers must be removed.



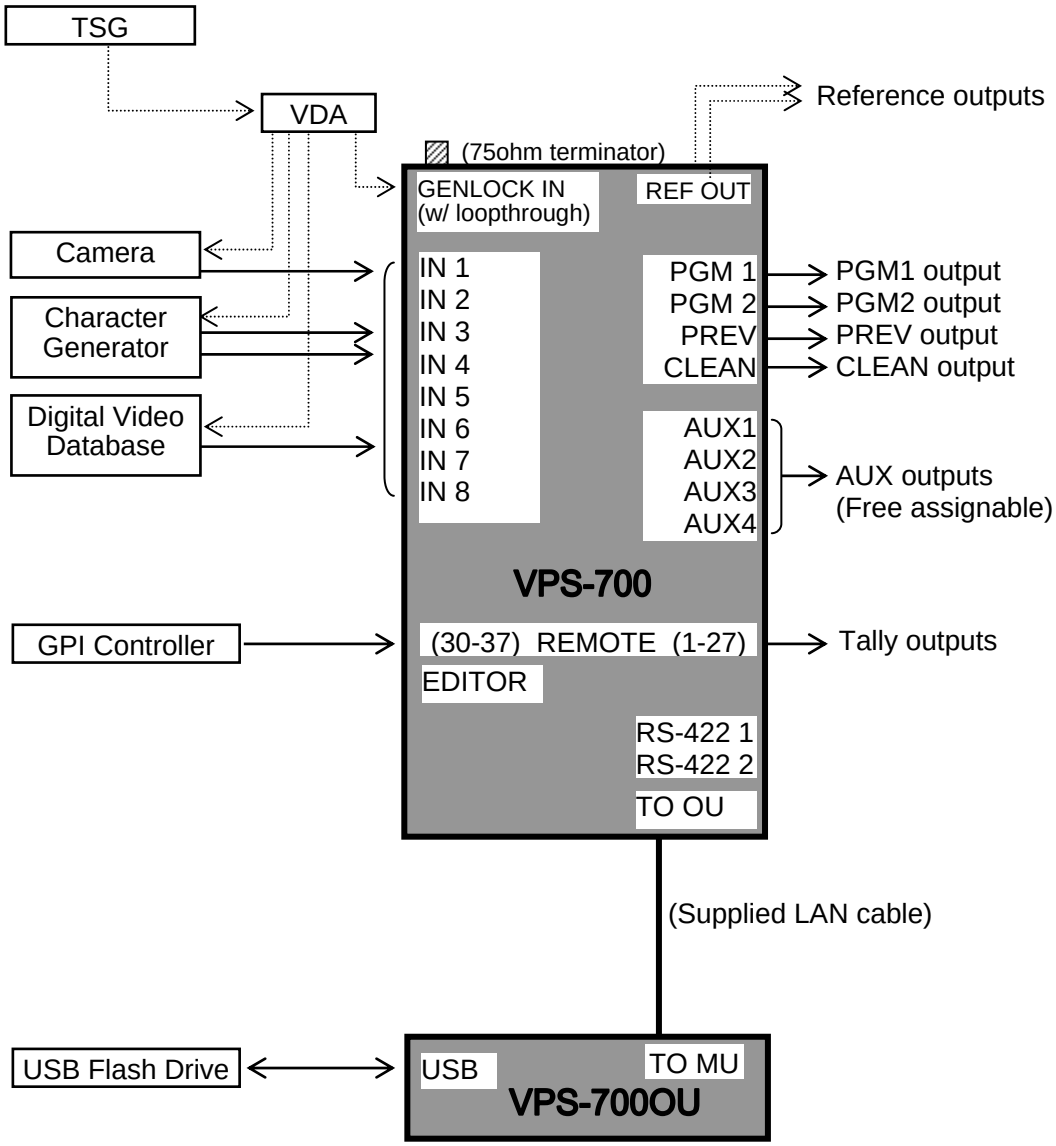
Slot	Standard/Option	Card	Description
1	Standard	GENLOCK	GENLOCK Card
		SDO	Standard Output Card of 8 SD-SDI outputs.
	Option	VPS-70AO / VPS-70SDO	For addition of max. 2 cards. (*1)
2	Standard	Main	Main Card.
	Option	VPS-70DS	Pre-combiner card with 16 channels of DVE. (Max 2 cards) (Two slots for shared use by VPS-70DS and VPS-70FR.)
		VPS-70FR	Flash recorder card (Max 2 cards) (Two slots for shared use by VPS-70DS and VPS-70FR.)
3	Standard	SDI	Standard Input Card of 8 SD-SDI inputs.
	Option	VPS-70AI / VPS-70SDI	For addition of max. 2 cards. (*1)
4	Option	VPS-70AI	For addition of max. 2 cards. (*1)
	Standard	CPU	CPU Card.
	Standard		Chromakey module (Hardware dongle)
	Option		Advanced 3D DVE Warp module. (Hardware dongle)
	Option		Display Interface Module (Hardware dongle)

*1 See section 4-6. “Input Expansion Option” for adding inputs and see section 4-7. "Output Expansion Option" for adding outputs.

NOTE
MU unit have built-in cooling fans. If fan replacement becomes necessary, contact your FOR-A supplier.

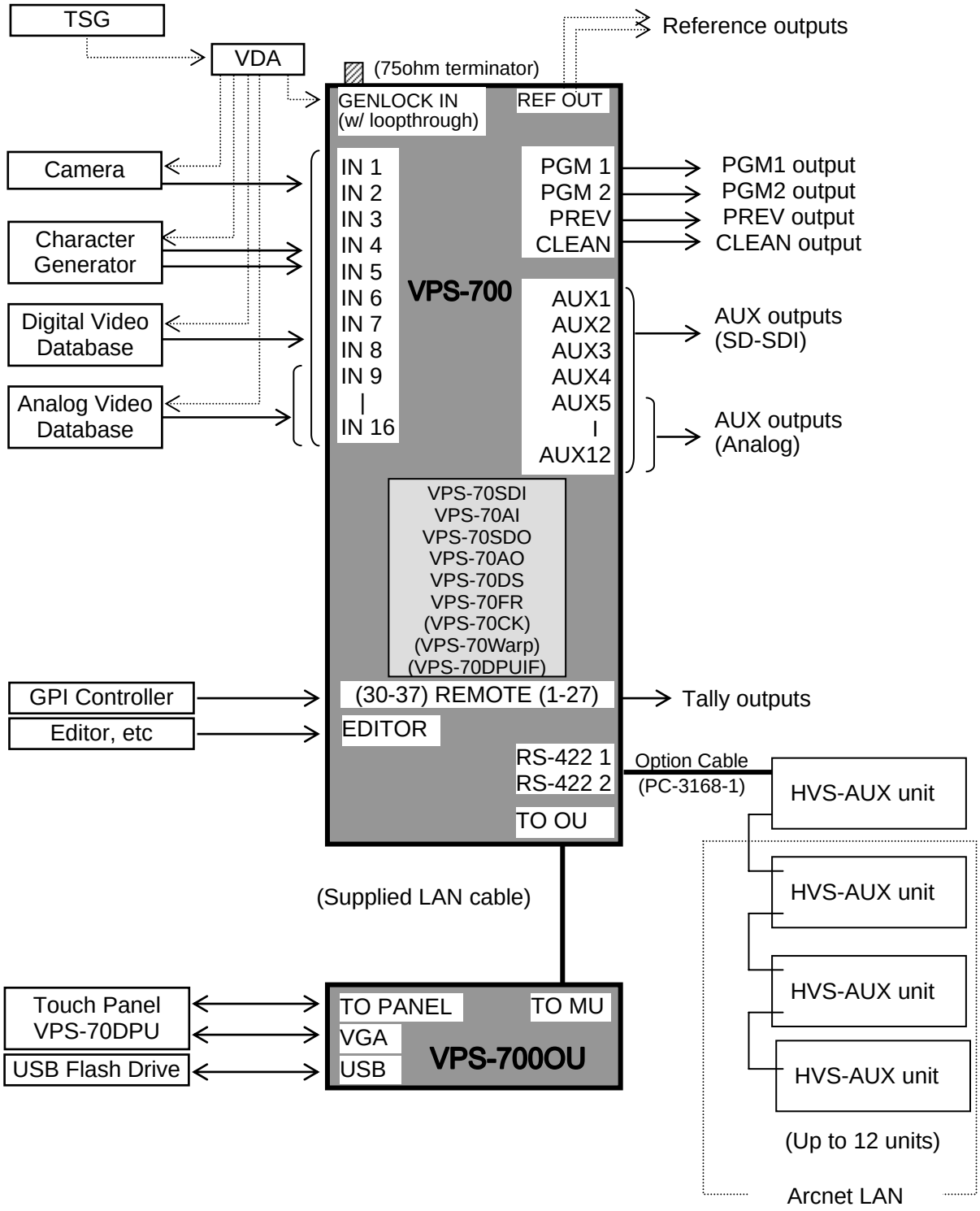
3. Connection and Setup

3-1. Basic Connection



IMPORTANT
Be sure to use the supplied control cable (Category 5, cross-over LAN cable) for MU to OU connection.

3-2. Optional Configuration



3-3. Connection for Aux Output Control (Option)

Auxiliary outputs can be controlled remotely from optional auxiliary units.

IMPORTANT
To control VPS-700 auxiliary outputs, the HVS-AUX units must have firmware version 3.00 or higher. Refer to section 4-8. “Auxiliary Connection Setting” to make communication settings with the auxiliary units on the VPS-700 control panel. The communication settings must be done before configuring the auxiliary units.

First, designate one of the auxiliary units as a master and the others as slaves. Connect the master unit to the VPS-700 via the supplied control cable as shown in the connection example below. Use the Arcnet to daisy-chain the master and slaves using the cables supplied with the auxiliary units in a series connection. Both ends of the Arcnet must be 75 ohm-terminated.

◆ **Connecting VPS-700 to the master auxiliary unit:**

Connector on VPS-700: RS-422 (1) or (2) (9 pin D-sub 9, female)
Connector on HVS-AUX unit: CONTROL B (9 pin D-sub 9, female)
Connection cable: Optional control cable (PC-3168-1, Separate purchase)

◆ **Connecting the master and slave auxiliary units:**

Used connector: BNC with loopthrough (75Ω termination switch provided)
Connection cable: BNC cable supplied with the auxiliary unit

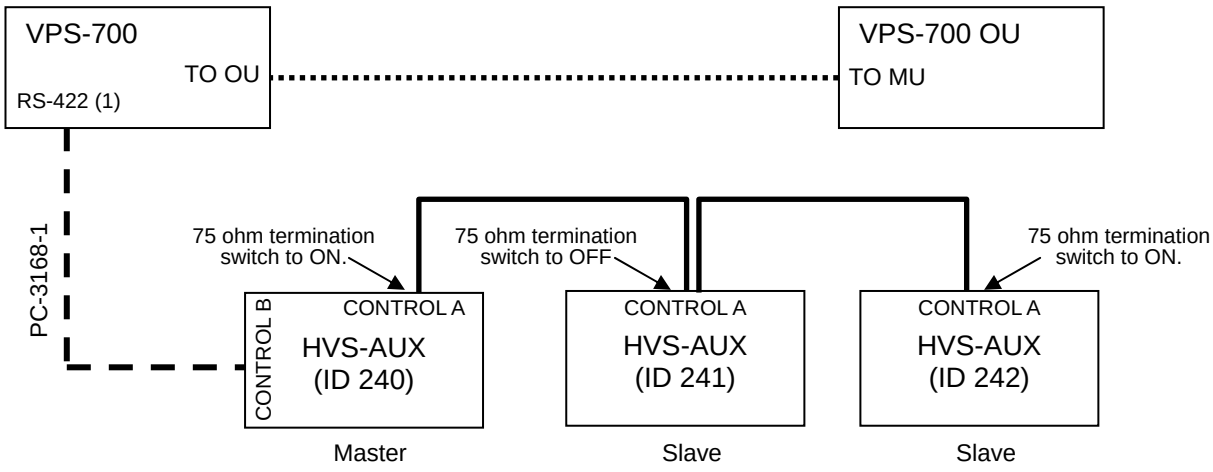
◆ **Arcnet Connection Requirements**

Connection cable	BNC (5C2V or equivalent)
Total cable length of one segment	Less than 100m
Maximum number of units within one segment	7 units

These figures are provided only as a guide. They vary depending on the environments of the system.

IMPORTANT
To control all of auxiliary outputs at the same time, you need the same number of auxiliary units as the auxiliary outputs. To construct a system with more than eight auxiliary units, an Arcnet hub is required. Consult your For-A resellers for more details.

◆ **Connection Example**



4. Setup

4-1. Power ON

Before powering ON the VPS-700, verify that all cabling connections are secure and power supplies are properly connected.

① Turn all units in the system ON.

② Set the power switch on the VPS-700 front panel to ON. The power indicator lights up green when power is supplied to the unit.

③ Set the power switch on the VPS-700OU rear panel to ON to start up the operation unit.

④ After powering up, the display briefly displays the following.

```
Now Initializing…
Please wait…
```

⑤ Once the OU software has started, the message shown below is displayed while establishing a connection with the main unit.

```
Now initial communication started.
```

⑥ After the connection between the main unit and the operation unit is established and initialization is completed, the message shown below appears to indicate that the control panel is ready for operation.

```
Transition Rate                          Now DVEs = 0
                  PGM=25      DSK=25      BLK=25
```

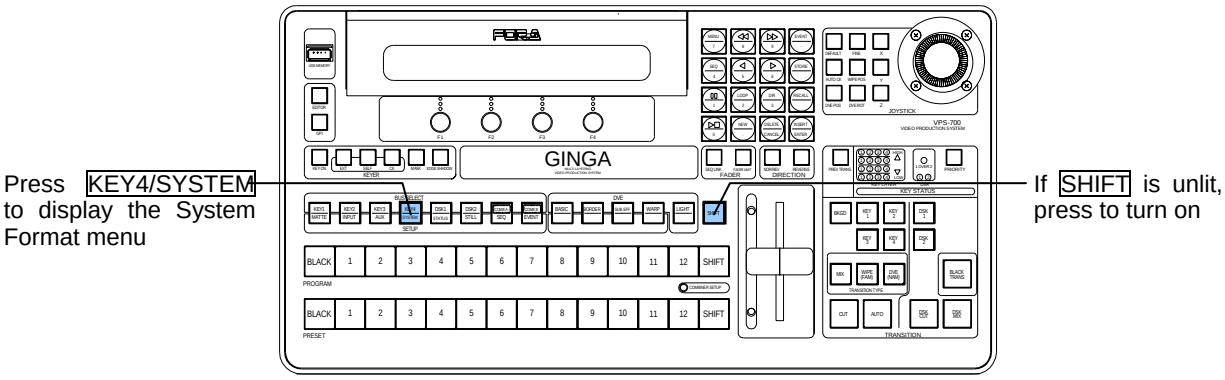
⑦ Move the fader lever from end to end to adjust the fader position.

⑧ If you are going to use an optional touch panel (VPS-70DPU/DPUA), provide the touch panel calibration at its first operation after purchase referring to section 18-3. “Update”.

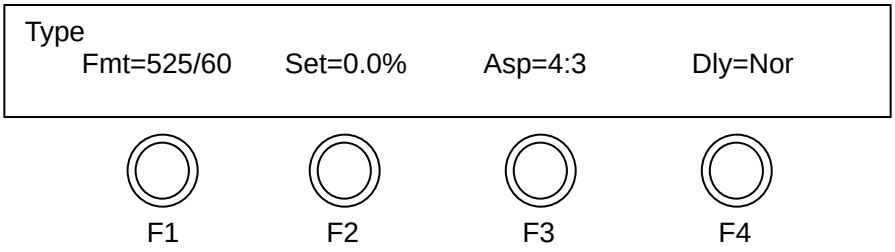
4-2. Selecting System Signal Format

Before using your switcher, select a signal format for your system.

① Press the KEY4 / SYSTEM button (while SHIFT is lit) to access the [SYSTEM] menu.



② Verify that the Video Signal Format (Fmt), Setup Level (Set), Aspect, and Delay settings are correct. If they are not suitable for your system, turn the F1, F2, F3 or F4 controls to adjust the settings. Once the settings are changed in the menu, the system must be restarted.

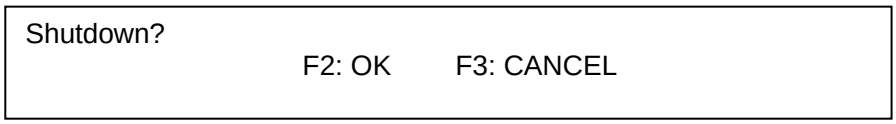


4-3. Power OFF

Before powering off the VPS-700, follow the procedure below to make the shutdown operation.

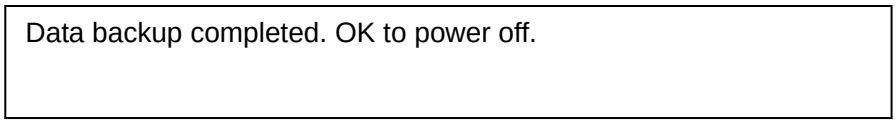
① Remove USB flash drive from panel.

② Press both F1 and F4 together. The panel display changes as shown below.



③ Press F2 to start the shutdown process. (Or press F3 if you want to cancel the shutdown.)

④ The panel display changes as shown below when the VPS-700 can be properly turned off.



⑤ Power off the OU. Then power off the MU.

IMPORTANT

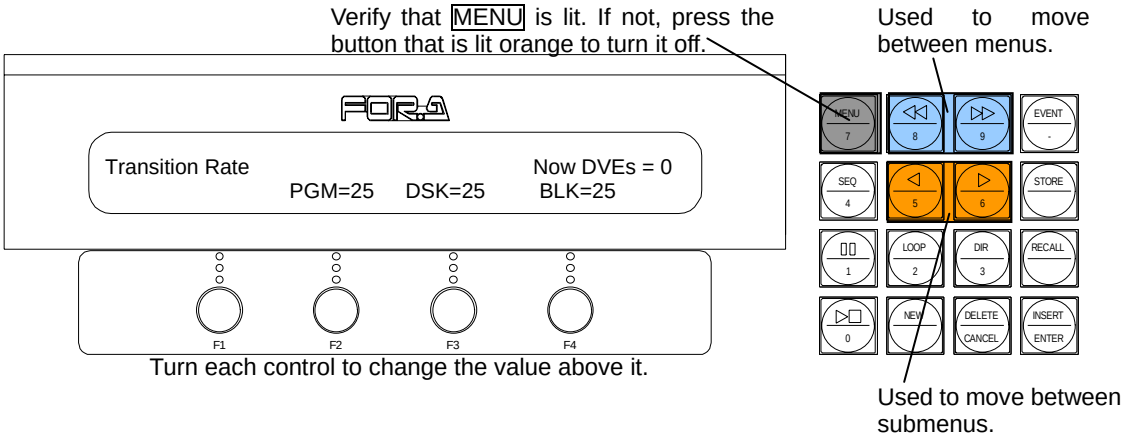
Be sure to make shutdown operation before powering off the system. If you shutdown the system without making shutdown operation, the current panel settings cannot be saved and the system OS cannot be shutdown properly, which may cause a malfunction or restart failure.

Do not power off your switcher during the saving process (writing to internal memory), because this will cause damage to the memory and in some cases your switcher will not start up the next time you turn it on.

The system saves the last panel settings and they are recalled at startup if the system was shutdown properly.

4-4. Quick Reference for Menu Setting

Before operating your unit, you need to understand how to make the settings using menus. This short chapter provides a quick overview of making the menu settings. Refer to section 5. "Menu Description" for more details.

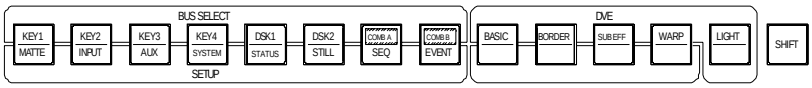


◆ **Menu Display and Changing Settings**

The submenu title is displayed at the top left of the window.
Up to 4 items can be displayed on the second line in the window.
Controls F1 to F4 are used to make the settings.

◆ **Accessing a Menu**

To access a menu, press and light up each of the buttons shown below.



◆ **Moving between Menus and Moving within a Menu**

Single arrow buttons are used to move between submenus within a menu.

Double arrow buttons are used to move between menus.

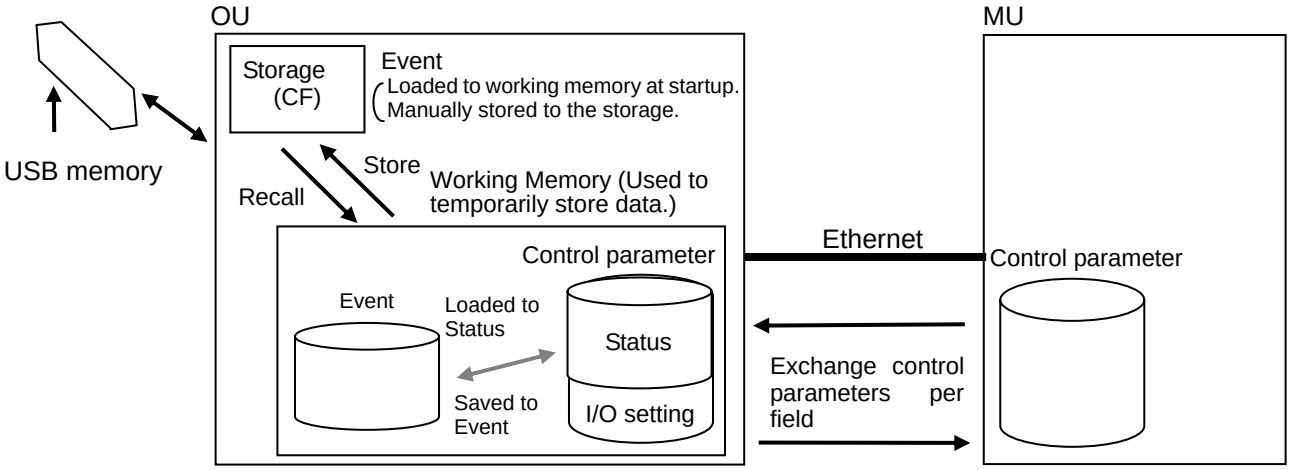
Verify that MENU is lit orange in the keypad. If not, press the button that is lit orange (SEQ or EVENT) to turn it off. Then the MENU lights up, the keypad is set to the Menu mode and the arrow buttons above can be used for menu selection.

4-5. File Management

The VPS-700OU unit has a dedicate storage facility and it can save and load data from the OU storage. When the unit starts up, it reads the saved data in the storage area and loads it into working memory. The saved data is automatically or manually loaded or replaced during panel operations.

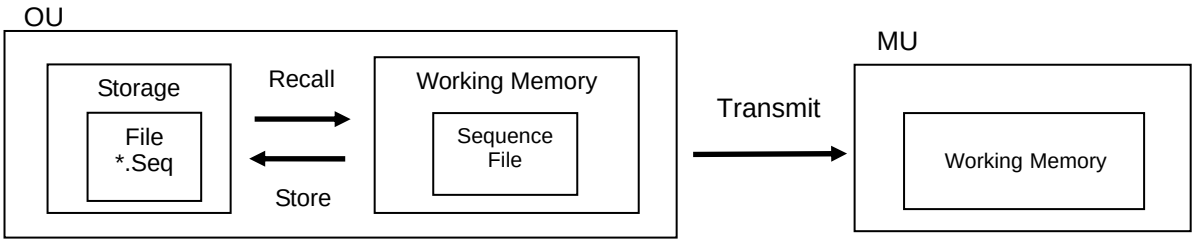
◆ **Basic operations**

Basically, operations on the panel use or change data in the working memory. Therefore, after finishing event or sequence operations temporary changes will be lost and cannot be reloaded, unless they are manually backed up or stored to the OU storage or USB memory.
Executing the "Recall" of event will recall an event data from the Event and replace the Status data in the Control parameter with it. The "Store" of event will save the Status data as an event data in the working memory.



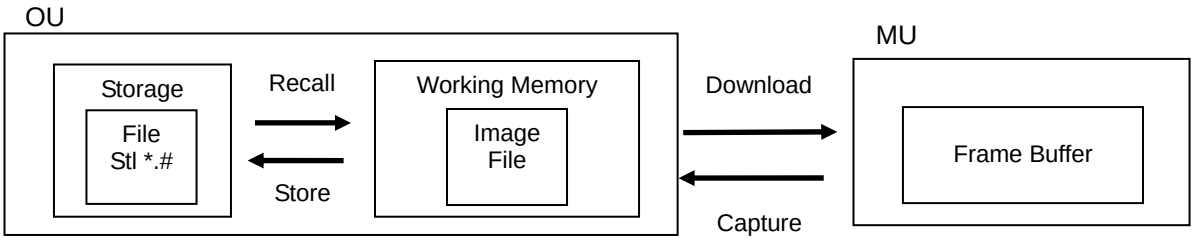
◆ **Sequence**

A sequence is processed as a succession of events. When you "Store" a newly created sequence, the data in the OU working memory is stored to the storage. When you "Recall" the sequence, the sequence data is recalled to the OU working memory and transmitted to the MU working memory.



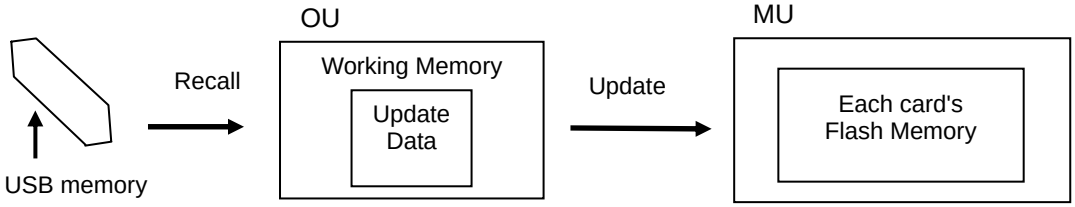
◆ **Still Store**

When downloading a still image, the image file is recalled to the working memory. The recalled image file is stored to the MU frame buffer. When capturing a still image, the image is stored to the working memory and then to the still file (Storage).



◆ **Firmware Update**

Executing the **Firmware Update** after connecting USB memory to OU will recall the update data to the working memory and the data will be written to the flash memory of each card in MU.



◆ **OU Storage Directory Structure**

The OU storage is divided into two 2 sections: C (Protected area: Not rewritable or removable) ・D (Non-protected area: rewritable and removable)

C	OS Application		
D	VPS-700.evt VPS-700.oud VPS-700.ini VPS-700.ste	Event data I/O setting data Initial setting data Status data	
Stl	Stl *.#	Still store data file	#: {jpg , tga , bmp} [00≦ * ≦99]
Seq	*.Seq	Sequence file	[00≦ * ≦99]

◆ **USB Memory Directory Structure**

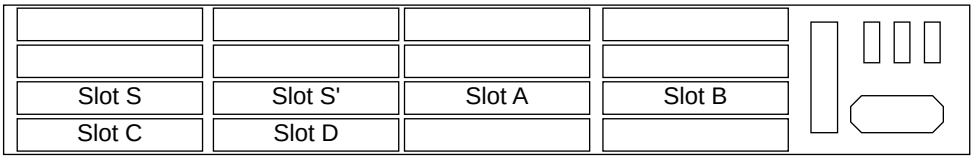
USB memory	VPS-700 *.evt VPS-700 *.oud	Event data Other setting data	} 10 groups [a≦ * ≦j]
Stl	Stl *.#	Still store data file	#: {jpg , tga , bmp} [00≦ * ≦99]
Seq	*.Seq	Sequence file	[00≦ * ≦99]

The amount of data varies on the format of the still image. The more uncompressed files (bmp, tga) are saved, the larger the image data becomes. The 256 MB or more USB flash memory drive is recommended. However the USB flash memories of over 2GB cannot be recognized by the file system.

4-6. Input Expansion Option

The VPS-700 comes with 8 digital video inputs (In01-In08) in the standard configuration. With optional cards (VPS-70SDI or VPS-70AI), eight more digital or analog inputs can be added. See section 4-6-1. “Available combination of card installations” for more details. To install the VPS-70SDI or VPS-70AI, please refer to their respective Installation Manuals. When installing analog input cards, please carry out the appropriate signal set-ups referring to section 4-6-3. "Settings for Optional Inputs".

4-6-1. Available Combinations of Card Installations

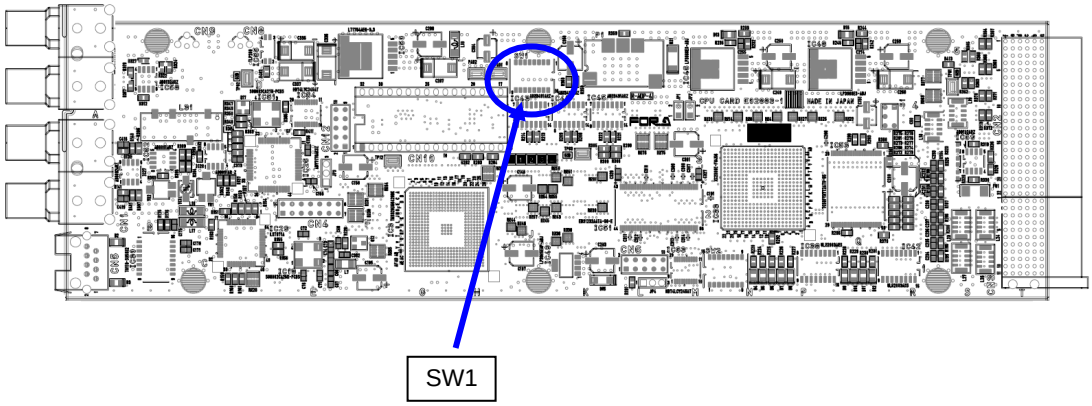


Slots of VPS-700 Rear Panel

Slot						Number of Inputs			Digital Input	Analog Input	
Standard		Option									
S	S'	A	B	C	D	Digital	Analog	Total	Signal Name	Signal Name	Signal Type
SDI	SDI	-	-	-	-	SDI x 8		8	In01-08	-	-
SDI	SDI	SDI	-	-	-	SDI x 12		12	In01-12	-	-
SDI	SDI	SDI	SDI	-	-	SDI x 16		16	In01-16	-	-
SDI	SDI	AI (9,10)		-	-	SDI x 8	A x 2	10	In01-08	In09	Composite, or Y,CB,CR
										In10	Composite
SDI	SDI	AI (9,10)	AI (11,12)	-	-	SDI x 8	A x 4	12	In01-08	In09, 11	Composite, or Y,CB,CR
										In10, 12	Composite
SDI	SDI	AI (9,10)	AI (11,12)	AI (13,14)	-	SDI x 8	A x 6	14	In01-08	In09, 11, 13	Composite, or Y,CB,CR
										In10, 12, 14	Composite
SDI	SDI	AI (9,10)	AI (11,12)	AI (13,14)	AI (15,16)	SDI x 8	A x 8	16	In01-08	In09, 11, 13, 15	Composite, or Y,CB,CR
										In10, 12, 14, 16	Composite
SDI	SDI	SDI	-	AI (13,14)	-	SDI x 12	A x 2	14	In01-12	In13	Composite, or Y,CB,CR
										In14	Composite
SDI	SDI	SDI	-	AI (13,14)	AI (15,16)	SDI x 12	A x 4	16	In01-12	In13, 15	Composite, or Y,CB,CR
										In14, 16	Composite

4-6-2. Adjustments on CPU Card

When installing optional input, DVE, or Flash Recorder cards, it is necessary to adjust the settings on the CPU card. See their respective installation manuals for details. The followings are the descriptions of the dipswitch settings on the CPU card.



◆ **SW1 (Card base address: J.5, 4.5)**

Factory default	Setting varies depending on the configuration of optional cards. Set to off for the standard configuration (without option).
Description	Adjust the settings according to the installed options by referring to the table below. Slots' assignments are shown in the figure on the next page.

Switch No.	Setting description
1	ON: Install VPS-70SDI or VPS-70AI in Slot A. OFF: No installation in Slot A.
2	ON: Install VPS-70SDI or VPS-70AI in Slot B. OFF: No installation in Slot B.
3	ON: Install VPS-70AI in Slot C OFF: No installation in Slot C.
4	ON: Install VPS-70AI in Slot D. OFF: No installation in Slot D.
5	ON: Install VPS-70AI in Slot A. OFF: Install VPS-70SDI or do not install anything in Slot A.
6	ON: Install VPS-70AI in Slot B. OFF: Install VPS-70SDI or do not install anything in Slot B.
7	ON: Install VPS-70DS or VPS-70FR in Slot 2. OFF: No installation in Slot 2.
8	ON: Install VPS-70DS or VPS-70FR in Slot 1. OFF: No installation in Slot 1.

4-6-3. Settings for Optional Inputs

Each optional analog input card (VPS-70AI) can add two channels of analog composite or analog component (Y,CB,CR) inputs. The right connector of the two connectors on each analog input card can only be used for the analog composite input (In10, In12, In14, and In16). The left connector can be used for either analog composite or analog component input (Y,CB,CR) (In09, In11, In13, and In15). For the Y,CB,CR input in the NTSC (525/60) standard, select the video signal level from Betacam or SMPTE according to the format the source device uses.

When installing both analog and digital input cards together, the IN09 through IN12 can be used for the digital inputs, and the IN13 through IN16 can be used for the analog inputs. See section 4-6-1. "Available Combinations of Card Installations" for details.

The Proc Amp and Input Still features are available for the optional inputs same as for the standard SD-SDI inputs. (The inputs added by the optional card are automatically set to and operate in the FS mode).

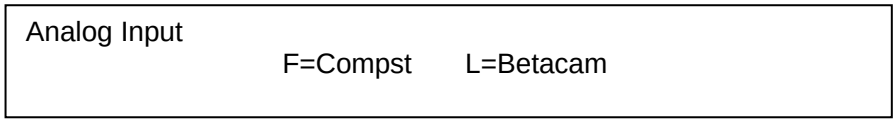
◆ **Analog Input Signal Settings**

① In the PST bus select section, press the bus button that an analog input signal is assigned. (See section 7-1-4. “Assigning Signals to M/E Bus.”)

② With SHIFT lit, press the KEY2/INPUT button.

③ Use single arrow buttons in the Keypad section (while MENU is lit) to go to the [Analog Input] submenu.

④ Turn F2 to select the analog video signal format. Turn F3 to select the signal level.



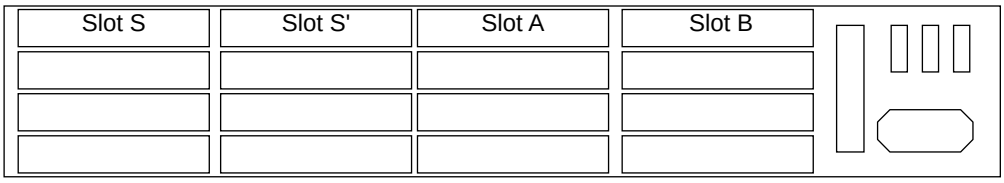
Item		Setting	Description
F	Video Format	Compst (Composite), Y,CB,CR (Component)	Used to select the analog video signal format. Y,CB,CR can only be assigned to In09, In11, In13, and In15.
L	Input Level	Betacam, SMPTE	Used to select the signal level when Video Format is set to Y,CB,CR. (Not necessary except for NTSC.)

IMPORTANT
The video format (NTSC/PAL) and the setup ON/OFF for input signals are selected in the [System]-[Type]-[Format, Setup Level] menu. (See section 18-1 "Signal Format and System Delay".) This setting applies to both input and output signals.

4-7. Output Expansion Option

With optional cards (VPS-70SDO or VPS-70AO), eight more auxiliary outputs can be added. See section 4-7-1. “Available combinations of card installations” for more details. To install the VPS-70SDI or VPS-70AO, please refer to their respective Installation Manuals.
When installing analog output cards, please carry out the appropriate signal set-ups referring to section 4-7-2. "Settings for Optional Analog Outputs."

4-7-1. Available combinations of card installations



Slots of VPS-700 Rear Panel

Slot				Number of Outputs			Digital Output	Analog Output	
Standard		Option							
S	S'	A	B	Digital	Analog	Total	Signal Name	Signal Name	Signal Type
SDO	SDO	-	-	SDI x 8	-	8	Program1-2 Prev, Clean Aux1-4		-
SDO	SDO	SDO	-	SDI x 12	-	12	Program1-2 Prev, Clean Aux1-8		-
SDO	SDO	SDO	SDO	SDI x 16	-	16	Program1-2 Prev, Clean Aux1-12		-
SDO	SDO	AO (5,6)	-	SDI x 8	A x 2	10	Program1-2 Prev, Clean Aux1-4	Aux 5	Composite, Y,CB,CR or GBR
								Aux 6	Composite
SDO	SDO	AO (5,6)	AO (7,8)	SDI x 8	A x 4	12	Program1-2 Prev, Clean Aux1-4	Aux 5, Aux 7	Composite, Y,CB,CR or GBR
								Aux 6, Aux 8	Composite
SDO	SDO	SDO	AO (9,10)	SDI x 12	A x 2	14	Program1-2 Prev, Clean Aux1-8	Aux 9	Composite, Y,CB,CR or GBR
								Aux 10	Composite

4-7-2. Settings for Optional Analog Outputs

Each optional analog output card (VPS-70AO) can add two channels of analog composite and analog component (Y,CB,CR or GBR). AUX06, AUX08, and AUX10 can only be used as the analog composite outputs. AUX05, AUX07, and AUX09 can be used either as analog composite or analog component outputs (Y,CB,CR or GBR). For the Y,CB,CR output in the NTSC (525/60) standard, select the video signal level from Betacam or SMPTE according to the format the device that receives the signal uses.

◆ Analog Output Signal Settings

① With the SHIFT lit, press the KEY3/AUX button to display the [AUX] menu.

```
AUX
        AUX=1        Src=PGM        Ihb=Off
```

② Turn F1 to select an auxiliary output from AUX1 to 12 (AUX5 to 12 are optional).

③ Turn F2 to select a source signal. See section 7-2-1. "Assigning Signals to Auxiliary Outputs" for details. (The Ihb is the setting for local control inhibition. If it is set to On, you cannot contro AUX outputs from the control panel.)

④ Use the single arrow buttons in the Keypad section (while MENU is lit) to go to the [Analog Output] submenu.

⑤ Turn F2 to select the analog video signal format. Turn F3 to select the signal level.

```
Analog Output
        AUX=1        F=Compst      L=Betacam
```

Item		Setting	Description
F	Video Format	Compst (Composite), Y,CB,CR (Component) GBR (Component)	Used to select the analog video signal format. Y,CB,CR or GBR in NTSC standard can only be assigned to AUX05, AUX07, and AUX09. See 4-7. “Output Expansion Option” for more details.
L	Output Level	Betacam, SMPTE	Used to select the signal level when Video Format is set to Y,CB,CR. (Not necessary except for NTSC.)

IMPORTANT

The video format (NTSC/PAL) and the setup ON/OFF for output signals are selected in the [System]-[Type]-[Format, Setup Level] menu. (See section 18-1 "Signal Format and System Delay".) This setting applies to both input and output signals.

4-8. Connection Settings for Aux Output Control

Before connecting the auxiliary output control units, the following communication settings must be made on the control panel.

IMPORTANT
Be sure to make communication settings **before** connecting with the auxiliary units. See section 3-3. “Connection for Aux “ for more details about auxiliary unit connection.

① Press the KEY4/SYSTEM button (while SHIFT is lit) to access the [SYSTEM] menu.

② Use single arrow buttons on the Keypad (while MENU is lit) to go to the [SYSTEM] - [Serial] sub menu. Refer to the procedure below to make settings in the submenus.

e.g.) Connecting an HVS-AUX unit to connector (RS-422-1)

◆ **Protocol**

In the [Protocol] submenu, set HVS-AUX for the first item.

```
Protocol
    1: HVS-AUX      2:  -       3: GVG100
```

◆ **Baudrate**

In the [Baudrate] submenu, set 38400 for the first item.

```
Baudrate
      1: 38400      2: 38400      3: 38400
```

◆ **Parity**

In the [Parity] submenu, set Odd for the first item.

```
Parity
      1: Odd        2: None       3: Odd
```

NOTE
In the case of connecting HVS/AUX unit to RS-422 (2) connector, provide the above settings for the second item in each submenu.

4-9. Easy Virtual Connection Setting

When the Easy Virtual function is applied to the system, the virtual tally information can be routed to other device via an auxiliary output. The communication settings must be made for the RS-422 connector used for virtual link and an auxiliary output to be used for virtual tally must be specified before connecting to the virtual system.

IMPORTANT
Be sure to make communication settings **before** connecting to the virtual system.

◆ Connecting the Switcher to the Virtual System

Connect the switcher to the virtual system via an RS-422-(1) or RS-422-(2) with the dedicated control cable (separate purchase option).

◆ Communication Settings

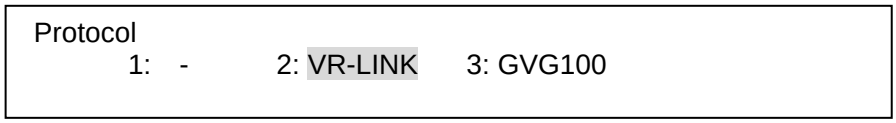
Follow the procedure below to make port communication settings for virtual connection.

① Press the KEY4/SYSTEM button (while SHIFT is lit) to access the [SYSTEM] menu.

② Use single arrow buttons on the Keypad (while MENU is lit) to go to the [SYSTEM] - [Serial] sub menu. Refer to the procedure below to make settings in the submenus. Note that the RS-422 (2) connector is used in the setting example below. If you use the RS-422 (1) connector for auxiliary connection, set for the first item in each submenus.

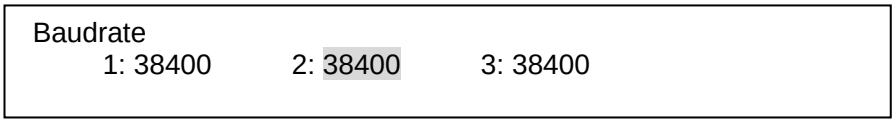
◆ Protocol

In the [Protcol] submenu, set VR-LINK for the second item.



◆ Baudrate

In the [Baudrate] submenu, set 38400 for the second item.

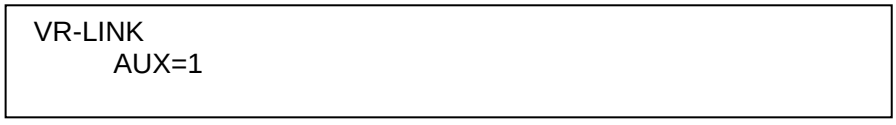


◆ Parity

In the [Parity] submenu, set Odd for the second item.

◆ Selecting an Auxiliary Output Used for Virtual Tally

In the [VR-LINK] submenu, select an auxiliary unit from AUX1 to AUX12.



5. Menu Description

VPS-700 operational items and response are set in the 2-line VFD display window menus. The following sub-sections explain the menu structure and how to access the menu and change items as required during operation. An optional touch panel is available which provides easy and intuitive access to menus.

5-1. Menu Overview

Menus can be accessed by the buttons located in the following four sections. From the menus accessed by those buttons, you can go to related submenus. There are menus you have to choose a layer or a bus to specify whose settings you are going to change before pressing the menu button, and menus you can directly access by the menu buttons. A menu overview is provided below to show you the buttons (label) that open each menu.

- **PGM Transition Section :** MIX, WIPE, DVE, FADER LIMIT
  Allows you to access transition related manus. Before pressing these buttons, a bus must be chosen for the transition from BKGD, KEY, and DSK in the NEXT TRANSITION section.
- **DVE Section :** BASIC, BORDER, SUB EFF, WARP
  Allows you to access DVE effects related manus. Before pressing these buttons, a layer must be chosen in the BUS SELECT section. Flash Recorder menu can be accessed by the SUB EFF button.
- **SETUP Section :** MATTE, INPUT, AUX, SYSTEM, STATUS, STILL, SEQ, EVENT
  Pressing these buttons which the SHIFT button is lit allows you to access menus for signal assignments and format settings for input, output and matte signals, event settings, and system settings. For the Input related manus, first, a bus must be chosen on the PST bus.
- **KEYER Section :** EXT, SELF, CK
  Allows you to access Keyer related menus. Before pressing these buttons, a layer must bechosen in the BUS SELECT section. To access Auto Chromakey menu, choose a layer to set, and then press the AUTO CK button in the Joystick control section.

- **M/E, Keyer and Setup Menus**

Button		Accessed menu		Accessed submenus
KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	EXT	KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	External Key	External Key 1-2
	SELF		Self Key	Self Key 1-2
	CK		Chroma Key	CK Manual 1-2、CK Other、CK Detail 1-2
	CK AUTO (*1)		Chroma Key	CK Auto
	MASK		Key Mask	Key Mask
	EDGE SHADOW		Edge Shadow	Edge Type, Edge Position, Edge Color1-2
	BASIC, BORDER, SUB EFF, WARP, LIGHT		DVE Modify	(See DVE menus.)
COMB A COMB B		Formation		Combiner Formation
COMB A COMB B	BASIC, BORDER	COMB A COMB B	DVE Modify	(See DVE menus.)
MIX (*2)		Transition Rate		Transition Rate
DVE (*2)		DVE		DVE Pattern
WIPE (*2)		Wipe	Wipe Pattern	Wipe Pattern
			Wipe Border	Wipe Border Color
			Wipe Modify	Aspect, Center Position(X, Y, Angle)

Button		Accessed menu		Accessed submenus
DVE (*2)	BASIC, BORDER, SUB EFF, WARP, LIGHT	M/E	DVE Modify	(See DVE menus.)
FADER LIMIT (*2)		Fader Limit		Fader Limit
MATTE		Matte		Matte Color
INPUT		Setup		Input Remap, Input Process 1-2, Analog Input, Input Rename
AUX		Aux, Output		Aux, Analog Output, Preview Clean
SYSTEM		System		Type, Other, Serial, Tally, Data Backup, Update
STATUS		Status		Board Status, Alarm Status, Version
STILL		Still		Download, Capture, Export, Delete
SEQ (*3)		Sequence		Seq File, Seq Edit
EVENT (*3)		Event		Event, Event Target

(*1) AUTO CK button is in the joystick section.
(*2) MIX, WIPE, DVE, and FADER LIMIT buttons in the transition section.
(*3) SEQ and EVENT buttons in the keypad section or in the SETUP section.

◆ DVE Menus

Button		Accessed DVE Modify menu		Accessed submenus	
KEY1 KEY2 KEY3 KEY4 DSK1 DSK2 COMB A COMB B	BASIC	M/E KEY1 KEY2 KEY3 KEY4 DSK1 DSK2 COMB A COMB B	Basic	Position	Local Source, Local Target, Global Source, Global Target
				Rotation	Local Source, Local Target, Global Source, Global Target
				Aspect, Setup(*1)	
	BORDER		Border	DVE Border Color, Inner Width, Outer Width DVE Border Softness, DVE Beveled Color, DVE Hilight Setup	
KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	SUB EFF	M/E KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	Sub Effects	Trail	Trail 1-3, Mix Color, Decay Color
				Chroma Control	
				Strobe	
	(Option) WARP		Warp	Warp OFF	
				Ripple	DVE Ripple 1-3, Modifier
				Swirl	DVE Swirl
				Mosaic	DVE Mosaic 1-2
				Slats	DVE Slats
				Lens	DVE Lens 1-3, Modifier
				Page Turn	DVE Page Turn 1-3
				Page Peel	DVE Page Peel 1-2
				Splits	DVE Splits 1-2
				Mirror	DVE Mirror 1-2
				Defocus	DVE Defocus
	(Option) LIGHT		Light	DVE Light Type	
				DVE Light1	DVE Light1 Position, DVE Light1 Color
				DVE Light2	DVE Light2 Position, DVE Light2 Color

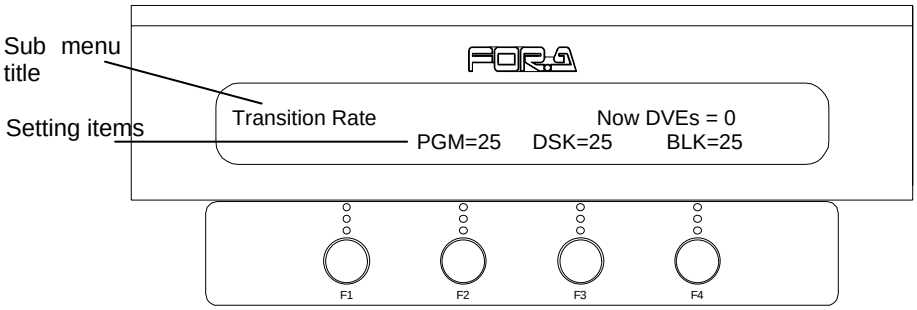
(*1) DVE in this submenu sets DVE key ON/OFF.

IMPORTANT

Note that pressing a DVE menu button (BASIC, BORDER, SUB EFF, WARP or LIGHT) without any bus button lit opens the DVE menu for M/E (background).

5-2. Menu Display

When starting up the system or pressing the MIX button in the TRANSITION section, a display similar to that shown below will show.



Turn each control to change the value above it.

Window Display

- The submenu title is displayed on the top left side.
- Up to four items are displayed on the bottom line.
- Controls F1 to F4 are used to change the item displayed above each control.
- The number of currently employed DVE channels is displayed on the top right side.

In the example above, the [Transition Rate] submenu is displayed. The setting for PGM (Program), DSK and BLK (Black) items can be changed by turning controls F2, F3 and F4, respectively.

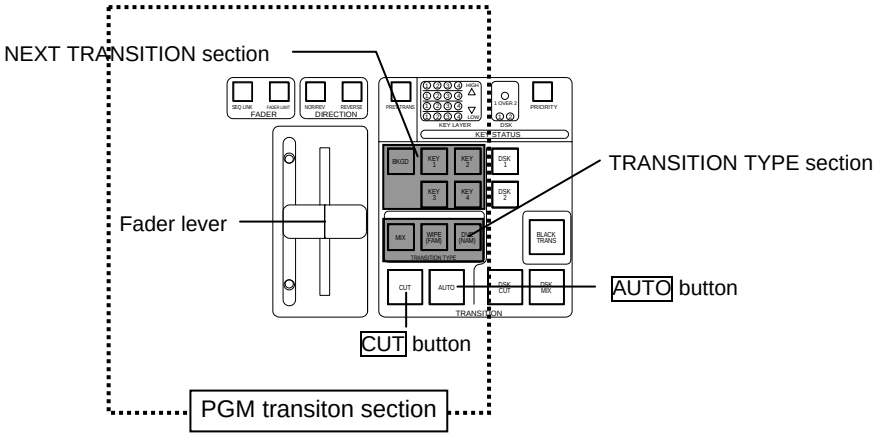
5-3. How to Access Menus

Menus, depending on their type, can be accessed in 3 different ways. These 3 procedures are:

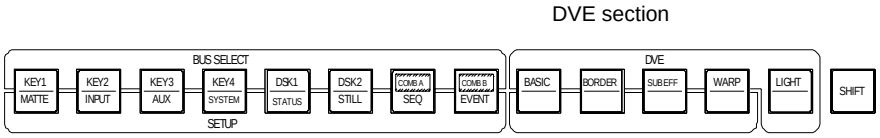
1. From PGM Transition Section : Bus(Mix), Wipe, DVE

First, select a layer you want to set a transition using BKGD (background), KEY, and DSK buttons in the PGM Transition section, and then press the MIX, WIPE, or DVE transition button to access the menu.

