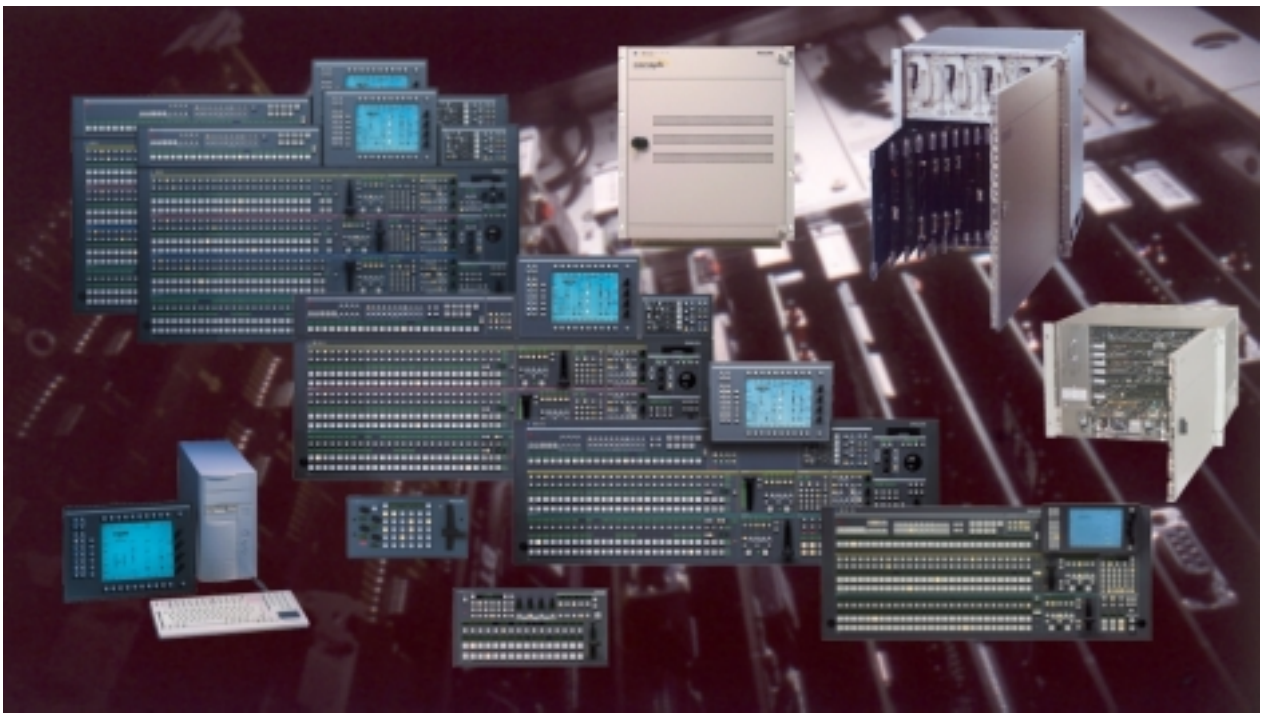
Production Switchers

DD35 Family
Seraph HD



Operating Instructions
Release V 3.1.5

THOMSON MULTI MEDIA
BROADCAST SOLUTIONS

Published by

BTS Media Solutions GmbH

Brunnenweg 9
D-64331 Weiterstadt, Germany
P.O. Box 1165

Tel: +49 (0) 6155-870-0
Fax: +49 (0) 6155-870-300

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Revision Report

DD35 Production Switcher **Customer's Manual**

Documentation Order Number RU 0052, 000 212 245 200

Before reading the entiremanual, please check for any supplements at the endof the manual.

Item	Rev	Date	Ser No	Pages affected	Volume/Contents	Remarks
1	0	9.97	100		Planning and Install. Operating Instructions	1st Edition Preliminary (Beta Test)
2	1	10.97	100	all sections	Planning and Install. Operating Instructions	1st Edition Shipment Release SW Release 1.0.0
3	2	02.98	100	all sections	Operating Instructions	General corrections SW Release 1.0.0
4	3	03.98	100	Chapter 3	Operating Instructions	General corrections SW Release 1.0.3
5	4	05.98	100	Chapter 9 – 12 Chapter 3	Planning and Install. Operating Instructions	SW Release 1.2.0
6	5	08.98	100	all sections	Operating Instructions	SW Release 1.3.0
7	6	11.98	100	all sections	Planning and Install. Operating Instructions	SW Release 1.4.0
8	7	02.99			Supplement V1.5.1	SW Release 1.5.1
9	8	05.99		all sections	Planning and Install. Operating Instructions	SW Release 1.6.1
10	9	06.99		Chapter 2.13 Chapter 4.4	TiM/E Memo Panel Setup	Corrections in Operating Instruc-tions
11	10	07.99		all sections	Planning and Install. Operating Instructions	DD35-2 and DD35-3 SW Release 2.0.0
12	11	08.99		Chapter 10 Chapter 3	Planning and Install. Operating Instructions	SW Release 2.0.2
13	12	10.99			Planning and Install. Operating Instructions	SW Release 2.1.1
14	13	05.2000			Planning and Install. Operating Instructions	New panel DD35-2S SW Release 2.2.0
15	14	12.2000		all sections	Planning and Install.	New mainframe DD35-2S-BM SW Release 2.3.3

Item	Rev	Date	Ser No	Pages affected	Volume/Contents	Remarks
16	15	05.2001		all sections	Planning and Install. Operating Instructions	SW Release 2.3.C
17	16	10.2001		all sections	Operating Instructions	SW Release 3.1.2-5 DVE

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1. GENERAL

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, DD35'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 *DD35* 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.

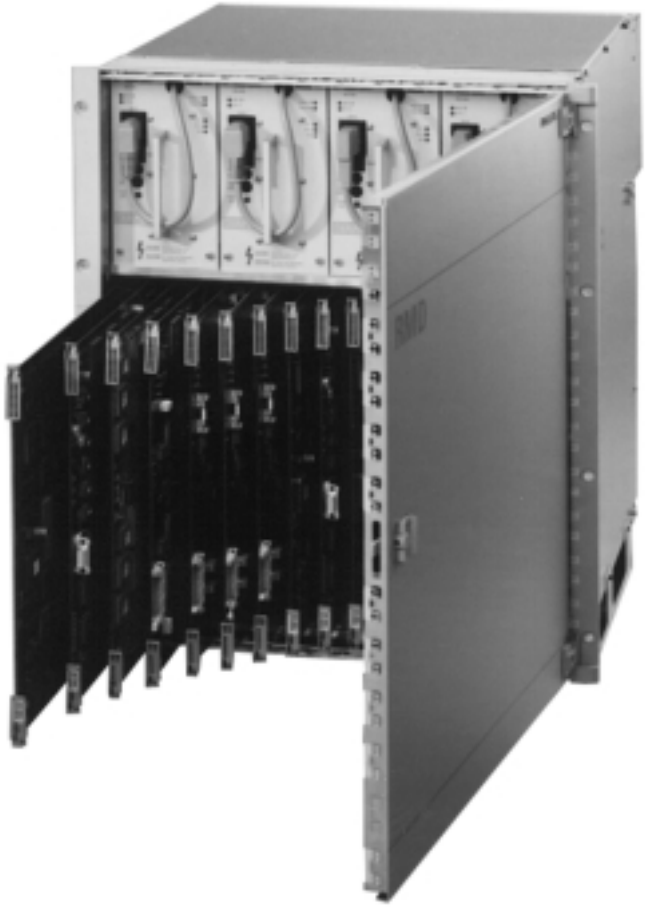
The switcher is equipped with a PC-based Graphical User Interface (GUI) display for the more complex switcher setup and timeline editing functions.

1.1 BASIC CONFIGURATION

1.1.1 DD 35 BASIC MAINFRAMES – GENERAL FEATURES

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 auto detect
- 4:3 / 16:9 switchable, manually or per GPI
- 19”, 12 RU housing (+ 1HE for air supply),
- 20 m connection cable (50 ohms, cheapernet)



All basic mainframes include:

- Power Supply
- Switcher Lookahead Preview
- Software package: The standard software includes many device drivers according to the current state of development.
- 1–4 Mix / Effect Stages
- Keyers and wipe generators see below (Key Functions, Wipe Generators).
- 32 DSC/SDI inputs each with modifier (Input Correction) for lum., contrast, hue, color balance.
- 1 x sync input (analog blackburst)
- AUX–Buses see below (Output Processor).
- Fade-to-Black stage
- Up to 3 more, external DSKs
- 3 x color backgrounds with 2 mattes each for washes (gradients).
- Up to 27 color generators, each with 2 mattes and color wash ramp. Ramp can be Softened, Rotated and Positioned. For Key Fills, Key Borders,Wipe Borders.
- Additional two more color generators in Montage Processor Option (incl. dual color and wash)
- Preview modes: Look Ahead, Chromakey Cursor, Key, Mask, Transition.
- 10 x RS485 or RS422 serial interfaces
- Protocols for edit systems, DVEs, Routers etc., partly optional. (min. 1 RS485 port for extern Tally/GPI needed !)
- 5 x RS232C serial interface
- Modem port RS232C (not yet implemented)
- 8 internal GPI inputs, 8 internal GPI outputs

Limitation using small mainframe

- In conjunction with the small mainframe, the switcher–internal sources **COL BGD 2** and **COL BGD 3** are not available.
- There is only one wipe generator board which, as in the DD35–4, is used by both M/Es (WiperFlex). It can be determined by the configuration how to assign the two generators on the board to the M/Es.
- A further restriction concerns the connections to the future FX processor (montage processor slot). Two of the input and output connections each lead to the second input processor. It follows from this that with a minimum configuration (only one input processor with 16 inputs) only two inputs and two outputs of the FX processor can be used.

1.1.2 BASIC MAINFRAME DD 35-4-BM

- Basic Mainframe for P/P and 3 M/E
- Controller and Software (for 4 stages)
- Input Boards for 32 inputs
- Standard Power Supply (2 units)
- 4 x PGM outputs (DSC) (MAIN OUT)
- 1 x Main PVW
- 1 x Clean Feed output, switchable
- 1 x DP output (diverse operating modes)
- 3 M/Es with each: 3 x M/E PGM and 1 x M/E PVW outputs

1.1.3 BASIC MAINFRAME DD 35-3-BM

- Basic Mainframe for P/P and 2 M/E
- Controller and Software for 3 stages
- Input Boards for 32 inputs
- Standard Power Supply (2 units)
- 4 x PGM outputs (DSC) (MAIN OUT)
- 1 x Main PVW
- 1 x Clean Feed output, switchable
- 1 x DP output (diverse operating modes)
- 2 M/Es with each: 3 x M/E PGM and 1 x M/E PVW outputs

1.1.4 BASIC MAINFRAME DD 35-2-BM

- Basic Mainframe for P/P and 1 M/E
- Controller and Software for 2 stages
- Input Boards for 32 inputs
- Single Power Supply (1 unit)
- 4 x PGM outputs(DSC) (MAIN OUT)
- 1 x Main PVW
- 1 x Clean Feed output, switchable
- 1 x DP output (diverse operating modes)
- 1 M/E with: 3 x M/E PGM and 1 x M/E PVW outputs

1.1.5 BASIC MAINFRAME DD 35–1–BM

- Basic Mainframe for 1 M/E
- Controller and Software for 1 stage
- Input Boards for 32 inputs
- Single Power Supply (1 unit)
- 1 M/E with: 3 x M/E PGM and 1 x M/E PVW outputs

1.1.6 KEY FUNCTIONS (GENERAL)

- For each stage (M/E or P/P) one Key Processor (details see below) is mandatory. Each type has 3 linear/luminance keyers and 2 borderliners
- 1 x Key / Mask Store (4:0:0, 8 bit)
  for masks/keys/Paint-Mode-Masking
- Automated Key Adjustment AKA for all internal Keyers.
- Key Modifiers: Positioning, Sizing, Softness
- 2 x borderliners / shadow effects for every keyer
- Key masking: box per keyer, wipes or drawing (Paint-Mode-Masking)

1.1.6.1 Key Processor RY 1943 with 2x Chroma Keyers

ChromaKey in Key1 and 2:

- Based on a matting technique, DynaChrome achieves an excellent detail and shadow reproduction, virtually no color spill.
- Clip, Gain and FGD-Fade can reduce back ground 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

1.1.6.2 Key Processor RY 1945 with 1x Chroma Key

ChromaKey in Key1, otherwise like RY 1943. See above.

1.1.6.3 Key Processor RY 1944 without Chroma Key

Key functions see above.

1.1.7 OUTPUT PROCESSOR (GENERAL)

- One Output Processor (see below) is mandatory
- AUX buses (e.g. for DVE Video+Key, Aux-PVW) with auto-follow for various preview functions.
- On Aux buses 1–5, the automatic internal line synchronization can be switched off in order to allow external device loops (e.g. color correction ...). A feedback of processed signals into the inputs works without additional 2V synchronization, provided their delay is some micro seconds only.

1.1.7.1 Output Processor RY 2154 with 15 Aux Busses (1–15)

- Output Processor with 15 Aux Busses

1.1.7.2 Output Processor RY 2153 with 10 Aux Busses (1–10)

- Output Processor with 10 Aux Busses

1.1.7.3 Output Processor RY 2155 with 5 Aux Busses (1–5)

- Output Processor with 5 Aux Busses

1.1.7.4 Options for Output Processor

- **Texture / Matte Store RC 2181**

  4:0:0 Image store for freezing textures (derived from the wipe generator), respectively key signals for modulating the gradient between the two mattes of the color background.
  The Wash-Key signal can be determined with a wipe generator or from a keyer. The option does not store the actual colors, but the transition information between them; i.e. with a stored color transition (via wipe), both mattes still can be changed. Store content lost as soon as mixer is switched off.
  Store gets inputs signals from M/E 1.

- **Image Store (frame grabber) RC 2182**

  4:2:2 store for freezing one full frame. Frame, Field 1/2 select possible for separate save as well as readout. This allows for 2 separate videos to be stored with half vertical resolution. Horizontally the store contents can be shifted +/– 128 pixel in +/– 64 steps. ”Grab” function implemented for photo snapshot functionality on video.
  The input of the store can access all primary sources, as well as the internal signals PVW, PGM and Clean Feed.
  The image store content gets lost as soon as the mixer is switched off.

1.1.8 WIPE GENERATORS (GENERAL)

- Per M/E stage one board (see below) can be equipped.
- Maximum 3 boards in the mainframe
- 43 wipe patterns
- WiperFlex: Wipe Generator from M/E 1 can alternatively be setup for use in Program/Preset.

1.1.8.1 Wipe Processor (2x wipe) RY 1908

- Board equipped with two generators.

1.1.8.2 Wipe Processor (1x wipe) RY 1909

- Board equipped with one generators.

1.1.9 OTHER MAINFRAME OPTIONS

1.1.9.1 Input Extension Board (Input 33 ... 48) RY 2151

- Additional board, provides further 16 (DSC) inputs for expansion to 48 external sources.
- For model DD35–2 this option requires additional power supply RC 2160.

1.1.9.2 Input Extension II (Inputs 49 ... 62) RC 2410

- Additional board, provides further 14 (DSC) inputs for expansion to 62 external sources. Extension to 48 inputs is mandatory for this option. This option cannot be added later!

1.1.9.3 Montage Processor RY 1913

- 3 M/E Key Shadows
- Movable double frame store for 2 x 4:2:2 or 1 x 4:2:2:4 video.
- Manipulations: Additional level adjustment, Invert, Move picture, Posterization, Solarization, Palette (Hue) Change, Strobe, Grab.
- 3 x Far Shadow Stores for Drop Shadows on keyed signals (one assignable per dedicated ME, not in P/P of –4).
- For model DD35–2 this option requires additional power supply RC 2160.

1.1.9.4 Redundant Power Supply

- Redundant power supply incl. auto switch-over for the DD35 mainframe. Separate power supply cords, units exchangeable while in use (hot swap). In case of failure or switch-over, a warning is given via the Alarm output and/or through the GUI (TFT–Display).
- **Redundant Power Supply for DD35-3/-4 Mainframe RC 2180**
- **Redundant Power Supply for DD35-1/-2 Mainframe RC 2160**

1.2 CONTROL PANEL MODELS

1.2.1 DD 35 SERIES CONTROL PANELS (GENERAL)

- Panel is dark grey.
- 6 x GP Input, 6 x GP Output
- 4 x RS485 or RS422 (UMD, Aux ...)
- 2 x RS232C at panel
- Modem port RS232C (not yet implemented)
- Built-in PC for new, intuitively usable Graphical User Interface and additional operational features. Floppy Disk, SCSI HardDisk and TFT Color LCD Display incl. one software license belong to the delivery extent.
  Connectors: 2x RS232C, PC Keyboard, Parallel port, LCD Digital port, VGA port, separate LAN port.
  PS/2 Mouse included.

1.2.2 3 M/E PLUS P/P CONTROL PANELS RPS 35-4LX

- Control panel set with 32 input source buttons (”LX”)
- 4 separate modules

1.2.2.1 Options (initial order only)

”LX” Input Mnemonics Extension for 3 M/Es RC 2212

- 4-digit LED Display for the mixer banks. The mnemonics display for the AUX bus selection and the P/P stage comes as standard.

Redundant Power Supply Panel, RC 2213

- Common redundant power supply incl. automatic switch-over for all panel. Separate power supply cords. In case of failure or switch-over, a warning is given on panel (DIAGN) and GUI and optional using a GP Output (later orders possible)

”LX” All-in-one Mounting Frame Set (32 Sources) RC 2227

- Is needed when all delivered, separated panel modules have to be combined for a single unit. This mainly applies to studio desks not having a tilted back wall. The set contains mounting flanges and facings varnished in dark grey, where in the long RPA, RPV and RPW modules can be fitted in for attachment to the RPD35 base panel. A special tilting mechanism is provided for the display module’s viewing angle. Individually adjustable and lockable.

1.2.3 3 M/E PLUS P/P CONTROL PANELS RPS 35-4L

- Control panel set with 24 input source buttons (”L”)
- 4 separate modules

1.2.3.1 Options (initial order only)

”L” Input Mnemonics Extension for 3 M/Es RC 2211

- 4-digit LED Display for the mixer banks. The mnemonics display for the AUX bus selection and the P/P stage comes as standard.

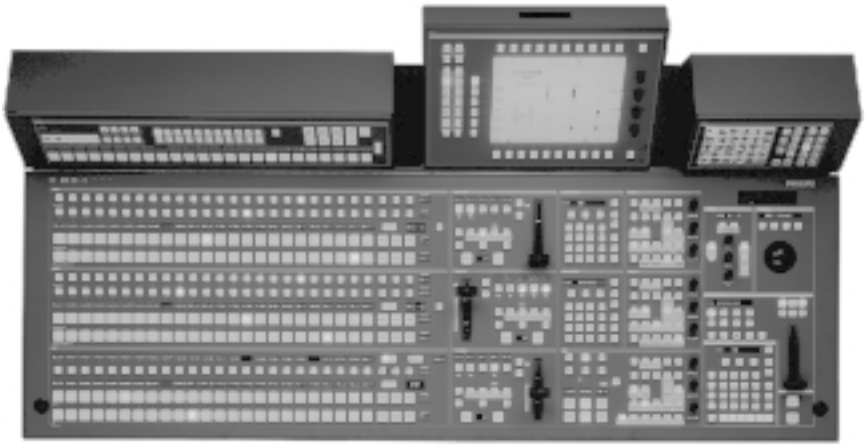
Redundant Power Supply Panel RC 2213

- Common redundant power supply incl. automatic switch-over for all panel. Separate power supply cords. In case of failure or switch-over, a warning is given on panel (DIAGN) and GUI and optional using a GP Output (later orders possible)

”L” All-in–one Mounting Frame Set (24 Sources) RC 2226

- Is needed when all delivered, separated panel modules have to be combined for a single unit. This mainly applies to studio desks not having a tilted back wall. The set contains mounting flanges and facings varnished in dark grey, where in the long RPA, RPV and RPW modules can be fitted in for attachment to the RPD35 base panel. A special tilting mechanism is provided for the display module’s viewing angle. Individually adjustable and lockable.

1.2.4 2 M/E PLUS P/P CONTROL PANEL RPS 35-3



- Control panel set with 24 input source buttons
- 4 separate modules

1.2.4.1 Options (initial order only)

Input Mnemonics Extension 2 M/Es RC 2363

- 4-digit LED Display for the mixer banks. The mnemonics display for the AUX bus selection and the P/P stage comes as standard.

Redundant Power Supply Panel RC 2376

- Common redundant power supply incl. automatic switch-over for all panel. Separate power supply cords. In case of failure or switch-over, a warning is given on panel (DIAGN) and GUI and optional using a GP Output (later orders possible).

All-in-one Mounting Frame Set for RPS 35-3 RC 2360

- Is needed when all delivered, separated panel modules have to be combined for a single unit. This mainly applies to studio desks not having a tilted back wall. The set contains mounting flanges and facings varnished in dark grey, where in the long RPA, RPV and RPW modules can be fitted in for attachment to the RPD35 base panel. A special tilting mechanism is provided for the display module's viewing angle. Individually adjustable and lockable.

1.2.5 1 M/E PLUS P/P CONTROL PANEL RPS 35–2

- Control panel set with 24 input buttons
- Aux, Wipe and GUI control section in basic module integrated

1.2.5.1 Options (initial order only)

Input Mnemonics Extension M/E+AUX **RC 2362**

- 4-digit LED Display for input names

Redundant Power Supply Panel **RC 2376**

- Common redundant power supply incl. automatic switch-over for all panel Separate power supply cords. In case of failure or switch-over, a warning is given on panel (DIAGN) and GUI and optional using a GP Output.

1.2.6 SMALL 1 M/E PLUS P/P CONTROL PANEL RPS 35–2S

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.

Compact control panel with 28 primary source buttons. Aux and Wipe module integrated. GUI integrated with touch screen. The four USB ports allow connention of PC peripherals like mouse, floppy drive, CD-ROM etc.

1.2.6.1 Options (initial order only)

Input Mnemonics Extension M/E1	**RC 2453–1**
Input Mnemonics Extension P/P	**RC 2453–2**
Input Mnemonics Extension AUX	**RC 2453–3**
Input Mnemonics Extension MaKE	**RC 2453–4**

- 4-digit LED Display row for input names

Redundant Power Supply Panel **RC 2376**

- Common redundant power supply incl. automatic switch-over for all panel Separate power supply cords. In case of failure or switch-over, a warning is given on panel (DIAGN) and GUI and optional using a GP Output.

1.2.7 OTHER PANEL OPTIONS (INITIAL ORDER ONLY)

1.2.7.1 Emergency Harddrive, SCSI, min. 2 GB, RC 2148

- Must order initially together with basic panel. Operation system software is pre-configured.
- SCSI HDD, min. 2,16 GB, mounted in separate housing for external connection. With power and SCSI connection cables.
- Allows in case of an emergency (head crash etc. ...) the switch-over to external booting instead of initialization from drive C:.
  Note: Automatic update to the working status of the built–in drive C: not supported at this time.
- Operating System Windows 95 pre-installed, as well as side panel SW.
- Includes software licenses (Windows 95 & and Sidepanel software DS 0103).

1.2.7.2 Operating System Windows NT for Panel PC, RC 2380

- in preparation

1.3 TALLY OPTIONS

1.3.1 SOFTWARE LICENSE FOR TALLY OPERATION DS 0141

- Includes protocols DS0141 and DS0143. 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 is needed for control of various distribution 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: Standard. OnAir source signalling.
  Preset Tally: Tally for selected sources not being put OnAir (”yellow”).
  Tally Ch. 2: Green Tally like Channel 1, with separate OnAir control input.
  Direct connection of tally indicators only via separately available distribution units (e.g. MI-3040). 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 DD35 mainframe port.

1.3.2 TALLY I/O BOX, MI-3040

- For switchers with 48 inputs 2 tally boxes are recommended. With 36 inputs 3 tally boxes are recommended.

- MI-3040 occupies 2 RU per box. Fastest tally signalling when controlled by dedicated ports, max. 6 units per RS485 port.

Box1:	Red Tally	
	Outputs:	Sources 01–32
Box2:	Red Tally, Expansion	
	Outputs:	Sources 33–48, AUX1–15,
	Inputs:	M/Es, CL, Ready, AUX1–15,
Box3:	IOutputs:	Source 49–62
Extra Box:		GPI / GPO Expansion, for ext. GPI / GPO a separate software license DS 0140 is needed.

  For Red and Green tally additional boxes are neccesssary.

1.4 SOFTWARE OPTIONS

1.4.1 TIM/E MEMO TIMELINES, DS 0142

- Separately shiftable M/E Timelines
- in preparation

1.4.2 SOFTWARE LICENSE FOR EXTERNAL GPI/GPO, DS 0140

- in preparation

1.4.3 SOFTWARE LICENSE FOR ADDITIONAL SIDEPANEL CONTROL, DS 0103

- Separate PC with LAN adapter necessary! Cost effective solution allows DD35 control via external LAN remote connected PC (Ethernet). Many, but not all main panel functions can be executed from a separate PC workplace (e.g. select of BGD sources not possible).
  However, Keyer adjust / control, Mask adjust and adjustment of setups is implemented entirely. This saves the cost for buying a 2nd, smaller Control Panel in most cases.
  Via network all connected units can be controlled from any additional PC. By loading identical applications, parallel operation of the GUI (Redundancy!) works as well as exclusive access to DD35 units by loading applications that have access to unoccupied switcher resources.

1.5 SHORT DESCRIPTION OF BASIC PROTOCOL DRIVER SOFTWARE

The following software protocol drivers are included in the basic package of the DD35 switchers:

1.5.1 EDIT PROTOCOL – GVG200, DS 0110

- Edit Protocol – GVG / model 200 emulation. Allows DD35 control via edit system. Amount of control only in the range of what is possible on a GVG200 switcher (e.g. 20 inputs, 2 M/Es ...), without E-MEMTM Register up/download (switcher learn). E.g. Sony BVE, GVG VPE, etc.
  Also often used for remote control of switcher AUX buses for A/B side switch of foreground and background sources within DVE moves (e.g. DVEous ...).

1.5.2 EDIT PROTOCOL – DD30, DS 0111

- Edit Protocol – Philips / DD30 for edit controllers with adapted driver for DD10/20/30 switchers, e.g. CMX Omni, Accom Axial.

1.5.3 EDIT PROTOCOL – DD35, DS 0132

- Edit Protocol: DD35. Allows complete control with proprietary command codes. Currently (besides Accom Axial with special software) no edit system is known, controlling DD35 with these commands).

1.5.4 DVE PROTOCOL – DVEOUS, DS 0112

- DVE Protocol – Scitex DVEous, A57, A53D. Allows integration of DVE being controlled from switcher. E.g. good for DVE background transitions and effects selection via switcher wipe module – as if it were a built in wipe generator.

1.5.5 DVE PROTOCOL – QUESTECH TENX, DS 0113

- Amount of control similar to DS 0112.

1.5.6 DVE PROTOCOL – PINNACLE DVEXTREME, DS 0113

- Amount of control similar to DS 0112.

1.5.7 DVE PROTOCOL – SONY DME 7000, DS 0115

- Amount of control similar to DS 0112.

1.5.8 EXT. DSK PROTOCOL – EASY KEY (OXTEL), DS 0117

- Allows integration of Downstream Key command codes for external unit control. Is extension to internal DSK system. Up to 3 channels (units of same type) can be controlled with the purchased license. It's up to the user to setup the DSK units in cascade or parallel video processing mode and to feed signals from switcher Aux buses or from an independent, external Routing system. Supported parameters are: Clip, Gain, Transparency, Cut and Auto.

1.5.9 EXTERNAL DSK PROTOCOL – CDK104 (ROSS), DS 0119

- Amount of control similar to DS 0117.
- Additional functionality: Box Masking, FTB

1.5.10 EXT. ROUTER PROTOCOL – VENUS, MARS, DS 0120

- Enables remote control of input source selection of up to 15 outputs from an external Philips router (ASCII protocol).

1.5.11 EXTERNAL ROUTER PROTOCOL – SANDAR, DS 0121

- Enables remote control of input source selection of up to 15 outputs from an external Sandar router. Includes Mnemonic Transfer.

1.5.12 NAME FOLLOW VIDEOTM – VENUS, DS 0123

- Is needed for transfer of mnemonics names from extern router (or integrated control system, e.g. Jupiter ...) into the switcher mnemonics (M/Es, Aux, P/P).

1.5.13 UNDER MONITOR DISPLAY PROTOCOL – PHILIPS, DS 0126

- Enables transmission of DD35's mnemonics names into Philips Under Monitor Displays of type RP1, RP2 and RP3 UMD. Names assigned in switcher can be 4 and 8 characters long (new !). Up to 8 digits supported.

1.5.14 AUX PANEL – PHILIPS CP-300/330/3020/321, DS 0129

- Allows for remote control of switcher Aux buses by separated keyboard units (buttons) of type CP300.. etc. Uses MPK protocol. Assignment of remote keyboard buttons can be altered with changing configuration setups per application.
  Aux buses individually programmable.

1.5.15 AUX–BUS PROTOCOL, DS 0133

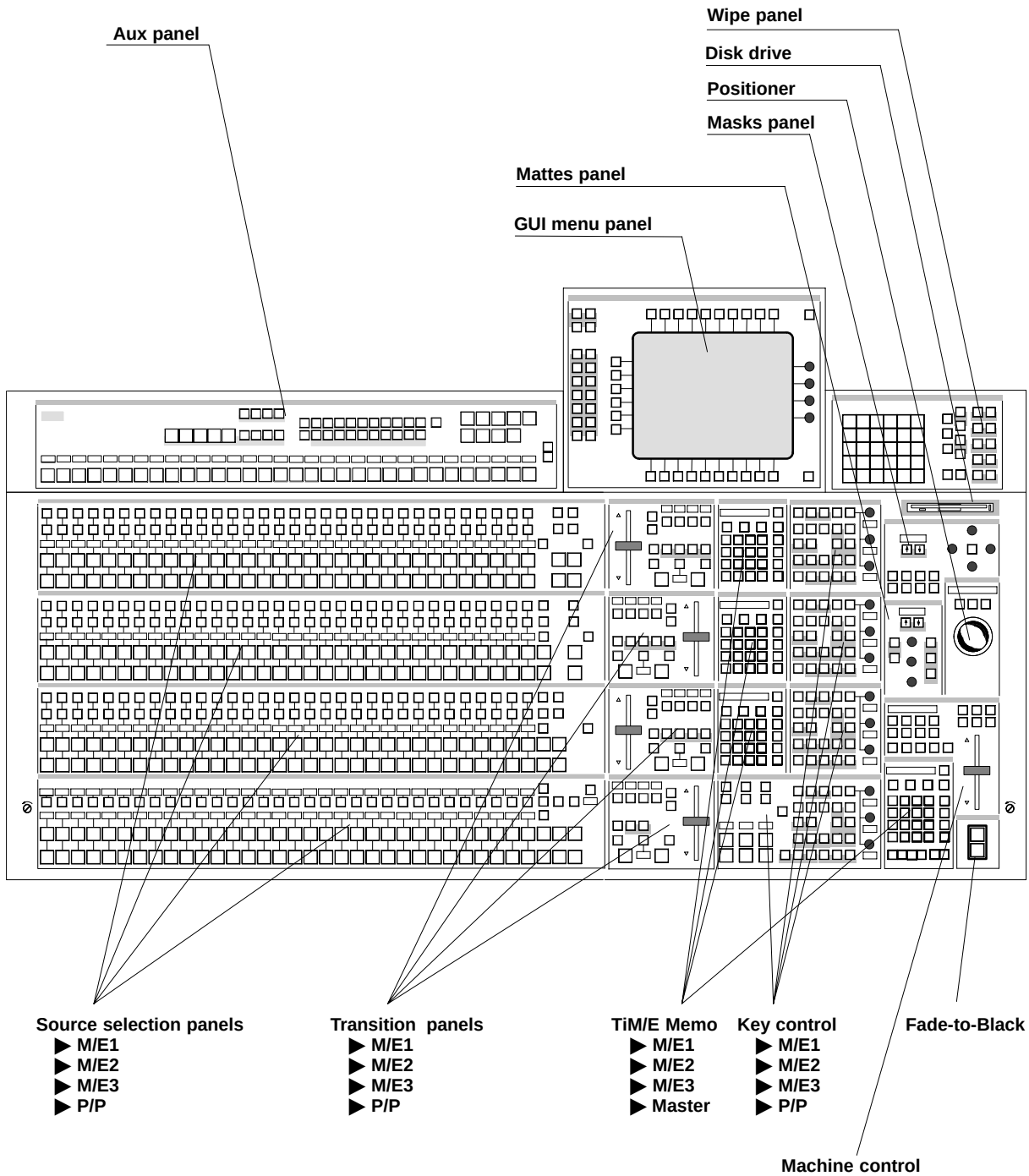
- For AUX Bus control e.g. from DVEs

1.5.16 MACHINE CONTROL – BVW75 (SONY), DS 0144

- Allows remote control of tape machines, disk recorders etc., which listen to this protocol. Supported are all tape motion commands: Stop, Play, VarPlay, Shuttle, Jog, Cue, Rewind, FFWD. Recorded as Crash Record.

2. PANEL OPERATION

2.1 OVERVIEW



Example RPS35–4L Control Panel

2.2 SOURCE SELECTION

The *DD35 Series 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
- 3 color backgrounds (Col1, Col2, Col3)
- Video store (optional)
- Montage processor (optional)
- Re-entry from M/E1, M/E2, M/E3
- Re-entry of Program/Preset and “Clean Feed”
- 16 “virtual” inputs with key memory (any normal input with secondary input correction)
- Layer mode: the combined key signals of M/E1, M/E2 or M/E3.

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

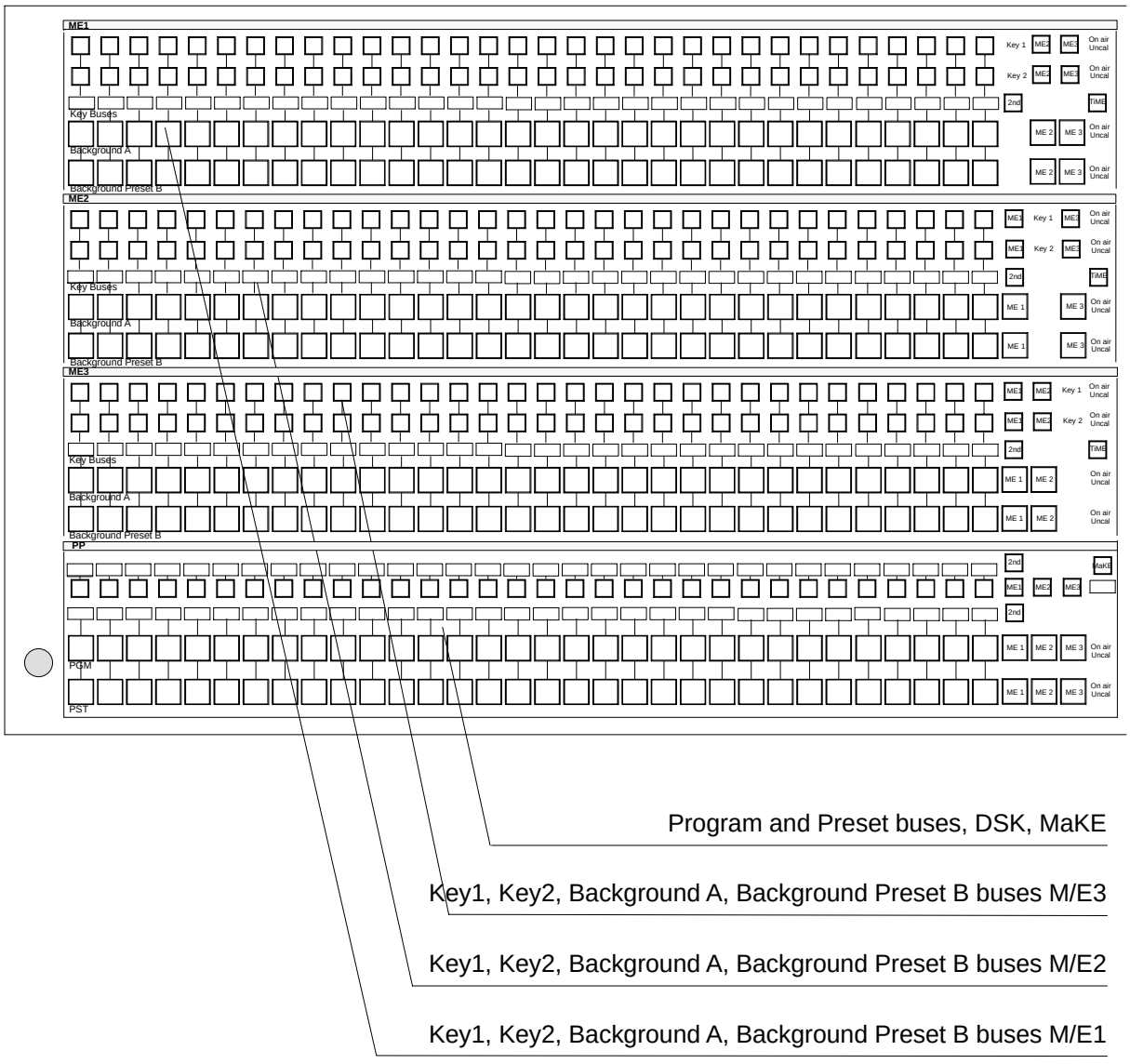
Find and disconnect the connention which prevent the picture source from being re-entered. Beside the direct selection via the source buttons, there is a number of internal connections which are not recognizable at the first sight.

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.

