INNOVATIONS IN VIDEO and AUDIO TECHNOLOGY

Released: 05/21/2008

FOR-A Co., Ltd.

VPS-715OU

Important Note On USB Memory

Do not power on VPS-715OU **with a USB flash memory** inserted in the USB port of VPS-715OU.

If VPS-715OU is powered on with a USB memory inserted by mistake, VPS-715OU 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-715OU.

FOR.A®
INNOVATIONS IN VIDEO
and AUDIO TECHNOLOGY

OPERATION MANUAL

VPS-715 MU

Video Production System

VPS-715 OU

Operation Unit

2nd Edition – Rev.1

FOR-A COMPANY LIMITED

Edition Revision History

Edit.	Rev.	Date	Description	Section
1	-	2007-10-31		
1	1	2007-12-12	Added explanation for Auto Key.	9-4-1
1	2	2008-4-4	Changed file management description Changed flash recorder (option) description Changed OU cleaning and backing up description Corrected other factual errors	4-5 14 18-2
1	3	2008-5-31	Changed MU rear panel illustration	2-4
2		2009-12-18	Added information about setting graphic Wipes with Flash Recorder (option). Changed the title of section 18-2 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 18-2 18-4-4 5, 7, 8
2	1	2010-2-1	Added a comment on Local Position menu description Corrected other errors	11-3-1

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.

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.

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	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.

[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.

[Rubber Feet]

 Caution	If this product has come with rubber feet attached by screws, do not insert the screws again without rubber feet after removing the rubber feet and screws. It may cause damage to the internal circuits or components of the unit. To install the rubber feet again to the unit, do not use other than the supplied rubber feet and screws.

Upon Receipt

Unpacking

The VPS-715 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-715 MU	1	VPS-715 main unit
AC Cord	2	For AC power connection
Rack Mount Brackets	1 pr.	For rack mounting to EIA standard rack

OU Box Contents

VPS-715OU	1	VPS-715 operation unit
Control Cable	1	For connection between MU and OU, UTP5eX-10B (RJ-45, 10Base-T/100Base-TX, Category 5, Cross-over cable), 10m
AC Cord	2	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) (Two slots are available for VPS-70DS or/and VPS-70FR installation.)
VPS-70FR	1-2	Flash recorder card (max. 2 cards) (Two slots are available for VPS-70DS or/and VPS-70FR installation.)
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 the installations, refer to sections 4-6 and 4-7 to setup analog inputs and / or outputs.

External Options and Devices

VPS-70DPUA	1	Touch Panel Display Unit
HVS-AUX8/16/32	1	Auxiliary control unit
Control cable	1	For connecting VPS-715 and HVS-AUX unit (PC-3168-1, 10m)
Control cable	1	For connecting VPS-715 and Virtual device (RS-422A cable)

Refer to sections 3-3 and 4-8 for HVS-AUX connection and setup. See the HVS-AUX unit's 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-715 can be mounted to EIA standard rack units. When rack mounting a unit, use the supplied rack mount brackets (rack ears).

Table of Contents

1. Prior to Starting

1-1. Welcome

Congratulations! By purchasing the VPS-715 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 augmented 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-715 Overview

FOR-A VPS-715 1.5M/E switchers are versatile, cost-effective and integrated solutions that support SDI SDTV video signals. The VPS-715, an enhanced version of the former VPS-700, adds KEY/AUX bus and P/P PGM/PST buses that enable even easier operation and production of multi-layered images. The addition of P/P PGM/PST buses provides the capability of recalling various complex images that are produced with a background and four keyers on the M/E buses with creative CUT, MIX, WIPE, or Basic 3D DVE (capable of rotation, resizing and positioning) transitions. Also, the keyer edge generator has four types of optional edges, such as standard, shadow, outline and extrude.
The optional Warp module can add up to 6 channels of versatile 3D-DVE and two light sources to each channel. The shader architecture used in this warp card will enable us to provide even more DVE patterns in the future.
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. The capability of storing still images by capturing video snapshots and by downloading images from USB devices offers you a wide variety of still images.
The optional DVE cards allow assignment of DVE combined signals to M/E bus as primary signals or key sources, and make VPS-715 M/E switchers function as advanced layer switchers. With the optional Flash Recorder card, uncompressed key fill and key source signals can be stored in flash memory that retains data even after powering off, and the stored data can be instantly used without reloading. In addition, an optional touch panel LCD provides users with intuitive control.

- The standard system configuration provides 8 SD-SDI inputs. Up to 16 inputs can be added in groups of 4 including video signals and key signals. The expansion slots can also be used for installing a combination of 8 or 12 SD-SDI inputs and 2,4,6,or 8 analog inputs up to a combined total of 16 inputs.
- The standard system configuration provides 8 SD-SDI outputs. Up to 16 outputs can be added in groups of 4. The expansion slots can also be used for installing a combination of 8 or 12 SD-SDI outputs and 2 or 4 analog outputs, up to a combined total of 14 outputs. All outputs are freely assignable. At the factory default, the 4 outputs on Card 1 are set to PGM1, PGM2, PVW, and Clean PGM. The outputs on Card 2 and optional cards can be set to M/E PGM, M/E PVW, Aux1, and AUX2 from the menu.
- 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 Edge/ shadow generator of keyers can produce various types of borders such as Edge, Shadow, Outline, and Extrude.
- The reference input accepts a black burst signal. Two reference outputs are available.
- Two lines of still store are available on the M/E bus. By downloading a 32-bit TGA image with the alpha channel, the still store can handle the image with a key with one line (for Fill and Key) instead of two lines . Because it is not necessary to divide Fill and Key, management and operation are simplified. Also, still images can be output using the frame memory of each input channel. When a still image is stored onto frame memory, Live channel's input cannot be output.
- 8 GPI inputs and 24 Tally outputs are provided and each assignment can be modified.
- CUT, MIX, WIPE and DVE transitions are available for the M/E bus. (FAM and NAM are also available for BKGD.) CUT and MIX transitions are available for the P/P bus and DSKs.
- Borders can be applied to both the inside and outside of DVE images. A bevel-edged border is also available in addition to the standard border.
- 4 matte colors independent from the border color are available.
- Optional 4:4:4 chroma keys are available for 6 lines (one for each keyer) .
- An optional module enables addition of warp and light effects to the starndard Basic3D-DVE. The module provides six warp engines and enables various effects to be combined with the basic DVE.
- By installing an optional DVE Input Card, Basic3D-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. Therefore, in the standard 8-input configuration, the assigned Combiner A/B (16 lines,i.e. 8 inputs times 2) can be previewed with one DVE input card. Since up to 2 cards can be installed, DVE can be assigned to all Combiner A/B inputs.
- Optional Flash Recorder card is available. Up to a total of two Flash Recorder cards and DVE cards can be installed 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, trigger play mode in which playback is controlled by buttons and fader lever, and others.
- An optional SVGA (800 x 600) LCD touch panel is available. The user-friendly graphical user interface on the LCD display enables users to select the menus intuitively and directly from the menu hierarchy without displaying the menus on the VFD display one-by-one.

1-3. About This Manual

This manual is intended to help users easily operate the VPS-715 and make full use of its functions during operations. Before connecting or operating your unit, read this operation manual thoroughly to ensure that you understand the product. After reading it, you are advised to keep this manual in a safe place and readily available for reference.

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

- Boxed 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.

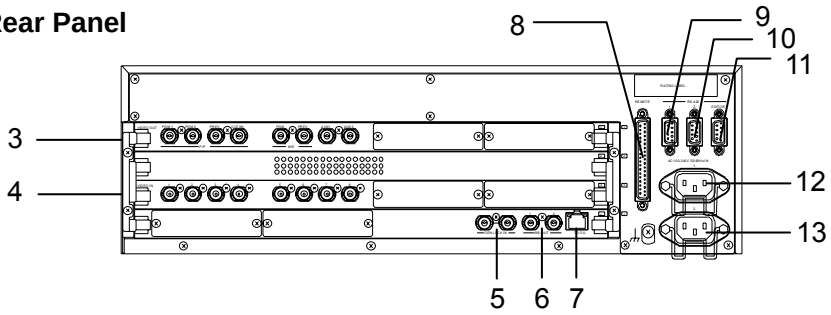
2. Panel Description

This section describes the locations and general functions of the controls, switches and connectors on the VPS-715 main unit and VPS-715 operation unit.

2-1. VPS-715 MU

◆ **Front Panel**

◆ **Rear Panel**

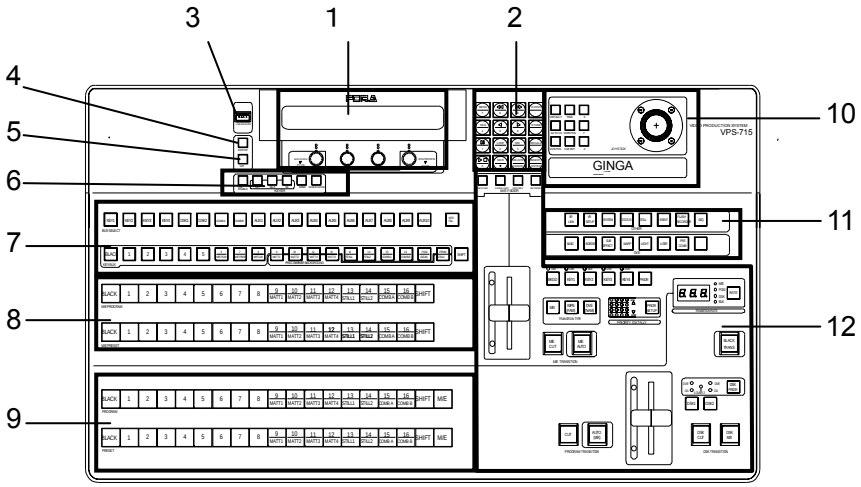


No.	Name	Description
1	Power1 indicator Power1 switch	Power1 indicator lights up green whenever the power1 switch is set to ON and power is applied to the unit through AC IN 1.
2	Power2 indicator Power2 switch	Power2 indicator lights up green whenever the power2 switch is set to ON and power is applied to the unit through AC IN 2.
3	VIDEO OUT	For SD-SDI video output signal connection. 2 Program, 1 each Preview, Clean, M/E Program, and M/E Preview and 2 Auxiliary outputs in the standard configuration. Additional up to 8 Auxiliary outputs are optional.
4	VIDEO INPUT	For SD-SDI video input signal connection. 8 primary standard inputs. Additional up to 8 inputs are optional.
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 no loopthrough output, 75 ohm termination is required.
6	REF 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	Used to supply AC power to POWER1 via supplied cable.
13	AC IN 2	Used to supply AC power to POWER2 via supplied cable.

2-2. Operation Unit

2-2-1. Control Panel

Buttons, indicators and other operational tools located on the front panel of the VPS-715 OU units are as shown and described in the figure and table below.

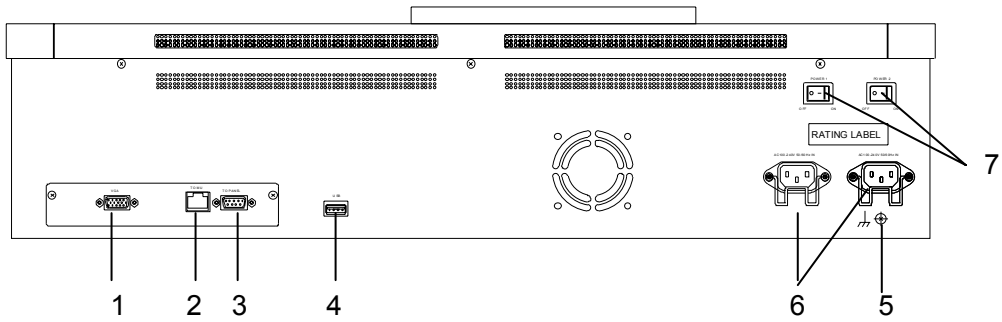


No.	Name	Description
1	Menu display / menu controls	Menu display where you can set parameters and controls to make selections. The display is in two lines.
2	Keypad and operation mode buttons	Menu, Event, Sequence operation mode buttons
		For number input / operational data adjustment.
		For event save / 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 (keyer DVE addition, signal and type selection and mask, edge and shadow settings).
7	BUS SELECT, Key/Aux bus	For bus selection for keyer, pre-combiner, Aux outputs and I/O.
8	M/E bus for background	For background signal source selection for 1M/E.
9	P/P bus for background	For background signal source selection.
10	Joystick control section	For menu setting and auto chroma key setting.
11	DVE and OTHER sections	For bus selection to display menus.
12	Transition control section	For operating transitions of background and key layers.

IMPORTANT
This 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.

2-2-2. Rear Panel

Connectors and items located on the rear panel of the VPS-715 units are as shown below.

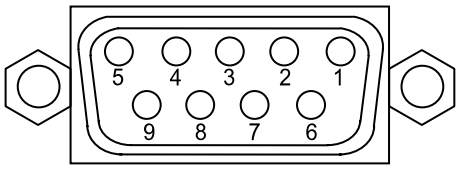


No.	Name	Description
1	VGA	For optional Touch Panel connection.
2	TO MU	For MU connection. (UTP5eX-10B, RJ-45, 10Base-T/100Base-TX, Cat5, Cross-over cable).
3	TO PANEL	For optional Touch Panel display connection. (RS232C, 9-pin D-sub, female)
4	USB	For USB device connection. (USB flash memory drive only, up to 2GB)
5	Ground Terminal	Used to ground unit for protection against electrical shock.
6	AC IN 1 AC IN 2	For AC input connection (AC100V-240V 50/60Hz).
7	Power switch 1 Power switch 2	Used to power ON/OFF.

IMPORTANT
This USB port can be used for USB flash memory drive only. Other USB devices are not recognizable.

2-3. Interfaces

◆ **EDITOR Connector**

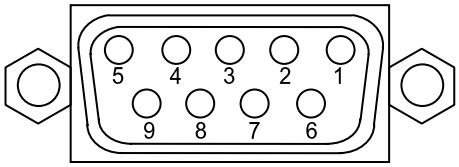


Pin Assignment Table (9-pin D-sub female)

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

◆ **RS-422 (1) (2) Connectors**



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

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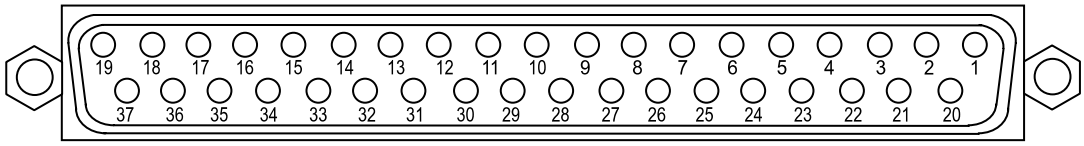
5	-	Not used
6	SG	Signal ground
7	R+	Receive data (+)
8	T-	Transmit data (-)
9	FG	Frame ground

Cable Connector;
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	PGM Auto Trans
31	GPI 2	PGM Cut Trans
32	GPI 3	DSK Auto Trans<Mix>
33	GPI 4	DSK Cut Trans
34	GPI 5	M/E Mix Type
35	GPI 6	M/E Wipe Type
36	GPI 7	M/E DVE Type
37	GPI 8	Black Trans

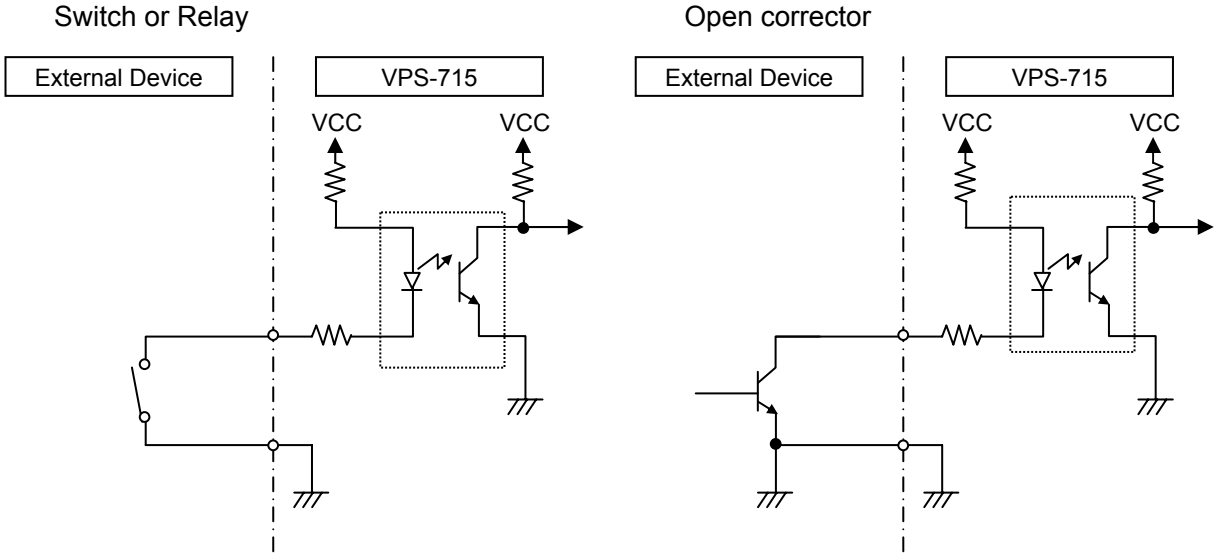
Cable connector

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

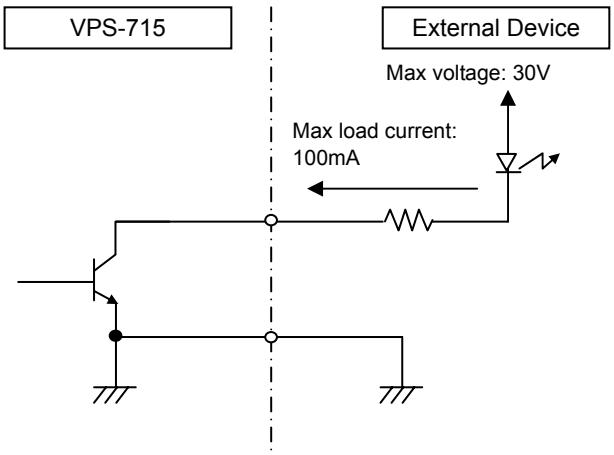
Freely Assignable Pins

The 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

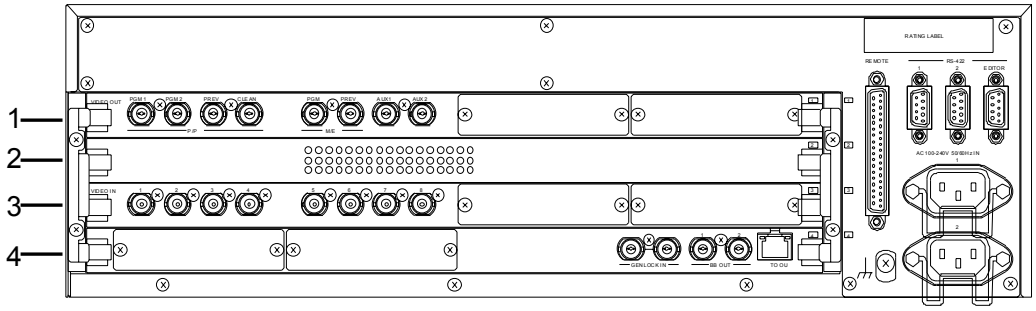


Tally Output Circuit



2-4. VPS-715 Card Configuration

The card configuration on the VPS-715 rear panel is as shown in the figure and the table below. The cards are secured by board stoppers. To remove cards from the main frame, the stoppers must be removed first.



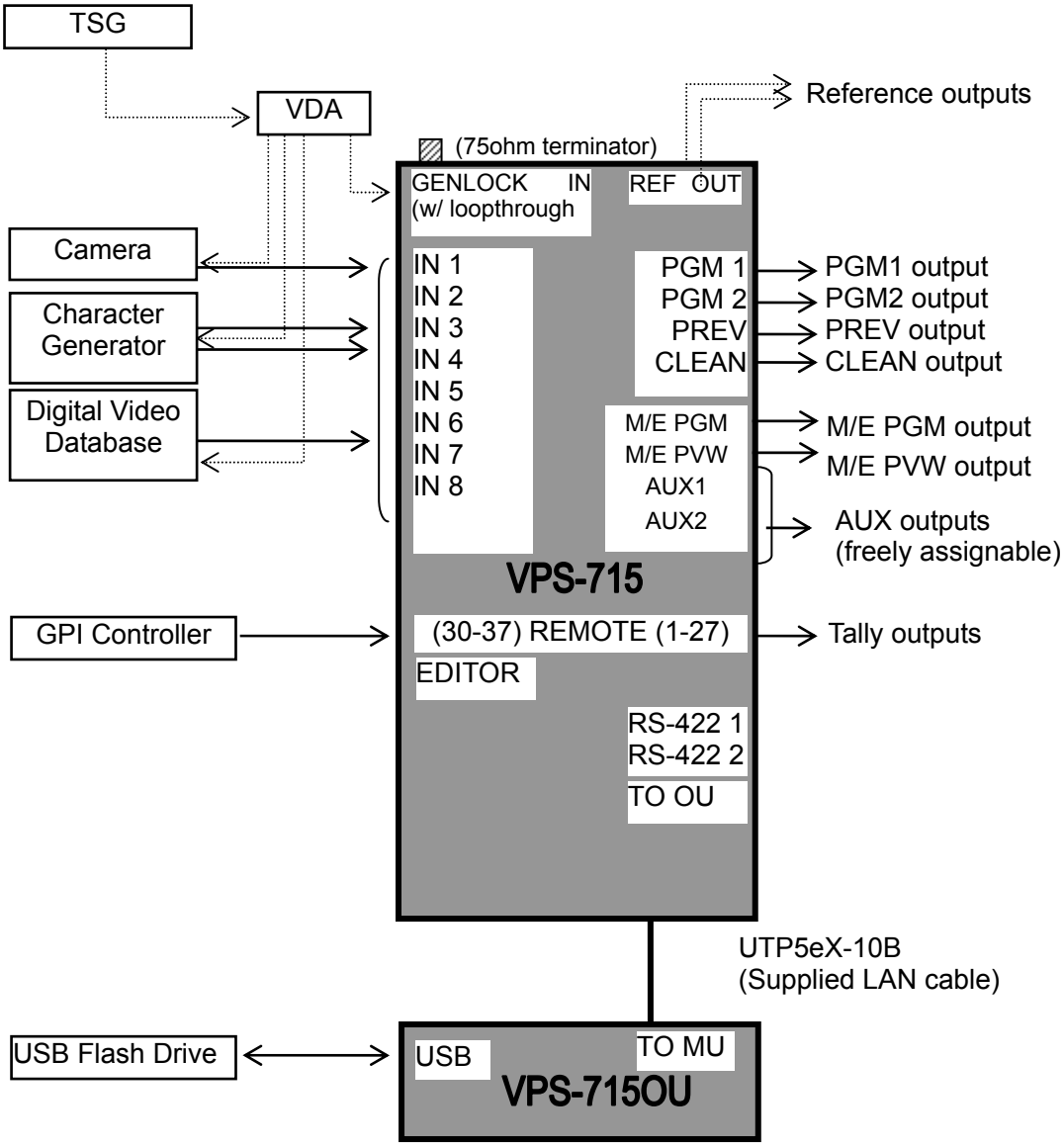
Slot designation (for slots placed in rows from top to bottom)

Row	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	Input DVE card with 16 channels. (Pre-combiner) (Max 2 cards) (Up to a total of two VPS-70DS and/or VPS-70FR can be installed.)
		VPS-70FR	Flash recorder card (Max 2 cards) (Up to a total of two VPS-70DS and/or VPS-70FR can be installed.)
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.
	Option		Chromakey module (Hardware dongle)
	Option		Advanced 3D DVE Warp module. (Hardware dongle)
	Option		Display Interface Module (Hardware dongle)

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

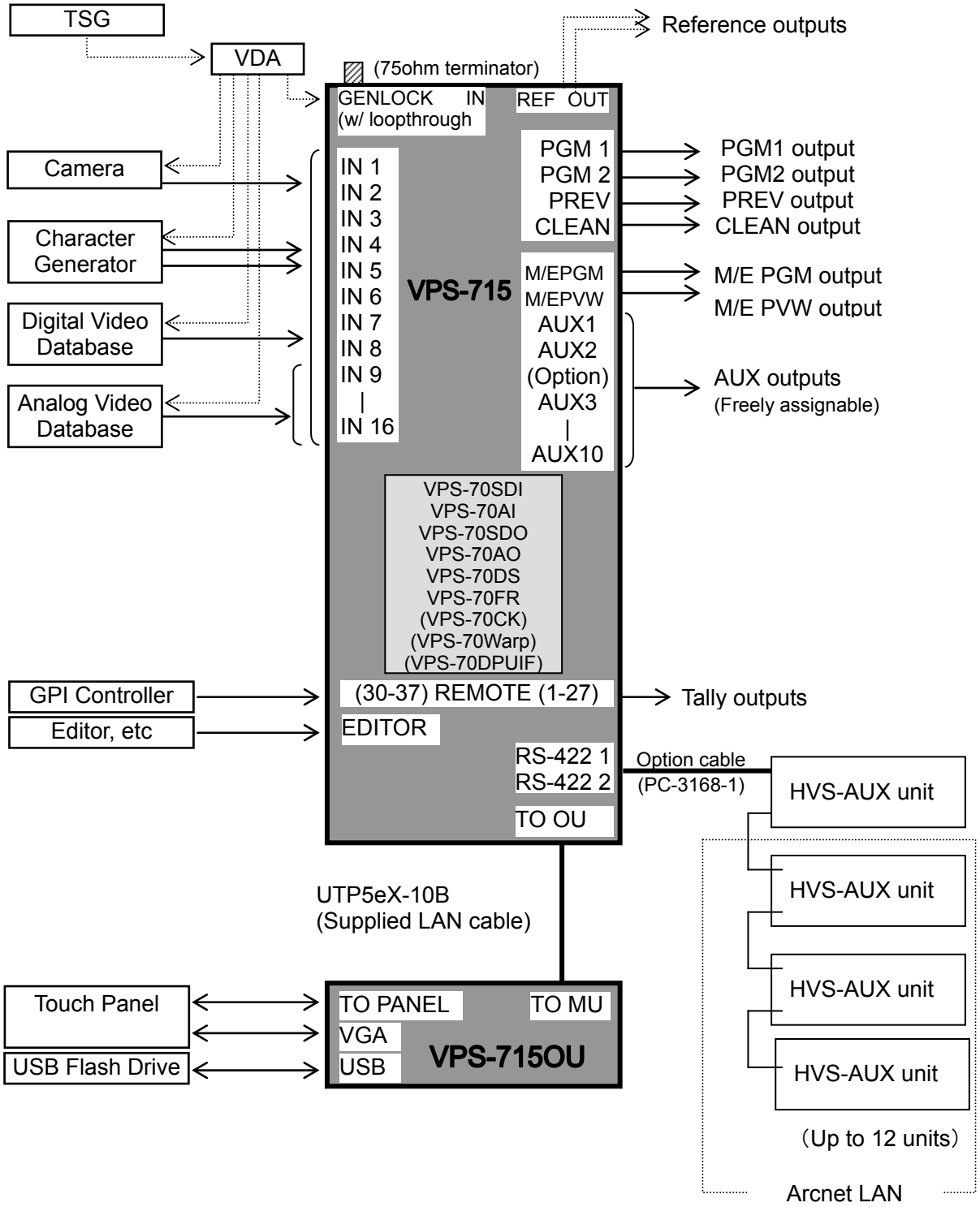
3. Connection and Setup

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
The HVS-AUX units to connect VPS-715 must have firmware version 3.00 or higher. Refer to section 4-8. “Connection Settings for Aux Output Control” to make communication settings with the auxiliary units on the VPS-715 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-715 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-715 to the master auxiliary unit:**

Connector on VPS-715: RS-422 (1) or (2) (9 pin D-sub, female)
Connector on HVS-AUX unit: CONTROL B (9 pin D-sub, female)
Connection cable: Optional control cable (PC-3168-1, Separate purchase)

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

Connector: CONTROL A, BNC with loopthrough (75Ω termination switch required)
Connection cable: BNC cable supplied with the auxiliary unit

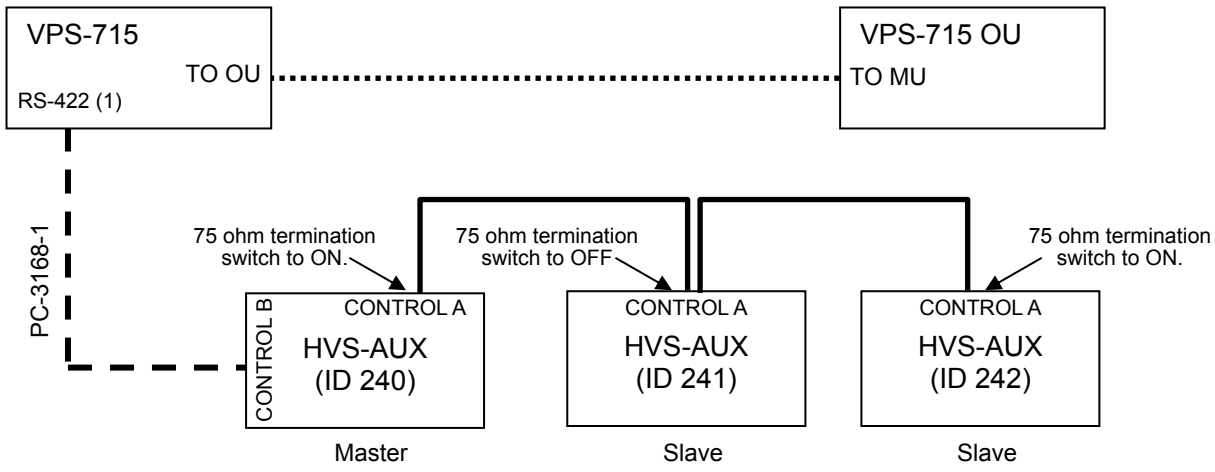
◆ **Arcnet Connection Requirements**

Connection cable	BNC (5C2V or higher performance)
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-715, verify that all cabling connections are secure and power supplies are properly connected.

IMPORTANT
If orange power LED is on, it is an alarm. Contact your distributor.

① Turn all units in the system ON.

② Set the two power switches on the VPS-715 front panel to ON. Each power indicator lights up green when power is supplied to the unit.

③ Set the two power switches on the VPS-715OU rear panel to ON.