Double-click the FADER LIMIT button to access the [Fader Limit] submenu.



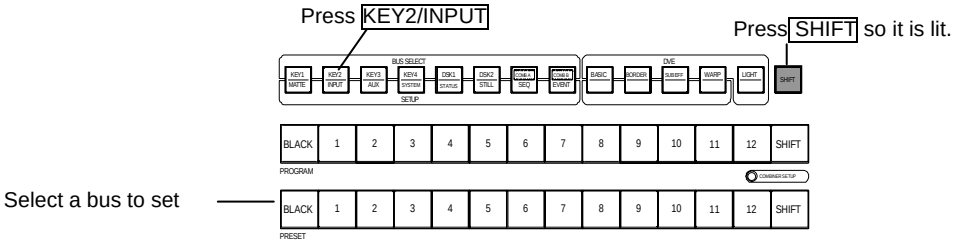
To access the **DVE Modify** menu, select a layer and then press menu buttons in the DVE section.



2. Signal Setting Menus

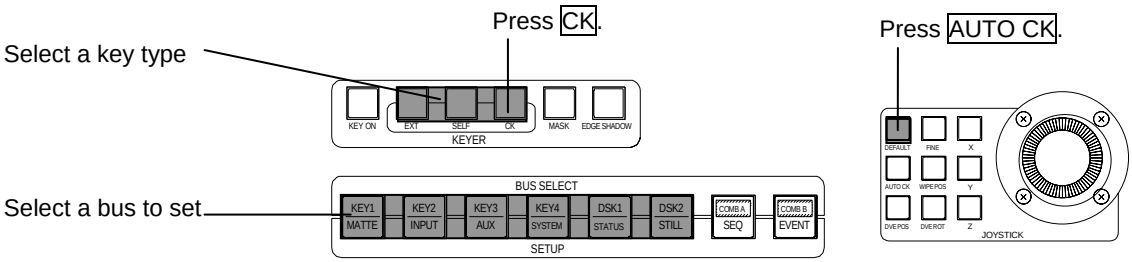
2-1. Input: Select a bus to set, and then press the button in the SETUP section.

First press a bus button on the PST bus to select a bus to set. Press the SHIFT button at the right hand-side of the DVE section so it is lit. While the SHIFT button is lit, press the KEY2/INPUT button to access the menu.



2-2. Key, DSK: Select a bus to set and then press the button in the KEYER section

Select a bus using KEY1 - KEY4, DSK1, or DSK2 in the BUS SELECT section (while SHIFT is unlit), and then select a key type using the buttons in the KEYER section.



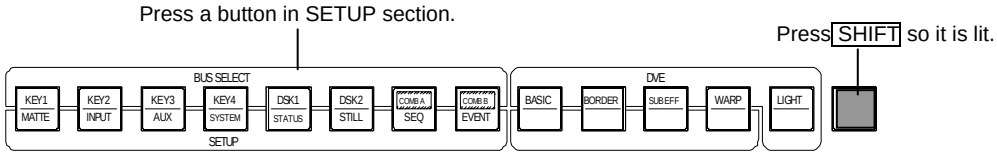
The Chromakey menu can be accessed via the CK button. However, selecting a key signal for chromakey is made at KIns which can be accessed via EXT or SELF button. The Auto-chromakey menu can be accessed using the AUTO CK button in the Joystick section after having selected a chromakeyer. Accessing DSK menus can be done in the same manner. (If the CK Auto menu cannot be accessed, the setting at the [SYSTEM] -[Other]-[Cursor] is not suitable for Key or DSK chromakey setting. (See section 9-4-1. "Auto Key" for details.)

2-3. AUX, Preview/Clean, Matte: Accessible via the buttons in the SETUP section

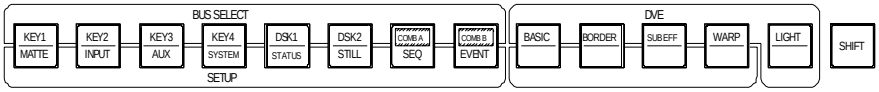
Press the SHIFT button at the right hand-side of the DVE section so it is lit. While the SHIFT button is lit, press the KEY3/AUX button in the SETUP section to access the AUX menu, or the KEY1/MATTE button to access the Matte menu. The Preview/Clean menu can be accessed from the AUX menu using single arrow menu.

3. Menus for whole system instead of individual bus or layer: System, Status, Event, Sequence, Still, Flash Recorder

3-1. System, Status, Event, Sequence, and **Still** menus can be directly accessed using the buttons in the SETUP section while the SHIFT button at the right hand-side of the DVE section is lit.



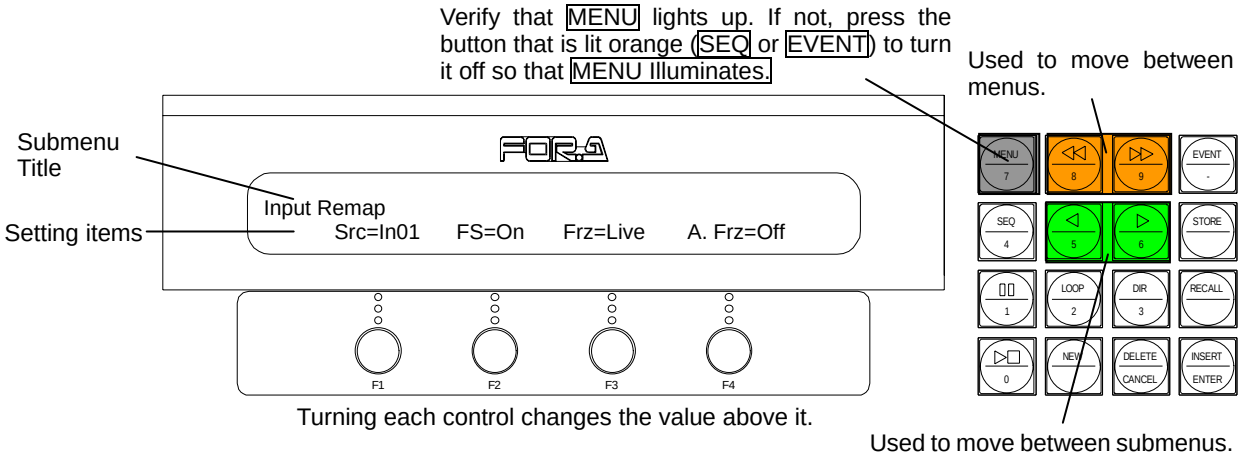
3-2. Flash Recorder menu can be accessed using the SUB EFF in the DVE section.



Event and **Sequence** menu can also be accessed using the EVENT or SEQ button in the keypad section.

5-3-1. How to Use Menus

Each menu has several submenus. When accessing a menu, the first submenu is displayed with its item values are ready to be changed. To go to the next submenu, press the right single-arrow button in the Kyepad section.



For example, when the submenu title [Input Remap] is displayed, the right single-arrow button in the keypad section lights up green as above. Pressing the arrow button lets you go to the next submenu. Then, both the right and left single arrow buttons in the keypad section light up green to indicate that you can go to next or previous submenu.

◆ **Moving between Menus and within a Menu**

The single-arrow buttons are used to move between submenus within a menu.

The double-arrow buttons are used to move between menus.

IMPORTANT
Note that you can access menus and submenus using these arrow buttons (both single and double) only when the keypad is in **Menu mode**. (MENU in the Kyepad section is lit). Before operating with menus, verify that MENU is lit orange in the keypad. If it is not lit, press the button that is lit orange (SEQ or EVENT) to turn it off. MENU lights up, the keypad enters the Menu mode, and the arrow buttons are enabled for menu navigation.

◆ **Changing menu settings**

To change menu settings for the items, such as Source, FS, Freeze, and Auto Freeze displayed in the example above, turn the controls right beneath each item.

◆ **Function control operations are shown in the table below**

Function control operations	Description
Turn clockwise	Increases value. Or displays next item.
Turn counter-clockwise	Decreases value. Or displays previous item.
Press	Switches to keypad input. (For numerical values)
Press and hold down	Starts processing such as "Save", "Load", etc. (at least one second).
	Reset the item to the default value (at least one second).

Changing menu settings in VFD (Vacuum Fluorescent Display) displays are usually done using the controls. However, two other ways to change settings, using the keypad and using the joystick, are available. See the following "Keypad Input" and "Joystick Input".

5-3-2. Keypad Input

You can use the keypad to change numerical values in menus. This can be done as follows.

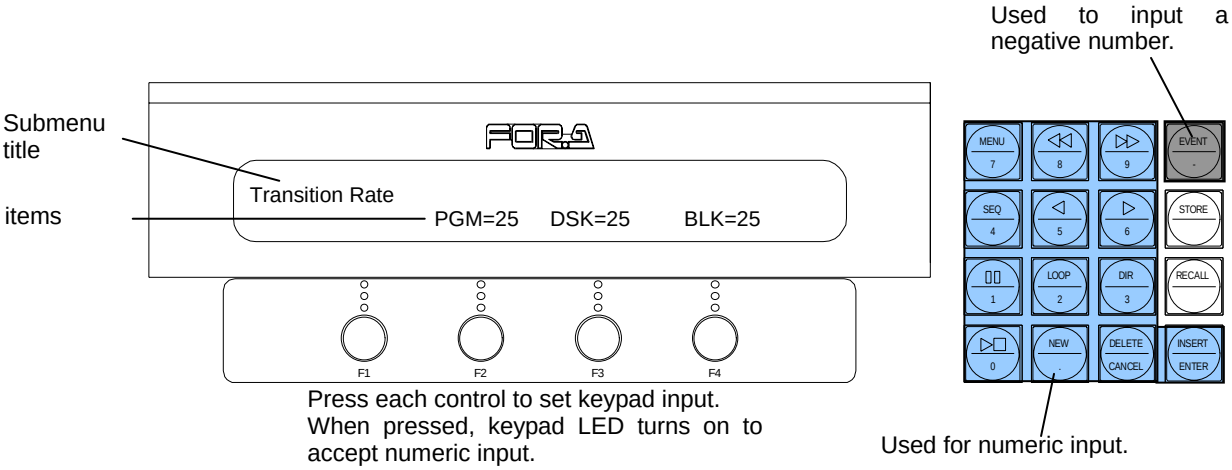
① Press a control (F1 - F4) to select an item you want to change the value of. The keypad LED turns on to accept numeric input.

② Enter the values with the keypad.

③ Press ENTER to confirm the change.

◆ **Additional Notes for Keypad Inputs:**

- Pressing CANCEL before pressing ENTER clears changes just made.
- The - button is used for setting negative value. To input a negative value, first input the number and them press the - button.

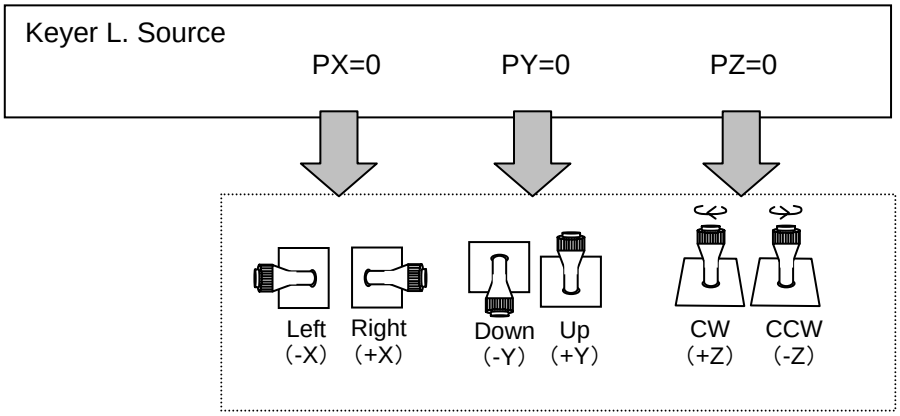


IMPORTANT
Only numerical values can be changed via the keypad. When pressing a control, press it lightly and release it within one second. Note that if you press and hold a control for more than one second, the setting is returned to its default setting. When the keypad is in the numeric input mode, the selected menu item in the window is highlighted.

5-3-3. Joystick Input

You can also use the joystick to change menu settings.

Moving the joystick sideways changes the value of X(the second item). Moving up or down changes the value of Y(the third item). Turning the joystick changes the value of Z(the fourth item). (Only for numeric values.)

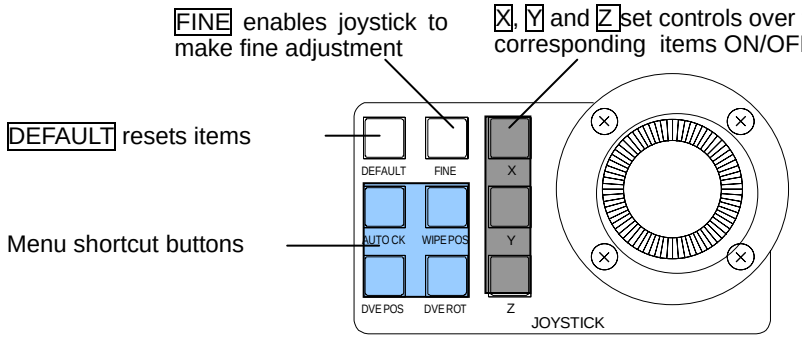


◆ **Additional Notes for Joystick Input:**

- The X, Y, and Z buttons in the Joystick section can enable or disable the control over the respective items with the joystick. For example, if the X and Y buttons are lit (ON), you can change the values of X(the second item) and Y(the third item). If all three buttons are unlit, you cannot change any setting values with the joystick.
- To make fine adjustments with the joystick, press the FINE button. The button will be lit to indicate the fine adjustment is enabled.
- The DEFAULT button resets the items, for which joystick control is active, to their default values.
- Press the buttons in the table below to directly access the related position items.

Button	Menu			Items
WIPE POS	WIPE			Wipe Center Position (X, Y, Angle)
* DVE POS	KEY1-4 DSK1-2 Pre-combiner A Pre-combiner B	DVE	BASIC	Local Position (X, Y, Z)
* DVE ROT				Local Rotation (X, Y, Z)
AUTO CK	KEY1-4			CK Position (X, Y)

- The DVE POS button and DVE ROT button access the respective DVE Position and Rotation menus for the bus whose menu has been displayed when the button is pressed. For example, if either button is pressed when the KEY1 menu has been displayed, the KEY1 DVE Position or Rotation menu will be opened.



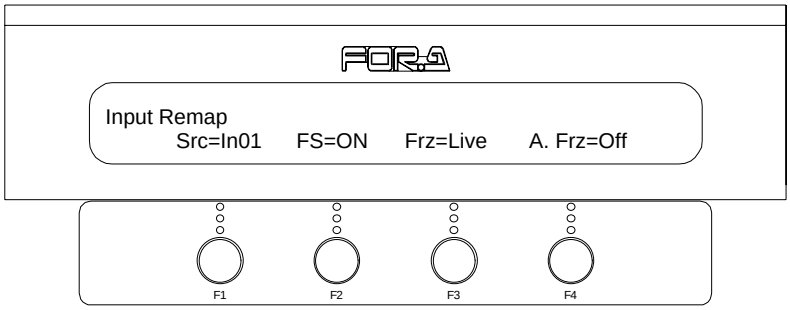
5-4. Returning to Default

5-4-1. Using Menu Controls

◆ **Returning Each Item to Default**

Pressing and holding down the F1, F2 , F3 , or F4 controls will return their associated numeric values to factory default.

.

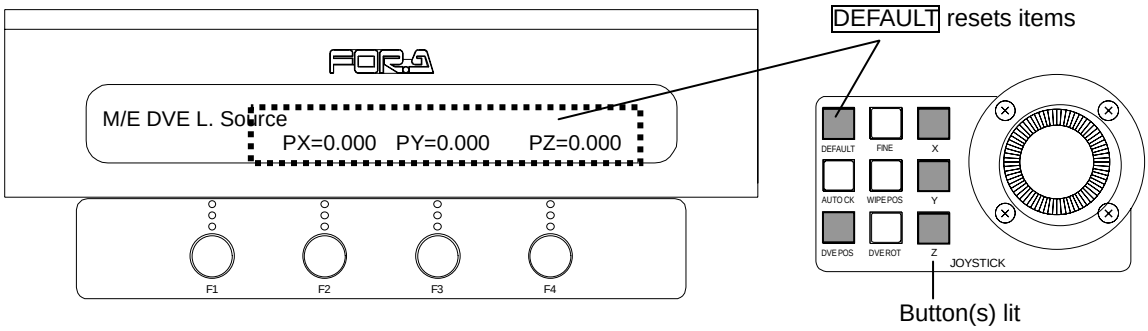


Press and hold down the related control button.

5-4-2. Using Buttons in Joystick Section

◆ **Returning X, Y and Z Items to Default**

Pressing the DEFAULT button with X, Y and/or Z lit resets the corresponding X, Y, and/or Z items to their factory default values.



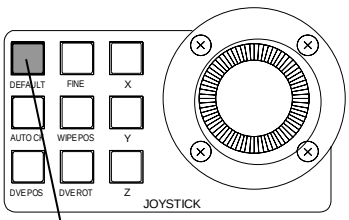
◆ **Returning Settings in a Menu to Default (M/E, KEY1-4, DSK1-2 and Pre-combiner A-B menus)**

① Press the button in the BUS SELECT section to select a bus to reset the settings. Press and hold down SHIFT, then press DEFAULT. All settings for the selected bus are returned to factory default values. Note that if any button(s) in the DVE section is lit, only the related DVE items are returned to factory default values. To turn off the button(s) in the DVE section, press the relevant button in the KEY TYPE section.

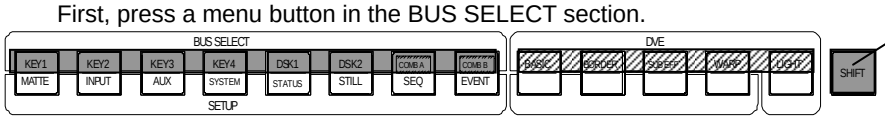
③ M/E bus menu settings are returned to factory default values in the same manner when all of the above BUS SELECT buttons are unlit.

* All DVE sub menu settings are not necessarily returned to factory defaults.

* The global position is not returned to factory default unless the All clear is performed.



First, press a menu button in the BUS SELECT section.



Pressing DEFAULT while SHIFT is pressed resets a menu.

6. Touch Panel Operations (Option)

The optional touch panel can be used to enable intuitive and easy menu operation. Also, with the optional display unit interface module (VPS-70DPUIF) you can connect and use a commercially available display such as CRT or LCD for menu display. When starting up the Operation Unit, perform a touch panel calibration refering to section 18-3. “Update”. See “Appendix 2. GUI menu” for each menu screen.

◆ **Status Display:**

At the top right of the screen, the VPS-700 GUI version, the number of currently employed DVE channels, and the transition rates for M/E, PGM, DSK and BLK transitions are always displayed.

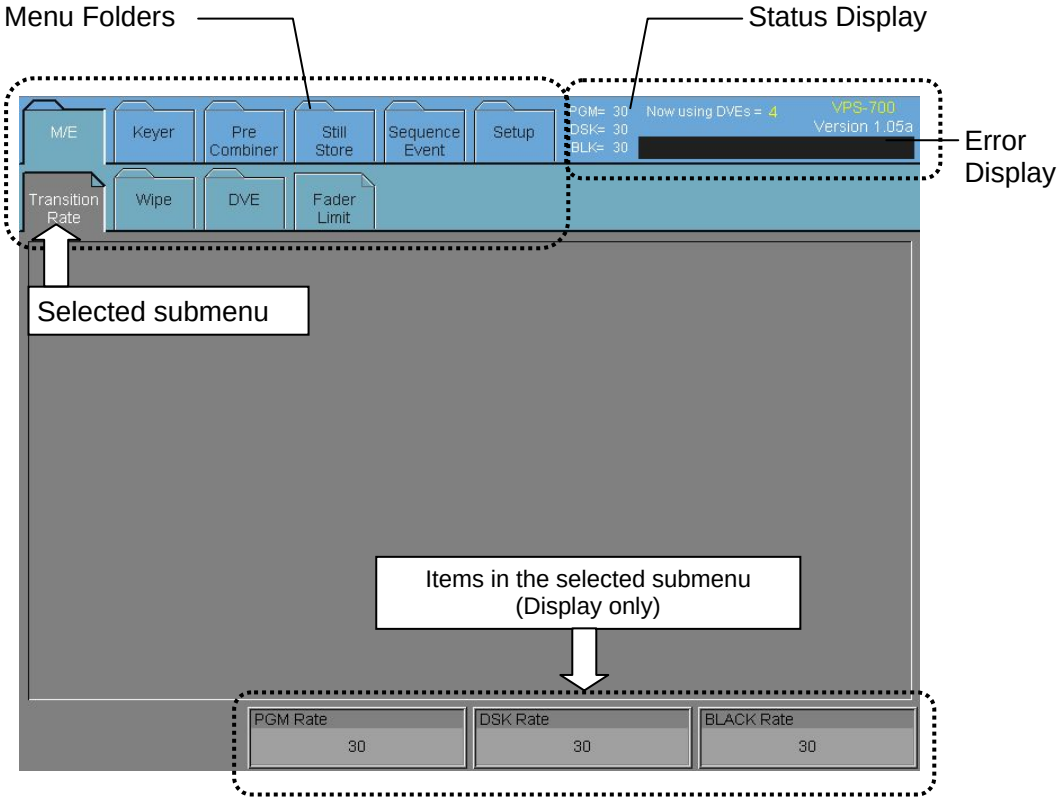
◆ **Menu Folders:**

On the touch panel, the menus are displayed in a folder format. Touching a folder displays the components of the folder. VPS-700 has six menus, that are displayed in the top left of screen, for the top category. Each top menu is divided into several submenus, and some of these submenus are further subdivided into sub-submenus. Dog eared tabs (right corner is folded) indicate they do not have any submenus inside.

◆ **Sub menus and items:**

Menus are several level deep. The depth varies depending on the menu. When the menu folder at the lowest level is pressed, the menu items are displayed at the bottom of the screen. These items are also displayed on the control panel at the same time.

NOTE
Changes to the setting values can only be made on the control panel, not on the touch panel. To change values, turn a control under the value you want to change.



7. Signal Setting Workflow

7-1. Input Signal

7-1-1. Signal Name

The abbreviations for the video signals used in the VPS-700 are shown in the table below. Signals that can be handled in the VPS-700 are input signals from the MU rear panel, and internally-generated STILL1 and 2, MATTE1 to 4, BLACK signals, signals as pre-combiner A and B (when VPS-70DS is installed),and signals from flash recorder (when VPS-70FR is installed).

SIGNAL	Signal Name	Signal description
Black	BLK	Black signal
Input 01 to 16	In**	MU rear panel input 1-16 (9-16 are optional inputs)
Still1 to Still2	Stl1, Stl2	Still images 1-2
Matte1 to Matte4	Mat1 - Mat4	BUS MATT color signal
Pre Combiner A /B	ComA - ComB	Pre-combiner output (optional)
Flash Recorder A/B	FR1A, FR1B FR2A, FR2B	Flash recorder output (optional)

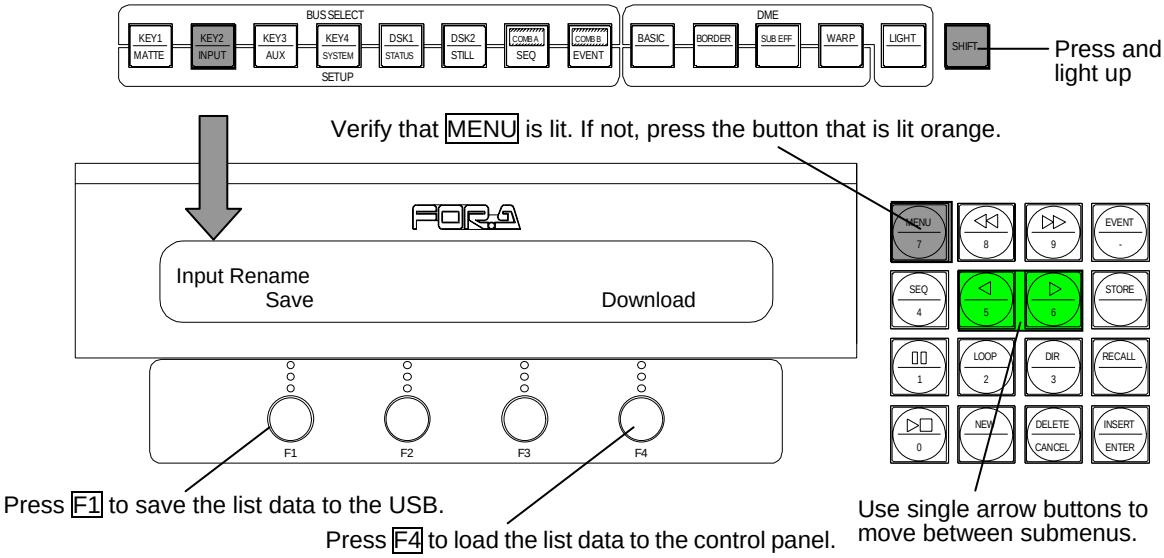
7-1-2. Changing Signal Name

Any name (up to 4 alpha-numeric characters) can be assigned to these video signals. To change the names, first save the data file of the signal name list to the USB memory. Next, change the names in the file, for example, by using the editor on the computer, and load that file again to the control panel. Follow the procedure below to change the signal names.

① Connect a USB flash drive to the USB port of the Control Panel.

② Press KEY2/INPUT (while SHIFT is lit) to display [INPUT] menu.

③ Use the single arrow buttons in the Keypad section to go to the [INPUT] - [Input Rename] submenu.



④ Press and hold down F1 for a while. A data file named "vps700.ini" will be saved to the USB root directory.

⑤ Open this file by using the editor on the computer, for example. The contents of the file are as shown to the right.

⑥ Rename the signals and save the data file. (using up to 4 alpha-numeric characters)

⑦ Connect the USB flash drive again to the USB port of the control panel.

⑧ Open the [INPUT] - [Input Remap] submenu. Press and hold down F4 for a while to download the data. The new names are immediately reflected on the panel.

<Default file contents>
(vps700.ini)

```
[InputShort]
Black = BLK
Input01 = In01
Input02 = In02
Input03 = In03
Input04 = In04
Input05 = In05
Input06 = In06
Input07 = In07
Input08 = In08
Input09 = In09
Input10 = In10
Input11 = In11
Input12 = In12
Input13 = In13
Input14 = In14
Input15 = In15
Input16 = In16
Still1 = Stl1
Still2 = Stl2
Matte1 = Mat1
Matte2 = Mat2
Matte3 = Mat3
Matte4 = Mat4
Comb_A = ComA
Comb_B = ComB
```

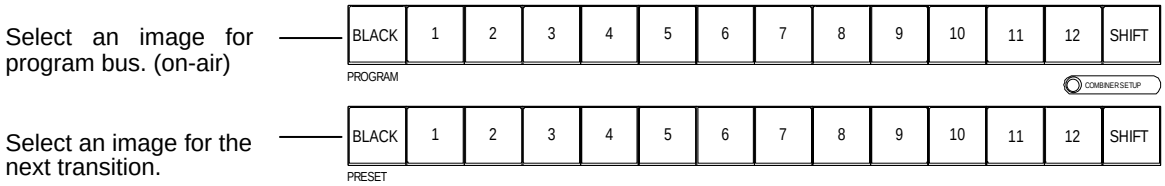
NOTE

Note that modified names are not supported on peripheral devices such as HVS-AUX units.

Also note that if you name a signal using more than four characters, the excess characters will be ignored.

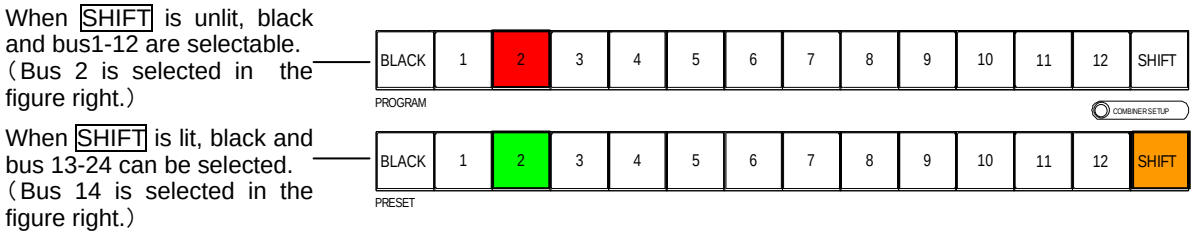
7-1-3. Selecting Signals for Background

Pressing a bus button in the M/E section allows you to select a background image. The bus buttons on the PGM bus allows you to select a background image for the Program output (on-air). The bus buttons on the PST bus allows you to select a background image for the next output (next on-air).



◆ Selecting Signals by Bus buttons and SHIFT

You can assign two signals to one bus button by using the SHIFT button. This enables you to assign a total of 24 signals to a bus. When SHIFT is unlit, you can select a bus from Black and bus01 to12. When SHIFT is lit, you can select from Black and bus13 to 24.

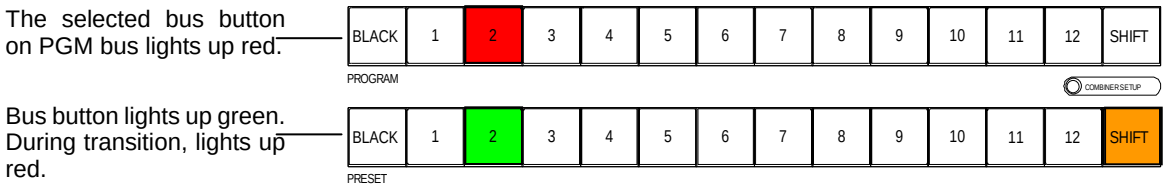


◆ SHIFT Mode

Usually you press the SHIFT button to turn it on, then select a bus that can be selected by using the SHIFT button. Pressing the SHIFT again turns it off (This is the procedure in **Toggle Shift** mode). There also is the **Momentary Shift** mode. In the momentary shift mode, you press a bus button while pressing down the SHIFT button. The shift modes are selected at the Bus Shift mode in the [SYSTEM]-[Other] submenu.

◆ Bus button indicators

When the fader lever is at one end and the AUTO button is OFF, the selected bus button on PST bus lights up **green**. While the transition on the P/P bus is in progress, the bus buttons of both selected PROGRAM and PRESET buses light up **red**. When the transition is complete, the bus buttons flip-flop (the lit buttons on PROGRAM and PRESET buses change places).



7-1-4. Assigning Signals to M/E Bus

Video source signals can be freely assigned to the bus buttons for background selection. The video input signals (8 inputs in standard, 16 inputs in full option), 4 MATTE signals, two STILL signals, two pre-combiner outputs, or BLACK can be freely assigned to 24 buses in the M/E bus section (using the SHIFT button). Signal assignments are shared by the PROGRAM bus and the PRESET bus.

◆ Bus Button Default Assignments

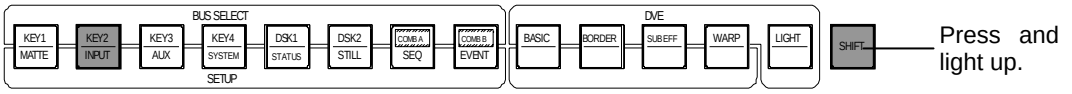
At the factory default, video signals are assigned to bus buttons as shown in the table below.

Bus Button		Video Signal	Bus Button		Video Signal
When SHIFT unlit:	BLACK	Black	When SHIFT lit:	BLACK	Black
	1 - 8	In01 - In08		1 - 8	In09 - In16
	9 - 10	Matte1 - Matte2		9 - 10	Matte3 - Matte4
	11	Still1		11	Still2
	12	Pre Combiner A		12	Pre Combiner B

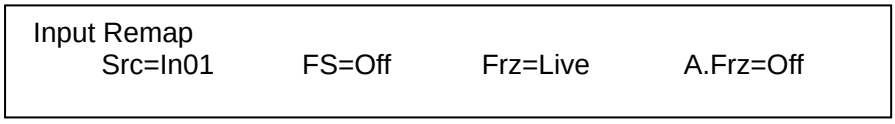
◆ Changing Video Signal assignments of M/E Bus Buttons

Signal assignments to the bus buttons can be changed in the [INPUT]-[Input Remap] submenu.

① Press the SHIFT button next to the DVE section, so that it lights orange, and then press the KEY2/INPUT button.



② Use single arrow buttons in the keypad section (while MENU is lit) to go to the [INPUT] - [Input Remap] submenu.



③ Press a bus button to assign a signal to in the PST bus.

④ Turn F1 to select a video signal. (See section 7-1-1. "Signal Name" for the abbreviations of the signal name.)

IMPORTANT

To use live inputs, verify that Frz (Freeze Mode) is set to Live. (See section 7-1-5. "Input Signal and Frame Synchronizer Mode Settings" for details.)

⑤ Repeat steps (3) and (4) for other bus buttons until setup is complete. Be sure to set the SHIFT button is lit in the PST bus, when assigning to bus13 to 24.

7-1-5. Input Signal and Frame Synchronizer Modes

The VPS-700 provides a built-in frame synchronizer (FS) for each input, so it can accept non-synchronous video signals. In the VPS-700, the FS can not only synchronize live inputs, but also hold and provide frozen live video (snapshot) or still image stored in its frame memory. This can be set in the [Input] ([Setup]) - [Input Remap] submenu. (See section 12-2. "Still Store" for storing stills to the FS memory.)

① Press the SHIFT button next to the DVE section, so that it lights orange, and then press the KEY2/INPUT button.

② Use single arrow buttons in the keypad section (while MENU is lit) to go to the [INPUT] - [Input Remap] submenu.

```
Input Remap
     Src=In01        FS=Off        Frz=Live        A.Frz=Off
```

Item		Default	Setting
Src	Source Assign	In01	In01-16, Stl1-3, Mat1-4, ComA, ComB
FS	FS Mode	On	On/Off
Frz	Freeze Mode	Live	Live (Live Through), Frm (Frame), Odd (Odd Field), Even (Even Field)
A.Frz	Auto Freeze Mode	Off	On/Off

③ Press a bus button to set the FS and Freeze modes to on the PST bus.

④ When using the FS as a frame synchronizer or a still memory, turn F2 to turn FS Mode On. When Off, it cannot store any captured frame video nor accept non-synchronous inputs. However, whenever a still image is stored on FS memory, FS Mode is set to On and Frz (Freeze Mode) is set to Frm (Frame) automatically.

WARNING

If you load a still into a LIVE input, the Freeze Mode will be reset from Live Through to Frame for the input channel. In order to restore the LIVE source, the Freeze Mode must be reset to Live Through in the Input FS Setting menu.

◆ **Freeze Live Video**

To freeze live inputs manually, turn F3 to select a freeze mode from Frm (frame freeze), Odd and Even (field freeze).

◆ **Auto Freeze**

When FS Mode is On, you can use the Auto Freeze function. If Auto Freeze Mode is On, FS automatically saves and outputs the last image (last field) when a video loss occurs.

IMPORTANT

When a still image is stored to the FS memory, the still image is automatically selected, neither live nor frozen video, to output from the channel. The Auto Freeze function is not supported by the VPS-70AI. On input analog channels provided by the VPS-70AI, FS Mode is always set to On.

7-1-6. Input Signal Adjustments (Proc Amp)

Video input signals can be also adjusted using the built-in Proc Amp. Adjustments can be made in the [Input] - [Process1] and [Process2] submenus below.

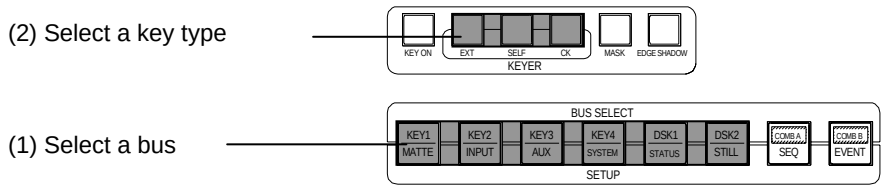
Input Process 1 WClp=0.0 BClp=0.0 LGN=1.5 Set=0.0

Input Process 2 CClp=0.0 CGN=1.5 Trm=0 Hue=0.0

Item		Default	Description
WClp	White Clip	109.0	Used to clip White level.
BClp	Black Clip	-7.0	Used to clip Black level.
LGN	Luminance Gain	100.0	Used to adjust luminance gain.
Set	Setup	0.0	Used to adjust black level.
CClp	Chroma Clip	111.0	Used to clip chroma level.
CGN	Chroma Gain	100.0	Used to adjust chroma gain.
Trm	H Phase Trim	0	Used to adjust H phase (Effective only for analog inputs.)
Hue	Hue	0.0	Used to adjust hue.

7-1-7. Selecting Signals for Keys and DSKs

There are no dedicated key bus buttons on VPS-700. Select the signals to be used for keyers in the menu. The key type can be selected by the key type buttons. To open a key menu, first press the key bus button to make settings of in the BUS SELECT section, then press a key type button in the KEYER section above the BUS SELECT section.



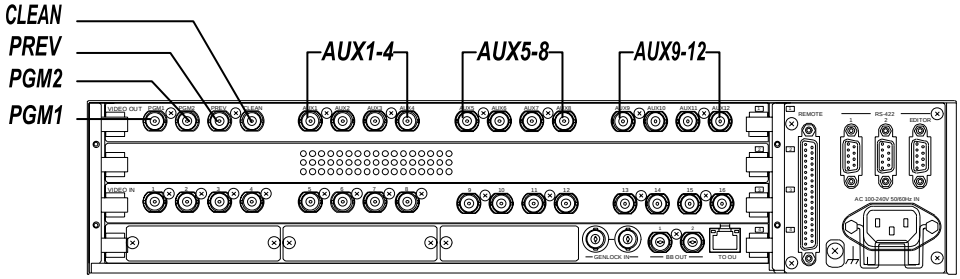
The related keyer menu similar to that shown below appears in the window.

External Key1 KIns=Stl1 KSrc=In01 GN=6.2 Clp=0.0

Select signals to be used for the keyer at the KIns (key insert) and the KSrc (key source). See section 9-1. "Keyer /DSK Setup Menu" for more details.

7-2. Output Signals

The VPS-700 has 8 video outputs in standard configuration: Program1, Program2, Preview, Clean and Auxiliary 1 to 4. By adding optional cards, outputs can be expanded up to a total of 16. The two PGM connectors are dedicated for Program outputs. However, outputs for the Preview (PREV) and Clean (CLEAN) can be selected in the menu. (See section 7-2-2. “Selecting Signals for PREV and CLEAN".) Any primary inputs or internally generated or processed signals can be assigned to any auxiliary outputs. (See section 7-2-1. Assigning Signals to Auxiliary Outputs.)



7-2-1. Assigning Signals to Auxiliary Outputs

① Press the SHIFT button next to the DVE section, so that it lights orange, and then press the KEY3/AUX button to display the [AUX] menu.

② Turn F1 to select an auxiliary output bus from AUX1 to 12 (AUX5 to 12 are optional).

```
AUX
        AUX=1        Src=PGM        Ihb=Off
```

③ Turn F2 to select a source signal for the auxiliary bus. The signals in the table below can be selected.

Source Signal	Signal Name	Description
Black	Blk	Black signal
Input 01-Input16	In01-In16	Primary input signals (9-16 are optional)
Still1 Still2	Stl1 Stl2	Stored Still1 Stored Still2
Matte1-Matte4	Mat1 - Mat4	Internally-generated bus matte color1 - 4
Pre Combiner A Pre Combiner B	ComA ComB	Pre-combined images made by pre-combiner A and B
Pre Combiner A Key Pre Combiner B Key	CoAK CoBK	Key signal for the pre combiner A Key signal for the pre combiner B
Program	PGM	Program output
Preview	PVW	Preview output
Clean	CLN	Clean output (Program output w/o DSK)

④ If the Ihb (Inhibit) item is set to On using F2, the auxiliary output signal can not be controlled locally (on the control panel). If auxiliary units (HVS-AUX) are configured in the system, auxiliary outputs can only be remotely controlled.

7-2-2. Selecting Signals for PREV and CLEAN Outputs

The output assignments for the PREV connector on the VPS-700 rear panel can be changed. Use the following procedure to change the assignments.

① Press the KEY3/AUX button (while SHIFT is lit) to display the [AUX] menu.

② Use single arrow buttons in the keypad (while MENU is lit) to go to the [Preview/Clean]] submenu as shown below.

Turn F1 to select a signal for the PREV output. (See the table below.)
Turn F2 to select for the CLEAN output. (See the table below.).

Available Output Options

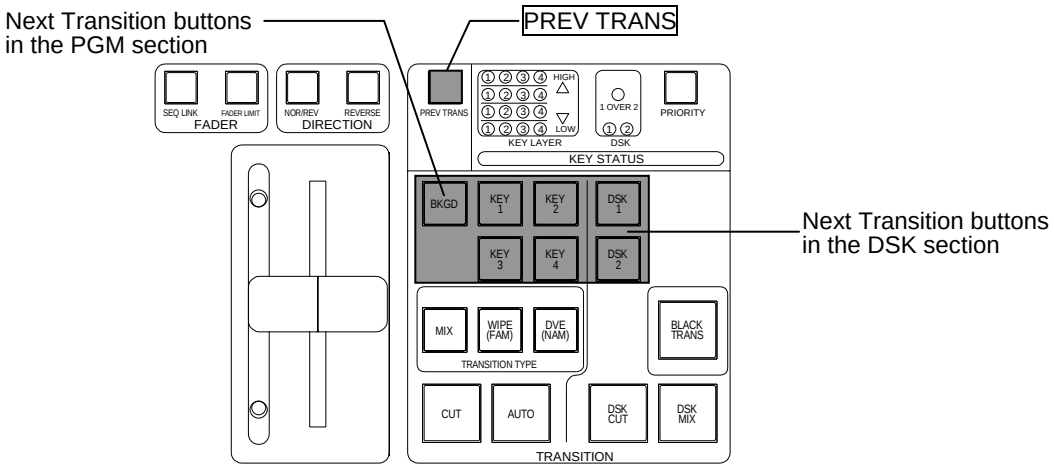
Item	Options	Description
PV	w/D_PV	PGM PV + DSK PV (Background, key and DSK signals for next transition)
	woDSK	PGM PV（Background and key signals for next transition）
	KeyOut	PGM key + Key1-4 key + DSK1, 2 key (Key signals on PGM output (on air))
CL	woDSK	PGM+key (Backgound and key signals on PGM output (on air))
	KeyOut	PGM key + Key1-4 key + DSK1, 2 key (Key signals on PGM output (on air))

* Key signals are displayed corresponding to the key transition, but in a manner of cut transitions. However DVE transitions are displayed the same as actual transitions.

7-2-3. Selecting Preview Output

The PVW output can consist of BKGD (signal selected in the PRESET bus), KEY1 to KEY4, and DSK1 and 2 (total of up to 7 signals). The next transition buttons are used to select which signals or whether to output next from the PREV. The bus signals set for the next transition and the background signal selected in the PST bus will be output to the PREV output.

◆ Selecting preview output signals using the next transition buttons



Next transition button indication	Transition Status
Unlit	Off-air
Lit red	On-air
Lit green	Set for the next transition

◆ Previewing How the Next Transition will be Performed

Next transitions can be previewed using the PREV TRANS button. Press the PREV TRANS button. Then the button will be lit up. While the PREV TRANS is lit, perform the transition. The preview screen shows how signals are mixed or switched over during the next transition. Note that the performance of the preview transition does not affect the PGM output. The mix and wipe transitions can be previewed, but not the transitions that include any DVE.

8. Transition Operations

8-1. About Transitions

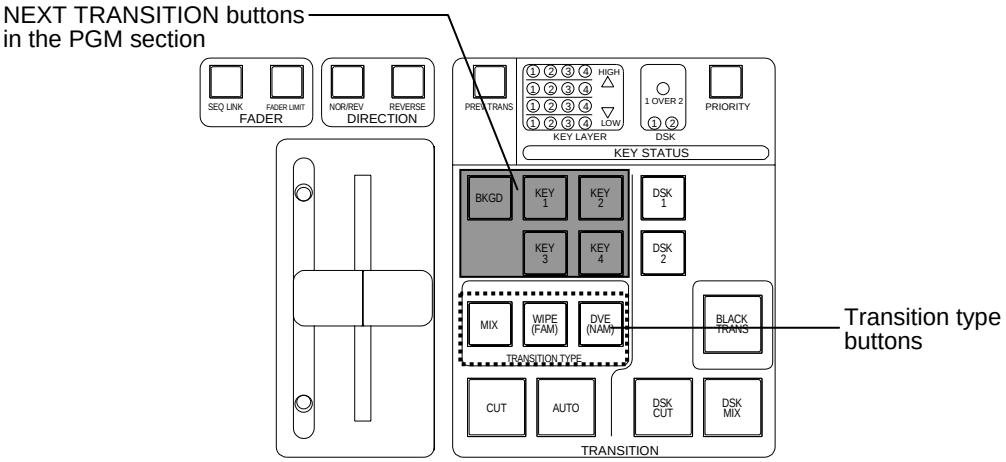
The VPS-700 can perform 7 types of transitions, Black, Cut, Mix, FAM, NAM, Wipe and DVE. The AUTO button or the fader lever is used to perform the background and the keyer transitions. FAM and NAM transitions can only be applied to the background layer. DSK layers have dedicated start buttons; DSK CUT and DSK MIX. DSK priority order and 4 keyers' priority order can be changed. The transition quick reference is provided in the table below.

Transition Quick Reference

Layer	Type	Priority Change	Start button	Fader
	Black	-	BLACK/TRANS	-
Background	Cut	-	CUT	-
Background	Mix, FAM, NAM, Wipe, DVE	-	AUTO	Available
Keyers 1-4	Cut	Available (4)	CUT	-
Keyers 1-4	Mix, Wipe, DVE	Available (4)	AUTO	Available
DSKs 1-2	Cut	Available (2)	DSK/CUT	-
DSKs 1-2	Mix	Available (2)	DSK/MIX	-

Background and keyers1 to 4 share the transition type buttons and the start buttons. Therefore, simultaneous transitions of multiple layers are possible with the same type and same transition rate using the AUTO button or fader lever. For the simultaneous multiple transitions, only one pattern can be used for all layers in WIPE transitions; however, different patterns can be used for layers in DVE transitions.
Pressing AUTO during AUTO transition pauses the transition. Pressing CUT during AUTO transition forcibly stops the transition.
Also, the VPS-700 supports modifying WIPE and DVE patterns. See section 10. "Wipe Modify" and section 11. "DVE Modify" for more details.

◆ **NEXT TRANSITION Button Indications**

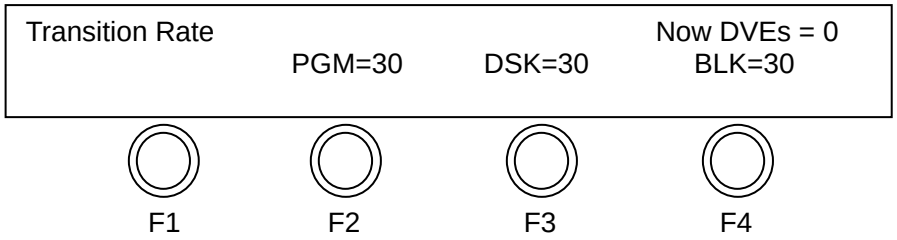


Indication	Transition Status
Unlit	Next transition is not programmed
Lit red	On-air
Lit green	Next transition is programmed

8-1-1. Transition Rate

Images are exchanged at the preset transition rate in the transitions performed using AUTO button. The transition rate is a duration (set by the number of frames) how long it takes to complete the transition. At the factory shipping the transition rates for all types of transitions are set to 30 frames (approx. 1 second). The transition rates can be changed in the [Transition Rate] menu.

(1) Press MIX button of the M/E Transition type buttons to display [Transition Rate] menu.

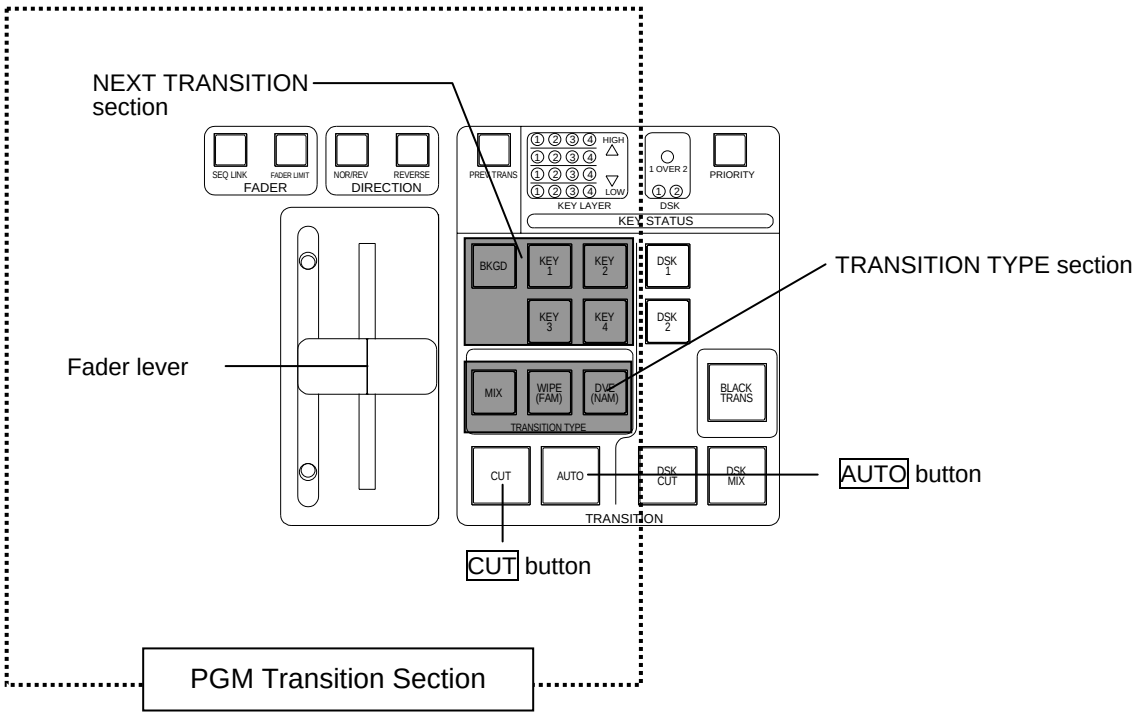


(2) PGM is the transition rate for background.
DSK is the transition rate for DSK.
BLK is the transition rate for Black transition.

IMPORTANT
The transition rates are effective when the transition is executed by the AUTO button. For the playback of clips when Inter Link mode is set to Linkage (See section 14-5. “Clip Playback”) and the playback is started by the AUTO button, the M/E transition rate is applied to the playback.

8-2. Background Transitions

Available transition types for backgrounds are CUT, MIX (FAM, NAM), WIPE and DVE. The example procedures given in the following subsections show how to perform a background signal layer transition using each of these transition types.
When performing a transition, first select the signal layer from the NEXT TRANSITION buttons in the PGM Transition section. To select the background layer, press the BKGD button. When the background layer is selected, the BKGD button is lit. Then, select a transition type. When a background transition is performed, the signal selected on the PST bus replaces the signal selected on the PGM bus on the PGM line output. At the end of the transition, cross-points of PGM and PST buses change places (flip-flop).



