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A ◆ THOMSON BRAND

XtenDD

DIGITAL PRODUCTION SWITCHERS

Operating Instructions

Software Release V4.2.4 / V6.2.4

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1. GENERAL

1.1 ABOUT THE MANUAL

This operating control serves as a reference for the **X**^{ten} **DD** production switcher family. It applies to all switcher mainframe configurations (2M/E, 3M/E and 4M/E) and to the Control Panels RPS 35-4/32, RPS 35-3, RPS35-2 and RPS 35-2S.

In principle, the control philosophy is identical for all control panels. Deviations and particularities are described accordingly.

A number of control functions is only available when the respective software license was also acquired when purchasing the switcher. Functions being only available by corresponding licenses, are marked accordingly.

The manual is divided into the following main chapters:

1. General   Introduction und allgemeine Hinweise
2. Panel Operation   Description of all buttons and controls
3. Menu Operation   Description of all menus and sub-menus
4. Setup and maintenance   Maintenance items for the operator
5. Application Notes

1.2 DESIGN OF THE CONTROL PANEL

In modern Live-Production operators demand instant access to a wide variety of desired image compositing functions in their digital production switchers. Successful work and best possible performance can only be attained when operators feel comfortable in their driver's seat. Therefore, **X^{ten} DD**'s control panels are dedicated to ease-of-use with a clearly structured, traditional Button-per-Function layout. Any DD35 is an ideal production tool for live-sports, game-show and live news production, either in stationary studios or mobile applications. Furthermore, the advanced control system with multiple-user access allows optimal use for complex post production in high-end online edit suites.

The control panels of the **X^{ten} DD** Production Switchers are designed with a conventional layout based on mixing levels (M/Es). This classic layout with matrix selection on the left, followed by transition control and key adjustments for each ME is a familiar to many users.

To distinguish between individual functional groups, the various control groups are subdivided into panels that are visually and structurally separated. Functions assigned to only one M/E have colored title bars and frames. Functions affecting more than one ME are identified with grey title bars and grey frames. Buttons with related functions are identified with grey bars. Lines indicate controls with related functions.

The many identical functions of the switcher use single assignable control panels for lower priority functions and separate control panels for higher priority functions such as keyer controls. Controls have multiple functions only if those functions are related, such as matte color controls.

Assignable control panels include delegation buttons that assign the relevant controls to a particular switching component. The delegation buttons are located in the same position on each panel.

During normal switcher operation, the assignable control panels are automatically delegated to the appropriate function by simply activating that function. For example, selecting a key mask in M/E3, keyer 2, will automatically delegate the assignable mask control panel to M/E3, keyer 2.

All switcher buttons have adjustable intensity to adapt to room lighting conditions.

The switcher is equipped with a PC-based Graphical User Interface (GUI) with Touch Screen Display for the more complex switcher setup and different editing functions.

1.3   OVERVIEW X^ten DD FAMILY

Configuration overview

RPS35-x Control Panel	+	Basic Mainframe	+ Options = X^ten DD

RPS35-4LX

RPS35-4L

RPS35-2

RPD35-2/S

RSAT2 *

RSAT1 *

LAN

DD35 GUI PC *

Service PC

M/E 1
M/E 2
M/E 3
P/P
XDM-2-BM

M/E 1
M/E 2
P/P
XDM-2-BM

M/E 1
P/P
XDM-2-BM

Mainframe Configurations
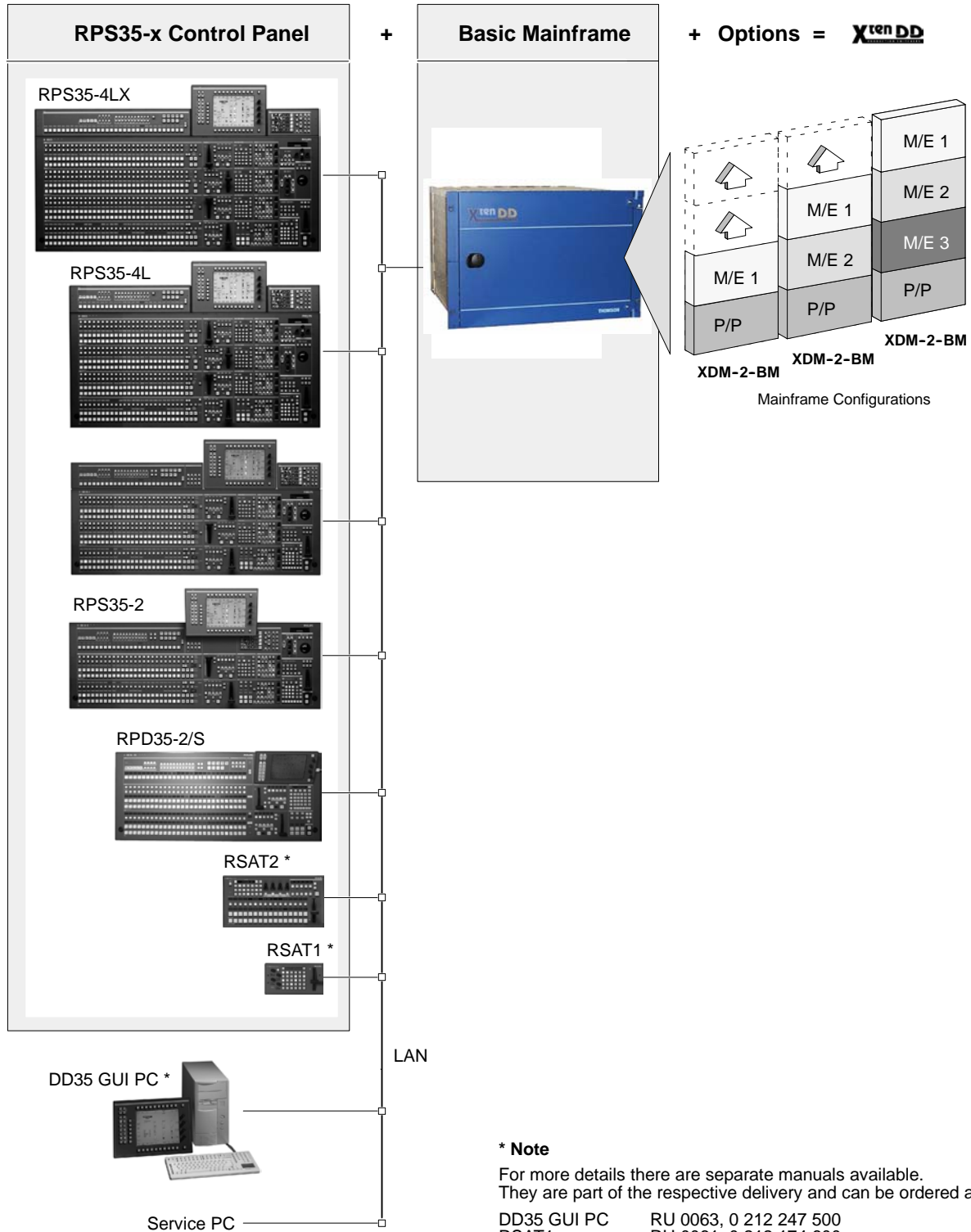
* Note

For more details there are separate manuals available.
They are part of the respective delivery and can be ordered also:

DD35 GUI PC	RU 0063, 0 212 247 500
RSAT1	RU 0061, 0 212 174 600
RSAT2	RU 0065, 0 351 763 000

1.4 KEY FEATURES

- Seven RU high mainframe

- Up to 4 M/E stages

- Up to 90 Inputs

- Up to 36 Inputs

- Up to 20 Aux Busses

- 4 Dynachrome® Chroma Keyers per M/E and up to 8 DSKs in P/P

- Machine Control

- Internal 4 channel DVE (delivering 3D planar effects)

- Internal RAM Recorder (providing 32 seconds of internal clip store)

1.5   PANEL OVERVIEW

1.5.1   RPS35-2/S CONTROL PANEL

The production switcher panel RPD35-2/S with one mixing level M/E and one Program/Preset, as well as the touch screen display panel.

Panel		Order number
RPS35-2S	Control panel	000 351 860 510
RPS35-2S–HL	Control panel (OnAir Highlighting)	000 351 862 510

Panel Options		Order number
RC 2453	Input Mnemonics P/P, MaKE, M/E1 and Aux (initial order only)	000 212 265 311
RC 2376	Redundant Power Supply Panel (retrofitting possible)	000 351 774 600
RC 2351	Fanless Power Supply, Redundancy included (initial order only)	000 351 772 100

1.5.2   RPS35-2 CONTROL PANEL SET

The production switcher panel set RPS35-2 comprises the basic unit RPD35-2 with one mixing level M/E and one Program/Preset, as well as the stand-alone display panel RPV35-2.
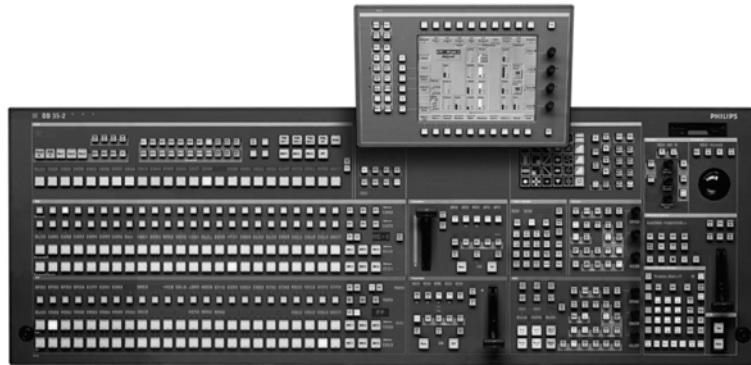
Panel		Order number
RPS35‒2	**Control panel set**	**000 351 860 410**
RPD35‒2	Basic panel	000 351 861 810
RPV35‒2	Display panel	000 351 861 610
RPS35‒2‒HL	**Control panel set** (OnAir Highlighting)	**000 351 862 410**
RPD35‒2‒HL	Basic panel	000 351 863 210
RPV35‒2‒HL	Display panel	000 351 861 610

Panel Options		Order number
RC 2362	Input Mnemonics Ext. 2 M/Es (initial order only)	000 351 773 200
RC 2376	Redundant Power Supply Panel (retrofitting possible)	000 351 774 600
RC 2418	RPV Mounting Frame	000 212 261 800
RC 2419	RPV Stand	000 212 261 900
RC 2351	Fanless Power Supply, Redundancy included (initial order only)	000 351 772 100

1.5.3 RPS35-3 CONTROL PANEL SET

The production switcher panel set RPS35-3 comprises the RPD35-3 with two mixing levels M/E and one Program/Preset, the display panel RPV35-3, the wipe panel RPW35 and the aux panel RPA35.

Panel		Order number
RPS35-3	**Control panel set**	**000 351 860 310**
RPD35-3	Basic panel	000 351 861 410
RPV35-3	Display panel	000 351 861 610
RPA35-3	Aux panel	000 351 861 510
RPW35-3/4	Wipe panel	000 351 861 710
RPS35-3-HL	**Control panel set** (OnAir Highlighting)	**000 351 862 310**
RPD35-3-HL	Basic panel	000 351 863 010
RPV35-3	Display panel	000 351 861 610
RPA35-3-HL	Aux panel	000 351 863 110
RPW35-3/4	Wipe panel	000 351 861 710

Panel Options		Order number
RC 2363	Input Mnemonics Ext. 2 M/Es (initial order only)	000 351 773 300
RC 2376	Redundant Power Supply Panel (retrofitting possible)	000 351 774 600
RC 2360	All in one "LX" Mounting Frame set	000 351 773 000
RC 2351	Fanless Power Supply, Redundancy included (initial order only)	000 351 772 100

1.5.4   RPS35-4/32 CONTROL PANEL SET

The production switcher panel set RPS35-4L comprises the RPD35-4L with three mixing levels M/E and one Program/Preset, the display panel RPV35-4, the wipe panel RPW35-4 and the aux panel RPA35-4L.
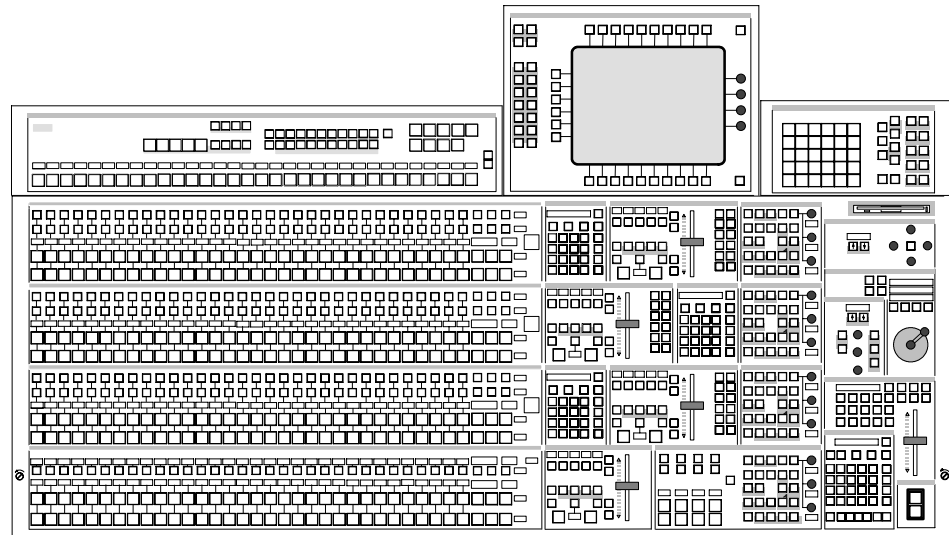
Panel		Order number
RPS35-4/32	**Control panel set**	000 351 850 010
RPD35-4/32	Basic panel	000 351 860 910
RPV35-4	Display panel	000 351 861 310
RPA35-4	Aux panel	000 351 861 010
RPW35-3/4	Wipe panel	000 351 861 710
RPS35-4/32	**Control panel set** (OnAir Highlighting)	000 351 8xx xxx
RPD35-4/32	Basic panel	000 351 862 610
RPV35-4	Display panel	000 351 861 310
RPA35-4	Aux panel	000 351 862 810
RPW35-3/	Wipe panel	000 351 861 710

Panel Options		Order number
RC 2212	Input Mnemonics Ext. 3 M/Es (initial order only)	000 351 746 800
RC 2376	Redundant Power Supply Panel (retrofitting possible)	000 351 774 600
RC 2840	All in one "LX" Mounting Frame set	000 351 854 000

1.6 BASIC MAINFRAME AND OPTIONS

1.6.1 GENERAL

All switchers of this series have serial digital inputs and outputs. Preview (PVW) is included. Peripheral protocols (with some exceptions, see below) are included according to the current state of development.

MaKE Memo allows users to program the buttons of the DSK selection row with Key Macros, incl. an identification name. Macros are single actions like GPO, recall of TiM/E Memo Registers or entire sequences of button strokes. The recall takes place within one Keyframe, but in the sequence the buttons strokes had been recorded before.

TiM/E Memo system (storage of 99 snapshots and / or timelines). Access definition and user log-in possible (similar to EXTRA, known from DD10-30).
Store and Recall for Resource settings is possible for all M/Es separately, i.e. 99 Registers per M/E in addition to Master TiM/E Memo.

The ability is provided to store application specific Mixer settings on the provided harddisk and to execute them any time. Such application specific settings may be: Mnemonics names, TiM/E Memo register contents, KeyMemory settings, Macros, 4:3/16:9 mode etc.

Tally is not included.

1.6.2 **Xten DD** BASIC MAINFRAMES

Production switcher for serial digital video signals according to ITU-R 601/656 including:

- 10 Bit Processing / 270 MBit/s

- 626 / 525 line standard, switchable or autodetect

- 4:3 / 16:9 switchable, manually or per GPI.

- 19", 7 RU housing

- 20 m connection cable (50 ohms, cheapernet).

- RJ45 LAN connection optional

The Basic Mainframe sections includes basic configurations for the **X^{ten} DD** switcher:

- Standard power supply

- Controller

- Genlock

- Input Processor

- 18 Inputs

- The respective number of M/E Processors

- The related M/E outputs.

- License for the respective number of M/Es

- Software package. The standard software includes many device drivers according to the current state of development.

No Aux busses are included in the basic version.

1.6.3   HARDWARE OPTIONS

The Basic Mainframe configurations are functional in general. With additional options the functions can be extended.

1.6.3.1   Video Inputs

Up to 90 serial digital video inputs can be installed in a **X^{ten} DD** mainframe. The number of inputs can be selected in steps of 18.
Configuring the **X^{ten} DD** with a certain number of inputs requires the respective input modules and the related software license.

- Serial Input 1 for IN 1–18 is already included in Basic Mainframe.

- Serial Input 2: Video serial input module: IN 19–36.
  The Video serial input module RC3421 provides the connectors and equalizers for video input 19–36. It is mounted form the back. The respective license is required in addition.

- Serial Input 3: Video serial input module: IN 37–54.
  The Video serial input module RC3422 provides the connectors and equalizers for video input 37–54. It is mounted form the back. The respective license is required in addition.

- Serial Input 4: Video serial input module: IN 55–72.
  The Video serial input module RC3423 provides the connectors and equalizers for video input 55–72. It is mounted form the back. The respective license is required in addition.

- Serial Input 5: Video serial input module: IN 73–90
  The Video serial input module RC3424 provides the connectors and equalizers for video input 73–90. It is mounted form the back. The respective license is required in addition.

1.6.3.2 Video Outputs

Output Modules are required to provide the drivers and connectors for M/E and Aux outputs. Two output modules are offered. The first covers the outputs of P/P, M/E 1 and Aux busses 1-10.
The second covers the outputs of M/E 2, M/E 3 and Aux busses 11-20. Installing Aux busses requires Aux Processor Options in addition and the related license.
A third Serial Output module is in preparation to provide additional Aux busses together with a enhanced version of the Input Processor.

- Serial Output 1 is already included in all Basic Mainframes.

- Serial Output 2 is included in Basic Mainframes or 3 and 4 M/E (XDM-3-BM, XDM-4-BM).

- Serial Output 2:
  The video serial output module RC 3451 includes drivers and connectors for outputs of M/E2 and M/E3 and aux busses 11-20.
  The module is mounted from the back.
  The module is already included in XDM-3-BM and XDM-4-BM. It is required for XDM-2-BM if number of Aux busses exceeds 10.

- Serial Output 3 (in preparation):
  The video serial output module RC 3452 includes drivers and connectors for Aux busses 21-38.
  The module is mounted from the back.

1.6.3.3 Aux Busses

AUX buses (e.g. for DVE Video+Key, Aux-PVW) with auto-follow for various preview functions. The Aux outputs are synchronized to the switcher reference. Markers for Safe Area and Center Cross can be inserted.
The **Xten DD** in it's current status can provide up to 20 Aux busses. The Aux Busses can be configured in steps of 5. To install Aux busses, the basic Aux Processor Motherboard (RY 3430) is required.
On this motherboard Aux Modules (RY 3435) with processing for 5 Aux busses each can be installed.

- Aux Processor Motherboard RY 3440:
  The Aux Processor Motherboard provides the control interface and connectors to install 4 Aux Modules. 3 additional connectors are included to enhance the maximum number of Aux busses to 38 with an extended Input Processor in the future.
  To install Aux busses, the Aux Processor Motherboard is mandatory

- Aux Processor Modules:
  The Aux Processor Module (RY3435) includes the processing for 5 Aux busses including phasing and safe area/ safe title. Up to 4 Aux Processor Modules can be installed (7 in a future release) on the Aux Processor Motherboard.
  1 Aux Processor Motherboard is required in the **Xten DD** Mainframe for any number of Aux busses.
  To install more than 10 Aux busses in a 2 M/E **Xten DD**, the Serial Output 2 (RY 3451) has to be present.

1.6.4   FX PROCESSOR

The FX Processor provides internal DVE functions for the **X^{ten}DD** It provides 4 channels of DVE (video or key) with linear effects (Zoom, Position, Rotation) in 3D space.
A combiner on the FX Processor supports Z–Priority and allows to combine the DVE channels already on the board to safe keyers on the M/E and simplify operation. A plug in module allows to add 4 channels of Ram Recorder.
A Ram Recorder channel can store 8s of uncompressed video including embedded audio.
The FX Processor provides 6 internal inputs and 8 outputs to the **X^{ten}DD** matrix (Input Processor).

- FX Processor RY 3460:
  The FX Processor provides 4 channels (video or key) of linear DVE effects in 3D space (Zoom. Position, Rotation on 3 axis). A on board combiner provides Z–Priority and combines channels for multi channel effects (e.g. cube).
  On board connectors can hold a Ram Recorder Module (RY 3465)

- Ram Recorder Module RY 3465:
  The Ram Recorder Module can be installed on the FX Processor (RY 3460) to provide 4 channels of uncompressed video store of 8s each for stills and video sequences.

1.7   MAINFRAME LICENSES

In the **X^{ten}DD** architecture the required processing performance is provided with the signal processing devices and structure on the boards. Implementing and using functions requires configuration data for the general processing devices and license codes to enable the function for a specific **X^{ten}DD** switcher. The enabled licenses are stored in the **X^{ten}DD** mainframe and will immediately enable a spare board to provide the existing functionality.
To configure **X^{ten}DD** for a certain function the required modules (e.g. Serial Input, Aux Module) and the license has to be ordered.

1.7.1   TALLY LICENSE LK 0113

Tally licenseenables **X^{ten}DD** to provide tally indication. 3 tally levels are supported. This port protocol license entitles the purchaser to use the Tally option. Tally software translates the internal control information for further use via serial RS485 ports. Only one license isneeded for control of variousdistribution units or Facility Control Systems (e.g. Jupiter).
Depending on the number of these units, several Tally channels are available (known as red–, yellow–, green Tally) per running Application.

- Tally Ch.1: Stdrd. On–Air src signalling

- Preset Tally: Tally for selected sources not being put On–Air ("yellow").

- Tally Ch.2:(green Tally) like Channel 1, with separate On Air control input.

Direct connection of tally indicators only via separately available distribution units (e.g. MI3040). Source indication assignment dedicated to specific output pins.

MI–3040 Emulation allows use of MI–3040 units driven by Jupiter Control System. Up to 6 MI–3040 units will then be simulated by using a separate mainframe port.

1.7.2   M/E COUPLE LK 0130

This option allows to couple M/Es. In such a mode there is a "Master"–M/E – which is operated – and a "Follow"– M/E which follows automatically. The amount of automatic following can be configured.
M/E couple is most useful for productions where not only a single program output has to be provided. But also feeds for so–called "2nd rightsholders" which normally are not allowed to use some special cameras and slo–motion images. The coupling allows to replace such sources. In the standard software the function AUX couple with replacement (AUX–Flex) allows something close. But, of course, on an AUX–Bus there are no transitions.
With M/E couple also the "2nd feed" to have transitions. Another application is the simulcast production in 4:3 and 16:9.

1.7.3   DSK DELEGATION LK 0131

DSK Delegation enables the control of the M/E3 keyers in a 2 or 3 M/E configuration as 4 internal down stream keyer. This provides 8 internal DSK to the operator. The M/E Processor (RY 3410) for M/E3 is required.

1.7.4   M/E FUNCTION LICENSES

The following licenses can be available per M/E. All M/E processing boards have identical performance and capabilities. The requested M/E for which the licenses are requested has to be listed in the order.

1.7.4.1   Wipe 1 LK 0101

Wipe Generator with 43 wipe patterns enables 1 Wipe in the requested M/E.

1.7.4.2   Wipe 2 LK 0102

Wipe Generator with 43 wipe patternsenables 2 Wipe in the requested M/E

1.7.4.3 Chromakey 1 LK 0103

Chroma Key function per keyer. Based on a matting technique, DynaChrome achieves an excellent detail and shadow reproduction, virtually no color spill. Clip, Gain and FGD-Fade can reduce background noise and eliminate most unwanted shadows. The automatic key alignment (AKA) is pre-adjustable for any key color. The cursor allows an AKA for every key color.
Manual adjustment is possible, as well as separate adjustment for both adjacent hues (selectivities) and a radial displacement away from the center of the color circle. Selectivity Masking is the ability that allows different Chromakey settings to be simultaneously executed in different image areas within single Keyers.

The license enables Chromakey 1 in the requested M/E.

1.7.4.4 Chromakey 2 LK 0102

Chroma Key function per keyer. Based on a matting technique, DynaChrome achieves an excellent detail and shadow reproduction, virtually no color spill. Clip, Gain and FGD-Fade can reduce background noise and eliminate most unwanted shadows. The automatic key alignment (AKA) is pre-adjustable for any key color. The cursor allows an AKA for every key color.
Manual adjustment is possible, as well as separate adjustment for both adjacent hues (selectivities) and a radial displacement away from the center of the color circle. Selectivity Masking is the ability that allows different Chromakey settings to be simultaneously executed in different image areas within single Keyers.

The license enables Chromakey 2 in the requested M/E.

1.7.4.5 Chromakey 3 LK 0103

Chroma Key function per keyer. Based on a matting technique, DynaChrome achieves an excellent detail and shadow reproduction, virtually no color spill. Clip, Gain and FGD-Fade can reduce background noise and eliminate most unwanted shadows. The automatic key alignment (AKA) is pre-adjustable for any key color. The cursor allows an AKA for every key color.
Manual adjustment is possible, as well as separate adjustment for both adjacent hues (selectivities) and a radial displacement away from the center of the color circle. Selectivity Masking is the ability that allows different Chromakey settings to be simultaneously executed in different image areas within single Keyers.

The license enables Chromakey 3 in the requested M/E.

1.7.4.6 Chromakey 4 LK 0104

Chroma Key function per keyer. Based on a matting technique, DynaChrome achieves an excellent detail and shadow reproduction, virtually no color spill. Clip, Gain and FGD-Fade can reduce background noise and eliminate most unwanted shadows. The automatic key alignment (AKA) is pre-adjustable for any key color. The cursor allows an AKA for every key color.
Manual adjustment is possible, as well as separate adjustment for both adjacent

hues (selectivities) and a radial displacement away from the center of the color circle. Selectivity Masking is the ability that allows different Chromakey settings to be simultaneously executed in different image areas within single Keyers.

The license enables Chromakey 4 in the requested M/E.

1.7.4.7   Shadow Store LK 0107

The Shadow Store can position key signals in pixel resolution to support far drop shadows. A available key signal (also internal) can be moved, and filled with a shadow color, reinserted through a keyer.
This license is available for each of the M/Es.

1.7.4.8   Mask Store LK 0108

Mask Store enables storage of user masks (key signal fames) and mask paint mode.
This license is available for each of the M/Es.

1.7.5   INPUT LICENSES

The input license determines the number of usable inputs. The appropriate number of Serial Input Modules have to be installed. The Basic Mainframe includes 18 inputs.

1.7.5.1   No of Inputs 36 LK 0115

Enables 36 serial inputs for video or key signals.

1.7.5.2   No of Inputs 54 LK 0116

Enables 54 serial inputs for video or key signals.

1.7.5.3   No of Inputs 72 LK 0117

Enables 72 serial inputs for video or key signals.

1.7.5.4   No of Inputs 90 LK 0118

Enables 90 serial inputs for video or key signals.

1.7.6   AUX BUS LICENSES

The Aux bus license determines the number of usable Aux busses. The appropriate number of Aux Modules (RY 3435) and Serial Output (RY 3450, RY 3451) has to be installed. Up to 20 Aux busses can be enabled.

The **Xten DD** is prepared to enable 38 Aux buses with future release (extended Input Processor).

1.7.6.1   No of Aux Busses 5 LK 0123

Enables 5 Aux busses.

1.7.6.2   No of Aux Busses 10 LK 0124

Enables 10 Aux busses.

1.7.6.3   No of Aux Busses 15 LK 0125

Enables 15 Aux busses.

1.7.6.4   No of Aux Busses 20 LK 0126

Enables 20 Aux busses.

1.8   OTHER CONTROL PANEL OPTIONS

1.8.1   HIGHLIGHT TALLY OPTION

The On Air status is indicated through increased brightness of the button in the source selection area of the M/E.
This option is available on request and with initial order only.

1.8.2   EMERGENCY HARDDRIVE

Emergency Harddisk for RPS35-4/32, RPS35-3 and RPS35-2.
The harddisk must be ordered initially together with the respective basic panel.
Operating software is pre-configured.
Not available for RPS 35-2S!

1.8.3   OPERATING SYSTEM WINDOWS NT™ FOR CONTROL PANEL PC

Initial order recommended, later orders possible.

2. PANEL OPERATION

2.1 OVERVIEW

Wipe Panel

Masks Panel

Positioner

Mattes Panel

Disk drive

Display Panel

Aux Panel

Source Selection Panels	Transition Panels	TiM/E Memo	Key Control
▶ M/E1	▶ M/E1	▶ M/E1	▶ M/E1
▶ M/E2	▶ M/E2	▶ M/E2	▶ M/E2
▶ M/E3	▶ M/E3	▶ M/E3	▶ M/E3
▶ P/P	▶ P/P	▶ Master	▶ P/P

Machine Control

Fade-to-Black
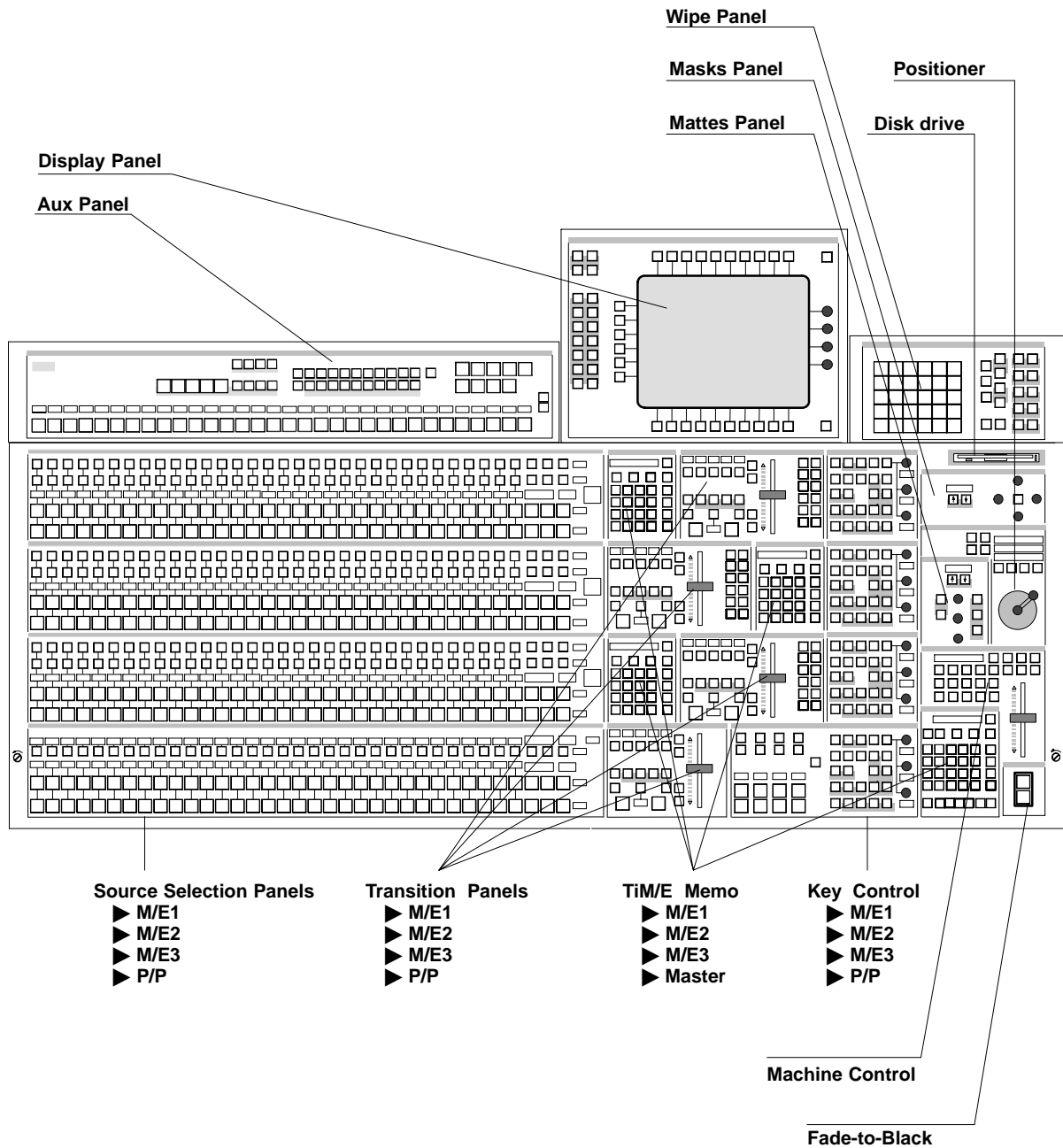
Example RPS35–4/32 Control Panel

2.2 SOURCE SELECTION

The **X**^{ten} **DD** Production Switcher are equipped with 32 (standard), 48 or 62 serial digital inputs, each usable as a video or key signal. The following internal signals are also available:

- Black, White

- 1 BGD matte for each M/E

- Re-entry from M/E1, M/E2, M/E3

- Re-entry of Program/Preset, "Clean Feed", Util A ...Util E

- 16 "virtual" inputs with key memory
  (any normal input with secondary input correction)

- RAM recorder sources

- DVx sources

Note: M/Ex cannot be selected as a picture source

Re-entry problem

*When selecting the source, it may happen that the switcher levels M/E1, M/E2, M/E3 or P/P cannot be re-entered as a source in another switcher level. This is not a fault, but a protective mechanism to avoid loops and consequently timing problems. In this case, the switcher system prevents that close loops are built when selecting the busses. For instance, in level M/E3, **M/E1** cannot be selected when in one of the most different combination paths the source M/E3 has been already selected in level M/E1.*

Solution

Find and disconnect the connention which prevent the picture source from being re-entered. Beside the direct selection via the source buttons, there is a number of internal connections which are not recognizable at the first sight.

Selection of the mask bus can be looked up in the Mask menu and all the other ones (PGM, PST, Key, Fill) in the Status menu.

Control panels   Four types of control panels with different numbers of primary source buttons are available:

- RPS35–4/32 control panel with 32 primary source buttons.

- RPS35–3 control panel with 24 primary source buttons.

- RPS35–2 control panel with 24 primary source buttons.

- RPS35–2S control panel with 24 primary source buttons.

Any input can be assigned to any button. Most internal inputs can also be assigned to any button. Key and Fill signals may be coupled in any combination.

Example: RPS35–3 Control Panel
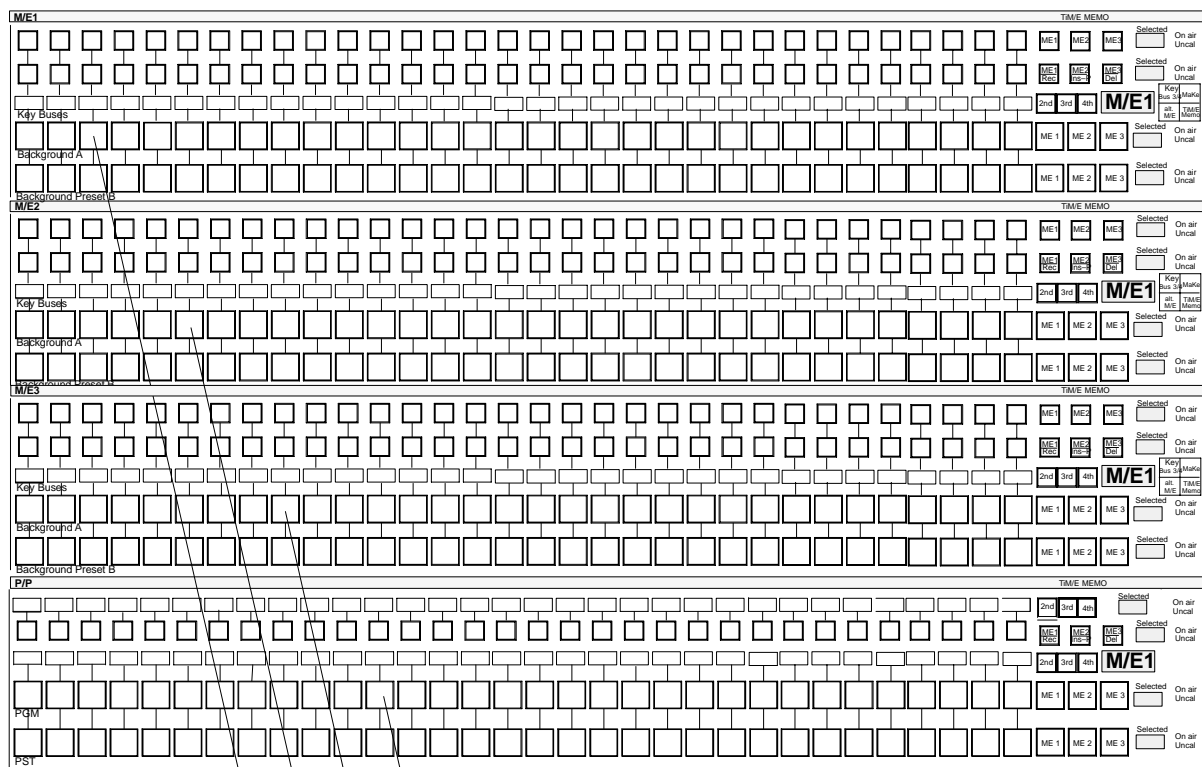
Program and Preset buses, DSK, MaKE

Key1..4, Background A, Background Preset B buses M/E3

Key1..4, Background A, Background Preset B buses M/E2

Key1..4, Background A, Background Preset B buses M/E1

Example RPS35–4/32 Control Panel
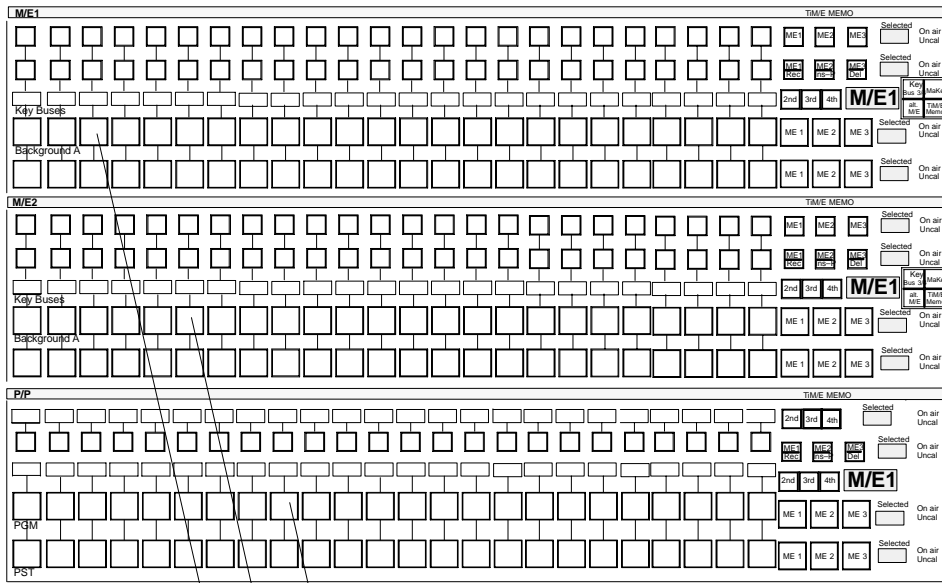
Program and Preset buses, DSK, MaKE

Key1..4, Background A, Background Preset B buses M/E2

Key1..4, Background A, Background Preset B buses M/E1

Example RPS35–3 Control Panel

2.2.1 FUNCTION OF THE BUSES

Background A   The **Background A** bus indicates which background picture is currently selected. Pressing another button in this bus performs a hard cut to another background picture. The selected background picture can be viewed on the corresponding M/E program monitor.

Background Preset B   The **Background Preset B** bus serves to select the background picture involved in the next transition. The preset background picture and the selected modifications (keys, for example) can be viewed on the corresponding M/E preview monitor.

The background and preset buses operate in "Flip-Flop" mode. After completion of the background transition, the preset source is automatically selected on the background bus and the original background source is automatically "flipped" to the preset bus.

The background and preset bus can be changed from the "international mode" (preset bus below) to "preset upper" mode (background bus below). For further modes of operation please refer to the ***Installation menu***.

Key1 / Key2 Buses   The **Key Buses** are for the selection and indication of key and fill signals.
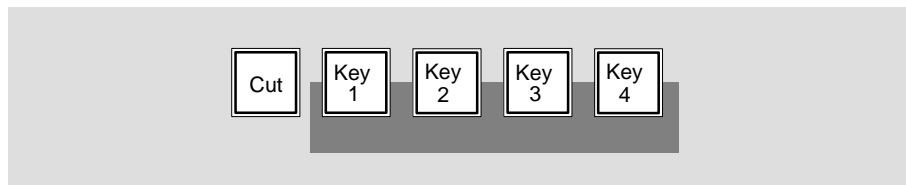
For details on key source control please refer to the sections ***Keyer Panels*** and ***Transition Panel***.

2nd Delegation   The **2nd** button allows for the selection of further source buttons (up to 48) in addition to the 24 (32) directly selectable sources. The **2nd** button will light when pressed. The current button assignment can be read from the respective button display.

If the optional Input Mnemonics is not built–in, input source buttons identification on adhesive foil is suggested.

3rd/4th Delegation   The **3rd** button(and **4th** button) allows for the selection of further sources in addition to the 24 (32) directly selectable sources. The button will light when pressed. The current button assignment can be read from the respective button display.

If the optional Input Mnemonics is not built–in, input source buttons identification on adhesive foil is suggested.

On Air   Buses involved in the output picture are indicated with a red **On Air** to the right of the bus.

Asynchronous Sources

Asynchronous (non-synchronous) sources are indicated by either a red or green-flashing **On Air** depending on the on air status.

Note: *Asynchronous picture signals are instantaneously switched through by the switcher.*

Uncal

The yellow **Uncal indicator** lights when a change from the default settings on the switcher has been made, such as, one or more of the following:

- the bus correction is non-default

- the selected source has a non-default input correction

MaKE/Aux
(only in P/P)

Button delegates the Key bus buttons of the P/P panel to the following functions:

Example: Part of the PGM / PST panel (RPS35–4/32)
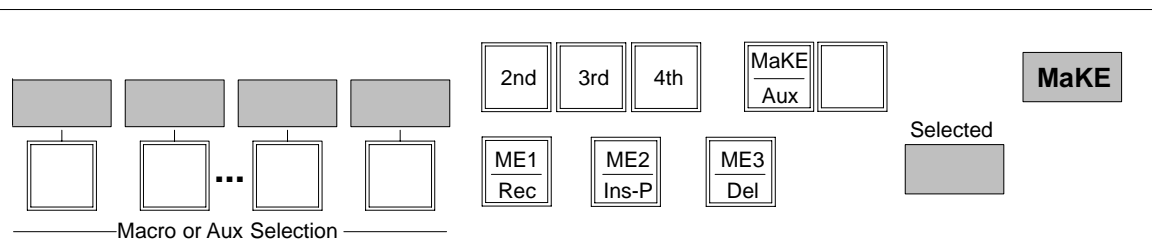
- For special applications the Aux bus input button row can be moved from the Aux Panel to the P/P panel.

- *Make Memo*™ function for storing and recalling macros. Operation with the panel buttons see below. For operation with menu refer to section ***Config Panel*** menu.

2.2.2   MAKE MEMO OPERATION

2.2.2.1   MACRO GENERATION WITH THE PANEL BUTTONS

MaKE Memo™ is a new feature. It can store commands as macros (e.g. Cut, Auto, GPO trigger, etc.). By inserting **Pause** between commands it can also store a macro sequence. The difference between *TiM/E Memo* with snapshots and time-lines to *MaKE Memo*™ is, that *TiM/E Memo* stores states and sequences of states, *MaKE Memo*™ stores commands and sequences of commands.
For recalling the stored macros, the P/P source selection panel is used. The **MaKE** button delegates the P/P keyer bus to the *MaKE Memo*™ function.

Example: Part of the PGM / PST panel (RPS35–4/32)
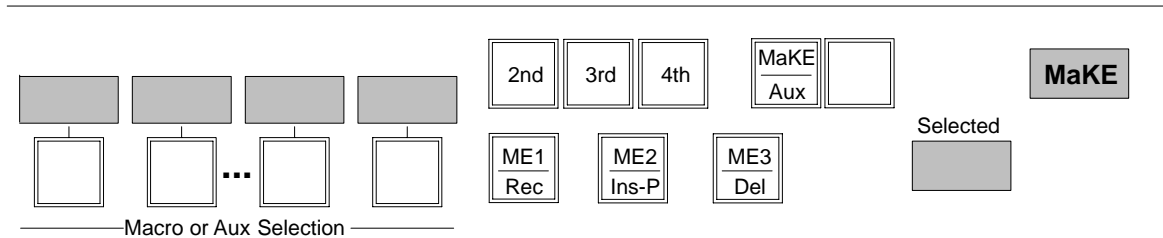
Record a macro

- Press **MaKE** button.

- Press **ME1/Rec** button and hold it down.

- Select the macro button on the key bus row of the P/P stage. The selected key bus button is now blinking (record mode). If a macro was already stored in this position, it will be overwritten.

- Press the selected button on the key bus again to stop and store the recording.

Insert Pause   During macro recording, pauses can be inserted:

- Press **ME2/Ins-P** button and hold it down. The key bus row is switched into the "Pause Mode", i.e. the display of the individual buttons offer different times for selection (e.g. **1.3s** for 1.3 seconds).
  Pressing a button adds the corresponding time as a pause to the recorded macro. By selecting the button **2nd** or **3rd**, the "Pause Mode" offers still a larger number of time values for selection. When selecting several time values in succession without pressing another button in between, the sum of the corresponding times will be added as a pause.

Play a Macro   To play a macro or a sequence

2 – 8

- Press **MaKE** button.

- Select the macro button on the key bus row of the P/P stage. While the macro is executed, the button is blinking. Pressing the button while the macro is still running stops the macro. After stopping or terminating the macro, the button lamp lit.
  Selecting the button while the macro ist stopped or at the end, starts the macro at the beginning.
  While the macro is running, no other macro can be started, recorded or deleted.

Delete a Macro   To delete a macro or a sequence

- Press **ME2/Del** button and hold it down and select the macro with the buttons of the key bus row.

Joining Macros

- Pressing another macro button during a macro recording, the macro associated to this button is not started but its data is added to the recorded macro.

Note:

Button lamp of current macro blinking in single speed while playing. Lamp of current macro and delegation lamp blinking in double speed while recording.
Lamp of last played keeps lit. If the last played macro is deleted, the lamp will be switched off. After a reset, the last played macro is undefined and so no lamp is on to indicate the "last" state.

2.2.2.2 MACRO ATTACHMENT

Under several circumstances it is useful to execute a macro together with the function of another button. E.g. when selecting a VTR which is under –> Machine Control on the Preset Bus it could be useful to cue the machine to the Mark In point. Or think about selecting a store (Video Store, Montage Processor) output and select the readout with the same button push.

For such uses the Macro Attachment is the tool to use. With macro attachment the macro can be added to the normal button function. In this case a macro can be executed before the normal function (pre–macro); it can be executed after the normal function (post–macro) or both pre–macro and a post–macro can be activated.
A macro can also replace the normal function of the button.
This is selected by Macro attachment Playmode for all the macro attachments made.

- **Function only** means that regardless whether a macro has been attached or not only the normal function is executed.

- **Function and macros** means that if there is a macro attached the normal function and the macro(s) is (are) is executed.

- **Macros only** means that if there is a macro attached, only the macro is executed.

The macro attachment is done in the following easy steps:

- Record the macro(s)

- Pre–macro:
  Press and hold the button where the macro is recorded to.
  Press and hold the button where the macro should be attached to.
  A beep after 2 seconds indicates that the attachment is stored. Both buttons can then be released.

- Post–macro:
  Press and hold the button where the macro should be attached to.
  Press and hold the button where the macro is recorded to.
  A beep after 2 seconds indicates that the attachment is stored. Both buttons can then be released.

- Pre–macro and post–macro:
  First attach the pre–macro.
  Then proceed to attach the post–macro.

Note!
during the process of attaching the macro the macro and the button's function will be executed.

- To delete the macro attachment:
  Activate the MaKE–Memo row
  Press and hold **M/E3 / Del** button
  Press the button from which the macro attachment should be deleted from.
  A beep will indicate the delete has occoured.

All macro attachments can be deleted in the panel setup.

2.2.3   AUX BUS ASSIGNMENT IN P/P PANEL

For special applications it is possible to delegate the Aux bus selection from the Aux bus panel to the key bus row of the P/P panel. This button row can alternatively be used for the MaKE memo selection.

To move an Aux bus:

● Press the **MaKE/Aux** delegation button and hold it down. The display beside the button shows **AUX?**.

● Then press the delegation button in the respective Aux panel section (e.g. **AUX3**) and release the **MaKE/Aux** delegation button.

● Instead to delegate to the MaKE memos, the MaKE delegation button now toggles between the key bus row (DSKs) and the selected Aux bus.
In this mode, the MaKE memos can be only used in the menu.

If you want to delegate the MaKE memos again to the button row, proceed as follows:

● Press the **MaKE/Aux** delegation button and hold it down. The display beside the button shows **AUX?**.

● Then press one of the buttons **ME1/Rec**, **ME2/Ins-P** or **ME3/Del** in the P/P panel and release the **MaKE/Aux** delegation button.

Note:

For more details refer to the Aux menu.
*The Aux bus assignment can be also controlled from the Config Panel menu where the first list entry **ALL** has to be selected in the MaKE Memo list. Subsequently, a menu is displayed for bus selection.*

2.3   AUX BUSES PANEL

2.3.1   OVERVIEW

The Aux Buses panel is used to select and indicate the sources on:

● all internal Aux Buses

● external Aux Buses

● RAM Recorder

● DVx

● Mask Bus in M/E1 ... 3

For example the **X^{ten} DD** provide in the basic version 5 serial digital auxiliary outputs. The "Aux Extension options" provides an additional outputs for a maximum of 38 Aux Buses.

Any Aux bus can be used as Aux PVW. Any Aux bus can also be used to feed a external DVE with video or key.

Example: RPS35–4 Control Panel

2.3.2   AUX BUS SOURCES

The **Aux Buses** bank permits the selection of the same signals as on Background and Key buses. Additionally

- PVW signals of all stages (M/E1 ... 3, P/P)

- P/P output

- Pre-processed Background Bus, Key Bus and Fill Bus signals (Preset/B, PGM/A, Key1, Key2, Key3 in P/P only) of any stage.

2.3.3   AUX BUS DELEGATION

The button group **Delegation** delegates one of the buses to the Aux Bus buttons row. Thus showing the respective status and enabling operation.

| Aux1 | Aux2 | Aux3 | Aux4 | Aux5 | Aux6 | Aux7 | | Mont Proc1 | Mont Proc2 | Video Store | | Ext Aux | Menu |
| Aux8 | Aux9 | Aux10 | Aux11 | Aux12 | Aux13 | Aux14 | Aux15 | Mask Bus1 | Mask Bus2 | Mask Bus3 | | 2nd Aux | |

Delegation
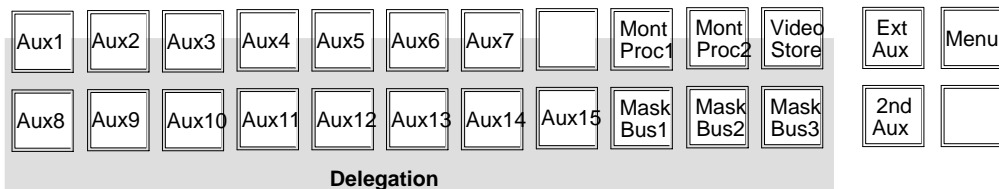
The other statuses are stored internally and are automatically stored when another Aux bus is selected.

Program, Preset and Key buses and the Aux buses can be coupled in any combination (for further details please refer to section ***Config menu***).

Note:

Holding an input button pressed and then pressing one or more aux delegation buttons (Aux1, Aux2, ..., Mask Bus3) will set this input active for the delegated aux buses. While the input button is pressed down no source hunting will be achtive. This means, you can set all aux buses to the same input (e.g. Black). Press Black, hold the button down, and than strike with your finger over all aux delegation buttons.

Special buttons:

2nd Aux   The **2nd Aux** button allows for the selection of further sources. The **2nd** button will light when pressed. The current button assignment can be read from the respective button display.

Seraph HD: Sources Aux 16 ..20
DD35:   Sources DVx 1/2, DVx 3/4

Menu   Selecting the Menu button and simultaneously pressing one of the buttons **Wipe 1 ... 4**, **VideoStore** or **MPR1/2** calls on the Aux button row a simplified version of the associated menu buttons. The function names of the buttons are shown in a short form in the 4–digit display. This operating mode can be useful when the control panel is operated without display or defined operational functions have to be available via direct button access.

Analog settings are possible by pressing the **%** buttons and simultaneously rotating the digipots in the Matte panel.

As soon as pressing another delegation button in the Aux panel, this operating mode is exit and the Aux button row is assigned to the corresponding sources.

Note:

If you have a panel without **Menu** *button, for this mode of operation please press simultaneously the buttons* **Matte↑** *+* **Matte↓** *+* **Matte1** *+* **(Wipe 1 ... 4, VideoStore or MPR1/2**).

2.3.4 ENABLE THE REMOTE FUNCTIONS
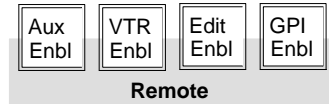
The **Remote** button groub has to be used to enable the following functions:

- Enables Aux control panels

- Enables the VTR control

- Enables editor control

- Enables GPI inputs

2.3.5 CENTRAL ON–AIR DISPLAY
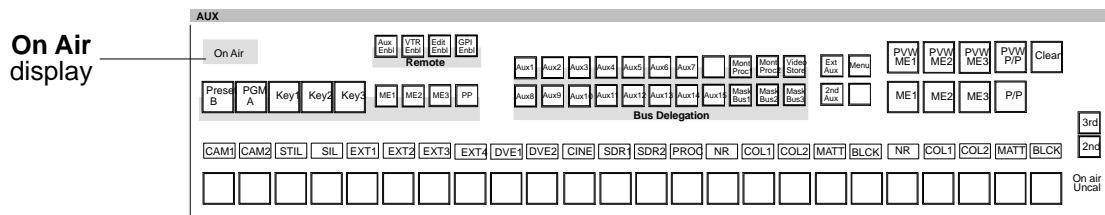
On Air
display

General red signalling of the switcher output. Buses involved in the output picture are indicated with a red **On Air** to the right of the involved buses.

2.4 SOURCE SELECTION GROUP

For operator convenience, the source selection rows can be swapped in the **Environment Setup**. See also: **Menu Install / Panel / Preset Is Upper** (formerly PGM/ PST German).

2.4.1 BACKGROUND A

The **Background A** bus source is selected and indicated on the **Background A** bus bank. Pressing another button in this bank performs a hard cut to the new source.

In **Non-Layer mode,** the **Background A** bus is the **Program** bus.
In addition to the source selection, the switcher performs the actions shown in the table when the appropriate **Application Setting** is turned on (for details see menu *Config / EBox / ME Settings*).

Application Setting	Action
Button Drop (= None)	The selected buttons will be dropped i.e. cut out when a program source is selected. Mainly used for DSKs.
Black Pst Abort	A currently running transition with **BLK Pst** on will be aborted, the **BLK Pst** button lamp turns off and the selected source is taken fully as program.
Transition Abort	A currently running transition will be aborted and the selected source is taken fully as program.
FTB Cancel	When Fade-To-Black is active, this will be instantly cancelled, so that the image with the selected source is visible on the stage's program output.

In **Layer mode,** the **Background A** bus is the bus of the key **BGD-A** – similar to the standard key buses **Key 1** and **Key 2**. I.e. the key selection mode of the Keyers Panel (**Key Bus, Couple, Split**) applies.

The following table shows what happens under the various conditions.

Key Selection Mode	Indication		Operation
identical	**Key Bus** button is lit		select Fill and Key source together and identical
coupled	**Couple/Split** button is lit		select Fill source and the **Coupled Key** input as Key source (the **Coupled Key** input is defined in menu *Application / Global Settings / Input*)
split	**Couple/Split** button + **Split** indicator lit	**Couple/Split** not pressed	select Fill source
split	**Couple/Split** button + **Split** indicator lit	**Couple/Split** pressed	select Key source

Refer to **Keyers Panel** how to switch the key selection mode.

In addition to the source selection, the switcher performs the actions shown in the table when the appropriate setting is turned on.

Application	Setting	Action
Black Pst Abort		If a currently running transition with **BLK Pst** on is at the black limit, it will be aborted, the **BLK Pst** button lamp turns off, the switcher changes to **non-layer mode** and the selected source is taken fully as program.

2.4.2 BACKGROUND B

The **Background B** bus source is selected and indicated on the **Background Preset B** bus bank. Pressing another button in this bank selects a new source. No additional action is performed.

In **Non-Layer mode,** the **Background B** bus is the **Preset** bus. The background image for the next BGD transition is selected on it. Usually this can be previewed on the stage's preview output.
Program and **Preset** bus operate in Flip-Flop mode, i.e. after the BGD transition, the preset and program sources will change automatically.

In **Layer mode,** the **Background B** bus is the bus of the key **BGD-B** – similar to the standard key buses **Key 1** and **Key 2**. I.e. the key selection mode of the Keyers Panel (**Key Bus, Couple, Split**) applies.

2.4.3 PRE-PROCESSED SIGNAL SELECTION GROUP

Each M/E stage of the switcher has the capability to send one processed key signal and one processed video signal to the internal router. The signals can be taken from any background or key.
For example: Key 1 is in chroma key mode **DynaChrome.** Then the processed key output is the black-and-white key signal, the processed video signal is the foreground signal with key color subtracted.

Button group in the Aux panel section:

| Preset B | PGM A | Key1 | Key2 | Key3 | M/E1 | M/E2 | M/E3 | P/P |
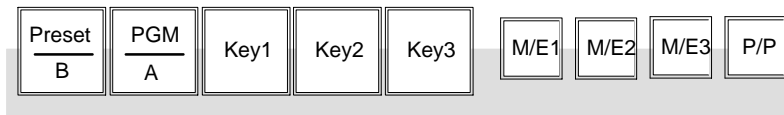
Button	Preset B	PGM A	Key1	Key2	Key3[1]
associated Video	Bus B	Bus A	Fill of Key1	Fill of Key2	Fill of Key3
associated Key – non-layer mode: – layer mode:	 full image white Key of BGD B	 full image white Key of BGD A	Key of Key1	Key of Key2	Key of Key3

[1] Only in stages with three keyers.

The pre-processed signals can be selected on

- logical DVE buses (see also section: ***DVE Integration***)

- any AUX bus (it is an application setup whether the AUX bus takes the pro-cessed video or the processed key)

- Montage Processor
  (MPR1 always uses the video and MPR2 always uses the key)

- VideoStore (always the video)

The pre-processed signals cannot be selected on the Mask buses and on the exter-nal AUX buses.To select a specific signal:

- Press and hold down the respective **M/E** button

- Press the button of the signal to select

- Release the **M/E** button

Since each stage can send only one out of the four or five possible signals, there might be a conflict. For example:

- AUX1 has selected Key1 of M/E 1.
  When a selection for AUX2 is made to send Key2 of M/E 1, there is a conflict, because only either Key1 or Key2 can be sent.

- To resolve this conflict, the DD35 switcher uses the principle "the last one wins".

- In this case, Key2 of M/E 1 is then selected on both buses AUX1 and AUX2.

2.5   M/E DELEGATION

Each M/E stage of the switcher can be delegated to each control level of the control panels. Refer also the menu section **ME-Mapping** and **Local Panel Setup.**

M/E Delegation	M/E Delegation
M/E1 M/E2 M/E3 P/P	M/E1 M/E2 M/E3 P/P
M/E1 M/E2 M/E3 P/P	M/E1 M/E2 M/E3 P/P
M/E1 M/E2 M/E3 P/P	M/E1 M/E2 M/E3 P/P
On air On air On air On air	On air On air On air On air
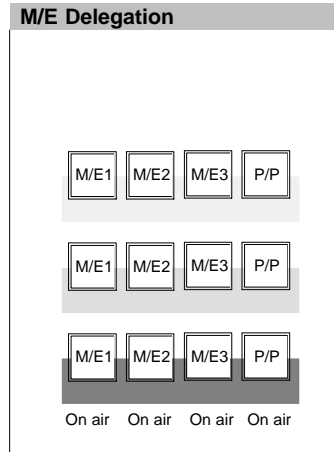
Example: RPD 35-3 control panel   Example: RPD 35-4 control panel
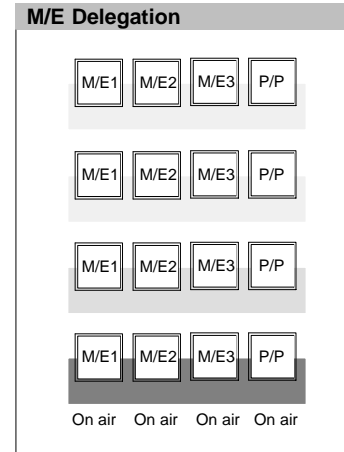
2.6   TRANSITION PANEL

The **X^{ten} DD** include a universal mixing level with a background transition stage and four independent keyers.
With all keyers, Luminance and Linear Key mode can be enabled.
The **DynaChrome** keyer is an option per M/E including P/P.

The transition panels for the M/E1, M/E2 and M/E3 levels are identically desined.

Transition

BGD	Key 1	Key 2	Key 3	Key 4
On	On	On	On	On
Fx	Fx	Fx	Fx	Fx

Limit Set
Limit On

Auto 1   Cut 1
Auto 2   Cut 2
Auto 3   Cut 1
Auto 4   Cut 2

Loop	DVE	Mix	Wipe 1	Wipe 2

Transition types

BLK Pst	Trans Dur	Trans PVW

Auto   Cut
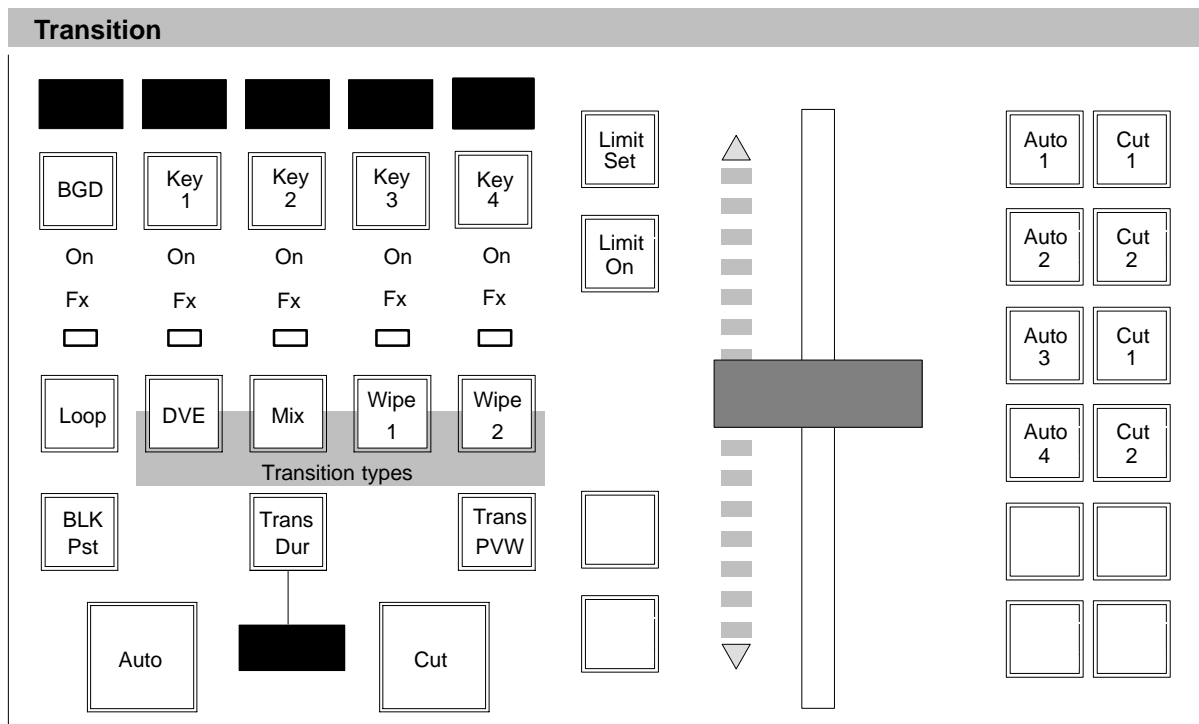
Example: RPD 35-4 Transition panel

In compare to the RPD 35-3 and RPS35–2 control panel, the RPD 35-4 panel have more buttons and gives therefore the possibility to select more functions without using UPK buttons (User programmable keys).

For mor details refer to section ***User Programmable Keys***.

Transition

		WP 1	WP 2	MIX	MIX	WP 2
	Limit set	BGD B	BGD A	Key 1	Key 2	Key 3
	Limit on	On	On	On	On	On
		Fx	Fx	Fx	Fx	Fx
		Layer		Over	Over	Over
		Loop	DVE	Mix	Wipe 1	Wipe 2
				Transition types		
		BLK Pst		Trans dur		Trans PVW
			Auto	1 2 3 4	Cut	
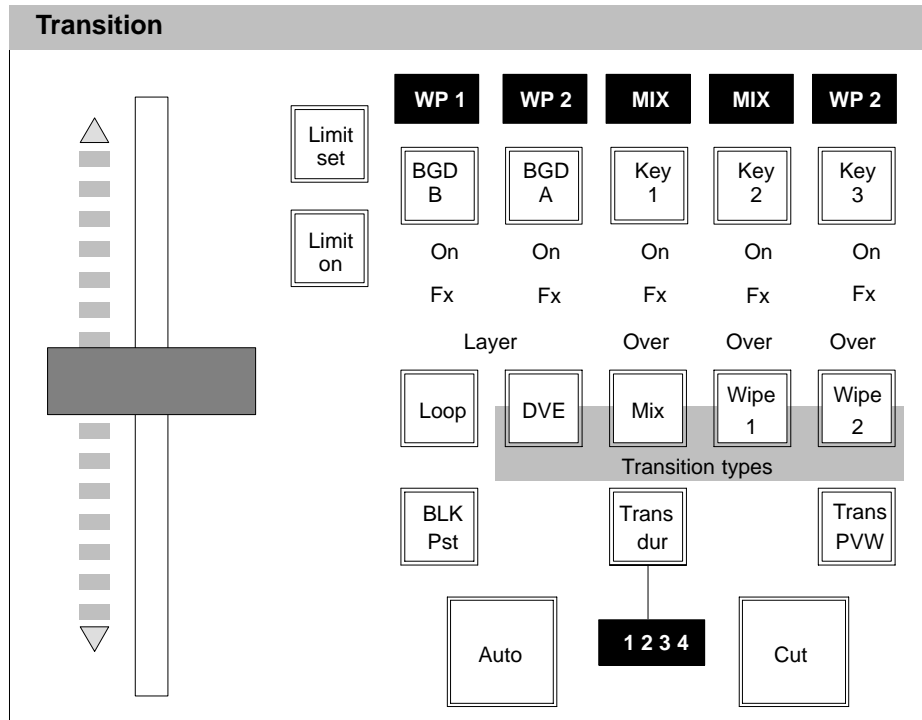
Example: RPD 35-2 and RPD 35-3 Transition panel

For effect design, **ADD**, **Mix**, **DVE**, **Wipe1 and Wipe2** transitions can be selected with up to two wipe generators (optional). The individual picture components can be simultaneously faded with different transition types (MultiMix).
Control of the mixing level is facilitated by the consistent application of the next-transition principle.

For an optimum preview of the transition effect, the switcher is equipped with independent preview mixing levels and Transition PVW capabilities.

Note: *Please note that the transition type **ADD** has to be set in the M/E Main menu.*

2.6.1 TRANSITION FUNCTIONS

Next Transition   The next-transition buttons **BGD**, **Key 1**, **Key 2**, **Key 3** and **Key 4** permit the prese-
lection of the picture components to be involved in the next transition. The buttons
are mutually exclusive. If you wish to fade several picture components simulta-
neously, press the respective buttons at the same time.

WP 1	WP 1	MIX	WP 2	WP 2
BGD	Key 1	Key 2	Key 3	Key 4
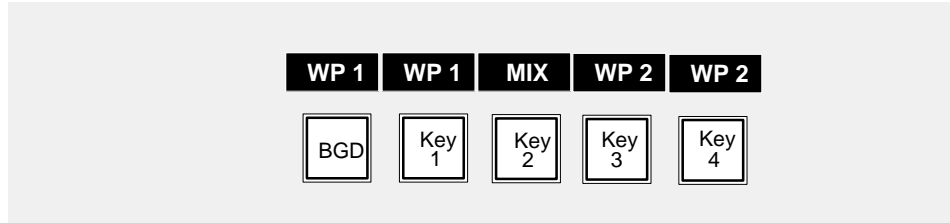
The selected buttons light up and indicate which picture components will be
affected during the next transition. The result can be checked on the preview moni-
tor. The display above the buttons shows the type of transition (**WP1** for Wipe1,
WP2 for Wipe2, **MIX**, **DVE**, **ADD**) that was selected for the respective picture com-
ponent. The "switched on" status of a keyer is indicated with **On** below the next-
transition buttons.

Keyer priority   The priority among the keyers 1 and 2 is indicated with **Over** (RPD 35-4) or **Mid**
Over (Mid)   (RPD 35-2/-3) . Keyer 3 is always on top
If, for instance, **Over** is on below **Key 1**, keyer 1 has priority over keyer 2.
Button **Key Over** in the Keyers panel enables the user to change the priority of the
keyers 1 and 2.

BGD	Key 1	Key 2	Key 3
On	On	On	On
Fx	Fx	Fx	Fx

Key Over

Background
Key 2
Key 1
Key 3
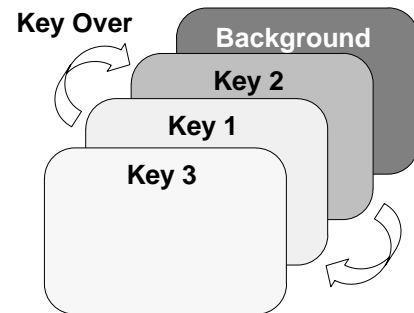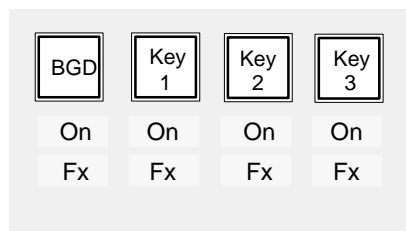
Transition Type	The Transition Type buttons permit selection of different types of transition: To select a transition type, activate the next-transition button for the picture component and then select a transition type with **ADD**, **DVE**, **Mix**, **Wipe 1** or **Wipe 2**.
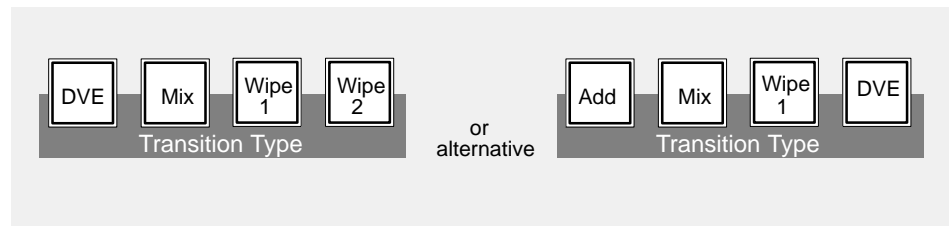
The selected transition type is indicated above the respective next-transition button.

Note: *Please note that you can only change the transition type when the transition procedure is finished, i.e. when an automatic transition has been completed or the fader is in final position.*

Add	**Add** is used for a full additive mix of PGM and PST. The output level is internally limited to 100%.
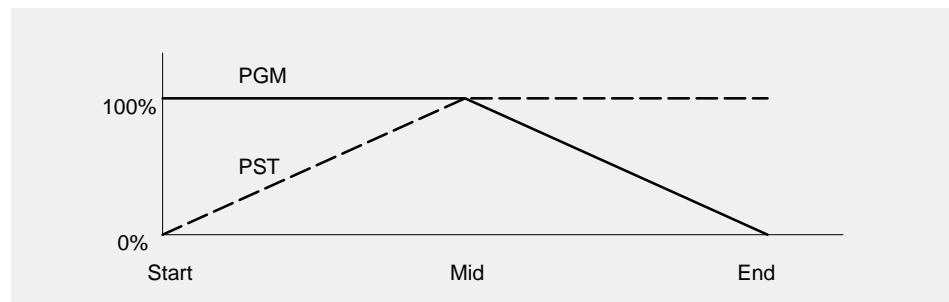
Note: *Please note that this type of transition can only be used for background transitions.*

Mix	**Mix** enables a type of transition which performs a cross fading between the picture signals selected with the next-transition keys.

Wipe (n)	**Wipe 1** and **Wipe 2** enable a wipe transition with the signal of the respective wipe generator 1 or 2. For further information on the control of the wipe generator, please refer to the section ***Wipe Panel.***

Note: *Please note that the wipe generators can be used simultaneously for several applications which may interact.*
Always use a wipe generator only for one function!

DVE

DVE permits recalling and running DVE effects from the switcher in the same way as wipe effects.

The various effects must be programmed on the respective DVE before and can then be recalled with the wipe pattern selection keypad in the Wipe panel when the associated display shows **DVE1** or **DVE2**.

For further information and important notes on DVE control please refer to the section **DVE Integration**.

Note: *Please note that the DVE transition type can only be effective for one picture component.*

The Transition Type displays indicate the component that is used for DVE transition, especially PGM and PST.

    —— **DVE**   DVE transition in PGM
DVE ——   DVE transition in PST

MultiMix

With **MultiMix** you can select different transition types for individual picture components and then fade them together. For instance, **Mix** can be selected for the background transition, **Wipe 2** for the first keyer and **Wipe 1** for the second keyer, and the different types of transition can be executed simultaneously in one transition.

Adjusting different transition types:

● Select the picture component with **BGD**, **Key 1**, **Key 2** or **Key 3**.

● Now select the desired transition type with **Add**, **DVE**, **Mix** or **Wipe (n)**.
The selected transition type will be indicated above the next-transition buttons.

● Select the respective transition type for the other picture components in the same way. Turn off the transition type by pushing the activated transition buttons.

● Pressing **BGD**, **Key 1**, **Key 2** or **Key 3** (or any combination) simultaneously activates
the corresponding picture components for the next transition.

Note: *Please note that the transition type **Add** will result in **Mix** type for **Key 1/2/3**. Multimix is possible when no transition type button is enabled.*

Black preset

The **BLK Pst** button switches between the normal crossfade (**X Fade**) transition and fade-out/fade-in (**V Fade**) transition. A **V Fade** transition can be made with all transition types.
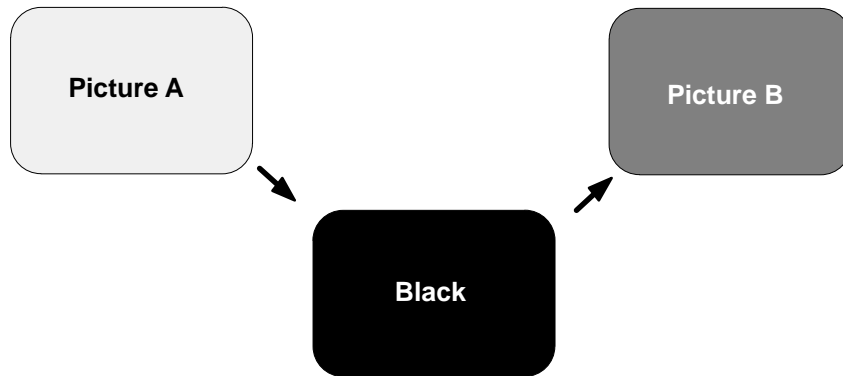
Different **V Fade** modes are pre-selectable in the menu:

- **V Fade 1**
  The complete V Fade is done in one pass. I.e. Black is in the middle of the transition.
  Components, that are on and not selected for **Next Transition**, will stay on during and after the V Fade.
  Before and during the transition, the preview monitor shows the result of the complete transition.

- **V Fade 2** (default)
  The complete V Fade is done in two passes. I.e. there is one transition to Black and one transition from Black. Components, that are on and not selected for **Next Transition**, will stay on during and after the V Fade. Before and during the first pass of transition, the preview monitor shows the result of the first pass of the transition. During the second pass, it shows the result of the complete transition.

- **V Fade 3**
  The complete V Fade is done in one pass. I.e. Black is in the middle of the transition. Components, that are on and not selected for **Next Transition**, will fade out and back in during the V Fade. Before and during the transition, the preview monitor shows the result of the complete transition.

- **V Fade 4**
  The complete V Fade is done in two passes. I.e. there is one transition to Black and one transition from Black.
  Components, that are on and not selected for **Next Transition**, will fade out and back in during the V Fade. Before and during the first pass of transition, the preview monitor shows the result of the first pass of the transition. During the second pass, it shows the result of the complete transition.

After the V Fade is completed, the **BLK Pst** button is automatically switched off. When a key component is selected for the V Fade transition: If it is on, it will fade-out

during the fade-out-phase and stay out during the fade-in-phase. If it is not on, it will stay out during the fade-out-phase and fade-in during the fade-in-phase.

BLK Pst can only be activated when all affected components are either in their "zero" or "fully-in" state.

When **BLK Pst** is switched off during the transition, the following happens:

- During the fade-out-phase and on the black limit: **BLK Pst** turns off and the transition is stopped and put back to the start position.

- During the fade-in-phase: the transition is stopped and set back to the black state. **BLK Pst** remains on.

A **BLK Pst** transition can optionally be aborted by a source selection on **Background A**.

Application Setting	Action
Non-layer mode: Black Pst Abort	A currently running transition with **BLK Pst** on will be aborted, the **BLK Pst** button lamp turns off and the selected source is taken fully as program.
Layer mode: Black Pst Abort	If a currently running transition with **BLK Pst** on is at the black limit, it will be aborted, the **BLK Pst** button lamp turns off, the switcher changes to **non-layer mode** and the selected source is taken fully as program.

Fader The fader permits delicate manual transitions. The yellow arrows to the left of the fader show the direction to complete the transition.
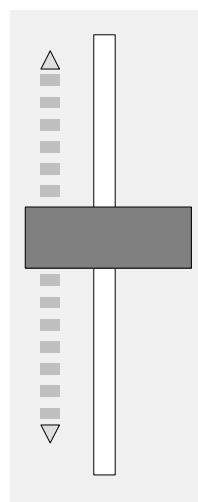
Cut Press button **Cut** if you wish to execute a hard cut transition .

Auto Press button **Auto** to execute a transition at the selected Trans Dur rate. During the transition, the button lights up and the selected transition duration time runs down in the associated display.
The transition can be completed prematurely by pressing **Cut**.
It is also possible to stop the automatic transition by pressing **Auto** again and then continue by pressing it once more. It can also be finished manually with the fader.

Trans dur The **Trans dur**ation function permits setting a transition duration between 1 and 9999 frames.

Adjusting the time:

- Press **Trans dur**. The **Trans dur** button and the buttons of the numeric keypad in the TiM/E Memo ™ panel will light up and prompt the entry of the transition duration.

- Enter the desired transition duration with the numeric keypad.
  The entry can be verified in the display. Errors can be deleted by pressing **Clr**.

- Confirm the entry with **Enter NEXT** or press **Trans dur** again.

- If **Trans dur** was pressed accidentally, press it again to disable the function.

Trans PVW Trans PVW permits an optional preview of the transition on the preview monitor without affecting the output picture.
Button **Trans PVW** will light up when activated. All current settings are stored and are automatically restored when you leave the Transition PVW mode.
It is now possible to select other transition types, to deselect picture components and to execute the transitions with **Cut** or **Auto** or manually with the fader.

Note: Please note that the Trans PVW mode can only be enabled or disabled when the transition is finished, i.e. when an automatic transition has been completed or the fader is in final position.

If another background picture is to be transmitted to the output while **Trans PVW** is enabled, this can be made by direct selection on the bus which is identified by **On Air**. This will result in a hard cut to another background picture.

Limit set, Limit on The **Limit set** and **Limit on** buttons serve to create reproducible partial transitions. This mode is possible with all types of transitions.
Limit set permits storing the desired value set with the fader.
Limit on enables the mode. Any transition with **Cut** or **Auto** and any manual transition with the fader is only executed up to the value previously defined with **Limit set**.

If the transition is made with the fader, the yellow arrow to the left of the fader does ***not*** change the direction when the fader is moved to a final position, thus indicating that the transition is not completed.
If **Limit on** is switched off at the point defined by **Limit set**, a jerk-free transition to the next contribution can be made with the fader. The remaining fader path is then stretched to the full fader path.

2.6.2 USER PROGRAMMABLE KEYS IN THE TRANSITION PANEL (UPK)

The function of some buttons in the transition panel can be changed as an environment setting. This is done in the panel setup (refer to section 4.4.3) or by menu control (software release V2.0.0).

For details refer also to 2.17. The default inlay set is shown on page 2 – 21.

The available and default functions for a specific button are listed below.

Button name	Default function	Possible function
Limit Set	Limit Set	• Limit Set • Limit On • Next Transition Misc1 • Next Transition Misc2 • Insert Key 1 (Start Auto Key1) • Insert Key 2 (Start Auto Key2) • Key 3 (for RPD 35-4 panel without Key 3 button)
Limit On	Limit On	same as Limit Set
BLK Pst	enable/disable V Fade 2	• enable/disable V-Fade 1 • enable/disable V-Fade 2 • enable/disable V-Fade 3 • enable/disable V-Fade 4

The transition type buttons are also programmable.

Button from left	Default function	Possible function
1.	DVE	• ADD • Mix • Wipe1 • Wipe2 • DVE
2.	Mix	as above
3.	Wipe 1	as above
4.	Wipe 2	• as above and • enable/disable V-Fade 1 • enable/disable V-Fade 2 • enable/disable V-Fade 3 • enable/disable V-Fade 4

In addition the function of the buttons **CUT** and **AUTO** can be exchanged in the *Install Panel* menu with the setting **CUT/AUTO Button Position.** The value can be **Cut Button Right** or **Cut Button Left**.

2.6.3 DVE INTEGRATION

The **Xten DD** switcher system has the capability to integrate up to two DVEs in terms of signal routing and control. This provides the user with more functionality compared with simply connecting the DVE's output signals.

In Installation setup, the signal and/or control connections can be defined.

● Signal connections:
> input for transformed image from DVE, can be any two of the SDI inputs
> output of effect send signals to the DVE, can be any two of the 15 AUX buses (one for video and one for key)
Since there are no reserved buses for the DVE, this installation setup maps the logical DVE buses to physical AUX buses.

● Control connections:
> port for the remote control of the DVE
> type of the DVE (because the various DVEs have a more or less special remote control protocol)

The following table shows the levels and possibilities of the DVE integration.

Level of Integration	Functionality
DVE outputs are connected to switcher inputs	DVE can be selected as Key and/or back-ground
+ DVE inputs are fed from switcher's AUX buses	Images to be transformed can be selected on the switcher's Control Panel
+ signal connection declared in DVE installation	FXLoop™ automatic routing possible
Remote control connection made and declared in DVE installation	Effect selection and control possible from Control Panel
Signal connection + control connection made and declared in DVE installation	DVE transitions can be used like Wipe transitions.
Not with all DVEs Second control connection from DVE to switcher for input switching	DVE can control front/back switching

2.6.3.1 Using FXLoop™

Once the DVE installation (signal connection) is made, the FXLoop™ is operated in the following way:

● In the **M/E** menu, use the softkey **FXLoop** to select the desired DVE. This setting remains until changed.

● In the **Transition Panel**, press and hold down the button **Loop.**

● Select the component to loop (BGD-B, BGD-A, Key1, Key2). The indicator **Loop** will light up for this component.

● Release **Loop**

● Now the pre-processed signals of the selected component is routed to the DVE.

● The FXLoop™ now can be switched on and off by simply pressing **Loop.**

It is possible but *not* recommended to overwrite the selections made in the Transition Panel by making selections in the Pre-Processed Signal selection group of the AUX Buses Panel. The resulting image may look peculiar.

2.6.3.2 Selecting a DVE effect

Once the DVE installation (control connection) is made, a DVE effect can be selected in the following way:

● In the **Wipe Panel**, push the delegation button of the desired DVE (**DVE1** or **DVE2**)

● Press a wipe pattern selection button to select the effect. The top-left button will select effect No=0. The bottom-right will select effect No=29.

Note: These are the default numbers. As an application setting it is possible to make an assignment of the effects on the DVE to the 30 buttons.)

It is also possible to select an effect using the menu **Remote DVE** of the specific DVE.

2.6.3.3 Using DVE transition

Once the DVE installation (signal connection) is made, the FXLoop™ is operated in the following way:

● In the **M/E** menu, use the softkey **FXLoop** to select the desired DVE. This setting remains until changed.

Once the DVE installation (signal **and** control connection) is made, the DVE transition can be used like a wipe transition by doing the following:

- In the **M/E** menu, use the softkey **DVE Trans** to select the desired DVE. This setting remains until changed.
  This setting is necessary. Otherwise the switcher does not know which DVE to use. It is possible to select the same DVE for **DVE Trans** in more than one M/E. But only one DVE transition can be performed at a time.

- Optionally configure what is the default when using the DVE transition in background.
  Use the softkey **BGD DVE** to define whether the DVE flies the PGM out or the PST in.

- In the **Transition Panel**, select the **Transition Type** button **DVE**. This will select DVE transition for the component that is currently activated for **Next Transition**. This will be indicated in the **transition type displays** (DVE). For a background transition, it will also be indicated whether the transition is done with the PGM or the PST.

  DVE Transition for PGM: `--- DVE`
  DVE Transition for PST: `DVE ---`

- The indicator **Loop** will light up for this component.

- The switcher has automatically changed the **FXLoop** setting in the **M/E** menu to use the same device for the FXLoop™ as for the DVE transition.

- Optionally change **DVE Transition.**
  E.g. to change the DVE transition from PGM to PST: Press and hold **DVE**, press **BGD-B**, release both buttons.
  To change the DVE transition from PST to PGM: Press and hold **DVE**, press **BGD-A**, release both buttons.

- Perform the transition using the **Fader** or the **AUTO** transition.

During the transition, the switcher automatically routes the signals to and from the DVE (makes the FXLoop™). When the transition is finished, the loop is automatically switched off and the switcher uses the direct input.

To use a DVE effect for DVE transition it must be programmed in a special way, so that a complete transition is the result.

- The first keyframe must be a complete, *untransformed* image.

- On the last keyframe, the image must be *invisible.*

Note: The Xⁱᵉⁿ DD *provides an application setup, so that this logic can be reversed on a effect basis.*

When contents of the image that is used for the transition has quick motion, it may be noticeable that the motion is slightly distorted on start and end of the transition. That is due to the 1 frame delay through the DVE.
It can be avoided when – additionally to **Transition Type DVE** – the **Loop** function is activated. Then, as long as **Loop** is On, the signal looped through the DVE is used.
It is possible but *not* recommended to overwrite the selections made in the Transition Panel by making selections in the Pre-Processed Signal selection group of the AUX Buses Panel. The resulting image may look peculiar.

Note:

*By selecting **DVE** as transition type it is possible to carry out wipe transitions using external DVE effects. These effects may also be controlled from the Fader in the machine control section.*

Notes on building an effect for DVE transitions:

*A DVE transition on the **Xten DD** uses an effect built on the DVE unit as a transition. This effect is built from keyframes, in order to obtain the desired result it is important to note the following points:*

- *With timecode based DVEs:
  Set the effect duration to
  Sony DME, Questech Charisma TEN-X: 2 min (i.e. sequence runtime is 3000/3600 frames for 525/625 standards, respectively) or
  Pinnacle DVExtreme: 30sec (i.e. sequence runtime is 600/750 frames for 525/625 standards, respectively)*

- *For the initial keyframe, set the image size to full screen size. For the final keyframe, move the image off the screen, or reduce size to zero, so that it cannot be seen on the screen.*

2.6.3.4   Moving the DVE without doing a transition

The DVE effect can also be moved using the **Fader** or **AUTO** with the *MiscFunction* facility (to be found in the M/E menu).

The **Xten DD** switcher has – like most other switchers – visible image components (BGD-A, BGD-B, Key1, Key2, (Key3)). Additionally, the switcher has *invisible image components* for flexible control purposes. These are called **Misc 1** and **Misc 2**, and treated logically as if they were Key components i.e. can be mixed in and out, value is between 0% and 100%. They can also be selected for **Next Transition**. The speciality of these components is: for each of these components, the user can select a function – the *MiscFunction* – that is controlled by the component.

The following example shows how to use this facility to move a DVE:

- In the **M/E** menu, use the softkey **Misc 1** or **Misc 2** to define the DVE as the function to be controlled by the invisible components **Misc 1** or **Misc 2**.

- Activate *Next Trans* for **Misc 1** or **Misc 2**.

- The DVE will move through its effect when the Fader is moved or AUTO is pressed. With CUT it will be set to the other end.

Because in this way no transition of a visible component is done, no restriction must apply to the effects that can be used. The first and last keyframe need not to be at a special value.

Also, since the FXLoop is not necessary, both DVEs can be moved using the same Fader.

Of course, the DVE movement can be combined with a transition in any visible component.

2.7 M/E KEYERS PANEL

2.7.1 CONTROL PANEL

Keyers

Bord on	Cursor	Auto	FGD Fade	Chr Sel

O P A C

Key over	Key inv	Mask on	Mask Key	Key PVW

D E N S

Matte	Key Bus	OnAir Split Memo	Key Bus	Coupl Split

Fill   Key

C L E A

Add Lin–	Lum –Lin	Chr Key	Pattn 1	Pattn 2

Type   Source

Cut	Key 1	Key 2	Key 3	Key 4
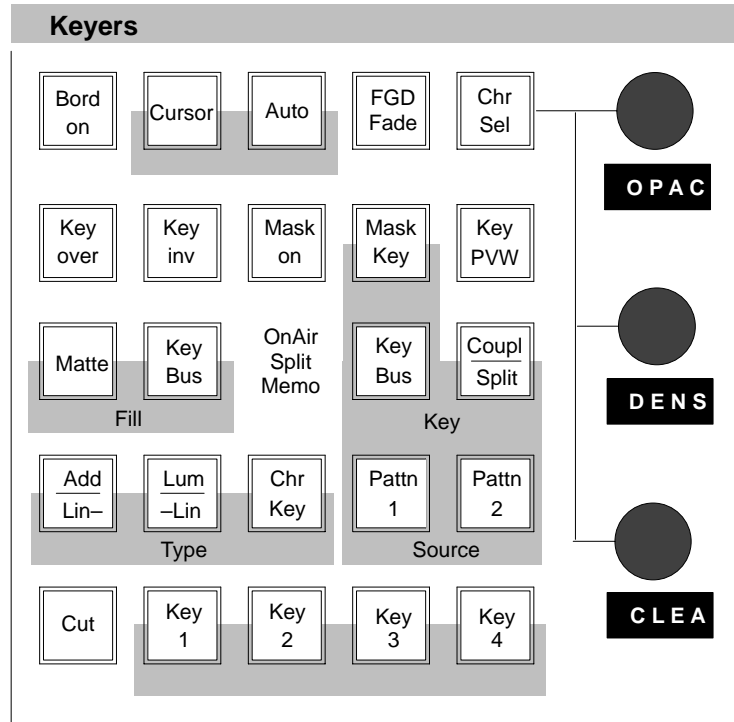
2.7.2 KEYERS DELEGATION

Key1..4

These buttons delegate the Keyers Panel and indicate which keyer is currently delegated to the Keyers Panel.

Due to the **Auto delegation** the keyers panel is automatically delegated to the appropriate keyer when it makes sense.

When **Auto Menu** is enabled, the menu display of the attached side panel will switch to the appropriate **Key Menu** and sub-menu.

Cut	Key 1	Key 2	Key 3	Key 4
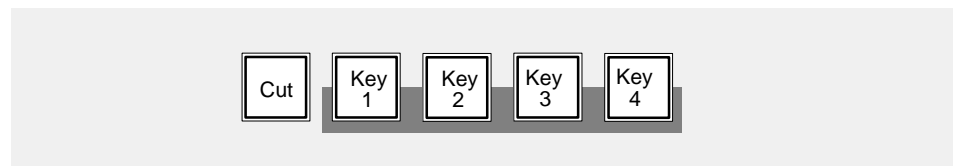
2.7.3   HARD KEY CUT

Cut   **CUT** inserts or removes the key in a hard cut transition. When inserted, the **On** indicator in the **Transition Panel** and the **CUT** button light up.

2.7.4   KEY TYPES

```
                                    ┌──────┐
                                    │ Mask │
                                    │ Key  │
                                    └──────┘


      ┌─────┐ ┌─────┐ ┌─────┐   ┌─────┐ ┌─────┐
      │ Add │ │ Lum │ │ Chr │   │Pattn│ │Pattn│
      │Lin──│ │─Lin │ │ Key │   │  1  │ │  2  │
      └─────┘ └─────┘ └─────┘   └─────┘ └─────┘
           ▀▀▀▀▀Type▀▀▀▀▀         ▀▀▀Source▀▀▀
```
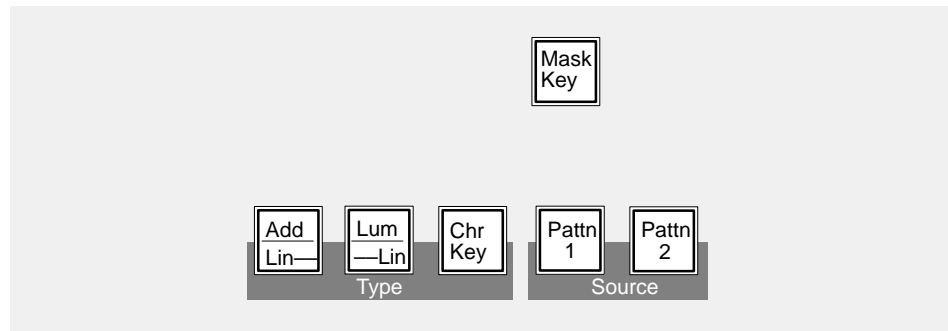
*Note   The **Add Lin** and **Lum Lin** buttons allow selecting three different operational modes (see below).*

The buttons are lit as follows:

Key function	Add/Lin (Lin Key)	Lum/Lin (Lum Key)
additive key	YES	NO
multiplicative key gain = unity	YES	YES
multiplicative key gain <> unity	NO	YES

Add Key   Button **Add Key** serves to select the additive key mode. In this mode, an external unit (e.g. modern caption generators, paint systems) generates and supplies the key signal and the associated fill signal.
The background signal is multiplied with the key control signal and added to the supplied fill signal. This mode ensures that the supplied fill signal is not influenced and that all details contained in it are reproduced true to the original.