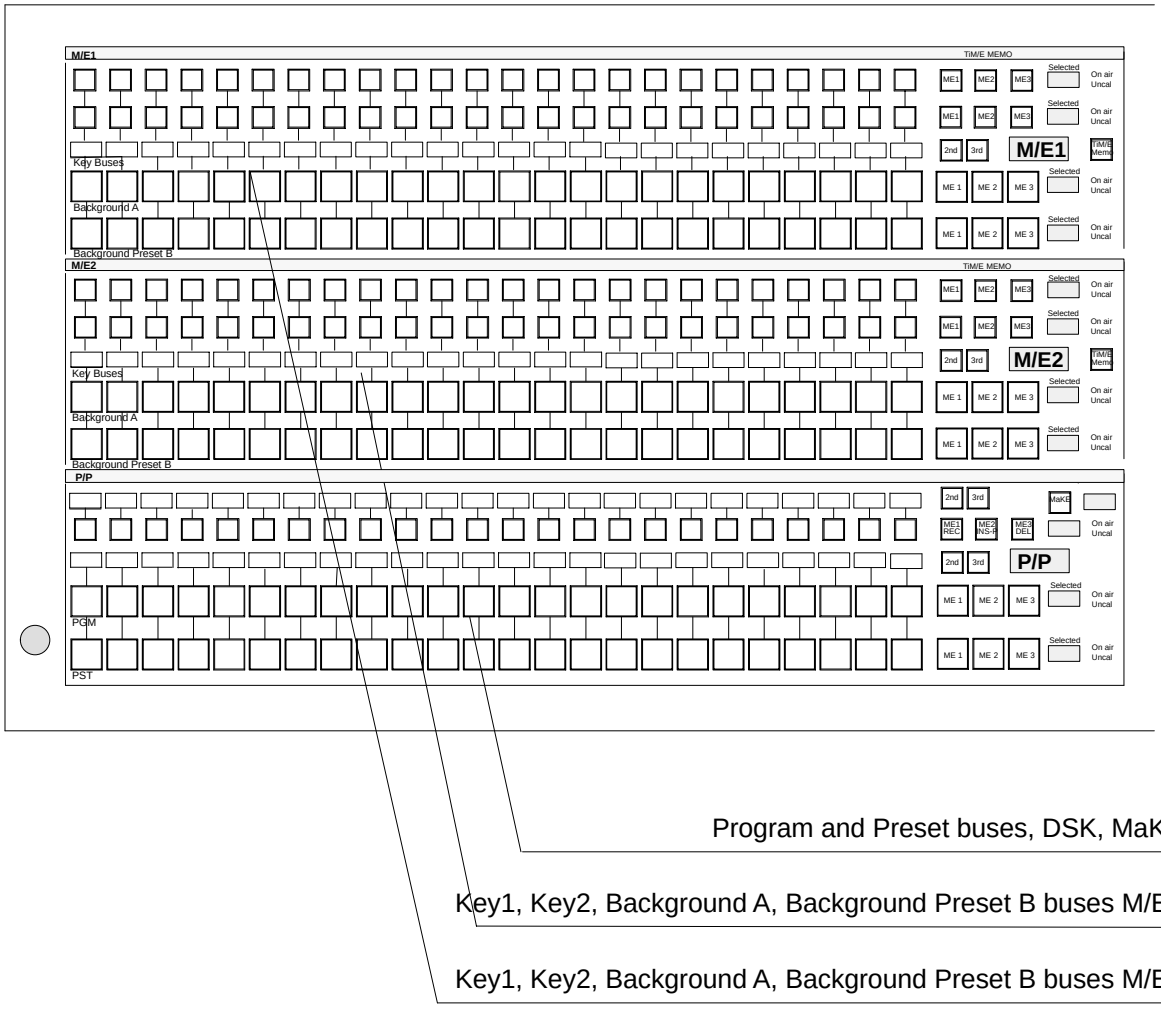
Control panels

Two types of panels are available for the DD35-4 switcher: The smaller “RPS35–4L” panel with 24 primary source buttons and the “RPS35–4LX” panel with 32 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: RPD 35-4LX control panel



Example: RPD 35-3 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

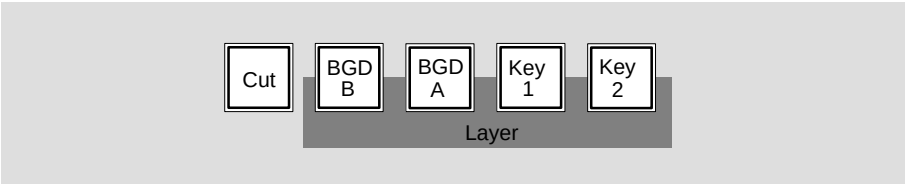
The **Background Preset B** bus serves to select the background picture involved in the next transition. The preset background picture and the selected modifications (keys, for example) can be viewed on the corresponding M/E preview monitor.

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 information 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 sources (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 installed, source identification on adhesive foil is suggested.

3rd Delegation

The **3rd** button allows for the selection of further sources (up to 62) in addition to the 24 (32) directly selectable sources. The **3rd** button will light when pressed. The current button assignment can be read from the respective button display.

If the optional Input Mnemonics is not installed, source 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. An interference-free operation of the downstream keyers is not always guaranteed.

Uncal

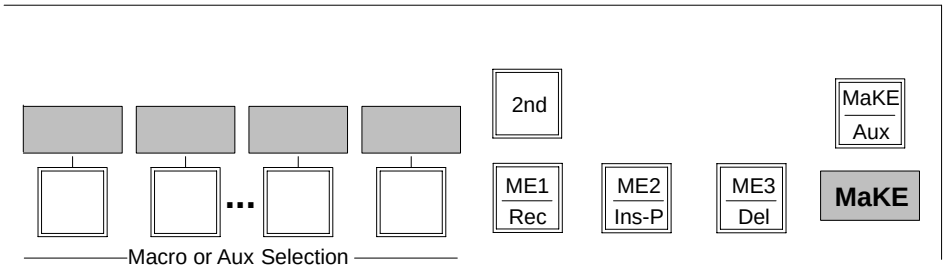
The yellow **Uncal indicator** lights when a change from the default settings on the switcher has been made, such as, one or more of the following:

- the bus correction is non-default
- the selected source has a non-default input correction
- opacity is non-default
- P/S/S is on (Positioning, Sizing and Softening parameters are stored in the key memory)

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 RPD 35-4 panel



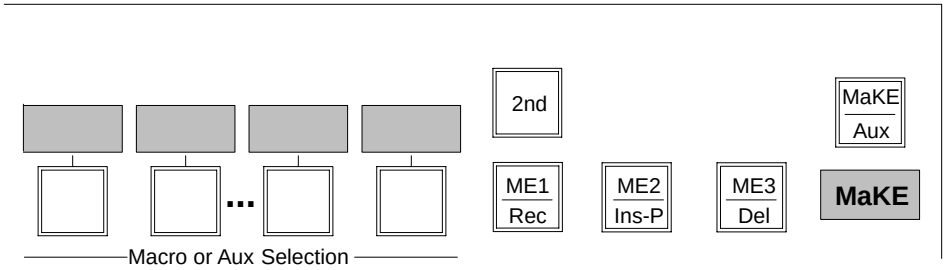
- For special applications the Aux bus input button row can be moved from the Aux Panel to the P/P panel.
- *Make Memo*™ function for storing and recalling macros. Operation with the panel buttons see below. For operation with menu refer to section ***Config Panel*** menu.

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 timelines 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 RPD 35-4 panel



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

- 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 lit. Pressing the button while the macro is still running stops the macro. After stopping/terminating, the button (i.e. the lamp in the button)goes out again.
  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.

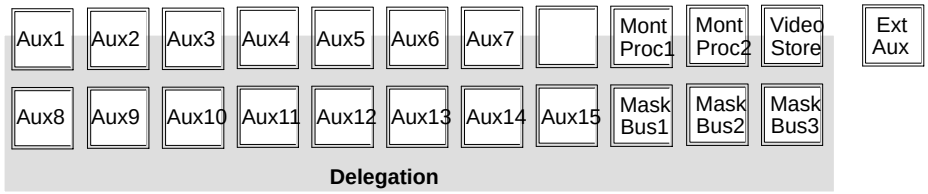
All macro attachments can be deleted in the panel setup.

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** or **MontProc1**) 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.

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

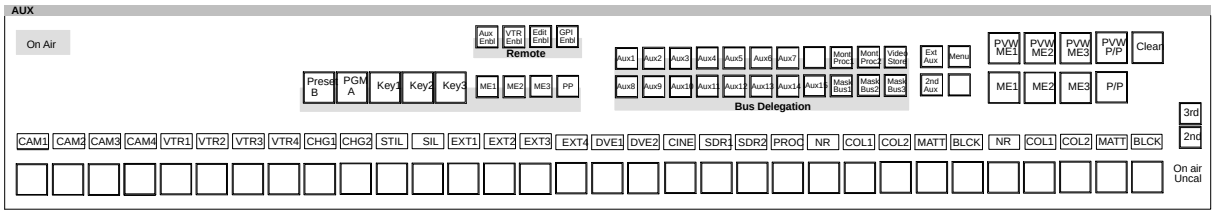
2.3.1 OVERVIEW

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

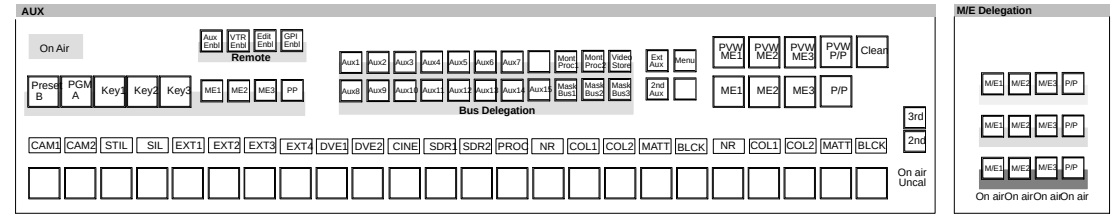
- up to 15 internal Aux Buses (Seraph HD up to 20 Aux Buses)
- up to 15 external Aux Buses
- Video Store (if equipped)
- Montage Processor (if equipped)
- Mask Bus in M/E1 ... 3 (if available. Not available in Layer and P/P mode.)

For example the *DD35* provide in the basic version 5 serial digital auxiliary outputs. The “Aux Extension options” provides an additional 5 or 10 outputs for a maximum of 15 Aux Buses.

Any Aux bus can be used as Aux PVW. Any Aux bus can also be used to feed a DVE with video or key (see menu ***Install / EBox / DVE***).



Example: RPD 35-4 control panel



Example: RPD 35-3 control panel

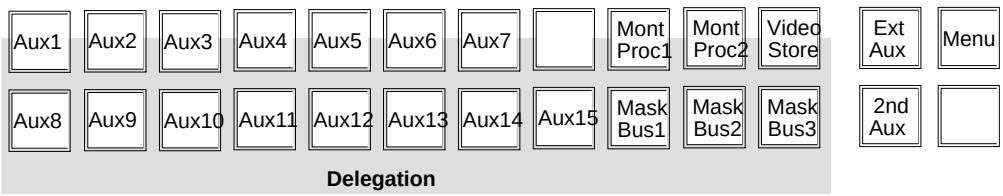
2.3.2 AUX BUS SOURCES

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.



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.

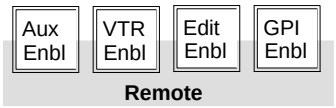
Analog settings are possible by pressing the **%** buttons and simultaneously rotating the digipots in the Matte panel.

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**).*

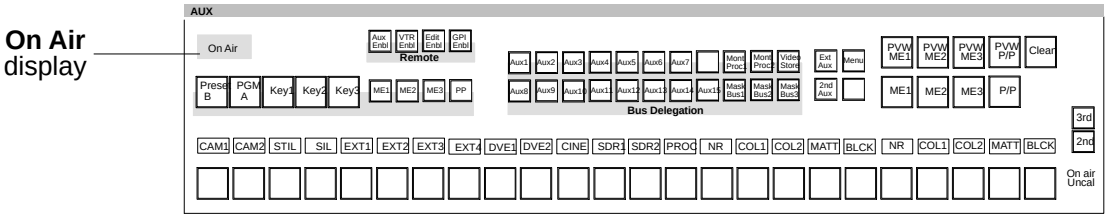
2.3.4 ENABLE THE REMOTE FUNCTIONS



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



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.

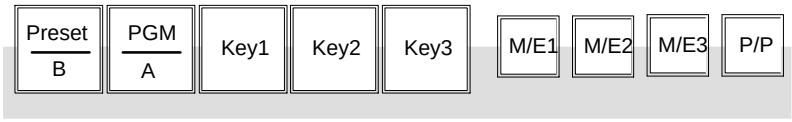
In **Non-Layer mode,** the **Background B** bus is the **Preset** bus. The background image for the next BGD transition is selected on it. Usually this can be previewed on the stage's preview output.
Program and **Preset** bus operate in Flip-Flop mode, i.e. after the BGD transition, the preset and program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



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 processed 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 external AUX buses.To select a specific signal:

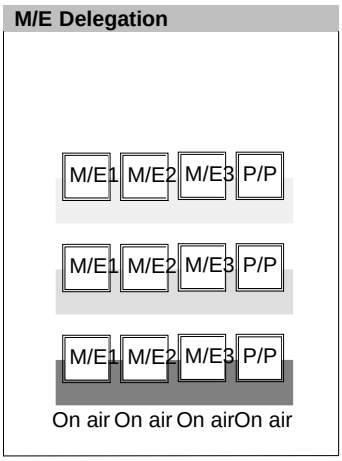
- Press and hold down the respective **M/E** button
- Press the button of the signal to select
- Release the **M/E** button

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 (ONLY IN RPD 35-2 AND RPD 35-3 PANELS)

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.***



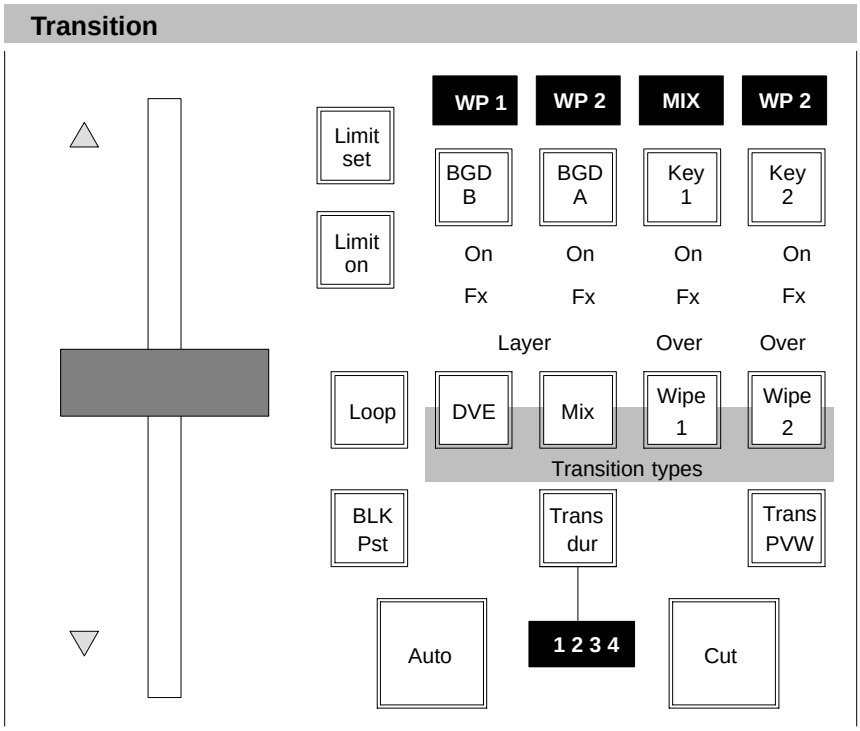
Example: RPD 35-3 control panel

2.6 TRANSITION PANEL

The *DD35 Production Switchers* include a universal mixing level with a background transition stage and two independent **keyers**.
With both keyers, Luminance and Linear Key mode can be enabled. The **DynaChrome** keyer is an option per M/E including P/P.

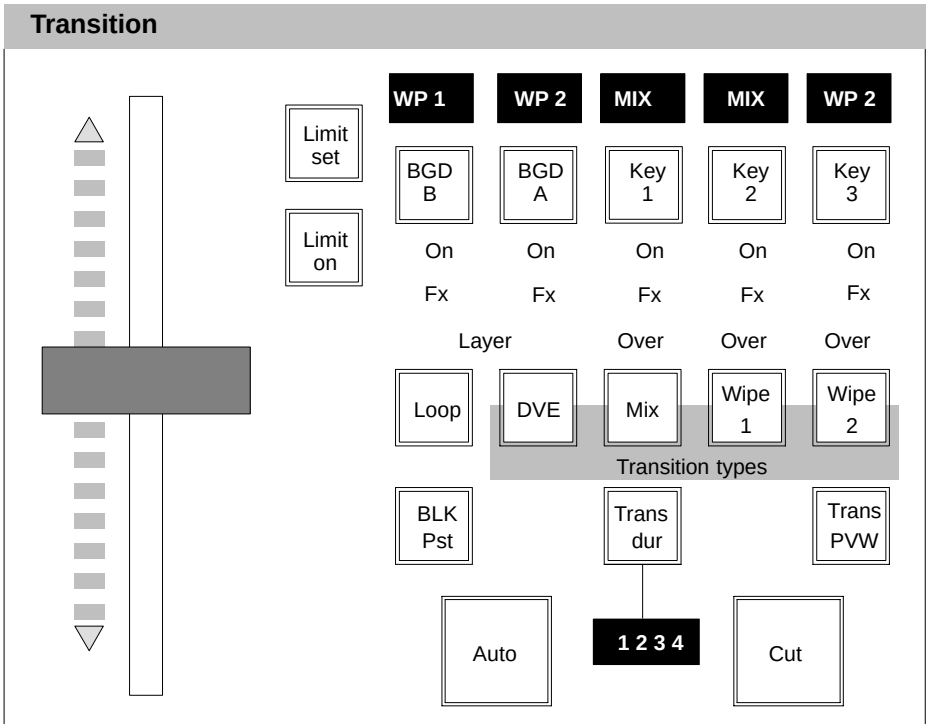
The transition panels for the M/E1, M/E2 and M/E3 levels are set up identically. For an ergonomic layout, the fader for the M/E2 and P/P level are arranged on the right-hand side of the panel.

Example 1: RPD 35-4 Transition panel



In compare to the RPD 35-4 control panel, the RPD 35-2 and RPD 35-3 panel have more buttons and gives therefore the possibility to select the 3rd keyer without changing UPK button functions. Additionally a fader status bar supports the fader operation.

Example 2: 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.

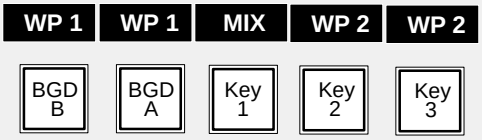
For an optimum preview of the transition effect, the switcher is equipped with independent preview mixing levels and Transition PVW capabilities.

*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

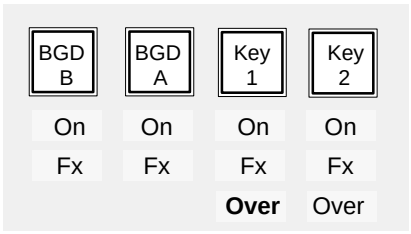
The next-transition buttons **BGD B**, **BGD A**, **Key 1**, **Key 2** and **Key 3** permit the preselection of the picture components to be involved in the next transition. The buttons are mutually exclusive. If you wish to fade several picture components simultaneously, press the respective buttons at the same time.

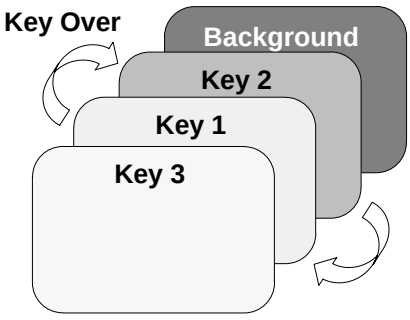


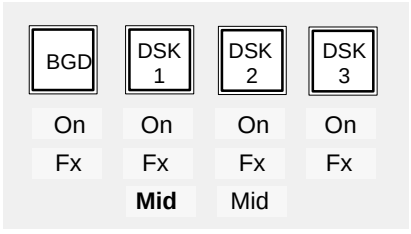
The selected buttons light up and indicate which picture components will be affected during the next transition. The result can be checked on the preview monitor. The display above the buttons shows the type of transition (**WP1** for Wipe1, **WP2** for Wipe2, **MIX**, **DVE**, **ADD**) that was selected for the respective picture component. The “switched on” status of a keyer is indicated with **On** below the next-transition buttons.

Keyer priority Over (Mid)

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.



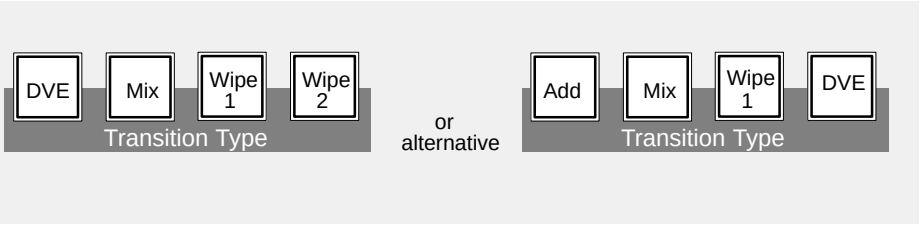




Note: *In the menu, the priority among the keyers is indicated with **Button**, **Mid** and **Top**.*

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**.

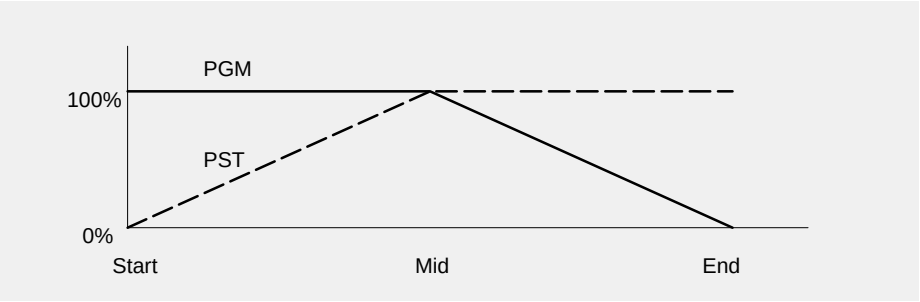


The selected transition type is indicated above the respective next-transition button.

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.

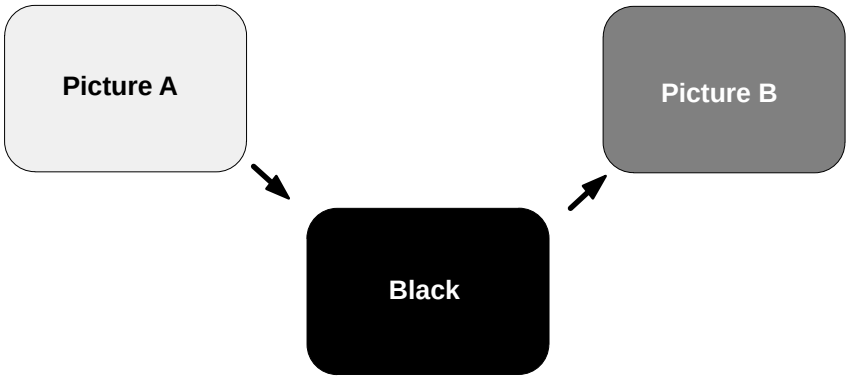
Adjusting different transition types:

- 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:

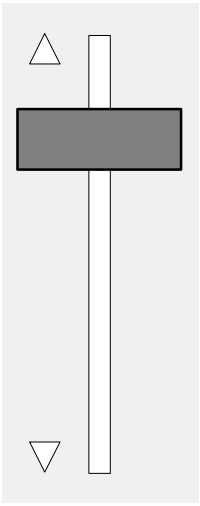
- During the fade-out-phase and on the black limit: **BLK Pst** turns off and the transition is stopped and put back to the start position.
- During the fade-in-phase: the transition is stopped and set back to the black state. **BLK Pst** remains on.

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

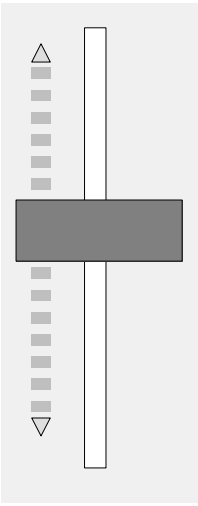
Application Setting	Action
Non-layer mode: Black Pst Abort	A currently running transition with **BLK Pst** on will be aborted, the **BLK Pst** button lamp turns off and the selected source is taken fully as program.
Layer mode: Black Pst Abort	If a currently running transition with **BLK Pst** on is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



RPD 35-4 fader



RPD 35-2/-3 fader

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 DD35 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 background
+ 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 DD35 switcher 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 DD35 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 DD35 production switcher has – like most other switchers – visible image components (BGD-A, BGD-B, Key1, Key2, (Key3)). 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.

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.

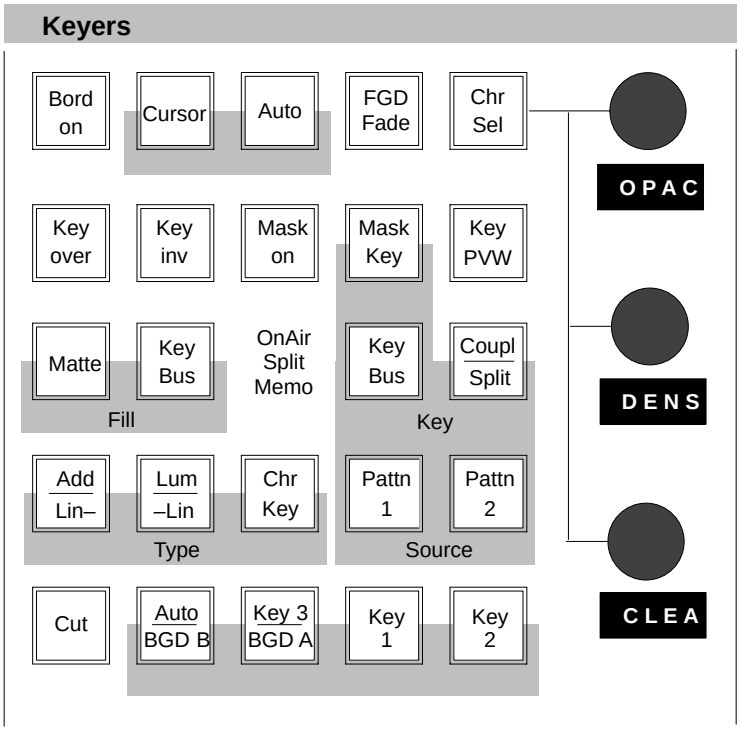
Because in this way no transition of a visible component is done, no restriction must apply to the effects that can be used. The first and last keyframe need not to be at a special value.

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



2.7.2 KEYERS DELEGATION

Key1, Key2, Key3 These buttons delegate the Keyers Panel and indicate which keyer is currently delegated to the Keyers Panel.

BGD B, BGD A BGD B and BGD A keyers are only available in LAYERED mode.

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

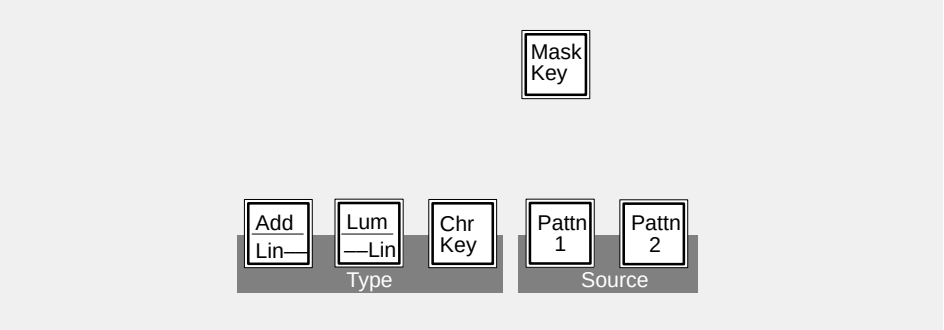
When **Auto Menu** is enabled, the menu display of the attached side panel will switch to the appropriate **Key Menu** and sub-menu.

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



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

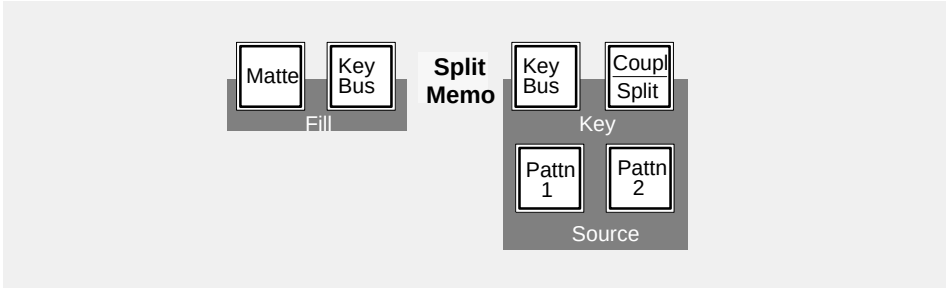
Button **Mask Key** serves to select the mask chosen in the Masks panel as a key signal.
For further information please refer to sections ***Masks Panel***, ***Wipe Panel*** and ***Stores Panel***.

*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.

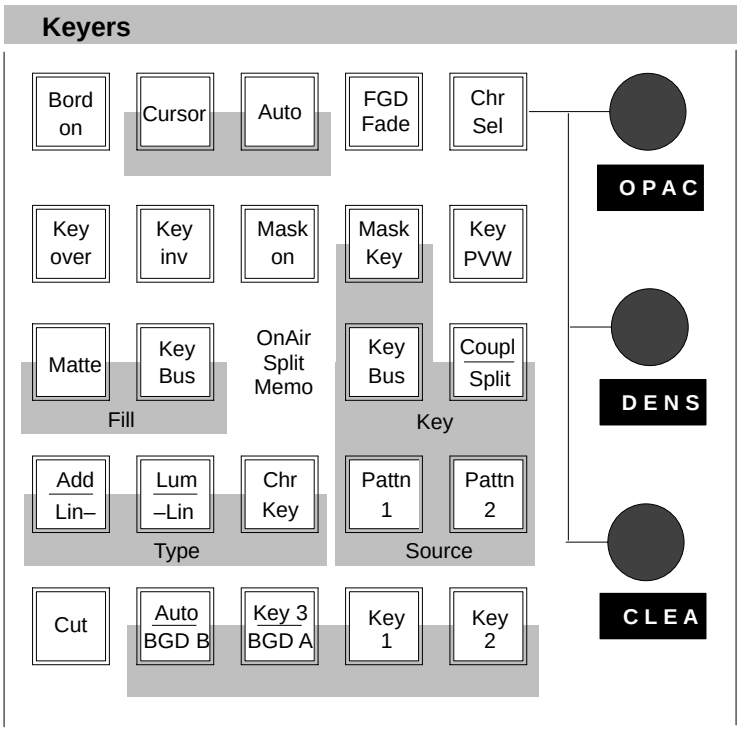
This determines the key source signal. The key fill signal can be selected on the Key Buses row without changing the key source signal.
If you want to cancel the separation of key source and fill signal, press **Key Bus**.

*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



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.

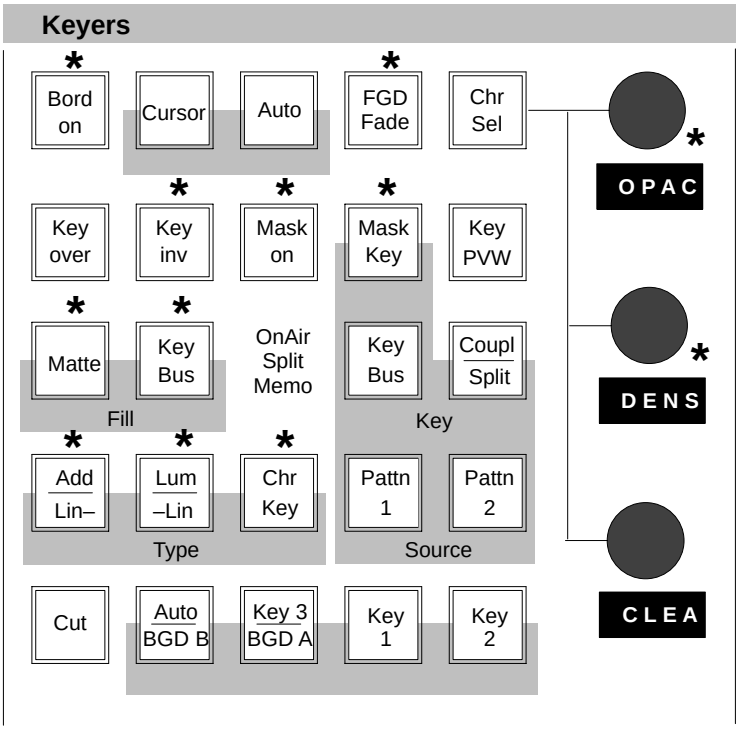
In any mode, the opacity and border opacity are reset to 100%.

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 3.17.2.2 .



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.*

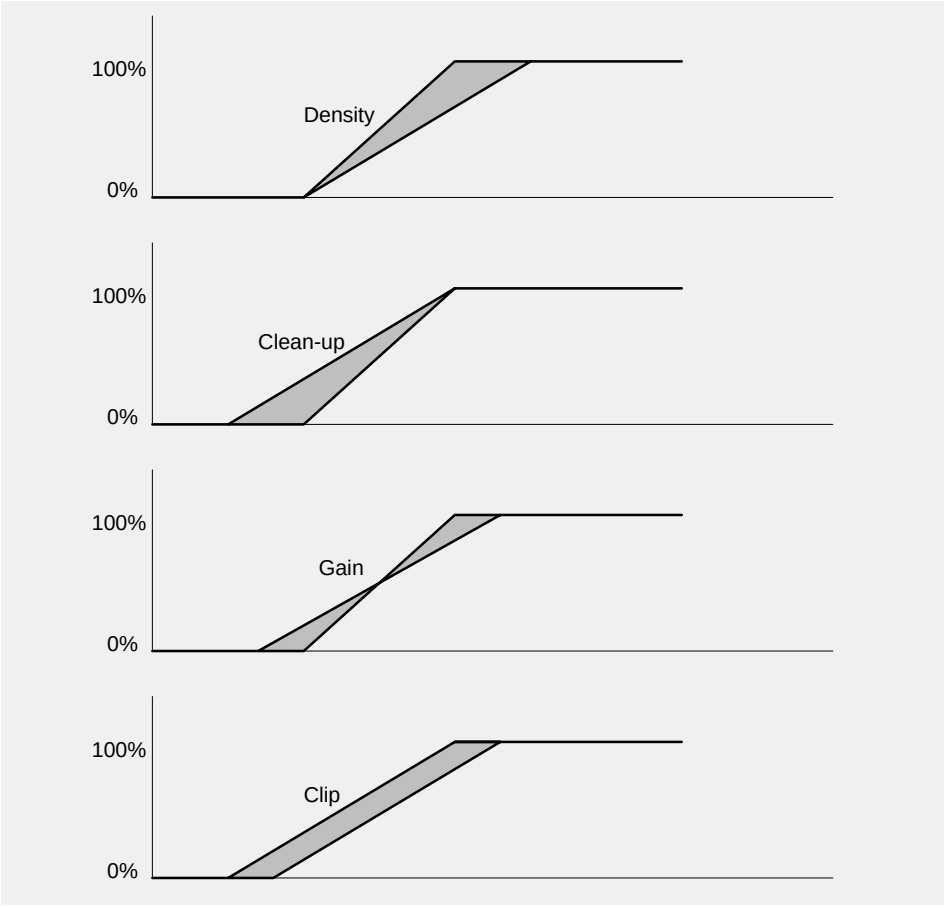
2.7.8 MANUAL KEY ADJUSTMENT

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.

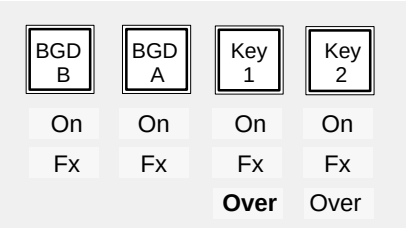
2.7.9.3 MANUAL ADJUSTMENT OF THE KEY COLOR

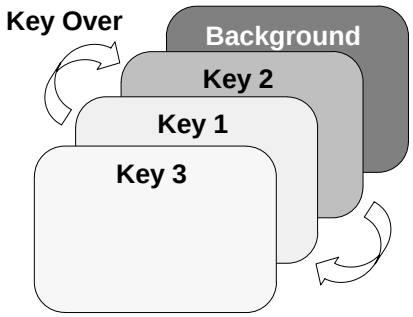
Refer to the controls **Hue**, **Chroma** and **Luminance** in the section ***Key / Chroma Key*** menu.

2.7.10 KEYER PRIORITY

Non-Layer mode

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.





Layer mode

Pressing **Key Over** once brings the delegated keyer one step nearer to the viewer. Priority of layers wraps around, so pressing **Key Over** for the top layer makes this keyer the botton layer.

2.7.11 FUNCTIONAL RESTRICTIONS FOR BGD-B AND BGD-A

In LAYERED mode, BGD-B and BGD-A operate like keyers with some functional restrictions.

BGD-B

– no Chroma Key
– no Fill Matte
– no Border
– no Masking
– no Mask Key

BGD-A

– no Chroma Key
– no Fill Matte
– no Border

2.7.12 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.

2.7.13 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.***

2.7.14 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 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 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.*

2.7.15 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.***

2.7.16 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.***

2.7.17 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.

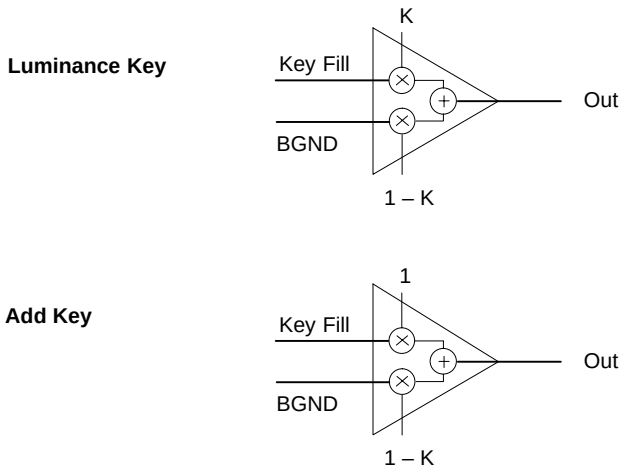


Figure 201: Fading Procedure

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.

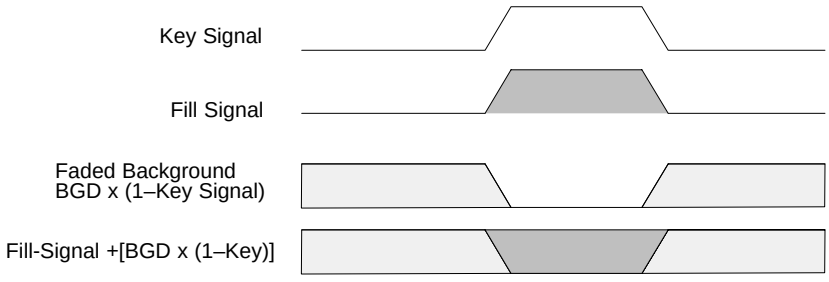


Figure 202: Key Results with Additive Key

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.