8-2-1. Cut

A Cut transition is an instantaneous switchover of images from one to another. When the CUT button is pressed, the PST bus selected signal almost instantly replaces the PGM bus selected signal . Follow the example procedure below to make a CUT transition of the background video layer.

① In the PGM transition section press BKGD. Then the button will be lit up.

② Select a bus button to be used for the background transition on the PGM and PST buses respectively. The bus button that is on-air lights up red, and the bus button for the next output lights up green.

③ Press CUT to execute the transition. The image on the PGM output changes from the signal selected on PGM bus to the signal selected on the PST bus.

8-2-2. Mix

Background bus mix transitions can be performed as normal, FAM (full-additive mix) or NAM (non-additive mix) transition. Each of these three mix transitions performs a different mixing of picture elements.

In the normal MIX transition, the new picture (next signal output) fades in (signal level increases) as the primary picture fades out and off (signal level decreases). Signal levels change proportionally to each other and are equal at the electrical midpoint of the transition.

In the FAM transition, the new picture is gradually added to the primary picture without attenuating. At the midpoint of the transition both pictures of 100% signal levels are mixed. Then the primary picture fades out.

In the NAM transition, the primary picture fades out (signal level decreases), and the next picture (next signal output) fades in (signal level increases). During a transition, only the brightest parts of each picture being mixed are passed by the switcher and output. This transition is effective for mixing pictures with black backgrounds.

① In the PGM transition section press BKGD button. Then the button will be lit up.

② Select a bus button to be used for the background transition on the PGM and PST buses respectively. The bus button that is on-air turns red, and the bus button for the next output turns green.

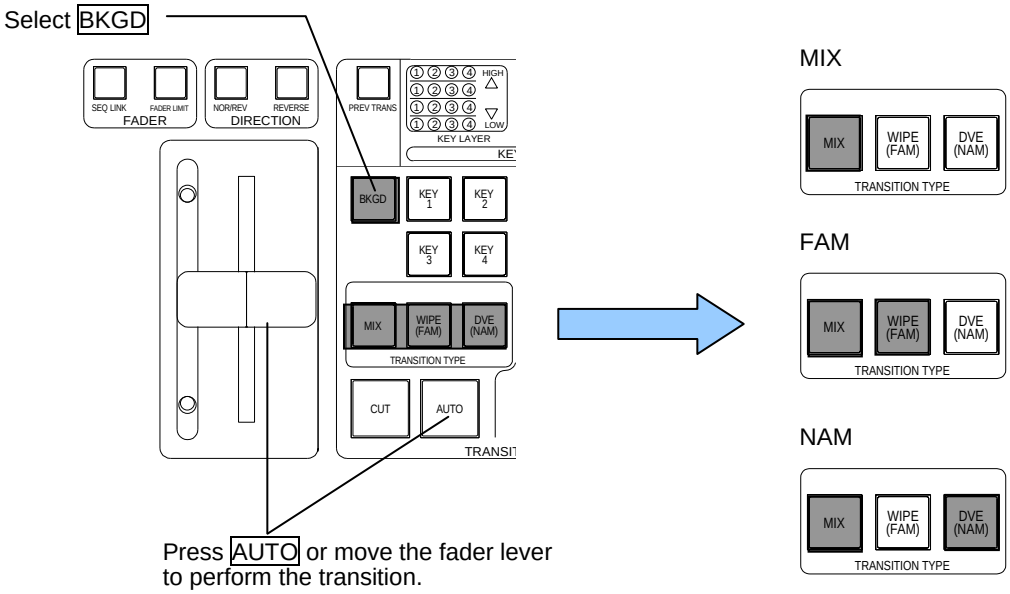
③ For a MIX transition press MIX (normal) so it is lit. For a FAM transition, press MIX and WIPE(FAM) at the same time so that both light up. For a NAM transition, press MIX and DVE(NAM) at the same time so that both light up.

④ Set the **Transition Rate**, if necessary. The transition rate setting determines how long it takes to complete the transition. This setting is only applied during automatic switchover. The Transition Rate setting is made in the Transition Rate menu. Press MIX to display the Transition Rate menu as shown below. (See section 8-1-1. “Transition Rate”.)

Transition Rate			Now DVEs=0
	PGM=25	DSK=25	BLK=25

Turn F2 under the PGM to change the setting of the Transition Rate for the background transition.

⑤ Press the AUTO button or move the fader lever in the PGM transition section to perform the MIX, FAM or NAM transition.



8-2-3. WIPE and DVE

WIPE and DVE transitions of the background layer can be performed either manually (by the fader lever) or automatically (by the AUTO button). Unlike mixes, in which one signal fades in and another fades out to switchover completely, a WIPE uses a geometric pattern for the transition. The basic procedure to perform a WIPE transition is as shown below. With DVE transitions, a wide variety of stereoscopic images can be produced.

① In the PGM transition section press BKGD button. Then the button will be lit up.

② Select a bus button to be used for the background transition on the PGM and PST buses respectively. The bus button that is on-air turns red, and the bus button for the next output turns green.

③ Press WIPE (DVE). The button will be lit and the WIPE (DVE) menu will be displayed in the menu display. Turn F1 under the Pat to **select a pattern** to be used for the background transition. (See Appendix 3, "Wipe Pattern List" and "2D/3D DVE Pattern List".) To input the pattern number using the keypad, press F1, input the pattern number, and then press ENTER.

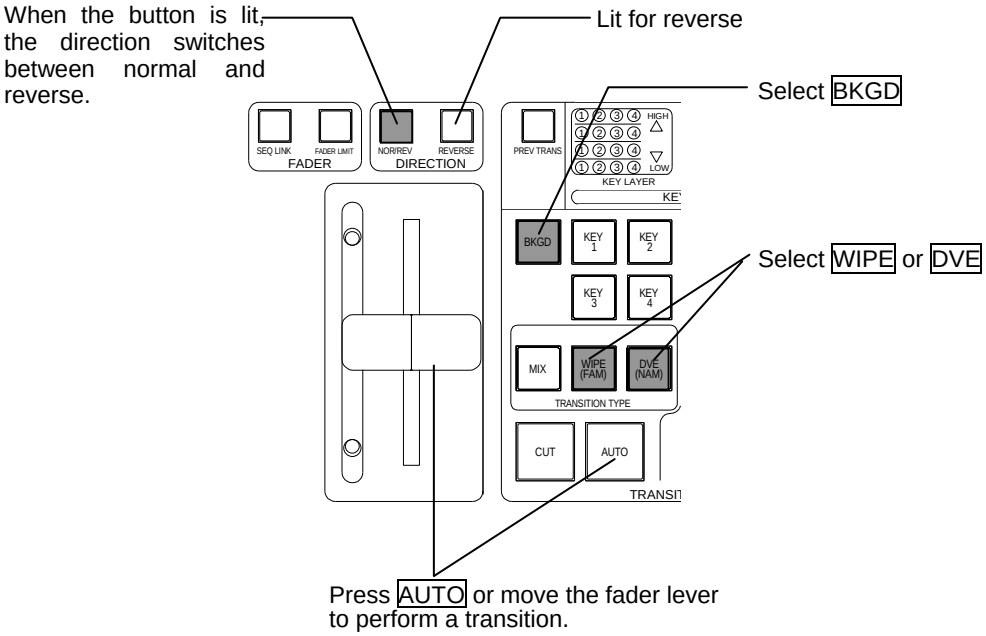
④ Set the **Transition Rate**, if necessary. (See section 8-1-1 "Transition Rate.")

⑤ If necessary, set the **transition direction** using the NOR/REV button and REVERSE button in the DIRECTION section.

NOTE
Unlike MIX transitions, WIPE and DVE transitions are supported for the user to define directions. The two buttons above the fader lever marked as NOR/REV and REVERSE can be used to change and indicate the direction of WIPE and DVE transitions, and they are effective for both automatic and manual operations. The transition direction switches between normal and reverse when NOR/REV is lit. The REVERSE button lights up to indicate that the next transition is set to the reverse direction.

⑥ You can also apply **a modifier** to a selected pattern. It can be set in [WIPE Modify] or [DVE Modify] menus. See section 10. "WIPE Modify " or section 11. "DVE Modify" for more details.

⑦ Press the AUTO button or move the fader lever in the PGM transition section to perform the pattern transition.



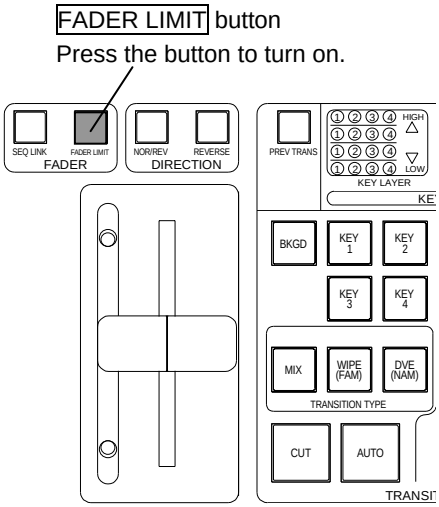
8-2-4. Fader Limit

The Fader Limit setting enables to stop the fader lever before images are completely exchanged (terminate the transition). Set the position to stop the fader lever in [Fader Limit] menu. Follow the procedure below.

① Press the FADER LIMIT button above the fader lever. The button lights up and the fader limit function is turned on.

② Double-click the FADER LIMIT button. The Fader Limit will be shown in the menu display. Turn F1 to set a value to limit the fader movement.

The current fader lever position can be set to the Fader limit. To set the Fader Limit at the current lever position, press the FADER LIMIT button while pressing down the SHIFT at the right hand-side of the DVE section.



8-3. Key and DSK Transitions

VPS-700 can add 4 keys and 2 DSKs to the background image using a CUT or MIX transition. In addition to these, WIPE and DVE pattern transitions can be also applied to 4 keyers. The Downstream Keys (DSK) are processed in the system downstream so that they are added on a layer above that of the keys. The priority order among the keys, as well as that of DSKs, is changeable. After setting up keys (see section 9. "Keyer / DSK Setup"), follow the procedure below to perform a key transition to make the key on air.

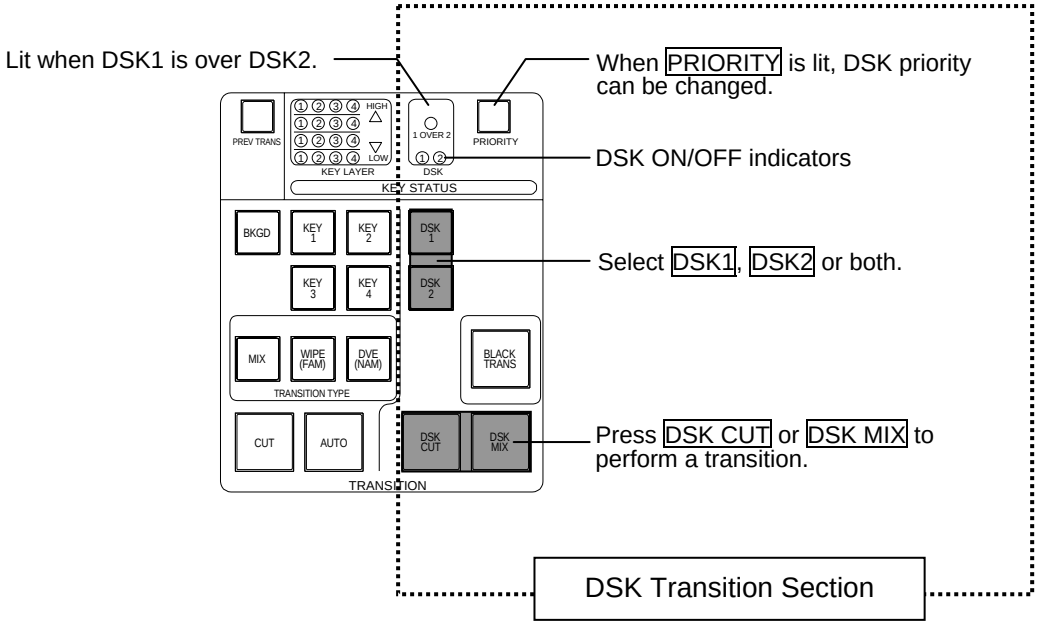
8-3-1. DSK Transitions and Changing Priority Orders

◆ **DSK Transitions**

① First make settings for a DSK signal in the DSK menu. (See section 9. "Keyer / DSK Setup".)

② In the DSK TRANSITION section, press either DSK1 or DSK2 button or both to select DSK for the transition. The selectec DSK button will be lit.

③ In the DSK TRANSITION section, press DSK CUT or DSK MIX to perform the DSK transition. The selected DSK(s) will be displayed on the PGM output screen. Press the button again to cancel the display. The DSK OA indicator lights up when the corresponding DSK is displayed on the screen.



◆ **DSK's Priority Order Change**

① Verify which DSK layer has a higher priority in the KEY STATUS section. If the "1 over 2" indicator is lit, DSK1 has layer priority over DSK2.

② To change DSK layer priority, press the PRIORITY button which will then light to indicate that the priority setting mode is enabled.

③ If you want to give a higher priority to DSK2, Press DSK2. The "1 over 2" indicator goes off and the set DSK priority is applied.

8-3-2. Key Cut Transitions

① First, make settings for a key signal in each key menu. (See section 9. "Keyer / DSK Setup".)

② In the PGM TRANSITION section, press a button or some buttons among KEY1, KEY2, KEY3 and KEY4 buttons.

③ Press CUT to perform a cut transition to send the key(s) on or off-air.

8-3-3. Mix Transitions for Keys

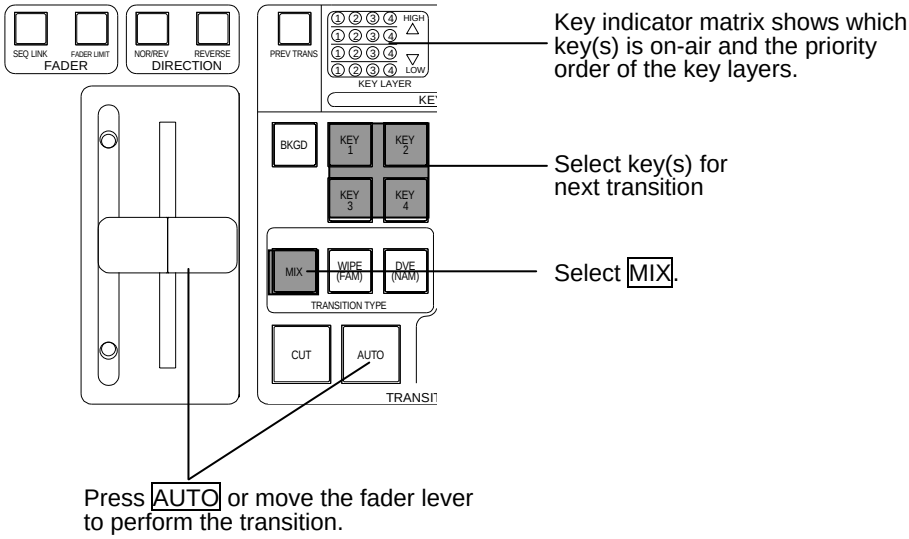
① First, make the settings for a key signal in each key menu. (See section 9. "Key and DSK Setup.")

② In the PGM TRANSITION section, press a button or some buttons among KEY1, KEY2, KEY3 and KEY4 buttons.

③ Select MIX to turn it on.

④ Set the **Transition Rate**, if necessary. (See section 8-1-1 "Transition Rate.")

⑤ Press AUTO or move the fader lever to perform the transition.
When a key is sent to on-air, the corresponding number lights up in the KEY STATUS section (indicator matrix). For example, if only KEY1 is on-air and other keys are off-air, only the light of number "1" lights up. This section can also indicate the layer priority levels. If the number "1" is lit on the second line from the top, it indicates that KEY1 is on the second highest level of the four.



◆ Light indication for the NEXT TRANSITION buttons (BKGD, KEY1-KEY4, DSK1-2)
The NEXT TRANSITION buttons in the transition section light up to indicate their transition status as shown below.

Indication	Transition Status
Unlit	Not set for the next transition
Lit red	On-air
Lit green	Set for the next transition
Lit orange	Key or DSK layer priority setting is enabled.

8-3-4. Wipe Transitions for Keys

① First, make settings for a key signal in each key menu. (See section 9. "Key and DSK Setup".)

② In the PGM TRANSITION section, press a button or some buttons among KEY1, KEY2, KEY3 and KEY4 buttons.

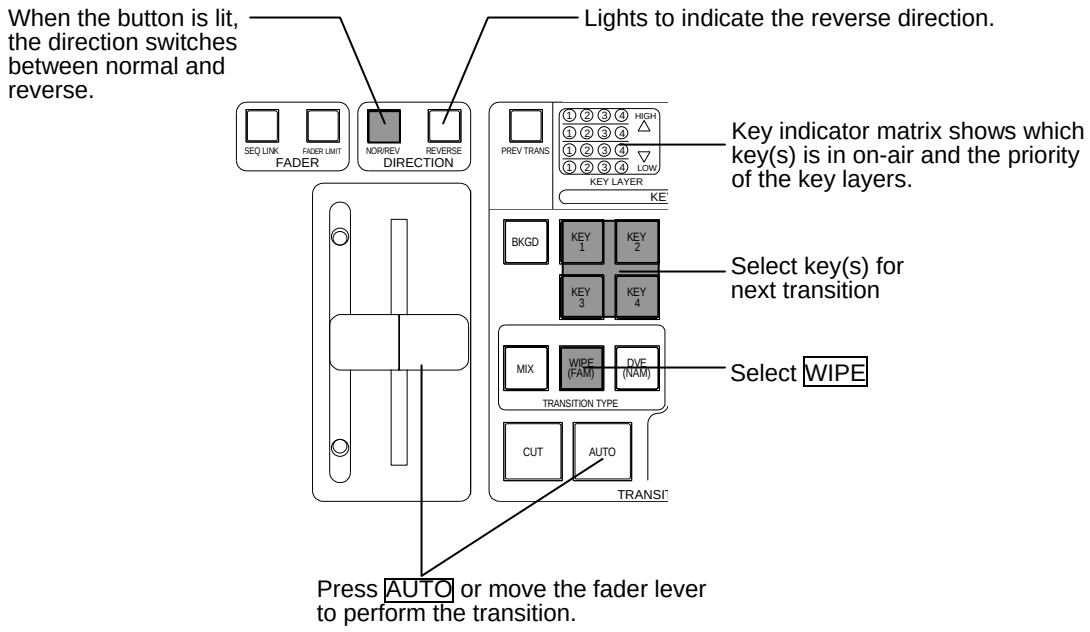
③ Select WIPE. The button will then be lit and the [Wipe] menu will be displayed in the window.

④ Turn F1 under the Pat to select the the number of the Wipe pattern you want to use. (See Appendix 3. "Wipe Pattern List".) To input the pattern number using the keypad, press F1, input the pattern number with the keypad, and then press ENTER.

IMPORTANT
Simultaneous Wipe transition of the multiple key and background layers is possible. However, the same Wipe pattern is used for all layers.

⑤ Set the **Transition Rate**, if necessary. (See section 8-1-1 "Transition Rate".)

⑥ If necessary, set the **transition direction** using the NOR/REV button and REVERSE button in the DIRECTION section. (See section 8-2-3 "WIPE and DVE" for details.)



⑦ You can also apply **a modifier** to the selected pattern. It can be set in the [WIPE Modify] menu. See section 10 "WIPE Modify" for more details.

⑧ Press the AUTO button or move the fader lever in the PGM transition section to perform the WIPE transition.
When a key is sent to on-air, the corresponding number lights up in the KEY STATUS section. For example, if only KEY1 is on-air and other keys are off-air, number "1" lights up. This section can also indicate the layer priority levels. If the number "1" is lit on the second line from the top, it indicates that KEY1 is on the second highest level of the four.

8-3-5. DVE Transitions for Keys

① First, make settings for key signals in each key menu. (See section 9. "Key and DSK Setup".)

② In the PGM TRANSITION section, press a button or some buttons among KEY1 - KEY4 buttons. (See section 9-5. " Assigning DVEs to Keyers")

③ Press the DVE button to turn it on.

④ Select a DVE pattern at the item Pat in each KEY menu by using F1. (See Appendix "3-2. 2.5D (2D & Basic 3D) DVE Pattern List".) To enter the pattern number from the keypad, press F1 then press the number on the keypad, and press ENTER.

IMPORTANT
Simultaneous DVE transition of multiple key and background layers is possible. In the DVE transition, different DVE patterns can be applied to each signal layer. To apply different DVE patterns for layers, provide setps ② to ④ for the each of BKGD, KEY1 to KEY4.

⑤ Set the **Transition Rate**, if necessary. (See section 8-1-1 "Transition Rate".)

⑥ If necessary, set the **transition direction** using the NOR/REV button and REVERSE button in the DIRECTION section. (See section 8-2-3 "WIPE and DVE" for details.)

⑦ You can also modify the selected DVE pattern. It can be set in the [DVE Modify] menu. See section 11. "DVE Modify" for more details.

⑧ Press AUTO or move the fader lever to perform the transition.

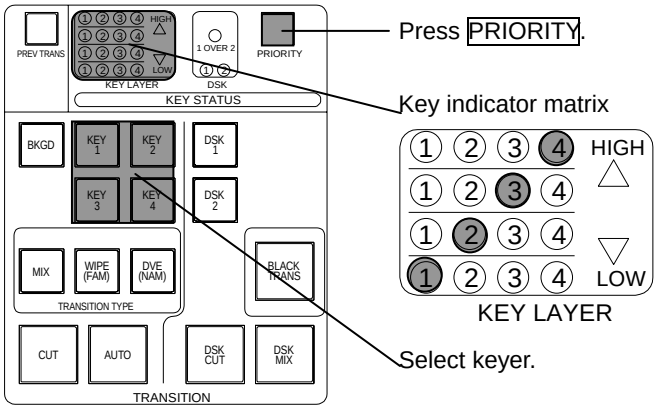
Note: In some cases such as changing transition type while the key is sent off the screen with certain DVE patterns, the key cannot be returned on the screen.

8-3-6. Priority Order Change of Keys

① Press the PRIORITY button to enter priority setting mode.

② When the PRIORITY button is turned on and lit, the NEXT TRANSITION buttons (KEY1, KEY2, KEY3, KEY4) light up orange and the key indicator matrix above these buttons shows the current key layer priority levels.

③ To change the key layer priority, press the KEY1 to KEY4 buttons in the order of high to low. For example, when pressing the key buttons in the order of KEY4, KEY3, KEY2 and KEY1, the key indicator matrix lights as shown at right and KEY4 becomes the upper-most layer and KEY1 becomes the lowermost layer of the four.



④ Press PRIORITY again to apply the set key layer priority. (To change the order, set order of all four keys. If PRIORITY is pressed again without pressing all four key buttons, the current setting is cancelled.)

8-4. BLACK Transitions

Pressing BLACK TRANS in the NEXT TRANSITION section initiates a fade to (or fade from) black of whatever signal layers are currently on the program line (background and keys).

Pressing the BLACK TRANS button again during the transition instantaneously returns the initial image on the program line. This means that the program line video changes from black to the initial image if it was in the process of fading to black, and vice versa, changes from the image to black if it was in the process of fading to the image.

IMPORTANT
BLACK transitions have the highest priority among all auto transitions. BLACK transition takes place whenever the BLACK TRANS button is pressed, even if DSK or PGM transition is in progress. BLACK TRANS button lights up red during transition, lights up orange when black is on-air, and then goes off when the initial image is returned.

9. Keyer / DSK Setup

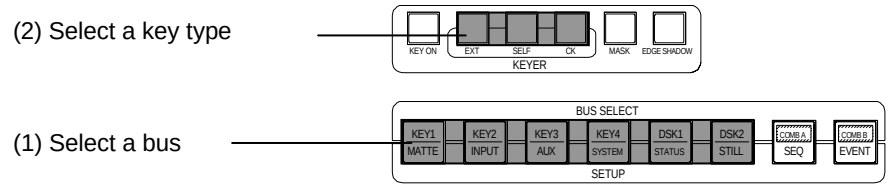
The four key and two DSK bus menus have nearly the same menu layout. Especially, an External, Self, or Chromakey submenus, Edge and Shadow submenus, and DVE Modify menu are exactly the same. Therefore, this section describes all of these menus for key and DSK together.

9-1. Keyer /DSK Setup Menu

Set up Keys and DSKs in the menus. Use the procedure below to set up.

① To select a bus to make the setup settings, press the corresponding key or DSK button in the BUS SELECT section (while SHIFT is unlit). Then the selected button will be lit.

② To select a key type for the selected bus, press the desired key type button in the KEYER section



The setup menu for the selected bus similar to below opens.

◆ When Ext is selected for key type:

```
External Key1
     KIns=Stl1      KSrc=In01      GN=6.2          Clp=0.0
```

This menu is used for the external key, which uses separate signals for the key insert (fill) and key source. In the [External Key1] submenu, select the key insert signal and source signal by turning F1 and F2 respectively. Key Gain and Clip can be also set in this submenu.

After all settings are made in this submenu, press the right single arrow button in the Keypad section (while MENU is lit) to open the next submenu. A menu similar to the one below opens.

```
External Key2
     Opac=0.0       Inv=Off
```

In the [External Key2] submenu shown above, the Opacity level (Opac) and Key invert (Inv) can be set. (The DSKs do not have Opacity control.)

◆ When Self is selected for key type:

```
Self Key1
     KIns=Stl1                GN=6.2        Clp=0.0
```

This menu is used for the self key, which uses the same signal for key source and key insert (fill). In the [Self Key1] submenu, select key insert signal by turning F1. Key Gain and Clip can be also set in this submenu.

After all settings are made in this submenu, press the right single arrow button in the Keypad section (while MENU is lit) to open the next submenu. A menu similar to that shown below opens.

```
Self Key2
     Opac=0.0        Inv=Off
```

In the [Self Key2] submenu shown above, the Opacity level (Opac) and Key invert (Inv) can be set. (The DSKs do not have Opacity control.)

◆ When CK is selected for type:

```
CK Manual1
     Ang=1.7        KAc=4.2        GN=6.2        Clp=0.0
```

This menu is used for the Chroma key, which has a very different setup procedure from other key types. See section 9-4 "Making and Adjusting Chromakey" for more details.

◆ **KEY ON Button**

The KEY ON button to the left of the KEYER section is used to select keyer DVE On / Off. Pressing the unlit button sets DVE to On (Enable-no Key) for the currently selected keyer. Pressing the button again sets DVE to On (Enable-with Key). And pressing it again turns off the light and sets DVE to Off (Disable). (See section 9-5-2. "Opening DVE Menus and Assigning DVE.")

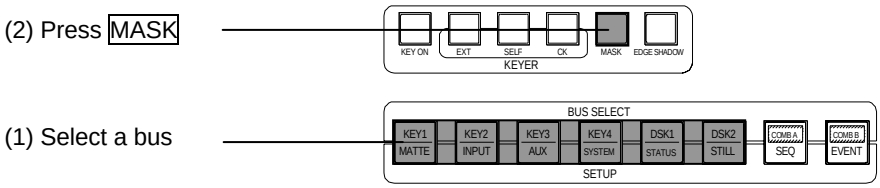
Both key insert and key source can be selected from Black, IN01 to IN16, Still 1 and 2, Matte 1 to 4, ComA, and ComB for any type of keys.

9-2. Mask

The switcher has a key mask function that let you alter key appearance by hiding a part of the key using mask patterns (almost same as Wipe patterns). To set the mask feature for keys and DSKs, first select a bus button for the bus you want to set the key mask in the BUS SELECT section, and then press MASK in the KEYER section to open the MASK submenu for the selected bus. Refer to the procedure below to make the mask settings.

① Press a bus button in the BUS SELECT section (while SHIFT is unlit) to select a bus you want to set the mask. Then the indicator will light up.

② Press MASK button in the KEYER section.



A mask menu for the selected bus similar to the one below opens.

Key Mask			
Pat=44	PX=0.0	PY=0.0	Siz=25.0

③ In the [Key Mask] submenu, set a mask pattern number, center position (X, Y) and size.

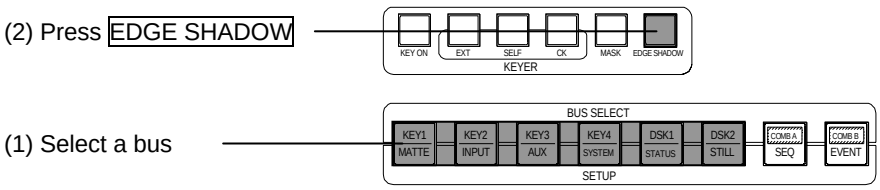
IMPORTANT
The center position can be changed only for the following patterns: 65 to 69, 75 to 79 85 to 94, and 105 to 114.

9-3. Edge and Shadow

Once you have made your key, you can add a colored edge or shadow to the key. In the [Edge Type] submenu you can select from four types of edge: Normal. Outline, Extrude, and Shadow,. This submenu also lets you adjust edge width and softness level and select single or dual mode. The [Edge Position] submenu lets you set the direction, position and offset. Edge color can be set in the [Edge Color] submenu. Follow the procedure below to make edge settings. For chromakeys, you cannot add an edge or a shadow.

① Press a bus button in the BUS SELECT section (while SHIFT is unlit) to select a bus you want to set edge or shadow. Then the indicator will light up.

② Press the EDGE SHADOW button in the KEYER section.



Pressing the right arrow button in the Keypad section also lets you go to the [Edge Type] submenu, when you are in the [Key Mask] submenu.

The [Edge Type] menu for the selected bus similar to that below opens.

Edge Type			
Typ=Nor	Wid=1	Sft=0.0	Mod=Sing

③ In the [Edge Type] submenu, turn F1 to select the edge type. Then set edge width, softness and mode.

Item		Description
Typ	Type	Selects the edge type from Normal, Outline, Extrude, and Shadow.
Wid	Width	Sets the edge width.
Soft	Softness	Sets the edge softness.
Mode	Mode	Selects single color mode or dual color mode.

NOTE

Before pressing single arrow buttons, make sure that MENU is lit orange in the keypad. If not, press the button that is lit orange (SEQ or EVENT) to turn it off. The MENU is turned on, the keypad enters the Menu mode and the arrow buttons can be used for menu selection.

④ After all settings are made in this submenu, press the right single arrow button in the Keypad section (while MENU is lit) to open the next submenu. A menu similar to below opens. Make settings in the following submenus to create the desired key edge.

Edge Position			
Dir=6	PX=0.0	PY=0.0	Off=0.0

Color setting for Single color mode or the first color of Dual color mode:

Edge Color 1
Lum=7.2 Sat=0.0 Hue=0.0

Color setting for the second color of Dual color mode:

Edge Color 2
Soft=0.0 Lum=7.2 Sat=0.0 Hue=0.0

Item		Description
Dir	Direction	Sets the direction if Extrude is selected.
PX PY	Position X Position Y	Sets the position if Shadow is selected.
Off	Offset	Moves the boundary between dual edges.
Lum Sat Hue	Luminance Saturation Hue	Selects the edge color.

9-4. Making and Adjusting Chromakeys (Option)

Chromakeys differ from regular keys in processing key signals. In chromakeys, the key signal is generated by chroma information instead of brightness that is used in regular keys. For example, if blue (the generally used back-drop color in chromakey studios) is used, all blue areas in the source video are removed and replaced with a video (CG or other live video).
The VPS-700 chromakey module offers high-performance chromakey capabilities of 10-bit 4:4:4 Video/Key processing. With this module, the chromakey feature can be assigned to all six keys including DSKs. Clean and noiseless keys are easy to achieve with the auto keyfunction alone in optimal lighting conditions. Keys can be easily created with automatic adjustment by the joystick and the AUTO CK button in the joystick section. Once a chromakey has been made by Auto Key, you can adjust and refine it in the chromakey menu to make the key even better.

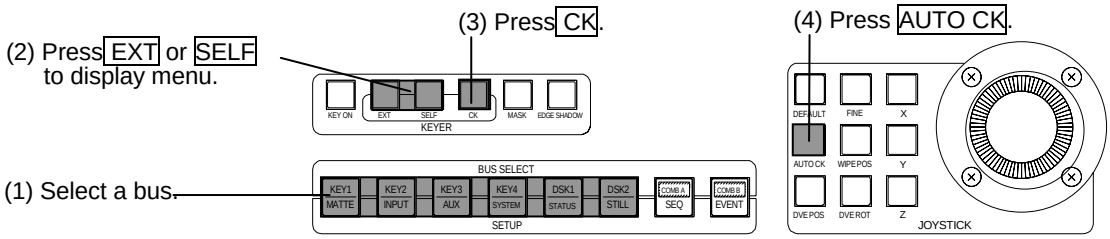
9-4-1. Auto Key

① To select a bus for auto keying, press the desired key or DSK button in the BUS SELECT section (while SHIFT is unlit). Then the selected button will light up.

② Press SELF or EXT in the KEYER section to display keyer menu. Select an insert signal for KIns in the menu.

③ Press CK in the KEYER section to change the key type to chromakey.

④ Press AUTO CK in the joystick section to enter AUTO CK mode.




```
CK Auto
      KIns=In01        PX=0.0        PY=0.0
```

IMPORTANT

If CK Auto menu is not displayed and the message "Set Cursor to PGM/PVW" appears at the right top corner of the menu display, Ck Auto menu cannot be displayed due to the incorrect setting for monitor output to display the crosshair of keying color setting. Press SYSTEM button and go to [System]-[Other] menu. If you are setting auto keying for a key, set CKCur to MPG or MPV. If you are setting auto keying for a DSK, set it to PGM or PVW. After the setting is corrected, restart the procedure from step (1) again.

⑤ Once AUTO CK is pressed, the crosshair appears on the preview or program screen and the [CK Auto] submenu is displayed in the menu display.
To set where to display the crosshair, select preview or program under Cursor in the [System] - [Other] submenu.

⑥ Use joystick X- and Y-axes to move crosshair to select the color for a key signal.

⑦ Press AUTO CK to do automatic keying.

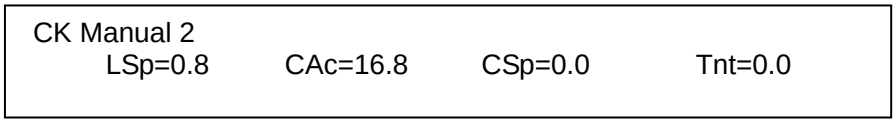
NOTE
You can finely adjust the auto setup chromakey and add an edge or mask to it. Once the chromakey setup has been completed, perform a transition to display the key on air. You can also set DVE transition with the chromakey applying LINE DVE. See section 8-3. "Key and DSK Transitions" and 9-5. "Assigning DVEs to Keyers" for details.

9-4-2. Adjusting Chromakey

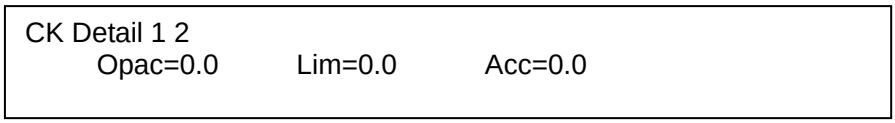
To ensure superior results with your chromakey, adjust and refine the key using the chromakey menu.

① Press the bus button used for chromakey in the BUS SELECT section (while SHIFT is unlit). The bus button will be lit.

② Press the CK button in the KEYER section. The [CK] menu for the selected key similar to below opens. Use the submenus to refine your chromakey.



In the CK Detail sub menu, even more detailed settings can be made for the chromakey.



◆ **If foreground image has similar color with keying color**

④ Turn F2 to adjust a range of hue angle. When you select the keying color, it is set to the range of 90 degrees around the set value. You can narrow the range to protect objects whose color is similar to the keying color from being cut out. There is few case you want to widen the range.

◆ **If key signal cannot remove background properly**
(1) having spots

⑤ You may need to change the value of Clip to remove noise that is left in the key signal. To set the Clip, turn F4.

⑥ If Clip is used to remove noise, luminance level is lowered. Therefore you need to gain luminance by setting Gain using F3.

* Clip and Gain influence each other. Therefore, if you change the value of either one, then usually it is better to change the value of the other one. The values of Clip and Gain do not need to be the same. Setting too large values will result solid and sharp edges. It is recommended to change the values while carefully looking at how foreground and background images are mixed at the borders to find the best balance of two parameters.

(2) having widely left background

⑦ Go to CK Manual 2 and turn F1 to change Luminace Suppress. The larger the value, the brighter the keying color is set.

⑧ Turn F3 to adjust Chroma Suppress. The smaller the value, the less chrominance in the keying signal.

Item		Description
Ang	Hue Angle	Specifies the hue of the keying color. Approximate values for colors. Blue: 0, Magenta: 60, Red: 100, Yellow: 160, Green: 240, Cyan: 280
KAc	Key Acceptance	Specifies the hue range of the keying color, so you can clearly remove the background or prevent the key signal to affect on the foreground image.
Gn	Gain	Sets the gain of the key signal to regain the level clipped by setting the Clip.
Clp	Clip	Sets the threshold level of the key signal so to remove the noise.
LSp	Luminance Suppress	Suppresses the luminance components. Adjust the brightness of the keying color to clearly remove the background when keying color is not uniform due to the lighting condition or other factors.
CAc	Chroma Acceptance	Specifies the hue range of the keying color. After auto keying, about the same value as Key Acceptance is set.
CSp	Chroma Suppress	Suppresses the chrominance components. Adjust the chrominance of the keying color to clearly remove the background.
Tnt	Tint	Adjusts the tint. This is used to adjust saturation in background and foreground images.
Opac	Opacity (Keyers only)	Sets the opacity level of the key.
ExtMsk	External Mask Enable	Used to enable or disable the usage of the external mask signal.

* To select the external mask signal, press the KEY/FILL button (indicator lit) and select in KEY/AUX bus.
* Clip and Gain influence each other. Setting too large values will make the edge of background and foreground too sharp. The goal of setting Clip and Gain is the well-balanced clear cutting and natural mixing of background and foreground.

CK Detail Menu

Item		Description
Mod	Mode	Used to select the setting mode suitable for higher luminance or lower luminance. Off (Off), HL (Highlight), LL (Lowlight)
Reg	Region	Used to select area for the detailed settings. BG (Background), FG (Foreground), Both (Both background & foreground)
GN	Gain	Used to set the gain in the detailed settings.
Clp	Clip	Used to set the threshold level of luminance at which the detailed settings are activated. In the HL mode, the settings are applied to the area where luminance level is above Clp level setting. In the LL mode, the settings are applied to where luminance level is below Clp level setting.
Opac	Opacity	Used to set the opacity in the detailed settings.
Lim	Limit	Used to set the luminance range for keying when the Region is set to BG or FG.
Acc	Accept	Used to specify the reference color angle to distinguish between BG and FG.

9-5. Assigning DVEs to Keyers

In addition to DVE transitions for 4 keys, the VPS-700 is also capable of applying LINE DVE to all keyers including DSKs. The DVE transition uses a preset DVE effect for keying, while LINE DVE applies a DVE directly to the key and manually modifies the key by applying effects, such as resizing, rotating, lighting. 3D warp effects are also available with the optional VPS-70Warp.

9-5-1. About DVE Channels

The VPS-700 provides six freely assignable DVE channels. You can assign six DVEs to six channels at the same time as a total of LINE DVEs and DVE transitions. For example, if 4 DVE keys are used for the on-air image, you have two more DVEs that enables you to perform a DVE transition of background and a key using a single channel pattern each for background and key transition.
The DVE channel information is always displayed at the top right of the menu display when the DVE-related submenus are displayed, and you can see how many DVE channels are currently being used. When you try to assign LINE DVE to a key or set a DVE transition, you cannot assign DVE to a new key or transition if 6 DVE channels are already in use. In this case, if you want to assign a DVE to a new channel, you have to cancel one of the existing DVE assignments.

9-5-2. Opening DVE Menus and Assigning DVE

Assigning a DVE to the key is set in the [Keyer Setup] submenu as shown in the procedure below.

① Press a key bus button to which you want to apply a DVE in the BUS SELECT section. (while SHIFT is not lit.) Then press BASIC in the DVE section to open the [DVE Basic] menu.

② Use right single arrow buttons in the keypad (while MENU is lit) to go to [Keyer Setup] or [DSK Setup] submenu.

③ Change the setting for DVE from Off (Disable) to On-woK (Enable-no Key) or On-w/K (Enable-with Key). This also can be done by using the KEY ON button to the left of the Keyer section. (See section 9-1. "Keyer /DSK Setup Menu.")

IMPORTANT
The button for DVE ENABLE is a three stare selction. Pay close attention to the menu when selecting ON, Enable no key or Enable with key. Simply pressing the button can produce unexpected results.

When making a DVE picture using a key, there are two types of processing:

- To make DVE picture with only key fill signal: Set to Enable (no key)
- To make DVE picture with key source & fill signals: Set to Enable (with key)

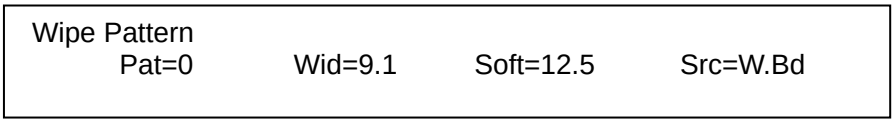
④ Modify the DVE key using BASIC, BORDER, SUB EFF, WARP and LIGHT menus. See section 11 "DVE Modify" for details.

IMPORTANT
Global items in DVE BASIC menu for keyers are disabled at factory default setting. If you want to use them, go to DVE setup submenu ([Keyer Setup]) and set Glbl (Use Global) to On (Enable). See section 11-3-3. "Setup."

10. Wipe Modify

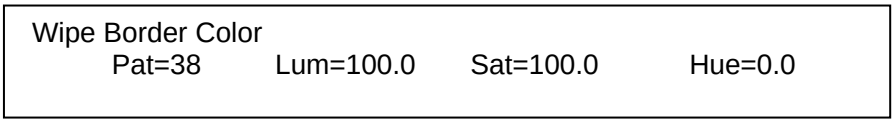
Wipe transitions use wipe patterns for signal switchover. Wipe transitions can be applied to the background layer and key signals (not to DSKs). However, note that you cannot apply different wipe patterns or directions to simultaneous wipe transitions of different layers. The selected wipe pattern is applied to all signals set for wipe transitions.
The WIPE menu lets you make a number of modifications on wipe patterns. You can add border or edge to the wipes, change size or aspect of the wipe shape and set the position at which the wipe starts. Pressing WIPE in the Transition section opens the [Wipe] menu. Use single arrow buttons to move between [Wipe] submenus. Note that not all modification settings shown in the [Wipe] menu can be applied to all patterns.

◆ **Pattern**



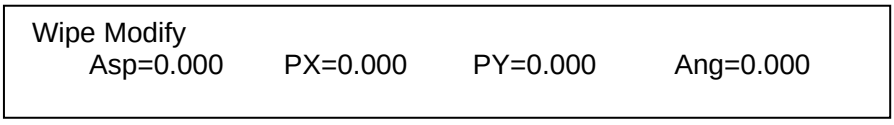
Item		Description
Pat	Pattern No.	Selects the pattern number.
Wid	Border Width	Sets the border width.
Soft	Border Softness	Sets the border softness.
Src	Border Source	Selects the border source. The options are Blk (Black), In01–16 (Input01-16), Stl1-3 (Still1-3), Mat1-4 (Matte1-4), ComA/B (Pre-combiner A, B), W.Bd (Wipe Border Matte).

◆ **Border Color**



Item		Description
Pat	Pattern No.	Selects the pattern number.
Lum	Luminance	Select the border color.
Sat	Saturation	
Hue	Hue	

◆ **Modify**



Item		Description
Asp	Aspect	Changes the aspect ratio.
PX	Center Position X	Specifies the x-coordinate of the center of the wipe pattern.
PY	Center Position Y	Specifies the y-coordinate of the center of the wipe pattern.
Ang	Angle	Sets the rotation angle.

The center position can be changed for the following patterns: 24, 29, 38, 39, 40, and 65 to 114.
Depending on the Aspect and Center Position settings, the wipe transition may not fully complete properly. .

10-1. Returning Wipe Modify Setting to Default

To return the WIPE Modify setting to the factory default, press and hold down the relevant control (F1 to F4) under the parameter.

10-2. Wipe Modify Example

The image shown to the right is a modified preset wipe pattern. It is added a border, changed the balance of height and width, and moved the center position. Follow the procedure below to set up the same effect.

① Choose different images for PGM and PST buses.

② Move the fader lever to the center of its travel.

③ Double-click the WIPE button in the transition section to open the [Wipe]-[Wipe Pattern] submenu.

Wipe Pattern			
Pat=82	Wid=9	Soft=7.5	Src=W.Bd

④ Turn F1 to select 82 for Pattern. Turn F2 to set 9 for Wid (BorderWidth). Then, turn F3 to adjust Softness.

⑤ Use the right single arrow button in the Keypad section (while MENU is lit) to go to the [Wipe] - [Border Color] submenu.

Wipe Border Color			
Pat=82	Lum=100.0	Sat=100.0	Hue=0.0

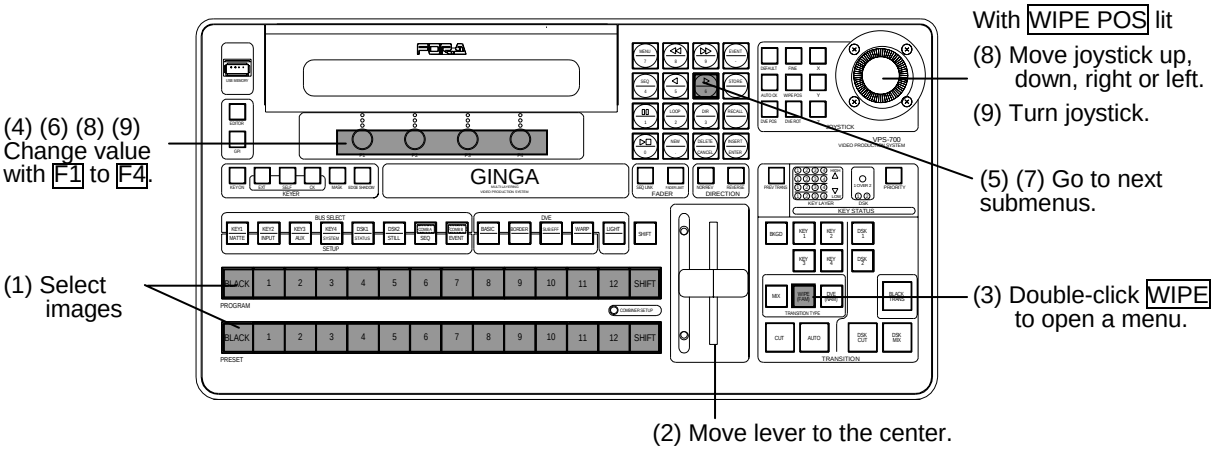
⑥ Use F2, F3 and F4 to set the border color.

⑦ Use the right single arrow button in the Keypad section (while MENU is lit) to go to the [Wipe] - [Modify] submenu.

Wipe Modify			
Asp=0.300	PX= -0.200	PY= -0.100	Ang=5.000

⑧ Turn F1 to change the aspect of the pattern. The shape of the pentacle pattern will be gradually distorted. And then, use F2 and F3 (or the joystick X and Y axes while WIPE POS is lit) to move patter position.

⑨ Turn F4 (or use the joystick Z axis) to change the angle of the pattern.



11. DVE Modify

The VPS-700 provides two types of modifications using DVE: DVE pattern modifications for transitions and LINE DVE modifications that modify keys (DVE keys). Both modifications are made in the DVE menus that are accessed by the buttons in the DVE section for each object. Possible modifications and the differences of each modification are shown below.

Menu	DVE transition	LINE DVE	Setting for
Basic	Partially available	Available	Foundamental factors (position, rotation, resizing, additional functions)
Border	Available	Available	Border
Sub Effects	Available	Available	Trail, Chroma control, Strobe
Warp (Option)	Not available	Available	3D DVE functions
Lights (Option)	Available	Available	Light source

■ DVE Pattern Modifications

When a DVE pattern is selected for a transition, it can be modified using DVE menus (Basic, Border, Sub Effects, and Light) in the same way as the Wipe pattern modification. DVE pattern modify settings are temporary, and the changes are in effect only until the main unit is reset or turned off. If you wish to save and reuse pattern modification settings, save the settings as an event. (See section 13-4. " Pre-combined Image Setting Example " for details.)
Pressing the WARP button allows you easy and quick access and cycling through the DVE Modify WARP menus.

■ DVE Keys

The LINE DVE feature can be applied to all 6 keyers including DSKs. It allows the user to make and customize video walls or DVE pictures easily. When the DVE modifier is applied to a key, all modification settings in the DVE menus (Basic, Border, Sub Effects, Warp and Light) are available in the same way as for DVE patterns. To apply the DVE to a key, set the DVE item in the [Keyer Setup] submenu of corresponding key to Enable. (See section 9-5-2. "Opening DVE Menus and Assigning DVE" for details.)

IMPORTANT
Some DVE modify settings are maintained and affect other patterns that you select after the modification. When the transition type is DVE, Local Source in the [KEY1 - 4 -Basic - Position (and Rotation)] menu cannot be modified.

11-1. Returning DVE Modify Setting to Default

Retruning Modify Parameter to Default Setting
Press and hold down the relevant control (F1 to F4) under the parameter.

Returning Modify Submenu (BASIC, BORDER, SUB EFFECT, WARP and LIGHT) to Default Settings
(1) Press a submenu button in the DVE section.
(2) Press the DEFAULT button in the Joystick section while hold down the SHIFT button next to the DVE section.

11-2. DVE Modify Example

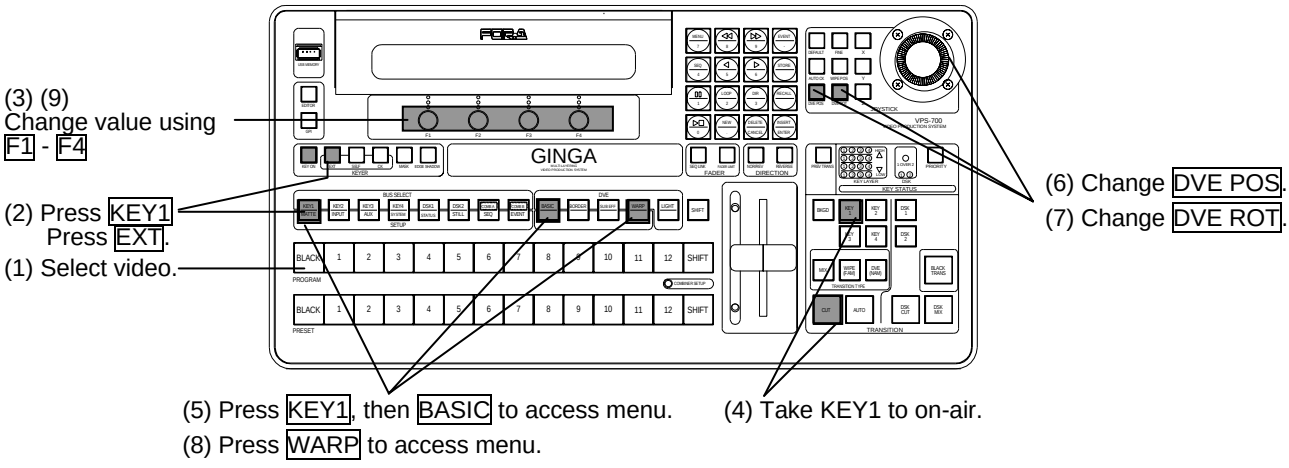
This DVE modification example (figure below) is set up using the LINE - DVE feature after Key1 is put onto the background video: the key is moved and rotated. And also made the image to ripple as the water surface does using Warp feature.