Note: Please note that the supplied fill signal must be on top of a black background. Otherwise, the addition of the signals will yield a discolored background signal.

Lum Key   Button **Lum Key** selects the luminance key mode. The key control signal is derived from the luminance component of the key source signal. The key control signal controls the transition between background and foreground (=fill) signal.

Luminance Key is available in the modes equalized (eq) and non-equalized (neq).

Lum Key eq	Is automatically switched on in the Self Key mode (key fill signal corresponds to the key source signal). Thus, dark halo effects at edges and soft transitions are avoided.
Lum Key	Is automatically switched on when Fill and Source do not have the same source (Non Self Key). Fill matte, Key invert, Border on also switches to Lum Key.

Note: Please note that P/S/S = ON forcibly switch Lum Key eq off.

Lin Key

Pressing the two buttons **Add / Lin** and **Lum / Lin** sets the luminance key to a linear mode. The key control signal corresponds to the non-amplified and unlimited luminance signal.

Chr Key

Button **Chr Key** serves to select the Chroma Key mode. In this mode, the key control signal is derived from the chrominance components of the key source signal. Any color may be keyed.

The **DynaChrome**™ key mode ensures that all details in the fill signal, such as smoke, shadow, or glass, are preserved true to the original. In this mode, the key color is proportionally subtracted from the key fill signal in the key area. The background signal is multiplied with the key control signal and added to the "cleaned" fill signal.

For further information please refer to section ***Chroma Keyer***.

Note: Please note that P/S/S = ON forcibly switches over to FGD-Fade.

FGD Fade

When the Foreground Fade function is enabled, the key in the control signal serves to fade between the background signal and the "cleaned" key fill signal.

Note: Please note that DynaChrome™ can only be used without Foreground Fade for Self Key (identical fill and source signal). If you are not working with Self Key or in case of a border, Foreground Fade will automatically be switched on without special indication.

Mask Key

Button **Mask Key** serves to select the mask chosen in the Masks panel as a key signal.
For further information please refer to sections ***Masks Panel***, ***Wipe Panel*** and ***Stores Panel***.

*Note: If the function **KEY MEMORY** is activated, the operation modes **Mask key** and **Pattern key** can be switched off by a renewed pressing of the corresponding button.*
*The mixer returns to the status (see Key Memory) of the last stored "natural" key (**Add, Lin, Lum** or **Chroma key**) with all settings.*
*If the operation modes **Mask key** and **Pattern key** are switched off by a direct selection of the key modes **Add, Lin, Lum** or **Chroma key**, the former settings are only available partially.*

Pattn 1, Pattn 2   Buttons **Pattn 1** or **Pattn 2** serve to select a wipe pattern generator as a key source (pattern key). The pattern can be selected with the wipe pattern selection buttons in the Wipe panel. The size of the pattern can be adjusted with the **Size** control in the Keyers panel.
The pattern can be positioned with the trackball in the Positioner panel. For this purpose, press **Pos** in the Wipe menu.

Note: *Please note that the wipe generators can be used simultaneously for several applications which may interact with each other.*

2.7.5   KEY SOURCES
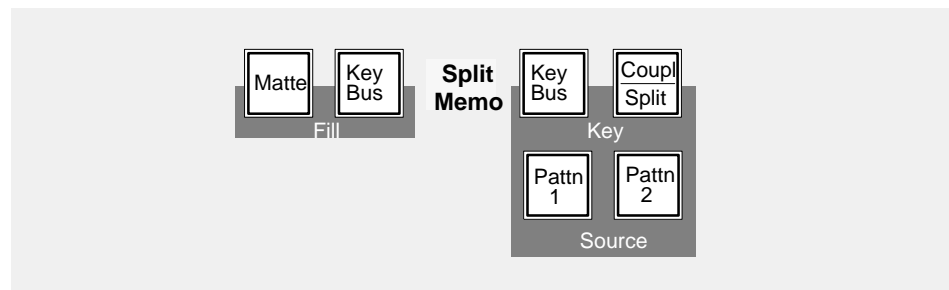
Key Bus *(Fill)*   The mutually exclusive buttons **Key Bus** (Fill) and **Matte** permit the selection of a key bus signal or the keyers own matte as fill signal for the respective keyer.

Matte   The **Matte** button in the Fill field serves to select a color matte as a fill signal for the respective key.

Key Bus *(Key Source)*   The **Key Bus** button in the Key Source field permits a direct selection of the key source on the Key buses row.
When the button lights up, the Key buses row indicates the source which is used for keying and filling (Self key).

Couple/Split   Usually, the **Coupled** key selection mode is more practical than the **Key Bus** button selection mode. In **Coupled** key selection mode, the operator selects a **Key Fill** source on the **Key Buses** row and the switcher automatically selects the **Key Source** signal using the **Coupled Key** table. The **Coupled Key** table is defined in the menu *Config / Ebox / Input*.
The default table entry for **Coupled Key** is the input itself. For DVEs, character generators, graphics, etc., the input where the Key signal from such an image source is connected should be *coupled* to the input where the video signal is connected.

Split

For creative effects, the **Key Source** signal can be completely independent from the **Key Fill** signal. This is called **Split** key selection mode (or general Iso Key).

To switch over to **Split** key selection mode proceed as follows:

● Press **Couple/Split** and hold it down.

● Select the new key source on the Key Buses row.

● After the buttons have been released, the status is shown with **Split**. The Key Buses row will now show the fill source again.

This determines the key source signal. The key fill signal can be selected on the Key Buses row without changing the key source signal.
If you want to cancel the separation of key source and fill signal, press **Key Bus**.

Note:　*If you want to see in Split Key mode which source you have selected as key source, press **Couple/Split**. The Key Buses row will indicate the source as long as the button is held down.*

***Overview
Key Selection Mode***

Key Selection Mode	Indication	Operation
identical	**Key Bus** key is lit	Select Fill and Key source together and identical
coupled	**Couple/Split** key is lit	Select Fill source and the **Coupled Key** input as Key source (the **Coupled Key** input is defined in **Application Setup – Input**)
split	**Couple/Split** key + **Split** indicator lit **Couple/Split** not pressed	Select Fill source
split	**Couple/Split** key + **Split** indicator lit **Couple/Split** pressed	Select Key source

2.7.6   AUTOMATIC KEY ADJUSTMENT

```
┌─────────────────────────────────────────────────────────┐
│  Keyers                                                   │
│  ┌──────────────────────────────────────────────────┐    │
│  │ ┌─────┐ ┌──────┐ ┌─────┐   ┌─────┐ ┌─────┐   ●     │
│  │ │Bord │ │Cursor│ │Auto │   │FGD  │ │Chr  │  ┌─────┐│
│  │ │on   │ │      │ │     │   │Fade │ │Sel  │  │OPAC ││
│  │ └─────┘ └──────┘ └─────┘   └─────┘ └─────┘  └─────┘│
│  │                                                    │
│  │ ┌─────┐ ┌─────┐ ┌─────┐   ┌─────┐ ┌─────┐         │
│  │ │Key  │ │Key  │ │Mask │   │Mask │ │Key  │   ●      │
│  │ │over │ │inv  │ │on   │   │Key  │ │PVW  │  ┌─────┐ │
│  │ └─────┘ └─────┘ └─────┘   └─────┘ └─────┘  │DENS │ │
│  │                                            └─────┘ │
│  │ ┌─────┐ ┌─────┐  OnAir    ┌─────┐ ┌─────┐         │
│  │ │Matte│ │Key  │  Split    │Key  │ │Coupl│         │
│  │ │     │ │Bus  │  Memo     │Bus  │ │Split│         │
│  │ └─────┘ └─────┘           └─────┘ └─────┘         │
│  │      Fill                    Key                   │
│  │ ┌─────┐ ┌─────┐ ┌─────┐   ┌─────┐ ┌─────┐   ●      │
│  │ │Add  │ │Lum  │ │Chr  │   │Pattn│ │Pattn│  ┌─────┐ │
│  │ │Lin− │ │−Lin │ │Key  │   │1    │ │2    │  │CLEA │ │
│  │ └─────┘ └─────┘ └─────┘   └─────┘ └─────┘  └─────┘ │
│  │      Type                  Source                  │
│  │ ┌─────┐ ┌─────┐ ┌─────┐   ┌─────┐ ┌─────┐         │
│  │ │Cut  │ │Key  │ │Key  │   │Key  │ │Key  │         │
│  │ │     │ │1    │ │2    │   │3    │ │4    │         │
│  │ └─────┘ └─────┘ └─────┘   └─────┘ └─────┘         │
│  └──────────────────────────────────────────────────┘    │
└─────────────────────────────────────────────────────────┘
```
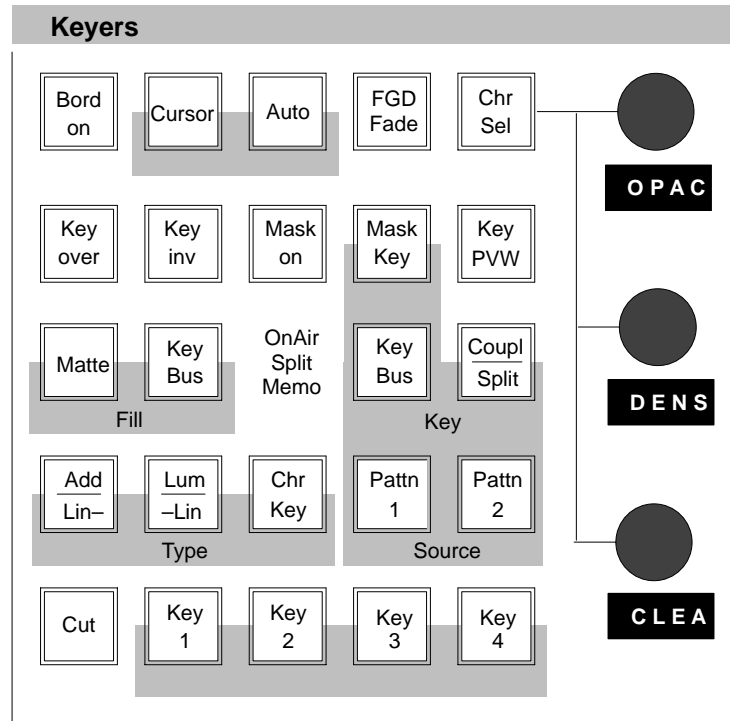
Auto

The **Auto** button serves to start various automatic functions in the different key modes.

- In **Add Key**, the key control is switched to 1:1 transfer so that key signals e.g. from the caption generator are effective without change.

- In **Luminance Key**, clip and gain are adjusted so that the key source signal is amplified to become a full-range signal with minimum of 0% and maximum of 100%.

- In **Linear Key** clip and gain are set to unity.

- In **Chroma Key**, the **Auto** button starts an automatic key adjustment to **Blue**. The picture evaluation includes all those colors which are within a certain angle range around the primary color Blue. Within this range, blue with the highest intensity is detected as key color. Key color and selectivity are thus adjusted.

In any mode, the opacity and border opacity are reset to 100%.

*Note: After all automatic key adjustments, the corresponding parameters
            may still be changed manually.*

2.7.7 KEY MEMORY

Stored adjustments

The key memory can store a complete key adjustment for any input of the switcher in an automatically or a manual way.
For details see also in section 3.7.1 and 3.16.2.2 .

Keyers

*			*		
Bord on	Cursor	Auto	FGD Fade	Chr Sel	● * OPAC

	*	*	*		
Key over	Key inv	Mask on	Mask Key	Key PVW	

*	*				
Matte	Key Bus	OnAir Split Memo	Key Bus	Coupl Split	● * DENS

Fill   Key

*	*	*			
Add Lin–	Lum –Lin	Chr Key	Pattn 1	Pattn 2	● CLEA

Type   Source

Cut	Key 1	Key 2	Key 3	Key 4
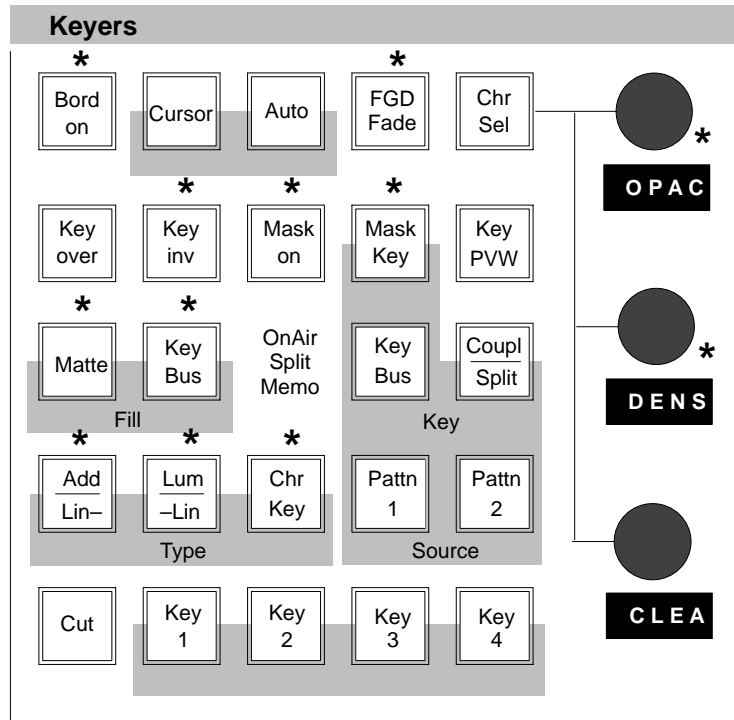
The following parameters (marked in the figure with ∗) are stored:

- Key Type (Lin, Lum, Chr, Chr with FGD Fade)

- Border (Shadow, Drop, Outline, ...)

- Border Position, Border Opacity

- Key Invert

- Mask on, Mask Source (Box, Pattern, ...), Box Mask (right/left/top/bottom), Mask Bus Clip/Gain

- Fill Matte/Bus

- Opacity

- Clip, Gain

- Chroma Key Color and Selectivity

- Adjustments of Fill Matte and Border Matte

- Synthetic Key Sources (Mask Key, Pattern Key)

The following parameters are **not** stored:

- Key Over

- Key PVW

- Cursor/Auto

- Source Key Bus / Coupl / Split Key (Iso Key)

- The source of the Mask Bus

Condition

Configuration in the **Config EBox** menu and selection of the function **Key Memo** in the **Key Main** menu.

Storing into the key memory

The key parameters are stored into the key memory,

- when another key source is selected on the key bus,

- when the momentarily used key source is selected again on the key bus.

Calling from the key memory

The key parameters of a key source stored in the key memory are called

- when switch-over is made to this key source on the key bus,

- when a synthetic key source (Mask Key, Pattern Key) is disabled by pressing the key once more.

Restoring from the key memory

To recall an adjustment already stored for the same source, a synthetic source (Mask Key, Pattern Key) has to be switched on and switched off with the same source.

Note

– *If only the key crossbar is switched over with TiM/E Memo™ , neither a storage of the former key state nor a call of the new key state is made.*
– *If the COUPL mode is selected or the key bus is selected as a source, the key source is automatically selected when selecting the fill signal, thus calling the stored adjustment of the source signal.*
– *If the KEY SPLIT (Iso Key) mode is selected, the key source signal can be selected on the key bus, thus calling the stored adjustment.*
– *For each input, only one adjustment can be stored. If an input is used for several keyers in a different way, each procedure described under "Storing", effects a storage into the key memory. The last storage procedure will be the contents for this input in the key memory.*

2.7.8 MANUAL KEY ADJUSTMENT

The 3 digipots in the Keyers Panel can be used for key fine adjustment. The display below the digipot shows the actual function.

The following abbreviations are used:

Opac	Opacity
Gain	Gain
Clip	Clip
Dens	Density
Clean	Clean-up
SelC	Selectivity Center (for Chroma Key, **Chr Sel** is on)
SelL	Selectivity Left (for Chroma Key, **Chr Sel** is on)
SelR	Selectivity Right (for Chroma Key, **Chr Sel** is on)
Size	for Pattern Key

Clip/Gain and Density/Clean-Up are adjustment pairs which both control the amplification and clipping stage in key processing.
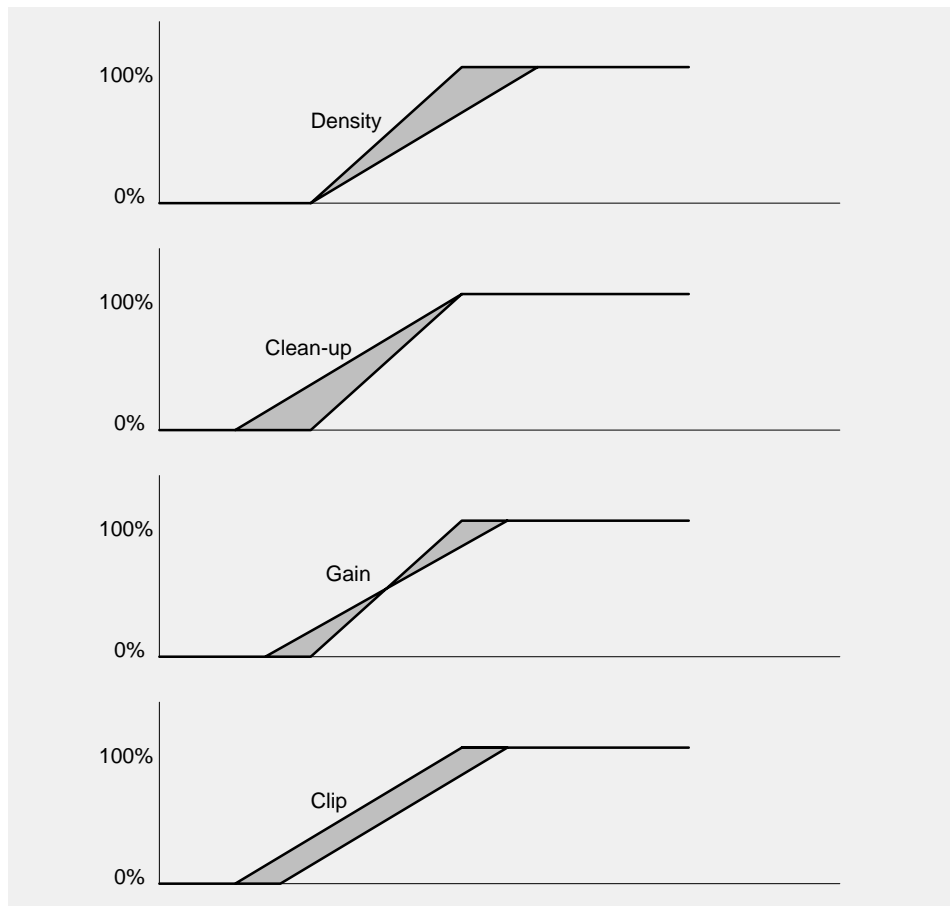
The preferred method of adjustment can be selected in the ***Key Main*** or ***Key / Chroma Key*** menu.

2.7.9   CHROMA KEY ADUSTMENTS

Chr Key

Pressing **Chr Key** selects Chroma Key mode. In this mode, the key color is proportionally subtracted from the key fill signal in the key color area and colored neighbouring areas. The result is a cleaned key fill signal which now contains in key color areas shadow-free black and in neighbouring areas the de-mixed foreground colors.

The key control signal is also derived from the foreground signal. The key control signal is multiplied with the background signal. The cleaned key fill signal and the multiplied background signal are added. This method ensures that all details are reproduced true to the original in the area of the key color.

FGD Fade

The **FGD Fade** (foreground fade) key switches over the chroma key processing. Now, the cleaned key fill signal and the background signal are faded in one fading operation by the key control signal.

In the area of the key color, only chrominance is subtractively removed, luminance is retained. However, this will impair some advantages of the DynaChrome™ procedure (good reproduction of details and transparency).

This mode is recommendable when object edges will show unnatural, extreme brightenings in details and transparency areas in case of too intense CLEAN-UP adjustments, or extreme darkenings in case of too intense DENSITY adjustments.

This mode may also be selected for improving the clean-up effect. It is required for eliminating noise and shadows and for adapting original background to key-influenced background with DVE.

For optimal adaptation of cross fadings on edges or for optimization in case of transparencies between foreground and background, the luminance value can be adjusted in the area of the key color.

Adjustment is made with the **L-Offset** control in the *Key / Chroma Key* menu. During adjustment, **Key color** has to be held down.

> *Note:*   *Please note that Foreground Fade is enabled automatically - without special indication - in the following modes:*
> - *Chroma Key Invert*
> - *Chroma Key with Border*
> - *not Self Key.*

Before adjusting Chroma Key, you should try to set optimum conditions on the picture source side to ensure low interference, for example by an evenly lit blue wall of maximum size and low camera gain setting.

2.7.9.1   AUTOMATIC CHROMAKEY ADJUSTMENT

This mode serves to adjust the following parameters:

- key color for LUMINANCE, HUE and CHROMA

- selectivity for SELECTIVITY LEFT and SELECTIVITY RIGHT

    The parameters DENSITY, CLEAN UP and SELECTIVITY-CENT are set by default adjustment to max. ccw position (ineffective).
    SELECTIVITY Y is set to center position (i.e. ineffective).
    COLOR CANCEL and NOISE REDuction to ON, P/S/S and SEL MASK to OFF.

Auto

Pressing the **Auto** button starts an automatic key adjustment to **Blue**. The picture evaluation includes all those colors which are within a certain angle range around the primary color Blue. Within this range, blue with the highest intensity is detected as key color. Key color and selectivity are thus adjusted.

Cursor

When pressing the **Cursor** button you enter the automatic, cursor-assisted key adjustment mode.
Pressing the button, the key fill signal with key color and a cursor appears on the preview monitor. Move the cursor to an area with the key color in it using the trackball in the Positioner panel.
Then press the **Auto** button to start the adjustment. Only those colors will be evaluated which resemble to those which were found within the cursor area. The color with the highest intensity is detected as a key color.

Note: When the Keyer is on, the output signal will be affected during the automatic adjustment.

2.7.9.2   MANUAL OPTIMIZATION OF CRITICAL PICTURES

Chr Sel

In the **off** position, OPAC, GAIN, CLIP or OPAC, DENS, CLEA are adjustable with the digipots.
In the **On** position, the selectivities SELC, SELL, SELR are adjustable with the digipots. For a detailed description of these and additional adjustments see section *Keyers* menu.

Refer to the controls **Selectivity L** (left), **Selectivity R** (right) and **Selectivity Y** in the section *Keyers / Chroma Key* menu.

2.7.9.3   MANUAL ADJUSTMENT OF THE KEY COLOR

Refer to the controls **Hue**, **Chroma** and **Luminance** in the section *Key / Chroma Key* menu.

2.7.10   KEYER PRIORITY

The priority among the keyers 1 and 2 is indicated with **Over** (RPD 35-4) or **Mid** (RPD 35-2/-3) . Keyer 3 is always on top
If, for instance, **Over** is on below **Key 1**, keyer 1 has priority over keyer 2.
Button **Key Over** in the Keyers panel enables the user to change the priority of the keyers 1 and 2.

BGD	Key 1	Key 2	Key 3
On	On	On	On
Fx	Fx	Fx	Fx

Key Over

Background

Key 2

Key 1

Key 3
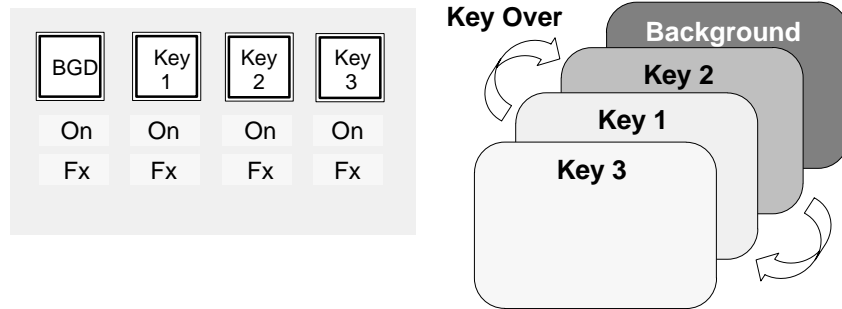
2.7.11 KEY INVERSION

If you press **Key inv,** the key signal is inverted, i.e. the contents of foreground and background are exchanged on the screen.

2.7.12 KEY MASKING

The mask selected in the Masks panel can be switched on with the **Mask on** button. For further information please refer to the sections *Masks Panel.*

2.7.13 KEY PREVIEW

Look Ahead Preview Mode:

If no Key Preview is active, the **Key PVW** button will not be lit. If it is pressed, the Color Preview will be switched on and the **Key PVW** button will be lit. Pressing this button once more switches on the the BlackWhite Preview and the button will still be lit. Pressing the button again switches off the Preview (no Key Preview for this M/E will be active anymore) and the lamp in the button will go out.
It is always the Key Preview for the actually delegated keyer which is switched. When re-delegating to another keyer, a possibly active preview of the previously delegated keyer will be switched off. The preview of the newly delegated keyer will also be switched of. When delegating to the same keyer (i.e. to that one which is already active), nothing will happen, i.e. the preview state (Off, Color, BlackWhite) is not changed.

Permanent Key Preview Mode

Holding down the **PVW** button switches into the Key Selection Mode (is deactivated when the button is released again). By pressing the delegation buttons (**Key1 .. Key2**) serving as selection buttons, the Key Selection Mode enables to select the keyers whose preview has to be permanently displayed. It is possible to simulta- neously select several keyers, the selection buttons have a toggle function. The button of the selected keyers are lit in the Key Selection Mode.

If the Key Selection Mode not active, from the selection buttons only the button of the actually delegated keyers will be lit. The buttons now serve again as delegation buttons.

If not a single keyer is selected in the Key Selection Mode, the preview of the actu- ally delegated keyers will be displayed (Auto Follow Mode).

If no key selection button was pressed while the Key Selection Mode was active, the Preview Mode will be toggled after releasing the **Key PVW** button, and that be- tween Color Preview (of the keyers being selected in the Key Selection Mode or of the actual keyer, if Auto Follow Mode is active) and the BlackWhite Preview (of the actually delegated keyer). If at least one selection button was pressed, the Pre- view Mode does not change after releasing the **Key PVW** button.

In the Permanent Key Preview, the **Key PVW** button is always lit, i.e. at all delega- tion whose keyers support a preview. In the specific case, this means that in the M/E stage, the button is always lit at **Key1 .. Key2** (regardless whether the actually delegated keyer is somehow involved in the preview or not).

Mode Selection

Holding down the two arrow buttons in the Matte panel and subsequently pressing the **Key PVW** button of the Keyers panel of an M/E toggles for this M/E between *Look Ahead Preview* and *Permanent Key Preview.*

The two different Preview modes can be separately switched for each M/E.

Installation and Setup

For details refer to section *Install* and *Config Menu.*

2.7.14 COPYING KEY SETTINGS

The settings of a keyer can easily be copied and assigned to other keyers. It is also possible to exchange the settings of keyers.

For further information please refer to section **Key Menu** and **Fast Copy.**

2.7.15 KEY BORDERLINER

The border function enables the user to provide the key signals with a border effect which can be adjusted individually.

The border selected in the Keyer menu can be switched on with the **Bord on** button. For further information please refer to the sections **Key Menu.**

2.7.16 USING ADDITIVE OR LUMINANCE KEY

The operational modes **Add** and **Luminance Key** differ in the fading procedure. In the luminance key mode, foreground and background are faded. In the add key mode, the background is faded and the foreground is added to the background.
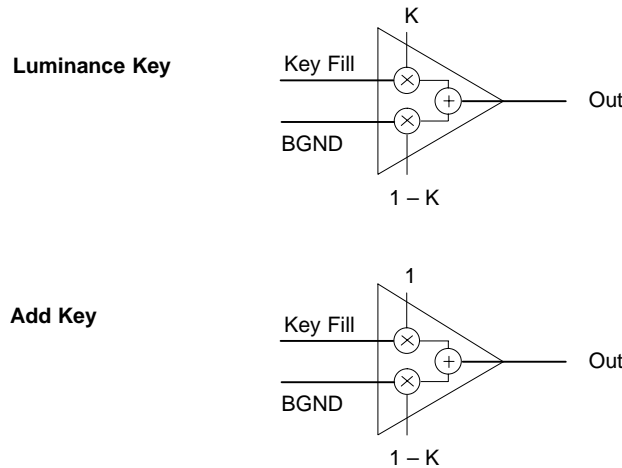
Figure 201: Fading Procedure

When should Additive Key be used?

The additive key is used when the pattern (caption etc.) is available on a black background or in the Split/Coupled Key mode, a separate key signal is available which matches to the pattern (caption generator etc.) with respect to contour.
Since only the background is faded out at the place of the key signal with the exact edge shape and the foreground signal is added to the faded background, both signals fit without error into each other in the transition area. Precondition is that the key signal is processed with gain factor 1 which is achieved by actuating the **Auto** key with Add Key or max. ccw position of the **Gain** control. Under the above-mentioned conditions, this key type leads to the best results. Key sources on black backgrounds provide the best keying results.
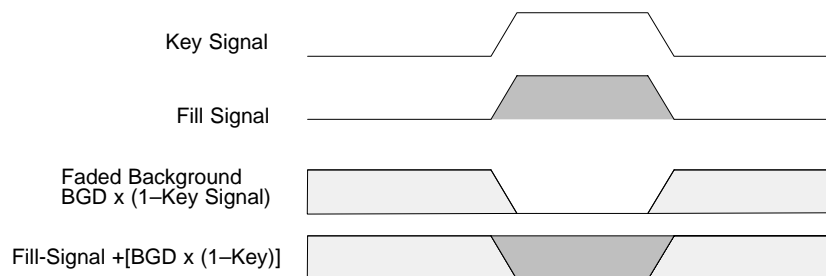
Figure 202: Key Results with Additive Key

When should Luminance Key be used?

The luminance Key is used when the key fill signal is not available on a black background. A further application for Luminance Key is in the Coupled/Split Key mode when the key signal does not match with the fill signal with respect to contour (e.g. DVE key signals with soft border).

A "linear luminance key" (Lin Key) can be selected by simultaneously pushing the **Add/Lin** and **Lum/Lin** buttons; thus achieving that the maximum possible luminance value range is completely and "linearly" reproduced on key signal range, regardless whether these extreme values also occur in the picture.

Actuating the **Auto** button achieves that the darkest luminance value is reproduced on KEY=0 and the brightest value on KEY=1. These values can be adjusted with **Clip/Gain** or **Clean up/Density**.

Deviating from the adjustment of **Lin** and **Auto** by adjusting **Clip** and **Density** a relatively dark luminance level is declared to be the foreground level, this will be reproduced as dark edges.

2.7.17   LOCKING THE DIGIPOTS

To protect the actual control adjustments against accidental changes, the digipots in all keyer groups can be locked.

For locking proceed as follows:

- Simultaneously press the buttons Up/down in the Mattes group and turn one of the digipots in a keyers group. The three digipots are locked.

- For unlocking press a delegation button in the respective group.

2.8   DOWNSTREAM KEYERS PANEL

DSK

| Cut 5 Coupl | Cut 6 Coupl | Cut 7 Coupl | Cut 8 Coupl |
| Auto 5 T-Dur | Auto 6 T-Dur | Auto 7 T-Dur | Auto 8 T-Dur |

5 DSK5   6 DSK6   7 DSK7   8 DSK8   **2nd Func**
1 DSK1   2 DSK2   3 DSK3   4 DSK4

| **CAM1** | **VTR1** | **EXT1** | **EXT1** |

| Cut 1 Coupl | Cut 2 Coupl | Cut 3 Coupl | Cut 4 Coupl |
| Auto 1 T-Dur | Auto 2 T-Dur | Auto 3 T-Dur | Auto 4 T-Dur |

Bord on	Cursor	Auto		FGD Fade	Chr Sel		**OPAC**
Key over	Key inv	Mask on		Mask Key	Key PVW		**GAIN**
Matte	Key Bus	OnAir Split Memo		Key Bus	Coupl Split		**CLIP**
	Fill				Key		
Add Lin–	Lum –Lin	Chr Key		Pattn 1	Pattn 2		
	Type				Source		
2nd	DSK 1 DSK 5	DSK 2 DSK 6		DSK 3 DSK 7	DSK 4 DSK 8		

Defaut DSK panel (with inlay set for Operation Mode 1)

DSK

| Coupl | Coupl | Coupl | Coupl |
| Trans Dur | Trans Dur | Trans Dur | Trans Dur |

5 DSK5   6 DSK6   7 DSK7   8 DSK8   **2nd Func**
1 DSK1   2 DSK2   3 DSK3   4 DSK4

| **CAM1** | **VTR1** | **EXT1** | **EXT1** |

| Cut | Cut | Cut | Cut |
| Auto | Auto | Auto | Auto |

Bord on	Cursor	Auto		FGD Fade	Chr Sel		**OPAC**
Key over	Key inv	Mask on		Mask Key	Key PVW		**GAIN**
Matte	Key Bus	OnAir Split Memo		Key Bus	Coupl Split		**CLIP**
	Fill				Key		
Add Lin–	Lum –Lin	Chr Key		Pattn 1	Pattn 2		
	Type				Source		
2nd	DSK 1 DSK 5	DSK 2 DSK 6		DSK 3 DSK 7	DSK 4 DSK 8		

DSK panel (with inlay set for Operation Mode 2)

The four-channel **downstream keyer** enables the user to insert captions, figures or characters using **Luminance, Linear** or **Chroma Key** (option) into the program picture which have priority over the other picture components.

The functions are identical to those in the M/E1, M/E2 and M/E3 keyer panels.

The buttons **DSK1** through **DSK7** are used for delegation. **DSK1 ... DSK4** are internal and **DSK5 ... DSK7** are optional external keyer boxes, e.g. Ross CDK104 or Oxtel EasyKey. The button **DSK8** (RPS35–4 panel only) is for future use.

Two control modes are available to cope with different control concepts. When leaving the factory, the control panel is equipped with the button inlays for mode 1. The inlays for mode 2 and further inlays are included in the switcher delivery and can easily exchanged.

OpMode 1
(default)

If the **2nd Func** button is not pressed, **Cut** and **Auto** can be operated from DSK1 ... 7.
If the **2nd Func** button is pressed, **TransDur** and **Couple** are operated from DSK1...7.
The DSK8 (RPS35–4 panel only) is for future use.

OpMode 2

2nd Func button toggles between DSK1 ... 4 (**Cut, Auto, TransDur, Coupled**) and DSK5 ... 7 (**Cut, Auto, TransDur, Coupled**).
The DSK8 (RPS35–4 panel only) is for future use.

Mode Selection

It is possible to toggle between the two modes by simultaneously pressing the two arrow buttons in the Matte panel and the **2nd Func** button in the DSK panel.

2.8.1 DOWNSTREAM KEYER TRANSITION

The downstream keyers may be faded in the same way as the keyers in the M/Es by selection and actuation in the Transition panel of the downstream keyer.

It is also possible to fade the downstream keyers independently from the next-transition selection.

2.8.1.1 DSK Operating Mode 1 (default)

2nd Func	Pressing and holding down **2nd Func** enables the use of the second function of the DSK **Cut** and **Auto** buttons to perform the **Couple** function or to select the input mode for the appropriate transition duration (also for FTB Auto). The **2nd Func** lamp is on during this operation mode.
Cut	Press **Cut x** if you wish to execute a transition as hard cut.
Couple	Holding down **2nd Func** and pressing one **Cut *x*** button switches the appropriate Couple mode of the DSK x on or off. Releasing the **2nd Func** button disables the second function mode and the lamp is off. The indicators **1 ... 8** then show which keyers are coupled.
Auto	Press **Auto** to execute a transition of the type selected in the Transition panel using the preset transition duration. If the **Auto** button is pressed again, the transition is aborted. For external DSKs only MIX is possible.
T-Dur	Holding down **2nd Func** and pressing **Auto *x*** button selects the input mode for transition duration input of the appropriate DSK x or FTB. The numeric keypad is delegated to numerical entry, the numeric buttons will light up and prompt for transition duration input. The actual transition duration value is displayed in the appropriate mnemonic field (not for FTB). Enter the desired transition duration (input displayed in mnemonic field and numeric keypad display) via numeric buttons, use **Clear/FREE** for input deletion if necessary. Confirm entry by pressing **Enter/NEXT** or by pressing **2nd Func**. The **2nd Func** lamp will be switched off.
Indicatores 1 ... 8	The coupled DSKs are indicated by the **Coupl** button and the indicators **1 ... 8**.

2.8.1.2   DSK Operating Mode 2

Cut   Press **Cut** if you wish to execute a transition as hard cut.

Auto   Press **Auto** to execute a transition of the type selected in the Transition panel using the preset transition duration. If the **Auto** key is pressed again, the transition is aborted. For external DSKs only MIX is possible.

Coupl   The **Coupl** function allows coupling the transitions of several DSKs. Pressing **Cut** or **Auto** for one of the coupled DSKs starts the transition for all coupled DSKs.
In case of **Auto,** the **Trans Dur** need not be equal.
When the transition duration for one of the coupled DSKs is modified, the transition duration for all coupled DSKs is set to the same value.

Indicators **1 ... 8**   The coupled DSKs are indicated by the **Coupl** button and the indicators **1 ... 8**.

2nd DSK   Pressing **2nd DSK** changes delegation of the DSK transition section from **DSK1** ... **DSK4** to **DSK5** ... **DSK8** and vice versa.

Indicator	Status
off	DSK is off
green	DSK is on but not On-Air
red	DSK is on and On-Air
green flashing	DSK is not On-Air, and the key source or the fill source or both is non-sync.
red flashing	DSK is On-Air and the key source or the fill source or both is non-sync.

Indicators
DSK1 ... DSK8

These indicators show the "On", "On-Air", and "Non-Sync" status of the DSKs.

Displays

The mnemonic display normally shows the selected source.
When **Trans Dur** is on, i.e. the transition duration is checked or modified, the display shows the transition duration.
When the **Auto** transition is running or during a preroll duration, the display shows the countdown of the duration.
When **Couple/Split** is pressed, the display shows the selected source of the respective key bus.

Trans dur

The **Trans dur**ation function permits setting a transition duration between 1 and 9999 frames.

***Adjustment*:**

● Press **Trans dur**. The **Trans dur** button and the buttons of the numeric keypad in the Master TiM/E-Memo panel will light up and prompt the entry of the transition duration.

● Enter the desired transition duration (frames) with the numeric keypad. The entry can be verified in the display. Errors can be deleted by pressing **Clear/FREE**.

● Confirm the entry with **Enter/NEXT**.

● If **Trans dur** was pressed accidentally, press it again to disable the function.

2.8.2 FUNCTIONAL RESTRICTIONS

2nd DSK
DSK5 ... DSK7

These keyers are optional external boxes. They are used as Luminance and Linear Keyers. The remote control comprises

– Cut in, Cut out
– Auto fade in, Auto fade out. Transition type is MIX only
– Clip/Gain (if possible with the specific device)

For installation of DSK4...DSK6 refer to the DD35 Planning & Installation Manual.

2.8.3 DSK PREVIEW MODE

In the default mode, *Look Ahead Preview* is active. If in this mode delegation is changed, the actual Key Preview is disabled.

DSK Preview modes

Physical Outputs Mainframe P/P	P/P Preview: Norm (Standard)	P/P Preview: Permanent DSK Preview (2)
PGM	Program Out	Program Out
CLEAN	Cleanfeed 1 Out	Cleanfeed 1 Out
P/P PVW	Look Ahead PVW	DSK PVW
DP	FxSend / Cleanfeed 2 / PST (1)	FxSend / Cleanfeed 2 / PST (1)

(1)   in settings: Cleanfeed 2 or PST Bus: no DVE loop possible

(2)   no DVE loop, no Look Ahead preview, no transition preview
                possible in this configuration

Look Ahead Preview and *Permanent Key Preview* are both available in all M/Es.

Look Ahead Preview Mode

If no Key Preview is active, the **Key PVW** button will not be lit. If it is pressed, the Color Preview will be switched on and the **Key PVW** button will be lit. Pressing this button once more switches on the the BlackWhite Preview and the button will still be lit. Pressing the button again switches off the Preview (no Key Preview for this M/E will be active anymore) and the lamp in the button will go out.
It is always the Key Preview for the actually delegated keyer which is switched. When re-delegating to another keyer, a possibly active preview of the previously delegated keyer will be switched off. The preview of the newly delegated keyer will also be switched of. When delegating to the same keyer (i.e. to that one which is already active), nothing will happen, i.e. the preview state (Off, Color, BlackWhite) is not changed.

Permanent Key Preview Mode

Holding down the **PVW** button switches into the Key Selection Mode (is deactivated when the button is released again). By pressing the delegation buttons (**DSK1 ..**

DSK3) serving as selection buttons, the Key Selection Mode enables to select the keyers whose preview has to be permanently displayed. It is possible to simultaneously select several keyers, the selection buttons have a toggle function. The button of the selected keyers are lit in the Key Selection Mode.

If the Key Selection Mode not active, from the selection buttons only the button of the actually delegated keyers will be lit. The buttons now serve again as delegation buttons.

If not a single keyer is selected in the Key Selection Mode, the preview of the actually delegated keyers will be displayed (Auto Follow Mode).

If no key selection button was pressed while the Key Selection Mode was active, the Preview Mode will be toggled after releasing the **Key PVW** button, and that between Color Preview (of the keyers being selected in the Key Selection Mode or of the actual keyer, if Auto Follow Mode is active) and the BlackWhite Preview (of the actually delegated keyer). If at least one selection button was pressed, the Preview Mode does not change after releasing the **Key PVW** button.

In the Permanent Key Preview, the **Key PVW** button is always lit, i.e. at all delegation whose keyers support a preview. In the specific case, this means that in the P/P stage, the button is always lit at **DSK1** .. **DSK3** (regardless whether the actually delegated keyer is somehow involved in the preview or not), at **DSK4** .. **DSK6** it is always off.

Mode Selection

Holding down the two arrow buttons in the Matte panel and subsequently pressing the **Key PVW** button of the Keyers panel of an M/E toggles for this M/E between *Look Ahead Preview* and *Permanent Key Preview*.
The two different Preview modes can be separately switched for each M/E.

Installation and Setup

For details refer to section *Install* and *Config Menu.*

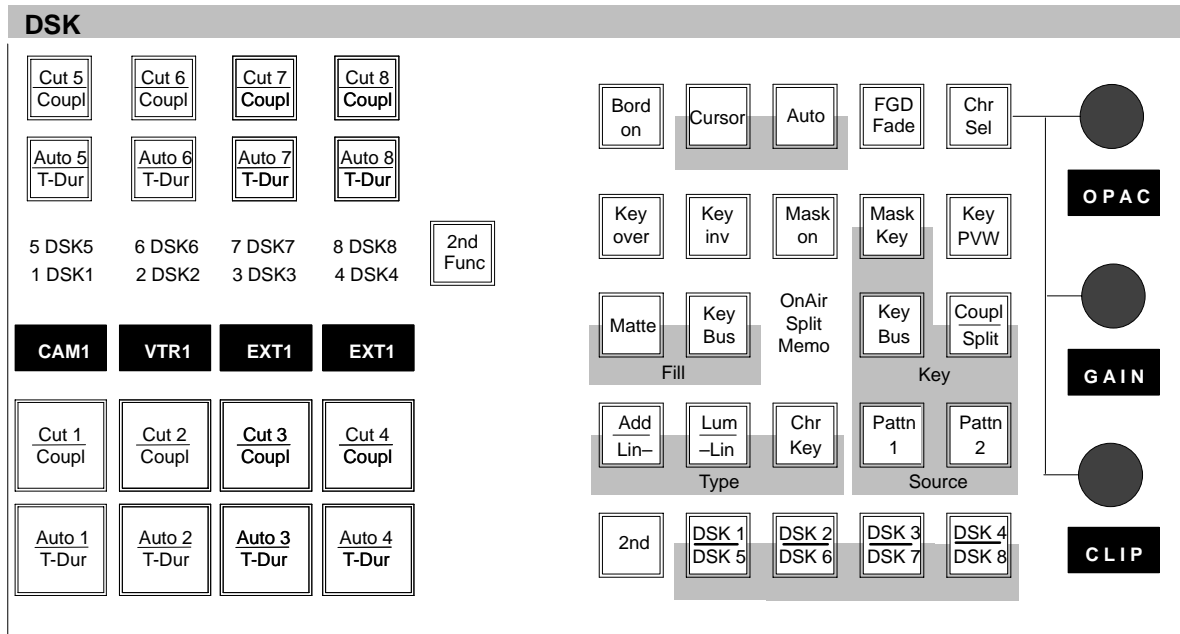**2.8.4   LOCKING THE DIGIPOTS**

To protect the actual control adjustments against accidental changes, the digipots in all keyer groups can be locked.
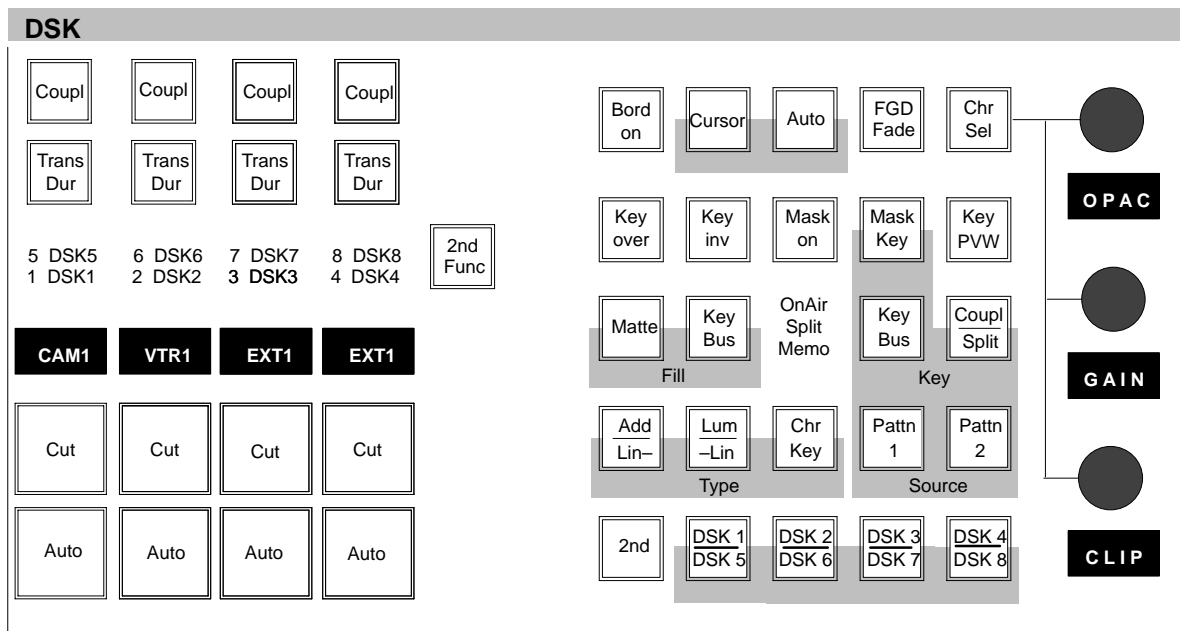
For locking proceed as follows:

● Simultaneously press the buttons Up/down in the Mattes group and turn one of the digipots in a keyers group. The three digipots are locked.

● For unlocking, press a delegation button in the respective group.

2.9   FADE-TO-BLACK PANEL

The **Xten DD** include a **fade-to-black stage** which permits fading the program picture to or from black

```
FTB

        Cut

        Auto
        T–Dur
```
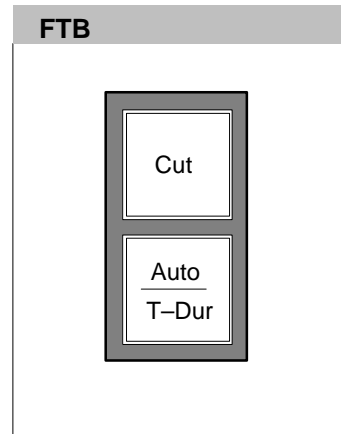
Cut   The transition to and from Black is done as a hard cut.

Auto   The transition to and from Black is done as a MIX transition in the preset transition duration. During the transition, the button lights.
Pressing **Auto** or **Cut** during the transition aborts it and deactivates the Fade-To-Black status, i.e. program signal is fully visible.

At the Black limit, both **Cut** and **Auto** flash with double speed.

Transition Duration   Transition Duration can be selected by simultaneous pressing of the **2nd Func** button in the DSK group and the **Auto** button in the FTB group.

● The buttons of the numeric keypad in the Master TiM/E-Memo panel will light up and prompt the entry of the transition duration.

● Enter the desired transition duration (frames) with the numeric keypad. The entry can be verified in the display. Errors can be deleted by pressing **Clear/FREE**.

● Confirm the entry with **Enter/NEXT**.

2.10   MATTES PANEL

```
┌─────────────────────────────────────┐
│  Mattes                              │
│                                      │
│         ┌───────────────┐            │
│         │ 0 1 2 3 4 5 6 7│           │
│         └───────────────┘            │
│         ┌─────┐  ┌─────┐             │
│         │  ↑  │  │  ↓  │             │
│         └─────┘  └─────┘             │
│                                      │
│   ┌──────┐    ◯       ┌──────┐       │
│   │Matte │            │ flat │       │
│   │  1   │  Hue/      └──────┘       │
│   └──────┘  Softness                 │
│                                      │
│   ┌──────┐    ◯       ┌──────┐       │
│   │Matte │            │ wash │       │
│   │  2   │  Chroma/   └──────┘       │
│   └──────┘  Position                 │
│                       ┌──────┐       │
│                       │Wiper │       │
│            ◯          │ Text │       │
│   Illegal             └──────┘       │
│             Luminance/   Mode        │
│             Angle                    │
└─────────────────────────────────────┘
```
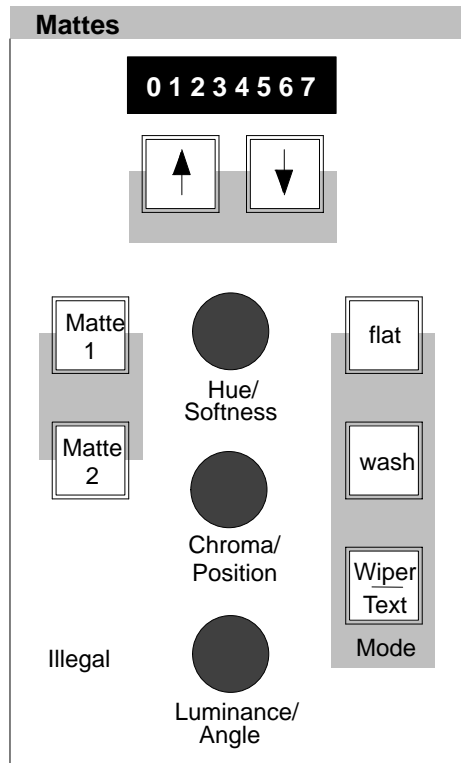
The **Xten DD** includes a maximum of 27 independent matte generators for design-ing matte backgrounds, wipe borders, key borders and captions in color.
The number of mattes is dependent of your respective hardware. Some functions described below is therefore only available when the respective hardware is avail-able in the mainframe.

MatteWash In addition to providing flat (plain) mattes, each matte generator can also assist pic-ture design with the **MatteWash** function, which permits the creation of extremely soft color wash effects between any two colors in horizontal, vertical or any diago-nal direction.

FractalTextures The new **FractalTextures** function extends the range of options for effective back-ground design. In this mode, the wipe signal of the wipe generator controls the color wash effect of a matte generator between any two colors.

MatteStore The new **MatteStore**, a volatile store for wipe and key signals, permits creative de-sign of complex brightness and color wash effects and of monochromatic pictures.

WiperWash™ The **WiperWash**™ function offers a new option for wipe border design by permit-ting color wash effects within the border.

BGD Matte The **BGD 1/2** keys permit direct selection of the background matte. The automatic delegation system automatically selects the background matte if **BGD Matte 1/2** are pressed on the Background Bus or the Preset Bus.

Matte selection   You can use the Up/Down buttons to scroll through the different mattes if you want to change the matte proposed by the automatic delegation system.

0 1 2 3 4 5 6 7
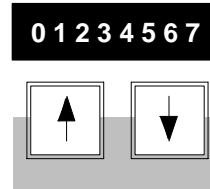
Each time you press this buttons, in maximum the following matte options will appear in cyclical order:

- **Wipe 1/2 B**order (M/E1 ... M/E3)

- **Key 1/2 F**ill (M/E1 ... M/E3)

- **Key 1/2 B**order

- **Col1**, **Col2**, **Col3**

- **Key 1/2/3 F**ill (P/P)

- **Key 1/2/3 B**order (P/P)

- **Wipe 1/2 B**order

Matte 1, Matte 2   The **Matte 1** and **Matte 2** keys serve to switch on the mattes so that the desired colors can be adjusted.

Note: *Please note that in case of unfavorable position settings only one matte will be visible in Wash or MatteStore mode. In this case we recommend to switch over to the Flat mode to adjust the color.*

Adjusting the Color

Hue/
Softness

Chroma/
Position
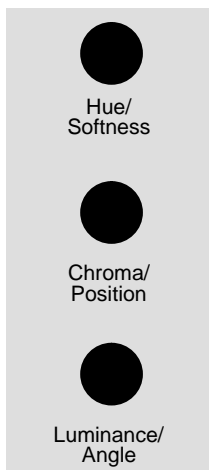
Luminance/
Angle

Hue – Chroma – Luminance

The **Hue** control serves to adjust the color. The **Chroma** control serves to adjust the color saturation (chrominance). The **Luminance** control serves to adjust the desired brightness of the color.

Note: *Please note that certain combinations of chrominance and luminance values will cause illegal colors. For this reason, an automatic control limits for instance the chrominance for defined luminance values.*
*You can easily check this by setting the **Chroma** control to maximum and then turning the **Luminance** control slowly to maximum; the chrominance will be reduced with increasing luminance values.*

flat	The **flat** button serves to select a flat (plain) matte.
wash	The **wash** button serves to select a matte that is composed of a color wash between matte 1 and matte 2.
	If only the **wash** button lights up, it is possible to change the color wash individually with the **Softness**, **Position**, and **Angle** controls. Press **Matte 1** or **Matte 2** if you wish to adjust the matte with the **Hue**, **Chroma**, and **Luminance** controls.

Adjusting the wash characteristics

Hue/
Softness

Chroma/
Position

Luminance/
Angle
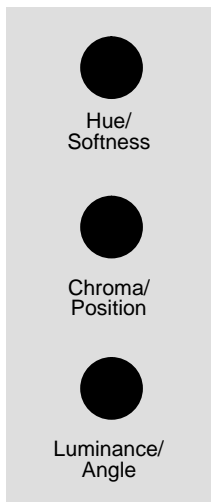
Softness – Position – Angle

The **Softness** control permits adjusting the steepness, i.e. the width of the transition between the two colors. The **Position** control serves to shift the position of the transition. With the **Angle** control, the transition angle can be rotated.

Wiper/Text *only with Col 1*	The **Wiper/Text** button is used to modulate the color wash between matte 1 and matte 2 with the wipe or key signal selected for Matte Store. For further information on the store control please refer to the section ***Video Store Menu***.
Wiper/Text *with wipe border*	The **Wiper/Text** button is used to control the color wash in the wipe border to the effect that a complete washing between the colors is made in the border. The softness of the transition can be adjusted with the **Softness** control. The border may be adjusted with the associated controls in the Wipe panel. For further information on the wipe control please refer to the section ***Wipe Boder Matte Menu***.

Copying mattes

Adjusted mattes may be easily copied or replaced.
For further information please refer to the section ***Key Mattes Menu.***

2.10.1   COLOR LIMITER

The new color limitation controls the effects of MATTE settings on

- RGB color space
- PAL / NTSC level

It ensures that these limitation regulations are observed but also that the scope is fully exploited. Both regulations are applicable at all times with the stricter regulation prevailing on a case by case basis.

RGB limitation

All colors are permitted that do not produce an R, G or B level of > 100% or <0%.

PAL / NTSC limitation

All colors are permitted as long as the total of luminance and chrominance does not exceed the (adjustable) COL LIMITER level.
If COL LIMITER is set to 133, a PAL/NTSC level of 33 % will be admissible but the representation of all RGB values (including a saturated yellow) will be possible. The colors of a 100/100 colorbar signal represent this limit.

If COL LIMITER is set to 100, a 100 % level will be ensured but certain (yellow) colors will be possible. The colors of a 100/75 colorbar signal represent the limit.

Color Limiter On / Off

The color limiter can be switched **Off**, so that the "illegal" colors can be adjusted but the **ILLEGAL** indication signal this status in the menu and at the panel.
With Color Limit **On** the limit is forced.

Function

When modifying hue, chroma, or luminance one of the limits is reached, the mixer attempts to realise the demanded value at the expense of a different parameter.

- A change in HUE may result in a chrominance correction.
- A change in CHR may result in a luminance correction.
- A change in LUM may result in a chrominance correction.

If an absolute limit is reached, no further value change is permitted. A maximum chroma may generally be achieved at a medium luminance, i.e. subsequent increases in LUM will result in a reduction in chrominance.

The limit mode simplifies the search for colors with maximum saturation. This mode is enabled, when chrominance is set to maximum.
In subsequent HUE changes, the color follows lines of maximum saturation.
For this purpose, both chrominance and luminance are continuously updated automatically. If the chrominance or luminance setting is changed, this mode is disabled.

2.11   WIPE PANEL

The Wipe panel is a separat control module used for RPS35–4 and RPS35–3. The RPS35–2 panel includes the same buttons in its basic panel.

With the RPS35–2S panel the wipe selection is menu–controled by using the touch screen display only.

The **X ten DD**'s mix effect stage has up to two wipe generators per mixing level (optional), which can be used for background or key transitions, for mask design or for modulation of the Col 1 matte.
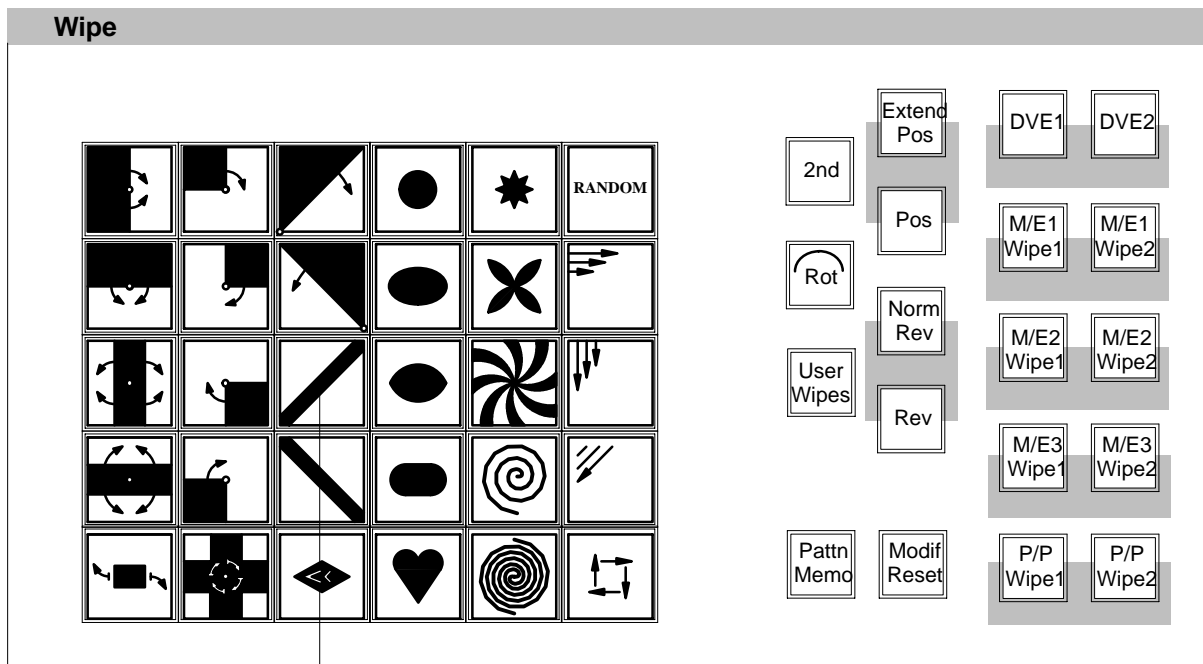
The control panel is delivered with two different pushbutton inlays.
Refer next page for details.

Wipe Pattern selection

In the wipe pattern selection panel, 30 wipe patterns may be directly selected. Further wipe patterns can be recalled by pressing the **2nd**, **Rot**ation or **User Wipe** button. In this mode, rotating wipes are available in addition to the standard wipe patterns.

Button legend foils, version 1.
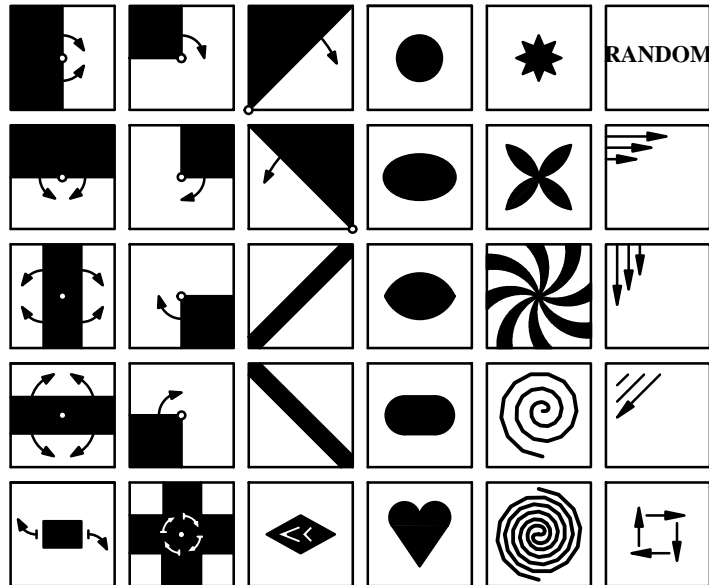
Button legend foils, version 2. Lower wipe pattern selectable with **2nd** button.
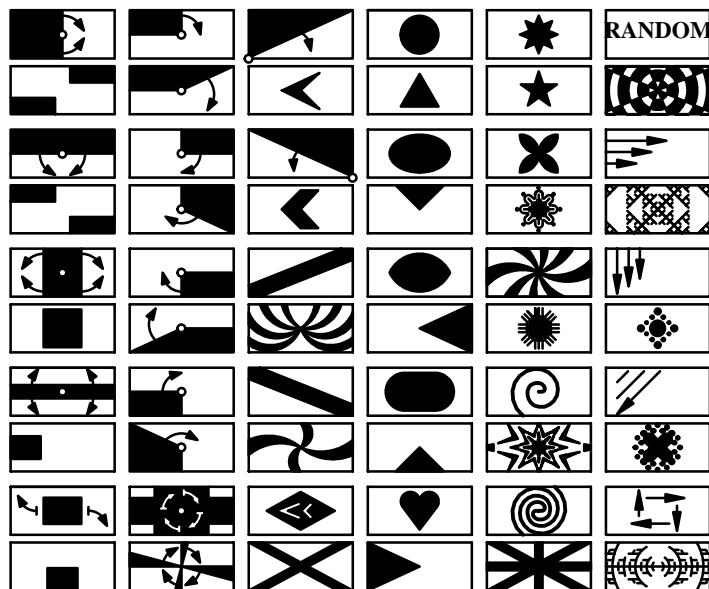
Note: In addition to these wipe patterns, other wipe selections are possible internally. These additional wipe patterns can be selected in the wipe menu.

User defined wipe patterns User 1....30

In addition to providing standard patterns, the *DD35* production switcher offers the possibility to prepare and store user-defined wipe patterns. These patterns can then be recalled directly in the **Wipe menu**.

Wipe pattern direction	The **Norm/Rev** button determines the wipe pattern direction. If this key is enabled, the wipe pattern direction is changed every time the fader is in final position or when the transition is completed. If you wish to change the preset wipe direction, press **Rev** button.

Wipe pattern positioning	Press **Pos** in the Wipe panel to enable the trackball. You can now use the trackball to position the center of the selected wipe pattern within the visible picture area.

Note: *Please note that some wipe patterns (e.g. matrix wipe patterns) cannot be positioned.*

If you enable the trackball by pressing **Extend Pos** in the Wipe panel, you can position the center of the selected wipe pattern at any place, even outside the visible picture area.

Note: *Please note that in this mode, the wipe transition may reach its limit before the wipe pattern fully covers the screen.*

Wipe Pattern Modifier	Using the modifiers like **Mod**, **Multi**, **Wipe Comb**, **Wipe Rot**, **Bord**, **Soft** and **Aspect** the standard wipe patterns can be changed and new patterns can be created. For more details see section ***Menu Operation***.

The **Modif reset** key can be used to turn off all enabled modifiers <u>at once</u>.

Size	If the wipe generator is used for a function other than background transition, the size of the wipe pattern may be adjusted with the **SIZE** control in the keyers panel.

Modifier adjustments	The modifiers are switched on and off by actuation of the softkeys in the respective menu only! When the user changes over between the individual modifiers, the selected values are automatically stored and will be available when the modifier is selected again.

Mod	The **Mod** key serves to enable the wipe edge modulation. The following adjustments are possible:

AMPL	modulation amplitude
SPD	modulation speed
MULT	modulation frequency
SHAP	modulation shape (square, triangle, sinewave).

In addition to these adjustments, the wipe edge modulation may also be influenced with the following keys:

H Mod key	horizontal wipe edge modulation only
V Mod key	vertical wipe edge modulation only
Lock Mod	modulation is locked, i.e. the modulation does not run through but produces a stationary picture.

Multi   The **Multi** key serves to enable the wipe pattern multiplication function.
The following adjustments are possible:

H	horizontal multiplication
V	vertical multiplication
O	multiplication in radial direction, only for closed wipe patterns (e.g. circle)
X	number of rays for the star wipe and flower.

Wipe Rot   The **Wipe Rot** key serves to enable the wipe pattern rotation.
The following adjustments are possible:

ANGL	setting a fixed rotation angle
SPD	setting the rotation speed
COUP	rotation angle depending on fader position. The number of rotations can be selected with the control.

Bord   The **Bord** key serves to enable the wipe pattern border function.
The following adjustments are possible:

WIDTH	border width adjustment. The border width may be adjusted by clockwise or counter-clockwise rotation. If the border is made transparent with **Opac**, the direction of rotation of the border width control determines which picture component will be seen in the border.
OPAC	adjustment of the transparency

If the **Soft** modifier is also enabled, the following additional adjustments are possible:

SOFT	adjustment of the border softness
SYM	adjustment of the softness symmetry

Soft   The **Soft** key permits adjusting the softness of the wipe edge.
The following adjustments are possible**:**

SOFT	adjustment of the softness width

If the **Bord** modifier is also enabled, the following additional adjustments are possible:

WIDTH	adjustment of the border width
OPAC	adjustment of the transparency
SYM	adjustment of the softness symmetry

Aspect   The **Aspect** key permits adjusting the aspect ratio of the wipe pattern. The following adjustments are possible:

H-ST	horizontal stretch
V-ST	vertical stretch
RATio	By clockwise or counter-clockwise rotation the wipe pattern may be stretched horizontally and/or vertically.

Note: *Please note that in Stretch, a linear piece is inserted in the wipe pattern. With Ratio, the aspect ratio of height and width is changed. Please note also the width of the borders with Stretch and Ratio.*

Copying wipe settings

The settings of one wipe generator can easily be copied to another. Similarly, both settings may be exchanged.

For further information please refer to the section **Menu operation**.

2.12 MASKS PANEL (ONLY RPD35-4 PANEL)

The **Xten DD** provide extensive masking capabilities which enable the operator to correct even difficult pictures. For the keyers, square masks are available. As an alternative, also the wipe patterns of a wipe generator may be used for masking. The volatile masks store (one store for each mixing level) offers new ways of masking. A key signal or a pattern signal may be stored.

The **PaintModeMasking** feature permits the creation of masks which are perfectly adapted to the individual requirements.

Masks

| 0 1 2 3 4 5 6 7 |

↑ ↓

Top/gain

| Forc FGND | | Mask Inv | | Bus | | Mask PVW |

Left   Mask reset   Right

| Box | | Store | | Pattn 1 | | Pattn 2 |

Bottom/clip
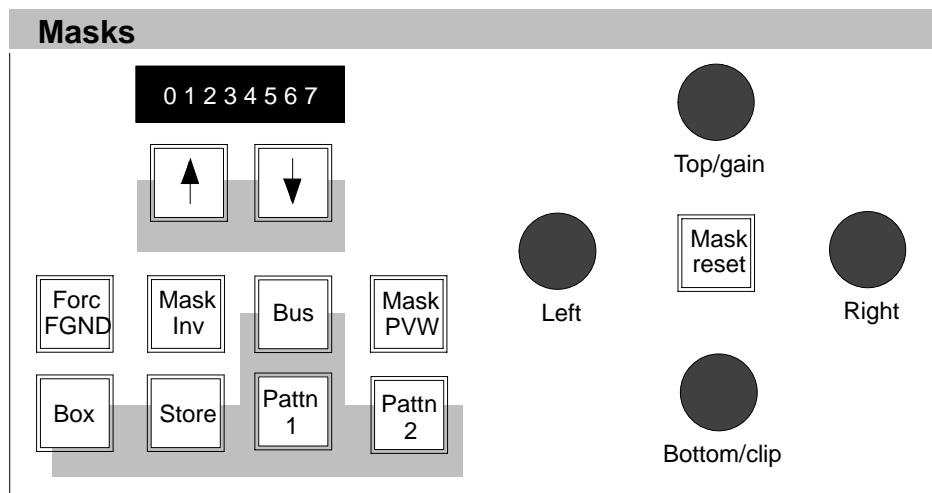
Delegation ↑ ↓   The delegation buttons permit delegating the Masks panel to another keyer if you want to change the keyer proposed by the automatic delegation system.

The **Pattn1**, **Pattn2**, **Box**, and **Store** buttons serve to select the type of mask to be used for masking.

Creating a box mask

The **Box** button serves to select a square mask for masking. The size of the mask can be adjusted with the four controls **Left**, **Right**, **Top**, and **Bottom**.

Adjusting the mask position

You can freely position the mask in the picture with Trackball (Joystick) in the Positioner panel or connected Mouse.
For further information please refer to section **Positioner Panel**.

Resetting the box mask

The **Mask Reset** button serves to create a box mask sized 1/4H, 1/4V in the middle of the picture.

Creating a wipe mask

Using **Pattn 1** or **Pattn 2** one of the wipe generators can be selected for masking. The wipe pattern can be directly selected with the wipe pattern selection keypad in the Wipe panel or in the Wipe menu. The size of the wipe pattern can be adjusted with the **SIZE** control in the Wipe menu.

You can position the wipe mask in the picture with the trackball after you have enabled **Pos** in the Wipe panel.

Note: Please note that the wipe generators can be used simultaneously for several applications which may interact with each other.

Mask store

The **Store** button serves to select the mask store as mask source.

Mask Bus

If **Bus** is used as a mask source, the luminance component of any input signal can be used as a mask, with adjustable **Gain** and **Clip**. In order to select the source, hold down the **Bus** key and select the input on the Aux Buses panel . For the mask bus signal, the **Clip** and **Gain** controls operate in the same way as for Luminance Key.

Note: A mask bus is available in M/E1, M/E2 amd M/E3 only.

Forc FGND

The **Forc FGND** button serves to select whether the mask should suppress (mask) or force the foreground picture. If the button lights up, Forced Foreground is active.

Mask inv The **Mask inv** button can be used to invert the mask signal.
This means that, for instance, with a square mask, not the inside but the outside of the square is used for masking.

Mask PVW The **Mask PVW** button is used to highlight the mask signal on the preview monitor. This function serves to adjust the mask.

Note: *In Mask PVW mode, the mask is only represented as a 1-bit signal. If you want to exactly position a mask with softness, simply switch on the mask with the **Mask on** key in the Keyers panel.*

2.13 POSITIONER PANEL

2.13.1 TRACKBALL IN RPS35–3 AND RPS35–2 PANEL

Positioner

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5

| Menu Deleg | H lock | Ctr | V lock |
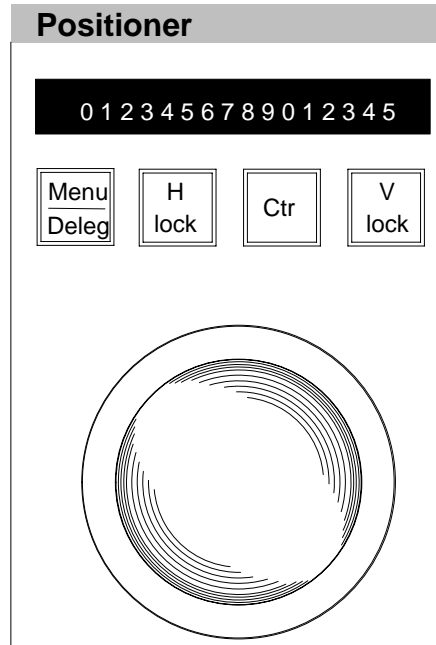
Menu/Deleg   The **Menu/Deleg** button provides two functions:

- If **Menu** is activated (button lights), the trackball controls the mouse function in the sidepanel menu.

- If button **Menu/Deleg** is pressed down, the delegation buttons **H Lock =** ↑ and **V Lock =** ↓ permit delegating the trackball to another function if you want to change the result of the automatic delegation system manually.

H Lock, V Lock   The **H Lock** and **V Lock** buttons are used to lock the trackball in horizontal or vertical direction. Thus, an exact positioning of a wipe pattern along a horizontal or vertical line is possible.

Note: If both buttons are pressed, the trackball is locked.

Center   Press **Ctr** to set the position to the center of the screen.

The display indicates which functions can be influenced with the trackball. The following indications are possible:

Level	Wipe generator	Masks	Cursor Chroma Key	Mask generator
ME1	Wipe1	MSK1	Key1	
			:	STOR
	Wipe2	MSK2	Key4	
ME2	Wipe3	MSK3	Key1	
			:	STOR
	Wipe4	MSK4	Key4	
PP	Wipe4	MSK5	Key1	
			:	STOR
	Wipe6	MSK6	Key4	

The delegation system automatically assigns the trackball to the currently used functions. If you want to assign the trackball to another function, select the corresponding function in the relevant panel.

The definition of the trackball can easily be adapted to the current requirements.

2.13.2   JOYSTICK IN RPS35–4 PANEL

2.14 MACHINE CONTROL

The Machine Control panel of the **X ten DD** supports up to 4 VTRs or Disk Recorders, Laser Disk Players which supports a standard VTR control interface.

To select a VTR choose one of the four **MPx** buttons (**MP1 ... MP4**).
The selected button will lit. All motion command buttons and the display in top of the Machine Control section are delegated to the selected **MPx** device.

For installation of an VTR driver refer to section INSTALL menu.

Machine Control

| | | | | | | | Mark In | Goto | Mark Out |

X X X X X X X X X X X X X X X X

| MP 1 | MP 2 | MP 3 | MP 4 | 2nd | | Norm Rev Shtl | Rev Var | Stop Next Jog |

| TiM/E Memo | Rec | DVE 1 | DVE 2 | |

| << | < | ■ | > | >> |

Master TiM/E Memo

F R E E   M E M O R Y :   8 7 % | T-Dur Free% |

| | Store | Bank | Edit | | BGD# Inhib |

| | | | | | Key# Inhib |

| Bank 3 | 7 INS | 8 MOD | 9 DEL | Bank0 GPO |

| Bank 4 | 4 H TM | 5 TRTM | 6 TRAJ | Bank1 SNAP | Undo |

| Bank 5 | 1 ← | 2 VIEW | 3 → | Bank2 TIML | Cut |

| Bank 6 | Clear FREE | 0 LOOP | Enter NEXT | Reloc +/− | Auto |

| Bank 7 | M/E1 | M/E2 | M/E3 | P/P | Misc Int | Misc Ext |

Example:
RPD35-4 panel

Machine Control

| X X X X X X X X X X X X X X X X X | | | | | Mark In | Goto | Mark Out |

| MP 1 | MP 2 | MP 3 | MP 4 | 2nd | | Norm Rev Shtl | Rev Var | Stop Next Jog |

| TiM/E Memo | Rec | DVE 1 | DVE 2 | |

| << | < | ■ | > | >> |

Master TiM/E Memo

| F R E E   M E M O R Y :   8 7 % | T-Dur Free% |

| | Store | Bank | Edit | BGD# Inhib |

| | | | | Key# Inhib |

| Bank 3 | 7 INS | 8 MOD | 9 DEL | Bank0 GPO |

| Bank 4 | 4 H TM | 5 TRTM | 6 TRAJ | Bank1 SNAP | Undo |

| Bank 5 | 1 ← | 2 VIEW | 3 → | Bank2 TIML | Cut |

| Bank 6 | Clear FREE | 0 LOOP | Enter NEXT | Reloc +/− | Auto |

| Bank 7 | M/E1 | M/E2 | M/E3 | P/P | Misc Int | Misc Ext |

Example:
RPD 35-2 /-3 panels

2.14.1   MACHINE STATUS

The display in top of the Machine Control section will inform you about the current status of the VTR connection.

no VTR protocol

The driver is not installed. For details refer to your Planning and Installation manual.

VTR not connected

The VTR is not connect. Please check if the device is powered on and the cabling is OK.

no tape loaded

Tape is ejected.

TC 00:32:16:00

The VTR is connected and ready to be controlled from the DD35. The current LTC value of the selected device will be shown on the display.

Note: *Please check if the VTR is switched to be controlled from the REMOTE interface.*

2.14.2   MOTION COMMANDS

Press one of the following buttons to send a motion command to the device. The 3 keys located over the Fader will have the following functions if the Machine Control section is delegated to a MPx control.

Norm Rev Shtl	Rev Var	Stop Next Jog
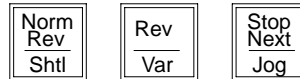
REWIND	Press the **<<** button to send a REWIND command to the device.
VARIABLE	Press the **<** button to send a VARIABLE reverse command to the device (speed = −1 X).
STOP	Press the ■ button to send a STOP command to the device.
PLAY	Press the **>** button to send a PLAY command to the device.
REC	Press **REC** and **>** button to send a RECORD (normal record = crash record) command to the device.
FAST FORWARD	Press the **>>** button to send a FAST FORWARD command to the device.
STEP	Hold ■ and press **>** to send a field STEP forward Hold ■ and press **<** to send a field STEP revers
	Caution: ***The DD35 protocol driver will send RS422 STEP commands. This commands will not be supported by some VTR types.***
JOGGING	Press the **Jog** button to enter the Jogging mode. In Jogging mode the TrackBall located in the Positioner section of the DD35 panel will be used. The TrackBall has to be delegated as Jog knob. This is done by the auto delegation feature whenever the **Jog** button is activated.

SHUTTLE   Press the **Shtl** button to enter the Shuttle mode. In Shuttle mode the fader will be used. If the fader is activated the LED's will show the currently selected speed direction.

If the speed is 0 both LED's will lit. The speed range is –32...+32 times normal speed. The 0 position is located in the middle of the Fader range.

Examples Shuttle directions:

forward   still (speed = 0)   reverse
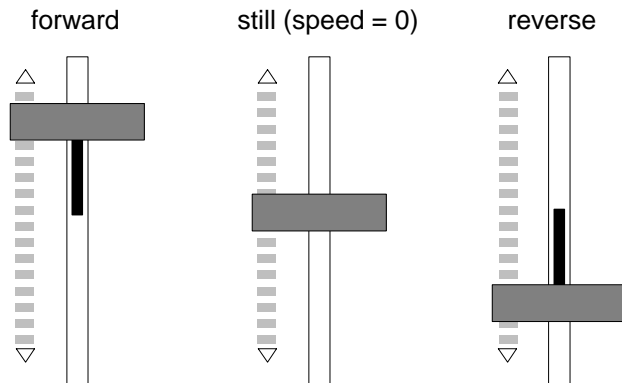
VARIABLE   Press the **Var** button to enter the Variable mode. The speed range is –1 ... +3 times normal speed. The 0 position is located in the lower half of the fader range.

Examples Variable directions:

forward   still (speed = 0)   reverse
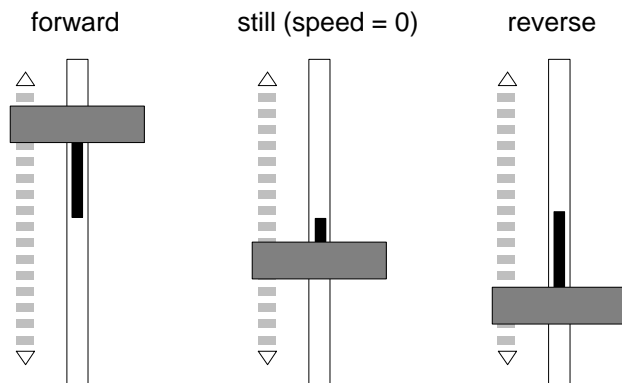
2.14.3   WORKING WITH MARK IN AND MARK OUT

For each Media Player machine you can set a **Mark In** and a **Mark Out** point. These are Timecode values where you want to cue the player to. To avoid the phrase **Mark In** or **Mark Out**, only **Mark In** is used in the following.

2.14.3.1 Entering Mark In

There are two ways to set **Mark In**

1. Directly from the tape.

    To learn Mark In from the current tape position:
    Press and hold the **MP** button of the player and then press **Mark In**.
    To indicate that there is a Mark In learned, the button is then lit.

2. Manual timecode entry in the numeric keypad.

    To enter the timecode by numeric keypad:

    - Press **Mark In**. If there was already a Mark In learned, this will be shown in the Machine Control Display.
    - The numeric keypad lights up and **Mark In** flashes.
    - Enter the timecode.
      You do not have to type leading zeros.
      Typing **1**, **2**, 3 will give you the timecode **00:00:01:23**.

      Pressing **Clear** will erase the timecode you entered so far, so you can type in the correct timecode.

    - To close the timecode entry, press **Enter**. **Mark In** stops flashing and is lit.
    - Pressing **Mark In** again cancels the entry, so the previous **Mark In** is not changed.

    Hints:

    - To look up Mark In: Press **Mark In**, view the timecode and press **Mark In** again.

    - To clear Mark In: Press **Mark In**, press **Clear**, press **Enter**.

    - Set the timecode to **00:00:00:00**: Press **Mark In**, press **0**", press **Enter**.

2.14.3.2 Cueing to Mark In

- Press **Goto** (numeric keypad will highlight, see below).
- Press **Mark In.**

2.14.3.3 Cueing to an arbitrary timecode

- Press **Goto** (numeric keypad will highlight).
- Enter the timecode.
- Press **Enter**.

Note: ***Pressing Goto again switches off the timecode entry, but will NOT cue somewhere.***

2.14.4 GANG MACHINES

Up to 4 machines can be operated together in parallel (e.g. all on PLAY or all on Rewind). The Gang mode can be freely selected in the Panel Setup: Die Gang-Betriebsart läßt sich dabei im Panel Setup frei wählen:

Gang mode A: When selecting the corresponding machines simultaneously press the buttons **MP1 ... MP4**.

Gang mode B: Hold the button **Rec** down and then press the respective **MP** button one after the other.

2.15   MEMORY SYSTEM (TIM/E MEMO TIMELINES)

2.15.1   GENERAL

The TiM/E Memory System is a M/E separate software package for storing and recalling switcher statuses and processes.

TiM/E thus permits storing and recalling individually prepared operating statuses and timelines with different background, key sources, borders, wipe pattern positioning, coloring etc.

The memo system is used for storing and recalling static settings (statuses, snapshots) and interpolated timelines.

The snapshots and timelines are identified with numbers (Register 0 ... 99).

TiM/E can be operated in two ways:

- operation via the buttons of the TiM/E panel section
- operation via the menu

The number of keyframes in a timeline is only limited by the storage capacity of the respective switcher computer and the number of mixing levels and storable functions.

The operator can edit a timeline in order to produce more sophisticated effects.

Note: The total memory in the electronics box RAM for snapshots and timelines is approx. 3.5 MB.

2.15.2   DEFINITION OF TERMS

SNAPSHOT (SNAP) is a switcher status or the status of a switcher part.

KEYFRAME (KF)   is a static switcher status within one timeline.

TIMELINE (TIML)   is a stored sequence of switcher statuses (keyframes).

DISSOLVE   is a dissolve between static switcher statuses. The analogue values are dissolved, the switching functions are switched at the end of the dissolve procedure.

DISSOLVE TIME   is the time for dissolving between two static switcher statuses.

STORE   is the storing of a static switcher status.

RECALL   is the reproduction of a stored static switcher status.

EDITING (EDIT)   is the creation or the processing of a timeline outside real-time.

PLAY   is the play of a stored timeline.

TRAJECTORY   is the "trajectory" between keyframes.

REGISTER is a memory location where a snapshot or a timeline can be stored. Registers are identified with a number between 0 ... 99.

REGISTER MODE is an input mode for the register number in the TiM/E panel section, in which the number is entered in one digit (0 ... 9) or in two digits (10 ... 99) followed by functional selections such as **Enter**, **Cut** or **Auto**.

BANK MODE is an input mode for the register number in the TiM/E panel section panel. The bank number 0 ... 9 corresponds to the tens digit of the register number. When the units digit of the register number is entered, the corresponding snapshot or timeline is triggered immediately.

2.15.3 TIM/E MEMO PANEL SECTION

```
┌─────────────────────────────────────────────────────────┐
│  Master TiM/E Memo                                        │
│                                              ┌──────┐     │
│   ┌───────────────────────────────────┐      │T-Dur │     │
│   │  F R E E   M E M O R Y :  8 7 %    │      │Free% │     │
│   └───────────────────────────────────┘      └──────┘     │
│                                                            │
│   ┌────┐  ┌──────┐  ┌──────┐  ┌──────┐       ┌──────┐     │
│   │    │  │Store │  │ Bank │  │ Edit │       │BGD#  │     │
│   └────┘  └──────┘  └──────┘  └──────┘       │Inhib │     │
│                                              └──────┘     │
│                                              ┌──────┐     │
│                                              │Key#  │     │
│   ┌────┐  ┌────┐  ┌────┐  ┌────┐  ┌─────┐    │Inhib │     │
│   │Bank│  │ 7  │  │ 8  │  │ 9  │  │Bank0│    └──────┘     │
│   │ 3  │  │INS │  │MOD │  │DEL │  │ GPO │                 │
│   └────┘  └────┘  └────┘  └────┘  └─────┘                 │
│   ┌────┐  ┌────┐  ┌────┐  ┌────┐  ┌─────┐    ┌──────┐     │
│   │Bank│  │ 4  │  │ 5  │  │ 6  │  │Bank1│    │ Undo │     │
│   │ 4  │  │H TM│  │TRTM│  │TRAJ│  │SNAP │    └──────┘     │
│   └────┘  └────┘  └────┘  └────┘  └─────┘                 │
│   ┌────┐  ┌────┐  ┌────┐  ┌────┐  ┌─────┐    ┌──────┐     │
│   │Bank│  │ 1  │  │ 2  │  │ 3  │  │Bank2│    │ Cut  │     │
│   │ 5  │  │ ←  │  │VIEW│  │ →  │  │TIML │    └──────┘     │
│   └────┘  └────┘  └────┘  └────┘  └─────┘                 │
│   ┌────┐  ┌─────┐ ┌────┐  ┌─────┐ ┌─────┐    ┌──────┐     │
│   │Bank│  │Clear│ │ 0  │  │Enter│ │Reloc│    │ Auto │     │
│   │ 6  │  │FREE │ │LOOP│  │NEXT │ │ +/– │    └──────┘     │
│   └────┘  └─────┘ └────┘  └─────┘ └─────┘                 │
│   ┌────┐  ┌────┐┌────┐┌────┐┌───┐ ┌────┐┌────┐            │
│   │Bank│  │M/E1││M/E2││M/E3││P/P│ │Misc││Misc│            │
│   │ 7  │  └────┘└────┘└────┘└───┘ │Int ││Ext │            │
│   └────┘                         └────┘└────┘            │
└─────────────────────────────────────────────────────────┘
```
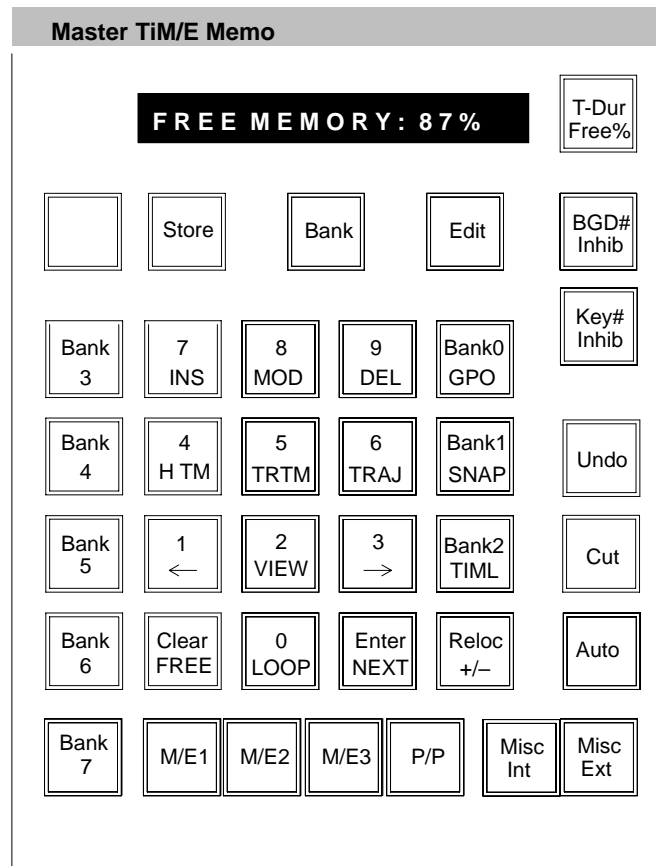
The TiM/E Memo panel section has different functions in the DD30 switcher.

- Input of the transition durations (TransDur) for transitions, DSK, Fade-to-Black and TiM/E Memo fading. For this, the buttons **0 ... 9** and the **Enter** button are used. For further details please refer to the relevant sections.

- Operation the TiM/E Memo functions. Here the **Store**, **Bank** and **Edit** buttons have different functions in the various operations.
  The secondary lettering of the buttons **0 ... 9** and **Bank 0 ... Bank 2** applies when existing timelines are modified. The secondary lettering **FREE** of the **Clear** key applies when a register is selected. The secondary lettering **NEXT** of the **Enter** key applies when an assigned register is called.
  In the following instructions only the applicable function of the double lettering is mentioned.

2.15.3.1 Display

If no editing function or store function is selected, the 16 digit display of the panel section may show the following indications:

`REG ????`   No register is selected. The register is empty.

`REG 24`   Register 24 is selected. The register is empty.

`REG B24`   Register 4 is selected in Bank mode 2 (this corresponds to register 24). Register 24 is empty.

`SNAP 05 SN05----`   Register 05 is selected. The register contains a snapshot and has no particular name.

`SNAP B05 SN05----`   As above but in Bank mode 0 with hotkey 5.

`SNAP 05 ABCDEFGH`   Register 05 is selected. The register contains a snapshot with the name "ABCDEFGH".
The name can only be entered in the menu.

`SNAP B05 ABCDEFGH`   As above but in Bank mode 0 with hotkey 5.

`TL 16 TL16----`   Register 16 is selected. The register contains a timeline and has no particular name.

`TL B16 TL16----`   As above but in Bank mode 1 with hotkey 6.

`TL 16 KLMNOPQR`   Register 16 is selected. The register contains a timeline with the name "KLMNOPQR".
The name can only be entered in the menu.

`TL B16 KLMNOPQR`   As above but in Bank mode 1 with hotkey 6.

2.15.3.2 Define Memo in TiM/E Memo panel section

The TiM/E Memo panel permits a rough but fast filtering for storing and recalling snapshots and timelines.

| M/E1 | M/E2 | M/E3 | P/P | Misc Int | Misc Ext |
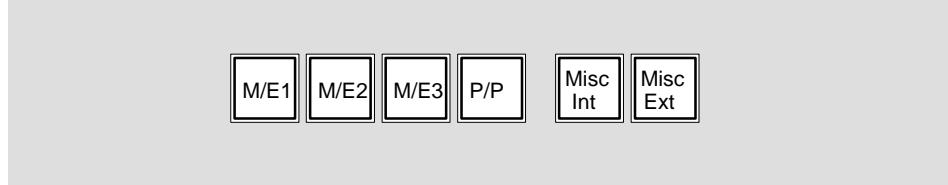
In **generating** a snapshot or a timeline, the lighting keys show which switcher selections are stored. In **recalling** a snapshot or a timeline, the lighting keys show which switcher sections are affected by the stored functions. If the recalled section is smaller than the available target section, only the recalled section is affected.

Example:

Mixing level M/E1 is stored. The entire switcher is ready for recalling. Only M/E1 is affected, the other sections of the switcher remain unchanged.

The indication is also shown in the **Define memo** menu.

2.15.3.3 Relocating

When a snapshot or a timeline is recalled, the Relocate function permits addressing a different mixing level (M/E) than that used during storing, i. e. a relocation can be switched.

1. Switch on source M/E. If several M/Es are selected as source, the M/E with the highest number is used as a source.

2. Press **Reloc**

3. Switch on the target M/E.

This feature is only available in the Master TiM/E Memos.