④ When powered on, 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
  M/E=30      PGM=30      DSK=30      BLK=30
```

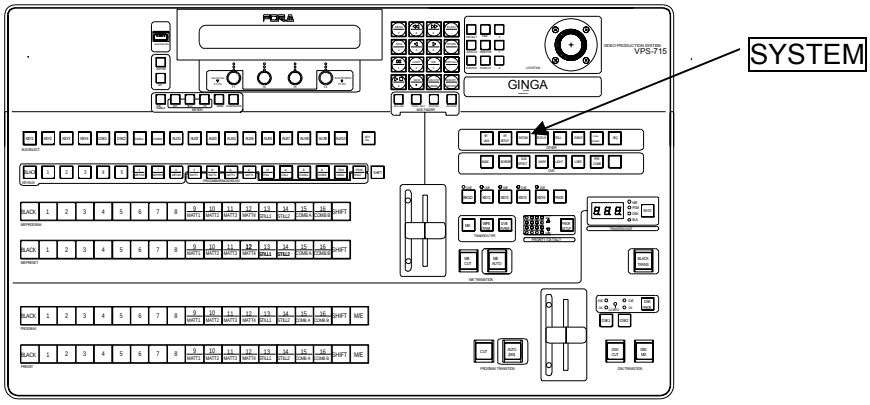
⑦ Move the two fader levers from end to end to adjust the fader position.

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".

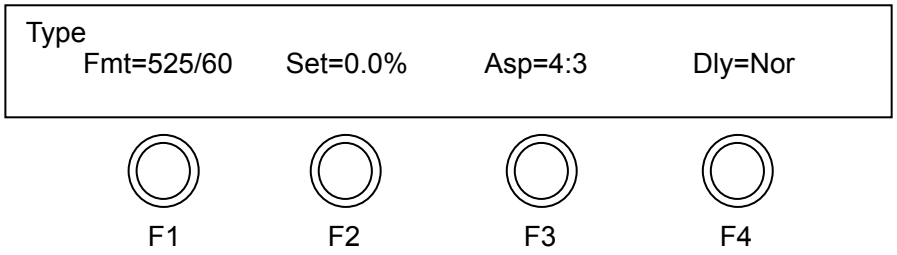
4-2. Selecting System Signal Format

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

① Press the SYSTEM button in the OTHER section 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 - 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-715, follow the procedure below to properly shutdown the system.

① Remove USB flash drive from panel.

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

Shutdown? F2: OK F3: CANCEL

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

Now closing…

④ The panel display changes as shown below when the VPS-715 can be properly turned off.

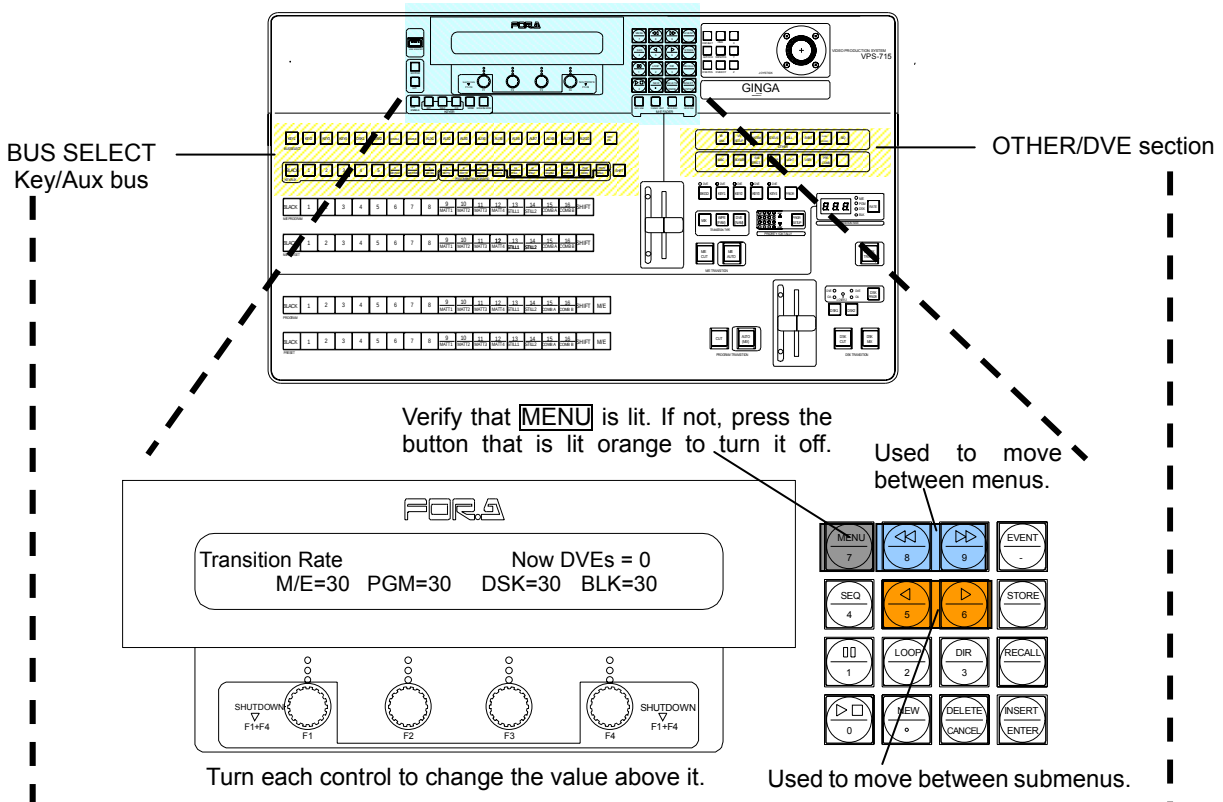
Data backup completed. OK to power off.

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

IMPORTANT
Be sure to follow the shutdown procedure when powering off the system. If you did not execute the shutdown procedure, 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 while saving data (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

This short chapter provides a quick overview of how to change settings using menus. Refer to section 5. "Menu Description" for more details.

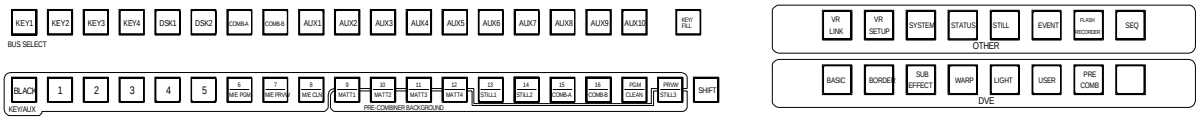


◆ **Menu Display and Changing Settings**

The submenu title is displayed at the top left of the window.
Up to 4 items are 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 within a Menu**

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

◁◁ ▷▷ Double-arrow buttons are used to move between menus.

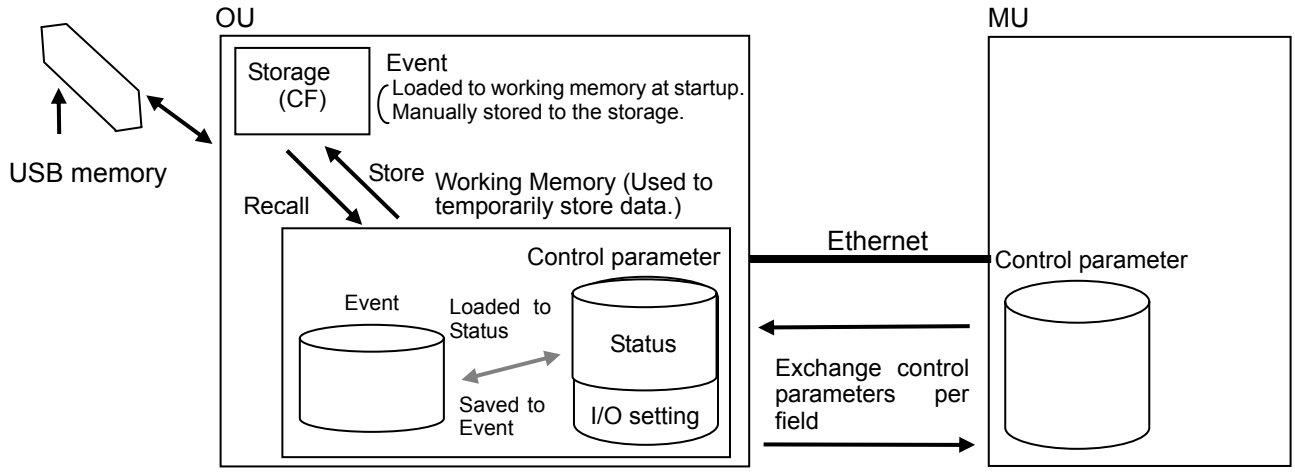
Verify that MENU is lit orange in the Kyepad section. If not, press the button that is lit orange (SEQ or EVENT) to turn it off. Then the MENU lights up, the keypad is set to the Menu mode and the arrow buttons above can be used for menu selection.

4-5. File Management

The VPS-715OU unit has a dedicated storage facility to save data. When the unit starts up, it reads the saved data in the storage area and loads it into working memory. Data can be manually loaded from and saved to the storage.

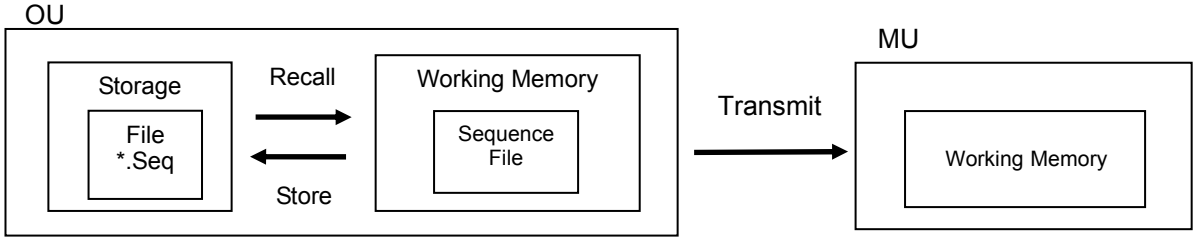
◆ **Basic operations**

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.



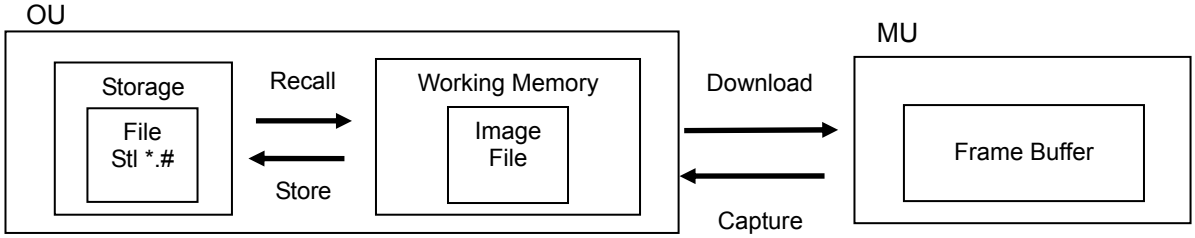
◆ **Sequence**

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.



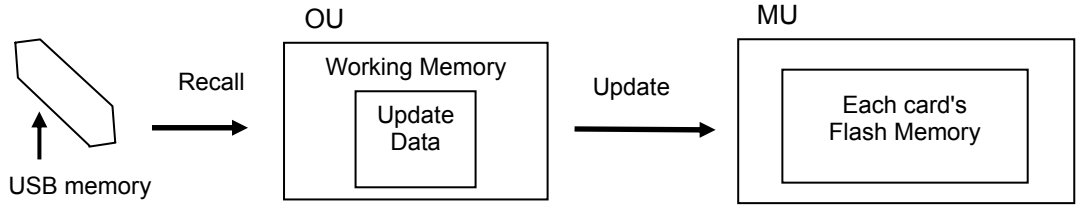
◆ **Still Store**

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 Directory Structure**

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

C	OS Application		
D	VPS-715.evt VPS-715.oud VPS-715.ini VPS-715.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 Directory Structure**

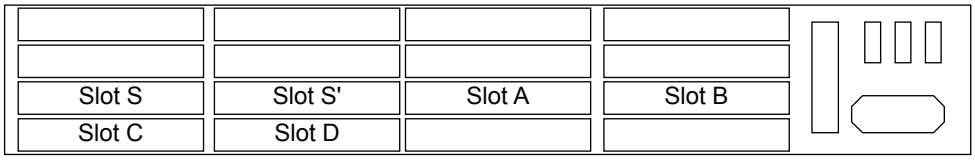
USB memory	VPS-715 *.evt VPS-715 *.oud	Event data Other setting data	} 10 groups [a≦ * ≦j]
Stl	Stl *.#	Still store data file	#: {jpg , tga , bmp} [00≦ * ≦99]
Seq	*.Seq	Sequence file	[00≦ * ≦99]

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, USB flash memories of over 2GB cannot be recognized by the file system.

4-6. Input Expansion Option

The VPS-715 comes with 8 digital video inputs (In01-In08) in the standard configuration. With optional cards (VPS-70SDI or VPS-70AI), 8 more digital or analog inputs can be added. See section 4-6-1. “Combinations of Input 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 Analog Inputs".

4-6-1. Combinations of Input Card Installations

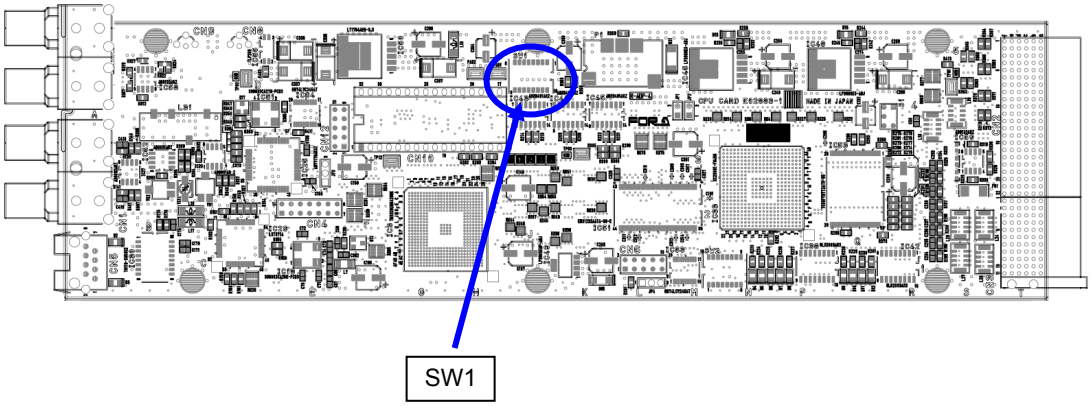


VPS-715 Rear Panel Slot Allocation

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 Analog 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. "Combinations of Input 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).

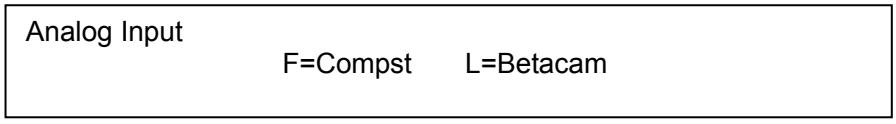
◆ **Analog Input Signal Settings**

① In the BUS SELECT section, press any one bus button from KEY 1 to KEY 4 or DSK 1, DSK 2 buttons. The selected buttons will light up.

② In the KEY/AUX bus section, double-click the bus button to which the input signal is assigned.

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.



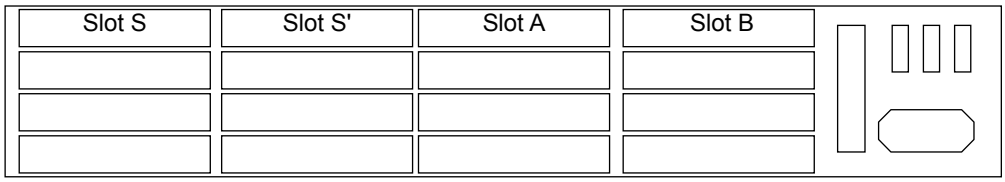
Item		Setting	Description
F	Video Format	Compst (Composite), Y,CB,CR (Component)	Used to select the analog video signal format. Y,CB,CR can only be assigned to In09, In11, In13, and In15.
L	Input Level	Betacam, SMPTE	Used to select the signal level when Video Format is set to Y,CB,CR.

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 is applied to both input and output signals.

4-7. Output Expansion Option

With the optional cards (VPS-70SDO or VPS-70AO), 8 more auxiliary outputs can be added. See section 4-7-1. “Combinations of Output Card Istallations” 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. Combinations of Output Card Istallations



VPS-715 Rear Panel Slot Allocation

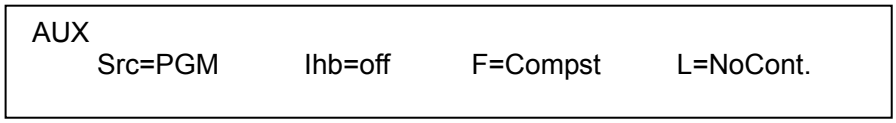
Slot				Number of Outputs			Digital Output	Analog Output	
Standard		Option							
S	S'	A	B	Digital	Analog	Total	Signal Name	Signal Name	Signal Type
SDO	SDO	-	-	SDI x 8	-	8	Program1-2 Prev, Clean, M/E PGM, M/E PVW, Aux1-2		-
SDO	SDO	SDO	-	SDI x 12	-	12	Program1-2 Prev, Clean, M/E PGM, M/E PVW, Aux1-6		-
SDO	SDO	SDO	SDO	SDI x 16	-	16	Program1-2 Prev, Clean, M/E PGM, M/E PVW, Aux1-10		-
SDO	SDO	AO (3,4)	-	SDI x 8	A x 2	10	Program1-2 Prev, Clean, M/E PGM, M/E PVW, Aux1-2	Aux 3	Composite, Y,CB,CR or GBR
								Aux 4	Composite
SDO	SDO	AO (3,4)	AO (5,6)	SDI x 8	A x 4	12	Program1-2 Prev, Clean, M/E PGM, M/E PVW, Aux1-2	Aux 3, Aux 5	Composite, Y,CB,CR or GBR
								Aux 4, Aux 6	Composite
SDO	SDO	SDO	AO (7,8)	SDI x 12	A x 2	14	Program1-2 Prev, Clean, M/E PGM, M/E PVW, Aux1-6	Aux 7	Composite, Y,CB,CR or GBR
								Aux 8	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). AUX4, AUX6, and AUX8 can only be used as the analog composite outputs. AUX3, AUX5, and AUX7 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 In the BUS SELECT section, press an AUX button to display the [AUX] submenu.



② Select a source signal in the KEY/AUX bus section. See section 7-2-1. "Assigning Signals to Auxiliary Outputs" for details.

③ Go to the [Analog Output] submenu by using the single-arrow buttons in the Keypad section (while MENU is lit).

④ Turn F3 to select the analog video signal format. (Refer to the table below.) Turn F4 to select the signal level.

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 AUX3, AUX5, and AUX7. 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.

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 "System Setup".) 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 output control units.

① In the OTHER section, press the SYSTEM button to access the [SYSTEM] menu.

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

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

◆ **Protocol**

In the [Protocol] submenu, select HVS-AUX for the item 1.

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

◆ **Baudrate**

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

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

◆ **Parity**

In the [Parity] submenu, select 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 settings same as above for the second items in each submenu.

5. Menu Description

VPS-715 operational items are set in 2-line VFD display window menus. The following sub-sections explain the menu structure and how to access the menus 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 categolized in three groups. Effect menus, individual bus(signals) menus, and system or event menus (a set of settings). For the details on how to access menus, see section 5-3. "How to Access Menus". The foundamental structure of menus and the relation between menus and menu buttons are shown in the "Quick Reference of Menus" table below.

◆ **Effect (Transition) Setting Menus: Bus(Mix), Wipe, DVE**

The transition setting menus can be accessed by the transition buttons in the M/E TRANSITION section for the selected individual buses, such as background bus (BKGD), KEYs and DSKs.

DVE Modify menus can be accessed by the buttons in the DVE section for the selected buses.

◆ **Signal Setting Menus: Matte, Input, AUX, PVW Clean, Key**

These are the menus for signal assignments and format settings for input, output, matte and key signals. The menus are provided for each bus (signal) and can be opened when relevant bus is selected. How to select the bus differs depending on the type of signals.

◆ **Menus for System or Events: System, Status, Event, Sequence (& Options)**

These are the menus related to a whole system or group of settings, such as Date/Time, version information display, or saving a set of current settings of control panel. The menus are accessed directly from the buttons in the OTHER section.

◆ **Quick Reference of 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	Manual 1-2, Other, 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)
DVE (*2)	BASIC, BORDER, SUB EFF, WARP, LIGHT	BUS	DVE Modify	(See DVE menus.)

Button		Accessed menu	Accessed submenus
FADER LIMIT (*2)		Fader Limit	Fader Limit
KEY1 - 4 DSK1, 2	Matte1-4 (KEY/AUX)	Matte Color	Matte Color
	IN01-16 (KEY/AUX)	Input	FS Setting, Process Control 1, Process Control 2, Signal Setting, Remap Rename
AUX1-10 (BUS SELECT)		AUX	Aux, Preview Clean
SYSTEM		System	Type, Other, Serial, GPI, Tally, Data Backup, Update
STATUS		Status	Board Status, Alarm Status, Version (Target Field)
STILL		Still	Download, Capture, Export, Delete
SEQ (*3)		Sequence	Seq File, Seq Edit
EVENT (*3)		Event	Event Data, Event Target

(*1) AUTO CK button is in the joystick section.
(*2) MIX, WIPE, DVE, and FADER LIMIT buttons are in the transition section.
(*3) SEQ and EVENT buttons are in the Kyepad section and in the OTHER 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 Highlight 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
				Split	DVE Split 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

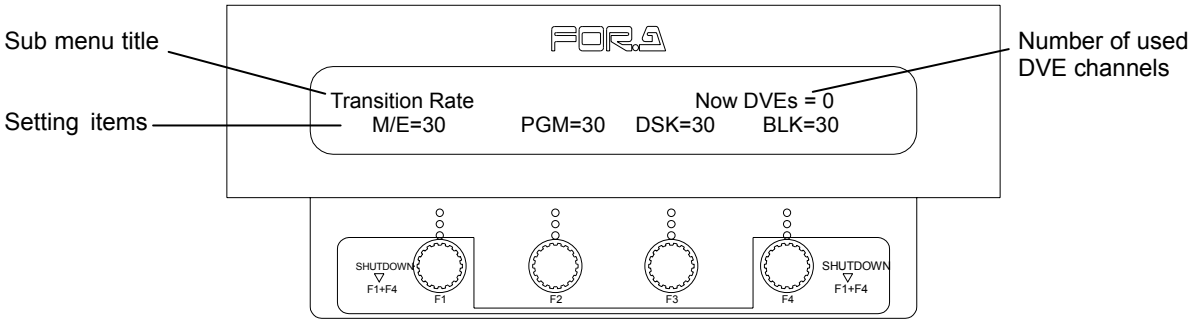
(*1) DVE in this submenu sets DVE key ON/OFF.

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 settings for M/E (M/E bus), PGM (Program), DSK and BLK (Black) items can be changed by turning controls F1 - F4, respectively.

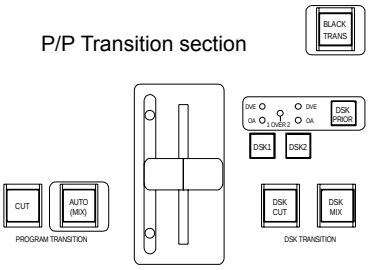
5-3. How to Access Menus

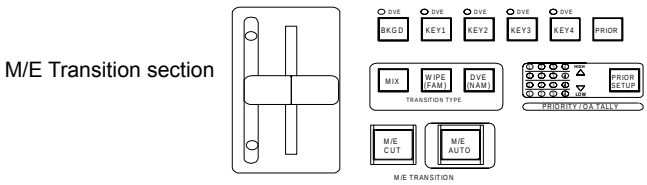
Menus, depending on their type, can be accessed in 3 different ways. These 3 procedures are:

1. Effect (Transition) Setting Menus: Bus(Mix), Wipe, DVE

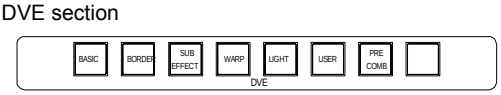
First, select a layer you want to set a transition using BKGD (background), KEY, and DSK buttons in the M/E or P/P Transition section, and then press the MIX, WIPE, or DVE transition button to access the menu.

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





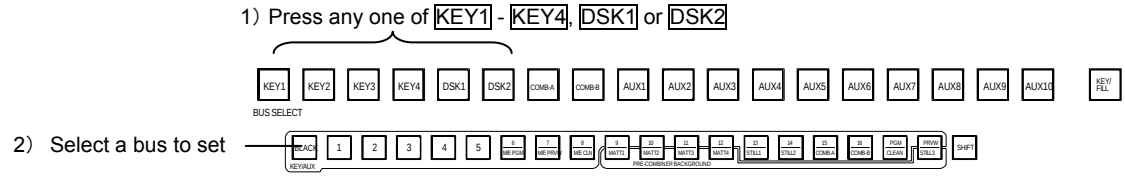
To access the **DVE Modify** menu, select a layer and then press menu buttons in the DVE section.



2. Signal Setting Menus：Selecting a bus to access a menu

2-1. Input, Matte

First press any one of KEY1 - KEY4, DSK1, or DSK2, then double-click the bus button to which changes will apply. To select Matte, press the SHIFT button at the right hand-side of the KEY/AUX bus section.



2-2. AUX, PVW Clean

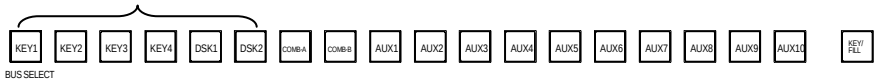
Press an AUX button to which changes should be applied in the BUS SELECT section. The PVW Clean menu can be accessed using single arrow buttons from the menu.

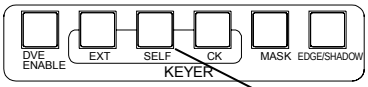
2-3. Key, DSK

Select a bus using KEY1 - KEY4, DSK1, or DSK2 buttons, 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.)

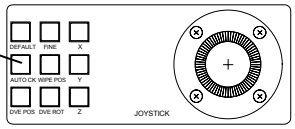
1）Select a bus using KEY1 - KEY4, DSK1, or DSK2.





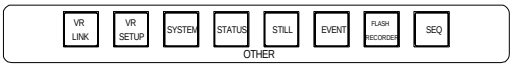
2）Select a key type.

2) Press AUTO CK.



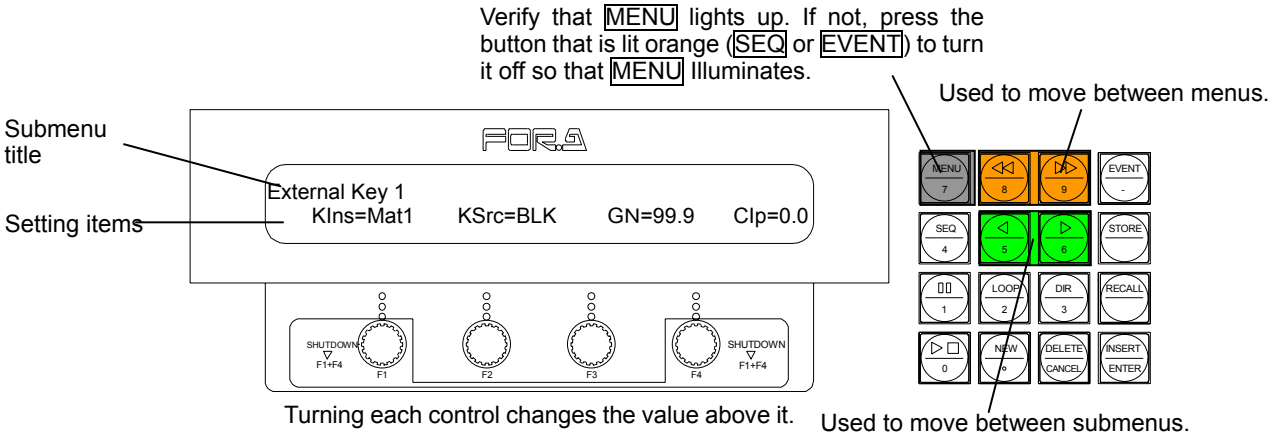
3. Menus for System or Events:

System, Status, Event, Sequence, Still, and Flash Recorder menus can be directly accessed using buttons in the OTHER 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 [External Key 1] is displayed as above, pressing the right single-arrow button in the Kyepad section lets you go to the next submenu, [External Key 2]. Pressing the right or left double-arrow buttons in the Kyepad section lets you go to the next submenu, [Self Key 1], or previous submenu, [Transition Rate].

◆ **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 KIns (key insert), KSrc (key source), GN (gain), or Clp (clip) displayed in the example above, turn the controls right beneath each item.

Function Control Operation

Operations	Description
Turn clockwise	Increases value.
Turn counterclockwise	Decreases value.
Press	Switches to keypad input. (For numerical values)
Press and hold down (at least one second)	Starts processing such as "Save", "Load", etc..
	Reset the item to the default value.

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.

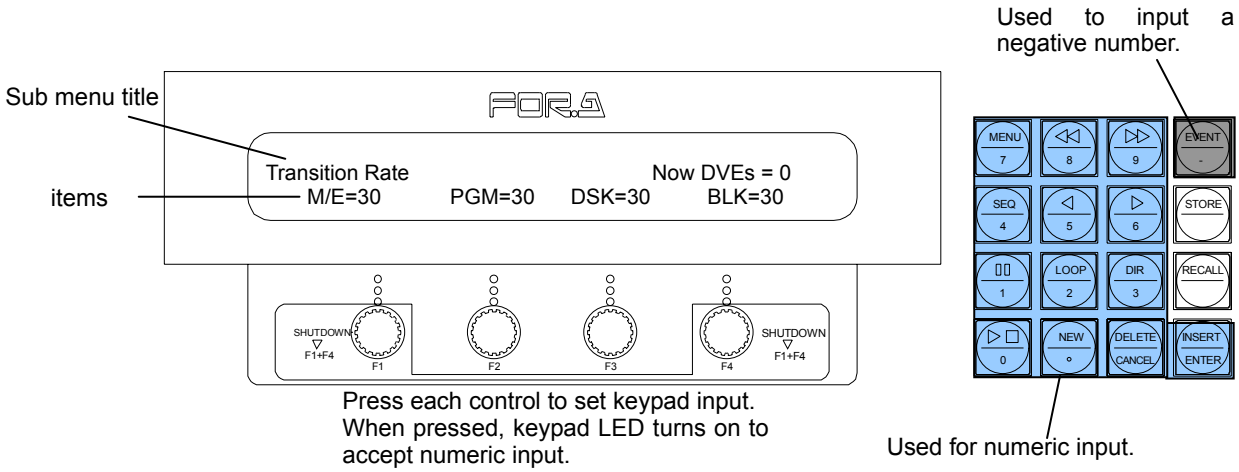
① Press a control (F1 - F4) to select an item you want to change the value of. The keypad LED turns on to accept numeric input.

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 the changes just made.
- The - button is used for setting negative values. To input a negative value, first input the number and then press the - button.

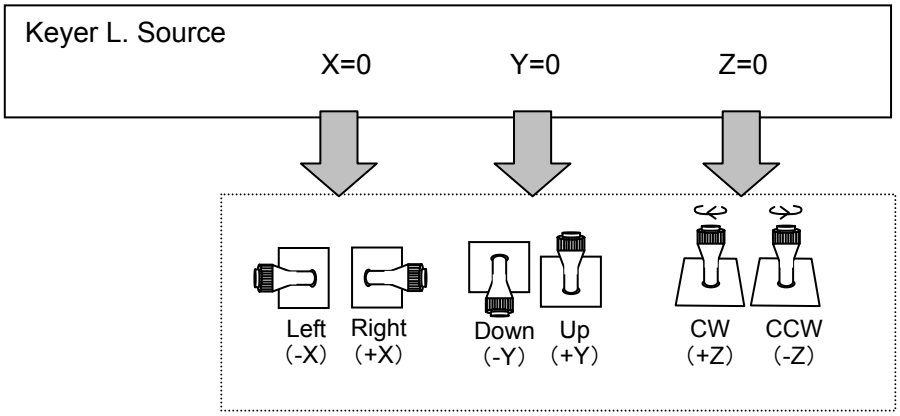


IMPORTANT
Only numerical values can be changed via the keypad. When pressing a control, press it lightly and release it within one second. Note that if you press and hold a control for more than one second, the setting is returned to its default setting. When the keypad is in the numeric input mode,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

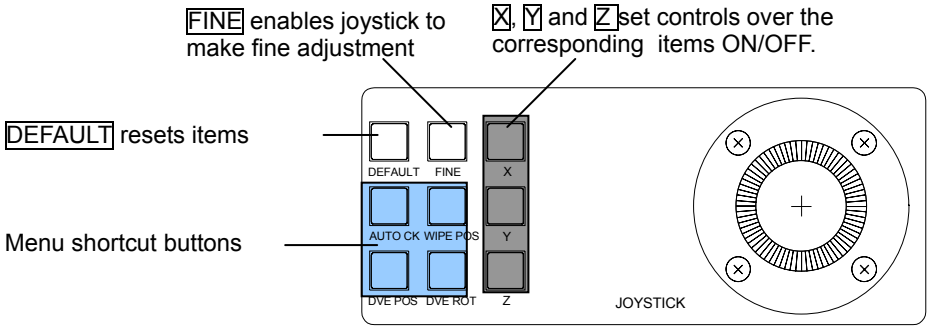


◆ **Additional Notes for Joystick Input:**

- 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	M/E 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)

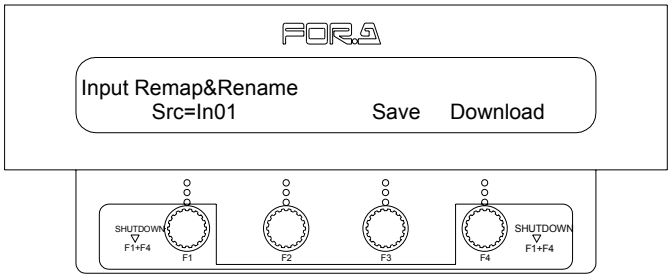
* The DVE POS button and DVE ROT button access the respective DVE Position and Rotation menus for the bus whose menu has been displayed when the button is pressed. For example, if either button is pressed when the KEY1 menu has been displayed, the KEY1 DVE Position or Rotation menu will be opened.



5-4. Resetting to Default

5-4-1. Using Menu Controls

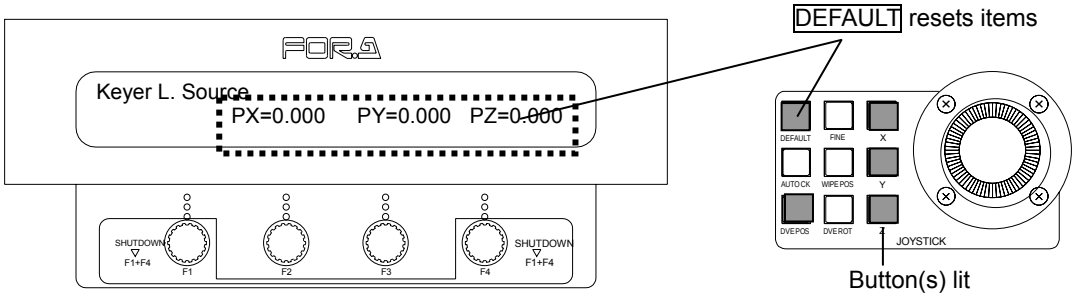
◆ **Returning Each Item to Default**
Pressing and holding down the F1, F2 , F3 , or F4 controls will return their associated numeric values to factory default.



Press and hold down the related control button.

5-4-2. Using Buttons in Joystick Section

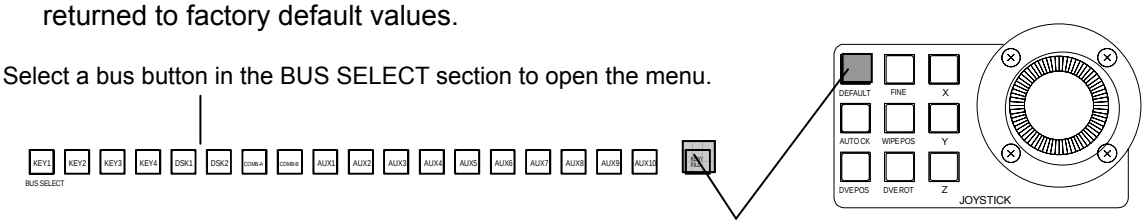
◆ **Returning X, Y and Z Items to Default**
Pressing the DEFAULT button with X, Y and/or Z lit resets the corresponding X, Y, and/or Z items to their factory default values.



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

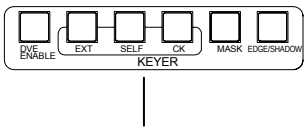
① Press the button in the BUS SELECT section to select a bus to reset the settings.

② Press KEY/FILL to be lit, then press DEFAULT. All settings for the selected bus are returned to factory default values.



Pressing KEY/FILL with DEFAULT pressed resets a menu.

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 KEYER section.



To turn off the button(s) in the DVE section, press a button in the KEYER section.

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-715 GUI version, the number of currently employed DVE channels, and the transition rates for M/E, PGM, DSK and BLK transitions are always displayed.

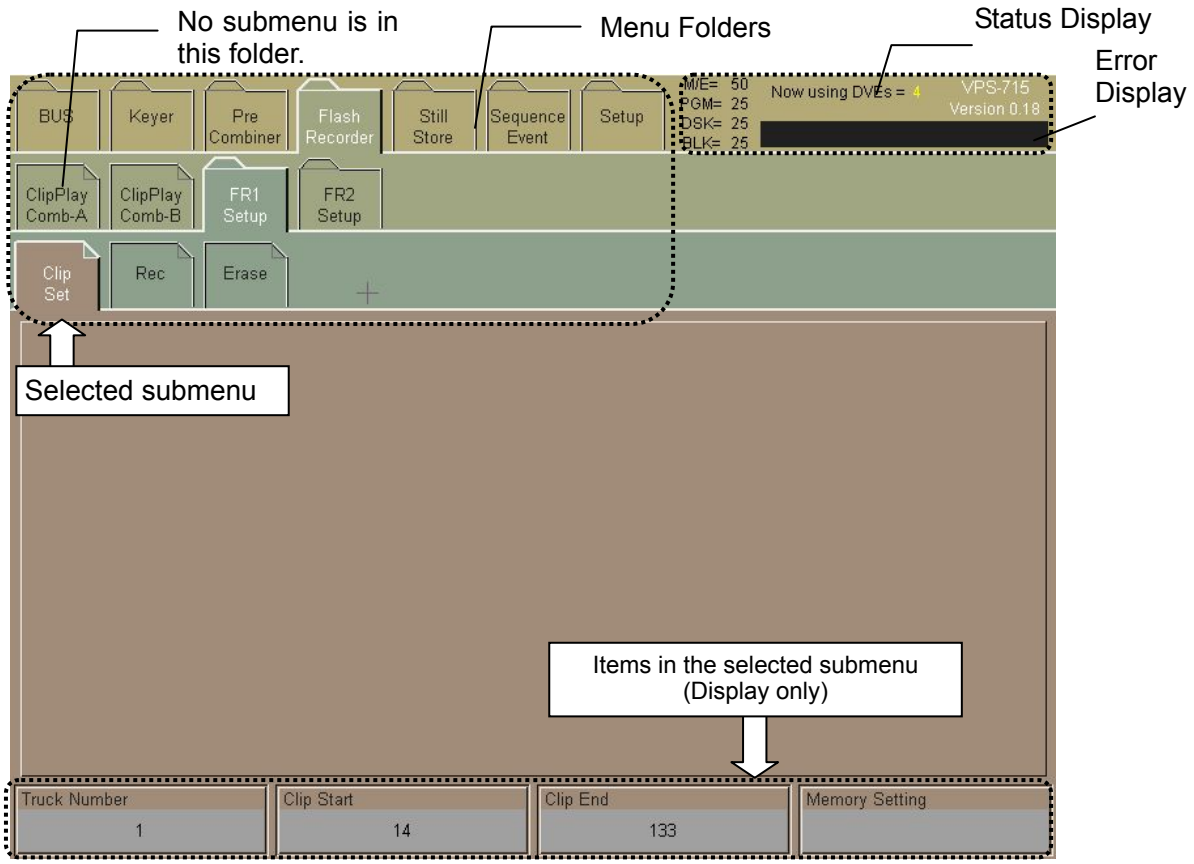
◆ **Menu Folders:**

On the touch panel, the menus are displayed in a folder format. Touching a folder displays the components of the folder. VPS-715 has 7 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.

◆ **Submenus 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-715 are shown in the table below. Signals that can be handled in the VPS-715 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).

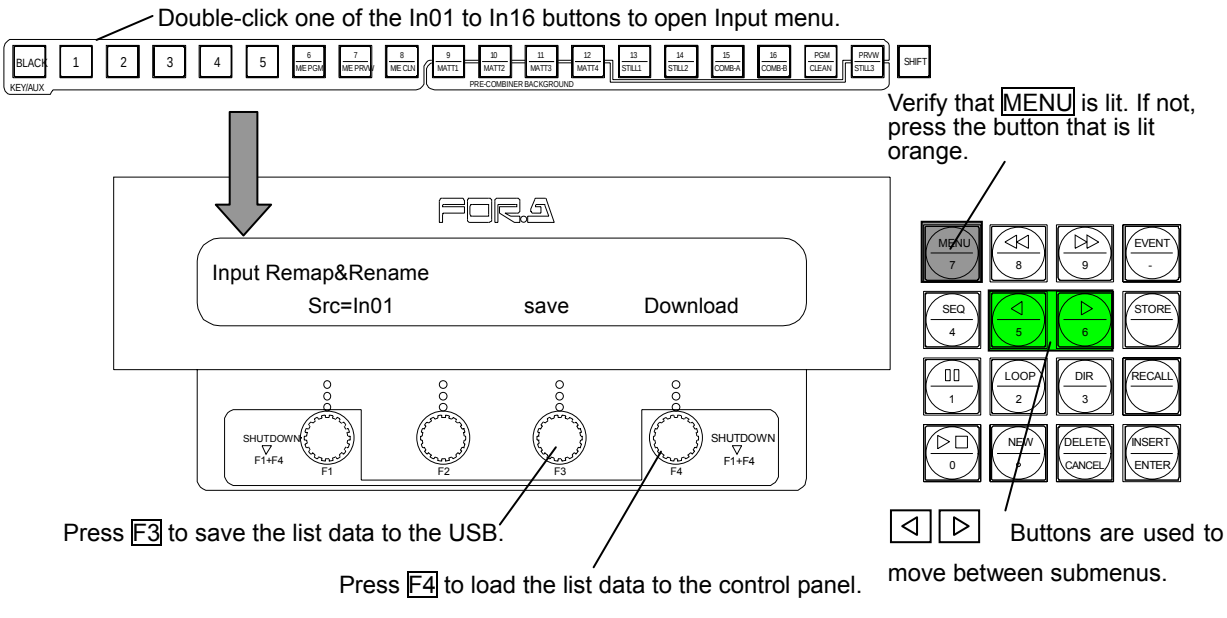
SIGNAL	Signal Name	Signal description
Black	BLK	Black signal
Input 01 to 16	In**	MU rear panel input 1-16 (9-16 are optional inputs)
Still1 to Still2	Stl1, Stl2	Still images 1-2
Matte1 to Matte4	Mat1 - Mat4	BUS MATT color signal
Pre Combiner A /B	ComA - ComB	Pre-combiner output (optional)
Flash Recorder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

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 any one of the KEY1 - KEY4, DSK1 and DSK2 buttons in the BUS SELECT section and double-click one of the IN1 - IN16 buttons to display [INPUT] menu. Then press the single-arrow button in the Kyepad section to open the [Input] - [Input - Remap&Rename] submenu.



③ Press and hold down F3 for a while. A data file named "vps715.ini" will be saved to the USB root directory.

④ Open this file by using the editor on the computer, for example. The contents of the file are as shown to the right.

⑤ Rename the signals and save the data file. (using up to 4 alpha-numeric characters)

⑥ Connect the USB flash drive again to the USB port of the control panel.

⑦ Open the [INPUT] - [Input Remap & Rename] 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>
(vps715.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

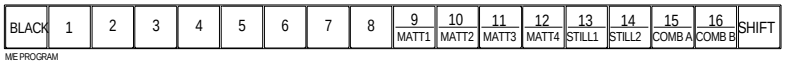
Note that modified names are not supported on peripheral devices such as HVS-AUX units.

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

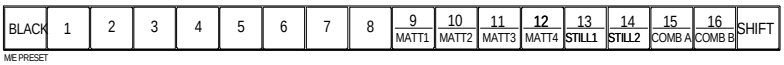
7-1-3. Selecting Background Signals on M/E Buses

The two rows of M/E bus buttons are used to select a background image. Pressing a bus button in the M/E PROGRAM section allows you to select a background image for M/E program output. Pressing a bus button in the M/E PRESET section allows you to select a background image for M/E preset output.

Select an image for M/E program bus.



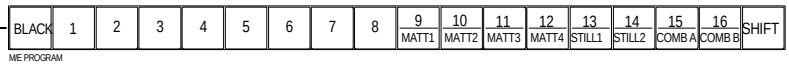
Select an image for the next transition.



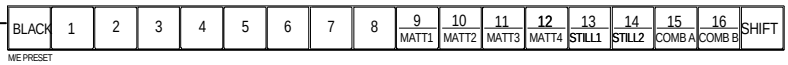
◆ Selecting Signals by Bus buttons and SHIFT

You can assign two signals to one bus button by using the SHIFT button. This enables you to assign a total of 32 signals to an M/E bus. When SHIFT is unlit, you can select a bus from Black and buses 1 to 16. When SHIFT is lit, you can select from black and buses 17 to 32. Press the SHIFT button to turn it on and press it again to turn it off.

Black and buses 1-16 can be selected when SHIFT is unlit.



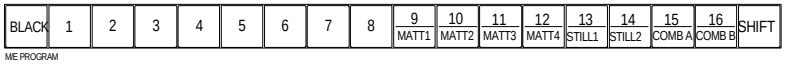
Black and bus 17-32 can be selected when SHIFT is lit.



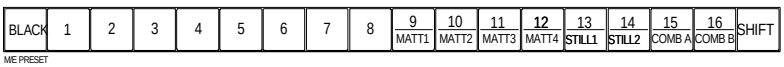
◆ Bus button indicators

The selected buttons on the M/E PGM and M/E PST buses light up **green** regardless of the fader lever position or the M/E AUTO button on/off settings, unless the M/E bus is employed to work as a P/P bus. If the M/E button on P/P bus is turned on, the selected M/E PGM bus button lights up **red**. While the transition on the M/E bus is in progress, the bus buttons of both selected M/E PGM and M/E PST buses light up **red**. When the transition is complete, the bus buttons flip-flop (the lit buttons on M/E PGM and M/E PST buses change places).

If M/E button on P/P bus is turned on, bus button lights up red.



Bus button lights up green.
During transition, lights up red.

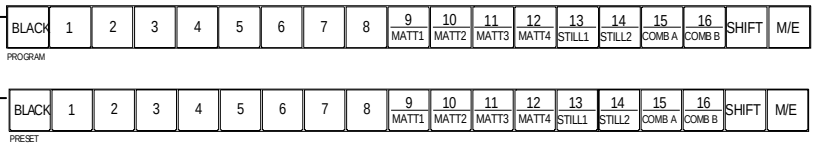


7-1-4. Selecting Background Signals on P/P Buses

The two rows of P/P bus buttons are used to select a background image. Pressing a bus button on the PROGRAM bus allows you to select a background image for the program output. Pressing a bus button on the PRESET bus allows you to select a background image for the preset output. Pressing an M/E button of the P/P buses employs the M/E bus setting to the P/P bus.

Select an image for program bus.

Select an image for the next transition.

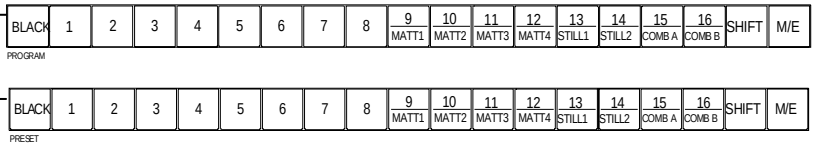


◆ Selecting Signals by Bus buttons and SHIFT

You can assign two signals to one bus button by using the SHIFT button. This enables you to assign a total of 32 signals to a P/P bus. When SHIFT is unlit, you can select a bus from Black and buses 1 to 16. When SHIFT is lit, you can select from black and buses 17 to 32. Press the SHIFT button to turn it on and press it again to turn it off.

When SHIFT unlit, Black and Buses 1-16 are selectable.

When SHIFT lit, Black and Buses 17-32 are selectable.

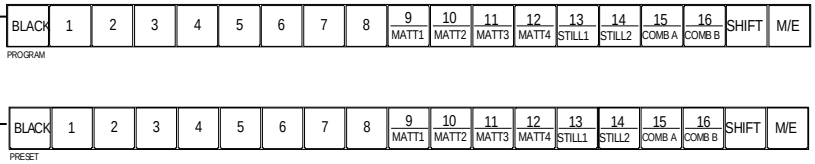


◆ Bus button indicators

When the fader lever is at one end and the AUTO (MIX) 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).

The selected bus button on PGM bus lights up red.

Bus button lights up green.
During transition, lights up red.



7-1-5. Changing Signal Assignments of Buses

Video source signals (input video signals and internally generated signals) can be freely assigned to any of the 16 bus buttons in each of M/E and P/P bus sections for background selection. The video input signals (8 inputs in standard, 16 inputs in full option), 4 MATTE signals, 2 STILL signals, 2 pre-combiner outputs, or BLACK can be freely assigned to 32 buses of each bus section (using the SHIFT button). Signal assignments are shared by the M/E bus and the P/P bus.

◆ Bus Buttons Default Assignments

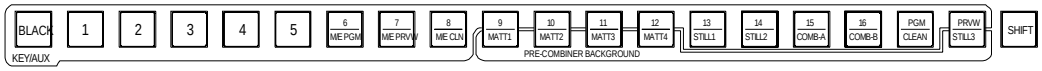
At the factory default, video signals are assigned to bus buttons as shown in the table below.

Bus Button		Video Signal	Bus Button		Video Signal
When SHIFT unlit:	BLACK	Black	When SHIFT lit:	BLACK	Black
	1 - 16	In01 - In16		1 - 8	Black
				9 - 12	Matte1 - 4
				13 - 14	Still1-2
				15 - 16	Pre Combiner A/B

◆ Changing Video Signal assignments of M/E (P/P) Bus Buttons

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

① Press any bus button: KEY1 - KEY4, DSK1, or DSK2 in the BUS SELECT section. This button will then be lit up. Double-click any button, choosing from IN01 to IN16 on the KEY/AUX bus to open the [INPUT] menu.



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

③ Press a bus button to assign a signal to in the M/E PRESET (or PRESET) bus section.

④ Turn F1 to select a video signal. (See section 7-1-1. "Signal Name" for the abbreviations of the signal name.) ("Save" and "Download" in this menu window are not for changing signal assignments, but for changing signal names.)

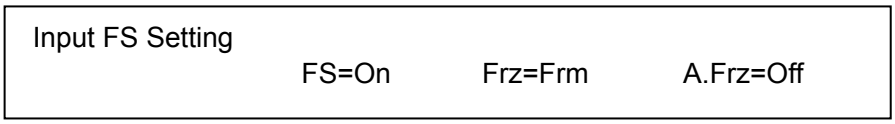
⑤ Repeat steps (3) and (4) for other bus buttons until setup is complete. Be sure to set the SHIFT button is lit in the M/E PST bus, when assigning to buses 17 to 32.

7-1-6. Input Signals and Frame Synchronizer Modes

The VPS-715 provides a built-in frame synchronizer (FS) for each input, so it can accept asynchronous video signals. In the VPS-715, the FS can not only synchronize live inputs, but also hold and provide frozen live video (snapshot) or still images stored in its frame memory. This can be set in the [Input] - [FS Setting] submenu. (See section 12-2. "Still Store" for storing stills to the FS memory.)

① Press any one of KEY1 - KEY4, DSK1, and DSK2 buttons in the BUS SELECT section, and double-click any bus button among IN01 - IN16 in the KEY/AUX section to open the [INPUT] menu.

② Use single-arrow buttons in the Kyepad section (while MENU is lit) to go to the [INPUT] - [FS Setting] submenu.



Item		Default	Setting
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 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 any asynchronous input. 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 channels provided by the VPS-70AI, FS Mode is always set to On.

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

Video input signals can also be 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

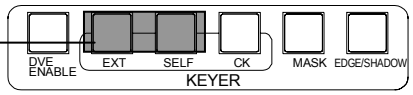
Item		Default	Description
WClp	White Clip	109.0	Clips the white level.
BClp	Black Clip	-7.0	Clips the Black level.
LGN	Luminance Gain	100.0	Adjusts the luminance gain.
Set	Setup	0.0	Adjusts the black level.
CClp	Chroma Clip	111.0	Clips the chroma level.
CGN	Chroma Gain	100.0	Adjusts the chroma gain.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

7-1-8. Selecting Signals for Keys and DSKs

There are 6 keyers provided for M/E bus, KEY1 to KEY4, and downstream, DSK1 and DSK2. Each keyer can be used for external key, self key or chroma key.
To open a key menu, first press the bus button to make settings of from KEY1 - KEY4, DSK1 and DSK2 in the BUS SELECT section, then press a key type button in the KEYER section above the BUS SELECT section. (To access the menu for selecting signals for keys, use either EXT or SELF button. The CK button is used to access menus for other chromakey settings.)

(1) Select a bus

(2) Select a key type



Once the key type is selected, the related keyer menu as shown below appears in the window.

(The example below is displayed when selecting an external key for KEY 1.)

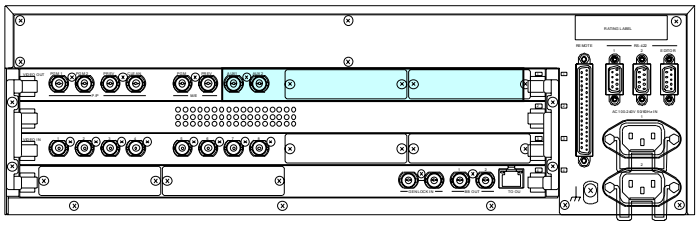
External Key1			
KIns=Stl1	KSrc=In01	GN=6.2	Clp=0.0

Select signals to assign for the KIns (key insert) and KSrc (key source) using F1 and F2 . You can also use the KEY/AUX bus buttons to select signals. However, this Input Remap function to select signlas using the KEY/AUX bus buttons can only select signals assigned to the buses 1 through 16. The buses that can be accessed by using the SHIFT button are not selectable. Key insert signal can be selected when the KEY/FILL button on the KEY/AUX bus section is unlit. Key source signal can be selected when the KEY/FILL button is lit. See section 9-1. "Keyer /DSK Setup Menu" for more details.

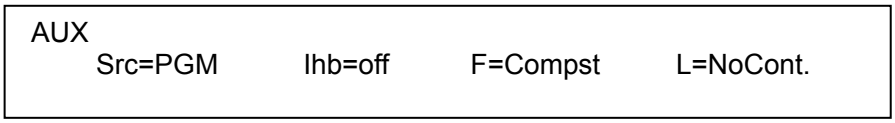
7-2. Output Signals

The VPS-715 has 8 video outputs in standard configuration: P/P Program x 2, P/P Preview, P/P Clean, M/E Program, M/E Preview, Auxiliary 1 and Auxiliary 2. 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 P/P Preview (PREV) and P/P Clean (CLEAN) can be selected in the menu. (See section 7-2-2. “P/P- PREV / CLEAN & M/E- PGM / PREV Outputs".) The Auxiliary outputs can be expanded up to 10. 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 Select and press desired AUX button from among the AUX1 to AUX10 buttons in the BUS SELECT section to display the [AUX] submenu for the AUX bus.



② Turn F1 to select desired source signal from the KEY/AUX buses. You can also use the KEY/AUX bus buttons to select the source signal. The signals in the table below can be selected.

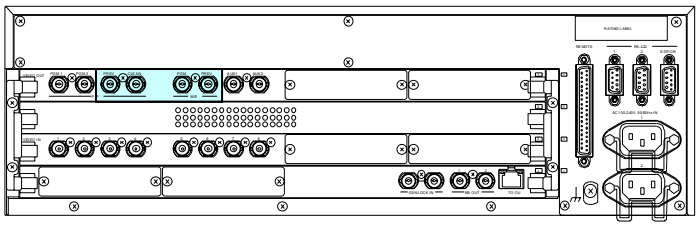
Source signal	Signal name	Description
Black	Blk	Black signal
Input 01-Input16	In01-In16	Primary input signals (9-16 are optional)
Still1 Still2	Stl1 Stl2	Store still 1 Store still 2
Matte1-Matte4	Mat1 - Mat4	Internally generated bus matte color signal 1 - 4
Pre Combiner A Pre Combiner B	ComA ComB	Pre-combined images made by pre-combiner A and B (Optional)
Pre Combiner A Key Pre Combiner B Key	CoAK CoBK	Key signal for the pre combiner A (Optional) Key signal for the pre combiner B (Optional)
P/P Program	PGM	P/P bus program output
P/P Preview	PVW	P/P bus preview output
P/P Clean	CL	P/P bus clean output (Program output w/o DSK)
M/E Program	MPGM	M/E bus program output
M/E Preview	MPVW	M/E bus preview output

③ 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. (See section 4-8. "Connection Settings for Aux Output Control".)

IMPORTANT
The optional analog outputs must be assigned to the designated Auxiliary outputs provided by the Analog Output Options. (See section 4-7. "Output Expansion Option".) Regarding the components of M/E PREV output or P/P PREV output, see section 7-2-3. "Selecting M/E Preview Output", or 7-2-4. "Selecting P/P PREV Output".

7-2-2. P/P- PREV / CLEAN & M/E- PGM / PREV Outputs

The output assignments for the P/P PREV, P/P CLEAN, M/E PGM and M/E PREV connectors on the VPS-715 rear panel can be changed. Use the following procedure to change the assignments.



① Press any AUX button among the AUX1 to AUX10 buttons in the BUS SELECT section to display the [AUX] submenu.

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