① Select a background image by pressing a button in the PGM bus section.

② Press KEY1/MATTE (while SHIFT is unlit) to select Key1. Then press EXT below the menu display to set up Key1 to an external key. The [Key1] menu will be shown on the menu display as shown below.

```
External Key1
      KIns=Stl1      KSrc=Stl1      GN=6.2          Clp=0.0
```

③ Assume that an image of 32-bit tga is assigned to Still1. Turn F1 to select Still1 for key fill and turn F2 to select again Still1 for key signal. (See section 12-2-6. “32-bit TGA Images.”)



④ Press KEY1 in the TRANSITION section. And then, press CUT to set the key to on-air.

⑤ Press KEY1 in the BUS SELECT section. Press BASIC in the DVE section to open the [DVE] - [Basic] menu and to assign LINE-DVE to the key. Once the DVE is assigned to a key, the KEY ON button in the KEYER section lights up.

⑥ Press the DVE POS button to the left of the JOYSTICK section. Move the joystick vertically and horizontally to move the key position. You can also move the position by changing values in the [Local Position] submenus as follows.

Keyer L. Source			
	PX= - 0.432	PY=0.264	PZ= - 0.996

Keyer L. Target			
	PX=0.096	PY= - 0.045	PZ= - 0.018

⑦ Press the DVE ROT button to the left of the JOYSTICK section. Turn the joystick clockwise or counter-clockwise to rotate the key. You can also rotate the key by changing values in the [Local Rotation] submenus.

⑧ Press WARP in the DVE section to access the [Warp] menu. Use right single arrow button in the Keypad section (while MENU is lit) to go to the [Warp] - [Ripple 1] submenu.

Keyer Ripple 1			
Typ=Cir	Frq=16.000	Amp=0.015	Phs=0.100

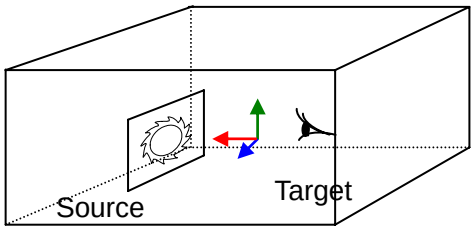
⑨ Turn F4 to change the Phase item.

Local Position and Global Position

The figures below give you an idea how the local position and the global position are defined.

- Local Position

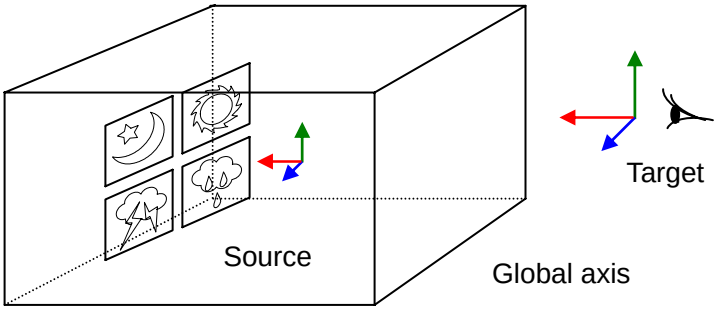
  Each key can be individually set its local position. If you want to show the key smaller or bigger you change the distance between the source and the target. Moving the positon for either one will do the same. The farther the smaller, and the closer the bigger. You can also rotate either or both of source and target. The value of source determines where the key is, and the value of target determines where you are.



Local axis

- Global Position

  You can move all the keys together in the global axis maintaining the relative positions set in the local axis.



Global axis

11-3. Basic

11-3-1. Position and Rotation

◆ **Local Position**

Keyer L. Source	PX=0.000	PY=0.000	PZ=0.000

Keyer L. Target	PX=0.000	PY=0.000	PZ=0.000

Item		Setting Range
PX	Position X	Sets position of DVE object in the local axes. The local position of M/E transitions cannot be changed.
PY	Position Y	
PZ	Position Z	

◆ **Global Position**

Keyer G. Source	PX=0.000	PY=0.000	PZ=0.000

Keyer G. Target	PX=0.000	PY=0.000	PZ=0.000

Item		Setting Range
PX	Position X	Sets the position of DVE object in the global axes (DVE space).
PY	Position Y	
PZ	Position Z	

◆ **Local Rotation**

Keyer L. Source	RX=0.000	RY=0.000	RZ=0.000

Keyer L. Target	RX=0.000	RY=0.000	RZ=0.000

Item		Setting Range
RX	Rotation X	Sets the rotation of DVE object in the local axes.
RY	Rotation Y	
RZ	Rotation Z	

◆ **Global Rotation**

Keyer G. Source RX=0.000 RY=0.000 RZ=0.000

Keyer G. Target RX=0.000 RY=0.000 RZ=0.000

Item		Setting Range
RX	Rotation X	Sets the rotation of DVE object in the global axes (DVE space).
RY	Rotation Y	
RZ	Rotation Z	

11-3-2. Aspect

Keyer Aspect X=1.000 Y=1.000 Z=1.000

Item		Description
X	Aspect X	Changes the aspect ratio of the selected keyer.
Y	Aspect Y	
Z	Aspect Z	

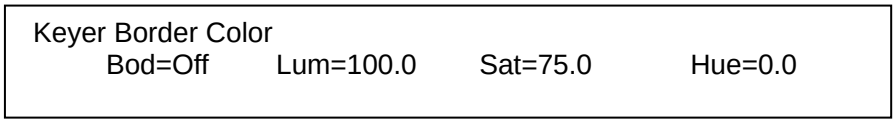
11-3-3. Setup

Keyer Setup Glbl=Off DVE=On-wok

Item		Description
Glbl	Use Global	Sets whether to enable or disable to set the Global Position and Global Rotation.
DVE	DVE	Sets whether or not to apply LINE DVE to a key (DSK). The options are Off (Disable), On-wok (Enable no key) and On-w/k (Enable with key). See section 9-5. "Assigning DVEs to Keyer" for more information.

11-4. Border

◆ **Border Color**



Item		Description
Bod	Border	Sets the border On/Off.
Lum	Luminance	Sets the border color.
Sat	Saturation	
Hue	Hue	

* When setting other than 0 for Inner Width or Outer Width, Border function is automatically to ON. Setting Border On/Off is a future use.

◆ **Inner Width**

Item		Description
L	Left	Adjusts the width of the left border.
R	Right	Adjusts the width of the right border.
T	Top	Adjusts the width of the top border.
B	Bottom	Adjusts the width of the bottom border.

◆ **Outer Width**

Item		Description
L	Left	Adjusts the width of the left border.
R	Right	Adjusts the width of the right border.
T	Top	Adjusts the width of the top border.
B	Bottom	Adjusts the width of the bottom border.

NOTE
Adjusting Outer Width can give the same effect with Crop.

IMPORTANT
When the Beveled is set to ON, values of four borders cannot be adjusted individually. To adjust each border individually, turn the Beveled OFF.

◆ Softness

Keyer Bord Softness
InS=1.9 OutS=0.5

Item		Description
InS	Inner Softness	Adjusts the softness at the inner edge of the border.
OutS	Outer Softness	Adjusts the softness at the outer edge of the border.

◆ Bevel Color

Keyer Bevel Color
Bvl=On Lum=100.0 Sat=0.0 Hue=0.0

Item		Description
Bvl	Beveled	Sets the border bevel ON/OFF.
Lum	Luminance	Sets the Hilight color of the beveled border.
Sat	Saturation	
Hue	Hue	

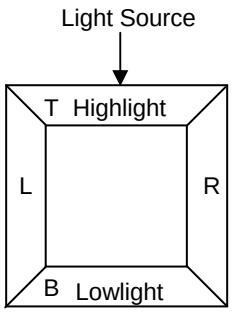
IMPORTANT

When beveled border is set to ON, the same width setting is applied to all four sides of the border, and individual item settings in the Inner and Outer Width menus cannot be made. To set the border width for four sides, set the value in any items of L, R, T or B.

◆ Bevel Lighting

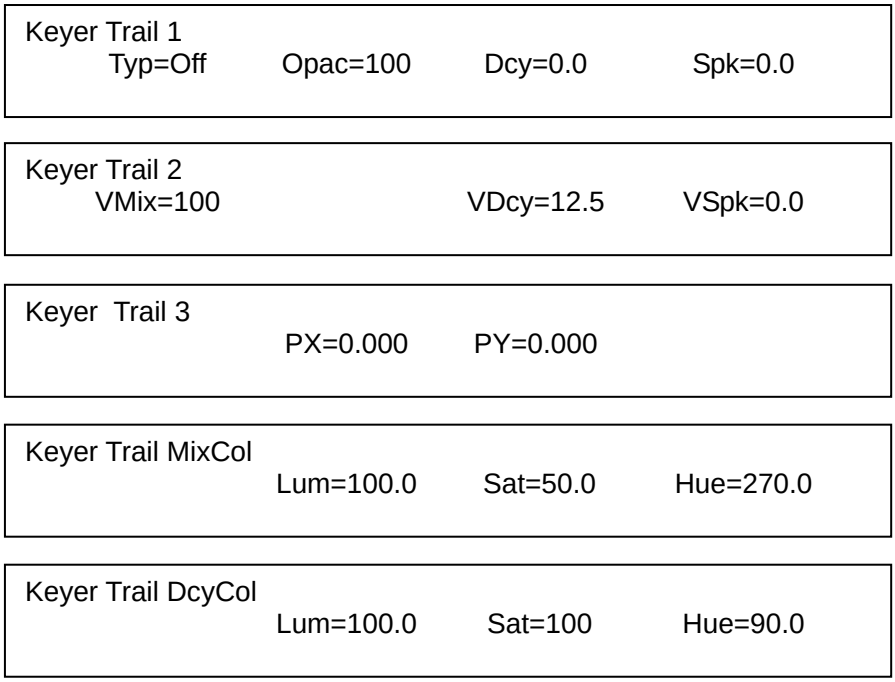
Keyer Border HL
Dir=0 HL=75.0 LL=43.7

Item		Description
Dir	Highlight Direction	Sets the direction of the lighting for the beveled border.
HL	Highlight Opacity	Sets the blend ratio of the highlight and the base color of the beveled border.
LL	Lowlight Opacity	Sets the blend ratio of the lowlight (shadow color) and the base color of the beveled border.



11-5. Sub Effect

11-5-1. Trail



Item		Description
Typ	Trail Type	Selects the trail type. The available parameters are: Off and Trail.
Opac	Opacity	Sets the blend ratio of the trail and the base color.
Dcy	Decay	Sets the rate of decay.
Spk	Sparkle	Sets the rate of sparkle.
VMix	Video Mix	Sets the blend ratio of trail and video.
VDcy	Video Decay	Sets the rate of video decay.
VSpk	Video Sparkle	Sets the rate of video sparkle.
PX	Pos X	Sets the position of the trail.
PY	Pos Y	
Lum	Luminance	Sets the color of the trail.
Sat	Saturation	
Hue	Hue	

11-5-2. Chroma Control

Item		Description
T	Type	Selects the chroma control type. The options are Through, Sepia and Nega (negative).
Sat	Saturation	When the Type is set to Sepia, colors can be added to the image by setting Saturation and Hue parameters. To change the image to monochrome, set Sat to 0.
Hue	Hue	

11-5-3. Strobe

Item		Description
Mode	Mode	Selects the strobe freeze effect mode between frame freeze and field freeze.
Ival	Interval	Sets interval of strobe freeze effect. If Interval is set to 0, the strobe freeze effect is Off.

11-6. Warp (Option)

11-6-1. Ripple

◆ **Ripple 1-3**

Keyer Ripple 1 Typ=Cir Frq=16.000 Amp=0.015 Phs=0.0

Keyer Ripple 2 Wav=Sine Rot=0.125 Pnt=2 Shp=0.0

Keyer Ripple 3 Sid=2 PX=0.0 PY=0.0

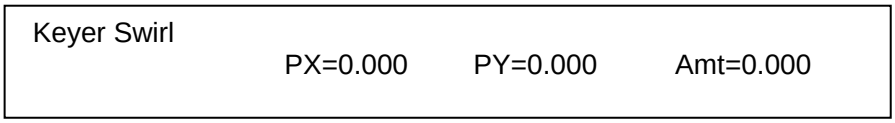
Item		Description
Typ	Shape Type	Selects the shape type. The options are Hor (Horizontal), Ver (Vertical), Rot (Rotated), Cir (Circular), Poly (Polygon), and Star (Star).
Frq	Frequency	Sets the frequency of the wave.
Amp	Amplitude	Sets the amplitude of the wave.
Phs	Phase	Sets the phase of the wave.
Wav	Wave Type	Selects the wave type. The options are Sine (Sine), Squ (Square), Tri (Triangle), Saw (Saw), and Rand (Random).
Rot	Rotation	Sets the rotation of the wave.
Pnt	Points	Set if Type is set to Star.
Shp	Sharpness	Set if Type is set to Star.
Sid	Sides	Sets the number of segments if Type is set to Polygon.
PX	Position X	Sets the center position of the wave.
PY	Position Y	

◆ **Modifier**

Keyer Modifier Mod=Off Zom=1.000 Asp=0.000

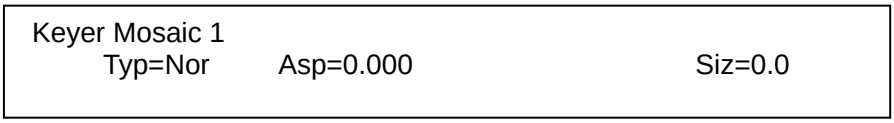
Item		Description
Mod	Modifier	Sets the modifier On/Off.
Zom	Zoom	Sets the multi-wave.
Asp	Aspect	Sets the aspect ratio of the multi-wave.

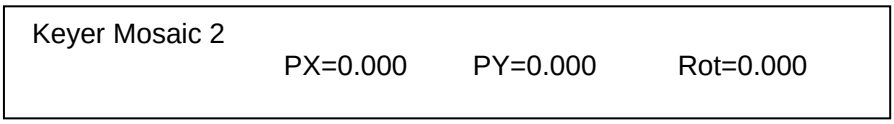
11-6-2. Swirl



Item		Description
PX	Position X	Sets the center position of the swirl.
PY	Position Y	
Amt	Amount	Sets the amount of swirl.

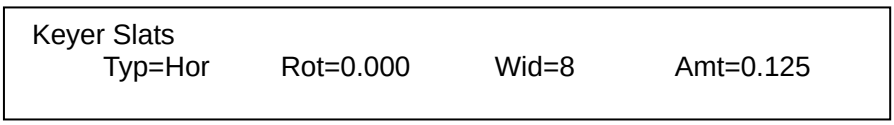
11-6-3. Mosaic





Item		Description
Typ	Type	Selects the mosaic type. The options are Nor (Normal) and Rot (Rotated).
Asp	Aspect	Sets the aspect ratio of the mosaic cell.
Siz	Size	Sets the size of the mosaic cell.
PX	Position X	Sets the center position of the mosaic.
PY	Position Y	
Rot	Rotation	Sets the rotation angle of the mosaic.

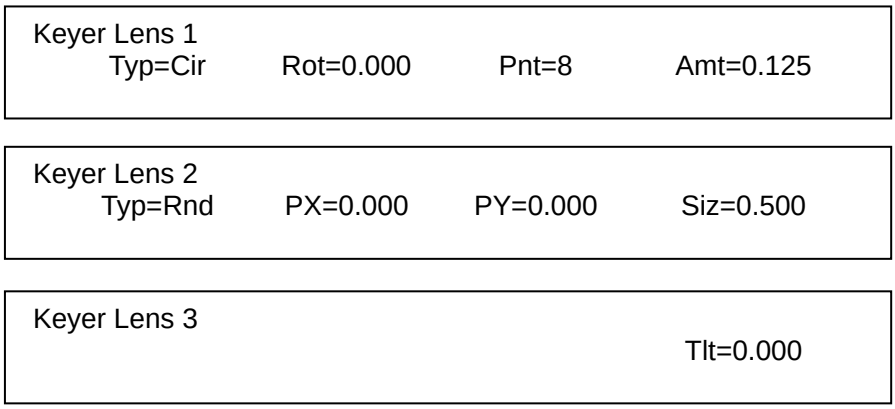
11-6-4. Slats



Item		Description
Typ	Shape Type	Select the shape type. The options are Hor (Hor), Ver (Ver), HV(HV), Rot (Rotated), and HV-R (HV-Rotated).
Rot	Rotation	Sets the rotation angle of the slats.
Wid	Slat_Width	Sets the width of the slats.
Amt	Amount	Sets the distance between slats.

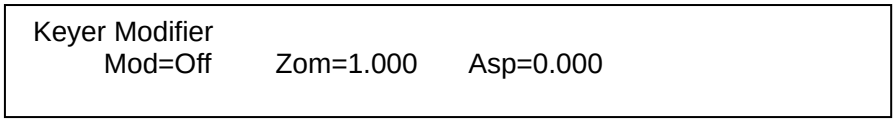
11-6-5. Lens

◆ **Lens 1-3**



Item		Description
Typ	Shape Type	Selects the shape type. The options are Cir (Circular), Poly (Polygon), and Star (Star).
Rot	Rotation	Sets the rotation angle of the lens
Pnt	Points	Sets the number of lens if Type is set to Polygon or Star.
Amt	Amount	Sets the focal length of the lens.
Typ	Pattern Type	Selects the pattern type. The options are Rnd (Round), Lin (Linear), and Mul (Multi).
PX	Position X	Sets the position of the lens.
PY	Position Y	
Siz	Size	Sets the size of the lens.
Tlt	Tilt	Sets the amount of tilt of the lens.

◆ **Modifier**



Item		Description
Mod	Modifier	Set the modifier On/Off.
Zom	Zoom	Sets the multi-lens.
Asp	Aspect	Sets the aspect ratio of the multi-lens.

11-6-6. Page Turn

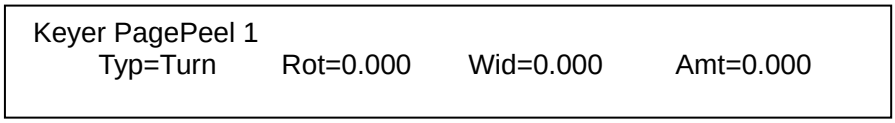
```
Keyer PageTurn 1
    Pat=Sing      Rot=0.000     Ang=0.250     Amt=0.000
```

```
Keyer PageTurn 2
    Typ=Turn      PX=0          PY=0          Num=0
```

```
Keyer PageTurn 3
                  Rad=0.125     Spl=0.000     Stg=0.000
```

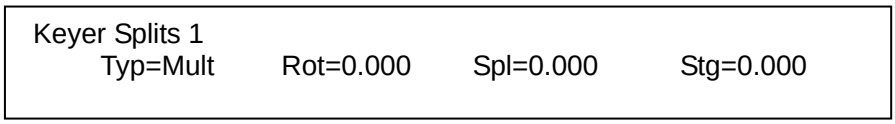
Item		Description
Pat	Pattern	Select the pattern. The options are Sing (Single), Quad (Quad), Mult (Multi), ZipT (Zip-Top), ZipR (Zip-Right), ZipB (Zip-Bottom), and ZipL (Zip-Left).
Rot	Rotation	Sets the rotation angle of the turn.
Ang	Peel Angle	Sets the peel angle of the turn.
Amt	Amount	Sets the amount of the page turn.
Typ	Type	Selects the type between Turn (PageTurn) and Roll (PageRoll).
PX	Position X	Sets the center position of the page turns.
PY	Position Y	
Num	Num_Segment	Sets the number of segments.
Rad	Radius	Sets the roller radius of the turn.
Spl	Spiral	Gives the spiral angle to the page turns.
Stg	Stagger	Divides the segments alternately into 2 groups and controls the groups separately.

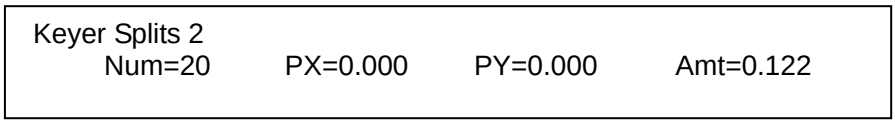
11-6-7. Page Peel



Item		Description
Typ	Type	Selects the type between Turn (PageTurn) and Roll (PageRoll).
Rot	Rotation	Sets the rotation angle of the page peel.
Wid	Peel Width	Sets the width of the page peel.
Amt	Amount	Sets the motion of the page peel.
Tlt	Tilt	Sets the tilt angle of the page peel.
Rad	Radius	Sets the radius of the page peel.

11-6-8. Splits





Item		Description
Typ	Type	Select the type. The options are 2WayH, 2WayV, 4Way and Multi.
Rot	Rotation	Sets the rotation angle if type is set to Multi.
Spl	Spiral	Gives the spiral angle to the splits.
Stg	Stagger	Divides the segments alternately into 2 groups and controls the groups separately.
Num	Number Segment	Sets the number of segments if type is set to Multi.
PX	Position X	Sets the center position of the splits if type is set to Multi.
PY	Position Y	
Amt	Amount	Sets the distance between segments.

11-6-9. Mirror

```
Keyer Mirror 1
    Typ=2Way0      Rot=0.000
```

```
Keyer Mirror 2
      Num=3        PX=0.000      PY=0.000
```

Item		Description
Typ	Type	Selects the mirror type. The options are 2Way0, 2Way1 2Way2, 2Way3, 4Way0, 4Way1, 4Way2, 4Way3, and Multi.
Rot	Rotation	Sets the rotation angle if type is set to Multi.
Num	Number Segment	Sets the number of mirrors if type is set to Multi.
PX	Position X	Sets the center position of the mirror.
PY	Position Y	

11-6-10. Defocus

```
Keyer Defocus
                                    Amt=0
```

Item		Description
Amt	Amount	Sets the amount of the defocus. If Amount is set to 0, the defocus effect is Off.

11-7. Light (Option)

11-7-1. Type

```
Keyer Light Type
        Typ=Off
```

Item		Description
Off	Type	Sets the light type. The options are Off (Off), 1-HL (Light 1), 2-HL (Light 2) and HL/LL (High light and Low light).

11-7-2. Light 1-2

◆ **Position**

```
Keyer L1 Position
        Siz=0        PX=1.0        PY=0.0        PZ=1.0
```

Item		Description
Siz	Size	Sets the size of the light source. (Plane source)
PX	Position X	Sets the center position of the light source.
PY	Position Y	
PZ	Position Z	

◆ **Color**

```
Keyer L1 Color
      Opac=75.0    Lum=100.0    Sat=0.0        Hue=0.0
```

Item		Description
Opac	Opacity	Sets the blend ratio of the light and base color.
Lum	Luminance	Sets the color of the light.
Sat	Saturation	
Hue	Hue	

IMPORTANT
Enabling the Light is not effective when using DVE Basic effects, since they are planal effects. Turn off the Light in DVE Modify menu when using DVE Basic effects.

12. Internally Generated Signals

12-1. Bus Mattes

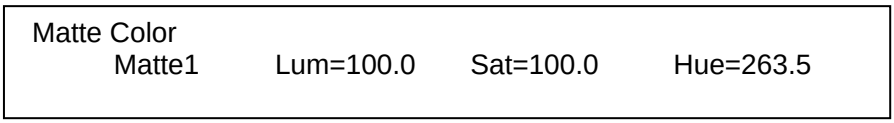
In the VPS-700, multiple single-color mattes can be internally generated. Color matte signals can be used for key insert, background of pre-combined images, a variety of border, edge and shadow effects. You can select different color mattes for each of those. Four different color matte signals can also be assigned to the M/E bus buttons. To set a color for the bus mattes, open the [Matte Color] submenu to make the color setting for each bus matte as shown below.

◆ **Bus Matte Color Settings**

① Press KEY1 / MATTE button (while SHIFT is lit) to display the [Matte Color] submenu.

② Turn F1 to select the bus matte from Matte 1 through 4.

③ Turn controls F2, F3 and F4 or use joystick to set the color.



Item	Description	Setting Range
Lum	Sets the color luminance level.	0.0 - 100.0%
Sat	Sets the color saturation level.	0.0 - 100.0%
Hue	Sets the color phase.	0.0 - 359.5

12-2. Still Store

The VPS-700 is capable of storing stills that are downloaded from USB flash memory drives (available up to 2GB) or captured from Program output for later recall and use as layering sources. Once stills have been captured and stored (up to 100 still files), they can be recalled for use by assigning them as "Still1" and "Still2" at the M/E bus, as well as a key source and key insert signals. Optionally, another still (Still 3) can be used as background video for combined images made by pre-combiners; however, "Still 3" cannot be assigned to PGM/PST nor key source/insert signals.
Stored stills can also be sent to the frame memory of the built-in Frame Synchronizer for each input. Once a still is stored to the FS, live input video of the bus will not be passed-through nor can it be selected.

The switcher has a frame buffer and memory, the same as other standard switchers. When a still is captured, it is saved to the switcher memory from the buffer. It can then be saved to still stores. Image files can also be downloaded to the still stores via USB. The switcher memory can store 100 still files (Stl00 - Stl99). So, still files as a whole can be backed up to or restored from USB flash memory drive, as needed. See section 4-5. “File Management” for details about file and memory management. The thumbnails for stills will be shown on the connected display units when VPS-70DPUIF option is installed.

12-2-1. Downloading Still Images from USB

① Connect a USB flash drive containing the image files to the USB port of the OU.

IMPORTANT
Available image file formats are jpg (jpeg), bitmap (bmp) and targa (tga). Names of image files must be "Stl00" - "Stl99". Make an "Stl" folder in the root directory of the USB and save image files to the folder.

② Press DSK2/STILL (while SHIFT is lit) to display [STILL] menu.

③ Use the single arrow buttons in the Keypad section to go to the [Download Still] submenu.

④ Turn F3 to set DL to USB.

⑤ Turn F2 to select a file to be downloaded from Stl00 to Stl99.

⑥ Turn F1 to select a destination to save still from In01-16 and Stl1-3.

In01-16	Saved to FS frame memory of In01-16. Still image is used as an alternative video of live input.
Still 1-2	Saved and named as either Still1 or Still2. Both can be assigned to the PGM/PST bus and key insert/source signals.
Still 3	Saved and capable of use as a background video of pre-combined images made by optional pre-combiners.

⑦ Press and hold down F3 at least one second to start downloading. The DSK2/STILL button turns red while downloading and then turns orange when the file is downloaded to the OU and the file is assigned to Still1.

The asterisk appearing next to a file name indicates that the selected still file exists in the OU. If the still file does not exist, the asterisk will not appear.

Item		Default	Description
Dst	Destination	Stl1	Selects a destination to save still. The options are In01-In16 and Stl1-Stl3 (Still1-Still3).
File	Source	00	Selects a source file.
DL	Download	USB	OU, USB
Direct	Direct Download	Off	(Do not change.)

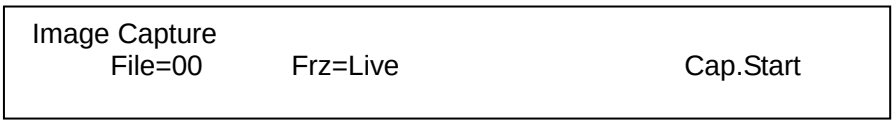
12-2-2. Capturing Program Out and Saving Still

① Press DSK2/STILL (while SHIFT is lit) to display [Still] menu.

② Use the single arrow buttons in the keypad section to go to the [Image Capture] submenu.

③ Turn F1 to select a file to save the captured still. Turn F2 to select a freeze mode from Live-through, Frame, Odd or Even field.

④ Press and hold down F4 at least one second to start capturing. The DSK2/STILL button turns red while processing and then turns orange when the still is captured.



Item		Default	Description
File	File	00	Selects from 00 to 99.
Frz	Freeze Mode	Live	Selects the freeze mode. The options are Live (Live Through), Frm (Frame), Odd (Odd Field), Even (Even Field).

IMPORTANT

Captured still image is once stored in the Frame Buffer of MU(main unit). It is not yet ready to be used as inputs. To use the image as an input, assign it to any of IN01-16 or Still1-3 as described in the next paragraph "Assigning Stills to Video Sources".

12-2-3. Assigning Stills to Video Sources

① Once the still image is captured and saved to the selected file in the OU, use the single arrow buttons in the Keypad section to go to the [Download Still] submenu.

② Turn F3 to set DL to OU.

③ Turn F2 to select a file where the captured still is stored.

④ Turn F1 to select a destination to save still.

In01-16	Saves the still to FS frame memory for In01-16. The saved still image will be used as an alternative video of live input.
Still 1-2	Saves the still as either Still1 or Still2. The saved still image can be assigned to the PGM/PST bus and key insert/source signals.
Still 3	Saves the still and the saved still image can be used as a background video of combined image made by optional pre-combiners.

⑤ Press and hold down F3 at least one second to start downloading. The DSK2/STILL button turns red while downloading and then turns orange when the captured image is stored as a selected video source.

12-2-4. Exporting Stills to USB Flash Memory Drive

① Connect a USB flash drive to the USB port of the OU.

② Press DSK2/STILL (while SHIFT is lit) to display the [STILL] menu.

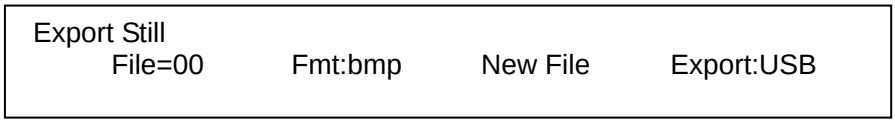
③ Use the single arrow buttons in the Keypad section to go to the [Export Still] submenu.

④ Turn F1 to select a still to export to the USB flash drive.

⑤ Turn F2 to select an image format from bmp and tga.

⑥ File information is shown on the third item. If the same file name as the exporting file exists in the USB memory, Overwrite will appear. If the same file name does not exist, New File will appear in the display.

⑦ Press and hold down F4 to export the selected still to the USB flash drive. The DSK2/STILL button turns red while processing and then turns orange when the still is exported to the USB flash drive.



Item		Default	Description
File	File	00	Selects from 00 to 99.
Fmt	File Format	bmp	Selects a file format to be exported. The options are bmp (Bitmap) and tga (Targa).
Export	Export	USB	USB

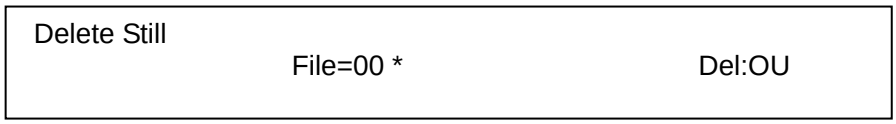
12-2-5. Deleting Still File

① Press DSK2/STILL (while SHIFT is lit) to display [STILL] menu.

② Use the single arrow buttons in the keypad section to go to the [Delete Still] submenu.

③ Turn F2 to select a file to delete.

④ Press and hold down F4 to delete the selected still file. The DSK2/STILL button turns red while processing and then turns orange when the still is deleted.



Item		Default	Description
File	File	00	Selects from 00 to 99.
Delete	Del	OU	Selects OU or USB and deletes the file.

Note that once a still file is saved to the USB flash drive, the "\Stl" folder is automatically made and all of the still files are saved in this folder. (See section 4-5. "File Management.")
The data cannot be saved to the USB memory drive if there is not enough space available in the USB. In this case, an error message "error_no 6101" will be displayed.

12-2-6. 32-bit TGA Images

Stills 1 and 2 can load 32-bit tga files. While the image files such as bitmap or jpeg are 24-bit RGB files and do not have alpha channel (key data), 32-bit tga is a 32-bit image with alpha channel. You can load both key and fill data as a 32-bit tga file to the one bus (Still1 or Still2). Storing two data in one bus allows you to use less buses, and so it makes your still data management easy. Follow the procedure below to load the image to the Still and set up a keyer.

① Refer to section 12-2-1. “Downloading Still Images from USB” to download 32-bit tga file to Still1 (or Still2).

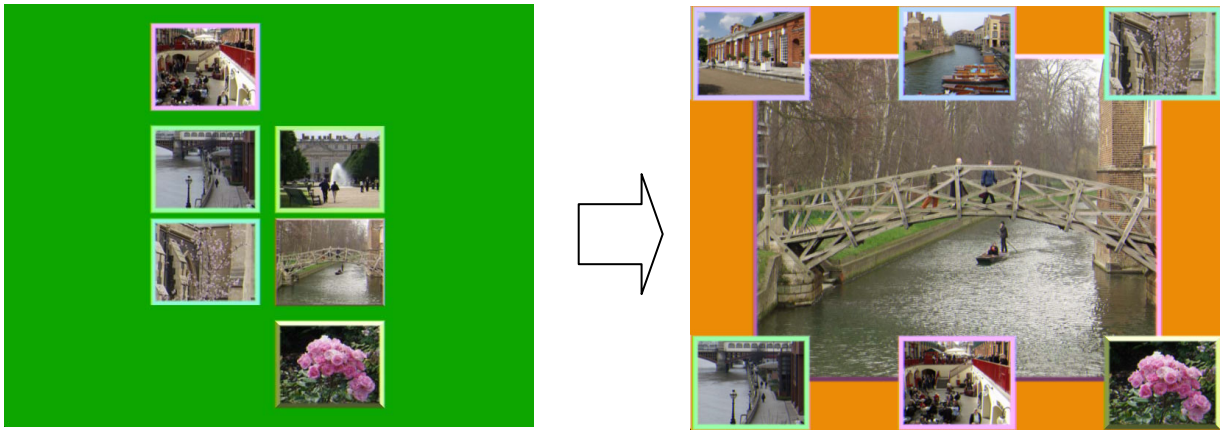
② Select a Keyer or a DSK (from KEY1-4 or DSK1-2) and press the EXT button to set it as an External key.

③ Select Stl1 (or Stll2) for both KIns (Key Insert) and KSrc (Key Source) items in the Keyer (or DSK) menu.

NOTE
Only Still1 and Still2 support 32-bit tga files.

13. Pre-combiner (Option)

Pre-combiner (VPS-70DS) is a very unique option. The two pre-combiner option boards can be installed to the switcher. Since one VPS-70DS can add 16 channels of DVE to the switcher, up to 32 channels of DVE are available as a total. The two images using these DVE can be combined and assigned to the M/E bus to be used as a video source same as primary inputs or stills.
They provide a wide range of video production capabilities and enable this M/E-type switcher to handle signals with multi-layer features in the same way as a layer switcher, so that transitions from multi-layer to multi-layer are possible as shown below.



Installation of this board adds 2.5D-DVEs (position, size, rotation, and border) to the primary inputs together with a pre-combiner function that combines these DVE pictures in the system upstream for enabling to use the composite results as PGM/PST bus and key source/insert signals.

IMPORTANT
Two images (ComA and ComB) can be combined when either one or two pre-combiner option cards are installed to the switcher. If only one card is installed, up to 8 source channels are available for each combined image as a default. A total of 16 channels of DVE can be allocated to two combined images. If two boards are installed to the switcher, maximum of 16 DVE channels can be used for each image.

13-1. Setting Up Pre-combined Images

① Press the ComA button on the PST bus. (ComA is assigned to the bus button 12 at the factory shipping.)

② Press the COMB A/SEQ button (while SHIFT is unlit). Then the button will light up.

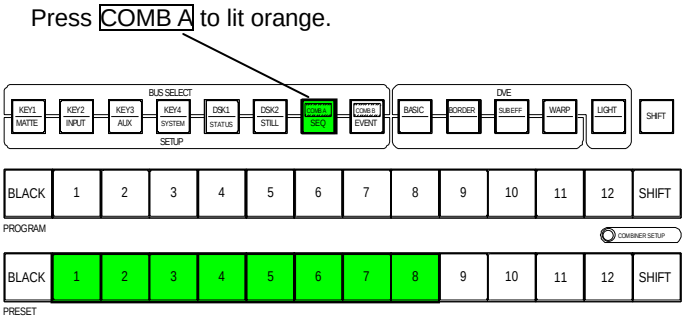
③ Press DEFAULT in the Joystick section while holding down the SHIFT button next to the DVE section.

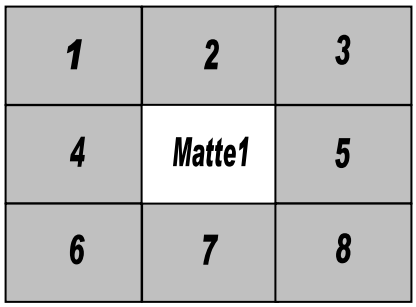
④ A preset combined image composed of 8 DVE pictures (default setting) on the matte background (Bus matte 1) is automatically made and displayed in the preview screen. The video images used for the DVE pictures are the images of In01 to In08.

⑤ The preset bus buttons whose video appears on the combined image as a DVE picture light up green. These bus buttons can be used to set DVE pictures ON/OFF.

◆ The Preset Bus Button Indications

The buttons in the preset bus light up to indicate the DVE picture status. Pressing the bus buttons toggles the DVE pictures **on** (lit **green**) and **off** (unlit). Double-clicking the bus buttons enters the **editing** (lit **orange**) mode.

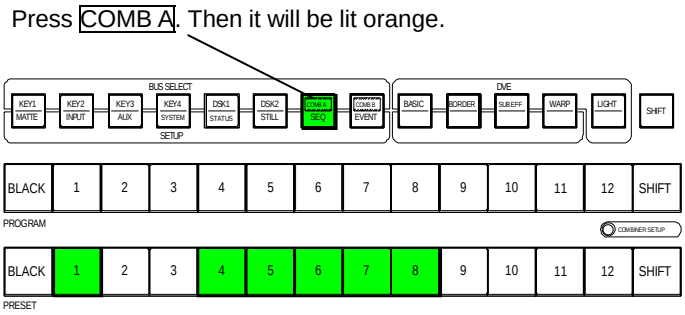


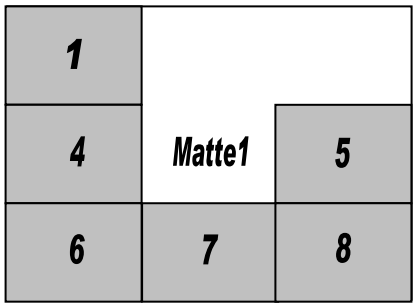


The Pre-combined image
（Preview screen）

◆ Eliminating DVE Pictures from the Combined Image

To eliminate DVE pictures from the combined image, press the corresponding bus buttons to turn them off. For example, to eliminate DVE pictures 2 and 3, press the bus buttons 2 and 3 to turn them off.





The Pre-combined image
（Preview screen）

◆ Addiing a DVE Picture to the Combined Image

To add a DVE picture to the combined image, press a relevant bus button. For example, to add the bus 9 image to the combined image, press the bus button 9. (The button light is turned on.) Note that the added DVE picture (the bus 9 image) is displayed in full-screen. Refer to the menu operation ([DVE] - [BASIC] menu) in the next section (section 12-3-1) to reduce the size of the DVE picture.

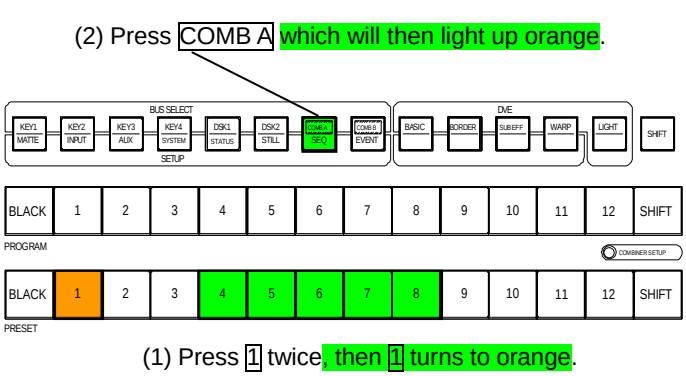
IMPORTANT
One option card can add up to 16 DVE channels as a total for both ComA and ComB. If all of 16 DVE channels are already assigned, no DVE picture can be added to the images.

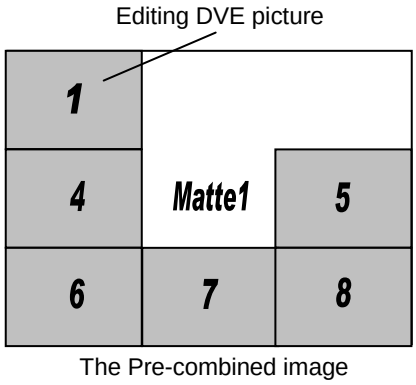
13-2. Editing Pre-combined Images

A still image (Still3) can be also used as the background video of the pre-combined images. The priority and opacity levels of the DVE pictures can be set in the [Formation] submenu of pre-combiners. Moreover, 2.5D DVE effects can be added to each DVE using the DVE menus ([BASIC] and [BORDER]).

① Press COMB A or COMB B (while SHIFT is unlit) to display the pre-combiner menu.

② Double-click a bus button to select a DVE picture to edit. If you want to edit the DVE picture No.1, double-click the 1 bus button on the preset bus. The bus button changes to orange to indicate that the DVE picture No.1 is ready for editing.





The Pre-combined image

③ Use single arrow buttons (while MENU is lit) in the keypad section to go to [Formation] submenu. Make the following settings in the [Formation] submenu.

Combiner Formation			Select A=7, B=0
Src=In01	Prior=0	Opac=0	BG=Matte1

The numbers of DVEs assigned to Combiner A and B are indicated at the upper right of the menu display. Total of DVE channels for both ComA and ComB must be 16 or less, if one optional VPS-70DS card is installed to the unit.

Item		Default	Description
Src	Video Src	In01	Selects an input video source for the DVE picture.
Prior	Input Priority	0	Arranges the layer order of the DVE pictures. If set to No.0, the DVE picture is set to the lowest layer.
Opac	Opacity	0	Sets opacity for the selected DVE picture.
BG	BKGD Matte	Matte1	Selects background video signal.

④ Then, press the BASIC or BORDER button in the DVE section to display the setting menu. Effects in the [BASIC] and [BORDER] menus can be used for each DVE picture. For details about the settings, refer to section 11-3. "Basic" and section 11-4. "Border."

IMPORTANT
Pre-combined images A and B are assigned to the M/E bus 12 and 24 respectively as a factory default.

13-3. Merging Input Mapping

The pre-combiner input mapping is independent from the input mapping for M/E bus. You can correlate these two sets of mappings as shown in the procedure below.

① Open the [SYSTEM]-[Other] submenu.

② Change the setting for Remap Link from Independent to BaseLink. The pre-combiner input mapping will be merged with the M/E input mapping each time an event or a sequence is recalled.

```
Other
    Cursor=PGM      FR<DS       Map=Link      SFT=Toggle
```

NOTE

If these two mappings are related, the pre-combiner input mapping will be updated with the current M/E bus mapping whenever an event or a sequence is recalled. This will allow you to keep using the event or the sequence without getting trouble by assigning an absent bus once signal existed.

13-4. Pre-combined Image Setting Example

This section illustrates a setting example of the pre-combined images as shown below. Image A is composed of 6 DVE pictures with border and a background matte. Image B is composed of 7 DVE pictures with border and a background matte. You can create these images and transition them from one to the other with one pre-combiner option card.

Image A

Image B

13-4-1. Setting Up Image A

To Make a Standard Composition

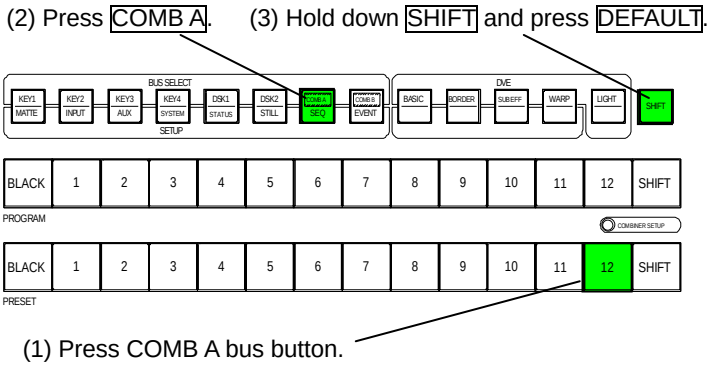
① Press the COMB A button on the PST bus. (ComA is assigned to the bus button 12 at the factory shipping.)

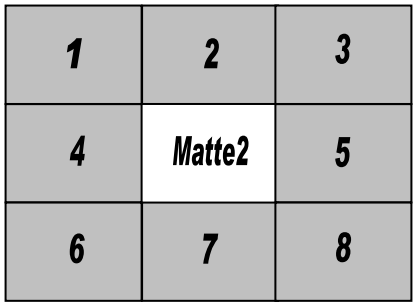
② Press the COMB A/SEQ button (while SHIFT is unlit).

③ Press DEFAULT in the Joystick section while holding down SHIFT next to the DVE section.

④ A preset combined image composed of 8 DVE pictures (default setting) on the matte background (Bus matte 2) similar to below is automatically made and displayed in the preview screen. The video images used for the DVE pictures are the images of In01 to In08.

⑤ The preset bus 1 to 8 buttons whose videos appear on the combined image as DVE pictures light up green. These bus buttons can be used to set DVE pictures ON/OFF.

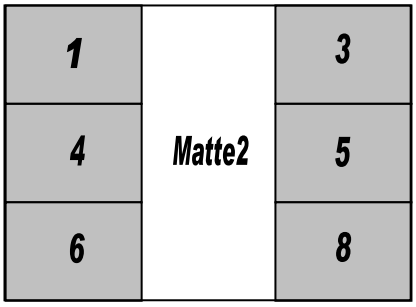




The Pre-combined image
（Preview screen）

⑥ Press 2 and 7 on the PST bus to eliminate two DVE pictures, so that a total of 6 sub screens appear on the image.

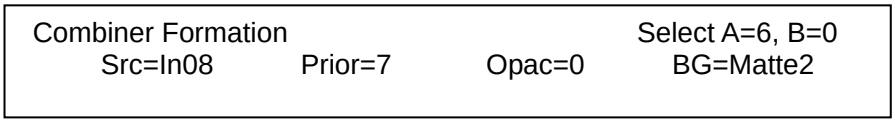
IMPORTANT
DVE Picture 1 is the lowest layer and Picture16 is the top layer of the pre-combined image as factory default. Start to modify DVE pictures from the upper layer.



The Pre-combined image
（Preview screen）

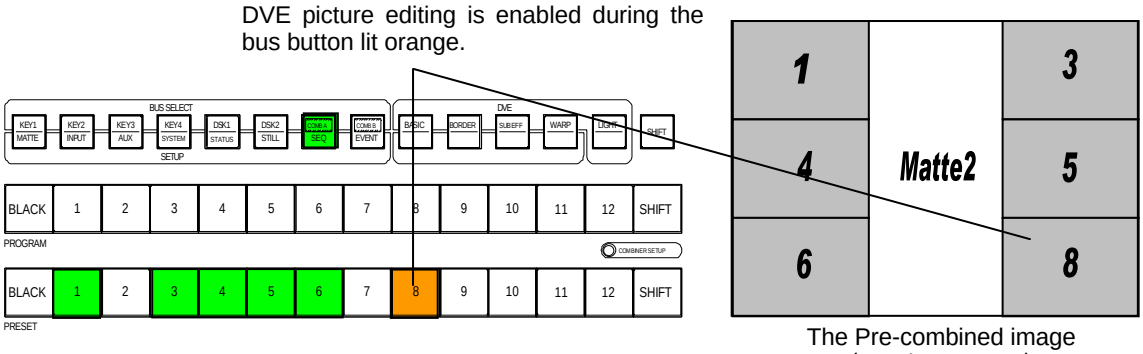
To Modify Each DVE Picture

① Double-click 8 on the PST bus. The button will light up orange. Then, press the COMB A/SEQ button (while SHIFT is unlit) to display the [Combiner Formation] menu for DVE Picture 1.



② Turn F1 to change the source video, if necessary. You can also change the layer order and opacity of DVE Picture 1 in this menu.

③ Press DVE POS in the Joystick section to display [Pre-combiner - BASIC] -[Local Position] menu. Move joystick (X-Y axes) to position the picture. Turn joystick to resize the picture.

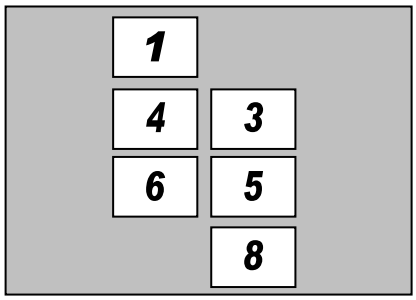


The Pre-combined image
（Preview screen）

④ Press the BORDER button in the DVE section to display the [Pre-combiner - BORDER] menu.

⑤ Turn F1 to set border to ON in the [Border Color] menu.

⑥ Press the right single arrow button on the Keypad section to go to the [Inner Width] menu and the [Outer Width] menu to specify the inner and outer width of the border.
Use the left single arrow button to go back to the [Border Color] menu. Use the joystick (X, Y and Z axes) to change the border color.



⑦ Repeat Steps 1 to 6 to modify all DVE pictures in the image.

⑧ To apply a beveled border to DVE Picture 8, press the right single arrow button to go to the [Bevel Color] menu. To use the beveled border, turn F1 to set the Beveled to ON. Set the border color in the same menu. Use the joystick (X, Y and Z axes) to change the color.

⑨ Finally, turn F4 in the [Combiner Formation] menu to select the background matte color.

13-4-2. Setting Up Image B

To Make a Basic Composition

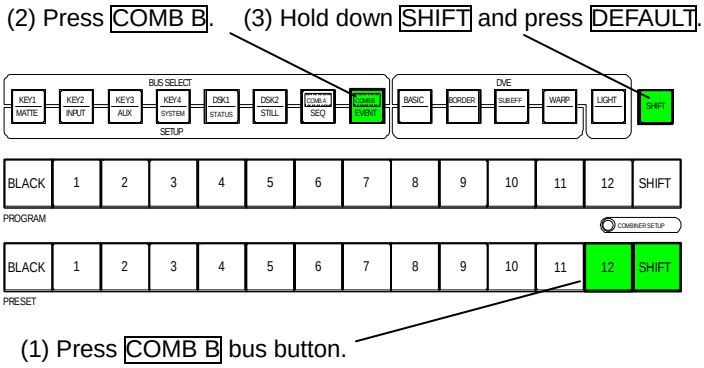
① Press the COMB B button on the PST bus. (ComB is assigned to the bus button 24 at the factory shipping.)

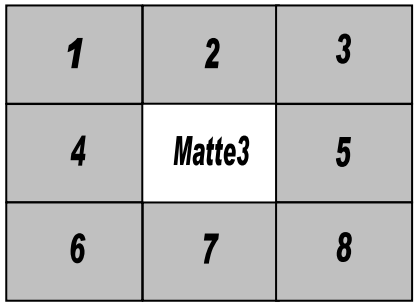
② Press the COMB B/EVENT button (while SHIFT is unlit).

③ Press DEFAULT in the Joystick section while holding down SHIFT next to the DVE section.

④ A preset combined image composed of 8 DVE pictures (default setting) on the matte background (Bus matte 3) similar to below is automatically made and displayed in the preview screen. The video images used for the DVE pictures are the images of In01 to In08.