2.15.3.4 Enabling and disabling bank mode

The Bank mode in the TiM/E panel permits access to a stored snapshot or timeline with a single key (hotkey). The bank number is the tens digit of the register. The hotkeys are the units digits of the register. The Bank mode may be enabled during storing but this does not have any particular benefit.

Enabling Bank mode

Hold the **Bank** key down and select the desired bank with the numeric keypad. The **Bank** key lights up. In the display a "**B**" appears before the register number.

Example: `SNAP` `B05` `SN05 ----`

Disabling Bank mode

Press the lighting **Bank** key.

2.15.3.5 Selecting a register during storing

During the storing of snapshots or timelines the register to be used for storage must be selected. The procedure is the same for both cases.

However, the indication in the display differs.

for snapshots	**STOR**
for Timelines	**EDIT**

● If the register number is to be taken over that was shown before the actuation of the **Store** or **Edit** key, no further selection is necessary.

Note: During storing the contents of the register is overwritten!

● If you wish to select the next free register, press the **FREE** key.

● If you wish to select a particular register, enter a one- or two-digit number with the numeric keypad. Errors can be deleted with **Clear**.

Note: Should the register be assigned, the contents is overwritten during storing.

2.15.3.6 Selecting a register during recalling

When a snapshot or a timeline is recalled, there are several ways to select a corresponding register.

- If the register shown in the display is to be used, no further selection is necessary.

- To select the next used register, press the **NEXT** key.

- To select a particular register, enter a one- or two-digit number with the numeric keypad.
  If a two-digit number is entered (e.g. 15), the related register (1) appears in the display when the first digit (1) has been entered. The desired register (15) appears after the input of the second digit.
  The input of the figures *need not* be confirmed with **Enter**.

2.15.3.7 Storing a snapshot

1. Set the switcher in the desired operation mode.
2. Set **Define memo**
3. Press **Store**.
4. Select register with numeric key pad.
5. Press **Enter**

2.15.3.8 Deleting snapshots and timelines

1. Press **Clear**.
2. Select other register (0 ... 99). Only if not already displayed.
3. Press **Enter**

2.15.3.9 Desolve functions depending on snapshot or timeline preselection

Key	Snapshot preselected	Timeline preselected
Auto	Dissolve to the snapshot in the time set with **Trans dur**.	Playing the timeline in the time set with **Trans dur**.
Cut or Hotkey in Bank mode	Recall the snapshots.	Playing the timeline in the stored time.
Fader	Dissolve to snapshot.	Playing the timeline.

Note: *Timelines that contain an endless loop or that are waiting for an event (GPI, Time) can only be recalled with **Cut**.*

2.15.3.10 Other button functions

Trans dur

Entry of the Auto transition duration.

- Press **Trans dur**. The key lights up.

- Enter transition duration with numeric keypad.

- The time is indicated in the **FRAMES** display.

- Complete the entry with **Enter** or **Trans dur** again.

Note:
*The **Trans Dur** entry function is selected by releasing the button. Hold down the **Trans Dur** button and pressing the **Store** button starts the panel setup mode.*

Undo

If you press this key, the status before the last recall of a snapshot or a timeline can be restored even if several other operations have been performed in the meantime.

Cut

Function of the button:

- If the TiM/E Memo is not playing a timeline and a snapshot register is selected, **Cut** recalls the snapshot.

- If the TiM/E Memo is not playing a timeline and a timeline register is selected, **Cut** starts playing the timeline.

- If the TiM/E Memo is playing a timeline, **Cut** stops playing the timeline; another **Cut** continues playing the timeline.

- If the TiM/E Memo is playing a timeline and the timeline is waiting, **Cut** continues playing the timeline.

Auto

Function of the button:

- If the TiM/E Memo is not playing a timeline and a snapshot register is selected, **Auto** interpolates to the snapshot in a fixed period of time.

- If the TiM/E Memo is not playing a timeline and a timeline register is selected, **Auto** starts playing the timeline in a fixed period of time. This only works if the timeline has no endless loops or waits and a transition duration other than 0 has been selected.

- If the TiM/E Memo is playing a timeline, **Auto** aborts playing the timeline.

- A timeline played with **Auto** can't be stopped/continued with **Cut**.

2.15.4   TIMELINE EDITING

2.15.4.1 Components of a Timeline

A timeline is stored as a chain of keyframes with related transitions between the keyframes and other timeline objects (wats, triggers).
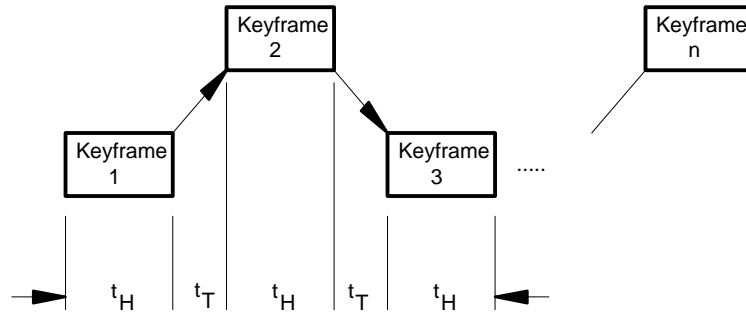
t_H = waiting or hold time
t_T = transition time

The dissolve between the keyframes is set to linear for default.

In the TiM/E Memo at this time the following components of a timeline can be displayed and edited:

S t a r t	Timeline start symbol
E n d	Timeline end symbol
K F n n n	Internal stored keyframe
S N n n	External stored keyframe, snapshot in register nn
T L n n	External stored timeline, timeline in register nn
L o o p	Loop begin symbol
E L o o p	Loop end symbol

U s e r	Wait for a user input
H o l d	Wait for a number of frames
T O D	Wait for a specified time of days
T C	Wait for a specified timecode of a connected machine
M a K n n	Trigger MaKE Memo nn of the panel where the timeline was started.
G P I n	Wait for GPI n (1 ... 8)
G P O n	Trigger GPO n (1 ... 8)
E G P O n	Trigger external GPO n (1 ... 8)
P G P I n	Wait for panel GPI n (1 ... 6)
P G P O n	Trigger panel GPO n (1 ... 6)
T G P I n	Trigger GPI n (1 ... 8)

T P G I n	Trigger panel GPI n (1 ... 6)
S t o p	TMC stop
P l a y	TMC play
R e c	TMC record
V a r	TMC variable
F r e w	TMC fast rewind
F f w d	TMC fast forward
C u e	TMC cue to specified timecode
C u e I n	TMC cue to in point
C u e O u t	TMC cue to out point
J o g	TMC joggle
S t e p	TMC step

2.15.4.2 Generating a Timeline

To generate a timeline the following steps must be done:

4. Ensure that no transition or anything else is running at TiM/E Memo

5. Press **EDIT**

6. Select register

7. Press **ENTER**

8. Insert timeline objects (snapshots, keyframes, loops,...)

9. Press **EDIT**

The timeline is stored as a chain of keyframes, snapshots, loops, ... with related dissolves (transitions) between the keyframes.

2.15.4.3 Modifying a Timeline

The following procedure is used for all modifications of a timeline:

1. Ensure that no transition or anything else is running at TiM/E Memo

2. Press **EDIT**

3. Select Register

4. Press **ENTER**

5. Insert, delete, modify,... timeline objects (snapshots, keyframes, loops,...)

6. Press **EDIT**

The timeline is stored as a chain of keyframes, snapshots, loops,... with related dissolves (transitions) between the keyframes.

Note: Modifications of an existing timeline always relate to the last timeline object indicated in the display.

2.15.4.4 Functionality of the Buttons in the Edit mode

> *Note:* Modifications of an existing timeline always relate to the last timeline object indicated in the display. This object is the currently selected timeline object.

Master TiM/E Memo

```
FREE MEMORY: 87%            T-Dur
                             Free%

   Store       Bank       Edit      BGD#
                                     Inhib

                                     Key#
                                     Inhib

 Bank    7      8      9    Bank0
  3     INS    MOD    DEL    GPO

 Bank    4      5      6    Bank1     Undo
  4     H TM   TRTM   TRAJ   SNAP

 Bank    1      2      3    Bank2     Cut
  5      ←     VIEW    →     TIML

 Bank  Clear    0    Enter  Reloc    Auto
  6    FREE   LOOP   NEXT    +/–

 Bank   M/E1   M/E2   M/E3   P/P   Misc  Misc
  7                                Int   Ext
```
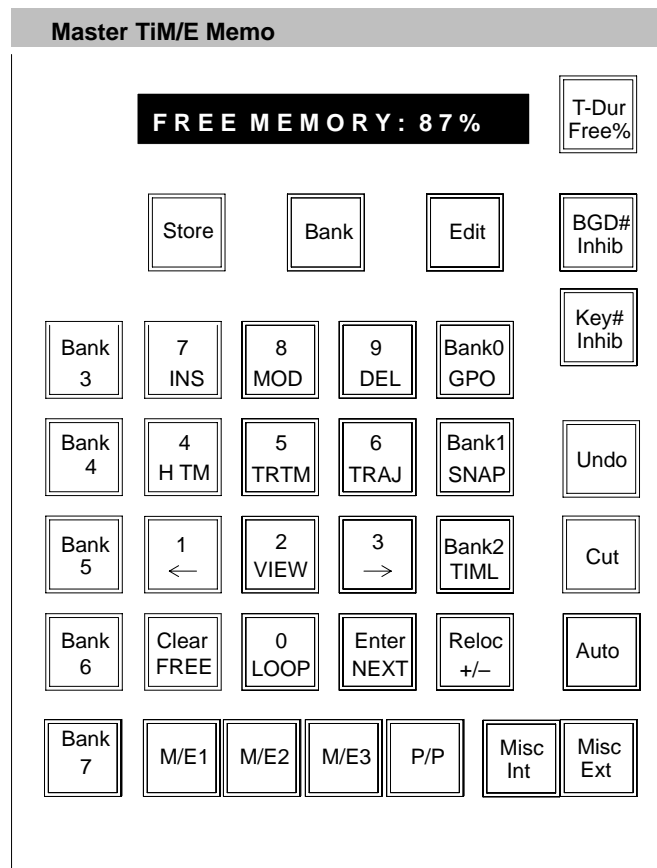
T-Dur / Free%	The transition duration can also be changed in the edit mode.
BGD # Inhib	Always the same functionality, also in EDIT mode. If enabled (lamp is on), the program and preset crosspoints will not be changed in case of a recall.
Key # Inhib	Always the same functionality, also in EDIT mode. If enabled (lamp is on), the key crosspoints (key and fill sources) will not be recalled in case of a recall.
Store	Inserts a keyframe (with the related transition) in the timeline.
Bank	No functionality during EDIT.
Edit	Ends the timeline editing, the timeline will be stored.
7 / INS	Inserts a keyframe (with the related transition) in the timeline.

8 / MOD	The functionality depends on the type of the currently selected timeline object.

	KF	The selected keyframe is changed to the current state of the switcher.
	LOOP	Change of the loop counter (000 = endless loop).
	ELOOP	Change of the loop counter (000 = endless loop).

9 / DEL	Deletes the currently selected timeline object. Depending on the type of the time-line object there are the following relationships.

	LOOP	The related ELOOP object will also be deleted.
	ELOOP	The related LOOP object will also be deleted.

Bank 0 / GPO	Inserts a GPO trigger object at the current cursor position.
4 / HTM	Changes the hold time of the selected snapshot or keyframe. The default hold time is always 0 frames.
5 / TRTM	Changes the transition time of the selected keyframe object. The default transition time is set to the current transition duration of snapshot dissolves.
6 / TRAJ	Changes the trajectory of the selected transition object. Possible are **Linear**, **SLinear** and **Smooth** (not yet implemented).
Bank 1 / SNAP	Inserts a snapshot object into the timeline. If the button is pressed more than once the next existing snapshot is displayed for selection.
Undo	The Undo function is enabled in the Edit mode and serves the abortion of a running edit operation without changing in the timeline.
	If, for instance, the button **Undo** is pressed in the edit mode, an Undo dialog is dis-played:

	Press **Undo** again	return to the edit mode
	Press **Enter**	abortion of edit mode without saving

1 / ←	The button ← permits a successive selection of the individual objects of a timeline. Changes the cursor position to the previous object.
2 / VIEW	With the **VIEW** function enabled (button lights up) the switcher is switched to the status stored in the keyframe.
3 / →	The button → permits a successive selection of the individual objects of a timeline. Changes the cursor position to the next (following) object.
Bank 2 / TIML	Inserts a previously stored timeline into the timeline.

Cut	No functionality during EDIT.

Clear / FREE	The button **Clear/FREE** enables to jump to the begin of a timeline.

0 / LOOP	If the currently selected object is not inside of a loop (button **LOOP** is off) a loop object will be inserted before the currently selected object. The related ELOOP object is inserted before the next LOOP or ELOOP object or at the end of the timeline. The cursor will be set to the ELOOP object.
	If the currently selected object is inside of a loop, the ELOOP object is moved to the current cursor position.

Enter / NEXT	The button **Enter/NEXT** enables to jump to the end of a timeline. While changing times etc. it serves always for confirmation.

Reloc / +/–	No functionality during EDIT.

Auto	No functionality during EDIT.

Cut / Copy / Paste	Within each Memo group, there are three clipboards available in the edit mode for Cut / Copy / Paste operations with keyframes and all other possible objects of a timeline.

For these functions, the following buttons can be used:

● Hold down button **Bank 0 ... 2** for selection the clipboard **0 ... 2**

● Simultaneously actuate one of the following buttons:
  INS = Paste
  MOD = Copy
  DEL = Cut
  CLEAR = Clear clipboard memory

When actuating Copy and Paste repeatedly, several objects are stored in the respective clipboard. So it is possible to cut or copy complete sections of a timeline.

2.15.4.5 Changing the Hold Time of a Snapshot or Keyframe

1. Select Keyframe / Snapshot (button ← and →)

2. Press **HTM**

3. Enter hold time with numeric keypad

4. Press **Enter**

*Note: Errors can be deleted with **Clear**.*

2.15.4.6 Changing the Transition Time of a Snapshot or Keyframe

1. Select transition object (button ← and →)

2. Press **TRTM**

3. Enter transition time with numeric keypad

4. Press **Enter**

*Note: Errors can be deleted with **Clear**.*

2.15.4.7 Inserting a Snapshot

1. Select the timeline object before which the new snapshot is to be inserted (button ← and →).

2. Press **Bank1 / SNAP**

3. Enter the snapshot register number with the numeric key pad or press **Bank1 / SNAP** again to select the next snapshot

4. Press **Enter**

*Note: Errors can be deleted with **Clear**.*

2.15.4.8 Inserting a Loop in a Timeline

If a loop is inserted with the TiME Memo control panel section always an endless loop (loop counter = 000) is inserted for default. To change the loop counter follow the steps under section ***Modifying A Loop***.

New:

It's possible to insert loops (max. 99) into other loops. This functionality is only available with the menu operation.

2.15.4.9   **Entering a Loop during the Generation of a Timeline**

1. Enter last timeline object before the loop

2. Press **LOOP**

3. Enter first timeline object in the loop

Note: *The loop end is before the next ELOOP or LOOP object or the end of the timeline if no other loop follows.*
*If the button **LOOP** is pressed before the end of the loop, the ELOOP object is moved to that position in the timeline. If the loop is an endless loop, the timeline ends with the end of the loop.*

2.15.4.10   **Inserting a Loop in an existing Timeline**

1. Select the timeline object after which the loop should start (button ← and →), or select transition before which the loop should start.

2. Press **LOOP**

Note: *The loop end is before the next ELOOP or LOOP object or the end of the timeline if no other loop follows.*
*If the button **LOOP** is pressed before the end of the loop, the ELOOP object is moved to that position in the timeline. If the loop is an endless loop, the timeline ends with the end of the loop.*

2.15.4.11   **Modifying a Loop in an existing Timeline**

1. Shift LOOP or ELOOP indication at the end of the display (button ← and →)

2. Press **MOD**

3. Enter the loop counter with the numeric keypad

4. Press **Enter**

Note: *Errors can be deleted with Clear.*
If the loop counter is 000 the loop is an endless loop.

2.15.4.12   **Delete a Loop in an existing Timeline**

1. Shift LOOP or ELOOP indication at the end of the display (button ← and →)

2. Press **DEL**

Note: *The related end or the begin of the loop is also deleted.*

2.15.4.13 **Delete a Timeline object in an existing Timeline**

1. Shift the timeline object to delete at the end of the display (button ← and →)

2. Press **DEL**

2.15.5 CONTROLLING THE MASTER TIM/E MEMOS FROM THE MACHINE CONTROL SECTION

TiM/E Memo can be controlled by the VTR keypad in the Machine Control section of the panel.

If a register containing a timeline has been selected in the Master TiM/E Memo, the timeline can be played with the VTR keypad, in normal (forward) or reverse (backward) direction and this with normal (1x) or fast (<128x) speed. **Stop** sets the speed to "0" but does not end playing the timeline, so playing can be resumed after a **Stop** has been issued. To end playing the timeline, **Cut** in the Master TiM/E Memo section has to be pressed.

Note:
A timeline started with Cut, Auto or with the fader cannot be controlled by the VTR keypad and vice versa.
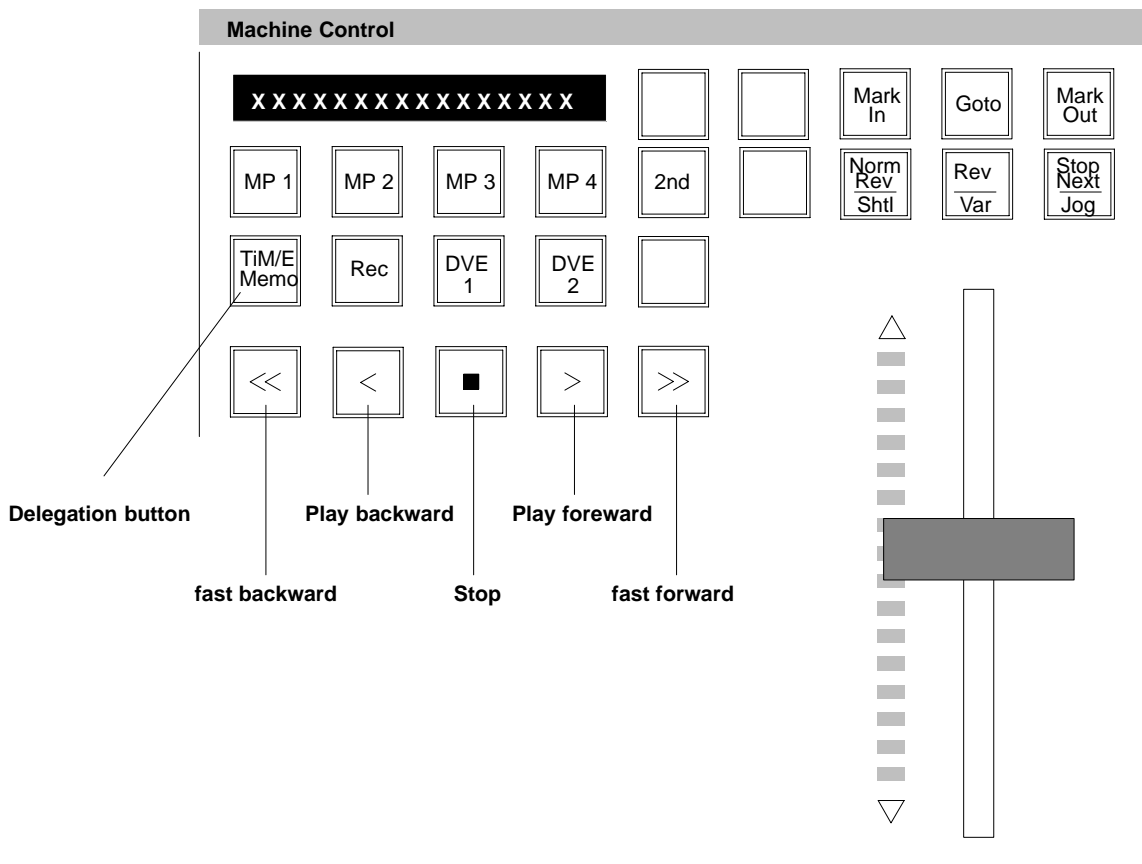
Stop/Next	Timeline pauses at next keyframe.	
Rev	Reverse: Timeline is played in reverse direction.	
Norm/Rev	Timeline play changes running direction at each end.	

2.16   FAST COPY

The fast Copy mode serves the fast copying of complete switcher settings between the individual M/Es or between individual functions (e.g. Wipe1/2, Key1,2,3 etc.).

2.16.1   ENABLE THE FAST COPY MODE

The enable of the mode is made in the panel Setup. Details are contained in section 4 of this manual.

2.16.2   COPYABLE FUNCTIONS

The following table shows the copyable functions. For copying, the corresponding source and destination buttons have to be simultaneously (first the source button, then the destination button) pressed for the duration of 2 seconds.

Source	Destination	Buttons	Note
P/P ... M/E3	P/P ... M/E3	Transition group: **Trans Dur**	*Note 1*
M/E1 Memo ... Master Memo	M/E1 Memo ... Master Memo	Memo group: **Edit** **Store**	*Note 2*
P/P Wipe1 ... M/E Wipe2	P/P Wipe1 ... M/E Wipe2	Wipe group: **Wipe1** **Wipe2**	*Note 3*
P/P Key1 ... M/E3 Key3 (BgdB in Layer mode)	P/P Key1 ... M/E3 Key3 (BgdB in Layer mode)	Key group: **Key1** **Key2** **Key3** **Key4** DSK group: **DSK1** **DSK2** **DSK3** **DSK4**	*Note 3*
P/P ext DSK1 ... DSK3	P/P ext DSK1 ... DSK3	DSK group: **DSK4** **DSK5** **DSK6**	*Note 3*

Note 1:   *Copies complete M/E without TiM/E Memos.*

Note 2:   **Edit** *copies all register files.*
              Store *copies the contents of the actual source register into the selected destination register.*

Note 3:   *Copies operational data.*

2.17 USER PROGRAMMABLE KEYS (UPKs)

Dedicated pushbutton functions of the **Xten DD** control panels can be configured for different tasks. For indication purposes the control panel is delivered with additional pushbutton inlays.

The programming can be made in the menu **Install / Panel / UPK**.

The following buttons are programmable:

Button	Panel Section
UPK upper / Limit Set	Transition
UPK lower / Limit On	Transition
DVE	Transition
Mix	Transition
Wipe1	Transition
Wipe2	Transition
BlkPst	Transition
Recall99	TiM/E
Loop	Transition
Trans PVW	Transition
NextTrans Bgd B	Transition
NextTrans Bgd A	Transition
NextTrans Key 1	Transition
NextTrans Key 2	Transition
NextTrans Key 3	Transition
UPK Left 0, 1	Transition
UPK Right 0..11	Transition

The following functions are programmable for the respective buttons described above:

Function	Panel Section
Default function (button specific)	All
None	All
Limit Set	Transition
Limit On	Transition
Wipe 1	Transition
Wipe 2	Transition
Add	Transition
DVE	Transition
GPO 1	Transition
GPO 2	Transition
GPO 3	Transition
GPO 4	Transition
GPO 5	Transition
GPO 6	Transition
GPO 7	Transition
GPO 8	Transition
Recall 99	TiM/E
User preset	TiM/E
Reloc	TiM/E
Next Transition Bgnd B	Transition
Next Transition Bgnd A	Transition
Next Transition key 1	Transition
Next Transition key 2	Transition
Next trans. Bgnd A (Bgnd B in layered mode)	Transition
Next transition key 3	Transition
Next Transition key 4	Transition
Next Transition misc 1	Transition
Next transition misc 2	Transition
Mix	Transition
Auto Transition key 1	Transition
Auto Transition key 2	Transition
Auto Transition key 3	Transition
Auto Transition key 4	Transition
Enable/Disable V–Fade 1	Transition
Enable/Disable V–Fade 2	Transition
Enable/Disable V–Fade 3	Transition
Enable/Disable V–Fade 4	Transition
Simulcast Master	Transition
Simulcast Slave	Transition
Show Button Macro Attachments	Transition
Loop	Transition
Transition Preview	Transition
Cut key 1	Transition
Cut key 2	Transition
Cut key 3	Transition
Cut key 4	Transition

2.18 FLOPPY DISK DRIVES

2.18.1 FLOPPY DISK DRIVE FOR RPS35–4, RPS35–3 AND RPS35–2

The **RPS35–4, RPS35–3** and **RPS35–2** panels are provided with a 3.5" floppy disk drive having a storage capacity of 1.44 MB. If a larger amount of data has to be stored, we recommend to use the so-called "Smart Media Cards" or "Memory Sticks". These stores are located in 3.5" disk adapters and have a storage capacity of 64 MB. The adapters are exclusively suited for the operating systems Windows '95 / '98 / 98SE / NT 4.0 / 2000 Professional and Mac OC Version 7.6.1 and higher.

The following disk types and 3.5" disk adapters have been tested by THOMSON and are released for being used with the above panels.

● 3.5" disk adapter MAFP-2NE from **Olympus** for use of the Smart Media Card from the manufacturer Viking

● 3.5" disk adapter MSAC-FD2M from **Sony** for use of the Sony Memory Stick, type MSA-64A

Smart Media Card   Memory Stick

It is not required to install the supplied program software of the adapters since it is already pre-installed on the switcher PCs.

Note:
When using 3.5" disk adapters in the panels, proceed according to the in-structions of manufacturer and his safety regulations.

Voltage supply of the adapter is made by two Lithium round cells, type CR2016. Insert the Lithium round cells according to the instructions of the manufacturer. Pay attention to the polarity. Insert the disk and make sure not to touch the contacts. How the disk has to be placed when inserting, is described in the operating instructions of the manufacturer. See also Fig. 203.
The disk adapter has to be inserted into the 3.5" floppy disk drive of the panel like a normal disk.

3.5" disk adapter from Olympus

Smart Media Card
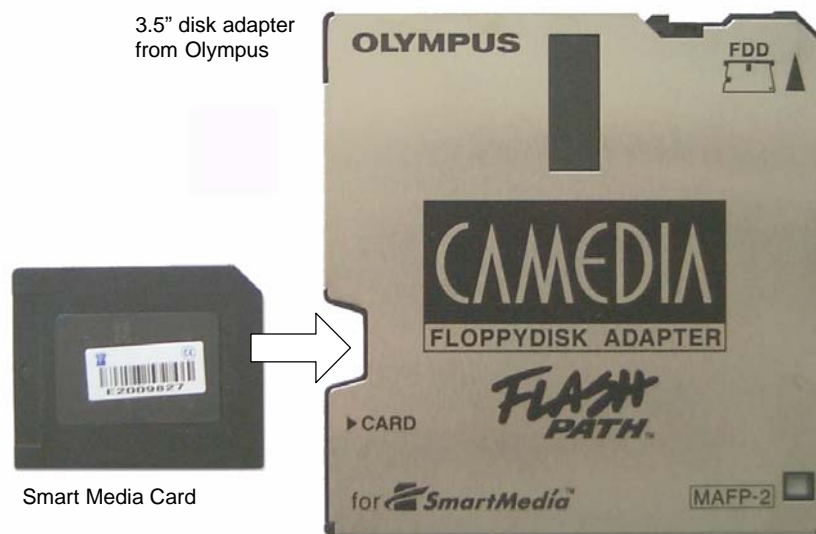
Fig. 203: Inserting the disk

Note:
External disk drives being controlled via PC card or USB interfaces, as well as disk drives with a high capacity (e.g. LS drives with 120MB) are not suited for connection to the switcher panels RPS35–4, RPS35–3 and RPS35–2 !

2.18.2 FLOPPY DISK DRIVE FOR RPS35-2S

The **RPS35-2S** panel enables to store the data via an external USB floppy disk drive onto Super Disks with a storage capacity of 120 MB. With this drive, also normal disks can be used. The following USB floppy disk drive models have been tested and released for use with the RPS35-2S panel:

● DASH Superdisk LS 120 from DATAWISE

● 120 MB USB Disk Drive SD USB U3 from IMATION

A cheaper solution for normal storage capacity is the following USB floppy disk drive model:

● FD–05PUB (1,44 MB).from TEAC

How to install the program software

Attention!
For all actions (Connecting and installing the floppy drive, booting the side-panel PC), a floppy disk must be inserted into the slot! It is the best to always leave a disk in the USB floppy disk drive!

Connect your laptop via LAN to the switcher and share your CDROM drive to the network. Close the sidepanel. Plug in the USB floppy disk drive and let Windows detect this new hardware. If no driver is installed yet, a window opens showing the new hardware and a dialog will guide you through the installation.

Program Dialog

Search for new drive	<Next>

Insert the driver CDROM of the USB floppy disk drive into your laptop.

Search for the best driver…	<Next>
Specify a locationconfirm that the box is activated	
C:\WIN98	<Browse>

Find your laptop in ”Network Neighborhood” and select the CDROM drive, hit OK.

Confirmation of path	<Next>
Location of driver confirmed…	<Next>

Now the automatic installation is activated.

After some seconds	<Next>
SW License agreement…	<Yes>
Location of installation…	<Next>
Accessories…	<Next>
Final setting confirmation…	<Next>
Finish?	<Finish>
Readme…	<Close>
Finish?	<Finish>

Check the correct installation by the Explorer. A new 3.5" floppy disk drive (E:) must be shown.

***Define the USB
floppy disk drive
as drive (A:)***

After connection and installation, the USB floppy disk drive is defined as "E" drive. The DOS command SUBST; enables to define the USB floppy disk drive as drive (A:).

The complete command looks as follows:

Open the DOS-Prompt and type in the command
SUBST A: E:

This definition can be cancelled by the DOS command
SUBST A: /D
or by new booting the sidepanel PC. To have the USB floppy disk drive always available as drive (A:), create a USB.bat folder on (C:) containing the command
SUBST A: E:
and enter it into the StartUp folder. By this it automatically will be executed after every start.

Creating a batch file

- Open Notepad (Start\Programs\Accessories\Notepad) and type
  SUBST A: E:

- Open File and select "Save" – Select "Save" in to (C:) – Filename **"USB.bat"** – "Save".

- Close Notepad.

- Creating a shortcut to StartUp

- Open Explorer and find USB.bat on (C:). Make a right mouse click on it and create Shortcut. Drag and drop this shortcut to park it on the desktop.

- Open Start by right mouse click, open Explore. Point to Start Menu and open Programs. Drag and drop the parked shortcut from the desktop into StartUp.

- Close all windows.

Attention!
The USB floppy disk drive cannot be used for booting!

2.18.3   CONNECTING AN USB MEMORY KEY TO THE RPS35-2S PANEL

The IBM Memory Key - DiskonKey^{TM} - based on USB is offering you a removable drive for storing and reading data, such as application data, with a capacity of 8 MB.

Fig. 204: IBM Memory Key

The Memory Key can be obtained from the market or ordered from THOMSON mulimedia Weiterstadt under the order number 003 114 060 017.

Before using the DiskonKey^{TM} module, it has to be entered as a drive into the Install / System / Drives menu of the sidepanel, see menu printout below. By this the DiskonKey^{TM} becomes applicable in the Config menu for copy actions.

| HW Opt | SW Opt | **Drives** | Devices | | | | |

XtenDD-165

System

⚠️ **Install**

E-Box

| HW Opt | SW Opt | Drives | Devices | | | | |

Drive/Server	Path	Refresh	Active
Harddisk	c:\Programme\DD35\Appli	No	Yes
Floppy	a:\appli	Yes	Yes
Examples	c:\Programme\DD35\Examples\appli	No	Yes
		No	No
		No	No

Panel

System

Diagnose

Previous Menu

attached macros

↔ ▶

↕ ▶

Menu Lock | | | ← | ↑ | ↓ | → | **Modify** | |
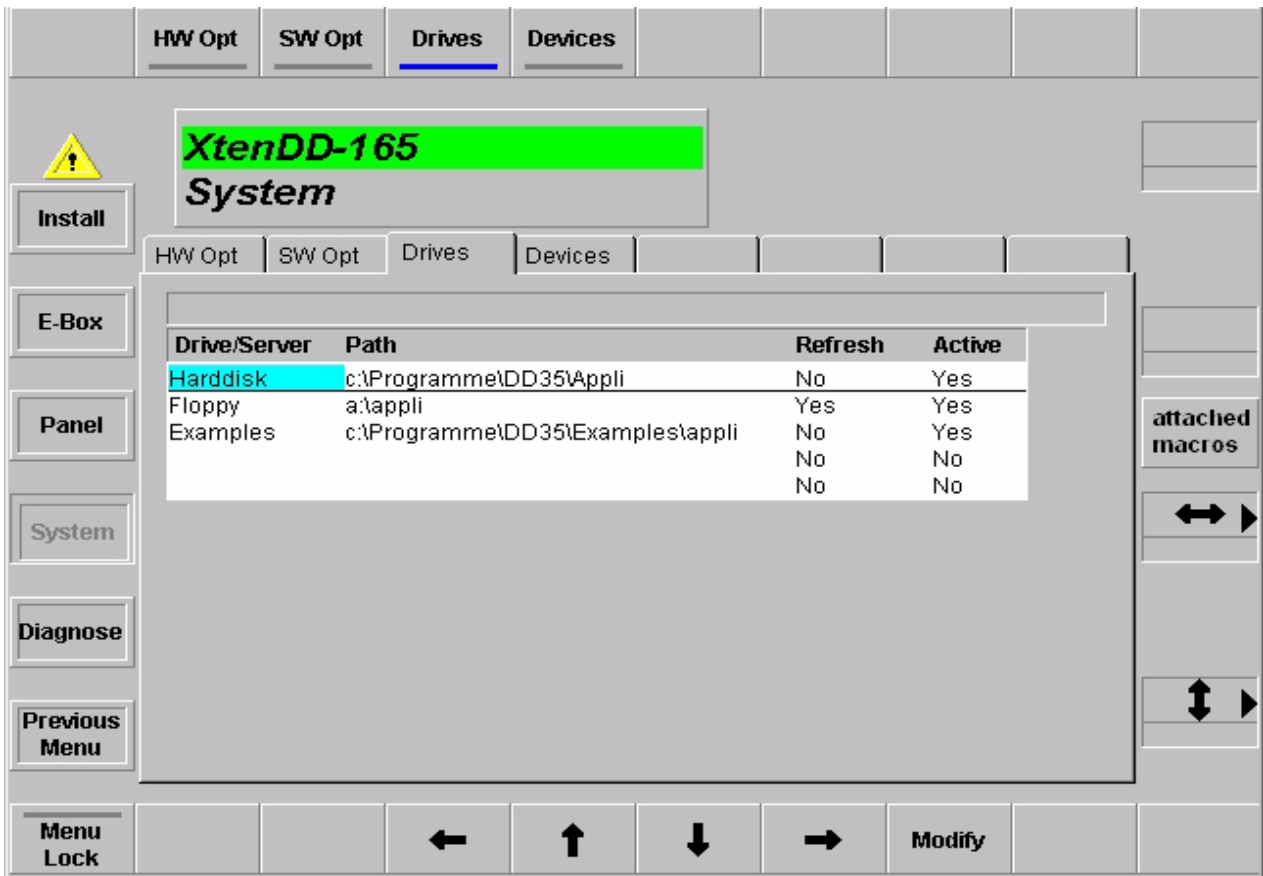
For operation, simply plug the DiskonKey^{TM} module into any USB port of the panel (USB connectors are hot pluggable without the need of power off). The sidepanel PC will immediately identify and support that module.

Note: From Serial No #178 on the driver is already installed to the panel. For older panels refer to the installation procedure from CD-ROM, described in the DiskonKey^{TM} set. To have a CD-ROM drive available, use an external PC or laptop and share it to the switcher network by LAN interface.

3.   MENU OPERATION

3.1   DISPLAY PANEL
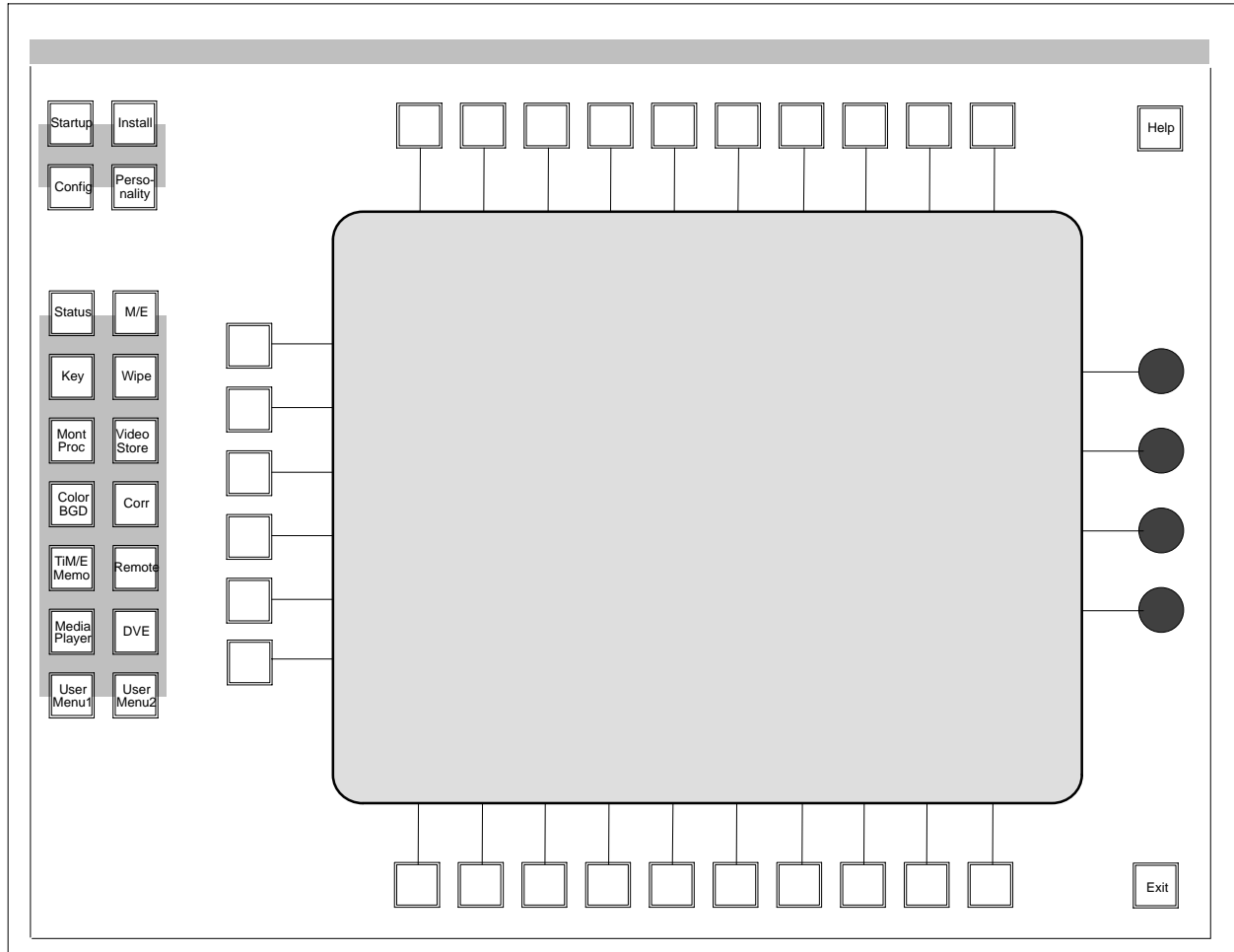
The TFT color display with a resolution of 640 x 480 Pixels and 256 colors is surrounded by the following controls:

- 10 softkeys   above
- 10 softkeys   below
- 6 dialog keys   to the left
- 4 digipots   to the right

All function and dialog keys and the digipots have a corresponding menu control element. Pushing a function or dialog key has the same effect as mouse clicking (left mouse button) on the corresponding control element. Turning a digipot operates (depending on the current menu):

- the analog controls shown with the delegated bar graphs.
- the listbox cursor in certain menus
- the cursor of the typewriter display

3.1.1   MENU BUTTONS

Startup   Install

Config   Perso-
nality

18 additional menu buttons are located on the left and 2 special function buttons (Help, Exit) on the right side of the panel.
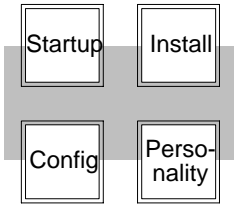
The menu buttons on the sidepanel keyboard provide direct selection of specific menus. Pressing the menu button of a menu group that has submenus and/or more than one associated hardware resource, performs the following actions depending on the actual condition.

- If a menu of another group is active: The menu button selects the last used sub-menu of the last used hardware resource of the menu group.

- If this menu for another hardware resource is active: The menu button selects the next hardware resource (e.g. M/E1, M/E2, ... Key1, Key2, ...) and the same sub-menu. If this sub-menu is irrelevant, the **Top-menu** is selected.

Status   M/E

Key   Wipe

Mont   Video
Proc   Store

Color   Corr
BGD

TiM/E   Remote
Memo

Media   DVE
Player

User   User
Menu1   Menu2

If nothing was used before, the **Top-menu** of the first hardware resource is selected. The lamp of a menu button is on, if the corresponding menu or sub-menu is active. If the sub-menu has its own menu button, only the lamp of the sub-menu button lights.

The menu buttons **User Menu 1** and **User Menu 2** are programmable. The users can select which menu or sub-menu is called by pushing these buttons. For programming, please press the button 2 seconds. The actual menu will be stored.

3.1.2 SPECIAL FUNCTION KEYS

Help

In preparation!

Exit

Pushing **Exit** always exits to the upper menu. In case of **Topmenu** it exits to the **Status** menu.

3.1.3 AUTO MENU

Allows the associated menus, sub-menus and digipot controls to be recalled when a control panel button is pushed.

The function **Menu Lock** prohibits auto menu. **Menu Lock** stays on, when you change the menu using the menu buttons.

To activate Auto Menu again Menu Lock must be switched off.

3.2   INTRODUCTION

Due to their logic structuring and application of standard elements, the menus are largely self-explaining. The setup is made according to the Graphical User Interfaces (GUI) usual in the PC world. Control of the individual functions is possible with the associated softkeys as well as with a mouse.

The following sections serve as an introduction into the philosophy of menu control, describing only the most important elements. Detailed information concerning the individual menus is contained in the following chapters of the manual.

3.2.1   GLOSSARY

Button   Control element of the graphical user interface which in appearance and function corresponds to a button. Such as on/off-buttons, action buttons, etc.

Control Element   All graphic elements of the user interface that are able to react to user inputs.

Dialog Elements   All graphic elements of the user interface.

Dialog Button   Dialog keys are the 6 buttons to the left of the display. They are used for the selection of other control dialogs. The graphic equivalent on the display is the dialog button.

Menu Button   Buttons on the sidepanel keyboard for the selection of primary control dialogs.

Digipot   Control element for adjusting analog values

3.2.2   WHAT'S A MENU

All sidepanel keyboard hardware controls (digipots, function and dialog buttons) have an associated control element within the display. This control element is placed as near as possible to the hardware control. The control elements belonging to the softkeys have two tasks:

● Identify the function of the control

● A mouse click on the control element results in the same action, like pressing button.

The controls belonging to the digipots describe the function of the digipots.

Every dialog of this format is called a **menu**. Associated functions are grouped whenever possible. A group of co-operating analog controls is formed by stacking up to four *bar graphs* into one column. If a menu has more than one bar graph column the column must be mapped (delegated) onto the digipots. This delegation is done when the grouped functions are activated (e.g. "Mask On" or "Border On") from this menu or with any other key belonging to the same function group. When

an analog control column is delegated, the digipot designators are updated.

The menus are structured using mainly 3D effects to provide a clear and appealing user interface without using many colors. Colors are used to signal events or represent states.

The inner dialog area is used for visualization of parameters and for setting parameters with the mouse. E.g. analog settings are represented by bar graphs inside the inner dialog area.

A definition of the various areas of a control dialog is given in the following diagram:
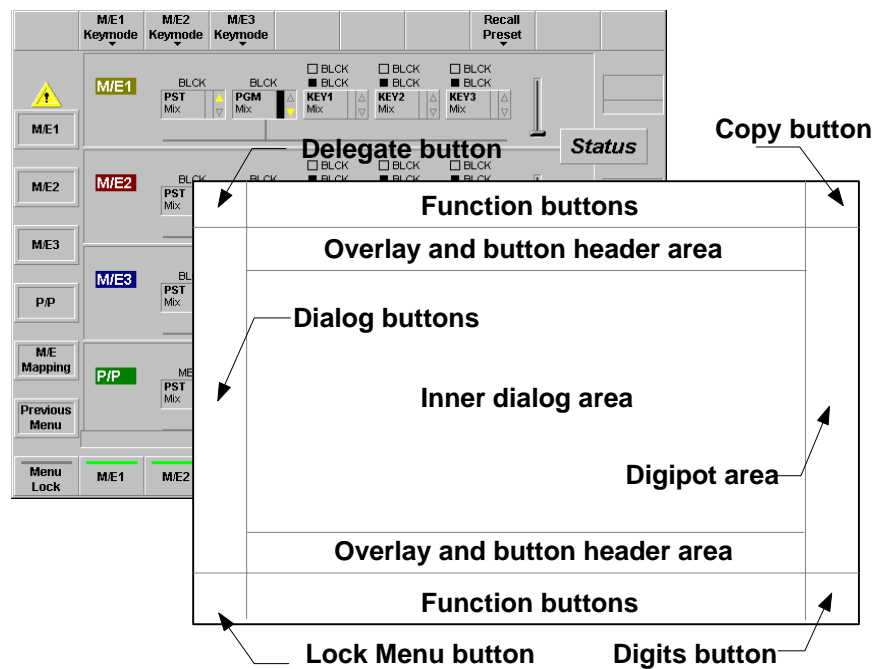
3.2.3   COLOR CODING

Red	Attention (as the traffic signboard)
Medium blue	Active bars in bar-graphs
Green	ON state in the case of on/off buttons
Light blue	marking of the active field in listboxes
Yellow	Attention
Light grey	Background
Dark grey	Inscription (inactive), shadow edges
Black	Inscription (active)
White	Bright edges
White	Background of delegated bar graphs

3.2.4   FIXED SOFTKEYS

These buttons have the same function in most menus:

Delegation   This button opens a button-overlay for direct selection of a similar hardware resource.

Delegate	M/E	BGD	DVE	
▲	P/P	M/E1	M/E2	M/E3
		Delegate to		

> *Note:*   *The overlay is displayed in default for approx. 5 seconds. The time can be changed in the menu **Personality / Sidepanel**!*

Transfer   This button opens a button-overlay for the available transfer modes "**Transfer from**", "**Transfer to**", "**EXCHANGE with**", and "**Undo**".

> *Note:*   *The overlay is displayed for approx. 5 seconds. The time can be changed in the menu **Personality / Sidepanel**!*

Example: Transfer of the wipe settings from M/E1, wipe 1.

Step 1: Select **Transfer**

Step 2: Select **From**

Set	. . .	Softness	Set	Transfer
From ▼	To ▼	Exchange ▼	Undo	▲
		Transfer		

Step 3: Select **M/E1**

Set	. . .	Softness	Set	Transfer
M/E1 ▼	M/E2 ▼	M/E3 ▼	P/P ▼	▲
		Transfer from		

Step 4: Select **Wipe1**

Softness	Set	Transfer
Wipe1	Wipe2	▲
Transfer from M/E1		
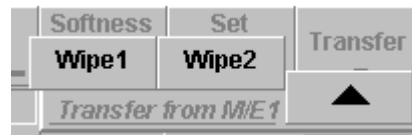
Lock Menu   As long as this button is switched on, the Auto Menu function is inhibited.

Menu Lock

Digits

This button is an on/off key that controls the numeric readout of analog values. The default setting of this button is a personality preference. A "double click" on this button enables the numeric keypad.

Digits

Previous Menu

Recall the previous menu. Pushing **Previous Menu** again returns the operator to the menu they just left.

Previous Menu

3.2.5 BAR GRAPHS
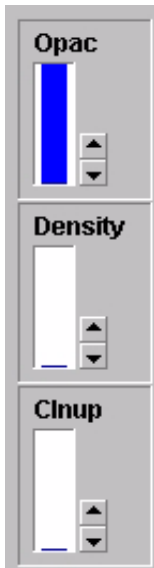
A bar graph visualizes parameters with a continuous (analog) range of values. A bar graph is also used to adjust settings with a number of distinct values. It is assumed that the average user associates a potentiometer and not a switch with the setting.

A bar graph has the control state relevant/irrelevant and delegated/nondelegated which is represented optically. A bar graph in the delegated state is represented a blue color. An nondelegated diagram is shown in black and an irrelevant diagram shows only the frame and the text in grey color. The column and the numerical values are not shown.
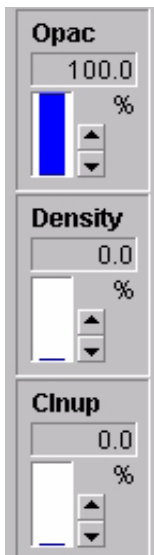
Bar graph in digit view mode. The bar graph contains the numerical value and the unit of the parameter. A mouse click into this field enables numeric entry via a keyboard connected to the panel.

3.2.6 DIGIPOT DESIGNATOR

A digipot designator is a control element which is used to describe the digipot function. It is represented in the digipot area on the right side, in each case in the height of the pertinent digipot. The inscription changes if another group is selected.
A numeric digipot designator has a small bar to give an overview of range and actual position of the value. This bar cannot be operated with the mouse, but you can enter the numeric value via the keyboard.

If the user turns the digipot slowly, it works in a linear mode. This means that the number of increments is proportional to the rotated speed of the digipot. If the user turns the digipot fast, the function will be nonlinear (e.g. quadratic).

3.2.7 SELECTION BOX

A selection box is a control that shows a number of elements. All elements of the group are inside a frame. In the upper frame the name of the group is shown. One element in the group is always selected. An element has a name or a bitmap as description.
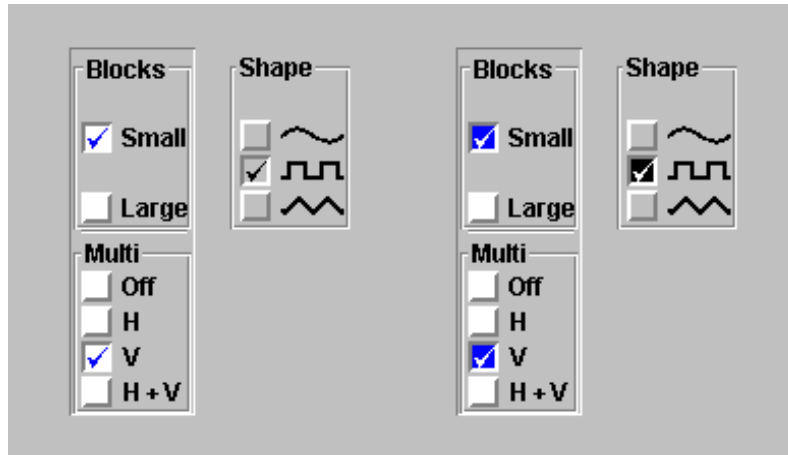
Example

Examples of selection boxes. The left three boxes are the default boxes. The right three boxes are optional (Personality Setup). **Blocks** and **Multi** are delegated. The **Shape** is non-delegated. A selection box can be controlled with the mouse or with a digipot if the box is delegated. When the user clicks to an unselected element the element is now selected. With the digipot the selection can moved up and down.

3.2.8 LIST BOXES AND INDEX CARDS

Listboxes are used to display and change lists of values. Most setup menus will have listboxes. A menu that uses a listbox must have cursor keys, a "Click" key **Modify** and a select key **OK**. The digipots can also be used for listbox cursor positioning (digipot 0 for Up/Down and digipot 1 for Right/Left). Also the mouse can be used to position the cursor. The cursor follows the mouse cursor. The softkeys for cursor positioning do autorepeat when held down.

Sliderbar: If the listbox has more entries than lines, the sliderbar can be used to position the visible section.

Every listbox has a memory for the actual listbox cursor position when the user leaves the listbox or the menu. If the user selects the menu or listbox later the list box cursor appears at the last stored position. Menus with more than one listbox have only one set of control buttons. These buttons and the digipots will be delegated (with a cursor button) to the selected listbox.

| AuxCp | Global | UPK | UMD | GPI | GPO | SatPanel | | Copy |

DD35-163
Install Panel

Install

E-Box

| AuxCp | Global | UPK | UMD | GPI | GPO | SatPanel | |

Setting	Value
Fader Adjustment	adjusted-- Press 'Modify' to readjust
Joystick Adjustment	adjusted-- Press 'Modify' to readjust
PGM/PST-Bus Position	PGM above PST
CUT/AUTO-Button Position	CUT Button left
Direct Ext DSK Cut/Auto	Off (use 2nd DSK)
Gang Mode Selection	like transition component select
Enable DSK delegation	Off (ignore delegations)
DSK1 delegation	Default
DSK2 delegation	Default
DSK3 delegation	Default
DSK4 delegation	Default
DSK5 delegation	Default
DSK6 delegation	Default
Simulcast Slave Address	0
Key Delegation Button Order	Key 1 / Key 2 / Key 3 / Key 4

Panel

attached macros

System

Diagnose

Previous Menu

Menu Lock | ↑ | ↓ | Modify | Digits

3.2.9   TYPEWRITER

When the user is requested to make a character input, a keyboard with typewriter layout (style US English) can be selected appear in the dialog window.
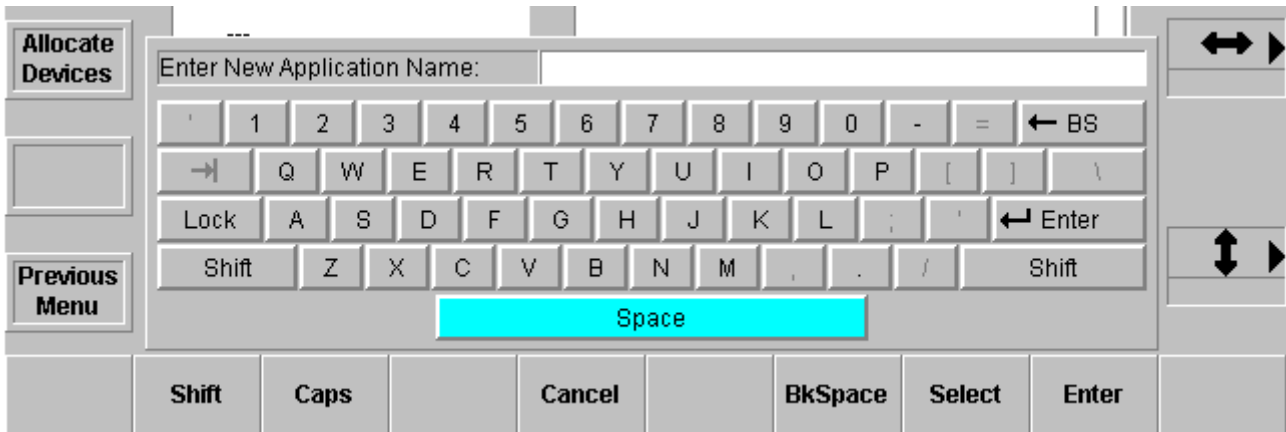
There are two types of input, normal input and password input. If a password is requested, for each typed character, a star appears.

The operation of the typewriter is possible with the following controls:

● Keyboard that is connected to the side panel

● Mouse or other pointing devices

● Digipot control: The left-right digipot changes the cursor position in a horizontal direction. When the cursor reaches the last butten in the row it jumps to the first button in the next row. When the cursor reaches the first button in a row it jumps to the last button in the previous row. The top-down digipot changes the cursor in a vertical direction. When the cursor reaches the last row it jumps to the first row in the next column. When the cursor reaches the first row it jumps to the last row in the previous column. [Select] then types the character.

● Numeric keypad (only for numbers)

The shift key operates like the 2nd button of a pocket calculator. If the shift key is pressed the next character is a capital letter or a special character (~!@#$%^&*()_+{}|:"<>?) respectively. The label on the button changes. If the shift lock function is active, the corresponding button will be represented as a pressed button.

Numeric keypad of the control panel will now be activated in the following cases:

● Click on the EditField of a Slider

● Click on the EditField of a Digipot, which is connected to a slider

● Double-clicking on the digit button modifies the last Slider that was modified with the mouse or side panel digipot.

3.2.10 USING A MOUSE

The menu can also be controlled by means of a mouse. Doing so, all functions contained in the menu are controllable with the mouse, thus enabling an operation without softkeys and digipots. That means, operation is possible from a normal PC without special hardware.

The functions are initiated by clicking or double-clicking with the left mouse button on the individual elements in the menu.

Clicking with the right mouse button calls a pub-up menu which enables a change into the other menu groups. This function replaces the menu buttons arranged to the left of the display.

Go To Menu	
Startup	Install
Config	Personality
Status	M/E
Key	Wipe
Mont. Proc.	Video Store
Color Bgnd	Correction
TiM/E-Memo	✓Remote
Media Player	DVE
Aux	
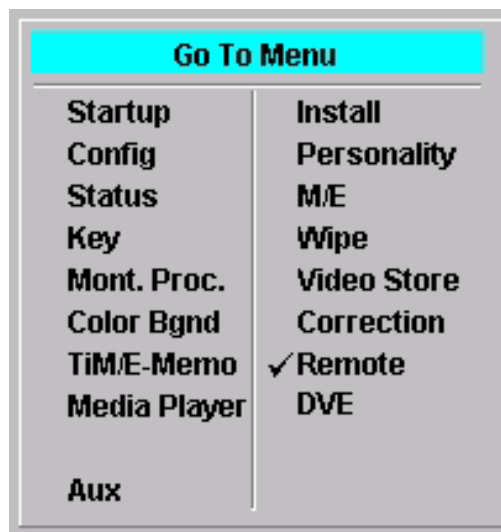
Dialog Title
A dialog title is presented inside the dialog area. It is edged by a graphic elevation. The hardware resources addressed by the control dialog as well as the addressed area come from the selection of this area. Example: hardware resource **M/E1** , area **Main** menu. The specified M/E text (e.g.**M/E1**) has the M/E color coding.
Clicking the mouse into the header selects the menu for the next associated hardware resource. For example, the control dialog of **M/E1** then changes to **M/E2**.

M/E1
Main

3.3   MENU GROUPS AND HIERARCHY

The root menu is the **Status** menu. From **Status** the top level menus of each group can be selected (when clicking the right mouse button) via the pop-up menu or pressing the respective menu buttons.

Menu group	Top level menu	Sub-menus
Startup	Startup	
Status	Status	Status
		M/E1, M/E2, M/E3, P/P
		M/E Mapping
M/E	M/E	Main
		Auto Times
		Offset Transi
		Color Background
Key	Main	Main
		Fill/Bord Matte
		Paint Store
		Mask
		Chroma key
Wipe	Select	Adjust
		Select
		Border Matte
		Pattern List
Remote	Remote	Remote
		GP-I/O
		P-Bus
Montage Proc	Main	Main
		Matte
		MPR Effects
		Pixel Manipulator
Color Bgnd	Color BGD	Color BGD 1, 2, 3
Correction	Correction	Bus
		Input
		Aux
Install	Install	Main
		E-Box
		Panel
		System
		Diagnose

Menu group	Top level menu	Sub-menus
Configuration	Config	Config
		E–Box
		Panel
		Attached Macros
		Allocate Panel
Video Store	Video Store	Video Store
TiM/E Memo™	TiM/E Memo	Select
		Define
DVE	DVE	DVE Extern
		DVx Main
		DVx Edit
		DVx Settings
Media Player	M/E	MP Status
		MP Clips
		Ram
Personality	Personality	Main
Auxilary	Aux	Main

In some cases it is necessary for convenient and fast operation that a menu in the context of an object provides a "link" into a menu of another object.
Example: The Paint Store Menu has a link to the Wipe Main Menu if a pattern is selected as Paint Store source.
The button that activates the link has the look of a dialog button . It shows the name of the called menu. It is located in the function buttons area not in the dialog button area. Once the link is activated the **Previous Menu** button changes to **Return** to provide a direct return path into the "calling" menu. **Return** is changed back into **Previous Menu**" when:

1. the **Return** is done

2. the context of the destination menu's object is left.

Example:
Paint Store has link into M/E x Wipe1 Main, the link is followed. **Return** is valid as long as the user is in menues of that wipe generator. If another wipe generator or another toplevel menu is selected **Return** is discarded and the button changes to **Previous Menu**.

3.4 STARTUP MENU

After having switched on the switcher control panel, the **Startup** menu is shortly called with the DD35 logo and then automatically the menu available last with all selected parameters.

With initial startup, the **Startup** menu is called in order to enable selection of the main frame and establishing the connection.

Close ▼		Rescan	E-Box	Panel		User			Shut down ▼
⚠		conn. E-Box: ip: 207 DD35-207 attached Panel: ip: 239 DD35-239				user: Operator			
Previous Menu									
▲ Minimize									

The run-up bitmap (big one DD35 logo) and the background bitmap in the Startup menu can be replaced by user defined ones. During run-up, the system is looking for the files

`c:\programme\dd35\bin\logo.bmp` and
`c:\programme\dd35\bin\logo2.bmp`

If not available, the internal DD35 logo will be displayed. The file `logo2.bmp` is optionally. If not available, the `logo.bmp` is used for both purposes.

3.4.1   SELECTION OF THE MAINFRAME

Actuating the **E-Box** button calls a listbox in which the main frames connected to the mains are listed with IP Net Address. After selection of a main frame, the **Connect** and **Disconn** buttons are activated.

A corresponding selection connects or disconnects the connection.

E-Boxes found:	
XtenDD-165	192.168.0.165
XtenDD-210	192.168.0.210
XtenDD-220	192.168.0.220
XtenDD-236	192.168.0.236
XtenDD-61	192.168.0.61
XtenDD-70	192.168.0.70

3.4.2   SELECTION OF A ATTACHED PANEL

Actuating the **Panel** button calls a listbox in which the switcher panels connected to the mains are listed with IP Net Address. After selection of a panel, the **Attach** and **Detach** buttons are activated.

A corresponding selection connects or disconnects the connection.

Panels found:	
DD35-158	192.168.0.158
DD35-163	192.168.0.163
DD35-168	192.168.0.168
DD35-213	192.168.0.213
DD35-239	192.168.0.239
DD35-73	192.168.0.73

3.4.3   CLOSE / MINIMIZE / SHUT DOWN

Close   A click (button or mouse) closes the XtenDD application.

Minimize   A click (button or mouse) minimizes the DtenDD GUI on the
                   screen to the Windows95 Task bar.
                   A minimized state can be restored to its original size by pressing
                   any key

Shut Down   A double-click (button or mouse) closes the XtenDD application
and

                   shut down the control panel PC.

3.4.4   PANEL LOCKING

To protect the actual control adjustments and settings against unauthorized or accidental changes, the control panel can be locked. This means that (almost) all menus are accessible, but no value in mainframe or panel can be changed. The text **Locked** is displayed in all menus. The panel cannot be detached. When the panel is locked, the attached side panel is also locked.
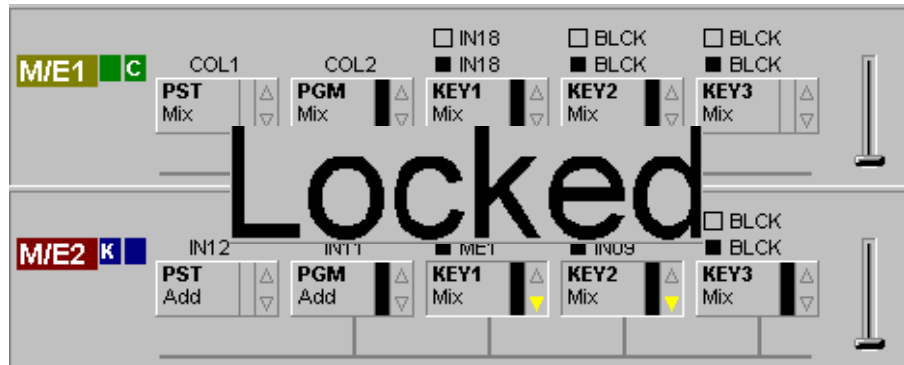
For locking proceed as follows:

● Simultaneously press the button **TransDur** and **Store** in the master TiM/E Memo section.

● Display shows **Panel Lock**.

● Using the numeric buttons, enter the password "**3511**" and press **Enter**.

For unlocking, repeat the same procedure. With power Off/On the panel can be unlocked too.

3.5 STATUS MENU

The root menu of the switcher is the **Status** menu. From **Status** the top level menus of other group can be selected (when clicking the right mouse button) via the pop-up menu or pressing the respective menu buttons.
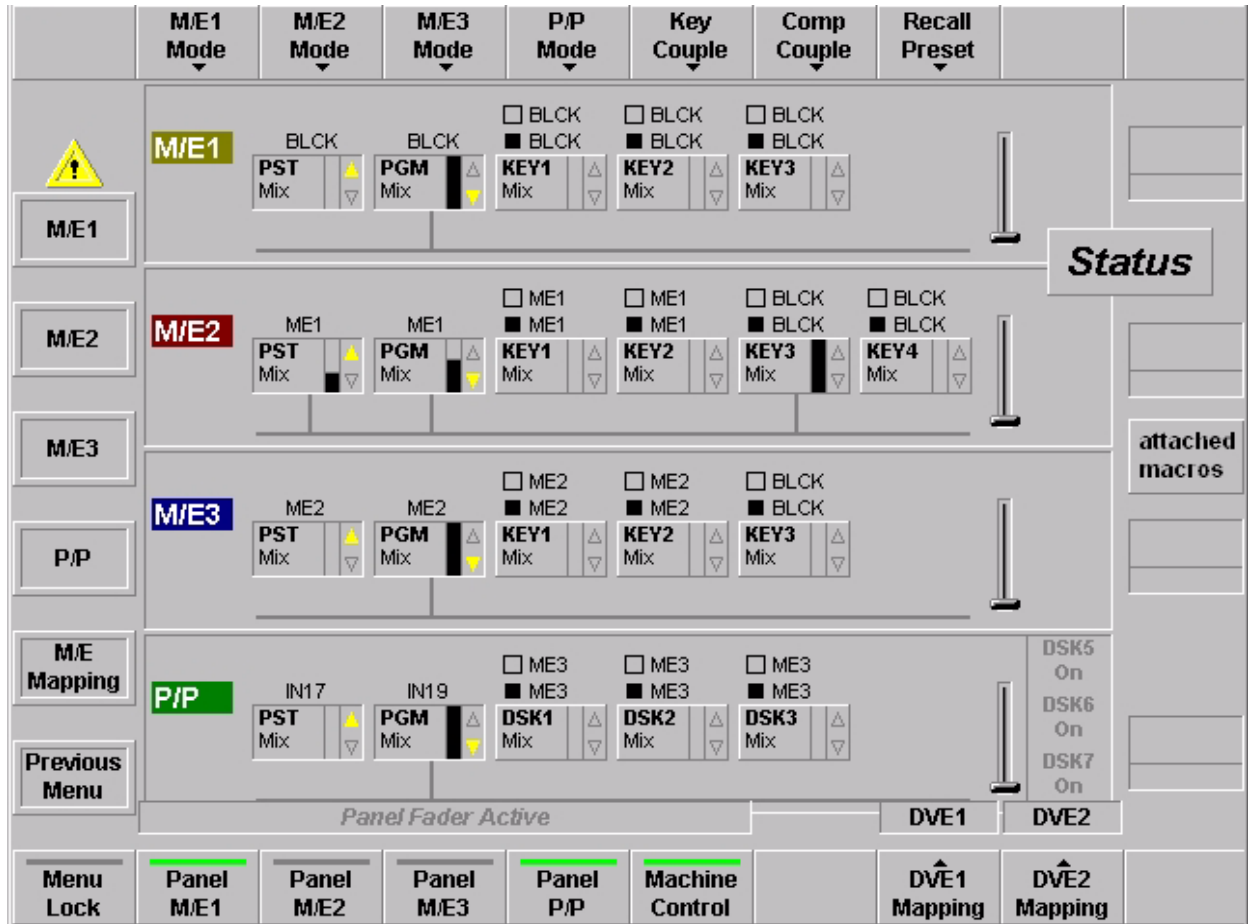
3.5.1   M/E MODES

The basic operation mode of keyers can be selected with the buttons **M/E1 Mode**, **M/E2 Mode** and **M/E3 Mode.**

Key3   Press the associated button to delegate the third keyer to the respective mixing levels M/Ex. In this mode, the Mask Bus button in the respective keyers menu is disabled.

Key4   Press the associated button to delegate the third keyer to the respective mixing levels M/Ex (ON state) or as DVE Return (OFF state) channel. In this mode, the DVE Returnin the respective keyers menu is disabled.

3.5.2 SELECTING THE M/E MAIN MENUS

M/E1
M/E2
M/E3
P/P

Press the associated dialog button to select the associated M/E Main menu which serves to modify the switcher parameters.

3.5.3 ENABLE / DISABLE THE FADERS

Fader Active:
M/E1, M/E2
M/E3, P/P

Press the associated button to enable or disable the panel fader of the individual mixing levels and the menu fader in the M/E Main menus.

The active status is displayed in the button.

Fader Active:
Machine Control

Press the associated button to enable or disable the fader in the Master Control panel.

The active status is displayed in the button.

3.5.4 DVE MAPPING

DVE 1 Mapping
DVE 2 Mapping

By selecting **DVE 1/2 Mapping** in the Status menu, the buttons **DVE1 / DVE2** of the Wipe and Machine Control panel section can be mapped to following sources:

3.5.5   M/E COUPLE

> *Note: The M/E Couple Mode Mode is a software option!*

The active status is displayed in the **Status** and **M/E** menu.

Key Coupled   Comp Coupled
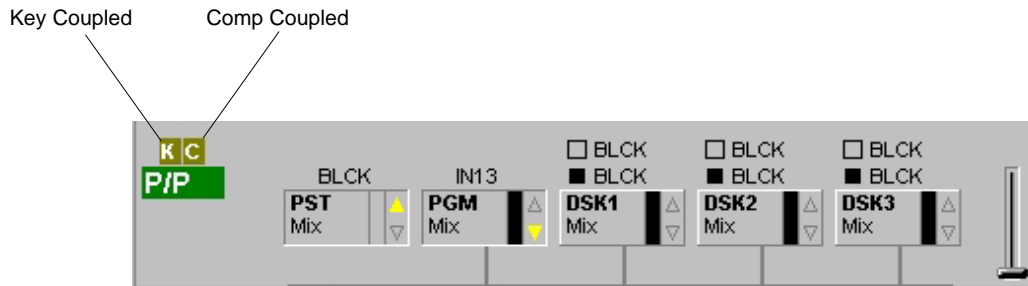
For details refersection 3.5.1

Functional description

M/E coupled is used to support a second (third..) transmission line output at a DD35 switcher that is in its main parts identical to a main output, but differs in country specific video components (source– and/or keyer substitution). Those source replacements can be defined with substitution tables.

How to use

TiM/E Memo recalls are used to set all – master and coupled M/Es – into an initial state depending on the next effect. According to the meaning of the effect the transition module then works correct with CUT, AUTO and the transition FADER.

Coupling rules

Each M/E can be coupled to any other M/E as long as they belong to the same application and the coupling doesn't become recursive. The coupling ($\rightarrow$) can be done serial, parallel and in combinations.

Examples:

Serial:	**P/P→M/E3→M/E2**	M/E3 is coupled to P/P M/E2 is coupled to ME3 M/E1 is not coupled
Parallel:	**P/P→M/E3; PP→M/E2**	Both, M/E3 and M/E2 are coupled to P/P M/E1 is not coupled
Combined:	**P/P→ME3; PP→ME2**	Both, M/E3 and M/E2 are coupled to P/P
	M/E2→M/E1	M/E1 is coupled to M/E2
Note.	*Loops are not possible!*	
	P/P→M/E3; M/E3→P/P	**NOT ALLOWED!!**

Each ME can be used as Master M/E. If a coupled M/E is modified directly via a control unit the master ME is not affected.

Coupled recources

Basic recources:

After selection the M/E Couple Mode in the **Config EBox** menu, the following M/E resources are coupled for a master M/E:

- PGM and PST bus (optionally by one substitution table) at M/E crossbar

- CUT, AUTO and FADER at M/E transition.

Key recources:

By selecting **Key Couple** in the Status menu, additionaly the following function are coupled to a master M/E:

- Fill and Key busses (optionally by a substitution table) of the keyers.
  Together with the key memory, most keyer adjustments can be recalled.

Comp recources:

By selecting **Comp Couple** in the Status menu, additionaly the following functions are coupled for a master M/E:
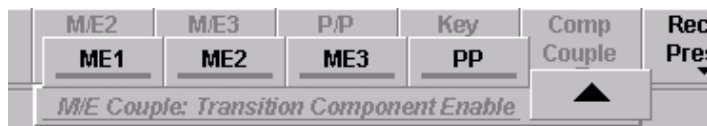
- Video component selection, Transition Type, Loop, Black Preset and Transition PVW.

TiM/E-Memo handling

ME coupling works on command level. This means that TiM/E-Memo recalls and application load are disregarding M/E coupling. It is used to preset M/Es.

Applications

Every application has its own, complete M/E-coupled structure. If an application is loaded or the coupled state of one application is changed, this new modification is checked and accepted or rejected (see Coupling rules).

3.5.6   USER DEFINABLE PRESETS

User definable preset of the mainframe operational state is possible for a single M/E or the complete switcher.

For a recall of the complete switcher preset select the **Status** menu. A single switcher preset can be recalled in the **M/Ex Main** menu.

Refer to the **Install E-Box** menu for saving the preset data.

Recall Preset   The following presets can be recalled:
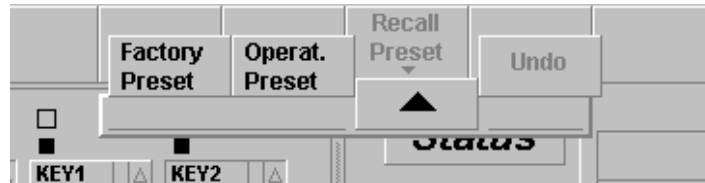
Factory Preset   Recall the factory preset.

Operation Preset   Recall the user defined operation preset. See section **Install E-Box** to store the user defined operation preset.

Undo   Recall the last user settings.

3.5.7   ATTACHED MACROS

This menu can be accessed in two ways:

- via **Config / Attached Macros** menu

- by clicking to "attached macros" button,
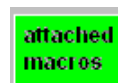
which is visible in all menus at the right side between the middle digipots. This button is only visible when there is at least one macro attachment. The button is grey or green, depending on the settings in the menu **Personality / Panel / MaKE Memo Attachment Playmode**.

For details refer to section 3.16.4.2.

3.5.8   M/E MAPPING MENU
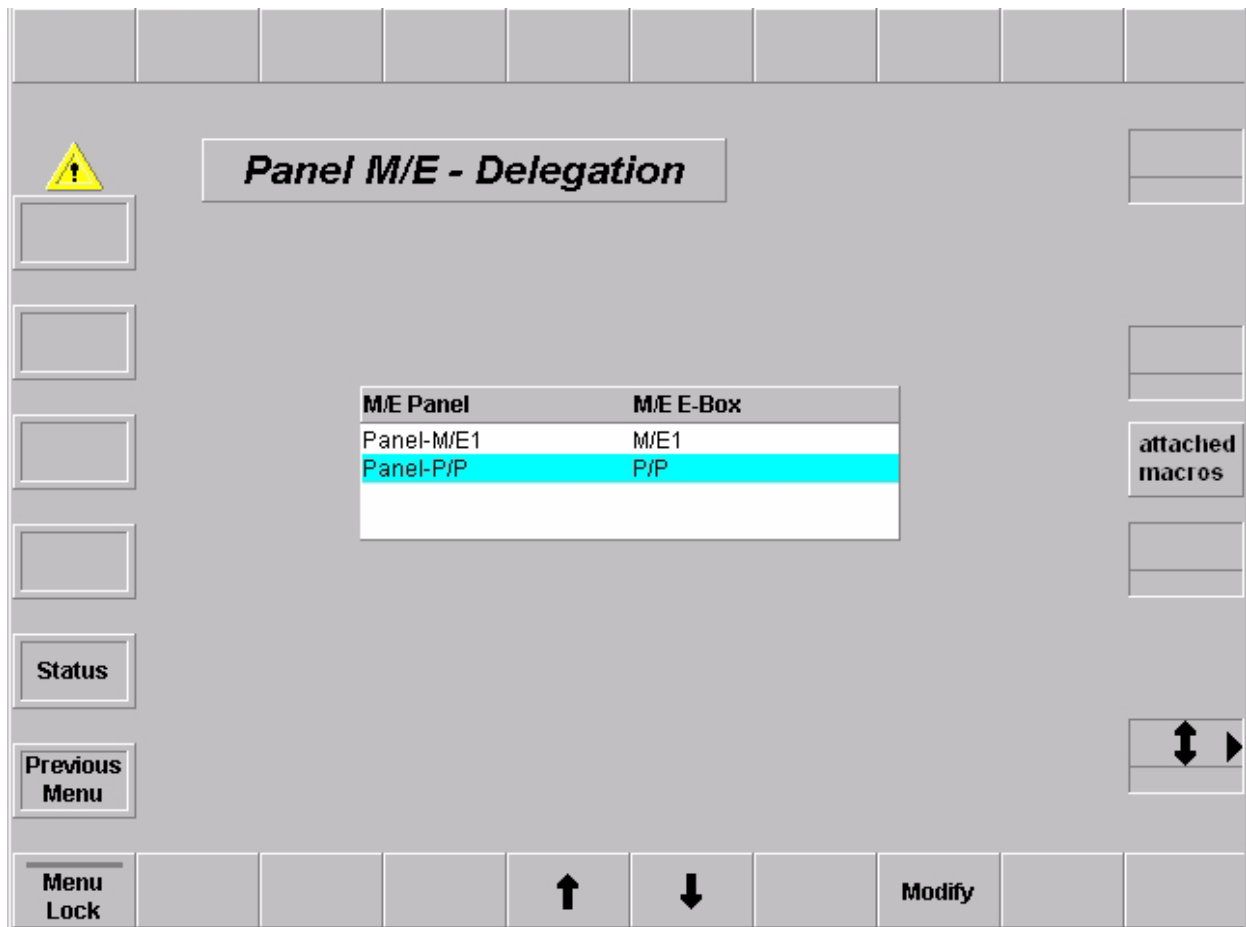
This menu is used to map the panel levels M/E1, M/E2, M/E3 and P/P to a desired switcher levels in the mainframe.

Modify   Select the desired level to map the panel and mainframe levels.
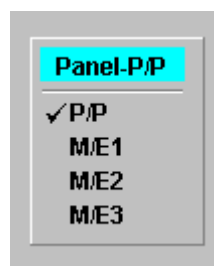
3.6 M/E MENU

3.6.1 M/E MAIN MENU
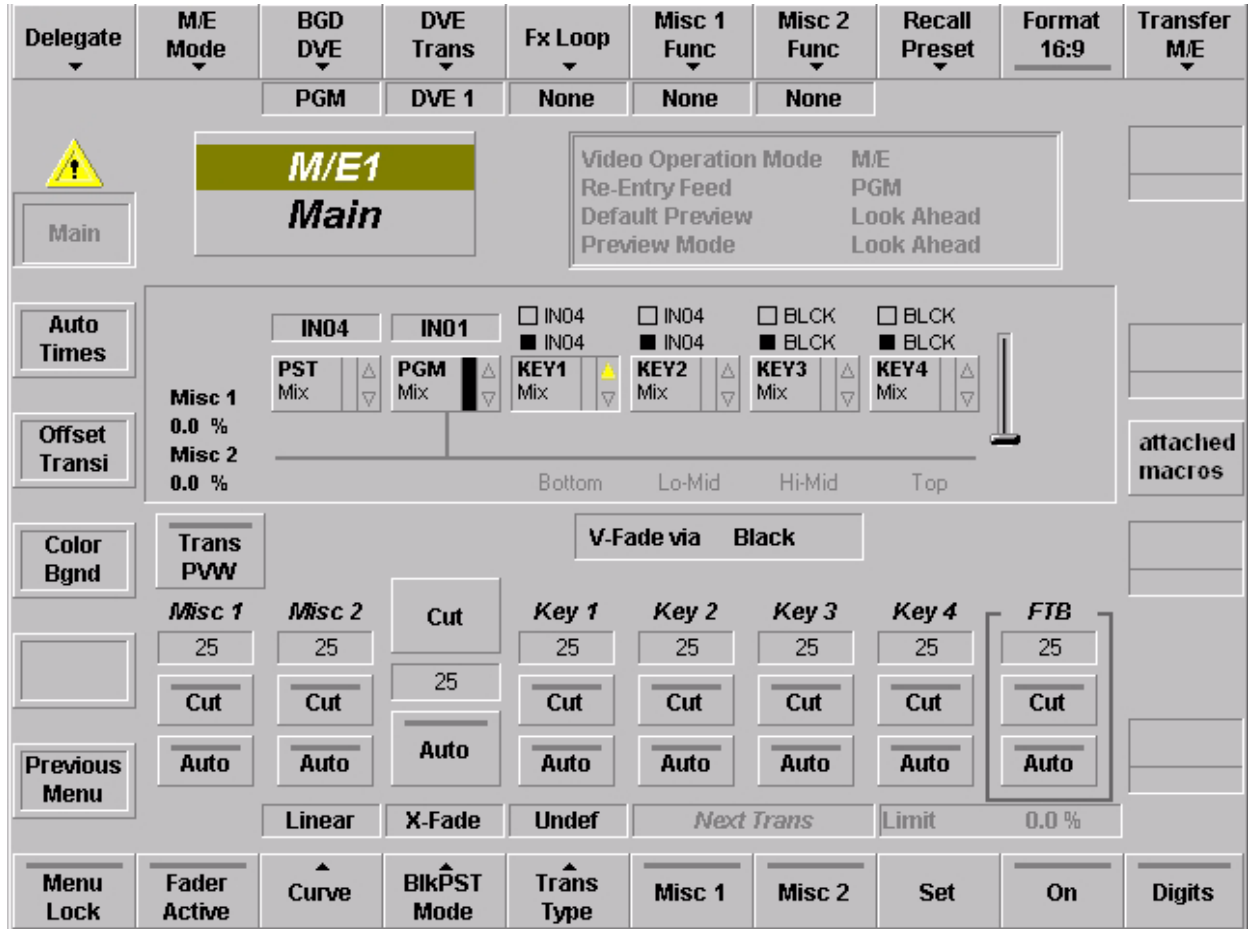
The inner dialog area shows the status of the respective M/E stage. All transsition functions (Cut, Auto, Trans PVW, Trans Duration, ...) can be controlled by trackball or mouse.

Select Trans Duration Time:

● Click on Duration field

● Enter the desired value using the numeric keypad

● Click **E** (enter) or **C** (clear)

3.6.1.1   Dialog Buttons

Auto Times   For details refer to section ***Auto Times Menu.***

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.6.1.2 Function Buttons

Delegate   For details refer to section ***Introduction.***

M/E Mode   The basic operation mode of M/E can be selected with the buttons **M/E Mode**.

Key3:
Press the associated button to delegate the third keyer to the respective mixing levels M/Ex. In this mode, the Mask Bus button in the respective keyers menu is disabled.

Key4:
Press the associated button to delegate the third keyer to the respective mixing levels M/Ex (ON state) or as DVE Return (OFF state) channel. In this mode, the DVE Returnin the respective keyers menu is disabled.

BGD DVE   Used to select Program or Preset as the video source for the DVE Transition. For details refer to section ***2.4.3.3 Using DVE transition***.
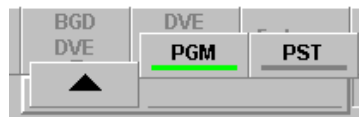
DVE Trans   Select the internal or external DVE channel and routes it to the designated M/E. For details refer to section ***2.4.3.2 Selecting a DVE effect***.
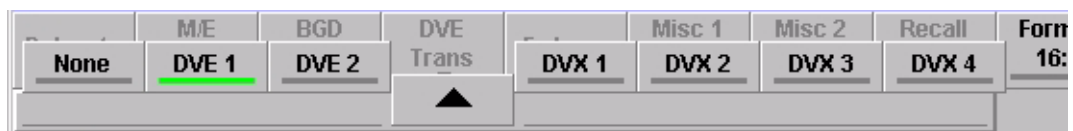
Fx Loop   Routes the proper video to the internal and external DVE.

Misc 1 Func ***Misc 2 Func***	The DVE effect can also be moved using the **Fader** or **AUTO** with the ***MiscFunction*** facility (to be found in the M/E menu). The DD35 production switcher has – like most other switchers – visible image components (BGD-A, BGD-B, Key1, Key2, (Key 3)). Additionally, the DD35 has ***invisible image components*** for flexible control purposes. These are called **Misc 1** and **Misc 2**, and treated logically as if they were Key components i.e. can be mixed in and out, value is between 0% and 100%. They can also be selected for **Next Transition**. The speciality of these components is: for each of these components, the user can select a function – the ***MiscFunction*** – that is controlled by the component.

Press the associated function button to define the DVE as the function to be controlled dy the invisible components **Misc1** or **Misc2** (see function buttons below).

Recall Preset	Recall the single M/E Preset

Factory Preset	Recall the factory preset

Operation Preset	Recall the user defined operation preset. See below to store the user defined operation preset.

All stop	Press the associated button to stop or reset the following functions:

- stops all ongoing auto transitions

- sets FTB to inactive (100%)

- sets transition type to MIX

- in non-layer mode:
  – moves BGND transition to start position
  – removes all keyers
  – set Next Transition BGND
  – resets Next Transition for all other components.

- in layer mode
  – moves all layers which are not in an end position into the start position of the current direction
  – sets Next Transition Layer A
  – resets Next Transition for all other components.

- This command does not
  – influence matrix crosspoints
  – stop TiM/E timeline play or TiM/E snapshot dissolve.

Format 16:9
(not HD)

Press the associated button to change the TV standard of the respective M/E to 16:9 format. The format setting in the *Config / E-Box / Global* menu has a higher priority. A change in the configuration menu set all M/E specific settings to the same format!

Transfer M/E

For details refer to section *Introduction.*

Fx Loop	Misc 1	Misc 2	Recall	Format	Transfer
▼	From	To	Exchange	Undo	M/E
None	▼	▼	Copy	▼	▲

Menu Lock

For details refer to section *Introduction.*

Fader Active

Press the associated function button to enable or disable the fader of the individual mixing levels.
The active status is displayed in the button.

Curve

Press the associated function button to select the transition characteristics for the faders.

▼	Linear	Expon	Gamma	S-Expon	S-Gamma
Curve	Mode	Type			
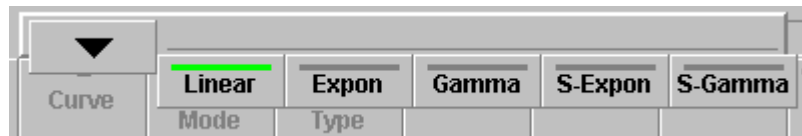
- ● **Linear** transition on the basis of a linear function

- ● **Expon** transition on the basis of an exponential function

- ● **Gamma** transition on the basis of a gamma function

- ● **S-Expon** transition on the basis of an exponential gamma function

- ● **S-Gamma** transition on the basis of a gamma exponential function

The selected curve function will be displayed in the button header area.
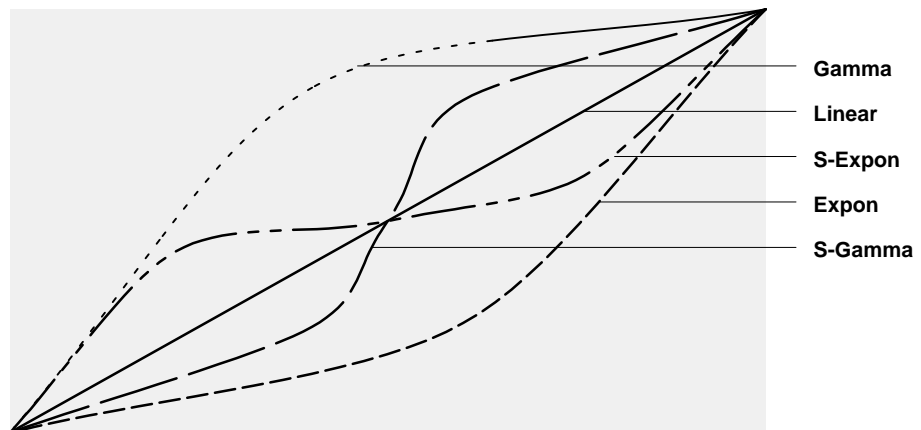
BlkPSTMode

The **BlkPST Mode** button permits selection of different modes of fading:

To select a fading mode, activate the button and then select a mode with the overlay button **X-Fade**, **V-Fade1**, **V-Fade2**, **V-Fade3** or **V-Fade4**.
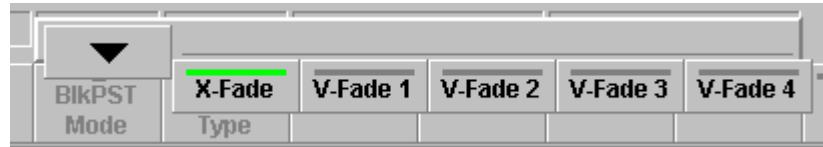
Note: Defaults back to X fade after transition is finished.

For the **V-Fade** two modes of operation are selectable by clicking the listbox:
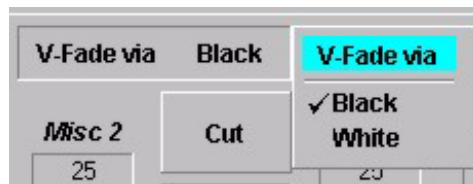
Trans Type

The **Trans Type** button permits selection of different types of transitions:
To select a transition type, activate the button and then select a transition type with the overlay button **Undef**, **Mix**, **Add**, **Wipe1**, **Wipe2** or **DVE**.

The selected transition type is displayed in the button header area.

Note: Please note that you can only change the transition type when the transition is finished, i.e. when an automatic transition has been completed or the fader is in end position.

Next Transition:
Misc 1
Misc 2

Press the associated function button to activate the next transition with the preselected Misc Function. See function buttons **Misc1/2** above.

Limit:
Set

The **Limit set** and **Limit on** buttons serve to create reproducible partial transitions. This mode is possible with all types of transitions.
Limit set permits storing the desired value set with the fader.

Limit:
On

Limit on enables the mode. Any transition with **Cut** or **Auto** and any manual transition with the fader is only executed up to the value previously defined with **Limit set**. If the transition is made with the fader, the yellow arrow to the left of the fader does ***not*** change the direction when the fader is moved to its end position, thus indicating that the transition is not completed.
If **Limit on** is switched off at the point defined by **Limit set**, a jerk free transition to the next contribution can be made with the fader. The remaining transition length is then stretched to the full fader path.

Digits

For details refer to section ***Introduction.***

3.6.2   AUTO TIMES MENU
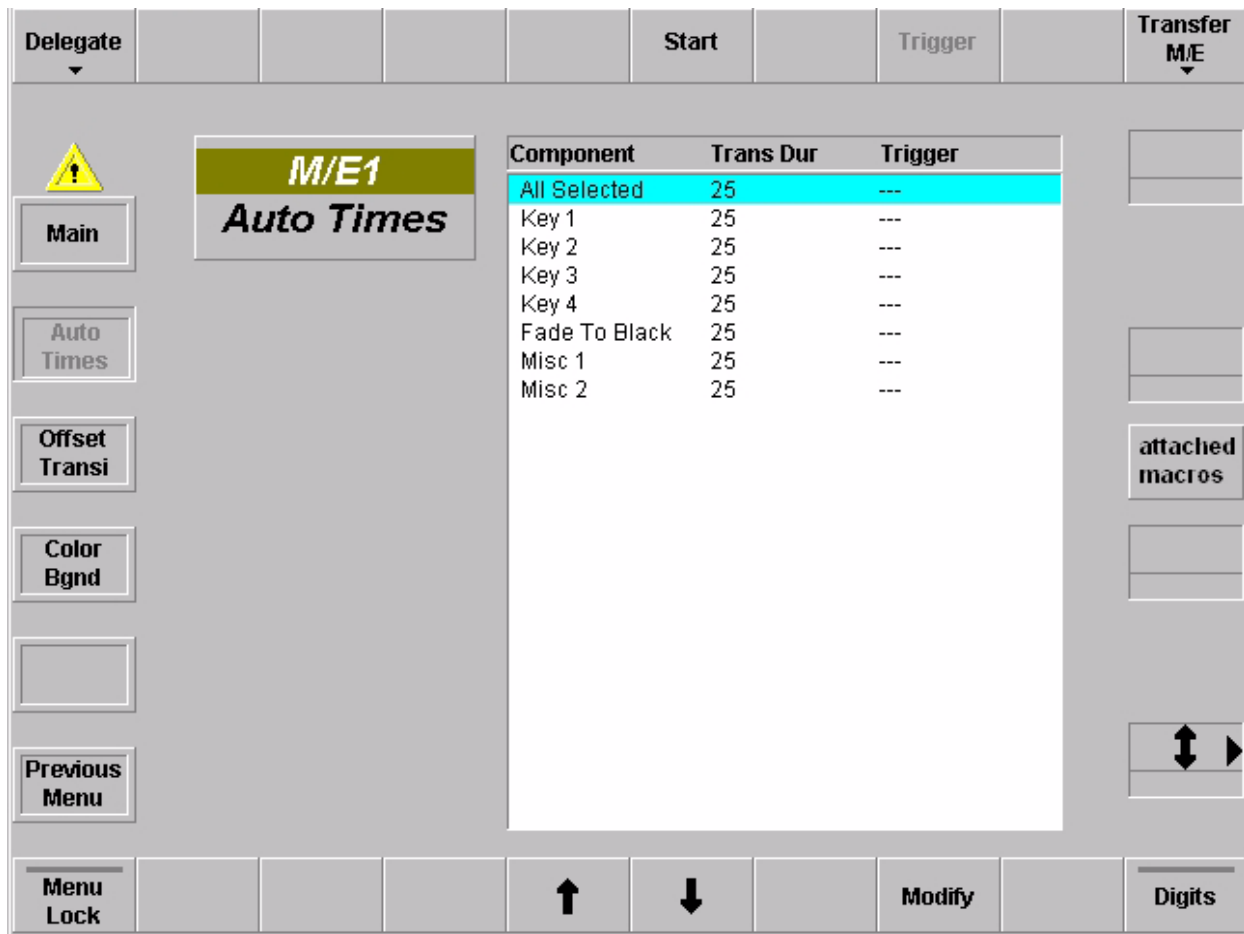
The menu permits setting the auto transition times.

3.6.2.1   Dialog Buttons

Main   Selecting M/E Main menu.