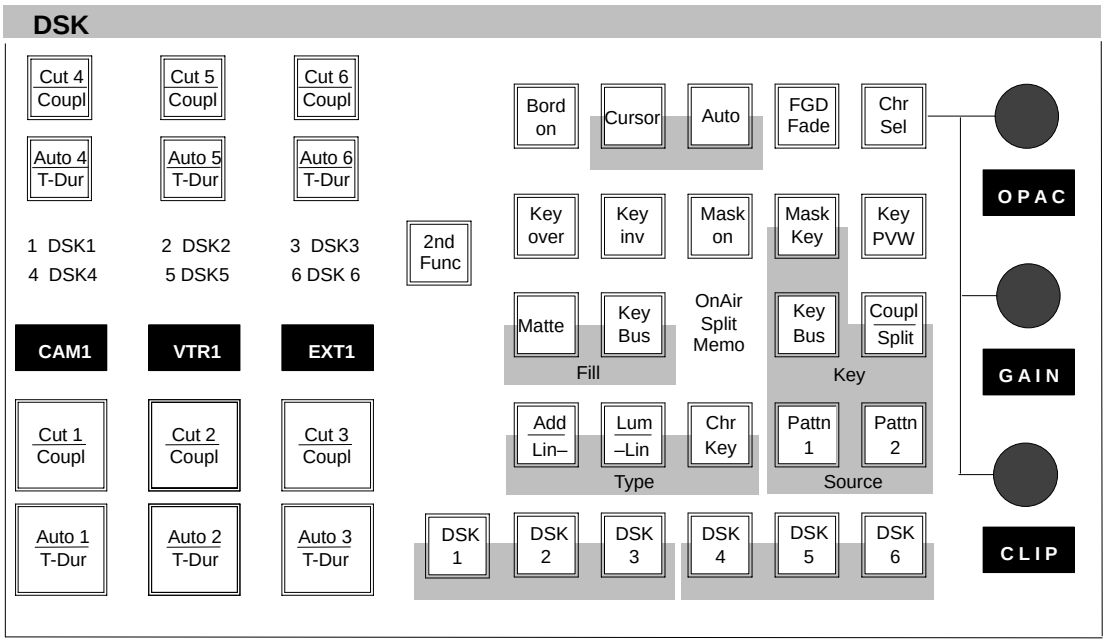
2.7.18 LOCKING THE DIGIPOTS

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

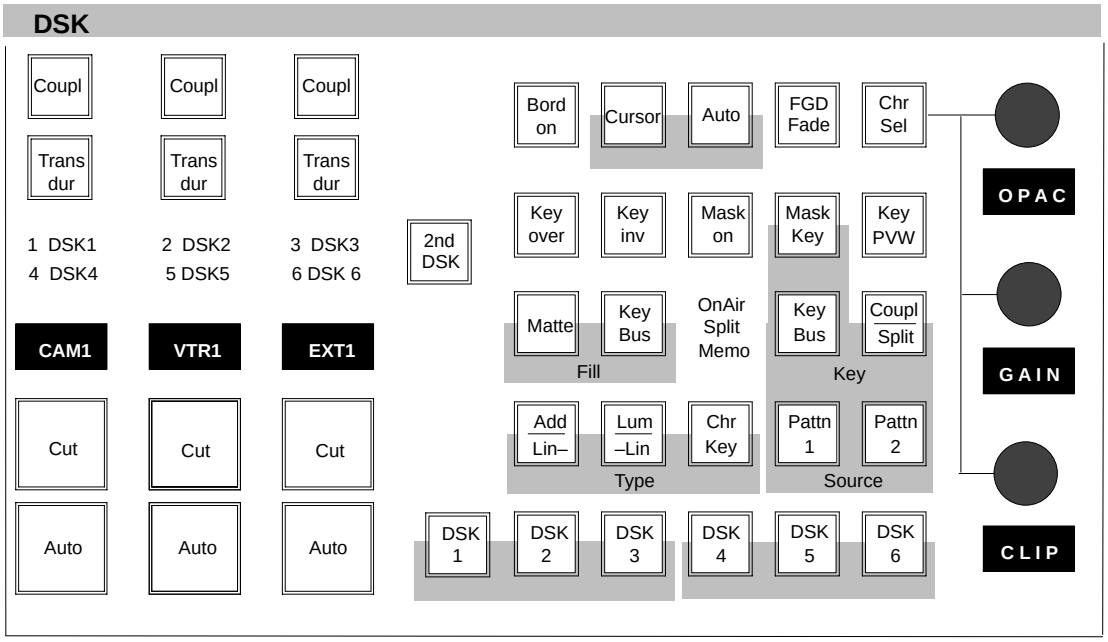
For locking proceed as follows:

- 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



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



DSK panel (with inlay set for Operation Mode 2)

The three-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 **DSK6** are used for delegation. **DSK1**, **DSK2** and **DSK3** are internal and **DSK4** , **DSK5** and **DSK6** are optional external keyer boxes, e.g. Ross CDK104 or Oxtel EasyKey.

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...6.
If the **2nd Func** button is pressed, **TransDur** and **Couple** are operated from DSK1...6.

OpMode 2

2nd Func button toggles between DSK1...3 (**Cut, Auto, TransDur, Coupled**) and DSK4...6 (**Cut, Auto, TransDur, Coupled**).

Mode Selection

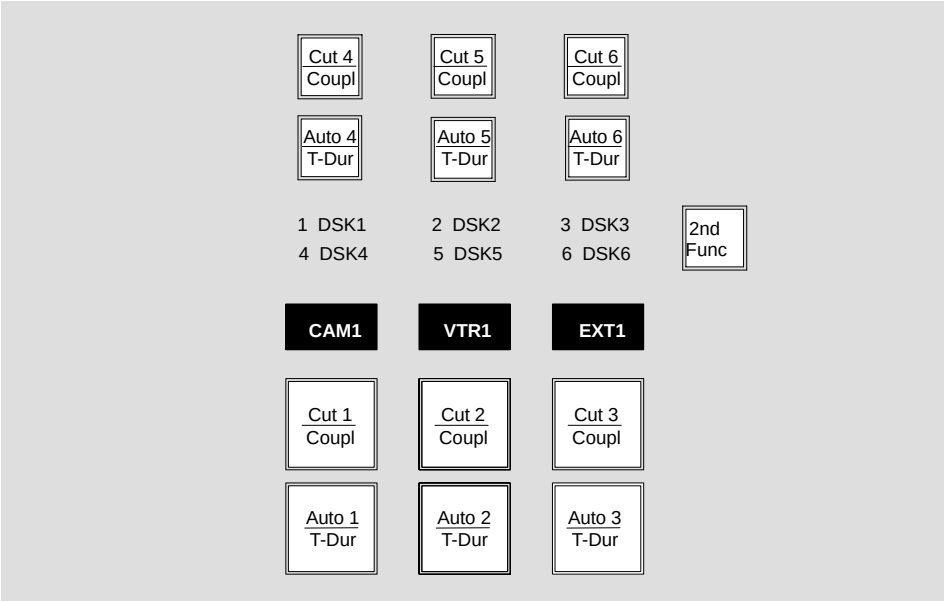
It is possible to toggle between the two modes by simultaneously pressing the two arrow buttons in the Matte panel and the **2nd Func** button in the DSK panel.

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.

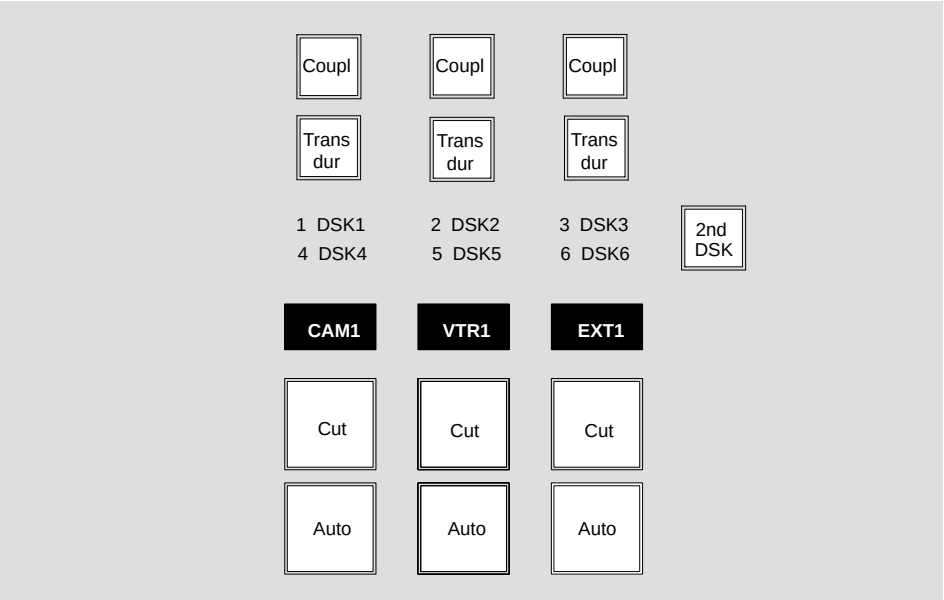
Couple Holding down **2nd Func** and pressing one **Cut *x*** button switches the appropriate Couple mode of the DSK x on or off. Releasing the **2nd Func** button disables the second function mode and the lamp is off. The indicators **1**, **2**, **3**, **4**, **5**, **6** then show which keyers are 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 DSK4...DSK6 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 appropritate 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 ... 6 The coupled DSKs are indicated by the **Coupl** button and the indicators **1..6**.

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 DSK4..DSK6 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..6** The coupled DSKs are indicated by the **Coupl** button and the indicators **1..6**.

2nd DSK Pressing **2nd DSK** changes delegation of the DSK transition section from **DSK1** ... **DSK3** to **DSK4** ... **DSK6** and vice versa.

Indicators
DSK1 ... DSK6

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

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.

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

DSK3

– no Chroma Key
– no Fill Matte
– no Border

2nd DSK
DSK4 ... DSK6

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

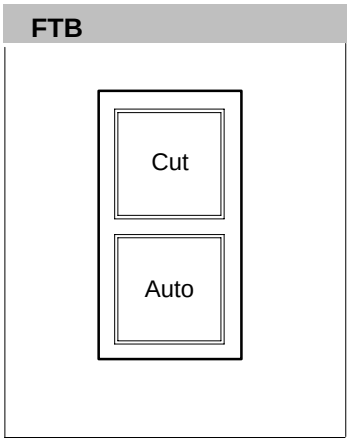
To protect the actual control adjustments against accidental changes, the digipots in all keyer groups can be locked.

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 *DD35 Production Switchers* include a **fade-to-black stage** which permits fading the program picture to or from black



Cut The transition to and from Black is done as a hard cut.

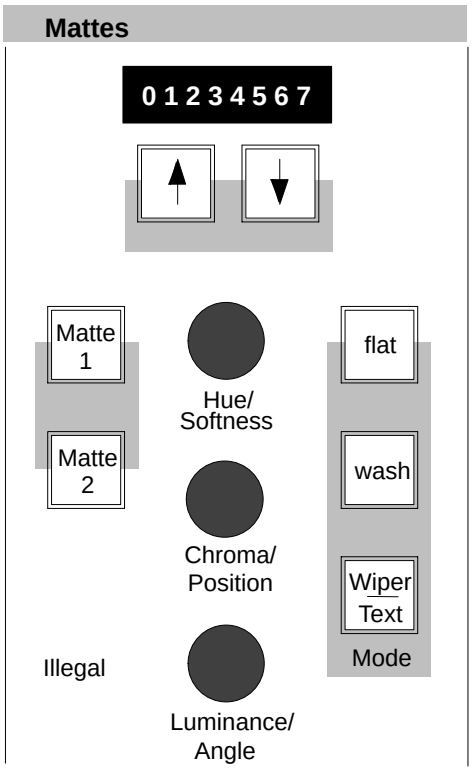
Auto The transition to and from Black is done as a MIX transition in the preset transition duration. During the transition, the button lights.
Pressing **Auto** or **Cut** during the transition aborts it and deactivates the Fade-To-Black status, i.e. program signal is fully visible.

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



The *DD35 Production Switchers* includes 27 independent matte generators for designing matte backgrounds, wipe borders, key borders and captions in color.

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

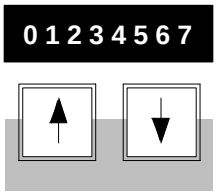
FractalTextures The new **FractalTextures** function extends the range of options for effective background design. In this mode, the wipe signal of the wipe generator controls the color wash effect of a matte generator between any two colors.

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

***WiperWash*™** The **WiperWash**™ function offers a new option for wipe border design by permitting 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.



Each time you press this buttons, the following matte options will appear in cyclical order:

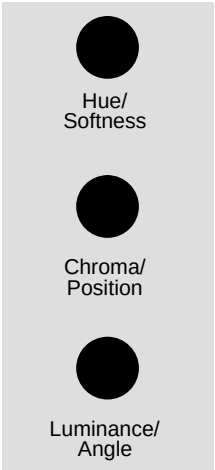
- **Wipe 1/2 B**order (M/E1 ... M/E3)
- **Key 1/2 F**ill (M/E1 ... M/E3)
- **Key 1/2 B**order
- **Col1**, **Col2**, **Col3**
- **Key 1/2/3 F**ill (P/P)
- **Key 1/2/3 B**order (P/P)
- **Wipe 1/2 B**order

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 – 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.

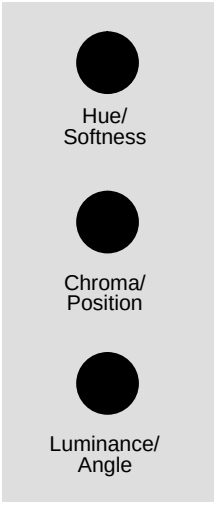
*Note: Please note that certain combinations of chrominance and luminance values will cause illegal colors. For this reason, an automatic control limits for instance the chrominance for defined luminance values. You can easily check this by setting the **Chroma** control to maximum and then turning the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



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.

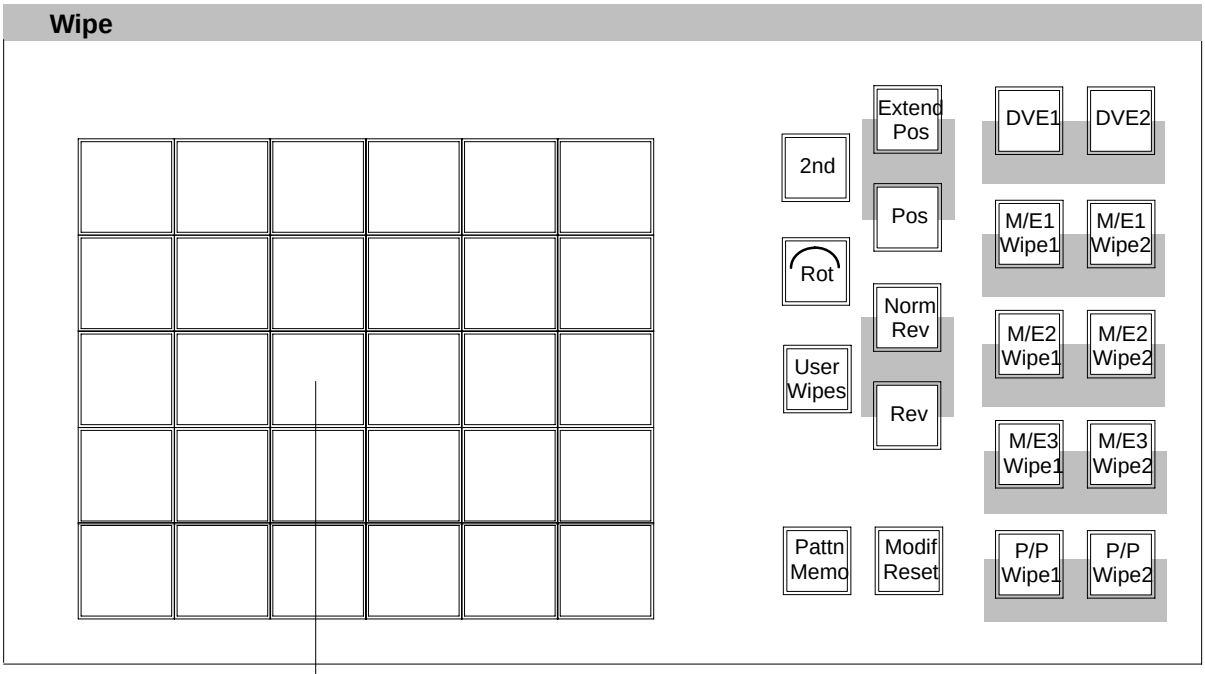
- A change in HUE may result in a chrominance correction.
- A change in CHR may result in a luminance correction.
- A change in LUM may result in a chrominance correction.

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 *DD35* 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.

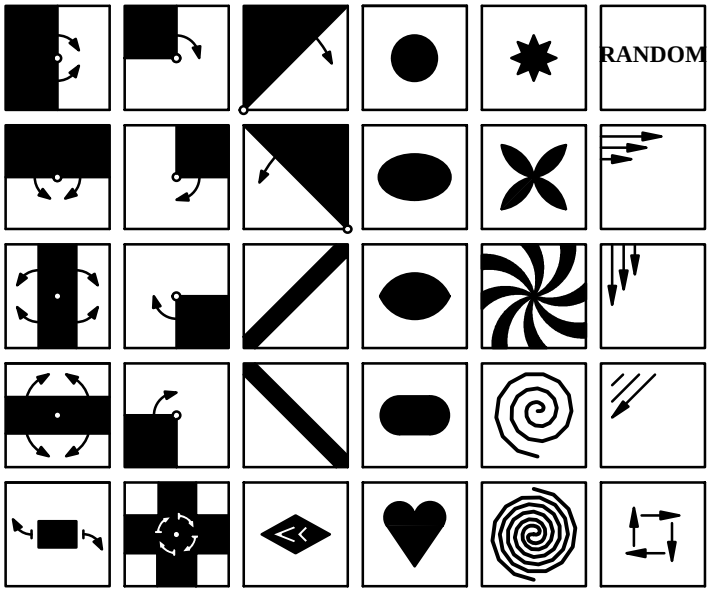


The control panel is delivered with two different pushbutton inlays.
Refer next page for details.

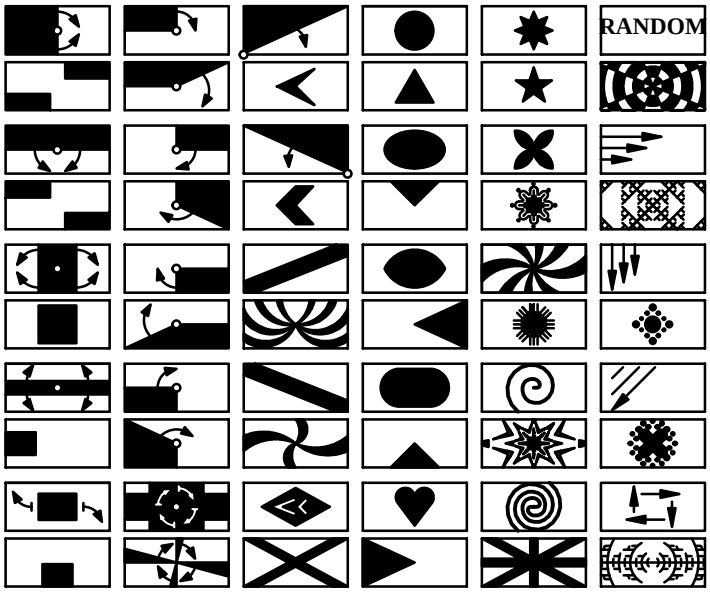
Wipe Pattern selection

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 at once.

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

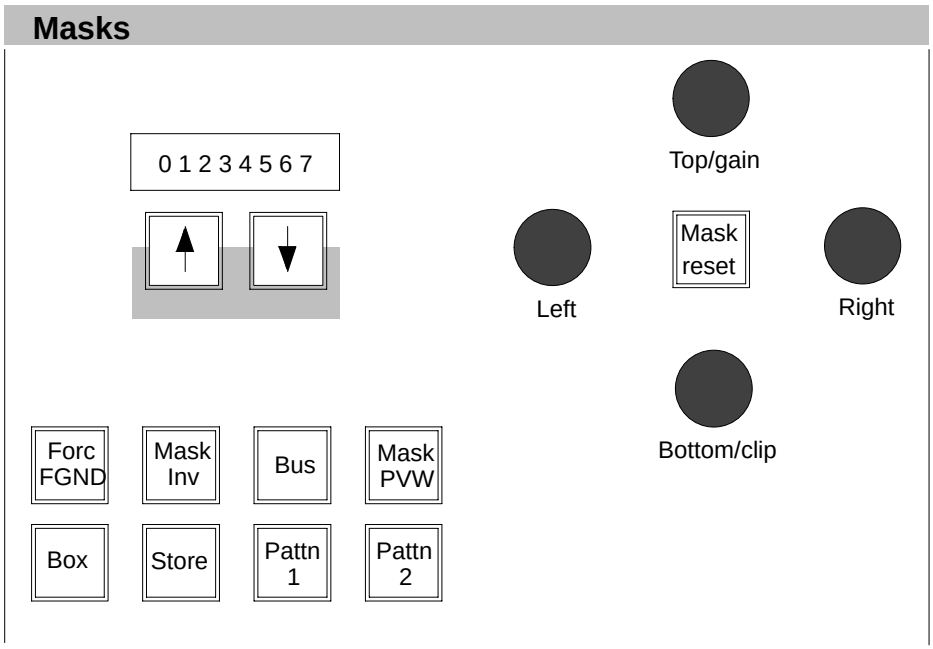
The settings of one wipe generator can easily be copied to another. Similarly, both settings may be exchanged.

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

2.12 **MASKS PANEL** (ONLY RPD 35-4 PANEL)

The *DD35 Production Switchers* 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.



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.

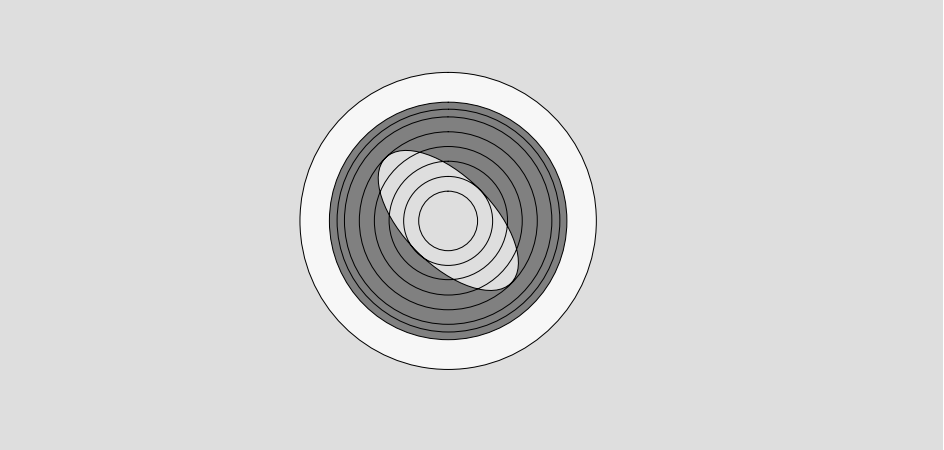
The **Pattn1**, **Pattn2**, **Box**, and **Store** buttons serve to select the type of mask to be used for masking.

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 the trackball in the Positioner panel. 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.

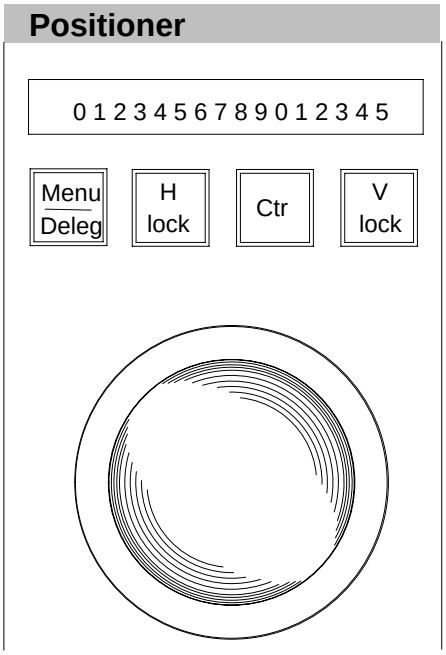
Forc FGND The **Forc FGND** button serves to select whether the mask should suppress (mask) or force the foreground picture. If the button lights up, Forced Foreground is active.

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



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	Key2	
ME2	Wipe3	MSK3	Key3	STOR
	Wipe4	MSK4	Key4	
PP	Wipe4	MSK5	Key5	STOR
	Wipe6	MSK6	Key6	

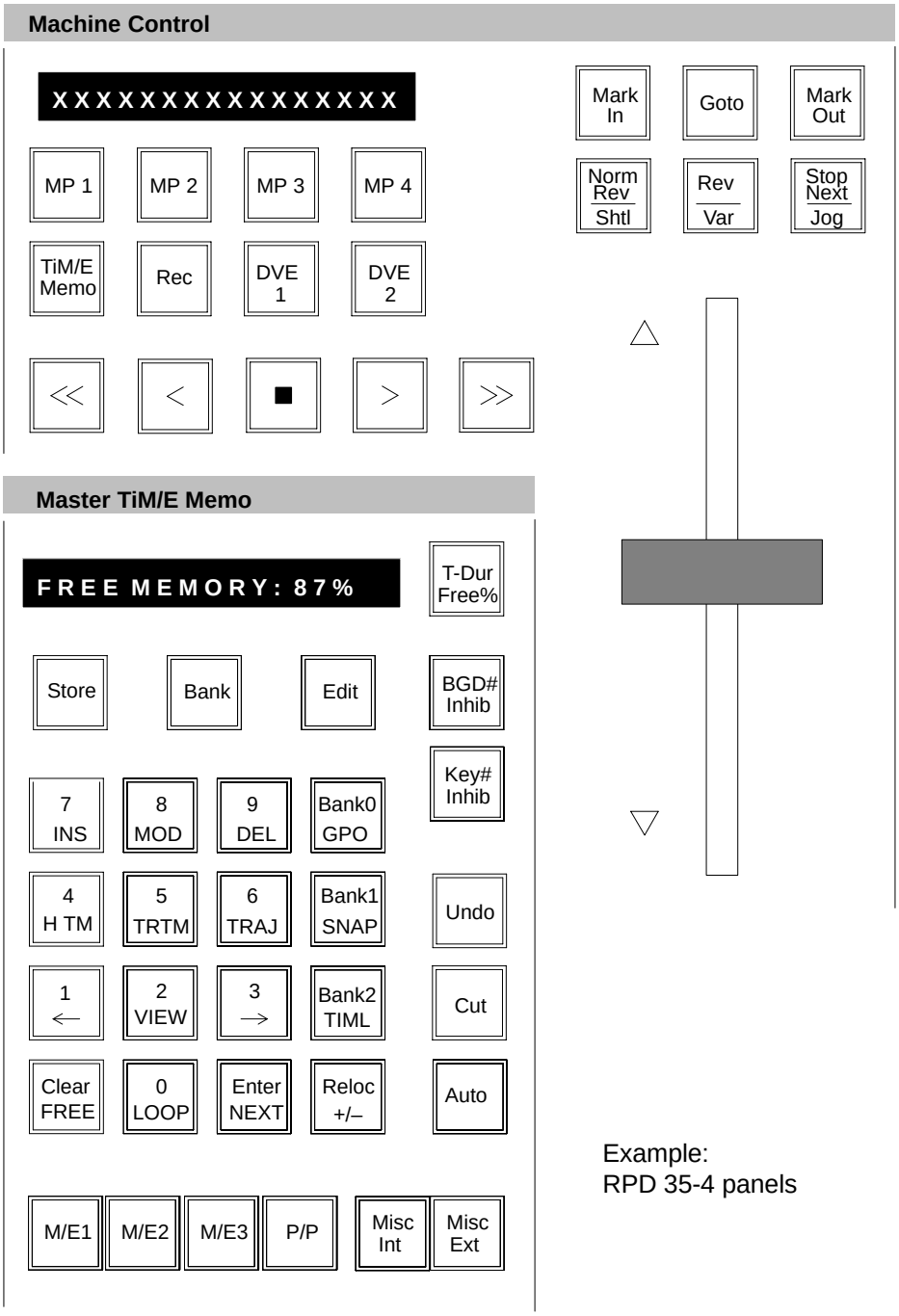
The delegation system automatically assigns the trackball to the currently used functions. If you want to assign the trackball to another function, select the corresponding function in the relevant panel.

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

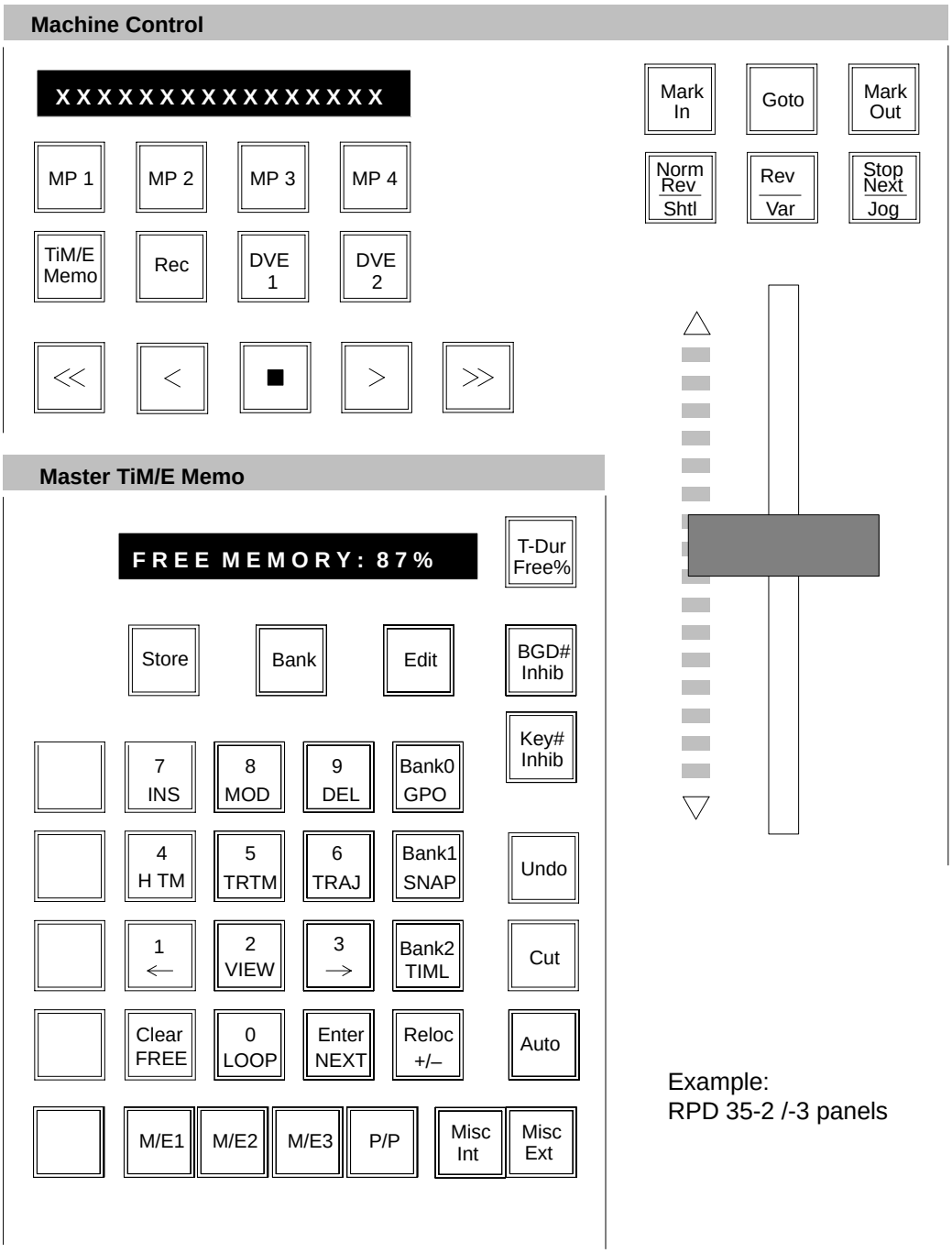
2.14 MACHINE CONTROL

The Machine Control panel of the DD35 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.



Example:
RPD 35-4 panels



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.

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

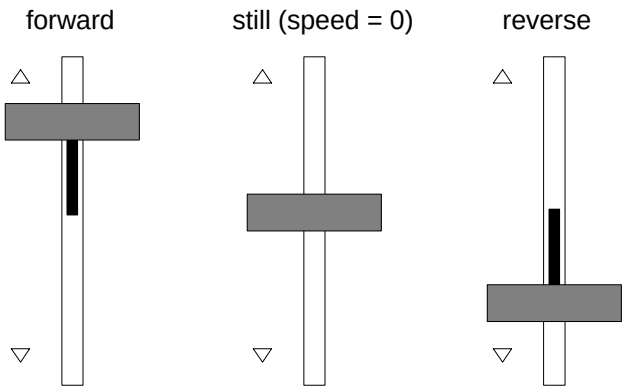
Caution:
The DD35 protocol driver will send RS422 STEP commands. This commands will not be supported by some VTR types.

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 **ShtI** 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.

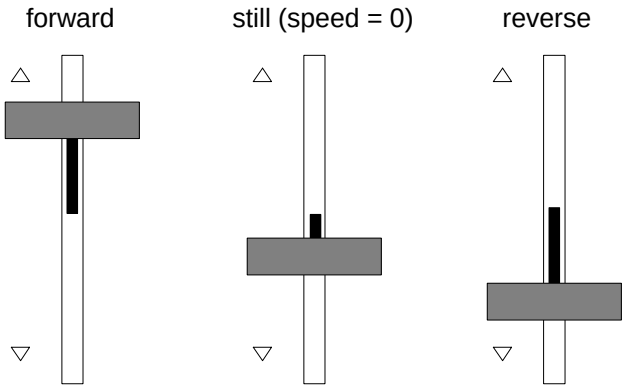
Examples Shuttle directions:



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:



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)

2.15.1 GENERAL

The TiM/E Memory System (former EXTRA) 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.

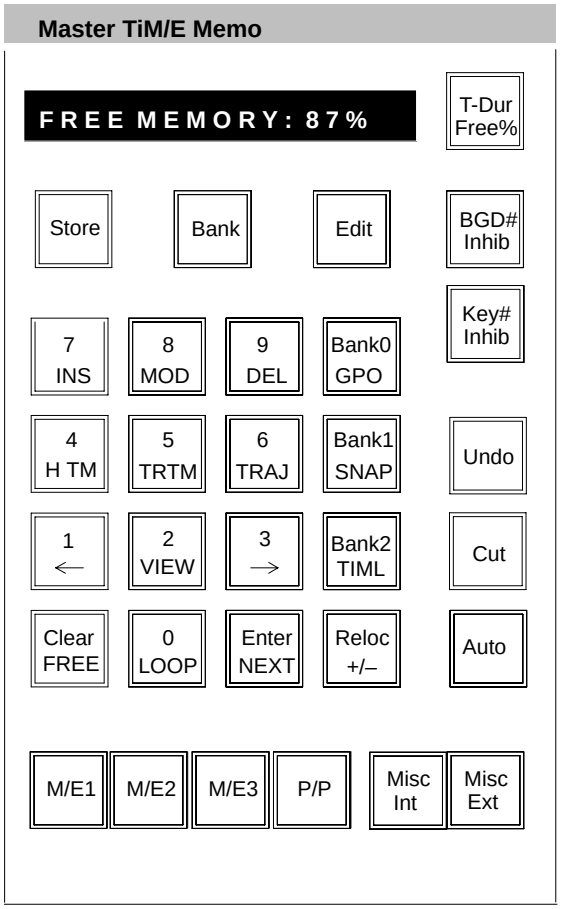
TRAJECTORY is the ”trajectory” between keyframes.

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



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:

No register is selected. The register is empty.

Register 24 is selected. The register is empty.

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

Register 05 is selected. The register contains a snapshot and has no particular name.

As above but in Bank mode 0 with hotkey 5.

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

As above but in Bank mode 0 with hotkey 5.

Register 16 is selected. The register contains a timeline and has no particular name.

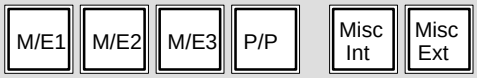
As above but in Bank mode 1 with hotkey 6.

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

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.



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 EXTRA 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: 

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

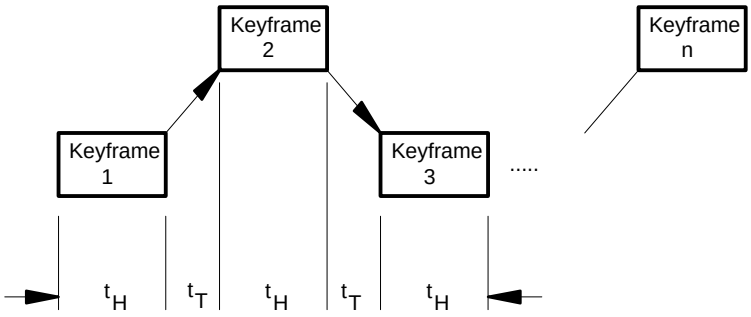
Function of the button:

- 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

User	Wait for a user input
Hold	Wait for a number of frames
TOD	Wait for a specified time of days
TC	Wait for a specified timecode of a connected machine
MaKnn	Trigger MaKE Memo nn of the panel where the timeline was started.
GPIn	Wait for GPI n (1 ... 8)
GPOn	Trigger GPO n (1 ... 8)
EGPOn	Trigger external GPO n (1 ... 8)
PGPIn	Wait for panel GPI n (1 ... 6)
PGPOn	Trigger panel GPO n (1 ... 6)
TGPIn	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:

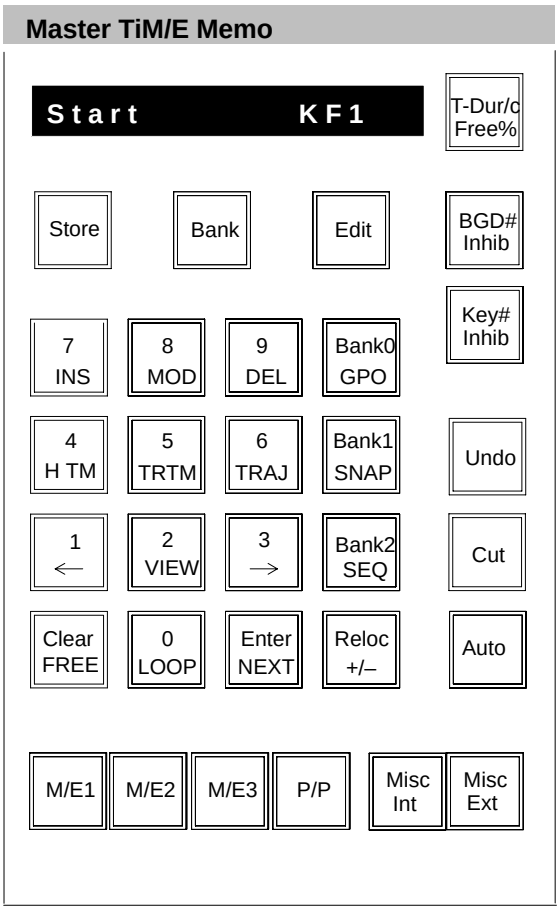
1. Ensure that no transition or anything else is running at TiM/E Memo
2. Press **EDIT**
3. Select Register
4. Press **ENTER**
5. Insert, delete, modify,... timeline objects (snapshots, keyframes, loops,...)
6. Press **EDIT**

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.



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 timeline 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 displayed:

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 CHANGES OF THE FUNCTIONALITY COMPARED TO EXTRA (DD5 – DD30)

2.15.5.1 Display

`TL 24 TL24----`	Register 24 is selected. The register contains a timeline and no particular name.
`TL B24 TL24----`	As above but in Bank mode 2 with hotkey 4.
`TL 24 ABCDEFGH`	Register 24 is selected. The register contains a timeline with the name "**ABCDEFGH**". The name can be entered in the TiME Memo menu to change the name.
`TL B24 ABCDEFGH`	As above but in Bank mode 2 with hotkey 4.

New: If the button **T-Dur / Free%** is pressed twice the following text is displayed:

`FREEMEMORY: x%`	The memory available for storing snapshots and timelines is displayed in %.