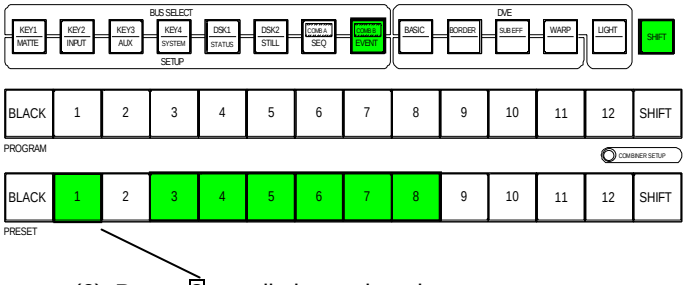
⑤ The preset bus 1 to 8 buttons whose videos appear on the combined image as DVE pictures light up green. These bus buttons can be used to set DVE pictures ON/OFF.

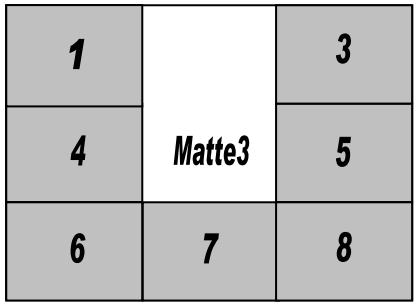




The Pre-combined image
（Preview screen）

⑥ Press bus button 2 on the PST bus to eliminate one DVE picture, so that a total of 7 sub screens are left on the image.





The Pre-combined image
（Preview screen）

Modify Each DVE Picture

① Double-click 8 on the preset bus. The bus button will light up orange. Then press the COMB B button (while SHIFT is unlit) to display the [Combiner Formation] menu for DVE Picture 8.

Combiner Formation			Select A=6, B=6
Src=In20	Prior=19	Opac=0	BG=Matte3

② Turn F1 to change the source video, if necessary. You can also change the layer order and opacity of DVE Picture 20 in this menu.

③ Turn F4 to select a Matte3 for Background.

④ Refer to section 13-4-1. "Setting Up Image A" to modify each DVE picture.

13-4-3. Making Transition

To Assign Pre-combiner Images to Bus

At a factory shipping, The Pre-combiner A image is assigned to Bus 12 (unshifted) and the Pre-combiner B image is assigned to Bus 12 (shifted). If you want to change these bus assignments, see 7-1-4 "Assigning Signals to M/E Bus."

To Make Transition from Pre-combiner A to Pre-combiner B Using WIPE or DVE

① In the PGM transition section press the BKGD button. Then the button will be lit up.

② Press 12 on the PGM bus (while SHIFT is unlit). The button will turn on red.

③ Press 12 on the PST bus (while SHIFT is lit). The bus button will turn on green.

④ Press WIPE (DVE). The button will then be lit. When WIPE (DVE) is pressed, the WIPE (DVE) menu is automatically displayed in the window. Turn F1 under the Pat item to **select a pattern** to be used for the background transition. (See Appendix 3, "Wipe Pattern List" and "2D/3D DVE Pattern List".) To input the number using the keypad, press F1, input the pattern number with the keypad, and then press ENTER.

⑤ Set the **Transition Rate**, if necessary. (See section 8-2-2 "Mix".)

⑥ If necessary, set the **transition direction** using the NOR/REV button and REVERSE button in the DIRECTION section.

⑦ You can also apply **a modifier** to a selected pattern. It can be set in the WIPE or DVE Modify menu. See section 10. "WIPE Modify " or section 11. "DVE Modify" for more details.

⑧ Press the AUTO button or move the fader lever in the PGM transition section to perform the pattern transition.

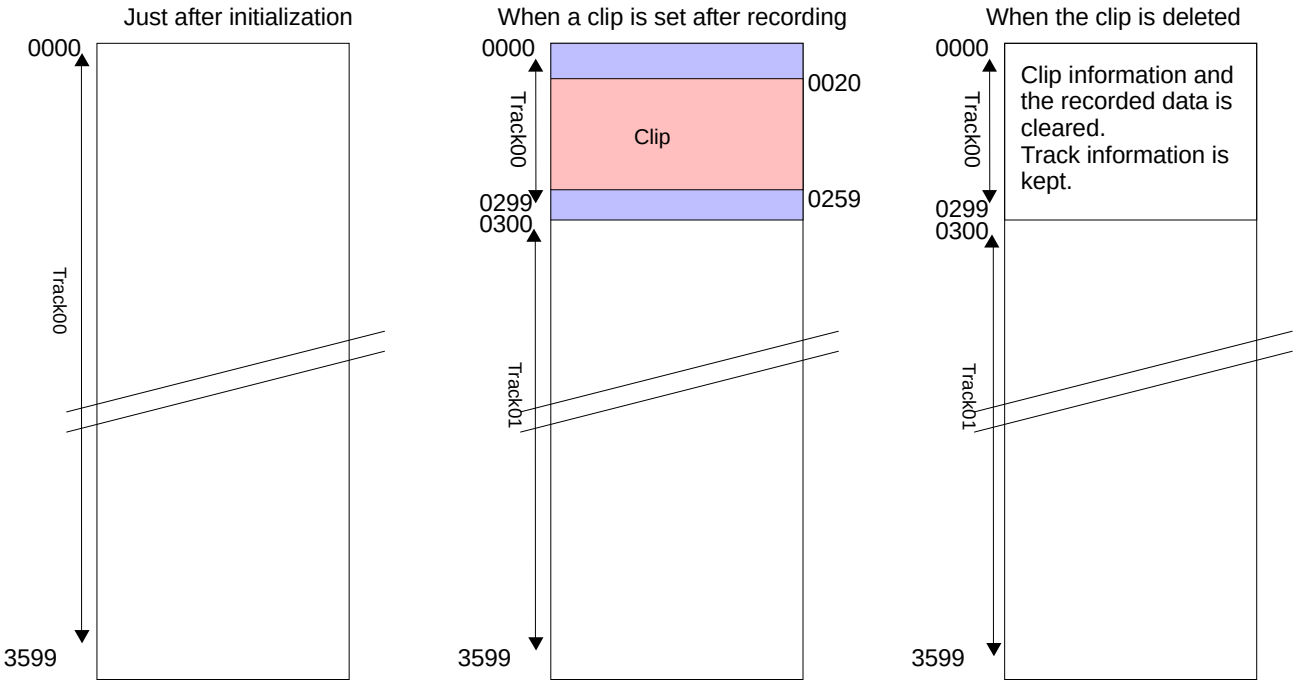
14. Flash Recorder (Option)

Installation of up to two optional VPS-70FR is available. Each VPS-70FR card can store a total of approximately 120 seconds of uncompressed images. VPS-70FR uses flash memory that is generally used on USB memory devices. The flash memory is non-volatile memory, so it does not need to restore data from backup at reboot. It can record images from primary inputs (in real time). It also supports simultaneous playback of up to two channels of videos with a key, and the playback of recorded videos in loop play mode or in trigger play mode. Moreover, it has the easy edit mode supporting frame by frame playback to easily set clip in and out points.

14-1. Managing Frame Memory

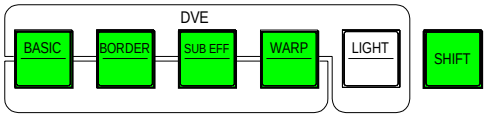
<The concept of Frame Memory Management>

Once the initialization is completed, Frame Memory becomes a linear memory space. After complete recording (or frame-by-frame recording) of the input source, a track that consists of the recorded numbers of frames is automatically set. A clip is defined by the desired start point and end point (Start must always exist before End) in a track. Only one clip can exist in one track. When the recording is completed, the beginning and ending are set to the start point and end point automatically. Once the clip is set, the track cannot be overwritten unless the clip is deleted. When an unnecessary clip is deleted, overwrite is enabled again, and the recording of the same number of frames that existed in the track will be possible, which means that even if the clip is deleted, the track will remain the same. This is to prevent fragmentation of the frame memory.
All tracks are cleared when “Initialize” is performed (all recorded information is lost).
Since “Track” is dynamically controlled, it can be used in many ways. You can make either longer clips for fewer tracks or shorter clips for more tracks. In addition, “Initialize” takes several minutes (does not finish immediately) since it provides the substitution of bad sectors as well as data clear of frame memory. The maximum number of tracks per flash recorder card is 17 numbered 0 to 16.



Relationships between Track and Clip

◆ **Buttons in the DVE Section**



The BASIC, BORDER, SUB EFF and WARP buttons in the DVE section can be used, when the SHIFT button is lit, to access to the [Flash Recorder] menus as below.

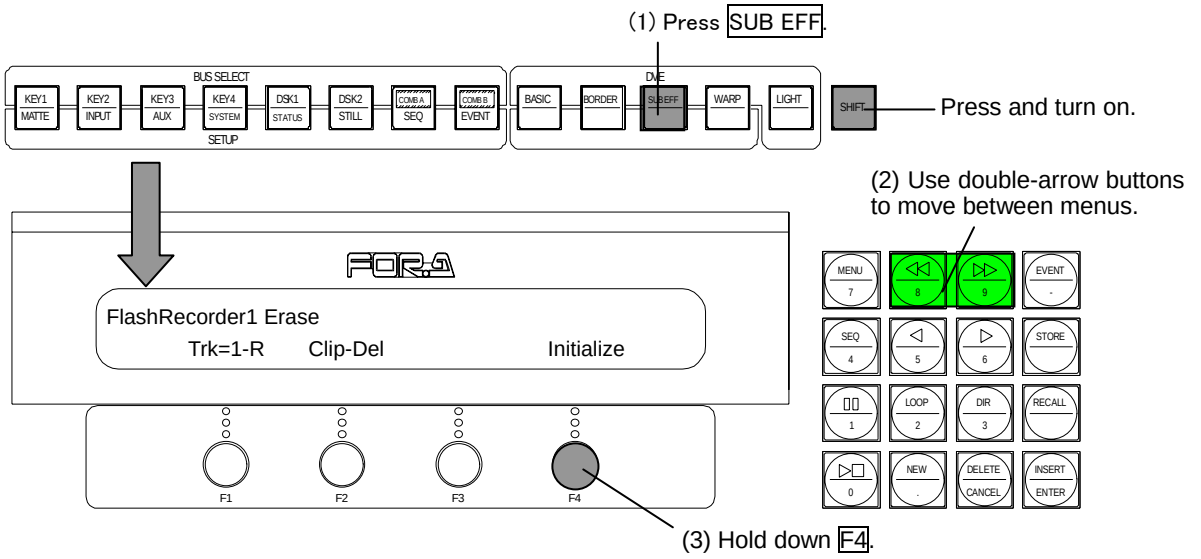
Button (while SHIFT is lit)	Menu
BASIC	Clip Play Comb-A
BORDER	Clip Play Comb-B
SUB EFF	FR1 Setup [Sub menue: Clip Set・Rec・Erase]
WARP	FR2 Setup [Sub menue: Clip Set・Rec・Erase]

14-2. Initializing

Perform the initialization before the first use of the flash recorder or when you want to erase all tracks and all recorded data as follows.

① Press SUB EFF button in the DVE section (while SHIFT is lit) to open the [Flash Recorder] - [FR1 Setup] menu.

② Open the [Erase] menu using double-arrow buttons.



③ Hold down F4 to start the initialization. While the initialization is being processed the DELETE button in the KEYPAD section lights up red. When the initialization is completed, the DELETE button indicator goes off. The FR1 is initialized.

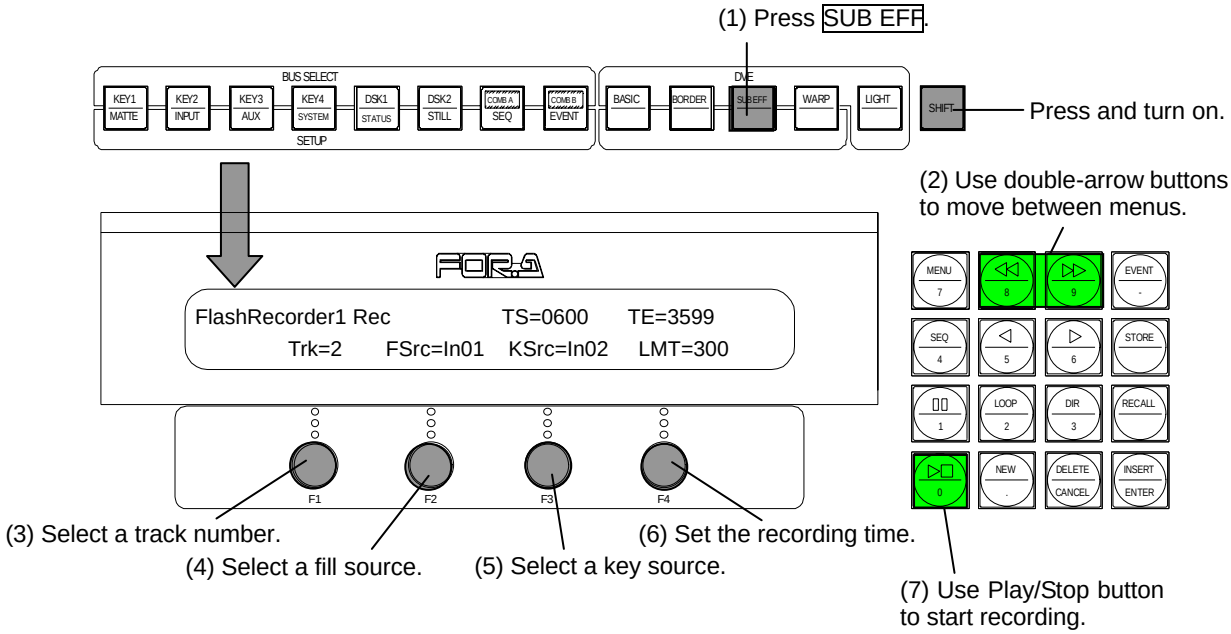
IMPORTANT
If the initialization cannot be successfully completed, the percentage for the Bad sector will be displayed at the top right in the menu display. If the initialization is successfully carried out, there is no display in the area.

14-3. Recording in Tracks

◆ **Recording in FR1**

① Press SUB EFF button in the DVE section (while SHIFT is lit) to open the [Flash Recorder] - [FR1 Setup] menu.

② Open the [Rec] menu using double-arrow buttons.

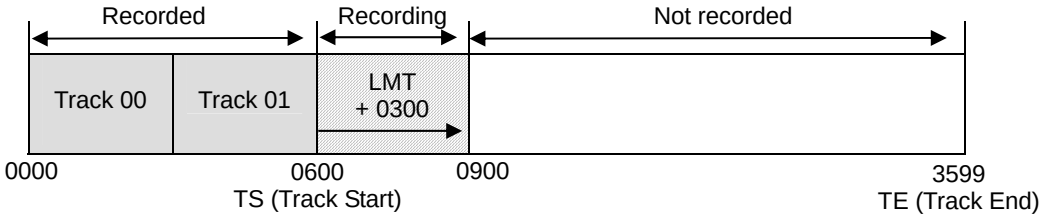


③ Turn F1 to select a Track number.

④ Turn F2 to select a fill source signal to record.(In01 - 16, BLK, Mat1 - 4, Stl3)

⑤ Turn F3 to select a key source signal to record. (In01 - 16, BLK, Mat1 - 4, Stl3, Full)

⑥ Turn F4 to set the recording time.



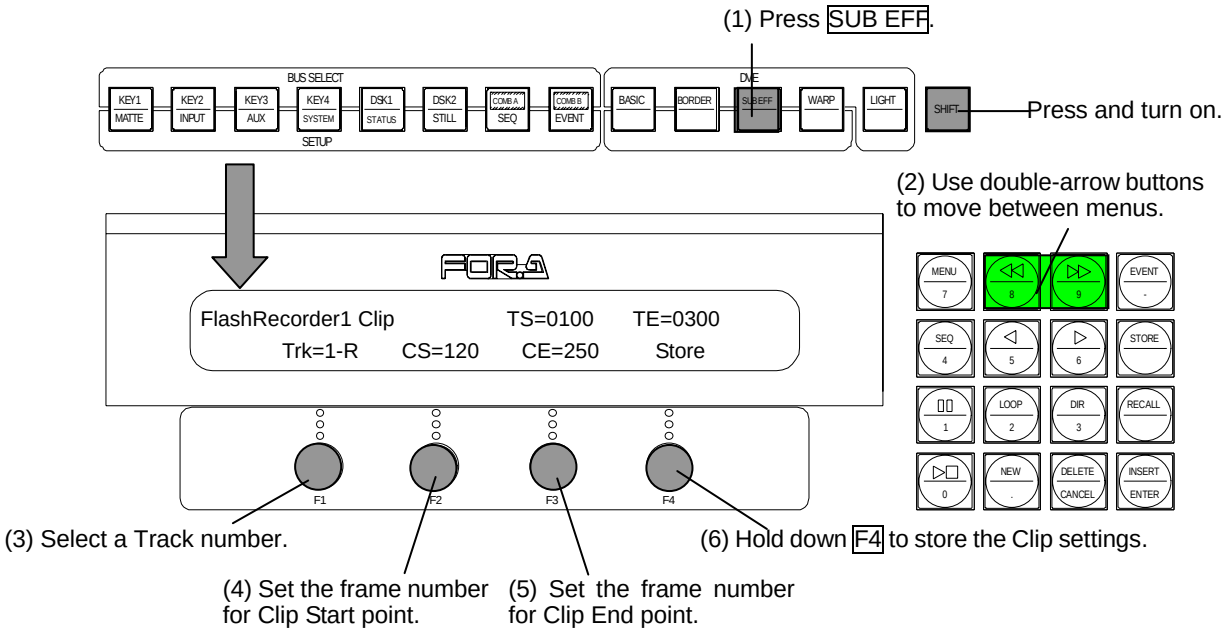
⑦ Press the Play/Stop button (▷□) in the KEYPAD section to start recording. Press the Play/Stop button again to stop recording.

IMPORTANT
To record in the track, all recorded data in the track must be cleared. To erase the data, see section 14-2. "Initializing".
The recording will be stopped at the set time for LMT unless it is manually stopped.
If there is only one VPS-70FR installed, the [Flash Recorder2 Rec] menu is not available for recording.
The value for the Track that has data recorded is displayed with 'R' attached behind the number as "Trk=0-R".

14-4. Editing Clips

① Press the SUB EFF button in the DVE section (while SHIFT is lit) to open the [Flash Recorder] - [FR1 Setup] menu.

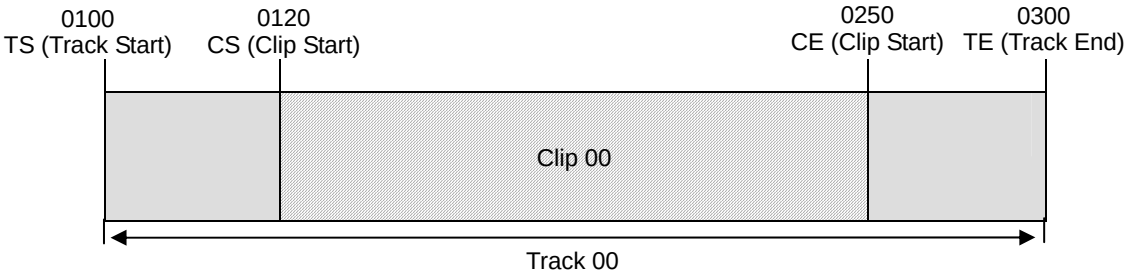
② Open the [Clip Set] menu using the double-arrow buttons in the KEYPAD section.



③ Turn F1 to select a Track number.
TS and TE are displaying numbers of the first and the last frame. (The numbers cannot be changed here.)

④ Turn F2 to enter the frame number for Clip Start point.

⑤ Turn F3 to enter the frame number for Clip End point.
The frame currently being controlled by either F2 or F3 will be shown on the video output.

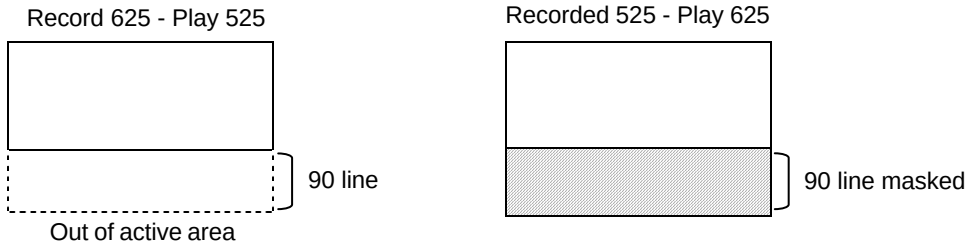


⑥ Press and hold down F4 to store the Clip settings.
The data is stored in the non-volatile memory on Flash Recorder card.

IMPORTANT
Whenever the [Clip Set] menu is opened during playback, the playback is paused. If any control is operated during playback, the video output is replaced by the corresponding frame. If there is one VPS-70FR installed, both Flash Recorder 1 and 2 display the same track information. The letter 'R' attached to the numbers indicates existence of data in the track. If there is no letter 'R' attached, the track is not available to set clip.

14-5. Clip Playback

In the Flash Recorder, playback is conducted according to the Clip settings that offer repeat play, reverse play, and control modes such as cue up, or corresponding with buttons or fader lever, and read mode. Also, up to two channels of simultaneous playback is possible, and settings such as loop and reverse play can be set for each channel independently.
If you output video taken in 525/60 to 625/50, the unused bottom area of about 90 lines produced by the image size difference will be automatically masked. Conversely, outputting video taken in 625/50 to 525/60 will cut the bottom part of the output image of about 90 lines. The clip playback does not convert frame rates, so the playback time changes according to the difference in formats.



◆ Route Priority Options

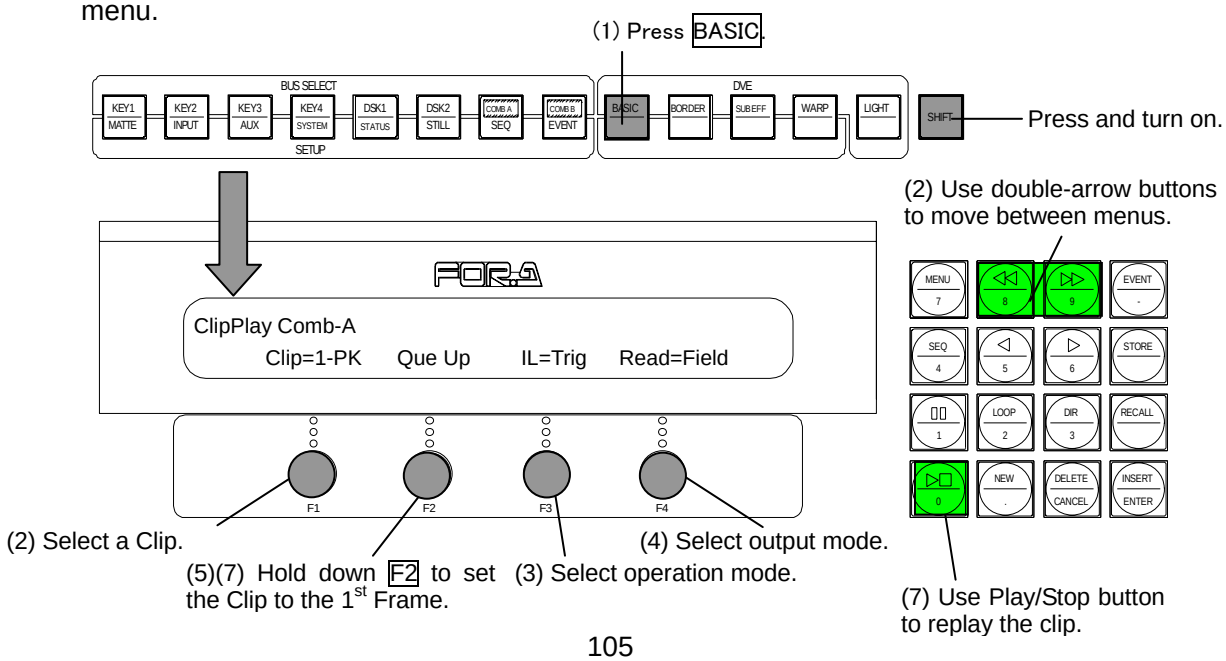
Flash Recorder outputs signal from Clip Play Comb-A to Comb A, and from Clip Play Comb-B to Comb B. The priority between FR and DS outputs can be set in the [System - Other - Route Priority] menu that is accessible by the KEY4/SYSTEM button in the SET UP section (while SHIFT is lit).

Menu value	Description
FR > DS	Two outputs from FR
FR = DS	One output from DS (Comb B) One output from FR (Comb A)
FR < DS	Two outputs from DS

IMPORTANT
The priority setting is required when each one FR card and DS card are installed.

◆ Setting for Com-A output

① In the DVE section, press the BASIC button (while SHIFT is lit) to open the [Flash Recorder] menu.



② Open the [Clip Play Comb-A] menu using the double-arrow buttons in the keypad section.

③ Turn F1 to select a Clip to be output.
When one VPS-70FR is installed: Comb-A and Comb-B display the clips in FR1.
When two VPS-70FR are installed: Comb-A displays the clips in FR1, and Comb-B displays the clips in FR2.

④ Turn F3 to select the operation mode from Off, Trigger, or Linkage.
Off : Operated by Play/Stop and Pause/Restart buttons
Trigger: Playback triggered by AUTO button, and the duration of playback is the same as the duration of recording.
Linkage: By AUTO button: Playback processed at the set transition rate
By Fader lever: Playback processed in conjunction with fader lever operation

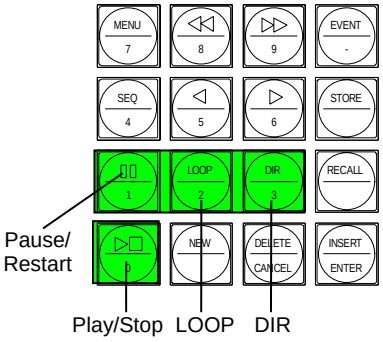
⑤ Turn F4 to select the output mode from Frame, or Field.

⑥ Press and hold down F2 to set the clip to the first frame.

⑦ Press Play/Stop button in KEYPAD to start playback of the clip (Play/Stop button lit red).
To pause playback, press the Play/Stop button again.

⑧ After completing the playback, it stops at the last frame of the clip. To restart playback of the clip, press and hold down F2 to set the clip to the first frame, then press Play/Stop button.

▷□	Play/Stop button	Pressing the button starts playback of a clip. Pressing again pauses the playback.
LOOP	LOOP button	Sets the playback mode to loop playback (continuous playback). Lights up red when it is on.
DIR	DIR button	Reverses the playback while it lights up red.
▯▯	Pause/Restart button	Pressing the button during playback pauses the playback. Pressing again restarts the playback.



IMPORTANT

Although recording will take place if recording is started during playback, playback cannot be initiated during recording.

Keypad LEDs are controlled by the currently displayed menu.

The priority between DS and FR changes according to various factors such as the number of installed FR cards, presence of DS card and various settings. Basically FR1 has the priority over FR2 when two FR cards are installed.

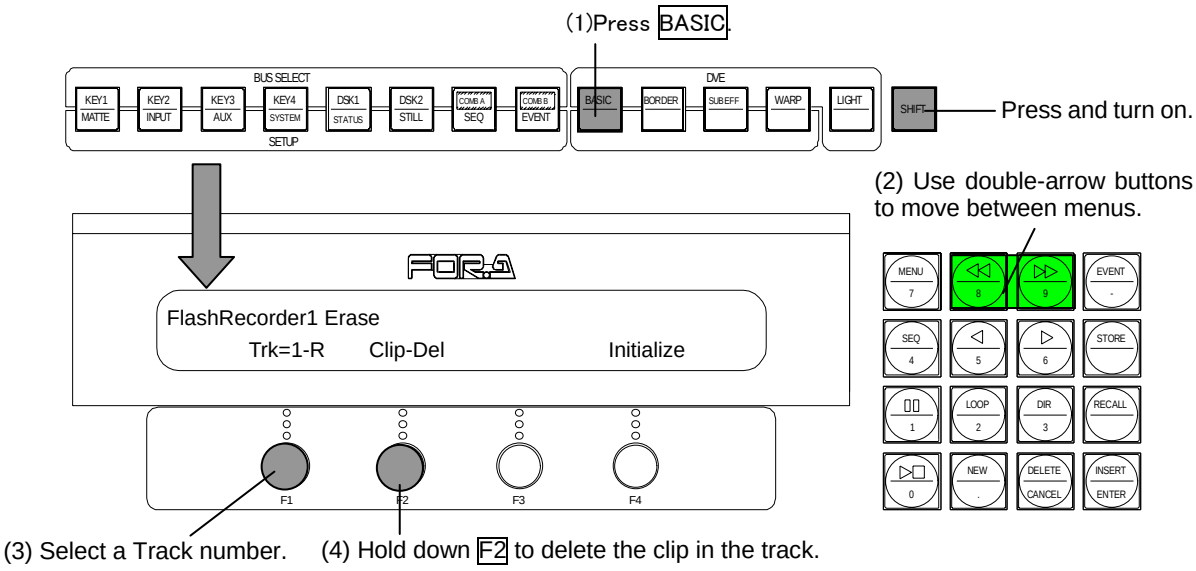
"N" or "P" attached at the end of Clip number indicates formats, "K" indicates the Clip is with a Key, and "D" indicates there is no recorded data.

14-6. Deleting Clips

◆ **Deleting Clips in FR1**

① In the DVE section, press the SUB EFF button (while SHIFT is lit) to open the [Flash Recorder] - [FR1 Setup] menu.

② Go to the [Erase] menu using the double-arrow buttons in the kyepad section.

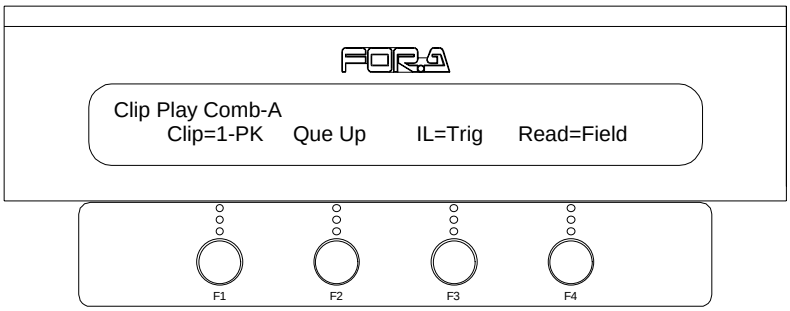


③ Turn F1 to select the Track number.

④ Press F2 to erase the clip in the track. When the clip is deleted, the 'R' at the end of F1 value is erased and overwriting is enabled for the track.

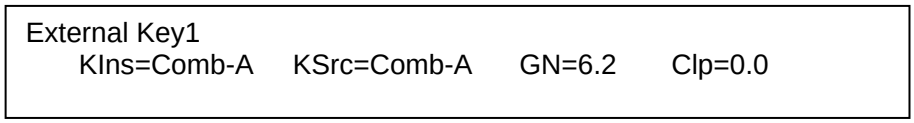
◆ Graphic Wipe Example

(1) Press the KEY4/SYSTEM button (while SHIFT is lit) in the SET UP section to open the [SYSTEM] - [Other] menu. Turn F2 and select either FR=DS or FR>DS.
(2) Press the SUB EFF button (while SHIFT is lit) in the DVE section to open the [Flash Recorder] – [FR1 Setup] menu.
(3) Record a data in a Track. (See section 14-3. "Recording in Tracks" for details on recording.)
(4) Go to the [Clip Set] menu using the double-arrow buttons in the keypad section. Create a clip. (See section 14-4. "Editing Clips" for details on creating clips.)
(5) Select Comb-A for the output of FR. (See section 14-5. “Clip Playback” for details on output setting.)
(6) Press the BASIC button (while SHIFT is lit) in the DVE section to open the [Flash Recorder] – [Clip Play Comb-A] menu. Turn F1 to select a clip to use for the key.



(7) If you are going to operate with the Fader lever or the AUTO button, turn F3 to select Inter Link mode.
Trigger: Triggered to start by the AUTO button and the duration of the playback is the same with the duration of recoding.
Linkage: By AUTO button: Playback processed at the set transition rate
By Fader lever: Playback processed in conjunction with fader lever operation

(8) Press a bus button among KEY1 to KEY4 buttons to select a bus to set the clip in the BUS SELECT section.
The following steps are the procedure for setting the clip for Key1.
Press the KEY1 button in the BUS SELECT section. The button will be lit, then press the EXT button in the KEYER section to open the [External Key] menu.
Turn F1 and F2 to set both Key Insert and Key Source to Comb-A.



(9) Press the KEY1 button in the TRANSITION section (lit green). Then press the CUT button to set the Key on air (lit red). Press the KEY1 button again to disengage from the next tansition. The key1 stays on air.

(10) Press the WIPE button in the TRANSITION section. Then the button will be lit. Use the fader lever or the AUTO button to initiate CGWipe.

15. Event Memory

An event is essentially one set of basic operational settings that have been made at the control panel. The settings include signal selections at M/E bus, PGM and DSK transition setup and keyer setup, and WIPE and DVE modify settings, DVE key settings, etc. If the current settings of control panel are saved as an event, they can be recalled and applied to the panel later to return it to the same basic operational settings. Moreover, events can also be saved to a USB flash memory drive and recalled from it directly. Up to 96 (12 x 8 pages) events can be saved to memory (OU or USB).

15-1. Storing Events

To store current panel setup as an event, proceed as follows.

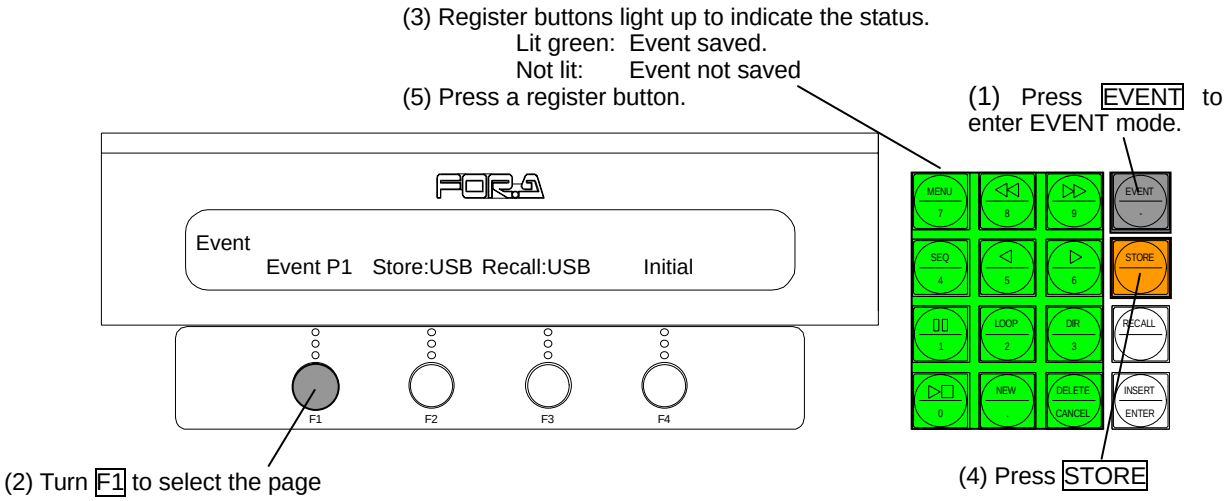
① Once the panel setup is complete, press the EVENT button in the keypad section. The keypad is changed to EVENT mode and the [EVENT] menu is displayed in the window.

② Turn F1 to select a page.

③ When the event page opens, number keys are turned into event register buttons.

④ Press STORE. The button lights up red.

⑤ Press a register button (0 to 9, NEW and DELETE) on the keypad to store the event.



IMPORTANT
Register buttons (0 to 9, NEW and DELETE) light up to indicate the status of storing event. When a button is lit, an event is saved to the button. When a button is not lit, no event is saved to the button. If you save an event to a lit button where an event is already stored, the previously stored event is overwritten with the new one.

To delete an event, press and hold down the STORE button (step (4) above) and the SHIFT button, then press the register button (0 to 9, NEW and DELETE) of the event which you want to delete. The EVENT button will turn off and the saved event data is deleted.

15-2. Recalling Events

To recall an event and apply it to the control panel, proceed as follows.

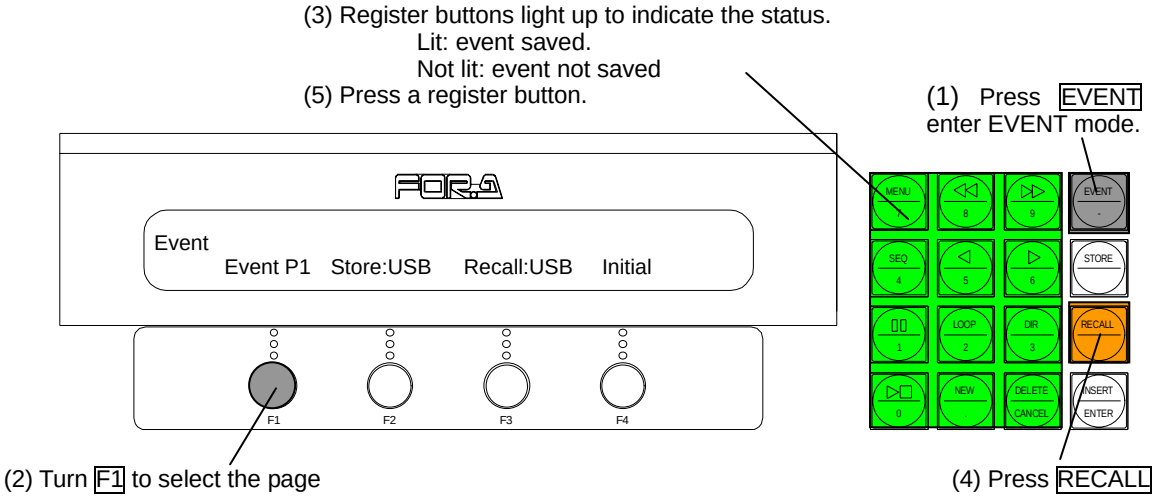
① Press the EVENT button in the Keypad section. The keypad is changed to EVENT mode and the [EVENT] menu is displayed in the window.
(To select the contents of event data, see the "Event Target" on the following page.)

② Turn F1 to select the page where the event is stored.

③ Once the event page is selected, the register buttons on the keypad where events are stored light up.

④ Press RECALL. The button lights up red.

⑤ Press the register button (0 to 9, NEW and DELETE) of the event you want to recall. The event is recalled and applied to the panel.



IMPORTANT

The event data is recalled from the OU memory to the buffer at startup. Once the data is recalled, it is read from the buffer and written to the buffer. If you have changed or erased the data by mistake, you can recalled the data again from the memory using F3 and the buffer data is returned to the startup values. If you want to set the current data as a startup default, save the current data using F2. Same operations (recall and save) on the USB are also available.

◆ **Event Target** (Selecting Contents of Event Data)

You can select the contents of event data when recalling the event. The procedure is as follows:

(1) Press the INSERT/ENTER button on the keypad. The menu as shown below will be displayed.

Event Target			
Full M/E	Full Keyer	Full DSK	Full DS

(2) Turn Controls F1 to F4 to select the contents of event data. Set each item to Off if you do not want to recall events.

Setting Options

F1 Full M/E: Replaces the settings of M/E section with the event.
OFF: Does not change. Remains as it is.
PP Hold : Replaces the settings of M/E section except crosspoints with the event.

F2 Full KEYER: Replaces all keyer settings with the event.
OFF: Does not change. Remains as it is.
K1-4, K1+2-K1+4
K2+3-K2+4, K3+4
K1+2+3, K1+2+4
K2+3+4, K1+3+4
: Replaces the settings of selected keyers with the event.

F3 Full DSK: Replaces all DSK settings with the event.
OFF: Does not change. Remains as it is.
DSK1, 2: Replaces the settings of selected DSKs with the event.

F4 Full DS: Replaces the settings of both pre-combiners with the event.
OFF: Does not change. Remains as it is.
Comb-A, B: Replaces the settings of selected pre-combiner with the event.

IMPORTANT
Once this setting is made, it remains valid until the switcher is turned off.

◆ **Recalling events on a page-by-page basis**

To recall events on a page-by-page basis from OU or USB, select a page to be recalled, then press RECALL (F3) while holding down the SHIFT to the right of the DVE section.

15-3. Clearing Events

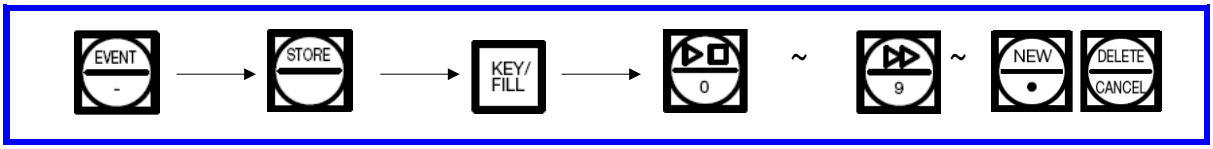
The events stored in the OU can easily be cleared. They can be cleared on a per-page basis.

① Press the EVENT button in the keypad section. The keypad is changed to EVENT mode and the [EVENT] menu is displayed in the window.

② Turn F1 to select a page that you want to reset. Press and hold down F4 at least one second to clear the event.

◆ Clearing A Event

1. Press the EVENT button in the Keypad section.
2. Turn FI to select a page that you want to delete.
3. Press the STORE button in the Keypad section. (lit up in red)
4. Press and hold down the SHIFT button, and select an event to be deleted using 0 to 9, NEW, or DELETE button.



15-4. Backing up Events to OU or USB Memory

Basically, event operations use or change data in the working memory. So, after finishing operations temporary changes will be lost and cannot be reloaded, unless they are manually backed up or stored to the OU or USB memory. To store events to the OU or USB memory, proceed as follows.

① Press the EVENT button in the keypad section. The keypad is changed to EVENT mode and the [EVENT] menu is displayed in the window.

② Turn F2 to select where to save events (OU or USB).

③ Press and hold down F2 at least one second. All registered events are saved to the selected memory.

IMPORTANT
The COMB B/EVENT button lights red while processing and then turns orange when all the events are saved. Be sure to wait until the button turns orange before starting other operations.

16. Sequence Operations

A sequence is a series of control panel settings that are performed in a sequential order in the predetermined duration. A hundred sequences with up to 31 keyframes each can be stored to the system.

16-1. Storing Sequence to Memory

① Press SEQ in the keypad section. The keypad enters SEQUENCE mode and the [SEQUENCE] menu is displayed in the window.

② Press NEW in the keypad section to clear the sequence buffer.

③ Press SEQ to exit SEQUENCE mode.

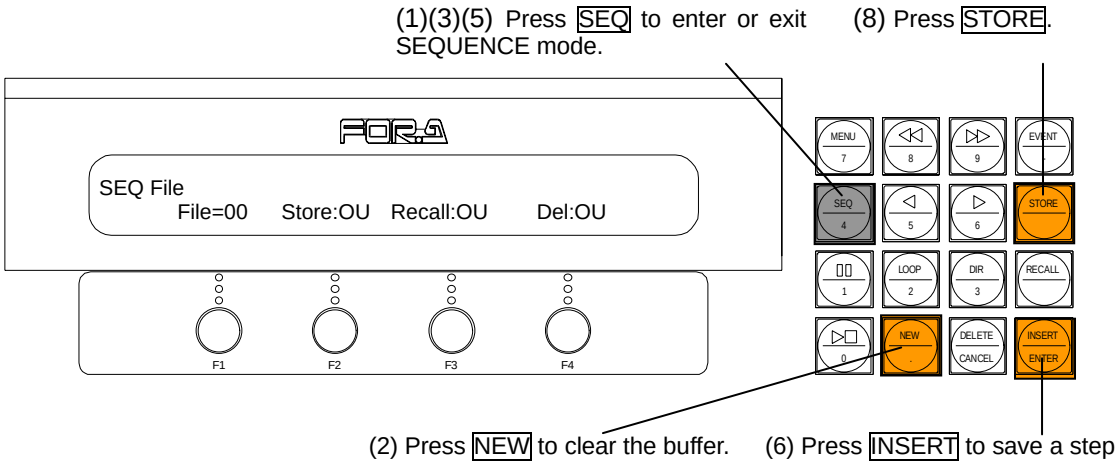
④ Create an image to start the sequence with.

⑤ Press SEQ to enter SEQUENCE mode.

⑥ Press INSERT/ENTER to save the current keyframe to the sequence.

⑦ Repeat steps (3) to (6) until all steps of the sequence are saved to the memory.

⑧ Press STORE to save the sequence.



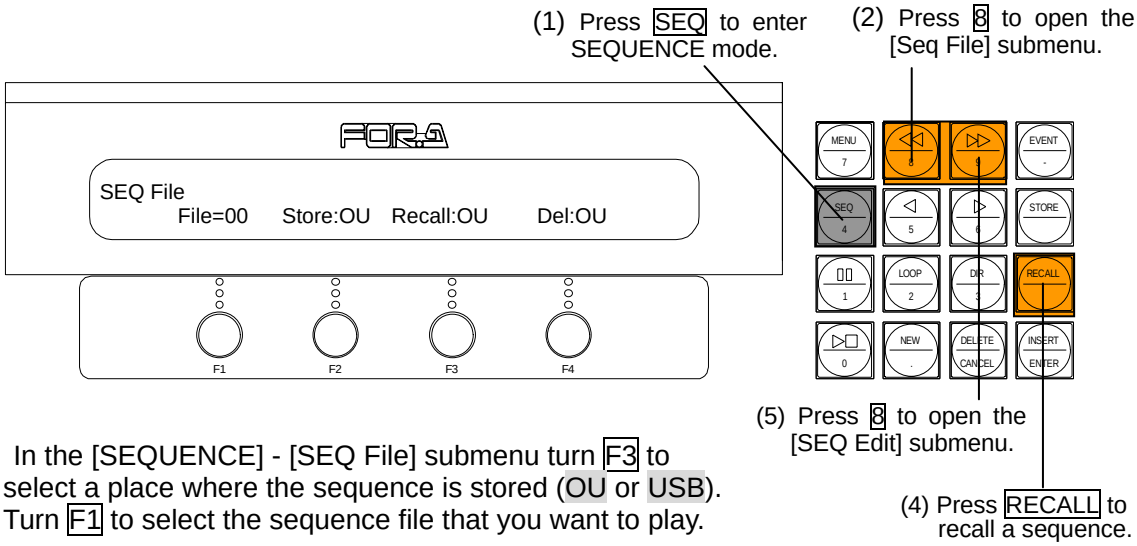
⑨ In the [SEQUENCE] - [SEQ File] submenu, turn F1 to select a file to store the sequence. Turn F2 to select the destination to store the sequence file (OU or USB). Press F2 to store the sequence.

IMPORTANT
The keyframe using CUT button cannot be saved to a sequence. To save a cut transition to a sequence, switch images manually by using PROGRAM and PRESET bus bottons.

16-2. Recalling Sequence

① Press SEQ in the Keypad section to enter SEQUENCE mode and the [SEQUENCE] menu is displayed in the window.

② Press 8 in the Keypad section to open the [SEQUENCE] - [SEQ File] submenu.



③ In the [SEQUENCE] - [SEQ File] submenu turn F3 to select a place where the sequence is stored (OU or USB). Turn F1 to select the sequence file that you want to play.

④ Press RECALL in the Keypad section to recall the sequence.

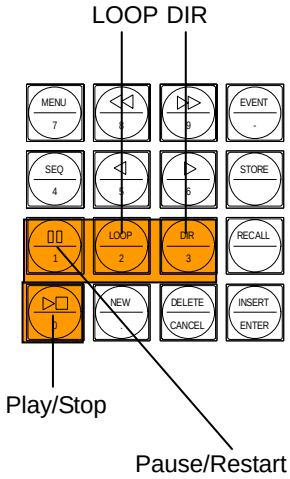
◆ **Deleting Sequence**

To delete the sequence, recall the sequence (See above.) and press and hold down F4.

16-3. Playing Sequence

Once the sequence has been recalled, you can play/stop it with the related buttons in the Keypad section (See below). Loop play and reverse play modes are available.

▷□	Play/Stop button	Pressing the button plays the sequence. Pressing the button again stops the sequence
▯▯	Pause/Restart button	Pressing the button during playback pauses the play. Pressing the button again restart the play.
LOOP	Loop button	Pressing the play button while LOOP is lit continues to repeat play.
DIR	DIR button	Pressing the play button while DIR is lit plays the sequence in reverse.

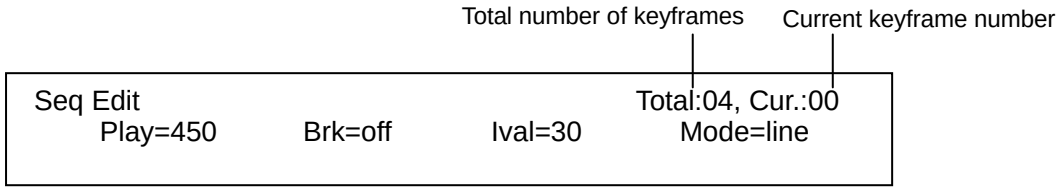


◆ **SEQ LINK**

To contro sequence playbacks via the fader lever, press the SEQ LINK button in the M/E FADER section. Then the button lights up and the fader lever is enabled to control the playback of sequence.

16-4. Editing Sequence

To edit a sequence, recall the sequence file (See section 16-2.) and press 9 on the keypad to display [SEQUENCE] - [SEQ Edit] submenu.
The total number of keyframes and the currently selected keyframe number are shown in the upper right of the menu display. The Play Time, Interval and Interpolation Mode can be changed in the menu. If the sequence's total time (Play Time) is changed, the value for the Interval will be automatically adjusted.
Before editing a sequence, Set the Break in the menu to On. If set to On, a keyframe can easily be selected for editing.



Item		Description
Play	Play Time	Indicates the total duration of the sequence.
Brk	Break	Sets whether to pause at every key frame (On or Off).
Ival	Interval	Indicates the interval between keyframes.
Mode	Interpolations Mode	Selects interpolation mode from Point, Line or Curve.

Each time after editing keyframe, press STORE in the Keypad to save settings.

IMPORTANT
After editing, be sure to press STORE in the Keypad to save keyframes. Otherwise, the currently made settings will be lost.

◆ **Adding Keyframes to the Sequence**

① Use 5 / 6 on the Keypad to go to the desired keyframe.

② Create an image for the new keyframe.

③ Press INSERT/ENTER to save the current panel settings. A new step is added just before the selected keyframe.

④ If necessary, set the keyframe interval (Interval) and interpolation mode (Mode) in the menu. If the interval value is changed, Play Time will be automatically changed accordingly.

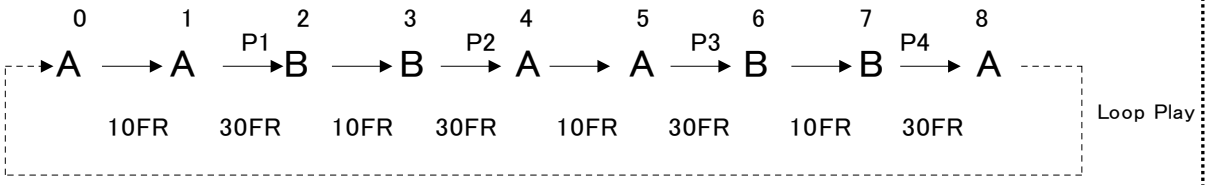
IMPORTANT
To add a keyframe at the end of the sequence, add the keyframe when the Total (Total) and the Cur (current) indications show the same number.