Offset Transi   Selecting Offset Transi menu.

Color Bgnd   Selecting M/E's Color Bgnd menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.6.2.2   Function Buttons

Start   Starts the transition selected in the list box.

Trigger   Press the associated function button to start the Auto times manually.
                            The button is only active when a GPI in the Trigger columne is pre-selectet.

Modify   Selecting the button displays the numeric keypad to enter the auto transition times
                            of the selected component. Only numbers are valid entries.

Transfer M/E   For details refer to section ***Introduction.***

Digits   For details refer to section ***Introduction.***

3.6.3 OFFSET TRANSI

3.6.3.1 Dialog Buttons

Main   Selecting M/E Main menu.

Auto Times   Selecting Auto Times menu.

Color Bgnd   Selecting M/E's Color Bgnd menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.6.3.2 Was soll der Kunde mit dem Menü anfangen (Philosophie)?

3.6.3.3 Wie arbeiten die einzelnen Einsteller?

3.6.4   COLOR BGND M/E
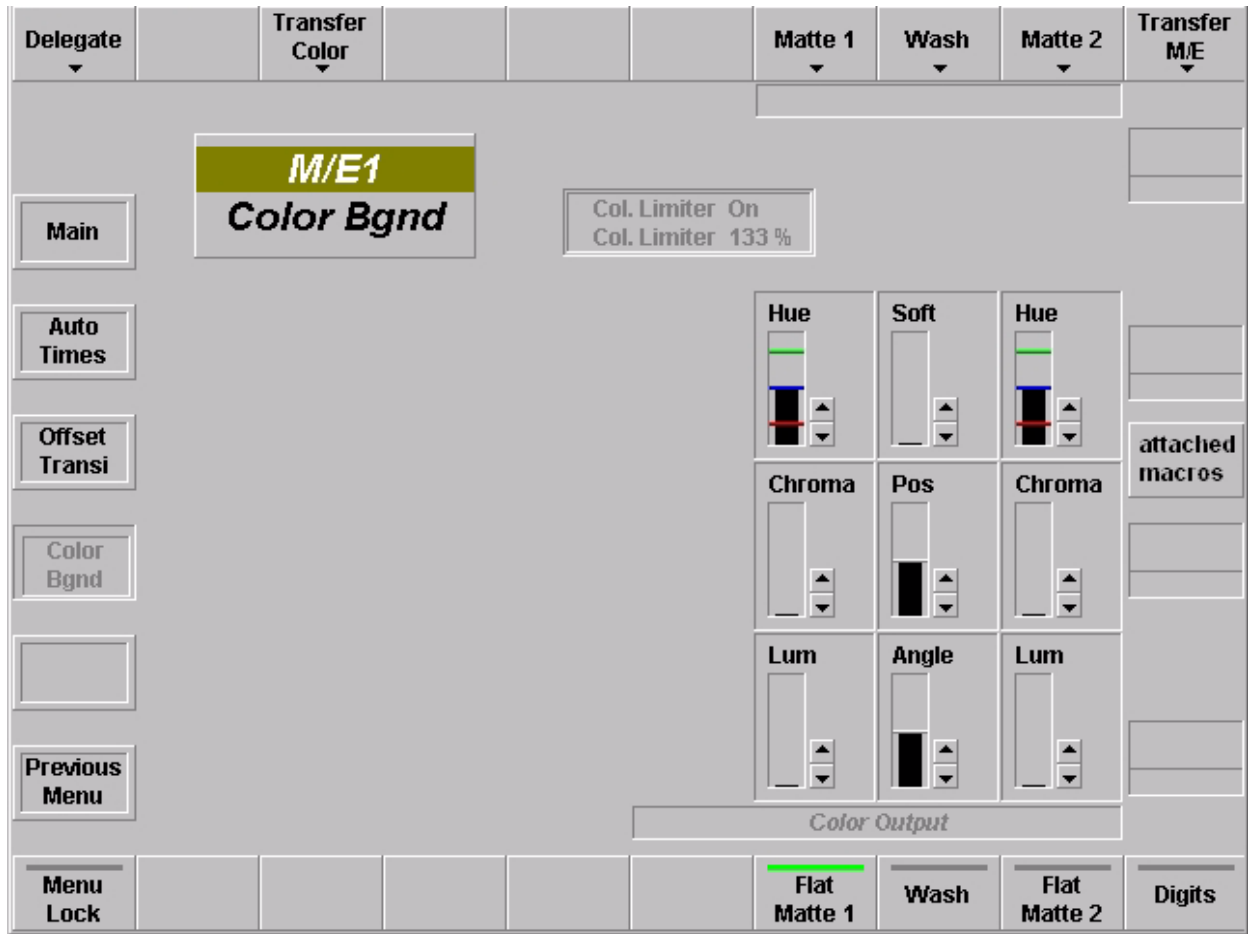
The menu permits setting of the M/E's Color Bgnd Generator.

For details refe to section 3.9 ***Color Background Generators***

3.6.4.1   Dialog Buttons

Main   Selecting M/E Main menu.

Auto Times   Selecting Auto Times menu.

Offset Transi   Selecting Offset Transi menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.7   KEYERS MENU

3.7.1   KEYER MAIN MENU
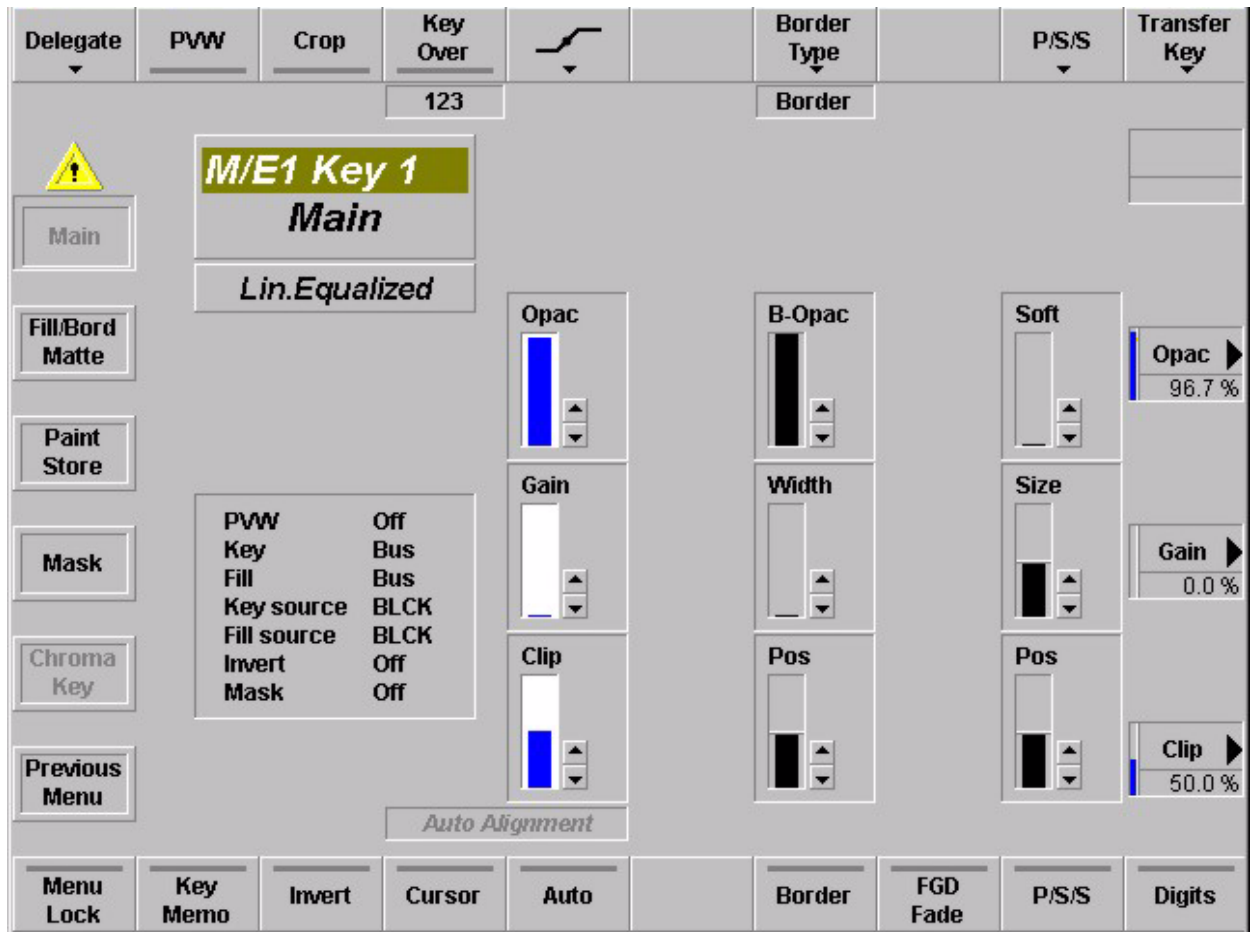
3.7.1.1   Key Mode Selecting

Clicking on the key mode designation field (below the dialog tiltle) calls a pub-up menu. Select the desired mode by clicking the respective name.
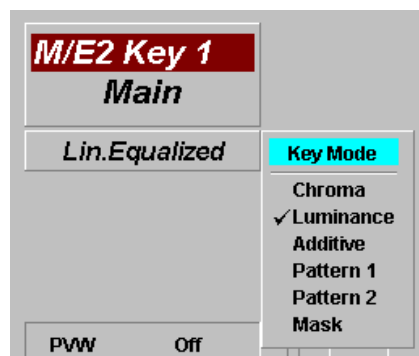
3.7.1.2   Dialog Buttons

Fill / Bord Matte Selecting **Fill / Border Matte** menu.

Paint Store Selecting **Paint Store** menu.

Mask Selecting **Mask** menu.

Chroma Key Selecting **Chroma Key** menu.

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.7.1.3   Function Buttons

Delegate For details refer to section ***Introduction.***

PVW The **Key PVW** button displays the keying result or the key signal on the preview monitor to permit optimization.
This function permits adjusting a keyer which is not selected in the Transition panel. If you press **Key PVW** repeatedly, the following signals can successively be switched to the preview monitor:

- original key fill signal on current background picture

- key control signal as black-and-white signal.

Crop In the activated status, the blanking width of the mixer is changed over to blanking for analog signals. This is necessary if the signals of the analogous sources are derived. The different blanking width can result in black bars on the right and left picture edge, particularly in case of key invert.

  Note: *The CROP mode should not be used in connection with DynaChrome as it can lead to color distortions on the right and left picture edge.*

Key Over Button and display to change the priority of the keyers 1, 2 and 3.
For details refer to section 2.7.10.

Cleanup / Density or Clip / Gain mode:

Each keyer provides the possibility of processing the key signal with **Cleanup / Density** or **Clip / Gain** mode. Either method can be used for acceptable keying result. The better choise is determined by the selected key source and associated key signal. The choise should be made before making any key adjustments, subsequent switching between the two types will affect the keying result.
Both methods enhance the characteristic curve of the key signal. The only difference is the invariant center of rotation of the characteristic curve.

The automatic button resets all four parameters.

The *Cleanup / Density* method influences only one end of the key area and keeps the other one invariant.

Cleanup	influences only the area of the background. Key levels are increasingly limited to black, i.e. "cleaned". Noise and slight shadows in this area will disappear.
Density	influences only the area of the foreground. Key levels are increasingly limited to white to the unity value "1", which corresponds to the "dense" foreground.

The *Clip / Gain* method influences both ends of the key area and leaves only one selectable, average clip value invariant.

Clip	determines that key signal level in the proximity of which linear, unlimited keying has to be performed (effective only at Gain > 1).
Gain	determines by gain change the width of the area around Clip within which linear, unlimited keying has to be performed.

Border type

				Border Type	
Border	**Outline**	**Extrude**	**Drop**	▲	**ShdwStor**
	Select Border Type				

The Border group enables the user to provide the key signals with a border effect which can be adjusted individually.

Border off

Background
Key

Border

Drop

Extrude

Outline
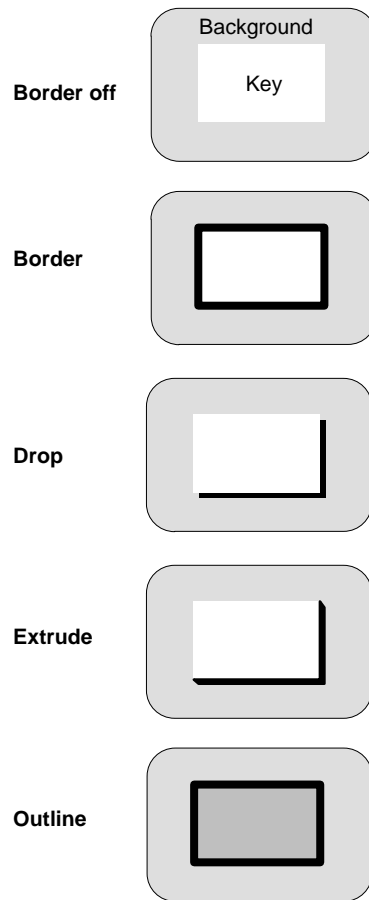
Shdw Store	The **Shadow Store** (optional) serves to produce a shadow that can be positioned over the entire picture. The shadow is generated by the shadow store and can be positioned with the trackball.
	Note: If the shadow is positioned before or above the original, the shadow is delayed by one frame.
Border	The **Border** button serves to generate a simple border. The width of the border is adjustable (number of picture lines: H and 2H).
Extrude	The **Extrude** button serves to produce a shadow of the key. The width of the shadow is adjustable (number of picture lines: H, 2H, 3H and 4H).
Drop	The **Drop** button serves to produce a drop shadow of the key. The width of the shadow is adjustable (number of picture lines: H, 2H, 3H and 4H).
Outline	If **Outline** is pressed, only the outline of the key is faded in. The outline signal is filled with the background signal. The width of the outline is adjustable (number of picture lines: H and 2H).
***Pos**ition*	The **Position** control permits changing the position of the border in steps.
	Note: Please note that the position of the original signal changes when you position a shadow above or before the border signal.
B-Opacity	The **B-Opacity** control serves to change the transparency of the border.
Width	The **Width** control serves to change the width of the border

- **Border**: H and 2H;
- **Extrude** / **Drop**: H, 2H, 3H and 4H;
- **Outline**: H and 2H.

P/S/S	**Reset** of the Positioning, Sizing and Softening parameters.

Transfer	For details refer to section ***Introduction.***
Menu Lock	For details refer to section ***Introduction.***

Key Memo

Press the associated function button to enable or disable the Key Memory of the individual mixing levels M/Ex.

If the **KeyMemo** button is switched on, the key memory is always recalled if the key sources are changed during control panel operation. These changes can occur directly by selecting another key source or also indirectly by changing the Fill source or the Split mode.

For storing the key parameters two modes are available:

1. Auto Save

If the switch **Key Memory AutoSave** in the Config EBox menu is activated (On), the settings of the previous key signal are stored automatically before the settings of the next key are recalled. If the switch **Key Memory AutoSave** is deactivated (Off), the stored settings of the new key are recalled without saving the previous settings.

2. Manual storing

Switch **Key Memory AutoSave** in the Config EBox menu is deactivated. For storing the current settings into the key memory, press the button of the respective Fill source approx. 2 seconds. The storing is confirmed by a short beep in the control panel.

For details refer to section 2.7.7

Invert

By pressing **Invert** the key signal is inverted, i.e. the contents of foreground and background are exchanged on the screen.

Cursor

Pressing the **Cursor** button starts an automatc, cursor-assisted key adjustment. When you press the button, a cursor appears on the preview monitor. Move the cursor to a spot of the key color using the trackball.

Then press the **Auto** button to start the adjustment. Only those colors within the cursor will be evaluated. The color with the highest intensity is detected as the key color.

*Note: The **Auto** buttons in the Chroma Keyer and the Keyers panels operate in parallel. When the Keyer is on, the output signal will be affected during the automatic adjustment.*

Auto

Pressing the **Auto** button starts an automatic key adjustment to **Blue**.
The picture evaluation includes all those colors which are within an angle range of
+/–30° around the primary color Blue. Within this range, blue with the highest inten-
sity is detected as key color. Key color and selectivity are thus adjusted.

Border

Switches the selected border.

FGD Fade

Lum-equalized key modes can be set to non-equalized key mode. The **FGD Fade**
(foreground fade) key switches over the key procedure. Now, the cleaned key fill
signal and the background signal are faded in one fading operation by the key con-
trol signal.

P/S/S

These three functions are available in the **Lum/Add key** and **FGD Fade** modes,
not in the DynaChrome™.

Attention: *When selecting P/S/S in the **DynaChrome**™ mode, the chromakey*
*procedure automatically switches to **FG Fade** (quality loss)! When se-*
*lecting P/S/S in the **Lum Self Key** mode, the fill linearization is auto-*
matically omitted for the luminance key procedure (quality loss)!

All P/S/S parameters are stored in the key memory, independent of the key type.
With **Reset**, all P/S/S parameters are reset. When starting an automatic key adjust-
ment (AKA), all P/S/S parameters are switched to **OFF**, but will be preserved.

Positioning: The setting range amounts to +/ – 8 pixels with a smallest increment
of 1/8 subpixel. A positive Positioning shifts the key signal with regard to the fill sig-
nal to the right.

Sizing: The setting range amounts to +/ – 8 pixels with a smallest increment of 1/4
subpixel with all permitted key types. A positive sizing extends the key signal, thus
reducing the foreground objects. By this way, incorrect object edges can be re-
moved. However, foreground details will also disappear more and more.
A negative sizing increases the foreground object around the object edges. Dark
or key-colored object edges are added.

Softening: The key signal is filtered with an adjustability of 10 steps. Object edges
and details are softened.

Digits

For details refer to section ***Introduction.***

3.7.2   FILL/BORDER MATTE MENU
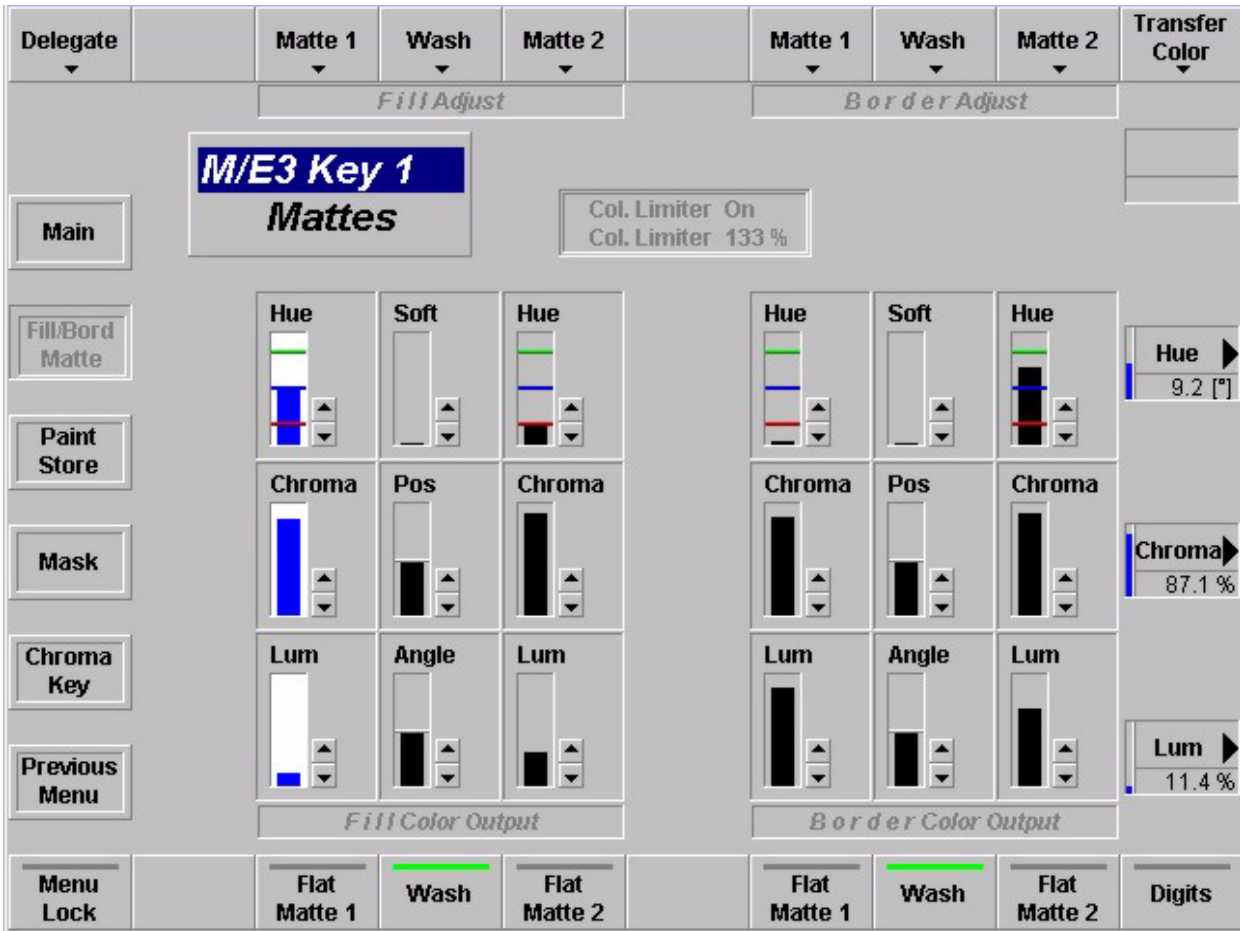
3.7.2.1   Dialog Buttons

Main   Selecting **M/E Main** menu.

Paint Store   Selecting **Paint Store** menu.

Mask   Selecting **Mask** menu.

Chroma Key   Selecting **Chroma Key** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.7.2.2 Function Buttons

Delegate   For details refer to section ***Introduction.***

Fill Adjust:
Matte 1
Matte 2

The **Matte** buttons serves to select a pre-adjusted color and delegates the digipots to the color parameters **Hue**, **Chroma**, **Lum**.

Border Adjust:
Matte1
Matte 2

SuperBlk	Matte 1		Blue	Yellow	Cyan	Green	Magenta	Red
	▲				*Fill Preset*			

Fill Adjust:
Wash

The **Wash** button serves to reset the wash to: Angle-Vert, Pos-Mid and Soft-Min and delegates the digipots to the wash parameters **Angle**, **Pos**, **Soft**.

Border Adjust:
Wash

	Wash	Matte 2
Reset		▼
Wash	▲	

Transfer Color   For details refer to section ***Introduction.***

Menu Lock   For details refer to section ***Introduction.***

Fill Color Output: The **Flat Matte 1** and **Flat Matte 2** buttons serve to switch on Flat Matte1 or 2 so
Flat Matte 1   that the desired colors can be adjusted.
Flat Matte 2

Border Color Output:
Flat Matte 1
Flat Matte 2
                                Note: Please note that in case of unfavorable parameter settings only one
                                matte will be visible in Wash or MatteStore mode. In this case we rec-
                                ommend to switch over to the Flat mode to adjust the color.

                                The **Hue** control serves to adjust the color. The **Chroma** control serves to adjust
                                the color saturation (chrominance). The **Luminance** control serves to adjust the
                                desired brightness of the color.

                                Note: Please note that certain combinations of chrominance and luminance
                                *values will cause **illegal** colors. For this reason, an automatic control*
                                limits for instance the chrominance for defined luminance values.
                                *If Color Limiter is on, you can easily check this be setting the **Chroma***
                                *control to maximum and then turning the **Luminance** control slowly*
                                to maximum; the chrominance will be reduced with increasing lumi-
                                *nance values. If Color Limiter is off an **ILLEGAL** indication will light*
                                *up above the **Hue** bar.*

Fill Color Output: The **wash** buttons serves to select a matte that is composed of a color wash be-
Border Color Output: tween matte 1 and matte 2. If only the **wash** button lights up, it is possible to change
Wash   the color wash individually with the **Softness**, **Position**, and **Angle** controls.

Digits   For details refer to section ***Introduction.***

3.7.3   KEY MASK MENU
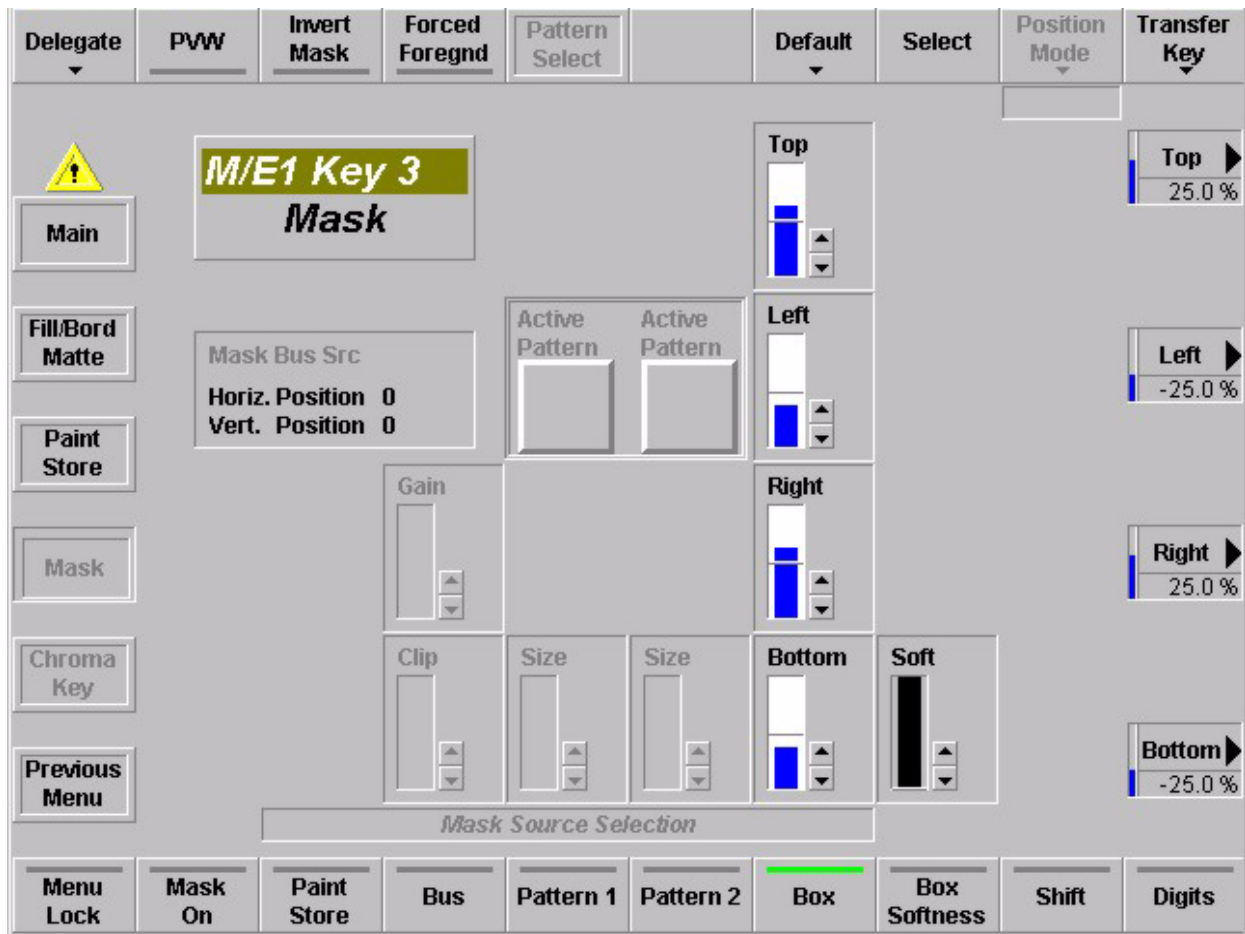
The *DD35 Production Switchers* provide extensive masking capabilities which enable the operator to correct even difficult pictures. For the keyers, rectangular masks are available. As an alternative, the wipe patterns of the wipe generator may be used for masking. The volatile masks store offer new ways of masking. A key signal or a pattern signal may be stored. The **PaintModeMasking** feature permits the creation of masks which are perfectly adapted to the individual requirements.

With the Ext. Mask (Bus) external created masks can also be used for masking.

All Postion and Shift functions can be controlled via mouse.

3.7.3.1 Dialog Buttons

Main   Selecting **Key Main** menu.

Fill / Bord Matte   Selecting **Fill / Border Matte** menu.

Paint Store   Selecting **Paint Store** menu.

Chroma Key   Selecting **Chroma Key** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.7.3.2 Function Buttons

Delegate For details refer to section *Introduction.*

PVW The **PVW** button displays the keying result or the mask signal on the preview monitor, to permit key optimization.

Note: *In Mask PVW mode, the mask is only represented as a 1-bit signal. If you want to exactly position a mask with softness, simply switch on the mask with the **Mask on** button in the Keyers panel.*

Invert mask Press the associated button to invert the mask signal. This means that, for instance, with a rectangular mask, not the inside but the outside of the rectangle is used for masking.

Forced Foreground Press the associated button to select whether the mask should suppress (mask) or force the foreground picture (Forced Foreground).

Pattern Select Select the **M/E Wipe Select** menu.
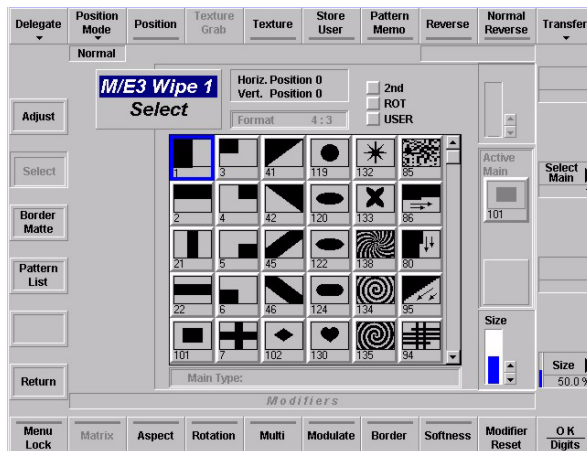
Default Press the associated button to reset the box mask to a default size or to the center position.

Reset:	Displays a mask in the center with a factory set size to start the adjustment.
Center:	A pre-adjusted mask is put to the center of the screen.

Select	Aktivating the **Box Softness** adjustment. See **Box Softness** button below.
Position Mode	Allows the operator to use the trackball to position the mask in the screen. Three position modes are selectable:
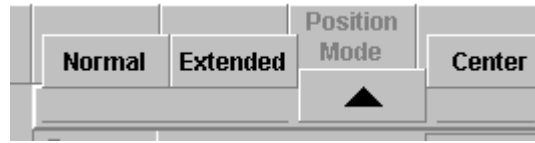
Normal:	You can position the center of the mask within the visible picture area.
Extended:	You can position the center of the mask at any place, even outside the visible picture area.
Center:	Reset the mask to the center position.

See also **Shift** button below.

Transfer Key	For details refer to section ***Introduction.***
Menu Lock	For details refer to section ***Introduction.***
Mask On	Turns on the selected mask.
Mask Source Selection:	
– Paint Store	If **Paint Store** is selected as a mask source, the luminance component of any input signal can be used as a mask, with adjustable gain and clip. In order to select the source, select the input on the **Aux Buses** row.
– Bus	If **Bus** is selected as a mask source, the luminance component of any input signal can be used as a mask, with adjustable gain and clip. In order to select the source, select the input on the **Aux Buses** row.

Note: Only one mask bus is available in mixing level 1, 2, 3.

– Pattern1 ***– Pattern2***	With **Pattern1** or **Pattern2** one of the wipe generators can be selected for masking. The wipe pattern can be directly selected with the wipe pattern selection keypad in the Wipe panel or in the ***Wipe Select*** menu. The size of the wipe pattern can be adjusted with the **Size** control above. You can freely position the wipe mask in the picture with the trackball in the Positioner panel after you have enabled **Pos** or **Extend Pos** in the Wipe panel or in the ***Mask*** menu.

Note: Please note that the wipe generators can be used simultaneously for
          several applications which may interact with one another.

– Box   The **Box** button serves to select a rectangular mask for masking. The size of the
                          mask can be adjusted with the four controls **Left**, **Right**, **Top**, and **Bottom**. The
                          mask can be positioned with the positioner.

Box Softness   The **Box Softness** digipot serves to adjust the softness of the mask. The respec-
(Seraph HD and   tive digipot is activated after selecting the **Select** button.
XtenDD only)

Mask Store   The **Mask Store** button serves to select the mask store as mask source.

Shift   Allows the operator to use the trackball to position the mask on the screen (only with
                          Pattern or Mask Source). See also **Position Mode** button above.

Digits   For details refer to section **Introduction.**

3.7.4 PAINT STORE MENU
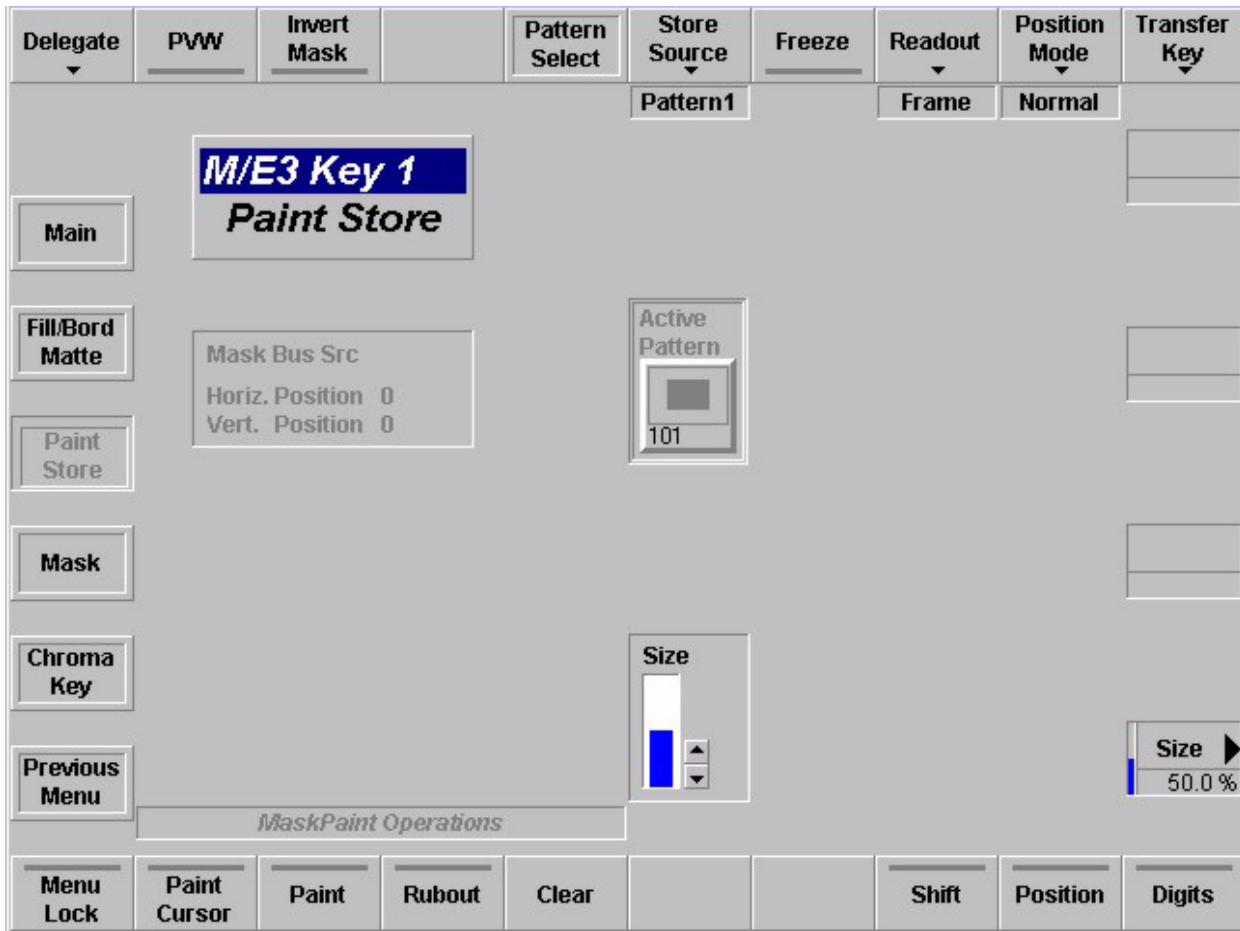
3.7.4.1 Dialog Buttons

Main	Selecting **M/E Main** menu.
Fill / Bord Matte	Selecting **Fill / Border Matte** menu.
Mask	Selecting **Mask** menu.
Chroma Key	Selecting **Chroma Key** menu.
Previous Menu	Return to the previous menu. For details refer to section *Introduction.*

3.7.4.2 Function Buttons

Delegate   For details refer to section ***Introduction.***

PVW   Press the associated button to highlight the mask (paint) signal on the preview
                            monitor. This function serves to paint the mask.

> *Note:*   *In PVW mode, the paint mask is only represented as a 1-bit signal. If
>   you want to exactly position a mask with softness, simply switch on
>   the mask with the **Mask on** button in the Keyers panel.*

Invert mask   Press the associated button to invert the mask signal. This means that, for exam-
                            ple, with a rectangular mask, not the inside but the outside of the rectangle is used
                            for masking.

Pattern Select   Call the **M/E Wipe Select** menu.

Mask Store Source

PVW	Invert		Key	Store			Position	Transfer
	Mask Bus	**Key 1**	**Key 2**	Source	**Key3**	**Key 4**	Pattern1	Pattern2
		Store Source		▲				

To store or paint a mask, proceed as follows:

● Select the signal to be stored or to paint with in the Mask store with **Mask Bus,
Pattern1**/**Pattern2** or **Key1**/**Key2/Key3/Key4**.

● To store a wipe signal or to paint, press **Pattern1** or **Pattern2**. The desired wipe
pattern and the modification can be selected in the Wipe panel or *Pattern Se-
lect* menu.

● For storing a texture, please refer to section *Wipe* menu.

● To assign a key signal as a source to the paint store, press **Key1, Key2, Key3**
or **Key4**.
The required adjustments can subsequently be made in the Keyers panel.

Freeze   Press the associated button to store a mask signal.

                               Note: Please note that a signal is delayed by one frame when it passes
                               *   through the store.*

Readout   If you press the associated button, you can select separately whether both fields
                               or a particular field is to be recalled from the store.

Position Mode   If as mask source a pattern is selected, two position modes are selectable:
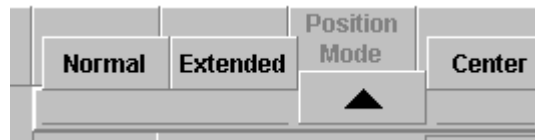
                               Normal: You can position the center of the mask within the
                                               visible picture area.
                               Extended: You can position the center of the mask at any place,
                                               even outside the visible picture area.
                               Center: Reset the mask to the center position.

                               See also **Position** button below.

Transfer Key   For details refer to section ***Introduction.***

Menu Lock	For details refer to section ***Introduction.***
Paint Cursor	If you wish to create an individual mask, it is neccessary to use a wipe signal as brush. For this purpose, select the corresponding generator with **WIPE1** or **WIPE2**. For a free design of a mask, press **Paint Cursor**. The preview monitor now shows the wipe pattern as cursor if **Mask Store** is selected as mask source in a mask generator.
	The paint cursor is active when the button **Paint Cursor** and the button **Position** is activated.
Paint	Enable the painting process with **Paint** and paint using the cursor as brush.
Rubout	Press **Rubout** to use the cursor as rubber.
Clear	Press **Clear** to delete the contents of the paint store.
Shift	Press **Shift** to shift the output picture of the store with trackball or mouse.
	Mouse handling: *– move mouse: cursor is moved without shifting* *– move mouse with left button pressed: shift is active*
Position	Allows the trackball or mouse to be used to position the mask. See also **Position Mode** button above.
Digits	For details refer to section ***Introduction.***

3.7.4.3 Painting the Mask with a Mouse

Paint Cursor on enables the paint mode with the mouse. The function **Paint** and **Rubout** are controlled with the mouse button. The mouse cursor can always be moved on the whole screen. Inside the paint area, the display of the cursor changes from arrow to cross. The paint function is switched on with the left mouse button. The Rubout function is switched on with the right mouse button.

Painting a mask with the mouse:

- ***Mask*** menu   Select Mask Source: Paint Store (Mask Store)

- ***Paint Store*** menu   Paint Cursor = on
  Move the mouse into the painting area and position the paint cursor.
  Painting by holding down the left mouse button.
  Rubout by holding down the right mouse button.
  Paint Cursor = off switches the mouse into the normal mode.

3.7.5 CHROMA KEY MENU

| Delegate ▼ | PVW | | | ⎍ | Color Cancel | Key Color | Sel Outer ▼ | Sel Inner ▼ | Transfer Key ▼ |

M/E3 Key 1
Chroma Key

Dynachrome

Main		
Fill/Bord Matte		
Paint Store		
Mask		
Chroma Key		
Previous Menu		

Opac
Gain
Clip

PVW	Off
Key	Bus
Fill	Bus
Key source	BLCK
Fill source	BLCK
Invert	Off
Mask	Off

L-Offset   Sel C
Lum   Sel Y   Sel Y I
Chroma   Sel R   Sel R I
Hue   Sel L   Sel L I

Opac ▶ 87.6 %
Gain ▶ 0.0 %
Clip ▶ 50.0 %

Pick Color / Auto Alignment

| Menu Lock | | Pick Color | Cursor | Auto | Sel Auto | FGD Fade | Sel Mask | Noise Reduct | Digits |

In DynaChrome ™ mode, the foreground signal is proportionally and subtractively deprived by the key color in the key color area and colored neighboring areas. The result is a cleaned key fill signal which now contains in key color areas shadow-free black and in the transition regions the de-mixed foreground colors.

The key control signal is also derived from the foreground signal. The key control signal is multiplied with the background signal. The cleaned key fill signal and the multiplied background signal are added. This method ensures that all details are reproduced true to the original in the area of the key color.

3.7.5.1   Dialog Buttons

Main   Selecting **M/E Main** menu.

Fill / Bord Matte   Selecting **Fill / Border Matte** menu.

Paint Store   Selecting **Paint Store** menu.

Mask   Selecting **Mask** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.7.5.2   Function Buttons

Delegate   For details refer to section ***Introduction.***

PVW   The **Key PVW** button displays the keying result or the key signal on the preview monitor to permit optimization.
This function permits adjusting a keyer which is not selected in the Transition panel.

If you press **Key PVW** repeatedly, the following signals can successively be switched to the preview monitor:

● original key fill signal on current background picture

● key control signal as black-and-white signal.

⌐   **Cleanup / Density or Clip / Gain mode:**
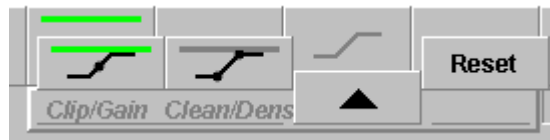
Each keyer provides the possibility of processing the key signal with the **Cleanup / Density** or **Clip / Gain** mode. Either method can be used for acceptable keying results. The better choise is determined by the selected key source and the associated key signal. The choise should be made before making any key adjustment, subsequent switching between the two types will affect the keying results.

Both methods enhance the characteristic curve of the key signal. The only difference is the invariant center of rotation of the characteristic curve.

Each automatic run resets all four parameters.

The ***Cleanup / Density*** method influences only one end of the key area and keeps the other one invariant.

Cleanup   influences only the area of the background. Key levels are increasingly limited to black, i.e. "cleaned". Noise and slight shadows in this area will disappear.

Density   influences only the area of the foreground. Key levels are increasingly limited to white to the unity value "1", which corresponds to the "dense" foreground.

The **Clip / Gain** method influences both ends of the key area and leaves only one selectable, average clip value invariant.

Clip   determines that key signal level in the proximity of which linear, unlimited keying has to be performed (effective only at Gain > 1).

Gain   determines by gain change the width of the area around Clip within which linear, unlimited keying has to be performed.

Figure 5: Clip/Gain versus Dens/Clean adjustment

Color Cancel

Color Cancel desaturates all colors of the fill signal which lie within a narrow angle range around the key color in the color circle. **Color Cancel** is switched on by default after each automatic run (not **Sel Auto**).

Key Color

Key Color delegates the parameters **Luminance**, **Hue, Chroma** and **L-Offset** (with FGD-Fade) to the digipots.

To adjust the Key Color manually the following conditions must be given:

- **FGD Fade** "OFF"
- Key "ON" on background Black
- **Density, Clean up** and **Selectivity C** at left stop
- **Selectivity L** at right stop
- **Selectivity R** at left stop
- **Luminance** at left stop
- **Chrominance** at left right stop

The adjustment is made in the following order:

Turn the **Hue** control until the key color is extensively achromatic. Then turn back **Selectivity** roughly until approximately all key colors are covered.
Turn the **Chroma** control until the brightest color is just achromatic.
Turn the **Luminance** control until the key color is just black.

This setting can subsequently be optimized with the **Selectivity**, **Density** and **Clean up** controls.

Sel Outer

Delegates the parameter **OLum S**, **ORight S** and **OLeft S** to the digipots.

Sel Inner

Delegates the parameter **Chr S**, **Lum S**, **Right S** and **Left S** to the digipots.

Transfer Key

For details refer to section *Introduction.*

Menu Lock	For details refer to section ***Introduction.***

Pick Color	Pick Color permits the operator to select a particular color by using the trackball to position the cursor over the color to be captured.

How to use Pick Color:

Select the source on a unused key bus (ChromaKey must be available for this key channel). Select **ChromaKey**. Push the button **Pick Color** in the Chroma Key menu. On the preview monitor the source with a cursor is displayed. Position the cursor to the desired color. Select the desired destination:

Misc:	Col1, Col2, Col3, MPR1, MPR2
M/Ex:	Key1Fill, Key1Bord, Key2Fill, Key2Bord, (Wipe1Bord, Wipe2Bord)

Select the matte generator:
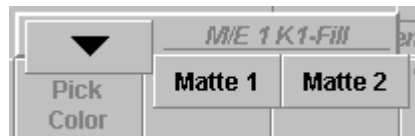
When the matte is selected the copy procedure is done.

Cursor	Pressing the **Cursor** button starts an automatic, cursor-assisted key adjustment. When you press the button, a cursor appears on the preview monitor. Move the cursor to a spot of the key color using the trackball. Then press the **Auto** button to start the adjustment. Only those colors within the cursor will be evaluated. The color with the highest intensity is detected as a key color.

Note: *When the Keyer is on, the output signal will be affected during the automatic adjustment.*

Mouse handling:
  – move mouse: chroma key cursor is moved
  – move mouse with left button is pressed: only the mouse cursor is moved, not the chroma key cursor
  – press right mouse button: starts auto-key-adjustment

Auto

Pressing the **Auto** button starts an automatic key adjustment to **Blue**. The picture evaluation includes all those colors which are within an angle range of $\pm 30^{\circ}$ around the primary color Blue. Within this range, blue with the highest intensity is detected as key color. Key color and selectivity are thus adjusted.

Sel Auto

If **Sel Mask** is enabled **Sel Auto** starts an automatic selectivity adjustment for both areas inside and outside the mask.

FGD Fade

The **FGD Fade** (foreground fade) key switches over the chroma key procedure. Now, the cleaned key fill signal and the background signal are faded in one fading operation by the key control signal.
In the area of the key color, only chrominance is subtractively removed, luminance is retained. However, this will impair some advantages of the DynaChrom™ procedure (good reproduction of details and transparency).

For optimal adaptation of cross fadings on edges or for optimization in case of transparencies between foreground and background, the luminance value can be adjusted in the area of the key color.
Adjustment is made with the **L-Offset** control in the *ChromaKey* menu.

This mode is recommended when object edges will show unnatural, extreme brightenings in details and transparency areas in case of too intense CLEAN-UP adjustment, or extreme darkenings in case of too intense DENSITY adjustment.

This FGD Fade mode may also be selected for improving the clean-up effect. It is required for eliminating noise and shadows and for adapting original backgrounds to key-influenced backgrounds with the DVE.

Note: *Please note that Foreground Fade is enabled automatically - without special indication at the control panel - in the following modes:*
- *Chroma Key Invert*
- *Chroma Key with Border*
- *not Self Key.*

Before adjusting Chroma Key, you should try to create optimum conditions on the picture source side to ensure low interference, for example by an evenly lit blue wall of maximum size and little camera post-amplification.

Sel Mask

Selective mask is available with the two chromakey modes DynaChrome™ and FG Fade. Thus, it is possible to select inside a mask area another selectivity than outside the mask. This means, when – due to color conflicts within the picture – no compromise can be found between the density of foreground objects of a certain color and the freedom from fringes of other objects with the same color, the relevant objects can be separated by the mask.

The separation lines remain invisible in the areas of the background. With correct adjustment, they also remain invisible in the areas of the foreground. Only colors at the object edges can be then affected.

Method of procedure (only with critical patterns):

- Run the cursor assisted Ato chromakey setup

- First attempt manual optimization of **Left SL** or **Right S**. The purpose is to maximize the object density.

- Adjustment of **Chrom S**, **Density** and **Cleanup**

If no satisfactory result:

- Switch on **Sel Mask** and select the Mask Source in the menu

- Check in the PVW position of the mask

- Call the automatic selectivity adjustment **Sel Auto** or adjust manually **Selectivities-I** (inside the mask) and **Selectivities-O** (outside the mask). The **Sel Auto** optimizes the selectivities independent inside and outside the mask.

Noise Reduct   Reduces the noise in the selected key color (default On).

Digits   For details refer to section ***Introduction.***

3.7.5.3   Manual optimization of critical pictures

Selectivity L (left), **Selectivity R** (right) and **Lum Sel** enables the user to change the selectivity manually.

This may be required for the following reasons:

- The user wants another compromise between color fringes and density of the foreground object.

- Size and focus of the foreground object were not sufficient.

- Blue spill has to be removed from the foreground object.

- The picture only contained the key color and no foreground object.

The selectivity separates the foreground colors from those without key color component. The attributes **L**eft and **R**ight refer to the neighborhood to the key color on a vectorscope. **Lum Sel** refers to the luminance dependence of the gray mixed color in transition areas.

Thus, incase the key color is Blue, the selectivity adjustment influences the following colors:

- **Selectivity L,** the reddish neighboring colors

- **Selectivity R,** the greenish neighboring colors

- **Lum Sel,** the gray/yellow colors.

Direction of rotation of the controls:

The influence of the foreground is increased when **Selectivity L** is turned left and **Selectivity R** is turned right.
When **Selectivity L** is at the right stop and **Selectivity R** is at the left stop, a very high selectivity (i. e. narrow band color selection) is set.

With **Lum Sel Y** = 50% (center position after automatic run), this parameter is without influence on the picture. Higher values (cw rotating) deprive gray edges increasingly by the key color, thus coloring them complementarily. A gray halo in yellow (blond) hair becomes yellow (blond) again when its gray was effected by mixing yellow and blue key colors.
Adjustment of the selectivity should be just so much that the key color portion on the foreground object has disappeared. Doing so, a slight "keying" of the foreground object may be noticed.

Selectivity C
Selectivity center refers to the achromatic center of the color circle and acts on objects with slightly saturated key colors which cannot be influenced with **Selectivity R** and **Selectivity L**.

Problem: *The light blue shirt of a newscaster is slightly transparent after adjustment. It could be made dense with DENSITY; however it would lose its blue color.*

Solution: *Rotate* **Selectivity C** *in cw direction until the shirt is dense and blue again. Correct possibly obtained blue fringes with* **Selectivity L** *and* **Selectivity R**.

Alternative: *For reducing newly occurring blue fringes, first use DENSITY and then* **Selectivity C** *as described above.*

Density
The **Density** control can be used to restore the density of the foreground object. This may become necessary if the foreground object is slightly "keyed" (transparent) as a result of blue spill and/or the required selectivity setting.

Clean up
The **Clean up** control can be used to "clean up" the background.
This may become necessary if the background contains noise or undesired shadows etc.

3.8 WIPE MENU

3.8.1 WIPE SELECT MENU
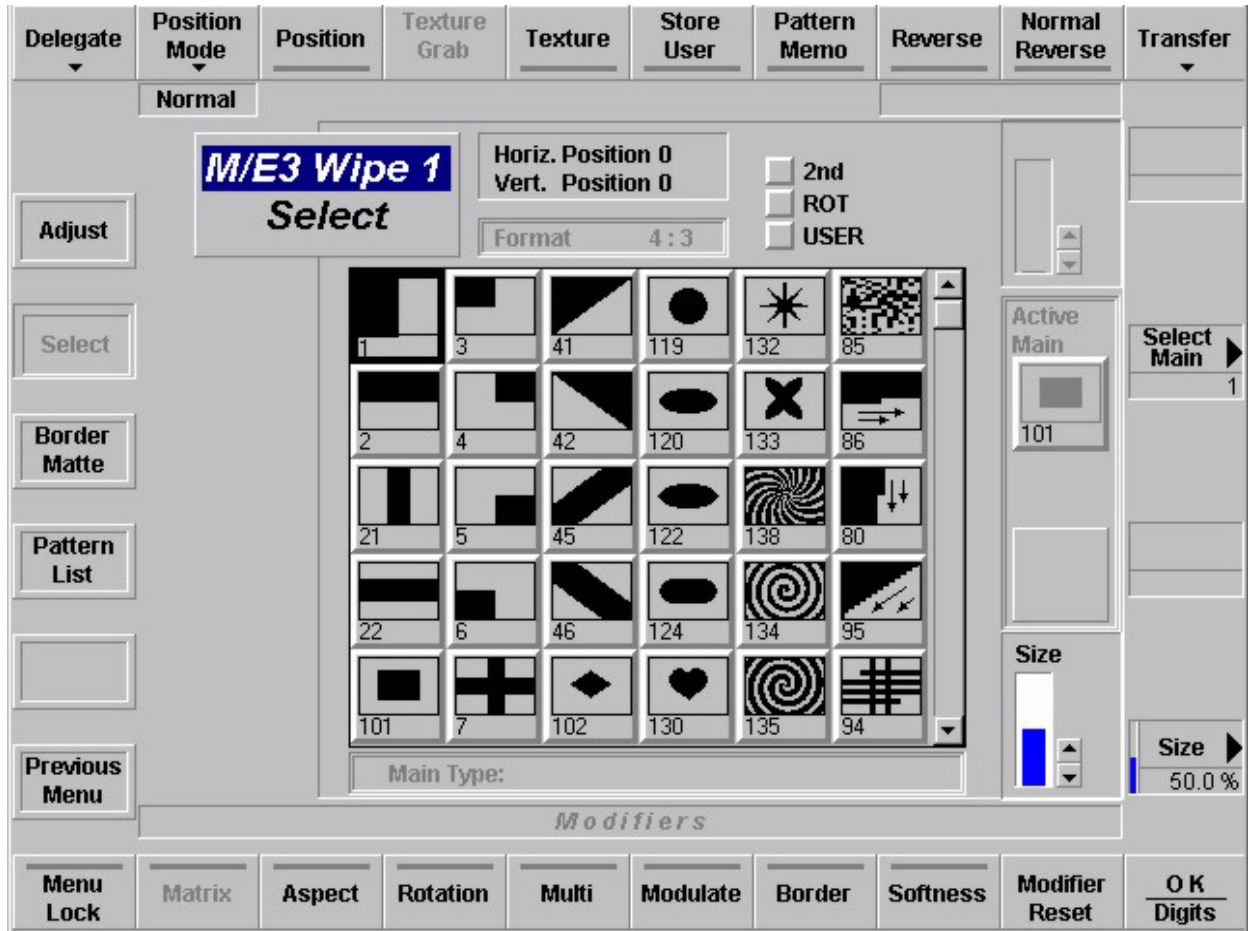
In the wipe pattern selection field (**1st**) 30 wipe patterns may be directly selected. Further wipe patterns can be recalled by selecting the **2nd**, **ROT** or **USER** button. In these modes further standard wipes, rotating wipes and user-defined wipes are available in addition to the standard wipe patterns.

Clicking the mouse on the **M/E** header, the menu switches to the next available M/E where a wipe is available. The wipe within the M/E normally remains unchanged. If the corresponding wipe in the new M/E does not exist, the next available wipe should be selected. Clicking the mouse on the **Wipe**, the wipe switches to the next available wipe within the M/E.

The M/E tries to follow the sequence:

...– M/E1 – M/E2 – M/E3 – P/P – M/E1 – ...

The wipe (P/P M/E1...3) tries to follow the sequence:

... – Wipe1 – Wipe2 – Wipe1 ...

Wipe Icon Listbox	The wipe icon list box displays all available wipe patterns. They are arranged in four pages à thirty patterns (**1st**, **2nd**, **ROT**, **USER**). The listbox is used to pre-select the active main and the combine (in preparation) pattern. The patterns can be scrolled up and down pagewise by a scrollbar. The user can pre-select an item via mouse-click or digipot.

There are two cursors:

- a blue one to select the main pattern

- a black one to select the combine pattern. When both cursors rest on the same icon a deep sky blue cursor is displayed. If one of these cursors is moved out of the current page the previous/next is shown. Moving a momentarily not displayed cursor sets the listbox focus to that cursor's page.

In the footer of the listbox the pattern types of both main and combine pattern are shown:

The types are displayed as one of the following characters:

🕐	Clock
🙁	non-combinable
⠛	Matrix
■	Rectangle
●	Circle

Note: *Wipe Combine is in peparation!*

3.8.1.1   Dialog Buttons

Adjust	Selecting **Adjust** menu.
Border Matte	Selecting **Border Matte** menu.
Pattern List	Selecting **Pattern List** menu.
Previous Menu	Return to the previous menu. For details refer to section ***Introduction.***

3.8.1.2   Function Buttons

Delegate   For details refer to section ***Introduction.***

Position Mode
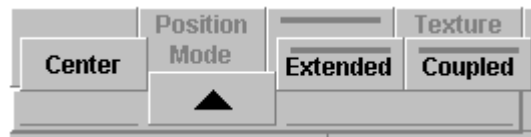
Select **Position** in the menu to enable the trackball. In the **Normal** mode, you can now use the trackball to position the center of the selected wipe pattern within the visible picture area.

Note: *Please note that some wipe patterns (e.g. matrix wipe patterns) can-not be positioned. See section 3.8.6*

If you enable the trackball in the **Extended** mode, you can position the center of the selected wipe pattern at any place, even outside the visible picture area.

Note: *Please note that in this mode, the wipe transition may reach its limit before the wipe pattern fully crosses the screen.*

If you enable the trackball in the **Coupled** mode, the position of the wipe pattern is controled by the transition (Fader, Auto). The position starts at the beginning of the transition with the adjusted position and ends at the end of the transition in the center.

Position   Selecting **Postion** enables the Trackball to position the center of the selected wipe pattern within the visible picture area.
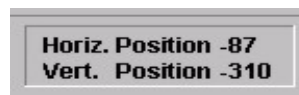
Texture Grab	Pressing the button stores the current wipe pattern including all modifiers in a frozen way in the texture store of the switcher. A texture possibly stored before, will be overwritten. The texture can then be called in the Color Background menu as a background.

The **Texture Grab** function performs the following actions:

1. The output signal of the wipe generator is selected as **Texture Source** *Store* (see *Color BGD1 Menu*).

2. The **Freeze** function of the **Texture Store** is switched off.

3. After one frame, **Freeze** of the **Texture Store** is switched on again.

The effect is, that after a **Texture Grab**, the selected pattern is frozen in the **Texture Store.**

Note: *Only if the output of the wipe generator can be routed into the **Texture Store**, which is possible for the M/E1 wipe generators and P/P wipe generators.*

Texture	The wipe modifier **Texture** can be used to automatically select the output of the wipe generator as **Texture Source**.

When **Texture** is switched on, this action is performed.

- Assume a **User Wipe** which is stored with **Texture=On**.
  When this **User Wipe** is recalled, the mixer will automatically select that wipe generator where **User Wipe Recall** was performed as **Texture Source.**

- Another **User Wipe** which is stored with **Texture=Off** will NOT change the **Texture Source** on recall.

Note: *Only if the output of the wipe generator can be routed into the **Texture Store**, which is possible for the M/E1 wipe generators and P/P wipe generators.*

Store User	In addition to providing standard patterns, the *DD35 Production Switchers* offer the possibility to prepare and store user-defined wipe patterns. These patterns can then be recalled directly by pressing **User 1....30**. Selecting **Store User** starts the user page to store a special adjusted wipe pattern to the user wipe group. See section 3.8.5 *Storing to User Wipe .*

Pattern Memo ™

In the on-state, the pattern store is activated. The pattern store is available once in each application and can store and restore all modifiers with regard to a wipe pattern.

Storing:

● Select the wipe pattern

● Activate **Pattern Memo**

● Adjust the modifier (border etc.)

● Select next wipe pattern. The modifiers are automatically assigned to the first wipe.

Calling:

● Activate **Pattern Memo**

● Select wipe pattern. The modifiers are automatically called.

Restrictions:

The function pattern memo is restricted to the 30 wipe patterns on the **1st**, **2nd** and **Rot** page.

Reverse
Normal / Reverse

The **Normal / Reverse** button determines the wipe pattern direction. If this key is enabled, the wipe pattern direction is changed every time the fader is in final position or when the transition is completed.
If you wish to change the preset wipe direction, press **Reverse** button.

Transfer

The settings of one wipe generator can easily be copied to another. Similarly both settings may be exchanged.

	Store	Pattern	Pattern	Pattern	
	From ▾	**To** ▾	**Exchange** ▾	Undo	**Transfer** _
			Transfer		▲

For details refer to section *Introduction.*

Menu Lock	For details refer to section ***Introduction.***
Wipe Modifiers:	See section 3.8.6. The table in this sections contains all wipe patterns available in the switcher together with their specific wipe number (in line with SMPTE). The table also indicates which modifiers are possible with the individual wipe patterns.
	Note: Softness and Border is possible with all listed patterns!
– Matrix	Enables the modifier **Matrix** for the selected wipe pattern. See **Adjust** menu for details.
– Aspect	Enables the modifier **Aspect** for the selected wipe pattern. See **Adjust** menu for details.
– Rotation	Enables the modifier **Rotation** for the selected wipe pattern. See **Adjust** menu for details.
– Multi	Enables the modifier **Multi** for the selected wipe pattern. See **Adjust** menu for details.
– Modulate	Enables the modifier **Modulate** for the selected wipe pattern. See **Adjust** menu for details.
– Border	Enables the modifier **Border** for the selected wipe pattern. See **Adjust** menu for details.
– Softness	Enables the modifier **Softness** for the selected wipe pattern. See **Adjust** menu for details.
– Modifier Reset	The Modifier **Reset** button can be used to reset the enabled modifiers all at once.
OK / Digits	In this twin button two functionalities are embedded. A normal single click means activating the OK button. Double clicking means pressing the Digits button.
	For details refer to section ***Introduction.***

3.8.1.3   Selecting a Wipe Pattern in the Menu

With the **Select Main** digipot the *Aktive Main Pattern* can be selected by positioning the frame cursor on the desired wipe pattern symbol and pressing the **OK** button to confirm.

With the mouse the desired pattern can be selected direct by clicking on the pattern and confirming with **OK**.

The desired page can be selected by clicking on the **2nd**, **Rot**, and **User** botton or using the scroll bar.

3.8.2   WIPE ADJUST MENU
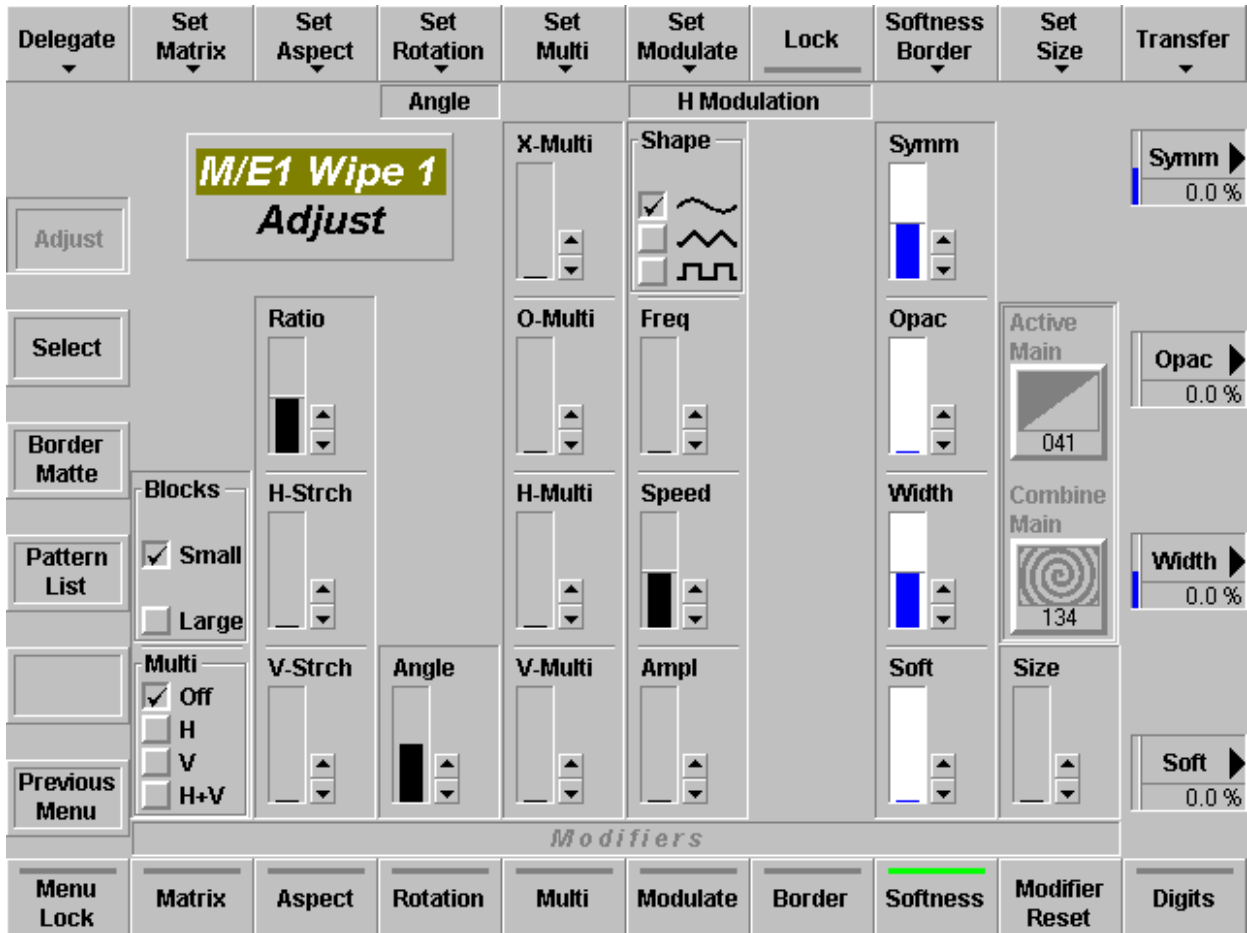
By means of the modifier functions **Matrix**, **Aspect**, **Rotation**, **Multi**, **Modulate**, **Border** and **Softness** the standard wipe patterns can be changed and new patterns can be created by combination of patterns.

3.8.2.1   Dialog Buttons

Select   Selecting **Wipe Select** menu.

Border Matte   Selecting **Border Matte** menu.

Pattern List   Selecting **Wipe Patterns** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.8.2.2 Function Buttons

Delegate　　　　　　　For details refer to section ***Introduction.***

Set Matrix　　　　　　Selecting **Set Matrix** delegates the respective controls to the digipots to modify the selected wipe patterns. This function is active only in connection with matrix pattern and if the **Matrix** modifier is activated.

Selecting **Reset** sets the **Multi** modifier to **OFF** and the **Blocks** to **Small**.

The following adjustments are possible:

Multi		
	H Multi	horizontal multiplication
	V Multi	vertical multiplication
	H+V Multi	multiplication in radial direction, only for closed wipe patterns (e.g. circle)
	OFF	no multiplication

Blocks		
	Small Blocks	block size small
	Large Blocks	block size large

Set Aspect　　　　　　Selecting **Set Aspect** delegates the respective controls to the digipots to adjust the aspect ratio of the wipe pattern if **Aspect** modifier is activated.

Selecting **Reset** sets the **Aspect** modifier to "normal".

The following adjustments are possible:

H-Strch	horizontal stretch
V-Strch	vertical stretch
Ratio	By clockwise or counter-clockwise rotation the wipe pattern may be stretched horizontally and/or vertically.

Note:　　　*This function is not available for all patterns. See section 3.8.6. Please note that in Stretch, a linear piece is inserted in the wipe pattern. With Ratio the aspect ratio of height and width is changed. Please note also that the width of the borders with Stretch and Ratio is different.*

Set Rotation   Selecting **Set Rotation** delegates the digipots to adjust the wipe pattern rotation.
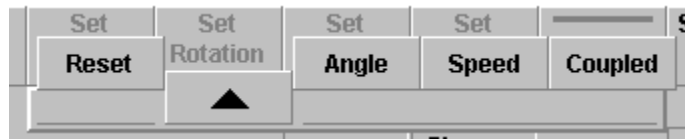
The following adjustments are possible (if the **Rotation** modifier is activated):

Angle	setting a fixed rotation angle
SPD	setting the rotation speed
COUP	rotation angle depending on the transition (Fader, Auto). The number of rotations can be selected with this control.

Selecting **Reset** sets the **Rotation** modifier to "normal".

Set Multi   Selecting **Set Multi** delegates the digipots to adjust the number of the multiplication.

The following adjustments are possible (if the **Multi** modifier is activated):

X-Multi	Changes the number of points in the star)
O-Multi	Changes the number of wipes inside a closed wipe (e.g. circles)
H-Multi	Changes the number of patterns on the horicontal plane
V-Multi	Changes the number of patterns on the vertical plane

Selecting **Reset** sets the **Multi** modifier to "zero"

Set Modulate   Selecting **Set Modulate** delegates the digipots to adjust the wipe edge modulation.
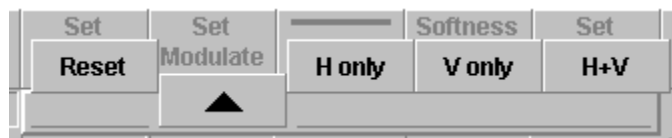
The following adjustments are possible (if the **Modulate** modifier is activated):

Ampl	modulation amplitude
Speed	modulation speed
Freq	modulation frequency
Shape	modulation shape (square, triangle, sinewave).

In addition to these adjustments the wipe edge modulation may also be influenced with the possibilities:

H only	horizontal wipe edge modulation only
V only	vertical wipe edge modulation only
H+V	vertical and horizontal wipe edge modulation

Lock

Selecting **Lock** serves for a locked modulation, i.e. the modulation does not vary but produces a stationary picture.

Softness Border

Selecting **Softness Border** delegates the digipots to adjust the wipe pattern border function.

The following adjustments are possible (if the **Border** modifier is activated):

Width	border width adjustment. The border width may be adjusted by clockwise or counter-clockwise rotation. If the border is made transparent with **Opac**, the direction of rotation of the border width control determines which picture component will be seen in the border.
Opac	adjustment of the transparency

If the **Softness** modifier is also enabled, the following additional adjustments are possible:

Soft	adjustment of the border softness
Symm	adjustment of the softness symmetry.

Selecting **Reset** sets the **Softness** and **Border** modifier to "normal".

Set Size

Selecting **Set Size** delegates the digipots to adjust the size of a wipe pattern.
If the wipe generator is used for a function other than background transition, the size of the wipe pattern may be adjusted with the **Size** control.

Selecting **Reset** sets the **Size** to "minimum".

Transfer

The settings of one wipe generator can easily be copied to another. Similarly both settings may be exchanged.

For details refer to section **Introduction.**

Menu Lock	For details refer to section ***Introduction.***
Wipe Modifiers:	See Annex 1. The list in Annex 1 contains all wipe patterns available in the switcher together with their specific wipe number (in line with SMPTE). The table also indicates which modifiers are possible with the individual wipe patterns.
	Note: **Softness and Border is possible with all listed patterns!**
*– **Matrix***	Enables the modifier **Matrix** for the selected wipe pattern.
*– **Aspect***	Enables the modifier **Aspect** for the selected wipe pattern.
*– **Rotation***	Enables the modifier **Rotation** for the selected wipe pattern.
*– **Multi***	Enables the modifier **Multi** for the selected wipe pattern.
*– **Modulate***	Enables the modifier **Modulate** for the selected wipe pattern.
*– **Border***	Enables the modifier **Border** for the selected wipe pattern.
*– **Softness***	Enables the modifier **Softness** for the selected wipe pattern.
*– **Modifier Reset***	The **Reset** button can be used to reset the enabled modifiers <u>all at once</u>.
*– **OK / Digits***	In this twin button two functionalities are embedded. A normal single click means activating the OK button. Double clicking means pressing the Digits button.
	For details refer to section ***Introduction.***

3.8.3   WIPE BORDER MATTE MENU
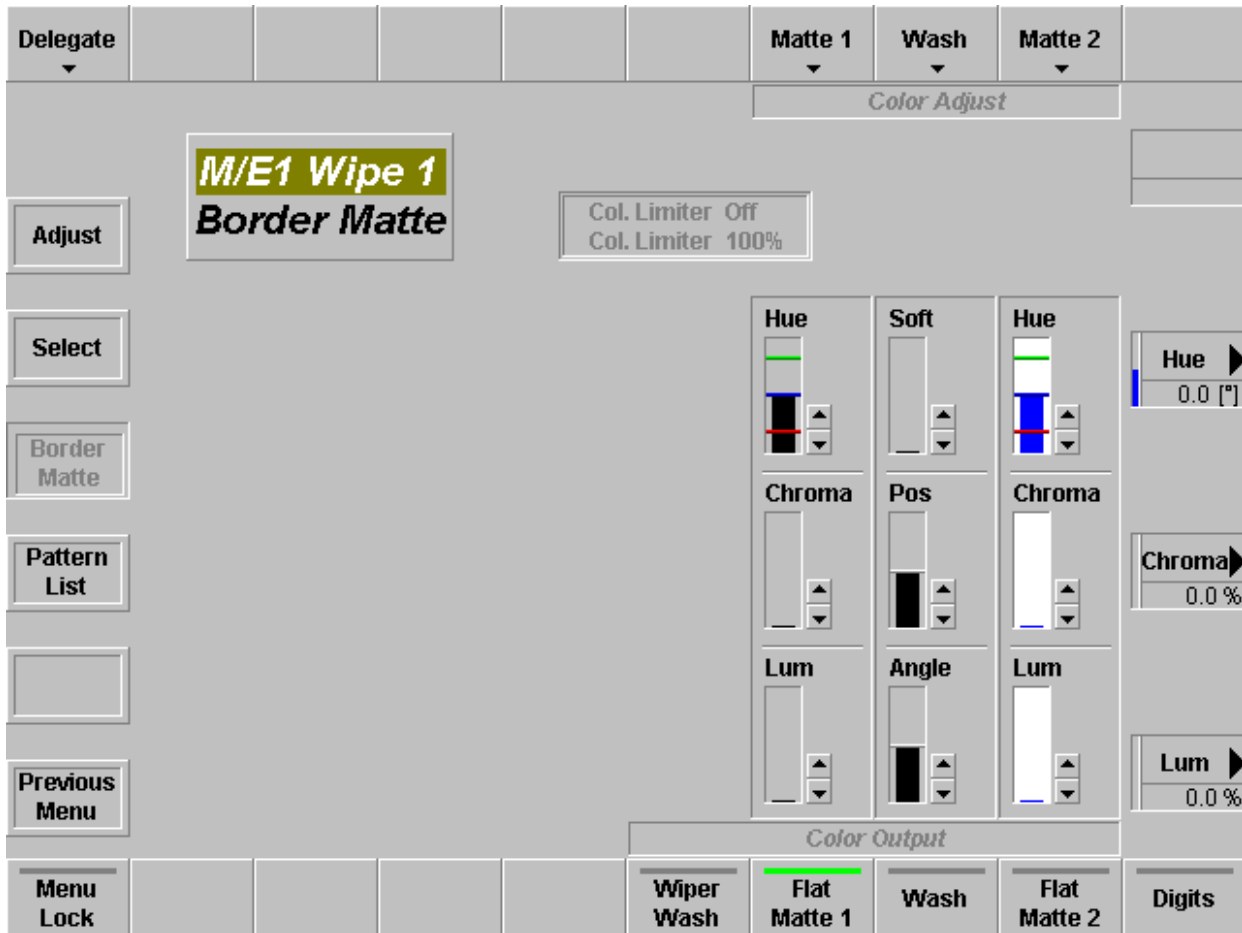
3.8.3.1   Dialog Buttons

Adjust   Selecting **Wipe Adjust** menu.

Select   Selecting **Wipe Select** menu.

Pattern List   Selecting **Pattern List** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.8.3.2   Function Buttons

Delegate   For details refer to section *Introduction.*

Delegate ▲	P/P	M/E1	M/E2	M/E3
	Delegate			

Matte 1   The **Matte 1 (Matte 2)** button delegates the digipots to adjust the desired colors.
Matte 2   There are seven preadjusted matte colors selectable.

SuperBlk	Yellow	Cyan	Green	Magenta	Red	Matte 1 ▲	Blue
			Preset				

The **Hue** control serves to adjust the color. The **Chroma** control serves to adjust the color saturation (chrominance). The **Luminance** control serves to adjust the desired brightness of the color.

Note: *Please note that certain combinations of chrominance and luminance values will cause overlevels and inadmissible colors. For this reason, an automatic can be switched on to control limits the chrominance for defined luminance values.*
*You can easily check this by setting the **Chroma** control to maximum and then turning the **Luminance** control slowly to maximum; the chrominance will be reduced with increasing luminance values.*
*If the automatic control is switched off an **illegal** sign indicates a wrong adjustment.*

Wash   The **Wash** button delegates the digipots to adjust the wash parameters **Angle**, **Pos**, **Soft**. selecting **Reset** set the parameters to

> **Angle = Vert**
> **Pos = Mid**
> **Soft = Min.**

Reset	Wash ▲	Matte 2 ▼
Wash		

Menu Lock   For details refer to section ***Introduction.***

Wiper Wash   The **Wiper Wash** function offers a new option for wipe border design by permitting color wash effects within the border.

Flat Matte 1   Selecting **Flat matte 1** serves to select a flat (plain) matte 1.

Wash   Selecting **Wash** serves to select a matte that is composed of a color wash between matte 1 and matte 2.
                       If only the **Wash** button lights up, it is possible to change the color wash individually with the **Softness**, **Position**, and **Angle** controls.

                       The **Softness** control permits adjusting the steepness, i.e. the width of the transition between the two colors. The **Position** control serves to shift the position of the transition. With the **Angle** control, the transition angle can be rotated.

                       Select **Flat Matte 1** or **Flat Matte 2** if you wish to adjust the matte with the **Hue**, **Chroma**, and **Luminance** controls.

Flat Matte 2   Selecting **Flat matte 2** serves to select a flat (plain) matte 2.

Digits   For details refer to section ***Introduction.***

3.8.3.3 Color Limiter

The new color limitation controls the effects of MATTE settings on

- RGB color space
- PAL / NTSC level

It ensures that these limitation regulations are observed but also that the scope is fully exploited. Both regulations are applicable at all times with the stricter regulation prevailing on a case by case basis.

RGB limitation

All colors are permitted that do not produce an R, G or B level of > 100% or <0%.

PAL / NTSC limitation

All colors are permitted as long as the total of luminance and chrominance does not exceed the (adjustable) COL LIMITER level.
If COL LIMITER is set to 133, a PAL/NTSC overlevel of 33 % will admissible but the representation of all RGB values (including a saturated yellow) will be possible. The colors of a 100/100 colorbar signal represents the limit.

If COL LIMITER is set to 100, a 100 % level will be ensured but certain (yellow) colors will be inadmissible. The colors of a 100/75 colorbar signal represents the limit.

Color Limiter On / Off

The color limiter can be switched **Off**, so that the "illegal" colors can be adjusted but the **ILLEGAL** indication signal this status in the menu and at the panel.
With Color Limit **On** the limit is forced.

Function

If in a modification of hue, chroma, or luminance one of the limits is reached, the indication **ILLEGAL** lights and attempts to realize the demanded value at the expense of a different parameter.

- A change in HUE may result in a chrominance correction.
- A change in CHR may result in a luminance correction.
- A change in LUM may result in a chrominance correction.

If an absolute limit is reached, values will no longer change. A maximum chroma may generally be achieved at a medium luminance, i.e. subsequent decreases or increases in LUM will result in a reduction in chrominance.

The limit mode simplifies the search for colors with maximum saturation. This mode is enabled, when chrominance is set to maximum.
In subsequent HUE changes, the color follows lines of maximum saturation.
For this purpose, both chrominance and luminance are continuously updated automatically. If the chrominance or luminance setting is changed, this mode is disabled again.

3.8.4   WIPE PATTERN MENU
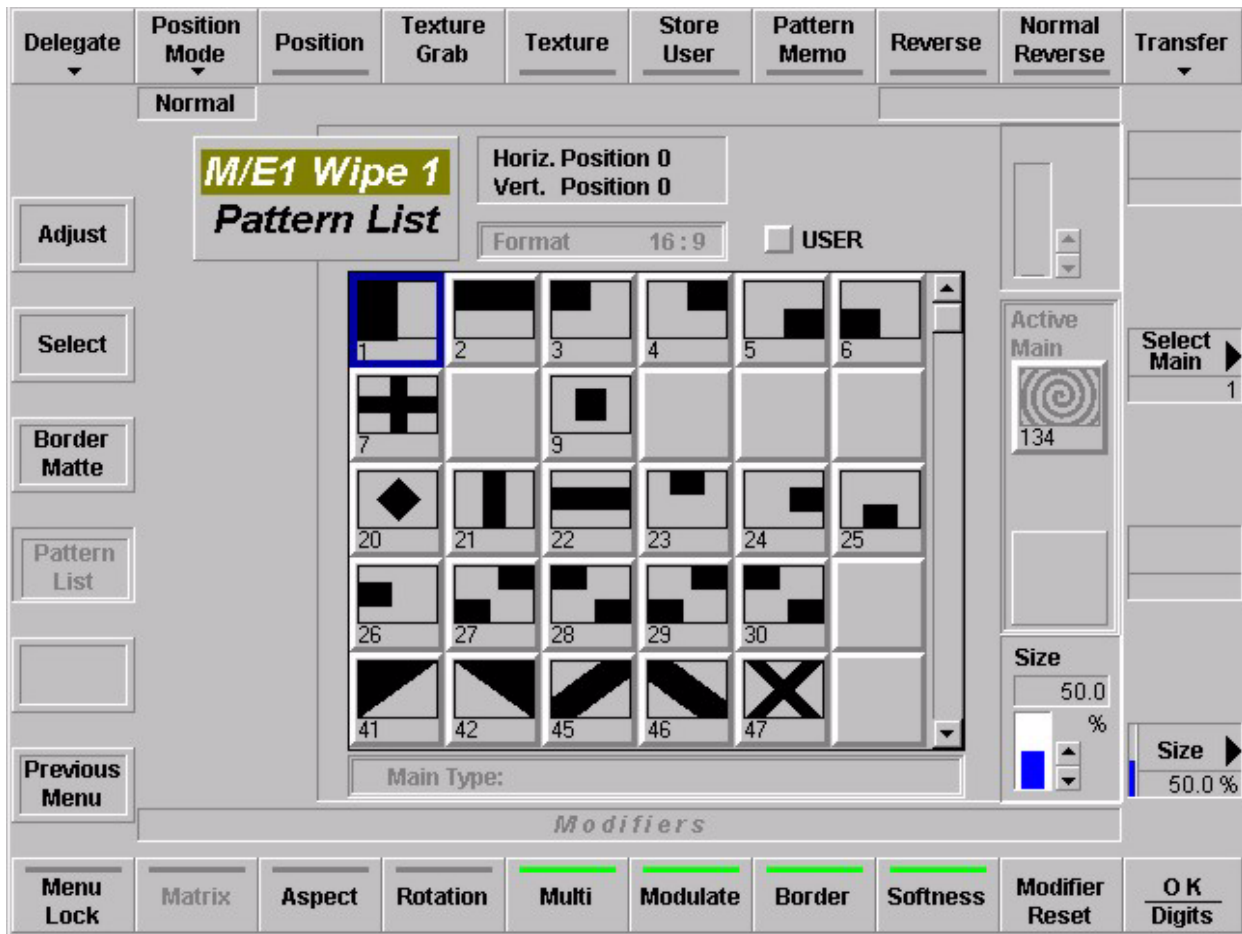
This menu corresponds to the **Select** menu. The difference is in number and arrangement of the wipe patterns. The **Pattern** menu shows all possible wipe patterns in sequence according to the SMPTE code.

These are   **150 standard patterns**
                   30 user patterns

The further control is identical with the **Select** menu and is described in the corresponding section.

Pattern List, Page 1
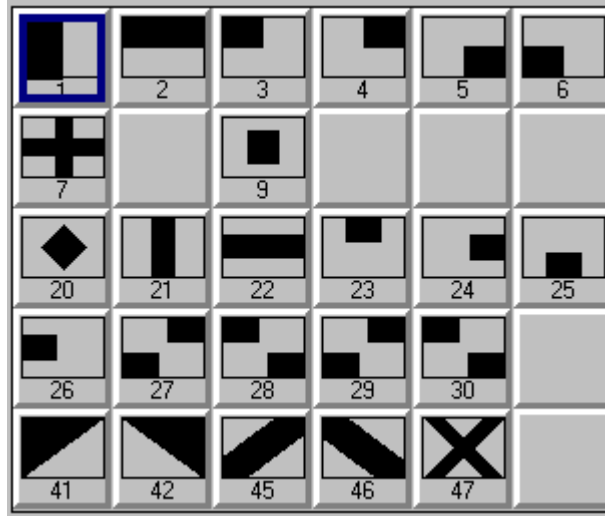
Pattern List, Page 2
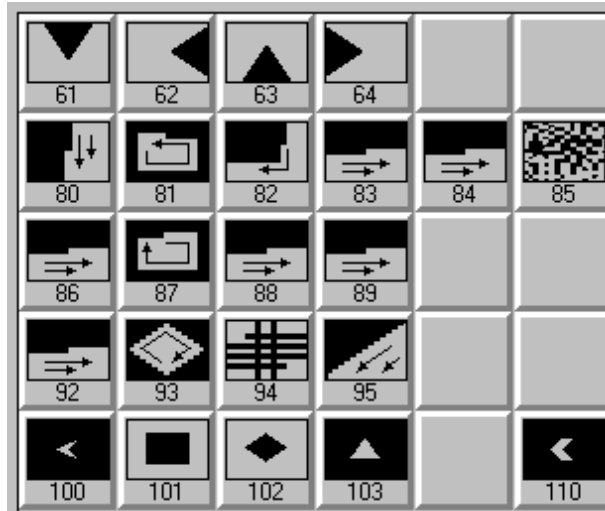
Pattern List, Page 3

Pattern List, Page 4

Pattern List, Page 5

Pattern List, Page 6
(User stored wipes)

3.8.5   STORING A USER WIPE

A preadjusted wipe pattern with all modifiers and border mattes can be stored as a *User Wipe*. Storing user-defined wipe patterns can be performed as follows:

- select standard wipe pattern

- Adjust the desired modifiers and activate **Texture** if the user wipe shall be used as textures later on.

- Select **Store User**. In the ***Wipe Pattern*** menu, the user page and a control dialog are displayed.

- With the **Select User** digipot the red frame cursor can be positioned to the desired button.
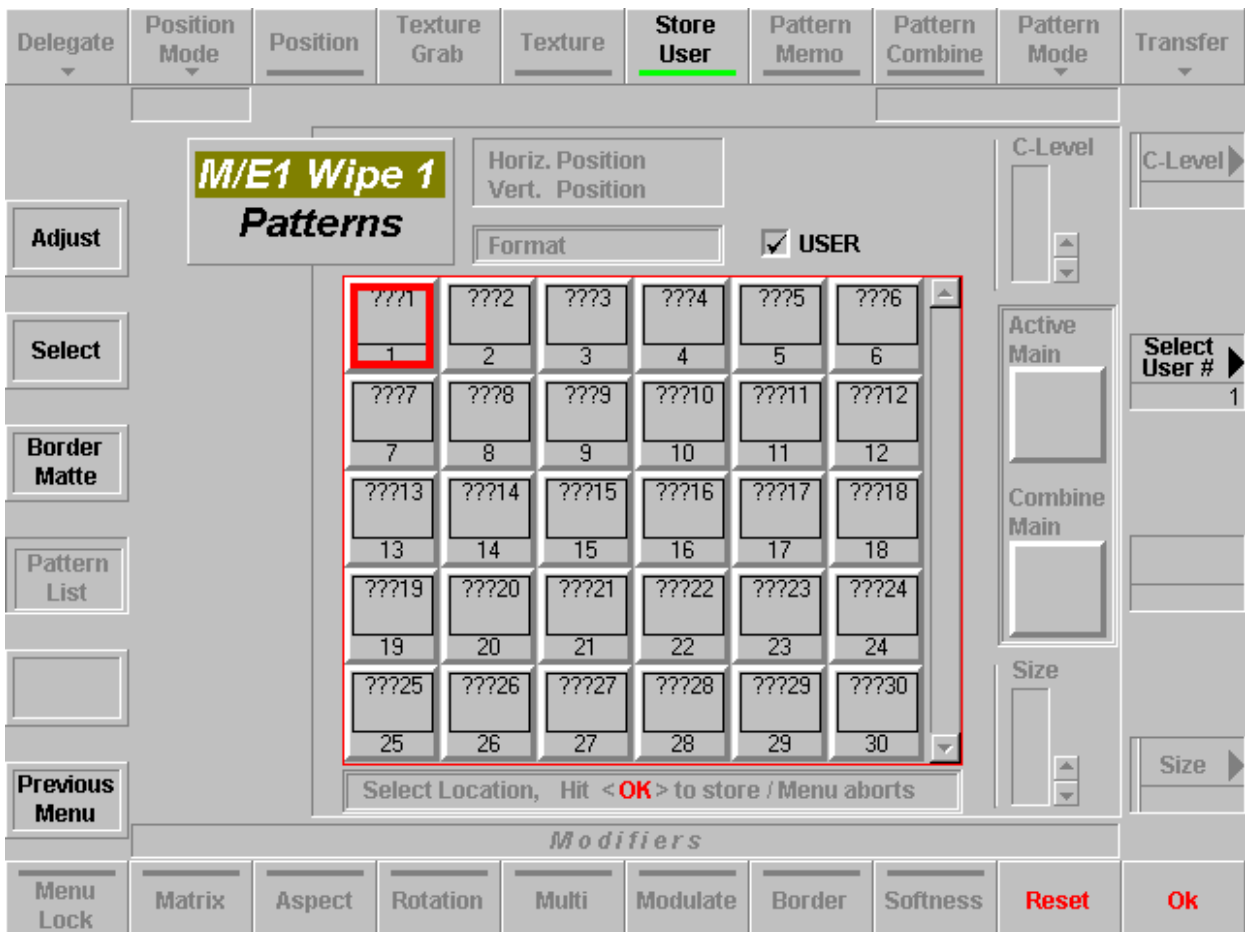
● Press **OK** to store the wipe. The wipe is stored under the selected button posi-
tion. The menu shows the keyboard to enable naming the wipe.

```
Name for User Wipe:  wipeXYZ

  '   1   2   3   4   5   6   7   8   9   0   -   =   ← BS
  →|   Q   W   E   R   T   Y   U   I   O   P   [   ]   \
 Lock  A   S   D   F   G   H   J   K   L   ;   '   ↵ Enter
  Shift  Z   X   C   V   B   N   M   ,   .   /     Shift
                        Space

  Shift    Caps          Cancel          BkSpace   Select   Enter
```
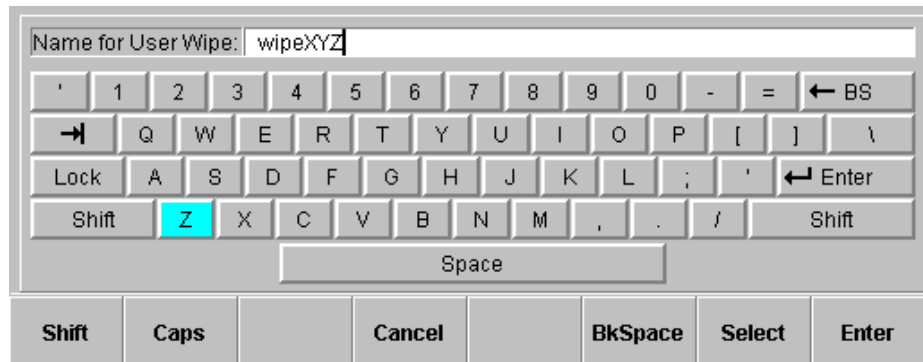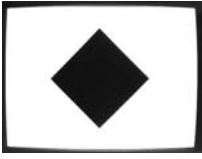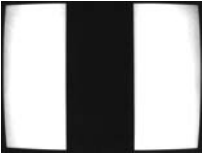
● Enter the name and press **Enter**. The name (7 letters max) is inserted in the
button symbol.
To type in a name select the desired letter with the digipots and confirm with
the **Select** button. To confirm the name the **Enter** button has to be pushed.
With a mouse the letters can be selected by a click. An external keyboard can
also be used to type in a user wipe name.

3.8.6 WIPE PATTERN LIST WITH SELECTION CODE FOR EDITOR OPERATION
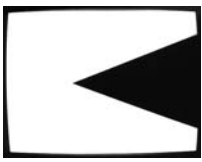
The enclosed list contains all wipe patterns available in the switcher together with their specific wipe number (in line with SMPTE). The table also indicates which modifiers are possible with the individual wipe patterns.