```
Preview/Clean
    PV=w/D_PV    CL=woDSK   MPGM=MPGM   MPVW=MPVW
```

Turn F1 to select a signal for the P/P PREV (preview) output. (See the table below.)
Turn F2 to select a signal for the P/P CLEAN output. (See the table below.)
Turn F3 to select a signal for the M/E PGM output. (See the table below.)
Turn F4 to select a signal for the M/E PREV output. (See the table below.)

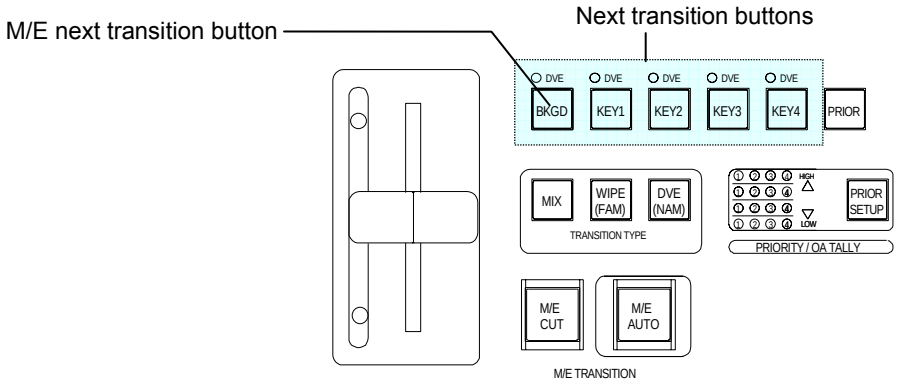
Available Output Options

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))
MPGM	All the signals that can be selected for AUX outputs. 7-2-1. "Assigning Signals to Auxiliary Outputs"	
MPVW		

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 M/E Preview Output

The M/E PREV output can consist of BKGD (signal selected in the M/E PRESET bus), and KEY1 to KEY4 (total of up to 5 signals). The next transition buttons are used to select which signals or whether to output next from the M/E PREV. For example, when KEY1 and KEY2 next transition buttons are lit, the background signal, Key1 and Key2 signals are displayed as the M/E PREV output.



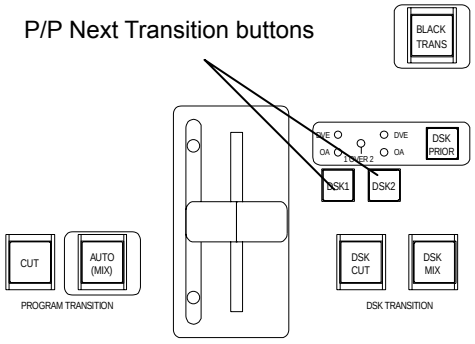
Next Transition Buttons indicates the status as below.

Next transition button indication	Transition Status
Unlit	Off-air / On-air *
Lit red	On-air (Output to P/P PGM)
Lit green	Set for the next transition
Lit orange	Output to M/E PGM

* Pressing the next transition button while it is on-air turns the button LED off, and the signal is disengaged from the next transition and stays on-air.

7-2-4. Selecting P/P PREV Output

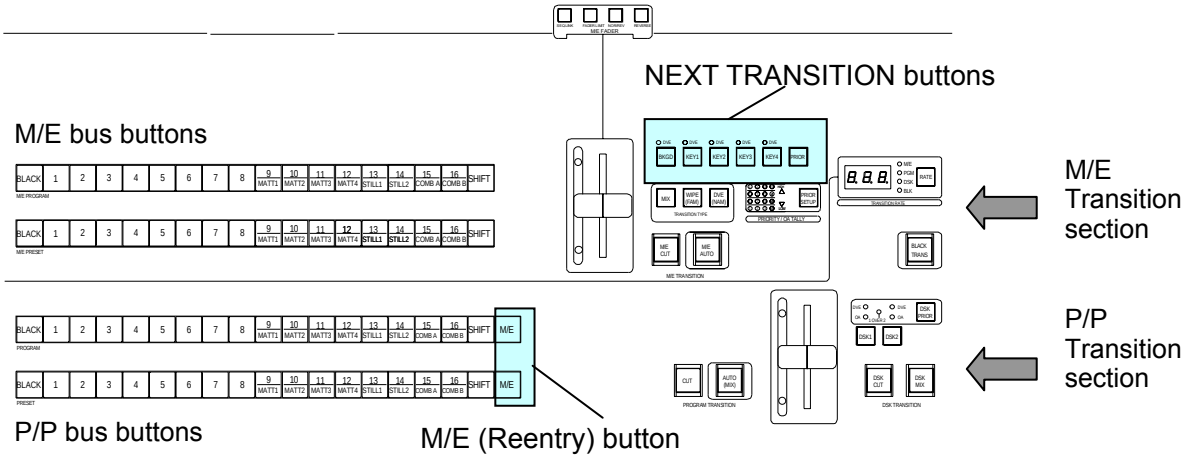
The P/P PREV output can consist of BKGD (signal selected in the PRESET bus), DSK1 and DSK2 (total of up to 3 signals). The next transition buttons are used to select which signals or whether to output next.
For example, when DSK2 next transition button is lit, the background signal and DSK2 signal are displayed as the P/P PREV output. See the table above for the next transition button indication.



8. Transition Operations

8-1. About Transitions

There are M/E Transition section and P/P Transition section in the Transition control section on the VPS-715 Control panel. The transitions are used to output combined images to M/E PGM output or P/P PGM. M/E PGM output can consist of key signals of KEY1 to KEY4. Meanwhile, P/P PGM output can consist of downstream keys of DSK1 and DSK2.



M/E bus buttons, P/P bus buttons, and NEXT TRANSITION buttons light up in different colors to indicate the status of being selected for the next transition, or being output as the M/E PGM output or the P/P PGM output. All the buttons of images that are on-air (on the P/P PGM output) light up red. If the Reentry function is enabled, the buttons of on-air images in the M/E Transition section also light up red.

Button	Transition Status	Color of light
M/E PGM/PST buses M/E Next Transition	Selected for the next transition	Green light
	On the P/P PGM (On-air) output	Red light
	On the M/E PGM output	Orange light
P/P PGM/PST buses P/P Next Transition	Selected for the next transition	Green light
	On the P/P PGM (On-air) output	Red light

8-1-1. Reentry Function

M/E buttons in the P/P buses section can assign the M/E PROGRAM image to the bus (Reentry function). So, P/P buses can output the complex combined images that are preset in the M/E buses, or use those combined images (M/E PGM) as a material to create even more complex images.

8-1-2. Buses and Transitions

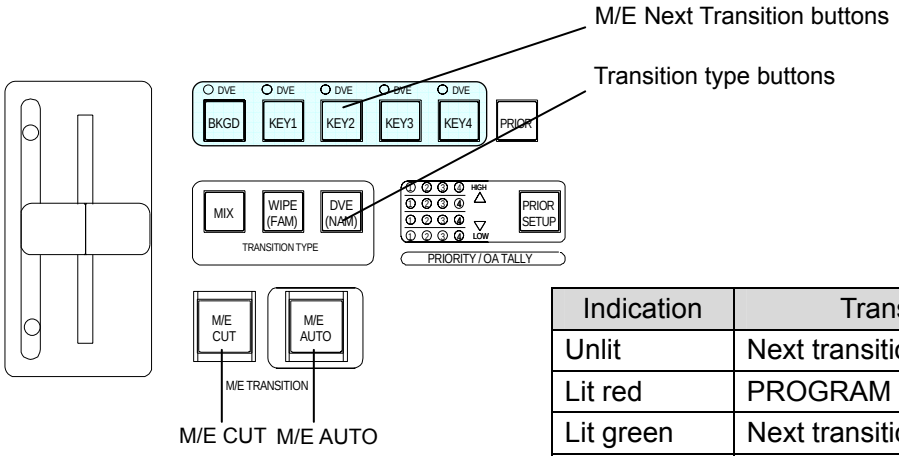
M/E bus is supported to perform Cut, Mix, FAM, NAM, Wipe, and DVE transitions, while P/P bus is supported to perform Black, Cut, and Mix transitions. The AUTO buttons and the fader levers in the respective transition sections are used to execute transitions of background and key signals of M/E bus, or background of P/P bus. FAM and NAM transitions can only be applied to the background layer. DSK layers have dedicated start buttons: DSK CUT and DSK MIX. The priority order for the 4 keys as well as the 2 DSKs can be changed. The transition quick reference is provided in the table below.

Transition Quick Reference

Layer	Type	Priority Change	Start button	Fader lever
	Black	-	BLACK TRANS	-
M/E Background	Cut	-	M/E CUT	-
M/E Background	Mix, FAM, NAM, WIPE, DVE	-	M/E AUTO	Yes
P/P Background	Cut	-	CUT	-
P/P Background	Mix	-	AUTO (Mix)	Yes
Keyers 1-4	Cut	Yes (4 layers)	CUT	-
Keyers 1-4	Mix, Wipe, DVE	Yes (4 layers)	AUTO	Yes
DSKs 1-2	Cut	Yes (2 layers)	DSK CUT	-
DSKs 1-2	Mix	Yes (2 layers)	DSK MIX	-

M/E Background and keyers 1 to 4 share the same transition type buttons and start buttons. Therefore, simultaneous multiple transitions with the same type and same transition rate are possible using the M/E AUTO button or fader lever. For simultaneous multiple transitions, WIPE transition is available only with the same one pattern for all layers; however, DVE transition is available with different patterns for each layer.
Pressing M/E AUTO during AUTO transition pauses the transition. Pressing M/E CUT during AUTO transition forcibly stops the transition.
Also, the VPS-715 supports modifying WIPE and DVE patterns. See section 10. "Wipe Modify" and section 11 "DVE Modify" for more details.

◆ **NEXT TRANSITION Button Light Indicators**

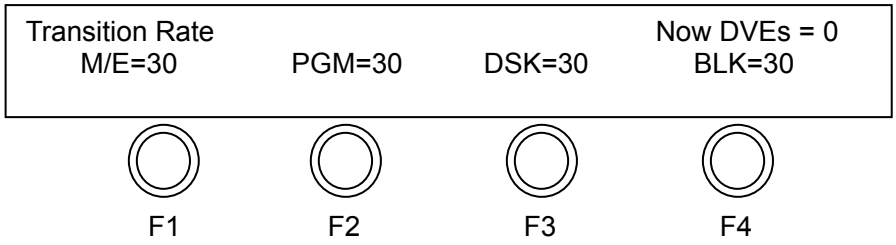


Indication	Transition Status
Unlit	Next transition not programmed
Lit red	PROGRAM output (On-air)
Lit green	Next transition programmed
Lit Orange	M/E PGM output

8-1-3. Transition Rate

Images are exchanged at the preset transition rate in the transitions performed using M/E AUTO or AUTO(MIX) 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.

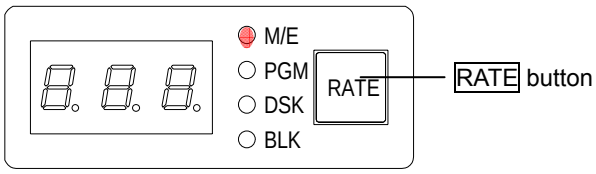
(1)Press MIX button of the M/E Transition type buttons to display [Transition Rate] menu.



(2) M/E is the transition rate for M/E background and keys.
PGM is the transition rate for P/P background.
DSK is the transition rate for DSK of P/P bus.
BLK is the transition rate for Black transition of P/P bus.

◆ **Transition Rate Window**

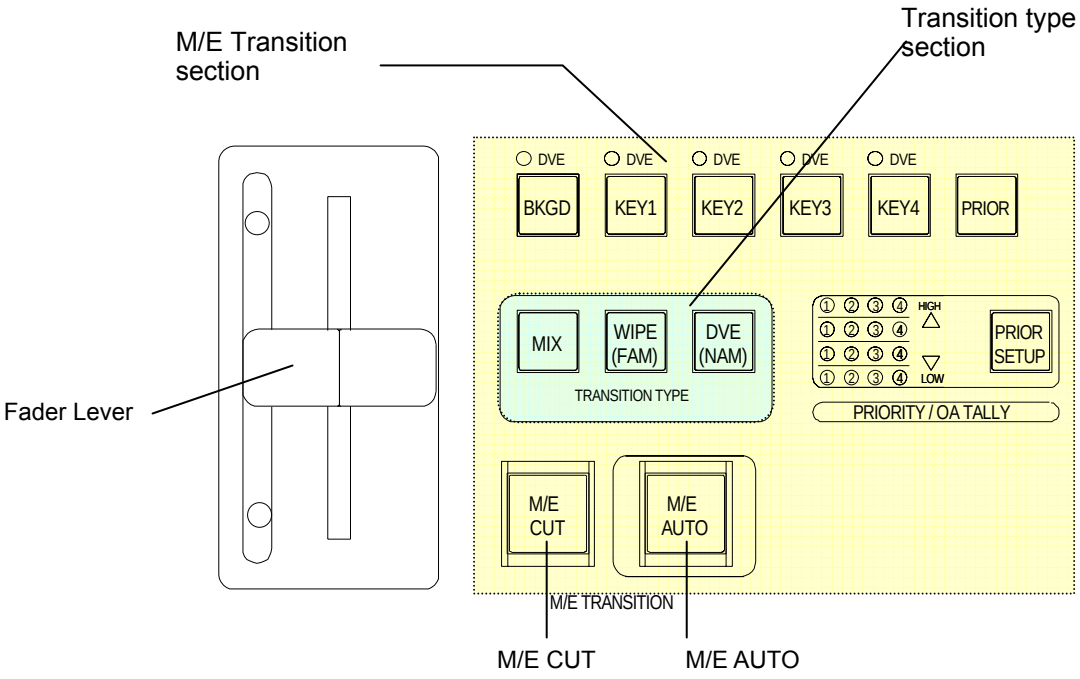
Press RATE button to turn on the indication. The item LEDs start illuminating sequentially and the transition rate for each illuminating LED appears in the window.



IMPORTANT
The transition rates are effective when the transition is executed with M/E AUTO or AUTO(MIX) button. For the playback of clips when Inter Link mode is set to Linkage and the playback is started with M/E AUTO button, the M/E transition rate is applied to the playback.

8-2. M/E Bus Background Transitions

Available transition types for M/E buses 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 M/E background transition, first press and light up BKGD button in the M/E Transition section to select the signal layer. Then, select a transition type. When a background transition is performed, the signal selected on the M/E PST bus replaces the signal selected on the M/E PGM bus on the M/E PGM output. At the end of the transition, cross-points of PGM and PST buses change places (flip-flop).



8-2-1. M/E Cut

The M/E bus Cut transition provides an instantaneous switchover of images from one to another. When the M/E CUT button is pressed, the M/E PST bus-selected image instantly replaces the M/E PGM bus-selected image. Follow the example procedure below to make a M/E CUT transition of the background video layer.

① In the M/E 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 M/E PGM and M/E PST buses respectively. If the M/E button on P/P bus is turned on, the bus button on the M/E PGM bus that is on-air lights up red.

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

8-2-2. M/E Mix

Background bus mix transitions can be performed as standard, 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 standard 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 M/E 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 M/E PGM and M/E PST buses, respectively. If the M/E button on P/P bus is turned on, the bus button on the M/E PGM bus that is on-air lights up red.

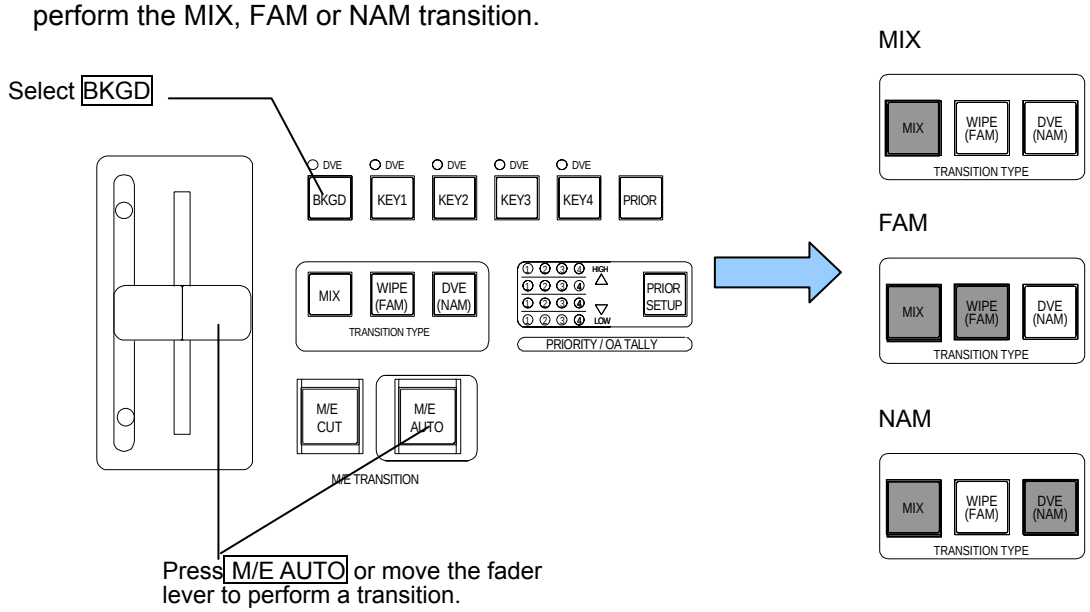
③ For M/E MIX transition press MIX (standard) in the M/E Transition section to turn it on. For a FAM transition, press MIX and WIPE(FAM) at the same time so that both light up. For a NAM transition, press MIX and DVE(NAM) at the same time so that both light up.

④ Set the **Transition Rate**, if necessary. To set the transition rate, press MIX to display [Transition Rate] menu as shown below.

Transition Rate			Now DVEs = 0
M/E=30	PGM=30	DSK=30	BLK=30

Turn F1 under the M/E item to change the setting of the Transition Rate for the M/E bus transition. (See section 8-1-3. "Transition Rate".)

⑤ Press the M/E AUTO button in the M/E Transition section or move the fader lever 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 (with the fader lever) or automatically (with the M/E 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 three-dimensional images can be produced.

① In the M/E Transition section press the BKGD button. Then the button will be lit up.

② Select a bus button to be used for the background transition on the M/E PGM and M/E PST buses, respectively. If the M/E button on P/P bus is turned on, the bus button on the M/E PGM bus lights up red.

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 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.

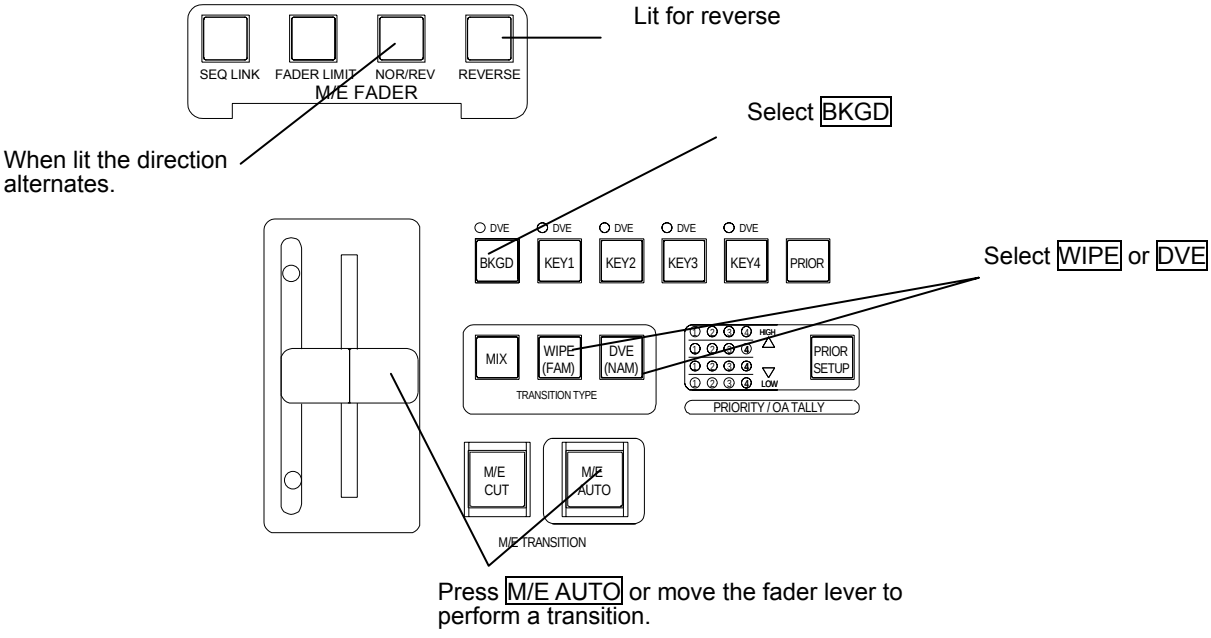
④ Set the **Transition Rate**, if necessary. (See section 8-1-3 "Transition Rate.")

⑤ If necessary, set the **transition direction** using the NOR/REV and REVERSE buttons in the M/E FADER section above the fader lever.

NOTE
Unlike MIX transitions, WIPE and DVE transitions are supported for the user to define directions. The two buttons above the fader lever marked 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 alternates 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 M/E AUTO button or move the fader lever in the M/E TRANSITION section to perform the pattern transition.



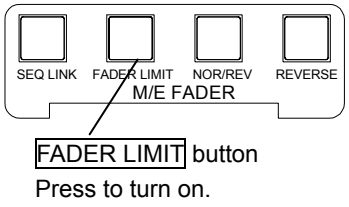
8-2-4. Fader Limit

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

① Press the FADER LIMIT button in the M/E FADER section 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] menu will be displayed in the menu display. Turn F1 to set a value to limit the fader movement.

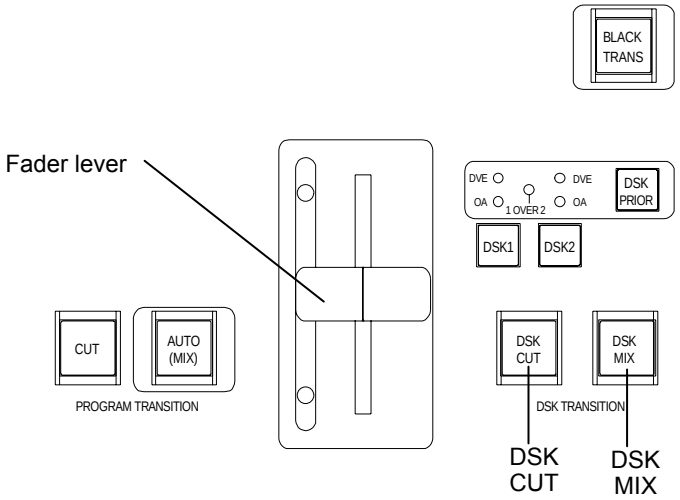
The current position of the fader lever can be set to the Fader limit. To set the Fader Limit at the current lever position, press the FADER LIMIT button to turn it on and move the fader lever while pressing the KEY/FILL button at the left under the M/E FADER section above the fader lever.



IMPORTANT
The Fader Limit setting is only for M/E transitions. The Fader Limit cannot be set for the P/P transitions.

8-3. P/P Bus Background Transition

For P/P bus background transition, CUT and MIX transitions are available.



8-3-1. CUT Transition and MIX Transition

① Select an image on each PROGRAM and PRESET bus. The bus button of the image that is on-air lights up red (PGM bus), and the bus button of the image that is set to output next lights up green (PST bus). (See section 7-1-4. "Selecting Background Signals on P/P Buses".)

② To perform a Cut transition, press the CUT button to perform. In the PGM output screen, the image selected in the PST bus instantaneously replaces the image selected in the PGM bus.
To perform Mix transition, press AUTO(MIX) button or move the fader lever. In the PGM output screen, the image selected in the PST bus replaces the image selected in the PGM bus at the preset duration (See section 8-1-3. "Transition Rate") or as the fader lever is moved.

8-4. BLACK Transitions

For the P/P bus, the Black transition is supported for the case of an immergency that needs to output black signal.
Pressing BLACK TRANS in the P/P Transition section initiates a fade to (or fade from) black whatever signal layers are currently on the program line. Pressing the BLACK TRANS button again after the black transition is completed returns the initial image on the program line. The transition rate for the fade can be changed. (See section 8-1-3 "Transition Rate.")
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 orange when black is on-air, lights up red during transition, and then goes off when the initial image is returned.

8-5. Key and DSK Transitions

The VPS-715 can add 4 keys and 2 DSKs to the background image using a CUT or MIX transition. For the 4 keys, in addition to these transitions, WIPE and DVE pattern transitions can also be applied. 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 among DSKs, is changeable. After setting up keys (see section 9. "Keyer / DSK Setup"), follow the procedure below to perform key transitions to set the keys on air.

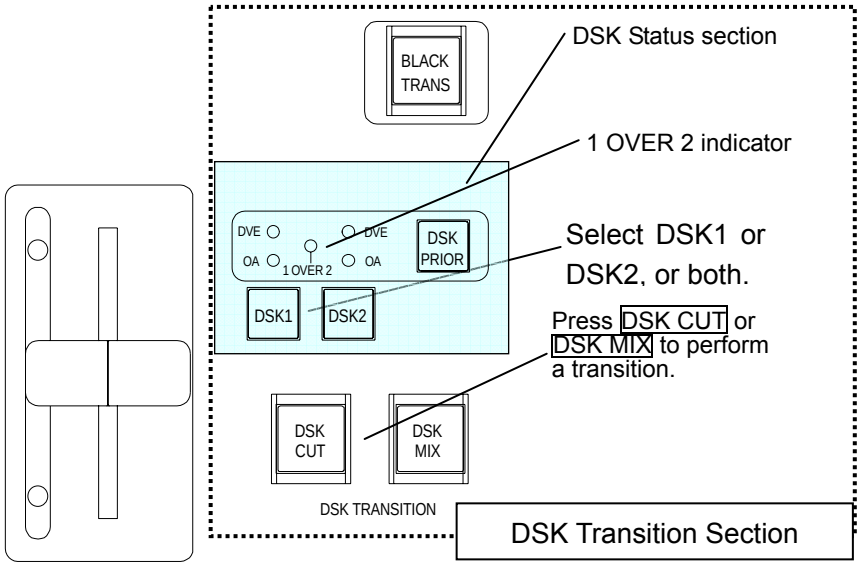
8-5-1. DSK Transitions and Changing Priority Orders

◆ **DSK Transitions**

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

② In the DSK Transition section, press and light up either DSK1 or DSK2 button or both to select DSK for the transition. Set the **Transition Rate**, if necessary. (See section 8-1-3. "Transition Rate".)

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 (which DSK is over the other) in the DSK Status section. If the "1 over 2" indicator lights up, DSK1 has layer priority over DSK2.

② To change the DSK layer priority order, press the DSK PRIOR 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.

④ Press the DSK PRIOR button which will go off to indicate that the priority setting mode is disabled.

8-5-2. Key Cut Transitions

① First, make settings for key signals in the respective [KEY] menus. (See section 9-1. "Keyer /DSK Setup Menu".)

② In the M/E Transition section, press a button or some buttons among KEY1 - KEY4 buttons.

③ Press M/E CUT to perform a cut transition to send the key(s) on or off the M/E PGM output screen.

8-5-3. Mix Transitions for Keys

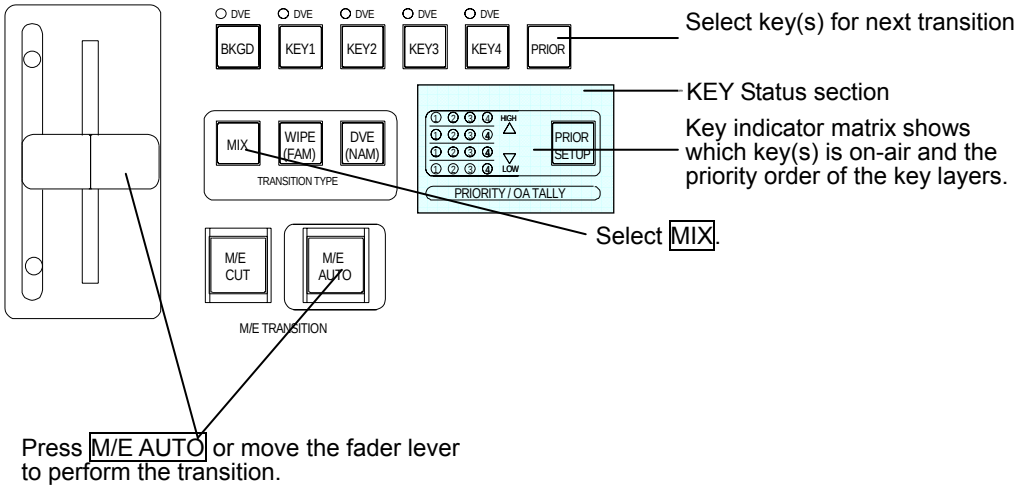
① First, make the settings for key signals in the respective [KEY] menus. (See section 9-1. "Keyer /DSK Setup Menu".)

② In the M/E Transition section, press a button or some buttons among KEY1 - KEY4 buttons.

③ Press MIX to turn it on.

④ Set the **Transition Rate**, if necessary. (See section 8-1-3. "Transition Rate".)

⑤ Press M/E AUTO or move the fader lever in the M/E Transition section 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)**
The NEXT Transition buttons in the transition section light up to indicate their transition status as shown below.

Indication	Transition Status
Unlit	Next transition is not programmed
Lit red	On-air
Lit green	Next transition is programmed
Lit orange	Output to M/E PGM

8-5-4. Wipe Transitions for Keys

① First, make the settings for key signals in the respective [KEY] menus. (See section 9-1. "Keyer /DSK Setup Menu".)

② In the M/E Transition section, press a button or some buttons among KEY1 - KEY4 buttons.

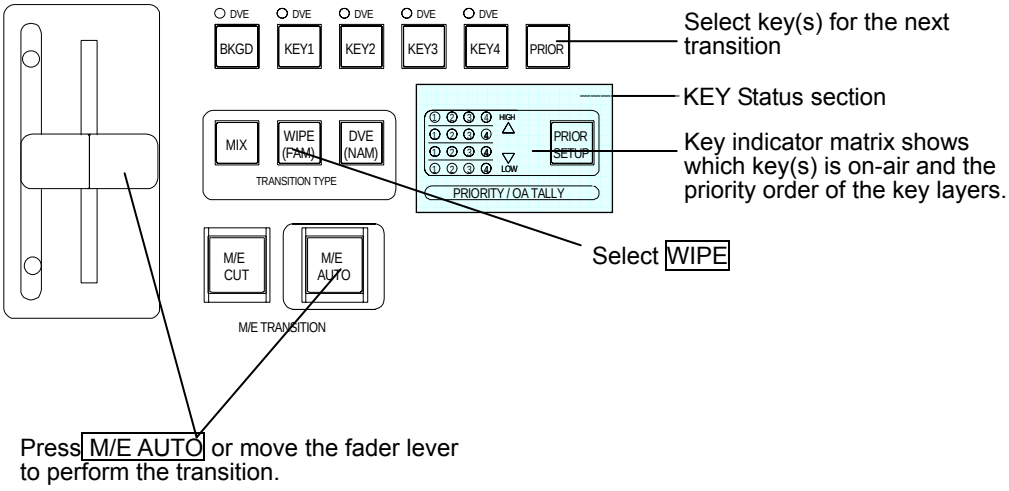
③ Press WIPE to turn it on. The [Wipe] menu is displayed in the menu display.

④ Turn F1 under the item Pat to select the number for 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 from 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 8-1-3. "Transition Rate".)

⑥ If necessary, set the **transition direction** using the NOR/REV or REVERSE button in the M/E FADER section above the fader lever. (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 M/E AUTO button or move the fader lever in the M/E 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 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.

8-5-5. DVE Transitions for Keys

① First, make the settings for key signals in the respective [KEY] menus. (See section 9-1. "Keyer /DSK Setup Menu".)

② In the M/E 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 Turn F1 under the item Pat to select a DVE pattern in the [KEY] menu for each key. (See Appendix 3-2, "2D/3D DVE Pattern List".) To select a DVE pattern by entering pattern number from keypad, press F1, enter the pattern number, then 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. If a key without DVE enabled is selected for the next transition and the DVE transition button is enabled, then the DVE transition is also applied to the key. To recover the key to the Mix transition, press a KEY button to select the key in the BUS SELECT section and then press the DVE ENABLE button to turn it off. The DVE ENABLE button is a three state button. Make sure DVE is turned off in the menu display.

④ Set the **Transition Rate**, if necessary. (See section 8-1-3. "Transition Rate".)

⑥ If necessary, set the **transition direction** using NOR/REV or REVERSE button in the M/E FADER section above the fader lever. (See section 8-2-3 "WIPE and DVE" .)

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.

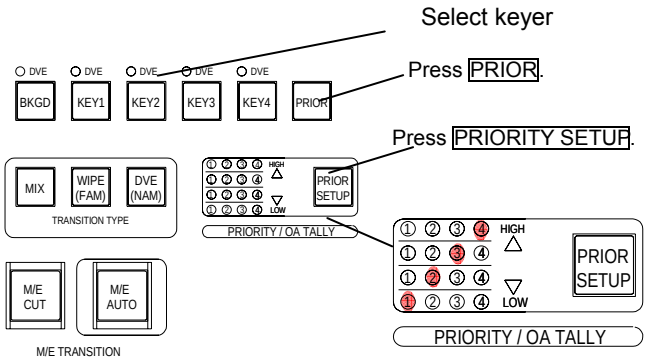
⑧ Press M/E AUTO or move fader lever in M/E Transition section to perform the transition.

⑨ If DVE transition is not set, the DVE LED above the corresponding BKGD, Key1 to 4 or DSK is not lit. If DVE transition is set, the DVE LED is/are lit.

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.

8-5-6. Priority Order Change of Keys

① Press the PRIOR SETUP button to enter priority setting mode.



② When the PRIOR SETUP button is turned on and lit, the NEXT Transition buttons (KEY1 - KEY4) light up orange and the key indicator matrix above these buttons shows the current key layer priority levels. To change the key layer priority order, 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. (To change the order, set order of all four keys. If PRIOR SETUP is pressed again without pressing all four key buttons, the currently made setting is cancelled.)

③ To activate the new priority settings, press the PRIOR SETUP button again to turn it off, and press the PRIOR button to turn it on. Move the M/E fader lever to the either end. Press the PRIOR button again to turn it off. Then the priority setting is updated.

9. Keyer / DSK Setup

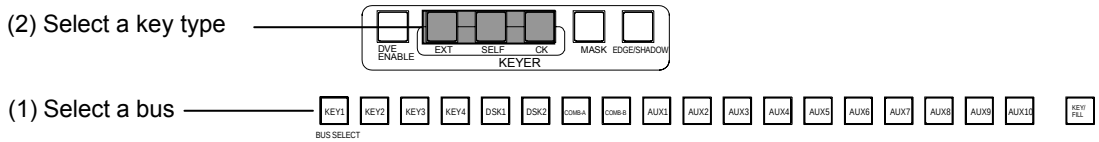
The 4 key bus menus and 2 DSK bus menus have nearly the same menu layout, and especially the [External], [Self], [Chromakey] submenus, [Edge Shadow] submenus, and [DVE Modify] menu are exactly the same. Therefore, this section describes all of these menus for key and DSK together.

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. Then the selected button will be lit.

② Select a key type for the selected bus using the 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. To select the key insert signal, press a KEY/AUX bus button. To select the key source signal, press the KEY/FILL button. Once lit, press a KEY/AUX bus button. You can also select a key insert signal and a key source signal using F1 and F2. 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 Kyepad 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) On/Off can be set. (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). The key insert signal can be selected using the buttons on KEY/AUX bus, or selected in the [Self Key1] submenu by turning F1. Key Gain and Clip can be also set in this submenu.

After all settings are made in the submenu, press the right single-arrow button in the Kyepad 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) On/Off can be set. (The DSKs do not have Opacity control.)

◆ When CK is selected for key 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.

◆ **DVE ENABLE Button**

The DVE ENABLE button at the left end 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 LINE DVE.")

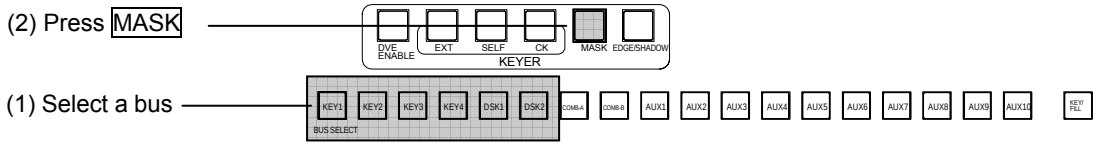
Both key insert and key source can be selected from Black, IN01 to IN16, Still 1 and 2, Matte 1 to 4, ComA, and ComB for any type of keys.

9-2. Mask

The switcher has a key mask function that lets you alter key appearance by hiding a part of the key using mask patterns (almost the 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 [Key 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 to select a bus you want to set the mask. Then the indicator will light up.

② Press the MASK button in the KEYER section.



The [Key Mask] menu for the selected bus similar to 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.

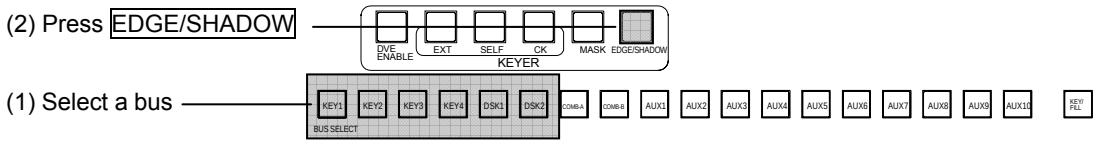
IMPORTANT
The center position can be changed only for the following patterns: 65 to 69, 75 to 79 85 to 94, and 105 to 114.

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 and light up a bus button in the BUS SELECT section to select a bus you want to set edge or shadow.

② Press the EDGE/SHADOW button in the KEYER section.



Pressing the right single-arrow button in the Kyepad 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 below opens.

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

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

Item		Description
Typ	Type	Selects the edge type. The available parameters are: 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 the submenu, press the right single-arrow button in the Kyepad 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

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-715 chromakey module offers high-performance chromakey capabilities of 10-bit 4:4:4:4 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 key function 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. For a chromakey, the signal selected for its key source can be used for a Mask signal by setting the External Mask Enable to On.

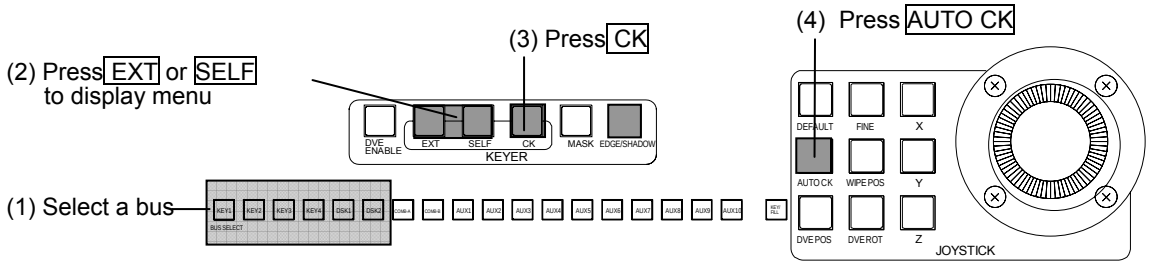
9-4-1. Auto Key

① To select a bus for auto keying, press the desired key or DSK button in the BUS SELECT section. Then the selected button will be lit up.

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

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

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

⑦ Press AUTO CK to do automatic keying.

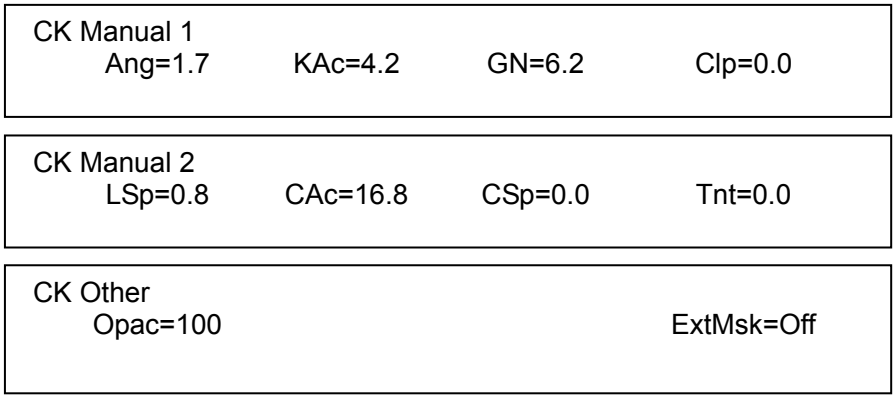
NOTE
You can finely adjust the auto setup chromakey and add an edge or mask to it. Once the chromakey setup has been completed, perform a transition to display the key on air. You can also set DVE transition with the chromakey applying LINE DVE. See section 8-5. "Key and DSK Transitions" and 9-5. "Assigning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

9-4-2. Adjusting Chromakeys

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

① Press the bus button that is used for chromakey in the BUS SELECT. 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.



③ Turn FI to adjust a keying color, if you could not select a color you want using the crosshair. The setting values for major colors are given in the table below.

◆ **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 background left in a wide area

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.

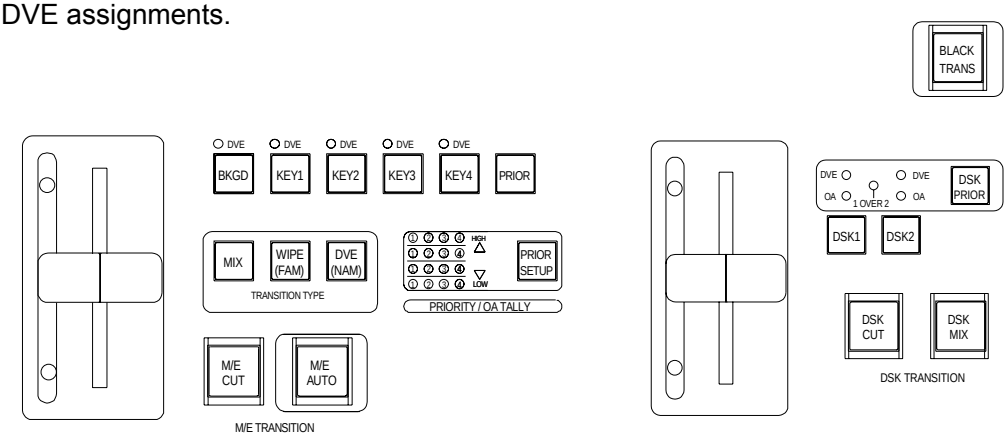
9-5. Assigning DVEs to Keyers

In addition to DVE transitions for 4 keys, the VPS-715 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-715 provides 6 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 in 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.



When DVE is in use, DVE LED of corresponding channel/s is/are lit.

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

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

① Press a key bus button to assign a DVE in the BUS SELECT section. Then press BASIC in the DVE section to open the [DVE Basic] menu.

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