◆ **Deleting Keyframes from the Sequence**

① Use 5 / 6 on the Keypad to go to the desired keyframe.

② Press DELETE/CANCEL to delete the currently selected keyframe.

◆ Making A Sequence



1. Press the SEQ button in the Keypad section.
2. Select a file number as you desire.
3. Press the INSERT/ENTER button to save the first key frame of sequence.
4. Select a wipe patten (No.01 to 04), and then press the INSERT/ENTER button.
5. Transition from A to B using T-bar, and then press the INSERT/ENTER button.
6. Repeat steps 4 and 5 untill you have 8 key frames.
7. Press the 9 button in the Keypad section to display the [SECUENCE]-[SEQ Edit] menu.
8. Select 0 key frame and change the interval value as 10 and press the STORE button to save the setting.
9. Repeat step 8 to change the interval value of 2, 4 and 6 key frames.
10. Press the LOOP button and the Play button to play the sequence.

17. Interface Settings

17-1. RS422 Interfaces

The serial interfaces allow the output signal selections, tally output expansion, editor control or other remote controls of the VPS-700. The switcher has three RS422 Serial Interfaces, one of which is dedicated to an Editor control. When setting up the RS422 interfaces, press the KEY4/SYSTEM button in the SETUP section (while SHIFT is lit) to open the [SYSTEM] menu. Then, use single arrow buttons in the keypad (while MENU is lit) to go to [Serial] submenu. Select a communication protocol or a connecting device for each interface.

IMPORTANT
Interface Settings must be made before connecting the serial devices.

◆ **Serial （Protocol, Baudrate and Parity）**

Protocol
1: - 2: - 3:GVG100

Item		Default	Setting Range
1	RS-422A 1CH	-	HVS-AUX, VR-LINK
2	RS-422A 2CH	-	HVS-AUX, VR-LINK
3	EDITOR	GVG100	GVG-100 (for BVE-2000, AG-A850, etc.), BVS-3000, GVG-100R (for Microace), etc.

Baudrate
1:38400 2: 38400 3: 38400

Item		Default	Setting Range
1	RS-422A 1CH	38400	9600, 19200, 38400
2	RS-422A 2CH	38400	9600, 19200, 38400
3	EDITOR	38400	9600, 19200, 38400

Parity
1:None 2:Even 3:Odd

Item		Default	Setting Range
1	RS-422A 1CH	Even	None, Odd, Even
2	RS-422A 2CH	Even	None, Odd, Even
3	EDITOR	Odd	None, Odd, Even

17-2. GPI Inputs

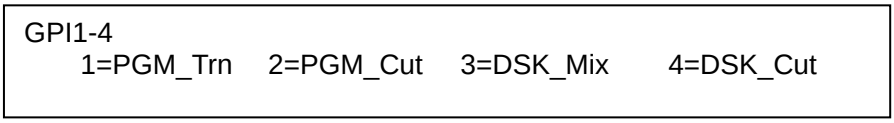
The VPS-700 has GPI IN interface capability to allow other devices to initiate switcher operations. The pins 30-37 of the REMOTE connector is dedicated to GPI inputs. Transition triggers and transition type commands are assigned to these eight pins at the factory default. (See the table below.)

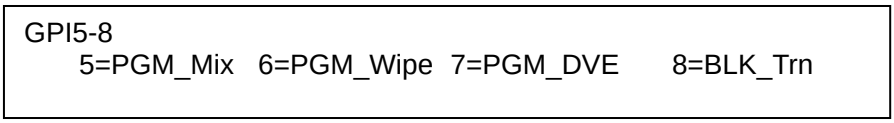
Item		Default	Description	Setting Range
1	GPI 1 (pin 30)	PGMAutoTrans	Initiates PGM Auto transition.	PGMAutoTrans PGMCutTrans DSKAutoTrans<Mix> DSKCutTrans PGMMixType PGMWipeType PGMDVEType BlackTrans SEQ Play
2	GPI 2 (pin 31)	PGMCutTrans	Initiates PGM Cut transition.	
3	GPI 3 (pin 32)	DSKAutoTrans <Mix>	Initiates DSK Auto transition.	
4	GPI 4 (pin 33)	DSKCutTrans	Initiates DSK Cut transition.	
5	GPI 5 (pin 34)	PGMMixType	Changes PGM transition type to Mix.	
6	GPI 6 (pin 35)	PGMWipeType	Changes PGM transition type to Wipe.	
7	GPI 7 (pin 36)	PGMDVEType	Changes PGM transition type to DVE.	
8	GPI 8 (pin 37)	BlackTrans	Initiates Black transition.	

The GPI assignments can be freely changed. Follow the procedure below to change the GPI assignments, if necessary.

① Press the GPI button twice to open the [GPI] submenu as shown below.

② Refer to the table above to select a function for each pin.





17-3. Tally Outputs

The VPS-700 has tally output capability. The pins 1-16 and 20-27 of the REMOTE connector are dedicated to Tally outputs. The On Air tallies are assigned to these 16 pins at the factory default. (See the table below.)

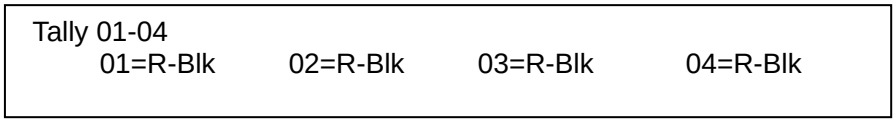
Item		Default	Description	Setting Range
01	Tally 1 (pin 1)	R-In01	RedTallyInput01	R-Blk (Black) R-In01 - 16 (Input) R-Stl1 - 2 (Still) R-Mat1-4 (Matte) R-PCb1-2 (Pre-combiner) R-Resv (Reserve) G-Blk (Black) G-In01 - 16 (Input) G-Stl1 - 2 (Still) G -Mat1-4 (Matte) G -PCb1-2 (Pre-combiner) G -Resv (Reserve) Alarm
02	Tally 2 (pin 2)	R-In02	RedTallyInput02	
03	Tally 3 (pin 3)	R-In03	RedTallyInput03	
04	Tally 4 (pin 4)	R-In04	RedTallyInput04	
05	Tally 5 (pin 5)	R-In05	RedTallyInput05	
06	Tally 6 (pin 6)	R-In06	RedTallyInput06	
07	Tally 7 (pin 7)	R-In07	RedTallyInput07	
08	Tally 8 (pin 8)	R-In08	RedTallyInput08	
09	Tally 9 (pin 9)	G-In01	GreenTallyInput01	
10	Tally 10 (pin 10)	G-In02	GreenTallyInput02	
11	Tally 11 (pin 11)	G-In03	GreenTallyInput03	
12	Tally 12 (pin 12)	G-In04	GreenTallyInput04	
13	Tally 13 (pin 13)	G-In05	GreenTallyInput05	
14	Tally 14 (pin 14)	G-In06	GreenTallyInput06	
15	Tally 15 (pin 15)	G-In07	GreenTallyInput07	
16	Tally 16 (pin 16)	G-In08	GreenTallyInput08	
17	Tally 17 (pin 20)	Alarm	Alarm	
18	Tally 18 (pin 21)	Alarm	Alarm	
19	Tally 19 (pin 22)	Alarm	Alarm	
20	Tally 20 (pin 23)	Alarm	Alarm	
21	Tally 21 (pin 24)	Alarm	Alarm	
22	Tally 22 (pin 25)	Alarm	Alarm	
23	Tally 23 (pin 26)	Alarm	Alarm	
24	Tally 24 (pin 27)	Alarm	Alarm	

The tally assignments can be freely changed. Follow the procedure below to change the tall assignments, if necessary.

① Press the KEY4/SYSTEM button (while SHIFT is lit) to open the [SYSTEM] menu.

② Use the single arrow buttons in the keypad (while MENU is lit) to go to the [Tally] submenu.

③ Refer to the table above to select the On Air tally for the pin.



18. System Setup

The system signal format selection and the reference signal adjustments can be made in the [SYSTEM] menu. To change the signal format or adjust reference signals, press the KEY4/SYSTEM button (while SHIFT is lit) to open the [SYSTEM] menu. Then, use the single arrow buttons in the keypad (while MENU is lit) to go to the relevant submenu.

18-1. Signal Format and System Delay

In the [SYSTEM]-[Type] submenu, the system video format, signal setup level, video aspect ratio and system delay can be set.

◆ **Type**

Item		Default	Description
Fmt	Video Format	625/50	625/50 (625/50 PAL), 525/60 (525/60 NTSC)
Set	Setup Level	0.0%	0.0%, 7.5%
Asp	Aspect	4:3	4:3, SQ
Dly	System Delay	Nor	Nor (Normal), Min (Minimum)

◆ **When Nor is set for Delay:**

FS Mode setting is automatically (FS Mode) turned to On. (See section 7-1-5. "Input Signal and Frame Synchronizer Modes." The system delay of VPS-700 is 1 frame with reference to the input BB. The system delay time varies according to DVE On/Off, FS On/Off settings and the number of DVE effects applied to keyers. Using the effects such as DVE and edge increases the total system delay.

◆ **When Min is set for Delay:**

The system delay is minimum. When the FS Mode is set to OFF, the total system delay is 1H with reference to the input BB. The delay will be more than 1H, if any DVE capabilities are used.

18-2. Clearing and Backing Up OU

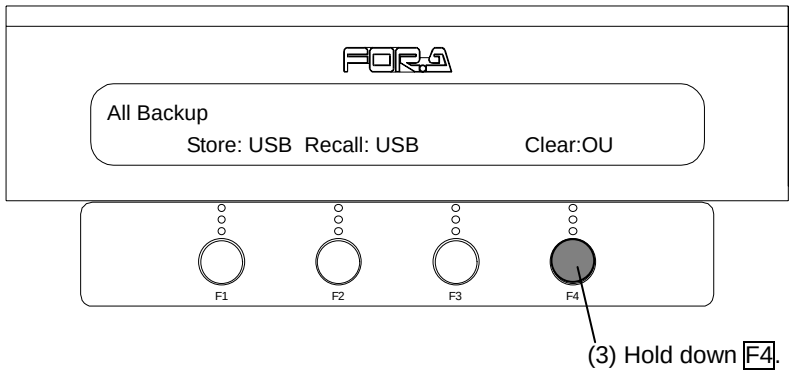
For clearing or backing up OU data, you can select whether to clear or back up all or a part of data from System Backup (Event, I/O setting, Initial setting and Status), File Backup (Still and Sequence) or All Backup. All these clearing or backing up can be made in the [SYSTEM] - [Data Backup] submenus. Refer to section 4-5. "File Management" for more details about file management in the OU and USB.

18-2-1. Clearing Data

◆ **All Backup**

① Press KEY4/SYSTEM button (while SHIFT is lit) in the SETUP section to open the [SYSTEM] menu.

② Use single arrow buttons (while MENU is lit) in the KEYPAD section to go to the [SYSTEM] - [All Backup] submenu.



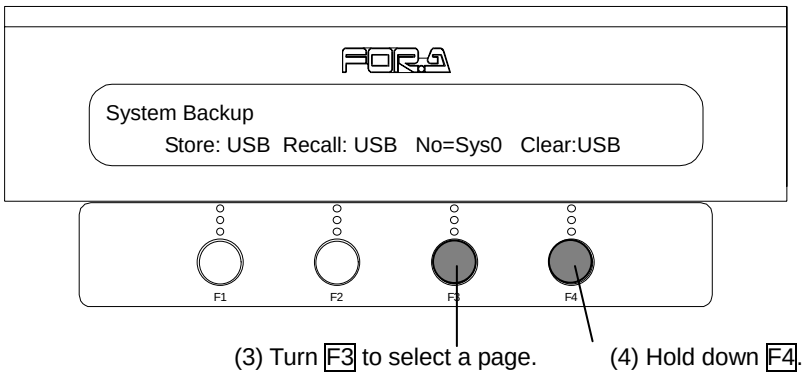
③ Press and hold down F4 to clear the System Data and the File Data in OU.

◆ **System Backup**

① Press KEY4/SYSTEM button (while SHIFT is lit) in the SETUP section to open the [SYSTEM] menu.

② Use single arrow buttons (while MENU is lit) in the KEYPAD section to go to the [SYSTEM] - [System Backup] submenu.

③ Turn F3 to select a page for System Data from 0 to 9.



④ Press and hold down F4 to clear the System Data in USB.

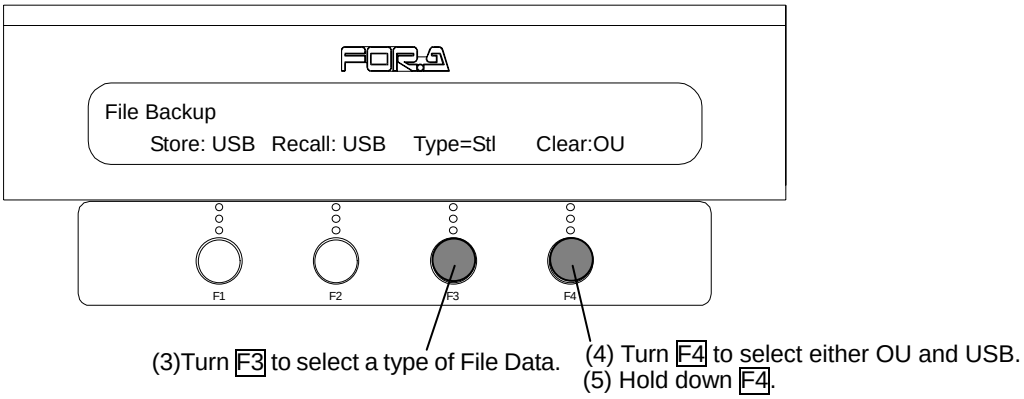
IMPORTANT
An asterisk is attached to the displayed page number when the selected System Data (0 to 9) exists.

◆ **File Backup**

① Press KEY4/SYSTEM button (while SHIFT is lit) in the SETUP section to open the [SYSTEM] menu.

② Use single arrow buttons (while MENU is lit) in the KEYPAD section to go to the [SYSTEM] - [File Backup] submenu.

③ Turn F3 to select a type for File Data from Still and Sequence.



④ Turn F4 to select where the File Data is stored from OU and USB.

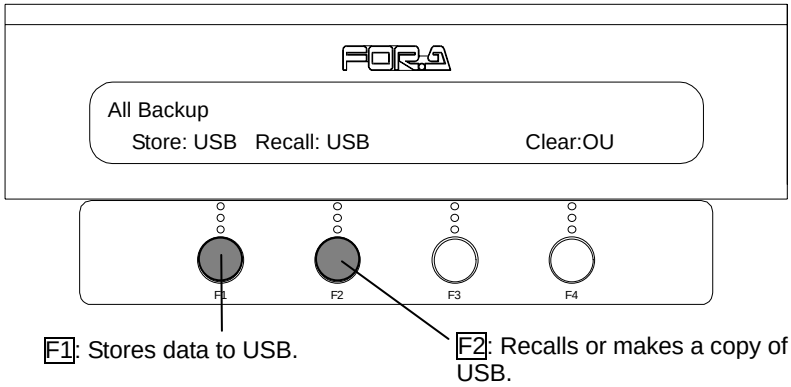
⑤ Press and hold down F4 to clear the selected File Data.

18-2-2. Backing Up OU Data

◆ **All Backup**

① Press KEY4/SYSTEM button (while SHIFT is lit) in the SETUP section to open the [SYSTEM] menu.

② Use single arrow buttons (while MENU is lit) in the KEYPAD section to go to the [SYSTEM] - [All Backup] submenu.



Recalling or Making a Copy of System Data in USB
Turn F2 to select USB. Press and hold down F2 to recall all System Data in USB. The current panel setting is overwritten with the System Data recalled from the USB.
Also, File Data in the USB is copied and the copy is stored to OU.

Storing System Data to USB
Turn F1 to select USB. Press and hold down F1 to store the System Data and the File Data to USB. The System Data and all File Data saved at the OU is stored to the USB memory.

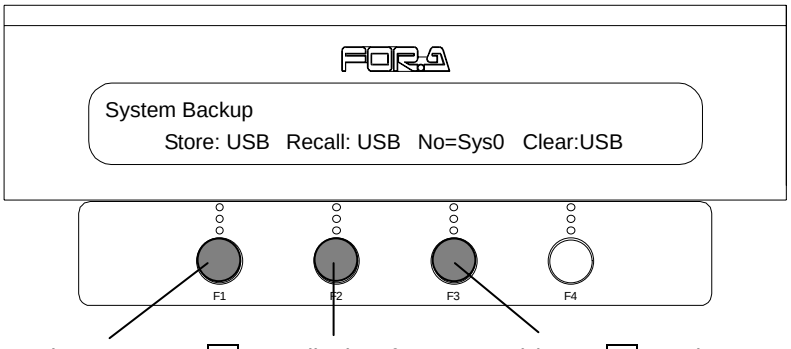
IMPORTANT
When sufficient memory space is not available, processing is automatically cancelled. (An error message appears.)

◆ **System Backup**

① Press KEY4/SYSTEM button (while SHIFT is lit) in the SETUP section to open the [SYSTEM] menu.

② Use single arrow buttons (while MENU is lit) in the KEYPAD section to go to the [SYSTEM] - [System Backup] submenu.

③ Turn F3 to select a page for System Data from 0 to 9.



Recalling System Data from USB
Turn F2 to select USB. Press and hold down F2 to recall System Data from USB. The current panel setting is overwritten with the System Data recalled from the USB.

Storing System Data to USB
Turn F1 to select USB. Press and hold down F1 to store the System Data to USB. The System Data saved at the OU is stored to the USB memory.

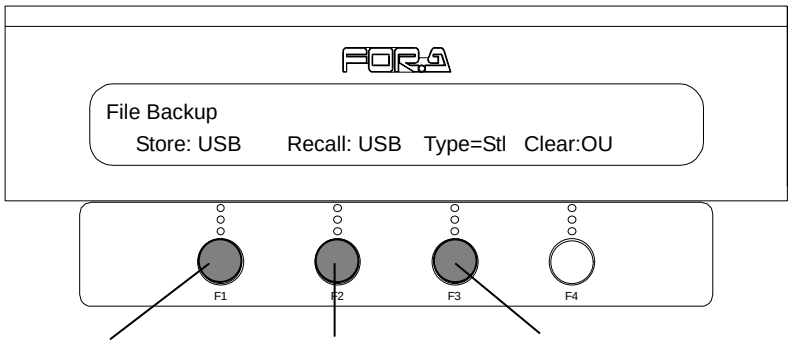
IMPORTANT
When sufficient memory space is not available, processing is automatically cancelled. (An error message appears.) Each of the System Data (0 to 9) files stored to the USB memory will be named "a" to "j".

◆ **File Backup**

① Press KEY4/SYSTEM button (while SHIFT is lit) in the SETUP section to open the [SYSTEM] menu.

② Use single arrow buttons (while MENU is lit) in the KEYPAD section to go to the [SYSTEM] - [File Backup] submenu.

③ Turn F3 to select a type for File Data from Still or Sequence.



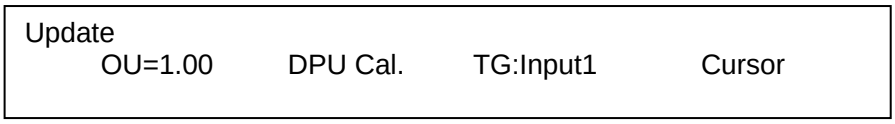
F1: Makes a copy of the data to USB.
F2: Makes a copy of the data in USB.
(3) Turn F3 to select a File Data.

Making a Copy of File Data in USB
Turn F2 to select USB. Press and hold down F2 to make a copy of File Data in USB. The copied File Data is stored to OU.

Making a Copy of File Data to USB
Turn F1 to select USB. Press and hold down F1 to make a copy of File Data to USB. The copy of the File Data saved in the OU is stored to the USB memory.

IMPORTANT
When sufficient memory space is not available, processing is automatically cancelled. (An error message appears.)

18-3. Update



Item		Default	Description
OU	OU Update	(Software version)	Updates OU software.
DPU Cal.	DPU Calibration	-	Performs touch panel calibration. Do not set to Cal. unless a touch panel is connected.
TG	Firmware Update	Input1	Updates MU (Firmware). The options are SDI_1, SDI_2, SDI_3, SDI_4, Genlock, Main_1, Main_2, DVESub1, DVESub2, CPU_1, CPU_2, AI_3_3, AI_3_4, AI_4_1, AI_4_2, Out_1, Out_2, FR_1, FR_2.
Cursor	Cursor	-	Turns on or off the cursor icon display for the case of operating the optional VPS-70DPUIF on the LCD instead of using a touch panel. Move the mouse while pressing and holding down F4 under the item Cursor to turn on or off the cursor icon display.

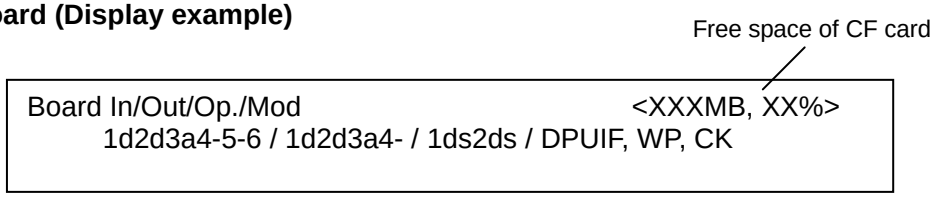
IMPORTANT

If an optional touch panel display (VPS-700DPU or VPS-DPUA) is configured in the system, a touch panel calibration is necessary when starting up the system. Access the [Setup] - [Update] menu, press and hold down F2 for a while and follow the instructions shown on the screen to perfrom the touch panel calibration.

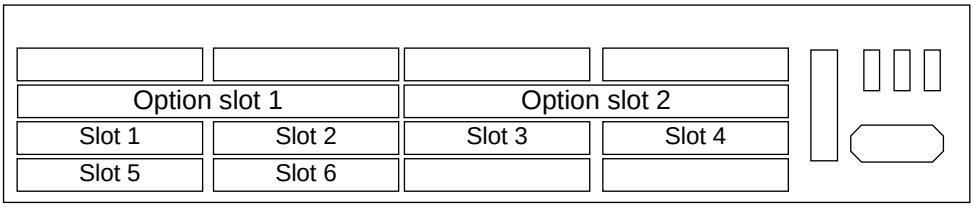
18-4. Status

18-4-1. Option Boards

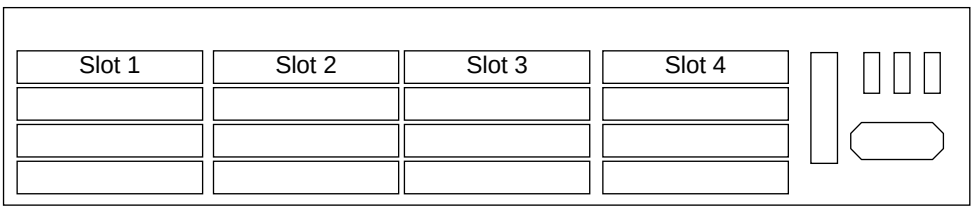
◆ **Board (Display example)**



Item	Label	Description
In	(Slot Number)d	Indicates that the SDI input card is installed in the slot. See the figures below for the slot configuration. Ex.）**1d2d**: SDI input cards are installed in Slot1 and Slot2.
	(Slot Number)a	Indicates that the analog input card is installed in the slot. See the figures below for the slot configuration. Ex.）**3a**: An analog input card is installed in Slot3.
Out	(Slot Number)d	Indicates that the SDI output card is installed in the slot. See the figures below for the slot configuration. Ex.）**1d2d**: SDI output cards are installed in Slot1 and Slot2.
	(Slot Number)a	Indicates that the analog output card is installed in the slot. See the figures below for the slot configuration. Ex.）**3a**: An analog output card is installed in Slot3.
Option	1ds	Indicates that the DS card is installed in the option slot1.
	2ds	Indicates that the DS card is installed in the option slot2.
	1fr	Indicates that the FR card is installed in the option slot1.
	2fr	Indicates that the FR card is installed in the option slot2.
Module	DPUIF	Indicates that the DPU-I/F (VPS-70DPUIF) module is installed.
	WP	Indicates that the DVE Warp engine module (VPS-70Warp) is installed.
	CK	Indicates that the Chromakey module (VPS-70CK) is installed.



Input Slots of VPS-700 Rear Panel

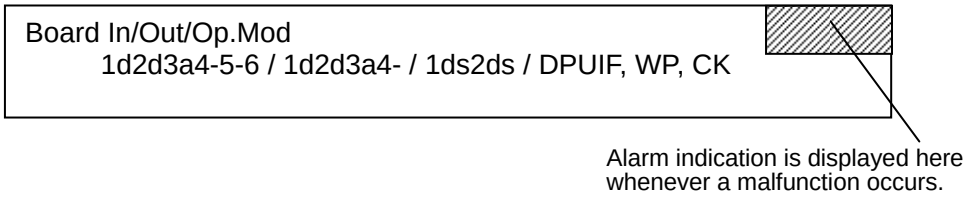


Output Slots of VPS-700 Rear Panel

18-4-2. Alarm

```
Alarm
PWR=2          PS: 1OK2OK          FAN: 1OK2OK
```

Item		Description
PWR		1: VPS-700MU (Single power supply model) 2: VPS-700RPS MU (Redondant power supply model)
PS	1	Indicates PS1 (front side) alarm. “NG” will be shown when a power failure occurs.
	2	Indicates PS2 (rear side) alarm. (VPS-700RPS only) “NG” will be shown when a power failure occurs.
FAN	1	Indicates the status of the rear right side fan (8 cm square). NG” will be shown when a fan failure occurs.
	2	Indicates the status of the rear left side fan (8 cm square). NG” will be shown when a fan failure occurs.



IMPORTANT

When a power failure or a fan failure occurs, the STATUS button on the panel blinks red. If a power failure occurs in either or both power supply units of VPR-700RPS, both power lamps will go off.

Change all fans whenever a fan needs to be replaced.

18-4-3. CPU Version

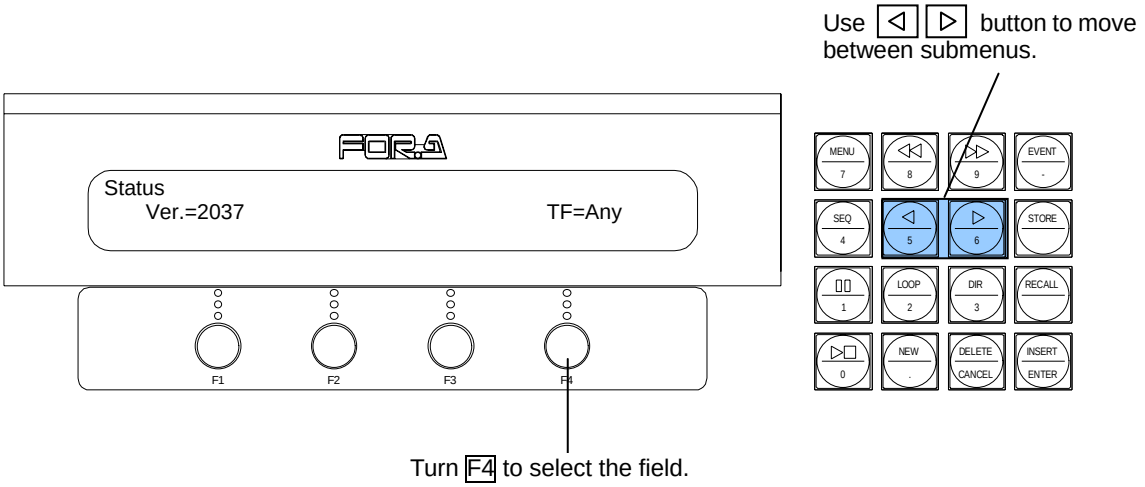
```
Version
    CPU1=X.XX                                TF-Odd
```

Item	Description
CPU1	Displays CPU firmware version.
Target Field	Selects when to implement the settings from at the Odd field, Even field or Any field.

18-4-4. Field Selection for Switchover

Which field to start switchiver such as switchover of input or output video assignments, stills, and events, or cut transitions (exclude transitions other than cut transitions) can be selected from Odd / Even / Any.

(1) Press the STATUS button in the OTHER section to open the [Status] menu.
(2) Use right single-arrow button in the keypad to go to [Status]-[Version] submenu.
(3) Turn F4 and select which field to start switchover.



19. Specifications and Dimensions

19-1. Unit Specifications

19-1-1. VPS-700

TV Standard	525/60, 625/50	
Signal Processing	Digital component 4:2:2:4 (key) 10-bit	
Quantization	Y:10-bit, C:10-bit, Key:10-bit	
Video Inputs	SD SDI 270Mbps, 75Ω, 8 inputs (optionally expand to 16 inputs), BNC	
Reference Input	BB: 0.429 Vp-p (NTSC) or 0.45 Vp-p (PAL), 75Ω or loopthrough, 1 input, BNC	
Video Outputs	SD SDI 270Mbps, 75Ω, 8 outputs (Program, 2 ea., Preview and Clean, 1 ea., Auxiliary, 4ea.) (optionally expand to 16 outputs), BNC	
Reference Output	BB: 0.429 Vp-p (NTSC) or 0.45 Vp-p (PAL), 75Ω, 2 outputs., BNC	
I/O Delay	1H (minimum delay) - 4 frames	
Interfaces		
OU:	Ethernet, 10/100BASE-TX, RJ-45; 1 port	
RS-422:	9-pin D-sub connector (female), 2 port	
EDITOR	9-pin D-sub connector (female), 1 port	
REMOTE:	37-pin D-sub connector (female), 1 port (8-input/24-output)	
Temperature	5°C - 40°C	
Humidity	30% - 90% (no condensation)	
Power	100VAC-240VAC±10%, 50/60Hz	
Power Consumption	VPS-700MU	Standard: 170VA (100V), 176VA(240V) Full option: 190VA (100V), 195VA(240V)
	VPS-700RPS MU	Standard: 190VA (100V), 200VA(240V) Full option: 210VA (100V), 220VA(240V)
Weight	VPS-700MU	Approx. 15kg
	VPS-700RPS MU	Approx. 18kg
Dimensions	VPS-700MU	430 (W) x 425(D) x 88 (H) mm, EIA 2RU
	VPS-700RPS MU	430 (W) x 425(D) x 132 (H) mm, EIA 3RU
Consumables	Cooling fan:	999136 x 1 (Front side) 4 year exchange 999137 x 2 (Rear side) 4 year exchange

19-1-2. VPS-700OU

USB (control panel)	USB1.1, "A" type, female, 1 port Accepts USB flash memory drive (up to 2GB).
Interfaces	
TO PANEL	9-pin D-sub, male; 1 port
TO MU	Ethernet, 10/100BASE-TX, RJ-45; 1 port
VGA	VGA OUT, 15-pin D-sub, female
USB:	USB1.1, "A" type, female, 1 port
Temperature	5°C - 40°C
Humidity	30% - 90% (no condensation)
Power	100VAC-240VAC±10%, 50/60Hz
Power Consumption	25VA(100V), 29VA(240V)
Weight	Approx. 5kg
Dimensions	430 (W) x 221 (D) x 117 (H) mm

19-1-3. VPS-70AI

TV Standard	525/60, 625/50
Video Input	Analog composite 2 inputs or Analog composite 1 input and analog component 1 input
	Analog composite: 1.0Vp-p, 75Ω, BNC Analog component Y: 1.0Vp-p, 75Ω,BNC CB, CR: 0.486Vp-p(SMPTE level, Setup 7.5) 0.525Vp-p(SMPTE level, Setup 0) 0.700Vp-p(Betacam level, Setup 7.5) 0.757Vp-p(Betacam level, Setup 0)
Phase Control	±8 pixcel
I/O Delay	1 to 4 frames

19-1-4. VPS-70AO

TV Standard	525/60, 625/50
Video Output	Analog composite 2 outputs or Analog composite 1 output and analog component 1 output
	Analog composite: 1.0Vp-p75Ω BNC
	Analog component Y,CB,CR Y: 1.0Vp-p, 75Ω,BNC CB, CR: 0.486Vp-p(SMPTE level, Setup 7.5) 0.525Vp-p(SMPTE level, Setup 0) 0.700Vp-p(Betacam level, Setup 7.5) 0.757Vp-p(Betacam level, Setup 0)
	Analog component GBR G, B, R: 1.0Vp-p,75Ω, BNC

Characteristics

Analog composite outputs:

Frequencey Response	100kHz - 4.2MHz: ±0.5dB, 4.2MHz - 5MHz: within -1dB, roll off above 5MHz
S/N Ratio	60dB (no quantization noise)
DG/DP	1%/1°
K-factor (2T)	1%
H/V tilt	1%
Residual Jitter	±15ns

Analog component Y,CB,CR outputs:

Frequencey Response	100kHz - 4.2MHz: ±0.5dB, 4.2MHz - 5MHz: within -1dB, roll off above 5MHz
S/N Ratio	60dB (no quantization noise)
Linearity	2%
K-factor (2T)	1%
Phase difference (Y/CB/CR)	10ns

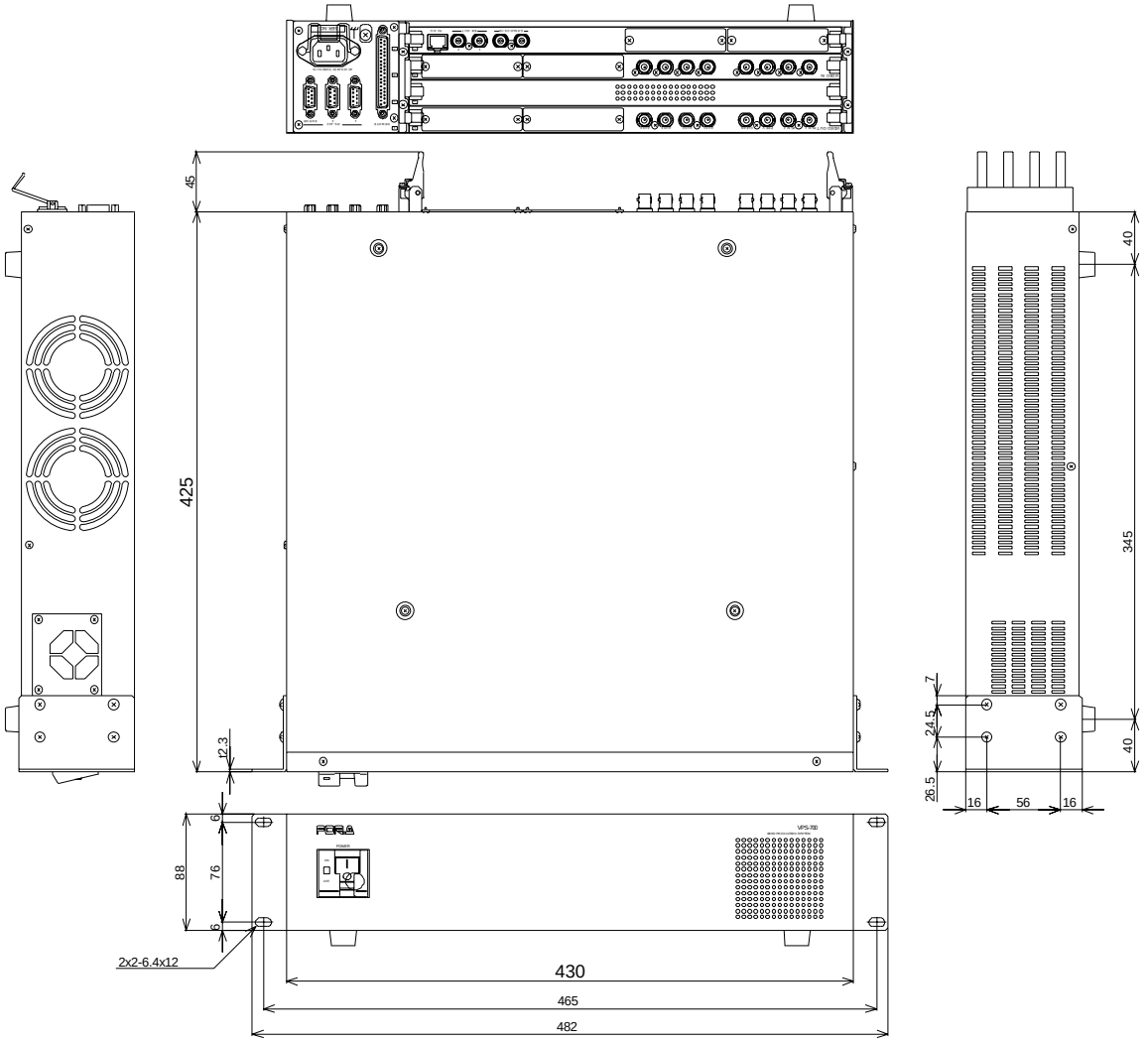
Analog component GBR outputs:

Frequencey Response	100kHz - 5MHz: ±0.5dB, roll off above 5MHz
S/N Ratio	60dB (no quantization noise)
K-factor	1%

19-2. External Dimensions

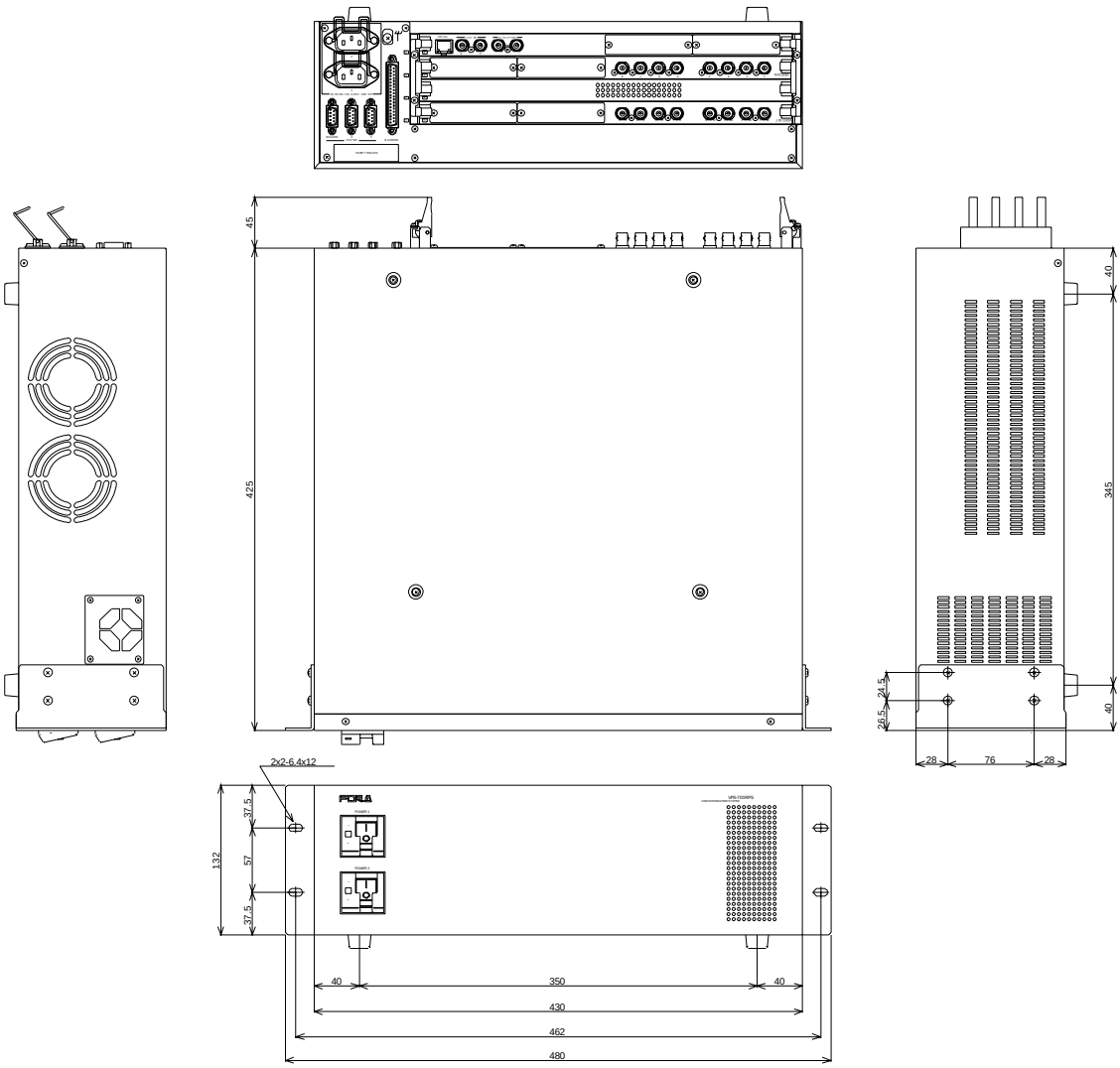
19-2-1. VPS-700 MU

(All dimensions in mm.)



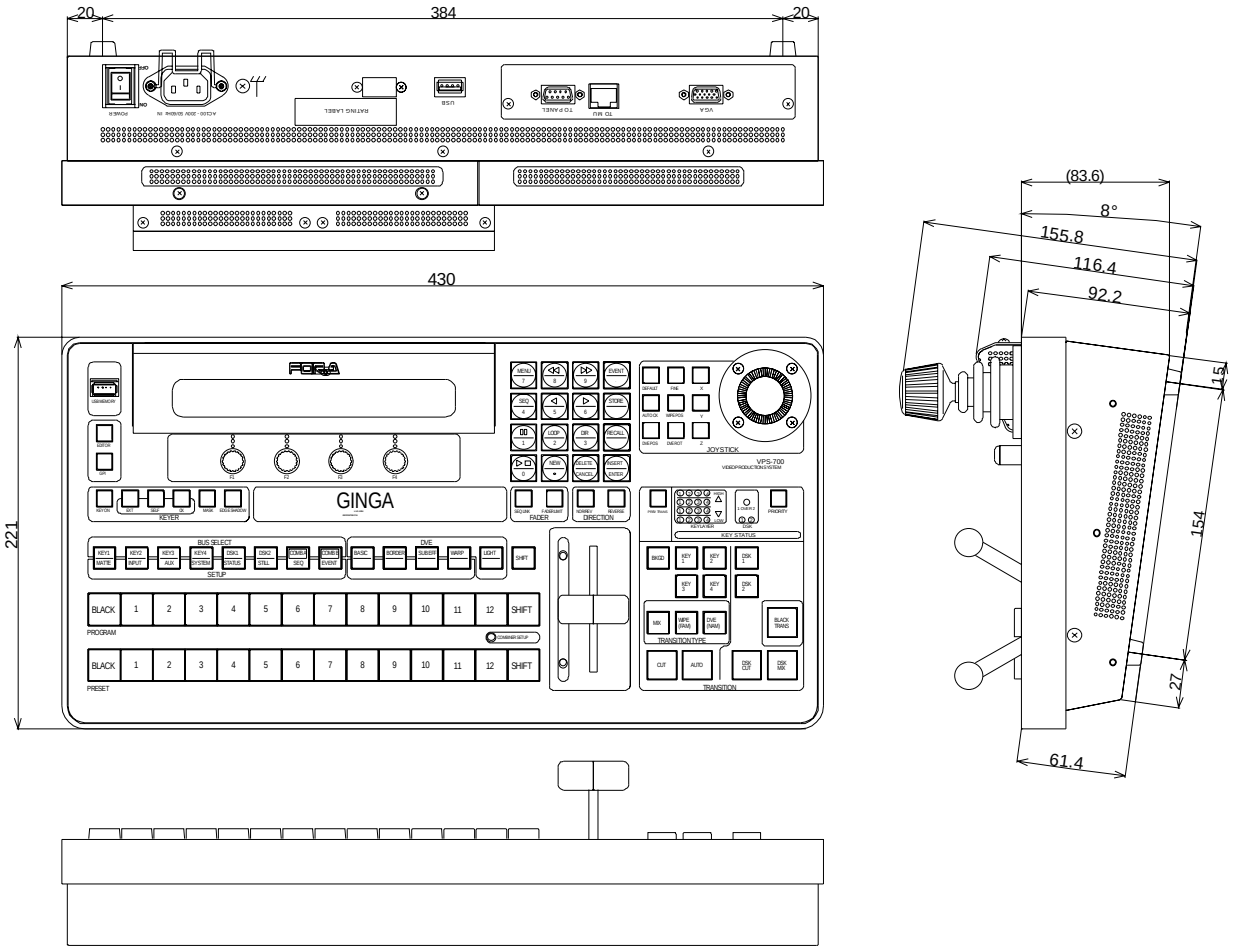
19-2-2. VPS-700RPS MU

(All dimensions in mm.)



19-2-3. VPS-700OU

(All dimensions in mm.)



Appendix 1. Menu List

1-1. M/E menu

Button	Button	Menu	Submenu	Item	Setting	Refer to
MIX (Transition section)		Transition Rate	Transition Rate	PGM	1 - 999	8-2-2
				DSK	1 - 999	
				BLK	1 - 999	
WIPE (Transition section)		Wipe Pattern	Wipe Pattern	Pattern No.	0 - 114	8-2-3 10
				Border Width	0.0 - 100	
				Border Softness	0.0 - 100	
				Border Source	BLK, In01-16, Stl 1-2, Mat 1-4, Com A, Com B, Wipe Border	
		Wipe Border	Wipe Border Color	Pattern No.	0 - 114	10
				Luminance	0.0 - 108.6%	
				Saturation	0.0 - 100.0%	
				Hue	0.0 - 359.5	
		Wipe Modify	Wipe Modify	Aspect	-1.0000 - 1.0000	
				Center Position X	-1 - 1	
				Center Position Y	-1 - 1	
				Angle	-16 - 16	
DVE (Transition section)	BASIC, BORDER, SUB EFF, WARP, LIGHT	DVE Modify	(See DVE Modify menu.)			8-2-3
FADER LIMIT (Transition section)		Fader Limit		Fader Limit	0.0 - 100.0 [%]	8-2-4
Shortcut button for Wipe Modify Center Position: WIPE POS (Joystick section)						

1-2. Keyer / DSK menu

The menu structures of Keyer 1-4 are all consistent. The DSK1 and DSK2 menu structures are also basically the same as Keyer 1-4 except that there is no Opacity item in DSK1 and DSK2. The Wipe Pattern and Wipe Modify setting are common to M/E, Keyer, and DSK.