Note: **Softness and Border is possible with all listed patterns!**
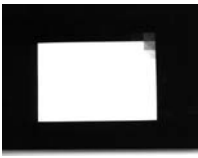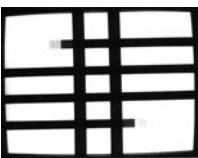
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	01								●		●					
	02									●		●				
	03	●					●		●	●	●	●		●	●	●
	04	●					●		●	●	●	●		●	●	●
	05	●					●		●	●	●	●		●	●	●
	06	●					●		●	●	●	●		●	●	●
	07	●		●			●	●	●	●	●	●	●			

Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matrix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
◼	**09**			●			●	●	●	●	●	●	●	●	●	●
RECALL OFF USER WIPE 1 FROM EDIT SYSTEM	**10**															
RECALL OFF USER WIPE 2 FROM EDIT SYSTEM	**11**															
RECALL OFF USER WIPE 3 FROM EDIT SYSTEM	**12**															
RECALL OFF USER WIPE 4 FROM EDIT SYSTEM	**13**															
RECALL OFF USER WIPE 5 FROM EDIT SYSTEM	**14**															
◆	**20**			●			●	●	●	●	●	●	●	●	●	●
▮	**21**							●	●		●					
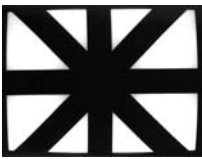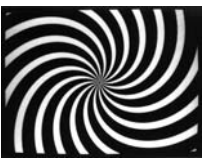
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matrix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	22							●		●		●				
	23	●					●		●	●	●	●		●	●	●
	24	●					●		●	●	●	●		●	●	●
	25	●					●		●	●	●	●		●	●	●
	26	●					●		●	●	●	●		●	●	●
	27						●	●	●	●	●	●	●			
	28						●	●	●	●	●	●	●			
	29						●	●	●	●	●	●	●			

Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	30						●	●	●	●	●	●	●			
	41								●	●	●	●	●			
	42								●	●	●	●	●			
	45							●	●	●	●		●			
	46							●	●	●	●		●			
	47	●		●			●	●	●	●	●	●	●			
	61	●						●	●	●	●	●		●	●	●
	62	●						●	●	●	●	●		●	●	●
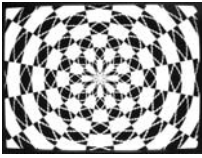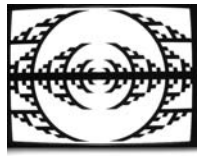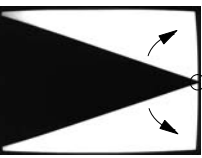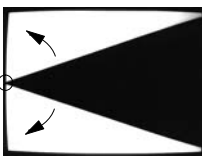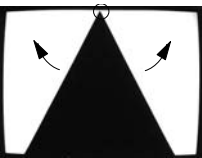
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matrix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	63	●					●		●	●	●	●		●	●	●
	64	●					●		●	●	●	●		●	●	●
	80		●								●	●				
	81		●								●	●				
	82		●								●	●				
	83		●								●	●				
	85		●								●	●				
	86		●								●	●				

Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	87		●								●	●				
	88		●								●	●				
	89		●								●	●				
	92		●								●	●				
	93		●								●	●				
	94		●								●	●				
	95		●								●	●				
	100 (99)	●					●	●	●	●	●	●	●			

Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
■	**101** **(69)**						●	●	●	●	●	●	●	●	●	●
◆	**102** **(96)**						●	●	●	●	●	●	●	●	●	●
▲	**103** **(97)**	●		●			●	●	●	●	●	●	●	●	●	●
◄	**110** **(98)**	●					●	●	●	●	●	●	●	●	●	●
●	**119** **(49)**			●			●	●	●	●	●	●	●	●	●	●
⬮	**120** **(50)**			●			●	●	●	●	●	●	●	●	●	●
⬭	**122**	●					●	●	●	●	●	●	●	●	●	●
⬭	**124** **(70)**			●			●	●	●	●	●	●	●	●	●	●

Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
♥	130	●		●				●	●	●	●	●				●
✴	132	●		●		●	●	●	●	●	●	●	●	●	●	●
✕	133	●		●		●	●	●	●	●	●	●	●	●	●	●
spiral	134	●		●			●	●	●	●	●	●	●	●	●	
spiral	135	●		●			●	●	●	●	●	●	●	●	●	
spiral	136	●		●			●	●	●	●	●	●	●	●	●	
star	137	●		●		●	●	●	●	●	●	●	●	●	●	
spiral	138	●		●			●	●	●	●	●	●	●	●	●	
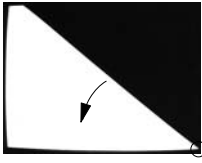
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	140	●		●			●	●	●	●	●	●	●	●	●	●
	141	●		●			●	●	●	●	●	●	●	●	●	●
	142	●		●			●	●	●	●	●	●	●	●	●	●
	143	●		●		●	●	●	●	●	●	●	●	●	●	●
	144	●		●		●	●	●	●	●	●	●	●	●	●	●
	145	●		●		●	●	●	●	●	●	●	●	●	●	●
	146	●		●		●	●	●	●	●	●	●	●	●	●	●
	147	●		●		●	●	●	●	●	●	●	●	●	●	●

Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	148	●		●		●	●	●	●	●	●	●	●	●	●	●
	149	●		●			●	●	●	●	●	●	●	●	●	●
	150	●		●			●	●	●	●	●	●	●	●	●	●
	151	●		●			●	●	●	●	●	●	●	●	●	●
	152	●		●			●	●	●	●	●	●	●	●	●	
	182 (58)	●							●	●	●	●				
	183 (60)	●							●	●	●	●				
	184 (57)	●							●	●	●	●				

Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	185 **(59)**	●							●	●	●	●				
	186	●							●	●	●	●				
	187	●							●	●	●	●				
	188	●							●	●	●	●				
	189	●							●	●	●	●				
	190	●							●	●	●	●				
	191 **(51)**					●		●	●	●	●	●	●			
	192 **(52)**					●		●	●	●	●	●	●			

Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	193 **(53)**					●		●	●	●	●	●	●			
	194 **(54)**					●		●	●	●	●	●	●			
	195 **(56)**					●		●	●	●	●	●	●			
	196					●		●	●	●	●	●	●			
	201					●		●	●	●	●	●	●			
	202					●		●	●	●	●	●	●			
	203					●		●	●	●	●	●	●			
	204					●		●	●	●	●	●	●			

Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	205					●		●	●	●	●	●	●			
	207					●		●	●	●	●	●	●			
	210					●		●	●	●	●	●	●			
	211					●		●	●	●	●	●	●			
	213					●		●	●	●	●	●	●			
	214					●		●	●	●	●	●	●			
	235	●							●	●	●	●				
	244	●							●	●	●	●				

Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	I	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	247	●							●	●	●	●				
Only with wipe processor hardware index 12 or higher	**128** **(75)**	●		●		●	●	●	●	●	●	●	●	●	●	●

X^{ten}DD

3.9 COLOR BACKGROUND MENU

In preparation!

The **X^{ten}DD** is equipped with up to 90 serial digital inputs which can be universally used for video or key signals. Among other inputs additionally the following internal signals are available:

● 3 color background signals (**Col1, Col2, Col3**)
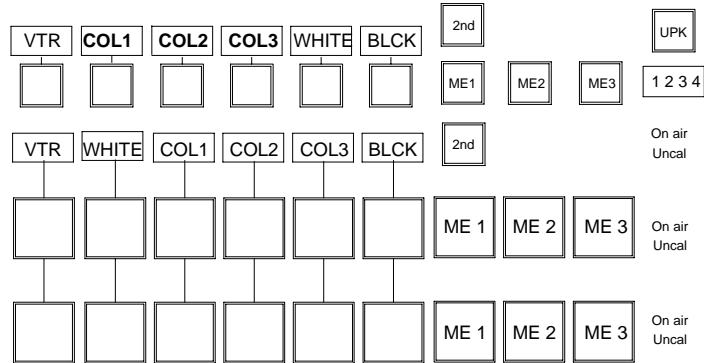
3.9.1 COLOR BACKGROUND 1 MENU

Because the video architecture of the mixer the funktion buttons **Texture Source**, **Freeze** and **Texture Wash** are only present in the **Color BGD1** menu.

Texture Source

Key1 ———
Key2 ———
Pattern1 ———
Pattern2 ———
MaskBus ———

Texture Store

Color BGD 1 Generator
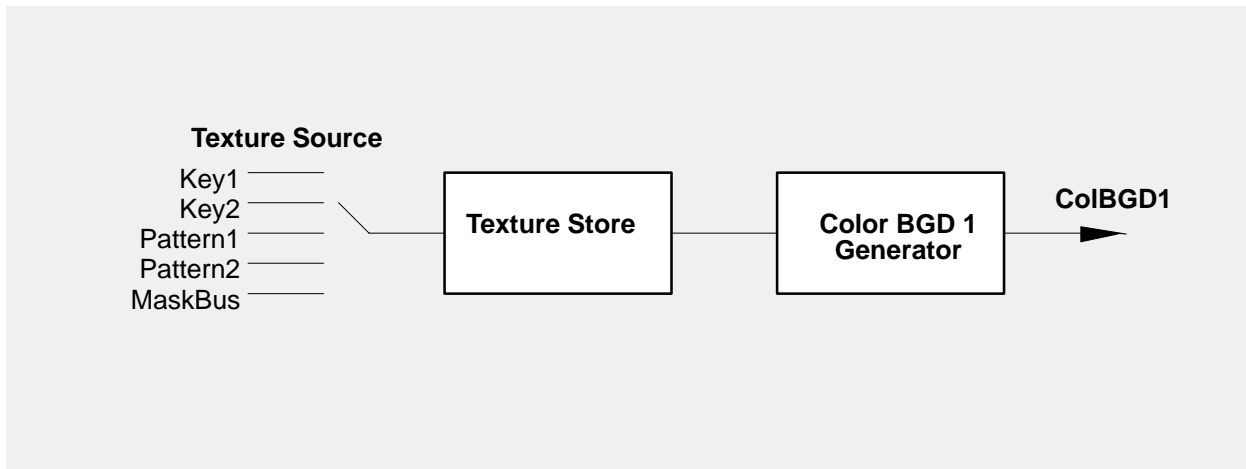
ColBGD1

3.9.1.1   Dialog Buttons

Col BGD 1   Selecting **Color Background 1** menu.

Col BGD 2   Selecting **Color Background 2** menu.

Col BGD 3   Selecting **Color Background 3** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.9.1.2 Function Buttons

Delegate

For details refer to section ***Introduction.***

Delegate	BGD 1	Pattern BGD 2	BGD 3
▲		*Delegate to ColorGen*	

Pattern Main
Key Main

Dialog button serves to call the respective menu.
– if **Texture Source** = Pattern, the **Pattern Main** button will be displayed
– if **Texture Source** = Key, the **Key Main** button will be displayed.

Matte 1
Matte 2

The **Matte 1 (Matte 2)** button delegates the digipots so that the desired colors can be adjusted. There are seven preadjusted matte colors selectable.

Pattern SuperBlk	Yellow	Cyan	Green	Magenta	Red	Matte 2 ▲	Blue
			Preset				

The **Hue** control serves to adjust the color. The **Chroma** control serves to adjust the color saturation (chrominance). The **Luminance** control serves to adjust the desired brightness of the color.

Note: Please note that certain combinations of chrominance and luminance values will cause overlevels and inadmissible colors. For this reason, an automatic can be switched on to control limits the chrominance for defined luminance values.
*You can easily check this by setting the **Chroma** control to maximum and then turning the **Luminance** control slowly to maximum; the chrominance will be reduced with increasing luminance values.*
*If the automatic control is switched off an **illegal** sign indicates a wrong adjustment.*

Wash

The **Wash** button serves to reset the wash to: Angle-Vert, Pos-Mid and Soft-Min and delegates the digipots to the wash parameters **Angle**, **Pos**, **Soft**.

Reset	Wash	Matte 2 ▼	
Wash	▲		

Menu Lock   For details refer to section ***Introduction.***

Texture Source   Selecting the the requested Texture Source.

After selection the controls above change to the respective mode:

Shows basic pattern
even of User Wipes
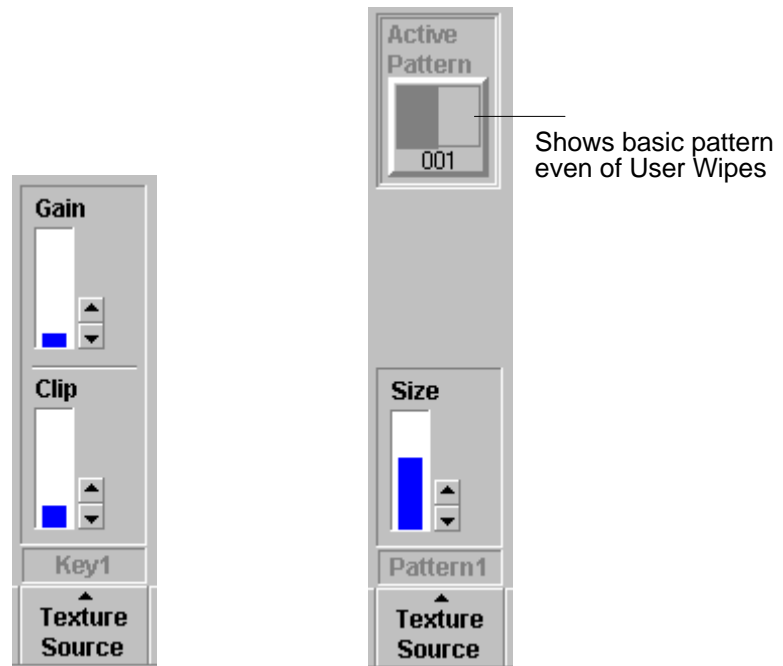
Texture Source = Key   Texture Source = Pattern

Freeze   Selecting freeze mode for the Texture Store.

Readout   Selecting the respective field or frame for readout:

Flat Matte 1 **Flat matte 1** selects matte 1 as output.

Flat Matte 2 **Flat matte 2** selects matte 2 as output.

Wash Selecting **Wash** serves to select a matte that is composed of a color wash between matte 1 and matte 2.
If only the **wash** button lights up, it is possible to change the color wash individually with the **Softness**, **Position**, and **Angle** controls.

The **Softness** control permits adjusting the width of the transition between the two colors. The **Position** control serves to shift the position of the transition. With the **Angle** control, the transition angle can be rotated.

Select **Matte 1** or **Matte 2** if you wish to adjust the matte with the **Hue**, **Chroma**, and **Luminance** controls. Select **Wash** (upper row) to adjust **Softness**, **Position**, and **Angle**.

Texture Wash Selecting a special matte composed of matte 1 + 2. The contents of the Texture Store washes between them.

Digits For details refer to section *Introduction.*

3.9.1.3   How to use Texture Wash

The Texture Wash can be selected in the following way:

- Select **Flat Matte 1** and adjust the desired color

- Select **Flat Matte 2** and adjust the desired color. Matte1 and Matte2 should be different.

- Switch on **Texture Wash**

- Select the Texture source **Key1**, **Key2**, **Pattern1**, **Pattern2** or **Mask Bus** as control signal to fade between Matte1 and Matte2. All Texture sources are only from M/E1.

- Make sure that **Freeze** is off

- Adjust the pattern with the digipot **Size** or the Key1/2 and Mask Bus with the **Clip** and **Gain** digipot.

- If desired, the adjusted Key Bus or wipe signal can be stored in the Texture Store with **Freeze**

- The color of Matte1 and Matte2 can be adjusted also with Freeze mode on.

- The Matte can be switched between **Flat**, **Wash** and **Texture Wash** without loosing contents of the store.

Note: Please note that a signal is delayed by one frame when it passes through the store.

3.10 CORRECTION MENU

3.10.1 BUS CORRECTION MENU
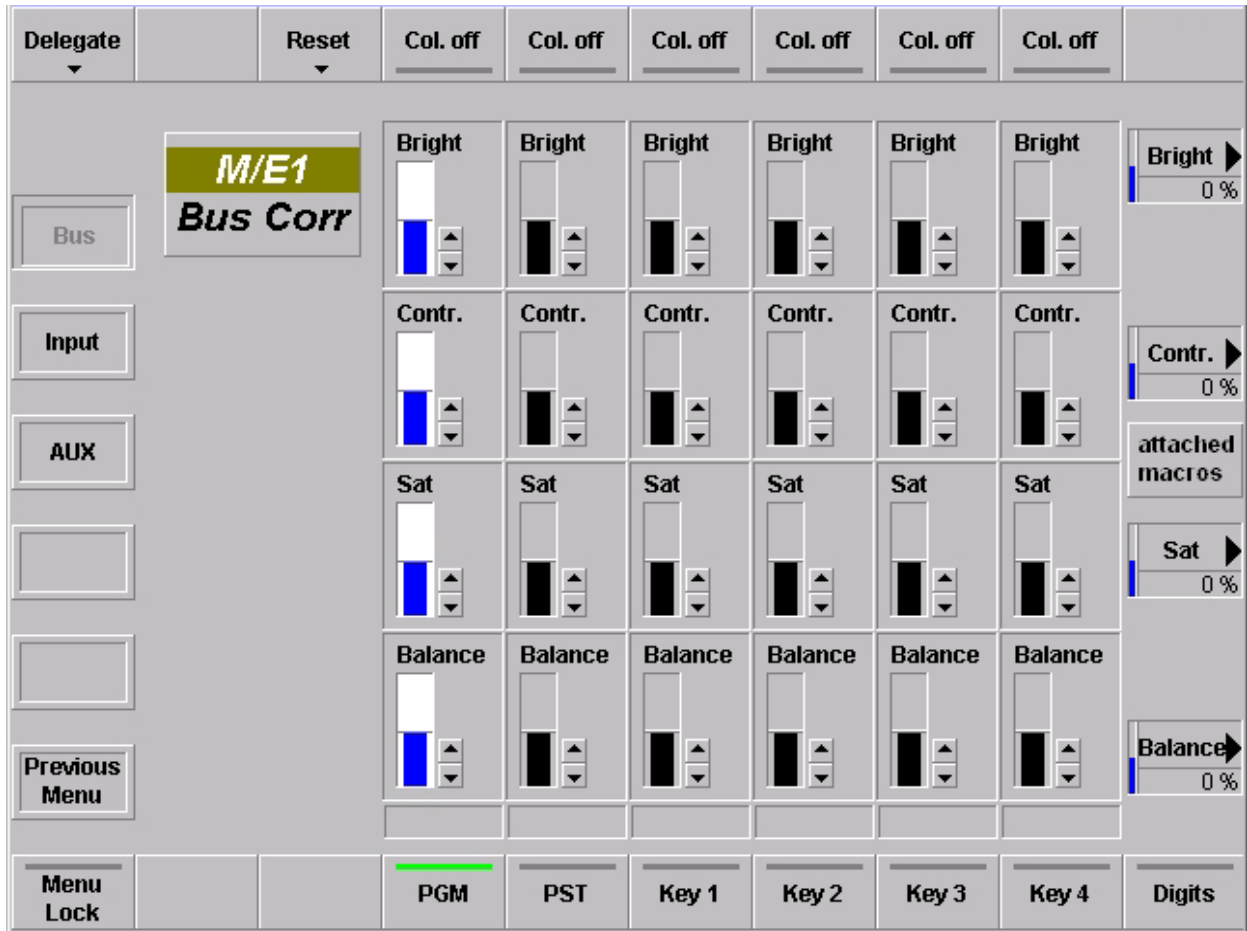
The Bus Correction menu serves to adjust brightness, contrast, saturation and color balance related to the bus. The correction can be made in the following buses:

- Input (all input signals)
- Bus (PGM, PST, Key1 ... Key4)
- Aux (all Aux buses)

Note: Bus correction has priority over input correction.

3.10.1.1 Dialog Buttons

Input   Selecting of the Input Correction menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.10.1.2 Function Buttons

Delegate	Menu delegation to M/E1, M/E2, M/E3 or P/P. For details refer to section ***Introduction.***
Reset Bus	Reset the values for a single bus of the selected M/E to their default value.
Reset M/E	Reset the values for all busses of the selected ME to their default values.
Col. off	Switched the color on/off completely separate for each bus.
Menu Lock	For details refer to section ***Introduction.***

PGM
PST
Key1 (DSK1)
Key2 (DSK2)
(DSK3)

The button serve to activate the bus correction and delegates the digipots to the parameters **Bright**, **Contr**, **Sat** and **Balance**.

> ***Note:*** **If Bus Correction for PGM bus and/or PST bus is selected, the two settings are exchanged at the end of a fading.**
>
> ***Application:***
> ***Color/BlackWhite fading of the same picture source.***

Digits   For details refer to section ***Introduction.***

3.10.2   INPUT CORRECTION MENU
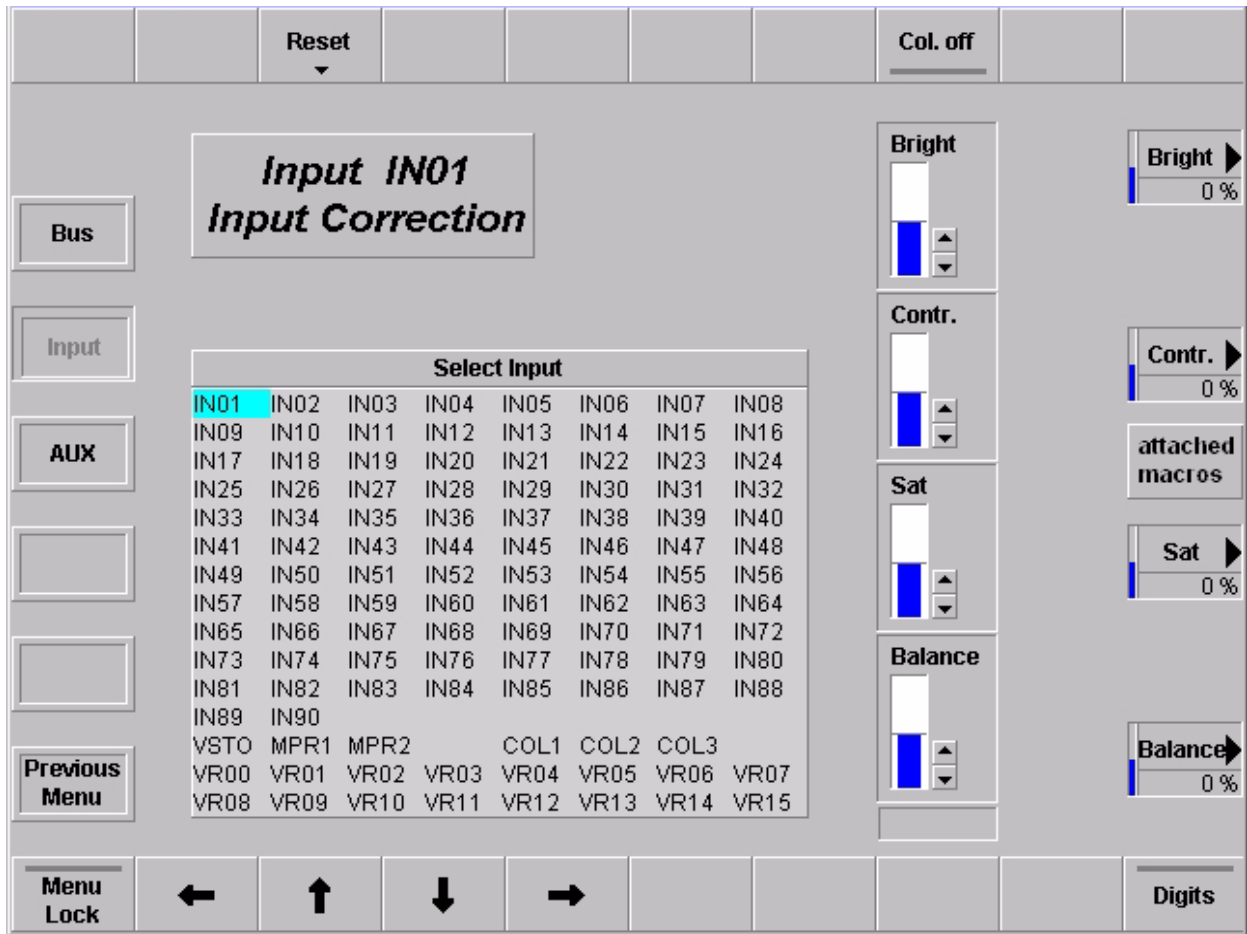
The Input Correction menu serves to adjust brightness, contrast, saturation and color balance related to the inputs.

3.10.2.1 Dialog Buttons

Bus   Selecting of the Bus Correction menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.10.2.2 Function Buttons

Reset Input   Reset the values for the selected input to their default value.

Reset All   Reset the values for all inputs to their default values.

Col. off   Switched the color on/off completely.

→ ↑ ↓ ←   Moving the cursor to select a input channel.

Menu Lock   For details refer to section *Introduction.*

PGM   The button serve to activate the bus correction and delegates the digipots to the
PST   parameters **Bright**, **Contr**, **Sat** and **Balance**. In compare to the DD35**,** the adjust-
Key1 ... 4   ment range is expanded.
DSK1 ... 3

Digits   For details refer to section *Introduction.*

3.11   REMOTE MENU

3.11.1   MAIN MENU
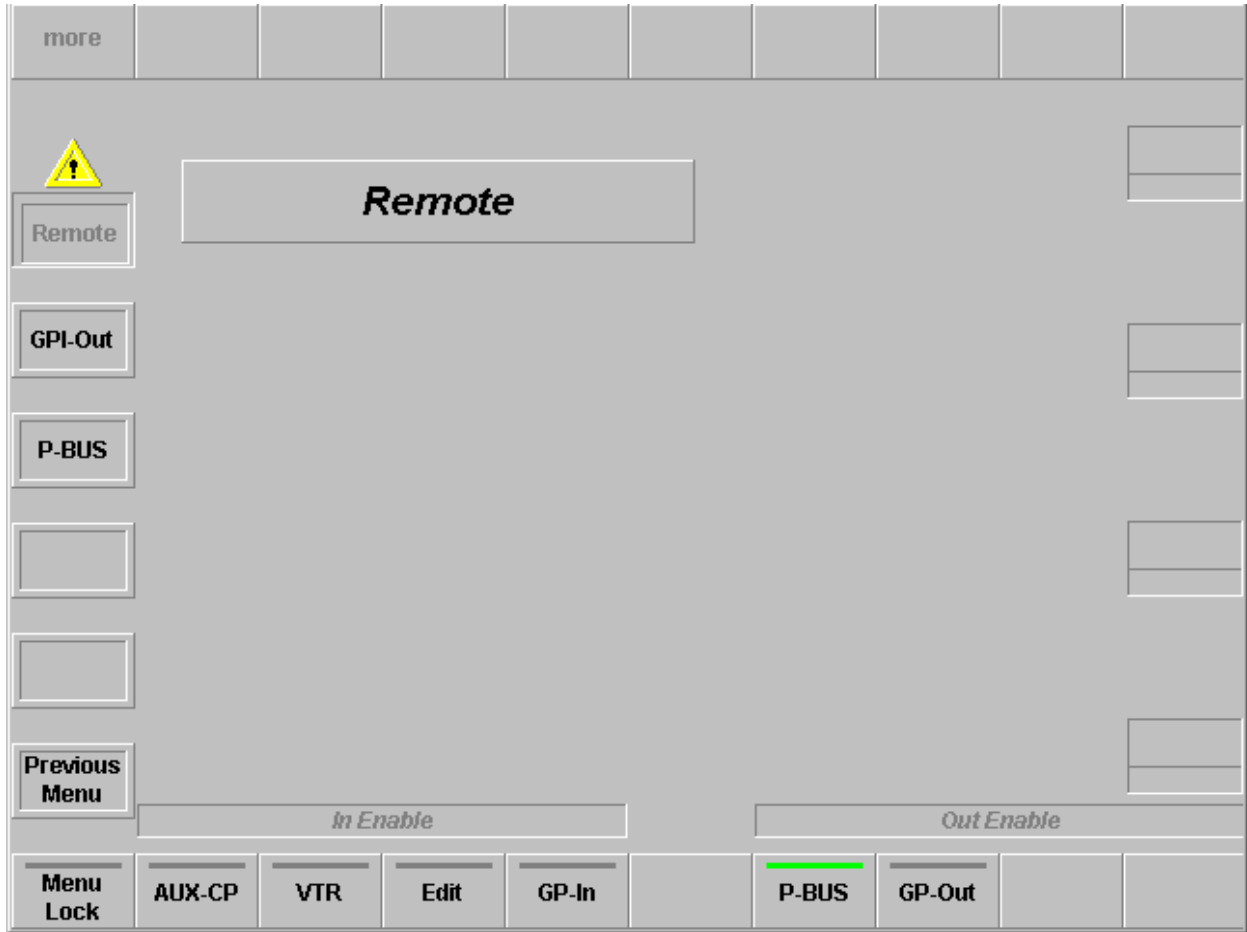
3.11.1.1 Dialoge Buttons

GPI-Out   Selecting **GPI-Out** menu

P-Bus   Selecting **P-Bus** (Periveral Bus) menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.11.1.2 Function Buttons

Menu Lock   For details refer to section ***Introduction.***

In Enable   Enables Aux Control Panels
AUX CP

In Enable   Enables the VTR control
VTR

In Enable   Enables Editor control.
Edit

In Enable   Enables GPI inputs
GP In

Out Enable   Enables Editor control.
P-Bus

Out Enable   Enables GPI inputs
GP Out

3.11.2   GPI-OUT MENU

```
┌─────────────────────────────────────────────────────┐
│                                                       │
│  ┌──────────┐      ┌──────────────────┐               │
│  │ Remote   │      │    Remote        │               │
│  └──────────┘      │    GPI-Out       │               │
│                    └──────────────────┘               │
│  ┌──────────┐     ┌─────────────────────┐             │
│  │ GPI-Out  │     │ No.     Name        │             │
│  └──────────┘     │ GPO1    EGO8      ▲  │             │
│                   │ GPO2    GPO2         │             │
│  ┌──────────┐     │ GPO3    GPO3         │             │
│  │  P-BUS   │     │ GPO4    GPO4         │             │
│  └──────────┘     │ GPO5    GPO5         │             │
│                   │ GPO6    GPO6         │             │
│  ┌──────────┐     │ GPO7    GPO7         │             │
│  │          │     │ GPO8    GPO8         │             │
│  └──────────┘     │                     │             │
│  ┌──────────┐     │                  ▼  │        ↕ ▶  │
│  │          │     └─────────────────────┘             │
│  └──────────┘                                         │
│  ┌──────────┐     Trigger attached GPOs               │
│  │ Previous │                                         │
│  │  Menu    │                                         │
│  └──────────┘                                         │
│  Menu                                                 │
│  Lock   P/P  M/E1  M/E2  M/E3  ↑   ↓      Trigger     │
└─────────────────────────────────────────────────────┘
```
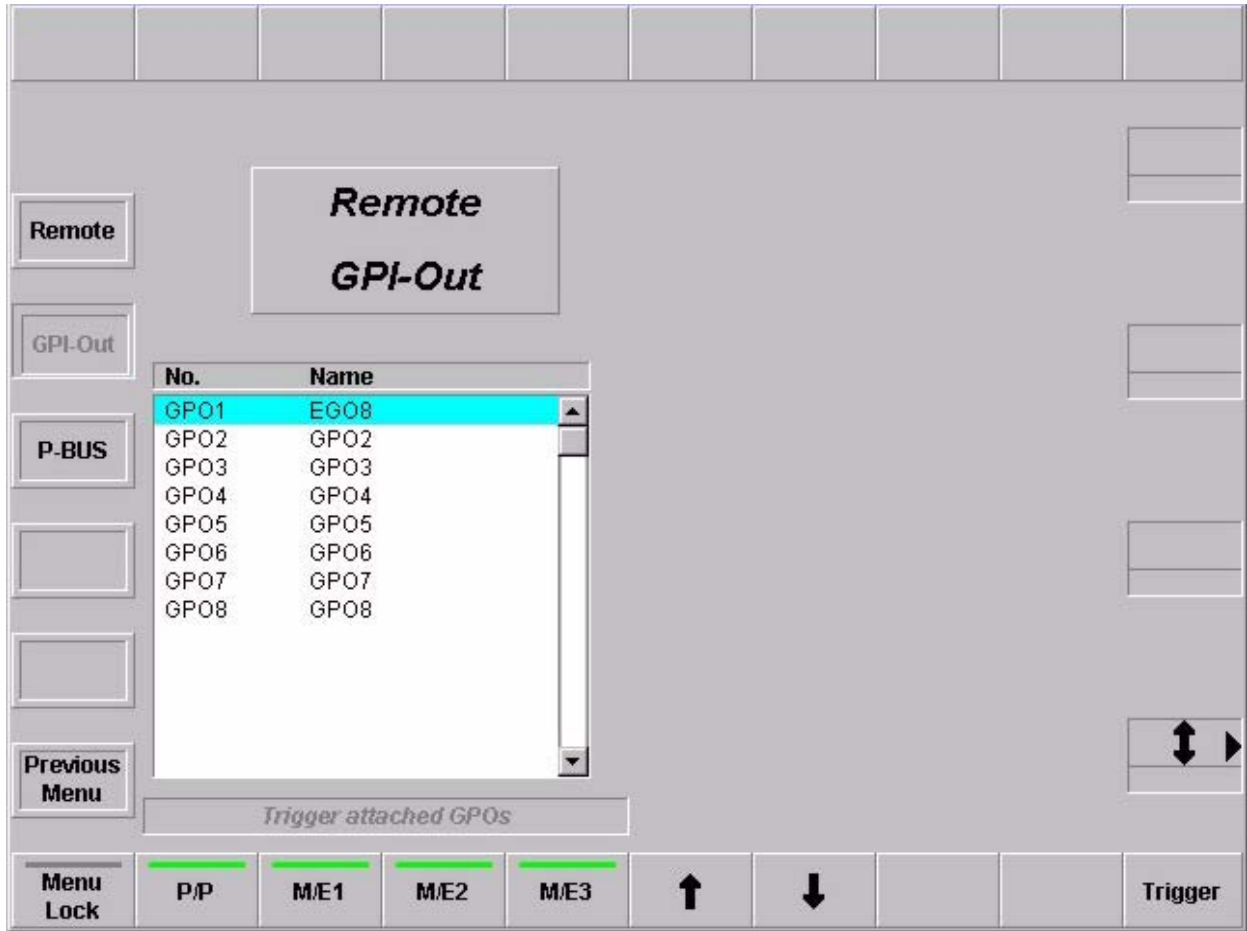
3.11.2.1   Dialog Buttons

Remote   Return to the **Remote** main menu.

P-BUS   Selecting **P-Bus** menu

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.11.2.2 Function Buttons

Menu Lock   For details refer to section ***Introduction.***

Trigger attached   In preparation
GPOs:
– P/P
– M/E1 ... 3

Cursor ↑ ↓   Moving the bar in the list box and select a GPO channel

Trigger   Set a manual trigger

3.11.3 REMOTE P-BUS
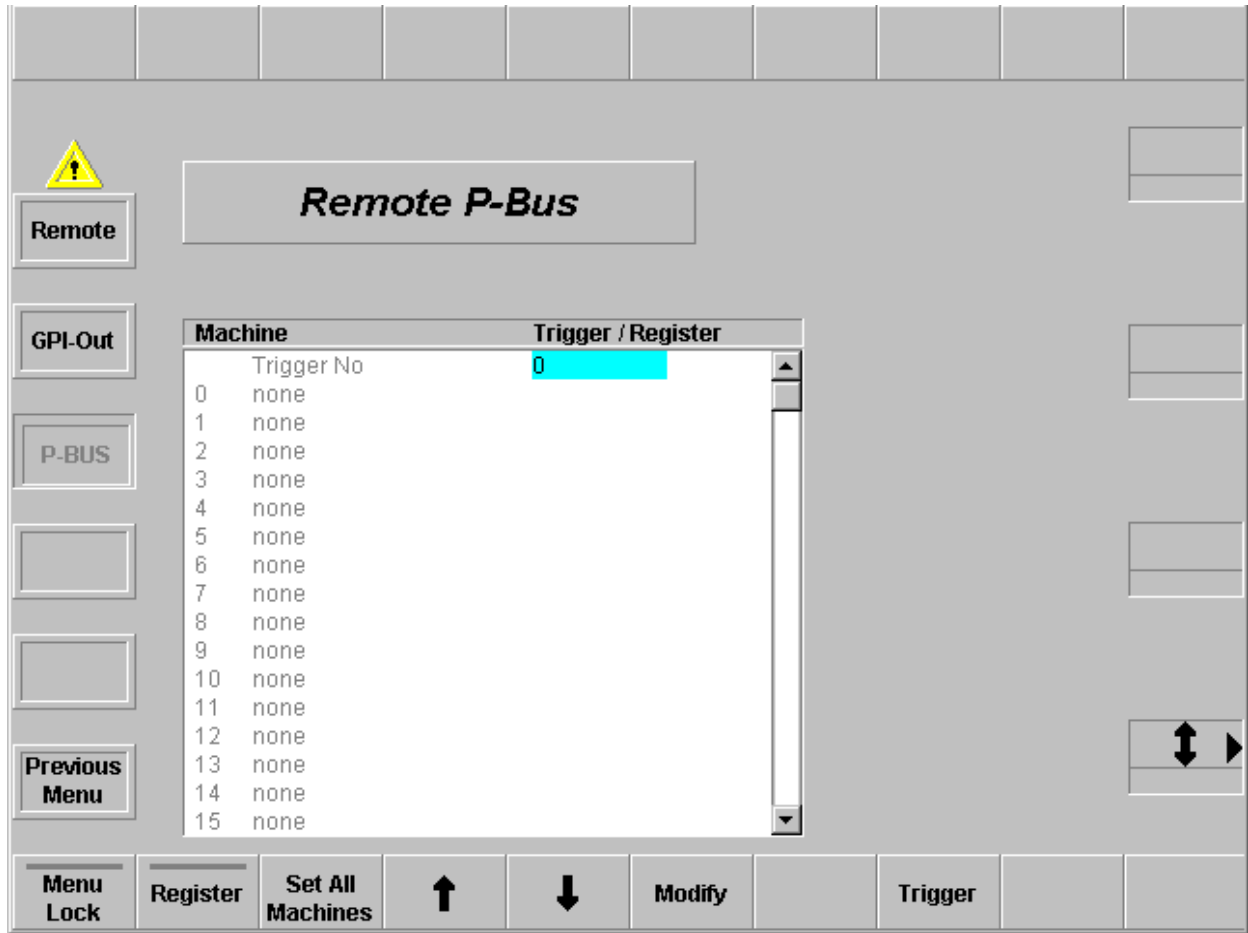
3.11.3.1 Dialog Buttons

Remote   Return to the **Remote** main menu.

GPI Out   Selecting **GPI-In** menu. Not yet implemented.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.11.3.2 Function Buttons

Remote P-Bus / Trigger

The **Remote / P•Bus** enables to manually trigger with **Trigger** the machines defined in the **Install / E-Box / P-Bus** menu. At present, only 1 trigger can be output on the P-Bus, which then reaches all machines for which in this case a trigger is adjusted.
In the 1st line, the trigger number is present (can be used, but must not). In the other lines, this trigger number is adjusted for the respective machines.

The popup of each machine provides the following selection possibilities:

no Command: this machine does not get any trigger

default Command: this machine gets the trigger number
                                                    being in the 1st line
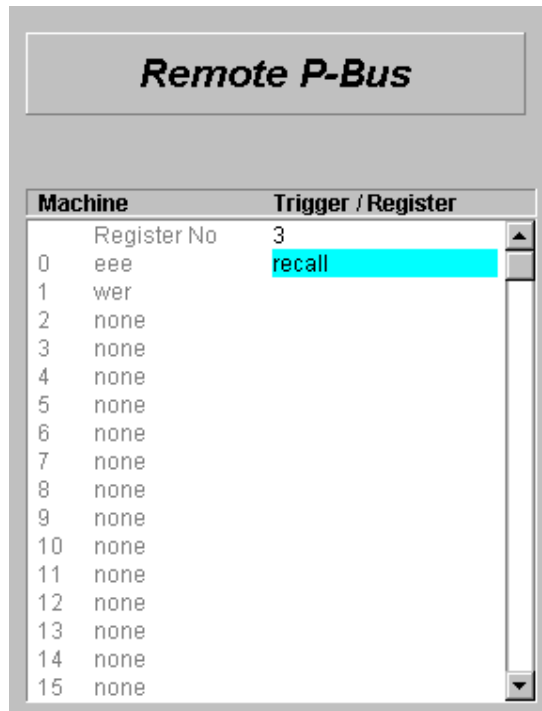
all other lines: here, each trigger is specified with the
                                                    name being provided for this machine.
                                                    A selection in this area also changes
                                                    the general trigger number in the
                                                    1st line which then is applicable for all
                                                    machines.

It is only possible to trigger those machines which are activated in the **Install / P-Bus** menu. The trigger will then be performed by the equal-named button. It then reaches all machines with a trigger name listed below.

Remote P-Bus / Register

Subdialog of the trigger. Register are device-specific states. These registers can be read out or written in just as the trigger for a defined number of machines. The concerned machines are indicated in the field **Trigger/Register** where only **Recall / No Recall** can be selected.

Remote P-Bus	
Machine	**Trigger / Register**
Register No	3
0 eee	recall
1 wer	
2 none	
3 none	
4 none	
5 none	
6 none	
7 none	
8 none	
9 none	
10 none	
11 none	
12 none	
13 none	
14 none	
15 none	

Storing or recalling is performed with the buttons **Save Register** and **Recall Register**.

3.12 EXTERNAL DVE MENU
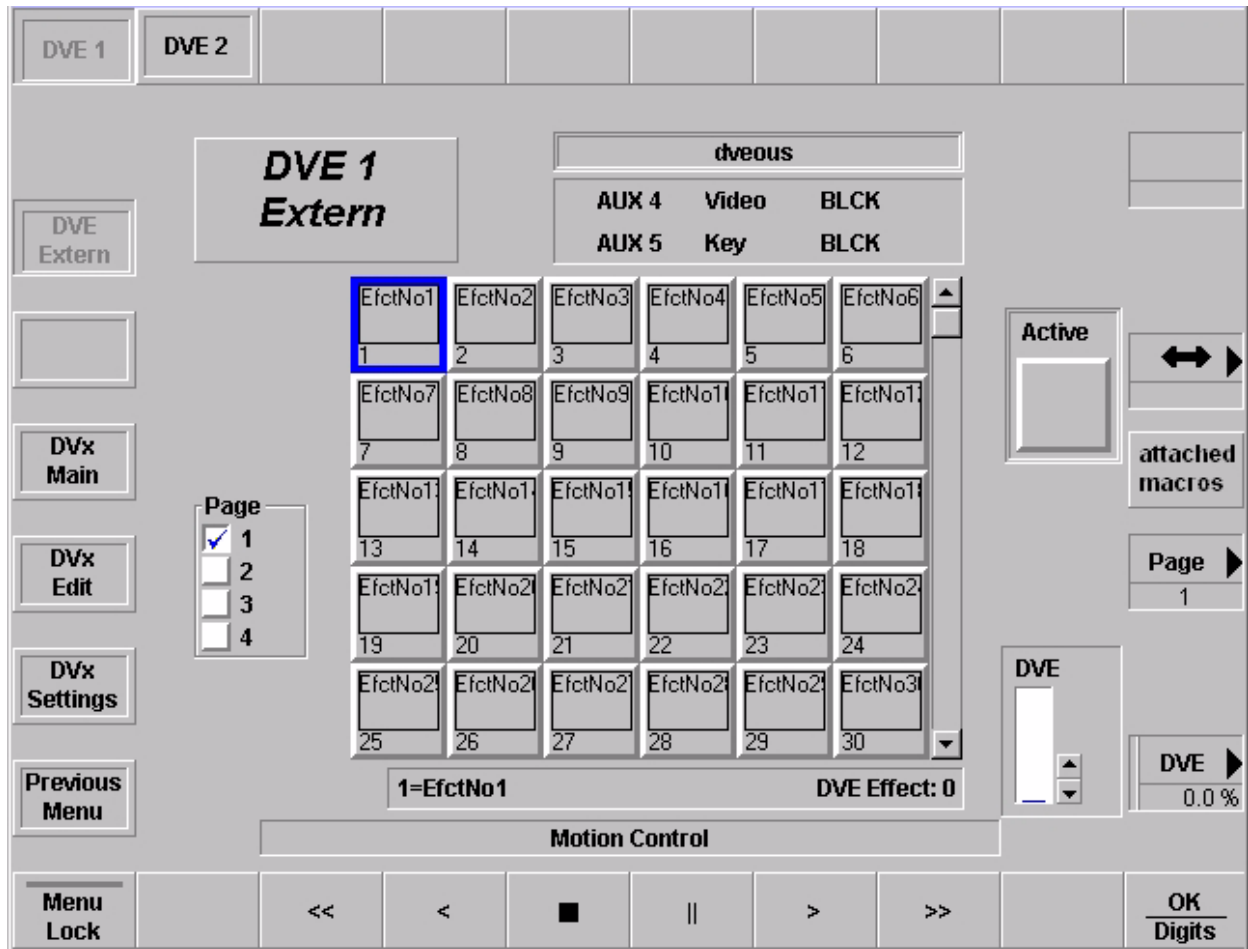
3.12.1 Dialogue Buttons

DVx Main   Selecting the Main menu of the internal DVx Processor.
                      For details refer to section **DVx Menu.**

DVx Edit   Selecting the Editor menu of the internal DVx Processor.
                      For details refer to section **DVx Menu.**

DVx Settings   Selecting the Settings menu of the internal DVx Processor.
                      For details refer to section **DVx Menu.**

Previous Menu   Return to the previous menu. For details refer to section **Introduction.**

3.12.2   FUNCTION BUTTONS

Menu Lock   For details refer to section ***Introduction.***

DVE1 / DVE2   Selecting the channel of the external DVE.

                       DVE effects can be selected either by positioning the blue cursor box with the digi-
                       pot or by clicking with the mouse on the desired effect and confirm with **OK**. The
                       selected effect can be used as DVE transition (see section 2.6.3.3 *Using DVE tran-*
                       sition) or the DVE can be controlled by the Motion Controls in this menu.
                       With the digipot **DVE** the DVE can be positioned to a fixed point in the timeline.

Menu Lock   For details refer to section ***Introduction.***

Motion Control:

             < <   Fast rewind

             <   Rewind

             ■   Stop

             I I   Pause

             >   Play

             > >   Fast forward

OK / Digits   For details refer to section ***Introduction.***

3.13 MEDIA PLAYER MENU

3.13.1 STATUS MENU

	MP 1	MP 2	MP 3	MP 4	Grab Mark In	Grab Mark Out	Go To ▼	Speeds ▼	

MP 1

MP Status

MP Status

MP 2

MP Clips

Ram

MP 3

MP 4

Previous Menu

Menu Lock			<<	<	■	||	>	>>	
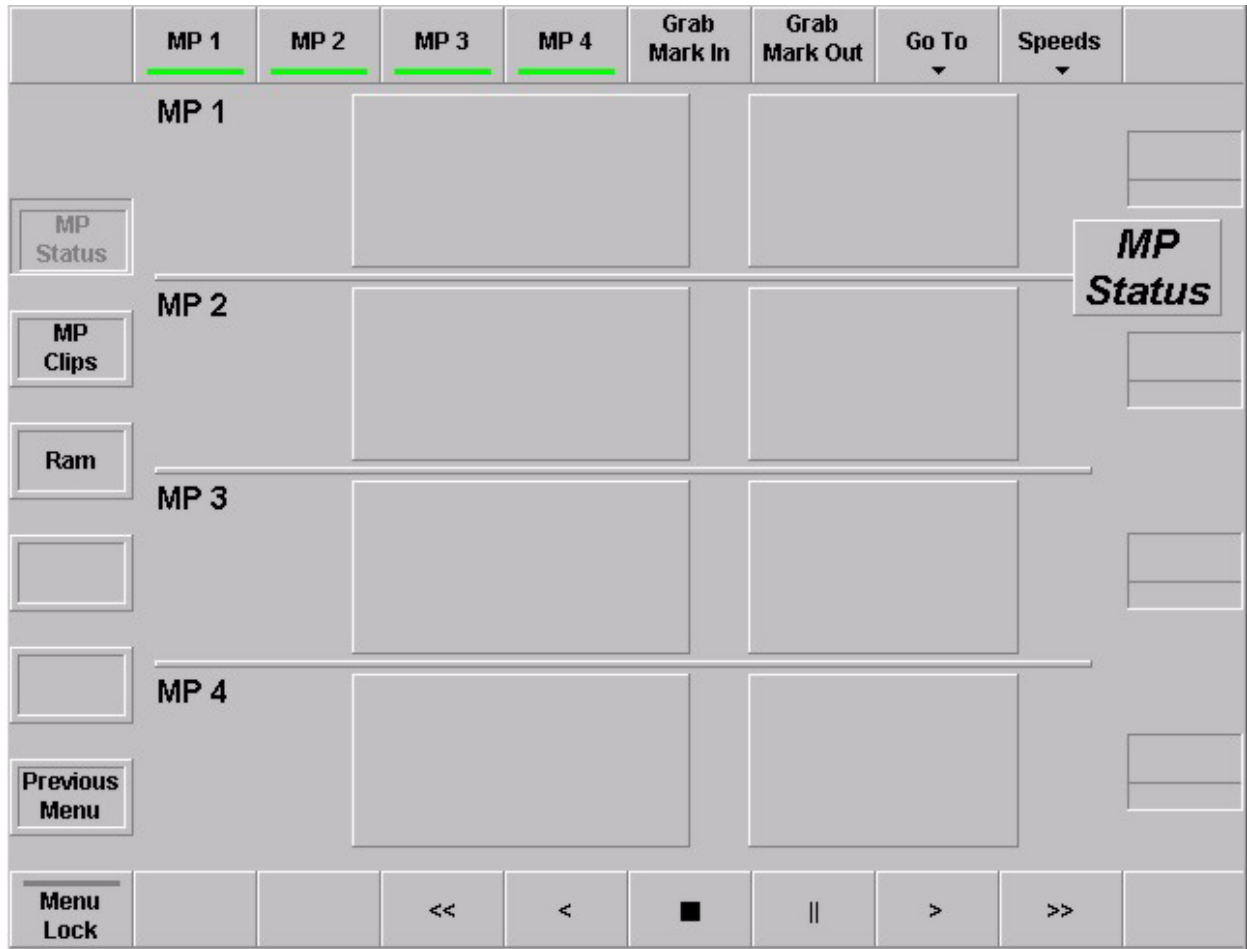
The Status menu shows the status of up to four "Media Playern" defined in the *Install / EBox / Machine* menu.

Display: **Timecode**
In mark
Out mark
VTR operation mode (Play, Stop, Rewind, ...)

Note: *Dropframe is indicated in the MediaPool format.*
For example `01:23:12.06`
The last colon is replaced by a dot in case of a drop frame.

3.13.1.1 Dialog Buttons

MP Clips	Selecting the Media Player Clip menu.
RAM	Selecting the internal RAM Recoder menu.
Previous Menu	Return to the previous menu. For details refer to section ***Introduction.***

3.13.1.2 Dialog Buttons

MP1 ***MP2*** ***MP3*** ***MP4***	Selecting the desired machines
Grab Mark In	Current timecode value of the selected machine is stored as Mark In.
Grab Mark Out	Current timecode value of the selected machine is stored as Mark Out.
Go To	Selected machine go to Mark In (Marc Out)

Speeds   Selecting of the speed control:

Var	Variable speed control with Digipot and Fader
Jog	Jogging control with Digipot and Trackball
Shuttle	Shuttle control with Digipot and Fader

Motion control buttons

Fast rewind
Play reverse
Stop
Pause
Play forward
Fast forward

3.13.2   MEDIA PLAYER CLIP MENU
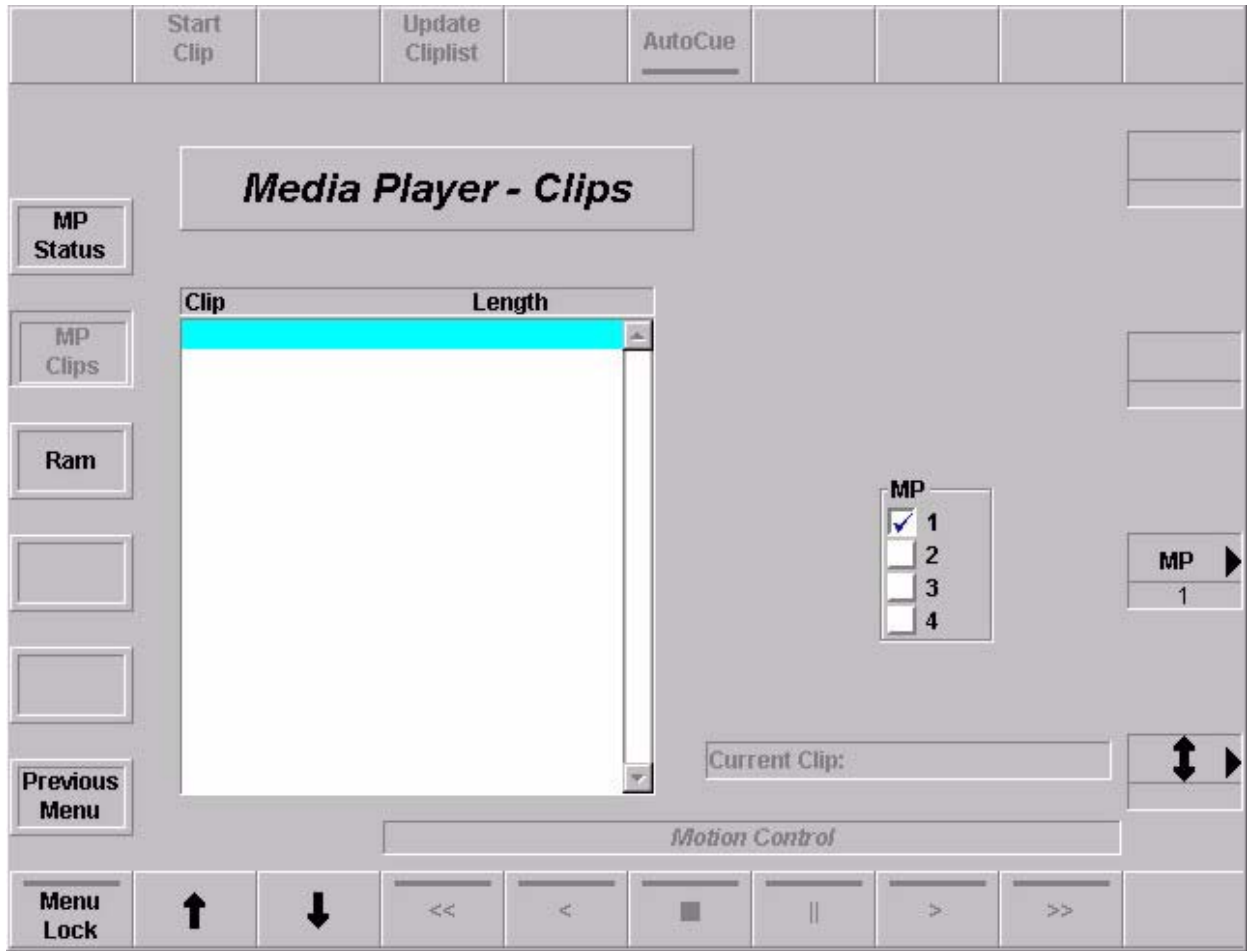
The Media Player Clip menu serves the drive control at VTR. For this purpose, the buttons in the Motion Control are provided. In addtionen, in this menu the clips list from a Media Server (e.g. MediaPool, EDIFIES) can be displayed.

3.13.2.1 Dialog Buttons

MP Status   Selecting the Media Player menu.

RAM   Selecting the internal RAM Recoder menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.13.2.2 Dialog Buttons

Start Clip   Load the chosen clip from the Media Server

Update Cliplist   Update Cliplist requests a table of contents of all clips of the Media Server.
                                 This procedure may take some time.

Autocue   Selected machine jumps to the stored timecode value.

Motion control   Fast rewind
buttons   Play reverse
                                 Stop
                                 Pause
                                 Play forward
                                 Fast forward

3.13.3 RAM RECORDER MENU

	Source	↑	↓	Goto ▼	Settings ▼	Grab Mark In	Grab Mark Out	Speeds ▼	

MP Status	**Ram - 1** 1 **2** **3** **4**	Mode: Normal VTR **00:00:00** stop F1 / F2	In : 00:00:00 Out : 00:00:00 RecLen: 00:00:00 AutoCue: Off Loops: endless

Ram Status

MP Clips	**Ram - 2** **1** 2 **3** **4**	Mode: Normal VTR **00:00:00** stop F1 / F2	In : 00:00:00 Out : 00:00:00 RecLen: 00:00:00 AutoCue: Off Loops: endless

| Ram |

attached macros

	Ram - 3 **1** **2** 3 **4**	Mode: Normal VTR **00:00:00** stop F1 / F2	In : 00:00:00 Out : 00:00:00 RecLen: 00:00:00 AutoCue: Off Loops: endless

Previous Menu	**Ram - 4** **1** **2** **3** 4	Mode: Normal VTR **00:00:00** stop F1 / F2	In : 00:00:00 Out : 00:00:00 RecLen: 00:00:00 AutoCue: Off Loops: endless

↕ ▶

Menu Lock	Start	<	Step -	■	‖	Step +	>	End	▲ Rec

The RAM Recorder Module can be installed on the FX Processor (RY 3460) to pro-
vide 4 channels of uncompressed video store of 8s each for stills and video se-
quences.

Note: ***Channel 1 and channel 2 are fed with the same signal.***
               Channel 3 and channel 4 are fed with the same signal.

Light blue border indicates selected channel

3.13.3.1 Dialog Buttons

MP Status   Selecting the Media Player menu.

MP Clip   Selecting the internal Media Player Clip menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

                     Buttons top row:

3.13.3.2 Dialog Buttons

Source		Select source for selected channel
	Note:	***Channel 1 and channel 2 are fed with the same signal.***
		Channel 3 and channel 4 are fed with the same signal.

Up / Down Arrow   Move cursor for selected machine up/down

Goto	**Start**	Goto to start of timecode (or Mark In point if in clipmode, loopmode).
	End	Goto to end of timecode (or Mark Out point if in clipmode, loopmode).
	Timecode	Goto to entered timecode.
	Mark In	Goto to Mark In point.
	Mark Out	Goto to Mark Out point.

Settings	**Auto Cue**	Switch Auto Cue On/Off (not yet supported in this SW–version).
	Loops	Number of loops for "Simple Loop" or "Extended Loop" mode
	Readout	set readout for still and for play (see detailed description "Readout").
	Mode	Set operational mode of RAM recorder channel.
	Mark In	Set Mark In point.
	Mark Out	Set Mark Out point.
	Offset	Set offset.
		This value is used different purposes, depending on the operational mode of the RAM recorder.

Grab Mark In   Copy actual timecode to Mark In point.

Grab Mark Out   Copy actual timecode to Mark Out point.

Settings	**Variable:**	Set RAM recorder to variable speed and allow speed change by digipot.
	Jog:	Set RAM recorder to jog mode and allow jogging by digipot.

Start   Goto to start of timecode (or Mark In point if in clipmode, loopmode).

Motion control	Play reverse	
buttons	Step –	Single step back (see detailed description "Readout")
	Stop	Show E–E signal
	Still	
	step +	Single step forward (see detailed description "Readout")
	Play forward	

End   Goto to end of timecode (or Mark Out point if in clipmode, loopmode)

Rec   Record selected signals

Readout Options   You can setup the readout per channel differently for play mode and still mode.

Play mode is normally set to "**Frame**", but "**Field1**" or "**Field2**" will generate film-look.

Still mode is set to "**Field1**" or "**Field2**" to avoid motion jitter.

Special readout F1/F2
In still mode single step goes per field, that means, field1, field2, field1, field2, etc.In play mode frames can be played out in "wrong field sequence, that means, first field "**Field2**" of a frame, next field "**Field1**" of the next frame.

This can be used to correct sequences recorded in wrong field order.

Cascading Channels   By clicking the numbers 1, 2, 3, 4 under the title "RAM–1", etc. you can cascade 2, 3, or 4 channels. By this the resulting time of the combined channels is accordingly increased. To decascade the channels, just click again on the according numbers or click the title "**RAM–1**" etc.

The following rules apply to cascading:

● The channel with the lowest number is always the master channel. Video input, video output, operational mode, and readout is used from this channel.

● When you use tape motion commands, the cursor can be positioned on any RAM recorder of the cascade.

● In Clip mode, Simple Loop mode, and Extended Loopmode the In and Out points of the selected RAM recorder are used which allows more In and Out points in cascade mode (see just below).
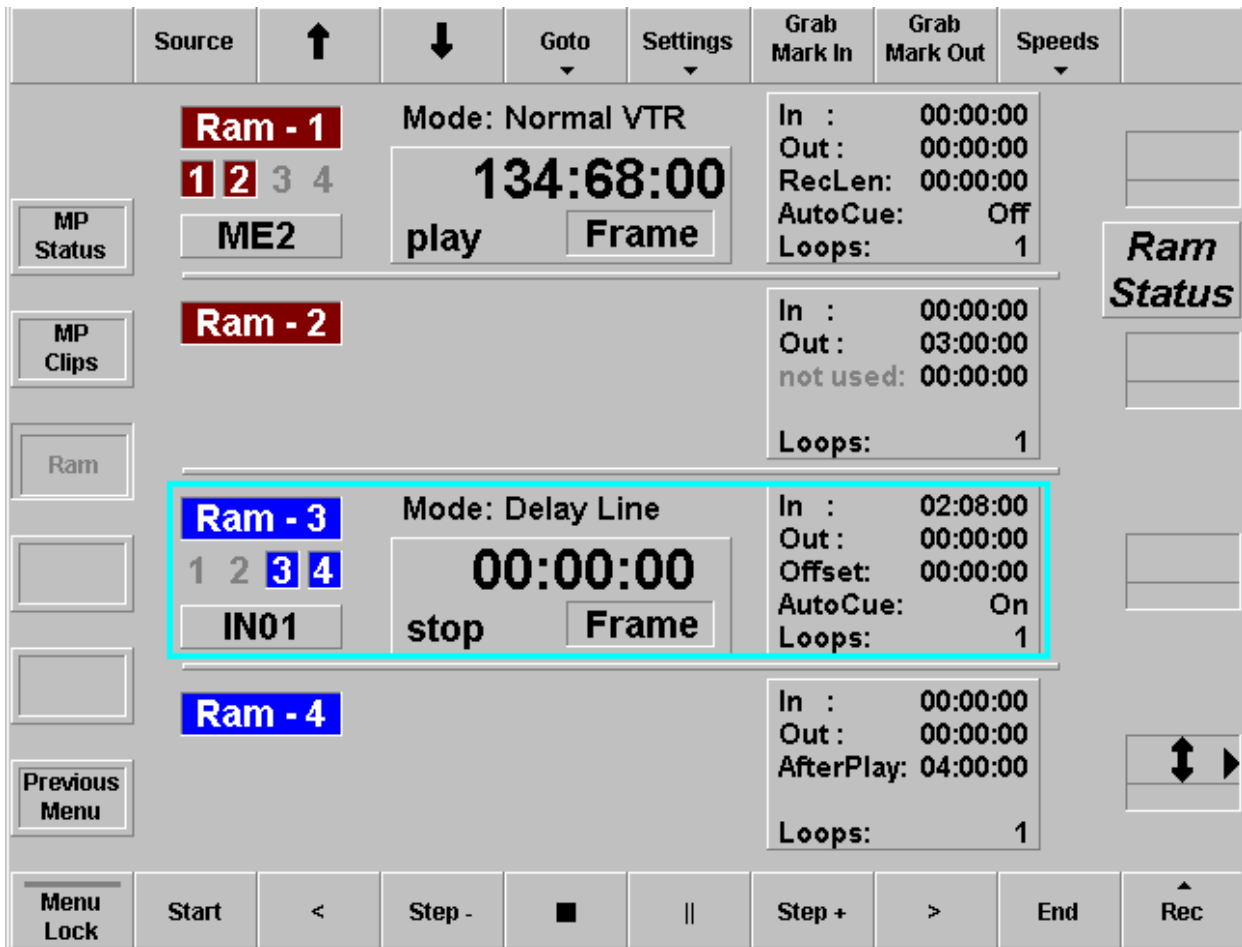
Operational Mode Depending on the operational mode, the parameters in the right part of the window have a different meaning:

<div align="center">

Mode: Normal VTR

</div>

Normal VTR:

In: not used for record or play, can only be used as Mark with "goto Mark In"

Out: not used for record or play, can only be used as Mark with "goto Mark Out"

RecLen: record length for record (00:00:00 is unlimited)

AutoCue: not yet supported in the SW–option

Loops: not used here

In this mode you can access the total TCrange of a channel or cascade. Recording starts at the actual timecode and continues for the number of frames indicated in "RecLen".

Clip mode:

In: start of the clip

Out: end of the clip

not used: not used

AutoCue: not yet supported in the SW–option

Loops: not used here

All tape motion commands are limited to the TC range within In and Out timecode. A play command will automatically play from In to Out point.

Simple Loop:

In: start of the loop

Out: end of the loop

not used: not used

AutoCue: not yet supported in the SW–option

Loops: number of loops, 0 is endless

All tape motion commands are limited to the TC–range within In– and Out–time-code. A play command will automatically play from In– to Out–point and repeat this for the number of loops.

Extended Loop:

In:	start of the loop
Out:	end of the loop
AfterPlay:	time to be played after Out timecode
AutoCue:	not yet supported in the SW–option
Loops:	number of loops, 0 is endless

This mode allows to start outside (before the loop), providing a kind of "leader". Once inside the TC range of the loop, the handling is like in "Simple Loop". When the loop is finished, it continues playing after the loop for the time indicated in "After-Play".

Delay Line:

In:	not used here
Out:	not used here
Offset:	delay offset
AutoCue:	not yet supported
Loops:	not used here

Once set to record, the playout of the channel is delayed by the time indicated by "Offset". Since the channel will record endlessly in a circle, the maximum delay is the record length of the channel (or the cascade).

Live Slomo:

In:	not used here
Out:	not used here
Offset:	replay offset
AutoCue:	not yet supported
Loops:	not used here

Once set to record, the playout of the channel is real time E/E, that means not delayed. The channel will record endlessly. Any other tape motion command than record will stop recording, leaving the full record length of a channel (or a cascade) for e.g. slomo playback. When record stops, the channels goes back in time indicated by "Offset".

3.14 INTERNAL DVx PROCESSOR

3.14.1 DVX GENERAL

The FX Processor is a powerful option for the XtenDD switcher mainframe. It improves the feature set and the value of switcher significantly for all production purposes. It supports the user of XtenDD to increase the efficiency of productions and investments.

The FX Processor provides internal DVx (DVE) and huge video storage capabilities to the XtenDD user. The DVE is mainly designed to cover the basic effects that are widely used in day to day productions. Integration of the DVx into the switcher avoids the requirement of additional space for installation, additional power supply and additional cabling. No inputs or Aux buses are required to feed the DVx. This frees all the I/O of the switcher for other video signals.

Close integration of DVx control into the user interface of the switcher gives more creative power to the operator and optimizes the efficiency of the operation personal.

FX Processor functions:

- **DVx**
  The FX Processor board provides 4 channels of DVx with linear effects in 3D space. Every channel handles video or key signals. Sizing, Positioning and Rotation in all 3 axis can be performed and perspective representation of the images.
  A combiner function combines the DVx channels on the board to not block the keyers or transition means on the XtenDD M/E. The combiner also provides Z–intersection for the DVx channels.
  All DVx channels can be controlled independently or a any number of channels can be controlled together through a global control channel
  Examples for applications are picture in picture, over the shoulder boxes, cubes, and more.

- **RAM Recorder**
  The FX Processor also includes 4 channels of RAM Recorder. Each channel can store 8 sec of uncompressed video together with embedded audio data. The 4 channels can also be combined to form one channel of 32 sec. The channels can be cascaded to 16, 24, or 32 sec (2, 3, or 4 channels).

- **Key Shadow**
  The FX Processor includes 3 key stores for generation of far shadows. The 3 key shadow stores are dedicated to M/E1 to M/E3.

For many applications it will make the need for an external DVE obsolete or enable it to be used for more sophisticated true 3D effects.

3.14.2   VIDEO ARCHITECTURE

The XtenDD internal DVx (DVE) offers a high flexibility in the way it can be controlled. You can control it in the same way you control existing DVEs, that means you can combine up to 4 channels via a combiner and feed it into the switcher via a video and a key input. That means you can combine up to 4 channels via the combiner and the Video and Key are internally supplied to the input bus.

It is also possible to break down the architecture into two 2–channel DVxs each with a video and key signal. Both DVxs can be controlled independently.

Each of the 2–channel DVxs can further be split into two 1–channel DVxs. In this case the input into the switcher is superblack.
So up to 4 individual DVxs can be controlled independently for e.g. background– or key–transitions.

DVx architecture can differ per DVx effect.

3.14.3 DVx MAIN MENU

| highlight effect nr. ▼ | no x-point Chan 1 | no x-point Chan 2 | no x-point Chan 3 | no x-point Chan 4 | | | | Refresh |

no chan no show

⚠

DVE Extern

DVx Main

FX inputs			FX outputs	
Ch1 F: DSF1	Ch3 F: DSF1		DVX 1: DVX 1	RAM 1: Ram 1
Ch1 B: IN01	Ch3 B: IN01		DVX 2: DVX 2	RAM 2: Ram 2
Ch2 F: DSF1	Ch4 F: DSF1		DVX 3: Ram 2	RAM 3: Ram 3
Ch2 B: IN01	Ch4 B: IN01		DVX 4: Ram 3	RAM 4: Ram 4

current effect nr.

| Transition Device **1** 1234 | Transition Device **2** 123 | Left Window **3** 12 | Right Window **4** 12G | Two Windows **5** 12G | Effect Nr. 6 **6** 12 |

Ch 1:	3
Ch 2:	3
Ch 3:	1
Ch 4:	1

↔ ▶

DVx Main

| fxloop **7** 12 | 8 | 9 | Page Turn **10** 1234G | 11 | 12 |

| Global: | 1 |

Page ▶ 1

DVx Edit

| 13 | 14 | 15 | 16 | 17 | 18 |

DVx Settings

| 19 | 20 | 21 | 22 | 23 | 24 |

Page
✓ 1
  2
  3
  4

DVX

Previous Menu

| 25 | 26 | 27 | 28 | 29 | 30 |

DVX ▶ 0.0 %

Motion Control

Menu Lock

| | Start | Reverse | Pause | Play | End | | ▲ Modify | OK Digits |

3.14.3.1 Dialog Buttons

DVE Extern   Switch to control page for extern DVE 1 + 2.

DVx Main   Current page.

DVx Edit   Switch to edit page for intern DVx.

DVx Settings   Switch to settings page for intern DVx.

Previous Menu   Return to the previous menu. For details refer to section *Introduction.*

3.14.3.2 Inner Window

The inner window consists of several sections:

- FX inputs

- FX outputs   can be hidded via DVx Settings

- Effect selection   (6 x 5 buttons)

- Current effect no.   can be hidden via DVx Settings

Input Selection

Input selection for the 4 FX processor channels, click on the according fields for source selection:

FX inputs				FX outputs	
Ch1 F: DSF1		Ch3 F: DSF1		DVX 1: DVX 1	RAM 1: Ram 1
Ch1 B: IN01		Ch3 B: IN01		DVX 2: DVX 2	RAM 2: Ram 2
Ch2 F: DSF1		Ch4 F: DSF1		DVX 3: Ram 2	RAM 3: Ram 3
Ch2 B: IN01		Ch4 B: IN01		DVX 4: Ram 3	RAM 4: Ram 4

Each channel has a separate source for front and back side, which is automatically selected, depending on the rotation angle of the channel.

Output Selection

DVX1 ... DVX4:   click on the according fields to change
                         to another DVX
RAM1 ... RAM4:   click on the according fields to change
                         to another Ramrecorder

The standard settings are:

DVX1: DVX1   **RAM1: RAM1**
DVX2: DVX2   **RAM2: RAM2**
DVX3: DVX3   **RAM3: RAM3**
DVX4: DVX4   **RAM4: RAM4**

Since it is very unlikely that you have to change these settings, you probably will hide the complete FX outputs section (DVx Settings menu).

Effect Selection

						Page
kf-dur test 1	kf-dur test 2	arbwuerfe	box 2	arbwuerfe moving	over shoulder	☑ 1
1 1	**2** 1	**3** 1234G	**4** 1234G	**5** 1234G	**6** 12	☐ 2
HAllo Welt !	box flip	Cascade (Box!)	pumping	nicht fertig	4rot Test	☐ 3
7 12	**8** 123G	**9** 123G	**10** 1	**11** 12G	**12** 1234	☐ 4
soft test	arbwuerfe moving	arbwuerfe moving	washtest	linera test	z key test	
13 1234	**14** 1234G	**15** 1234G	**16** 1234	**17** 1G	**18** 12G	
19	20	21	22	23	24	
25	26	27	28	29	30	
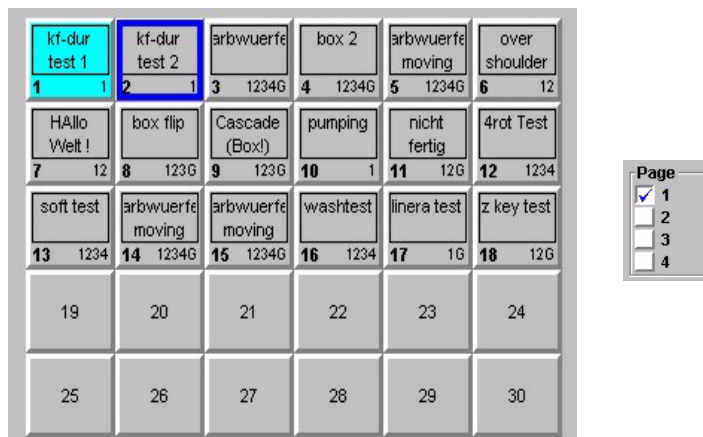
30 buttons for DVx effect selection (in total 120 effects on 4 pages).

In the bottom part per button you find an indication of the channels used in the according effect.

To select an effect, first pre–select it (dark blue border) then press **OK** – or double click an effect directly.

The selected effect (light blue background) can be controlled by the motion control buttons or by the **DVx** digipot on the right side.

Tip

The effect selection can be learned in a macro.

Since you can run up to 4 DVx effects simultaneously, learning motion control commands in macros have to be done carefully.
Pressing the "Play" button while learning a macro, this macro will record a play command for the first channel in the selected effect.

Example: the effect contains channel 2,3,4 – the macro will record the play command for channel 2. This macro can be used to play any effect containing at least channel 2, because a play command for one of the used channels will play all used channels. So 4 macros is enough to play all effects.

Current Effect Nr.

In this section you find an indication of the selected effect per channel. This can differ from the last recalled effect, since an effect recall only loads the channels included in the DVx effect.
"WB" (workbuffer) means this channel is currently in editmode. This section is only interesting for users using the DVx as a multi DVE. If you use the DVx channels only in a single DVE mode, you probably will hide this section.

3.14.3.3 Function buttons

Highlight eff nr.

> This feature is only a help to get a quick overview, which channel is used in which effect. This is only important for customers using the DVx as a multiple DVE!
>
> The overlay row is special and consists of two parts, which have to be selected independently.

no show	highlight effect nr.	no x-point 1 incl.	no x-point all incl.	no x-point exact	no x-point - - -	- - -	- - -	- - -	- - -
no show	▲	- - - *highlight mode* - - -		*Chan 1*	*Chan 2*	*Chan 3*	*Chan 4*	*Global*
⚠ **no show**		Ch1 F: PPST	Ch3 F: IN10		DVX 1: DVX 1	RAM 1: Ram 1		
DVE	*DVx*	Ch1 B: BLCK	Ch3 B: BLCK		DVX 2: DVX 2	RAM 2: Ram 2		
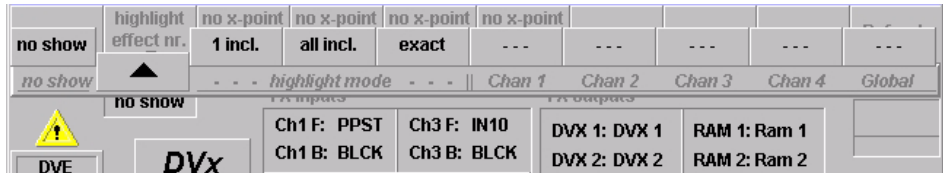
> | **no show** | no highlighting |
> |---|---|
> | **1 incl.** | Highlight all effects which contain at least one of the selected channels. |
> | **all incl.** | Highlight all effects which contain all of the selected channels. |
> | **exact** | Highlight all effects which contain exactly the selected channels. |
>
> | —— / **chan 1** | toggle selection channel 1: "– – –" is off, "chan 1" is on. |
> |---|---|
> | —— / **chan 2** | toggle selection channel 2: "– – –" is off, "chan 2" is on. |
> | —— / **chan 3** | toggle selection channel 3: "– – –" is off, "chan 3" is on. |
> | —— / **chan 4** | toggle selection channel 4: "– – –" is off, "chan 4" is on. |
> | —— / **global** | toggle selection global: "– – –" is off, "global" is on. |

No x–point chan 1 – 4

> If active, recalling or playing an effect does not recall the sources stored per keyframe for the according channel.

Refresh

> Refresh the display of the menu and reload the workbuffer for editmode.

Motion Controls: Motion control buttons for selected effect, see below Inner Window, middle part*.*
– Start
– Reverse
– Pause
– Play
– End

Modify

Rename	rename selected effect	
Copy	copy selected effect	(not yet supported)
Move	move selected effect	(not yet supported)
Delete	delete selected effect	

3.14.4 DVX EDIT MENU

| ↑ | Input | 2-D | 3-D | Cube/Sl. | Crop | Key | FX-Out | Global | Function Select |

DVX 3
2-D

workbuffer   time :   00:00:00:00

DVX 1   DVX 2   DVX 3   DVX 4

^ - - - - - - - - - allow global control - - - - - - - - - ^

Function:

Source (Pre-3D)
Aspect (Pre-3D)
Target (Post-3D)

X-Source   Y-Source   Size-Source
◄ ► +_   ◄ ► +_   ◄ ► +_
J   ▲   J   ▲   J   ▲
   0.000 ▼   0.000 ▼   0.000 ▼

X Source ►

| Colors | Combin. | Copy | Priority | Save/Rcl. | Misc | Timeline | Setup |
| Input | 2-D | 3-D | Cube/Sl. | Crop | Key | FX-Out | Global |

KF				X-Source	Y-Source	Size-Source
1				J 0.000	J 0.000	J 0.000

Y Source ►

Size Source ►

| Menu Lock | ↑ | ↓ | Accelerat. Spline | Spline | Accelerat. Linear | Linear | Jump | DVX Run Controls | Set Trajectory |

3.14.4.1 General Control Principles

The edit control consists of 2 rows of 8 index cards.

● You can toggle between the two rows of 8 with the arrow button (top row left).

● To select an index card press the according button in the top row of the GUI panel.

Most index cards have several pages (functions) with up to 4 controls.

● You can toggle through the functions with the function select button (top row rigth of the GUI).

● The up to 4 controls per page can be controlled by the 4 digipots on the right side.

● Some controls can also be set with numeric values (see below)

Tip The tabulators of the index cards indicate the following states:

- Dark blue background: At least one value of the index card is not user default.

- Name of the cards is followed by an asterisk (*), e.g. "**2–D *:**
  At least one value of the index card does not match the according values of the selected keyframe. In this case you will loose your changes when you press next / previous keyframe. To keep your changes first select "**Modify / Sel. KF**".

- The dark blue index cards, marking a non default are not visible on Windows95 systems.

Channel selection:

| DVX 1 | DVX 2 | DVX 3 | DVX 4 |

You can select per local channel whether this channel should be affected by the global channel. Click the buttons with the mouse to select / de–select. The buttons are only enabled when the global channel is set to **used** in the **Setup** index card.

3.14.4.2 Dialog Buttons

DVx 1	When selected, the associated channel is preset for function controls.
DVx 2	Since only the values of one channel can be displayed at a time (the colored name
DVx 3	in the inner window),
DVx 4	You may not see a change in values, because e.g. the display is set for the values
Global	of **DVx 1**, but only **DVx 2** and **DVx 3** are selected. In this case channel 2 + 3 will
	be controlled, but the value change will not be reflected.

To change the channel to be displayed double press (double click) the according channel. This will put the channel to display and deselect all other channels.

Depending on the type of index card the channel to be displayed can only be channel 1 – 4 (local channel) or global channel. If you select an index card of that type, the channel to be displayed is forced accordingly.

Forced local channel:

- INPUT

- 2–D

- 3–D

- CROP

- KEY

- COLORS

- COMBINER

Forced global channel:

- PRIORITY

- CUBE/SLAB

- GLOBAL

Don't care:

- COPY

- SAVE/RECALL

- MISC

- TIMELINE

- SETUP

Previous Menu	Return to the previous menu. For details refer to section ***Introduction.***

3.14.4.3 Function Buttons

DVx Run Control   Toggles bottom row controls between standard editing controls and motion controls:

Standard editing controls

Motion controls

Set Trajectory   Toggles bottom row controls between standard editing controls and trajectory controls:
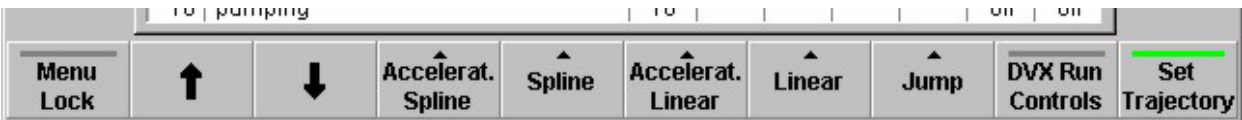
Trajectory controls

↑ ↓   "Arrow Up" and "Arrow Down" (in Timeline "Arrow Left" and "Arrow Right"):
← →   Go to next / previous keyframe.

Tip   ***Some of the bottom controls refer to the "selected" control (the control box with light blue background)***

There are two ways to change the selected control:

- ***Touch the according digipot***

- ***Press the button of the selected index card (top row) again to advance the selection***

3.14.4.4 Standard Edit Controls

In general the commands below are executed for the selected channels (with Dialog buttons) only.

Default

Factory		User defaults					
All	▼ Default	**All**	**Selected**	**Function**	**Menu**	**Save** ▼ Controls	**Set Trajectory**

Factory All	Sets all values for all selected channels to factory default values.

User default:

All	Sets all values for all selected channels to user default values.
Selected	Set the selected (light blue) control to user default.
Function	Set all controls of a page to user default.
Menu	Set all controls of all pages of an index cards.
Save	Save the actual values of **DVx 1** and the actual values of the global channel as user default.

Goto

Start	**End**	**Enter**	▼ Goto	**Undo**

Start	Go to start of timeline (first keyframe).
End	Go to end of timeline (last keyframe).

Other commands not yet supported.

Insert

Insert	**Ins. at Sel**	**Ins. at End**	**Pause**	▼ Insert	**Enter**	**Clear**	**Undo** Controls

Ins. at Sel	Insert actual state as keyframe before the selected keyframe.
Ins. at End	Insert actual state as keyframe after the last keyframe.
Pause	Insert pause after the last keyframe.

Other commands not yet supported.

Modify

| From | To | All KF's | **Sel. KF** | **Selected** | ▼ Modify | Enter | Clear Controls | Undo Trajectory |

Sel. KF	Modify the selected keyframe
Selected	Allows numeric input for geometric parameters. If you use the keypad in the Master–Ti/ME–Memo section of the main control panel: Toggle **+/–** is the relocate button. Decimal point is achieved by pressing the digit "**8**" twice.

Other commands not yet supported

Delete

selected KF			▼	*all KF's*	
Delete	**Remove**	**Pause**	Delete	**Del All** Controls	**Set** **Trajectory**
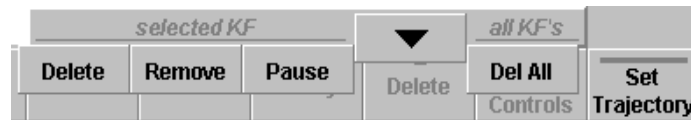
Delete	Delete the selected keyframe. The total duration of the effect will be reduced by the keyframe duration of the deleted keyframe. If this keyframe is the only one, the values are set to factory default.
Remove	Same as delete, but the keyframe duration of the deleted keyframe is added to the following one, maintaining the total effect length.
Pause	Deletes the selected Pause.
Delete All	Deletes all keyframes. One keyframe always remains with factory default values.

3.14.4.5 Motion Controls

Start	Reverse	Pause	Play	End

Start:	Set effect to begin (first keyframe)
Reverse:	Play effect in reverse direction
Pause:	Pause effect
Play:	Play effect in normal direction
End:	Set effect to end (last keyframe)

3.14.4.6 Trajectory Controls

There are 5 types of trajectory for transitions between keyframes:

Accelerat. Spline	Spline	Accelerat. Linear	Linear	Jump

Accelerated Spline	Spline curve with variable speed (slow start and end).
Spline	Spline curve with constant speed.
Accelerated Linear	Linear interpolation with variable speed.
Linear	Linear interpolation with constant speed.
Jump:	No interpolation at all, just switch to the values of the next keyframe.

These 5 types can be set selectively:

Set "Spline" for:				
Selected	Function	▼ Spline	Tot. Menu	Undo
	Spline		Linear	

Selected	Set the selected.
Function	Set all controls of a page.
Menu	Set all controls of all pages of an index cards.

■ **Jump**
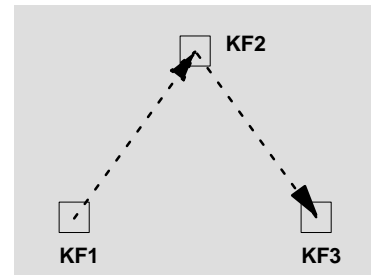
■ **Linear**
(with constant speed)
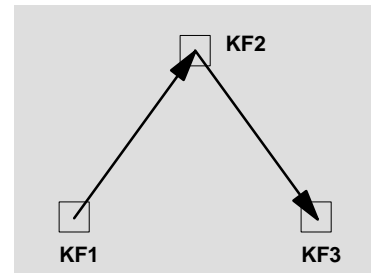
■ **Accelerated Linear**
(with variable speed,
slow start, slow end)
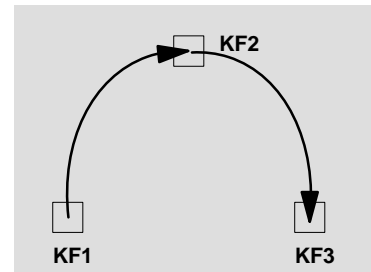
■ **Spline**
(with constant speed)

■ **Accelerated Spline**
(with variable speed,
slow start, slow end)

3.14.5   INDEX CARDS

3.14.5.1 Input Index Card

Index card with 3 pages: **Front**, **Back**, **Mosaic**

```
Function:                    ^ - - - - - - - - - allow global control - - - - - - - - - ^
Front                                           Front-Src.        Front-Inv.
Back                                            ◄       ►         ◄       ►
General                                                      ▲                  ▲
Mosaic                                          DSF1    ▼    No       ▼

Colors   Combin.   Copy   Priority   Save/Rcl.   Misc      Timeline   Setup
Input    2-D       3-D    Cube/Sl.   Crop        Key       . . .      Global

KF                                              Front-Src      Front-Inv
  1                                                IN01             No
```
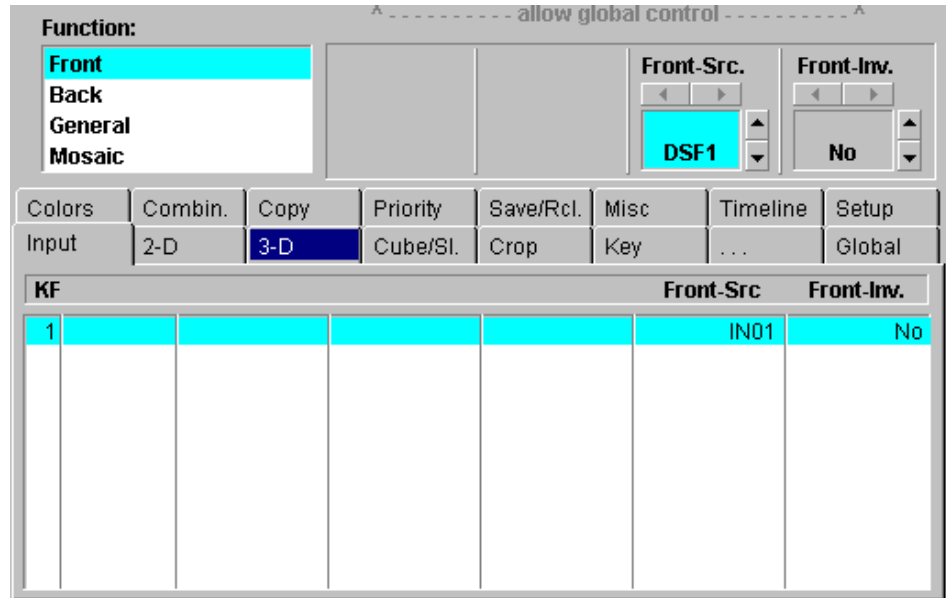
Page Front

Front–Src		The selected input is set for this keyframe when the front side of the DVx is visible
Front–Inv	”**No**”	The front source is shown directly
	”**Horiz.**”	The front source is horizontally mirrored
	”**Vert.**”	The front source is vertically mirrored
	”**H & V**”	The front source is horizontally and vertically mirrored.

Page Back

Back–Src		The selected input is set for this keyframe when the back side of the DVx is visible
Back–Inv	”**No**”	The back source is shown directly
	”**Horiz.**”	The back source is horizontally mirrored
	”**Vert.**”	The back source is vertically mirrored
	”**H & V**”	The back source is horizontally and vertically mirrored.

Page General

Freeze	”**on**”	Selecting Freeze mode
	”**off**”	
Readout		Selecting Readout mode
	”**field 1**”	
	”**field 2**”	
	”**frame**”	

Page Mosaic

Mosaic H	Reduces the horizontal resolution. The result is a block structure
Mosaic V	Reduces the vertical resolution. The result is a block structure

3.14.5.2 2–D Index Card

Index card with 3 pages: **Source (Pre–3D), Aspect (Pre–3D), Target (Post–3D)**

Page Source (Pre–3D)

X–Source	x–position in 2–dimensional space prior to 3–D manipulation for local channel	
Y–Source	y–position in 2–dimensional space prior to 3–D manipulation for local channel	
Z–Source	z–position in 2–dimensional space prior to 3–D manipulation for local channel	

Page Aspect (Pre–3D)

Width–Asp.	Stretch / compress image horizontally in 2–dimensional space prior to 3–D manipulation for local channel
Height–Asp	Stretch / compress image vertically in 2–dimensional space prior to 3–D manipulation for local channel
Size–Asp.	Size in 2–dimensional space prior to 3–D manipulation for local channel

Page Target (Post–3D)

X–Target	x–position in 2–dimensional space after 3–D manipulation for local channel
Y–Target	y–position in 2–dimensional space after 3–D manipulation for local channel
Z–Target	Size in 2–dimensional space after 3–D manipulation for local channel

Tip   **Values of X, Y, and Z Parameters in the 2D Space:**

X = Horizontal Axis
Y = Vertical Axis
Z = Rotation Axis
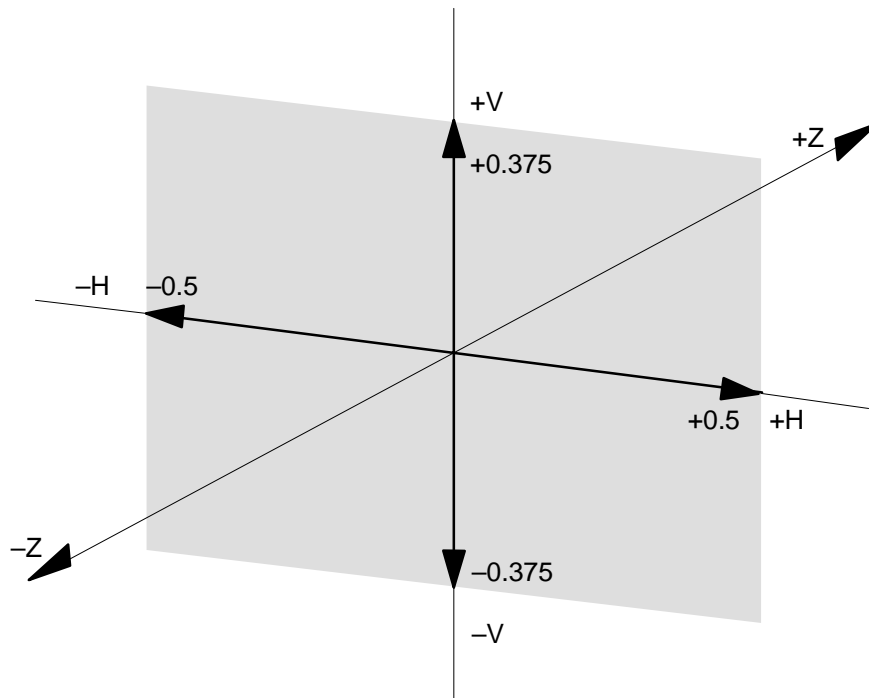
3.14.5.3 3–D Index Card

Index card with 3 pages: **Locate**, **Rotate**, **Axis**

Page Locate

X–Locate	x–position in 3–dimensional space for local channel
Y–Locate	y–position in 3–dimensional space for local channel
Z–Locate	z–position in 3–dimensional space for local channel

Page Rotate

X–Rotate	x–axis rotation in 3–dimensional space for local channel
Y–Rotate	y–axis rotation in 3–dimensional space for local channel
Z–Rotate	z–axis rotation in 3–dimensional space for local channel

Page Axis

X–Position	x–position of the coordinate system for local channel
Y–Position	y–position of the coordinate system for local channel
Z–position	z–position of the coordinate system for local channel

3.14.5.4 Cube / Slab Index Card

Index card with seven pages:
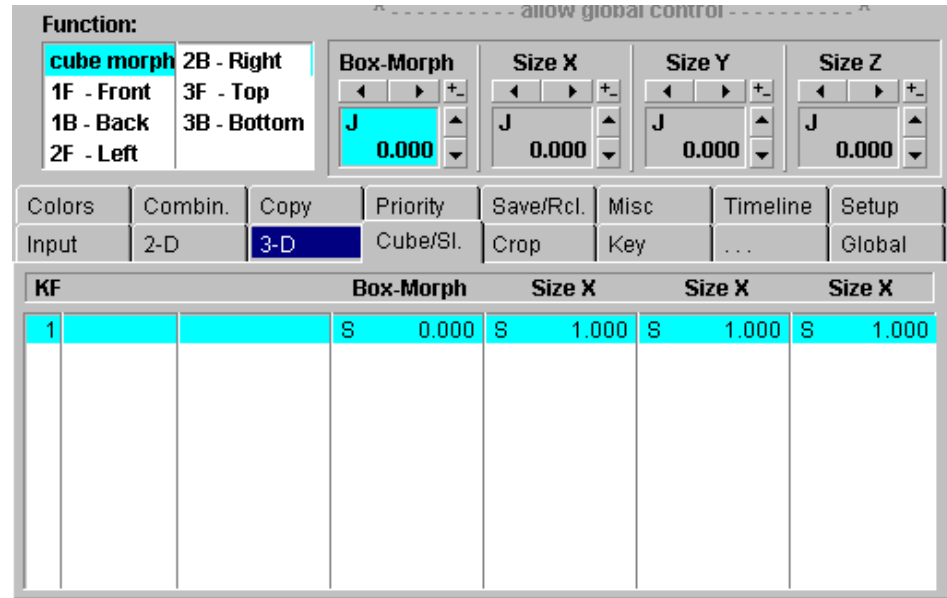
Page Box Morph

All commands on this index card are only effective when the global channel is enabled (Setup index card), and when the buttons DVX1 – DVX3 are selected:

If the box–morph value is 0.000 the 3–D parameters of the local channels are used to position the local channels.
If the value is 1.000 the internal 3–D parameters for the cube–builder are used to position the local channels.
That means when you run an effect with e.g. keyframe 1 box–morph = 0, and keyframe 2 box–morph = 1.000 you will first see the 3 channels at their individual positions, then flying to the positions to form a cube.