```
Keyer Setup
        Glbl=Off        DVE=Off
```

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 using the DVE ENABLE button at the left end 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.

To make a DVE picture using a key, two types of processing are available:

- To make DVE picture with only key fill signal: Set to Enable (without key)
- To make DVE picture with key source & fill signals: Set to Enable (with key)

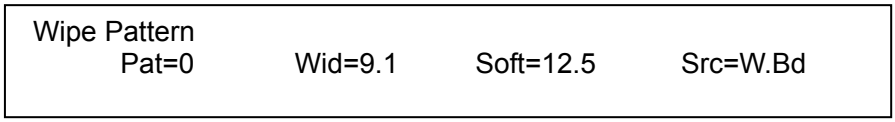
④ Modify the DVE key using BASIC, BORDER, SUB EFF, WARP and LIGHT menus. See section 11 "DVE Modify" for details.

IMPORTANT
The item Global (Glbl) in DVE BASIC menus for keyers are set to Off at the factory default. 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

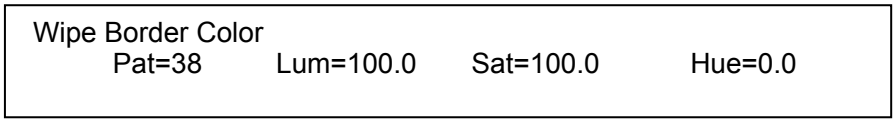
Wipe transitions use wipe patterns for signal switchover. Wipe transitions can be applied to the M/E background layer and key signals (not to DSKs). However, note that you cannot apply different wipe patterns or directions to simultaneous wipe transitions of different layers. The selected wipe pattern 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 M/E 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**



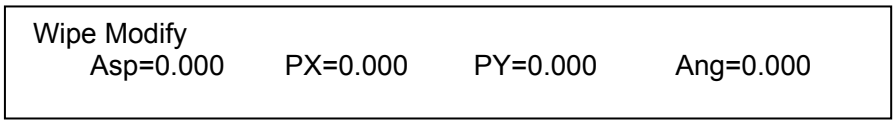
Item		Description
Pat	Pattern No.	Selects the pattern number.
Wid	Border Width	Sets the border width.
Soft	Border Softness	Sets the border softness.
Src	Border Source	Selects the border source. The available parameters are: Blk (Black), In01–16 (Input01-16), Stl1-3 (Still1-3), Mat1-4 (Matte1-4), ComA/B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

◆ **Border Color**



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

◆ **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 control (F1 to F4) under the parameter you want to reset.

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 Press the WIPE button in the M/E 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

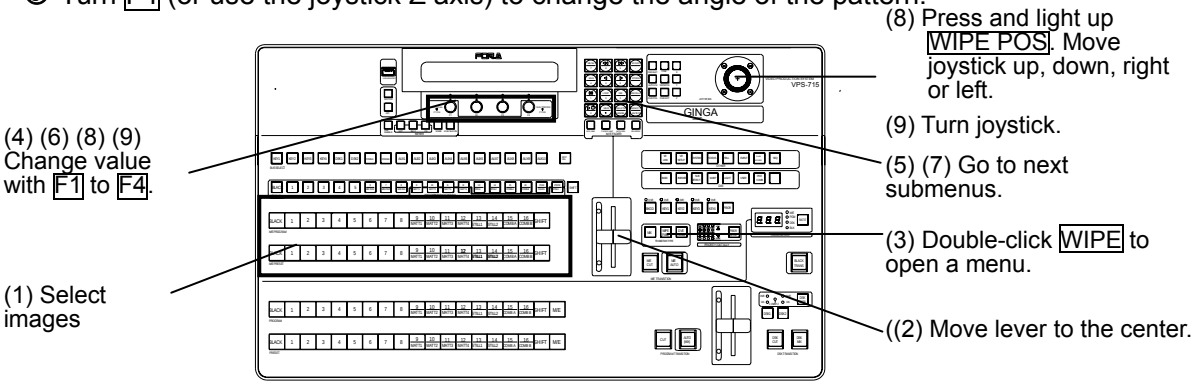
⑥ Use F2, F3 and F4 to set the border color.

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. Then use F2 and F3 (or the joystick X and Y axes while WIPE POS is lit) to move the pattern position.

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



11. DVE Modify

The VPS-715 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 13-3. " Pre-combined Image Setting Example " for details.)

■ **DVE Keys**

The LINE DVE feature can be applied to all 6 keyers including DSKs. It allows the user to easily make and customize video walls or DVE pictures. 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 LINE DVE to a key, set the DVE item in the [Keyer Setup] submenu of the subject key to Enable. (See section 9-5-2. "Opening DVE Menus and Assigning LINE 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

Returning Modify Parameter to Default Setting

Press and hold down the control (F1 to F4) under the parameter you want to reset.

Returning Modify Submenu (BASIC, BORDER, SUB EFFECT, WARP and LIGHT) to Default Settings

① Press a submenu button in the DVE section.

② Press DEFAULT in the JOYSTIC section while pressing KEY/FILL.

11-2. DVE Modify Example

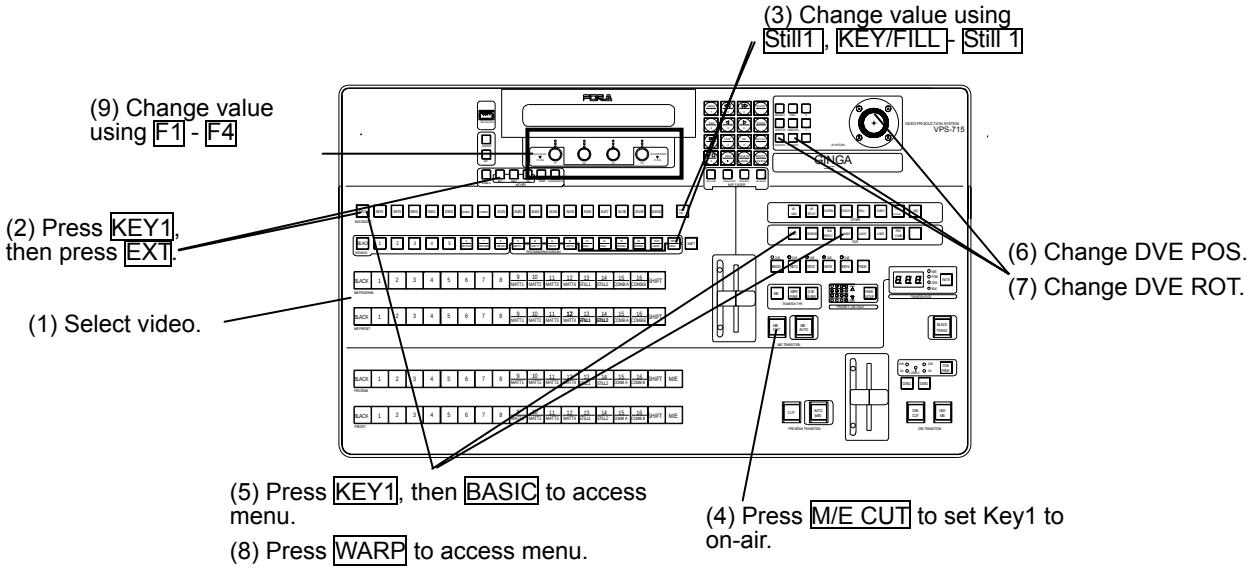
This DVE modification example (figure below) is set up using the LINE - DVE feature after Key1 is put onto the background video: the key is moved and rotated. And also made the image to ripple as the water surface does using Warp feature.

① Select a background image by pressing a button on the M/E PGM bus.

② Press KEY1 in the BUS SELECT section 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 Press Still 1 (while SHIFT is lit) on KEY/AUX bus to select Still 1 for key fill (KIns). Press KEY/FILL which lights to indicate that it is enabled to select a source signal, then press Still 1 on KEY/AUX bus again to select Still 1 for key source (KSrc). Or, you can turn F1 to select Still1 for key fill and turn F2 to select Still1 for key source (KSrc). Use 32-bit tga files for the Still 1.(See section 12-2-6. “32-bit TGA Images.”)



④ Press KEY1 in the M/E Transition section. Then press M/E 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 DVE ENABLE button in the KEYER section lights up.

⑥ Press the DVE POS button in the left part 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 shown below.

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 in the left part 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. Press WARP several more times to go to the [Warp] - [Ripple 1] submenu.

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

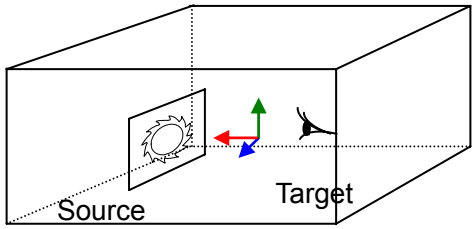
⑨ Turn F4 to change the value for the Phase.

Local Position and Global Position

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

- Local Position

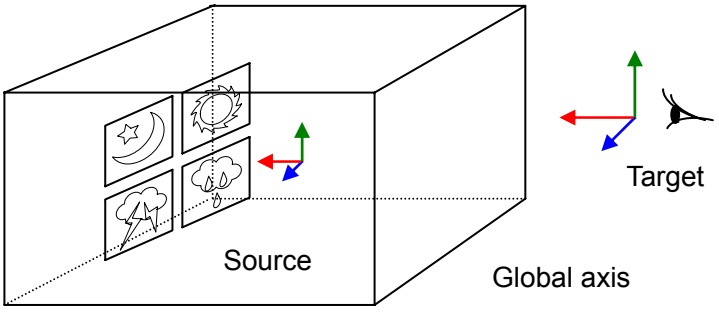
  Each key can be individually set its local position. If you want to show the key smaller or bigger you change the distance between the source and the target. Moving the positon for either one will do the same. The farther the smaller, and the closer the bigger. You can also rotate either or both of source 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		Description
PX	Position X	Sets the 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		Description
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		Description
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		Description
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 details.

11-4. Border

◆ **Border Color**

Keyer Border Color Bod=Off Lum=100.0 Sat=75.0 Hue=0.0

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 set to ON.

◆ **Inner Width**

Keyer Bord Inner Wid L=0 R=0 T=0 B=0

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**

Keyer Bord Outer Wid L=0 R=0 T=0 B=0

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

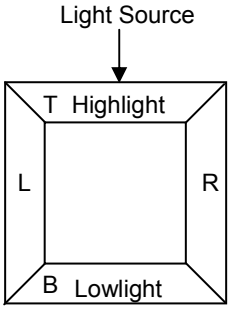
Item		Description
Bvl	Beveled	Sets the border bevel ON/OFF.
Lum	Luminance	Sets the highlight color of the beveled border.
Sat	Saturation	
Hue	Hue	

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 highlight for the beveled border.
HL	Highlight Opacity	Sets the blend ratio of the highlight and base color of the beveled border.
LL	Lowlight Opacity	Sets the blend ratio of the lowlight (shadow color) and base color of the beveled border.



11-5. Sub Effect

11-5-1. Trail

◆ **Trail 1-3**

Keyer Trail 1 Typ=Off Opac=100 Dcy=0.0 Spk=0.0

Keyer Trail 2 VMix=100 VDcy=12.5 VSpk=0.0

Keyer Trail 3 PX=0.000 PY=0.000

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	

◆ **Trail MixCol, Trail DcyCol**

Keyer Trail MixCol Lum=100.0 Sat=50.0 Hue=270.0

Keyer Trail DcyCol Lum=100.0 Sat=100.0 Hue=90.0

Item		Description
Lum	Luminance	Sets the color of the trail.
Sat	Saturation	
Hue	Hue	

11-5-2. Chroma Control

```
Chroma Control
     T=Through        Sat=0          Hue=0
```

Item		Description
T	Type	Selects the chroma control type. The available parameters are: Through, Sepia and Nega (negative).
Sat	Saturation	Adds color to the image using two color-difference parameters. To change the image to monochrome, set Type to Sepia and Sat to 0.
Hue	Hue	

11-5-3. Strobe

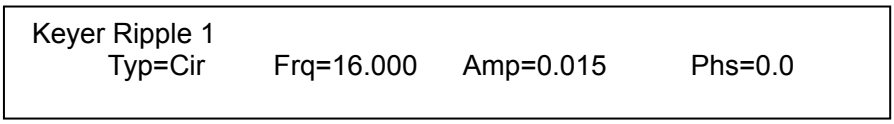
```
Keyer Strobe
     Mode=Frame                                   Ival=0
```

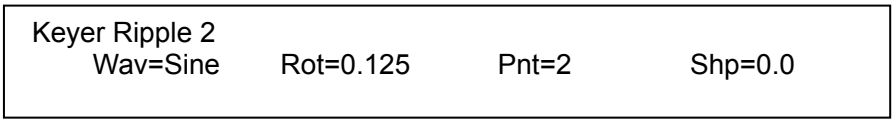
Item		Description
Mode	Mode	Selects the mode of the strobe freeze effect. The available parameters are: Frame Freeze and Field Freeze.
Ival	Interval	Sets the interval of the strobe freeze effect. If Interval is set to 0, the strobe freeze effect is turned off.

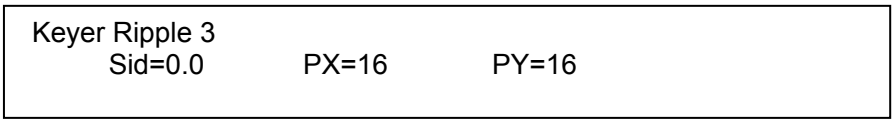
11-6. Warp (Option)

11-6-1. Ripple

◆ **Ripple 1-3**

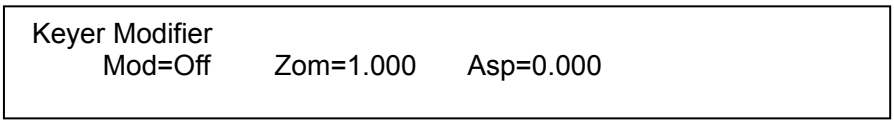






Item		Description
Typ	Shape Type	Selects the shape type. The available parameters are: Hor (Horizontal), Ver (Vertical), Rot (Rotated), Cir (Circular), Poly (Polygon), and Star (Star).
Frq	Frequency	Sets the frequency of the wave.
Amp	Amplitude	Sets the amplitude of the wave.
Phs	Phase	Sets the phase of the wave.
Wav	Wave Type	Selects the wave type. The available parameters 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**



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

11-6-2. Swirl

```
Keyer Swirl
                    PX=0.000    PY=0.000    Amt=0.000
```

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

```
Keyer Mosaic 1
    Typ=Nor     Asp=0.000                   Siz=0.0
```

```
Keyer Mosaic 2
                    PX=0.000    PY=0.000    Rot=0.000
```

Item		Description
Typ	Type	Selects the mosaic type. The available parameters 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.

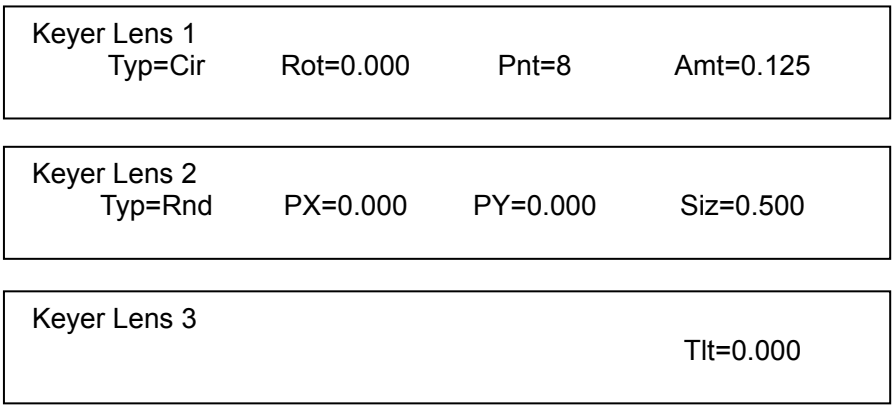
11-6-4. Slats

```
Keyer Slats
    Typ=Hor     Rot=0.000    Wid=8    Amt=0.125
```

Item		Description
Typ	Shape Type	Selects the shape type. The available parameters 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 motion of the slats.

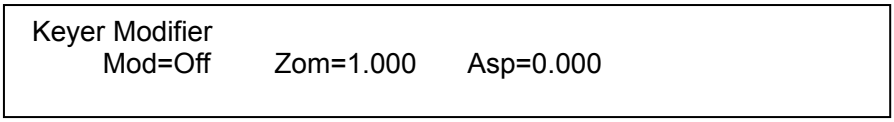
11-6-5. Lens

◆ **Lens 1-3**



Item		Description
Typ	Shape Type	Selects the shape type. The available parameters 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 available parameters 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	Sets the modifier to 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	Selects the pattern. The available parameters 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 page turn.
Ang	Peel Angle	Sets the peel angle of the page turn.
Amt	Amount	Sets the motion 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 of the turn.
Rad	Radius	Sets the radius of the turn.
Spl	Spiral	Applies the spiral effect to the page turn.
Stg	Stagger	Divides the segments alternately into 2 groups and controls the groups separately.

11-6-7. Page Peel

```
Keyer PagePeel 1
      Typ=Turn      Rot=0.000      Wid=0.000      Amt=0.000
```

```
Keyer PagePeel 2
                                   Tlt=0          Rad=0
```

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. Split

```
Keyer Splits 1
      Typ=Mult      Rot=0.000      Spl=0.000      Stg=0.000
```

```
Keyer Splits 2
      Num=20        PX=0.000       PY=0.000       Amt=0.122
```

Item		Description
Typ	Type	Selects the type. The available parameters are: 2WayH, 2WayV, 4Way and Multi.
Rot	Rotation	Sets the rotation angle if Type is set to Multi.
Spl	Spiral	Applies the spiral effect 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 motion of the split.

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 available parameters 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 effect. If Amount is set to 0, the defocus effect is turned off.

11-7. Light (Option)

11-7-1. Type

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

Item		Description
Off	Type	Sets the light type. The available parameters are: Off (Off), 1-HL (Light 1), 2-HL (Light 2) and HL/LL (Highlight and Low light).

11-7-2. Light 1-2

◆ **Position**