Button	Button	Menu	Submenu		Item	Setting	Refer to
KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	EXT	External Key	External Key 1		Key Insert	BLK, In01-16, Stl1-2, Mat1-4, ComA, ComB	7-1-7 9-1
					Key Source		
					Gain	0.0 - 100.0 [%]	
					Clip	0.0 - 100.0 [%]	
			External Key 2		Opacity (Keyers only)	0 - 100	
					Key Invert	On/Off	
	SELF	Self Key	Self Key 1		Key Insert	BLK, In01-16, Stl1-2, Mat1-4, ComA, ComB	7-1-7 9-1
					Gain	0.0 - 100.0 [%]	
					Clip	0.0 - 100.0 [%]	
			Self Key 2		Opacity (Keyers only)	0 - 100	
					Key Invert	On/Off	
	AUTO CK (Joystick section)	Chroma Key	CK Auto		Key Insert	BLK, In01-16, Stl1-2, Mat1-4, ComA, ComB	9-4-1
					Position X	0 - 1023	
					Position Y	0 - 1023	
	CK	Chroma Key	CK Manual 1		Hue Angle	0 - 359.9 Deg	9-4-2
					Key Acc	0 - 359.9 Deg	
					Gain	-100% - 100%	
					Clip	-100% - 100%	
			CK Manual 2		Luminance Suppress	0.0 - 100.0%	
					Chroma Accept	0 - 359.9 Deg	
					Chroma Suppress	0.0 - 100.0 [%]	
					Chroma Tint	-100% - 100%	
			CK Other		Opacity (Keyers only)	0.0 - 100.0 [%]	
			CK Detail1, 2	1	Mode	Off, HL, LL	
					Region	BG, FG, Both	
					Gain	0.0 - 32.0	
					Clip	0.0 - 100	
				2	Opacity	0.0 - 100	
					Limit	-100 - 100	
					Accept	-90 - 90	
	MASK	Key Mask	Key Mask		Pattern No.	0 - 114	9-2
					Pattern Center X	-1.000 - 1.000	
					Pattern Center Y	-1.000 - 1.000	
					Pattern Size	0.0 - 100.0 [%]	

Button	Button	Menu	Submenu	Item	Setting	Refer to
KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	EDGE SHADOW	Edge Shadow	Edge Type	Type	Normal, Outline, Extrude, Shadow	9-3
				Width	1 - 15	
				Softness	0.0 - 100.0 [%]	
				Mode	Single, Dual	
			Edge Position	Direction	0 - 11 (Clock directions)	
				Position X	-100% - 100%	
				Position Y	-100% - 100%	
				Offset	-100% - 100%	
			Edge Color 1	Luminance	0.0 - 108.6%	
				Saturation	0.0 - 100.0%	
				Hue	0.0 - 359.5	
			Edge Color 2	Softness	0.0 - 100.0%	
				Luminance	0.0 - 108.6%	
				Saturation	0.0 - 100.0%	
				Hue	0.0 - 359.5	
	DVE	DVE	DVE Pattern	Pattern No.	000 - 252	8-2-3 8-3-5
				User DVE Data Clear	-	
				User DVE Data Store	-	
	BASIC, BORDER, SUB EFF, WARP, LIGHT	DVE Modify	(See DVE Modify menu)			9-5 11

1-3. Pre-Combiner menu

Button	Button	Menu	Submenu	Item	Setting	Refer to
COMB A COMB B	BASIC	DVE Basic - Position	Local Source Local Target Global Source Global Target	Position X	-16.0000 - 16.0000	11-2 11-3-1
				Position Y	-16.0000 - 16.0000	
				Position Z	-16.0000 - 16.0000	
		DVE Basic - Rotation	Local Source Local Target Global Source Global Target	Rotation X	-16.0000 - 16.0000	
				Rotation Y	-16.0000 - 16.0000	
				Rotation Z	-16.0000 - 16.0000	
		DVE Basic	Aspect	Size X	0 - 16	11-3-2
				Size Y	0 - 16	
				Size Z	0 - 16	
		DVE Basic	Setup	Use Global	Disable, Enable	11-3-3
	BORDER	Border	Border and Color	Border Enable	On/Off	11-4
				Luminance	0.0 - 108.6%	
				Saturation	0.0 - 100.0%	
				Hue	0.0 - 359.5	
			Inner Width	Left Side	0 - 1024	
				Right Side	0 - 1024	
				Top Side	0 - 1024	
				Bottom Side	0 - 1024	
			Outer Width	Left Side	-140 - 1024	
				Right Side	-140 - 1024	
				Top Side	-140 - 1024	
				Bottom Side	-140 - 1024	
			Softness	Inside Softness	0.0 - 100.0%	
				Outside Softness	0.0 - 100.0%	
			Bevel Color	Beveled	On/Off	
				Luminance	0.0 - 108.6%	
				Saturation	0.0 - 100.0%	
				Hue	0.0 - 359.5	
			Hilight Setup	Highlight Direction	0 - 11 (Clock directions)	
				Highlight Opacity	0 - 100.0%	
				Lowlight Opacity	0 - 100.0%	
COMB A COMB B		Formation	Combiner Formation	Video Src	BLK, In01-16	13
				Priority	0 - 15	
				Opacity	00 - 100	
				BKGD Matte	Mat1-4, Stl3	
Shortcut button: COMB A, COMB B (BUS SELECT section) >> BASIC, BORDER (DVE section)						

1-4. Flash Recorder menu

Button	Menu	Submenu		Item	Setting	Refer to
BASIC, BORDER, SUB EFF, WARP (SHIFT is lit)	Flash Recorder	Clip Comb-A, Clip Comb-B		Play Clip	None, 0 -	14-5
				Que Up	-	
				Inter link	Off, Trigger, Linkage	
				Read Mode	Field, Frame	
		FR1 Setup, FR2 Setup	Clip Set	Track Number	0 - 17	14-4
				Clip Start	TS - TE	
				Clip End	TS - TE	
				Memory Setting	-	
			Rec	Track Number	0 - 17	14-3
				Fill Source	In01-16, Mat1-4, BLK, Stl 3	
				Key Source	In01-16, Mat1-4, BLK, Stl 3, Full	
				Upper Limitation	0 - 3599	
			Erase	Track Number	0 - 17	14-2 14-6
				Delete Clip Initialize	-	

1-5. Still Store menu

Button	Menu	Submenu	Item	Setting	Refer to
STILL	Still	Download Still	Destination	In01-In16, Still1-Still3	12-2
			File	00 - 99	
			Download	OU, USB	
			Direct Download	Off, On	
		Image Capture	File	00 - 99	
			Freeze Mode	Frame, Live, Odd Field, Even Field	
			Capture Start	-	
		Export Still	File	00 - 99	
			File Format	Bmp, tga	
			Export	-	
		Delete	File	00 - 99	
			Delete	OU, USB	

1-6. Sequence and Event menu

Button	Menu	Submenu	Item	Setting	Refer to
SEQ (SETUP section) (Keypad section)	Sequence	Seq File	Sequence Name	File00 - File99	16
			Store Sequence	OU, USB	
			Recall Sequence	OU, USB	
			Delete Sequence	OU, USB	
		Seq Edit	Play Time	0 - 3200	16-4
			Break	On, Off	
			Interval	0 - 999	
			Interpolation Mode	Point, Line, Curve	
EVENT (SETUP section) (Keypad section)	Event	Event	Select Event Page	Event P1 - P8	15
			Store Event	OU, USB	
			Recall Event	OU, USB	
			Initialize	-	
		Event Target	M/E Area	Full, PPHold, off	15-2
			Keyer Area	Full, off, K1, K2, K3, K4, K1+2, K1+3, K1+4, K2+3, K2+4, K3+4, K1+2+3, K1+2+4, K2+3+4, K1+3+4	
			DSK Area	Full, off, DSK1, DSK2	
			DS Area	Full, off, ComA, ComB	

1-7. Setup (Matte, Input, Aux) menu

Button	Menu	Submenu	Item	Setting	Refer to
MATTE	Matte	Matte Color	Select	Mat1 - Mat 4	12-1
			Luminance	0.0 - 108.6%	
			Saturation	0.0 - 100.0%	
			Hue	0.0 - 359.5	
INPUT	Input	Input Remap	Source Assign	In01 - In16	7-1-4 7-1-5
			FS Mode	On/Off	
			Freeze Mode	Live, Frame, Odd Field, Even Field	
			Auto Freeze Mode	On/Off	
		Input Process 1	White Clip	50.0 - 109.0%	7-1-6
			Black Clip	-7.0 - 50.0%	
			Luminance Gain	0.0 - 200.0%	
			Setup	0.0 - 100.0%	
		Input Process 2	Chroma Clip	50.0 - 111.0%	7-1-6
			Chroma Gain	0.0 - 200.0%	
			H Phase Trim	-4 - 4	
			Hue	0.0 - 359.5	
		Analog Input	F	Compst, YCBCR	4-6-3
			L	Betacam, SMPTE	
		Rename	File Save		7-1-2
			File Download		
AUX	Aux	Aux	01-12	BLK, In01-In16, Stl1, Stl2, Mat1 - Mat4, ComA, ComB, CoAK, CoBK, PGM, PVW, CLN	7-2-1
	Analog Output		F	Compst, YCBCR, GBR	4-6-3
			L	Betacam, SMPTE	
	PVW Clean		Preview	w/D_PV, woDSK, KeyOut	7-2-2
			Clean	woDSK, KeyOut	

1-8. Setup (System, Serial, GPIO/Tally, Data Backup, Update) menu

Button	Menu	Submenu	Item	Setting	Refer to
SYSTEM	System	Type	Video Format	625/50 PAL, 525/60 NTSC	18-1
			Setup Level	0.0%, 7.5%	
			Aspect	4:3, SQ	
			System Delay	Normal, Minimum	
		Other	Chroma Key Cursor	PGM, PVW	9-4-1
			Route Priority	FR>DS, FR=DS, FR<DS	14-5
			Remap Link	Independent, Baselink	13-3
			Bus Shift Mode	Toggle, Momentary	7-1-3
		Virtual Link	VR-LINK	AUX1-12	4-9
		Date Adj	Date - Time Set	-	
			Date adj - Year	1900 - 2100	
			Date adj - Month	1 - 12	
			Date adj - Day	1 - 31	
		Time Adj	Date - Time Set	-	
			Time adj - Hour	0 - 23	
			Time adj - Minute	0 - 59	
			Time adj - Second	0 - 59	
	Serial	Protocol	RS-422A 1CH	HVS-AUX, VR-LINK	4-8 4-9 17-1
			RS-422B 2CH	HVS-AUX, VR-LINK	
			Editor	GVG100, BVS3000, GVG100R etc	17-1
		Baudrate	1-3	9600, 19200, 38400	
		Parity	1-3	None, Even, Odd	
	GPIO/Tally	GPI	GPI 1-8	-	17-2
		Tally	Tally01-24	Red-XX Green-XX Alarm, None	17-3
	Data Backup	All Backup	Store	USB	4-5 18-2
			Recall	USB	
			Clear	OU	
		System Backup	Store	USB	
			Recall	USB	
			No.	Sys0-9	
			Clear	USB	
		File Backup	Store	USB	
			Recall	USB	
			Typ	Stl, Seq	
			Clear	USB, OU	
	Update	Update	OU Update	-	18-3
			DPU Calibration	-	
			Firmware Update	SDI1-4, GENLOCK, Main1,2, DVE Sub1,2 CPU1,2 AI_3_3-4, AI_4_1-2, Out1,2, FR1,2	
			Cursor	On,Off	

1-9. Status menu

Button	Menu	Submenu	Item		Refer to
STATUS	Status	Board Status	In		18-4-1
			Out		
			Option		
			Module		
		Alarm Status	Power Supply Unit	Single Dual	18-4-2
			Power Alarm	PS1 Status PS2 Status	
			Fan Alarm	FAN1 Status FAN2 Status	
		Version	CPU firmware version-		18-4-3

1-10. DVE Modify (Basic, Border) menu

■ **[DVE Modify] - [Basic] menu**

Button		Menu	Submenu	Item	Setting	Refer to
M/E KEY1 KEY2 KEY3 KEY4 DSK1 DSK2 COMB A COMB B	Basic	Position	Local Source Local Target Global Source Global Target	Position X	-16.0000 - 16.0000	11-3-1
				Position Y	-16.0000 - 16.0000	
				Position Z	-16.0000 - 16.0000	
		Rotation	Local Source Local Target Global Source Global Target	Rotation X	-16.0000 - 16.0000	11-3-1
				Rotation Y	-16.0000 - 16.0000	
				Rotation Z	-16.0000 - 16.0000	
		Aspect		Size X	0 - 16	11-3-2
				Size Y	0 - 16	
				Size Z	0 - 16	
		Setup		Use Globals	Disable, Enable	11-3-3
				DVE	Disable, Enable(no Key), Enable(with Key)	

■ **[DVE Modify] - [Border] menu**

Button		Menu	Submenu	Item	Setting	Refer to
M/E KEY1 KEY2 KEY3 KEY4 DSK1 DSK2 COMB A COMB B	Border	DVE Border Color		Border Enable	On/Off	11-4
				Luminance	0.0 - 108.6%	
				Saturation	0.0 - 100.0%	
				Hue	0.0 - 359.5	
		DVE Border Inner Width		Left Side	0 - 1024	
				Right Side	0 - 1024	
				Top Side	0 - 1024	
				Bottom Side	0 - 1024	
		DVE Border Outer Width		Left Side	-140 - 1024	
				Right Side	-140 - 1024	
				Top Side	-140 - 1024	
				Bottom Side	-140 - 1024	
		DVE Border Softness		Inside Softness	0.0 - 100.0%	
				Outside Softness	0.0 - 100.0%	
		DVE Beveled Color		Beveled	On/Off	
				Luminance	0.0 - 108.6%	
				Saturation	0.0 - 100.0%	
				Hue	0.0 - 359.5	
		DVE Hilight Setup		Highlight Direction	0 - 11 (Clock directions)	
				Highlight Opacity	0 - 100.0%	
				Lowlight Opacity	0 - 100.0%	

1-11. DVE Modify (Sub Effects) menu

◆ **[DVE Modify] - [Sub Effects] menu**

Button		Menu	Submenu	Item	Setting	Refer to
M/E KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	Sub Effects	Trail	Trail 1	Trail Type	Off, Trail	11-5-1
				Opacity(Keyers only)	0 - 100	
				Decay	0 - 100	
				Sparkle	0 - 100	
			Trail 2	Video Mix	0 - 100	11-5-1
				Video Decay	0 - 100	
				Video Sparkle	0 - 100	
			Trail 3	Position X	-16 - 16	11-5-1
				Position Y	-16 - 16	
			Mix Color	Luminance	0.0 - 108.6%	11-5-1
				Saturation	0 - 100.0%	
				Hue	0.0 - 359.5	
			Decay Color	Luminance	0.0 - 108.6%	11-5-1
				Saturation	0 - 100.0%	
				Hue	0.0 - 359.5	
		Chroma Control		Type	Thrugh, Sepia, Nega	10-5-2
				Saturation	0 - 100.0%	
				Hue	0.0 - 359.5	
		Strobe		Mode	Frame, Field	10-5-3
				Interval	0 - 1023	

1-12. DVE Modify (Warp) menu (Option)

◆ **[DVE Modify] - [Warp] menu**

Button		Menu	Submenu	Item	Setting	Refer to
KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	Warp	Warp OFF				
		Ripple	DVE Ripple 1	Shape Type	Horizontal, Vertical, Rotated, Circular, Polygon, Star	11-6-1
				Frequency	-100 - 100	
				Amplitude	-2 - 2	
				Phase	-16 - 16	
			DVE Ripple 2	Wave Type	Sine, Square, Triangle, Saw, Random	11-6-1
				Rotation	-16 - 16	
				Points	1 - 31	
				Sharpness	-100 - 100.0%	
			DVE Ripple 3	Sides	2 - 63	11-6-1
				Position X	-16 - 16	
				Position Y	-16 - 16	
			DVE Modifier	Modifier	On/Off	11-6-1
				Zoom	-16 - 16	
				Aspect	-16 - 16	
		Swirl	DVE Swirl	Position X	-16 - 16	11-6-2
				Position Y	-16 - 16	
				Amount	-1 - 1	
		Mosaic	DVE Mosaic 1	Type	Normal, Rotated	11-6-3
				Aspect	-16 - 16	
				Size	0 - 32	
			DVE Mosaic 2	Position X	-16 - 16	11-6-3
				Position Y	-16 - 16	
				Rotation	-16 - 16	
		Slats	DVE Slats	Shape Type	Horizontal, Vertical, HV, Rotated, HV-Rotated	11-6-4
				Rotation	-16 - 16	
				Slat Width	0 - 1	
				Amount	-16 - 16	
		Lens	DVE Lens 1	Shape Type	Circular, Polygon, Star	11-6-5
				Rotation	-16 - 16	
				Points	1 - 16	
				Amount	-16 - 16	
			DVE Lens 2	Pattern Type	Round, Linear, Multi	
				Position X	-16 - 16	
				Position Y	-16 - 16	
				Size	0 - 1	
			DVE Lens 3	Tilt	0 - 1	
			Modifier	Modifier	On/Off	
				Zoom	-16 - 16	
				Aspect	-16 - 16	
				Amount	-16.0000 - 16.0000	

◆ **[DVE Modify] - [Warp] menu (Continued)**

Button		Menu	Submenu	Item	Setting	Refer to
KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	Warp	Page Turn	DVE Page Turn 1	Pattern	Single, Quad, Multi, Zip-T, Zip-R, Zip-B, Zip-L	11-6-6
				Rotation	-16.0000 - 16.0000	
				Peel Angle	-16.0000 - 16.0000	
				Amount	-16.0000 - 16.0000	
			DVE Page Turn 2	Type	PageTurn, PageRoll	
				Position X	-16.0000 - 16.0000	
				Position Y	-16.0000 - 16.0000	
				Number Segment	1 - 31	
			DVE Page Turn 3	Radius	0 - 1.0000	
				Spiral	-16.0000 - 16.0000	
				Stagger	-16.0000 - 16.0000	
		Page Peel	DVE Page Peel 1	Type	PageTurn, PageRoll	11-6-7
				Rotation	-16.0000 - 16.0000	
				Peel Width	0.0000 - 1.0000	
				Amount	-16.0000 - 16.0000	
			DVE Page Peel 2	Tilt	-1 - 1	
				Radius	0 - 1.0000	
		Splits	DVE Splits 1	Type	2WayH, 2WayV, 4Way, Multi	11-6-8
				Rotation	-16.0000 - 16.0000	
				Spiral	-16.0000 - 16.0000	
				Stagger	-16.0000 - 16.0000	
			DVE Splits 2	Number Segment	1 - 31	
				Position X	-16.0000 - 16.0000	
				Position Y	-16.0000 - 16.0000	
				Amount	0 - 16.0000	
		Mirror	DVE Mirror 1	Type	2Way0, 2Way1, 2Way2, 2Way3, 4Way0, 4Way1, 4Way2, 4Way3, Multi	11-6-9
				Rotation	-16.0000 - 16.0000	
			DVE Mirror 2	Number Segment	1 - 31	
				Position X	-16.0000 - 16.0000	
				Position Y	-16.0000 - 16.0000	
		Defocus		Amount	0 - 100	11-6-10

1-13. DVE Modify (Light) menu (Option)

◆ **[DVE Modify] - [Light] menu**

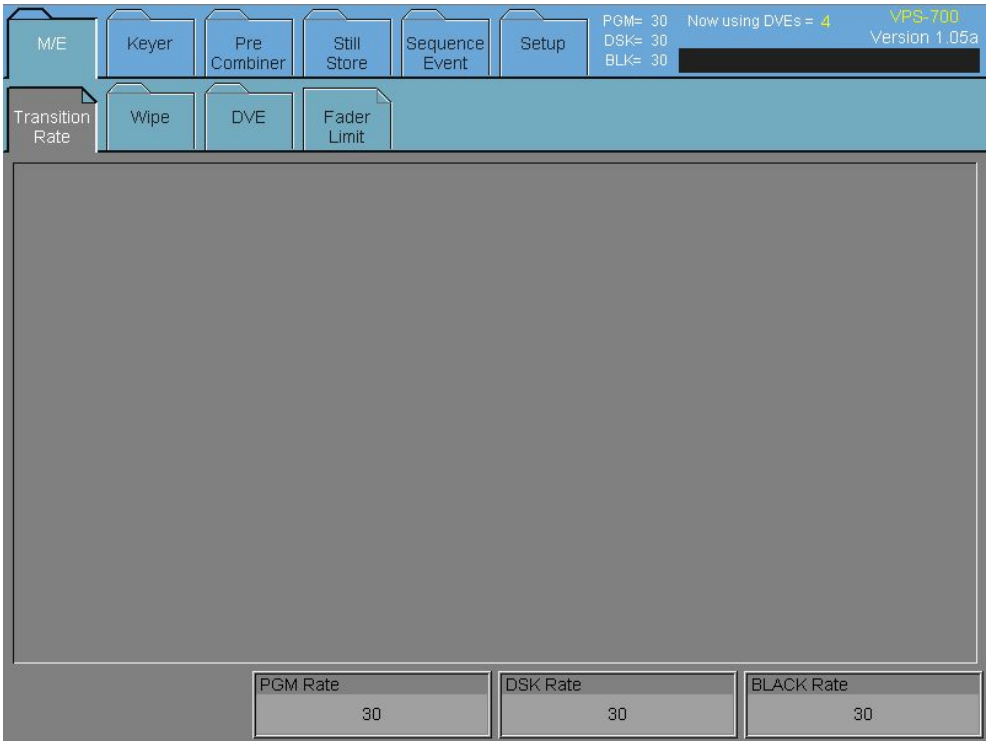
Button		Menu	Submenu	Item	Setting	Refer to
KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	Light	DVE Light Type		Type	Off, 1-HL, 2-HL, HL/LL	11-7-1
		DVE Light1-2	DVE Light1-2 Position	Size	0.0 - 100.0 [%]	11-7-2
				Position X	-1.0000 - 1.0000	
				Position Y	-1.0000 - 1.0000	
				Position Z	-1.0000 - 1.0000	
			DVE Light1-2 Color	Opacity (Keyers only)	0.0 - 100.0 [%]	
				Luminance	0.0 - 108.6%	
				Saturation	0 - 100.0%	
				Hue	0.0 - 359.5	

Appendix 2. GUI menu

M/E, Key1, Key2, Key3, Key4, DSK1, DSK2 have a respective DVE Modify menu (Basic, Border, Sub Effects, Warp, Light). See section 8-5. “Assigning DVEs to Keyers”, ”Appendix 1-10 to 1-13” for more details.

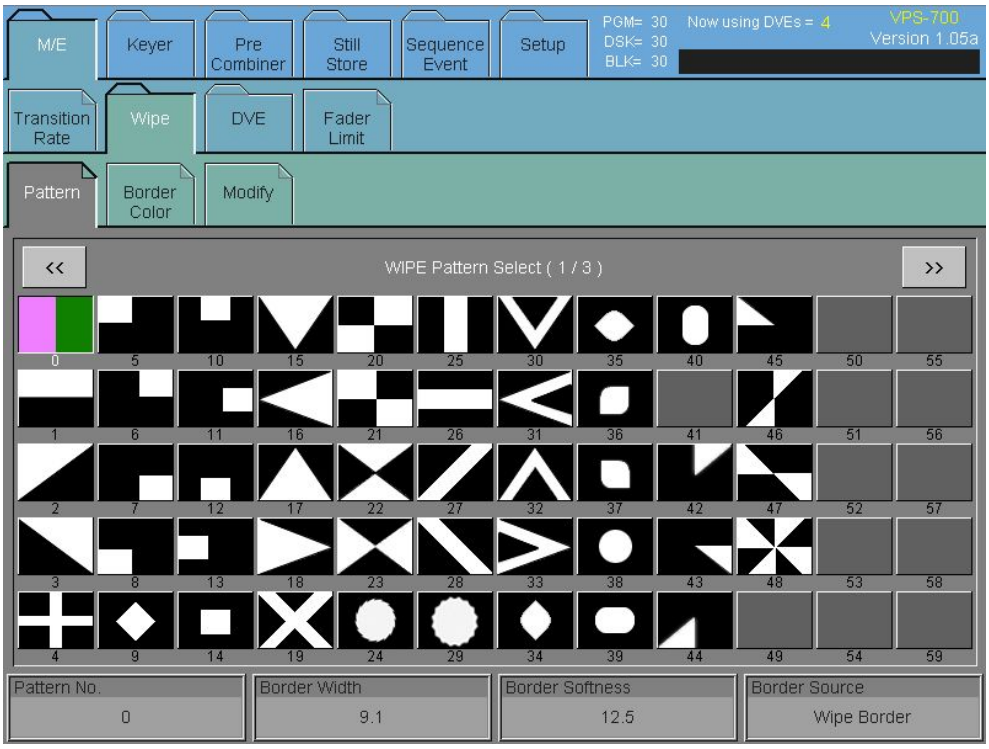
2-1. M/E menu

◆ **[M/E] - [Transition Rate] menu**



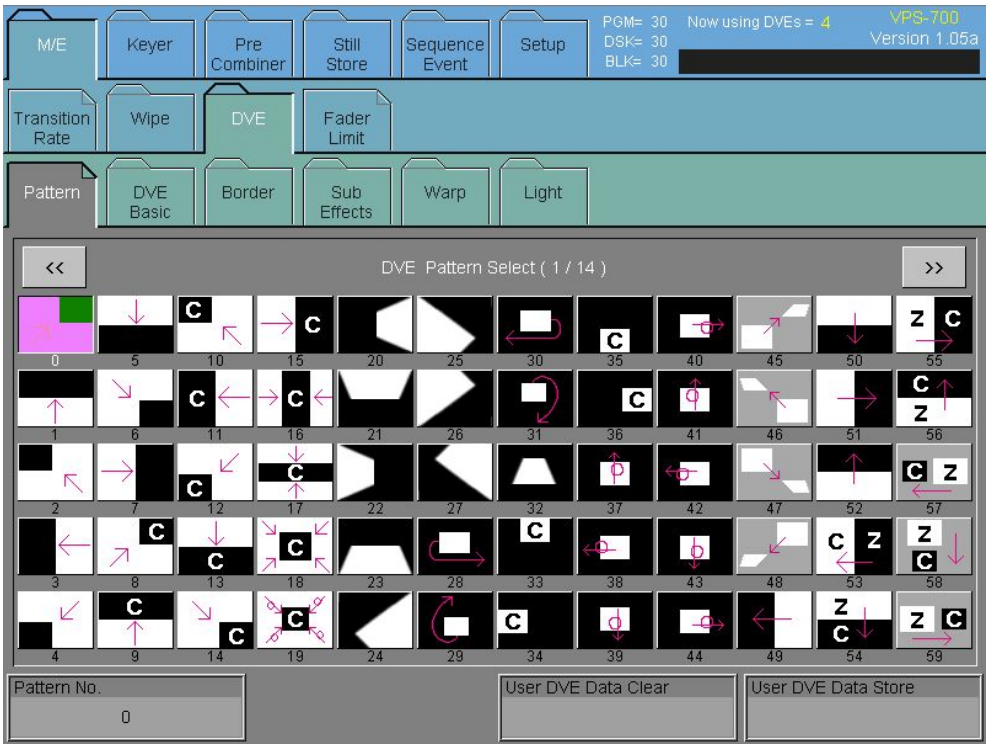
Folder Button					Item	Setting	Refer to
M/E	Transitio n Rate	-	-	-	PGM	1 - 999	8-2-2
					DSK	1 - 999	
					Black	1 - 999	
Shortcut button (double push): MIX (Transition section)							

◆ **[M/E] - [Wipe] menu**



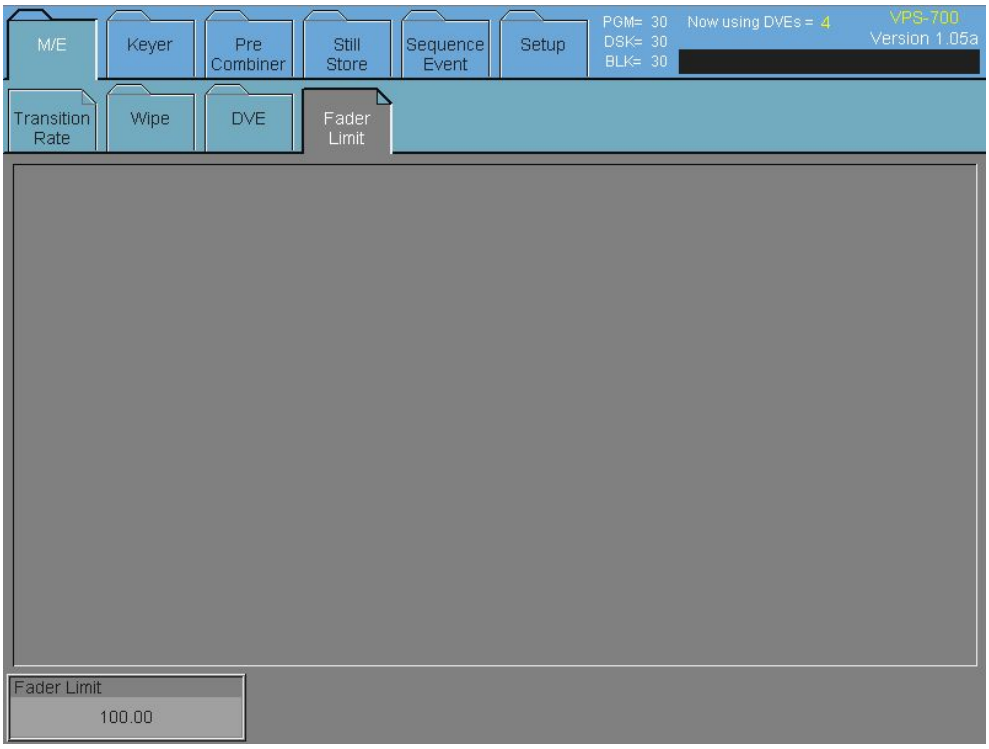
Folder Button					Item	Setting	Refer to
M/E	Wipe	Pattern	-	-	Pattern No.	000 - 114	8-2-3 10
					Border Width	0.0 - 100	
					Border Softness	0.0 - 100	
					Border Source	BLK, In01-16, Stl1-2, Mat1-4, ComA, ComB, Wipe Border	
		Border Color	-	-	Pattern No.	000 - 114	10
					Luminance	0.0 - 108.6%	
					Saturation	0.0 - 100.0%	
					Hue	0.0 - 359.5	
		Modify	-	-	Aspect	-1.0000 - 1.0000	
					Center Position X	-1 - 1	
					Center Position Y	-1 - 1	
					Angle	-16 - 16	
Shortcut button (double push): WIPE (Transition section) Shortcut button to Wipe Modify Center Position: WIPE POS (Joystick section)							

◆ **[M/E] - [DVE] menu**



Folder Button					Item	Setting	Refer to
M/E	DVE	Pattern	-	-	Pattern No.	000 - 252	8-2-3
					User DVE Data Clear	-	
					User DVE Data Store	-	
		DVE Basic			See DVE Modify menu		11
		Border					
		Sub Effects					
		Warp					
		Light					
Shortcut button (double push): DVE (Transition section)							

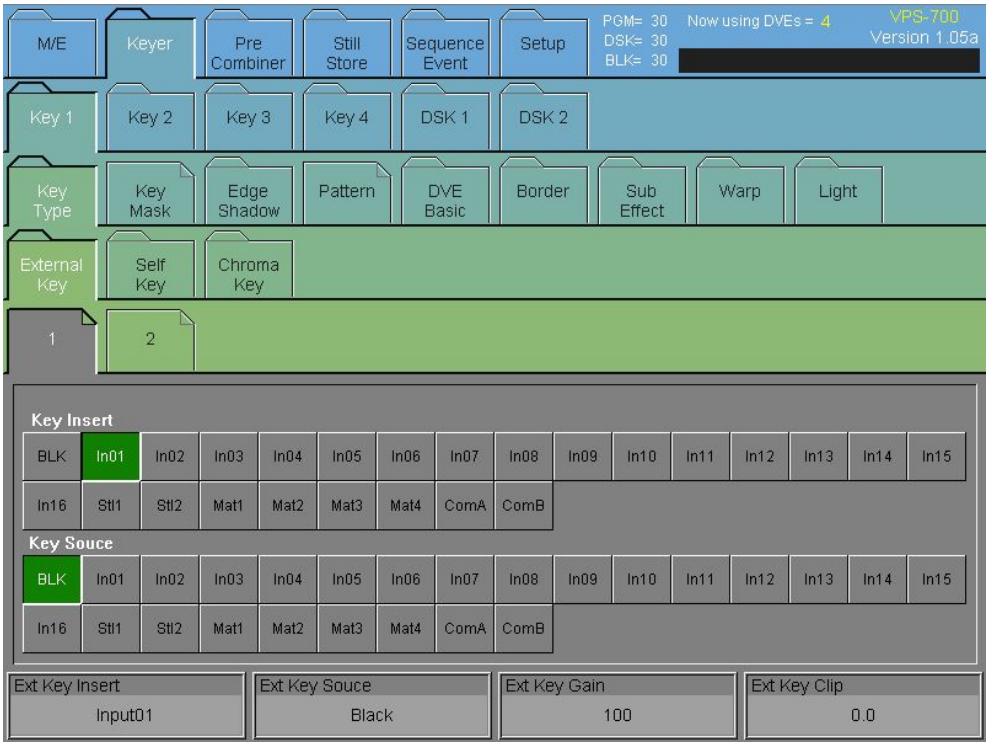
◆ **[M/E]- [Fader Limit] menu**



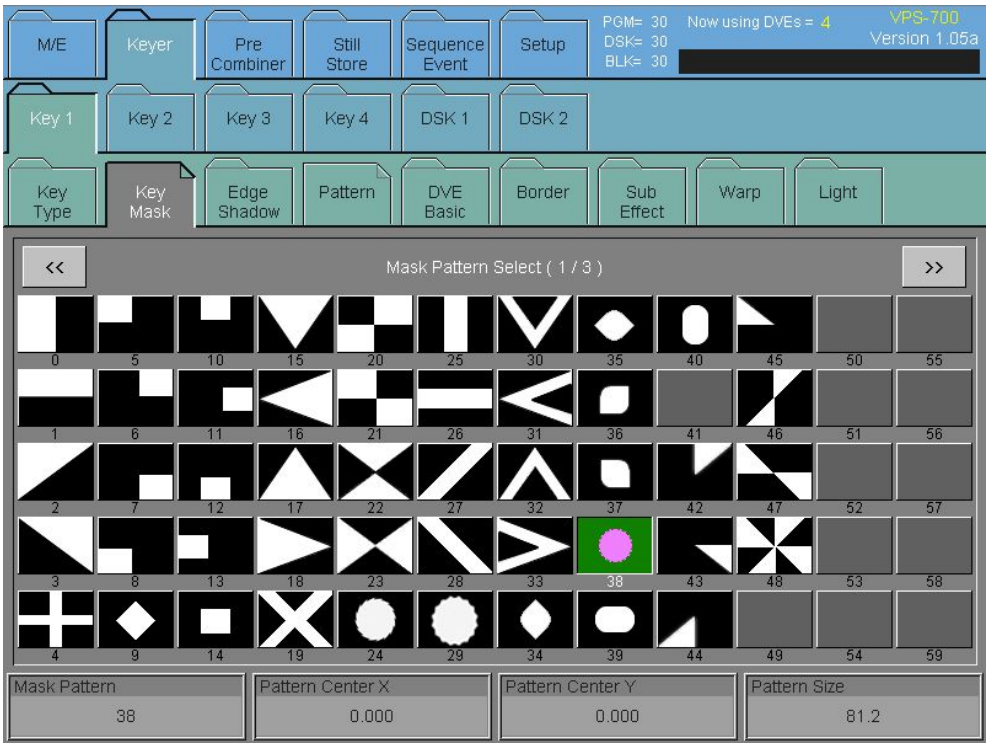
Folder Button					Item	Setting	Refer to
M/E	Fader Limit	-	-	-	Fader Limit	0.0 - 100.0 [%]	8-2-4
Shortcut button (double push): FADER LIMIT (Transition section)							

2-2. Keyer / DSK menu

◆ **[KEYER / DSK] - [Key Type] menu [Key Mask] menu**



◆ **[KEYER / DSK] - [Key Mask] menu**



The menu structures of Keyer 1-4 are all consistent. The DSK1 and DSK2 menu structures are also basically the same as Keyer 1-4 except that there is no Opacity item in DSK1 and DSK2. The Wipe Pattern and Wipe Modify setting are common to M/E, Keyer, and DSK.

◆ **[KEYER / DSK] - [Key Mask] menu**

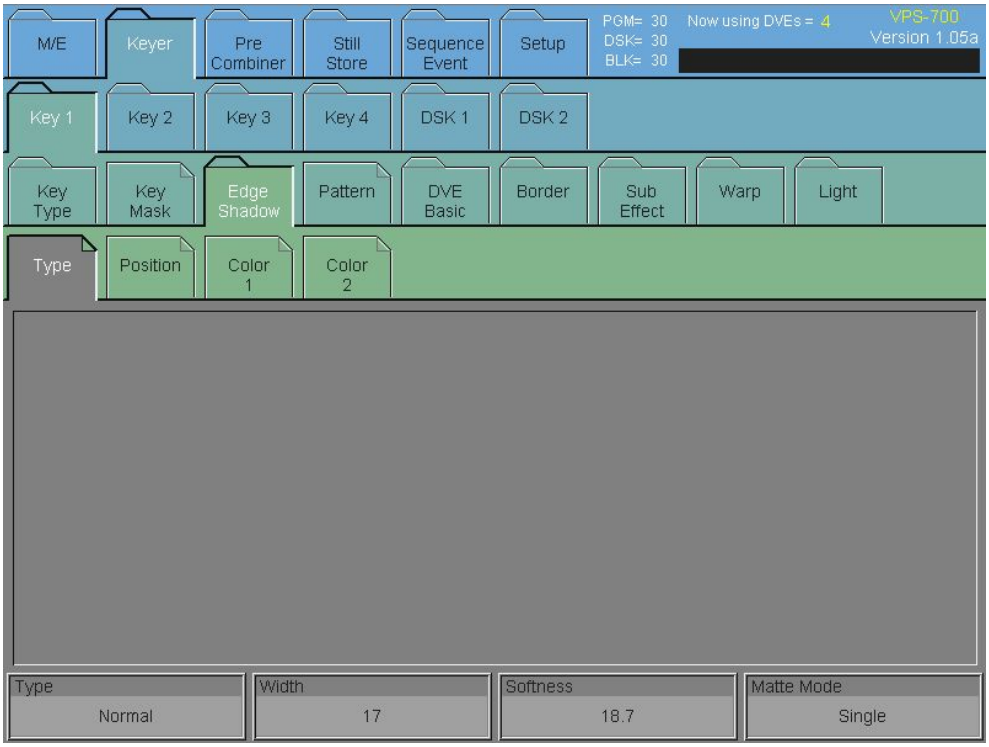
Folder Button						Item	Setting	Refer to
Keyer	Keyer1 Keyer2 Keyer3 Keyer4 DSK1 DSK2	Key Type	External Key	1		Key Insert	BLK, In01-16, Stl1-2, Mat1-4, ComA, ComB	7-1-7 9-1
						Key Source		
						Gain	0.0 - 100.0 [%]	
						Clip	0.0 - 100.0 [%]	
				2		Opacity (Keyers only)	0 - 100	
						Key Invert	On/Off	
			Self Key	1		Key Insert	BLK, In01-16, Stl1-2, Mat1-4, ComA, ComB	7-1-7 9-1
						Gain	0.0 - 100.0 [%]	
						Clip	0.0 - 100.0 [%]	
				2		Opacity	0 - 100	
						Key Invert	On/Off	
Keyer	Keyer1 Keyer2 Keyer3 Keyer4 DSK1 DSK2	Key Type	Chroma Key	CK Auto		Key Insert	BLK, In01-16, Stl1-2, Mat1-4, ComA, ComB	9-4-1
						Position X	0 - 1023	
						Position Y	0 - 1023	
				Manual 1		Hue Angle	0 - 359.9 Deg	9-4-2
						Key Acc	0 - 359.9 Deg	
						Gain	-100% - 100%	
						Clip	-100% - 100%	
				Manual 2		Luminance Suppress	0.0 - 100.0%	
						Chroma Accept	0 - 359.9 Deg	
						Chroma Suppress	0.0 - 100.0 [%]	
						Chroma Tint	-100% - 100%	
				CK Other		Opacity (Keyers only)	0.0 - 100.0 [%]	
				CK Detail1, 2	1	Mode	Off, HL, LL	
						Region	BG, FG, Both	
						Gain	0.0 - 32.0	
						Clip	0.0 - 100	
					2	Opacity	0.0 - 100	
						Limit	-100 - 100	
						Accept	-90 - 90	

Shortcut button:
KEY1-3, DSK1-2 (BUS SELECT section) >> EXT (KEYER section)
KEY1-3, DSK1-2 (BUS SELECT section) >> SELF (KEYER section)
KEY1-3, DSK1-2 (BUS SELECT section) >> AUTO CK (JOYSTICK section)
KEY1-3, DSK1-2 (BUS SELECT section) >> CK (KEYER section)

◆ [KEYER / DSK] - [Key Mask] menu

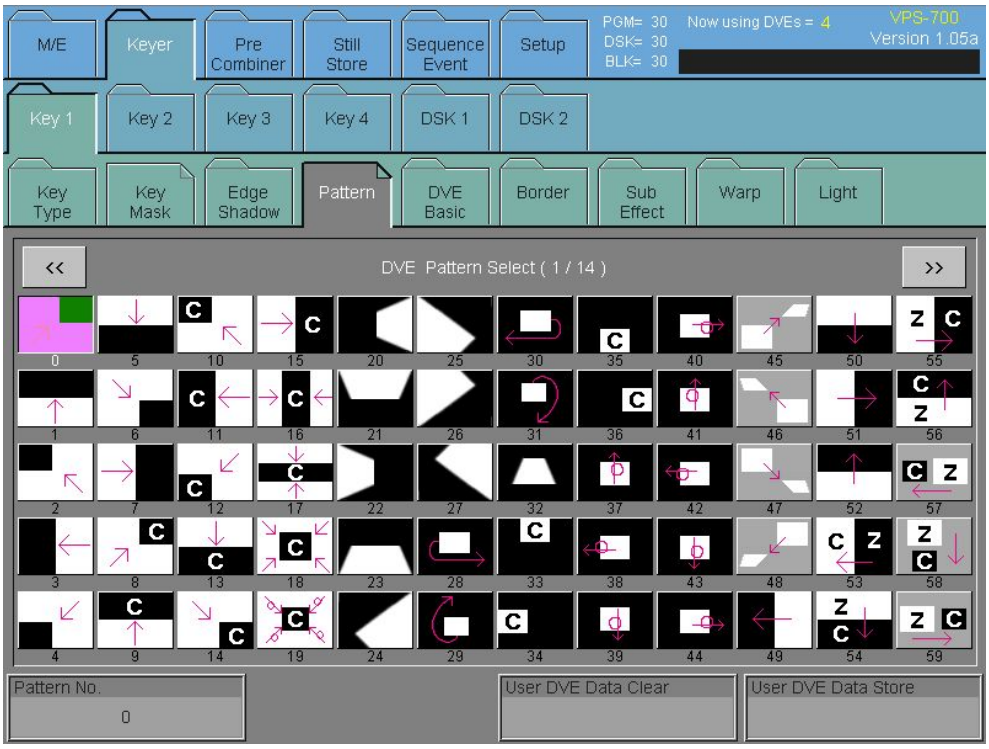
Folder Button					Item	Setting	Refer to
Keyer	Keyer1 Keyer2 Keyer3 Keyer4 DSK1 DSK2	Key Mask	-	-	Pattern No.	0 - 114	9-2
					Pattern Center X	-1.000 - 1.000	
					Pattern Center Y	-1.000 - 1.000	
					Pattern Size	0.0 - 100.0 [%]	
Shortcut button: KEY1-3, DSK1-2 (BUS SELECT section) >> MASK (KEYER section)							

◆ [KEYER / DSK] - [Edge Shadow] menu



Folder Button					Item	Setting	Refer to
Keyer	Keyer1 Keyer2 Keyer3 Keyer4 DSK1 DSK2	Edge Shadow	Type	-	Type	Normal, Outline, Extrude, Shadow	9-3
					Width	1 - 15	
					Softness	0.0 - 100.0 [%]	
					Mode	Single, Dual	
			Position	-	Direction	0 - 11 (Clock directions)	
					Position X	-100% - 100%	
					Position Y	-100% - 100%	
					Offset	-100% - 100%	
			Color 1	-	Luminance	0.0 - 108.6%	
					Saturation	0 - 100.0%	
					Hue	0.0 - 359.5	
			Color 2	-	Luminance	0.0 - 108.6%	
					Saturation	0 - 100.0%	
					Hue	0.0 - 359.5	
					Softness	0 - 100.0%	
Shortcut button: KEY1-3, DSK1-2 (BUS SELECT section) >> EDGE SHADOW (KEYER section)							

◆ [KEYER / DSK] - [DVE] menu



Folder Button					Item	Setting	Refer to
Keyer	Keyer1 Keyer2 Keyer3 Keyer4 DSK1 DSK2	DVE Pattern	-	-	Pattern No.	000 - 252	8-2-3 8-3-5
					User DVE Data Clear	-	
					User DVE Data Store	-	
		DVE Basic			See DVE Modify menu (Appendix 1)		8-2-3 9-5 11
		Border					
		Sub Effects					
		Warp					
		Light					

Shortcut button to DVE Pattern (double push):
DVE (Transition section)

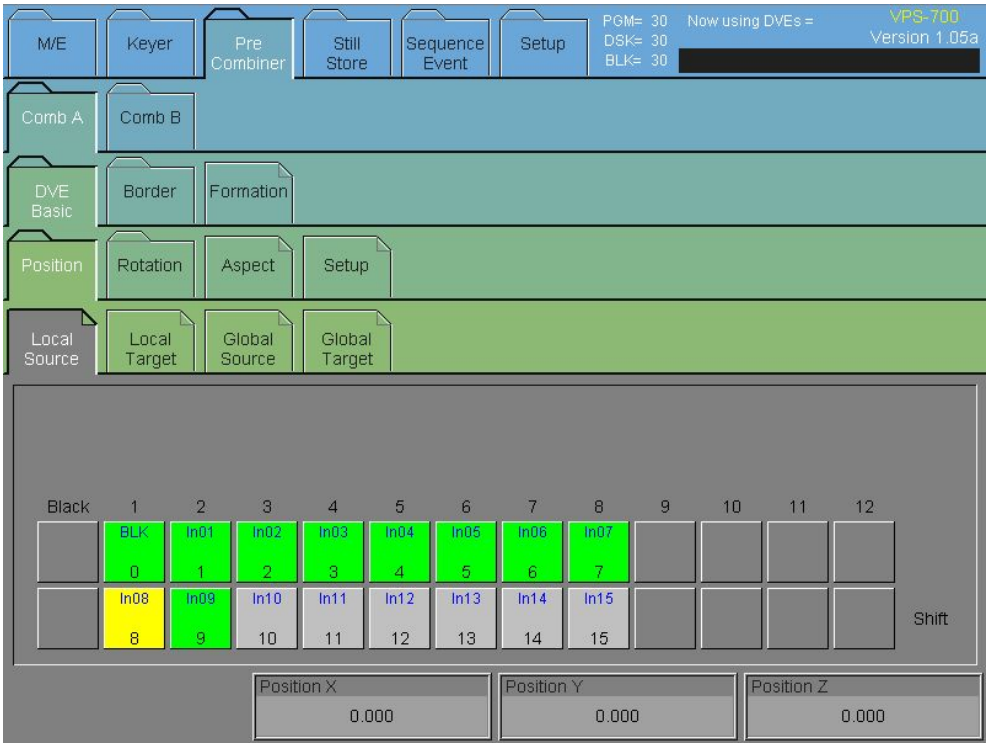
Shortcut button to DVE Modify:
KEY1-3, DSK1-2 (BUS SELECT section) >> BASIC, BORDER, SUB EFF, WARP LIGHT (DVE section)

Shortcut button to DVE Basic Position:
KEY1-3, DSK1-2 (BUS SELECT section) >> DVE POS (JOYSTICK section)

Shortcut button to DVE Basic Rotation:
KEY1-3, DSK1-2 (BUS SELECT section) >> DVE ROT (JOYSTICK section)

2-3. Pre-Combiner menu

◆ **[Pre-Combiner]- [DVE Basic] menu**



Folder Button					Item	Setting	Refer to
Pre Combiner	Comb A Comb B	DVE Basic	Position	Local Source Local Target Global Source Global Target	Position X	-16.0000 - 16.0000	11-3-1
					Position Y	-16.0000 - 16.0000	
					Position Z	-16.0000 - 16.0000	
			Rotation	Local Source Local Target Global Source Global Target	Rotation X	-16.0000 - 16.0000	
					Rotation Y	-16.0000 - 16.0000	
					Rotation Z	-16.0000 - 16.0000	
			Aspect	-	Size X	0 - 16	11-3-2
					Size Y	0 - 16	
					Size Z	0 - 16	
			Setup	-	Use Global	Disable, Enable	11-3-3

Shortcut button:
COMB A, COMB B (BUS SELECT section) >> BASIC (DVE section)

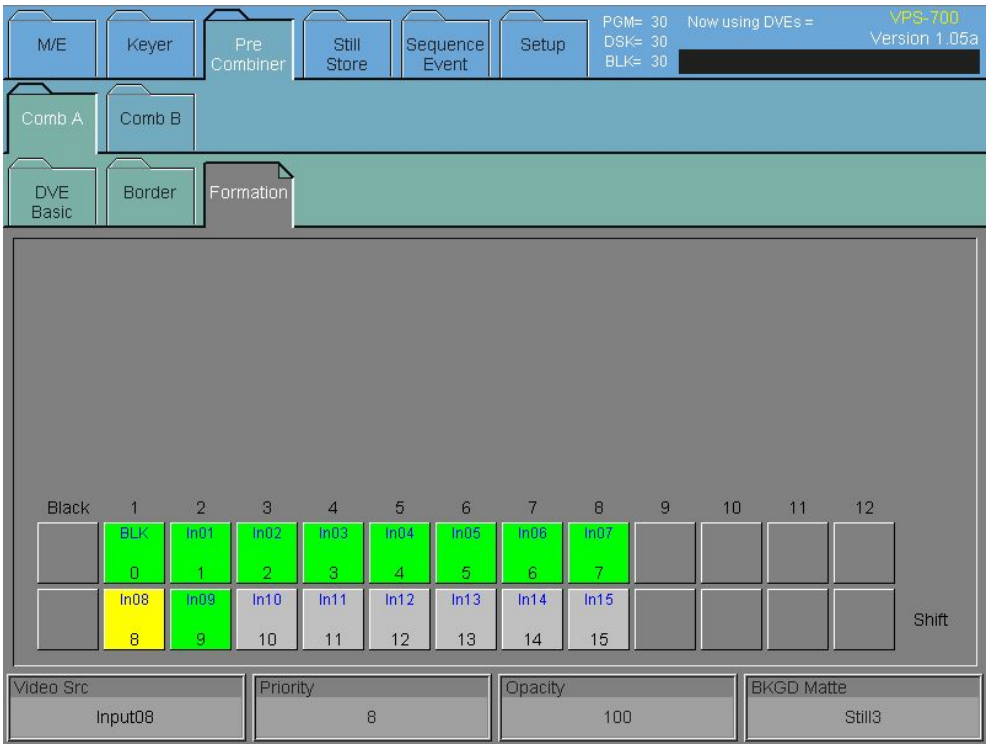
Shortcut button to DVE Basic Position:
COMB A, COMB B (BUS SELECT section) >> DVE POS (JOYSTICK section)

Shortcut button to DVE Basic Rotation:
COMB A, COMB B (BUS SELECT section) >> DVE ROT (JOYSTICK section)

◆ **[Pre-Combiner]- [Border] menu**

Folder Button					Item	Setting	Refer to
Pre Combiner	Comb A Comb B	Border	Border and Color	-	Border Enable	On/Off	11-4 13
					Luminance	0.0 - 108.6%	
					Saturation	0.0 - 100.0%	
					Hue	0.0 - 359.5	
			Inner Width	-	Left Side	0 - 1024	
					Right Side	0 - 1024	
					Top Side	0 - 1024	
					Bottom Side	0 - 1024	
			Outer Width	-	Left Side	-140 - 1024	
					Right Side	-140 - 1024	
					Top Side	-140 - 1024	
					Bottom Side	-140 - 1024	
			Softness	-	Inside Softness	0.0 - 100.0%	
					Outside Softness	0.0 - 100.0%	
			Bevel Color	-	Beveled	On/Off	
					Luminance	0.0 - 108.6%	
					Saturation	0.0 - 100.0%	
					Hue	0.0 - 359.5	
			Hilight Setup	-	Highlight Direction	0 - 11 (Clock directions)	
					Highlight Opacity	0 - 100.0%	
					Lowlight Opacity	0 - 100.0%	
Shortcut button: COMB A, COMB B (BUS SELECT section) >> BORDER (DVE section)							

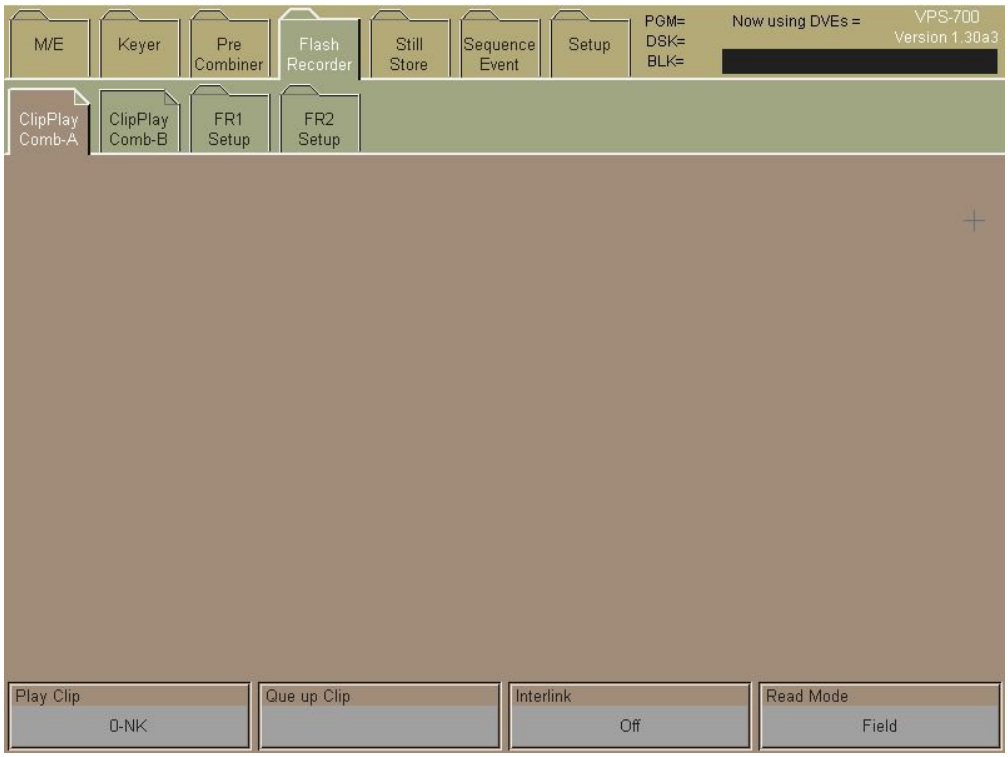
◆ **[Pre-Combiner] - [Formation] menu**



Folder Button					Item	Setting	Refer to
Pre Combiner	Comb A Comb B	Formation	-	-	Video Src	BLK, In01-16	13-2
					Priority	0 - 15	
					Opacity	0.0 - 100.0	
					BKGD Matte	Mat1-4, Stl3	
Shortcut button: COMB A, COMB B (BUS SELECT section)							