2.15.5.2 Enabling and Disabling Bank Mode

The Bank mode can be enabled or disabled directly with the buttons **Bank0**, **Bank1**, and **Bank2**. Thus the desired bank (0–2) can be selected at the same time the bank mode is enabled with only one button pressed.

2.15.5.3 Components of a Timeline

Look at section ***Timeline Editing***.
The timeline object: TRAJ smooth is not yet implemented.

2.15.5.4 Available effects memory

If the button **Trans dur** is pressed two times the following text is displayed:

FREE MEMORY: XX%

The memory available for storing snapshots and timelines is displayed in %.

2.15.5.5 Peculiarities of the Master TiM/E Memo

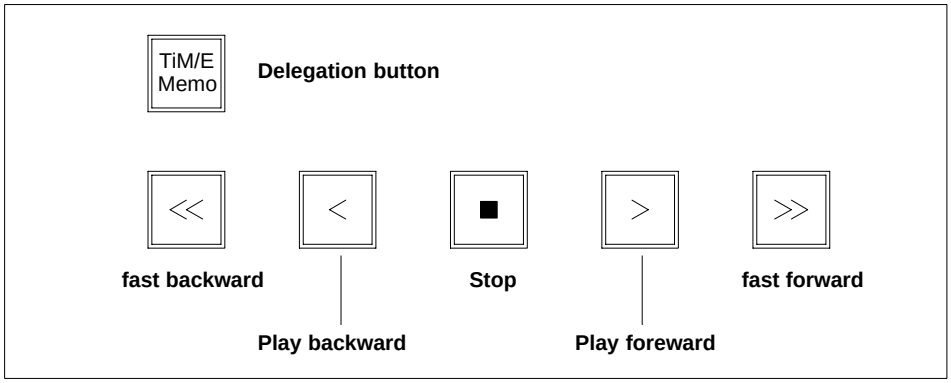
In the Master TiM/E Memo control panel section there are the following additional buttons: **ME 1**, **ME 2**, **ME 3**, **PP**, **Misc int** and **Misc ext**.

The buttons **ME 1**, **ME 2**, **ME 3, PP, Misc int** and **Misc ext** serve for the selection, which switcher functions will be stored and recalled in snapshots and timelines.

2.15.6 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** **BGD-A** **BGD-B** **Key3**, DSK group: **DSK1** **DSK2** **DSK3**	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 DD35 control panel can be configured for different tasks in future software versions. For indication purposes the control panel is delivered with additional pushbutton inlays:

- Set 1: **GPO / Enbl GPO / Shot Box 1 / Shot Box 2**
- Set 2: **Add / DVE1 / DVE2**
- Set 3: **Cut1 Coupl / Cut2 Coupl / Cut3 Coupl**
  Cut4 Coupl / Cut5 Coupl / Cut6 Coupl
  Auto1 T-Dur / ... / Auto6 T- / 2nd Fct
- Set 4: **DVE1 Video / DVE1 Key**
  DVE2 Video / DVE2 Key
- Special pushbutton inlays for more user programmable keys

From **Software Release V2.3.9** onwards, all **Next Transition** buttons (**Bgd A**, **Bgd B**, **Key 1,2,3**) are UPKs.
That means that they can be assigned to any UPK function of the Transition panel, and that the original functions of the buttons are now also available as UPK function of the Transition panel. The purpose is to shift the button assignment for RPS35–4 panels which are not provided with the button Next–Trans–Key 3:

Old:	**Bgd B**	**Bgd A**	**Key 1**	**Key 2**
New:	**Bgd A**	**Key 1**	**Key 2**	**Key 3**

This causes the problem that the Key 3 button operates in the Layered mode **Bgd A**, but **Bgd B** is missing so that the following assignment would be obtained:

(Layered mode)

Old:	**Bgd B**	**Bgd A**	**Key 1**	**Key 2**
New:	**Bgd A**	**Key 1**	**Key 2**	**Bgd A**

For this reason, in the menu Install / Panel / UPK there is still a special UPK function "**Bgd A (Bgd B in layered mode)**" available for the Layered mode, which normally operates **Bgd A**, but in the Layered mode it operates **Bgd B**. With this function on the first button, the following assignment is obtained:

(Non–layered mode)

New:	**Bgd A**	**Key 1**	**Key 2**	**Key 3**

(Layered mode)

New:	**Bgd B**	**Key 1**	**Key 2**	**Bgd A**

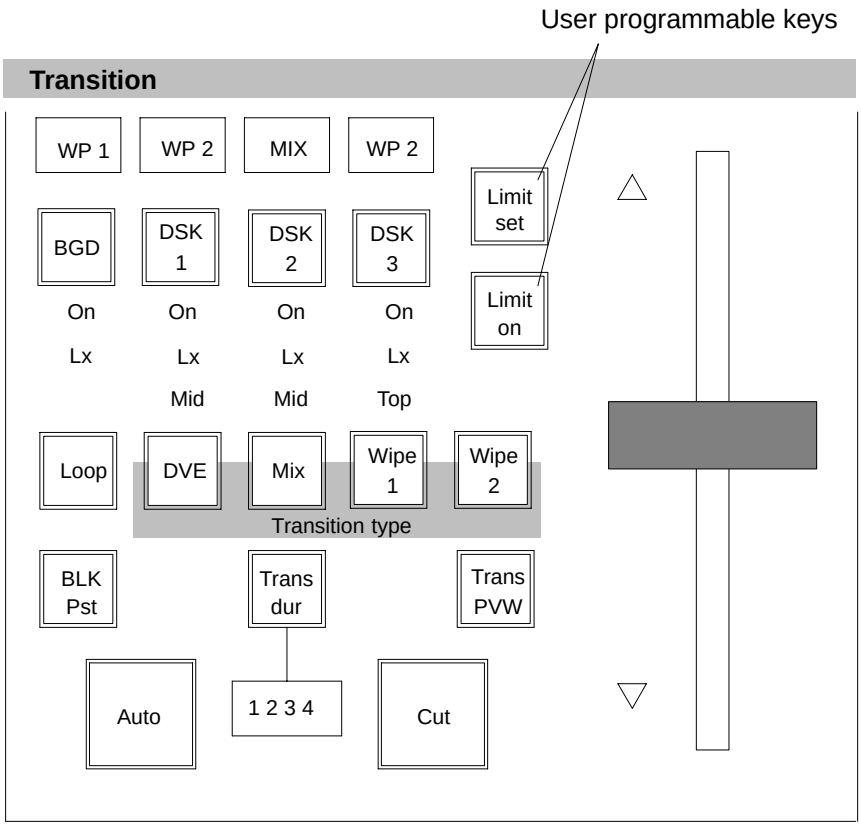
From **Software Release V2.3.9** onwards addition UPK added: **Next Transition** buttons, **FTB–Cut**, **FTB–Auto**, **Transi–Loop**, **Transi BlackPreset**

From **Software Release V3.1.1** onwards addition UPK in the Aux panel section added and **Wait**, **Continue**.

Refer to the menu **Install / Panel / UPK** (section 3.16.3) for details and a complete list of all available UPKs.

2.17.1 INLAY SET1

Pushbutton inlays for configuration modes for pushbuttons **Limit set** and **Limit on** for direct GPO triggering, enable GPO triggering in parallel to Auto and Cut functions, enable Shot Box mode:



The function of ”trigger GPOn” is simply to trigger the GPOn when the so programmed button **GPO** is pushed.

”Enable GPO trigger” can be switched on/off by pushing the so programmed button **Enable GPO**. When on the function of **AUTO** and **CUT** in this ME is slightly modified. **AUTO** then triggers GPO 2 additionally to the normal function. **CUT** then triggers GPO 3 additionally to the normal function.

”Enable DVEx shotbox” can be switched on by pushing the so programmmed button **Shot Box 1/2**. Switching off is done by pushing a “Next Transition” button. When onN the ”transition” control field serves as DVE shotbox i.e. all lamps and displays are switched off, the fader is inactive.

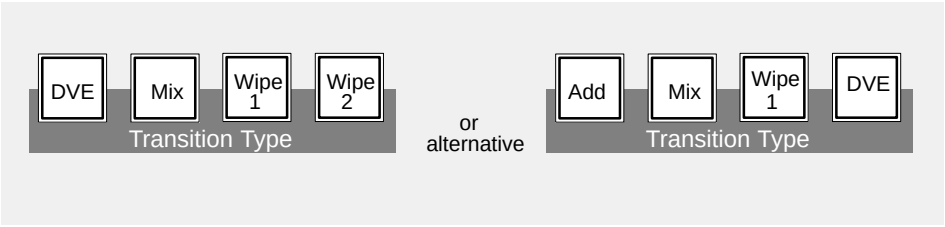
AUTO and **CUT** have differrent functions:

- **AUTO** triggers GPO 2 in DVE1-shotbox mode
- **CUT** triggers GPO 3 in DVE1-shotbox mode
- **AUTO** triggers GPO 4 in DVE2-shotbox mode
- **CUT** triggers GPO 5 in DVE2-shotbox mode

as a side effect the keyers control field is delegated to key1 when enabling DVE-shotbox.

2.17.2 INLAY SET 2

Inlay set for programmable transition type **Add** instead of **Wipe1/2** or **DVE** transition type with **DVE1/2** indication.



2.17.3 INLAY SET 3

Pushbutton inlay set for alternative DSK operation. Refer to section 2.8 in this manual for details.

2.17.4 INLAY SET 4

Pushbutton inlay set for indication of dedicated DVE Aux buses.

2.18 FLOPPY DISK DRIVES

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

Fig. 203: Floppy disk drive in the RPS35-4 panel

The panels **RPS35-4, RPS35-3** and **RPS35-2** 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 Philips 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

Sony Memory Stick

Fig. 204: Disks

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 instructions 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. 205.
The disk adapter has to be inserted into the 3.5” floppy disk drive of the panel like a normal disk.

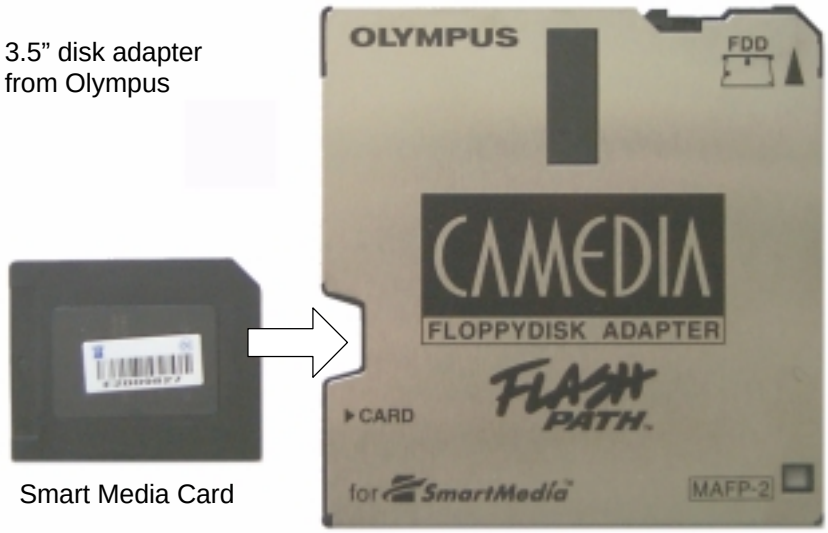


Fig. 205: Inserting the disk

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 sidepanel 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!

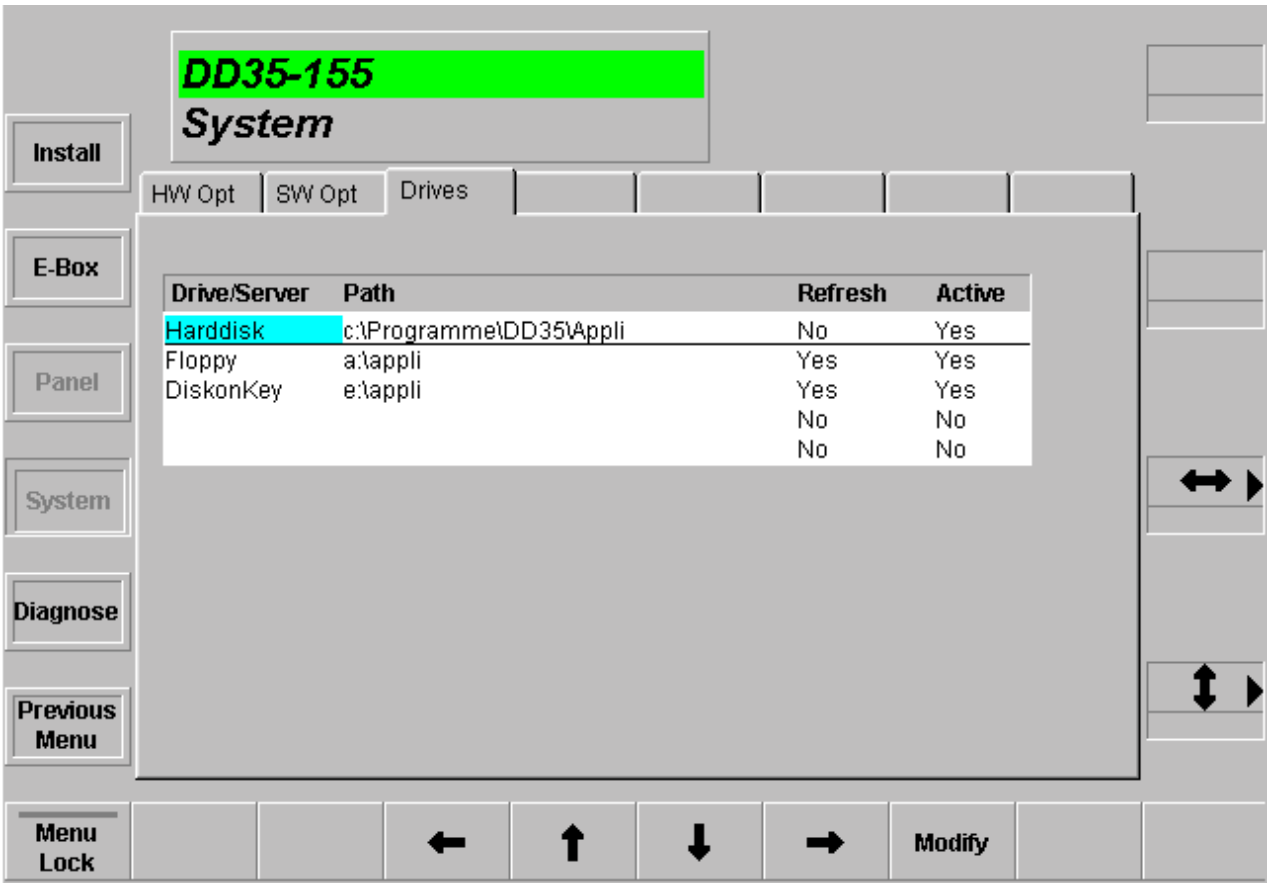
2.18.3 CONNECTING AN USB MEMORY KEY TO THE RPS35-2S PANEL

The IBM Memory Key - DiskonKey™ - 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. 206: 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™ 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™ becomes applicable in the Config menu for copy actions.

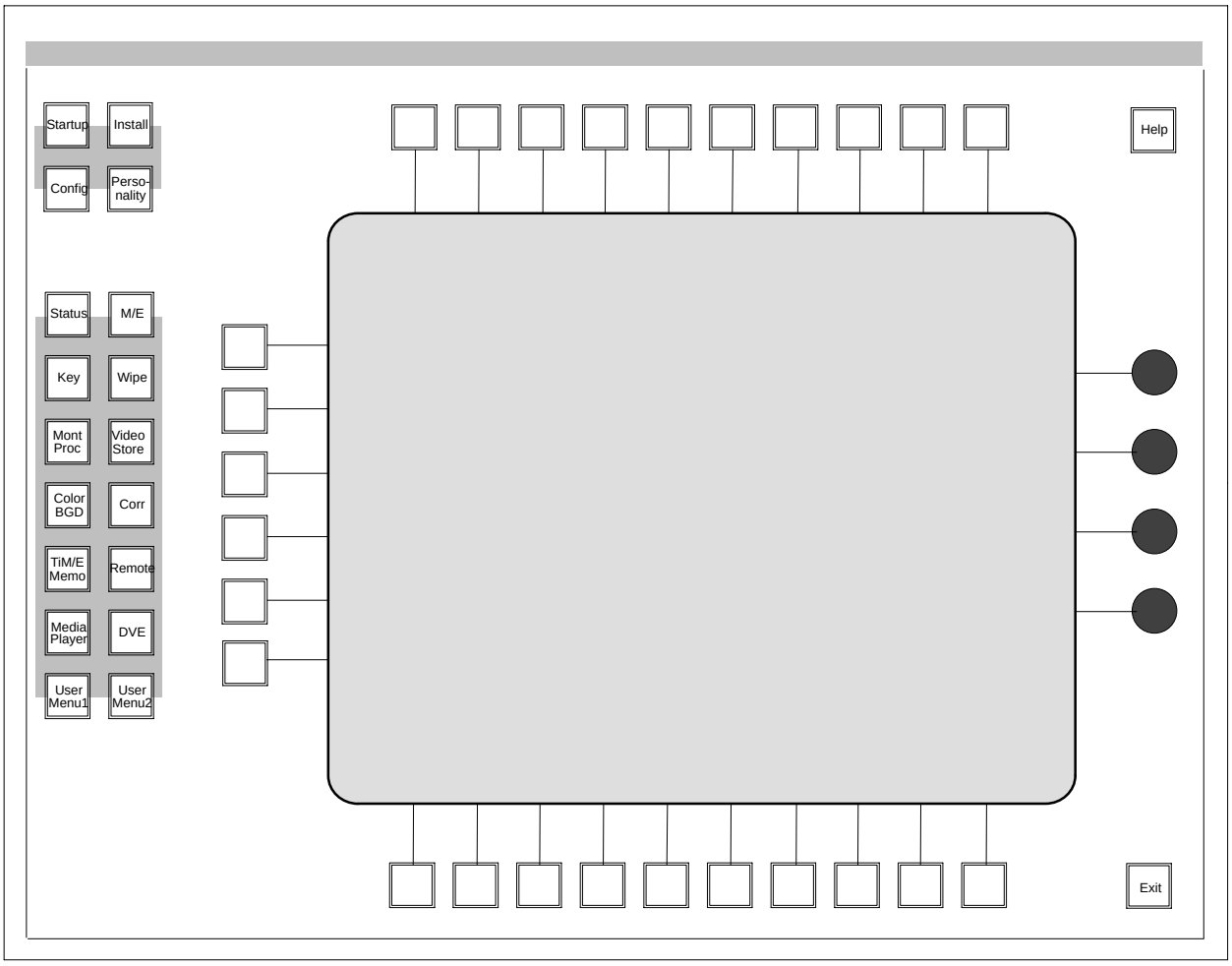


For operation, simply plug the DiskonKey™ module into any USB port of the panel (USB connectors are hot pluggable without the need of power off). The sidepanel PC will immediately identify and support that module.

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™ 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:

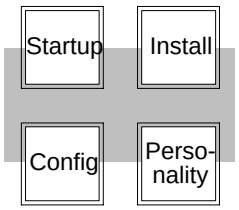
- 10 softkeys above
- 10 softkeys below
- 6 dialog keys to the left
- 4 digipots to the right

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

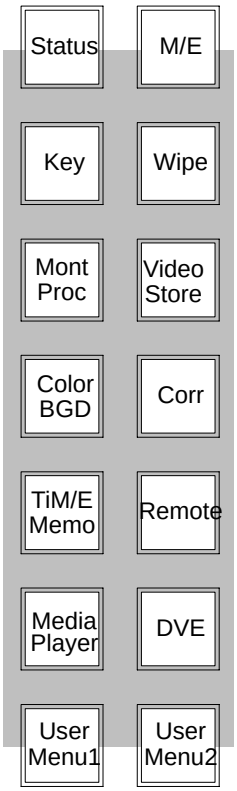
3.1.1 MENU BUTTONS

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.



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

Pushing the **Help** button recalls a general help menu. If **Help** is held down while pushing a certain menu button, it calls a context sensitive help window which can be closed with **OK**.

When help is selected a window is opened and an appropriate help menu is displayed. Similar to the regular Windows Help System navigation through the listed subjects is possible. To select a specific ”Link Item” (underlined, displayed in green) the regular list box cursor buttons are provided. Like <TAB> and <SHIFT><TAB> on regular keyboards the right/left arrows are used for advancing or going backward in the select position. The cursor is represented as an ”inverse” colored block, preferrably in light blue.
Modify performs a jump to the selected subject. Instead of **OK** either a **Close** button or the Help button is used to leave the current Help window.

Exit

Pushing **Exit** always exits to the upper menu. In case of **Topmenu** it exits to the **Status** menu. In the case of **Status** menu it closes the Side panel application software SP.EXE

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.

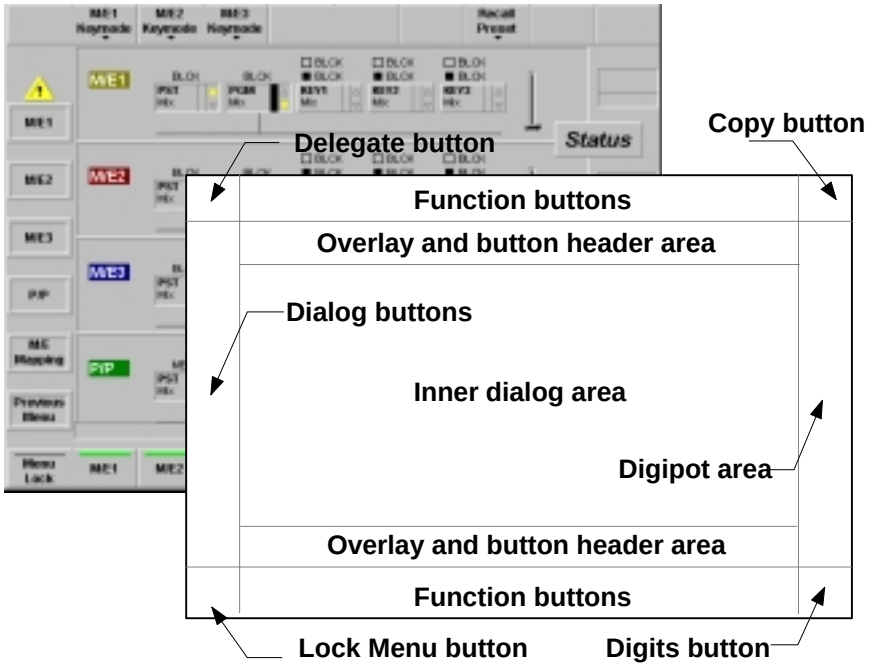
Every dialog of this format is called a **menu**. Associated functions are grouped whenever possible. A group of co-operating analog controls is formed by stacking up to four *bar graphs* into one column. If a menu has more than one bar graph column the column must be mapped (delegated) onto the digipots. 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.

Note: The overlay is displayed for approx. 5 seconds.

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.

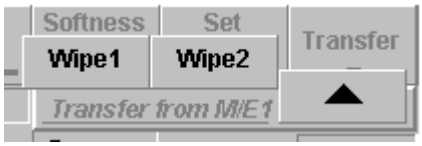
Examble: Transfer of the wipe settings from M/E1, wipe 1.

Step 1: Select **Transfer**

Step 2: Select **From**

Step 3: Select **M/E1**

Step 4: Select **Wipe1**



Lock Menu

As long as this button is switched on, the Auto Menu function is inhibited.

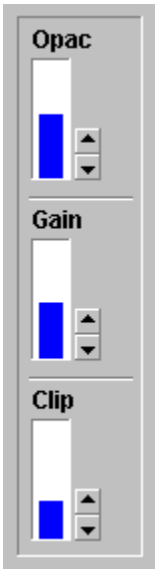
Digits

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.

Previous Menu

Recall the previous menu. Pushing **Previous Menu** again returns the operator to the menu they just left.

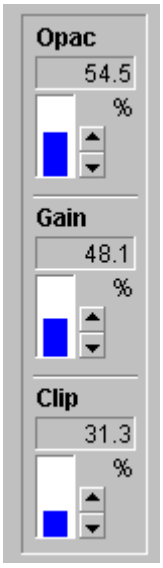
3.2.5 BAR GRAPHS



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.

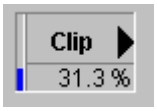
A bar graph has the control state relevant/irrelevant and delegated/nondelegated which is represented optically. A bar graph in the delegated state is represented a blue color. An nondelegated diagram is shown in black and an irrelevant diagram shows only the frame and the text in grey color. The column and the numerical values are not shown.

Bar graphs in bar view mode



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

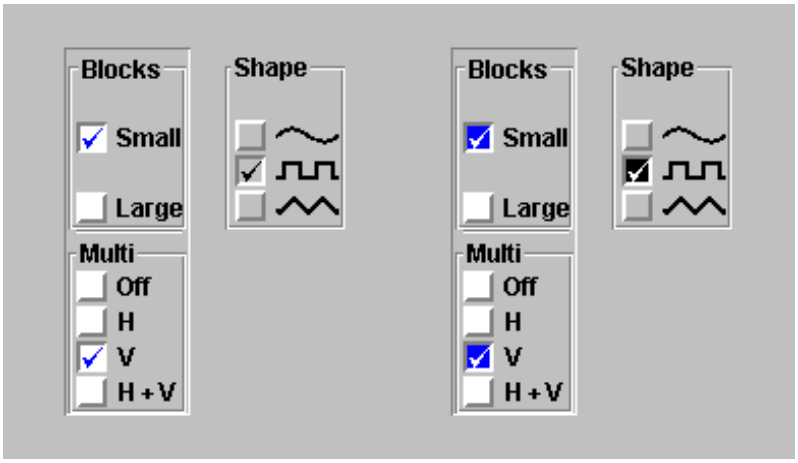


A digipot designator is a control element which is used to describe the digipot function. It is represented in the digipot area on the right side, in each case in the height of the pertinent digipot. The inscription changes if another group is selected.
A numeric digipot designator has a small bar to 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

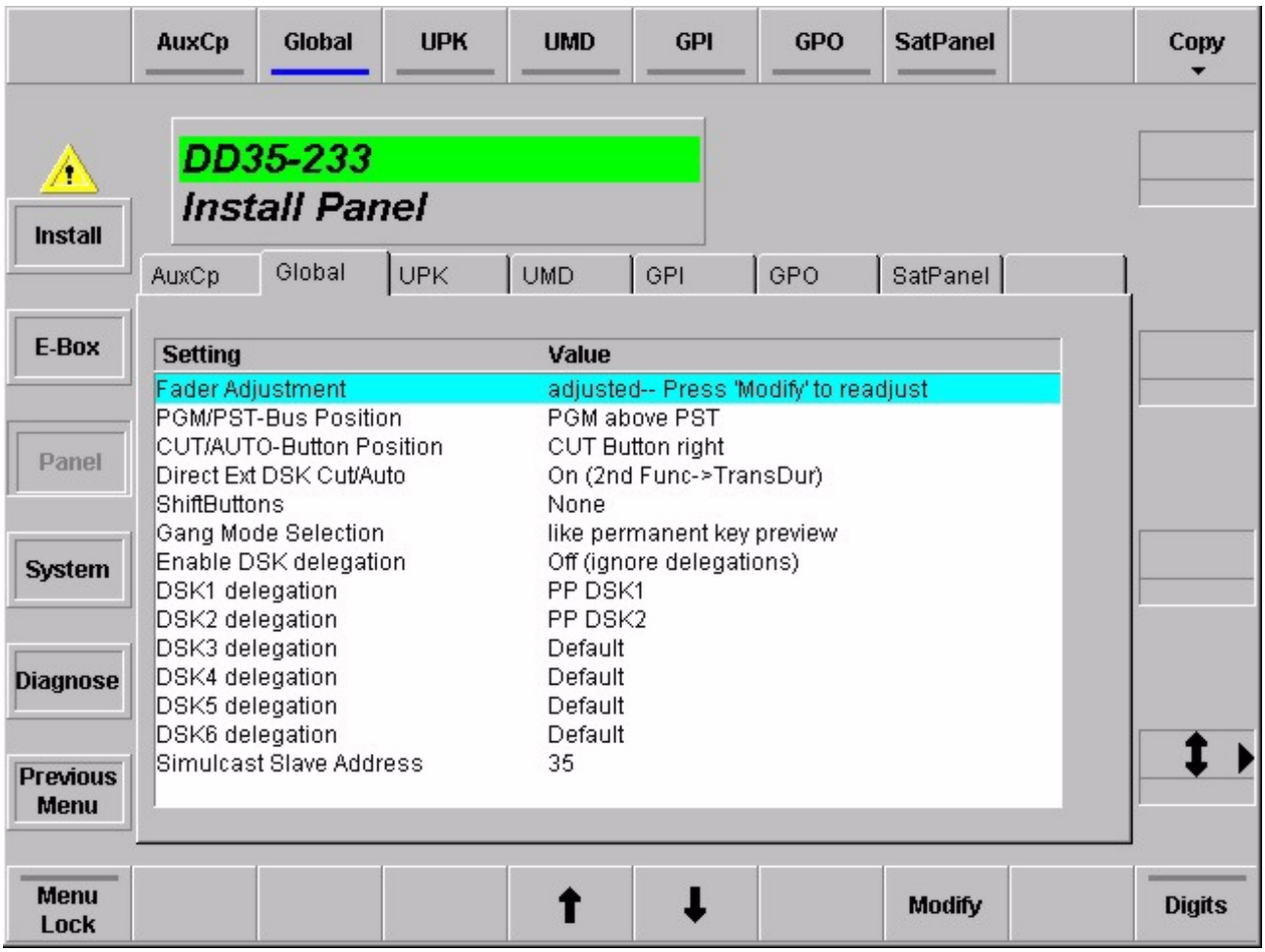
Examples of selection boxes. The left three boxes are the default boxes. The right three boxes are optional (Personality Setup). **Blocks** and **Multi** are delegated. The **Shape** is non-delegated. A selection box can be controlled with the mouse or with a digipot if the box is delegated. When the 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.

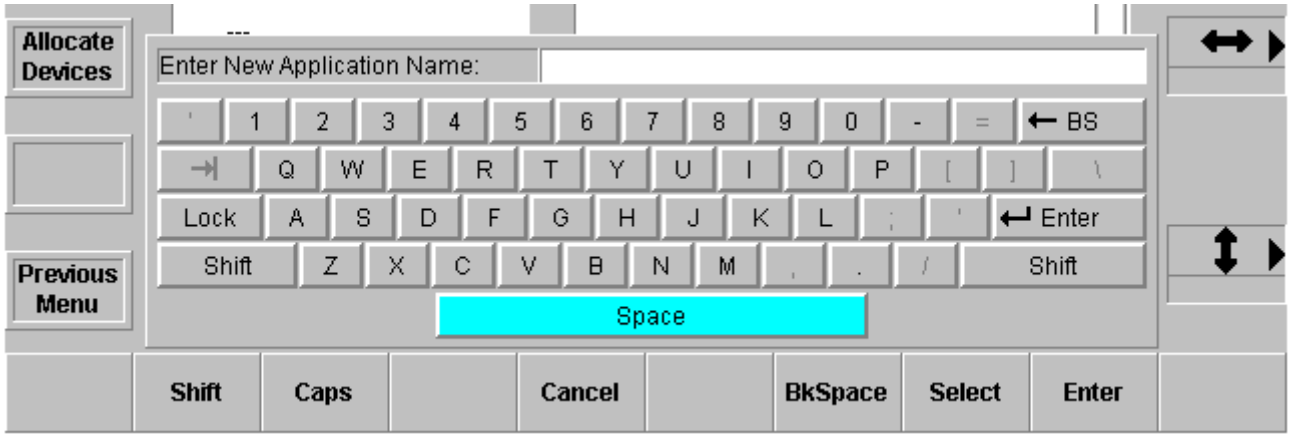
Sliderbar: If the listbox has more entries than lines, the sliderbar can be used to position the visible section.

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.



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 request text ”Please enter the password” is a parameter of the typewriter creation routine.

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.

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**.

3.2.11 USING A PC KEYBOARD

As an alternative to the direct use of sidepanel function buttons, the selection of menus etc. can also be achieved by using the following Function-Button-Combinations (on a NoteBook Computer etc...)

Sidepanel Keys	Corresponding Notebook / PC key
Softkey 1 ... 10 (upper)	< SHIFT > + < F1 ... F10 >
Softkey 1 ... 10 (lower)	< F1....F10 >
Dialog key 1 ..6	< CTRL > + < F1....F6 >
Help	< F12 >
Exit	< ESC >

All other PC keys have normal Windows 95 functions.

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 pup-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
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
Install	Install	Main
		E-Box
		Panel
		System
		Diagnose

Menu group	Top level menu	Sub-menus
Configuration	Config	E–Box
		Panel
		Allocate Resources
		Allocate Panel
Video Store	Video Store	
TiM/E Memo ™	TiM/E Memo	Select
		Define
DVE	DVE	DVE Extern
		DVx
		DVx Edit
Media Player	M/E	MP Status
		MP Clips
		Ram
Personality	Personality	Panel
		SidePanel

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.

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

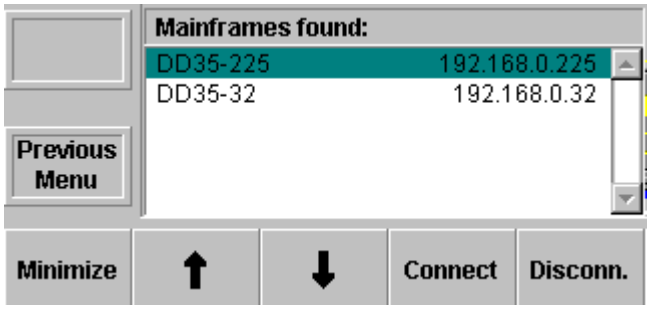
`c:\programme\dd35\bin\logo.bmp` and
`c:\programme\dd35\bin\logo2.bmp`

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 Net Address. After selection of a main frame, the **Connect** and **Disconn** buttons are activated.

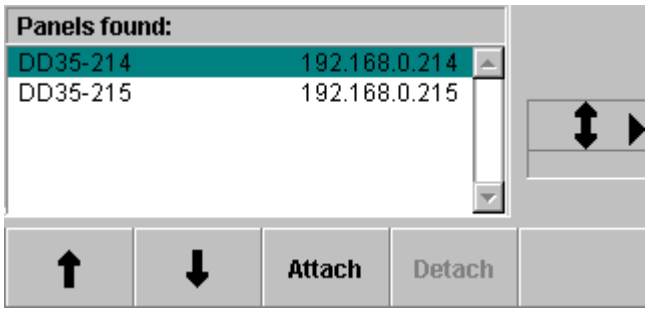
A corresponding selection connects or disconnects the connection.



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 Net Address. After selection of a panel, the **Attach** and **Detach** buttons are activated.

A corresponding selection connects the further panel with the same main frame or disconnects the connection.



3.4.3 CLOSE / MINIMIZE / SHUT DOWN

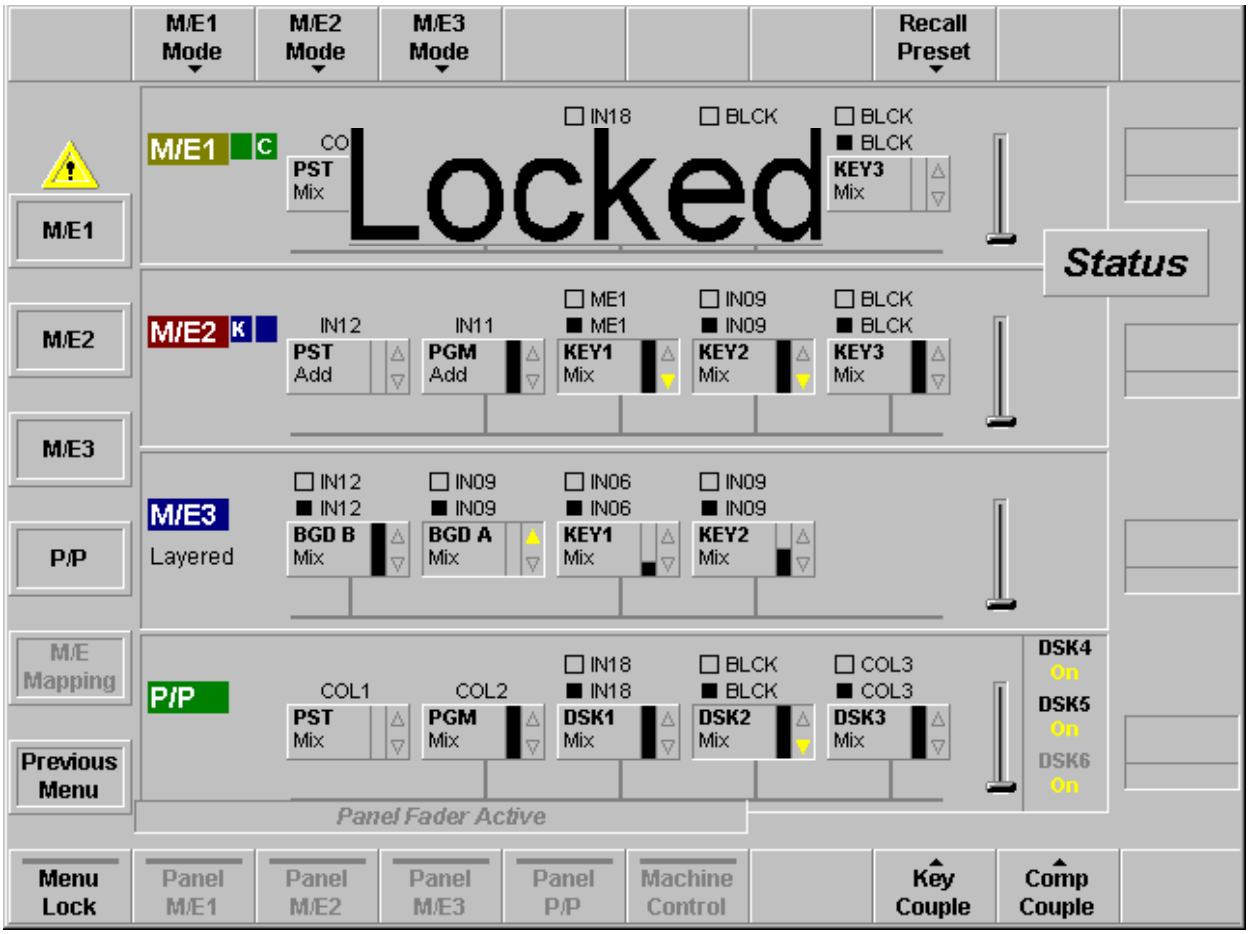
Close A click (button or mouse) closed the DD35 application.

Minimize A click (button or mouse) minimized the DD35 GUI on the screen to the Windows95 Task line.
A minimized state can be restored to its original size by pressing any key

Shut Down A double-click (button or mouse)closed the DD35 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.