```
Keyer L1 Position
        Siz=0       PX=1.0000       PY=0.0       PZ=1.0000
```

Item		Description
Siz	Size	Sets the size of the light source (surface light 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.

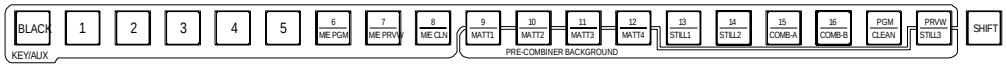
12. Internally Generated Signals

12-1. Bus Mattes

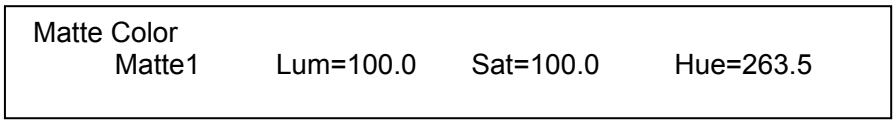
In the VPS-715, multiple single-color mattes can be internally generated. Color matte signals can be used for key insert, background of pre-combined images, and various border, edge and shadow effects. You can select different color mattes for each of those. Four different color matte signals can also 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 To open the [SETUP] - [Matte Color] menu, press any one bus button among KEY1 to KEY 4, DSK1 and DSK 2 in the BUS SELECT section, and the SHIFT button at the right end of KEY/AUX bus. The both buttons will be lit, then double-click any one of the MATT1 to MATT4 buttons.



② Turn controls F2, F3 and F4 or use the joystick to set the color.



Item	Description	Setting Range
Lum	Sets the color luminance.	0.0 - 108.6%
Sat	Sets the color saturation.	0.0 - 100.0%
Hue	Sets the hue.	0.0 - 359.5

12-2. Still Store

The VPS-715 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 jpeg (jpg), bitmap (bmp) and targa (tga). Names of image files must be "stl00" - "stl99". Make a "Stl" folder in the root directory of the USB and save image files to the folder.

② Press STILL in the OTHER section to display [STILL] menu.

③ Use the single-arrow buttons in the Kyepad 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 the 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 to start downloading. The STILL button turns red while downloading and then turns back to **green** when the download is completed.

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 the still image. The available parameters 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.)

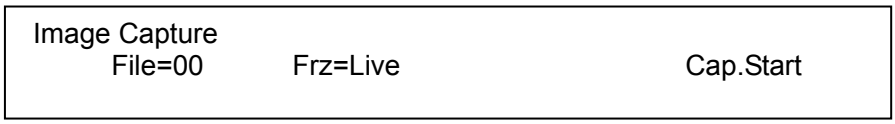
12-2-2. Capturing Program Out and Saving Still

① Press STILL in the OTHER section to display the [Still] menu.

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

③ Turn F1 to select a file to save a 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 STILL button in the OTHER section turns **red** during processing and then turns **green** when completed.



Item		Default	Description
File	File	00	Selects from 00 to 99.
Frz	Freeze Mode	Live	Selects the freeze mode. The available parameters are: Live (Live Through), Frm (Frame), Odd (Odd Field), and 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 the Still to A Video Source".

12-2-3. Assigning the Still to A Video Source

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 the 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 to start downloading. The STILL button in the OTHER section turns red during downloading and then turns green 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 the STILL button in the OTHER section to display the [STILL] menu.

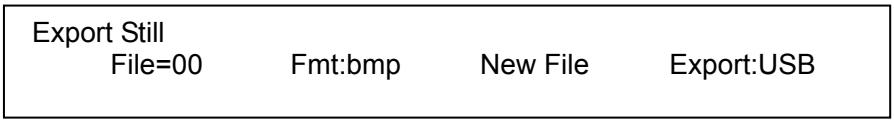
③ Use the single-arrow buttons in the Kyepad section to go to the [Export Still] submenu.

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 targa.

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 STILL button in the OTHER section turns **red** while processing and then turns **green** when completed.



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

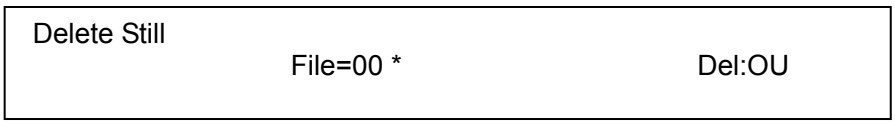
12-2-5. Deleting Still File

① Press the STILL button in the OTHER section to display the [STILL] menu.

② Use the single-arrow buttons in the Kyepad 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 STILL button turns **red** while processing and then turns **green** when completed.



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.

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).

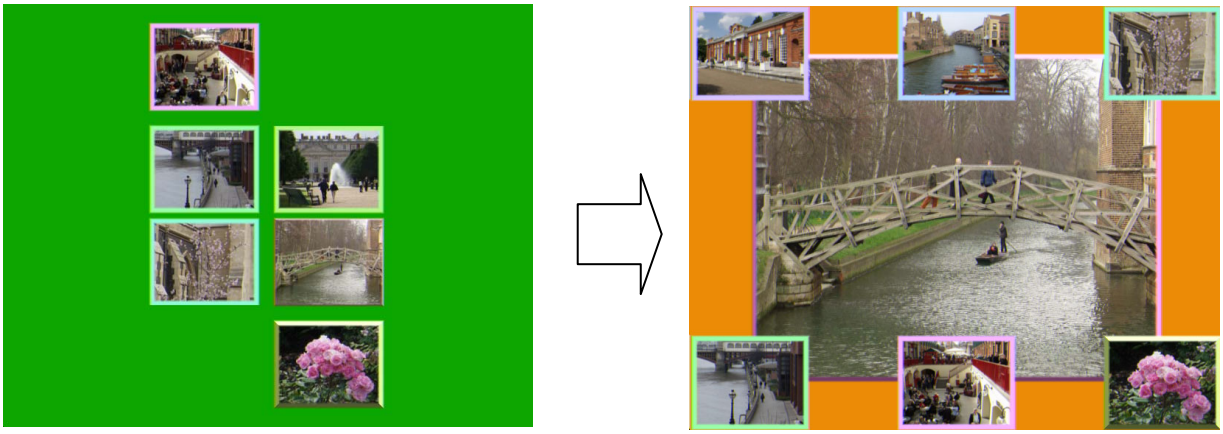
② Select a Keyer or a DSK (from KEY1 - KEY4, DSK1, or DSK2) and press the EXT button to set it as an External key.

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)

The pre-combiner option (VPS-70DS) is very unique. The two pre-combiner option cards can be installed in 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 card adds 2.5D-DVEs (positioning, resizing, rotation, and border) to the primary inputs together with a pre-combiner function that combines these DVE pictures in the system upstream for enabling the composite results to be used as PGM/PST bus and key source/insert signals.

IMPORTANT
Two combined images (ComA and ComB) can be created when either one or two pre-combiner option cards are installed in the switcher. If one card is installed, a total of 16 channels of DVE can be used to the two combined images. If two cards are installed, a maximum of 16 DVE channels can be used for each image (a total of 32 channels for both ComA and ComB.)

13-1. Setting Up Pre-combined Images

① Press either COMB A or COMB B button in the BUS SELECT section to access the [Pre-combiner] menu. For the following operation, output COMB A or COMB B to the monitor screen to view the settings.

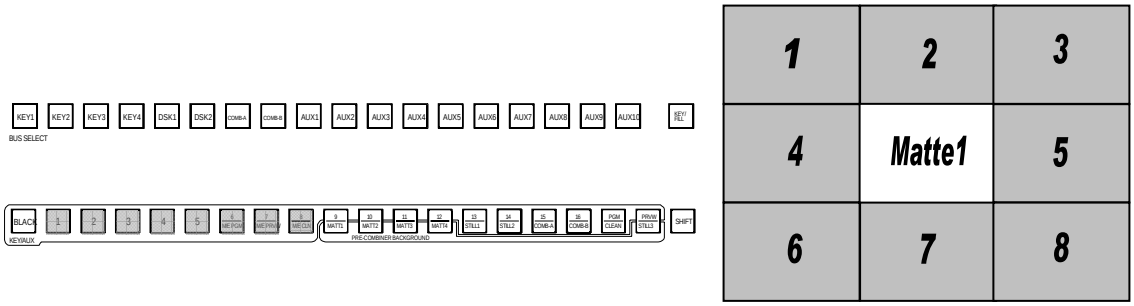
② Press DEFAULT in the JOYSTIC section while pressing the KEY/FILL button in the BUS SELECT section.

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

④ The KEY/AUX 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 to ON/OFF.

◆ KEY/AUX Bus Button Indications

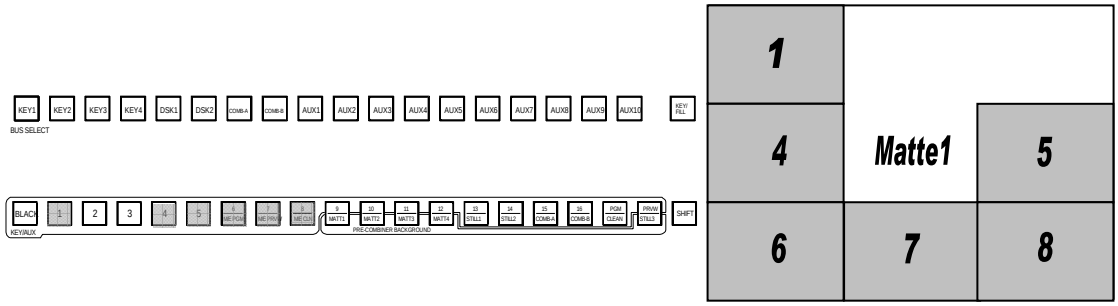
The buttons in the KEY/AUX bus light up to indicate the status being used or not used in the DVE picture. Pressing the bus buttons toggles the DVE pictures **on** (lit **green**) and **off** (unlit). Double-click a bus button to enter the **editing** (lit **orange**) mode.



Pre-combined image
（Preview screen）

◆ Eliminating DVE Pictures from the Combined Image

To eliminate DVE pictures from a combined image, press the corresponding KEY/AUX bus buttons to turn them off. For example, to eliminate DVE pictures 2 and 3, press the bus buttons 2 and 3, then the buttons will be off.



Pre-combined image
（Preview screen）

◆ Adding DVE Pictures to the Combined Image

To add a DVE picture to a combined image, press the bus button of the picture you want to add. For example, to add the bus 9 image to the combined image, press the KEY/AUX bus button 9. The button will be lit to indicate it is added. Note that the added DVE picture (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.

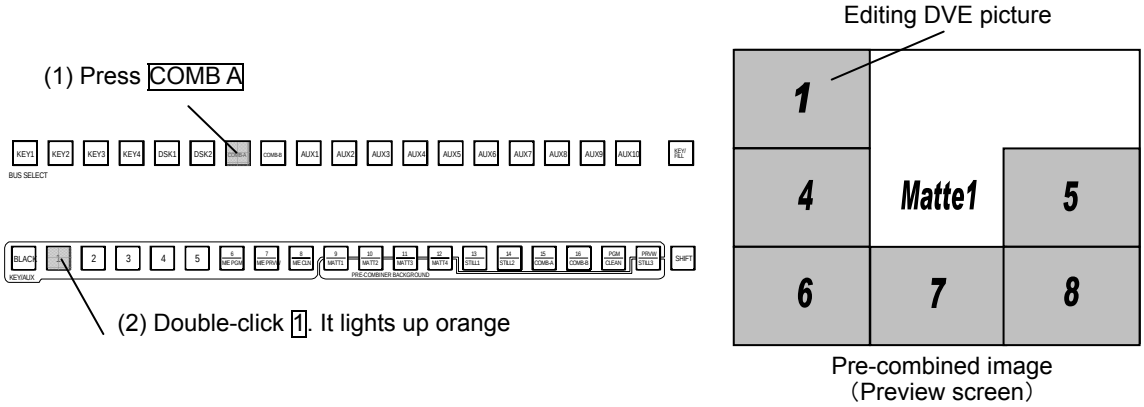
IMPORTANT
One option card can add up to 16 DVE channels as a total for both ComA and ComB. If all 16 DVE channels are already assigned, no more DVE pictures can be added.

13-2. Editing Pre-combined Images

A still image (Still3) can also be used for 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 the 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 in the BUS SELECT section to display the pre-combiner menu. For the following operation, output COMB A or COMB B to the monitor screen to view the settings.

② Double-click a bus button and select a DVE picture to be edited. The button will be lit up orange. If you want to edit the DVE picture No.1, double-click the bus button 1 on the preset bus. The bus button turns to orange to indicate that DVE picture No.1 is ready for editing.



③ Use single-arrow buttons (while SHIFT is unlit) in the Keypad section to go to the [Combiner Formation] submenu. Make the following settings.

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 DVE channels for both ComA and ComB must be 16 or less, if one optional VPS-70DS card is installed in 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 the opacity of the DVE picture.
BG	BKGD Matte	Matte1	Selects the 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 buses 31 and 32, respectively, as a factory default.

13-3. Merging Input Mappings

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 Press the SYSTEM button in the OTHER section to 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 Basic Composition

① Press the COMB A button in the BUS SELECT section. For the following operation, output COMB A to the monitor screen to view the settings.

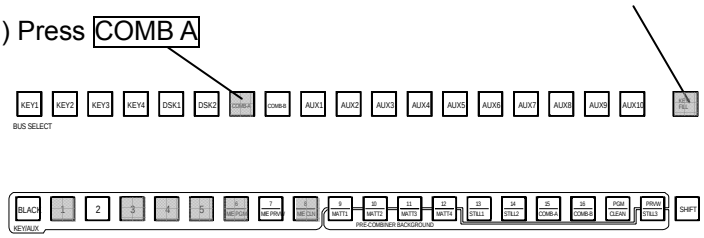
② Press the DEFAULT button in the JOYSTIC section, while pressing the KEY/FILL button in the BUS SELECT section.

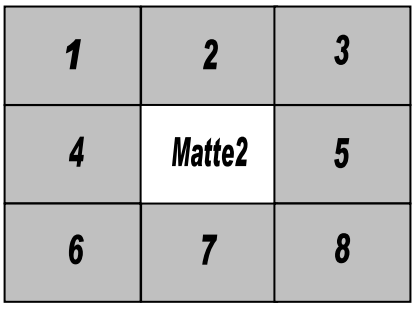
③ A preset combined image composed of 8 DVE pictures (default setting) on the matte background (Bus matte 2) similar to below is automatically made and displayed in the preview screen. The video images used for the DVE pictures are the images of 1 to 8 on the KEY/AUX bus.

④ The KEY/AUX bus 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.

(2) Press and hold down KEY/FILL and press DEFAULT

(1) Press COMB A

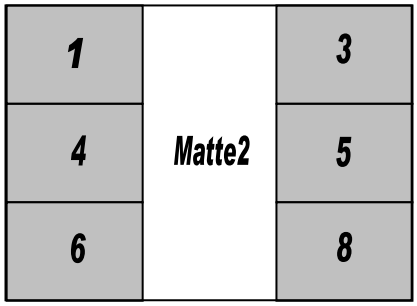




Pre-combined image
（Preview screen）

⑤ Press 2 and 7 on the KEY/AUX 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.



Pre-combined image
（Preview screen）

To Modify Each DVE Picture

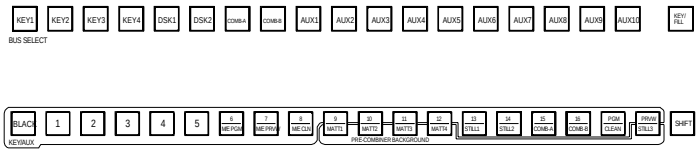
① Double-click the KEY/AUX bus 8 button. The button will be lit orange. Then go to the [Combiner Formation] menu for the DVE Picture using the single-arrow buttons in the Kyepad section.

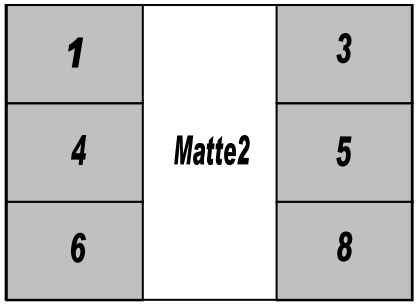
Combiner Formation			Select A=6, B=0
Src=In08	Prior=7	Opac=0	BG=Matte1

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

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

DVE picture editing is enabled while the KEY/AUX bus button is lit orange.



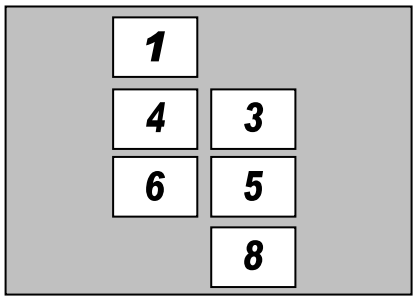


Pre-combined image
（Preview screen）

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 widths 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

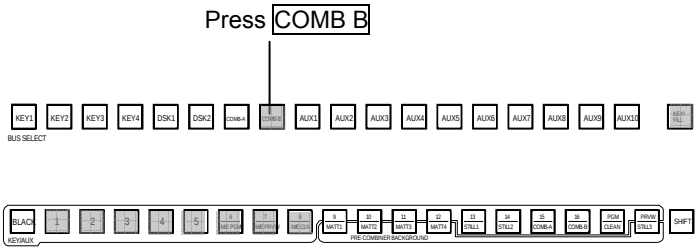
To Make a Basic Composition

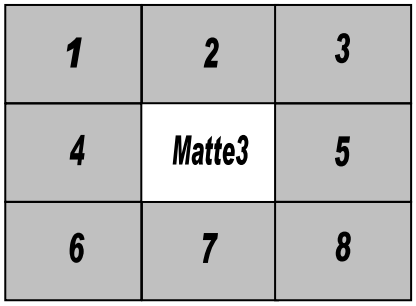
① Press the COMB B button in the BUS SELECT section. For the following operation, output COMB B to the monitor screen to view the settings.

② Press the DEFAULT button in the JOYSTIC section, while pressing the KEY/FILL button in the BUS SELECT section.

③ 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 assigned to the 1 to 8 of KEY/AUX bus.

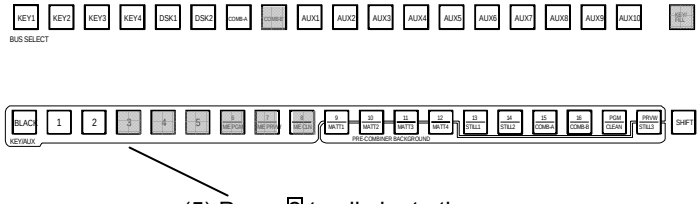
④ The KEY/AUX bus buttons whose videos appear on the combined image as DVE pictures light up **green**. These bus buttons can be used to set DVE pictures to ON/OFF.

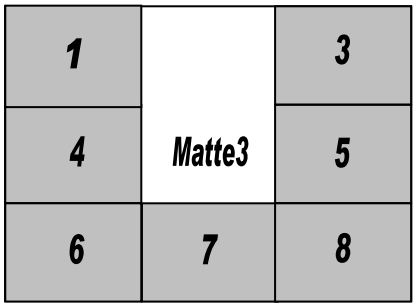




Pre-combined image
（Preview screen）

⑤ Press bus button 2 on the KEY/AUX bus to eliminate one DVE picture, so that a total of 7 sub-screens are left on the image.





Pre-combined image
（Preview screen）

Modify Each DVE Picture

① Double-click the KEY/AUX bus button 8. The button wil be lit in orange. Then go to the [Combiner Formation] menu for DVE Picture 8 using the single-arrow buttons.

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 Transitions

To Assign Pre-combiner Images to Bus

At factory shipping, Pre-combiner A image is assigned to Bus 31 and Pre-combiner B image is assigned to Bus 32 . If you want to change these bus assignments, see 7-1-5 "Changing Signal Assignments of Bus."

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

① Press M/E on P/P PGM bus to view the pre-combined image on the PGM output screen.

② In the M/E Transition section press the BKGD button. Then the button will be lit up.

③ Press 15/COMB A on the M/E PGM bus (while SHIFT is lit). The button will be lit in **red**.

④ Press 16/COMB B on the M/E PST bus (while SHIFT is lit). The bus button will be lit in **green**.

⑤ Press the WIPE (or DVE) button. The button will be lit up, and the WIPE (DVE) menu will be displayed. Turn F1 under the Pat to **select a pattern** to be used for the background transition. (See Appendix 2, "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 the Enter button.

⑥ Set the **Transition Rate**, if necessary. (See section 8-1-3 "Transition Rate".)

⑦ If necessary, set the **transition direction** using the NOR/REV or REVERSE buttons in the M/E FADER section above the fader lever.

⑧ You can also apply **a modifier** to a selected pattern. It can be set in the [Wipe Modify] or [DVE Modify] menu. See section 10. "Wipe Modify " or section 11. "DVE Modify" for more details.

⑨ Press the M/E AUTO button or move the fader lever in the M/E 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 keys, 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.

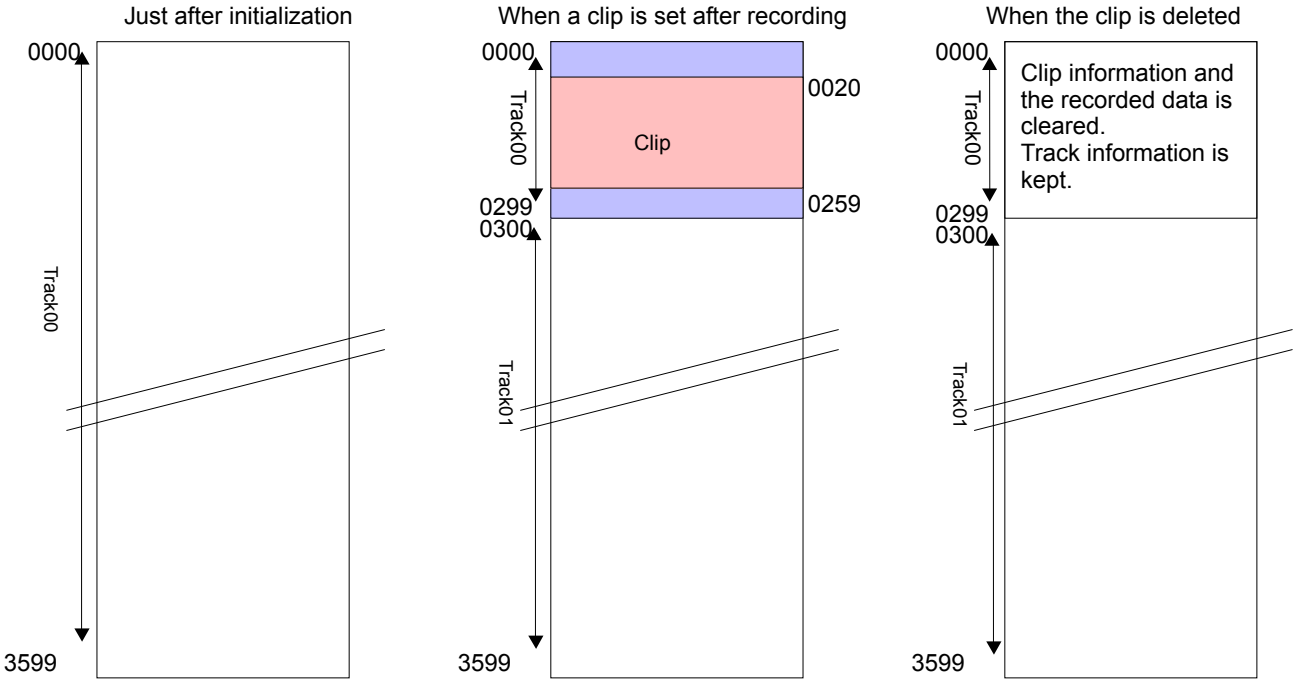
14-1. Managing Frame Memory

<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.



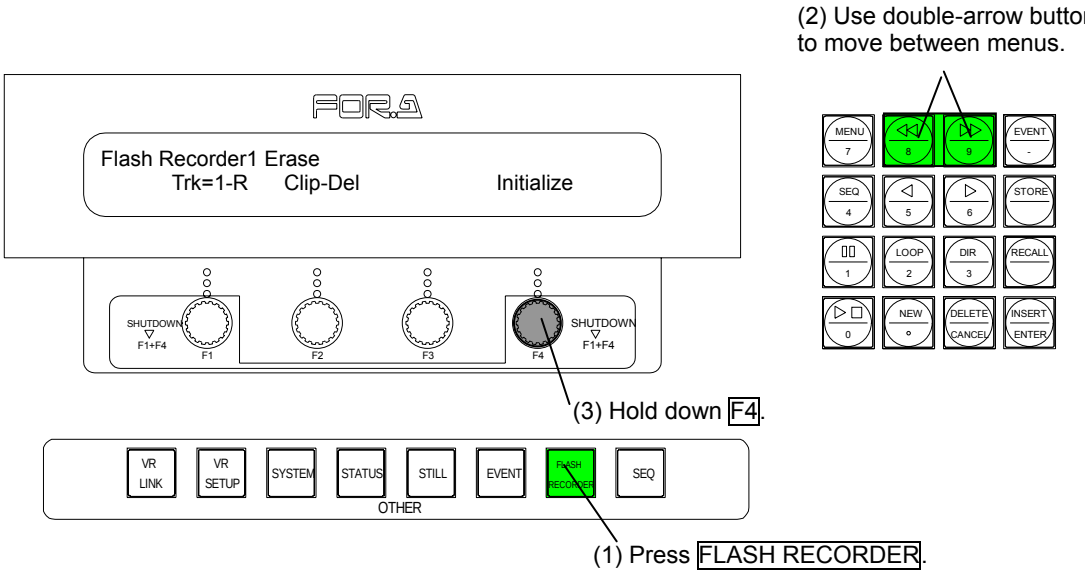
Relationships between Track and Clip

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 FLASH RECORDER button in the OTHER section to open the [Flash Recorder] -[FR1 Setup] menu.

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



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

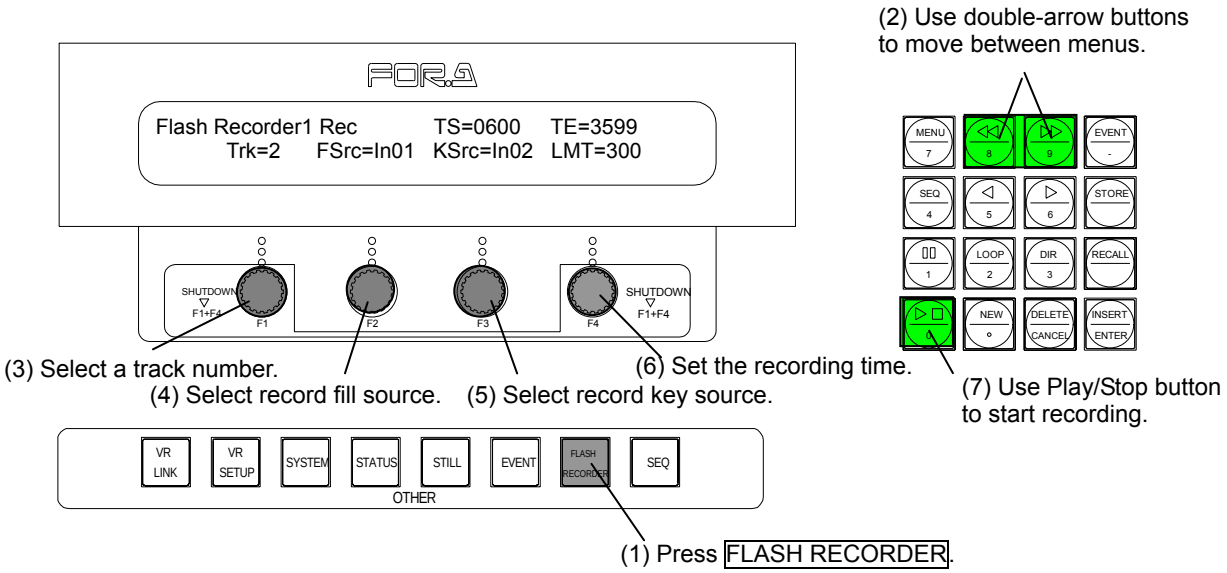
IMPORTANT
If the initialization cannot be successfully completed, the percentage for the Bad sector will be displayed at the top right in the menu display. If the initialization is successfully carried out, there is no display in the area.

14-3. Recording in Tracks

◆ **Recording in FR1**

① Press FLASH RECORDER button in the OTHER section to open the [Flash Recorder] -[FR1 Setup] menu.

② Go to the [Rec] menu using double-arrow buttons in the Kyepad section.

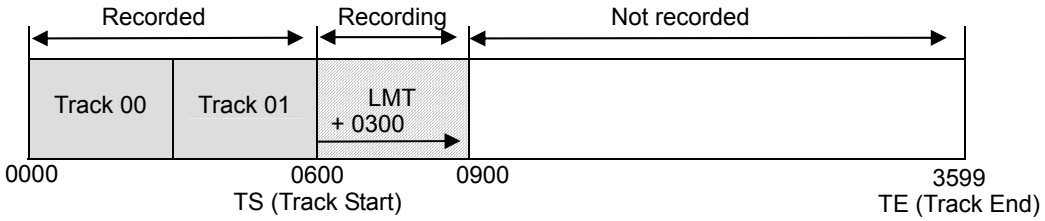


③ Turn F1 to select a Track number.

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.



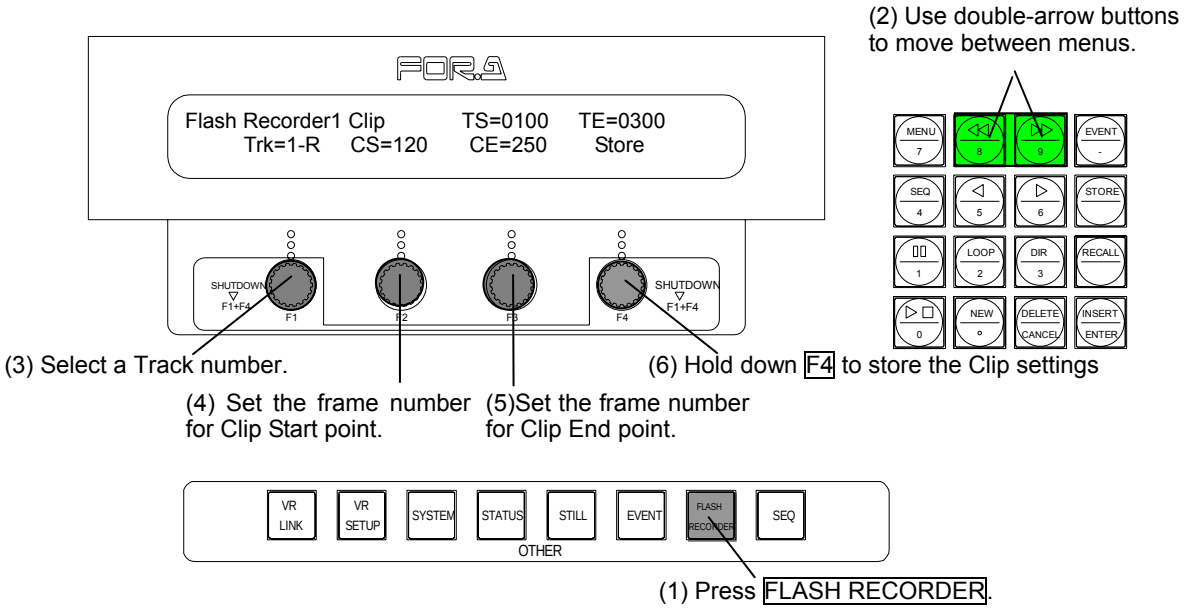
⑦ Press the Play/Stop button (▷□) in the Kyepad section to start recording. Press the Play/Stop button again to stop recording.

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 FLASH RECORDER button in the OTHER section to open the [Flash Recorder] -[FR1 Setup] menu.

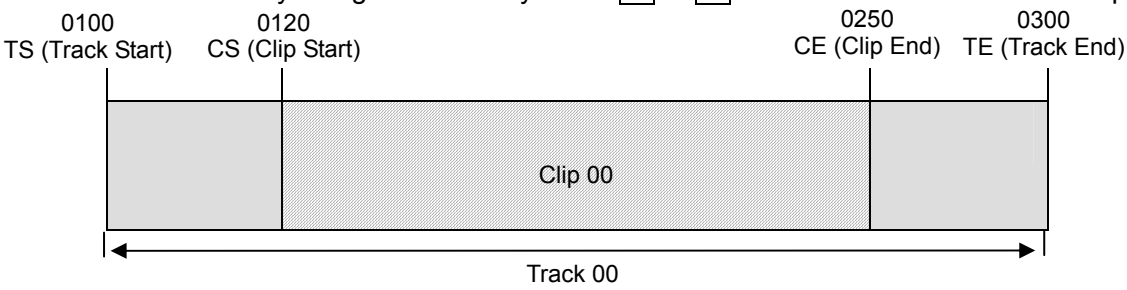
② Go to the [Clip Set] menu using the double-arrow buttons in the Kyepad section.



③ Turn F1 to select a Track number.
TS and TE in the window are showing 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.

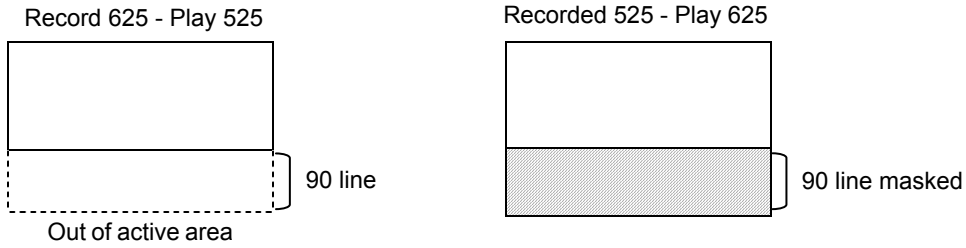


⑥ Press and hold down F4 to store the Clip settings. The data is stored in the non-volatile memory on Flash Recorder card.