Size–X   x–size of the cube (should be 1.0 for fullframe)

Size–Y   y–size of the cube (should be 0.7 for fullframe)

Size–Z   z–size of the cube

Pages	**1F–Front**
	1B – Back
	2F–Left
	2B–Right
	3F–Top
	3B–Bottom

These pages allow to crop part and position an image for each side of the cube.

Pos H   horizontal start of the image

Pos V   vertical start of the image

Size H   horizontal size of the image

Size V   vertical size of the image

3.14.5.5 Crop Index Card

Index card with 3 pages: **Crop**, **Border**, **Softness–Width**
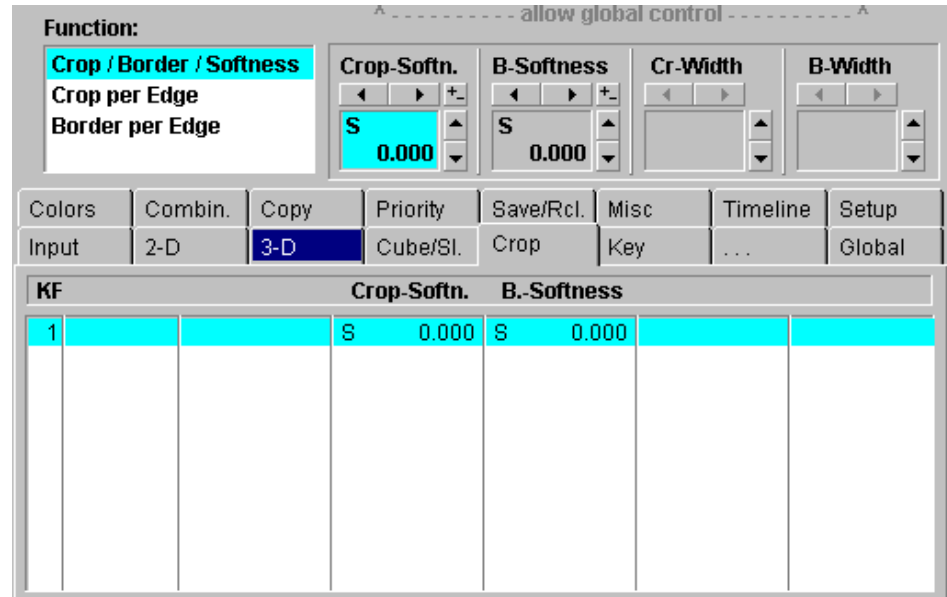
Page Crop / Border / Softness

Crop Soft	Set softness for all edge of the image
Border Soft	Set border softness for all edge of the image
Cr Width	Set crop for all edges of the image simultaneously
B Width	Set border for all edges of the image simultaneously

Page Crop per Edge

Crop Left	Crop left edge of the image
Crop Top	Crop top edge of the image
Crop Right	Crop right edge of the image
Crop Bot.	Crop bottom edge of the image

Page Border per Edge

Border Left	Set width for left edge border of the image
Border Top	Set width for top edge border of the image
Border Right	Set width for right edge border of the image
Border Bot	Set width for bottom edge border of the image

3.14.5.6 Key Index Card

Index card with one page:
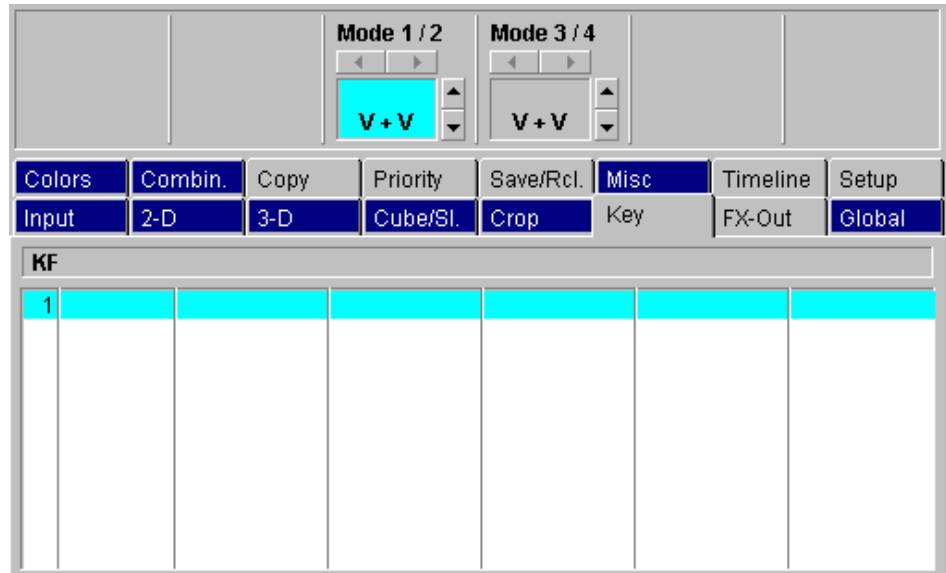
Page Mode 1/2

V + V   Channel 1 and 2 process both a video signal. The key signals for both channels are generated internally in the DVx. Both channels can be controlled individually.

V + K   In this mode Channel 1 processes the video signal and channel 2 the key signal (flying key mode). Channel 2 can not be controlled directly, the control parameters of channel 1 are used.

Note:
Since in the actual software also the input source for channel 2 is set by channel 1. This would not allow you to select e.g. "chargen video" for channel 1 and "chargen key" for channel 2.
To allow different sources set in the Input index card Inp.–Type to "no x–pts".

Page Mode 3/4

V + V   Channel 3 and 4 process both a video signal. The key signals for both channels are generated internally in the DVx. Both channels can be controlled individually.

V + K   In this mode Channel 3 processes the video signal and channel 4 the key signal (flying key mode). Channel 4 can not be controlled directly, the control parameters of channel 3 are used.

Note:
Since in the actual software also the input source for channel 4 is set by channel 3. This would not allow you to select e.g. "chargen video" for channel 3 and "chargen key" for channel 4.
To allow different source set in the Input index card Inp.–Type to "no x–pts".

3.14.5.7 Global Index Card

Index card with 3 pages: **Locate**, **Rotate**, **Axis**

Page Locate

X–Locate	x–position in 3–dimensional space for global channel.
Y–Locate	y–position in 3–dimensional space for global channel.
Z–Locate	z–position in 3–dimensional space for global channel.

Page Rotate

X–Rotate	x–axis rotation in 3–dimensional space for global channel.
Y–Rotate	y–axis rotation in 3–dimensional space for global channel.
Z–Rotate	z–axis rotation in 3–dimensional space for global channel.

Page Axis

X–Position	x–position of the coordinate system for global channel
Y–Position	y–position of the coordinate system for global channel
Z–position	z–position of the coordinate system for global channel

3.14.5.8 Colors Index Card

Index card with four pages: **Matte 1**
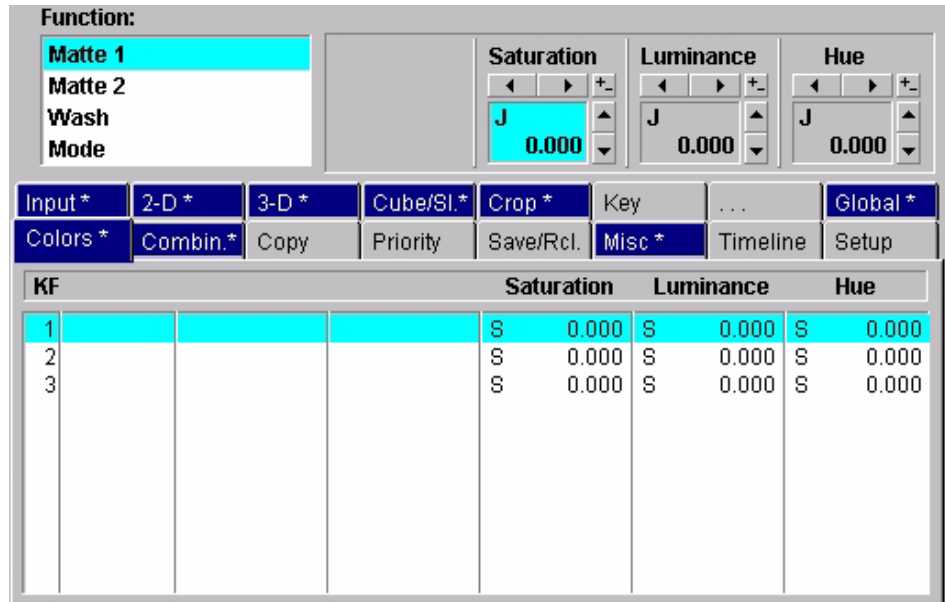
Page Matte 1 / 2

Saturation	Range 0.000 through 1.000, saturation of the border color

Luminance	Luminance of the border color fo matte 1 / 2
	0.000: black
	0.500: full color saturation
	1.000: white

Hue	Hue of the border color. The range for a full color circle is 0.000 through 1.000. Larger values than 1.000 allow more than one full color change between keyframe transitions

Page Wash

Angle	Adjusting the angle of the wash.
Position H	Adjusting the H position of the wash.
Position V	Adjusting the V position of the wash.
Softness	Adjusting the softness of the wash.

Page Mode

	Matte 1	Select matte 1 as color.
	Matte 2	Select matte 2 as color.
	Wash	Select the Wash mode. In this mode the trenstion beteen the two colors run can be adjusted with "Angle", and H/V Position in the "Wash" page.
	Split	Select the Split mode. In this mode the wash is within the border.

3.14.5.9 Combiner Index Card

Index card with two pages:
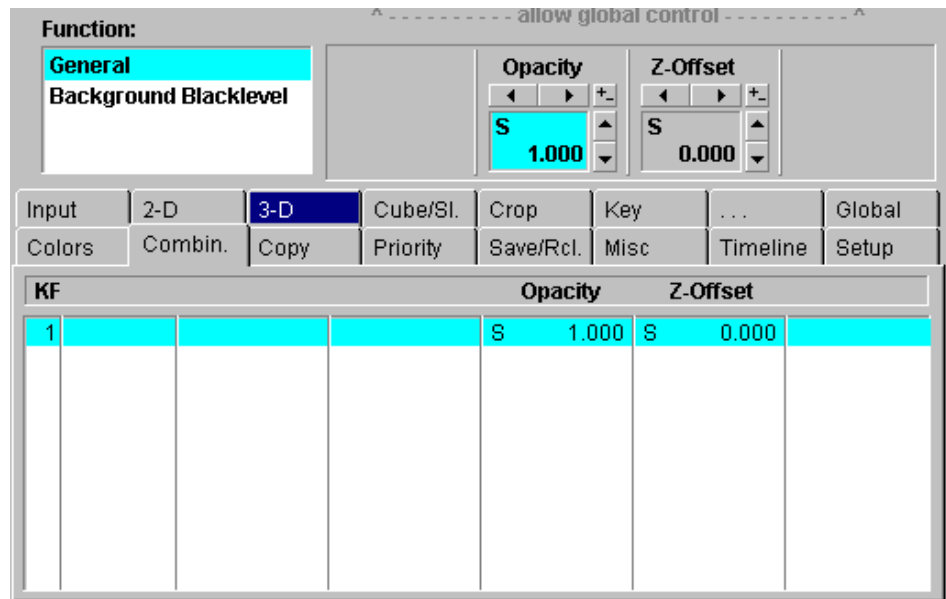
Page General

Opacity   Opacity for local channel.

Z–Offset   Z–offset for this channel. Only effective if the priority for
this channel is set to Z–key in the Priority index card.

Page Background Blacklevel

Chan 1 ... 4   black / superblack
Every time you change the architecture for your effect (single, pair1/2, pair3/4, triple, quadruple), the background blacklevels for the according channels are set automatically:

●   For single to superblack (allowing to work with just one output without a key channel).

●   For pair1/2, pair3/4, triple, quadruple to black (using 2 outputs – video+key)

If you want to use superblack also for the more channel effects, you can overwrite it here AFTER you have set your architecture

3.14.5.10 Copy Index Card

This index card is not yet supported in the actual software version!

3.14.5.11 Priority Index Card

Index card with one pages:
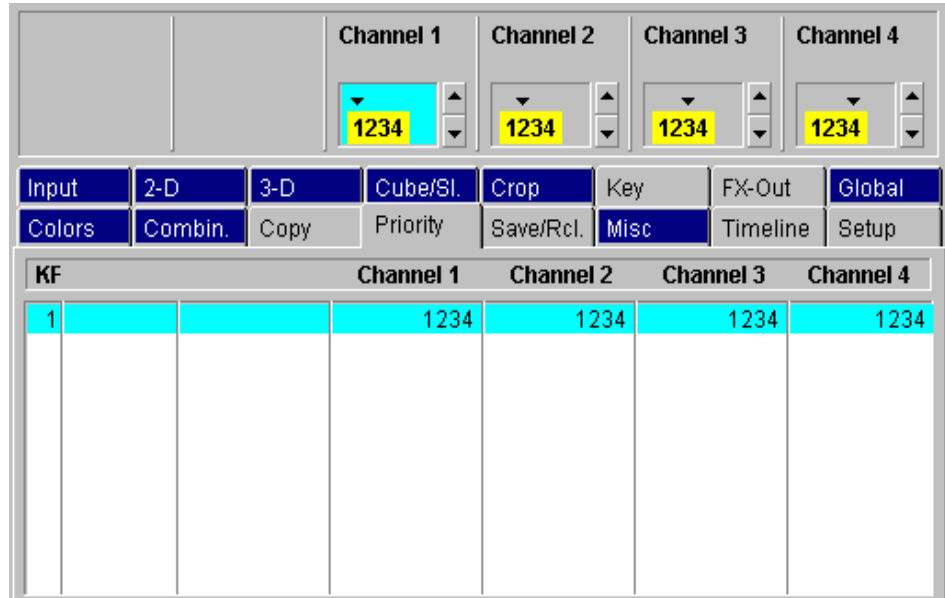
All commands on this index card are only effective when the global channel is enabled (Setup index card)

Channel 1   Set the combiner priority for channel 1.
If the channel priority is lower than another channels, the channel number ("1") is left of the other numbers, separated by a dash ("–"). If the channel has z–priority with other channels, these channels are not separated by a dash and highlighted with yellow background.

Example: 4 – 12 – 3
This indication means: channel 4 has the lowest priority, channel 1 and 2 are together in one group of z–priority, but this group has always a higher priority than channel 4 and a lower priority than channel 3.

Channel 2   See channel 1

Channel 3   See channel 1

Channel 4   See channel 1

3.14.5.12 Save / Rec Index Card

Index card with one page
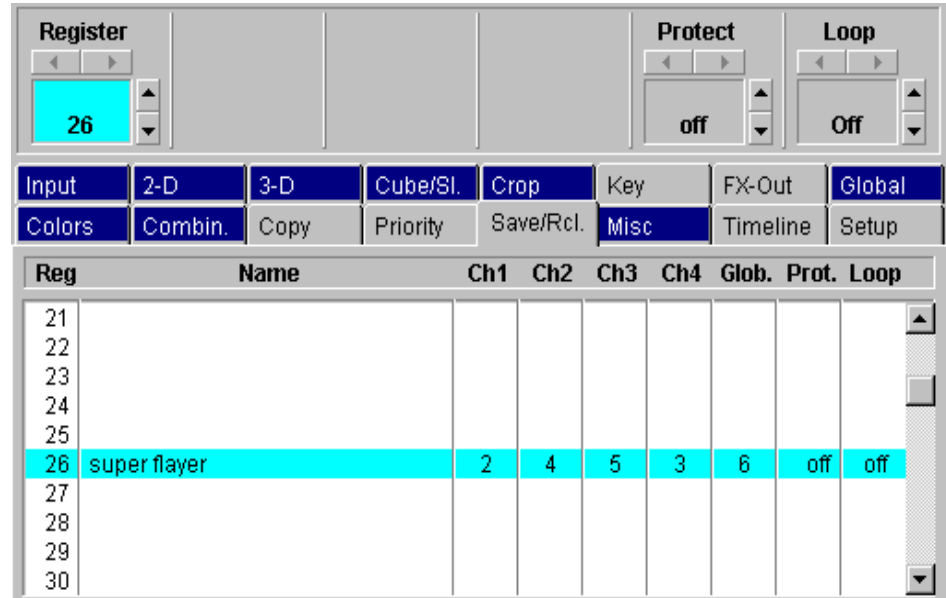
Register	Select register for	
	"Save"	
	"Rename"	
	"Delete" (not yet implemented)	
	"Recall"	
	"Protect"	
	"Loop" (not yet implemented)	

Protect

	"on":	register cannot be saved, renamed, or deleted
	"off":	all operations are allowed

Loop	"on":	effect runs endlessly in loop (not yet implemented)
	"off":	effect runs once (not yet implemented)

In the listbox per effect the number of keyframes per channel is listed.

Note: doppelclick an effect in listbox recalls effect autom.

3.14.5.13 Misc Index Card

Index card with one page:

Kf			Filter			Start Speed	End Speed
1			S	0.000		0.000	0.000

Filter

When a DVx channel is sized, higher frequencies are automatically filtered to avoid moiré effect. If you still find moiré in some very critical signals you can adapt it manually by this parameter.

This parameter can also be used the generate a slight defocus. You can cascade more channels to increase the defocus range. For stills you can also increase the defocus range by using one channel recursively (e.g. feed DVx1 with signal from DVx1) and going to freeze before the image is completely blured.

Chan.–Ident

To indicate the number and front/back information of a channel you can insert an ident per channel (e.g. "2F" = channel 2 front) in different sizes:

- hidden
- small
- medium
- large
- extra large

Start Speed/ End Speed

If you have selected "accelerated spline" or "accelerated linear" as trajectory between keyframes, these two parameters define the amount of acceleration.

"**0.000**" = strongest acceleration.
"**1.000**" = constant speed.

Start Speed   Acceleration at the begin of the movement**.**

End Speed   Acceleration at the end of the movement**.**

3.14.5.14 Timeline Index Card

Index card with 2 pages: **Timeline**, **View**
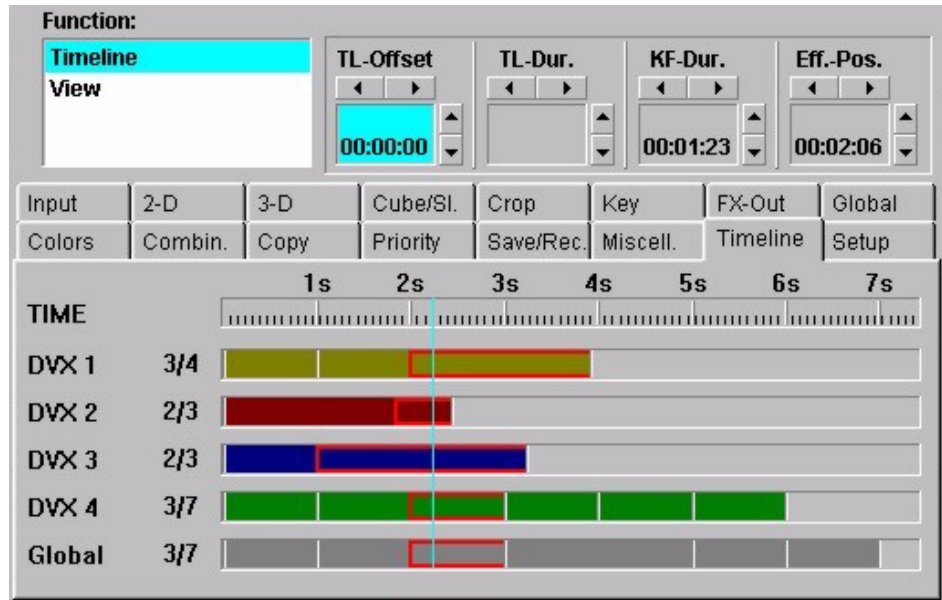
Page Timeline

TL–Offset	Set timeline offset for selected channel. Via "Modify / Selected" you can enter absolute timecode
TL–Dur	Will set the duration for the total timeline. Not yet implemented in the actual software.
KF–Dur	Set the duration for the selected keyframe. Via "Modify / Selected" you can enter absolute timecode
Eff.–Pos	Moves the actual position (cursor) in the timeline.

Page View

Zoom	Set the zoom window for the display
Scroll	Set the start timecode for the display.
Eff.–Pos	Moves the actual position (cursor) in the timeline. (same as in "page timeline")

With the left / right arrow at the bottom you step to the previous / next keyframe for the DISPLAYED channel.

3.14.5.15 Setup Index Card

Index card with 1 pages: **Local Channels**
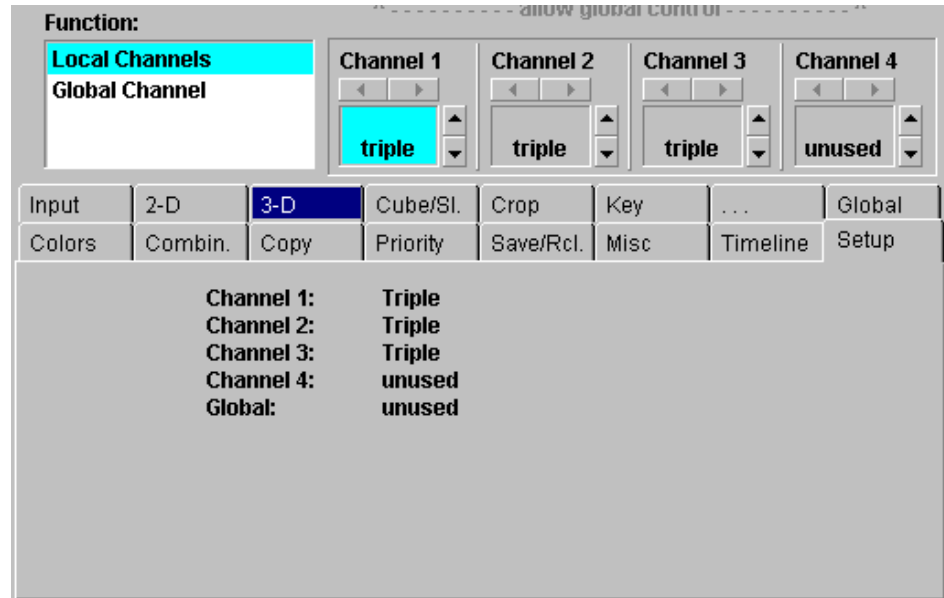
Page Local Channels

Channel 1 – Channel 4
When you start creating an effect in the workbuffer, this is the first page to set.

The possible modes per channel are:
● unused
● single
● pair
● triple (not for channel 4)
● quadruple

If you decide to use the DVx like you would use an external DVE – just as one device – your choice will always be quadruple. When you only need two channels for a certain effect, just set the size of the channels not necessary to zero. But in this case you only can use one DVx effect at a time.
When you want to use the DVx as multiple independent DVEs, only select the channels needed – to leave the other ones available for other, simultaneously recalled effects.

Depending on the channel setup (architecture) the resulting video signal is available on the following DVx outputs:

Channel 1:

Single:	DVX1 (video on superblack)
Pair 1 / 2:	Combiner output video DVX 1, combiner output key DVX 2.
Triple:	Combiner output video DVX 1, combiner output key DVX 2.
Quadruple:	Combiner output video DVX 1, combiner output key DVX 2.

Channel 2:

Single:	DVX2 (video on superblack)
Pair 1 / 2:	Combiner output video DVX 1, combiner output key DVX 2.
Triple:	Combiner output video DVX 1, combiner output key DVX 2.
Quadruple:	Combiner output video DVX 1, combiner output key DVX 2.

Channel 3:

Single:	DVX3 (video on superblack)
Pair 3 / 4:	Combiner output video DVX 3, combiner output key DVX 4.
Triple:	Combiner output video DVX 1, combiner output key DVX 2.
Quadruple:	Combiner output video DVX 1, combiner output key DVX 2.

Channel 4:

Single:	DVX4 (video on superblack)
Pair 3 / 4:	Combiner output video DVX 3, combiner output key DVX 4
Triple:	not possible on channel 4
Quadruple:	Combiner output video DVX 1, combiner output key DVX 2

The cube–builder always uses channels 1–3, that means, when you want to build a cube you need a triple – or a quadruple if you want to used a cube (channel 1–3) and channel 4 as an independent channel, all on one combiner output.

Tip Depending on your channel settings you can run up to 4 DVx effects simultaneously.

Page Global Channel

The global channel should be set to "used" if you need:

● the cube/slab builder

● priority settings other than Z–priority

● global 3D–control of more than one channel

If you decide to use the DVx like you would use an external DVE – just as one device – your choice will always be "used".

3.14.6 DVX SETTINGS

```
┌─────────────────────────────────────────────────────────────────────┐
│     FX-Out      View      General                                     │
│  ─────────────                                                        │
│  ┌───┐                                                                │
│  │ ⚠ │        DVx                                                     │
│  └───┘      Settings                                                  │
│  ┌─────┐                                                              │
│  │ DVE │    ┌──────────────────────────────────────────────────────┐ │
│  │Extern│   │ FX-Out │ View │ General │    │    │    │    │         │ │
│  └─────┘    ├────────────────────────────────────────────────────┐ │ │
│  ┌─────┐    │                                                     │ │ │
│  │     │    │ FX Outputs        current value  default value      │ │ │
│  └─────┘    │ As internal source                                  │ │ │
│             │ Intern Out 1  "DVX1"   [DVX 1]      DVX 1            │ │ │
│  ┌─────┐    │ Intern Out 2  "DVX2"    DVX 2       DVX 2            │ │ │
│  │ DVx │    │ Intern Out 3  "DVX3"    Ram 2       DVX 3            │ │ │
│  │ Main│    │ Intern Out 4  "DVX4"    Ram 3       DVX 4            │ │ │
│  └─────┘    │                                                     │ │ │
│  ┌─────┐    │ On "ram output option"                              │ │ │
│  │ DVx │    │ Extern Out 1  "RAM1"   Ram 1       Ram 1    ←→ ▶    │ │ │
│  │ Edit│    │ Extern Out 2  "RAM2"   Ram 2       Ram 2            │ │ │
│  └─────┘    │ Extern Out 3  "RAM3"   Ram 3       Ram 3            │ │ │
│  ┌─────┐    │ Extern Out 4  "RAM4"   Ram 4       Ram 4            │ │ │
│  │ DVx │    │                                                     │ │ │
│  │Settings│  │                                             ↕ ▶    │ │ │
│  └─────┘    │                                                     │ │ │
│  ┌─────┐    │                                                     │ │ │
│  │Previous│ │                                                     │ │ │
│  │ Menu │   └─────────────────────────────────────────────────────┘ │ │
│  └─────┘                                                              │
│  ┌─────┬───────┬───────┬─────┬─────┬─────┬─────┬───────┐             │
│  │Menu │Set Intern│Set Extern│ ← │ ↑ │ ↓ │ → │Modify │             │
│  │Lock │to Default│to Default│    │    │    │    │       │             │
│  └─────┴───────┴───────┴─────┴─────┴─────┴─────┴───────┘             │
└─────────────────────────────────────────────────────────────────────┘
```

3.14.6.1 Dialog Buttons

DVE Extern   Switch to control page for extern DVE 1 + 2.

DVx Main   Switch to the main menu page for internal DVx

DVx Edit   Switch to edit page for intern DVx.

DVx Settings   Current page.

Previous Menu   Return to the previous menu. For details refer to section **Introduction.**

3.14.6.2 Fx–Out Index Card

```
FX-Out │ View │ General │      │      │      │      │

┌──────────────────────────────────────────────────────┐
│  FX Outputs           current value  default value    │
│  As internal source                                   │
│  Intern Out 1  "DVX1"    DVX 1         DVX 1           │
│  Intern Out 2  "DVX2"    DVX 2         DVX 2           │
│  Intern Out 3  "DVX3"    Ram 2         DVX 3           │
│  Intern Out 4  "DVX4"    Ram 3         DVX 4           │
│                                                        │
│  On "ram output option"                                │
│  Extern Out 1  "RAM1"    Ram 1         Ram 1           │
│  Extern Out 2  "RAM2"    Ram 2         Ram 2           │
│  Extern Out 3  "RAM3"    Ram 3         Ram 3           │
│  Extern Out 4  "RAM4"    Ram 4         Ram 4           │
└──────────────────────────────────────────────────────┘
```

In this indexcard you can set the curent values and your default values for DVX1 ... DVX4 and RAM1 ... RAM1.
For more information please see FX–outputs section of DVx Main menu

Bottom row buttons:

Set intern to Default   just an easy way to set DVX1 ... DVX4 to default

Set extern to Default   just an easy way to set RAM1 ... RAM4 to default

3.14.6.3 View Index Card

| FX-Out | View | General | | | | | |

Settings	value
Show or hide elements on "DVx Main" page	
Selected effects per channel	show
FX intern out settings	show
FX extern out settings	show
highlight when FX-out actual is not default	yellow
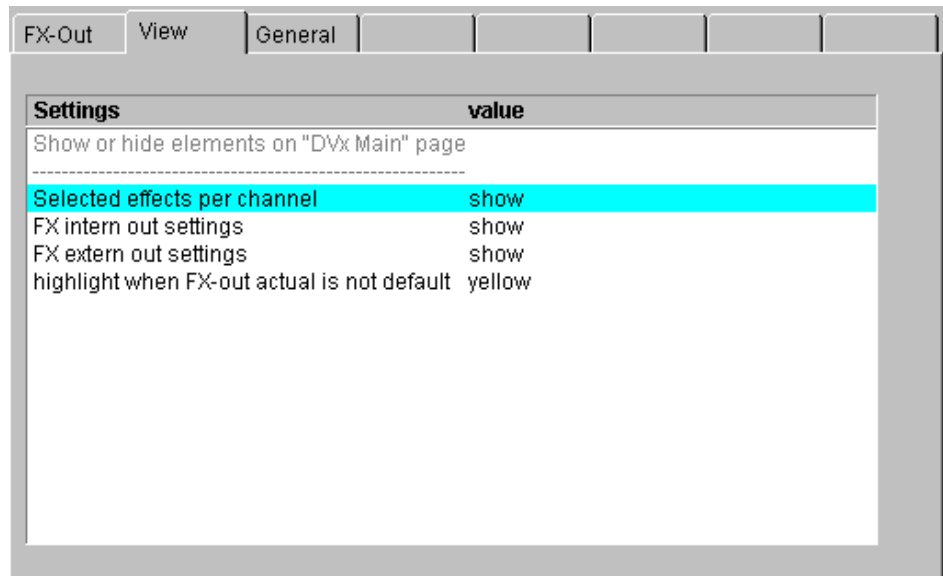
Selected effects per channel: show/hide "**current effect nr.**" section in
DVx Main menu

FX intern out settings: show/hide DVX1 – DVX4 part of the "FX outputs"
section in DVx Main Menu

FX extern out settings: show/hide RAM1 – RAM4 part of the "FX outputs"
section in DVx Main Menu

Highlight when FX–out actual is not default:
select the color for highlighting a deviation from
default – or gray for no highlighting

3.14.6.4 General Index Card

Edit workbuffer loadmode:

In contrary to other DVE's the DVx can run effects without loading them into the workbuffer. This allows editing an effect while running another one at the same time – as long as there is no channel conflict. If you do not need this feature, you should select "**load last played one**" to simplify operation.

In this mode the behaviour is as follows:
When you enter the DVx Edit menu the last recalled effect from the DVx Main menu will be automatically loaded into the workbuffer, creating a behaviour which is similar to other DVE's.

Note:
When you recall other effects e.g. by macros or timelines while you are in the DVx Edit Menu, you have to confirm the loading into the workbuffer by a button in the bottom row ("load last played one") to avoid unneccessary loading actions.

To allow editing e.g. an effect using channel 3+4 while running another effect using channel 1+2 you have to select "**load manually**"

In this mode the behaviour is as follows:
When you enter the DVx Edit menu that contents of the workbuffer remains untouched. You can go on editing the current effect in the workbuffer. If there is a architecture conflict, that means the last recalled effect on the DVx Main page uses channels which are also used by the workbuffer, a window is displayed, describing this conflict situation.

Example:
You are editing with a "**Triple**" in the workbuffer and in the DVx Main page you have recalled en effect with a "**Pair 3 / 4**". According to the "last one wins" philosophy the "**Pair 3 / 4**" has stolen channel 3 from your "**Triple**" architecture.

Tip

Your choice is now: (buttons in the bottom row)

Restore: You will re–establish your "triple", steeling channel 3 from
"**Pair 3/4**". All your keyframes are still available.

New: The workbuffer architecture is set to "unused" for all channels
("unused" means the workbuffer does not touch any channel, you
will not disturb any recalled effect) and you can set the architecture
of your choice.

Note:
*The keyframes in a channel are not deleted when the architecture is set to
"unused". This allows you to change the architecture without loosing
keyframe contents. When you want to start from scratch in a channel, select
the channel and press "Delete / Del All".*

Display channel select mode:

In the edit menu paramaters can only be displayed for one channel at a time. You
can select more than one channel to be controlleded simultaneously.

Allow display of a not controlled channel
In this mode the displayed channel is only changed when a
channel is double clicked or when you click on the DVX name. It is possible e.g.
to control channel 1 only, having channel 2 displayed. You control a channel – but
displayed paramters do not change

Force display to a controlling channel
In this mode the displayed channel is automatically changed to a controlling
channel when the displayed channel is no longer controlled. When you control a
channel you always see the change in the parameters.

Channel 1 ... 4 source recall with DVx effects: Yes / No

If no, recalling or playing an effect does not recall the sources stored per keyframe
for the according channel (same as "no x–point chan 1 ... 4" on DVx Main page).

3.15 INSTALLATION MENU

3.15.1 INSTALL MAIN MENU

more			Store Preset ▼				

XtenDD-61

Install

Install

E-Box

Control Panel Port Assignment

1		
2		
3	SatPanel	satpanel_v101
4		
5		
6		

Mainframe Port Assignment

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

Panel

System

Diagnose

Previous Menu

attached macros
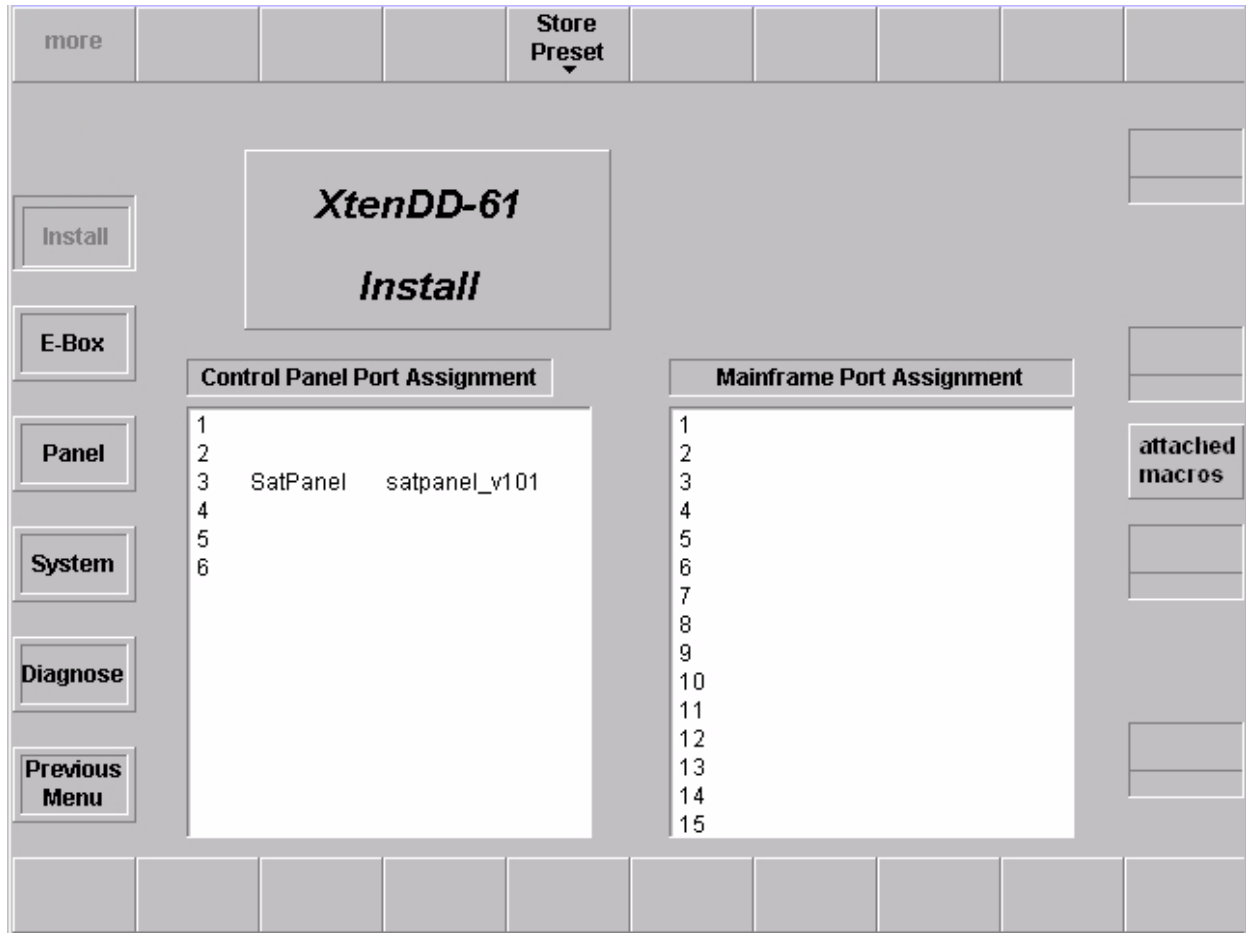
Main menu with displays of the current control panel and mainframe port assignment.

3.15.1.1 Dialog Buttons

E-Box   Selecting **E–Box Install** menu.

Panel   Selecting **Panel Install** menu.

System   Selecting **System** menu. Menu not yet implemented.

Diagnose   Selecting **Diagnose** menu.

Previous Menu   Return to the previous menu. For details refer to section **Introduction.**

3.15.1.2 Saving Operation Preset Data

Saving operation data as user defined preset is possible with the button **Store Preset** in the **Install / E-Box** menu.
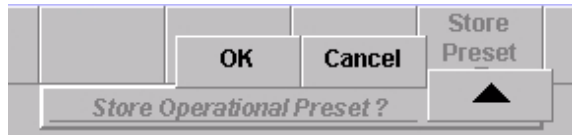
OK   The complete mainframe operational setting is saved as to be the new "operational preset" setting.

Cancel   Canceling the save procedure.

3.15.2 INSTALL E-BOX MENU

3.15.2.1 Dialog Buttons

Install   Selecting **Install** main menu.

Panel   Selecting **Install Panel** menu.

System   Selecting **System** menu.

Diagnose   Selecting **Diagnose** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.15.2.2 Function Buttons / Inedx Cards

Copy With the softkey **Copy** it is possible to store or load the files **ENVIRON.INI** and **License.txt** (E-Box) or **ENVIR_CP.INI** (panel) from a floppy disk or harddisk.

CAUTION: **After loading the environment file, the switcher will reset!**

Timing The index cards serves for setting the video standard and modifying the timing parameter. For details refer to section 3.15.2.3 *Timing Adjustment* below.
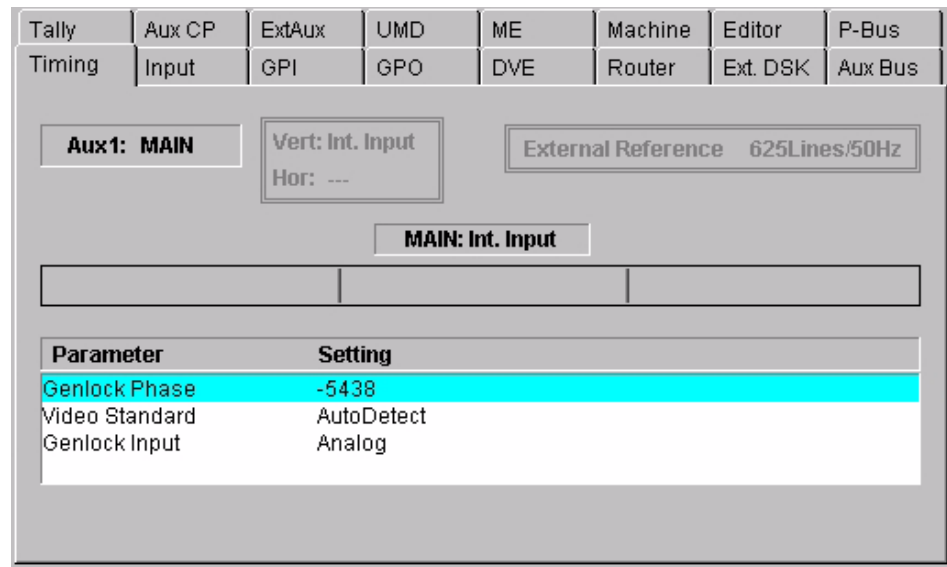
Input   Index card for setting the input name transfer parameters and the Software patch Panel.

Tally	Aux CP	ExtAux	UMD	ME	Machine	Editor	P-Bus
Timing	Input	GPI	GPO	DVE	Router	Ext. DSK	Aux Bus

Subst. Table   none

modified

Input	Patched to	ext. Name	Router Outp.	Router Lvl	GPO Preroll
1 IN01	1	No	0	0	0
2 IN02	2	No	0	0	0
3 IN03	3	No	0	0	0
4 IN04	4	No	0	0	0
5 IN05	5	No	0	0	0
6 IN06	6	No	0	0	0
7 IN07	7	No	0	0	0
8 IN08	8	No	0	0	0
9 IN09	9	No	0	0	0
10 IN10	10	No	0	0	0
11 IN11	11	No	0	0	0
12 IN12	12	No	0	0	0

ext. Name: Enable / Disable the name transfer mode with **Yes/No**

Patched to: Option "Software Patch Panel":
Software License Key is required!
With the buttons **Reset Patch Panel** and **Patch Panel On/Off**
the settings can be activated or resetted.

Router Output: Select the router output channel

Router Level: Select the level of the routing system (e.g. Prosan router)

GPO Preroll: in preparation

Subst. Table: **None / SUBSTAB1 ... 15**
Selecting a substitution table.
Refer also to **Config / Panel / SubstTab** menu.
The substitution tables are used for Simulcast mode.
This entry in this index card can only be modified
if in the sidepanel PC's registry the value
"**USERINTERFACE / INPUT_SUBSTAB_SELECTABLE** is set
to **"1"**.

GPI   Index card for modifiying the GPI parameters.

Tally	Aux CP	ExtAux	UMD	ME	Machine	Editor	P-Bus
Timing	Input	GPI	GPO	DVE	Router	Ext. DSK	Aux Bus

GPI	Edge
1	rising
2	rising
3	rising
4	rising
5	rising
6	rising
7	rising
8	rising

GPI Edge

✓ rising
 falling
 either edges

Select **Modify** to determine wheater the rising or falling edge of the arriving signal (GPI 1 ... 8) is to be used.

A GPI is considered **Active** when current flows through the LED of the opto-coupler at the GPI input. When no current flows the GPI is **Inactive**. Hence a **Rising** edge is the transition from **Inactive** to **Active**, and a **Falling** edge is the transition from **Active** to **Inactive**.

GPO Index card for selecting and modifying the GPO parameters.
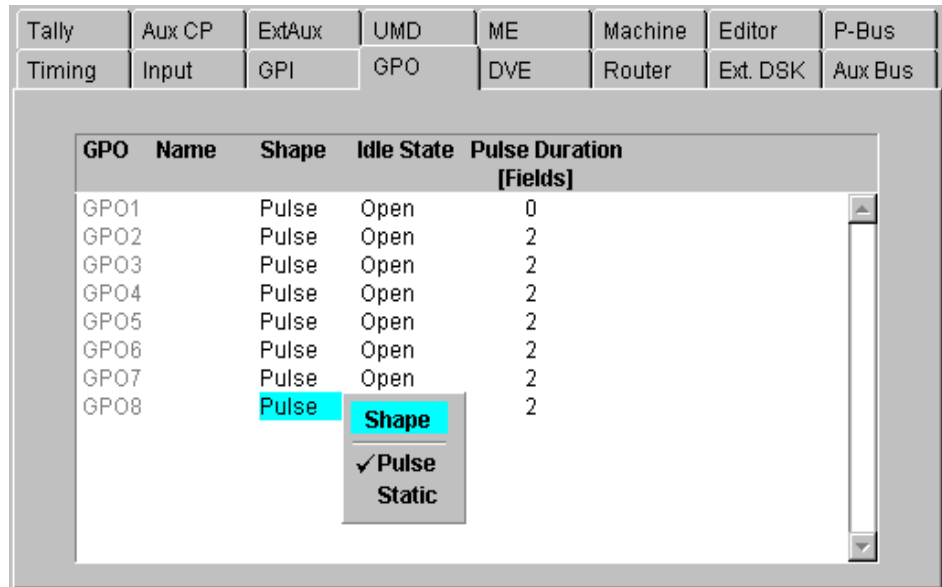
Select **Modify** to change the parameters:

Shape: Pulse / Static
Idle State: Open / Closed
Pulse Duration: Enter the preroll time in frames
  (max 255 frames)
Attached to: Assign a fixed video source to the GPI channel

DVE Index card for selecting and modifying the DVE parameters.

Tally	Aux CP	ExtAux	UMD	ME	Machine	Editor	P-Bus
Timing	Input	GPI	GPO	DVE	Router	Ext. DSK	Aux Bus

Parameter	Setting
Port	8
Type	none
Video In	1
Key In	2
Delay	0
Tally	extern
Video Send	AUX 1
Key Send	AUX 2
Control Port	9
Control Type	none
Control Delay	0

DVE
✓ 1
☐ 2

For details refer to the respective section ***Digital Video Effect System Integration*** in your Planning & Installation Manual.

Router Index card for selecting and modifying the parameters of external routers.

| Tally | Aux CP | ExtAux | UMD | ME | Machine | Editor | P-Bus |
| Timing | Input | GPI | GPO | DVE | Router | Ext. DSK | Aux Bus |

Parameter	Setting
Mnemonic Transfer	
Port	10
Type	identbts_drv_v110
Crosspoint Control	
Port	None
Type	prosan_v101
Audio follow Video	
Port	3
Type	esam2_v308
Automation Control 1	
Port	None
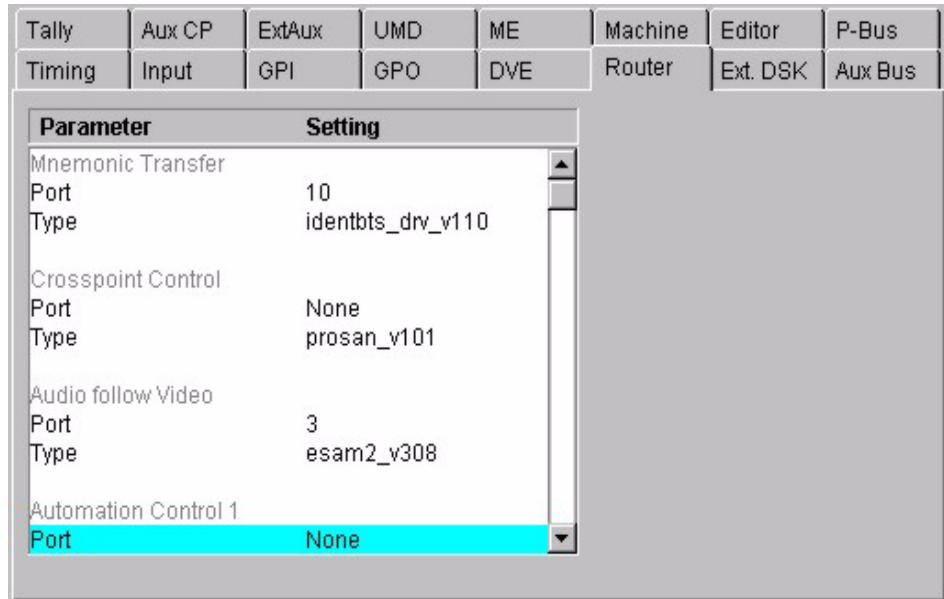
Two protocols and the assigned ports are selectable:

Mnemonic Transfer:	Name transfer from the external router to the switcher control.
Crosspoint Control:	Control protocol for the external Aux busses.
Audio follow Video:	Control protocol for Audio follow Video, e.g. "**esam2_V308**"
Automatic Control:	Control protocol for Autom. control system protocol , e.g. "**acos_V300**"

Ext DSK

Index card for installation the external DSK parameters.

Parameter	Setting
Port	None
Type	None
Tally	Intern
Key Send	none
Fill Send	none
BGD Source	none
Option Mask	No
Option Wipe	No
Option Fill Matte	No
Option Chroma Key	No
Option Key Opacity	No
Option FTB Auto	Yes
Option KEY Auto	No

Ext DSK
☑ DSK 5
☐ DSK 6
☐ DSK 7

For details refer to the section **External Downstream Keyers** in your Planning & Installation Manual.

Aux Bus   Index card for installation the Aux Bus parameters.

Tally	Aux CP	ExtAux	UMD	ME		Machine	Editor	P-Bus
Timing	Input	GPI	GPO	DVE		Router	Ext. DSK	Aux Bus

AUX Bus	Output	Phaser	Permanent Input
1	10 Bit	Phased	none
2	10 Bit	Phased	none
3	10 Bit	Phased	none
4	10 Bit	Phased	none
5	10 Bit	Phased	none
6	10 Bit	Phased	none
7	10 Bit	Phased	none
8	10 Bit	Phased	none
9	10 Bit	Phased	none
10	10 Bit	Phased	none
11	10 Bit	Phased	none
12	10 Bit	Phased	none
13	10 Bit	Phased	none
14	10 Bit	Phased	none
15	10 Bit	Phased	none

All Aux buses of the XtenDD are generally phased.
Output coding and **Permanent Input** can be selected by pressing the **Modify** button.

Tally Index card for selecting Tally ports and setting the MI-3040 box addresses.

Timing	Input	GPI	GPO	DVE	Router	Ext. DSK	Aux Bus
Tally	Aux CP	ExtAux	UMD	ME	Machine	Editor	P-Bus

Tally System	Port	Box 1	Box 2	Box 3
Standalone				
overall	None			
1	None			
2	None			
3	None			
4	None			
Contr. System				
overall	None			
1	None			
2	None			
3	None			
4	None			

Tally
☑ Red
☐ Green
☐ Yellow

Tally Assignment Active
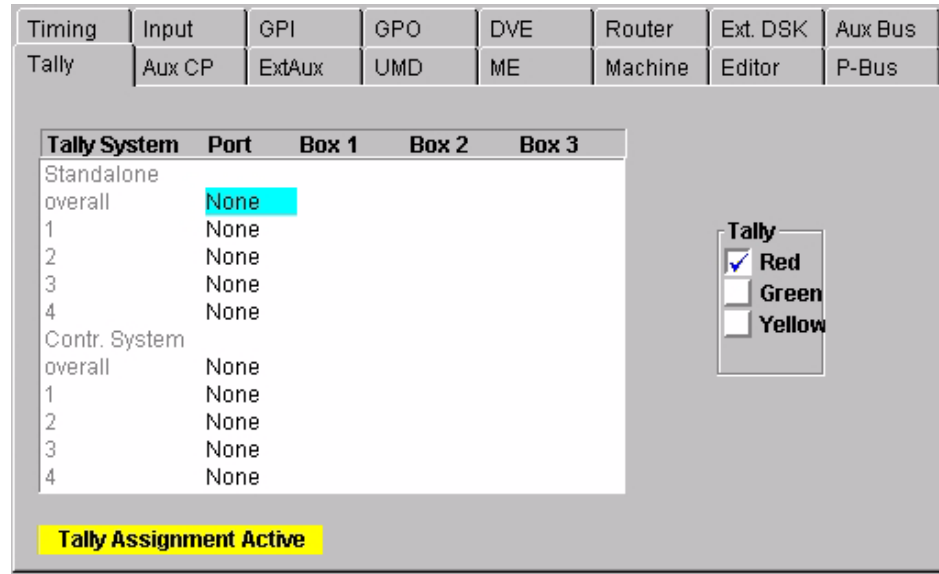
Please note:
Two MI–3040 boxes can be addressed as to be one box with 80bits if they have the same MPK address and if they are installed in neighbour colums in the table obove. Within a tally channel (Red, Green, Yellow) same box addresses may be used. However, a box address cannot be used in different colours.

For details refer to the section "Tally Signalling" in your Planning & Installation Manual.

Pressing the button **Tally Out Assignment** opens a new dialog page for Tally Assignment:

Timing	Input	GPI	GPO	DVE	Router	Ext. DSK	Aux Bus
Tally	Aux CP	ExtAux	UMD	ME	Machine	Editor	P-Bus

Tally Bit	Red	Green	Yellow
1 (Box 1 Bit 1)	VID_INPUT_01	VID_INPUT_01	VID_INPUT_01
2 (Box 1 Bit 2)	VID_INPUT_02	VID_INPUT_02	VID_INPUT_02
3 (Box 1 Bit 3)	VID_INPUT_03	VID_INPUT_03	VID_INPUT_03
4 (Box 1 Bit 4)	VID_INPUT_04	VID_INPUT_04	VID_INPUT_04
5 (Box 1 Bit 5)	VID_INPUT_05	VID_INPUT_05	VID_INPUT_05
6 (Box 1 Bit 6)	VID_INPUT_06	VID_INPUT_06	VID_INPUT_06
7 (Box 1 Bit 7)	VID_INPUT_07	VID_INPUT_07	VID_INPUT_07
8 (Box 1 Bit 8)	VID_INPUT_08	VID_INPUT_08	VID_INPUT_08
9 (Box 1 Bit 9)	VID_INPUT_09	VID_INPUT_09	VID_INPUT_09
10 (Box 1 Bit 10)	VID_INPUT_10	VID_INPUT_10	VID_INPUT_10
11 (Box 1 Bit 11)	VID_INPUT_11	VID_INPUT_11	VID_INPUT_11
12 (Box 1 Bit 12)	VID_INPUT_12	VID_INPUT_12	VID_INPUT_12
13 (Box 1 Bit 13)	VID_INPUT_13	VID_INPUT_13	VID_INPUT_13
14 (Box 1 Bit 14)	VID_INPUT_14	VID_INPUT_14	VID_INPUT_14

With the following buttons the Tally Assignment can be changed:

Tally Out Assign   dialoge page appears/disappears

Tally Assign   switched assignment on/off

Modify   changed the assignment

Reset Assign   reset the channels to **Default** or **None**

Copy Assign   copied assignment from channel to channel

A "modified" state of each channel will be displayed in the headline of the assign-ment table.

Aux CP   Index card for installing the Aux Control Panels connected with the mainframe.
For Details refer to the Planning and Installation Manual.

Timing	Input	GPI	GPO	DVE	Router	Ext. DSK	Aux Bus
Tally	Aux CP	ExtAux	UMD	ME	Machine	Editor	P-Bus

Aux CP No.	Type	Port	MPK Address
1	cp300	None	not inst.
2	cp330	None	not inst.
3	none	None	not inst.
4		None	not inst.

Type   opens a pop-up window with all types of Aux Control Panels**.**

Port   opens a pop-up window with all ports plus "**None**" like in all other menus where a port must be configured.

> *Note:*   *The port must be different to the ports used for DVEs, Editors, ext. DSKs, etc.*

MPK Address   opens the typewriter pop-up window.
The physical MPK address of the AUX-CP must be entered.
Refer the label at the rear of the panel modules
(e.g. CP-3020: **e0002d43**).

Ext Aux   Index card for selecting and modifying the external Aux parameters.

Timing	Input	GPI	GPO	DVE	Router	Ext. DSK	Aux Bus
Tally	Aux CP	ExtAux	UMD	ME	Machine	Editor	P-Bus

ExtAux Bus	Router Output	Router Level
1	1	0
2	2	1
3	3	2
4	4	3
5	5	4
6	6	5
7	7	6
8	8	7
9	58	0
10	59	1
11	60	2
12	61	3
13	62	4
14	63	5
15	64	6

The card enables the ability to select a special output at a defined level of the router.

Example:

If you select in the column **Router Output** the number 6 and in the column **Router Level** the number 1 then it corresponds to the specification that External Aux Bus 1 ist connected with the router output 6 at level 1. The number of the levels and router outputs depends of the router control protocol.

UMD   Index card for installation the Under Monitor Displays and set the tally mode.

UMD	Address	Display 1	Display 2	Display 3
1	0	none	none	none
2	not inst.	none	none	none
3	not inst.	none	none	none
4	not inst.	none	none	none
5	not inst.	none	none	none
6	not inst.	none	none	none
7	not inst.	none	none	none
8	not inst.	none	none	none
9	not inst.	none	none	none
10	not inst.	none	none	none
11	not inst.	none	none	none
12	not inst.	none	none	none

Tabs: Timing | Input | GPI | GPO | DVE | Router | Ext. DSK | Aux Bus
Tally | Aux CP | ExtAux | UMD | ME | Machine | Editor | P-Bus

None   Red / Red

For details refer to the section "Under Monitor Displays" in your Installation Manual.

ME   Index card with M/E specific output parameters.

Timing	Input	GPI	GPO	DVE	Router	Ext. DSK	Aux Bus
Tally	Aux CP	ExtAux	UMD	ME	Machine	Editor	P-Bus

Parameter	Setting
Output Precision PGM	10 Bit
Output Precision PVW	10 Bit

M/E
- ✓ P/P
- ☐ M/E 1
- ☐ M/E 2
- ☐ M/E 3

The output coding of the PGM and PVW channel can be changed between 10Bit and 8Bit.

Machine   Index card for installation the machine parameters (e.g. VTR) for Machine Control
                           and VTR Emulation.

Timing	Input	GPI	GPO	DVE	Router	Ext. DSK	Aux Bus
Tally	Aux CP	ExtAux	UMD	ME	Machine	Editor	P-Bus

Machine Control		VTR Emulation	
Parameter	**Setting**	**Parameter**	**Setting**
Machine 1		VTR Emulation 1	
Port	1	Port	None
Type	bvw75play_v102	Type	None
		Device	none
Machine 2			
Port	2	VTR Emulation 2	
Type	none	Port	None
		Type	None
Machine 3		Device	none
Port	3		
Type	none	VTR Emulation 3	
		Port	None
Machine 4		Type	None
Port	4	Device	none

The setting can be changed by navigating the parameter and pressing the **Modify**
button. For operationg refer to section ***Machine Control.***

Editor   Index card for installation the Editor parameters.

Timing	Input	GPI	GPO	DVE	Router	Ext. DSK	Aux Bus
Tally	Aux CP	ExtAux	UMD	ME	Machine	Editor	P-Bus

Parameter	Setting
Port	None
Type	none

Editor
- ☑ 1
- ☐ 2
- ☐ 3
- ☐ 4

For details refer to the section "Editor Control" in your Installation Manual.

P-Bus Index card for setting the P-Bus parameters.

The **Install E-Box / P-Bus** (= Peripheral Bus) menu defines the machines which can be controlled via an RS422 bus. In the left list box of the **P•Bus** index card, these machines can be provided with a name and can be activated or deactivated.

Timing	Input	GPI	GPO	DVE	Router	Ext. DSK	Aux Bus
Tally	Aux CP	ExtAux	UMD	ME	Machine	Editor	P-Bus

Machine	Name	Active		Trigger	Name
0	none	No	▲	Trigger 0	
1	none	No		Trigger 1	Trg1
2	none	No		Trigger 2	Trg2
3	none	No		Trigger 3	Trg3
4	none	No		Trigger 4	Trg4
5	none	No		Trigger 5	Trg5
6	none	No		Trigger 6	Trg6
7	none	No		Trigger 7	Trg7
8	none	No		Trigger 8	Trg8
9	none	No		Trigger 9	Trg9
10	none	No		Trigger 10	Trg10
11	none	No		Trigger 11	Trg11
12	none	No		Trigger 12	Trg12
13	none	No	▼	Trigger 13	Trg13
14	none	No			None

The right list box enables to provide for each of these machines the trigger events with function names (e.g. PLAY, SHUTTLE). For each machine there are the trigger from 0 ... 15 which can be assigned each to other function. The name can be selected from a list of default names which provides specific names for this application.

The list of trigger names consist of a fixed-programmed part and a freely definable part. The freely definable part – 16 names – can be adjusted in the subdialog **Edit Names**.

For controlling the machines refer to section **Remote P-Bus / Trigger**

3.15.2.3 Timing Adjustment XtenDD

When source signals are fed into the switcher, it must be ensured that the time difference between the sources is not outside the operating range of the internal switcher autophasers (41μs). The output signals of the sources must correspond to the timing customary in operation. For instance, no EE picture in a VTR, PB-Ref on CCVS etc.

The switcher's Genlock Phase can be adjusted to the fed reference signal in the range of –9 line to +10 lines.

Timing reference diagram

Min delay
approx 41 us

approx 0.6us

Autophasing
range inputs
approx 41us

Aux outputs

ME1

ME1 outputs, PVW

approx 5.6us

ME2

ME2 output, PVW

approx 5.6us

ME3

ME3 output, PVW

approx 5.6us

PP

Main outputs, PVW

approx 5.6us

Total timing position of XtenDD in respect to reference blackburt:

approx minus 9 lines   approx plus 9 lines
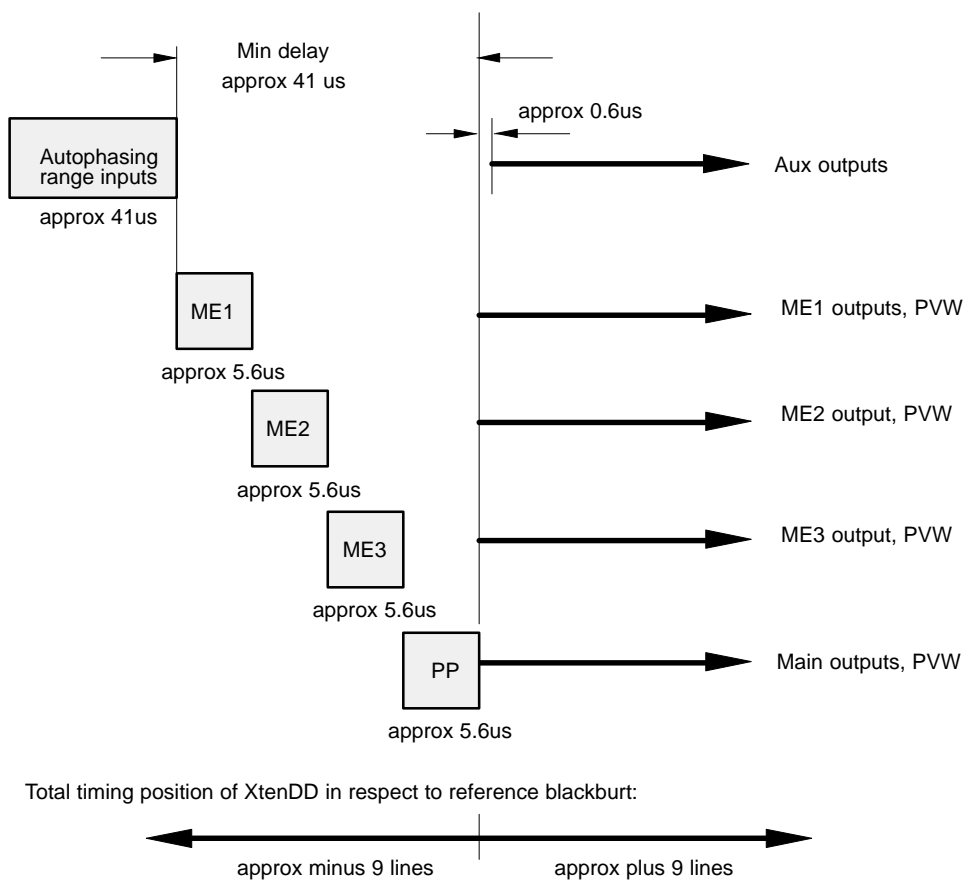
Refer to the Installation Manual for detailed information for DD35-2 and DD35-3 switchers.

The mixers include the possibility to perform the genlock adjustment of the individual input sources in **Install E-Box** menu**.**

When adjusting the genlock phase, **all** sources have to be successively checked for their timing by switching up on the bus **Aux1**.

To adjust the genlock phase, select the softkey in the **Install E-Box** menu and select the index card **Timing**. The following display is represented:

Tally	Aux CP	ExtAux	UMD	ME	Machine	Editor	P-Bus
Timing	Input	GPI	GPO	DVE	Router	Ext. DSK	Aux Bus

Aux1: MAIN   Vert: Int. Input   Hor: ---   External Reference   625Lines/50Hz

MAIN: Int. Input

Parameter	Setting
Genlock Phase	-5438
Video Standard	AutoDetect
Genlock Input	Analog
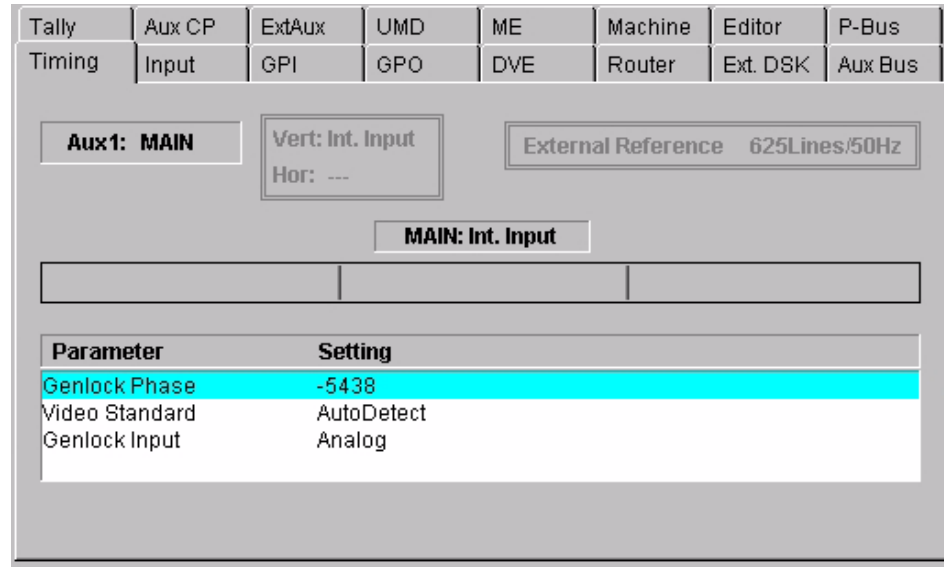
With **Genlock Phase**, the phase relation of the mixer can be shifted +15/–15 lines in comparison with the genlock reference signal.
The display **TIMING** serves for checking the timing of the sources.
The bar diagram displays the timing of the source to the mixer that is selected on bus **Aux1**.

The display can give the following informations:

Aux1:   Shows the selected source on the Aux1 Bus witch is used for timing measurement.

Vert: Shows how many lines the source is off in comparison to the switcher timing.

Hor: Shows how many μs the source is off in comparison to the switcher timing (only if Vert=0).

External Reference:

        Shows the standard of the Black or Blackburst signal at the genlock input.

The bar diagram shows the timing of the input source relatively to the autophasing range. All sources should be timed between the two marker lines in the middle area of the bar. The right line (with the rspective switcher type name) marks the earliest mixer input (latest timing of the sources). The left line marks the earliest timing of the sources. The bar is displayed black, if the timing is in the phasing range or yellow, if the timing is outside the phasing range.

How to adjust the Genlock Phase:

- Make sure that the switcher is set to the same standard as the external reference and the sources.

- The video standard of the switcher can be modified by selecting the parameter **Video Standard** in the **Install E-Box** menu. Then push **Modify** to open an overlay with the selection modes **Auto Detect** (default), **625Lines/50Hz**, **525Lines/60Hz**. Confirm the selected mode with **OK**.

- Select a video source on Aux1. To adjust the genlock phase select **Genlock Phase**. Pressing **Modify** opens an overlay and delegates the digipots to adjust the phase.
  At first make a coarse adjustment that the display shows **Vert: 0 Lines** (For a quick adjustment the bar in the overlay can be dragged with the mouse.)
  If **Vert: 0 Lines** the display shows the horizontal offset. This offset should be for all inputs in the range of 0 ... –41us. This phasing range is also displayed in the horizontal bar. For a correct adjustment the bar should be black.

- Select all inputs on Aux1 and correct the timing if necessary.

- Finally all inputs should be in the range of 0 ... –41us

Note: *The sources on **Aux1** (Timing index card) can also be selected by clicking with the mouse on Aux1 and selecting a source from the overlay. Adjusting the genlock phase may cause disturbances on monitors especially during coarse adjustment.*

3.15.3   INSTALL PANEL MENU

AuxCp	Global	UPK	UMD	GPI	GPO	SatPanel		Copy ▼

⚠️

Install

DD35-233
Install Panel

E-Box

AuxCp	Global	UPK	UMD	GPI	GPO	SatPanel	

Panel

Aux CP No.	Type	Port	MPK Address
1	cp300	None	70027db
2	cp330	None	7002a52
3	cp300	None	7001b5a
4	cp330	None	not inst.
5		None	not inst.
6		None	not inst.
7		None	not inst.
8		None	not inst.
9		None	not inst.
10	cp300	None	not inst.

System

↔ ▶

Diagnose

Previous Menu

↕ ▶

Menu Lock			←	↑	↓	→	Modify	

3.15.3.1 Dialog Buttons

Install   Selecting **Install** main menu.

E-Box   Selecting **E–Box Install** menu.

System   Selecting **System** menu.

Diagnose   Selecting **Diagnose** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.15.3.2 Function Buttons / Index Cards

Menu Lock   For details refer to section ***Introduction.***

Cursor → ← ↑ ↓   The cursor buttons are used to navigate within the table.

Aux CP   Index card for installing the Aux Control Panels connected to the switcher control
                                panel. For Details refer to your the Planning and Installation Manual.

AuxCp	Global	UPK	UMD	GPI	GPO	SatPanel

Aux CP No.	Type	Port	MPK Address
1	cp300	None	70027db
2	cp330	None	7002a52
3	cp300	None	7001b5a
4	cp330	None	not inst.
5		None	not inst.
6		None	not inst.
7		None	not inst.
8		None	not inst.
9		None	not inst.
10	cp300	None	not inst.

Type   opens a pop-up window with all types of Aux Control Panels**.**

Port   opens a pop-up window with all ports plus "**None**" like in all other
                    menus where a port must be configured.

                    Note: *The port must be different to the ports used for
                                      DVEs, Editors, ext. DSKs, etc.*

MPK Address opens the typewriter pop-up window.
                 The physical MPK address of the AUX-CP must be entered.
                 Refer to the label at the rear of the panel modules
                 (e.g. CP-3020: **e0002d43**).

Global	Index card for performing global panel settings and fader adjustment.

AuxCp	Global	UPK	UMD	GPI	GPO	SatPanel	

Setting	Value
Fader Adjustment	adjusted-- Press 'Modify' to readjust
Joystick Adjustment	adjusted-- Press 'Modify' to readjust
PGM/PST-Bus Position	PGM above PST
CUT/AUTO-Button Position	CUT Button right
Direct Ext DSK Cut/Auto	Off (use 2nd DSK)
Gang Mode Selection	like permanent key preview
Enable DSK delegation	Off (ignore delegations)
Simulcast Slave Address	0
Key Delegation Button Order	BGD B / BGD A / Key 1 / Key 2

Fader/Joystick Adjustment : Adjustment of the fader end-position values
(fine adjustment of the A/D converters):

Lower end-position: 0% signal, Upper end-position: 100% signal

● Press **Modify**, a pup-up menu with dialog messages appears

● Move all faders to the upper end-position and select the menu entry in the pup–up menu "**Move all faders to the upper position and press OK**"

● Move all faders to the lower end-position and select the entry in the pup–up menu "**Move all faders to the lower position and press OK**"

● The automatic adjustment is finish.

End-position means: move the fader with gentle force as far as it will go.
During the fader adjustment the fader moving have no effect on video signals!

The following settings can be selected and/or adjusted:

PGM/PST Bus Position:	**PGM above PST / ...**
CUT/AUTO Button Position:	**CUT right / left**
Direct Ext DSK Cut/Auto:	**Off (use 2nd DSK) /**
	On (2nd funct. –> Trans Dur
ShiftButtons:	**None / Left / Right / Left and Right**
Gang Mode Selection:	**like transition component select /**
	like permanent key preview
Enable DSK delegation:	**enable/disable**
DSK1..6 delegation:	**The 6 DSK delegation buttons of the PP stage can be used to delegate individually any internal keyer:**
Simulcast Slave Address:	**Last byte of the defined mainframe IP address**
Key Delegation Button Order:	**BgndA–BgndB–Key1–Key2 or Key1–Key2–Key3–Key4**

For more personal settings refer to section 3.17 ***(Personality).***

UPK
User programmable keys

In this index card, many buttons available in the panel sections, can be assigned to other functions. The functions are individual for each button. Select the desired function with pressing the **Modify** button.

The following buttons are programmable:

Button	Panel Section
UPK upper / Limit Set	Transition
UPK lower / Limit On	Transition
DVE	Transition
Mix	Transition
Wipe1	Transition
Wipe2	Transition
BlkPst	Transition
Recall99	TiM/E
Loop	Transition
Trans PVW	Transition
NextTrans Bgd B	Transition
NextTrans Bgd A	Transition
NextTrans Key 1	Transition
NextTrans Key 2	Transition
NextTrans Key 3	Transition
UPK Left 0, 1	Transition
UPK Right 0..11	Transition

The following functions are programmable for the respective buttons described above:

Function	Panel Section
Default function (button specific)	All
None	All
Limit Set	Transition
Limit On	Transition
Wipe 1	Transition
Wipe 2	Transition
Add	Transition
DVE	Transition
GPO 1	Transition
GPO 2	Transition
GPO 3	Transition
GPO 4	Transition
GPO 5	Transition
GPO 6	Transition
GPO 7	Transition
GPO 8	Transition
Recall 99	TiM/E
User preset	TiM/E
Reloc	TiM/E
Next Transition Bgnd B	Transition
Next Transition Bgnd A	Transition
Next Transition key 1	Transition
Next Transition key 2	Transition
Next trans. Bgnd A (Bgnd B in layered mode)	Transition
Next transition key 3	Transition
Next Transition key 4	Transition
Next Transition misc 1	Transition
Next transition misc 2	Transition
Mix	Transition
Auto Transition key 1	Transition
Auto Transition key 2	Transition
Auto Transition key 3	Transition
Auto Transition key 4	Transition
Enable/Disable V–Fade 1	Transition
Enable/Disable V–Fade 2	Transition
Enable/Disable V–Fade 3	Transition
Enable/Disable V–Fade 4	Transition
Simulcast Master	Transition
Simulcast Slave	Transition
Show Button Macro Attachments	Transition
Loop	Transition
Transition Preview	Transition
Cut key 1	Transition
Cut key 2	Transition
Cut key 3	Transition
Cut key 4	Transition

UMD   Index card for installation the Under Monitor Displays and set the tally mode.

AuxCp	Global	UPK	UMD	GPI	GPO	SatPanel

UMD	Address	Display 1	Display 2	Display 3
1	0	PP PVW Out	none	none
2	not inst.	none	none	none
3	not inst.	none	none	none
4	not inst.	none	none	none
5	not inst.	none	none	none
6	not inst.	none	none	none
7	not inst.	none	none	none
8	not inst.	none	none	none
9	not inst.	none	none	none
10	not inst.	none	none	none
11	not inst.	none	none	none
12	not inst.	none	none	none

None		Red / Red

For details refer to the section **Under Monitor Displays** in your Planning & Installation Manual.

GPI Index card for installation the panel GPIs.

| AuxCp | Global | UPK | UMD | GPI | GPO | SatPanel |

GPI	Edge
1	rising
2	rising
3	rising
4	rising
5	rising
6	rising

Select **Modify** to determine wheater the rising or falling edge of the arriving signal (GPI 1 ... 6) is to be used.

A GPI is considered **Active** when current flows through the LED of the opto-coupler at the GPI input. When no current flows the GPI is **Inactive**. Hence a **Rising** edge is the transition from **Inactive** to **Active**, and a **Falling** edge is the transition from **Active** to Inactive.

GPO   Index card for installation the panel GPOs.

| AuxCp | Global | UPK | UMD | GPI | GPO | SatPanel |

GPO	Name	Shape	Idle State	Pulse Duration [Fields]
PAN1		Static	Open	2
PAN2		Static	Closed	2
PAN3		Pulse	Open	152
PAN4		Static	Closed	176
PAN5		Static	Open	2
Alarm		Static	Closed	130

Select **Modify** to change the parameters:

Shape:	Pulse / Static
Idle State:	Open / Closed
Pulse Duration:	Enter the preroll time in frames (max 255 frames)
Attached to:	Assign a fixed video source to the GPI channel

Note:

Panel GPO6 is reserved for the ALARM function.

Sat Panel   Index card for installation the Satellite Panel RSAT.

AuxCp	Global	UPK	UMD	GPI	GPO	SatPanel

Setting	Value
Port	5
Type	satpanel_v100

Select **Modify** to set the port number and protocol type.

3.15.4   SYSTEM MENU

```
        HW Opt   SW Opt   Drives   Devices


Install       XtenDD-10
              System

E-Box       HW Opt | SW Opt | Drives | Devices |

            PP Wipe1        PP Wipe2        ME1 Wipe1
            ME1 Wipe2       ME2 Wipe1       ME2 Wipe2
Panel       ME3 Wipe1       ME3 Wipe2       PP Chr Key1    attached
            ME1 Chr Key1    ME2 Chr Key1    ME3 Chr Key1   macros
            PP Chr Key2     ME1 Chr Key2    ME2 Chr Key2
            ME3 Chr Key2    PP Present      ME1 Present
System      ME2 Present     ME3_Present     Aux 1          ←→ ▶
            Aux 2           Aux 3           Aux 4
            Aux 5           Aux 6           Aux 7
            Aux 8           Aux 9           Aux 10
Diagnose    Aux 11          Aux 12          Aux 13
            Aux 14          Aux 15          Aux 16
            Aux 17          Aux 18          Aux 19
            Aux 20          Col Bgd 1       Col Bgd 2
Previous    Col Bgd 3       Col Bgd PP      Col Bgd ME1    ↕ ▶
Menu


Menu
Lock
```

3.15.4.1 Dialog Buttons

Install   Selecting **Install** main menu.

E-Box   Selecting **E–Box Install** menu.

Panel   Selecting **Panel Install** menu.

Diagnose   Selecting **Diagnose** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.15.4.2 Hardware Options

The menu shows the features and different hardware options of the switcher system.

In the menu, hardware options marked "**green**" are available, hardware options or features marked "**white**" are not installed in the present mainframe.

3.15.4.3 Software Options

Index card for installation the software options and the mainframe type:

3.15.4.4 How to use the License Codes

Storage Location

● When the hardware option is enabled or disabled is defined within a EEProm on the dedicated board.

● The device type of a EBox is defined within a EEProm on the EBox backplane.

● Software Options license codes are stored within a dedicated file **license.txt** or on the EBox backplane.

Enabling / Upgrade Procedure

● Enabling of a hardware options will be done via the standard operating software with a dedicated license key, coded with the board serial number.

● Upgrading of a device type XtenDD–3 to XtenDD–3+1 will be done via the standard software with a dedicated license key, coded with the switchers Ebox serial number.

● Input of a license key and enabling/upgrading should be done via the Sidepanel menu **Install / System** (procedure see below).

Working Principle

Every license key is a unique key for one and only one option or device type upgrade or software option, coded with a serial number.
During system startup, the operating software reads the EEproms to check the enabled hardware options and to check the device type. The read device type leads to a filter within the hardware access level of the operating software to ensure that only the dedicated M/E are controllable by the user.

The temprary software licenses are stored within a file **license.txt** and the built-in license manager will check and verify the valid license key codes once per day and if the code is invalid or terminated, the license manager will kill the software option module during runtime. Software options may be enabled temporarily (start time, end time). Permanent software licenses are stored on the EBox backplane.

For each ordered license, the manufacturer creates a license code which is entered prior to delivery to the customer, thus enabling the option. Furthermore, a license document is provided with all required information and is added to the documentation for the customer.

Please note that the key code is indicated only in this License Document – keep it save!

When placing a special order for software options only, the license document of the indicated switcher is created and send to the customer together with the complete System CD-ROM. For creating the license key, the customer has to inform the manufacturer about the serial number of the respective subassembly.

The respective serial numbers are contained in the **Diagnose** menu when selecting the mainframe host.

SerialBoard# Controller:	**xxx**
SerialBoard# Backplane:	**xxx**
SerialBoard# OutputProc:	**xxx**

With the generation, the license key is connected with the series number of the device. Then the license document will be sent to the customer and can be entered into the **Install / System /SW opt** menu by using the **Modify** button .

Note:

- *After changing the mainframe type (device type), a RESET has to be made at the mainframe controller.*

- *When updating software, license file **license.txt** is treated in the same way as **environ.ini**. That means, it is first saved on the RAM disk and subsequently written back on the flash disk.*

- *The license file **license.txt** on the flash disk must not be deleted!.*

How to get a license keys file

This procedure is only for THOMSON service personnel with access to the THOMSON Intranet.

The valid (purchased) license keys for the XtenDD switchers can be obtained from intranet site http://www.weiterstadt.thmulti.com/default_2.htm

● select (on left bar) "**Technical Support**"

● select "**Technical Support Signal Processing**"

● select "**Download Area**"

● select "**License codes**" and choose the switcher type and respective EBox serial number

● click theleft mouse button for viewing the license code

● for download of the licence key click with right mouse button at the respective serial number of EBox (e.g. **115**) and store it onto Floppy Disk as **115.txt**

Install the license keys by using the license file

Before downloading to the switcher the file (e.g. **115.txt**) has to be renamed to: **sp_license.txt**

● Insert Floppy Disk

● Select the menu **Install / System /SW opt**

● ress "**Read File**" button and choose "**Read file from FD**"

● The option codes will be downloaded to the switcher EEprom at the mainframe's backplane.
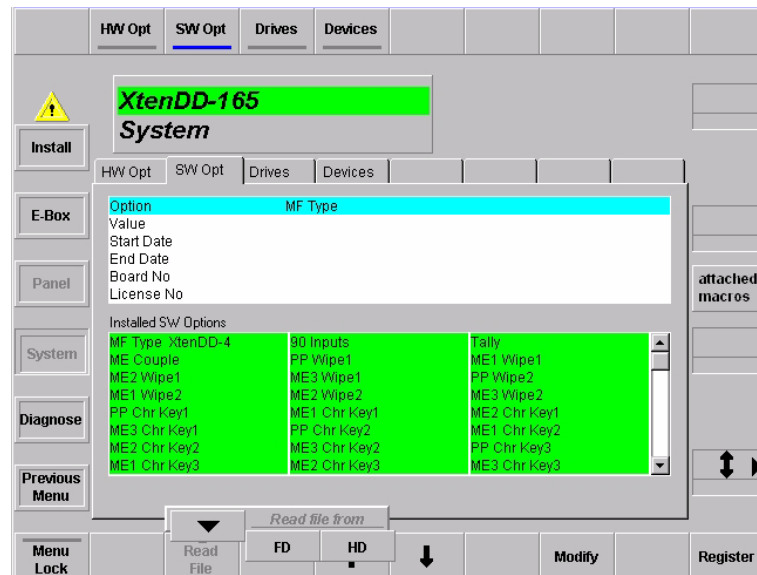
Path for reading file from FD: **A:\sp_license.txt**

Path for reading file from HD: **C:\Programme\DD35\sp_license.txt**

3.15.4.5 Drives

Drive/Server	Path	Refresh	Active
Harddisk	c:\Programme\DD35\Appli	No	Yes
Floppy	a:\appli	Yes	Yes
Examples	c:\Programme\DD35\Examples\appli	No	Yes
		No	No
		No	No
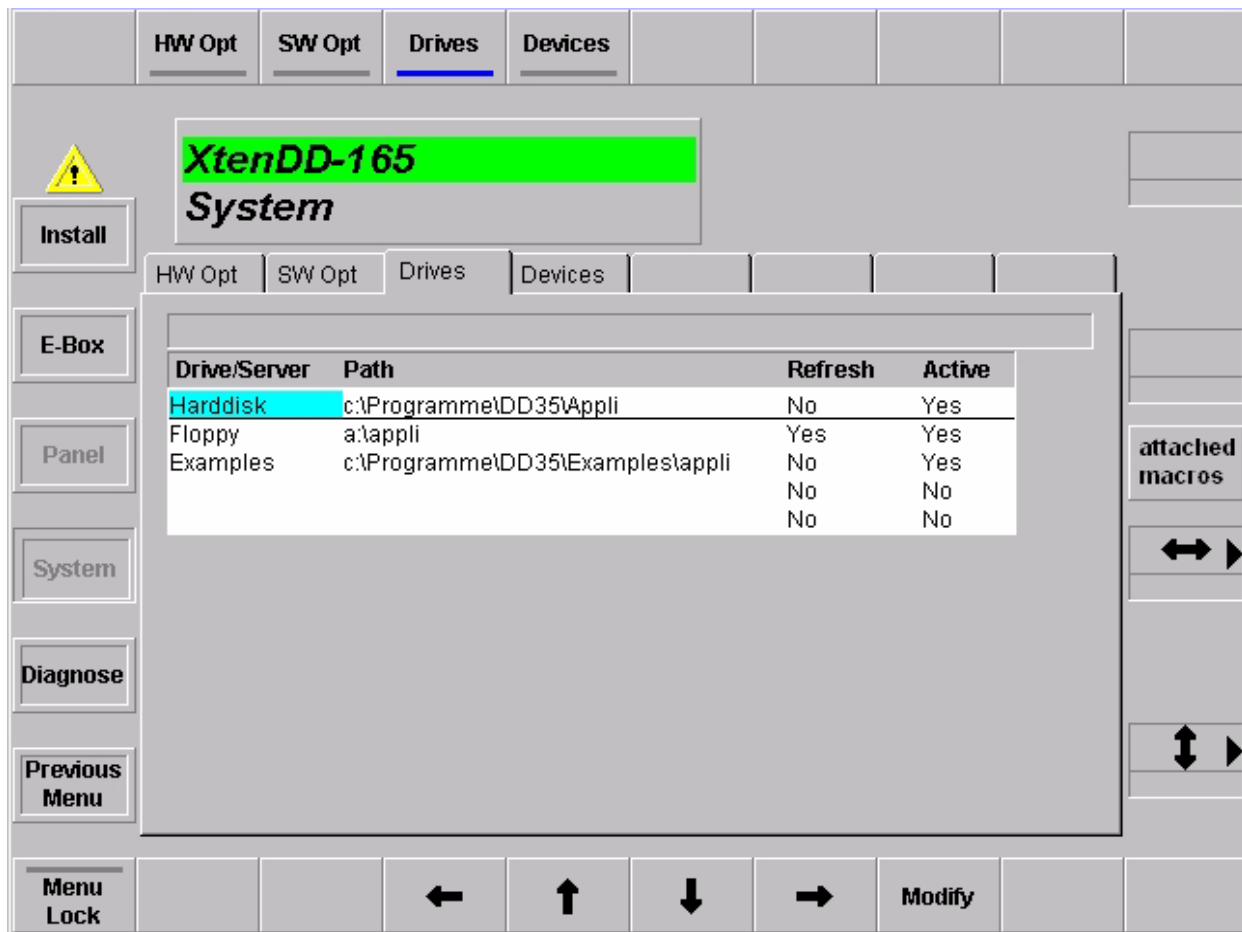
The Drives menu defines all drives which are provided with application data on the switcher.

The drive in the top line (separated by a horizontal line from the other drives in the list) enables loading and storing applications. All other drives displayed in the list are only important for the copying procedures **Copy Config Simple** and **Copy Config Detailed**.

Drive/Server: Name of the drive or server

Path: Path to the application directory

Refresh: If **Yes**, it can be read in again in the **Copy Config** dialogs by means of the **Refresh** button.

Active: If **Yes**, the drive is displayed in the **Copy Config** dialogs.

3.15.4.6 Devices
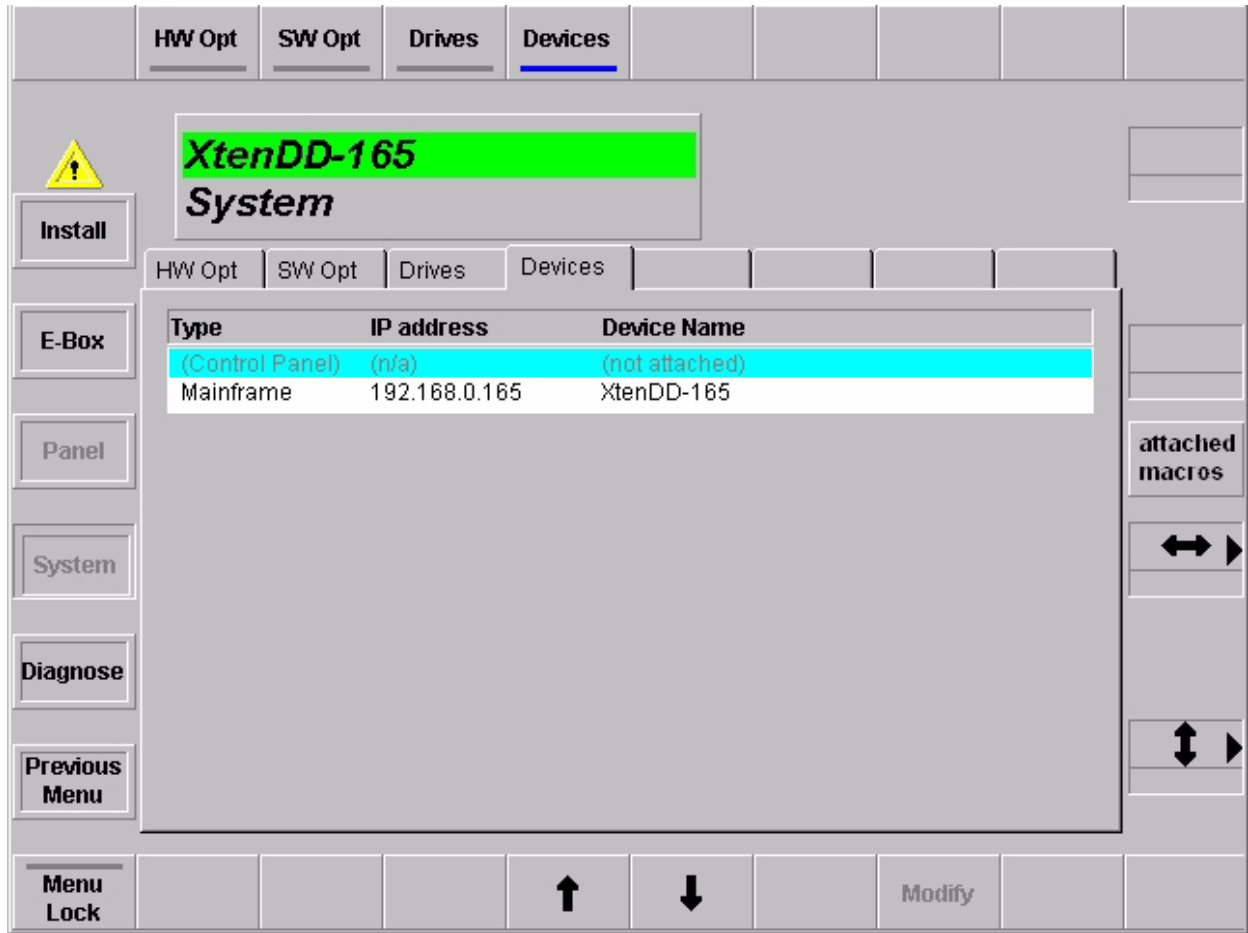
The Device name of control panel and mainframe can be renamed by using the **Modify** button.