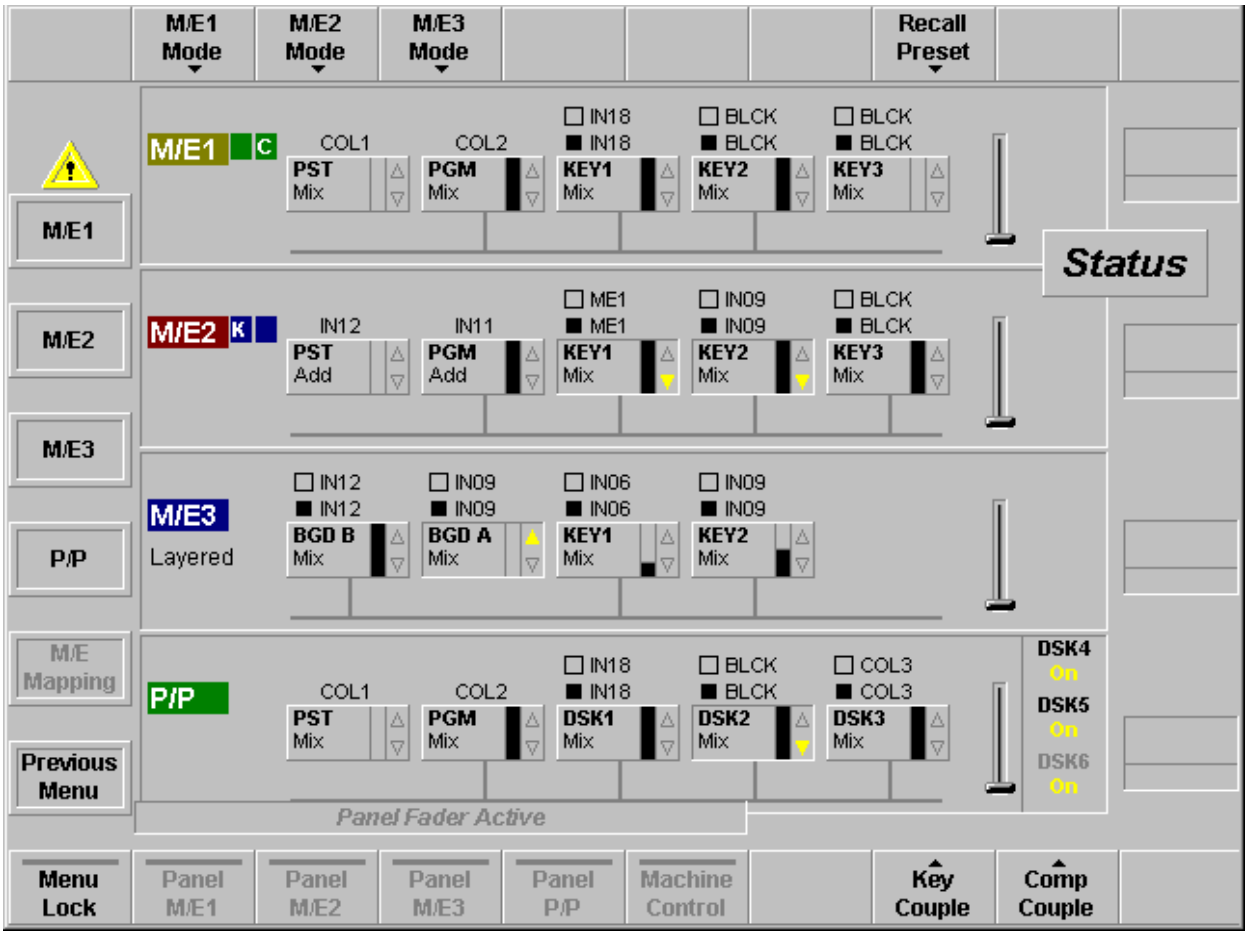
For locking proceed as follows:

- 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.

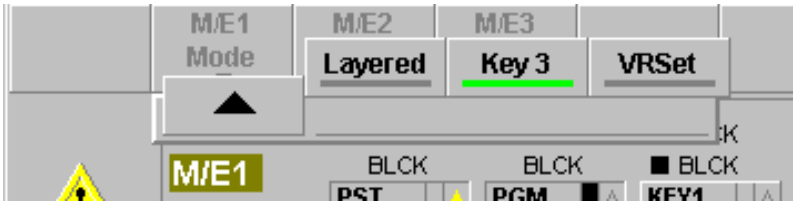
3.5 STATUS MENU

The root menu is the **Status** menu. From **Status** the top level menus of other group can be selected (when clicking the right mouse button) via the pup-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.**



Layered

Press the associated function button to switch over to Layer mode for the individual mixing levels M/Ex. In Layer mode, background A and background B become independent from each other with each background bus functioning as a key bus. Each signal is limited with a key pattern. The background is black.

The PVW path is used to create a B/W key transition signal which unites all currently active layers. If, for instance, in the DSK a mixing level in Layer mode is selected as a fill signal, this key signal will automatically be added to the key transition signal. The keyer should be switched to Linear.

Note for using the Layer mode:

During the layer mode in the corresponding mixer level don't use the following operating functions:

- *Key PVW*
- *Mask PVWChroma*
- *Key Cursor Adjustment*

These functions switch off the layer mode temporary.

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.

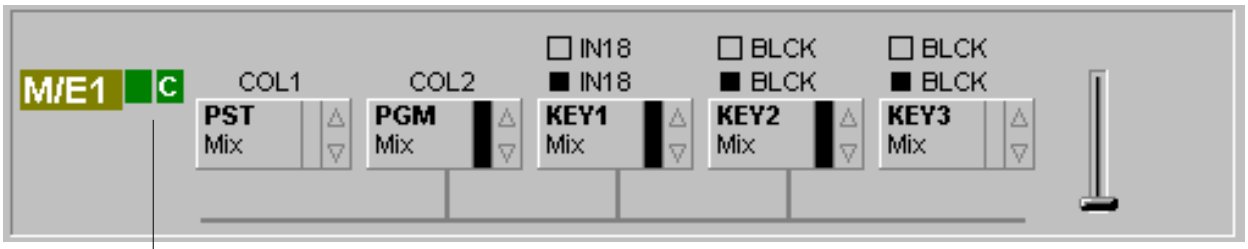
VRSet

Press the associated button to select the Virtual Set Mode.

Note: The Virtual Set Mode is a software option!

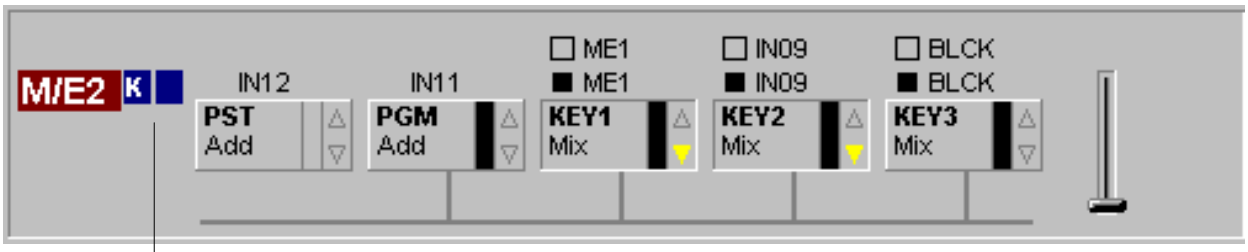
In this mode the PVW out signal can be selected as source in all other M/Es. For details refer to section M/E Menu (3.6.1.2).

Example 1 Status display of the mixing level M/E1 in “non-layered / key3 mode”.



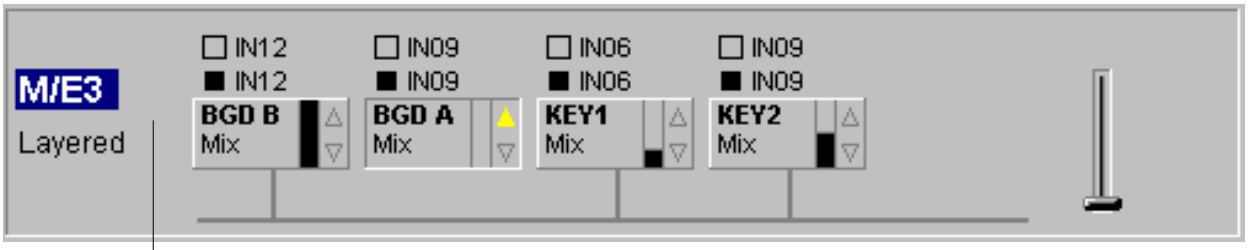
Status M/E Coupled:
Selected is: M/E1 is coupled with P/P (green backround)
Component Coupled (**C**) extension enabled.

Example 2 Status display of the mixing level M/E2 in “non-layered / key3 mode” .



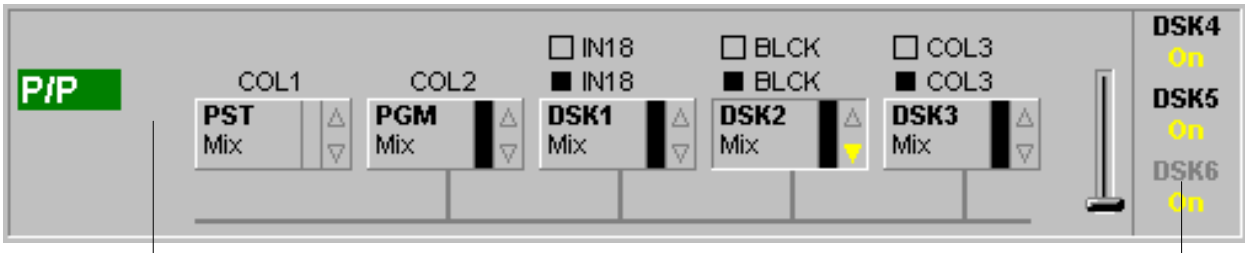
Status M/E Coupled:
Selected is: M/E2 is coupled with M/E3 (blue backround)
Key Coupled (**K**) extension enabled

Example 3 Status display of the mixing level M/E3 in “layered” mode.



Status M/E Coupled:
No coupling is selected in Config / EBox / M/E Couple menu for M/E3

Example 4 Status display of the mixing level P/P, always “non-layered / key3 mode” .



Status M/E Coupled:
No coupling is selected in
Config / EBox / M/E Couple menu for P/P

Status Ext. DSK:
If an external DSK is not installed,
the corresponding icons are greyed

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 mixing parameters.

3.5.3 ENABLE / DISABLE THE FADER

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 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.
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 (→) 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

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

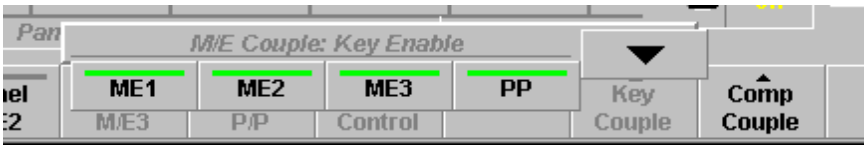
Basic recources:

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:

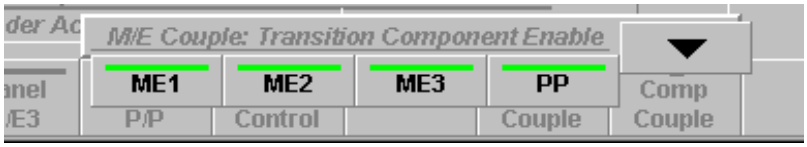
By selecting **Key Couple** in the Status menu, additionaly the following function are coupled to a master M/E:



- 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.

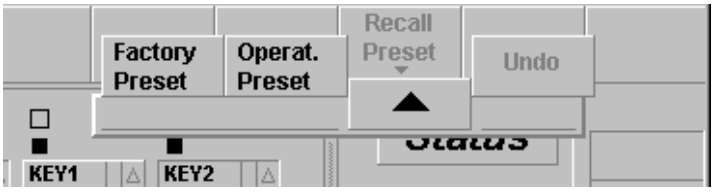
Applications

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).

3.5.5 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:

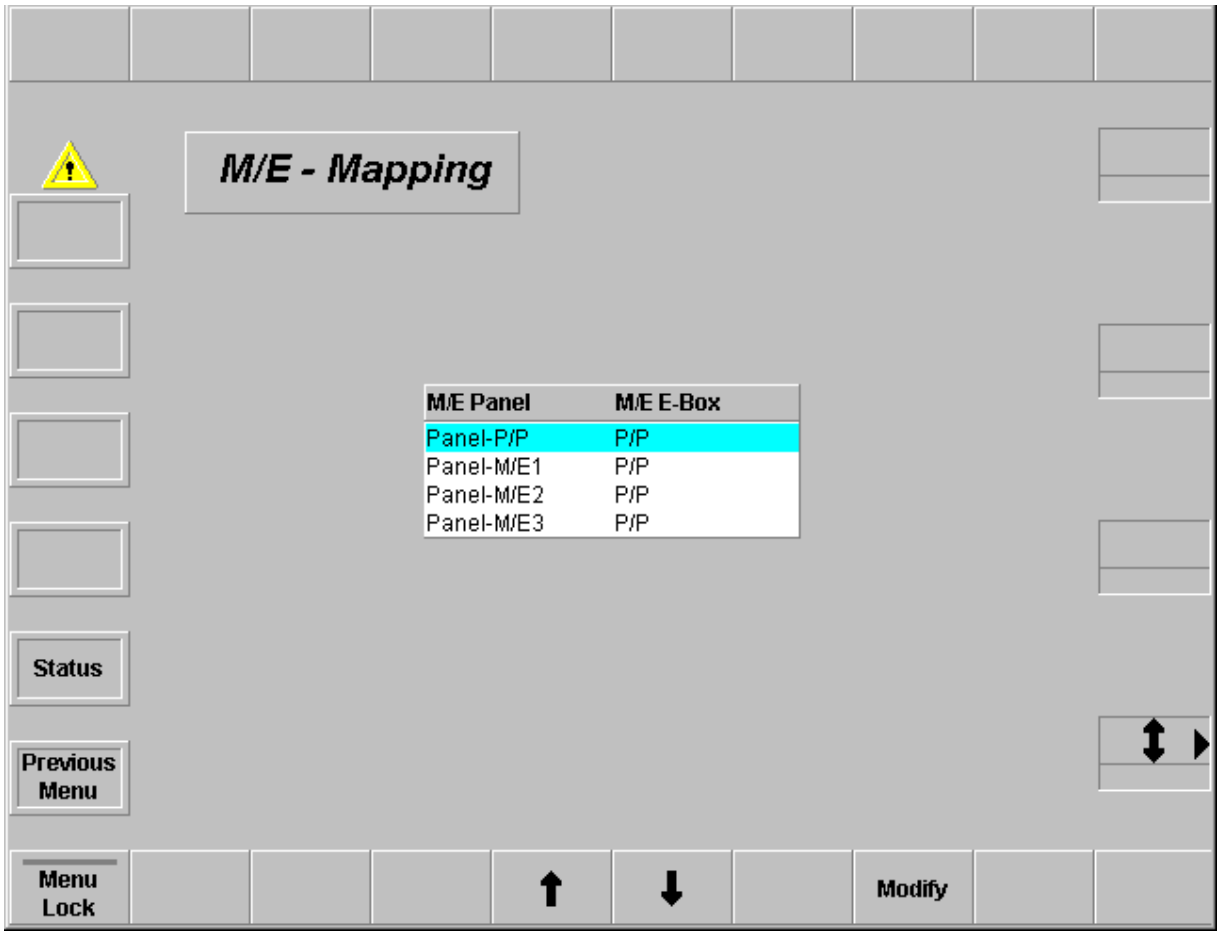


Factory Preset Recall the factory preset

Operation Preset Recall the user defined operation preset. See section **Install E-Box** to store the user defined operation preset.

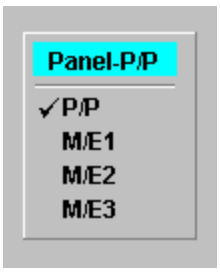
Undo Recall the last user settings.

3.5.6 M/E MAPPING MENU



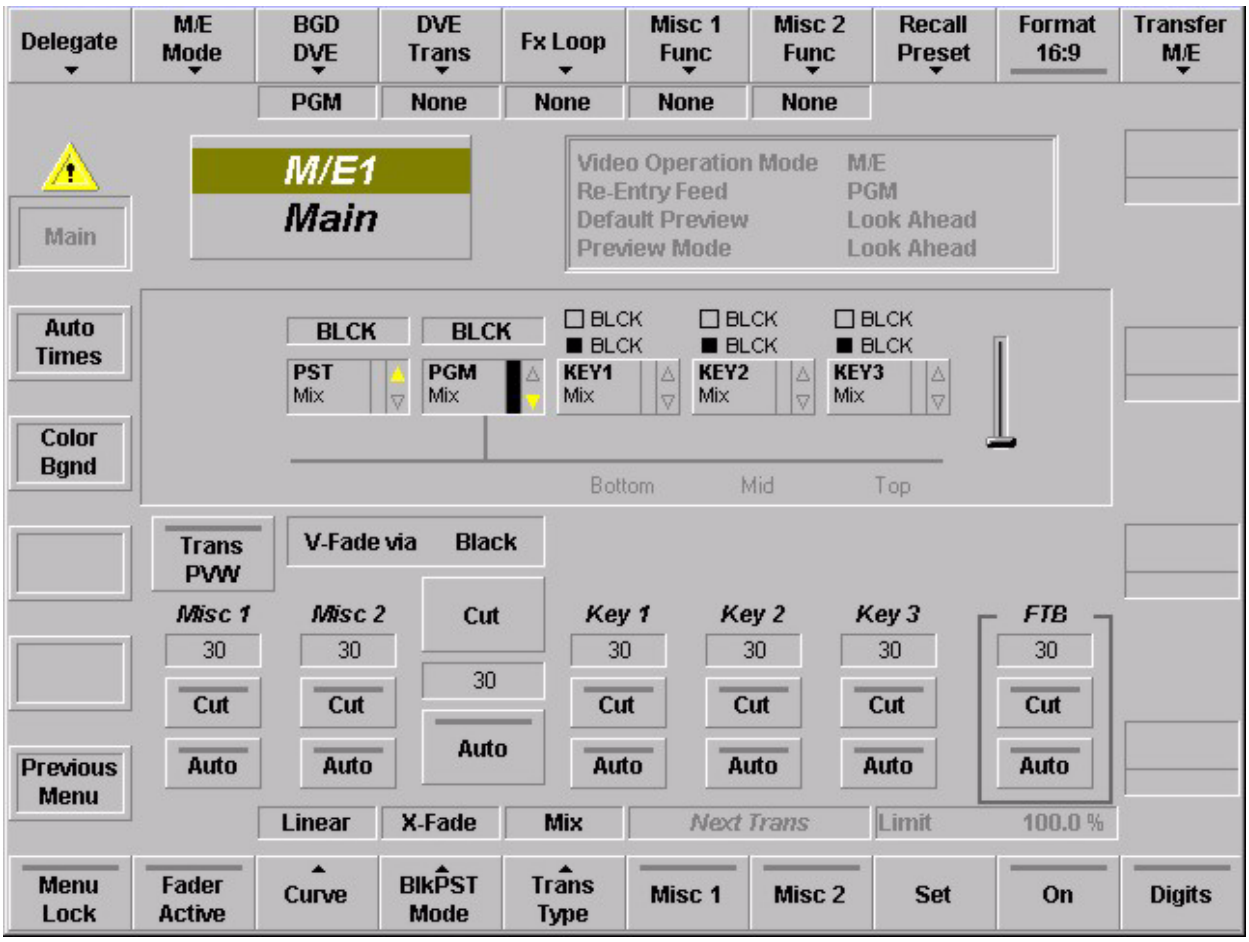
This menu is used to map the panel levels M/E1, M/E2, M/E3 and P/P to a desired switcher levels in the DD35 mainframe.

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**.

Layered:
Press the associated button to switch over to Layer mode for the individual mixing levels. In Layer mode, background A and background B become independent from each other with each background bus functioning as a key bus.The background is black.

The PVW path is used to create a B/W key signal which unites the currently active layers. If, for instance, in the DSK a mixing level in Layer mode is selected as fill signal, this key signal will automatically be used as key transition signal. The keyer should be switched to Linear.

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.

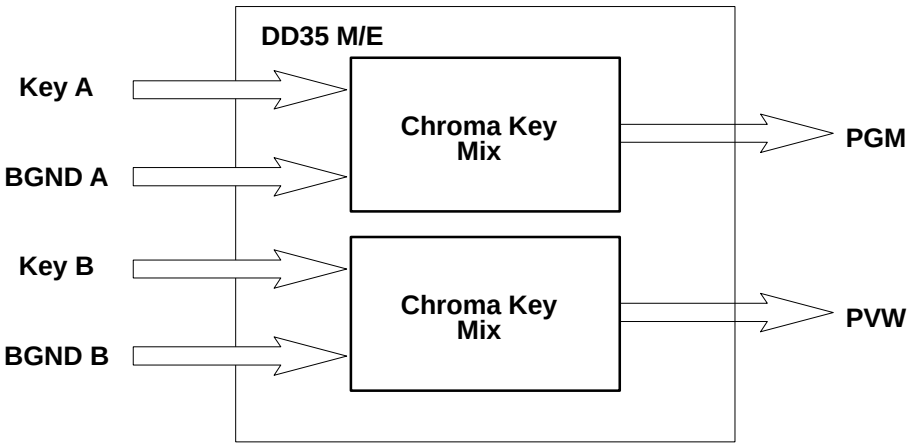
VRSet:
Press the associated button to select the Virtual Set Mode.

Note: ***The Virtual Set Mode is a software option!***

Virtual Set Mode:

In Virtual Set applications an important function is, to put a live scene on a computer generated background by using a chroma key.

With the Virtual Set Mode one M/E of the DD35 is configured such, that it generates two different chroma keys on top of two different backgrounds.



To use this feature you first have to install a related license code.

After you put the M/E into the Virtual Set Mode via the **Status** or **M/E** menu you can configure the image on the program output (PGM) by selecting a background on the program bus, selecting your Key A on Key 1 and putting it on top of the background. Key 1 has to be selected for the next transition.

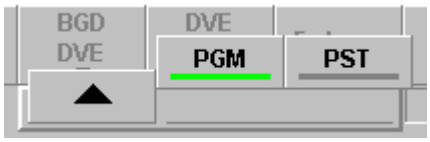
The signal on the preview output (PVW) can be configured by selecting BGND B on the preset bus, selecting Key B for Key 2 and activating Key 2 for the next transition. Next transition must also be activated for BGD.

Key 3 of the M/E can still be used on top of one or both outputs.

The PGM and PVW output of the M/E you configured for Virtual Set operation can be used directly or selected on another M/E or Aux bus. When using in another M/E (e.g. the program/preset bank) transitions between these signals will be undisturbed. (Without the Virtual Set Mode enabled there will be a disturbance)**.**

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

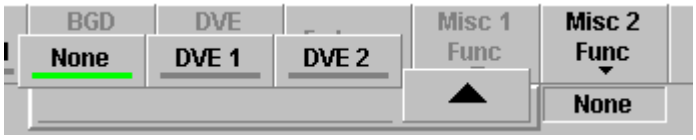
Select the DVE channel and routes it to the designated ME. For details refer to section ***2.4.3.2 Selecting a DVE effect***.

Fx Loop

Routes the proper video to the DVE (**None**, **DVE1**, **DVE2** or **MPR** = internal Montage Processor)

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 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.***

Menu Lock

For details refer to section ***Introduction.***

Fader Active

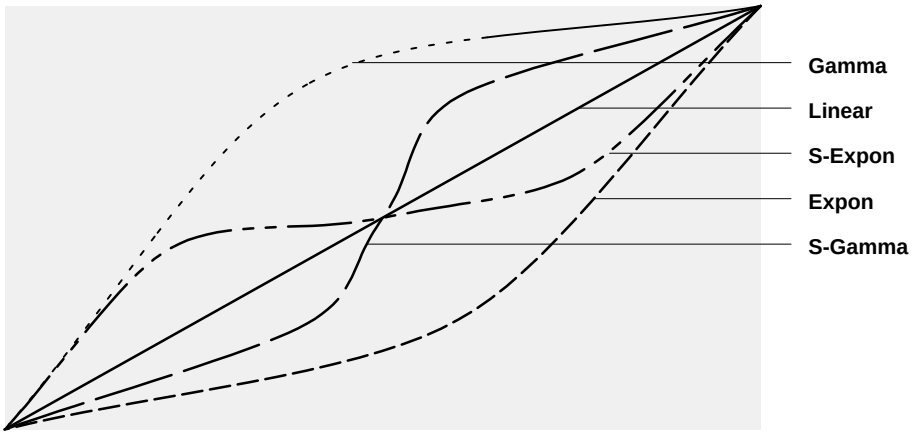
Press the associated function button to enable or disable the fader of the individual mixing levels.
The active status is displayed in the button.

Curve

Press the associated function button to select the transition characteristics for the faders.

- **Linear** 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.



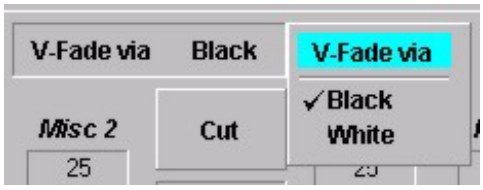
BlkPSTMode

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 aktivate 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.

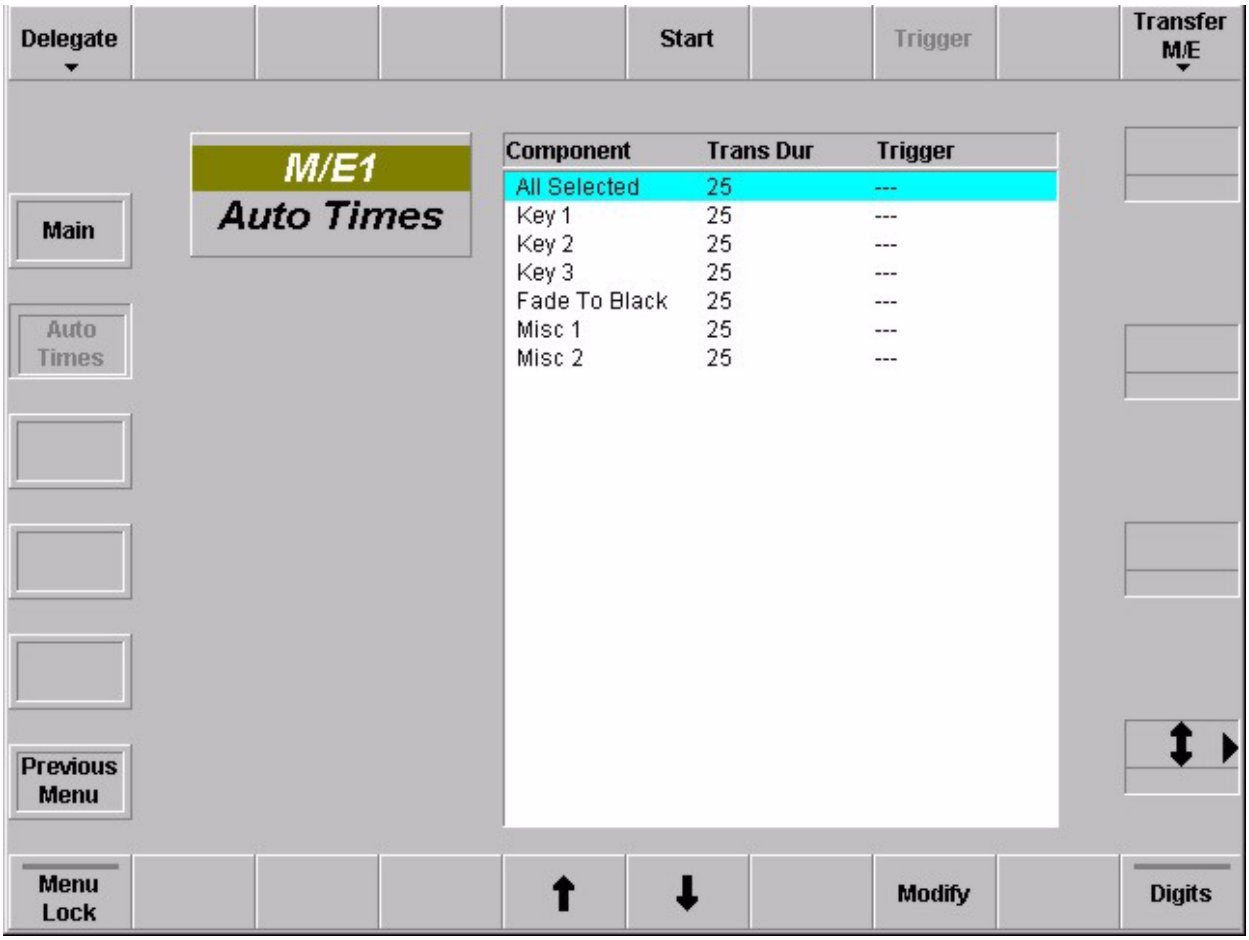
Limit: On

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.

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.

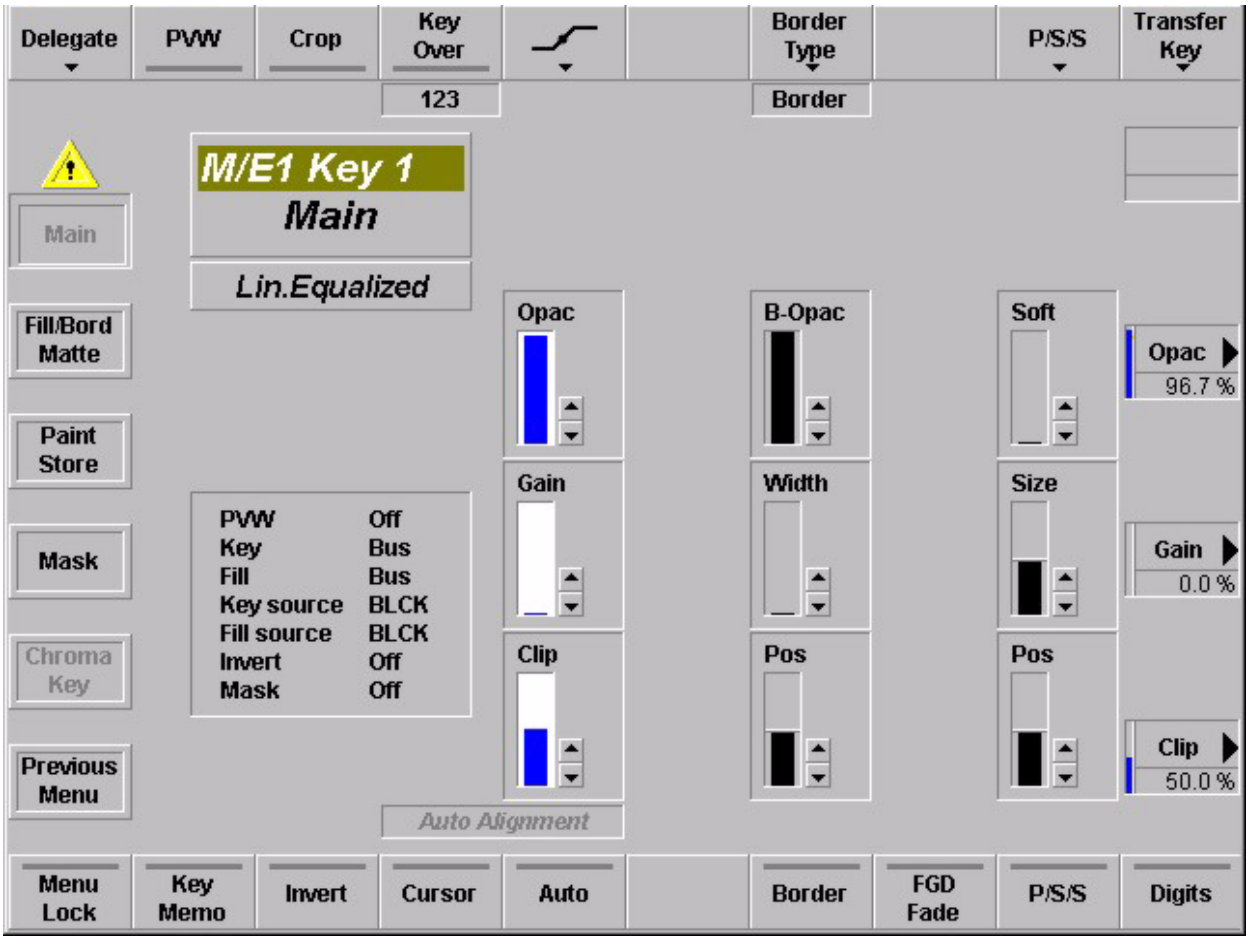
Modify Selecting the button displays the numeric keypad to enter the auto transition times of the selected component. Only numbers are valid entries.

Transfer M/E For details refer to section ***Introduction.***

Digits For details refer to section ***Introduction.***

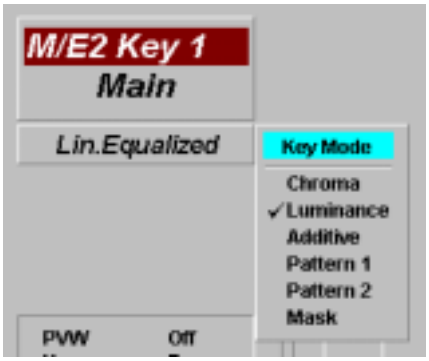
3.7 KEYERS MENU

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.

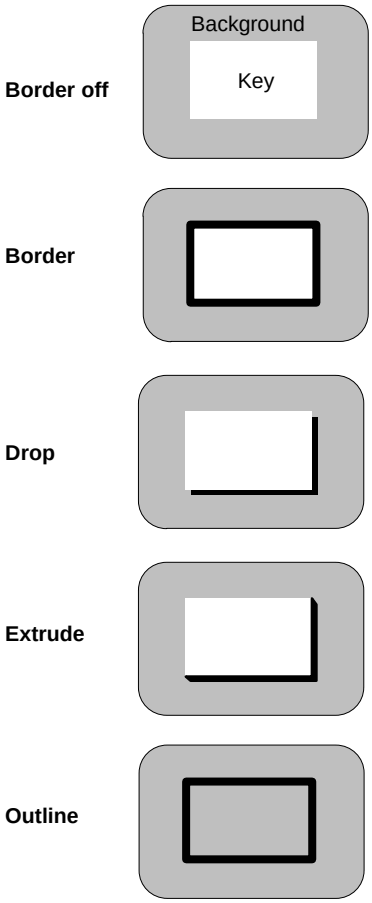
The ***Clip / Gain*** method influences both ends of the key area and leaves only one selectable, average clip value invariant.

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

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



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.

Bord The **Bord** 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.

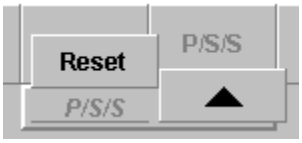
Note: Please note that the position of the original signal changes when you position a shadow above or before the border signal.

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^{o} 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.

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 control 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 selecting P/S/S in the **Lum Self Key** mode, the fill linearization is automatically 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 adjustment (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 signal to the right.

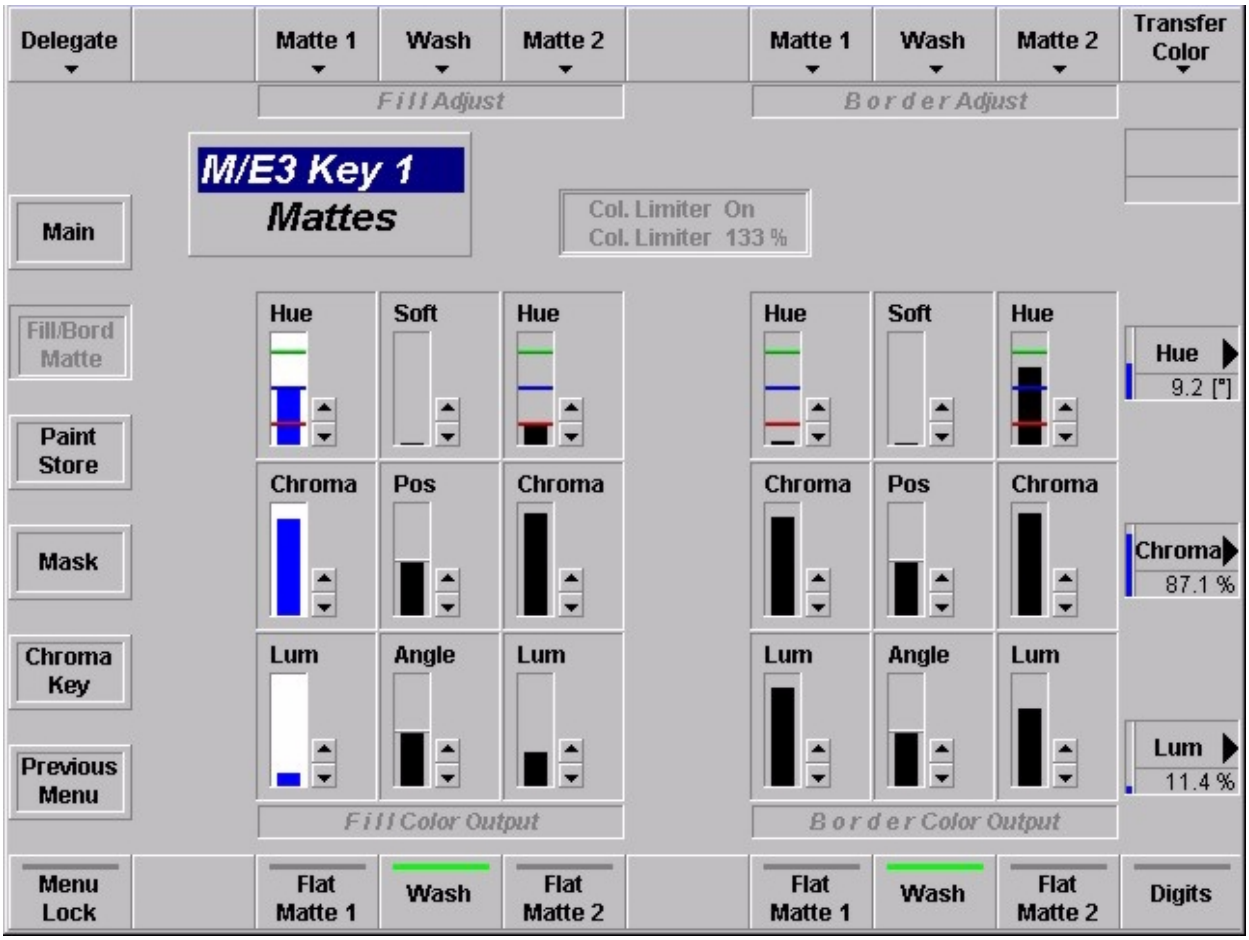
Sizing: The setting range amounts to +/ – 8 pixels with a smallest increment of 1/4 subpixel with all permitted key types. A positive sizing extends the key signal, thus reducing the foreground objects. By this way, incorrect object edges can be removed. However, foreground details will also disappear 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

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

Transfer Color

For details refer to section ***Introduction.***

Menu Lock

For details refer to section ***Introduction.***

Fill Color Output:
Flat Matte 1
Flat Matte 2

The **Flat Matte 1** and **Flat Matte 2** buttons serve to switch on Flat Matte1 or 2 so that the desired colors can be adjusted.