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

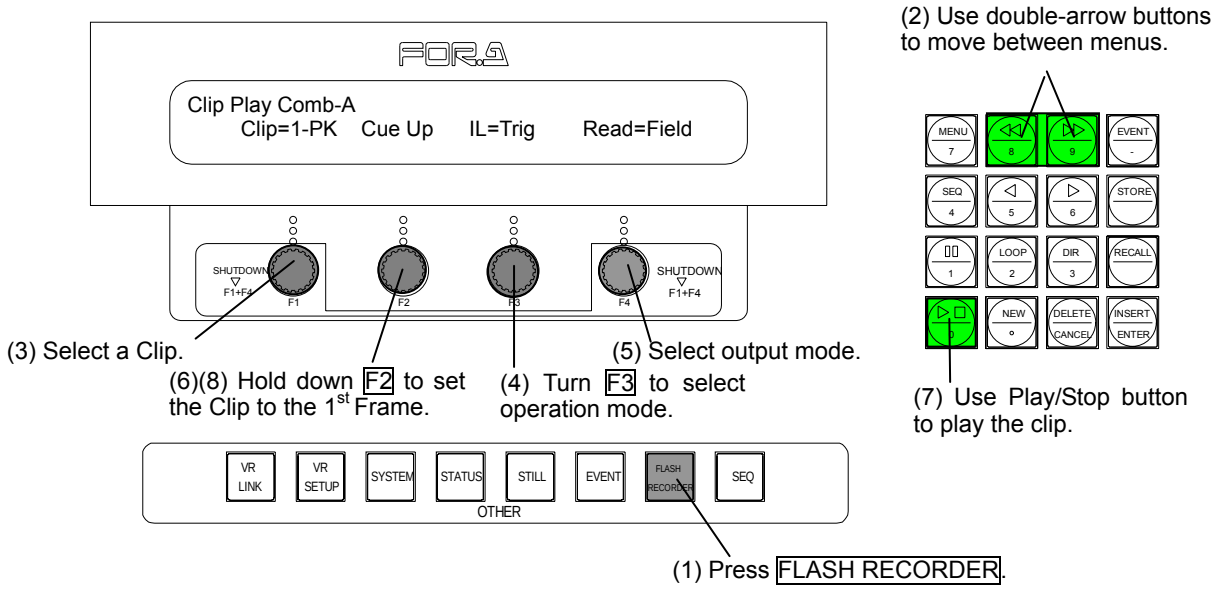
Flash Recorder outputs signal from Clip Play Comb-A to Comb A, and from Clip Play Comb-B to Comb B. The priority between FR and DS outputs can be set in the [System - Other - Route Priority] menu that is accessible by the SYSTEM button in the OTHER section.

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 Press FLASH RECORDER button in the OTHER sectin to open the [Flash Recorder] menu.



② Go to the [Clip Play Comb-A] menu using the double-arrow buttons in the Kyepad section.

③ Turn F1 to select a Clip to be output.
When one VPS-70FR is installed: Both 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 M/E AUTO button, and the duration of playback is the same as the duration of recording.
Linkage: By M/E AUTO button: Playback processed at the set transition rate
By Fader lever: Playback processed in conjunction with fader lever operation

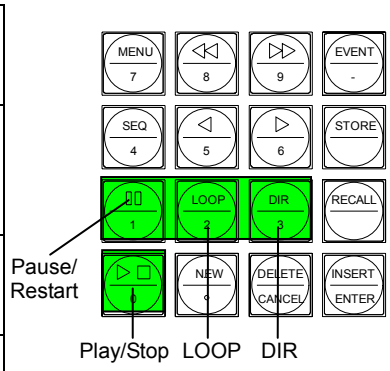
⑤ Turn F4 to select the output mode from Frame, or Field.

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.
▯▯	Pause/Restart button	Pressing the button during playback pauses the playback. Pressing again restarts 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.



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 settings. Basically FR1 has the priority over FR2 when two FR cards are installed.

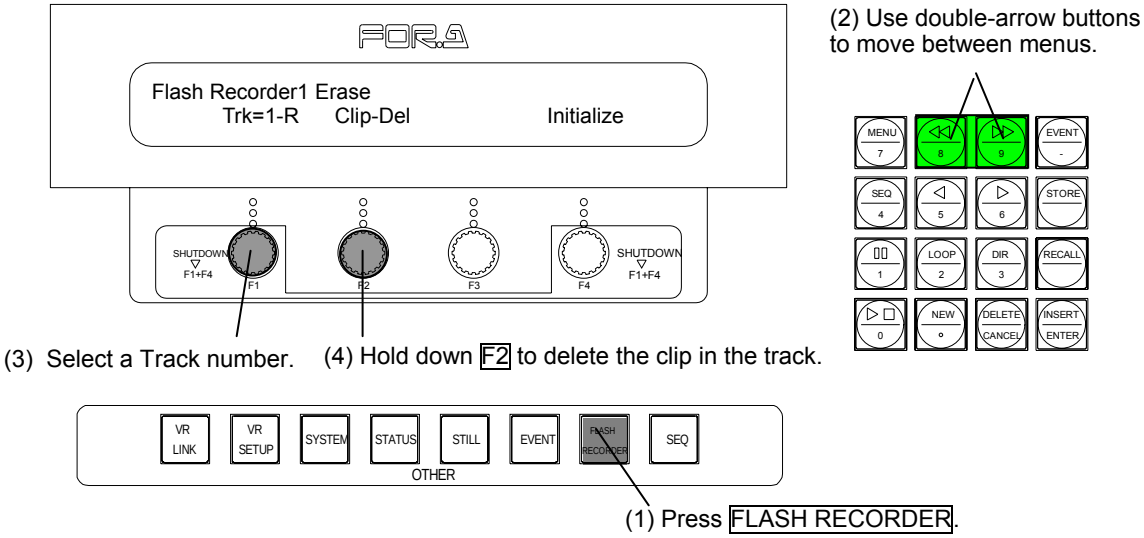
"N" or "P" attached at the end of Clip number indicates formats, "K" indicates the Clip is with a Key, and "D" indicates there is no recorded data.

14-6. Deleting Clips

◆ **Deleting Clips in FR1**

① Press the FLASH RECORDER button in the OTHER section to open the [Flash Recorder]-[FR1 Setup] menu.

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

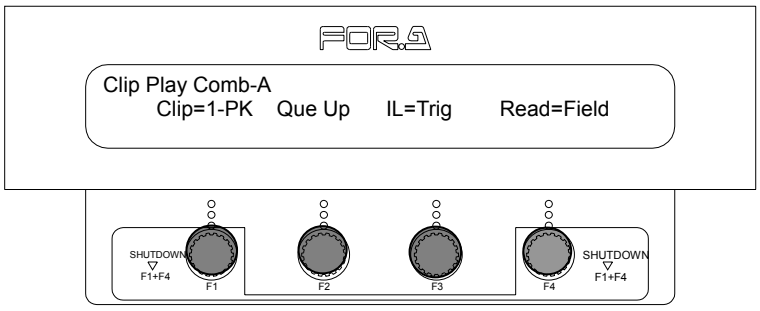


③ Turn F1 to select the Track number.

④ Press and hold down 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.

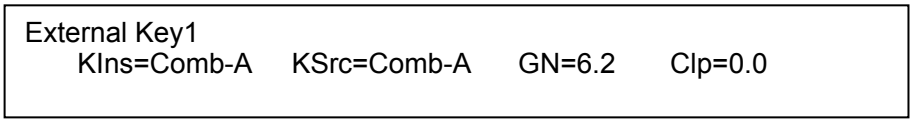
Graphic Wipe Example

(1) Press the SYSTEM button in the OTHER section to open the [SYSTEM] menu. Then use single-arrow buttons to go to the [Other] menu. Turn F2 and select either FR=DS or FR>DS.
(2) Press the FLASH RECORDER button in the OTHER section to open the [Flash Recorder] menu.
(3) Record a data in a Track. (See section 14-3. "Recording in Tracks".)
(4) Create a clip. (See section 14-4. "Editing Clips".)
(5) Use double-arrow buttons in the Keypad section to open the [Clip Play Comb-A] menu.
(6) Turn F1 to select a clip to use for the key.



(7) If you are going to operate with the Fader lever or the M/E AUTO button, turn F3 to select Inter Link mode.
Trigger: Triggered to start by the M/E AUTO button and the duration of the playbackis the same with the duration of recoding.
Linkage: By M/E 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 Insert and Source to Comb-A.



(9) Press the KEY1 button in the M/E Transition section (lit green). Then press the M/E 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 M/E Transition section. Then the button will be lit. Use the fader lever or the M/E 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 or in the OTHER section. The keypad is changed to EVENT mode and the [EVENT] menu is displayed in the window.

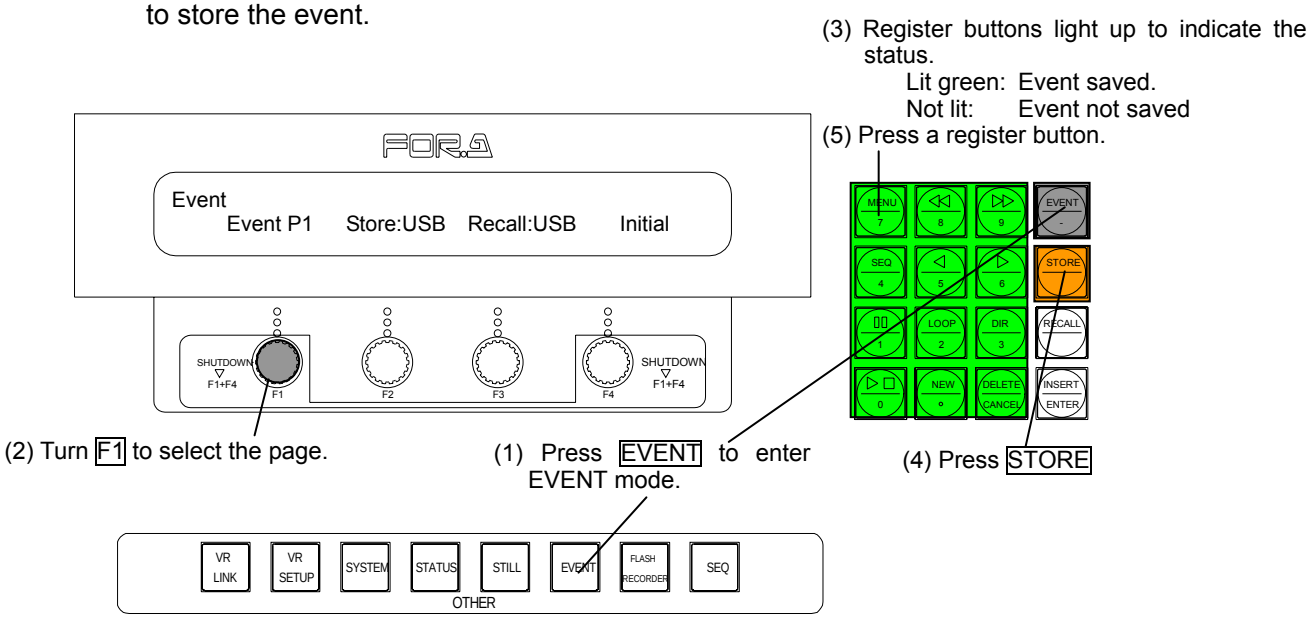
② Turn F1 to select a page.

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

④ Press STORE in the Keypad section. The button lights up red.

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

⑥ Turn F2 to select where to store the event from OU and USB, then press and hold down F2 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 the STORE button. The button will be lit (step (4) above), then press the register button (0 to 9, NEW and DELETE) of the event which you want to delete while holding down the KEY/FILL button in the BUS SELECT section. The register button indicator goes 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.

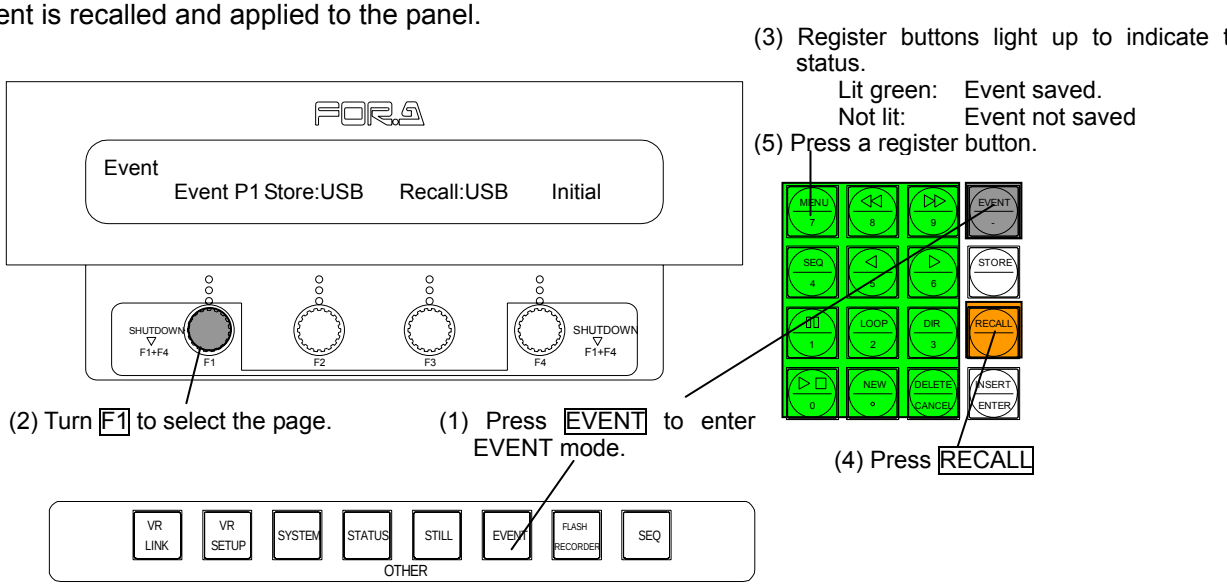
① Press the EVENT button in the Keypad section or in the OTHER section. The keypad is changed to EVENT mode and the [EVENT] menu is displayed in the window.
(To select the contents of event data to recall, see "Event Target" on the following page.)

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 In the Keypad section. The RECALL 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 recall the data 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. The 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) button while holding down KEY/FILL button in the BUS SELECT section.

15-3. Clearing Events

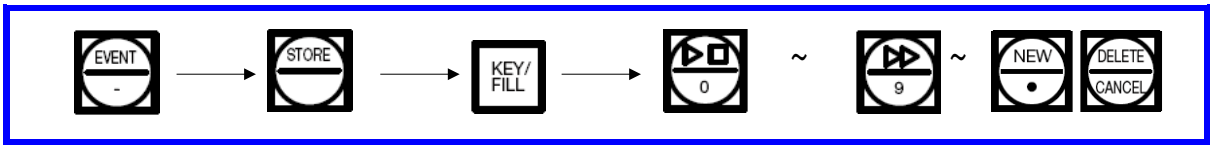
The events stored in the OU can easily be cleared. They can be cleared on a per-page basis.

① Press the EVENT button in the Kyepad section or in the OTHER 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 F1 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 KEY/FILL 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. Therefore, 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 Kyepad section or in the OTHER 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 EVENT button in the OTHER section 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 Create an image to start the sequence with.

② Press the SEQ button in the Kyepad section or in the OTHER section. The keypad enters SEQUENCE mode and the [SEQUENCE] menu is displayed in the window.

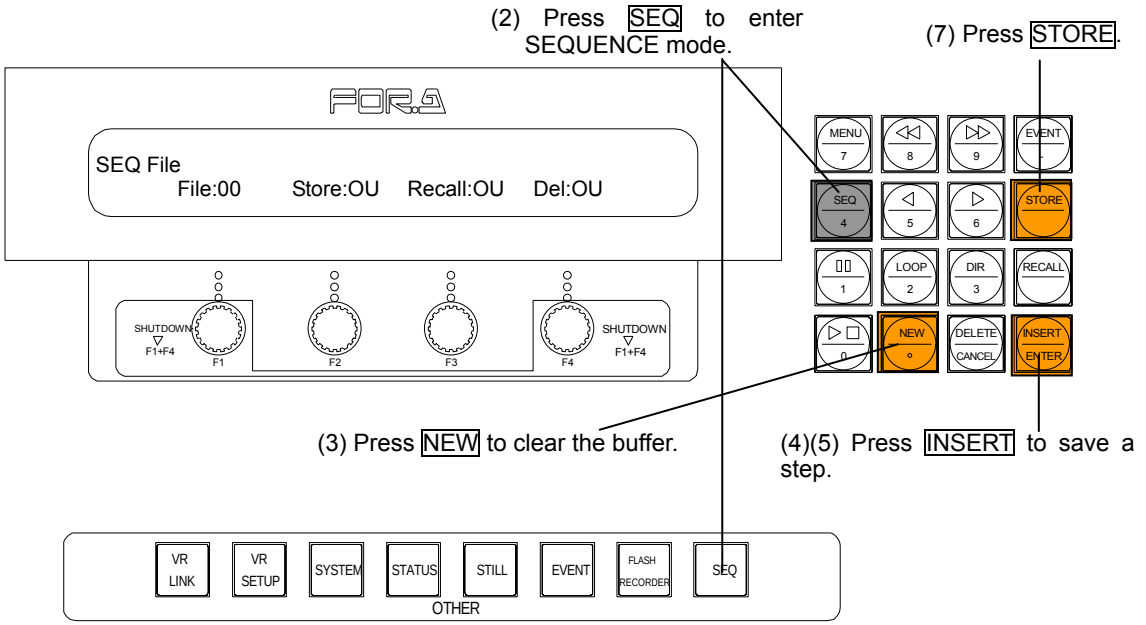
③ Press the NEW button in the Kyepad section to clear the sequence buffer.

④ Press the INSERT/ENTER button to save the current panel settings to the sequence.

⑤ Press the SEQ button to exit SEQUENCE mode. Create an image for the next keyframe, and press the SEQ button again to enter SEQUENCE mode. Then press the INSERT/ENTER button to save the current keyframe to the next step of the sequence.

⑥ Repeat step (5) until all steps of the sequence are saved to the memory.

⑦ In the [SEQUENCE] - [SEQ File] submenu, turn F1 to select a file to store the sequence. Press the STORE button in the Kyepad section.



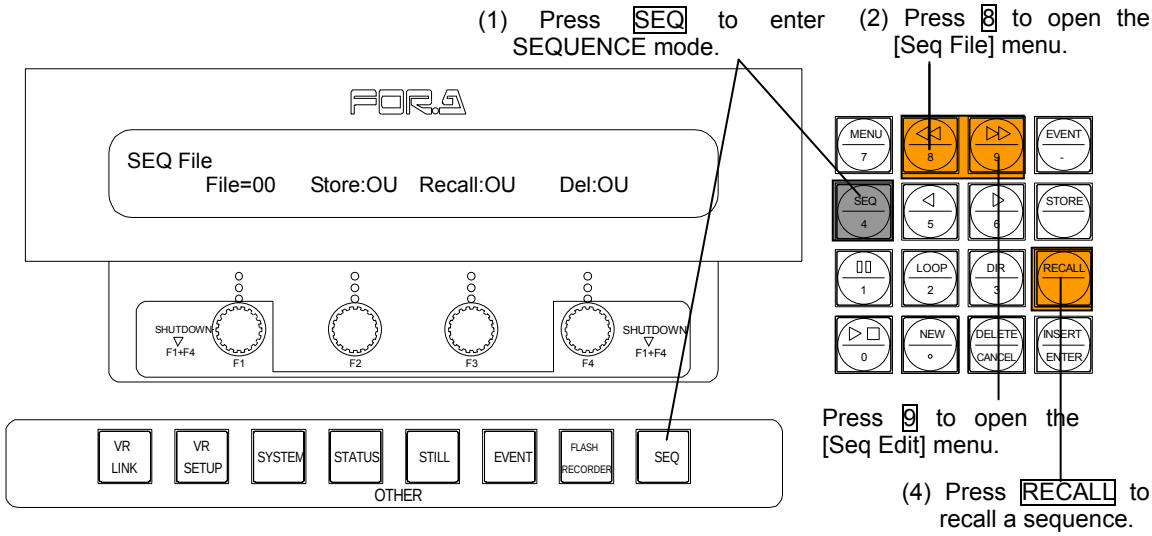
⑧ Turn F2 to change the destination to store the file to USB. Then press and hold down F2 to store the file in USB memory.

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 the SEQ button in the Kyepad section or in the OTHER section. The keypad enters SEQUENCE mode and the [SEQUENCE] menu is displayed in the window.

② Press 8 in the Kyepad 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 recall.

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

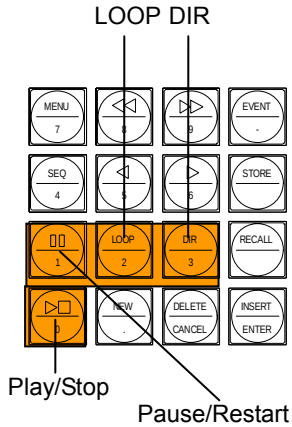
◆ **Deleting Sequence**

To delete the sequence previously made, recall the sequence (see above) and press and hold down F4 , or press DELETE in the Kyepad section.

16-3. Playing Sequence

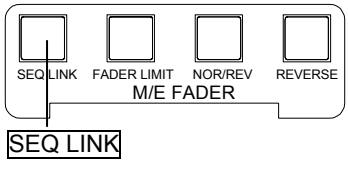
Once the sequence has been recalled, you can play/stop it with the related buttons in the Kyepad section (see below). Loop play and reverse play modes are available.

▷□	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 restarts the play.
LOOP	Loop button	Pressing the play button while LOOP is lit repeats the play continuously.
DIR	DIR button	Pressing the play button while DIR is lit plays the sequence in reverse.



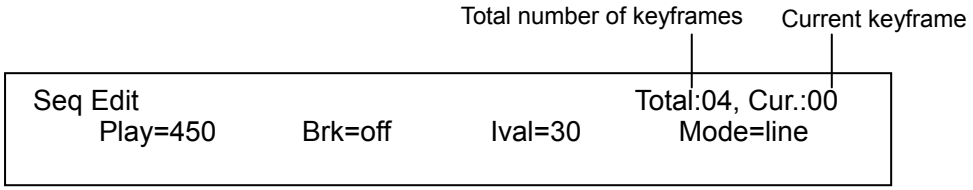
◆ **SEQ LINK**

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



16-4. Editing Sequences

To edit a sequence, select the sequence file and press RECALL to recall the data and press 9 on the keypad to display the [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 the interpolation mode. The available parameters are: Point, Line and Curve.

Each time after editing keyframes, 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.

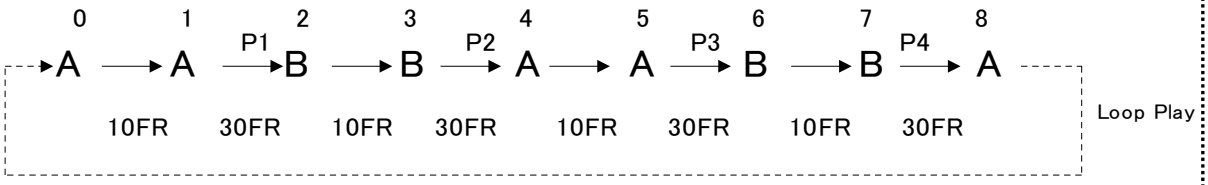
IMPORTANT
To add a keyframe at the end of the sequence, add the keyframe when the Total (Total) and the Cur (current) indications show the same number.

◆ **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

Serial interfaces allow the output signal selections, tally output expansion, editor control or other remote controls of the VPS-715. The switcher has three RS422 Serial Interfaces, one of which is dedicated to an Editor control. When setting up the RS422 interfaces, press the SYSTEM button in the OTHER section 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 and 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:Even 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

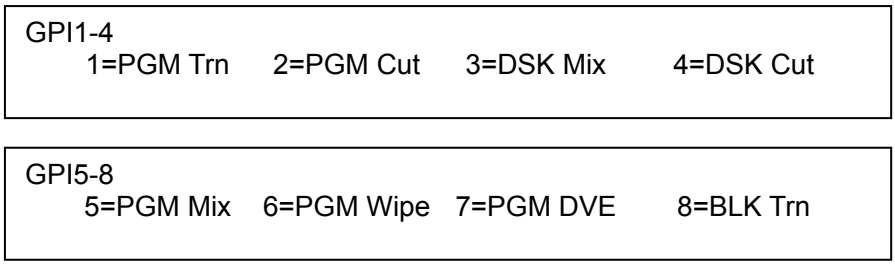
The VPS-715 has GPI IN interface capability to allow other devices to initiate switcher operations. The pins 30-37 of the REMOTE connector are dedicated to GPI inputs. Transition triggers and transition type commands are assigned to these 8 pins at the factory default. (See the table below.)

Item		Default	Description	Setting Range
1	GPI 1 (pin 30)	M/E Trans (PGM Trn)	Initiates the M/E transition.	M/E Trans Seq.Play M/E Cut M/E Mix M/E Wipe M/E DVE DSK Cut DSK Mix BLK Trans P/P Cut P/P Trans
2	GPI 2 (pin 31)	M/E Cut (PGM Cut)	Initiates the M/E Cut transition.	
3	GPI 3 (pin 32)	DSK Mix	Initiates the DSK Mix transition.	
4	GPI 4 (pin 33)	DSK Cut	Initiates the DSK Cut transition.	
5	GPI 5 (pin 34)	M/E Mix (PGM Mix)	Changes the M/E transition type to Mix.	
6	GPI 6 (pin 35)	M/E Wipe (PGM Wipe)	Changes the M/E transition type to Wipe.	
7	GPI 7 (pin 36)	M/E DVE (PGM DVE)	Changes the M/E transition type to DVE.	
8	GPI 8 (pin 37)	BLK Trans (BLK Trn)	Initiates the 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-715 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.)

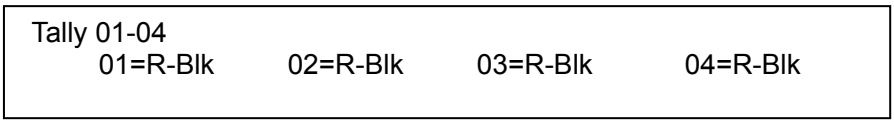
Item		Default	Description	Setting Range
01	Tally 1 (pin 1)	R-In01	RedTallyInput01	R-Blk (Black) R-In01 - 16 (Input) R-Stl1 - 2 (Still) R-Mat1-4 (Matte) R-PCb1-2 (Pre-combiner) R-Resv (Reserve) G-Blk (Black) G-In01 - 16 (Input) G-Stl1 - 2 (Still) G-Mat1-4 (Matte) G-PCb1-2 (Pre-combiner) G-Resv (Reserve) 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 tally assignments, if necessary.

① Press the SYSTEM button in the OTHER section 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.



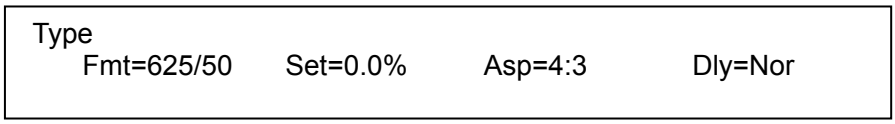
18. System Setup

The system signal format selection and the reference signal adjustments can be made in the [SYSTEM] menu. Press the SYSTEM button in the OTHER section to open the [SYSTEM] menu. Then, use the single-arrow buttons in the keypad (while MENU is lit) to go to the relevant submenus.

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 7-1-6. "Input Signals and Frame Synchronizer Mode." The system delay of VPS-715 is 1 frame with reference to the input BB. The system delay time varies according to DVE and 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 Data

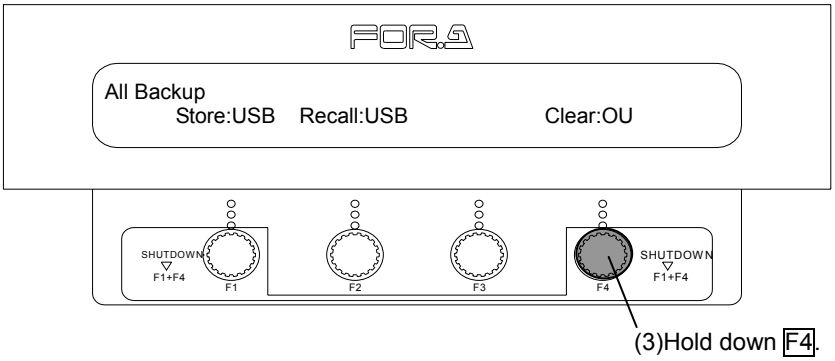
For clearing or backing up OU data, you can select whether to clear or back up all or a part of data from System Backup (Event, I/O setting, Initial setting and Status), File Backup (Still and Sequence) or All Backup. All these clearing or backing up can be made in the [SYSTEM] - [Data Backup] submenus. 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 the SYSTEM button in the OTHER section to open the [SYSTEM] menu.

② Use single-arrow buttons to go to the [SYSTEM] - [All Backup] submenu.



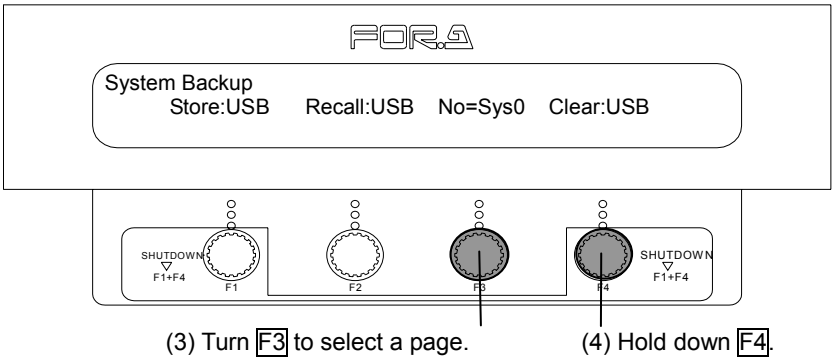
③ Press and hold down F4 to clear the System Data and the File Data in OU.

◆ **System Backup**

① Press the SYSTEM button in the OTHER section to open the [SYSTEM] menu.

② Use single arrow buttons in the Kyepad 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.

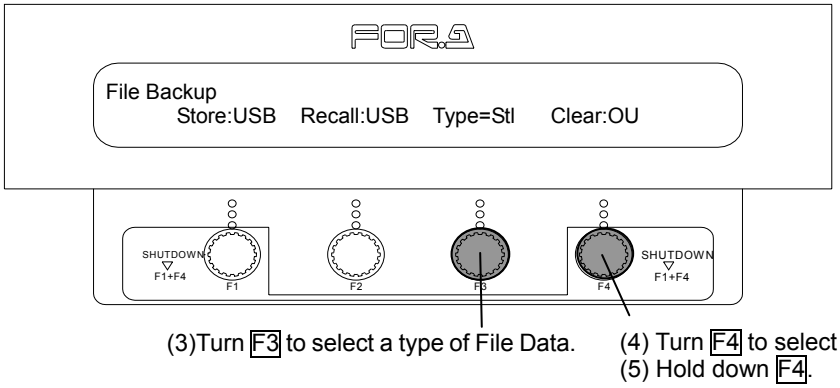
IMPORTANT
An asterisk is attached to the displayed page number when the selected System Data (0 to 9) exists.

◆ **File Backup**

① Press the SYSTEM button in the OTHER section to open the [SYSTEM] menu.

② Use single-arrow buttons in the Kyepad 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.

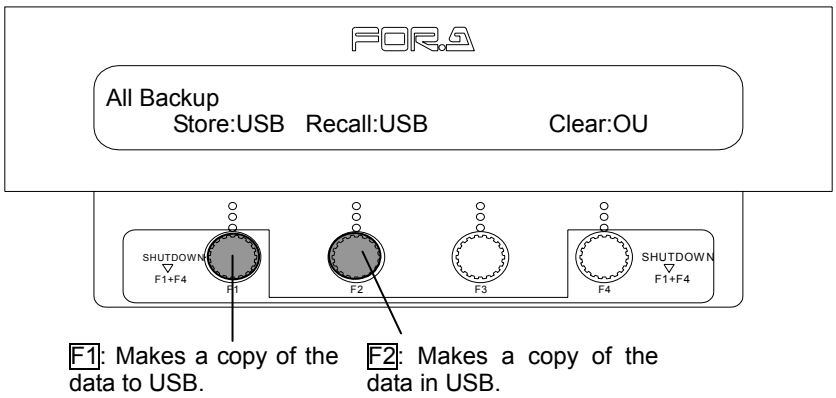
⑤ Press and hold down F4 to clear the selected File Data.

18-2-2. Backing Up OU Data

◆ **All Backup**

① Press the SYSTEM button in the OTHER section to open the [SYSTEM] menu.

② Use single-arrow button in the Kyepad 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 in the OU is stored to the USB memory.

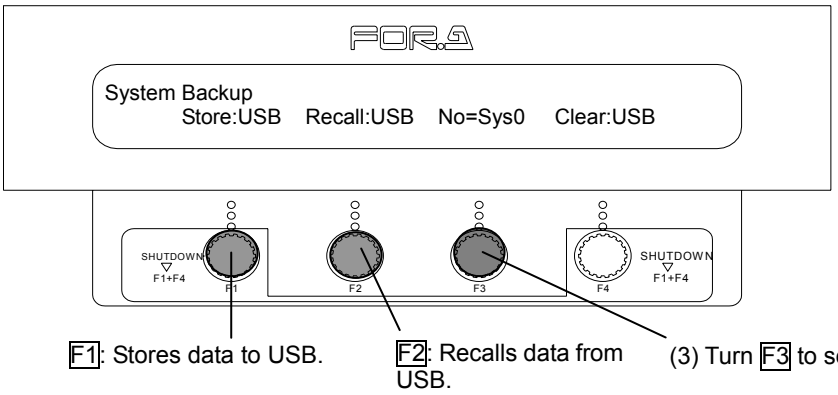
IMPORTANT
When sufficient memory space is not available, processing is automatically cancelled. (An error message appears.)

◆ **System Backup**

① Press the SYSTEM button in the OTHER section to open the [SYSTEM] menu.

② Use single-arrow buttons in the Kyepad section to go to the [SYSTEM] - [System Backup] submenu.

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



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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 in the OU is stored to the USB memory.

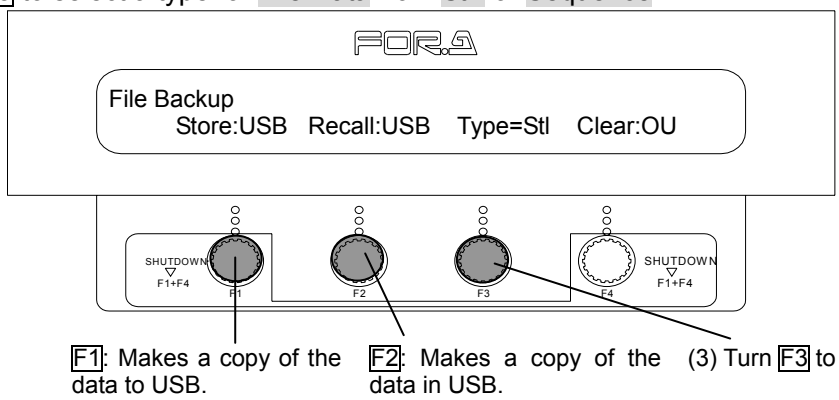
IMPORTANT
When sufficient memory space is not available, processing is automatically cancelled. (An error message appears.) Each of the System Data (0 to 9) files stored to the USB memory will be named "a" to "j".

◆ **File Backup**

① Press the SYSTEM button in the OTHER section to open the [SYSTEM] menu.

② Use single-arrow buttons in the Kyepad section to go to the [SYSTEM] - [File Backup] submenu.

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



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

Update
OU=1.00 DPU Cal. TG:Input1 Cursor

Item		Default	Description
OU	OU Update	(Software version)	Updates the OU software.
DPU	DPU Calibration	-	Performs touch panel calibration. Do not set to Cal. unless a touch panel is connected.
TG	Firmware Update	SDI_1-4	Updates the MU firmware. The available parameters 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, and FR_2
Cursor	Cursor	-	Turns on or off the cursor icon display for the case of operating the optional VPS-715DPUIF 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.

If an optional touch panel display (VPS-715DPUA) 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 perform the touch panel calibration.

18-4. Status

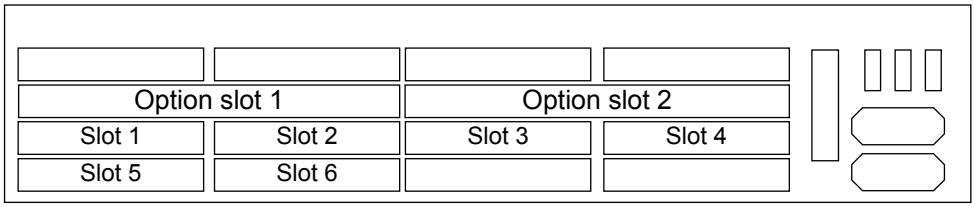
18-4-1. Option Boards

◆ **Board (Display example)**

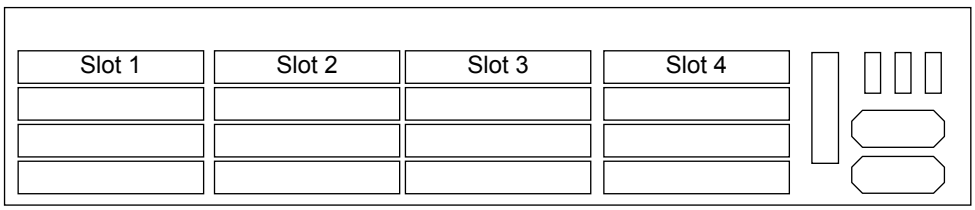
Free space of CF card