3.15.5   DIAGNOSIS MENU
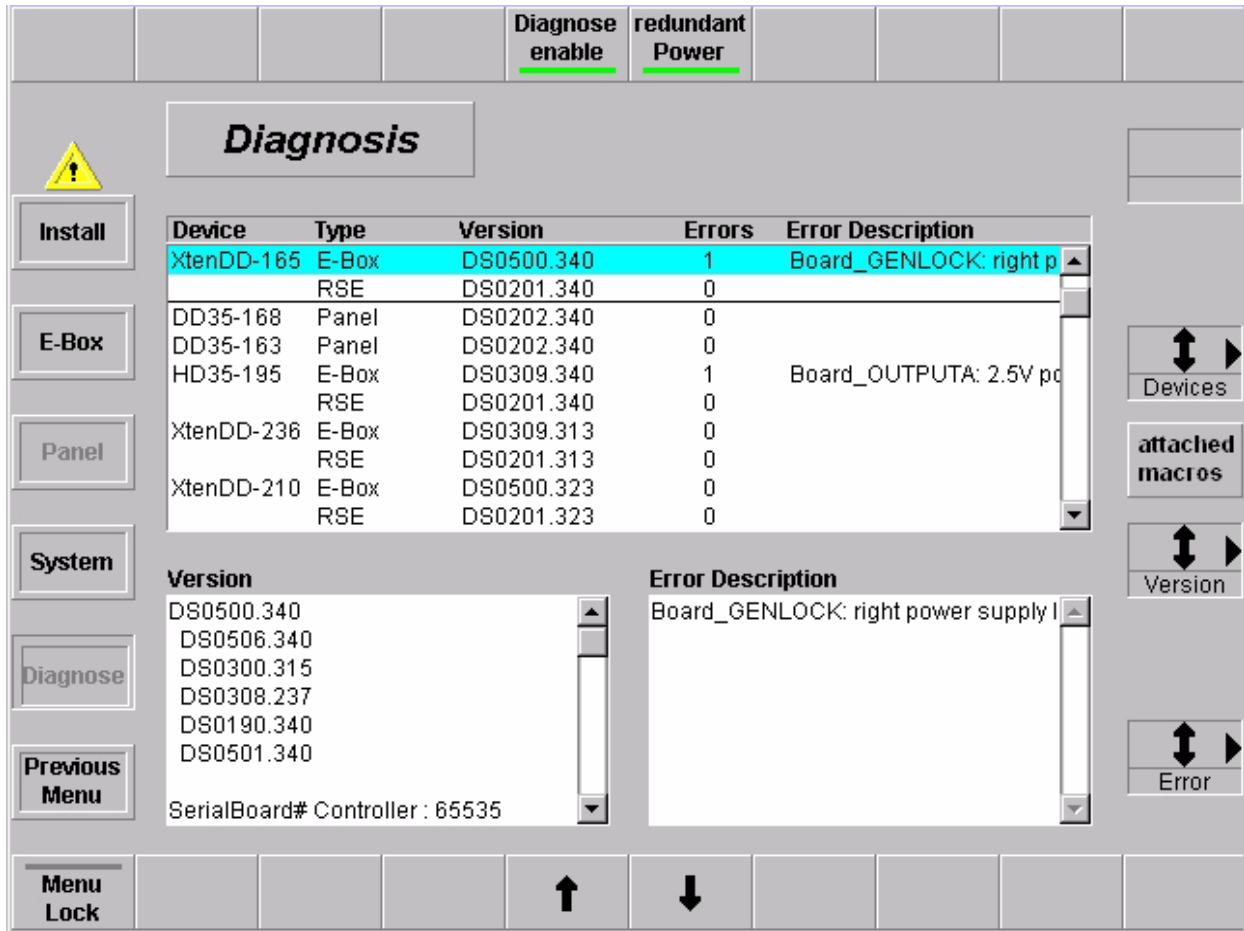
3.15.5.1 Dialog Buttons

Install   Selecting **Install** main menu.

E-Box   Selecting **E–Box Install** menu.

Panel   Selecting **Panel Install** menu.

System   Selecting **System** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.15.5.2 Enable / Disable Diagnosis Menu

	Diagnose enable	redundant Power		

Diagnosis

⚠️ **Install** | **Device** | **Type** | **Version** | **Errors** | **Error Description**
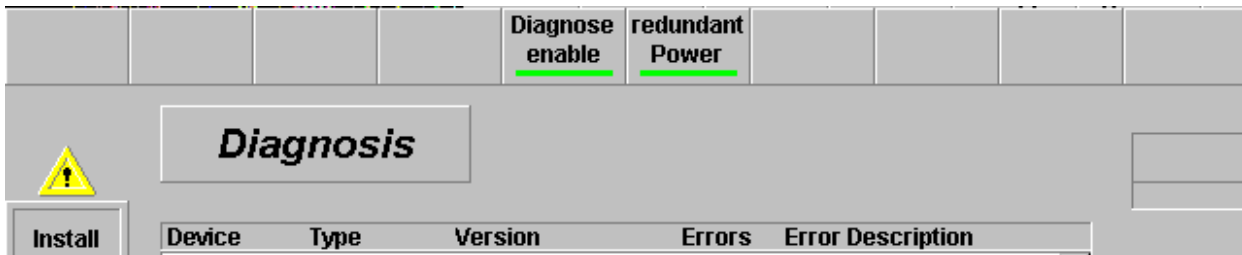
Diagnose Enable   Enables / Disables the diagnosis in the attached control panel and in the connected mainframe.

Redundant Power   Includes / Excludes the option redundant power supply of control panel and mainframe in the diagnosis.

3.15.5.3 Possible Error Messages

Mainframe
```
right power supply / DC VCC error
right power supply / DC 3V error
right power supply / DC 12V error
right power supply / DC AC error
right power supply / I2C read

left power supply / DC VCC error (red)
left power supply / DC 3V error (red)
left power supply / DC 12V error (red)
left power supply / DC AC error (red)
left power supply / I2C read (red)

rack fan 1
rack fan 2
rack fan 3
rack fan 4
rack fan 5
rack fan 6
rack fan 7
rack fan 8
fan unit I2C read

micro computer battery
micro computer +5V
micro computer temperature (Wert)
Temperature sensor not accessible
```

Input processor board:

3V error
temperature to high

M/E processor board:

1.5V error
1.9V error
temperature to high

Genlock board:

VEE error
VCC error
no analog input detected
no digital input detected
no locking to sync
PLL1 not locking
PLL2 not locking
H-Out missing
V-Out missing
F-Out missing
CLK-Out missing
LCA not loaded

If a local error message occurs, the **alarm** output conducts at the rear of the main-frame.

Additionally a yellow warning triangle is displayed in all menus. Mouse click on this warning sign opens the diagnosis menu also.

Control Panel

```
rear power supply 1 / AC
rear power supply 1 / DC1
rear power supply 1 / DC2

front power supply 2 / AC  (red)
front power supply 2 / DC1 (red)
front power supply 2 / DC2 (red)

micro computer battery
micro computer +5V

cp temperature to high
```

The fan (1) on the RY 2370 controller is temperature controlled. The cooling starts at 40ºC, also the diagnosis of fan.

If a local error message occurs, GPO6 (Alarm) conducts. If an error message occurs in the control panel or in the selected mainframe, the display **Diagnose** lit on the panel (near disk drive).

Additionally a yellow warning triangle is displayed in all menus. Mouse click on this warning sign opens the diagnosis menu also.

3.16 CONFIGURATION MENU

3.16.1 CONFIG MAIN MENU

| Join | Leave | Clear Content ▼ | Copy Config ▼ | Delete ▼ | Rename | Save | Save As | |

Config

⚠️

Config

E-Box

Panel

Attached Macros

Allocate Panel

Previous Menu

XtenDD-165

Running Applications
✓ default

Content Overview

Panel (MaKE-Memo)	
Available	---
Attachments	---

E-Box (TiM/E-Memo)	
Master Registers	22
P/P Registers	0
ME1 Registers	0
ME2 Registers	0
ME3 Registers	0

Available Applications

attached macros

↕ ▶

| Menu Lock | Stop | New | ← | ↑ | ↓ | → | Protect | Start | |

The application main menu is designed to handle the use of applications within a DD35 mixer system. Applications can be loaded from harddisk and started, stopped, modified or created new. If an application is modified or created it is normally done online. Online in this case means that each modification done in an application menu results in an action within a DD35 – device immediately. Offline means that those modifications are only stored in files on the local harddisk.

The Application Main menu has a list of the running applications of the connected mainframe "**Running Applications**" and a list of stored applications on the local harddisk "**Available Applications**". If the menu is entered, the cursor should be on "**Running Applications**" and on the application, the local sidepanel belongs to.

The name of the connected mainframe is displayed in a separate display field.

The list box "**Running Applications**" displays all known running applications of the mainframe connected to the local sidepanel. It has a fixed number of entries. The "**Defaul**t" application that is always available is the top entry. It is followed by two userdefined applications. If less than applications are running in a mainframe, the related place remains empty ("– – –"). The application where the local sidepanel belongs to is marked with a hook.

The list box "**Available Applications**" displays all applications stored on the local harddisk. The listbox has two vertical sections. At the top there is a shortcut section that shows the last four applications loaded to a mainframe. It is displayed in loading order with the latest one at the top. Below there is a complete list of all applications available on the harddisk. It is listed alphabetical.

Each entry consists of an application name, a creation date and time.

The list box "**Content Overview**" displays the register resources of panel (MaKE menos) and mainframe (TiM/E memo).

3.16.1.1 Dialog Buttons

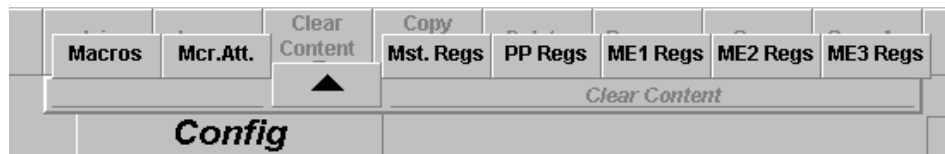*E-Box*   Selecting **Config E-Box** menu.

Panel   Selecting **Config Panel** menu.

Allocate Resource   Selecting **Allocate Resource** menu.

Allocate Panel   Selecting **Allocate Panel** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.16.1.2 Function Buttons

Join

This function is used to join the local sidepanel to a running application. The button is only relevant for the list box "**Running Applications**".

Leave

This function is used to leave the application the local sidepanel is joined to. Leaving an application is identical to the function "join to default". The button is only relevant for the list box "**Running Applications**".

Clear Content

The **Clear Contents** is used to delete the selected registers (MaKE memos, TiM/E memos) in the attached panel and connected mainframe.

		Clear Content	Copy					
Macros	Mcr.Att.	▲	Mst. Regs	PP Regs	ME1 Regs	ME2 Regs	ME3 Regs
					Clear Content			
	Config							

		Clear Content	Copy Config
OK	Cancel	▲	▼
Delete all macros?			
	Config		

Copy Config

For details refer to section *3.16.1.3 Copy Config.*

Delete

The **Delete** button is used to delete complete application entries on the local harddisk. Thus it is only relevant if the cursor points to an application stored there.

Rename

The rename function is applyable on running applications and on stored applications. The new application name is read with an input dialog. For stored applications it renames the application name on the local harddisk.

Save

Starts saving an application on the local harddisk. The button is only relevant if the cursor points to a running application.

Save As

Starts saving an application on the local harddisk after entering a new name for the application. The new application name is read by an input dialog.

Menu Lock

For details refer to section *Introduction.*

Stop

Stops the running application where the cursor points to. All allocated resources are given to the default application.

New   Creates a new application. The button is relevant if the cursor points to a free application entry in "**Running Application**" (online), or on any position at "**Available Applications**" (offline).

Cursor $\rightarrow \leftarrow \uparrow \downarrow$ The horizontal cursor buttons are used only to toggle between the two list boxes. The vertical cursor softkeys and the vertical cursor digipot are used to navigate within a list box.

Protect   Write protection of the selected application in the list box "**Available Applications**". Protected applications are marked with a cross.

Start   Loads an application from the local harddisk and starts it.

3.16.1.3 Copy Config

To save or exchange applications or user-specific data from the switcher harddisk to a floppy or vice versa, a new Copy function with new menus is implemented.
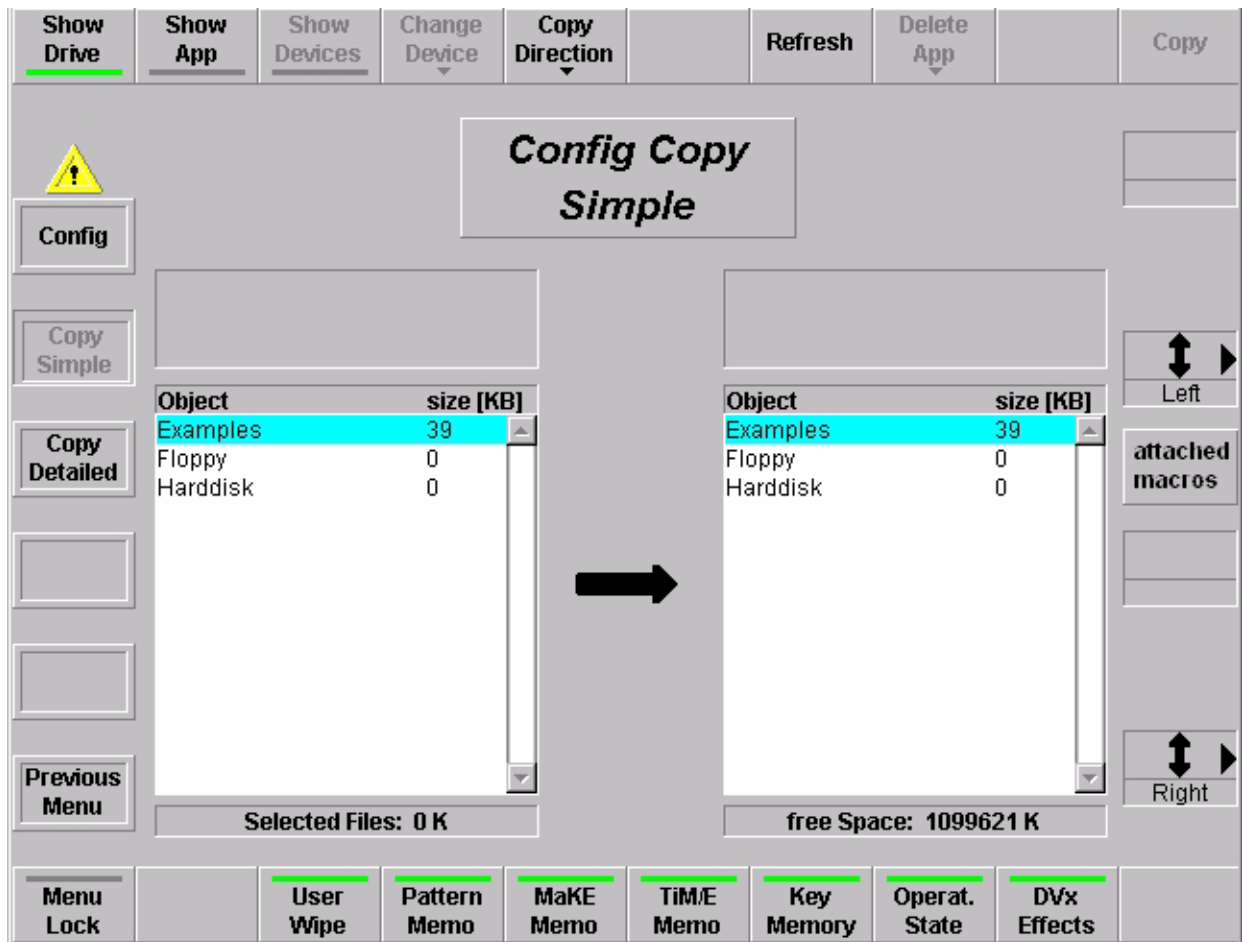
Select the new menu in the **Config** menu:
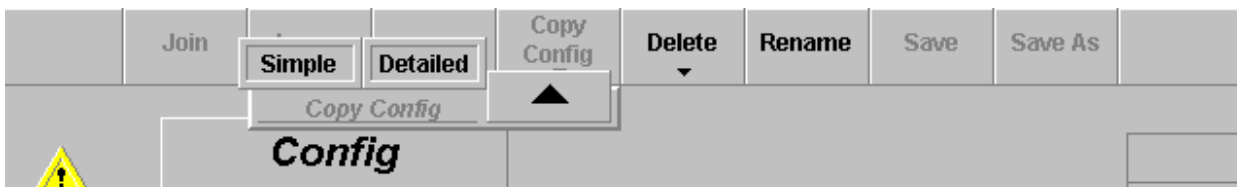
Simple   Complete applications can be stored.

Detailed   Single files can be stored.

3.16.1.4 Config Copy Simple Menu

In the **Copy Simple** menu, whole applications can be copied. The menu shows lists for source and destination. In the lists, the available storage devices, the stored applications or the connected devices of an application can be shown.
After copying an application from another switcher, the application might use devices which are not available here. The devices can be changed with the **Change Device** button.

| Show Drive | Show App | Show Devices | Change Device ▾ | Copy Direction ▾ | | Refresh | Delete App ▾ | | Copy |

Config Copy Simple

⚠️ Config

Copy Simple

| | ↕ ▶ Left |
| | attached macros |

Copy Detailed

Object	size [KB]		Object	size [KB]
Examples	39		Examples	39
Floppy	0		Floppy	0
Harddisk	0		Harddisk	0

➡️

| | ↕ ▶ Right |

Previous Menu

| Selected Files: 0 K | free Space: 1099621 K |

| Menu Lock | | User Wipe | Pattern Memo | MaKE Memo | TiM/E Memo | Key Memory | Operat. State | DVx Effects | |

Show Drive   Internal harddisk and floppy drive are shown in the two selection areas. There are all drives listed, which are activated in the ***Install / System / Drivers menu***

***Show Appl**ication*   The applications of the selected drive are listed in the two selection areas.

Show Devices   The devices of the selected application are shown.

Change Devices   Allocates a different device (E-Box, Panel) for the currently selected application in the listbox. A list of currently available devices is shown. Select the desired device. After copying an application from another switcher, the application might use devices which are not available here. The button is enabled only when **Show Devices** is selected.

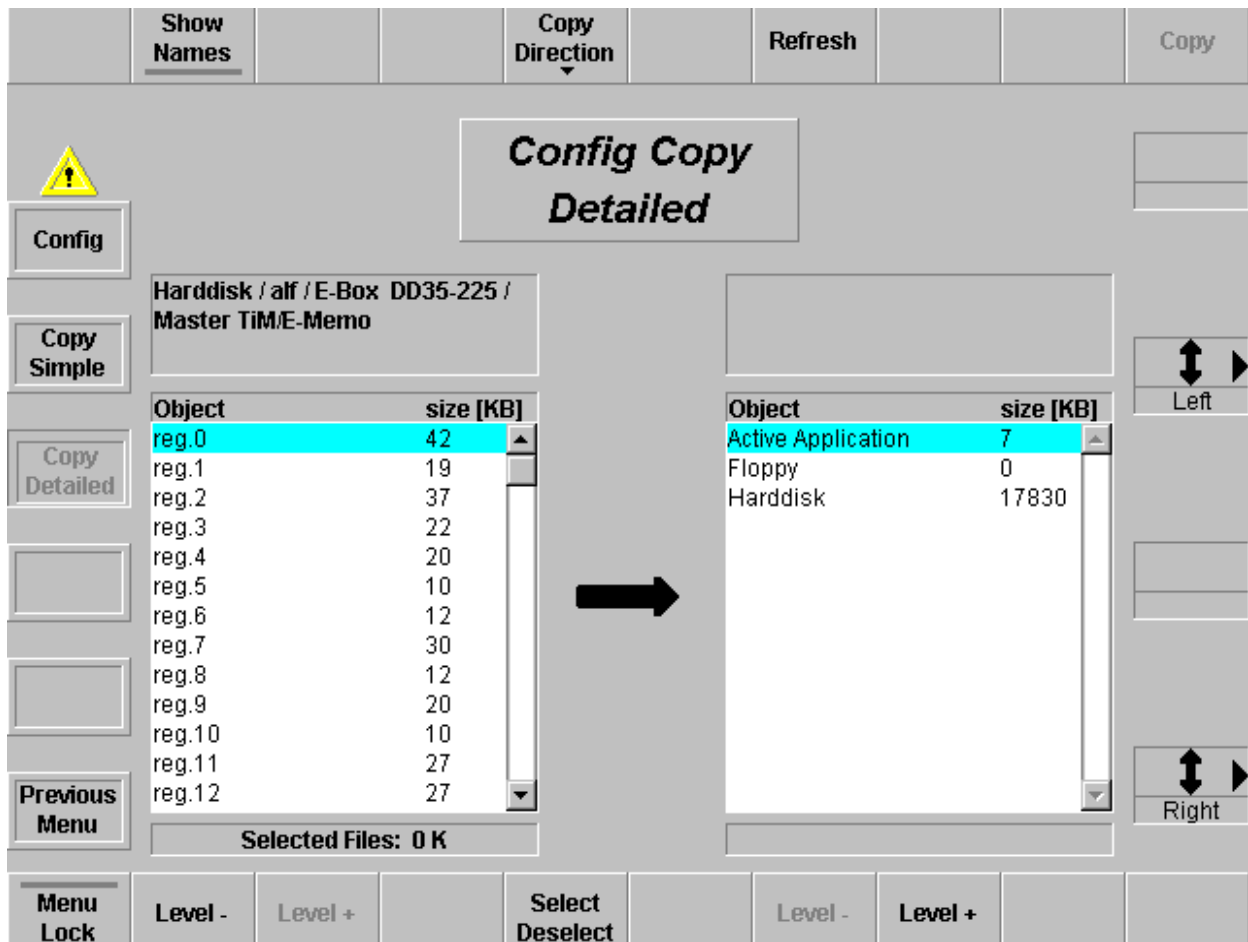|	
Copy Direction	Changing the copy direction from the left to the right and vice versa.
Refresh	Reads the drive.
Delete App	Deletes the selected application files from the drive.
User Wipe ***Wipe Pattern*** ***MaKE Memo*** ***TiM/E Memo*** ***Key Memory*** ***Operation State*** ***DVx Effects***	Buttons act as a filter for the shown application. Only the selected file types are copied.

3.16.1.5 Config Copy Detailed Menu

In the **Copy Detailed** menu, selected files can be copied between two existing applications. The menu shows two lists for source and destination. In each list, a specific part of an application can be viewed.

Note: *In the copy detailed mode only one file can be copied per procedure. If you select more than one file an error message appears.*

On the highes level, all drives activated in the ***Install / System / Drives menu*** and the Active Application are listed.
Use the **Level+** and **Level–** buttons to navigate in the directory tree of the application. File types and files can be selected using the **Select** button or by double-clicking on an item in the source list box. In the destination list, the same directory level must be selected!

Press the **Copy** button to copy the selected file.

Show Names   Shows the object names of the files.

Copy Direction   Changing the copy direction from the left to the right and vice versa.

Refresh   Reads the drive.

Level +/–   Changing the directory level.

Select / Deselect   Selects the blue marked file or file type for copying.

3.16.2 CONFIG E-BOX MENU
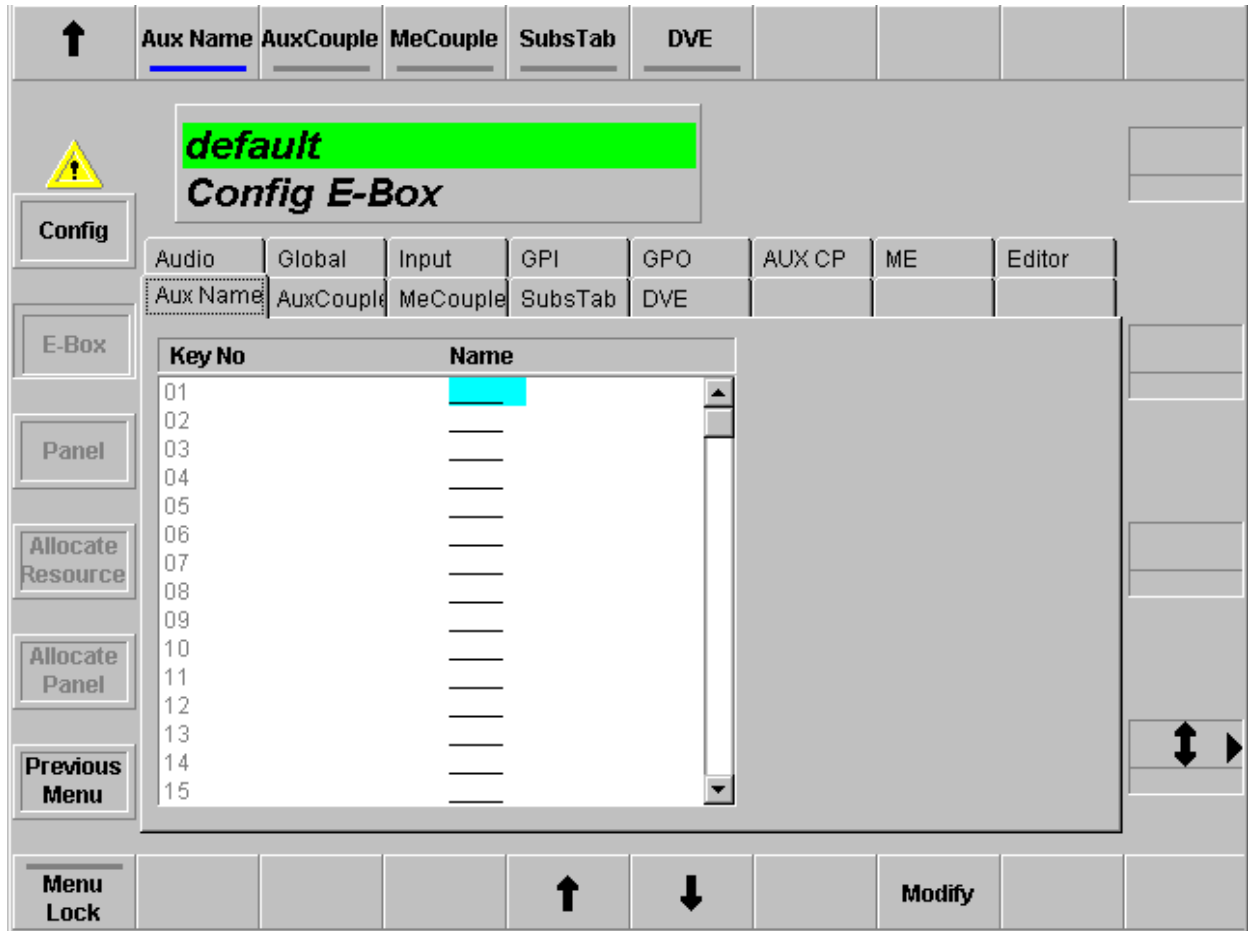
3.16.2.1 Dialog Buttons

Config   Selecting **Config** menu.

Panel   Selecting **Panel** menu.

Allocate Resource   Selecting **Allocate Resource** menu.

Allocate Panel   Selecting **Allocate Panel** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

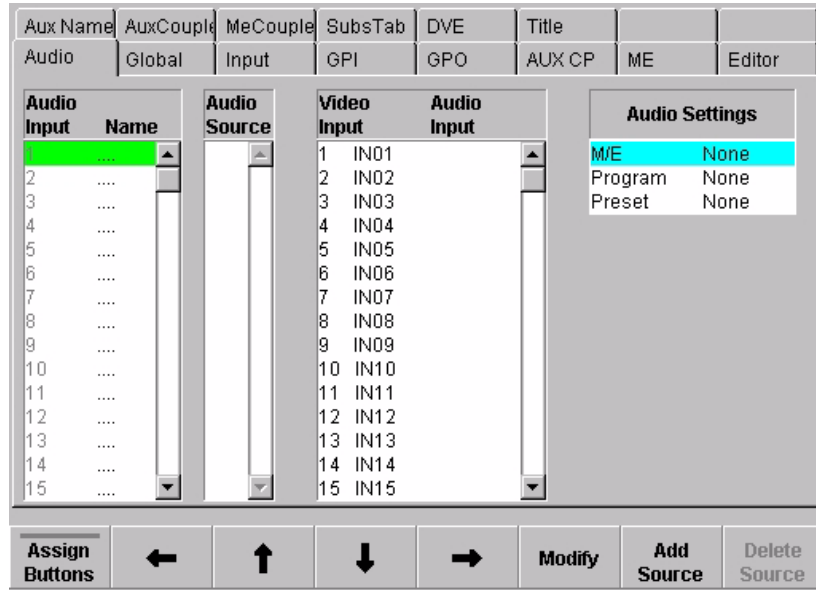### 3.16.2.2 Function Buttons / Index Cards

Menu Lock   For details refer to section **Introduction.**

Cursor → ← ↑ ↓   All cursor softkeys and cursor digipots are used to navigate the cursor. The complete cursor control is always relevant.

Modify   This button is only enabled if the cursor is set on an entry belonging to the own application.

Audio   Index card serves for adjustment of audio switchers via the ESAM2 protocol.

Aux Name	AuxCouple	MeCouple	SubsTab	DVE	Title		
Audio	Global	Input	GPI	GPO	AUX CP	ME	Editor

Audio Input	Name	Audio Source	Video Input	Audio Input	Audio Settings	
	....		1 IN01		M/E	None
2	....		2 IN02		Program	None
3	....		3 IN03		Preset	None
4	....		4 IN04			
5	....		5 IN05			
6	....		6 IN06			
7	....		7 IN07			
8	....		8 IN08			
9	....		9 IN09			
10	....		10 IN10			
11	....		11 IN11			
12	....		12 IN12			
13	....		13 IN13			
14	....		14 IN14			
15	....		15 IN15			

Assign Buttons	←	↑	↓	→	Modify	Add Source	Delete Source

It is possible to define up to 64 internal audio channels. In the left listbox, they are provided with a name. to each of these internal audio channels can be assigned as many audio channels as you like. They are displayed in the listbox **Audio Source**.

The buttons **Add Source** and **Delete Source** enable to vary them. The respective internal audio channel is marked green for this purpose.

To each video input can be assigned an internal audio channel. This is indicated in the third listbox.

The listbox **Audio Settings** is used to perform basic adjustments.

M/E:	The audio switcher operates only on one M/E which is specified here.
Program / Preset:	Audio Program and Audio Preset can be mapped on an external Aux bus.

The button **Assign Buttons** opens a second dialog page. This page enables assignment of the audio channels to the individual buttons of the external Aux busses for **Audio Program / Audio Preset**.

Aux Name	AuxCouple	MeCouple	SubsTab	DVE		Title		
Audio	Global	Input	GPI	GPO		AUX CP	ME	Editor

Ext. Aux Button	Audio Input
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

Assign Buttons			↑	↓		Modify	

Operating:

The audio switcher follows only PGM (PST). Only PGM is always to be heard. The crossbar selection only is switched. If there is no audio assigned to the video, the last audio source stays.

CUT   PGM and PST sources swap according to the video
AUTO   works only correctly when the associated audio sources differ from each other. Otherwise, the equal audio sources are temporarily muted.
PGM/PST   enables to control the two busses as EXT AUX BUSSES. When switching on these and simultaneously on the corresponding video crossbar, the principle is applied that "the last" is winning.

With the ESAM2 protocol, transition with the fader is not possible.

Global　　　Index card for global settings

With button **Modify** the following parameters are selectabe:

● **Color Limit Actice: No /Yes**
The level limitation for the internal matte signals will be switched **On** or **Off**.

● **Color Limit:** Adjustable between **100 ...133 %**

● **Format: 4:3** or **16:9**
An M/E specific TV format selection is possible in the respective M/E menu.

● **Field Dominance:**
The **Modify** button can be used to switch over between **Any**, **Field1** and **Field2**.
The setting concerns the switching of the crosspoints on all busses, the start of auto transitions, switching with **Cut** and the recalling of snapshots and timelines. In position **ANY** switching occurs at the beginning of the next frame. In position **FIELD1/2** switching or starting occurs before the corresponding field.

● **Replace Async: On/Off**
The **Modify** button permits the selection of different modes for the treatment of asynchronous sources in the switching levels (M/E1, M/E2, P/P):
On: If Background/Program are asynchronous, enabled keyers are disabled. If Background/Program are synchronous and the fill signal of a keyer becomes asynchronous, the enabled keyer is disabled. If Background/Program or Preset are asynchronous and a transition is selected, a cut is performed at the end of the transition.
Off: Asynchronous signals are phased over H and are passed.

● **Aux Preview Bus:**
Selecting the desired Aux Preview Bus **None, Aux1 ... Aux15**

- **Auto Aux Preview: On/Off**
  Enable or disable the **Auto PVW** mode. In enabled condition the key PVW, mask PVW or the chroma key cursor signal of the respective mixing level is switched on the PVW bus.

- **KeyMemory AutoSave: On/Off**

  If the **KeyMemo** button is switched on in a Keyers menu, the key memory is always recalled if the key sources are changed during control panel operation. These changes can occur directly by selecting another key source or also indirectly by changing the Fill source or the Split mode.

  For storing the key settings in the key memory two modes are available:

  1. Auto Save

  If the switch **Key Memory AutoSave=On**, the settings of the previous key signal are stored automatically before the settings of the next key are recalled. If the switch **Key Memory AutoSave=Off**, the stored settings of the new key are recalled without saving the previous settings.

  2. Manual storing

  Key Memory AutoSave=Off. For storing the current settings into the key memory, press the button of the respective Fill source approx. 2 seconds. The storing is confirmed by a short beep in the control panel.

  For details refer to section 2.7.7

- **H/V Blanking**
  The **Modify** button can be used to switch over between **transparent** and **blanked**. In **blanked** position the V-gap and the H-gap is replaced by BLACK and the DD35-internal sync frame is added. In **transparent** position the information contained in the V-gap (VITS, videotext etc.) are kept.

  This function can be selected for each output and aux busses separately

Input   Index card for input settings

Aux Name	AuxCouple	MeCouple	SubsTab	DVE	Title		
Audio	Global	Input	GPI	GPO	AUX CP	ME	Editor

Input	4 char ID	8 char ID	Coupled Key		Real Input	
1	IN01	IN01	1	IN01	---	▲
2	IN02	IN02	2	IN02	---	
3	IN03	IN03	3	IN03	---	
4	IN04	IN04	4	IN04	---	
5	IN05	IN05	5	IN05	---	
6	IN06	IN06	6	IN06	---	
7	IN07	IN07	7	IN07	---	
8	IN08	IN08	8	IN08	---	
9	IN09	IN09	9	IN09	---	
10	IN10	IN10	10	IN10	---	
11	IN11	IN11	11	IN11	---	
12	IN12	IN12	12	IN12	---	
13	IN13	IN13	13	IN13	---	
14	IN14	IN14	14	IN14	---	
15	IN15	IN15	15	IN15	---	▼

Take	Release	←	↑	↓	→	Modify	Show All

Entries belonging to the own application are marked with a green background, entries belonging to other applications are marked with a yellow background.

Take   Takes the input source selected with the cursor to the own application.

Release   Releases the input source selected with the cursor from the own application.

Show All   In the on-state, all input sources are displayed. In the off-state only the own (green marked) inputs are displayed.
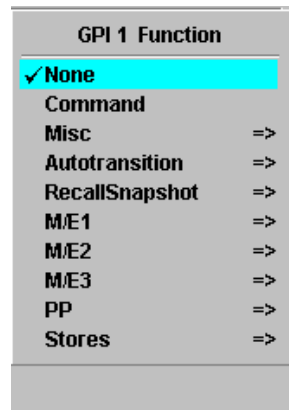
Coupled Key   Set all coupled keys to **Default** (=self) or **White**.

GPI   Index card for GPI settings

Aux Name	AuxCouple	MeCouple	SubsTab	DVE			
Audio	Global	Input	GPI	GPO	AUX CP	ME	Editor

GPI	Name	Function	Parameter
1	GPI1	None	
2	GPI2	None	
3	GPI3	None	
4	GPI4	None	
5	GPI5	None	
6	GPI6	None	
7	GPI7	None	
8	GPI8	None	

Double-cklick or pressing the **Modify** button calls a pop-up menu and in some cases pop–up lists.

GPI 1 Function

✓None	
Command	
Misc	=>
Autotransition	=>
RecallSnapshot	=>
M/E1	=>
M/E2	=>
M/E3	=>
PP	=>
Stores	=>

The selected function will be triggered on the edge defined in Install menu when button **GPI Enable** is **On**. However, there are some exceptions where the GPI works as a "static" input. i.e. actions take place after a change in the GPI state but the value depends on the GPI's state after the change. Also **GPI Enable** needs not to be **On** for these functions.

GPI Functions:

- **None:** GPI has no function.

- **Command:** User-defined command code. See note below.

- **Misc:** Switch over the **Video Standard** or **Video Format**
  Video Format (4x3, 16x9)
  Inactive = 4x3
  Active = 16x9

  VideoStandard (625/50, 525/60)   (Example für DD35)
  Inactive = 625/50
  Active = 525/60
  This is a very redundant function because the switcher can auto detect the video standard from the signal at the reference input.
  See also **Install/EBox/Timing** menu.

- **Autotransition:** Starting **Auto Transition**, selected in the pop-up list

- **Recall Snapshot:** Starting **Snapshot**, selected in the pop-up list

- **M/E1:** Starting function, selected in the pop-up list

- **M/E2:** Starting function, selected in the pop-up list

- **M/E3:** Starting function, selected in the pop-up list

- **PP:** Starting function, selected in the pop-up list

- **Stores:** Starting **Video Store** or **MPR Store**, selected in the pop-up list

Note:

*In the **Comand** mode, user defined commands are selected being transmitted to the switcher at a received trigger event. Selecting **Command** enables to directly enter the command code. See for this purpose the DD35 command set, which can be obtained from the manufacturer. The other selections are defined in text files **GPICMDMF.TXT** (mainframe) and **GPICMDCP.TXT** (panel). These files are contained in the directory **c:/programme/dd35/bin**.*

For entry, a special syntax has to be considered. It is possible to add predefined parameters to the command, the available commands are listed in these files. For editing, it is best to copy and match existing entries. In any case, the DD35 command set is required.

GPO   Index card for GPO settings.

Aux Name	AuxCouple	MeCouple	SubsTab	DVE			
Audio	Global	Input	GPI	GPO	AUX CP	ME	Editor

GPO Name

1	EGO8
2	GPO2
3	GPO3
4	GPO4
5	GPO5
6	GPO6
7	GPO7
8	GPO8

With the **Modify** button, names can be assigned to the GPOs.

Aux CP   Index card for configuration the Aux Control Panels connected to the DD35 mainframe.

Aux Name	AuxCouple	MeCouple	SubsTab	DVE	Title		
Audio	Global	Input	GPI	GPO	AUX CP	ME	Editor

Aux Cp	Deleg 1	Deleg 2	Deleg 3	Deleg 4	Deleg 5	Deleg 6
1 None	None	None	None	None	None	None
2 None	None	None	None	None	None	None
3 None	None	None	None	None	None	None
4 None	None	None	None	None	None	None

Assign		←	↑	↓	→	Modify	

Modify   Opens a pop-up window with the functions that can be programmed.

> **Deleg 1**
> ✓ **None**
> **2nd**
> **3rd**
> **Aux**   =>
> **Ext. Aux**   =>
> **ME 1**   =>
> **ME 2**   =>
> **ME 3**   =>
> **PP**   =>
> **Video Store**
> **MPR 1**
> **MPR 2**
> **TiM/E Memo**   =>
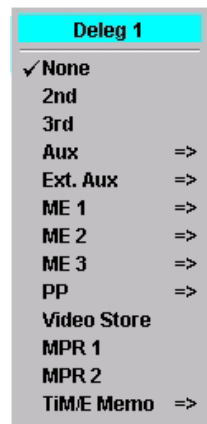
None   no function

2nd   this button is used as 2nd button i.e. shifts the source selection buttons

3rd   this button is used as 3rd button i.e. shifts the source selection buttons

AUX n
M/E Bus
P/P Bus   this buttons delegates the AUX-CP to crosspoint selection for the given bus.

Ext. AUX n   these buttons delegate the AUX-CP to crosspoint selection for the given external aux bus.

TiM/E Memo n this button delegates the AUX-CP to register recall for the given TiM/E Memo system.

Make Memo this button delegates the AUX-CP to Make Memo macro recall.

Note: This function is not available for AUX-CPs installed at the E-Box

At least one function other than **None, 2nd** or **3rd** must be programmed. Otherwise the AUX-CP performs no action at all.

Since the CP-3020 Aux control panel module has only two delegation buttons, **Deleg 1** and **Deleg 2** may be programmed with **2nd** and **3rd**. In this case, **Deleg 3** defines the function of the AUX-CP. **Deleg 4..6** can be ignored.

Assign

There are three modes:

- when the Aux Control Panel is used for crosspoint selection of internal busses, the sources can be assigned freely to the source selection buttons of the AUX-CP. To do this, **Assign** changes the contents of the index card. See below.

- using for crosspoint selection of external AUX busses

- does not apply to the **TiME Memo n** and **Make Memo** functions. I.e., the left-most source button selects register 0. Make Memo macro of Make Memo button 1 and so on.

Input Assign (internal sources):

The procedure for input assignment is very similar to the input assignment for the control panel.

Aux Name	AuxCouple	MeCouple	SubsTab	DVE		Title			
Audio	Global	Input	GPI	GPO		AUX CP	ME		Editor

Input Assign	**Input**		**Button**	**Assigned**	
	NONE		01	c0 BLCK	attached macros
	1 IN01 IN01		02	1 IN01	
	2 IN02 IN02		03	2 IN02	
AUX CP	3 IN03 IN03		04	3 IN03	
	4 IN04 IN04		05	4 IN04	
No.1	5 IN05 IN05		06	5 IN05	↕ ▶
None	6 IN06 IN06		07	6 IN06	Input
	7 IN07 IN07		08	7 IN07	
	8 IN08 IN08		09	8 IN08	
	9 IN09 IN09		10	9 IN09	
	10 IN10 IN10		11	10 IN10	
	11 IN11 IN11		12	11 IN11	
	12 IN12 IN12		13	12 IN12	↕ ▶
	13 IN13 IN13		14	13 IN13	Button
	Input				

Assign		↑	↓	Insert Position	Delete Position	Reset Assign	Assign None	Assign

Reset Assign

All None	all buttons are assigned to no input.	
Default	sets the factory default input assign (see table below)	
= **All**	sets the input assign like the input assign for bus row ALL (*control panel only)*	
= **Aux All**	sets the input assign like the input assign for bus row AUX ALL (*control panel only)*	

Factory Default Assign:

Button	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9
0	—	Blck	in01	in02	in03	in04	in05	in06	in07	in08
10	in09	in10	in11	in12	in13	in14	in15	in16	in17	in18
20	in19	in20	in21	in22	in23	in24	in25	in26	in27	in28
30	in29	in30	in31	in32	in33	in34	in35	in36	in37	in38
40	in39	in40	in41	in42	in43	in44	in45	in46	in47	in48
50	Vids	MPR 1	MPR 2	COL1	COL2	COL3	WHIT	Main	CLNF	ME1
60	ME2	ME3	Pvw0	Pvw1	Pvw2	Pvw3	Lay1	Lay2	Lay3	——
70	VR00	VR01	VR02	VR03	VR04	VR05	VR06	VR07	VR08	VR09
80	VR10	VR11	VR12	VR13	VR14	VR15	—	—	—	—
90	—	—	—	—	—	—	—	—	—	—

Assign   Moves both cursors downwards.

Assign None   Moves the cursor in the right table downwards.

Insert Position   Insert the selected input at the current cursor position and moves the previous inputs downwards to the end. At the end of the levels, the last assignment get loost!

Delete Position   Deletes the selected input at the current cursor position and moves the all the next inputs upwards. At the end of the levels, a **None** will be inserted.

ME   Index card for global settings for M/E1, M/E2, M/E3 and P/P

Edit Input Name   button is only active when one of the M/E Output
                               configuration entries is selected (e.g. Util A...).
                               The button serves to rename the input name of
                               the respective output.

With button **Modify** the following parameters are selectable:

● **Operation Mode**
Defines the general operation mode for M/E:

act as **M/E** or act as **P/P**

● **Cleanfeed** defines the Re-Entry-feed in P/P.

● **Look-Ahead PVW**
Defines the signal for PVW output:

OFF	PVW output = ME output
ON	PVW output = Look-Ahead PVW
OnAir PVW	ME on air: PVW output = Look-Ahead PVW
	ME not on air: PVW output = ME output

● **Clean 2 Out**
Defines the effect of Cleanfeed 2, if Cleanfeed 2 is enabled by Fx-send settings:

PGM Out
BGD only
BGD + Under-key
BGD + Key1 + Key 2
BGD + Key1 + Key2 + Key3

● **Black Preset Abort (Enable/Disable)**
When another program source is selected a currently running transition with **BLK PST** on will be aborted, the **BLK PST** button lamp turns off and the selected source is taken as program.

In Layered mode:
If a currently running transition with **BLK PST** on is at the black limit, it will be aborted, the **BLK PST** button lamp turns off, the switcher changes to non-layered mode and the selected source is taken as program.

● **Transition Abort (Enable/Disable)**
When another program source is selected a currently running transition will be aborted and the selected source is taken as program. Only available in non-layered mode.

● **FTB Cancel (Enable/Disable)**
When another program source is selected an active fade-to-black will be instantly cancelled, so that the image with the selected source is visible on the stages program output. Only available in non-layered mode.

● **Auto Trans. Abord Inhibit**
In **On** state, a Auto Transition can not stoppt by pressing the Auto button again.

● **Key Drop ...**
The selected keys will be dropped, i.e. cutout, when another program source is selected. Mainly used for DSKs**.**

Editor   Index card for editor settings.

Parameter	Setting
map P/P to	P/P
map M/E 1 to	M/E 1
map M/E 2 to	M/E 2
map M/E 3 to	M/E 3
map DSK to	P/P
map AUX 1 to	AUX 1
map AUX 2 to	AUX 2
map AUX 3 to	AUX 3
map AUX 4 to	AUX 4
map AUX 5 to	AUX 5
map AUX 6 to	AUX 6
map AUX 7 to	AUX 7
map AUX 8 to	AUX 8
map AUX 9 to	AUX 9
map AUX 10 to	AUX 10

For details refer to your ***Installation Manual***

Aux Name

Index card for aux bus name settings.

Audio	Global	Input	GPI	GPO	AUX CP	ME	Editor
Aux Name	AuxCouple	SubsTab	DVE				

Key No	Name
01	
02	────
03	────
04	────
05	────
06	────
07	────
08	────
09	────
10	────
11	────
12	────
13	────
14	────
15	────

This configuration card is to be used if you want to have source names at the External Aux Bus and the router control protocol excludes the name transfer. E.g. ASCII protocol. The 4digit names occur at the external aux bus source and they are fixed for each external aux bus.

Router control protocols with a name transfer do not need the setting here. These protocols are able to grab the name from the external control unit, e.g. Prosan.

Aux Couple	Index card for coupling the aux bus to other switcher buses (masters). if the source on the master is changed, the source on the coupled aux bus follows.

Coupled to:	Select the desired switcher bus

Mode:

Normal
In coupled mode, additional selection of sources on the aux bus is possible.

Exclusive
In coupled mode, additional selection of sources on the aux bus is not possible.

Subst. Table:	Select the desired substitution table. Refer index card below.

M/E Couple   Index card for M/E coupling.

Audio	Global	Input	GPI	GPO	AUX CP	ME	Editor
Aux Name	AuxCouple	MeCouple	SubsTab	DVE			

ME	follows	subst.Table Pgm/Pst	subst.Table Key/Fill
P/P	P/P		
M/E 1	P/P		
M/E 2	P/P		
M/E 3	P/P		

Functional description:

M/E coupled is used to support a second (third..) transmission line output at a DD35 switcher that is in its main parts identical to a main output, but differs in country specific video components (source– and/or keyer substitution). Those source replacements can be defined with substitution tables.

How to use:

TiM/E Memo recalls are used to set all – master and coupled M/Es – into an initial state depending on the next effect. According to the meaning of the effect the transition module then works correct with CUT, AUTO and the fader commands.

Coupling rules:

Each M/E can be coupled to any other M/E as long as they belong to the same application and the coupling doesn't become recursive. The coupling ($\rightarrow$) can be done serial, parallel and in combinations.

Examples:

Serial:	**P/P→M/E3→M/E2**	M/E3 is coupled to P/P M/E2 is coupled to ME3 M/E1 is not coupled
Parallel:	**P/P→M/E3; PP→M/E2**	Both, M/E3 and M/E2 are coupled to P/P M/E1 is not coupled
Combined:	**P/P→ME3; PP→ME2** **M/E2→M/E1**	Both, M/E3 and M/E2 are coupled to P/P M/E1 is coupled to M/E2

Recursion is not possible:

P/P→M/E3; M/E3→P/P   NOT ALLOWED!!

Each ME can be used as Master M/E. If a coupled M/E is modified directly via a control unit the master ME is not affected.

Coupled recources:

After selection the M/E Couple Mode in the **Config EBox** menu, the following M/E resources can be coupled:

- PGM and PST bus (optionally by one substitution table) at M/E crossbar

- CUT, AUTO and FADER at M/E transition.

By selecting **M/E Couple** in the Status menu, additional the following function can be coupled:

- Fill busses of the keyers. Together with the key memory, most keyer adjustments can be recalled (no wipes...)

- M/E coupling can be (de)activated for each resource)

TiM/E-Memo handling:

ME coupling works on command level. This means that TiM/E-Memo recalls and application load are disregarding M/E coupling. It is used to preset M/Es.

Applications:

Every application has its own, complete M/E-coupled structure. If an application is loaded or the coupled state of one application is changed, this new modification is checked and accepted or rejected (see Coupling rules).

Subst. Table   Index card for generating and editing a substitution table.
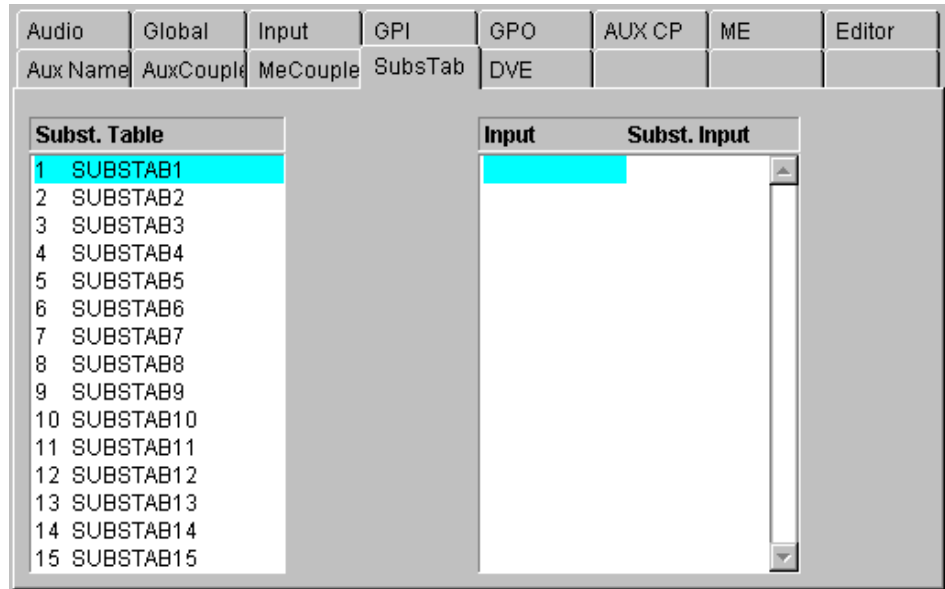
The index card contains 15 substitution tables. These tables can be used by coupled aux buses or coupled M/Es to exchange the source when the coupled aux bus follows his master. Refer also Aux Couple and M/E Couple index card above.

Modify Name:	Enter a own name for the substitution table
All Subst:	Sets all substituted inputs to a selectabe input, to white or delete all.
Add Subst:	Enter a new substitution pair in the selected table.
Remove Subst:	Remove a substitution pair from the selected table.
Modify Subst:	Modify the selected table.

DVE   Index card for DVE settings.

Audio	Global	Input	GPI	GPO	AUX CP	ME	Editor
Aux Name	AuxCouple	MeCouple	SubsTab	DVE			

Parameter	Setting	
Key Bus Coupled	Off	▲
map AUX 1 to	AUX 1	
map AUX 2 to	AUX 2	
map AUX 3 to	AUX 3	
map AUX 4 to	AUX 4	
map AUX 5 to	AUX 5	
map AUX 6 to	AUX 6	
map AUX 7 to	AUX 7	
map AUX 8 to	AUX 8	
map AUX 9 to	AUX 9	
map AUX 10 to	AUX 10	
map AUX 11 to	AUX 11	
map AUX 12 to	AUX 12	
map AUX 13 to	AUX 13	
map AUX 14 to	AUX 14	▼

DVE
☑ 1
☐ 2
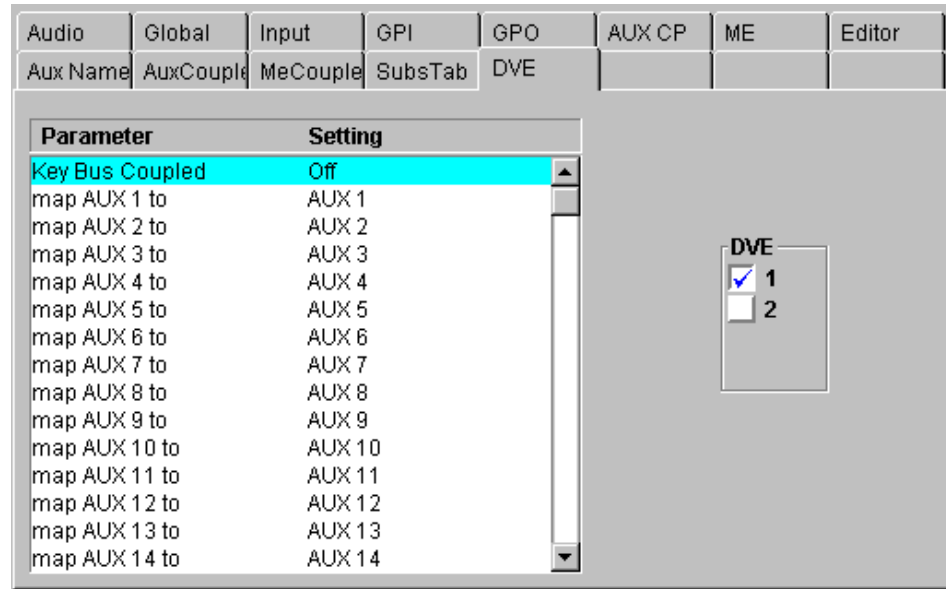
For DVE control, the Aux busses supplying the video and key signals have to be directly indicated in the GVG200 protocol. In order to keep an assignment variable, this index card is available enabling an Aux bus mapping. Thus, not only the permanently entered Aux busses can be used but also all the other Aux busses.

If the DVE Key and Fill source are assignet to Aux busses (that is the normal way working with the DVE) each time the DVE Fill source is changed at the Aux bus selection. The coupled key source is set on the corresponding DVE Key bus.
This coupling can be activated or deactivated with the parameter **Key Bus Coupled On/Off**

Title
(Seraph HD only)

Index card for fixed title settings.

Audio	Global	Input	GPI	GPO	AUX CP	ME	Editor
Aux Name	AuxCouple	MeCouple	SubsTab	DVE	Title		

Output	Modifying: Center Cross
Aux 1	
Aux 2	
Aux 3	
Aux 4	
Aux 5	
Aux 6	
Aux 7	
Aux 8	
Aux 9	
Aux 10	
Aux 11	
Aux 12	
Aux 13	
Aux 14	
Aux 15	

↑ ↓   Center **Title** **Cross**   **Modify**
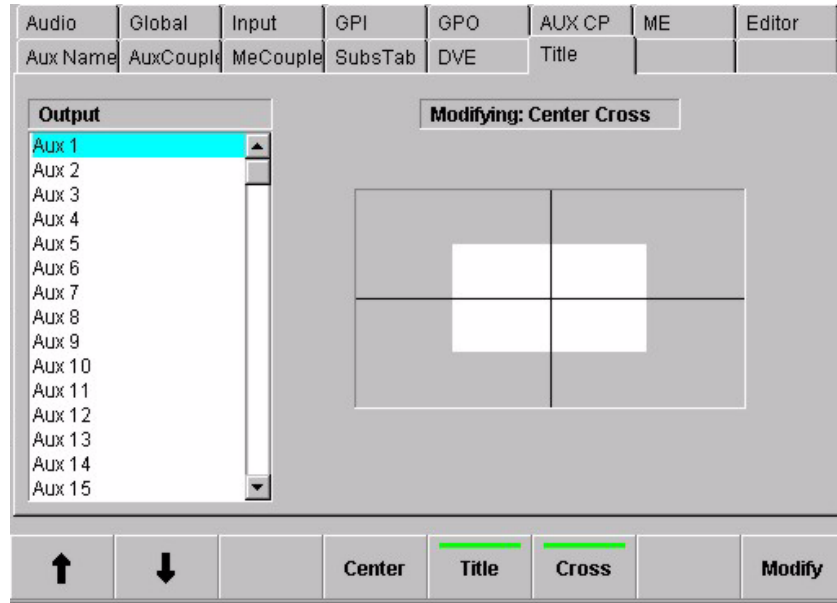
These adjusting elements enable fading–in different auxiliary lines (Box, Center Cross) into each individual Aux bus. The fadings serve as an auxiliary means to mark at productions defined picture areas (e.g. areas for logos, subtitles, 4:3 raster). The digipots enable to adjust the title box or the center cross over the complete picture area.

Center   centers the selected auxiliary line in the picture center

Title   fades in a retangular frame

Cross   fades in a center cross

3.16.2.3 Fixed Aux Bus

Via an additional entry for each Aux bus in the **environ.ini** file, an Aux bus can be permanently "wired" with a defined source, i.e. the indicated source is switched on the Aux bus and cannot be changed any more. Even with recalls or timelines, the source of the Aux bus remains unchanged. To be able to switch the Aux bus source again, the entry in the **environ.ini** file has to be changed again.

Syntax in environ.ini file (Examples)

```
[AUXBUS1]
PermanentInput=0xFF,0x03,0x01,0x02    AUX Bus 1 is permanently set to
               ==== ==== ==== ====    M/E3 Preset
...

[AUXBUS3]
PermanentInput=0x05,0x00,0x00,0x00    AUX Bus 1 is permanently set to
               ====                   Input 5
...

[AUXBUS4]
PermanentInput=0xFF,0xFF,0xFF,0xFF    AUX Bus 4 is not fixed
```

The repective codes are listed of the next pages.

Input code for standard set

Input code	Video signal
`0x00`	BLACK
`0x01`	Input 01
`0x02`	Input 02
`:`	:
`0x3E`	Input 62
`0x80`	Video store
`0x81`	Montage Processor Channel 1
`0x82`	Montage Processor Channel 2
`0x90`	Color BGD 1
`0x91`	Color BGD 2
`0x92`	Color BGD 3
`0xA0`	Main out (AUX–buses only)
`0xA1`	ME1
`0xA2`	ME2
`0xA3`	ME3
`0xB0`	Main PVW (AUX bus only)
`0xB1`	ME1 PVW (AUX bus only)
`0xB2`	ME2 PVW (AUX bus only)
`0xB3`	ME3 PVW (AUX bus only)
`0xC1`	ME1 Layered Key
`0xC2`	ME2 Layered Key
`0xC3`	ME3 Layered Key
`0xD0`	CLEANFEED
`0xE0`	Virtual input 0
`:`	:
`0xEF`	Virtual input 15
`0xF0`	WHITE
`0xF1`	Crosspoints for internal use.
`:`	
`0xF8`	

Input code for extended set

Input code				Bus name
`0xFF`	`0x00`	`0x01`	`0x01`	PP PGM Bus
`0xFF`	`0x00`	`0x01`	`0x02`	PP PST Bus
`0xFF`	`0x00`	`0x20`	`0x01`	DSK1 Fill
`0xFF`	`0x00`	`0x20`	`0x02`	DSK1 Key
`0xFF`	`0x00`	`0x21`	`0x01`	DSK2 Fill
`0xFF`	`0x00`	`0x21`	`0x02`	DSK2 Key
`0xFF`	`0x00`	`0x22`	`0x01`	DSK3 Fill
`0xFF`	`0x00`	`0x22`	`0x02`	DSK3 Key
`0xFF`	`0x01`	`0x01`	`0x01`	ME1 PGM Bus
`0xFF`	`0x01`	`0x01`	`0x02`	ME1 PST Bus
`0xFF`	`0x01`	`0x20`	`0x01`	ME1 Key1 Fill
`0xFF`	`0x01`	`0x20`	`0x02`	ME1 Key1 Key
`0xFF`	`0x01`	`0x21`	`0x01`	ME1 Key2 Fill
`0xFF`	`0x01`	`0x21`	`0x02`	ME1 Key2 Key
`0xFF`	`0x01`	`0x22`	`0x01`	ME1 LayerA Fill
`0xFF`	`0x01`	`0x22`	`0x02`	ME1 LayerA Key
`0xFF`	`0x01`	`0x23`	`0x01`	ME1 LayerB Fill
`0xFF`	`0x01`	`0x23`	`0x02`	ME1 LayerB Key
`0xFF`	`0x02`	`0x01`	`0x01`	ME2 PGM Bus
`0xFF`	`0x02`	`0x01`	`0x02`	ME2 PST Bus
`0xFF`	`0x02`	`0x20`	`0x01`	ME2 Key1 Fill
`0xFF`	`0x02`	`0x20`	`0x02`	ME2 Key1 Key
`0xFF`	`0x02`	`0x21`	`0x01`	ME2 Key2 Fill
`0xFF`	`0x02`	`0x21`	`0x02`	ME2 Key2 Key
`0xFF`	`0x02`	`0x22`	`0x01`	ME2 LayerA Fill
`0xFF`	`0x02`	`0x22`	`0x02`	ME2 LayerA Key
`0xFF`	`0x02`	`0x23`	`0x01`	ME2 LayerB Fill
`0xFF`	`0x02`	`0x23`	`0x02`	ME2 LayerB Key
`0xFF`	`0x03`	`0x01`	`0x01`	ME3 PGM Bus
`0xFF`	`0x03`	`0x01`	`0x02`	ME3 PST Bus
`0xFF`	`0x03`	`0x20`	`0x01`	ME3 Key1 Fill
`0xFF`	`0x03`	`0x20`	`0x02`	ME3 Key1 Key
`0xFF`	`0x03`	`0x21`	`0x01`	ME3 Key2 Fill
`0xFF`	`0x03`	`0x21`	`0x02`	ME3 Key2 Key
`0xFF`	`0x03`	`0x22`	`0x01`	ME3 LayerA Fill
`0xFF`	`0x03`	`0x22`	`0x02`	ME3 LayerA Key
`0xFF`	`0x03`	`0x23`	`0x01`	ME3 LayerB Fill
`0xFF`	`0x03`	`0x23`	`0x02`	ME3 LayerB Key

Other codes will be ignored.

Editing the Enviro.ini file

- Establish with **WS-FTP** a connection to the mainframe host controller. For this purpose, enter in **WS-FTP Profile** the corresponding address.

- Call directory **"/flash"**.

- Files in the directory are shown in the right-hand window of **WS-FTP**:

- Copy file **"Environ.ini"** from the host flash disk to the PC.

- Edit file **"Environ.ini"** with a window editor.

- Save the old file on the host flash disk **"Environ.ini"** by **Rename** into **"Environ.sav"**. The extensions **".ini"**, **".old"** and **".new"** are reserved and must not be used for backup names.

- Copy the changed file **"Environ.ini"** from the PC to the host flash disk in directory **"/flash"**.

- After storing the file, a **RESET** has to be initiated at host and RSE to read in **"Environ.ini"** again.
  Between storage and RESET, no changes have to be made at the installation setting of the switcher (e.g. menu settings) since, otherwise, the file being just stored will be overwritten with old values!

After restart of the switcher, the changing is ready.

3.16.3 CONFIG PANEL MENU
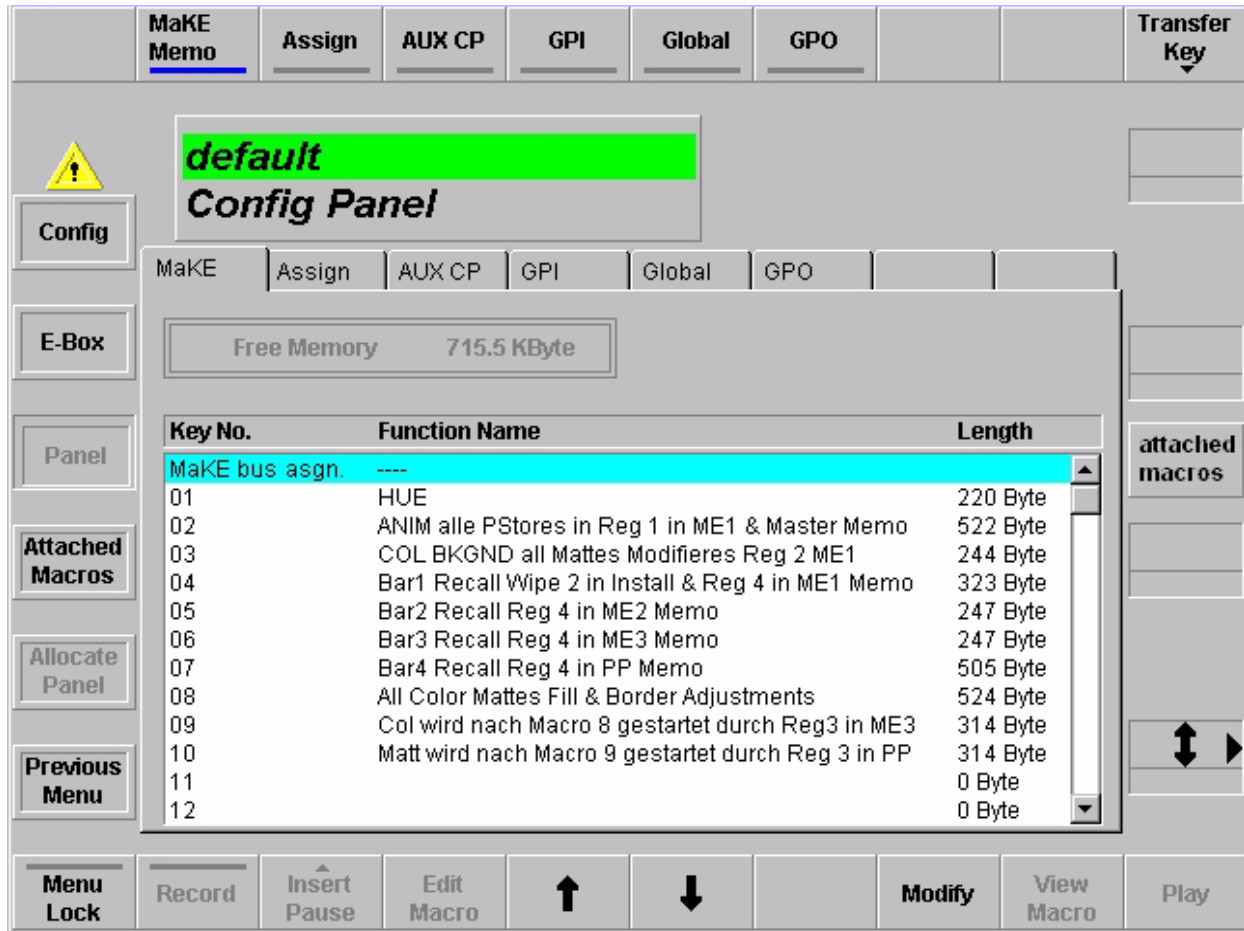
3.16.3.1 Dialog Buttons

Config   Selecting **Config** menu.

E-Box   Selecting **Config E-Box** menu.

Attached Macros   Selecting **Attached Macro** menu.

Allocate Panel   Selecting **Allocate Panel** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.16.3.2 Function Buttons / Index Cards

Make Memo™   Index card for *Make Memo*™
Make Memo™ is a new feature. It can store commands as macros (e.g. Cut, Auto, GPO trigger, etc.). By inserting **Pause** between commands it can also store a macro sequence. The difference between *TiM/E Memo* with snapshots and timelines to *Make Memo*™ is, that *TiM/E Memo* store states and sequences of states, *Make Memo*™ stores commands and sequences of commands.

For recall the stored macros the PP source selection panel is used. The **MaKE** button delegates the PP keyer bus to the *Make Memo*™ function.

Key No.	Function Name	Length
MaKE bus asgn.	----	
01	HUE	220 Byte
02	ANIM alle PStores in Reg 1 in ME1 & Master Memo	522 Byte
03	COL BKGND all Mattes Modifieres Reg 2 ME1	244 Byte
04	Bar1 Recall Wipe 2 in Install & Reg 4 in ME1 Memo	323 Byte
05	Bar2 Recall Reg 4 in ME2 Memo	247 Byte
06	Bar3 Recall Reg 4 in ME3 Memo	247 Byte
07	Bar4 Recall Reg 4 in PP Memo	505 Byte
08	All Color Mattes Fill & Border Adjustments	524 Byte
09	Col wird nach Macro 8 gestartet durch Reg3 in ME3	314 Byte
10	Matt wird nach Macro 9 gestartet durch Reg 3 in PP	314 Byte
11		0 Byte
12		0 Byte

Tabs: MaKE | Assign | AUX CP | GPI | Global | GPO

Free Memory   715.5 KByte

attached macros

Buttons: Record | Insert Pause | Edit Macro | ↑ | ↓ | Modify | View Macro | Play

Record   Start and stop recording macros.

Insert Pause   Only active, if Record button is selected.

	▼	*Insert Pause [seconds]*				
Manual	Insert Pause	0.5	1.0	2.0	3.0	5.0
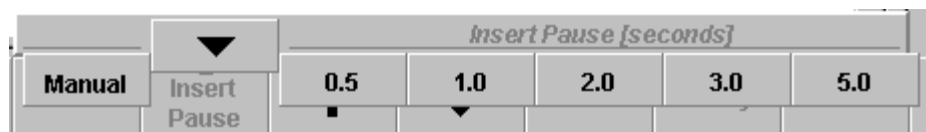
Edit Macro   For details refer to section 3.16.3.3
View Macro
Modify

Cursor $\uparrow\downarrow$ The vertical cursor softkeys and the vertical cursor digipot are used to navigate within a list box. The complete cursor control is always relevant.

How to store a macro:

● Make sure that in the **Config** menu the **Running Application** is selected to witch you want to add the macros. If the cursor is not on a **Running Application** the menu item menu is disabled.

● Select with the cursor button $\uparrow\downarrow$, the digipot or by mouse click a free **Key No.** in the Make Memo list field.

● Push **Record** button to start recording the macro. Push the desired control panel buttons and adjust the desired digipots. If a pause is needed between commands, push the **Insert Pause** and select the desired time (**0.5**, **1.0**, **2.0**, **3.0** or **5.0** in seconds), then proceed with the commands. At the end of the macro push **Record** again to stop recording.

Note: If no pause is inserted all commands were executed immediately.

● If you want to rename the stored commands push **Modify** and select **Rename** in the overlay. Type in the name with the keyboard overlay.

● To copy a macro to another **Key No.** select the macro and push **Modify**. Select **Copy** in the overlay. Type in the desired Key No. and confirm with **Enter**.

● Macros can also be swapped by selecting **Swap** in the **Modify** overlay.

● To delete a macro select the macro in the list, push **Modify** and select **Delete**.

It is possible to assign other busses to the Make buttons in the control panel., e.g. Aux busses. Select **Key All** and push **Modify**. Select from the overlay the bus you want to assign to these buttons.

Transfer Key   Transfer the selected macro from one button to another.

Assign   Index card for Input Assignment. The menu is selectabel only when a control panel is attached. Only a user with permit "APPLICATION MODIFY" can make changes.

MaKE Memo	Assign	AUX CP	GPI	Global	GPO			

default
Config Panel

Config · E-Box · Panel · Attached Macros · Allocate Panel · Previous Menu

MaKE	Assign	AUX CP	GPI	Global	GPO		

Bus Rows	**Input**		**Button**	**Assigned**	
ALL	NONE		01	c0	BLCK
AUX All	1	IN01 IN01	02	1	! IN01
P/P Bgnd + Fill	2	IN02 IN02	03	2	! IN02
P/P Key	3	IN03 IN03	04	3	! IN03
ME 1 Bgnd + Fill	4	IN04 IN04	05	4	! IN04
ME 1 Key	5	IN05 IN05	06	5	! IN05
ME 2 Bgnd + Fill	6	IN06 IN06	07	6	! IN06
ME 2 Key	7	IN07 IN07	08	7	! IN07
ME 3 Bgnd + Fill	8	IN08 IN08	09	8	IN08
ME 3 Key	9	IN09 IN09	10	9	IN09
AUX 1	10	IN10 IN10	11	10	IN10
AUX 2	11	IN11 IN11	12	11	IN11
AUX 3	12	IN12 IN12	13	12	IN12
AUX 4	13	IN13 IN13	14	13	IN13

Input

↕ ▶ Bus · attached macros · ↕ ▶ Input · ↕ ▶ Button

Menu Lock	All Bus Rows		↑	↓	Insert Position	Delete Position	Reset Assign	Assign None	Assign

*Box **Bus Rows***   Pre-selects the panel's bus rows for which the Input Assignment should be changed.

Selectable are :   **ALL** (= all bus rows on the panel),
P/P-Bgnd + Fill,
P/P-Key,
M/E 1 Bgnd + Fill,
M/E 1 Key,
M/E 2 Bgnd + Fill,
M/E 2 Key,
M/E 3 Bgnd + Fill,
M/E 3 Key,
AUX All,
AUX 1 ... AUX 20
Video Store
Mont Proc 1 ... 2
Mask Bus 1 ... 3

Note: *Extern AUX is NOT selectable.*

Box **Input**	Shows a sorted list of all assignable inputs (Number, four char ident, eight char ident) plus the entry **None** which must be used to assign no input to a button. The arrow in the rigthmost column indicates the input that is assigned to the button which is currently marked in the box **Button**.
Box **Button**	Shows a sorted list of all assignable crosspoint buttons. The arrow in column 1 indicates the buttons which are assigned to the input currently marked in box **Input.** Column 2 is the numeric list of all buttons. Column 3 is a helper to show whether the Button is in first 2nd or 3rd level. Column 4 and 5 show the number and the four char ident of the assigned input. Dashes (– – –) indicate that no input is assigned.
All Bus Rows	Shortcut for pre-selecting bus row **ALL.**
Cursor ↑↓	The vertical cursor softkeys and the vertical cursor digipot are used to navigate within a list box. The complete cursor control is always relevant.
Insert Position	Insert the selected input at the current cursor position and moves the previous inputs downwards to the end. At the end of the levels, the last assignment get loost!
Delete Position	Deletes the selected input at the current cursor position and moves the all the next inputs upwards. At the end of the levels, a **None** will be inserted.
Reset Assign	Resets the assigment to the following states:

Assign None	Moves the cursor in the right table downwards.
Assign	Moves both cursors downwards.

Reset Assign Opens an overlay with some pre-defined input assignments:

Like Bgnd Copies the input assignment from the Bgnd bus row into the key bus row (only for key buses)

Like AUX All Copies the input assignment from the AUX All bus row into the selected bus row.

Like ALL Copies the input assignment from the ALL bus row into the selected bus row.

Black Left Makes a default assignment with input **Black** on the leftmost button.

Black Right Makes a default assignment with input **Black** on the rightmost button.

▼ Closes the overlay.

All None Assigns no input to all buttons of selected bus row.

Assign Assigns the marked **input** to the marked **button** on the pre-selected **bus row**.

AUX CP　　　　　Index card for configuration the Aux Control Panels connected with the DD35 control panel.

Aux Cp	Deleg 1	Deleg 2	Deleg 3	Deleg 4	Deleg 5	Deleg 6
1 cp330	None	None	None	None	None	None
2 cp330	None	None	None	None	None	None
3 cp330						
4 cp330						
5 cp330						
6 cp330						
7 cp330						

(Tabs: MaKE | Assign | AUX CP | GPI)

Modify　　　　　For details refer to **Config E-Box Menu.**

Panel Operation:

Delegation   Pressing a delegation button delegates the AUX-CP to that function. The delegation button is lit to indicate that status. If possible, the source buttons show the current status of the delegated function. In most cases, this will be the selected crosspoint on the delegated bus. If the function is TiME Memo recall or Make Memo recall, no state is indicated because such recalls are events.

2nd, 3rd   Pressing a delegation button that is programmed to be **2nd** or **3rd** toggles the shift level of the source buttons.

2nd	3rd	Source buttons CP-300	Source buttons CP-330	Source buttons CP-3020
off	off	1 .. 24	1 .. 48	1 .. 20 (+ 20 per CP 3021)
on	off	25 .. 48	25 .. 62	21 .. 40 (+ 20 per CP 3021)
off	on	49 .. 72	49 .. 96	41 .. 60 (+ 20 per CP 3021)
on	on	not allowed		

Source Buttons   Pressing a source button performs the function according to the delegation. I.e., selects the crosspoint or recalls the register or macro.
The response to a recall is a short flash of the source button.
The response to a crosspoint selection is the indication of the new crosspoint.

AUX-CP Enable   In menu **Remote**, the AUX-CPs can be enabled or disabled. In disabled state, the AUX-CP performs no function. Local delegation is still possible.

GPI   Index card for configuration panel GPIs.

| MaKE | Assign | AUX CP | GPI | Global | GPO | | |

GPI	Name	Function	Parameter
1	PGI1	None	
2	PGI2	None	
3	PGI3	None	
4	PGI4	None	
5	PGI5	None	
6	PGI6	None	

Douple-cklick or pressing the **Modify** button calls a pop-up menu

GPI 1 Function

✓ **None**
Command
Autotransition   =>
MaKE-Memo   =>

The selected function will be triggered on the edge defined in Install menu when GPI ENABLE is ON. However, there are some exceptions where the GPI works as a "static" input. i.e. actions take place after a change in the GPI state but the value depends on the GPI's state after the change. Also GPI ENABLE needs not to be ON for these functions.

None: GPI has no function.

Command: User-defined command code. See note below.

Autotransition: Starting **Auto Transition**, selected in the pop-up list

GPI 1 : Function		
✓None	auto PP DSK6	auto ME2 Key3 / Layer A
Video Standard	auto PP FTB	auto ME2 Key1
Video Format	auto PP Misc1	auto ME2 Key2
auto T-Memo PP	auto PP Misc2	auto ME2 FTB
auto T-Memo ME1	auto ME1 all selected	auto ME2 Misc1
auto T-Memo ME2	auto ME1 Layer B	auto ME2 Misc2
auto T-Memo ME3	auto ME1 Key3 / Layer A	auto ME3 all selected
auto T-Memo Master	auto ME1 Key1	auto ME3 Layer B
auto PP all selected	auto ME1 Key2	auto ME3 Key3 / Layer A
auto PP DSK1	auto ME1 FTB	auto ME3 Key1
auto PP DSK2	auto ME1 Misc1	auto ME3 Key2
auto PP DSK3	auto ME1 Misc2	auto ME3 FTB
auto PP DSK4	auto ME2 all selected	auto ME3 Misc1
auto PP DSK5	auto ME2 Layer B	auto ME3 Misc2

MaKE Memo: Starting a macro (0 .. 99).

Note:

*In the COMMAND mode, user defined commands are selected being transmitted to the switcher at a received trigger event. Selecting COMMAND enables to directly enter the command code. See for this purpose the DD35 command set, which can be obtained from the manufacturer. The other selections are defined in text files **GPICMDMF.TXT** (mainframe) and **GPICMDCP.TXT** (panel). These files are contained in the directory **c:/programme/dd35/bin**.*

For entry, a special syntax has to be considered. It is possible to add predefined parameters to the command, the available commands are listed in these files. For editing, it is best to copy and match existing entries. In any case, the DD35 command set is required.

Global   Index card for global panel settings.

| MaKE | Assign | AUX CP | GPI | Global | GPO | | |

Parameter	Setting
logo On Air	Off
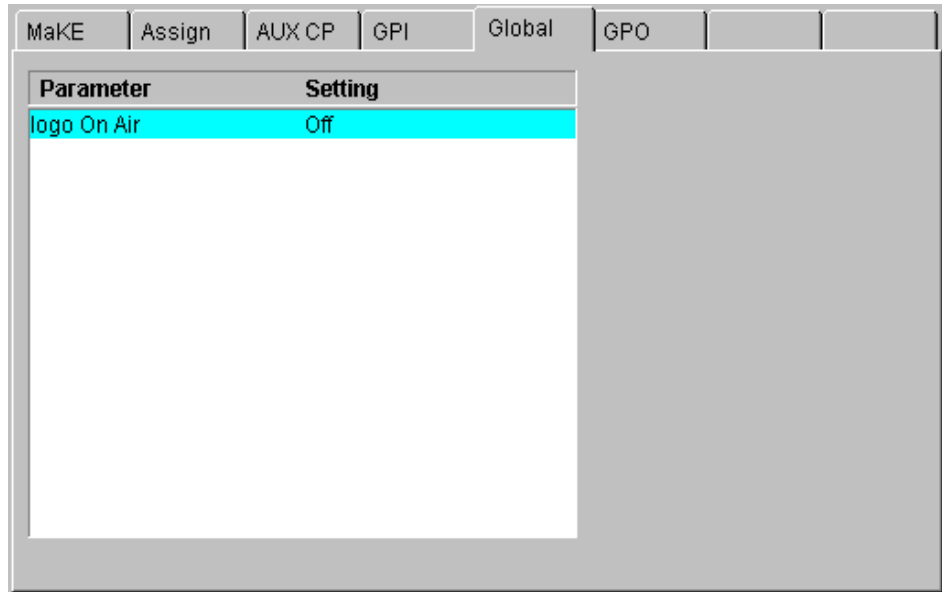
Logo OnAir
Selecting the panel log as OnAir display.

Modes: **On**   Logo always lit
           Off   Logo off
           OnAir   Logo shows the OnAir information.

GPO   Index card for GPO settings

With the **Modify** button, names can be assigned to the GPOs.

3.16.3.3 Makro Editor

Edit Macro   Pressing the button actually enters a subdialog of the MaKE page (see below).

View Macro   Pressing the button enters the same dialog as "Edit Macro", but without any buttons to change the contents

MaKE Memo	Assign	AUX CP	GPI	Global	GPO	SatPanel	

default
Config Panel

| Config | | MaKE | Assign | AUX CP | GPI | Global | GPO | SatPanel | |

E-Box

Macro Nr.: 2
Title: ANIM alle PStores in Reg 1 in ME1 & Master Memo

Panel

Command

Set | Master TimeMemo | Default Application | Select Register | PST | 9
Set | Master TimeMemo | Default Application | Select Register | PST | 99
Set | Master TimeMemo | Default Application | Select Register | PST | 99
Trigger | Master TimeMemo | Default Application | Cut, Auto, etc. | Cut
Trigger | CP Setup | CP MakeMemo | Pause | 0.2 sec
Set | Me1 | TimeMemo | Select Register | PST | 0
Set | Me1 | TimeMemo | Select Register | PST | 1
Set | Me1 | TimeMemo | Select Register | PST | 1
Trigger | Me1 | TimeMemo | Cut, Auto, etc. | Cut
Set | Me1 | Key2 | kw: 50 | params: 00
Set | Me1 | Key1 | Key Preview | key preview
Set | Me1 | Key2 | kw: 50 | params: 00
Trigger | CP Setup | CP Operational | Machine Control Deleg.

Attached Macros

Allocate Panel

Previous Menu

attached macros

| Menu Lock | | End Edit & Save | Cancel Edit | ↑ | ↓ | ▲ Insert | Modify | Delete | Show Hex Values |

SubDialog Macro Editor

End Edit & Save   Pressing the button saves the actual changes made in the macro editor and returns to the MaKE dialog.

Cancel Edit   Pressing the button discards changes made in the macro editor and returns to the MaKE dialog.

Insert

Insert new comm. at select.	Insert an empty command line before the selected command.
Insert new comm. at end	Insert an empty command line after the last command.
Insert exist. macro at select.	Insert an existing macro before the selected command.
Insert exist. macro at end	Insert an existing macro after the last command.

Modify	Pressing the button modifies selected command (or empty command line).
Delete	Pressing the button deletes selected command (or empty command line).

Show Hex Values

Pressing the button toggles the display between normal text mode and technical mode showing the command in hexadecimal code:
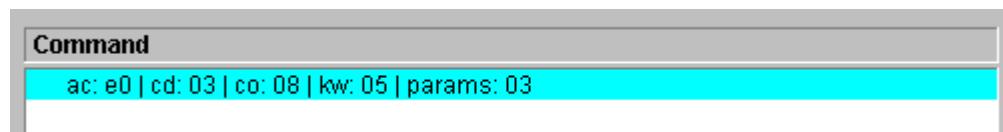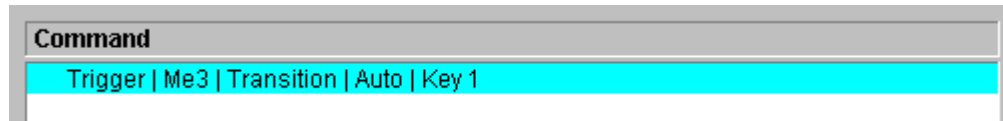
Principles of the Macro Editor


```
MaKE │ Assign │ AUX CP │ GPI │ Global │ GPO │        │        │

        Macro Nr. : 2
        Title :      MK02

│ Command                                                        │
│  Set │ Me1 │ Transition │ Transition Type │ Key 1 │ mix        │
│  Set │ Me1 │ Transition │ Transition Time │ Key 1 │ 12         │
│  Trigger │ Me1 │ Transition │ Auto │ Key 1                     │
│                                                                │
```
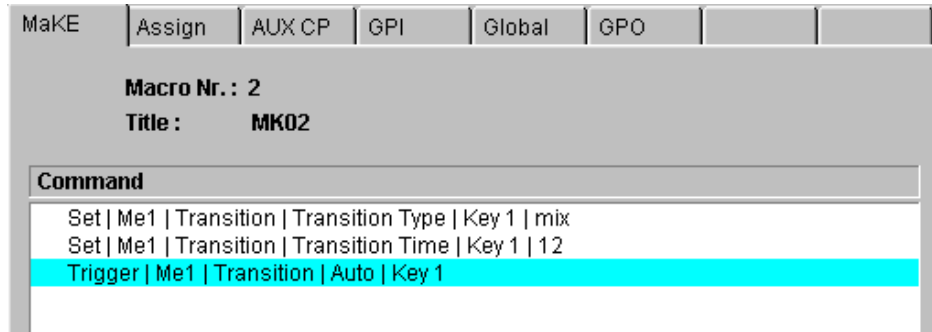
With the macro editor you can view and edit the contents of a macro. You can delete commands from the macro by just pressing the delete button. Insert a command can be done in two ways:

● Insert an empty command line and modify this line directly in the command editor.

● Create a (temporary) macro with the commands needed on the control panel and insert this macro.

Inserting an existing macro is the simpler way to add commands, however creating command directly in the editor gives you more flexibility.

Creating/changing commands with "Modify"

When you press the Modify button, a sequence of pop–up windows appears allowing you to create the command you want.

Example for a pop–up selection:


```
                    Select Main Group

ME's & PP -------------   Auxbuses ---------------   Peripheral Devices ---
Me1                       Auxbus                     Aux CP
Me2                       AuxBus Correction          SatPanel
Me3                       Ext-AuxBus Setup           UMD
PP


General Resources ----   Setups --------------------  External Controls ------
Color Background          SidePanel                   Edit Control
DVE                       CP Setup                    PBus
Stores                    MF Setup                    Saturn
Master TimeMemo           Source Substitution         Esam
Machine Control           XBarIdent                   Autom. Control
Video input               GPI
                          GPO
                          Serial Ports
                          Tally
                          Applic. Setup
```

Depending whether the command deals with a switch value, an analog value, or an event you will find one of the following selection pop–ups:

Switch value (e.g. Wipe Rotation Mode):

| Me3 | Wipe1 | Rotation Mode |

set by value
set to minimum
set to maximum
set to neutral
toggle up
toggle down
trigger
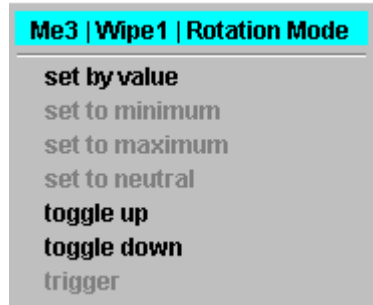
Set by value   Sets rotation mode to a fixed value.
Next selection will be: Angle / Speed / Coupled

Toggle up   When you execute this macro, the result depends on the actual state:
when Angle > Speed
when Speed > Coupled
when Coupled > Coupled
some parameters allow "wrap around".
In this case Coupled would change to Angle.
"On/Off" parameters always allow "wrap around".

Toggle down   When you execute this macro, the result depends on the actual state:
when Coupled > Speed
when Speed > Angle
when Angle > Angle
some parameters allow "wrap around".
In this case Angle would change to Coupled.
"On/Off" parameters always allow "wrap around".

When you learn macros via the control panel, you will find out that some commands are learned as "set by value" and others by "toggle" (e.g. "on/off" command).

When you create the commands directly in the command editor you have the choice to select the way most convenient to you.

Analog value (e.g. Wipe Border Width):

Me3 | Wipe1 | Border Width

> set by value
> set to minimum
> set to maximum
> set to neutral
> increment
> toggle down
> trigger
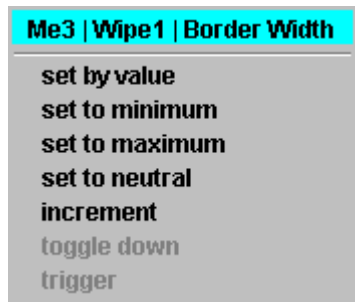
set by value   Sets border width to a fixed value.
Next selection will allow you numeric entry.

set to minimum
Sets the border width to minimum

set to maximum
Sets the border width to maximum

set to neutral   Some analog value like the border width have a symmetrical range (+/–). Set to neutral selects the middle position.

increment   allows you to create a macro which increases/decreases the value by a certain amount any time you execute the macro.
Analog commands can only be created directly in the command editor. Via the control panel you can **not** learn analog macros.

An interesting analog macro could be e.g. the following:

Command

> Set | PP | Transition | Fade-In Amount | Key 1 | Maximum
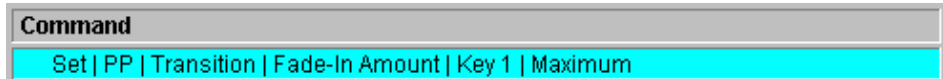
This macro will always set Dsk1 to "on".

A macro learned on the control panel with "Cut" or "Auto" instead will toggle the state of the Dsk.

Event (e.g. Transition Cut):

```
PP | Transition | Cut
set by value
set to minimum
set to maximum
set to neutral
toggle up
toggle down
trigger
```
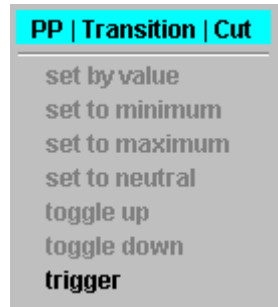
trigger   for this type there is only one selection possible:
                    to trigger the event

3.16.4 ATTACHED MACROS MENU
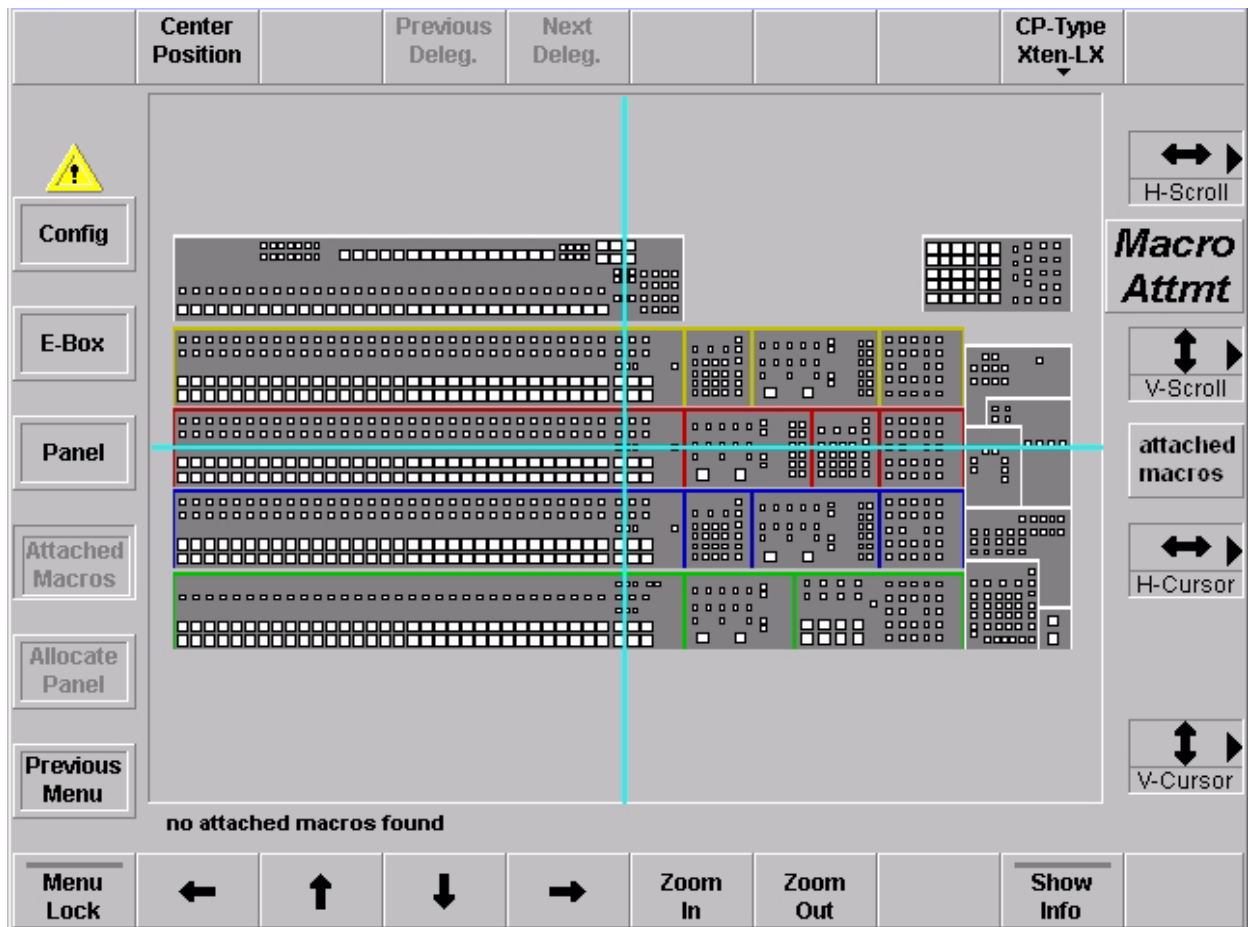
3.16.4.1 Dialog Buttons

Config   Selecting **Config** menu.