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 recommend 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 luminance values. If Color Limiter is off an **ILLEGAL** indication will light up above the **Hue** bar.*

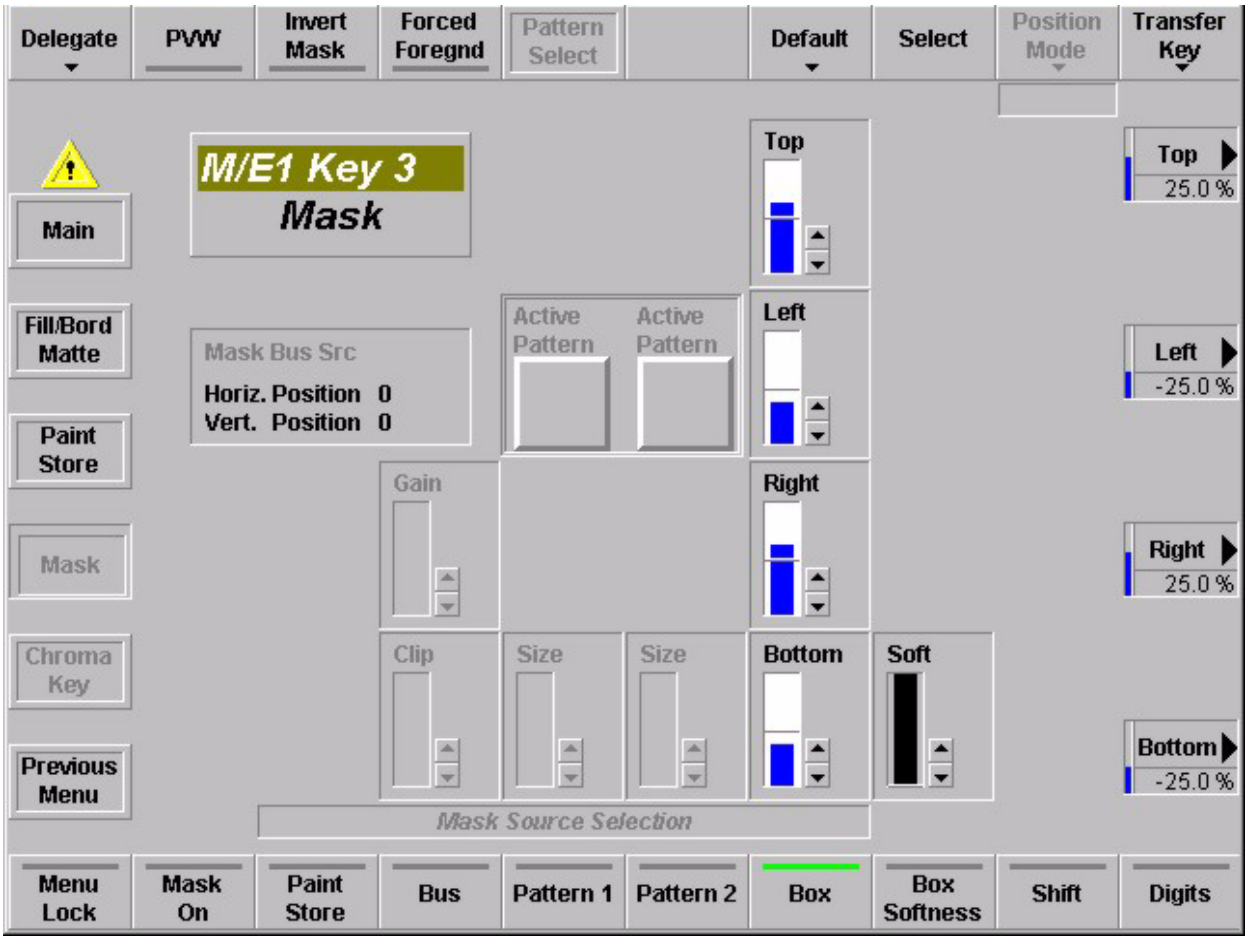
Fill Color Output:
Border Color Output:
Wash

The **wash** buttons 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.

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.***

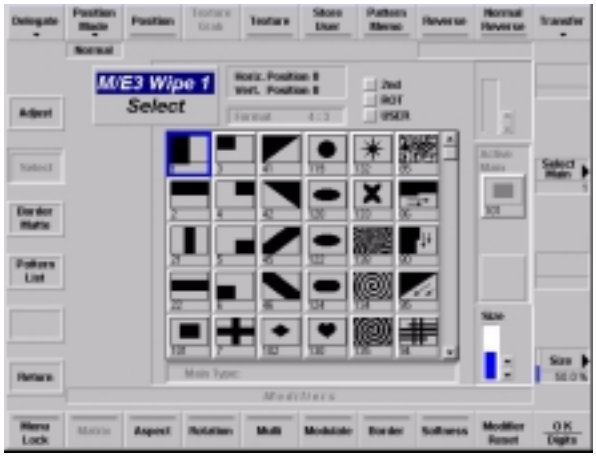
PVW The **PVW** button displays the keying result or the mask signal on the preview monitor, to permit key optimization.

*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.



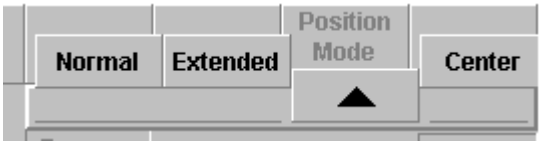
Default Press the associated button to reset the box mask to a default size or to the center position.

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.

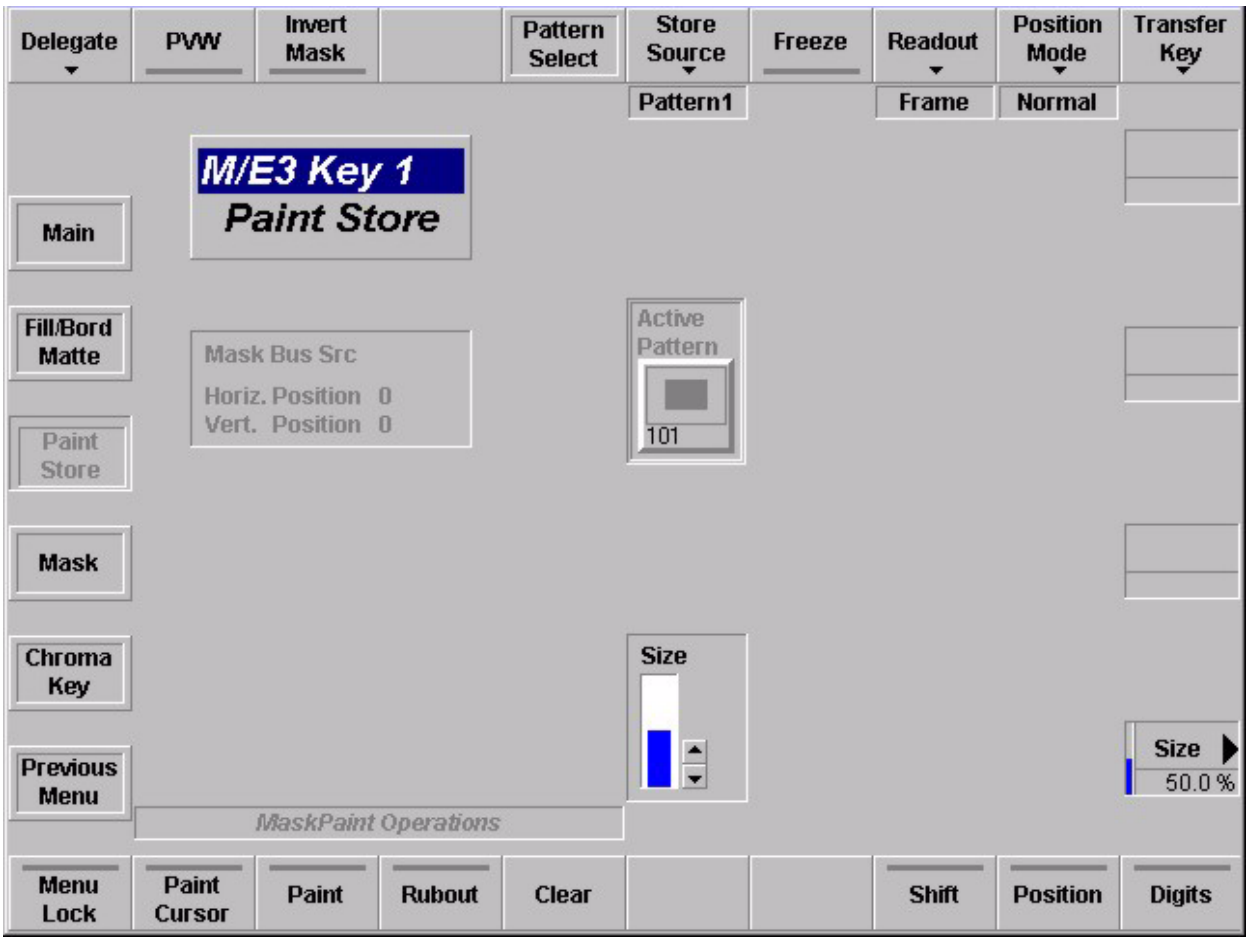
Box Softness (Seraph HD only) The **Box Softness** digipot serves to adjust the softness of the mask. The respective digipot is activated after selecting the **Select** button.

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 example, 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

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**.
- 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 Select* 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** or **KEY2**. The required adjustments can subsequently be made in the Keyers panel.

Freeze

Press the associated button to store a mask signal.

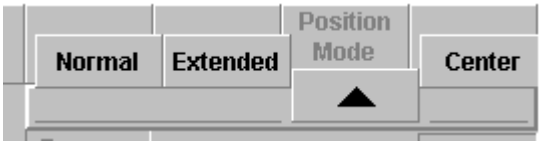
Note: Please note that a signal is delayed by one frame when it passes through the store.

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.***

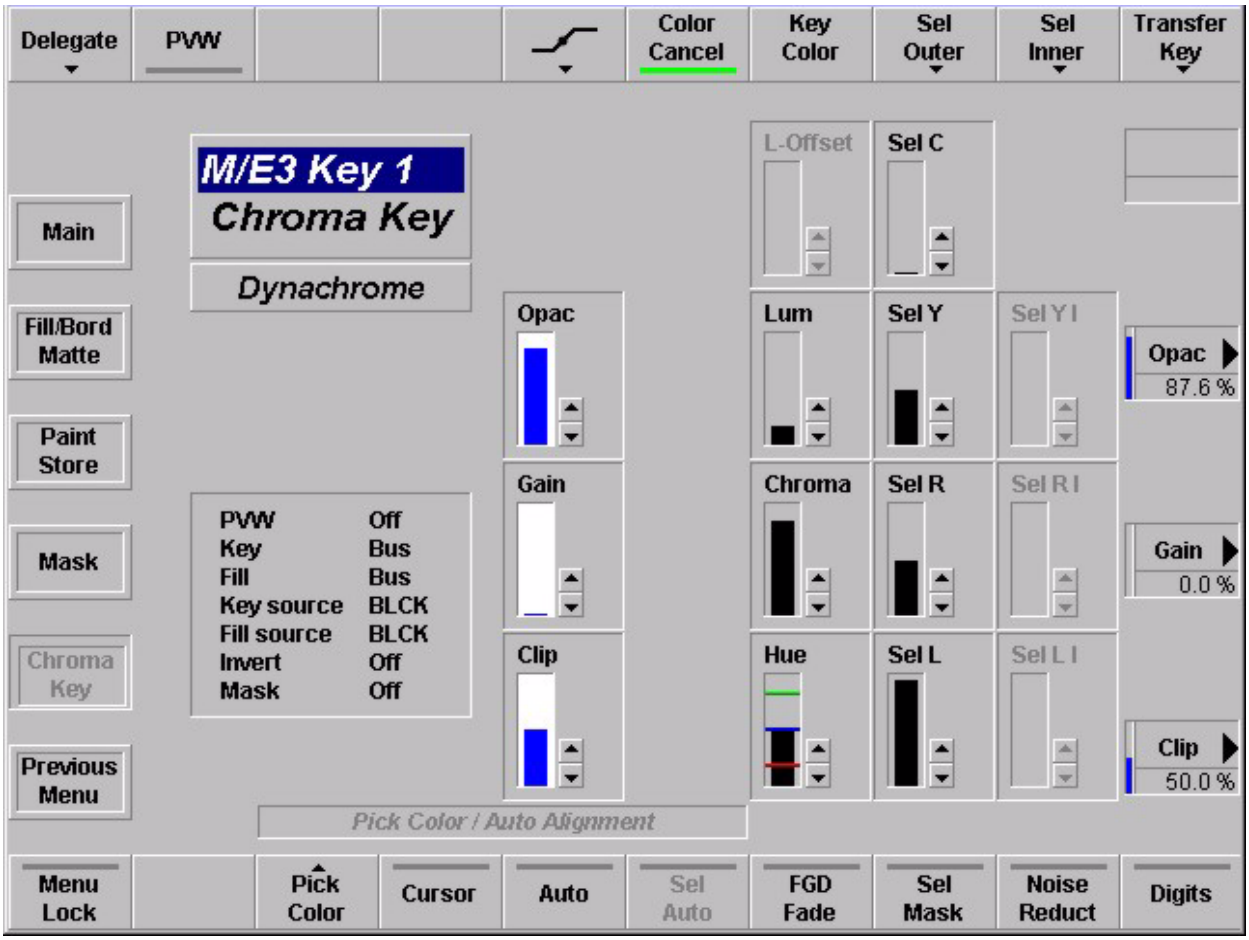
3.7.4.3 Painting the Mask with a Mouse

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



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.

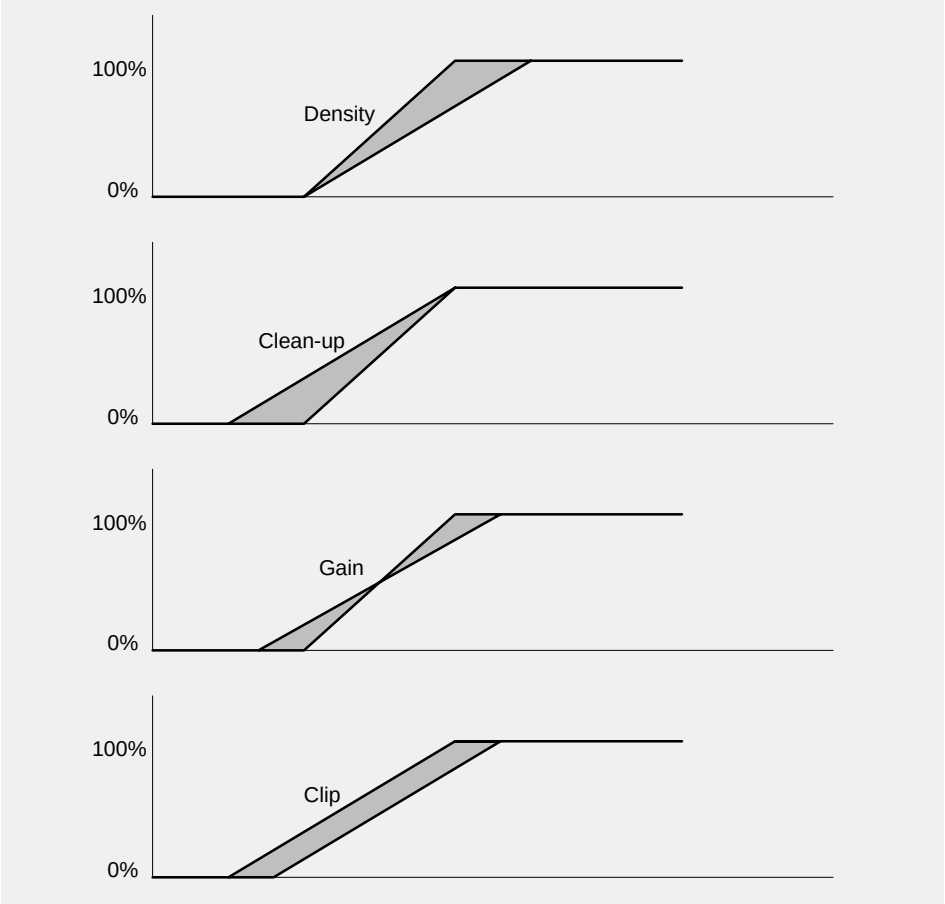


Figure 7: Clip/Gain versus Dens/Clean adjustment

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

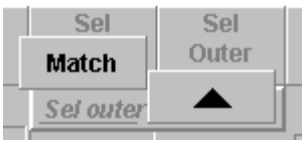
The adjustment is made in the following order:

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

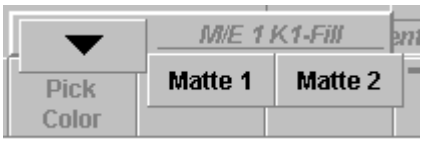
Pick Color permits the operator to select a particular color by using the trackball to position the cursor over the color to be captured.

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 $\pm 30^{o}$ 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

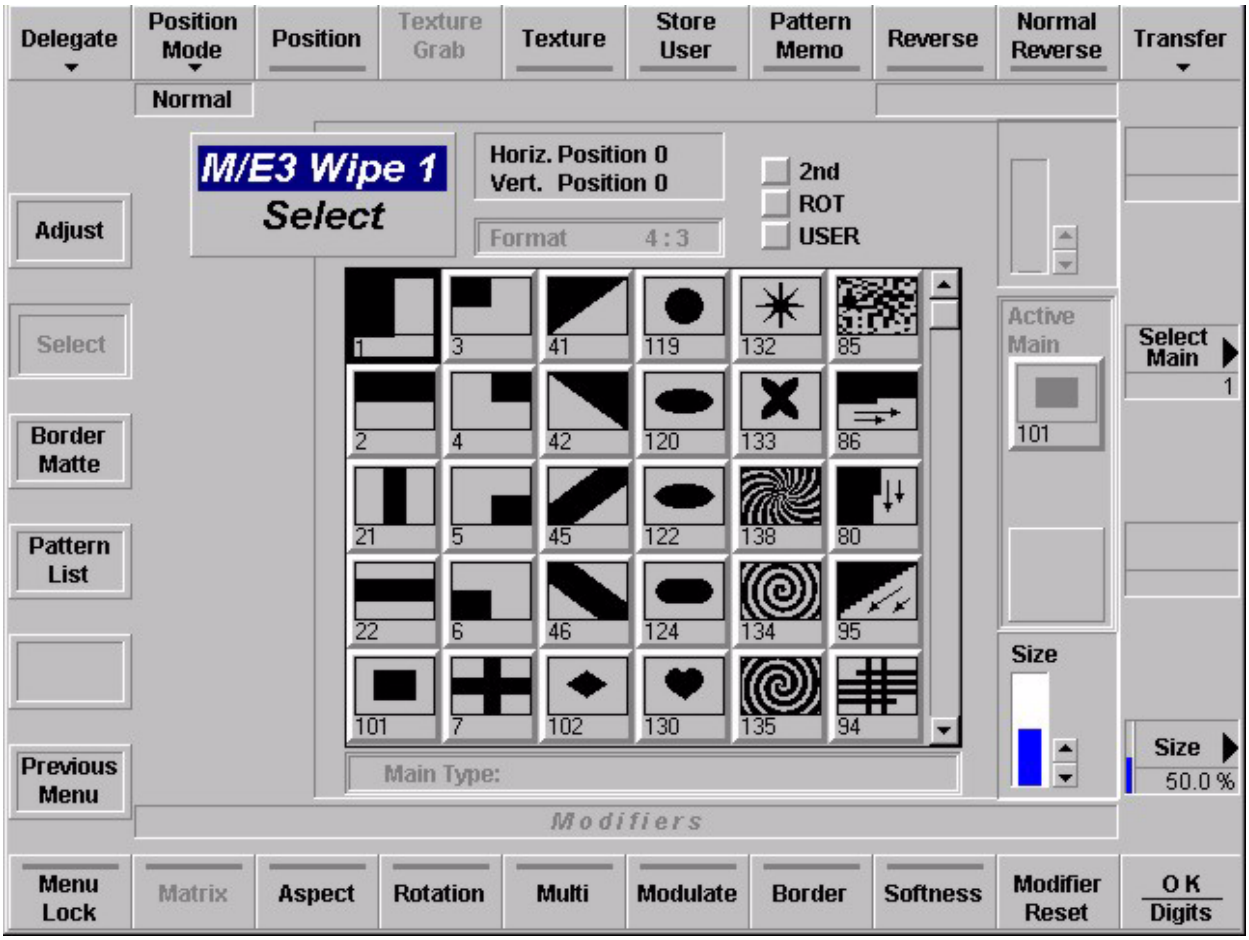
The **Density** control can be used to restore the density of the foreground object. This may become necessary if the foreground object is slightly ”keyed” (transparent) as a result of blue spill and/or the required selectivity setting.

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 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

3.8.1.1 Dialog Buttons

Adjust Selecting **Adjust** menu.

Border Matte Selecting **Border Matte** menu.

Pattern List Selecting **Pattern List** menu.

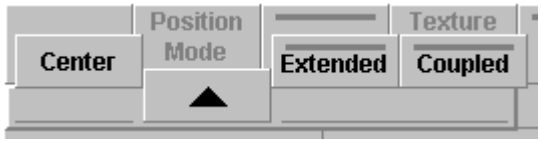
Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

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) cannot 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.

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.***

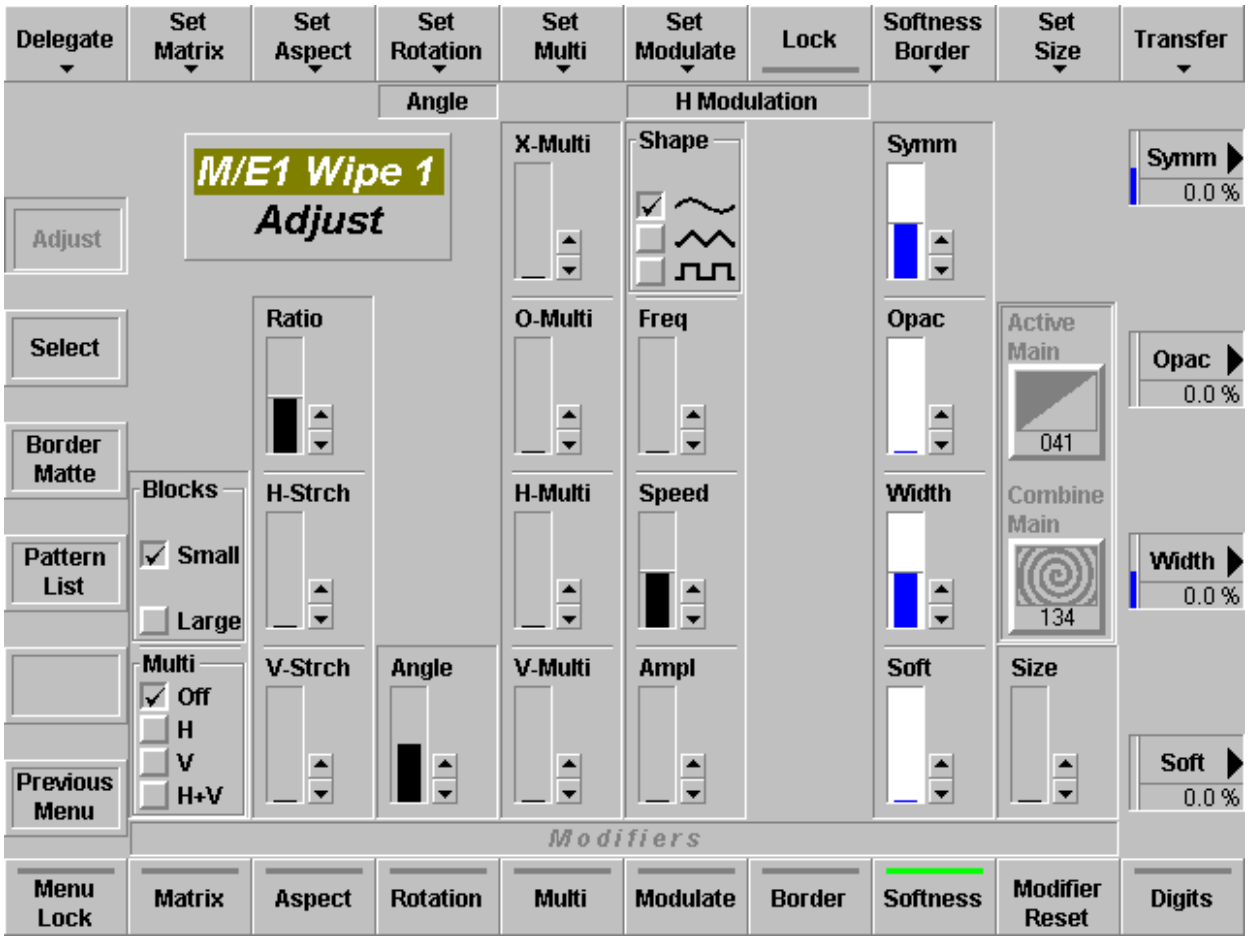
3.8.1.3 Selecting a Wipe Pattern in the Menu

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.

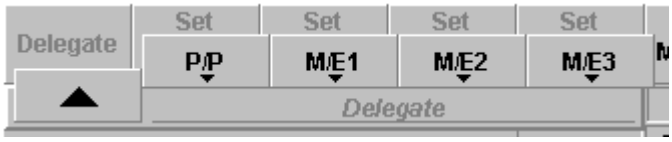
Pattern List Selecting **Wipe Patterns** menu.

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”.

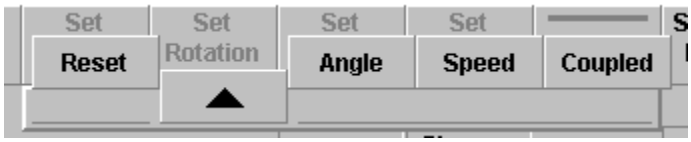
The following adjustments are possible:

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.

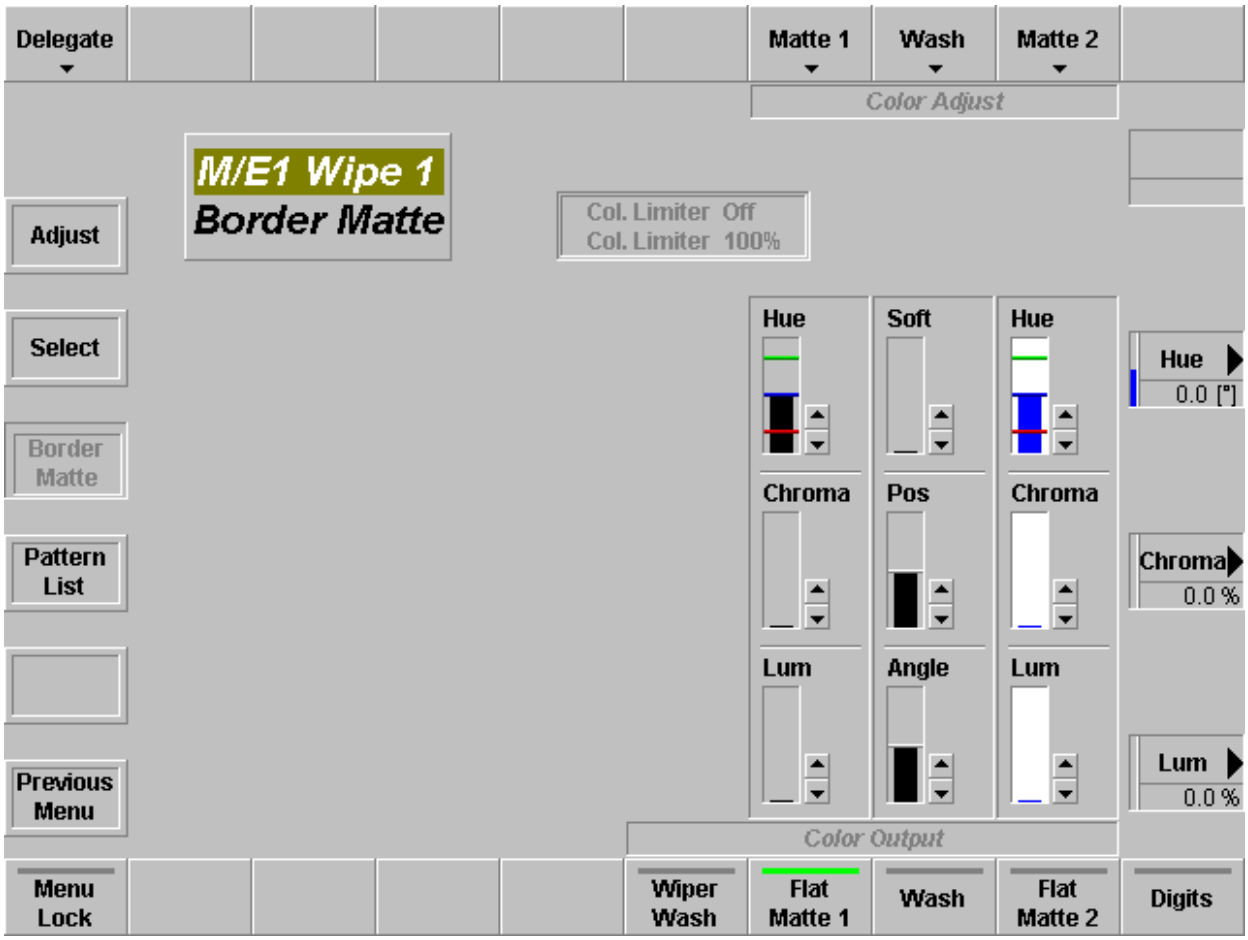
– Softness Enables the modifier **Softness** for the selected wipe pattern.

– Modifier Reset The **Reset** button can be used to reset the enabled modifiers 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.***

3.8.3 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.***

Matte 1
Matte 2

The **Matte 1 (Matte 2)** button delegates the digipots to adjust the desired colors. There are seven preadjusted matte colors selectable.

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.

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

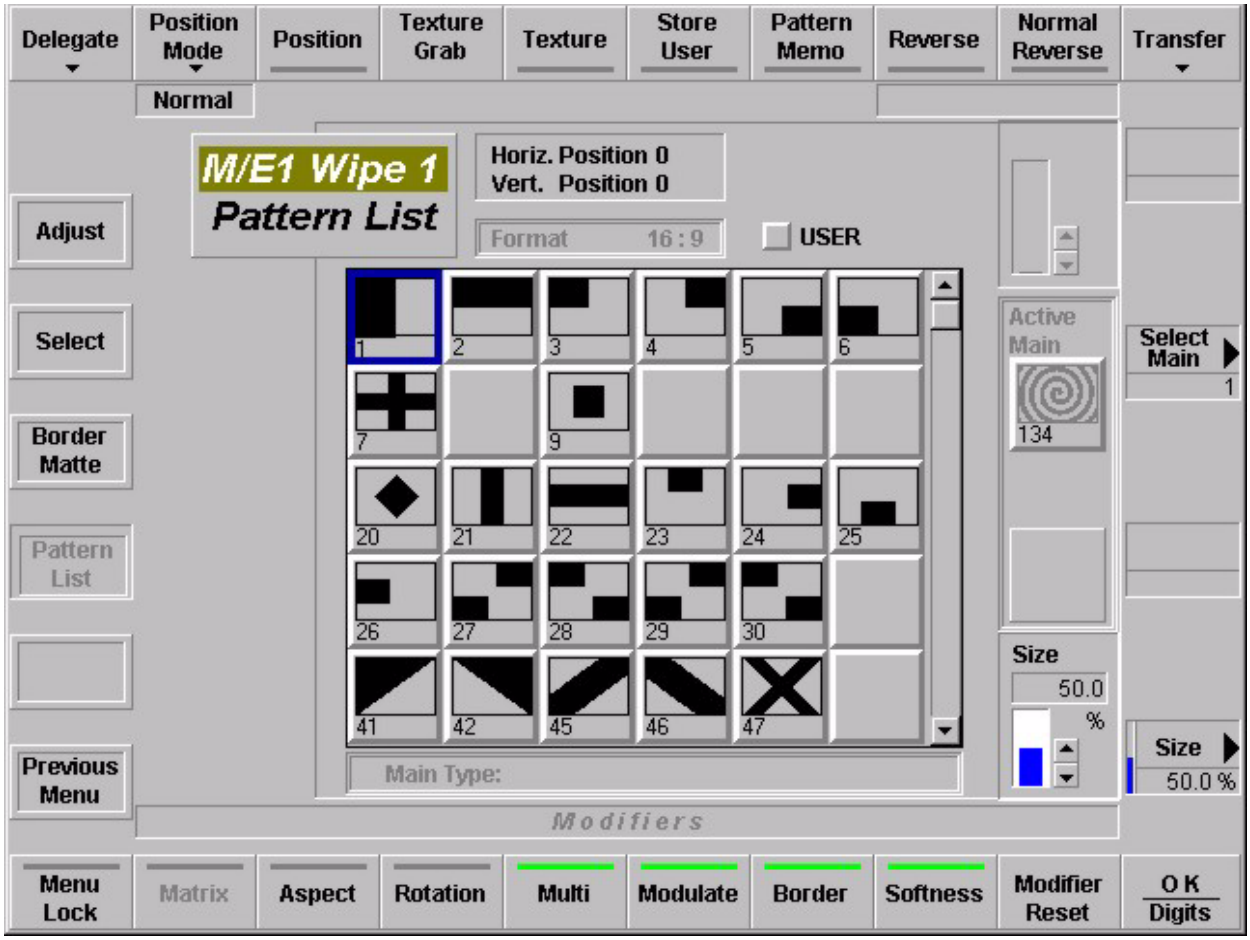
If in a modification of hue, chroma, or luminance one of the limits is reached, the indication **ILLEGAL** lights and attempts to realize the demanded value at the expense of a different parameter.

- 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

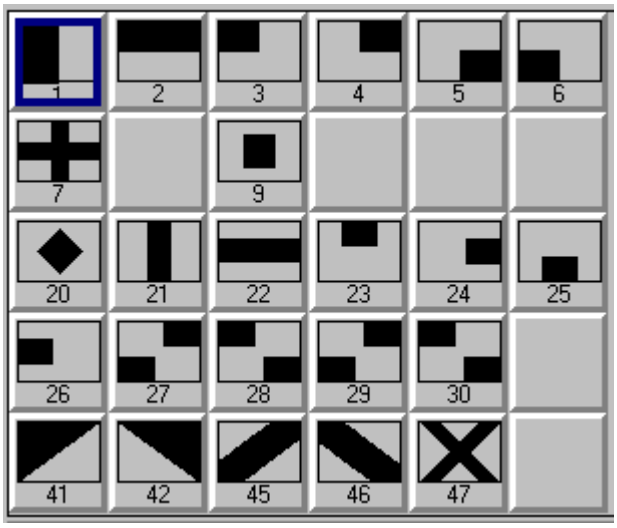


This menu corresponds to the **Select** menu. The difference is in number and arrangement of the wipe patterns. The **Pattern** menu shows all possible wipe patterns in sequence according to the SMPTE code.

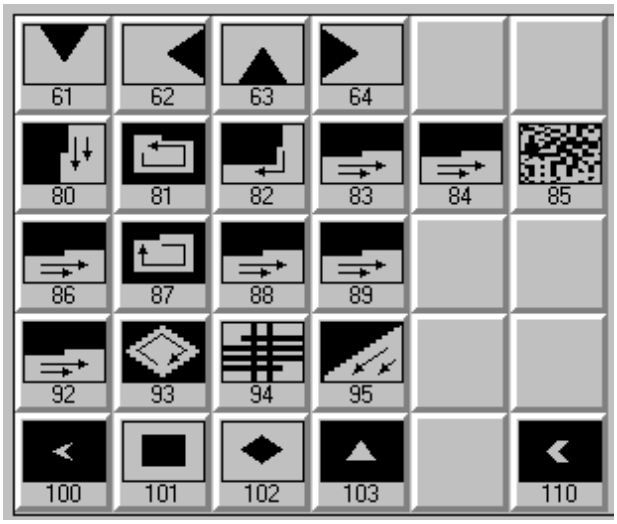
These are **150 standard patterns**
30 user patterns

The further control is identical with the **Select** menu and is described in the corresponding section.