```
Board In/Out/Op./Mod                                    <XXXMB, XX%>
        1d2d3a4-5-6 / 1d2d3a4- / 1ds2ds / DPUIF, WP, CK
```

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 module (VPS-70DPUIF) is installed.
	WP	Indicates that the DVE Warp engine module (VPS-70Warp) is installed.
	CK	Indicates that the Chromakey module (VPS-70CK) is installed.

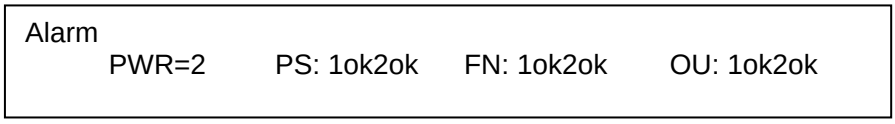


Input Slots of VPS-715 Rear Panel

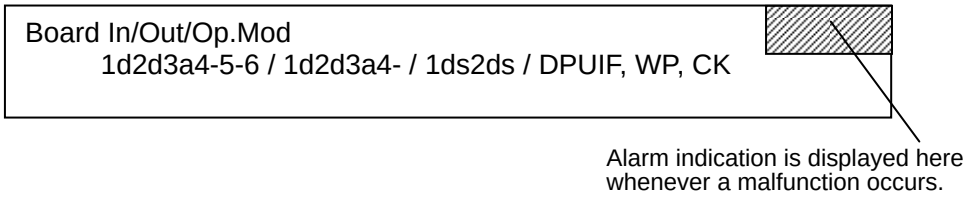


Output Slots of VPS-715 Rear Panel

18-4-2. Alarm



Item		Description
PWR		VPS-715MU
PS	1	Indicates the POWER1 (front side) alarm. “NG” will be shown when a power failure occurs.
	2	Indicates the POWER2 (front side) alarm. “NG” will be shown when a power failure occurs.
FAN	1	Indicates the alarm for the rear right-side fan (8 cm square). NG” will be shown when a fan failure occurs.
	2	Indicates the alarm for the rear left-side fan (8 cm square). NG” will be shown when a fan failure occurs.
OU	1	Indicates the POWER1 (rear side) alarm. “NG” will be shown when a power failure occurs.
	2	Indicates the POWER2 (rear side) alarm. “NG” will be shown when a power failure occurs.



IMPORTANT

When a power failure or fan failure occurs, the STATUS button in the OTHER section blinks red.

Change all fans whenever a fan needs to be replaced.

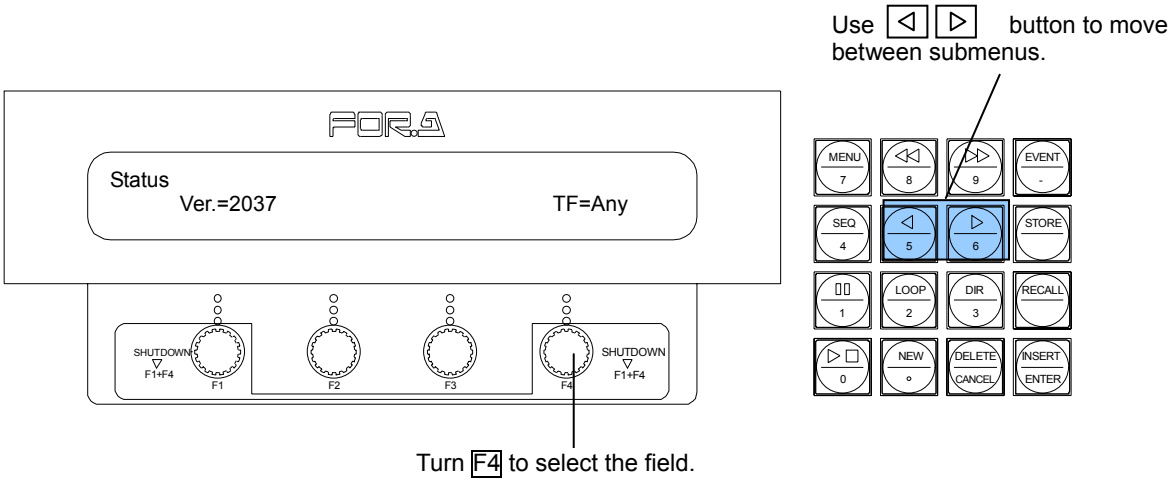
18-4-3. CPU Version

Item	Description
CPU1	Displays the firmware version of the CPU.
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 M/E and P/P 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-715

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 270Mpbs, 75Ω, 8 inputs (expandable 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 270Mpbs, 75Ω, 8 outputs (Program 2, Preview, Clean, M/E PGM and M/E PVW, 1 ea., Auxiliary 2) (expandable 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-715MU	Standard: 190VA (100V), 200VA(240V) Full option: 210VA (100V), 220VA(240V)	
Weight	VPS-715MU	Approx. 18kg	
Dimensions	VPS-715MU	430 (W) x 425(D) x 132 (H) mm, EIA 3RU	
Consumables	Cooling fan:	999136 x 1 (Front)	Replace every 4 years
		999137 x 2 (Rear)	Replace every 4 years

19-1-2. VPS-715OU

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	40VA(100V), 53VA(240V)
Weight	10kg
Dimensions	665 (W) x 399 (D) x 162 (H) mm, EIA 3RU

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

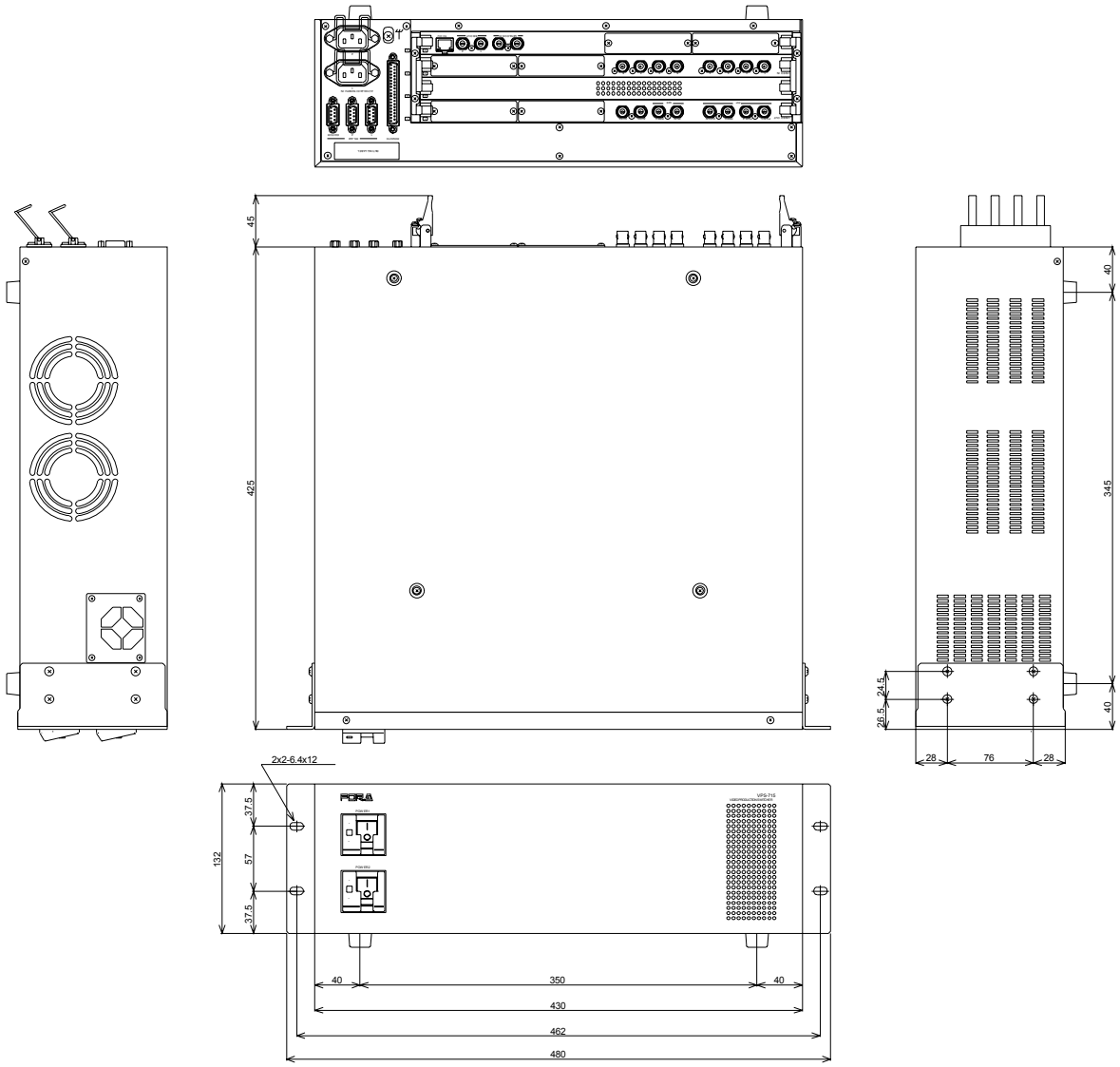
Analog component GBR outputs:

Frequencey Response	100kHz - 5MHz: ±0.5dB, roll off above 5MHz
S/N Ratio	60dB (no quantization noise)
K-factor	1%

19-2. External Dimensions

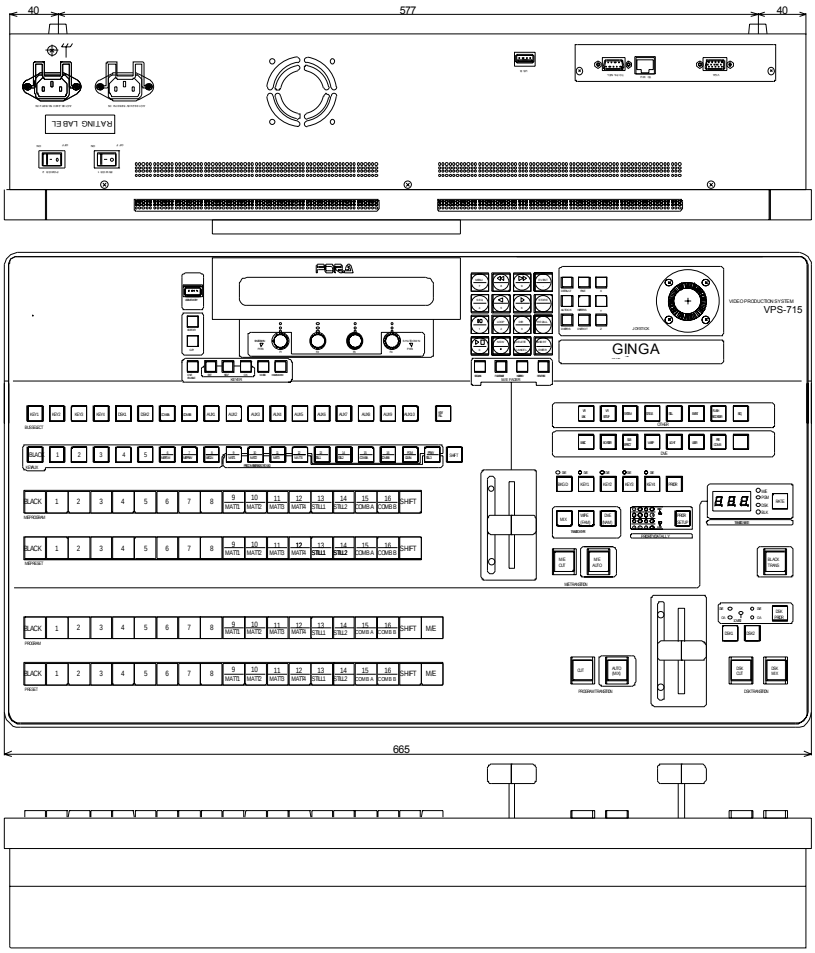
19-2-1. VPS-715 MU

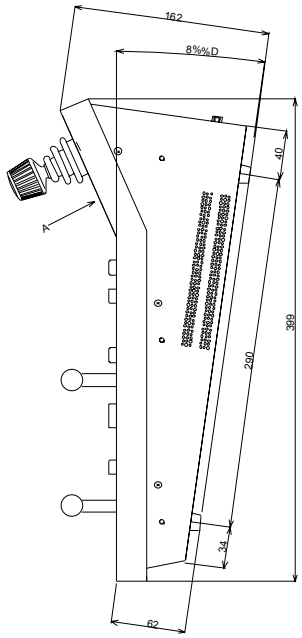
(All dimensions in mm.)



19-2-2. VPS-715OU

(All dimensions in mm.)





Appendix 1. Menu List

1-1. M/E menu

Button		Menu	Submenu	Item	Settings	Refer to
MIX (M/E TRANSITION section)		BUS	Transition Rate	M/E Rate	1 - 999	8-2-2
				PGM Rate	1 - 999	
				DSK Rate	1 - 999	
				BLK Rate	1 - 999	
WIPE (M/E TRANSITION section)		Wipe	Pattern	Pattern No.	0-40, 42-48, 65-114	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	
			Border Color	Pattern No.	0-40, 42-48, 65-114	10
				Luminance	0.0 - 108.6%	
				Saturation	0.0 - 100.0%	
				Hue	0.0 - 359.5	
			Modify	Aspect	-1.000 - 1.000	
				Center Position X	-1.000 - 1.000	
				Center Position Y	-1.000 - 1.000	
				Angle	-16 - 16	
DVE (M/E TRANSITION section)	BASIC, BORDER, SUB EFF, WARP, LIGHT	DVE	(DVE Modify menu)			8-2-3
FADER LIMIT (M/E FARDER section)		Fader Limit		Fader Limit	0.0 - 100.0 [%]	8-2-4
Shortcut button to 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		Menu	Submenu		Item	Settings	Refer to
KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	EXT	External Key	External Key 1		Key Insert	BLK, In01-16, Stl 1-2, Mat1-4, ComA, ComB	9-1
					Key Source		
					Gain	-1600-1600 [%]	
					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, Stl 1-2, Mat1-4, ComA, ComB	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, Stl 1-2, Mat1-4, ComA, ComB	9-4-1
					Position X	0 - 1023	
					Position Y	0 - 1023	
	CK	Chroma Key	Manual	1	Hue Angle	0 - 359.5 Deg	9-4-2
					Key Acc	0 - 359.5 Deg	
					Gain	-800% - 800%	
					Clip	-100% - 100%	
				2	Luminance Suppress	0.0 - 100.0%	
					Chroma Accept	0 - 359.5 Deg	
					Chroma Suppress	0.0 - 100.0 [%]	
					Chroma Tint	-100% - 100%	
			Other		Opacity	0 - 100	
					External Mask Enable	Enable, Disable	
			Detail	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		Mask Pattern	0-33, 38-40, 42-48, 65-69, 75-79, 85-94, 105-114	9-2
					Pattern Center X	-1.000 - 1.000	
					Pattern Center Y	-1.000 - 1.000	
					Pattern Size	0.0 - 100.0 [%]	

Button		Menu	Submenu	Item	Settings	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 [%]	
				Matte Mode	Single, Dual	
			Edge Position	Direction	0 - 11 (Clockwise)	
				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	Pattern	DVE Pattern	Pattern No.	0 - 77, 100 - 252	8-5-5 9-5
				User DVE Data Clear	-	
				User DVE Data Store	-	
	BASIC, BORDER, SUB EFF, WARP, LIGHT	DVE Modify	(DVE Modify menu)			8-2-3 11

1-3. Pre-Combiner menu

Button	Button	Menu	Submenu	Item	Settings	Refer to
COMB A COMB B	BASIC	DVE Basic - Position	Local Source Local Target Global Source Global Target	Position X	-16.000 - 16.000	11-3-1 13-2
				Position Y	-16.000 - 16.000	
				Position Z	-16.000 - 16.000	
		DVE Basic - Rotation	Local Source Local Target Global Source Global Target	Rotation X	-16.000 - 16.000	
				Rotation Y	-16.000 - 16.000	
				Rotation Z	-16.000 - 16.000	
		DVE Basic	Aspect	Size X	0 - 16.000	11-3-2 13-2
				Size Y	0 - 16.000	
				Size Z	0 - 16.000	
		DVE Basic	Setup	Use Global	Disable, Enable	11-3-3
				DVE	Off, On-wok, On-w/k	
	BORDER	Border	Border Color	Border Enable	On, Off	11-4 13-2
				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	
			Highlight 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	13-2
				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		Settings	Refer to
Flash Recorder	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	Truck 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	Settings	Refer to
STILL	Still	Download	Destination	In01-16, Stl 1-3	12-2
			Source	00 - 99	
			Download	OU, USB	
			Direct Download	Off, On	
		Image Capture	File	00 - 99	
			Freeze Mode	Frame, Live Odd Field, Even Field	
			Capture	Capture Start	
		Export Still	File	00 - 99	
			File Format	Bmp, tga	
			Overwrite	New File	
			Export	USB	
		Delete Still	File	00 - 99	
			Delete	OU, USB	

1-6. Sequence and Event menu

Button	Menu	Submenu	Item	Settings	Refer to
SEQ (OTHER 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 (OTHER section)	Event	Event Data	Select Event Page	Event P1 - P8	14-1
			Store Event	OU, USB	
			Recall Event	OU, USB	
			Initialize	Initial	
		Event Target	M/E Area	Full M/E, M/E Off, P/P bus Source Hold	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	Settings	Refer to
KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	MATTE1 MATTE2 MATTE3 MATTE4	Matte	Matte Color	Select	Mat 1- 4	12-1
				Luminance	0.0 - 108.6%	
				Saturation	0.0 - 100.0%	
				Hue	0.0 - 359.5	
	IN01 IN02 IN03 IN04 IN05 IN06 IN07 IN08 IN09 IN10 IN11 IN12 IN13 IN14 IN15 IN16	Input	FS Setting	FS Mode	On, Off	7-1-5 7-1-6
				Freeze Mode	Live, Frame, Odd Field, Even Field	
				Auto Freeze Mode	On, Off	
			Process Control 1	White Clip	50.0 - 109.0%	7-1-7
				Black Clip	-7.0 - 50.0%	
				Luminance Gain	0.0 - 200.0%	
				Setup	0.0 - 100.0%	
			Process Control 2	Chroma Clip	50.0 - 111.0%	7-1-7
				Chroma Gain	0.0 - 200.0%	
				H Phase Trim	-4 - 4	
				Hue	0.0 - 359.5	
			Signal Setting	F	Compst, YCBCR	4-6-2
				L	Betacam, SMPTE	
			Remap & Rename	Source	BLK, In01-16, Stl 1-2, Mat 1-4, ComA, ComB, CmAK, CmBK, PGM, PREV, CLN	7-1-2 7-1-5
				Save		7-1-2
				Download		
	AUX01 AUX02 AUX13 AUX04 AUX05 AUX06 AUX07 AUX08 AUX09 AUX10	Aux		Source	BLK, In01-16, Stl 1-2, Mat 1-4, ComA, ComB, CmAK, CmBK, PGM, PREV, CLN	7-2 4-7-2
				Inhibit	On, Off	
				Signal	Composite, Y.CB.CR, GBR	
				Level	No Control, SMPTE, Betacam	
		PVW Clean		Preview	w/D_PV, woDSK, KeyOut	7-2-2
				Clean	WoDSK, KeyOut	
				M/E PGM	BLK, In01-16, Stl 1-2, Mat 1-4, CoomA, ComB, ComAk, ComBk, PGM, PVW, M/E PGM, M/E PVW, CLN, M/E CL	
				M/E PVW	BLK, In01-16, Stl 1-2, Mat 1-4, CoomA, ComB, ComAk, ComBk, PGM, PVW, M/E PGM, M/E PVW, CLN, M/E CL	

1-8. Setup (System, Serial, GPIO/Tally, Data Backup, Update) menu

Button	Menu	Submenu	Item	Settings	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, LB	
			System Delay	Normal, Minimum	
		Other	Chroma Key Cursor	MPG, MPV, PGM, PVW	9-4-1
			Route Priority	FR>DS, FR<DS, FR=DS	
			Remap Link	Independent, Baselink	13-3
		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. Day	1 - 31	
	Serial	Protocol	RS-422A 1CH	HVS-AUX, VR-LINK	4-8 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	M/E Trans, SEQ, Play, M/E Cut, M/E Mix, M/E Wipe, M/E DVE, SDK Cut, DSK Mix, Black Trans, P/P Cut, P/P Trans	17-2
		Tally	Tally01-24	Red Tally Input 1-16, Red Tally Still 1-2, Red Tally Matte 1-4, Red Tally PComb 1-2, Red Tally Black Red Tally Reserve, Green Tally Input 1-16, Green Tally Still 1-2, Green Tally Matte 1-4, Green Tally PComb 1-2, Green Tally Black Green Tally Reserve, Alarm	17-3
	Data Backup	All Backup	Store	USB, OU	4-5 18-2
			Recall	USB, OU	
			Clear	OU	
		System Backup	Store	USB, OU	
			Recall	USB, OU	
			No.	Sys0-9	
			Clear	USB	
		File Backup	Store	USB, OU	
			Recall	USB, OU	
			Type	Stl, Seq	
			Clear	USB, OU	
	Update	Update	Cursor	On, Off	18-3

1-9. Status menu

Button	Menu	Submenu	Item		Refer to
STATUS	Status	Board	Input		18-4-1
			Output		
			Main Option		
			Module		
		Alarm	Power Supply Unit	Single Dual	18-4-2
			Power Alarm	1=OK, 2=OK 1=NG, 2=OK 1=OK, 2=NG	
			Fan Alarm		
			OU Power Alarm		
		Version	CPU firmware version		18-4-3
			Target Field	Odd, Even, Any	18-4-4

1-10. DVE Modify (Basic, Border) menu

■ **[DVE Modify] - [Basic] menu**

Button		Menu	Submenu	Item	Settings	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	-16.000 - 16.000	11-3-1
				Position Y	-16.000 - 16.000	
				Position Z	-16.000 - 16.000	
		Rotation	Local Source Local Target Global Source Global Target	Rotation X	-16.000 - 16.000	11-3-1
				Rotation Y	-16.000 - 16.000	
				Rotation Z	-16.000 - 16.000	
		Aspect		Size X	0 - 16.000	
				Size Y	0 - 16.000	
				Size Z	0 - 16.000	
		Setup		Use Globals	Disable, Enable	
				DVE	Disable, Enable (noKey), Enable (with Key)	

■ **[DVE Modify] - [Border] menu**

Button		Menu	Submenu	Item	Settings	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 (clockwise)	
				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	Settings	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	-16.000 - 16.000	11-5-1
				Position Y	-16.000 - 16.000	
			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	Through, Sepia, Nega	□
				Cb	0 - 100	
				Cr	0 - 100	
		Strobe		Strobe	Frame, Field	10-5-3
				Interval	0 - 1023	

1-12. DVE Modify (Warp) menu (Option)

◆ **[DVE Modify] - [Warp] menu**

Button		Menu	Submenu	Item	Settings	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	-16.000 - 16.000	
			DVE Ripple 2	Wave Type	Sine, Square, Triangle, Saw, Random	11-6-1
				Rotation	-16.000 - 16.000	
				Points	1 - 31	
				Sharpness	-100 - 100.0%	
			DVE Ripple 3	Sides	-2-63	11-6-1
				Position X	-16.000 - 16.000	
				Position Y	-16.000 - 16.000	
			DVE Modifier	Modifier	Enable, Disable	11-6-1
				Zoom	-16.000 - 16.000	
				Aspect	-16.000 - 16.000	
		Swirl	DVE Swirl	Position X	-16.000 - 16.000	11-6-2
				Position Y	-16.000 - 16.000	
				Amount	-1 - 1	

◆ **[DVE Modify] - [Warp] menu (Continued)**

Button		Menu	Submenu	Item	Settings	Refer to
KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	Warp	Mosaic	DVE Mosaic 1	Type	Normal, Rotated	11-6-3
				Aspect	-16.000 - 16.000	
				Size	0 - 32	
			DVE Mosaic 2	Position X	-16.000 - 16.000	11-6-3
				Position Y	-16.000 - 16.000	
				Rotation	-16.000 - 16.000	
		Slats	DVE Slats	Shape Type	Horizontal, Vertical, HV, Rotated, HV-Rotated	11-6-4
				Rotation	-16.000 - 16.000	
				Slat Width	0 - 1	
				Amount	-16.000 - 16.000	
		Lens	DVE Lens 1	Shape Type	Circular, Polygon, Star	11-6-5
				Rotation	-16.000 - 16.000	
				Points	1 - 16	
				Amount	-16.000 - 16.000	
			DVE Lens 2	Pattern Type	Round, Linear, Multi	
				Position X	-16.000 - 16.000	
				Position Y	-16.000 - 16.000	
				Size	0 - 1	
			DVE Lens 3	Tilt	0 - 1	
			Modifier	Modifier	On, Off	
				Zoom	-16.000 - 16.000	
				Aspect	-16.000 - 16.000	
		Page Turn	DVE Page Turn 1	Pattern	Single, Quad, Multi, Zip-T, Zip-R, Zip-B, Zip-L	11-6-6
				Rotation	-16.000 - 16.000	
				Peel Angle	-16.000 - 16.000	
				Amount	-16.000 - 16.000	
			DVE Page Turn 2	Type	PageTurn, PageRoll	
				Position X	-16.000 - 16.000	
				Position Y	-16.000 - 16.000	
				Number Segment	1 - 31	
			DVE Page Turn 3	Radius	0 - 1.000	
				Spiral	-16.000 - 16.000	
				Stagger	-16.000 - 16.000	
		Page Peel	DVE Page Peel 1	Rotation	-16.000 - 16.000	11-6-7
				Peel Width	0.000 - 1.000	
				Amount	-16.000 - 16.000	
			DVE Page Peel 2	Tilt	-1 - 1	
				Radius	0 - 1.000	
		Split	DVE Split 1	Type	2WayH, 2WayV, 4Way, Multi	11-6-8
				Rotation	-16.000 - 16.000	
				Spiral	-16.000 - 16.000	
				Stagger	-16.000 - 16.000	
			DVE Split 2	Number Segment	1 - 31	
				Position X	-16.000 - 16.000	
				Position Y	-16.000 - 16.000	
				Amount	0 - 16.000	