E-Box   Selecting **Config E-Box** menu.

Attached Macros   Selecting **Attached Marcro** menu.

Allocate Panel   Selecting **Allocate Panel** menu.

Previous Menu   Return to the previous menu. For details refer to section **Introduction.**

3.16.4.2 Viewer for Attached Macros

This menu can be accessed in two ways:

● via *Config / Attached Macros* menu

● by clicking to "attached macros" button,
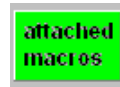
which is visible in all menus at the right side between the middle digipots. This button is only visible when there is at least one macro attachment. The button is grey or green, depending on the settings in the menu *Personality / Panel / MaKE Memo Attachment Playmode*.

3.16.4.3 Principles of Macro Attachment

Macros can be recalled manually via the macro bus row (Keyer row in Program/ Preset) and via the sidepanel. A more sophisticated way is to recall a macro automatically when you press any other button on the panel. Since a normal button has its own function, you can attach a macro which is executed **BEFORE** the actual function (**pre**–**macro**) and/or a macro which is executed **AFTER** the actual function (**post**–**macro**).

The macros are not attached to the physical buttons, but to the logical buttons. That means, when you attach a macro to the first button in the Aux bus row while the auxbus delegation is on Aux bus 5 and second page is selected, this macro is only fired at the button press for this special setting.

Center Position	Centers the display and the cursor
Previous Deleg.	Toggles the info display backwards through the different delegations. Only enabled for buttons with more delegation levels (e.g. Aux bus row buttons, Keyer section buttons).
Next Deleg.	Toggles the info display forwards through the different delegations. Only enabled for buttons with more delegation levels (e.g. auxbus row buttons, keyer section buttons, wipe selection buttons).
CP–Type	The default panel type to display is of course the actual panel type. You can select all other panel types in case you want to export your application to another type of panel. Since panels differ in button layout some button of type A may not exist on panel type B. Macro attached to this buttons will be shown as "not decoded macros" for panel type B.

Available panel types:

Center Position	Xten-LX	Previous DD35-4LX	Next DD35-4L	DD35-3L	DD35-2L	DD35-2S	CP-Type Actual	Actual
				actual			▲	

Selects automatically the connected panel type!

Left/Right/Up/Down Arrow   Scrolling the display in the according direction.

Zoom In   Zoom in display. Starting from a certain zoom factor the text lables per button are displayed.

Zoom Out   Zoom out display.

Show Info

If "on" the "info popup window" is shown whenever the cursor (blue crosshair) is over a button.
If "off" the "info popup window" is only shown as long as you hold down the left mouse button on the according button.
The 4 digipots also allow to scroll the display and to move the cursor (blue crosshair).

Attachment Display

If a macro is attached to a button in a certain section (e.g. Aux row, M/E1 row) this section is displayed with a yellow background. The buttons with attached macros are displayed in red.

To see the details of the attachment, move the cursor to the according button (or click on it) to open the "info popup window". Here you will see for which delegations and which pages pre– and/or post–macros are attached with the name and the number of the macro.

3.17 PERSONALITY MENU

| Panel | SidePanel | | | | | | Transfer ▼ |

⚠️

Main

Operator
Personality

| Panel | SidePane |

Setting	Value
Beeper	ON
Key Click	ON
Low Light	0 %
Trackball Speed	20 %
Digipot Speed	20 %
MaKE Memo Attachment Playmode	Function only
MaKE Memo Attachment Blinking	OFF
Enable Fast Copy	ON
Source Hunting (AUX busses & DSK busses)	ON
Aux Panel Store Functions	OFF
Shift Button Mode (2nd/3rd)	Latch Mode
Shift Buttons (2nd/3rd) per Row	None
Flip-flop 2nd/3rd for PGM/PST	OFF

attached macros

Previous Menu

Menu Lock   ↑   ↓   **Modify**

The menu permits personality settings for the panel and sidepanel (PC and display).

With the **Transfer** button, the settings can be saved (**Export**) on a diskette or loaded (**Import**) from a diskette.

| | | Import | Export | Transfer ▲ |
| Copy Personal Data | | | |
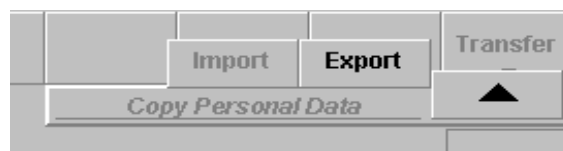
Panel   Index card for panel settings.

Panel	SidePane						

Setting	Value	
Beeper	ON	▲
Key Click	ON	
Low Light	0 %	
Trackball Speed	20 %	
Digipot Speed	20 %	
MaKE Memo Attachment Playmode	Function only	
MaKE Memo Attachment Blinking	OFF	
Enable Fast Copy	ON	
Source Hunting (AUX busses & DSK busses)	ON	
Aux Panel Store Functions	OFF	
Shift Button Mode (2nd/3rd)	Latch Mode	
Shift Buttons (2nd/3rd) per Row	None	
Flip-flop 2nd/3rd for PGM/PST	OFF	▼
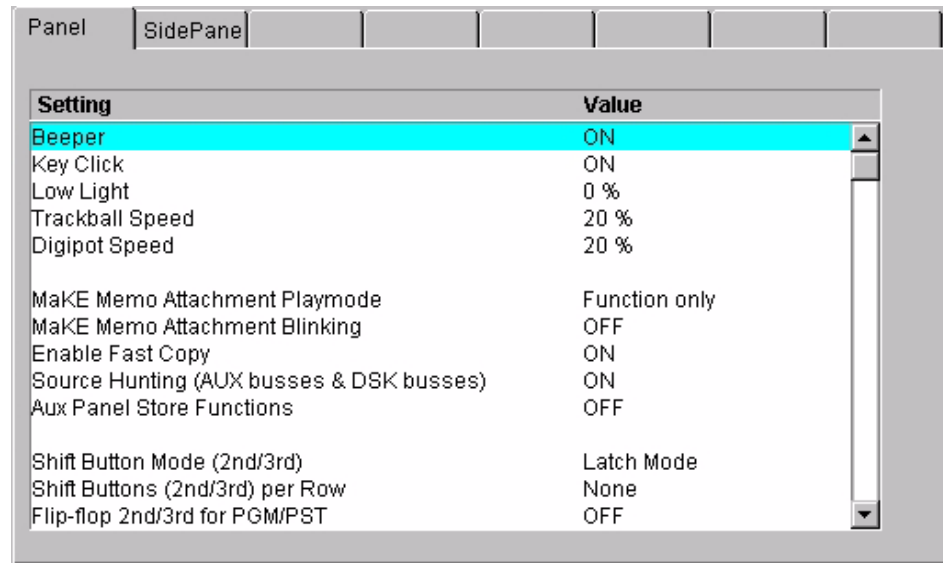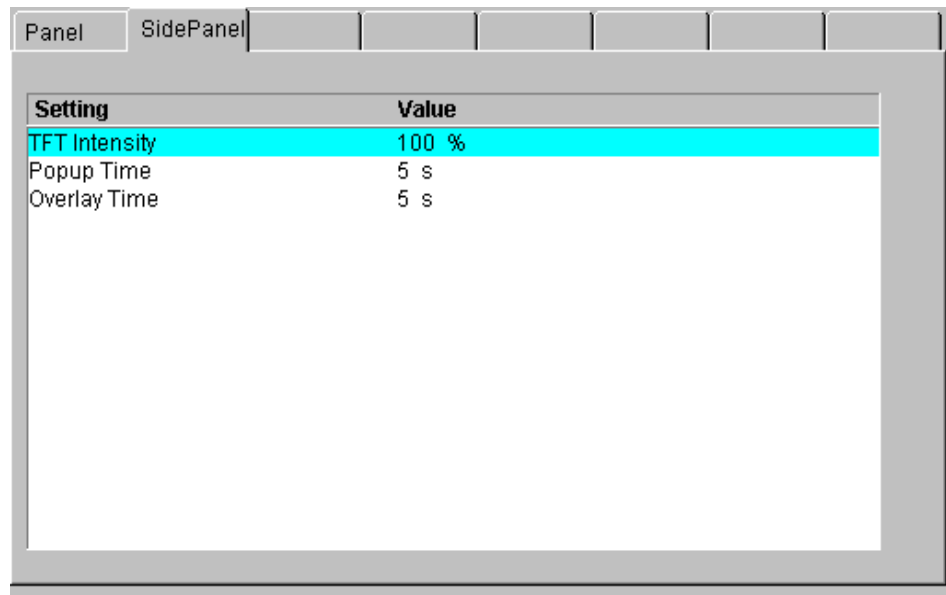
With button **Modify** the following settings are selectable:

Beeper	**On / Off**
Key Click	**On / Off**
Low Light	**0%**
Trackball Speed	**20%**
Digipot speed	**20%**
PP Key Level Follow BGD Level	**On / Off**
MaKE Memo Attachment Playmode	**Function only /**
	Function and Makros /
	Macros only
MaKE Memo Attachment Playmode	**On / Off**
Enable Fast Copy	**On / Off**
Source Hunting	**On / Off**
X-Bar to SP Delegation	**On / Off**
Trans DVE Menu Delegation	**On / Off**
Trans Key Menu Delegation	**On / Off**
Trans ME Menu Delegation	**On / Off**
Trans Wipe Menu Delegation	**On / Off**
X-Bar Aux Bus Delegation	**On / Off**
Aux Panel Store Functions	**On / Off**
SatPanel –> CP Delegation	**On / Off**
Switch PGM/PST Level	**On / Off**
CP –> SP Delegation	**On / Off**
SP –> CP Delegation	**On / Off**

SidePanel   Index card for sidepanel settings.

With button **Modify** the following settings are selectable:

TFT Itensity	**100%**
Popup Time	**5 s**
Overlay Time	**5 s**

3.18 TiM/E MEMO MENU

3.18.1 TiM/E MEMO SELECT MENU
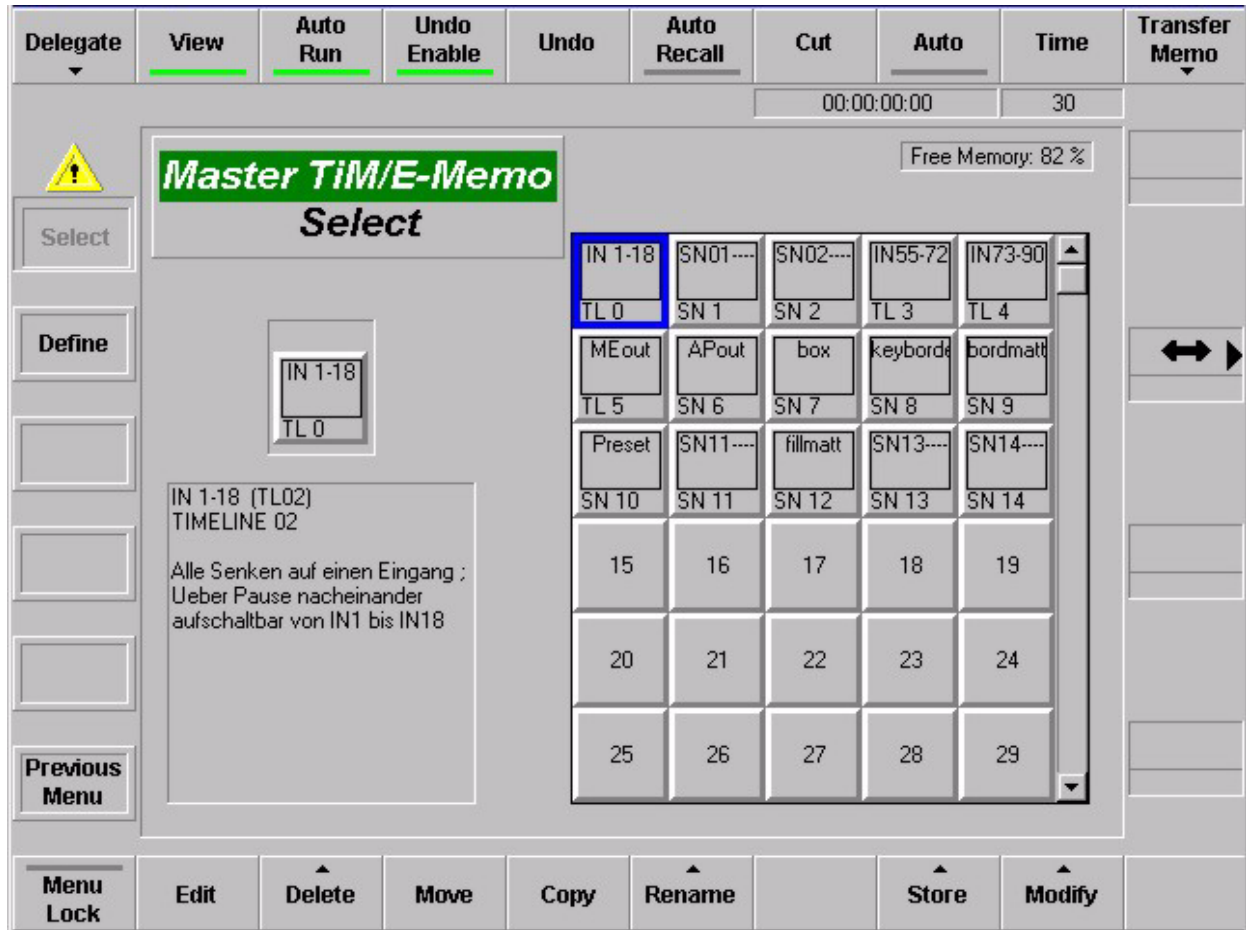
The Select menu enables to directly select the individual register 0 ... 99.

The info field on the left side displays the short name, the long name and the text of the register just marked with the cursor frame.

3.18.1.1 Dialog Buttons

Define   Selecting the **Define** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.18.1.2 Function Buttons

Delegate

If this button is pressed, the user can select another TiM/E Memo to go to. So it is possible to switch over to the PP, M/E1, M/E2, M/E3 or Master TiM/E Memo Select Menu.

Note – TiM/E Memo edit menu:

*If a M/E is in **Edit** mode and if the M/E changed with the **Delegate** button to a M/E which is in **Select** mode, the menu remains in edit mode and vice versa.*
*The M/E cannot be changed with the **TiM/E Memo** menu button on the right side of menu display.*

View

On: If the user is going to edit a timeline, then he will see the results of his modifications and cursor movement in the video, i.e. if a keyframe or snapshot object will be selected, it will be recalled and displayed in the video.

Off: If the user is going to edit a timeline, then he will not see the results of his modifications and cursor movement in the video, i.e. the state of any object and the video will not be affected.

Auto Run

When **Auto Run** is switched off, the timeline is played completely and only stopped when a "Wait" is inserted into the timeline.

When **Auto Run** is switched on, only the first keyframe of the timeline is recalled, thereafter the timeline is stopped until the user continues the timeline with Continue. Subsequently it continues running normally.

Undo Enable

If this button is pressed, the state before the last recall or timeline play is restored.

Undo Enable/Disable:
For special application, the Undo function can be disabled. If Undo disabled, no undo state is stored before snapshot recalls and playing timelines. Recalling the undo state is therefore not possible. The reason for disabling the Undo feature is, that it saves time before snapshot recalls.

Auto Recall

If this button is pressed, snapshots and timelines will be recalled / played as they were stored or edited, i.e. they will not be filtered through the currently adjusted define memo. The define memo is changed after a snapshot recall / timeline play to that define memo which is implicitly stored within snapshots and timelines.

Cut	Starts playing a selected timeline immediately.
	– If snapshot selected: Recall
	– If timeline selected: Timeline Play

Auto	If this button is pressed and a snapshot is selected, a dissolve operation with the Auto transition time for this snapshot will be done. If a timeline is selected and then the Auto button is pressed, the selected timeline will be played in the given Auto Time. While the dissolve or auto play operation the button LED is on. Timelines containing endless loops or waiting for an event (GPI, time) can't be played with Auto.

Time	If this button is pressed, the user can adjust the Auto Time for snapshot dissolves and timeline auto play and the default transition time for keyframes in timelines.

Transfer memo	If this button is pressed, the user can save single the contents (snapshot or timeline) of a registers **(Reg1 .. 99)** to a floppy disk **(FD)** or load datas into a register.
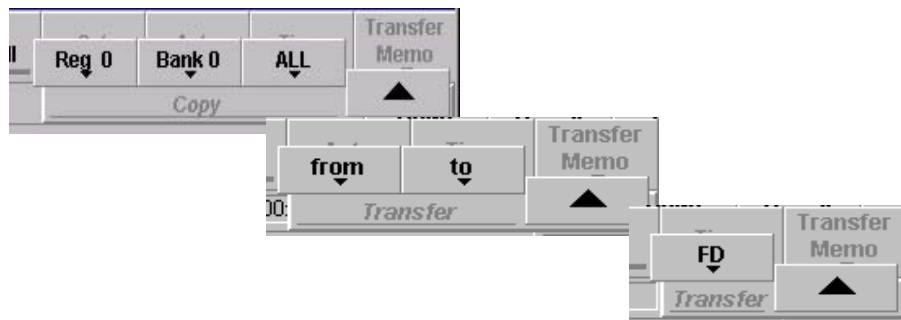
Menu Lock	Locks the current menu.

Edit	Selecting the **Edit** menu and enabled the edit function for the register selected with the blue cursor frame. For details refer to section **Edit Menu**.

Delete	Deletes the register selected with the blue cursor framer.

Move	Moves a snapshot from one register to another. If the destination register already contains a snapshot or timeline, both register contents will be changed.

Rename

Renames the currently selected register. The user can rename the 4, 8 and 20 character names and change the 256 character comment.

Change Name					Text
Normal	Short	Long	▼		
Protect			Rename		

Store

Stores the currently in Define Memo enabled entities to the selected (blue cursor frame) register as a snapshot.

Modify

Modifies a stored snapshot according to the currently defined Define Memo. The state of all currently in the Define Memo enabled entities will be changed in the selected snapshot to the currently adjusted state, e.g. if the border color of a wipe effect has to be changed from red to green in a already stored snapshot you have to select this snapshot, enable only the wipe in the Define Memo and adjust the mixer to the state where the border color is green. Then press **Modify**. The border color of this wipe now will be changed in the selected snapshot to green.

3.18.2 DEFINE MEMO MENU
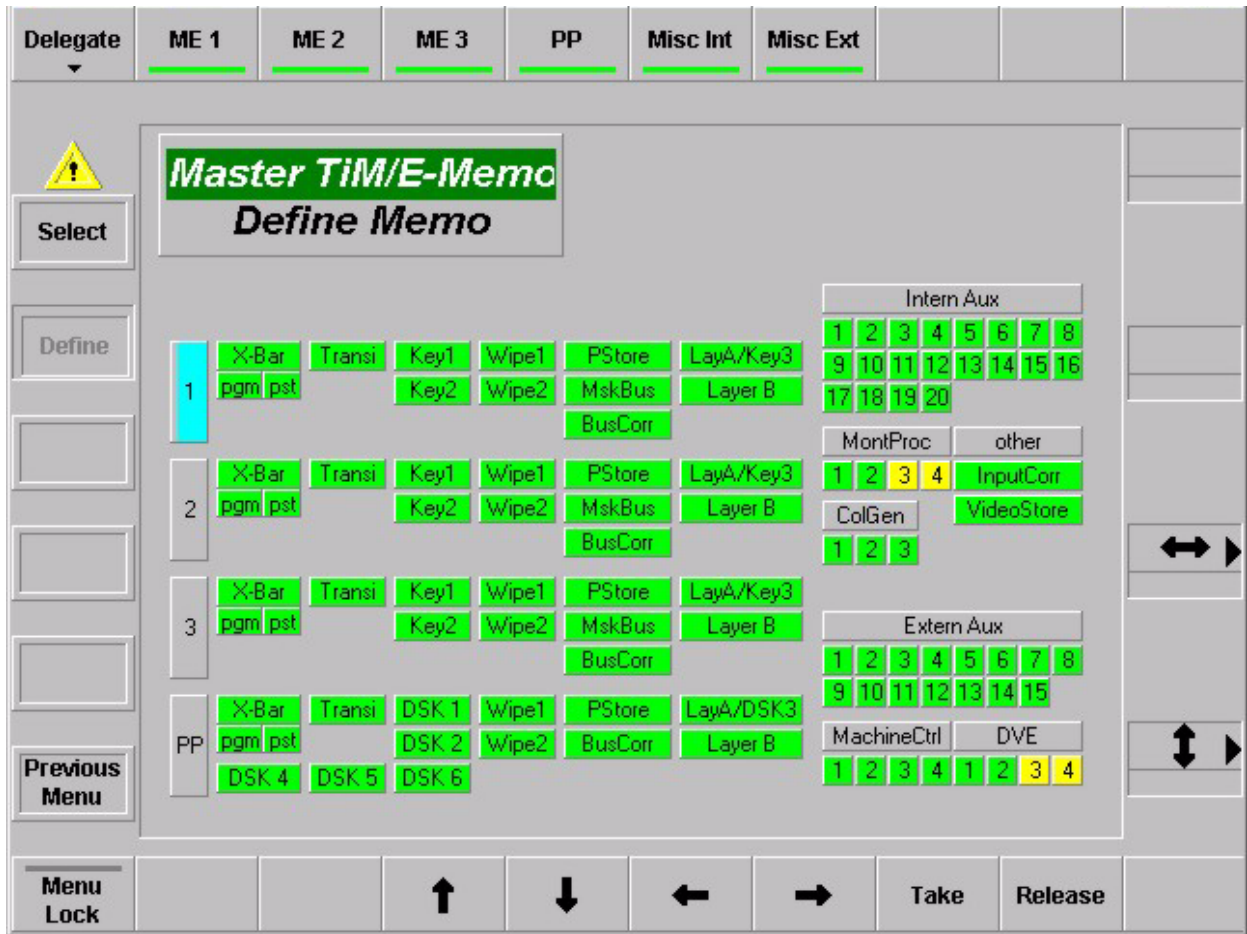
The menu indicates which switcher ressources are stored in snapshots and timelines. For this purpose, a symbolic representation of the switcher appears in the menu.

Blue:	Cursor position
Yellow:	Selectable switcher functions
Green:	Selected Switcher functions

Attention: Resource conflicts are possible. In the Define Memo menus of the M/E1..3 TiM/E Memo all resources not belonging to that M/E are "released" for default.

The **X-Bar** object in the menu **Define Memo** got the sub-entries **pgm** and **pst**.
Thus, PGM sources and PST sources can be selected individually.
The states of both are stored but only the activated bus will be recalled.
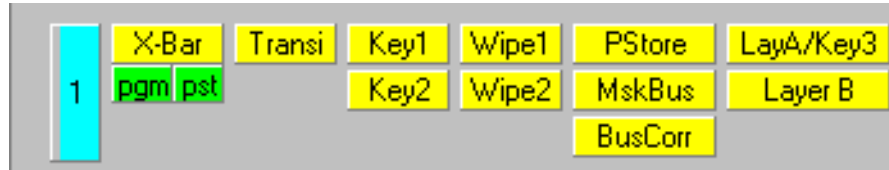
Example:

If PGM is disabled during **Recall**, the PGM row of the selected M/E is not affected
by the snapshot recall (or timeline).

It is not recommended, to disable only one bus (PGM or PST) during **Recall**, in
case of timelines that are including background transitions.

3.18.2.1 Dialog Buttons

Select Menu   Selecting the **TiM/E Memo Select** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

3.18.3 EDIT MENU
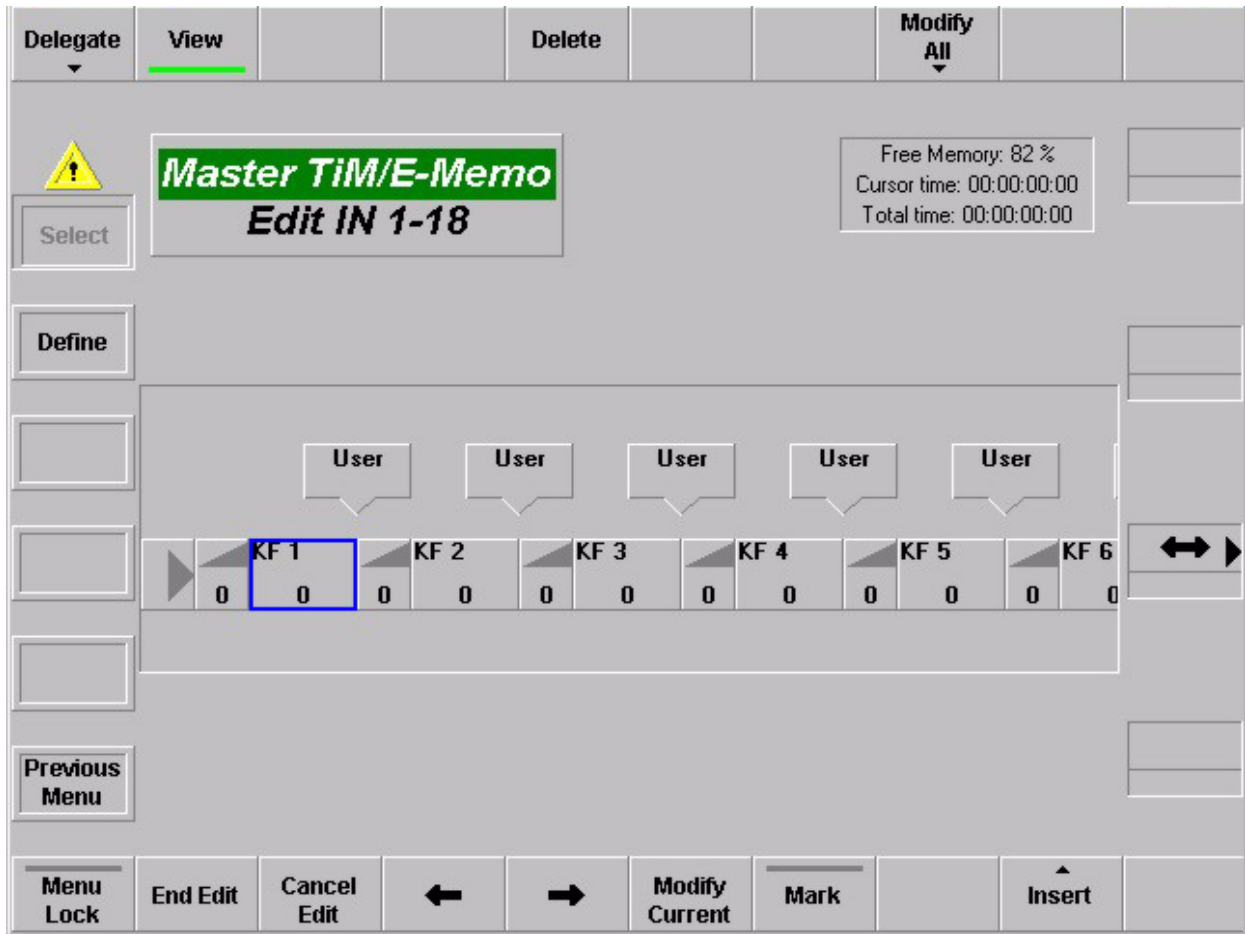
3.18.3.1 Dialog Buttons

Define   Selecting the **Define** menu.

Previous Menu   Return to the previous menu. For details refer to section ***Introduction.***

Note:

*If the edit mode is activated. The respective **Select** menu of the TiM/E memo cannot be selected.*

3.18.3.2 Function Buttons

View

On: If the user is going to edit a timeline, then he will see the results of his modifications and cursor movement in the video, i.e. if a keyframe or snapshot object will be selected, it will be recalled and displayed in the video.

Off: If the user is going to edit a timeline, then he will not see the results of his modifications and cursor movement in the video, i.e. the state of any object and the video will not be affected.

Delete

Delete the keyframe marked with the cursor.

Modify All

Selecting of the Modify All mode:

Modify All / Modify range
If is range is selected, the changes refer only to this area, otherwise the changes are carried out in the entire timeline.

Simple: Changes the parameters which can be adjusted with digipots and buttons absolutely on the adjusted value.

Advanced: The following functions change the keyframe contents:

Digipots Relative

Changes the parameters which can be adjusted with the digipots in a relative amount, e.g. color, brightness, pattern size, clip level, etc.

Digipots

Changes the parameters which can be adjusted with the digipots absolutely on the adjusted value, e.g. color, brightness, pattern size, clip level, etc.

Buttons

Changes the state of values which can be adjusted with buttons, e.g. crosspoints, key modes, wipe pattern, rotation on/off etc.

Exchange Buttons

This function changes only values which have a certain value. In order to set this value pressed previously the **Set KF Ref** button. Then enter the desired new value and press the Exchange Buttons button.

Example:

Exchange the circles in the time line through stars.

1. Selected wipe pattern no 119 (circle).

*2. Press **Set KF Ref**.*

3. Selected wipe pattern no. 131 (stars).

*4. Press **Exchange Buttons**.*

The following functions do not change the keyframe contents:

Transition –> Duration

Changes all transition times.

Transition –> Type

Changes the transition type (Linear / S-Linear).

Hold Time

Changes the hold time of the keyframe.

End Edit   Close the edit mode with saving the modification.

Cancel Edit   Cancel the edit mode without saving.

Left / Right Cursor   Navigate the cursor inside the timeline

Modify Current　　　　The parameter listbox appears for the current selected object. If it is a keyframe, the parameter listbox shows the entry **Store Keyframe [Yes/No]**. The default value depends on whether **View** On or Off is selected.
Store Keyframe [Yes] means that the keyframe data of the object are also stored when the listbox is closed with **OK**. I.e. there is a simple possibility to change the keyframe data.

When the listbox is opened, the cursor can be set with the mouse or the digipot to other objects in the timeline. The listbox then shows the state of the current selected object.

Double-clicking an object with the mouse opens the listbox just the same as the button **Modify Current**.

Mark　　　　This button enables selection of a range in the timeline. If a range is selected, the button **Modify all** changes its inscription into **Modify Range**. All modifications are performed in the selected range only.

Insert　　　　Insert an object in a timeline. For details see below.

Current:　　　　Insert a keyframe with the actual settings

Stored:　　　　Insert a stored **Snapshot** or **Sequence**.
　　　　　　　　Enter the desired number**.**

Wait:　　　　Insert a wait object **GPI, User, TOD, Hold**.

Trigger:　　　　Insert a trigger object **GPO, DVE, Machine, Memo, MaKE, PBus.**

Loop:　　　　Insert a loop object **Begin, End**

Note to insert a PBus Trigger/Register:

Under Insert > Trigger > PBus, a Trigger PBus command or a PBus Register command can be inserted into the timeline.

PBus Trigger
The listbox represents the machines and the meaning of the trigger for the machines. The first line in the listbox shows the numeric value of the trigger. All machines get the same trigger whose meaning, however, can be different for the individual machines. If the trigger is changed for one machine, in general, the display of the other machines is also changed as well as the numeric value of the trigger.

PBus Register
In the first line, that register can be selected which has to be recalled. It shows the machines. For each machine, it can be individually selected whether the recall has to be performed or not.

3.18.3.3 Object overview and parameter entry

The following section gives an overview on the objects with their parameters which can be inserted into a timeline.
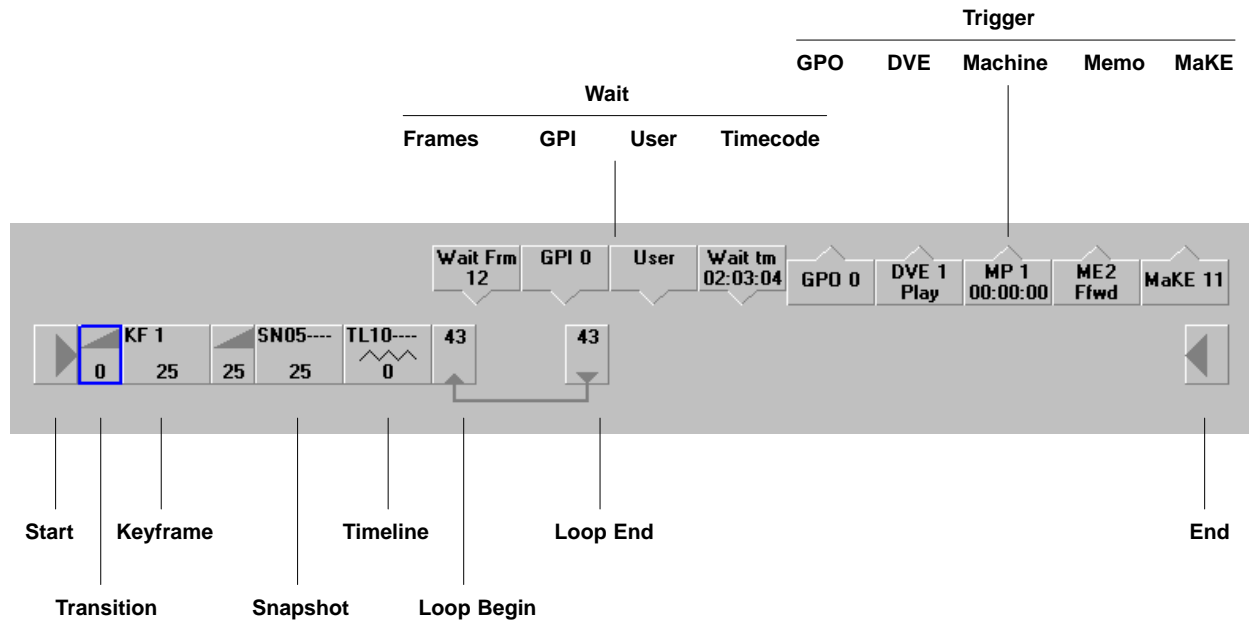
Start   Object is always available. Cannot be erased or inserted.

Transition   Is automatically inserted before keyframe or snapshot.

Keyframe   When inserting, also the parameters of the associated transition can be indicated.

                       Parameters: **Duration**
                                      Transition Type (linear, s-linear)
                                      Holdtime

External Snapshot When inserting, also the parameters of the associated transition can be indicated.

                       Parameters: **Snapshot No.**
                                      Holdtime

Timeline   Parameters: **Timeline No.**

Loop Begin   The loop can be changed on the **Loop Begin** as well on the **Loop End** symbol

                       Parameters: **Loop count**

| *Wait Frames* | Parameters: | **Frames** |

| *Wait GPI* | Parameters: | **GPI No.** |

| *Loop End* | | The loop can be changed on the **Loop Begin** as well on the **Loop End** symbol |
| | Parameters: | **Loop count** |

| *Wait User* | Parameters: | **–** |

| *Wait TOD* | Parameters: | **Time of Day** |

| *Trigger GPO* | Parameters: | **GPIONo.** |

| *Trigger DVE* | Parameters: | **Machine [1]**
Commands: Play, Stop, FFWD, FREW [1] |

| *Trigger Machine MP* | Parameters: | **Machine [1]**
Commands: Play, Stop, FFWD, FREW, Cue In, Cue Out, Goto, Variable [1]
Speed: only with command "Variable" [2]
Timecode: only with command "Goto" [2] |

| *Trigger Memo* | Parameters: | **Machine [1]**
Commands: Play, Stop, FFWD, FREW, Goto, Variable [1]
Speed: only with command "Variable" [2]
Timecode: only with command "Goto" [2]
Default Register [yes/no]
"Yes" means that the command is applied to the register just being selected in the TiM/E Memo control field.
Register No [0 ... 99]
"No" means that the command is applied to the register indicated under the register no. |

[1] The parameter is already defined via the overlay menu.
[2] Entry only possible with certain commands

Trigger *P-Bus Trigger*	Parameters:	**Trigger No** **Machine 1: recall, no recall** **Machine 24: recall, no recall**

Trigger *P-Bus Register*	Parameters:	**Register No** **Machine 1: recall, no recall** **Machine 24: recall, no recall**

Trigger MaKE Memo	Parameters:	**Memo No.**

End	Object is always available. Cannot be erased or inserted.

3.19 AUX MENU

AUX

Aux Bus	Input	Used as	Aux Bus	Input
AUX 1	IN14		Ext AUX 1	EX22
AUX 2	BLCK	DVE 1 Video Send	Ext AUX 2	EX0_
AUX 3	BLCK	DVE 1 Key Send	Ext AUX 3	EX4_
AUX 4	BLCK		Ext AUX 4	EX4_
AUX 5	BLCK	DVE 2 Video Send	Ext AUX 5	EX0_
AUX 6	BLCK	DVE 2 Key Send	Ext AUX 6	EX21
AUX 7	BLCK		Ext AUX 7	EX0_
AUX 8	BLCK		Ext AUX 8	EX95
AUX 9	BLCK		Ext AUX 9	EX4_
AUX 10	BLCK		Ext AUX 10	EX0_
AUX 11	BLCK		Ext AUX 11	EX21
AUX 12	BLCK		Ext AUX 12	EX0_
AUX 13	BLCK		Ext AUX 13	EX16
AUX 14	BLCK		Ext AUX 14	EX95
AUX 15	BLCK		Ext AUX 15	EX0_

Main

Previous Menu

Menu Lock

↑ ↓ Modify ↑ ↓ Modify

Int. Aux

Ext. Aux

The Aux menu enables to select the sources on the individual internal and external aux busses. This is the only way to select aux sources from a sidepanel without pushbuttons (e.g. with DD35 GUI PC (Network Control Station).

Select the aux bus with the cursor button and press **Modify.** Then select the desired aux source in a popup menu.

Input					
1 aaaa IN01		23 IN23 IN23		45 IN45 IN45	
2 IN02 IN02		24 IN24 IN24		46 IN46 IN46	
3 aaaa IN03		25 IN25 IN25		47 IN47 IN47	
4 IN04 IN04		26 IN26 IN26		48 IN48 IN48	
5 IN05 IN05		27 IN27 IN27		49 IN49 IN49	
6 IN06 IN06		28 IN28 IN28		50 IN50 IN50	
7 IN07 IN07		29 IN29 IN29		51 IN51 IN51	
8 IN08 IN08		30 IN30 IN30		52 IN52 IN52	
9 IN09 IN09		31 IN31 IN31		53 IN53 IN53	
10 IN10 IN10		32 IN32 IN32		54 IN54 IN54	
11 IN11 IN11		33 IN33 IN33		55 IN55 IN55	
12 IN12 IN12		34 IN34 IN34		56 IN56 IN56	

4. SETUP AND MAINTENANCE

4.1 CLEANING THE CONTROL PANEL

The surface of the control panel is covered with a plastic foil. Should dirt be on surface and keyboard, in form of adhesive remainders, dust, stains or similar, they have to be removed with a clean cloth and some spirit or another mild cleaning agent such as window cleaner.
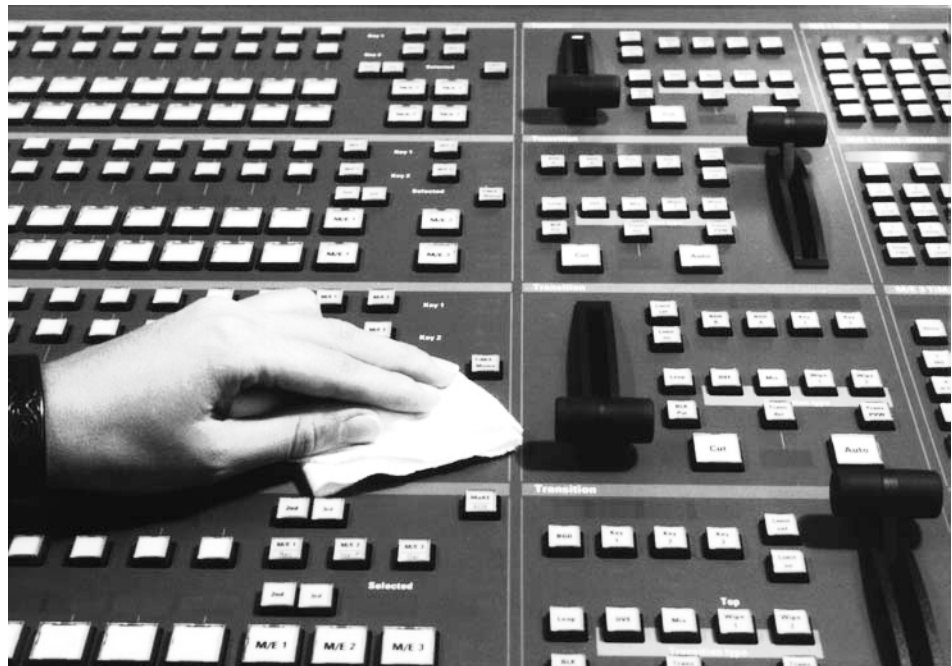
⚠️ **Note!**

For cleaning, do not use any cleaning agents with solvent or cleaners with scouring powder or polishing particles. They may damage the plastic surface.

4.2 PERFORMING A PANEL RESET
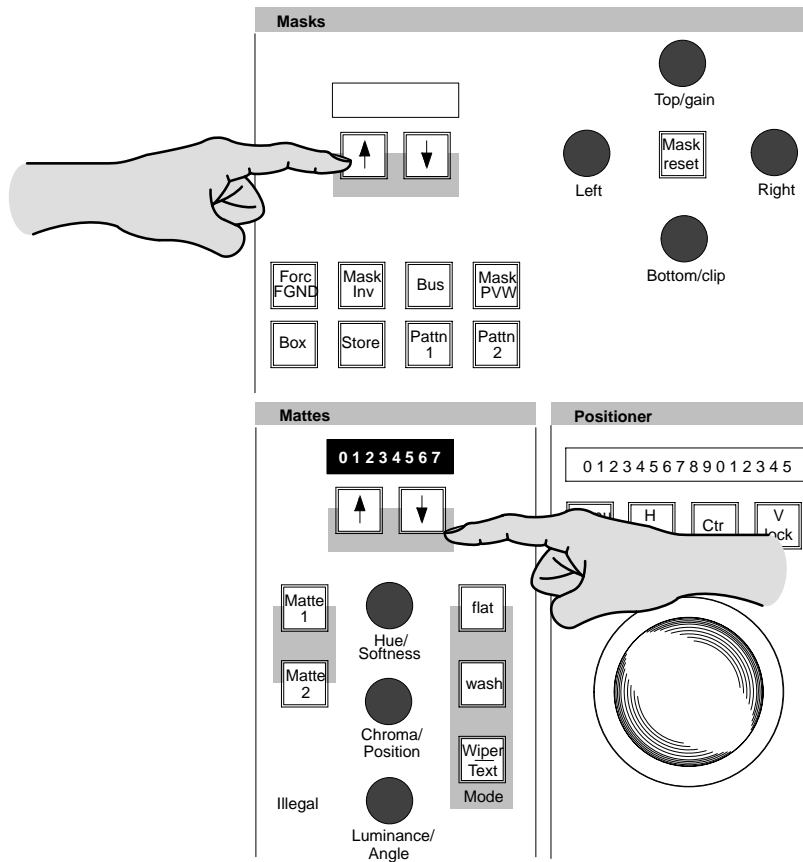
Reset   For resetting the panel controller please press and hold down the up/down buttons
Panel Controller   and then press the up button in the masks panel section

Mattes panel   **Masks panel**
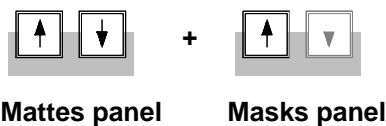
Reset   For resetting (rebooting) the panel PC motherboard please press and hold down
Panel PC Board   the up/down buttons and then press the down button in the masks panel section.

Mattes panel   **Masks panel**
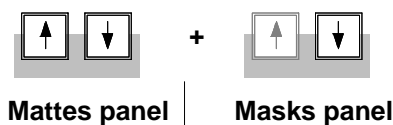
4.3 RUNNING PANEL TESTS

There are four panel tests:

- Test 1: Button/Lamp, Fader and Digipots

- Test 2: Display, Beep and Lowhigh

- Test 3: OnAir Highlight

- Test 4: Mainframe Connection

4.3.1 STARTING THE TEST

To start the panel tests use the button in the **Mattes** panel section or in the **Aux** panel section
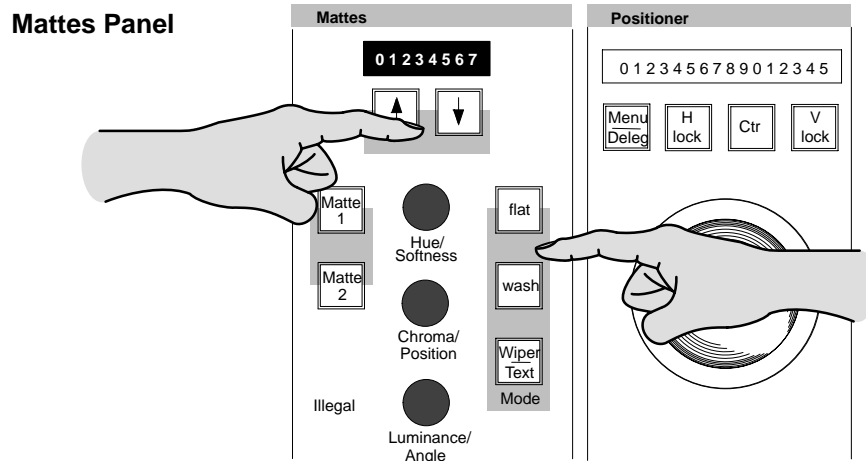
Mattes Panel

Exit Test mode by pressing the same button again that you have pressed when you entered the current test mode.

Aux Panel

M/E Delegation

M/E1	M/E2	M/E3	P/P
M/E1	M/E2	M/E3	
M/E1	M/E2	M/E3	P/P
M/E1	M/E2	M/E3	P/P
On air	On air	On air	On air
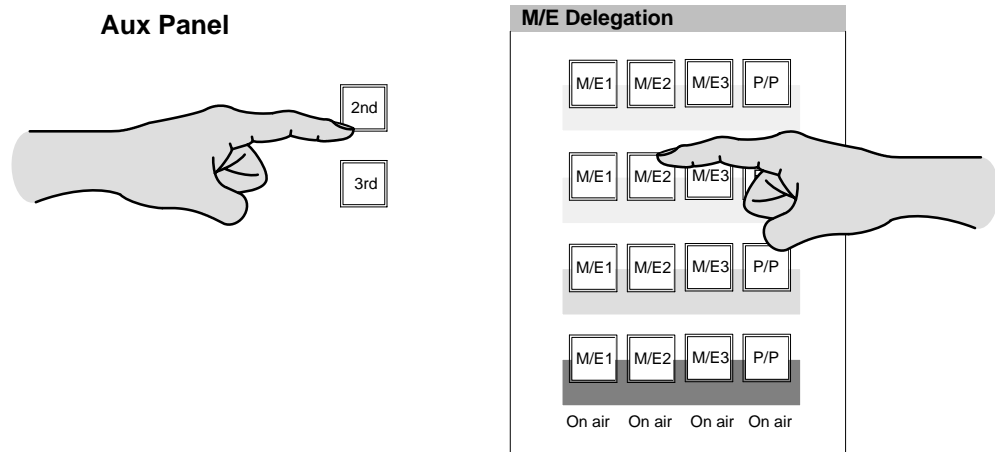
2nd	**+**	3rd	**+**	Button in P/P row	**= Test 1**
2nd	**+**	3rd	**+**	Button in M/E1 row	**= Test 2**
2nd	**+**	3rd	**+**	Button in M/E2 row	**= Test 3**
2nd	**+**	3rd	**+**	Button in M/E3 row	**= Test 4**

Exit Test mode by pressing the same button again that you have pressed when you entered the current test mode.

4.3.2   TEST 4

The test shows in the display of the Master TiM/E panel section the last byte of the IP address of the connected mainframe (EBox).

4.4 LOCAL PANEL SETUP

With the setup function you can set system parameters of the switcher panel and easily change them for a desired configuration.
Control is made via the 16-digit display on the Master TiM/E panel section and the buttons near by.

4.4.1 ENABLE THE PANEL SETUP

Enable the panel setup mode by setting the DIL switch **T15/3** (RY 2100) or **T28/3** (RY 2370) on the panel controller board to **ON** (upper position) :

Example:
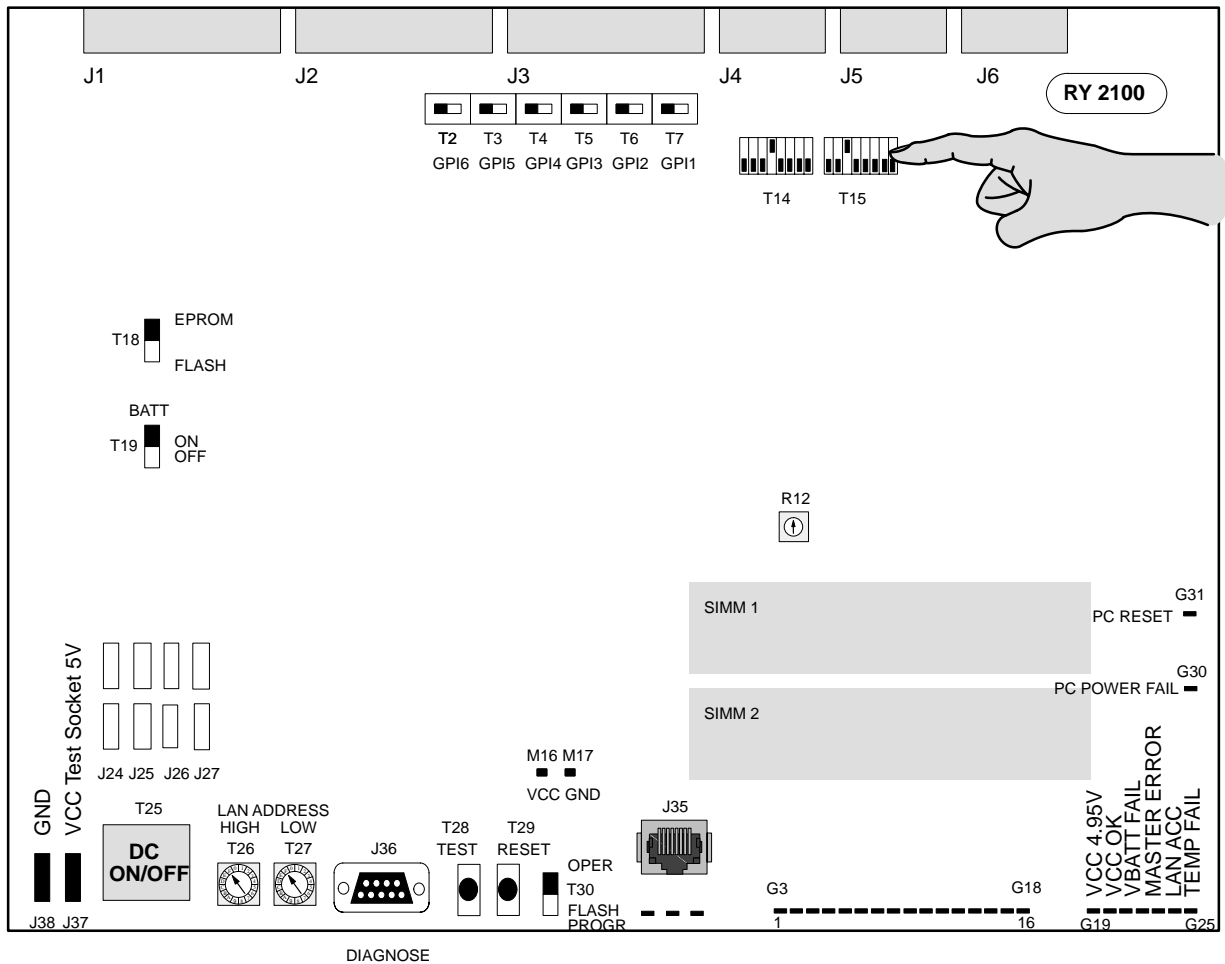
4.4.2 SWITCHING ON THE SETUP MODE

Note: Enabling the setup refer to section 4.4.1

```
┌─────────────────────────────────┐
│ Master TiM/E Memo               │
│ ┌─────────────────────┐ ┌────┐  │
│ │ Start          KF   │ │T-Dur/d│ │
│ └─────────────────────┘ │Free%│  │
│                                 │
│ ┌─────┐ ┌─────┐ ┌─────┐ ┌────┐  │
│ │Store│ │Bank │ │Edit │ │Key/│  │
│ └─────┘ └─────┘ └─────┘ │Inhib│  │
│                                 │
│                         ┌────┐  │
│                         │BGD#│  │
│                         │Inhib│ │
│ ┌────┐┌────┐┌────┐┌─────┐       │
│ │ 7  ││ 8  ││ 9  ││Bank0│       │
│ │INS ││MOD ││DEL ││GPO  │       │
│ └────┘└────┘└────┘└─────┘┌────┐ │
│ ┌────┐┌────┐┌────┐┌─────┐│Undo│ │
│ │ 4  ││ 5  ││ 6  ││Bank1│└────┘ │
│ │H TM││TRTM││TRAJ││SNAP │       │
│ └────┘└────┘└────┘└─────┘┌────┐ │
│ ┌────┐┌────┐┌────┐┌─────┐│Cut │ │
│ │ 1  ││ 2  ││ 3  ││Bank2│└────┘ │
│ │ ← ││VIEW││ → ││SEQ  │       │
│ └────┘└────┘└────┘└─────┘┌────┐ │
│ ┌────┐┌────┐┌────┐┌─────┐│Auto│ │
│ │Clear││ 0 ││Enter││Reloc│└────┘ │
│ │FREE ││LOOP││NEXT ││+/-  │      │
│ └────┘└────┘└────┘└─────┘       │
│                                 │
│ ┌───┐┌───┐┌───┐┌──┐┌───┐┌───┐   │
│ │M/E1││M/E2││M/E3││P/P││Misc││Misc││
│ └───┘└───┘└───┘└──┘│Int ││Ext ││
│                    └───┘└───┘   │
└─────────────────────────────────┘
```
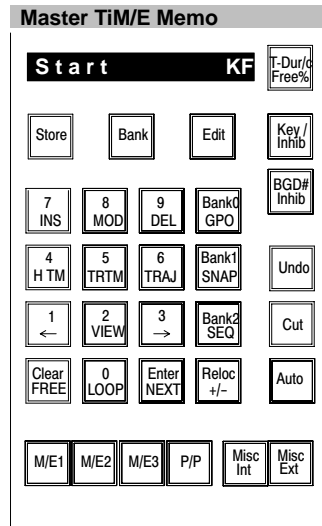
The settings for the Setup Items are activated by simultaneously pressing the **Store** and **T-Dur/Free%** buttons in the TiM/E-Memo panel.

The setup settings are shown on the display in the Master TiM/E Memo panel section.

Navigate and enter settings in the setup items with the following buttons:

Store	Select previous item
Bank	Select next item
Edit	Goto higher level or highest level exit.
T-Dur	Select previous option
Key Inhib	Select next option
ENTER	Activate actual selection
0 ... 9	Enter numbers

Note: Only the illuminated buttons can be used for operation.
*Some items have to be confirmed with **Enter** and some items*
*expect **Key/Inhib** "next option" or **T-Dur** "previous option".*

4.4.3 SETUP MAIN LEVELS

Press [Store] **&** [T-Dur/d Free%] **to enter setup!**

[Store]

[Bank]

←

→

| LockPanel |
| ▶ EBox level |
| ▶ InstallPanel level |
| ▶ ConfigPanel level |
| ▶ Panel level |
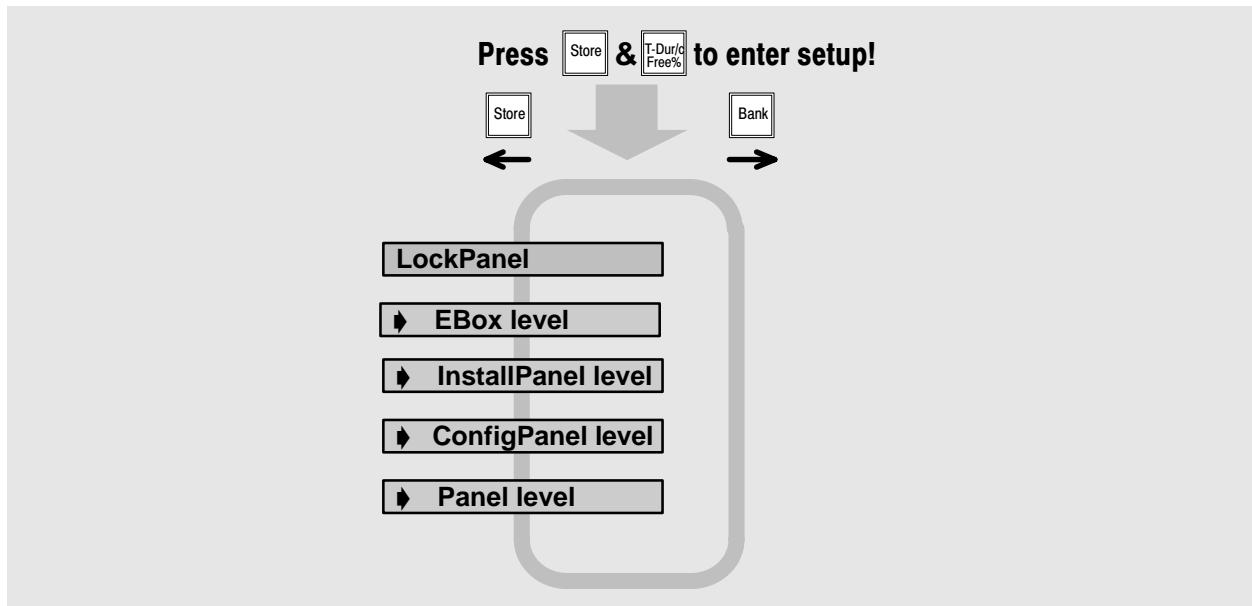
4.4.4 SETUP ITEMS

There are four main groups where the operator can make his setup settings: the Setup group **Panel**, **Configuration Panel**, **Install Panel** and the **E–Box**. Each main group consists of diverse setup items. In Setup, the panel can also be opened and locked.

L o c k P a n e l

The numeric code "3511" enables locking the panel.

Confirm item with **Enter**.

U n l o c k P a n e l

The numeric code "3511" enables unlocking the panel.

Confirm item with **Enter**.

4.4.4.1   Panel Setup Items

Using the buttons **Store** and **Bank** select the Setup group **Panel** and confirm with **Enter**. The display shows the first Setup item. By pressing the buttons **Store** or **Bank**, the display changes to the further Setup items.

M E D e l – c p = P P : P P	Panel M/E delegation With **Bank** and **Store** buttons we select the physical M/E in the panel. With **T-Dur/Free%** and **Key/Inhib** buttons we select the physical M/E in the E-box. Confirm item with **Enter**. **Options: PP, ME1, ME2, ME3, *****
P g m P s t L v S w a p :	In Shift Button Per Bus Row mode: 2nd/3rd level state follows flipflop of buses. Options: **yes / no**
S o u r c H u n t i n g	Automatically select bus row page with active source when activating an AUX bus or DSK delegation Options: **yes / no**
L o w L i g h t	Define low light level in %. Confirm item with **Enter**.
B e e p e r	Adjust the beep for the digipots. Options: **on / off**
K e y C l i c k	Enable / disable key click Options: **on / off**

R S a t M a c

Select the macros with **T-Dur/Free%** and **Key/Inhib** for the corresponding RSATx panel.

Confirm item with **Enter**.

Examples:
R S a t M a c : **1** _ m e 1 K y 1
transfer M/E 1 Key 1 to the **RSAT1** panel.

R S a t M a c : **2** _ m e 1 K y 1
transfer M/E 1 Key 1 to the **RSAT2** panel.

R S a t L o a d U s e r

Load user RSAT file no **XXX.**

Confirm item with **Enter**.

R S a t S a v e U s e r

Save user RSAT file no **XXX.**

Confirm item with **Enter**.

R S a t K i l l U s e r

Delete user RSAT file no **XXX.**

Confirm item with **Enter**.

R S a t C l e a r

Clear the RSAT panel settings.
The macro settings in RSATx are deleted, but the displays in the RSATx are preserved.
No files will be deleted!

Confirm item with **Enter**.

F a d e r T r a n s P P

Disable / enable fader.
First select the M/E with the buttons **Store** and **Bank**, subsequently enable or disable the fader of the M/E with the buttons **T–Dur/Free%** and **Key/Inhib**.

Options: **TransPP, TransME1 .. ME3, MachCtl**

D i g i p o t G a i n : %

Using the key pad or the buttons **T–Dur/Free%** and **Key/Inhib**, adjust the sensitivity of the digipots.

Confirm item with **Enter**.

T B a l l G a i n

Using the key pad or the buttons **T–Dur/Free%** and **Key/Inhib**, adjust the sensitivity of the trackballs.

Confirm item with **Enter**.

M e m o – c p = P P :

M/E TiM/E Memo delegation.
Delegate the running application ("App0" Master TiM/E-Memo) to M/E 1 ... M/E 2, PP
Example:
Memo – cp = ME1 : App0
With this setting, the Master TiM/E Memo is passed to the M/E 1 TiM/E Memo.
Factory setting: **APP0**
Applications **APP1 ... 4** have no function.

F a s t C o p y :

Copying / transfer complete M/E setups into another M/E
Example:
Transfer M/E 1 setups to M/E 3
Press the **Transdur** button of M/E 1 (hold down), subsequently press the **Transdur** button of M/E 3 and wait until a beep will confirm the copy.

Options: **on / off**

X B a r M e m o – M E 1 :

Starting a timeline or snapshot from the **Xbar**. When **on** is selected, the **TiM/E–Memo** button has to be active.

Options: **on / off**

M a k e B u A t t a c h C l r :

Clears all attached macros.

Confirm item with **Enter**.

M a k e B u A t t P l a y :

Make Memo Attachment Playmode
Attached macro button shows
Options: **F** = Function only
FM = Function and Macros
M = Macros only

Confirm item with **Enter**.

P P K e y F l w B g d L e v :

PP Key Level Follow BGD Level
If Yes is selected, the key bus level
(2nd, 3rd) is following the program bus
level.

Options: **yes / no**

A s y n c B l i n k :

The blinking indication of asynchron signals can be switched off.

Options: **on / off**

S h i f t M o d e :

In shift mode "**LATCH**", the level buttons
can be switched over from 2nd to 3rd.
In shift mode "**MOMENT**", the level buttons
have to be held down to make any selection.

Confirm item with **Enter**.

4.4.4.2 Configuration Panel Setup Items

S h f t B u P e r B u s

Individual 2nd/3rd buttons per M/E bus row.

Options: **OFF / LFT / RGT / L+R**

Confirm item with **Enter**.

M a c r o E d t B t n s

In **"on"** state, the right three button in the macro row are used for makro editing:
REC / INS–P/ DEL. (for RPS35–2S panel)
Options: **on, off**

M a c r o B l i n k i n g

In **"on"** state, all buttons attached with macros flashs all two seconds.
Options: **on, off**

S i m c s t U P K M o d

Options: **LTC** = Latch, Simulcast–UPK's works in "toggle mode. First pressing "on", second pressing "off".
MOM = Momentary, Simulcast–UPK's are only active during the button is pressed.

O n A i r L o g o

Define display mode of overall DD logo.

Options: **On** = Logo always lit
Off = Logo off
OnAir = Logo shows the OnAir information

I n i t A s s i g n

Confirm item with **Enter**.

Options: **Black left, Black right,
Row All, Row aux,
Key backround,
xxx = all none**

I n p u t A s s i g n : . . . .

Any input button pressed in the crossbar / Aux groups will take the shown input. Select options with **Key Inhib** button.

4.4.4.3 Installation Panel Setup Items

P a n e l U P K

Define user programmable keys per M/E or P/P.

Changeable buttons:
LimSet / **LimOn** / **DVE** / **MIX** / **WIPE1** / **WIPE2** / **Bk Pst** / **Reloc** / **Loop** / **TrPVW** / **NTBgB** / **NTBgA** / **NTKe1** / **NTKe2** / **NTKe3** / **UPL00** / **UPL01** / **UPR00** / **UPR01** **UPR02** / **UPR03** / **UPR04** / **UPR05** / **UPR06** / **UPR07** / **UPR08** / **UPR09** / **UPR10** / **UPR11** / **TMemo** / **KB3/4**

Options:	**Reloc / UPS / R99 / GP8...1 / DVE / ADD / WP2 / WP1 / LON / LST /*** / DEF / TEA–3 / VF4..1 / AK3..1 / MIX / NTBgA / NTBgB**
/ NTKe1	**/ NTKe2** / **NTKe3** / **TrPVW** / **FtbCu** / **FtbAu** / **BLK PST**

Meaning:	**DEF**	=	Default
	***	=	none
	LST	=	Limit Set
	LON	=	Limit On
	WP1	=	WP1 transition type
	WP2	=	WP2 transition type
	ADD	=	ADD transition type
	DVE	=	DVE transition type
	GP1..8	=	trigger GP Out 8..1
	R99	=	recall 99
	UPS	=	user preset
	RLC	=	relocate
	TM1	=	Next Trans Misc 1
	TM2	=	Next Trans Misc 2
	TK3	=	Next Trans Key 3
	MIX	=	Mix
	AK1	=	Auto Key 1
	AK2	=	Auto Key 2
	AK3	=	Auto Key 3
	VF1	=	V–Fade Selections
	VF2	=	V–Fade Selections
	VF3	=	V–Fade Selections
	VF4	=	V–Fade Selections
	S–M	=	SimulCast Master
	S–S	=	SimulCast Slave
	SBA	=	Show Macro Button Attachments
	LOP	=	Loop
	TPV	=	Transition preview
	CK1	=	Cut Key 1
	CK2	=	Cut Key 2

CK3	=	Cut Key 3
TBB	=	Next Trans Bgd B
TBA	=	Next Trans Bgd A
TK1	=	Next Trans Key 1
TK2	=	Next Trans Key 2
TAB	=	Next Trans Bgd A (Bgd B in lay. Mode)
TK4	=	Next Trans Key 4
AK4	=	Auto Trans Key 4
CK4	=	Cut Key 4
MEM	=	X–Bar Time Memo
K34	=	X–Bar Key Bus 3/4
TE1	=	Next trans. Ext DSK 1
TE2	=	Next trans. Ext DSK 2
TE3	=	Next trans. Ext DSK 3

T r n s C u t R i g h t

Exchange CUT and AUTO buttons in transition modules.

Options: **yes / no**

P g m P s t M o d e :

Exchange PGM and PST bus rows
PGM/PST bus position:
GER   PST above PGM
DEF   PGM/PST follow Fader Direction
JAP   PGM above PST

D s k T r n s D e l

Define operation mode for direct DSK transition buttons.

Options: **2ndLv / 2ndFu**
Access to DSK 4...6 via shift button 2nd DSK / direct access to DSK1..6, access to T-Dur and Couple via shift button 2nd function.

F a d e A d j

Adjustment of the fader end-position
1. Fade Adj: Upper
   Move all faders to the upper end-posi–tion and confirm item with enter.
2. Fade Adj: Lower
   Move all faders to the lower end-posi–tion and confirm item with enter.

G a n g M o d e S e l : A

Enable / disable the Gang mode for the machine control.

Options: **A**, **B** (B is recommended)

S i m u l c a s t :

The Simulcast mode should cause a control unit of the DD35/XtenDD or HD to control also a second Mainframe (Slave) beside the selected Mainframe (Master). It is the aim to synchronously produce a SDTV broadcast also in HDTV as far as possible.

Options: **Master, Slave, Both, Def**

S i m u l c a s t A d r :

Enter the IP address of the second mainframe.

Confirm with **Enter**.

D S K D e l E n a b l e :

Enables the DSK delegation with keys from other M/Es. The complete key control from the corresponding key will be delegated to the DSK panel. That means, that all key settings can be done in the DSK panel, for instance a luminance key or a mask key.

Options: **yes** / **no**

Note: Only available from software version 3.X.X.

D S K 1 D e l e :

DSK (1-8) delegation with keys from other M/Es
With **Bank** and **Store** buttons we select the physical DSK in the panel.
With **T-Dur/Free%** and **Key/Inhib** buttons we select the physical key of the M/E in the E-box.
Example:
D S K 4 D e l e : M E 3 K e y 1
transfer M/E3 key 1 to the DSK 4

Confirm item with **Enter**.

Note: Only available from software version 3.X.X.

K e y D e l O r d e r :

Order of the Key Deligation buttons in the Keyers section M/E1–3

Options: **BA12** = standard (default)
            1234 = recommended for
                        XtenDD

4.4.4.4   E-Box Setup Items

C o l o r L i m i t O n

Enable / disable the color limiter.

Options: **on / off**

C o l o r L i m i t

Define color limiter level in %.

Confirm item with **Enter**.

V S

Selection of the different HD standards.

Options: **1920x1080_60i (interlace)**
1920x1080_59i
1920x1080_30p (progresive)
1920x1080_29p
1920x1080_50i
1920x1080_25p
1920x1080_24s
1920x1080_23s
1920x1080_24p
1920x1080_23p
1280x720_60p
1280x720_59p
720x525_59i
720x625_50i
automatic

* Note:
Only selectable with HD mainframes.

Confirm item with **Enter**.

S y n c I n p :

Selection of analog and digital sync pulses.

Options: **analog, digital**,
analog RP154, reserved

Note:
Only selectable with HD mainframes.

Confirm item with **Enter**.

E x t D s k R e s e t

Confirm item with **Enter**.

Options: **Ext DSK 1**
(Ext DSK 1 ... Ext DSK 3)

4.4.4.5 Setup Items Structure

Press [Store] & [T-Dur/d Free%] to enter setup!

[Store] ← LockPanel → [Bank]

♦EBox   ♦Panel
♦InstallPanel   ♦ConfigPanel

♦EBox [Enter NEXT]

[Store] ← ColorLimit: On/Off → [Bank]

ExtDskReset   ColorLimit: %
*SyncInp: VS: Automatic
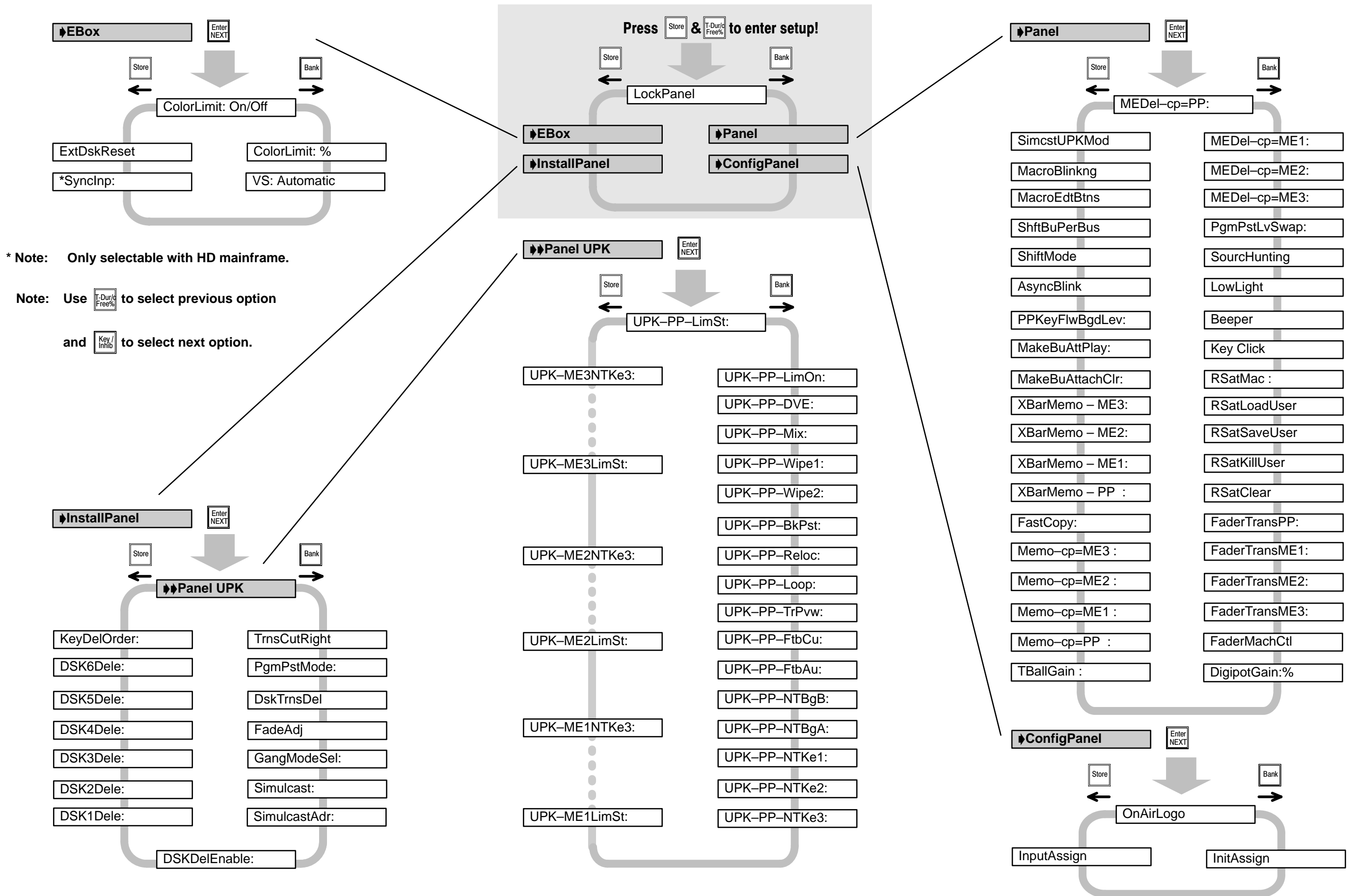
* Note: Only selectable with HD mainframe.

Note: Use [T-Dur/d Free%] to select previous option

and [Key/ Inhib] to select next option.

♦InstallPanel [Enter NEXT]

[Store] ← ♦♦Panel UPK → [Bank]

KeyDelOrder: TrnsCutRight
DSK6Dele: PgmPstMode:
DSK5Dele: DskTrnsDel
DSK4Dele: FadeAdj
DSK3Dele: GangModeSel:
DSK2Dele: Simulcast:
DSK1Dele: SimulcastAdr:

DSKDelEnable:

♦♦Panel UPK [Enter NEXT]

[Store] ← UPK–PP–LimSt: → [Bank]

UPK–ME3NTKe3:   UPK–PP–LimOn:
                 UPK–PP–DVE:
                 UPK–PP–Mix:
UPK–ME3LimSt: UPK–PP–Wipe1:
                 UPK–PP–Wipe2:
                 UPK–PP–BkPst:
UPK–ME2NTKe3:   UPK–PP–Reloc:
                 UPK–PP–Loop:
                 UPK–PP–TrPvw:
UPK–ME2LimSt: UPK–PP–FtbCu:
                 UPK–PP–FtbAu:
                 UPK–PP–NTBgB:
UPK–ME1NTKe3:   UPK–PP–NTBgA:
                 UPK–PP–NTKe1:
                 UPK–PP–NTKe2:
UPK–ME1LimSt: UPK–PP–NTKe3:

♦Panel [Enter NEXT]

[Store] ← MEDel–cp=PP: → [Bank]

SimcstUPKMod   MEDel–cp=ME1:
MacroBlinkng   MEDel–cp=ME2:
MacroEdtBtns   MEDel–cp=ME3:
ShftBuPerBus   PgmPstLvSwap:
ShiftMode   SourcHunting
AsyncBlink   LowLight
PPKeyFlwBgdLev: Beeper
MakeBuAttPlay: Key Click
MakeBuAttachClr: RSatMac :
XBarMemo – ME3:   RSatLoadUser
XBarMemo – ME2:   RSatSaveUser
XBarMemo – ME1:   RSatKillUser
XBarMemo – PP :   RSatClear
FastCopy: FaderTransPP:
Memo–cp=ME3 :   FaderTransME1:
Memo–cp=ME2 :   FaderTransME2:
Memo–cp=ME1 :   FaderTransME3:
Memo–cp=PP :   FaderMachCtl
TBallGain :   DigipotGain:%

♦ConfigPanel [Enter NEXT]

[Store] ← OnAirLogo → [Bank]

InputAssign   InitAssign

4.4.4.6 Setup Items in the Sidepanel Menus

Some of the setup items could also be found in one of the Sidepanel Menus, see below. In some cases it is easier to change the options of the items in the Sidepanel Menus than in the Local Panel Setup.

SETUP ITEMS	Personality/ Panel	Install/ Panel/ UPK	Install/ EBox	Install/ EBox/Timing	Install/ Panel/ Global	Config/ EBox/ Global	Config/ Panel/ Global	Config/ Panel/ Assign	Status	Status/ M/E Mapping
▸Panel										
MEDel–cp=**:** (Panel M/E Delegation)										X
PgmPstLvSwap (Switch PGM/PST–Level)	X									
SourcHunting	X									
LowLight	X									
Beeper	X									
Key Click	X									
FaderTrans**: (Panel Fader Active)									X	
DigipotGain:%	X									
TBallGain:	X									
FastCopy	X									
MakeBuAttPlay	X									
PPKeyFlwBgdLev:	X									
ShiftMode	X									
▸ConfigPanel										
OnAirLogo							X			
InitAssign								X		
▸InstallPanel										
▸▸Panel UPK		X								
TrnsCutRight					X					
PgmPstMode					X					
DSKTrnsDel					X					
ShftBuPerBus					X					
FadeAdj					X					
GangModeSel:					X					
DSKDelEnable: (DSK Delegation Enable)					X					
DSK*Dele:					X					
▸EBox										
ColorLimit: On/Off						X				
ColorLimit: %						X				
VS: Automatic (Video Standard)				X						
*SyncInp:				X						

*Only selectable with HD mainframe.

Note: **All setup items not listed in the table above could only be found in the Local Panel Setup!**

5.   APPLICATION NOTES

5.1   SIMULCAST

5.1.1   GENERAL

The Simulcast Mode is designed to make the control unit of DD35 or HD35 also control a second mainframe (Slave) beside the selected mainframe (Master). It is the aim to produce a SDTV transmission as far as possible synchronously also in HDTV.

Application is for instance a DD35 mainframe (MF) with connected control panel (CP) as well as an HD35 with connected control panel.
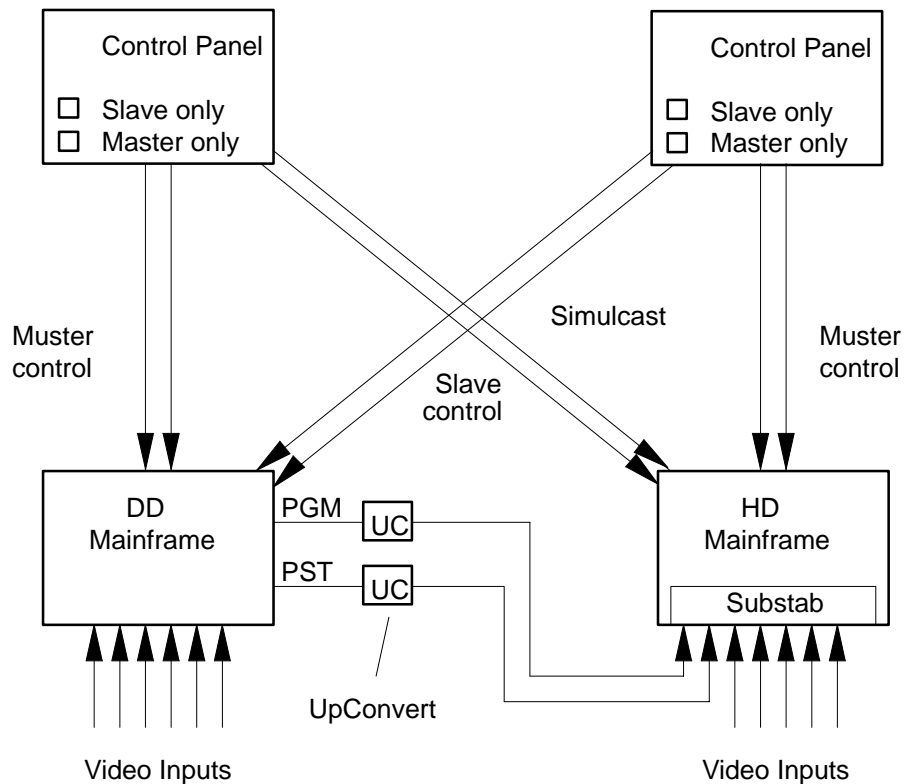
Figure 1   Simulcast Application

Each CP has as an additional environment adjustment an IP address for a slave mainframe. As soon as this IP address is known and the *Slave mode* is active, the CP sends all messages being sent to the Master also to the Slave. In addition, the CP is provided with a **Master Only** button and a **Slave Only** button. As long as one of the buttons is held down, the panel also behaves accordingly.

In each mainframe, a substitution table SUBSTAB can be activated, which has an effect on all messages switching at inputs on the main crossbar. This enables a different input assignment between Master switcher and Slave switcher.

With Simulcast two new settings have been added: SimulcastMode and Simulcast-Address.

- **Simulcast Mode**
  This value may have four states:
  Default, *MasterOnly*, *SlaveOnly* and *Both* (with Default = MasterOnly).
  After switching ON the control panel, it always has the state *MasterOnly.* It is stored neither in the operational state nor in the applicational one.

- **SimulcastAddress**
  it contains the least significant byte of the Slave IP address. The address '0' is considered to be undefined. Admissible are the addresses 1...254. It is an Environment settings of the CP.

Both values can be modified via the control panel Setup menu settings (TiM/E memo panel). Modifications are immediately effective.

The functions **S–M** (Simulcast Master only) and **S–S** (Simulcast Slave only) can be assigned to the UPK capable buttons. As long as the corresponding button is held down, transmission is only made to the selected device.

Control possibility of the assignment of an input substitution table (see sidepanel menu **Install / Ebox / Global**). Entry possibilities for *SimulcastAddress* (see menu Install/Panel).

5.1.2   INTERACTION WITH OTHER FUNCTIONS

- **AUX–Couple**
  When switching a bus to which further busses are coupled, proceeding is as
  follows: The original bus is switched via the LAN substitution table to a substi-
  tute source. Subsequently this substitute source copies itself with own Aux1
  Substitution Table into the coupled busses.
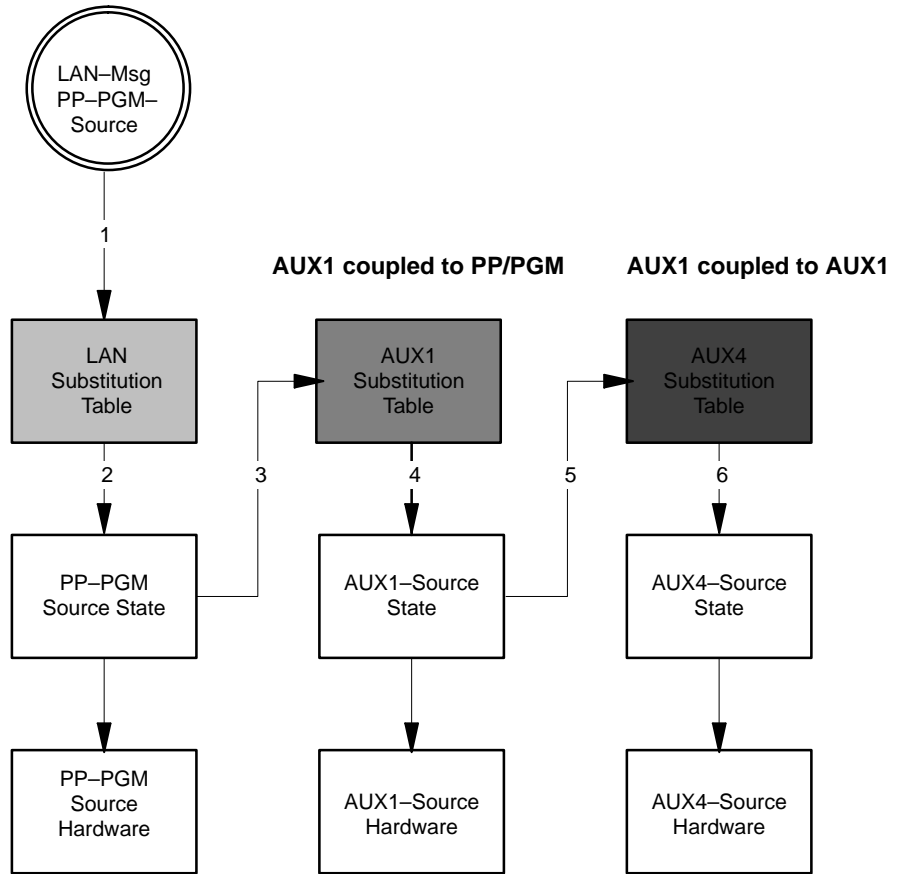
Figure 2   LAN Input Source Substitution & AUX Couple

- **M/E–Couple**
  When switching a bus being coupled to a corresponding bus of a Slave M/E, procedure is as follows: The original bus is switched via the LAN Substitution Table to a substitute source. The Lan Input Substitution is disabled for all calls somehow referring to this message.
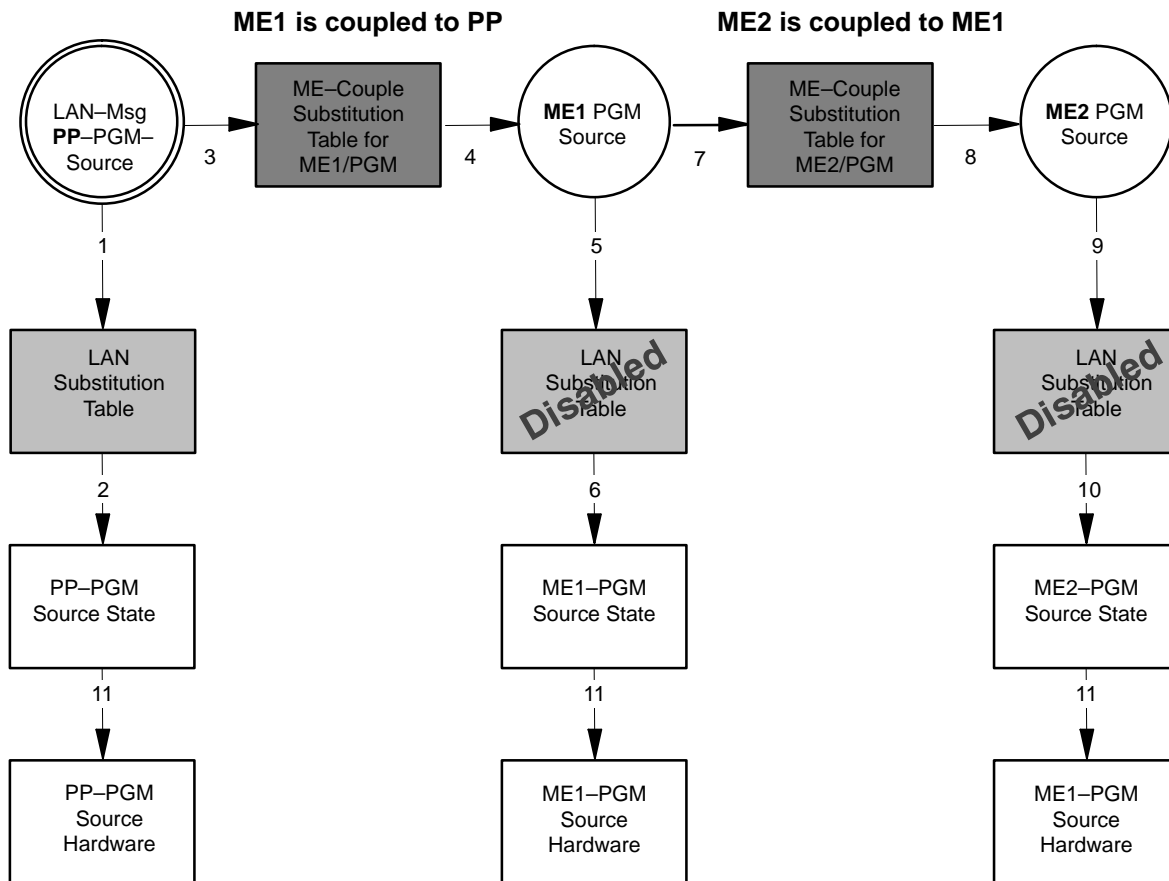
Figure 3   LAN Input Source Substitution & M/E Couple

Figure 4   LAN Input Source Substitution & PST Bus to Key4Fill coupling

5.1.3 OPERATIONAL HINTS

- Sidepanel menu **Install / EBox / Input**:
  A LAN Input Substitution table can only be defined when in the sidepanel PC registry the value **USERINTERFACE/INPUT_SUBSTAB_SELECTABLE** is set to '**1**'. The DD35 application must be closed during this operation.

- Sidepanel:
  The assignment of UPKs has been extended to **MasterOnly** and **SlaveOnly**

- Sidepanel:
  In the sidepanel menu **Install / Panel / Global** you can enter the Simulcast Mainframe Slave address. Address 0 = inactive. Admissible are the addresses between 1 and 254

- For example, the LAN Input Substitution table in the two mainframes should be put up as described in the figure below. As to the assignment of inputs, an input number is system–comprehensively clear in the HDTV range as well as also in the SDTV range:
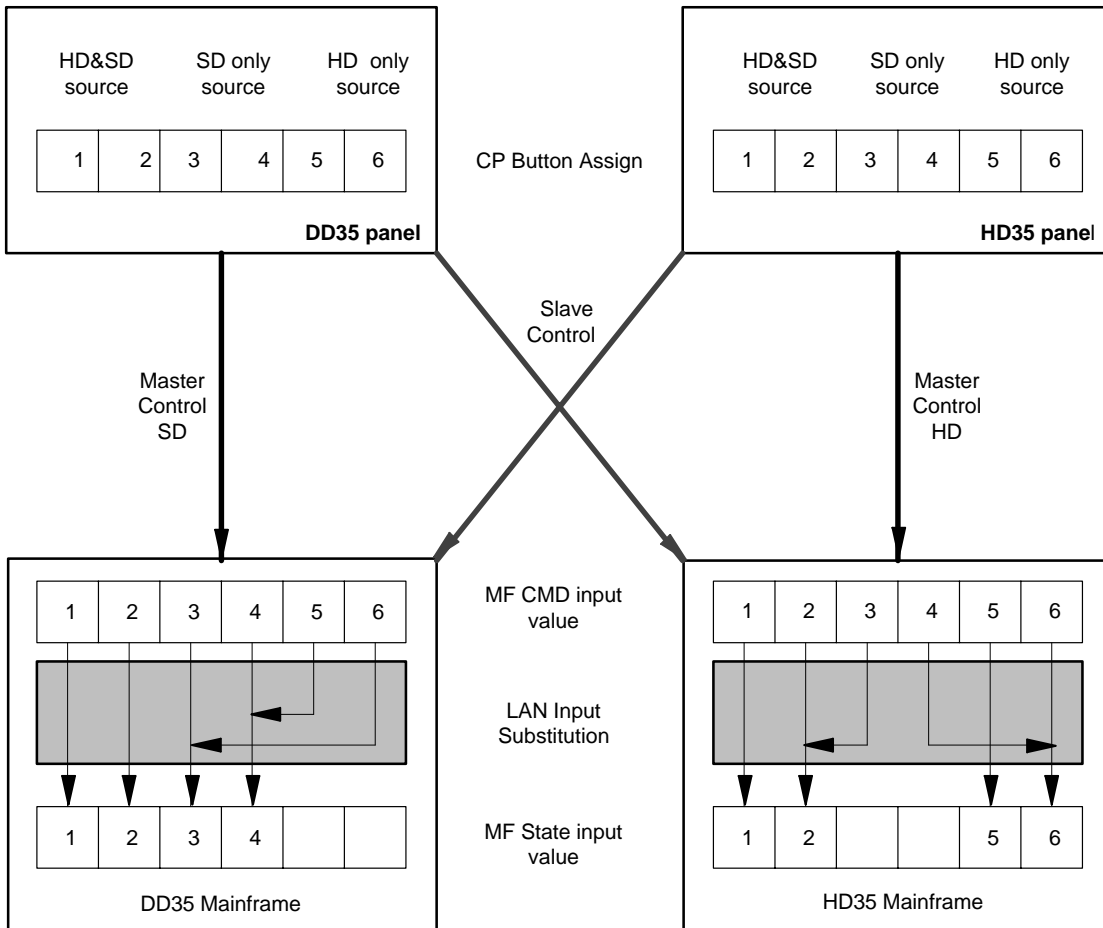
Figure 4   LAN Input Source Substitution & Input Assignment

Input1 and **Input2** exist as SD source and as HD source. It is applied at the respective Input1 of the corresponding switcher.

Input2 and **Input3** only exist for the SD. The corresponding input connectors in the HD are not assigned. When selecting **Input3**, the LAN Input Substitution switches in the HD to **Input 2**.

Input5 and **Input6** only exist for the HD. The corresponding input sockets in the SD are not assigned. When selecting **Input5**, the LAN Input Substitution switches in the SD to **Input4**.

6.   INDEX