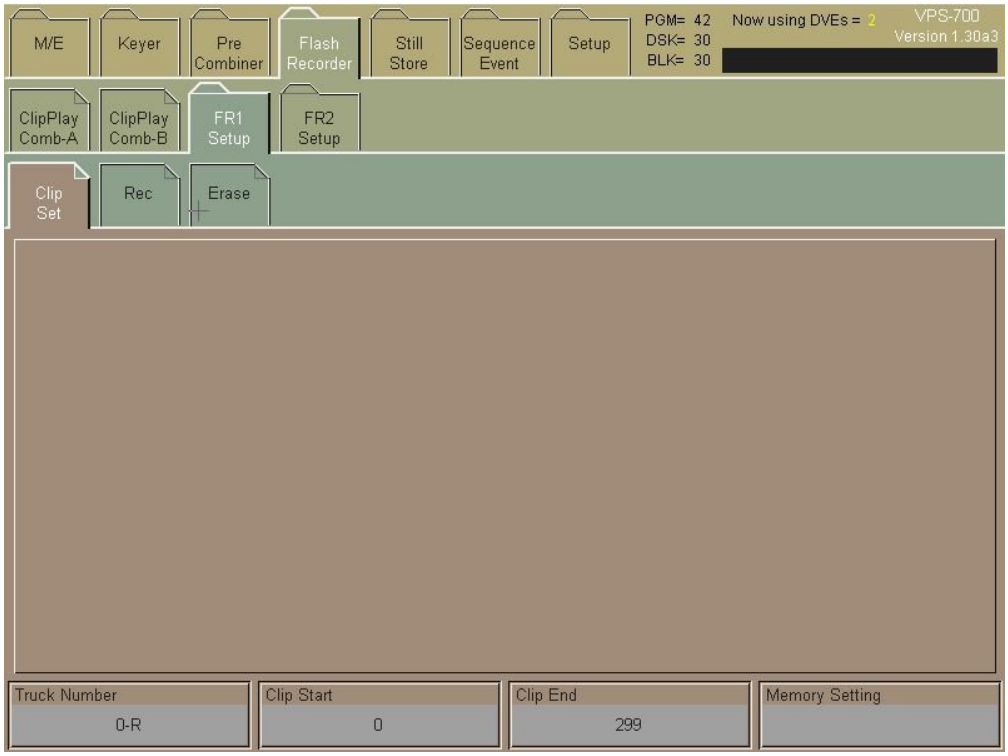
2-4. Flash Recorder Menu

◆ **[Flash Recorder] menu**



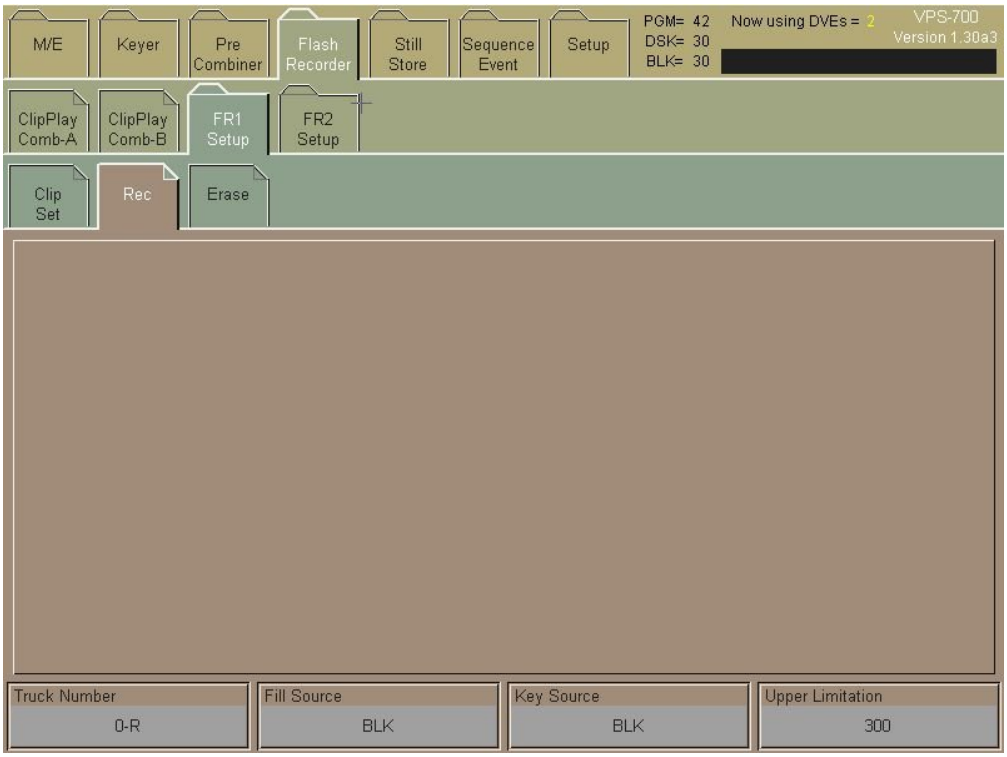
Folder Button					Item	Setting	Refer to
Flash Recorder	Clip Play Comb-A, Clip Play Comb-B	-	-	-	Play Clip	None, 0 -	14-5
					Que Up	-	
					Inter Link	Off, Trigger, Linkage	
					Read Mode	Field, Frame	
Shortcut button: BASIC (DVE section) (while SHIFT is lit)							

◆ **[Flash Recorder] - [Clip Set] menu**



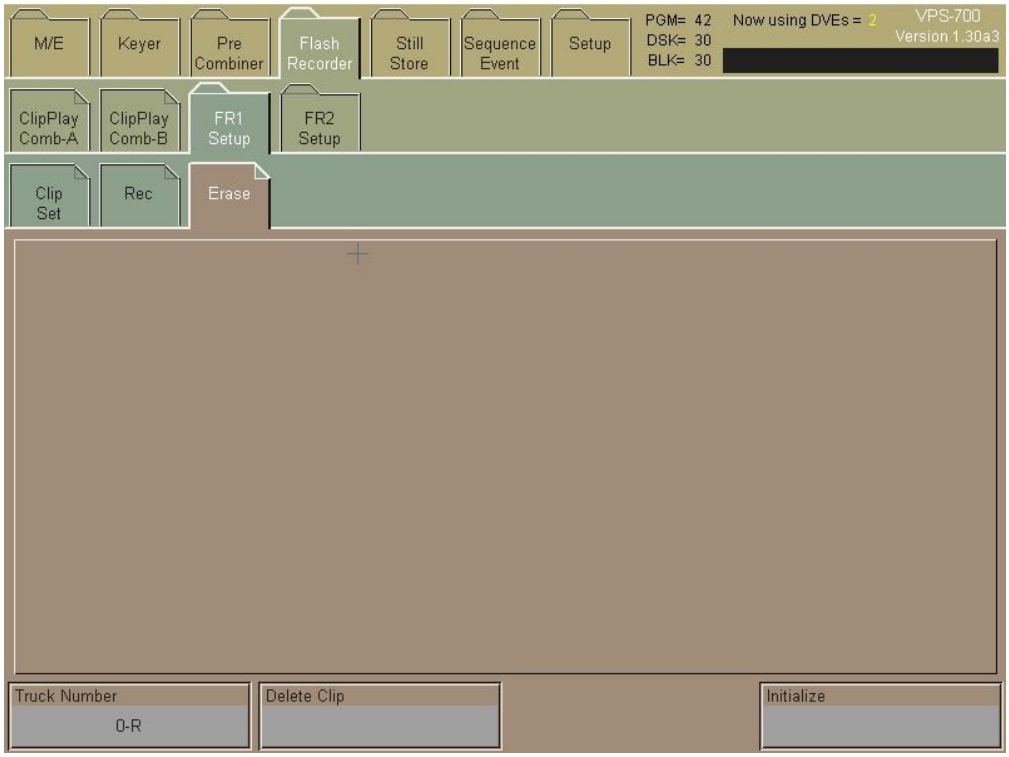
Folder Button					Item	Setting	Refer to
Flash Recorder	FR1 Setup FR2 Setup	Clip Set	-	-	Track Number	0 - 17	14-4
					Clip Start	TS - TE	
					Clip End	TS - TE	
					Memory Setting	-	
Shortcut button: SUB EFF (DVE section) (while SHIFT is lit)							

◆ **[Flash Recorder] - [Rec] menu**



Folder Button					Item	Setting	Refer to
Flash Recorder	FR1 Setup, FR2 Setup	Rec	-	-	Track Number	0 - 17	14-3
					Fiil Source	In01-16, BLK, Mat 1-4, Stl 3	
					Key Source	In01-16, BLK, Mat 1-4, Stl 3, Full	
					Upper Limitation	0 - 3599	
Shortcut button: SUB EFF (DVE section) (while SHIFT is lit)							

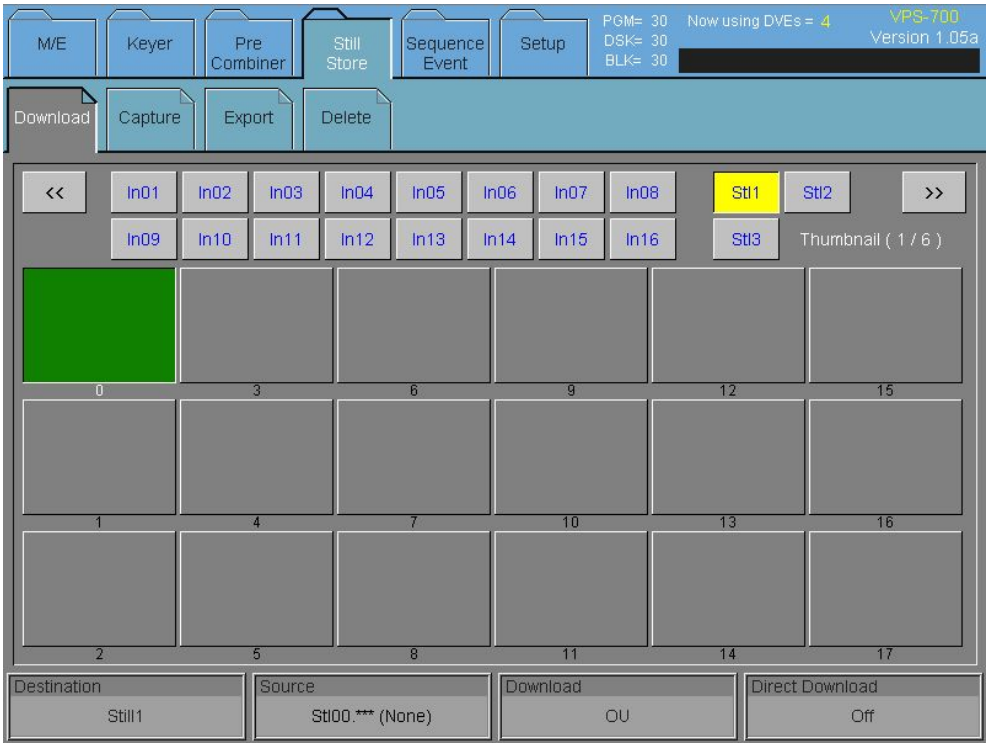
◆ **[Flash Recorder] - [Erase] menu**



Folder Button					Item	Setting	Refer to
Flash Recorder	FR1 Setup FR2 Setup	Erase	-	-	Track Number	0 - 17	14-2 14-6
					Delete Clip	-	
					All Initialize		
Shortcut button: SUB EFF (DVE section) (while SHIFT is lit)							

2-5. Still Store menu

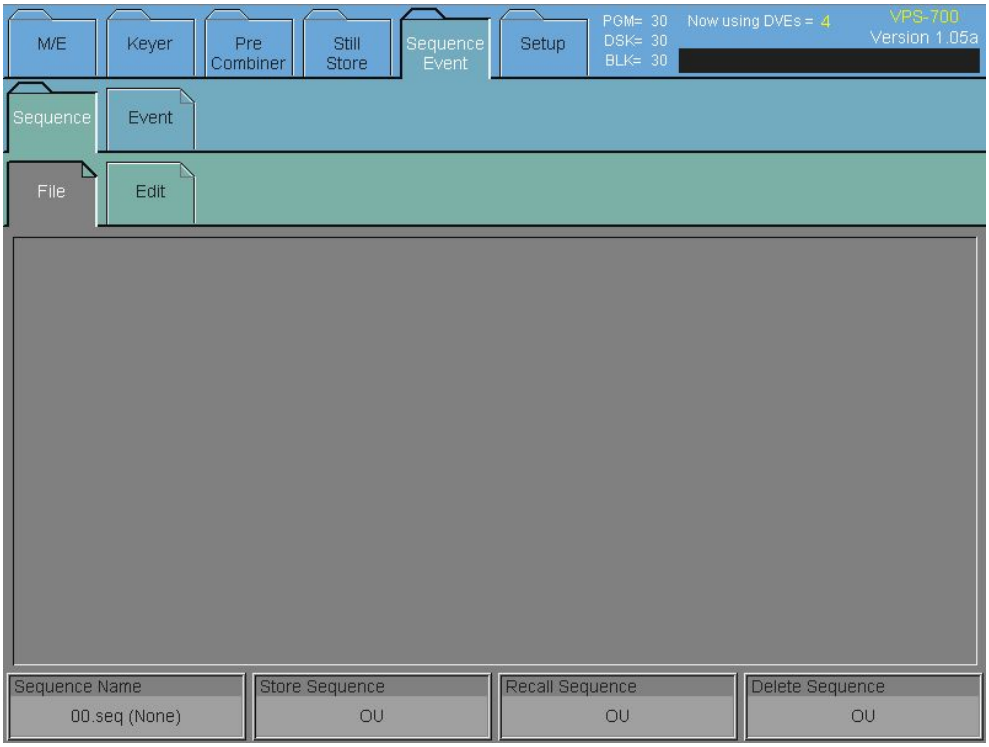
◆ **[Still Store] menu**



Folder Button					Item	Setting	Refer to
Still Store	Download	-	-	-	Destination	In01-In16, Stl1-Stl3	12-2
					Source	Stl00 - 99	
					Download	OU, USB	
					Direct Download	On, Off	
	Capture	-	-	-	File	00 - 99	
					Freeze Mode	Frame, Live Odd Field, Even Field	
					Capture Start	-	
	Export	-	-	-	File	00 - 99	
					File Format	Bmp, tga	
					Export	-	
	Delete	-	-	-	File	00 - 99	
					Delete	OU, USB	
Shortcut button: STILL (BUS SELECT section)							

2-6. Sequence, Event menu

◆ **[Sequence] menu**



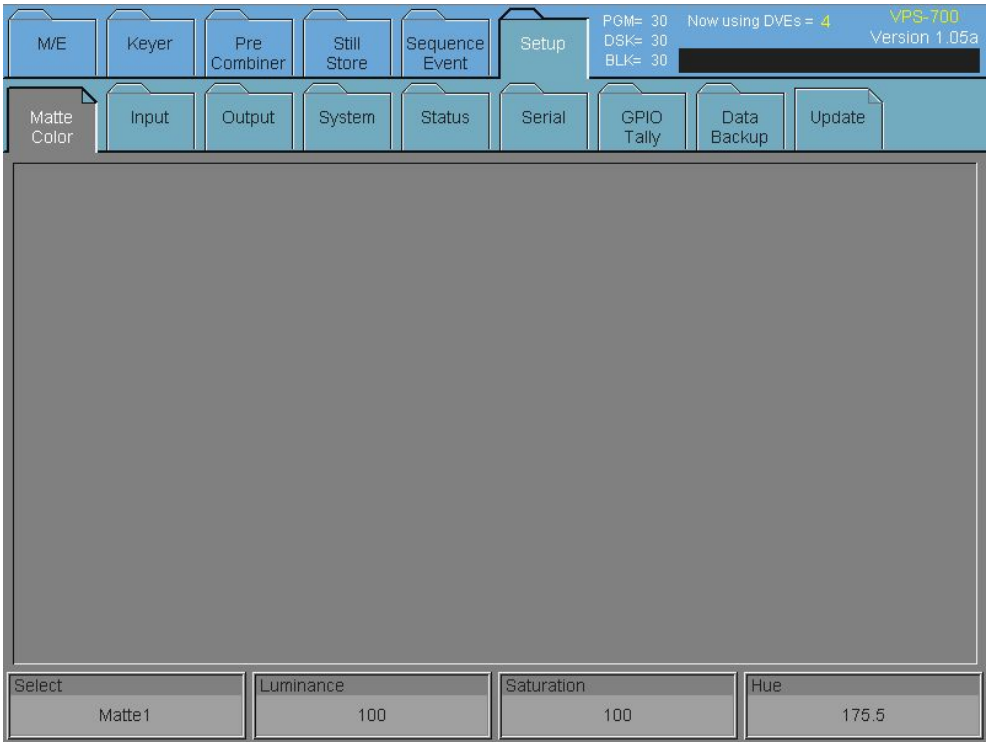
Folder Button					Item	Setting	Refer to
Sequence Event	Sequence	File	-	-	Sequence Name	File00 - File99	16
					Store Sequence	OU, USB	
					Recall Sequence	OU, USB	
					Delete Sequence	OU, USB	
		Edit	-	-	Play Time	0 - 3200	16-4
					Break	On, Off	
					Interval	0 - 999	
					Interpolation Mode	Point, Line, Curve	
Shortcut button: SEQ (SETUP section) SEQ (Keypad section)							

◆ **[Event] menu**

Folder Button					Item	Setting	Refer to
Sequence Event	Event	Event Data	-	-	Select Event Page	Event P1 - P8	15
					Store Event	OU, USB	
					Recall Event	OU, USB	
					Initialize	-	
		Event Target	-	-	M/E Area	Full, PPHold, off	15-2
					Keyer Area	Full, off, K1, K2, K3, K4, K1+2, K1+3, K1+4, K2+3, K2+4, K3+4, K1+2+3, K1+2+4, K2+3+4, K1+3+4	
					DSK Area	Full, off, DSK1, DSK2	
					DS Area	Full, off, ComA, ComB	
Shortcut button: EVENT (SETUP section) EVENT (Keypad section)							

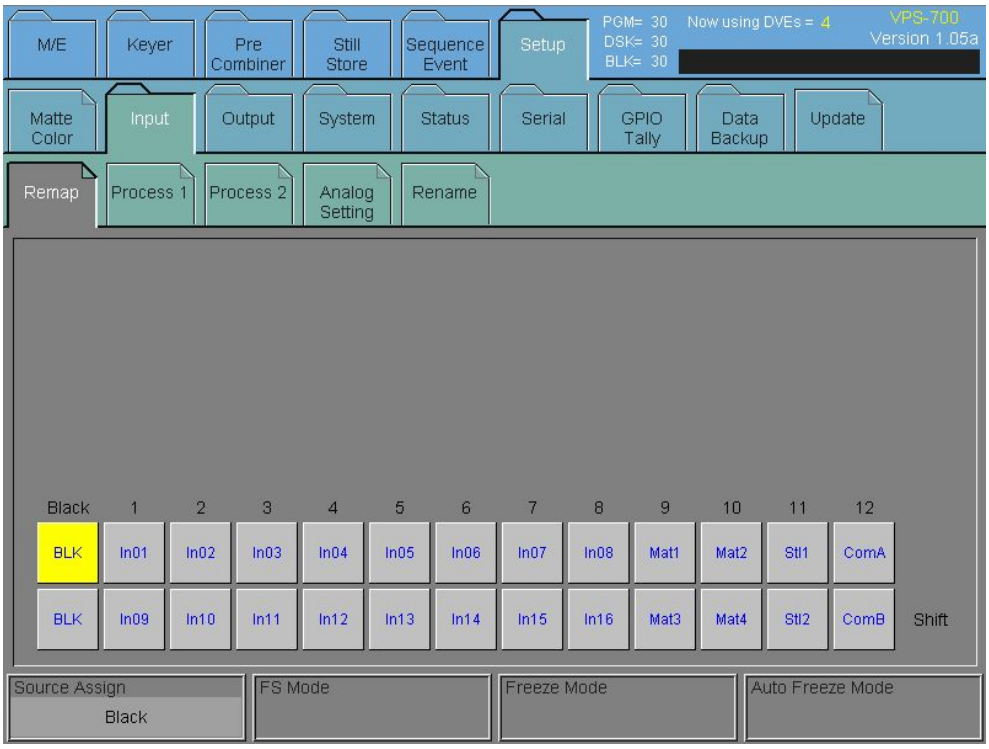
2-7. Setup (Matte, Input, Output) menu

◆ **[Setup] - [Matte] menu**



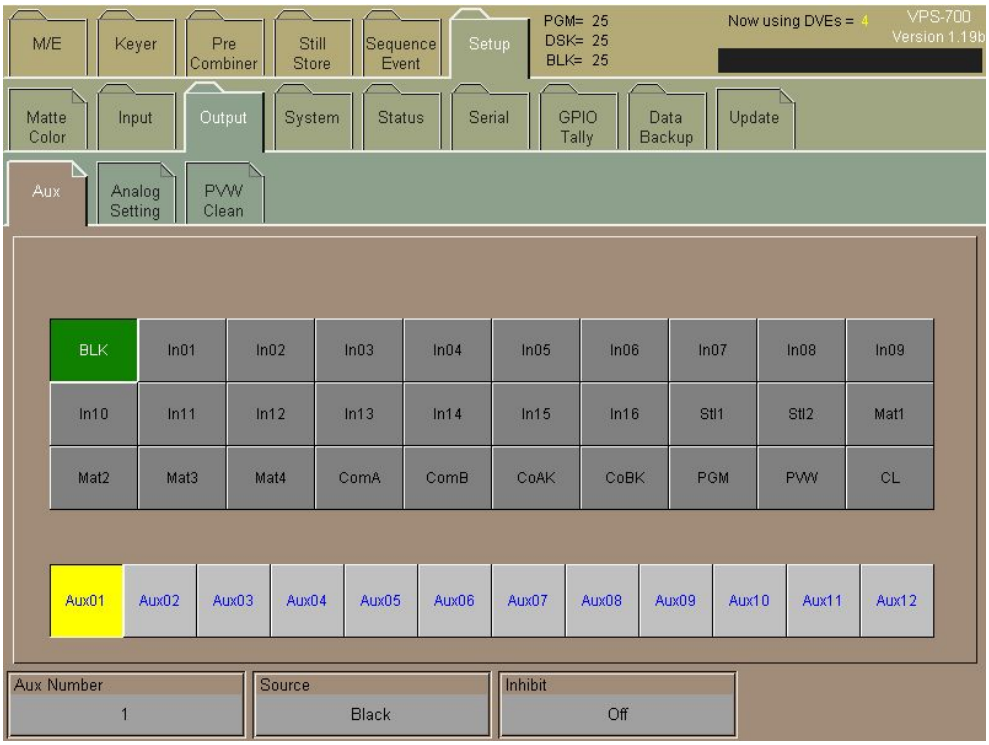
Folder Button					Item	Setting	Refer to
Setup	Matte Color	-	-	-	Select	Mat1 - Mat 4	12-1
					Luminance	0.0 - 108.6%	
					Saturation	0.0 - 100.0%	
					Hue	0.0 - 359.5	
Shortcut button: MATTE (SETUP section)							

◆ **[Setup] - [Input] menu**



Folder Button					Item	Setting	Refer to
Setup	Input	Remap	-	-	Source Assign	In01 - In16	7-1-4 7-1-5
					FS Mode	On, Off	
					Freeze Mode	Live Frame, Odd Field, Even Field	
					Auto Freeze Mode	On, Off	
		Input Process 1	-	-	White Clip	50.0 - 109.0%	7-1-6
					Black Clip	-7.0 - 50.0%	
					Luminance Gain	0.0 - 200.0%	
					Setup	0 - 100.0%	
		Input Process 2	-	-	Chroma Clip	50.0 - 111.0%	7-1-6
					Chroma Gain	0.0 - 200.0%	
					H Phase Trim	-4 - 4	
					Hue	0.0 - 359.5	
		Analog Input	-	-	F	Compst, YCBCR	4-6-2
					L	Betacam, SMPTE	
		Rename	-	-	File Save		7-1-2
					File Download		
Shortcut button: INPUT (SETUP section)							

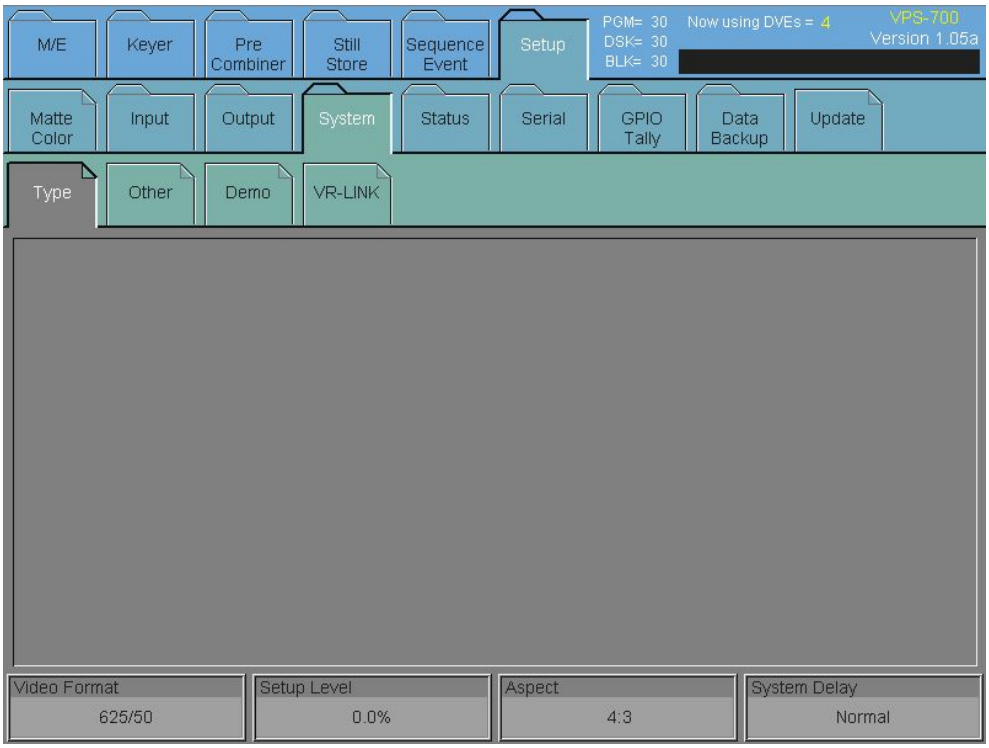
◆ **[Setup] - [Output] menu**



Folder Button					Item	Setting	Refer to
Setup	Output	Aux	-	-	Aux Number	1-12	7-2
					Source	BLK, In01-In16, Stl1, Stl2, Mat1 - Mat4, ComA, ComB, CoAK, CoBK, PGM, PVW, CLN	
					Inhibit	Off, On	
		Analog Output	-	-	F	Compst, YCBCR, GBR	4-7-2
					L	Betacam, SMPTE	
		PVW Clean	-	-	Preview	PV_w/D_PV PV_woDSK KeyOut	7-2-2
					Clean	WoDSK, KeyOut	
Shortcut button: AUX (SETUP section)							

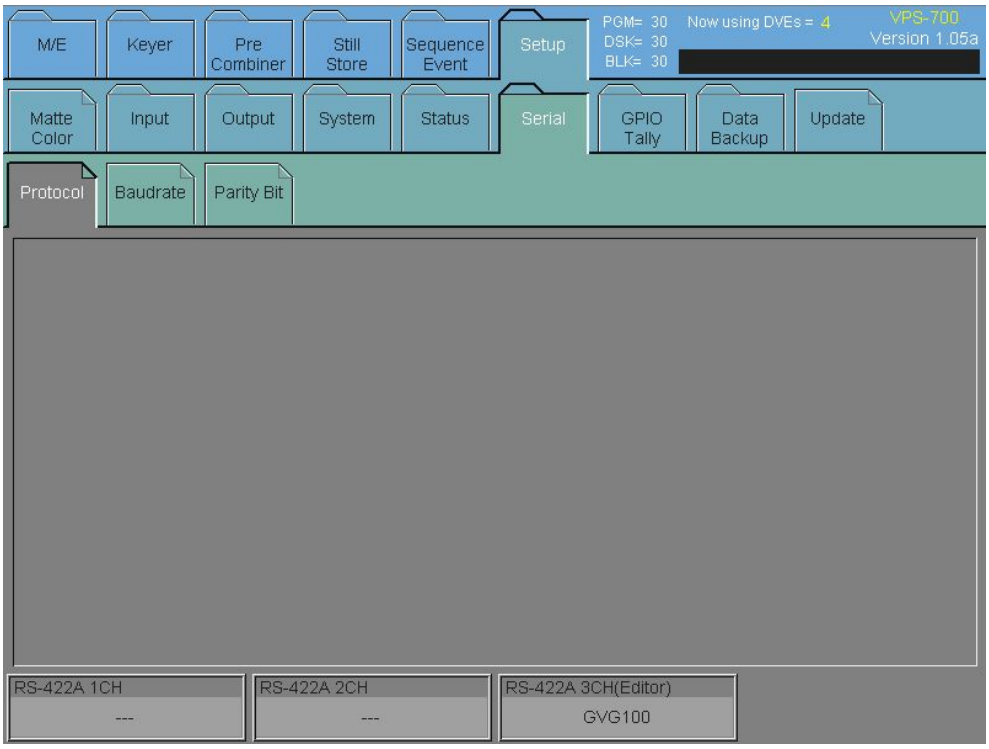
2-8. Setup (System, Serial, GPIO/Tally, Data Backup, Update) menu

◆ **[Setup] - [System] menu**



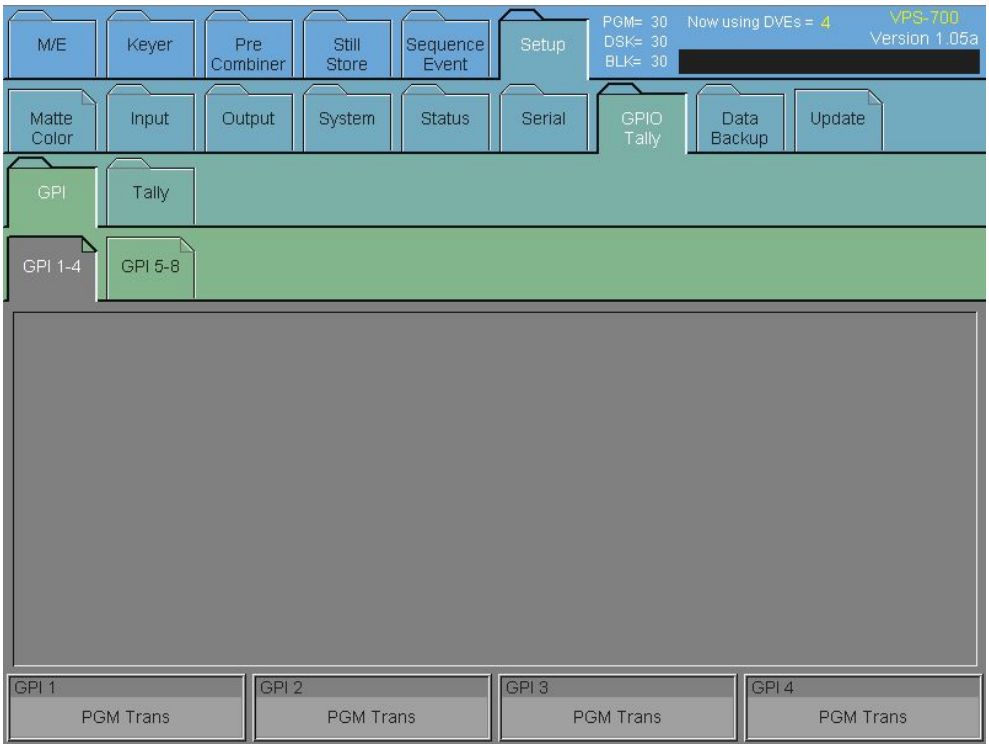
Folder Button					Item	Setting	Refer to
Setup	System	Type	-	-	Video Format	625/50 PAL, 525/60 NTSC	4-2 18-1
					Setup Level	0.0%, 7.5%	
					Aspect	4:3, SQ, LB	
					System Delay	Normal, Minimum	
		Other	-	-	Chroma Key Cursor	PGM, PVW	9-4-1
					Route Priority	FR>DS, FR=DS, FR<DS	14-5
					Crosspoint Mode	Swap, Mask	
					Bus Shift Mode	Toggle, Momentary	7-1-2
		VR-LINK	-	-	VR-LINK	AUX1-12	4-9
		Date Adj	-	-	Date - Time Set	-	
					Date adj - Year	1900 - 2100	
					Date adj - Month	1 - 12	
					Date adj - Day	1 - 31	
		Time Adj	-	-	Date - Time Set	-	
					Time adj - Hour	0 - 23	
					Time adj - Minute	0 - 59	
					Time adj - Second	0 - 59	
Shortcut button: SYSTEM (SETUP section)							

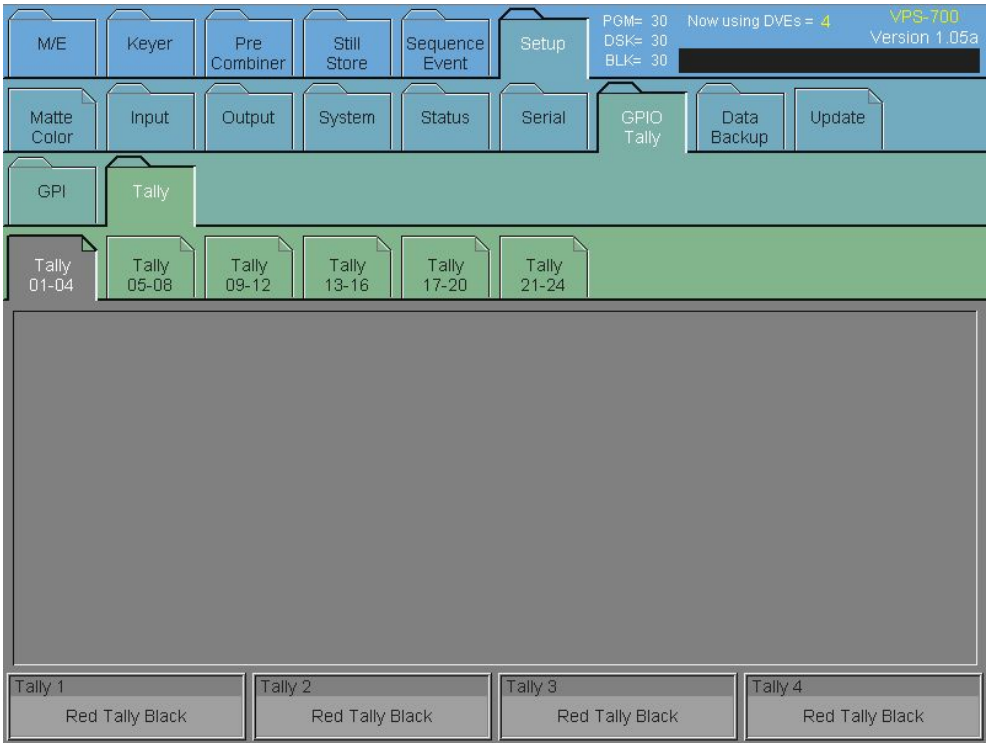
◆ **[Setup] - [Serial] menu**



Folder Button					Item	Setting	Refer to
Setup	Serial	Protocol	-	-	RS-422A 1CH	HVS-AUX, VR-LINK	17-1
					RS-422A 2CH	HVS-AUX, VR-LINK	
			-	-	Editor	GVG100, BVS3000, GVG100R etc	
		Baudrate	-	-	1-3	9600, 19200, 38400	
		Parity	-	-	1-3	None, Even, Odd	
Shortcut button: SYSTEM (SETUP section)							

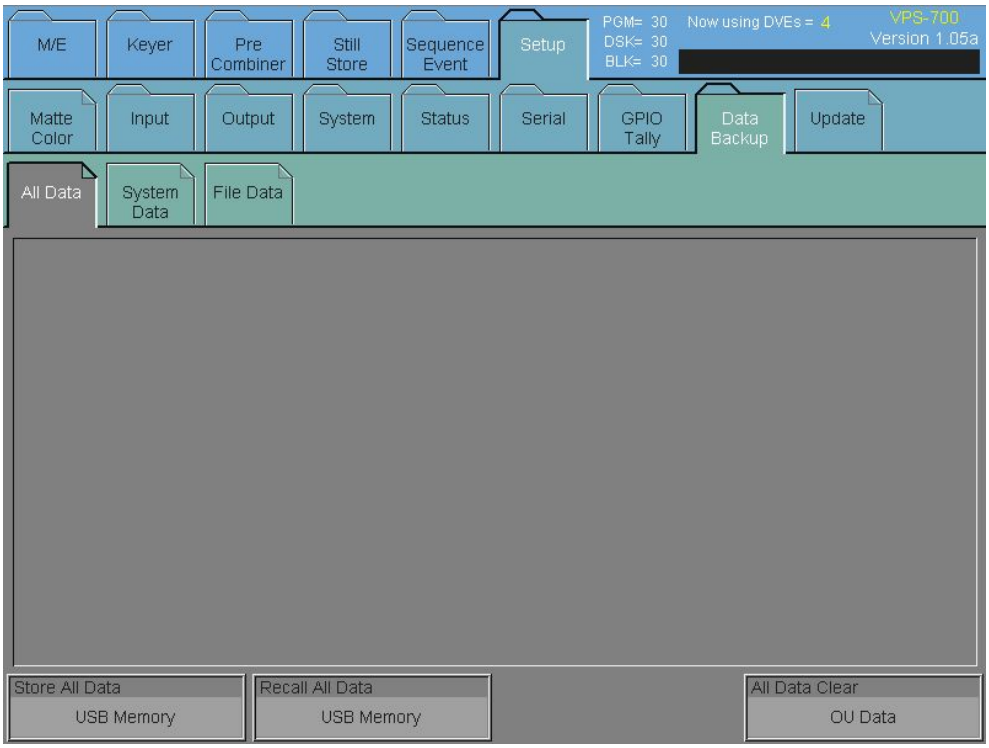
◆ **[Setup] - [GPIO Tally] menu**





Folder Button					Item	Refer to
Setup	GPIO Tally	GPI	GPI1-8	-	GPI1-8	17-2
		Tally	Tally01-24	-	Tally01-24	17-3
Shortcut button: SYSTEM (SETUP section)						

◆ **[Setup] - [Data Backup] menu**



Folder Button					Item	Setting	Refer to
Setup	Data Backup	All Backup	-	-	Store All Data	USB	4-5 18-2
			-	-	Recall All Data	USB	
					All Data Clear	OU	
		System Backup	-	-	Store System Data	USB	
					Recall System Data	USB	
					System Data Select	0 - 9	
					System Data Clear	USB	
		File Backup	-	-	Store File Data	USB	
					Recall File Data	USB	
					File Data Type	Still. Seuence	
					Clear File Data	OU, USB	
Shortcut button: SYSTEM (SETUP section)							

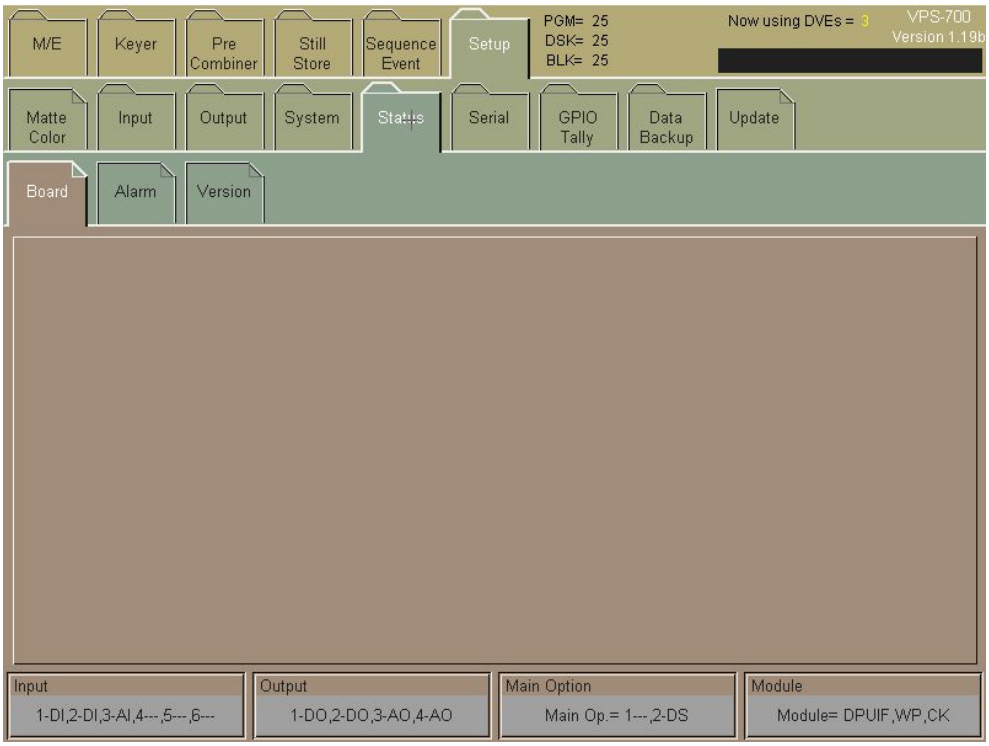
■ **[Setup] - [Update] menu**

Folder Button					Item	Setting	Refer to
Setup	Update				OU update	-	18-3
					DPU Calibration	-	
					Firmware Update	SDI1-4, GENLOCK, Main1,2, DVE Sub1,2 CPU1,2 AI_3_3-4, AI_4_1-2, Out1,2, FR1,2	
					Cursor	On,Off	

Folder Button					Item	Setting	Refer to
Setup	Update				OU update	-	18-3
					DPU Calibration	-	
					Firmware Update	SDI1-4, GENLOCK, Main1,2, DVE Sub1,2 CPU1,2 AI_3_3-4, AI_4_1-2, Out1,2, FR1,2	
					Cursor	On,Off	
Shortcut button: SYSTEM (SETUP section)							

2-9. Status menu

◆ **[Setup] - [Status] menu**



Folder Button					Item		Refer to
Setup	Status	Board (Installed option module)	-	-	Input		4-6 4-7 18-4-1
					Output		
					Main Option		
					Module		
		Alarm	-	-	Power Supply Unit	Single Dual	18-4-2
					Power Alarm	PS1 Status PS2 Status	
					Fan Alarm	FAN1 Status FAN2 Status	
		Version	-	-	CPU firmware version		18-4-3
					Target Field	Odd, Even, Any	
Shortcut button: STATUS (SETUP section)							

Appendix 3. Pattern List

3-1. WIPE Pattern List

									
000	001	002	003	004	005	006	007	008	009
									
010	011	012	013	014	015	016	017	018	019
									
020	021	022	023	024	025	026	027	028	029
									
030	031	032	033	034	035	036	037	038	039
040		042	043	044	045	046	047	048	
					065	066	067	068	069
070	071	072	073	074	075	076	077	078	079
080	081	082	083	084	085	086	087	088	089
090	091	092	093	094	095	096	097	098	099
100	101	102	103	104	105	106	107	108	109
110	111	112	113	114					

3-2. 2.5D (2D & Basic 3D) DVE Pattern List

When specifying a DVE effect number from an editor, add 200 to the original pattern number.

CW: Clockwise
CCW: Counter Clockwise

 Push Single	 Push Single	 Push Single	 Push Single	 Push Single	 Push Single	 Push Single	 Push Single	 Compress	 Compress
000	001	002	003	004	005	006	007	008	009
 Compress	 Compress	 Compress	 Compress	 Compress	 Compress	 Compress	 Compress	 Compress	 Compress
010	011	012	013	014	015	016	017	018	019
 Door	 Door	 Door	 Door	 Corner Rotate	 Corner Rotate	 Corner Rotate	 Corner Rotate	 Compress and Moving	 Compress and Moving
020	021	022	023	024	025	026	027	028	029
 Compress and Moving	 Compress and Moving	 Flying Carpet	 Compress on Middle POS	 Compress on Middle POS	 Compress on Middle POS	 Compress on Middle POS	 Move and Rotate CW	 Move and Rotate CW	 Move and Rotate CW
030	031	032	033	034	035	036	037	038	039
Move and Rotate CW	Move and Rotate CW	Move and Rotate CCW	Move and Rotate CCW	Move and Rotate CCW	Move with Twist CW	Move with Twist CW	Move with Twist CW	Move with Twist CW	Dual Push
040	041	042	043	044	045	046	047	048	049
Dual Push	Dual Push	Dual Push	Compress and Zoom	Compress and Zoom	Compress and Zoom	Compress and Zoom	Compress and Zoom on Middle Pos	Compress and Zoom on Middle Pos	Compress and Zoom on Middle Pos
050	051	052	053	054	055	056	057	058	059
Compress and Zoom on Middle Pos	Compress and Zoom on Corner Pos	Compress and Zoom on Corner Pos	Compress and Zoom on Corner Pos	Compress and Zoom on Corner Pos	Move with Twist CCW	Move with Twist CCW	Move with Twist CCW	Move with Twist CCW	Rotate and Contract
060	061	062	063	064	065	066	067	068	069
Rotate and Contract	Rotate and Contract	Rotate CW	Rotate CW	Rotate CW	Rotate CCW	Rotate CCW	Rotate CCW		
070	071	072	073	074	075	076	077		

3-3. 3D DVE (VPS-700Warp Option) Pattern List

When specifying a DVE effect number from an editor, add 200 to the original pattern number.

CW: Clockwise
CCW: Counter Clockwise

Ripple									
									
Hor Wave	Ver Wave	Rotate (Ⅰ) Wave	Rotate (Ⅱ) Wave	Rotate (Ⅰ) Wave Modify	Rotate (Ⅱ) Wave Modify	Star 6 Ripple	Star 8 Ripple	Star 8 Ripple Random	Star 16 Ripple
100	101	102	103	104	105	106	107	108	109
									
Star 6 Ripple Modify	Circular Ripple	Circular Ripple Triangle	Circular Ripple Random	Circular Ripple Modify					
110	111	112	113	114					

Swirl									
									
Swirl Clock	Swirl Inv Clock								
115	116								

Mosaic									
									
Mosaic Normal	Mosaic Rotate								
117	118								

Slats									
									
Stats Hor	Slats Ver	Slats HV	Slats Rotate	Slats Rotate	Slats HV Rotate				
119	120	121	122	123	124				

Lens									
									
Circular Round	Circular Round	Circular Round	Circular Round	Circular Round	Circular Linear	Circular Linear	Circular Linear	Circular Linear	Circular Linear
125	126	127	128	129	130	131	132	133	134
									
Circular Multi	Circular Multi	Circular Multi	Circular Multi	Circular Multi	Polygon Round	Polygon Round	Polygon Round	Polygon Round	Polygon Round
135	136	137	138	139	140	141	142	143	144
									
Polygon Linear	Polygon Linear	Polygon Linear	Polygon Linear	Polygon Linear	Polygon Multi	Polygon Multi	Polygon Multi	Polygon Multi	Polygon Multi
145	146	147	148	149	150	151	152	153	154
									
Circular Round Modify	Circular Round Modify	Circular Round Modify	Circular Round Modify	Circular Round Modify	Circular Linear Modify	Circular Linear Modify	Circular Linear Modify	Circular Linear Modify	Circular Linear Modify
155	156	157	158	159	160	161	162	163	164
Circular Multi Modify	Circular Multi Modify	Circular Multi Modify	Circular Multi Modify	Circular Multi Modify	Polygon Round Modify	Polygon Round Modify	Polygon Round Modify	Polygon Round Modify	Polygon Round Modify
165	166	167	168	169	170	171	172	173	174
Polygon Linear Modify	Polygon Linear Modify	Polygon Linear Modify	Polygon Linear Modify	Polygon Linear Modify	Polygon Multi Modify	Polygon Multi Modify	Polygon Multi Modify	Polygon Multi Modify	Polygon Multi Modify
175	176	177	178	179	180	181	182	183	184

Page Turn									
									
Turn	Turn	Turn	Turn	Roll	Roll	Roll	Roll	Turn	Turn
185	186	187	188	189	190	191	192	193	194
									
Turn	Turn	Roll	Roll	Roll	Roll	Turn	Roll	Turn	Roll
195	196	197	198	199	200	201	202	203	204
									
Multi Turn	Multi Roll	Multi Stagger	Multi Spiral 90°	Multi Spiral 180°	Multi Spiral 270°	Multi Spiral 360°	Multi Inv Spiral 90°	Multi Inv Spiral 180°	Multi Inv Spiral 270°
205	206	207	208	209	210	211	212	213	214
									
Multi Inv Spiral 360°	Multi Stagger Spiral 90°	Multi Stagger Spiral 180°	Multi Stagger Spiral 270°	Multi Stagger Spiral 360°	Multi Inv Stagger Spiral 90°	Multi Inv Stagger Spiral 180°	Multi Inv Stagger Spiral 270°	Multi Inv Stagger Spiral 360°	
215	216	217	218	219	220	221	222	223	

Page Peel									
									
Page Peel	Page Peel	Page Peel	Page Peel	Page Peel	Page Peel	Page Peel	Page Peel		
224	225	226	227	228	229	230	231		

Split									
Split	Split	Split	Split	Split	Split	Split	Split	Split	Split
232	233	234	235	236	237	238	239	240	241
Multi Split	Multi Split	Multi Split	Multi Split	Multi Split	Multi Split	Multi Split	Multi Split		
242	243	244	245	246	247	248	249		

Kaleidoscope		Defocus							
Kaleidoscope Inv Clock	Kaleidoscope Clock	Defocus							
250	251	252							

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V

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Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

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FOR-A COMPANY LIMITED

Head Office : 3-8-1 Ebisu, Shibuya-ku, Tokyo 150-0013, Japan
Overseas Division Phone: +81 (0)3-3446-3936, Fax: +81 (0)3-3446-1470
Japan Branch Offices : Osaka/Okinawa/Fukuoka/Hiroshima/Nagoya/Sendai/Sapporo
R&D/Production : Sakura Center/Sapporo Center

FOR-A America Corporate Office

11125 Knott Ave., Suite #A, Cypress, CA 90630, USA
Phone: +1 714-894-3311 Fax: +1 714-894-5399

FOR-A America East Coast Office

Two Executive Drive, Suite 670, Fort Lee Executive Park, Fort Lee NJ 07024, USA
Phone: +1 (201) 944-1120 Fax : +1 (201) 944-1132

FOR-A America Distribution & Service Center

2400 N.E. Waldo Road, Gainesville, FL 32609, USA
Phone: +1 352-371-1505 Fax: +1 352-378-5320

FOR-A Corporation of Canada

346A Queen Street West, Toronto, Ontario M5V 2A2, Canada
Phone: +1 416-977-0343 Fax: +1 416-977-0657

FOR-A Latin America & the Caribbean

5200 Blue lagoon Drive,
Suite 760, Miami, FL 33126, USA
Phone: +1-305-931-1700 Fax: +1-305-264-7890

FOR-A UK Limited

UNIT C71, Barwell Business Park, Leatherhead Road, Chessington Surrey, KT9 2NY, UK
Phone: +44 (0)20-8391-7979 Fax: +44 (0)20-8391-7978

FOR-A Italia S.r.l.

Viale Europa 50 20093, Cologno Monzese (MI), Milan, Italy
Phone: +39 02-254-3635/6 Fax: +39 02-254-0477

FOR-A Corporation of Korea

801 Dangsan Bld., 53-1 Dangsan-Dong, Youngdeungpo-Gu, Seoul 150-800, Korea
Phone: +82 (0)2-2637-0761 Fax: +82 (0)2-2637-0760

FOR-A China Limited

708B Huateng Building, No. 302, 3 District, Jinsong, Chaoyang, Beijing 100021, China
Phone: +86 (0)10-8721-6023 Fax: +86 (0)10-8721-6033