◆ **[DVE Modify] - [Warp] menu (Continued)**

Button		Menu	Submenu	Item	Settings	Refer to
KEY1 KEY2 KEY3 KEY4 DSK1 DSK2	Warp	Mirror	DVE Mirror 1	Type	2Way0, 2Way1, 2Way2, 2Way3, 4Way0, 4Way1, 4Way2, 4Way3, Multi	11-6-9
				Rotation	-16.000 - 16.000	
			DVE Mirror 2	Number Segment	1 - 31	
				Position X	-16.000 - 16.000	
				Position Y	-16.000 - 16.000	
		Defocus		Amount	0 - 100	11-6-10

1-13. DVE Modify (Light) menu (Option)

◆ **[DVE Modify] - [Light] menu**

Button		Menu	Submenu	Item	Settings	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

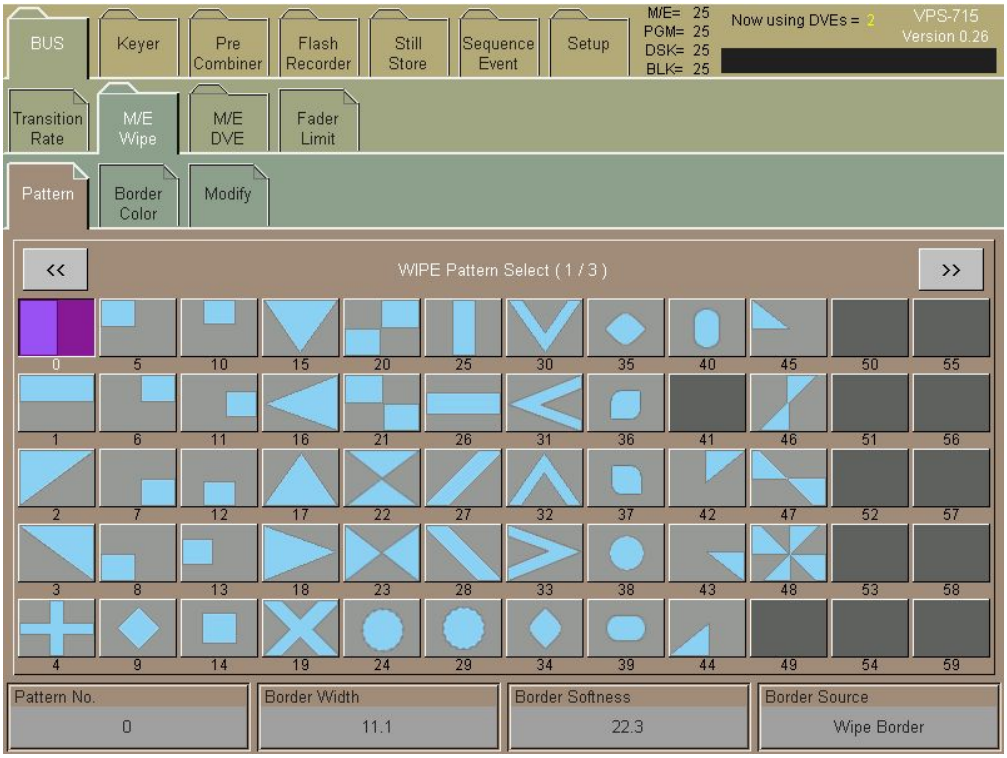
M/E, Key1, Key2, Key3, Key4, DSK1, DSK2 have a respective DVE Modify menu (Basic, Border, Sub Effects, Warp, Light). See section 11. “DVE Modify”, ”Appendix 1-10 to 1-13” for more details.

2-1. M/E menu

◆ **[BUS] - [Transition Rate] menu**

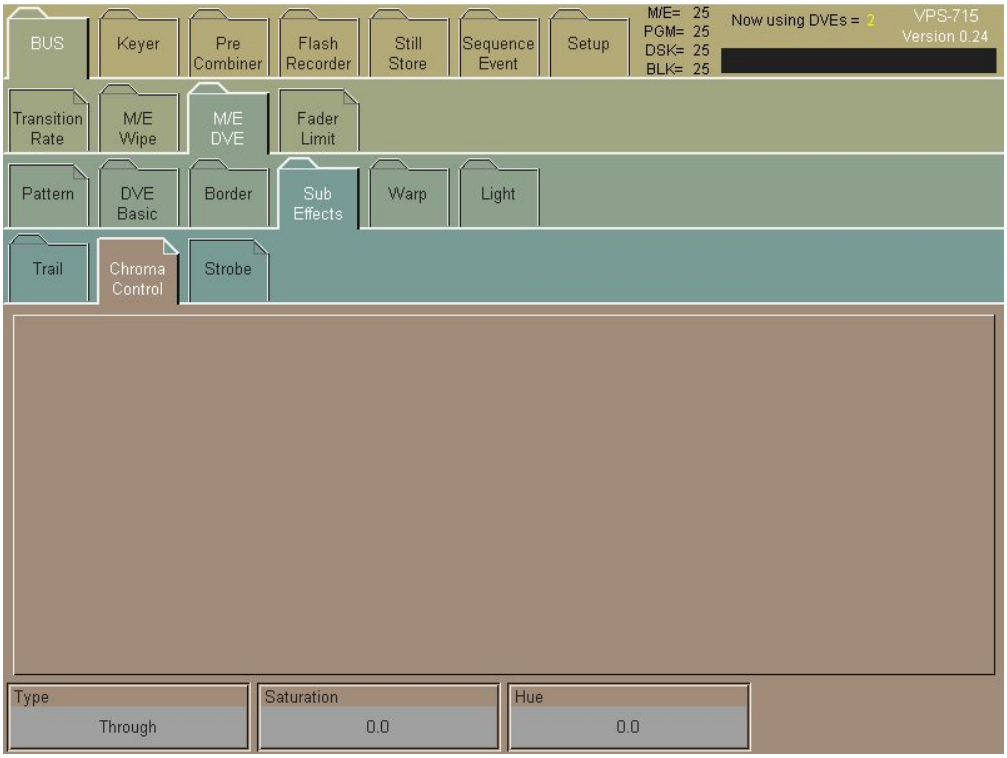
Folder Button					Item	Settings	Refer to
BUS	Transition Rate	-	-	-	M/E Rate	1 - 999	8-2-2
					PGM Rate	1 - 999	
					DSK Rate	1 - 999	
					Black Rate	1 - 999	
Shortcut button (double push): MIX (M/E Transition section)							

◆ [BUS] - [M/E Wipe] menu



Folder Button					Item	Settings	Refer to
BUS	M/E Wipe	Pattern	-	-	Pattern No.	0-40, 42-48, 65-114	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	
		Border Color	-	-	Pattern No.	0-40, 42-48, 65-114	10
					Luminance	0.0 - 108.6%	
					Saturation	0.0 - 100.0%	
					Hue	0.0 - 359.5	
		Modify	-	-	Aspect	-1.000 - 1.000	
					Center Position X	-1 - 1	
					Center Position Y	-1 - 1	
					Angle	-16 - 16	
Shortcut button (double push): WIPE (M/E Transition section) Shortcut button to Wipe Modify Center Position: WIPE POS (JOYSTICK section)							

◆ **[BUS] - [M/E DVE] menu**



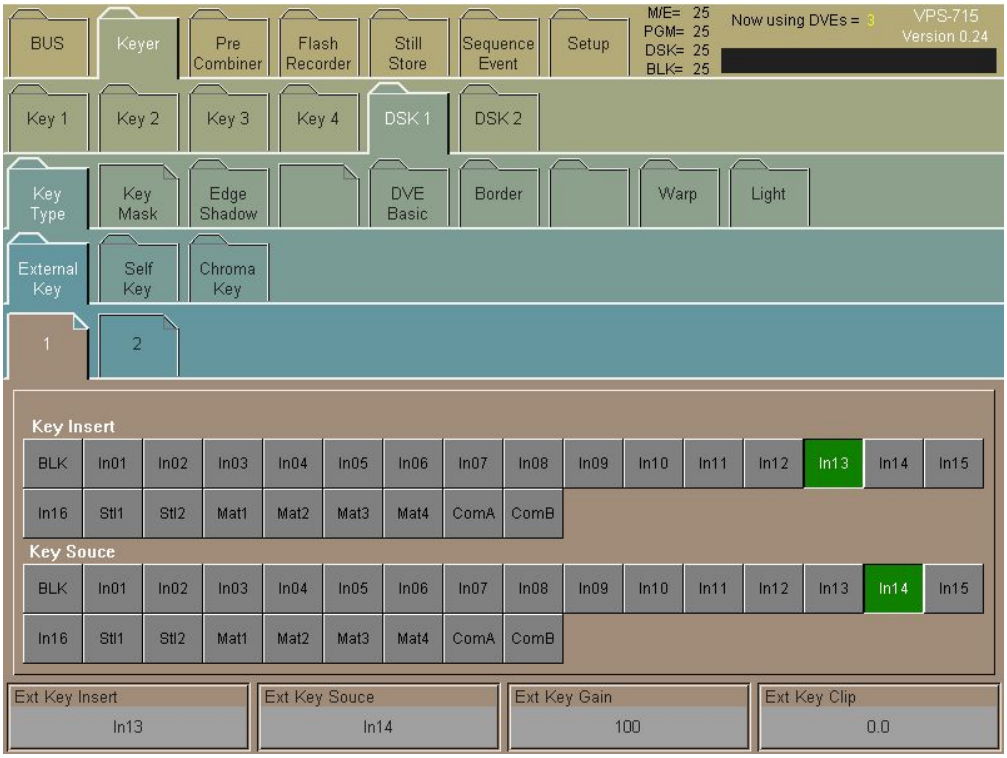
Folder Button					Item	Settings	Refer to
BUS	M/E DVE	Pattern	-	-	Pattern No.	0-77, 100-252	8-2-3
					User DVE Data Clear	-	
					User DVE Data Store	-	
		DVE Basic			See DVE Modify menu		11
		Border					
		Sub Effects					
		Warp					
		Light					
Shortcut button (double push): DVE (M/E Transition section)							

◆ **[BUS]- [Fader Limit] menu**

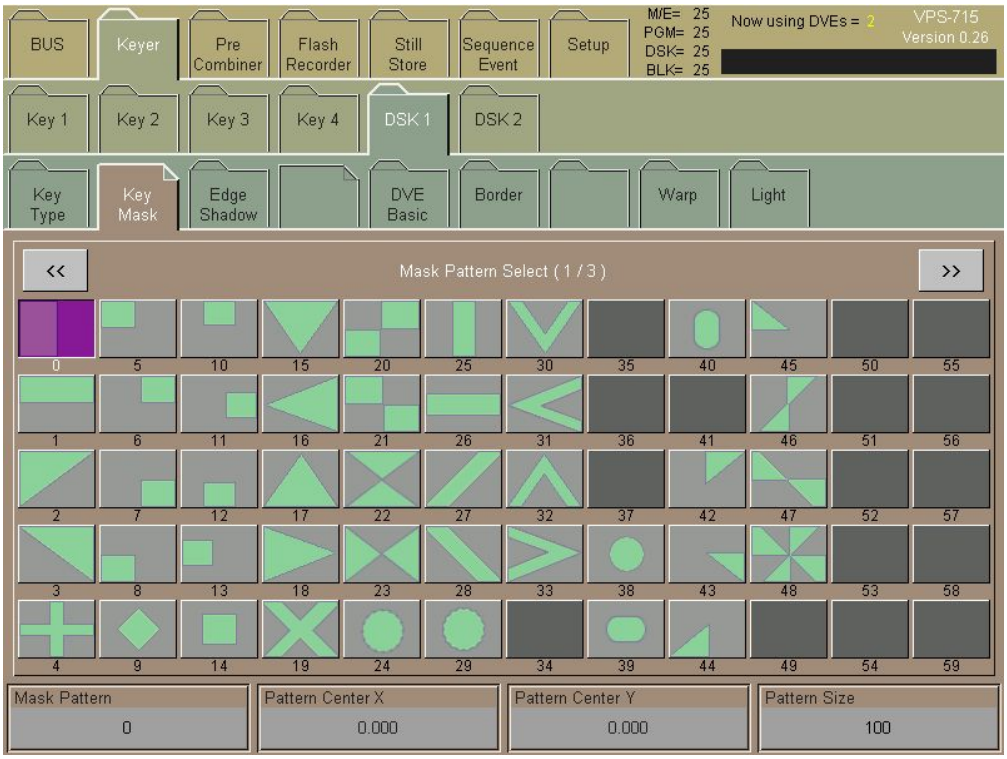
Folder Button					Item	Settings	Refer to
BUS	Fader Limit	-	-	-	Fader Limit	0.0 - 100.0 [%]	8-2-4
Shortcut button (double push): FADER LIMIT (M/E Transition section)							

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**

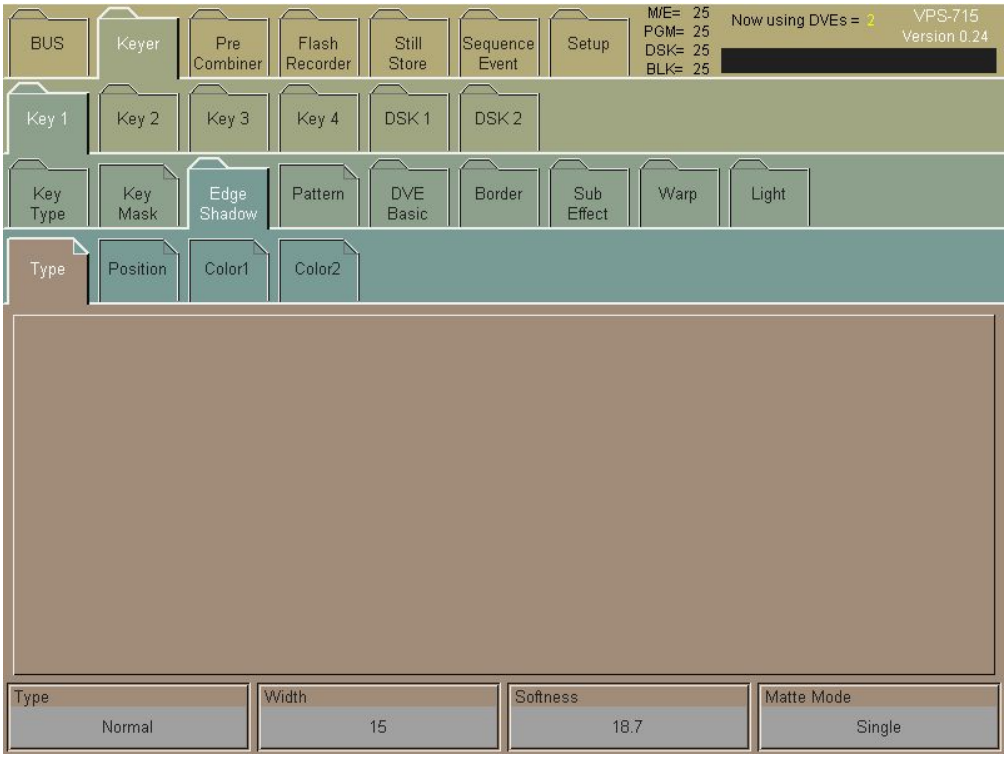
Folder Button						Item	Settings	Refer to
Keyer	Keyer1 Keyer2 Keyer3 Keyer4 DSK1 DSK2	Key Type	External Key	1		Key Insert	BLK, In01-16, Stl1-2, Mat1-4, ComA, ComB	9-1
						Key Source		
						Gain	-1600 - 1600	
						Clip	0.0 - 100.0 [%]	
				2		Opacity (Keyers only)	0 - 100	
						Key Invert	On, Off	
			Self Key	1		Key Insert	BLK, In01-16, Stl1-2, Mat1-4, ComA, ComB	9-1
						Gain	-1600 - 1600	
						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	-800% - 800%	
						Clip	-100% - 100%	
					2	Luminance Suppress	0.0 - 100.0 [%]	
						Chroma Accept	0 - 359.5 Deg	
						Chroma Suppress	0.0 - 100.0 [%]	
						Chroma Tint	-100% - 100%	
				Other		Opacity (Keyers only)	0.0 - 100.0 [%]	
						External Mask Enable	Enable, Disable	
				Det ail	1	Mode	Off, HL, LL	
						Region	BG, FG, Both	
						Gain	0.0% - 32.0%	
						Clip	0.0 - 100.0 [%]	
					2	Opacity	0.0 - 100.0 [%]	
						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**

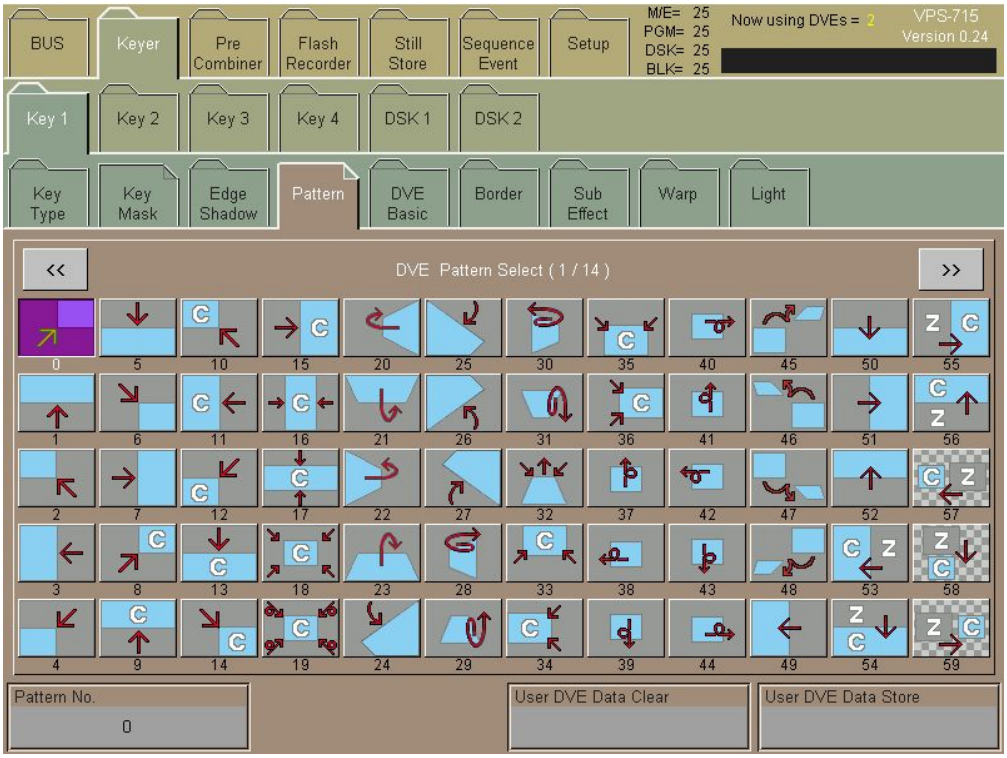
Folder Button					Item	Settings	Refer to
Keyer	Keyer1 Keyer2 Keyer3 Keyer4 DSK1 DSK2	Key Mask	-	-	Mask Pattern	0-33, 38-40, 42-48, 65-69, 75-79, 85-94, 105-114	9-2
					Pattern Center X	-1.000 - 1.000	
					Pattern Center Y	-1.000 - 1.000	
					Pattern Size	0.0 - 100.0 [%]	
Shortcut button: KEY1-3, DSK1-2 (BUS SELECT section) >> MASK (KEYER section)							

◆ **[KEYER / DSK] - [Edge Shadow] menu**



Folder Button					Item	Settings	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 [%]	
					Matte 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	-	2nd Color Softness	0.0 - 100	
					Luminance	0.0 - 108.6%	
					Saturation	0 - 100.0%	
					Hue	0.0 - 100%	
Shortcut button: KEY1-3, DSK1-2 (BUS SELECT section) >> EDGE SHADOW (KEYER section)							

◆ **[KEYER / DSK] - [DVE] menu**



Folder Button					Item	Settings	Refer to
Keyer	Keyer1 Keyer2 Keyer3 Keyer4 DSK1 DSK2	DVE Pattern	-	-	Pattern No.	0-77, 100-252	8-5-5 9-5
					User DVE Data Clear	-	
					User DVE Data Store	-	
		DVE Basic			See DVE Modify menu (Appendix 1)		8-2-3 11
		Border					
		Sub Effects					
		Warp					
		Light					

Shortcut button to DVE Pattern (double push):
DVE (M/E Transition section)

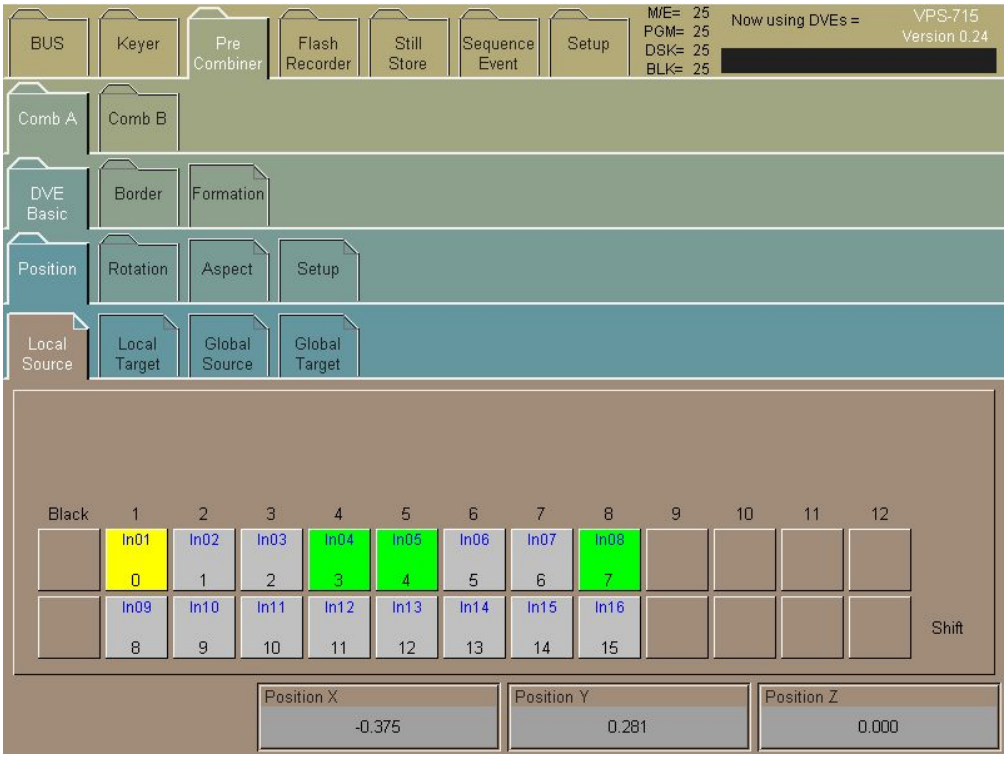
Shortcut button to DVE Modify:
KEY1-3, DSK1-2 (BUS SELECT section) >> BASIC, BORDER, SUB EFF, WARP LIGHT (DVE section)

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**



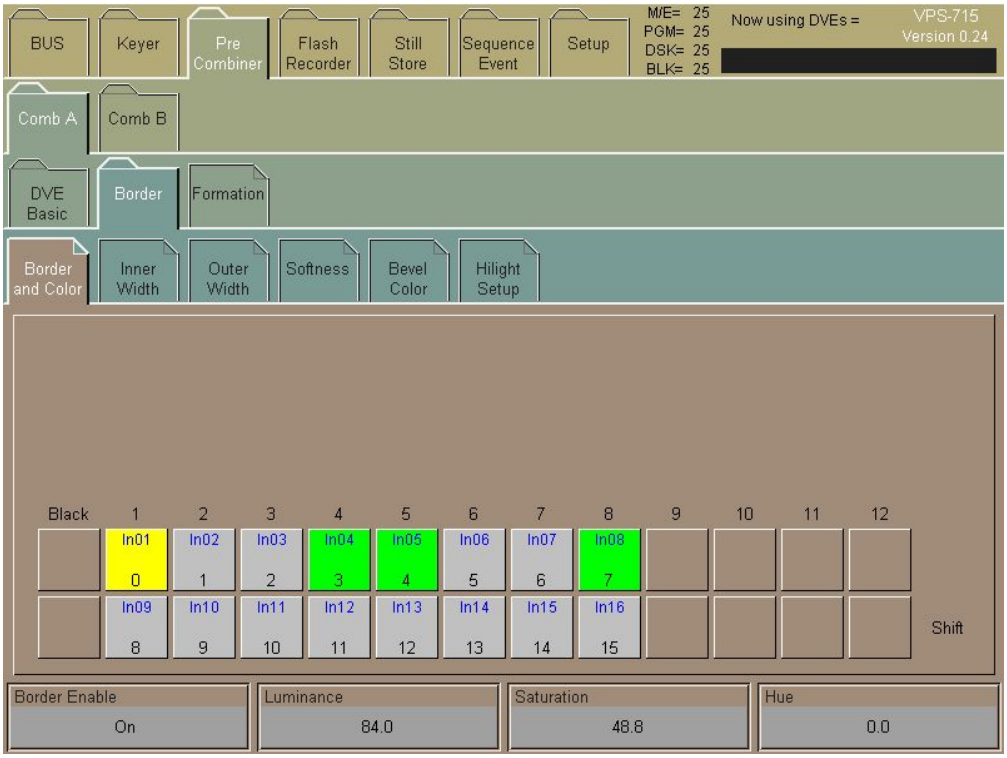
Folder Button					Item	Settings	Refer to
Pre Combiner	Comb A Comb B	DVE Basic	Position	Local Source Local Target Global Source Global Target	Position X	-16.000 - 16.000	11-3-1 13-2
					Position Y	-16.000 - 16.000	
					Position Z	-16.000 - 16.000	
			Rotation	Local Source Local Target Global Source Global Target	Rotation X	-16.000 - 16.000	
					Rotation Y	-16.000 - 16.000	
					Rotation Z	-16.000 - 16.000	
			Aspect	-	Size X	0 - 16.000	11-3-2 13-2
					Size Y	0 - 16.000	
					Size Z	0 - 16.000	
			Setup	-	Use Global	Disable, Enable	10-3-3

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)

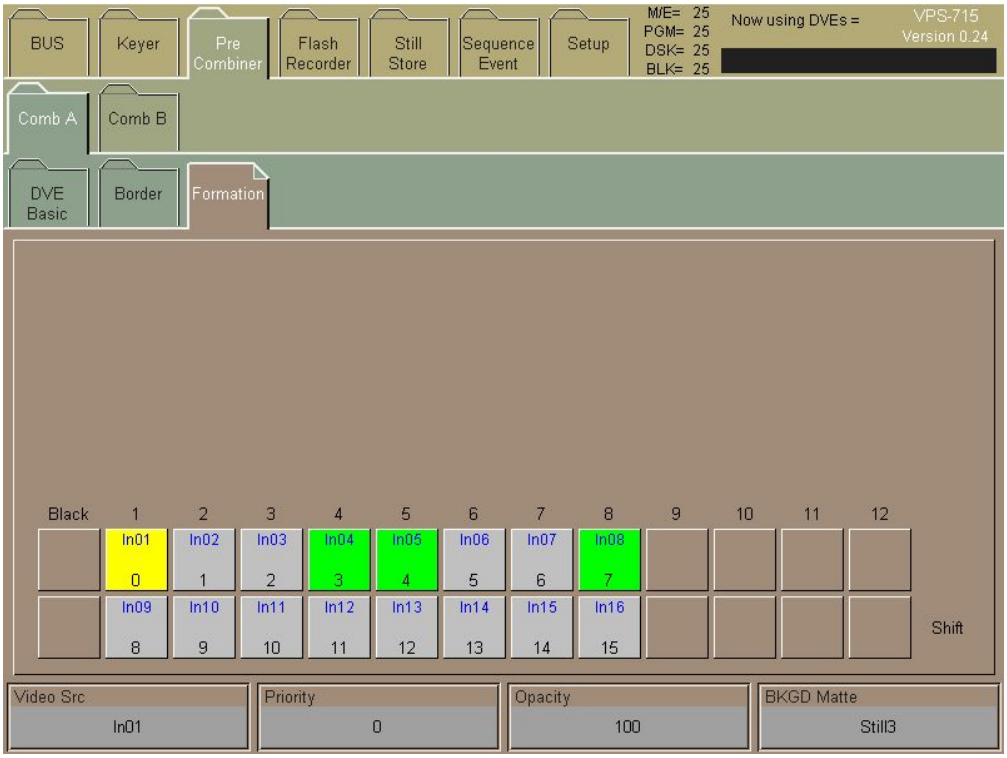
Shortcut button to DVE Basic Rotation:
COMB A, COMB B (BUS SELECT section) >> DVE ROT (JOYSTICK section)

◆ **[Pre-Combiner]- [Border] menu**



Folder Button					Item	Settings	Refer to
Pre Combiner	Comb A Comb B	Border	Border and Color	-	Border Enable	On, Off	11-4 13-2
					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**



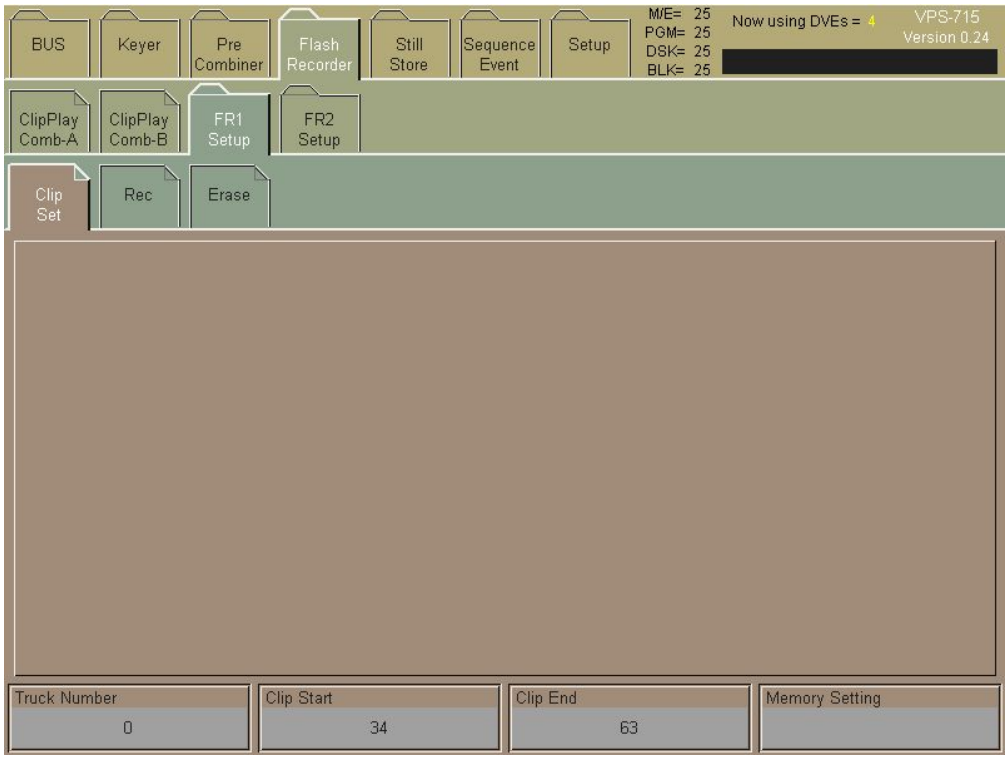
Folder Button					Item	Settings	Refer to
Pre Combiner	Comb A Comb B	Formation	-	-	Video Src	BLK, In01-16	13-2
					Priority	0 - 15	
					Opacity	0.0 - 100.0	
					BKGD Matte	Mat1-4, Stl3	
Shortcut button: COMB A, COMB B (BUS SELECT section)							

2-4. Flash Recorder Menu

◆ **[Flash Recorder] Menu**

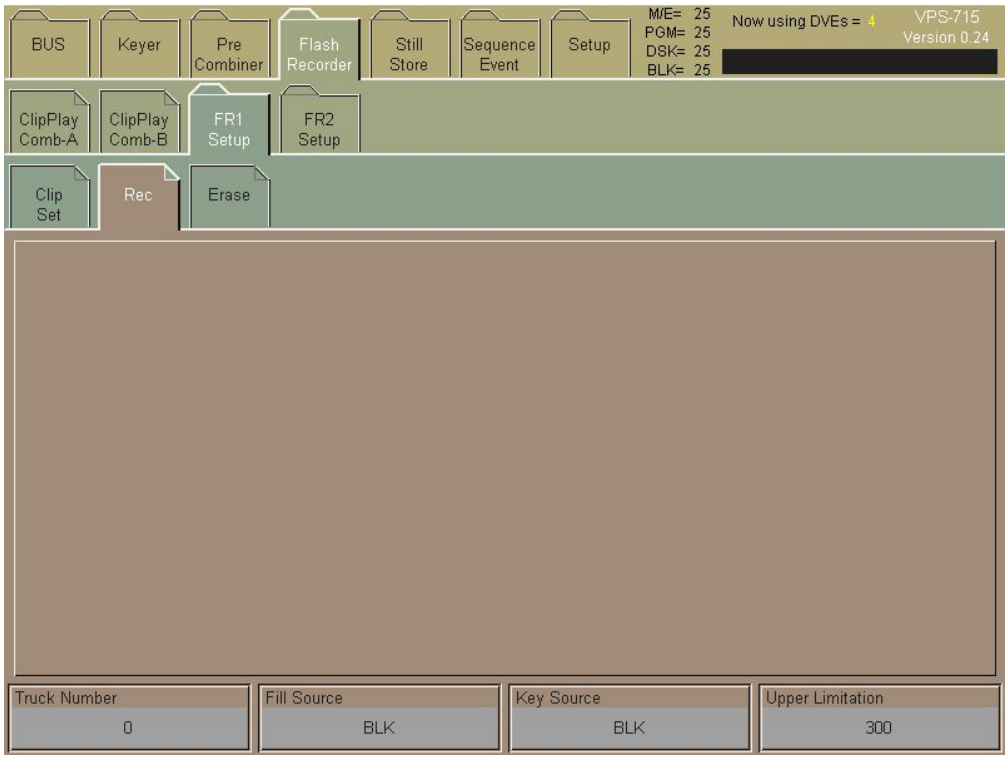
Folder Button					Item	Settings	Refer to
Flash Recorder	Clip Play Comb-A Clip Play Comb-B	-	-	-	Play Clip	None, 0 -	14-5
					Que Up	-	
					Inter Link	Off, Trigger, Linkage	
					Read Mode	Field, Frame	
Shortcut button: Flash Recorder (OTHERsection)							

◆ **[Flash Recorder] - [Clip Set] menu**



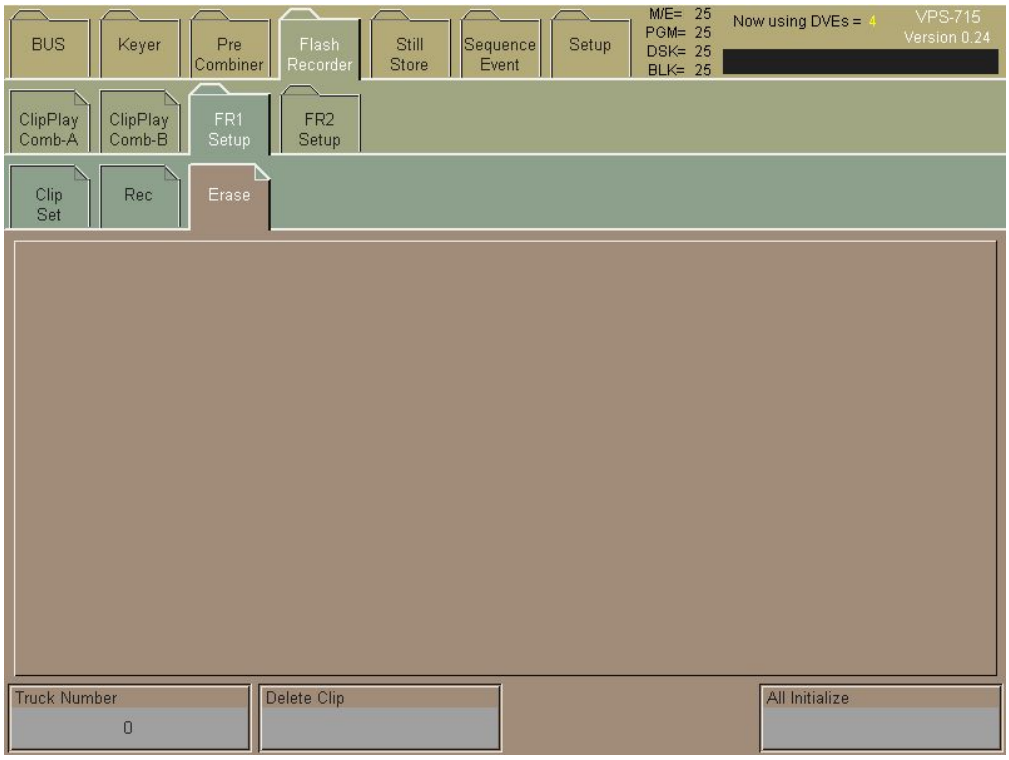
Folder Button					Item	Settings	Refer to
Flash Recorder	FR1 Setup FR2 Setup	Clip Set	-	-	Track Number	0 - 17	14-4
					Clip Start	TS - TE	
					Clip End	TS - TE	
					Memory Setting	-	
Shortcut button: Flash Recorder (OTHERsection)							

◆ **[Flash Recorder] - [Rec] menu**



Folder Button					Item	Settings	Refer to
Flash Recorder	FR1 Setup FR2 Setup	Rec	-	-	Truck 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: Flash Recorder (OTHERsection)							

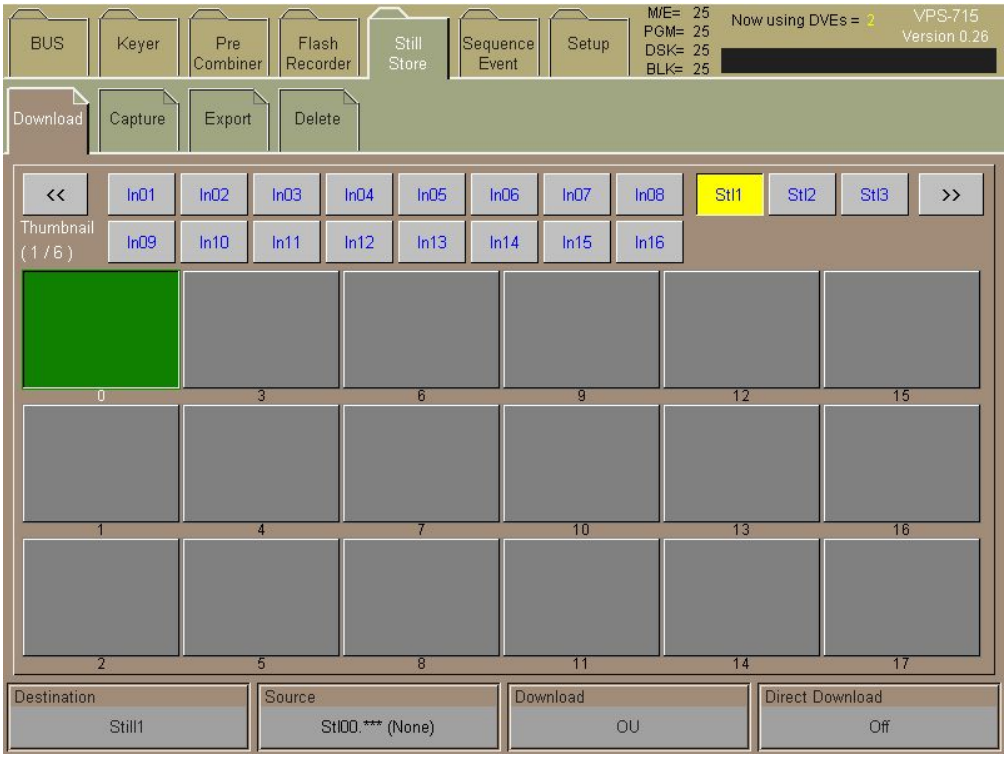
◆ **[Flash Recorder] - [Erase] menu**



Folder Button					Item	Settings	Refer to
Flash Recorder	FR1 Setup FR2 Setup	Erase	-	-	Truck Number	0 - 17	14-2 14-6
					Delete Clip	-	
					All Initialize		
Shortcut button: Flash Recorder(OTHER section)							

2-5. Still Store menu

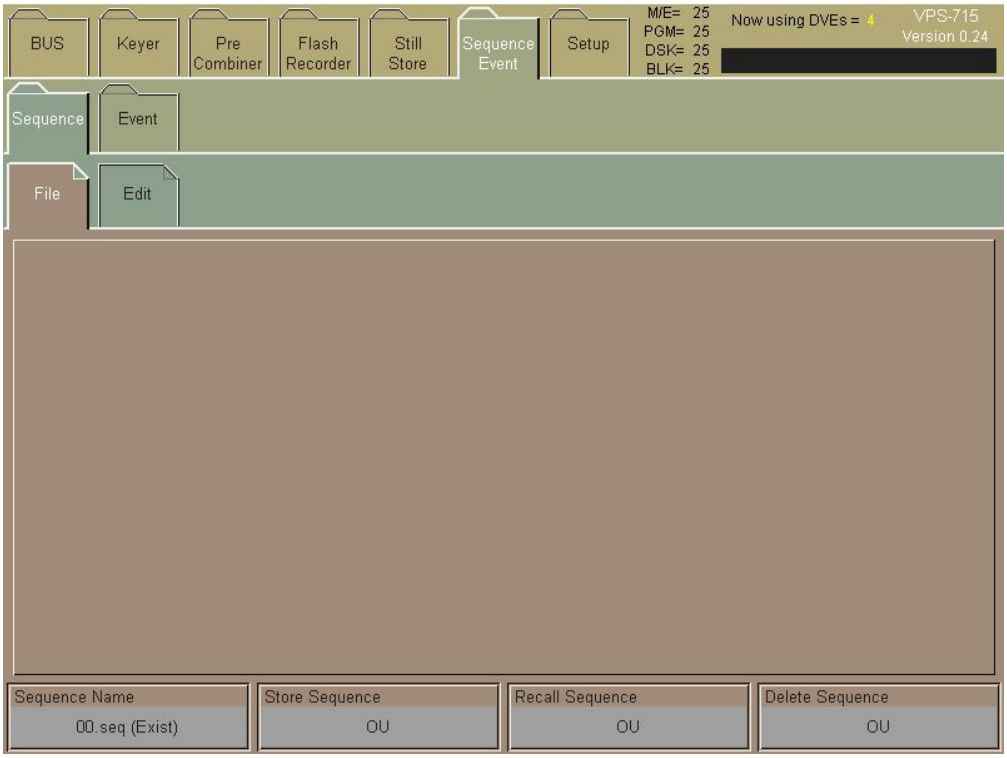
◆ **[Still Store] menu**



Folder Button					Item	Settings	Refer to
Still Store	Download	-	-	-	Destination	In01-16, Stl 1-3	12-2
					Source	00 - 99	
					Download	OU, USB	
					Direct Download	On, Off	
	Capture	-	-	-	File	00 - 99	
					Freeze Mode	Frame, Odd Field, Even Field	
					Capture	Capture Start	
	Export	-	-	-	File	00 - 99	
					File Format	Bmp, tga	
					Overwrite	-	
					Export	USB Memory	
	Delete	-	-	-	File	00 - 99	
					Delete	OU, USB	
Shortcut button: STILL (OTHER section)							

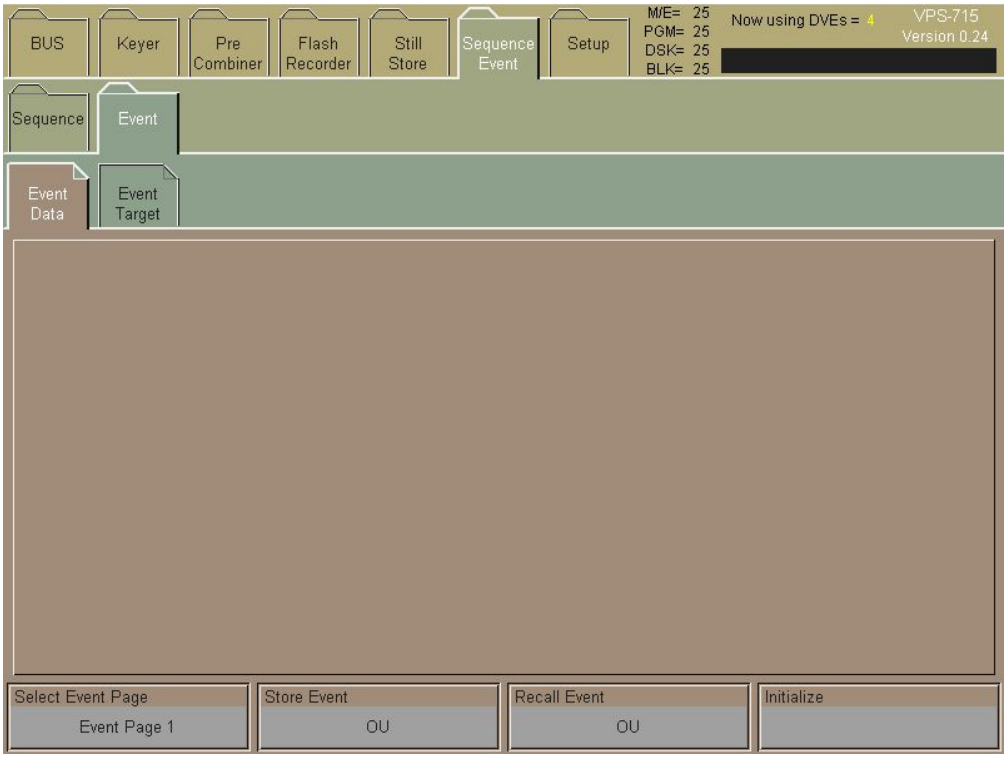
2-6. Sequence, Event menu

◆ **[Sequence] menu**



Folder Button					Item	Settings	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 (OTHER section) SEQ (Keypad section)							

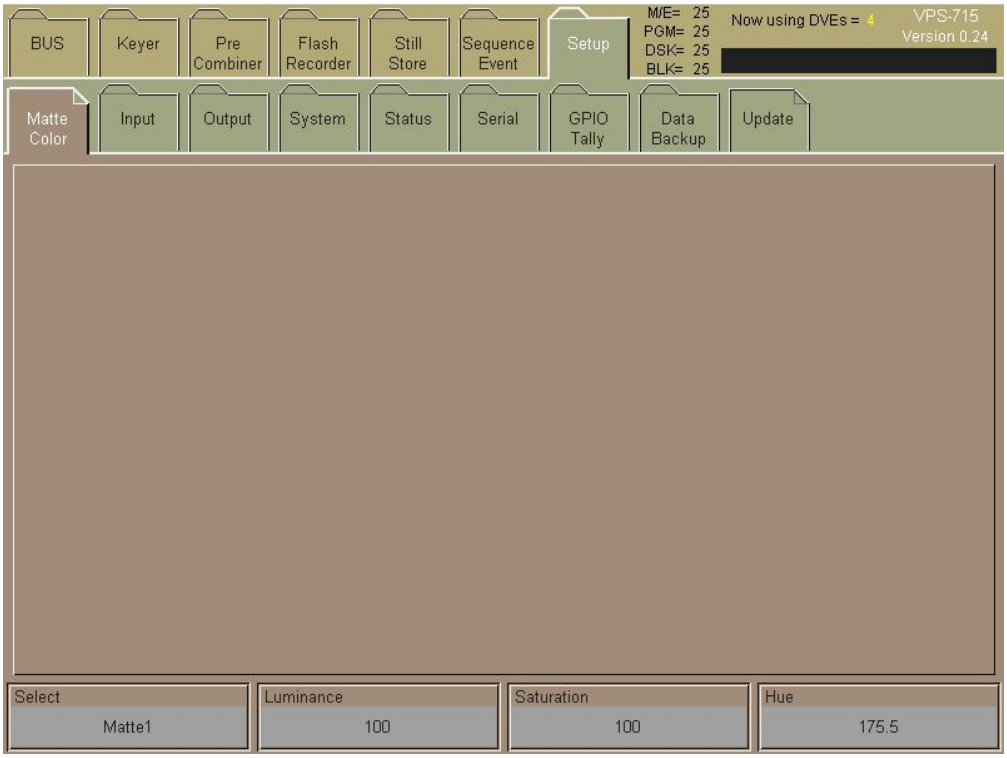
◆ **[Event] menu**



Folder Button					Item	Settings	Refer to
Sequence Event	Event	Event Data	-	-	Select Event Page	Event P1 - P8	14-1
					Store Event	OU, USB	
					Recall Event	OU, USB	
					Initialize	-	
		Event Target	-	-	M/E Area	Fulll M/E, M/E Off, P/P bus source Hold	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 (OTHER section) EVENT (Keypad section)							

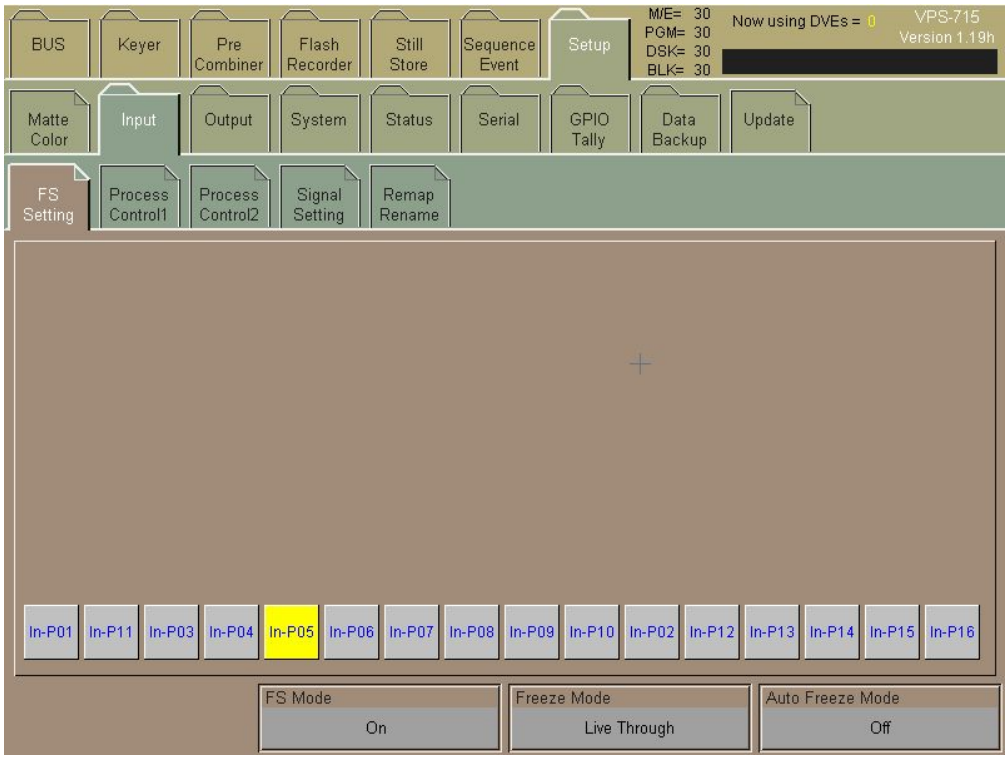
2-7. Setup (Matte, Input, Output) menu

◆ **[Setup] - [Matte] menu**



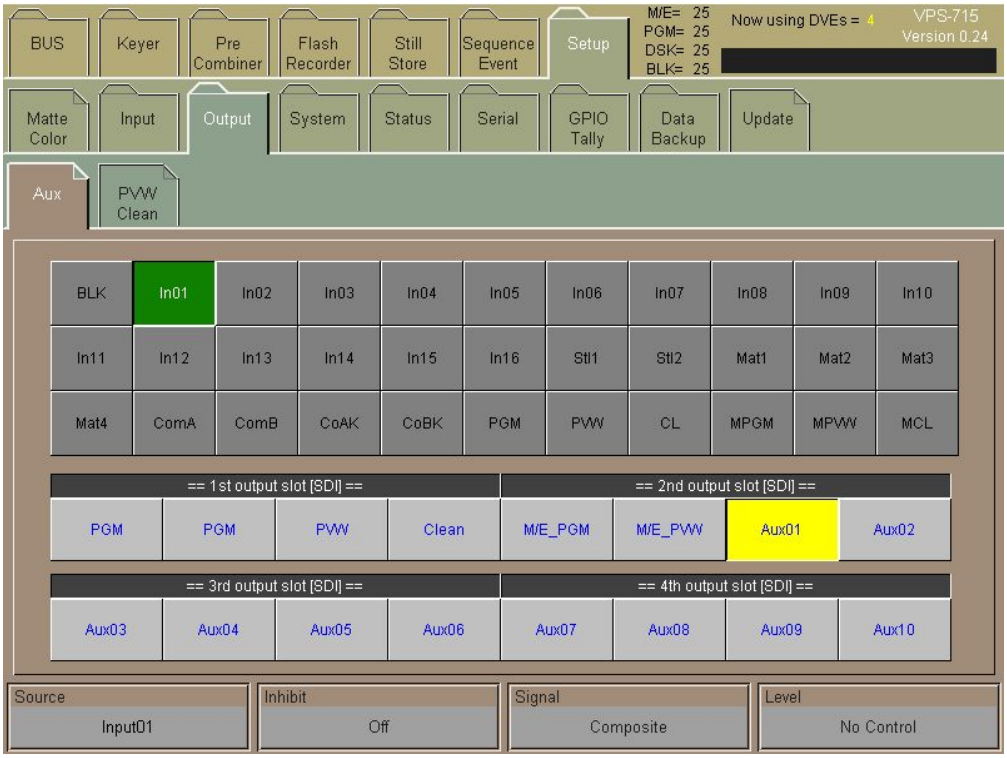
Folder Button					Item	Settings	Refer to
Setup	Matte Color	-	-	-	Select	Mat 1- 4	12-1
					Luminance	0.0 - 108.6%	
					Saturation	0.0 - 100.0%	
					Hue	0.0 - 359.5	
Shortcut button: [MATTE 1] - [MATTE 4] (while SHIFT is lit) double-click (KEY/AUXsection)							

◆ **[Setup] - [Input] menu**



Folder Button					Item	Settings	Refer to
Setup	Input	FS Setting	-	-	FS Mode	On, Off	7-1-5
					Freeze Mode	Live, Frame, Odd Field, Even Field	
					Auto Freeze Mode	On, Off	
		Process Control 1	-	-	White Clip	50.0 - 109.0%	7-1-7
					Black Clip	-7.0 - 50.0%	
					Luminance Gain	0.0 - 200.0%	
					Setup	0 - 100.0%	
		Process Control 2	-	-	Chroma Clip	50.0 - 111.0%	7-1-7
					Chroma Gain	0.0 - 200.0%	
					H Phase Trim	-4 - 4	
					Hue	0.0 - 359.5	
		Signal Setting	-	-	F	Compst, YCBCR	4-6-2
					L	Betacam, SMPTE	
		Remap Rename	-	-	Source Assign	In01 - 16, BLK, Stl 1-2, Mat 1-4, ComA, ComB	7-1-5
					File Save	-	
					File Download	-	
Shortcut button: [1] - [16] double-click（KEY/AUX section）							

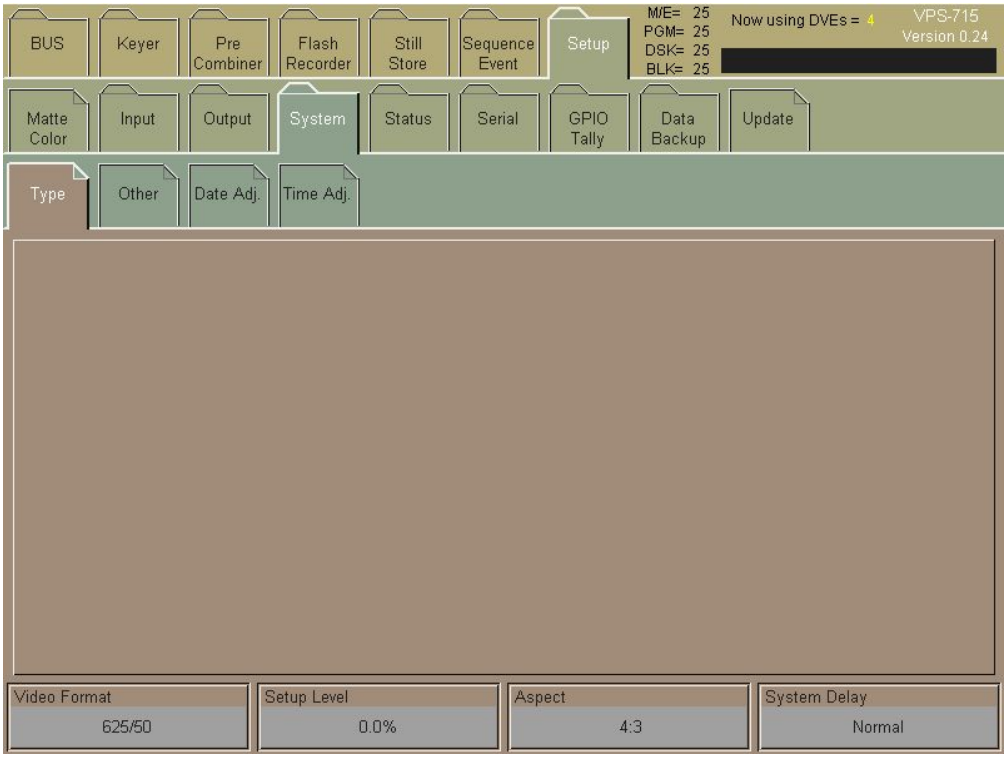
◆ **[Setup] - [Output] menu**



Folder Button					Item	Settings	Refer to
Setup	Output	Aux	-	-	Source	BLK, In01-16, Stl 1-2, Mat 1-4, ComA, ComB, CmAK, CmBK, PGM, PREV, CLN	7-2 4-7-2
					Inhibit	On, Off	
					Signal	Composite, YCBCR, GBR	
					Level	No Control, SMPTE, Betacam	
		PVW Clean	-	-	Preview	w/D_PV, woDSK, KeyOut	7-2-2
					Clean	woDSK, KeyOut	
					M/E PGM	BLK, In01-16, Stl 1-2, Mat 1-4, ComA, ComB, CmAK, CmBK, PGM, PREV, CLN, M/E PGM, M/E PVW, M/E CL	
					M/E PVW	BLK, In01-16, Stl 1-2, Mat 1-4, ComA, ComB, CmAK, CmBK, PGM, PREV, CLN, M/E PGM, M/E PVW, M/E CL	
Shortcut button: AUX (BUS SELECT section)							

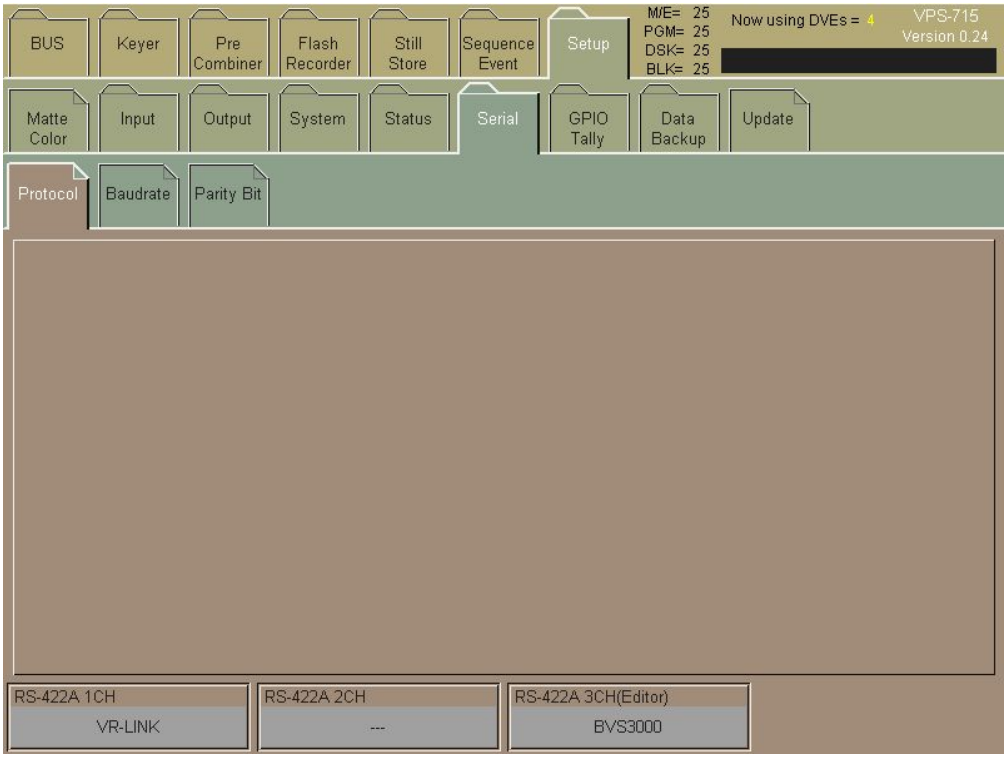
2-8. Setup (System, Serial, GPIO/Tally, Data Backup, Update) menu

◆ **[Setup] - [System] menu**



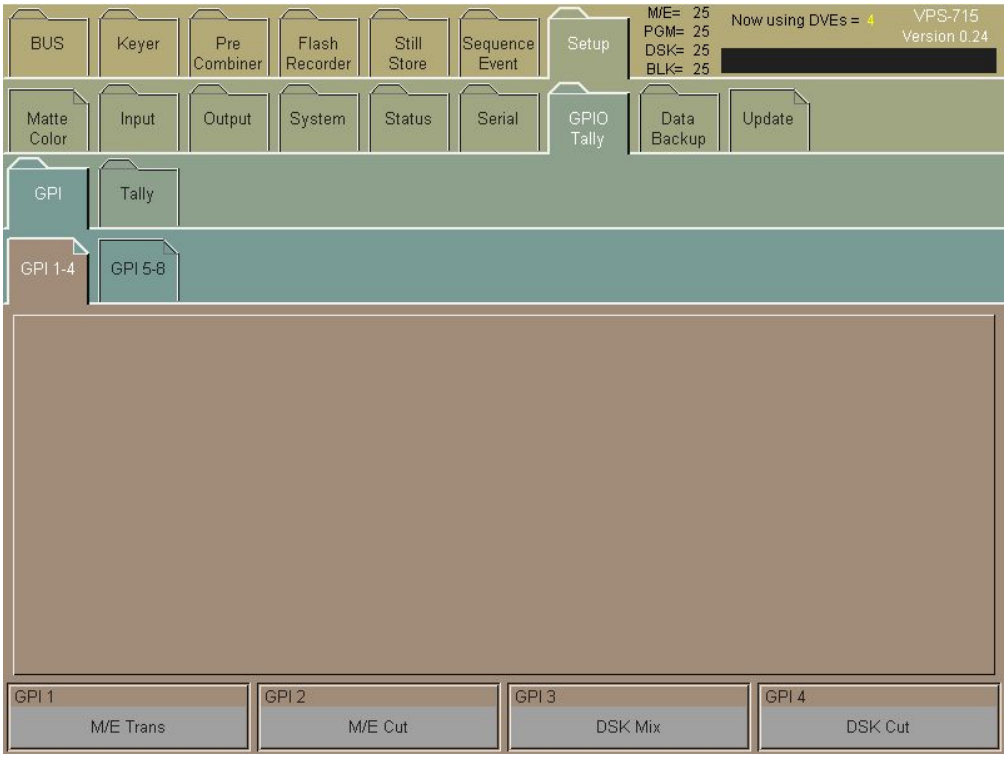
Folder Button					Item	Settings	Refer to
Setup	System	Type	-	-	Video Format	625/50 PAL, 525/60 NTSC	4-2 18-1
					Setup Level	0.0%, 7.5%	
					Aspect	4:3, SQ, LB	
					System Delay	Normal, Minimum	
		Other	-	-	Chroma Key Cursor	PGM, PVW	9-4-1
					Route Priority	FR>DS, FR<DS, FR=DS	
					Remap Link	Independent, Baselink	13-3
		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 (OTHER section)							

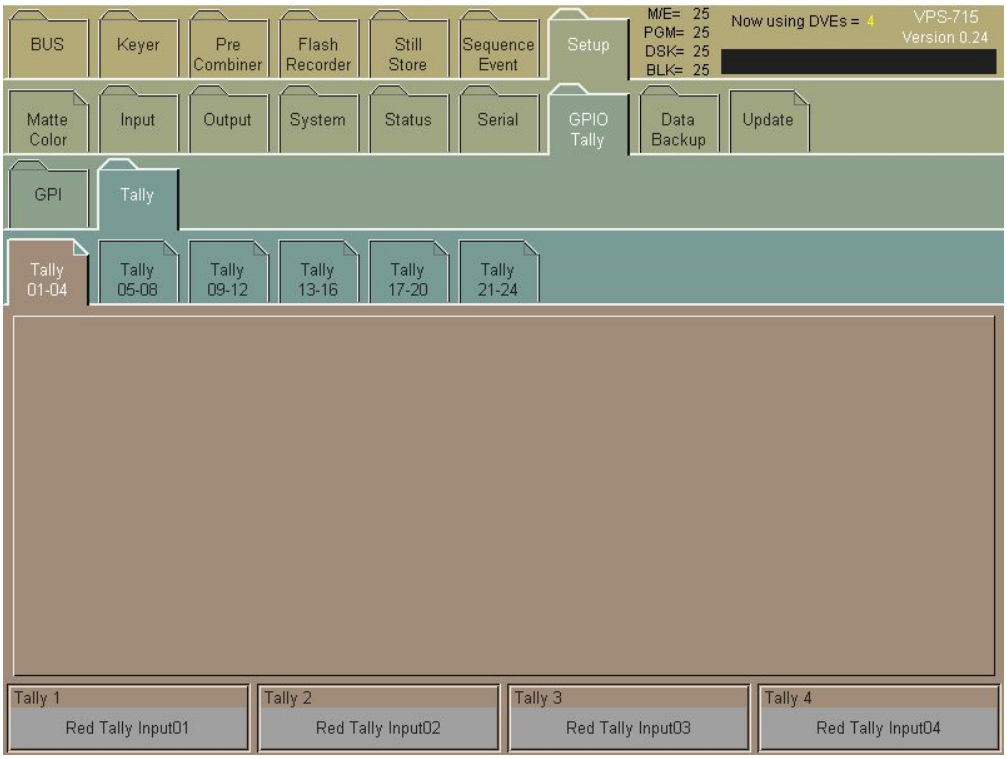
◆ **[Setup] - [Serial] menu**



Folder Button					Item	Settings	Refer to
Setup	Serial	Protocol	-	-	RS-422A 1CH	HVS-AUX, VR-LINK	17-1
					RS-422B 2CH	HVS-AUX, VR-LINK	
			-	-	RS-422B 3CH (Editor)	GVG100, BVS3000, GVG100R etc	
		Baudrate	-	-	1-3	9600, 19200, 38400	
		Parity	-	-	1-3	None, Even, Odd	
Shortcut button: SYSTEM (OTHER section) EDITOR button double-click							

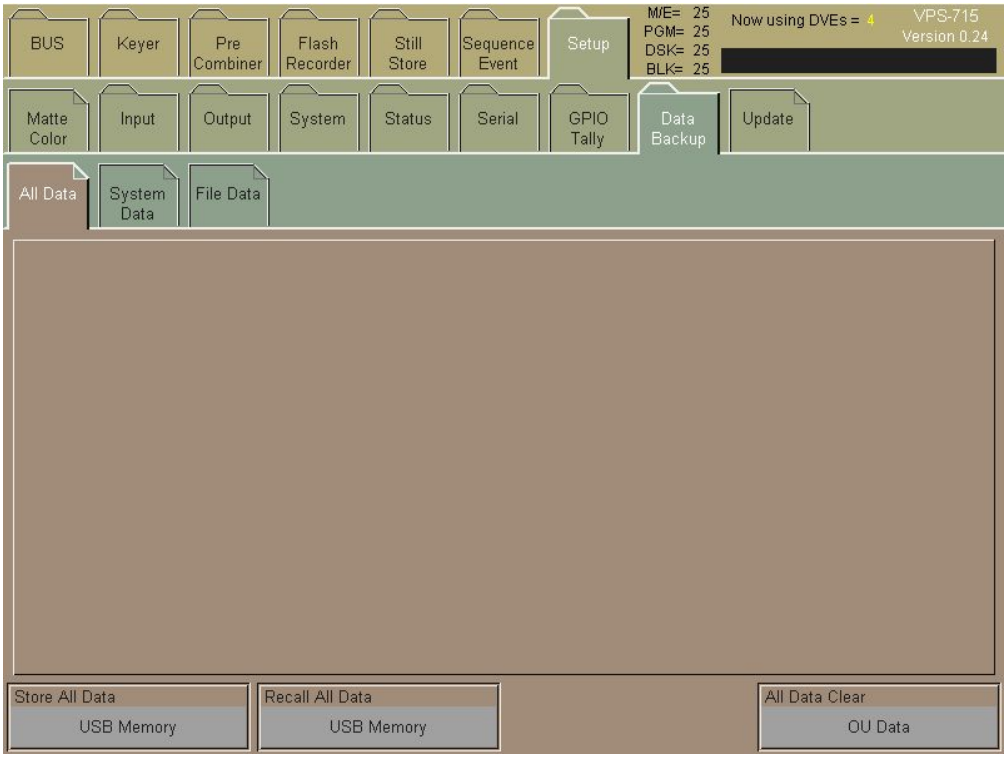
◆ **[Setup] - [GPIO Tally] menu**





Folder Button					Item	Settings	Refer to
Setup	GPIO Tally	GPI	GPI1-8	-	GPI1-8	M/E Trans, SEQ Play, M/E Cut, M/E Mix, M/E Wipe, M/E DVE, DSK Cut, DSK Mix, Black Trans, P/P Cut, P/P Trans	17-2
		Tally	Tally01-24	-	Tally01-24	Red Tally Input 1-16, Red Tally Still 1-2, Red Tally Matte 1-4, Red Tally Pcomb 1-2, Red Tally Black, Red Tally Reserve, Green Tally Input 1-16, Green Tally Still 1-2, Green Tally Matte 1-4, Green Tally Pcomb 1-2, Green Tally Black, Green Tally Reserve, Alarm	17-3
Shortcut button: SYSTEM (OTHER section) GPI button double-click							

◆ **[Setup] - [Data Backup] menu**



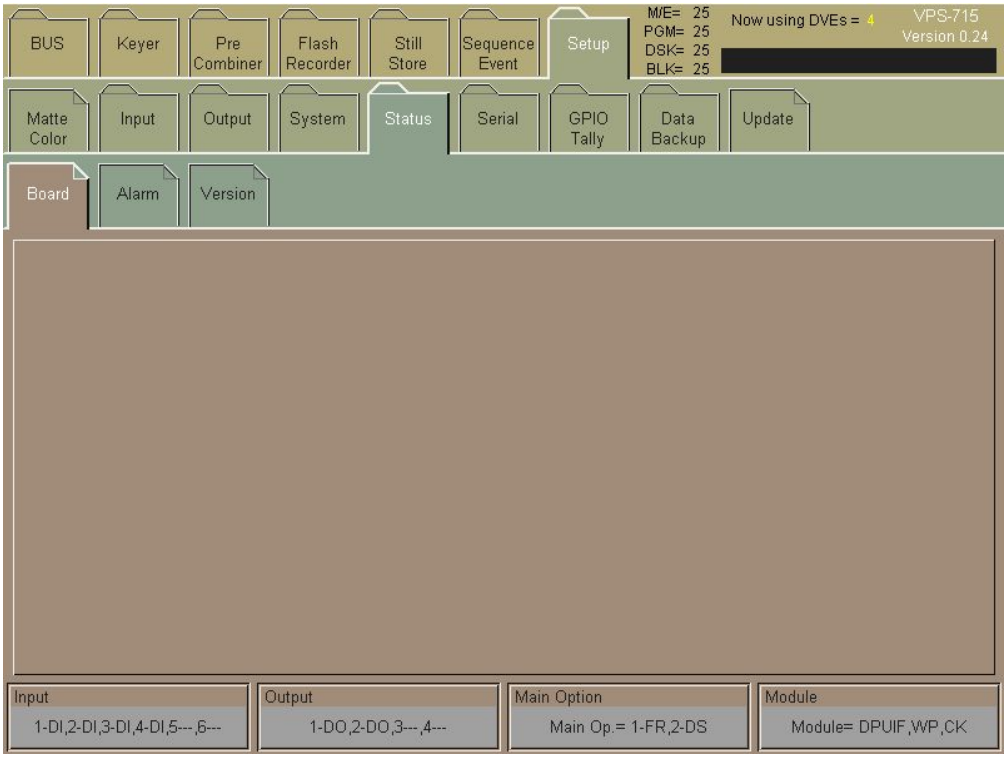
Folder Button					Item	Settings	Refer to
Setup	Data Backup	All Data	-	-	Store All Data	USB Memory	4-5 18-2
			-	-	Recall All Data	USB Memory	
					All Data Clear	OU Data	
		System Data	-	-	Store System Data	USB Memory	
					Recall System Data	USB Memory	
					System Data Select	0 - 9	
					System Data Clear	USB Memory	
		File Data	-	-	Store File Data	USB Memory	
					Recall File Data	USB Memory	
					File Data Type	Stl, Seq	
					Clear File Data	OU, USB	
Shortcut button: SYSTEM (OTHER section)							

■ **[Setup] - [Update] menu**

Folder Button					Item	Settings	Refer to
Setup	Update				OU update	-	18-2-1
					DPU Calibration	-	
					Firmware Update	SDI 1 - 4, GENLOCK, Main1, 2, DVESub1, 2, CPU1, 2, AI_3_3-4, AI_4_1-2, Out1, 2, FR1, 2	
					Cursor	On,Off	

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	Dual	18-4-2
					Power Alarm	1=OK, 2=OK 1=NG, 2=OK 1=OK, 2=NG	
					Fan Alarm		
					OU Power Alarm		
		Version	-	-	CPU firmware version		18-4-3
					Target Field	Odd, Even, Any	18-4-4
Shortcut button: STATUS (OTHER 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-715Warp 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							

Index

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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