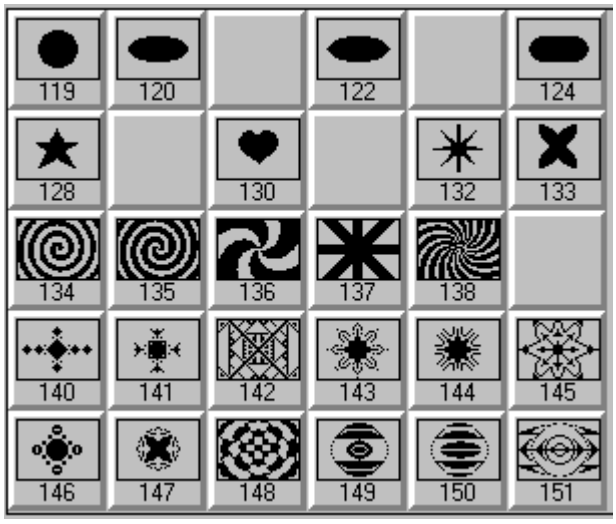
Pattern List, Page 1



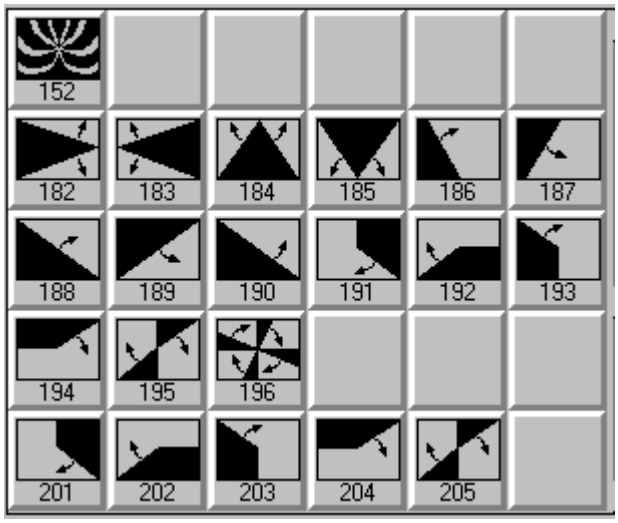
Pattern List, Page 2



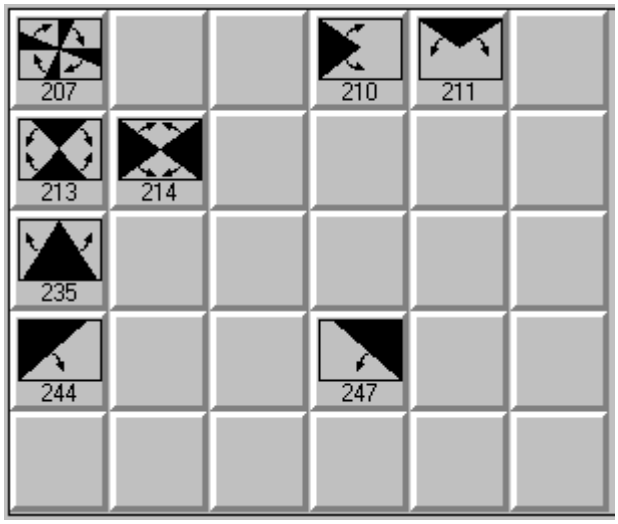
Pattern List, Page 3



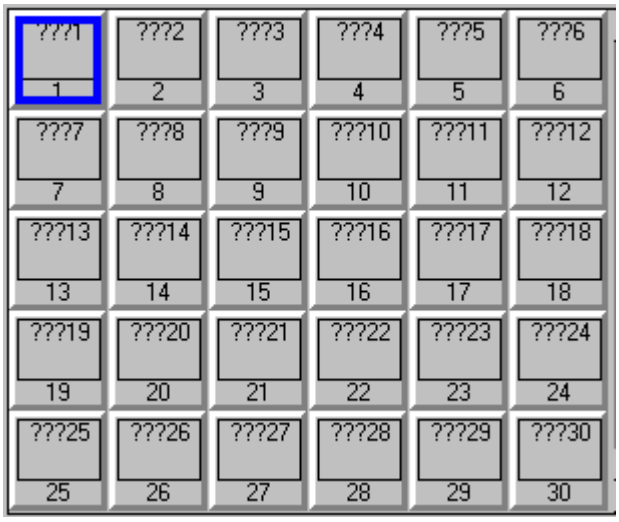
Pattern List, Page 4



Pattern List, Page 5



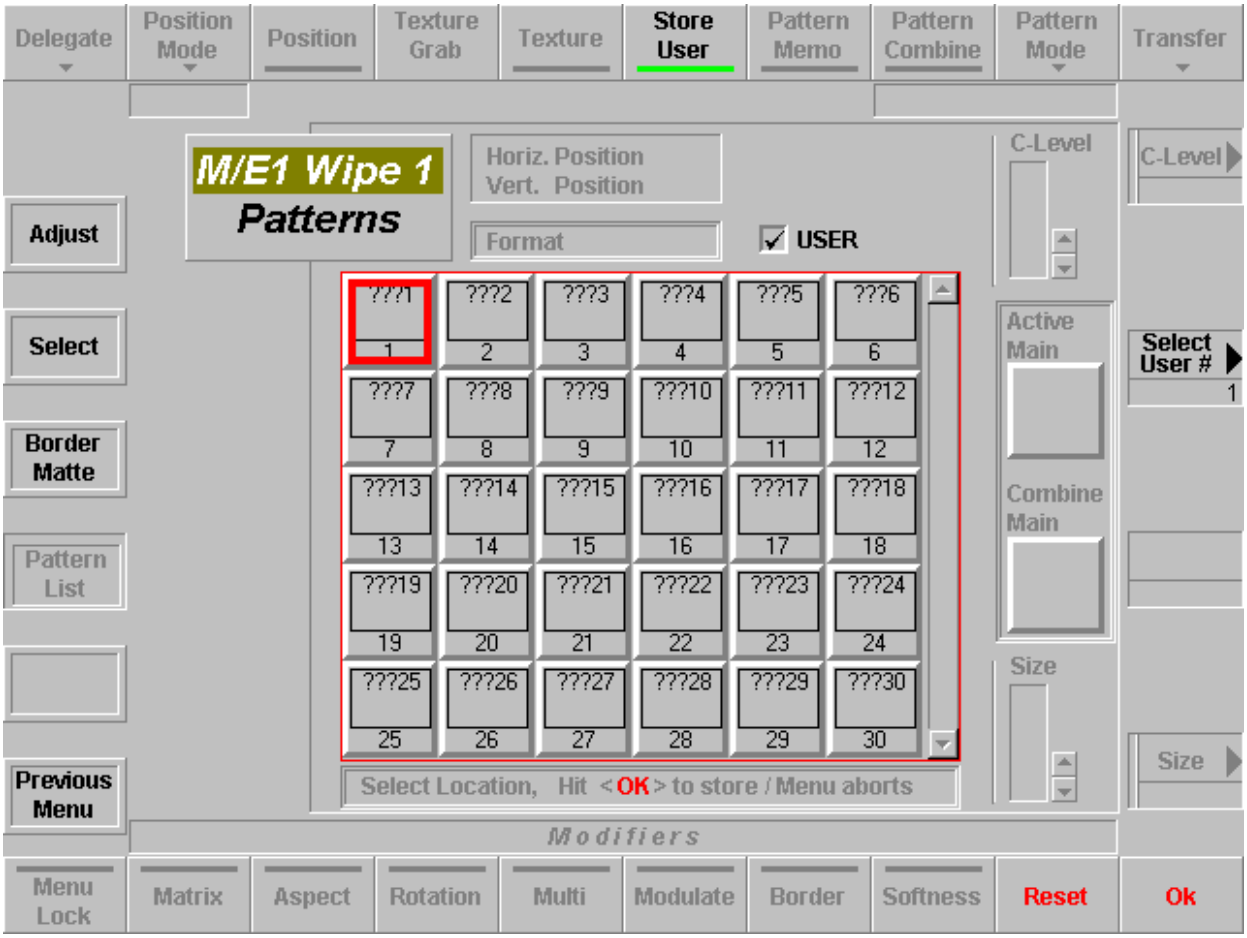
Pattern List, Page 6
(User stored wipes)



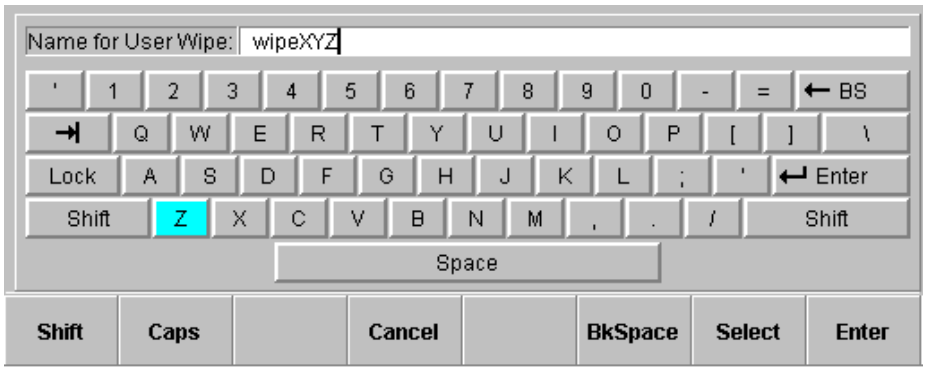
3.8.5 STORING A USER WIPE

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 position. The menu shows the keyboard to enable naming the wipe.



- 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.

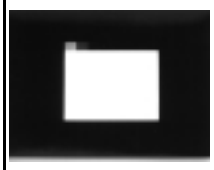
Note: Softness and Border is possible with all listed patterns!

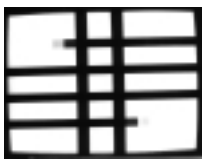
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	–	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	**01**								●		●					
	**02**									●		●				
	**03**	●					●		●	●	●	●		●	●	●
	**04**	●					●		●	●	●	●		●	●	●
	**05**	●					●		●	●	●	●		●	●	●
	**06**	●					●		●	●	●	●		●	●	●
	**07**	●		●			●	●	●	●	●	●	●			

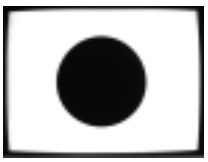
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	–	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	**09**			●			●	●	●	●	●	●	●	●	●	●
RECALL OFF USER WIPE 1 FROM EDIT SYSTEM	**10**															
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**							●	●		●					

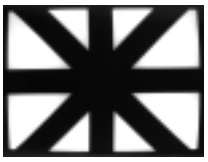
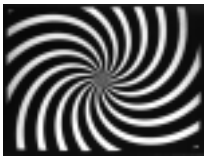
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	–	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	**22**							●		●		●				
	**23**	●					●		●	●	●	●		●	●	●
	**24**	●					●		●	●	●	●		●	●	●
	**25**	●					●		●	●	●	●		●	●	●
	**26**	●					●		●	●	●	●		●	●	●
	**27**						●	●	●	●	●	●	●			
	**28**						●	●	●	●	●	●	●			
	**29**						●	●	●	●	●	●	●			

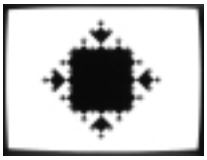
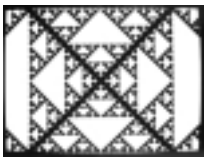
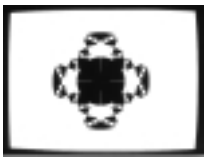
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	–	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	**30**						●	●	●	●	●	●	●			
	**41**								●	●	●	●	●			
	**42**								●	●	●	●	●			
	**45**							●	●	●	●		●			
	**46**							●	●	●	●		●			
	**47**	●		●			●	●	●	●	●	●	●			
	**61**	●					●		●	●	●	●		●	●	●
	**62**	●					●		●	●	●	●		●	●	●

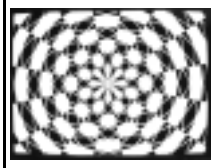
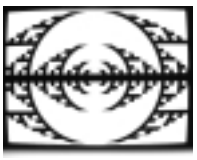
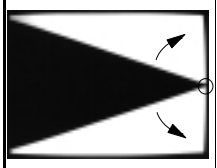
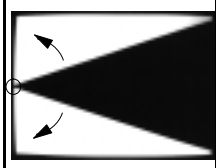
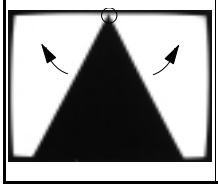
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	–	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	**63**	●					●		●	●	●	●		●	●	●
	**64**	●					●		●	●	●	●		●	●	●
	**80**		●								●	●				
	**81**		●								●	●				
	**82**		●								●	●				
	**83**		●								●	●				
	**85**		●								●	●				
	**86**		●								●	●				

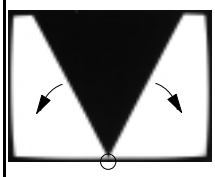
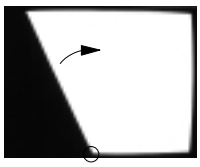
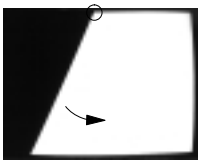
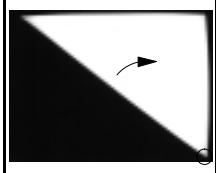
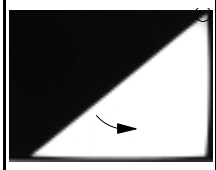
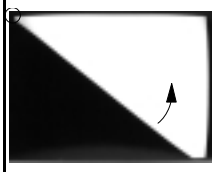
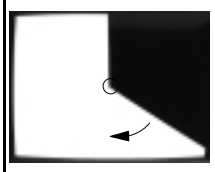
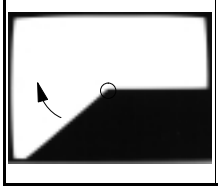
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	–	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	**87**		●								●	●				
	**88**		●								●	●				
	**89**		●								●	●				
	**92**		●								●	●				
	**93**		●								●	●				
	**94**		●								●	●				
	**95**		●								●	●				
	**100** **(99)**	●					●	●	●	●	●	●	●			

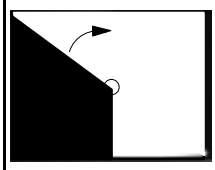
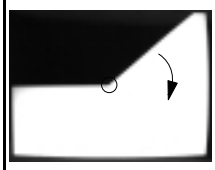
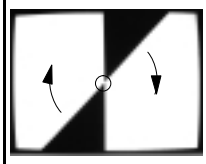
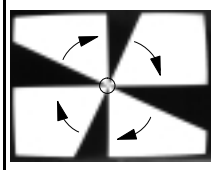
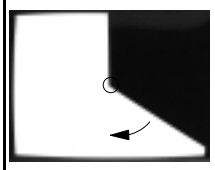
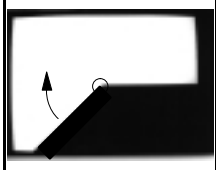
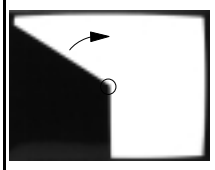
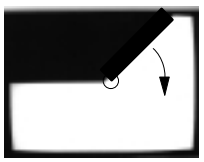
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	–	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	**101 (69)**						●	●	●	●	●	●	●	●	●	●
	**102 (96)**						●	●	●	●	●	●	●	●	●	●
	**103 (97)**	●		●			●	●	●	●	●	●	●	●	●	●
	**110 (98)**	●					●	●	●	●	●	●	●	●	●	●
	**119 (49)**			●			●	●	●	●	●	●	●	●	●	●
	**120 (50)**			●			●	●	●	●	●	●	●	●	●	●
	**122**	●					●	●	●	●	●	●	●	●	●	●
	**124 (70)**			●			●	●	●	●	●	●	●	●	●	●

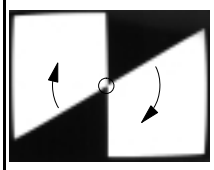
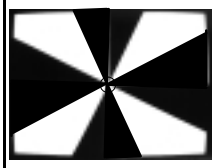
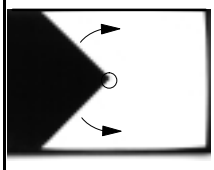
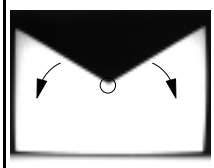
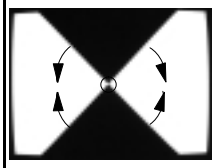
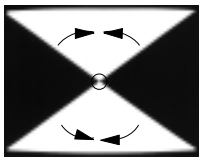
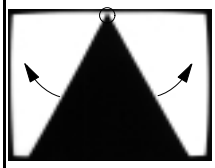
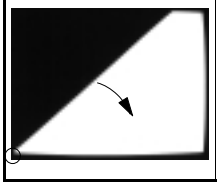
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	–	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	**130**	●		●				●	●	●	●	●				●
	**132**	●		●		●	●	●	●	●	●	●	●	●	●	●
	**133**	●		●		●	●	●	●	●	●	●	●	●	●	●
	**134**	●		●			●	●	●	●	●	●	●	●	●	
	**135**	●		●			●	●	●	●	●	●	●	●	●	
	**136**	●		●			●	●	●	●	●	●	●	●	●	
	**137**	●		●		●	●	●	●	●	●	●	●	●	●	
	**138**	●		●			●	●	●	●	●	●	●	●	●	

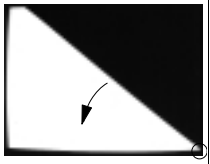
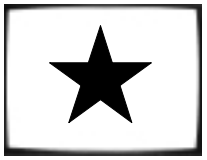
Wipe Pattern	SMPTE Wipe No. (Wipe No for SONY Editors)	Fraktal or not comb	Matxix wipe	Sensetive for 16/9	–	X-Multi	Ratio	Position	H-Modulation	V-Modulation	H-Multi	V-Multi	Rotation	H-Stretch	V-Stretch	O-Multi
	**140**	●		●			●	●	●	●	●	●	●	●	●	●
	**141**	●		●			●	●	●	●	●	●	●	●	●	●
	**142**	●		●			●	●	●	●	●	●	●	●	●	●
	**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	–	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	–	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	–	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	–	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	–	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)**	●		●		●	●	●	●	●	●	●	●	●	●	●

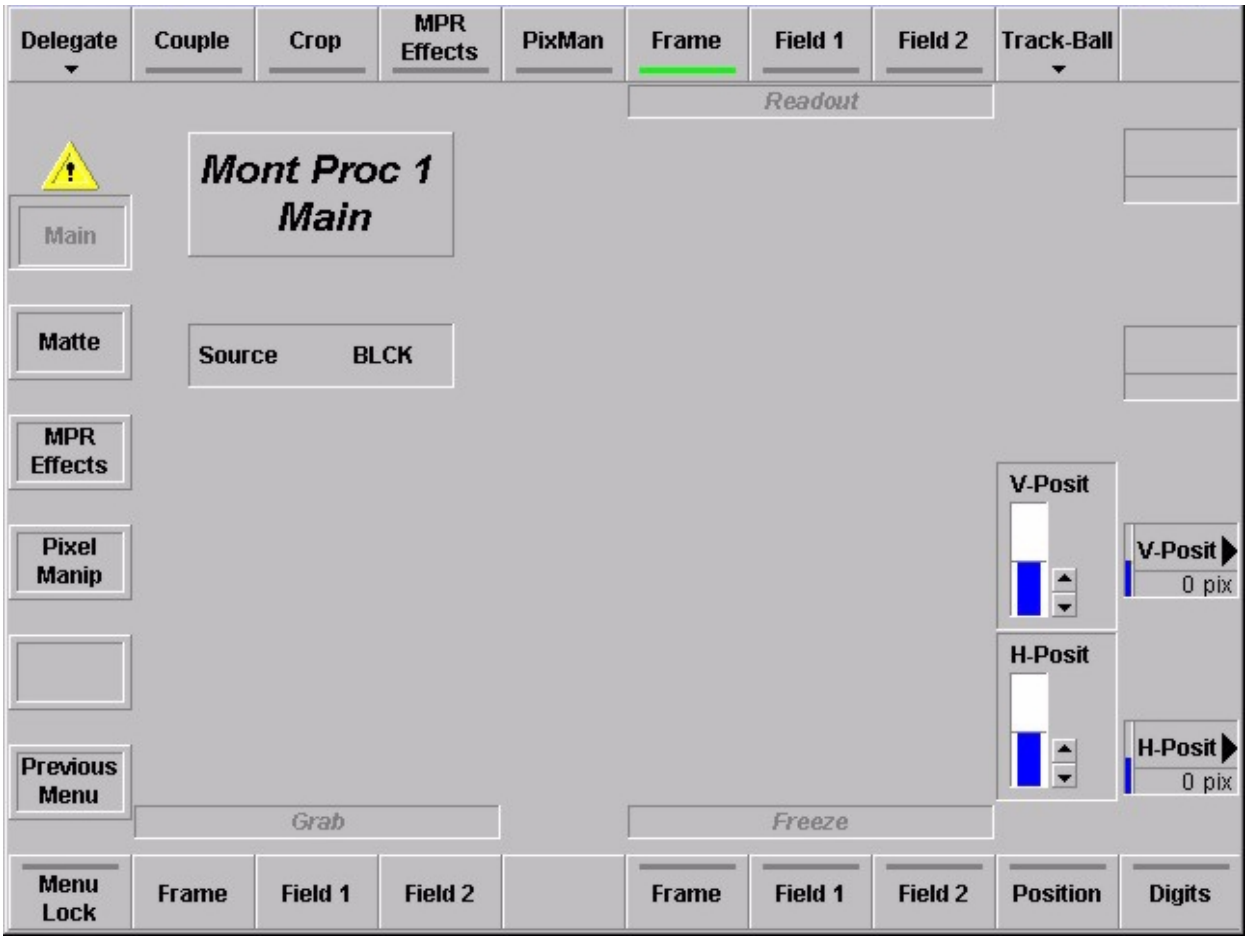
3.9 MONTAGE PROCESSOR MENU

The Montage Processor RY 1913 (optional) includes two full montage processors **MPR1** and **MPR 2** with storing functions. Position and readout of both channels can be coupled with the **Couple** button.

This is mainly used to store and modify a video signal together with the corresponding key signal. Each montage processor has two frame stores connected in series, which are designated here as 1st and 2nd store of a channel. The montage processor is menu controlled.

3.9.1 MONTAGE PROCESSOR MAIN MENU

The **Main** menu serves to set all parameters relevant to the storage function of the montage processor.



3.9.1.1 Dialog Buttons

Matte Selecting **MPR Matte** menu.

MPR Effects Selecting **MPR Effects** menu.

Pixel Manip Selecting **Pixel Manipulator** menu.

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.9.1.2 Function Buttons

Coupled If **Coupled** is selected, the montage processor is in Couple mode, i.e. the two processors (MPR1 and MPR2) are initialized with the same position and output parameters. In this mode the position and output parameters are always identical for both channels, i.e. a change in one channel has an influence on the other channel.

Crop The **Crop** function serves to adapt the blanking to the norm blanking for analog signals i.e. the black bars on the right and left picture edge will be replaced with the background color.

MPR Effects If **MPR Effects** is selected, the pixel manipulator of the respective channel is enabled. The relevant parameters can be selected in the pixel manipulator menu. *In preparation, not implemented yet.*

PixMan If **PixMan** is selected, the pixel manipulator of the respective channel is enabled. The relevant parameters can be selected in the pixel manipulator menu. *In preparation, not implemented yet.*

Readout Frame
Readout Field1
Readout Field2
The output of the Montage Processor is a full Frame, Field 1 only or Field 2 only. Use the field mode if a movement is in the stored picture or if two different fields were stored.

TrackBall Delegates the trackball to the Montage Processor

With the softkey **Pos Center** it is possible to delegate the trackball in center position.

Menu Lock For details refer to section ***Introduction.***

Grab Frame
Grab Field1
Grab Field2

The image is stored in the Montage Processor as full Frame, Field 1 only or Field 2 only.
Pushing the desired Grab button disables the Freeze mode for one frame or field to make a snapshot of the life picture.

Freeze Frame
Freeze Field1
Freeze Field2

The **Freeze** buttons freeze a full Frame, Field 1 only or Field 2 only.

Position Horizontal and vertical position display for the trackball adjustment in pixel values:

H	- 720 ... +720 pixel
V	- 576 ... +576 lines (625 lines standard) e.g.
	- 507 ... +507 lines (525 lines standard)

The values serve for the orientation in order to reproduce special adjustments.

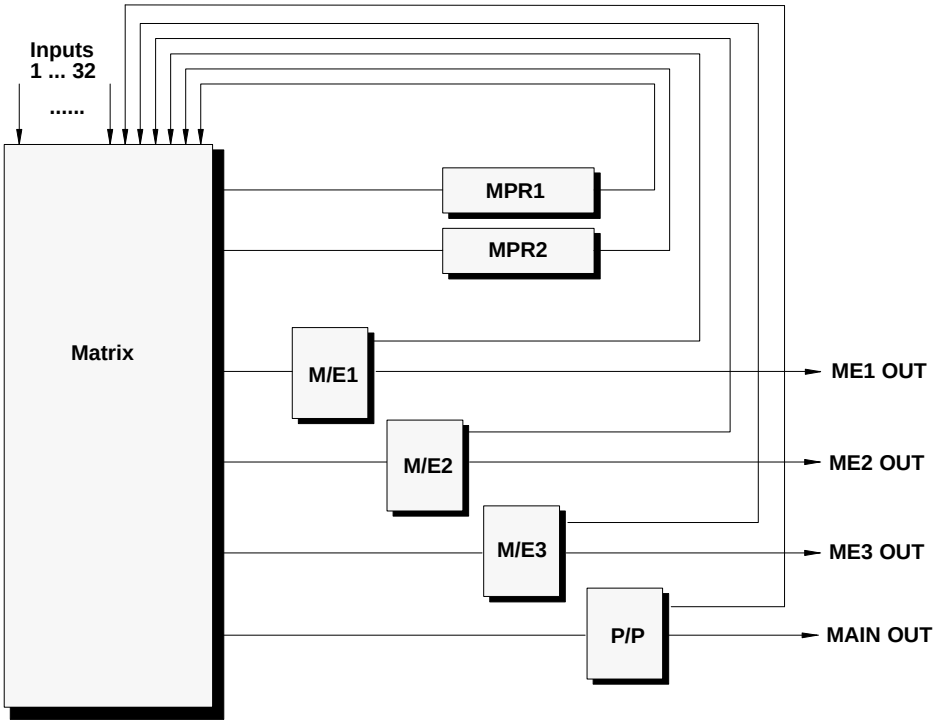
Positioning per mouse:

*Cursor is active when button **Postion** is activated.*
– move mouse: Cursor is moved without positioning
– move mouse with left button pressed: positioning active.

Digits For details refer to section ***Introduction.***

3.9.2 SOURCE SELECTION

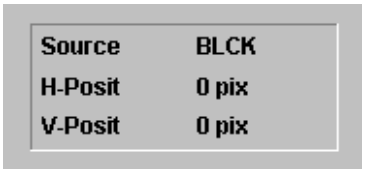
Integration of the montage processor in the video signal path



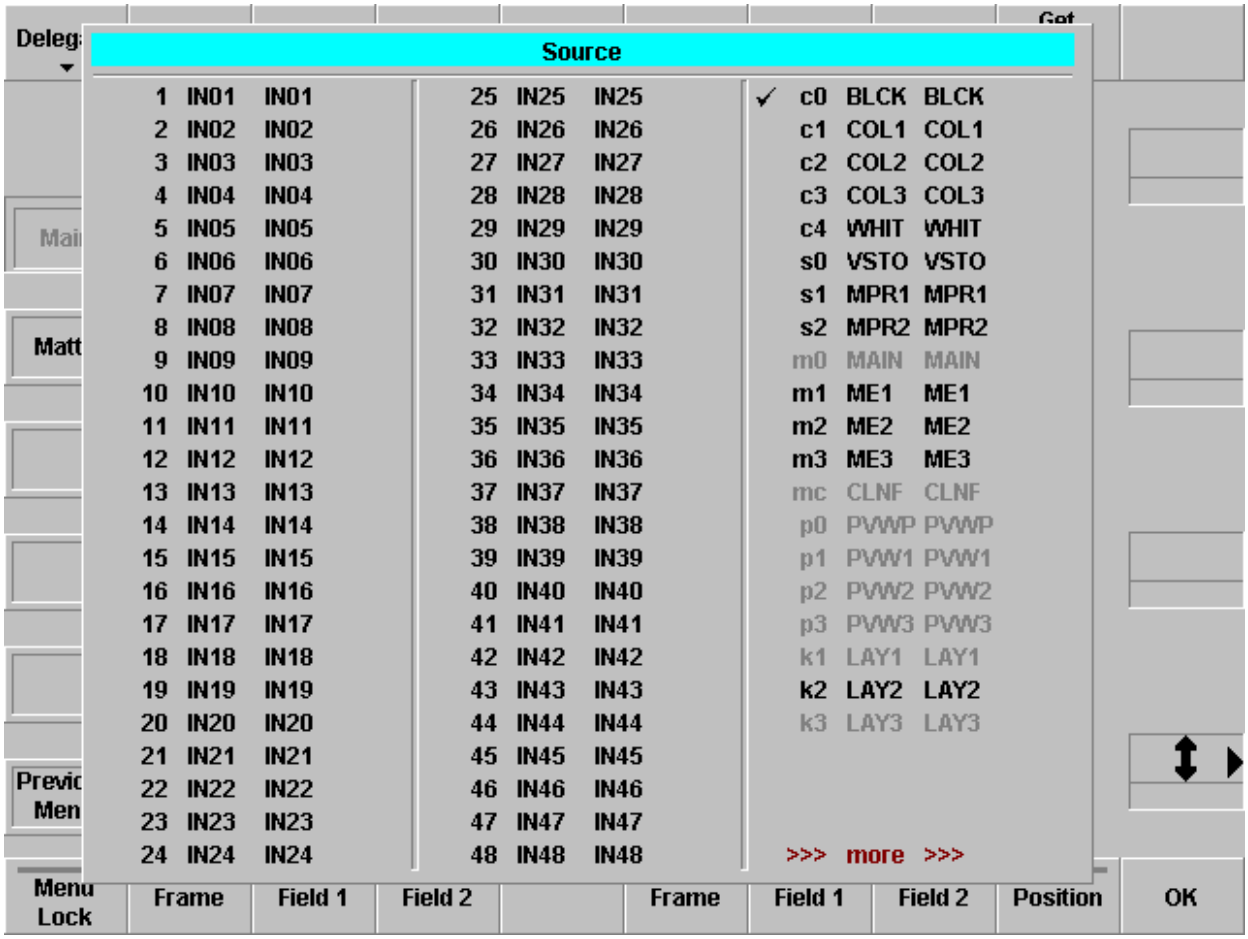
Selecting a Source

Selecting a source from the menu with the mouse:

Click on the source list field.



This opens the source overlay. Select a source by clicking with the mouse cursor on the desired source. By clicking on the **H-Pos** or **V-Pos** the position can be adjusted with the respective digipots.


Source
1 IN01 IN01
2 IN02 IN02
3 IN03 IN03
4 IN04 IN04
5 IN05 IN05
6 IN06 IN06
7 IN07 IN07
8 IN08 IN08
9 IN09 IN09
10 IN10 IN10
11 IN11 IN11
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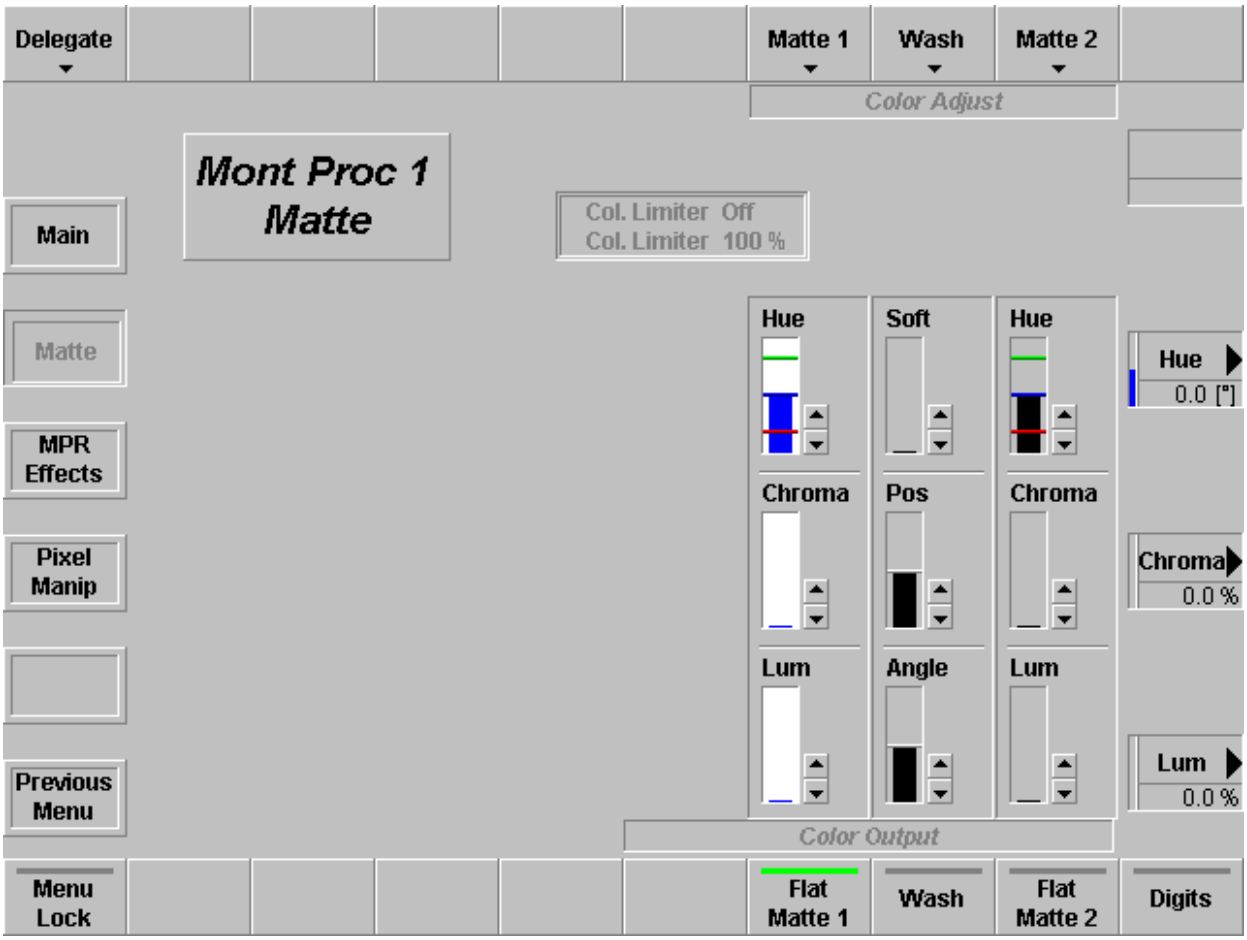
40 IN40 IN40
41 IN41 IN41
42 IN42 IN42
43 IN43 IN43
44 IN44 IN44
45 IN45 IN45
46 IN46 IN46
47 IN47 IN47
48 IN48 IN48
✓ c0 BLCK BLCK
c1 COL1 COL1
c2 COL2 COL2
c3 COL3 COL3
c4 WHIT WHIT
s0 VSTO VSTO
s1 MPR1 MPR1
s2 MPR2 MPR2
m0 MAIN MAIN
m1 ME1 ME1
m2 ME2 ME2
m3 ME3 ME3
mc CLNF CLNF
p0 PVWP PVWP
p1 PVW1 PVW1
p2 PVW2 PVW2
p3 PVW3 PVW3
k1 LAY1 LAY1
k2 LAY2 LAY2
k3 LAY3 LAY3
>>> more >>>
Menu Lock
Frame
Field 1
Field 2
Frame
Field 1
Field 2
Position
OK

3.9.3 MONT PROC MATTE MENU

The **Matte** menu permits the selection of the matte – corresponding to the matte operation in the switcher – which is to appear as background after shifting the video signal in the store.



3.9.3.1 Dialog Buttons

Main Menu Selecting **MPR Main** menu.

MPR Effects Selecting **MPR Effects** menu.

Pixel Manip Selecting **Pixel Manipulator** menu.

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.9.3.2 Function Buttons

Delegate

Delegates the matte generator to the Montage Processor channels*.*

Matte 1
Matte 2

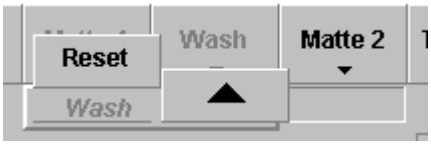
The **Matte 1 (Matte 2)** button delegates the digipots so that the desired colors can be adjusted. There are seven preadjusted matte colors selectable.

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**.



Menu Lock For details refer to section ***Introduction.***

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.

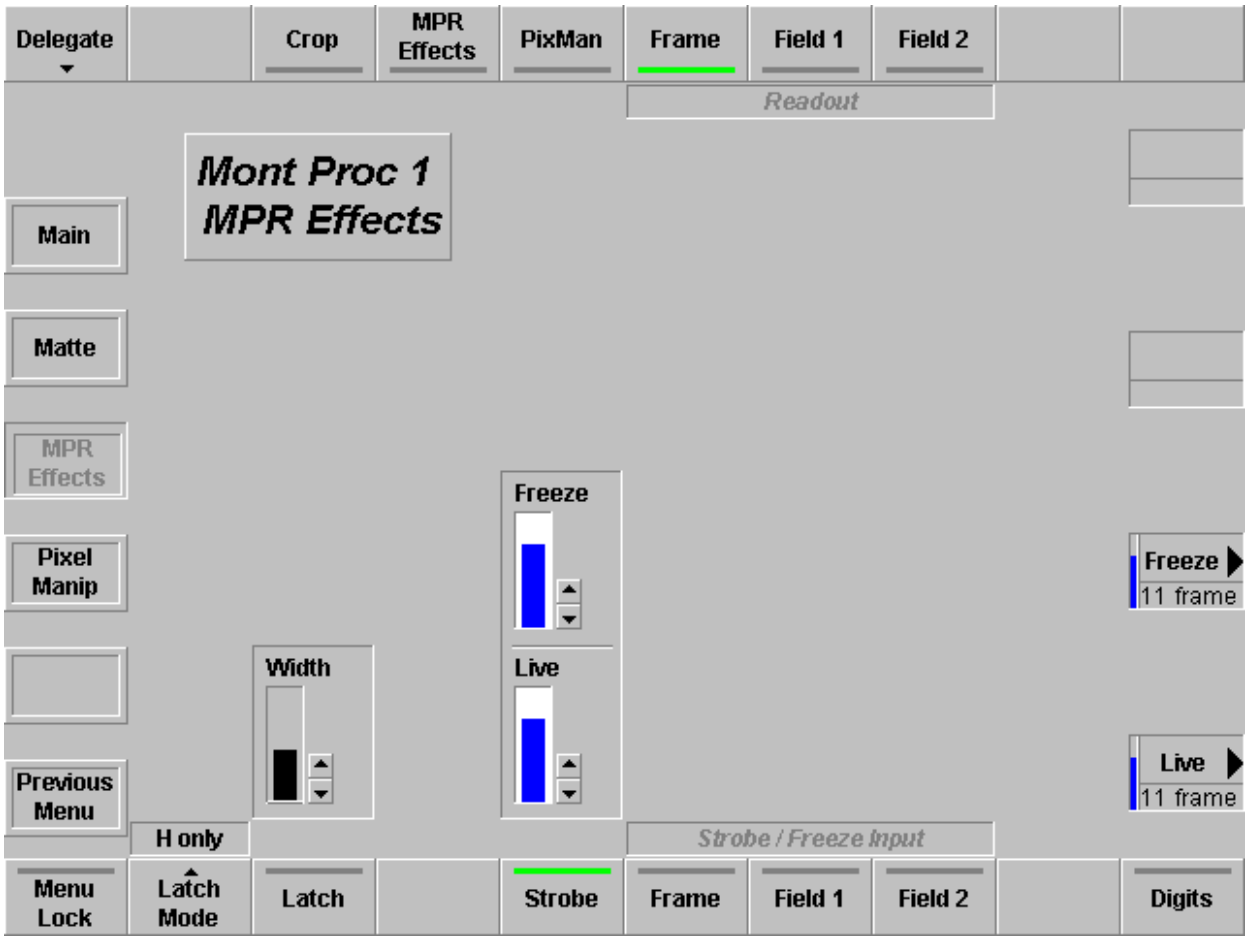
The **Softness** control permits adjusting the width of the transition between the two colors. The **Position** control serves to shift the position of the transition. With the **Angle** control, the transition angle can be rotated.

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**.

Digits For details refer to section ***Introduction.***

3.9.4 MONT PROC EFFECTS MENU

The **Matte** menu permits the selection of the matte – corresponding to the matte operation in the switcher – which is to appear as background after shifting the video signal in the store.



3.9.4.1 Dialog Buttons

Main Menu Selecting **MPR Main** menu.

Matte Selecting **MPR Matte** menu.

Pixel Manip Selecting **Pixel Manipulator** menu.

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.9.4.2 Function Buttons

Delegate

Delegates the matte generator to the Montage Processor channels*.*

Crop

The **Crop** function serves to adapt the blanking to the norm blanking for analog signals i.e. the black bars on the right and left picture edge will be replaced with the background color.

MPR Effects

If **MPR Effects** is selected, the pixel manipulator of the respective channel is enabled. The relevant parameters can be selected in the pixel manipulator menu.
In preparation, not implemented yet.

PixMan

If **PixMan** is selected, the pixel manipulator of the respective channel is enabled. The relevant parameters can be selected in the pixel manipulator menu.
In preparation, not implemented yet.

Readout Frame
Readout Field1
Readout Field2

The output of the Montage Processor is a full Frame, Field 1 only or Field 2 only. Use the field mode if a movement is in the stored picture or if two different fields were stored.

Latch Mode

In **Latch mode** the two frame stores connected in series are used in one channel. In this operation the processor switches several times between the two stores within one video image, with the video contents of the second store delayed by one frame to the first store. The delay between the two frame stores connected in series is only visible in moving image parts, and only there the Latch mode effect will be visible.

Four modes are selectable:

Latch

By activating the button the Latch mode is enabled.

The **Width** parameter can be changed with the digipot right of the display. The bar indicates the width of the stripes for the switching over between the first and the second store.

Note:

The Latch Width settings affect both channels MPR1 and MPR2. However, each channel can be enabled separately.

Strobe

By selecting **Strobe** the Strobe mode is enabled for the selected field(s) (depending on the **Strobe/Freeze Input** setting). The two digipots **Live** and **Freeze** permit the setting of the delay between frozen image and live image (in frames). To permit a reproduction of a given setting, the current setting is displayed as a bar together with a percentage indication.
If a video with movement is selected as input signal, a stroboscope effect will result if the Strobe mode is enabled.

Note:

If the video running through the store is used in a recursion to serve as input signal and the current video is displaced with the trackball, this will result in a trailing effect. Here the two channels should be operated in Couple mode, so that the corresponding key signal is modified as well.
Please refer also to the Application Notes.

*The **Live** and **Freeze** digipots permit the selection of a maximum of 15 frames each.*

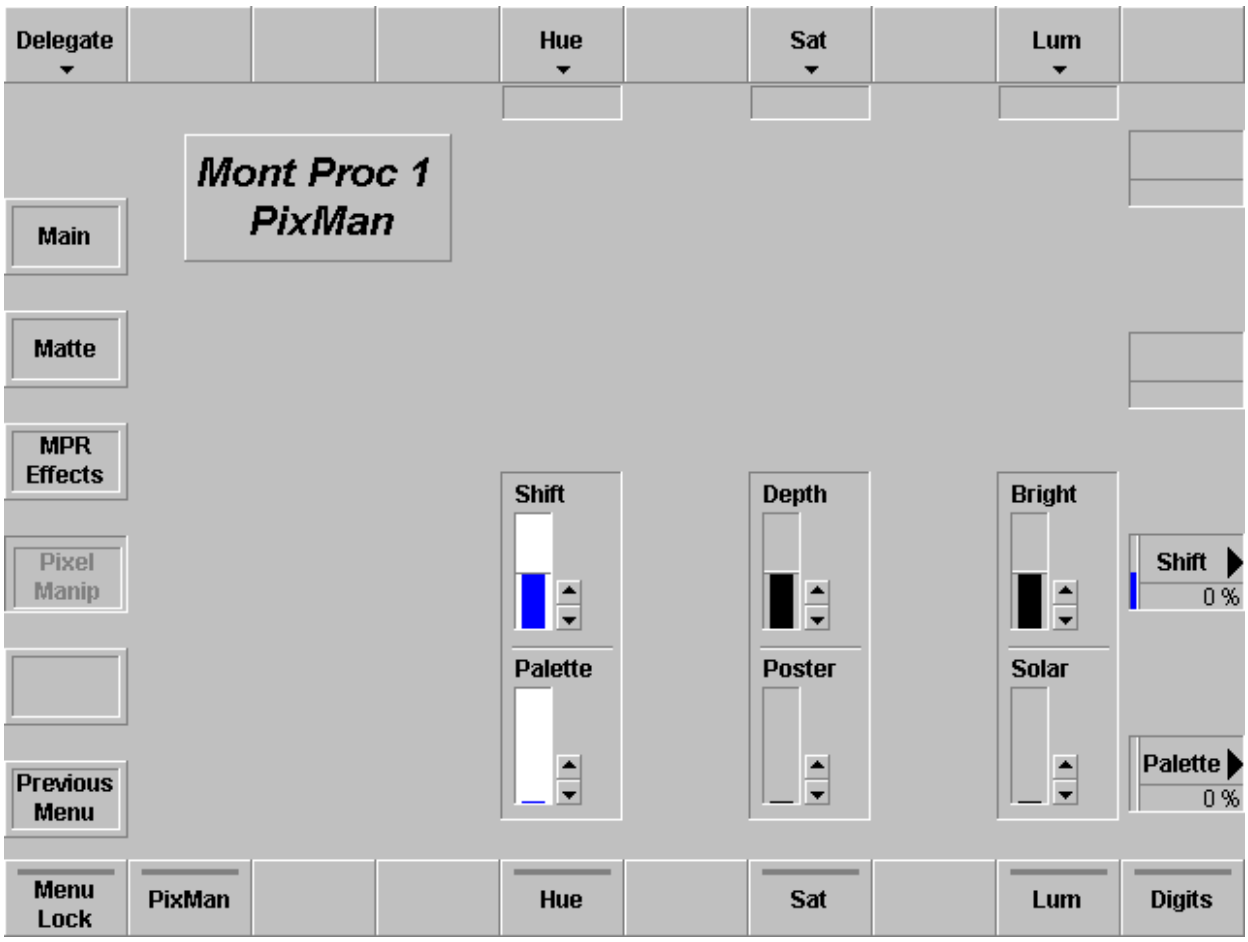
Strobe / Freeze Input
Frame
Field1
Field2

The **Strobe** buttons freeze a full Frame, Field 1 only or Field 2 only.

Digits

For details refer to section ***Introduction.***

3.9.5 PIXEL MANIPULATOR MENU



3.9.5.1 Dialog Buttons

Main Menu Selecting **MPR Main** menu.

Matte Selecting **MPR Matte** menu.

MPR Effects Selecting **MPR Effects** menu.

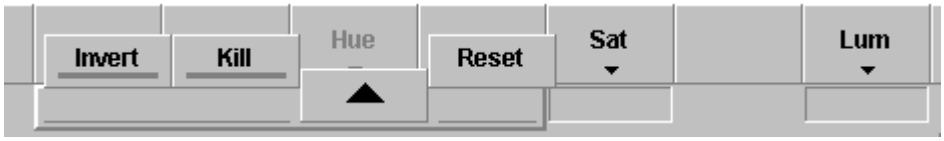
Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.9.5.2 Function Buttons

Hue
Sat
Lum

The buttons in the upper part of the menu permits color manipulation.



The **Hue** group of buttons permits a manipulation of the color of the stored video image:
- If you select **INV**, the color is inverted (1805 in the color circle)
- If you select **KILL**, all colors are set to ”red”.

The **Sat**uration group of buttons permits a manipulation of the color saturation of the stored video image.
- If you select **INV**, the color saturation is inverted.
- If you press **KILL**, the color saturation is set to ”Zero=no color”.

The **Lum**inance group of buttons permits a manipulation of the brightness of the stored video image.
- If you select **INV**, the luminance is inverted (bright=dark).
- If you select **KILL**, all luminance values are set to ”zero”.

PixMan

After activating the button (**ON**), the setting becomes visible in the image.

Hue
Sat
Lum

The buttons in the lower part of the menu permits manipulation with the digipots.

HUE modification:

Shift Offset setting of the hue.

Palette Segmentation of the hue value range
Minimum number of colors: 0 % = 4 colors

*Note: Is without function if **HUE KILL** was enabled.*

SATURATION modification:

Depth Offset setting of the color saturation.

Posterisation Segmentation of the saturation value range.
Minimum number of stages: 0 % = 2 stages (saturated or b/w)

*Note: Is without function if **SATURATION KILL** was enabled.*

LUMINANCE modification:

Brightness Offset setting of the brightness.

Solarisation Segmentation of the saturation value range of luminance.

*Note: Is without function if **LUMINANCE KILL** was enabled.*

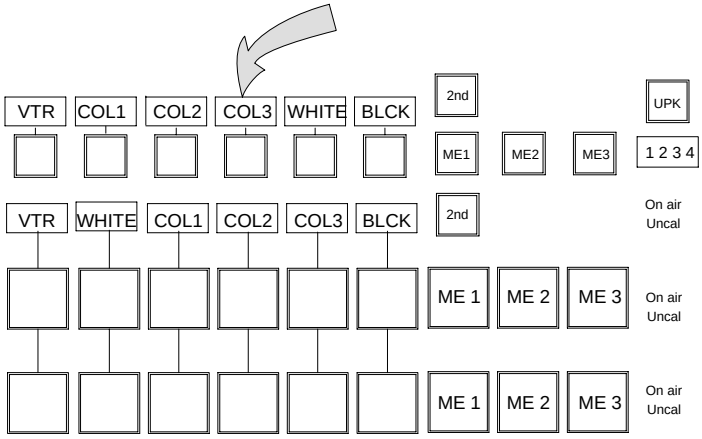
Digits

For details refer to section ***Introduction.***

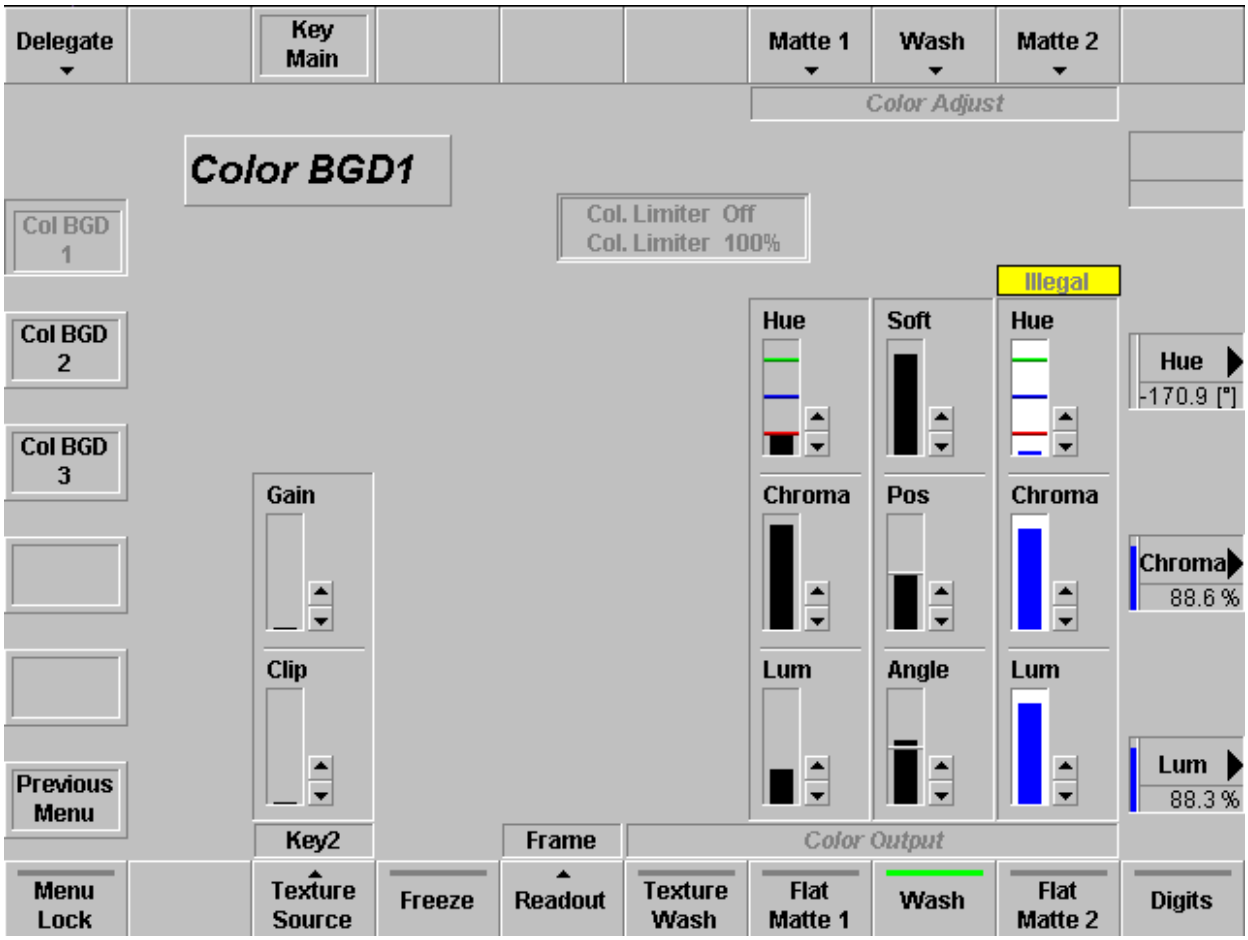
3.10 COLOR BACKGROUND MENU

The *DD35* production switchers are equipped with 32 or 48 (with option “Input Extension”) serial digital inputs which can be universally used for video or key signals. Among other inputs additionally the following internal signals are available:

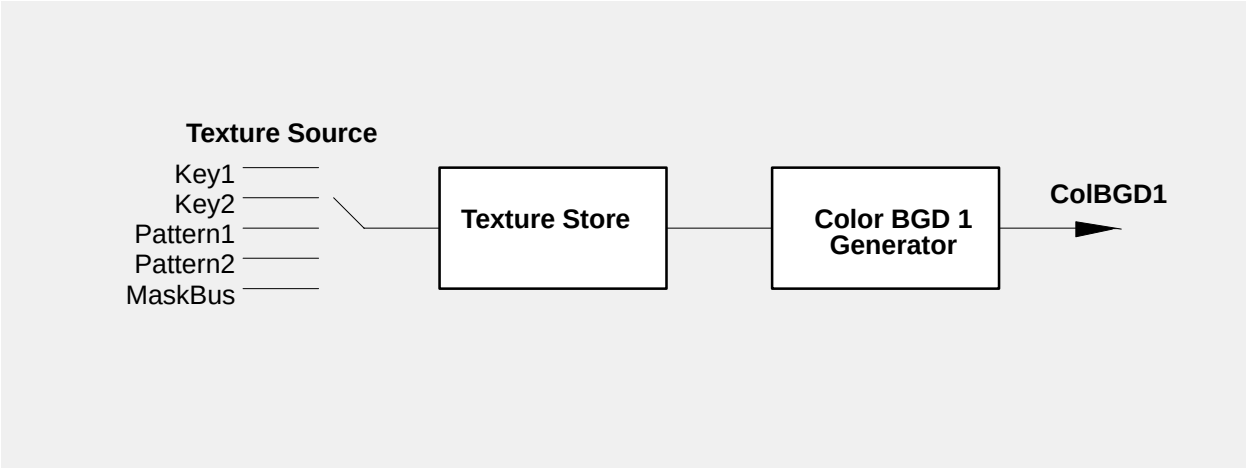
- 3 color backgrounds (Col1, Col2, Col3)



3.10.1 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.



3.10.1.1 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.***

3.10.1.2 Function Buttons

Delegate For details refer to section ***Introduction.***

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.

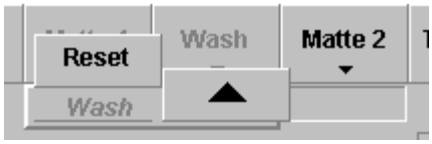
Matte 1
Matte 2

The **Matte 1 (Matte 2)** button delegates the digipots so that the desired colors can be adjusted. There are seven preadjusted matte colors selectable.

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.*

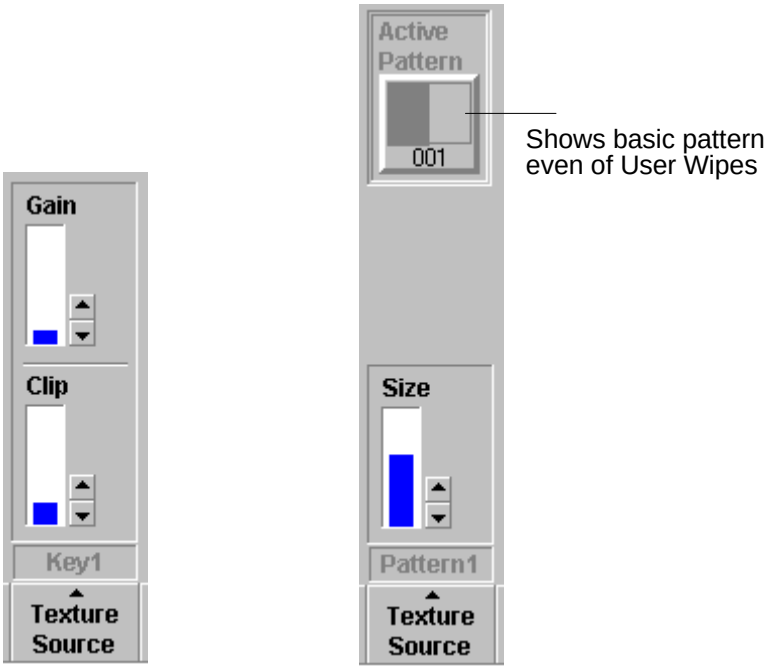
Wash The **Wash** button serves to reset the wash to: Angle-Vert, Pos-Mid and Soft-Min and delegates the digipots to the wash parameters **Angle**, **Pos**, **Soft**.



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:



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.***

3.10.1.3 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.

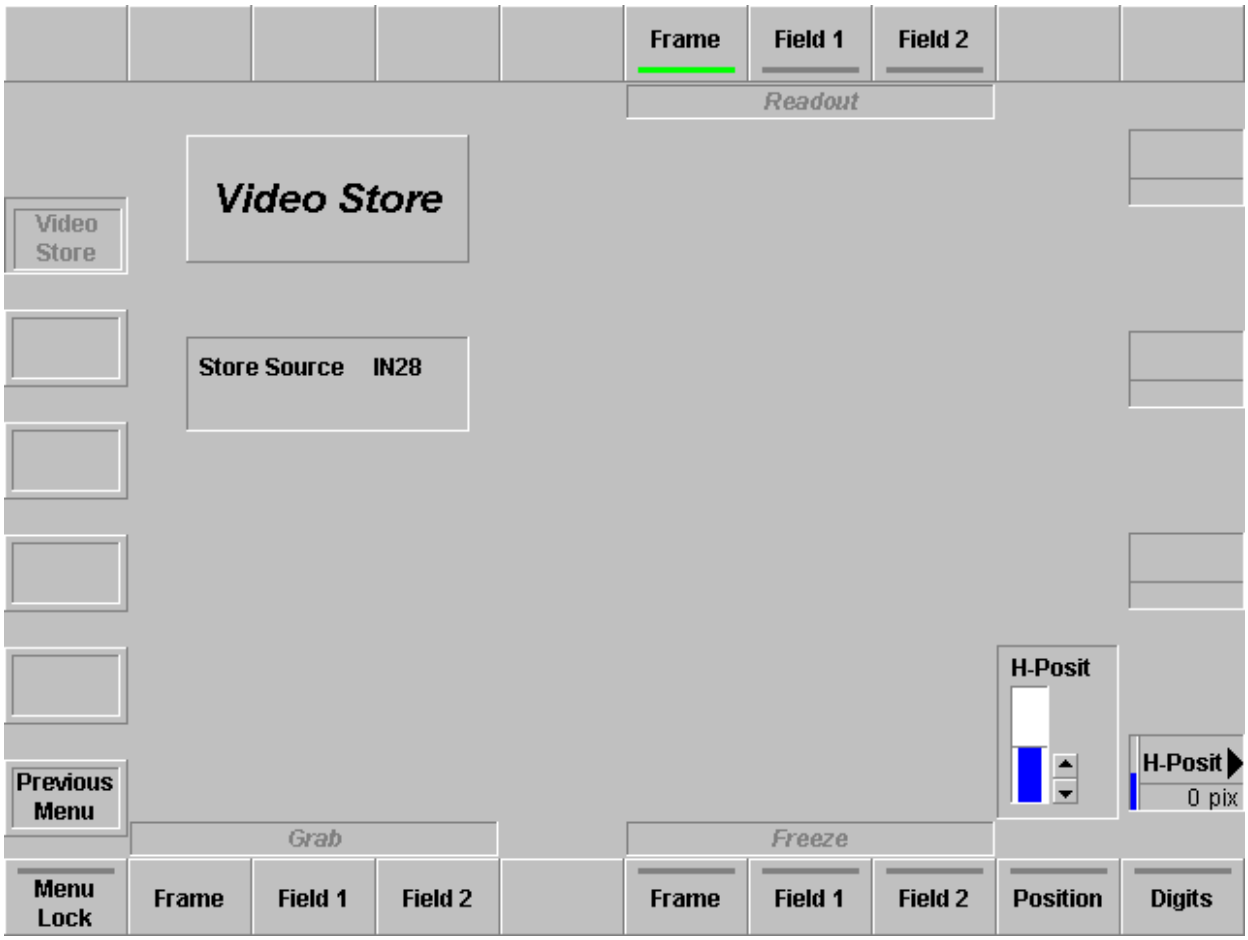
Note: Please note that a signal is delayed by one frame when it passes through the store.

3.11 VIDEO STORE MENU

The **video store** can store or pass a 4:2:2 video signal.

Note: Please note that a signal is delayed by one frame when it passes through the store.

3.11.1 VIDEO STORE MENU



3.11.1.1 Dialog Buttons

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.11.1.2 Function Buttons

Readout Frame
Readout Field1
Readout Field2

The output of the Video Store is a full Frame, Field 1 only or Field 2 only. Use the field mode if a movement is in the stored picture or if two different fields were stored.

Menu Lock

For details refer to section ***Introduction.***

Grab Frame
Grab Field1
Grab Field2

The image is stored in the Video Store as full Frame, Field 1 only or Field 2 only. Pushing the desired Grab button disables the Freeze mode for one frame or field to make a snapshot of the life picture.

Freeze Frame
Freeze Field1
Freeze Field2

The **Freeze** buttons freeze a full Frame, Field 1 only or Field 2 only. See hints below.

Position

Horizontal shift of ± 64 pixel.

Positioning per mouse:

*Cursor is active when button **Postion** is activated.*
– move mouse: Cursor is moved without positioning
– move mouse with left button pressed: positioning active.

Digits

For details refer to section ***Introduction.***

Hints

Although it is not a real frame synchronizer, in most cases, the Video Store can be used to synchronize incoming signals to the mixer's reference.
To do this:
– select the non-sync signal as source for the Video Store
*– switch off all **Freeze** functions*
*– select **Readout Frame**.*
Note: With free running signals at the store input it is possible that the store output sometimes jumps 1 line.

*Because of the **Freeze Field** and **Readout Field** capability, the Video Store can store two independent images.*
To do this:
– select the first image as source
*– activate **Freeze Field 1***
– select the second image as source
*– activate **Freeze Field 2***
*– with **Readout Field1** or **Field2** the output can be changed from the first image to the second image and vice versa.*

***Readout Frame** can be selected, the output will then be image 1 in field 1 and image 2 in field 2. In most cases, this will be a distorted image.*

Some really nice effects can be done when the Video Store is used recursively in an M/E.
For example:

- *– select an M/E as source*
- *– switch off **Freeze***
- *– make a slight horizontal shift*
- *– select the Video Store e.g. as PST in this M/E*
- *– and now perform a BGND Mix or Wipe.*

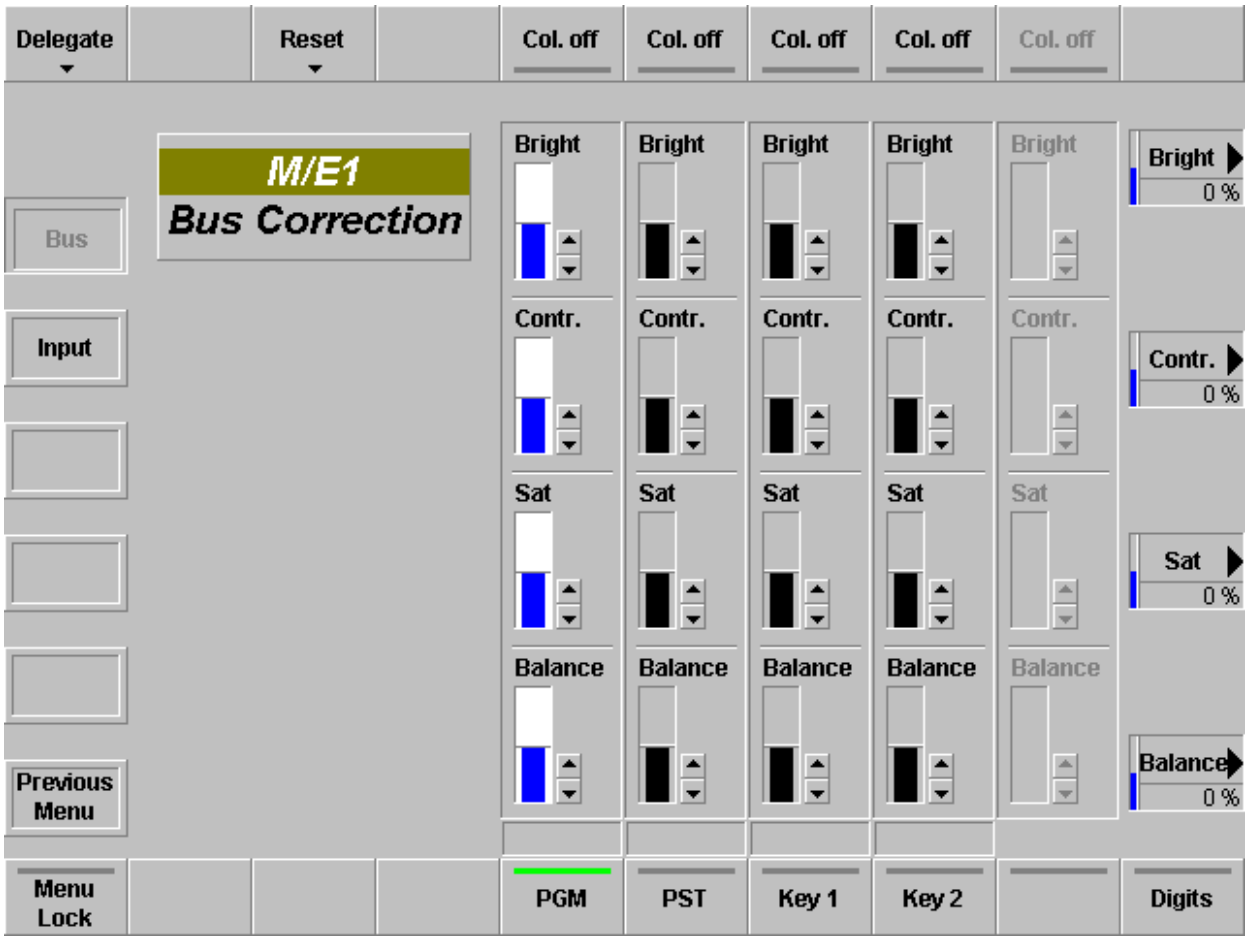
3.11.2 SOURCE SELECTION

To store a video picture, proceed as follows:

- Enable the **Video Store** key in the Aux Buses panel and select a signal source.
- The stored picture signal can be selected as input signal with the keys **2nd** and **Video Store** in the Source Selection panel. This of course depends on the input assignment.
- Selecting a store source from the menu with the mouse:
  Click on Store Source. This opens the store source overlay. Select a source by clicking with the mouse cursor on the desired source.

3.12 CORRECTION MENU

3.12.1 BUS CORRECTION MENU



The Bus Correction menu serves to adjust brightness, contrast, saturation and color balance related to the bus.

Note: *Bus correction has priority over input correction.*

3.12.1.1 Dialog Buttons

Input Selecting of the Input Correction menu.

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.12.1.2 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.***

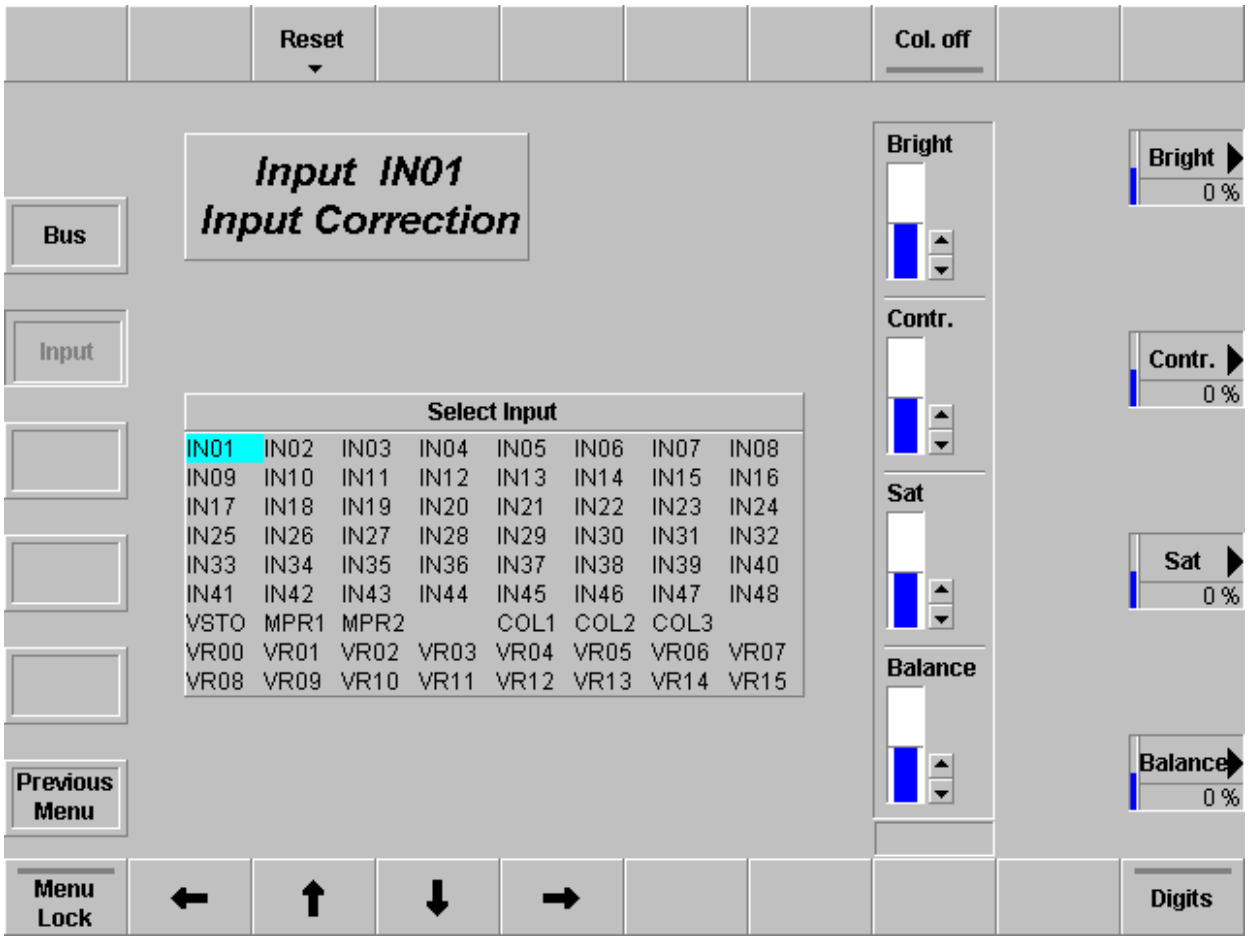
PGM
PST
Key1 (DSK1)
Key2 (DSK2)
The button serve to activate the bus correction and delegates the digipots to the parameters **Bright**, **Contr**, **Sat** and **Balance**.

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.***

3.12.2 INPUT CORRECTION MENU



The Input Correction menu serves to adjust brightness, contrast, saturation and color balance related to the inputs.

3.12.2.1 Dialog Buttons

Bus Selecting of the Bus Correction menu.

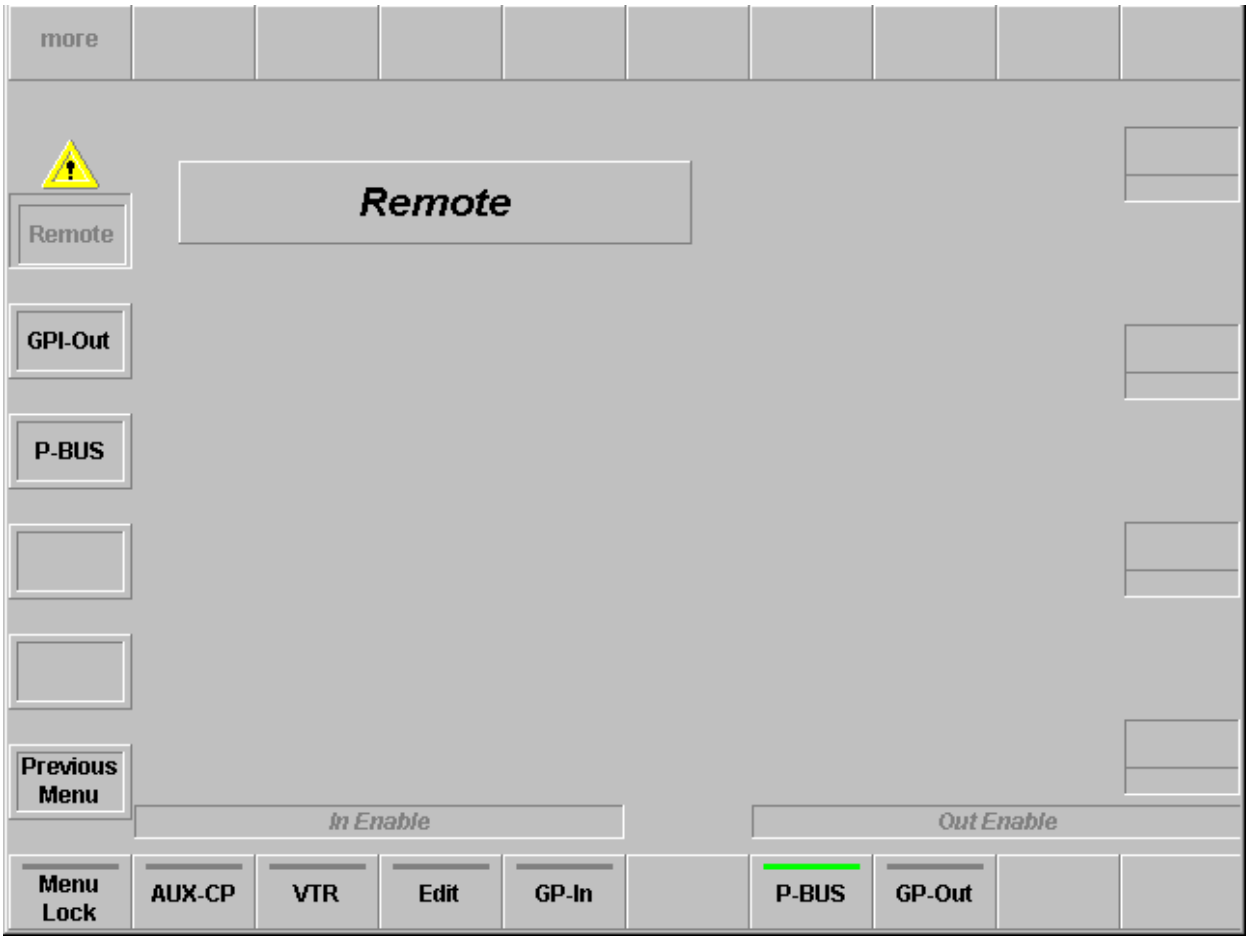
Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.12.2.2 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 ***PST*** ***Key1 (DSK1)*** ***Key2 (DSK2)***	The button serve to activate the bus correction and delegates the digipots to the parameters **Bright**, **Contr**, **Sat** and **Balance**.
Digits	For details refer to section ***Introduction.***

3.13 REMOTE MENU

3.13.1 MAIN MENU



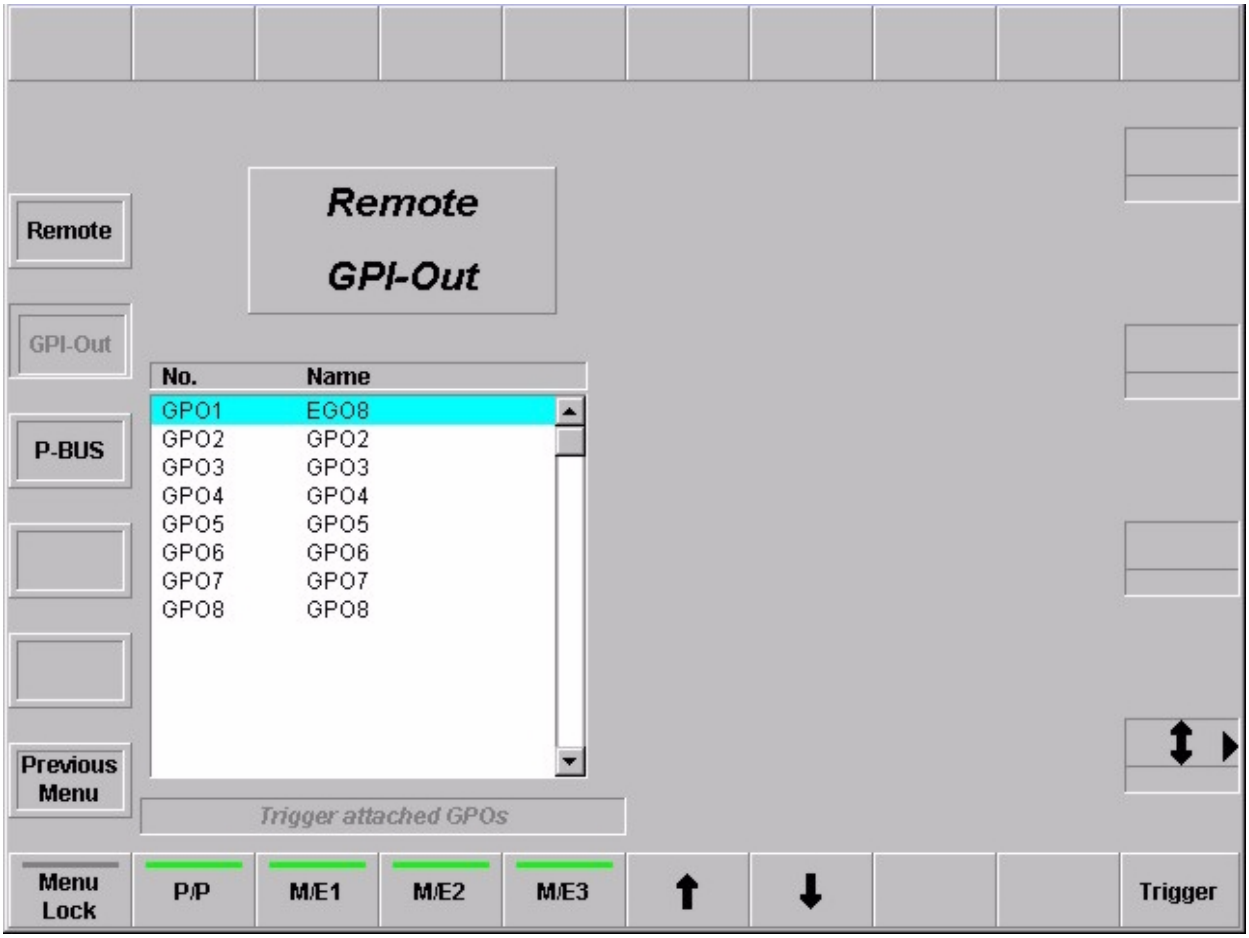
3.13.1.1 Dialoge Buttons

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.***

3.13.1.2 Function Buttons

Menu Lock	For details refer to section ***Introduction.***
In Enable AUX CP	Enables Aux Control Panels
In Enable VTR	Enables the VTR control
In Enable Edit	Enables Editor control.
In Enable GP In	Enables GPI inputs
Out Enable P-Bus	Enables Editor control.
Out Enable GP Out	Enables GPI inputs

3.13.2 GPI-OUT MENU



3.13.2.1 Dialog Buttons

Remote Return to the **Remote** main menu.

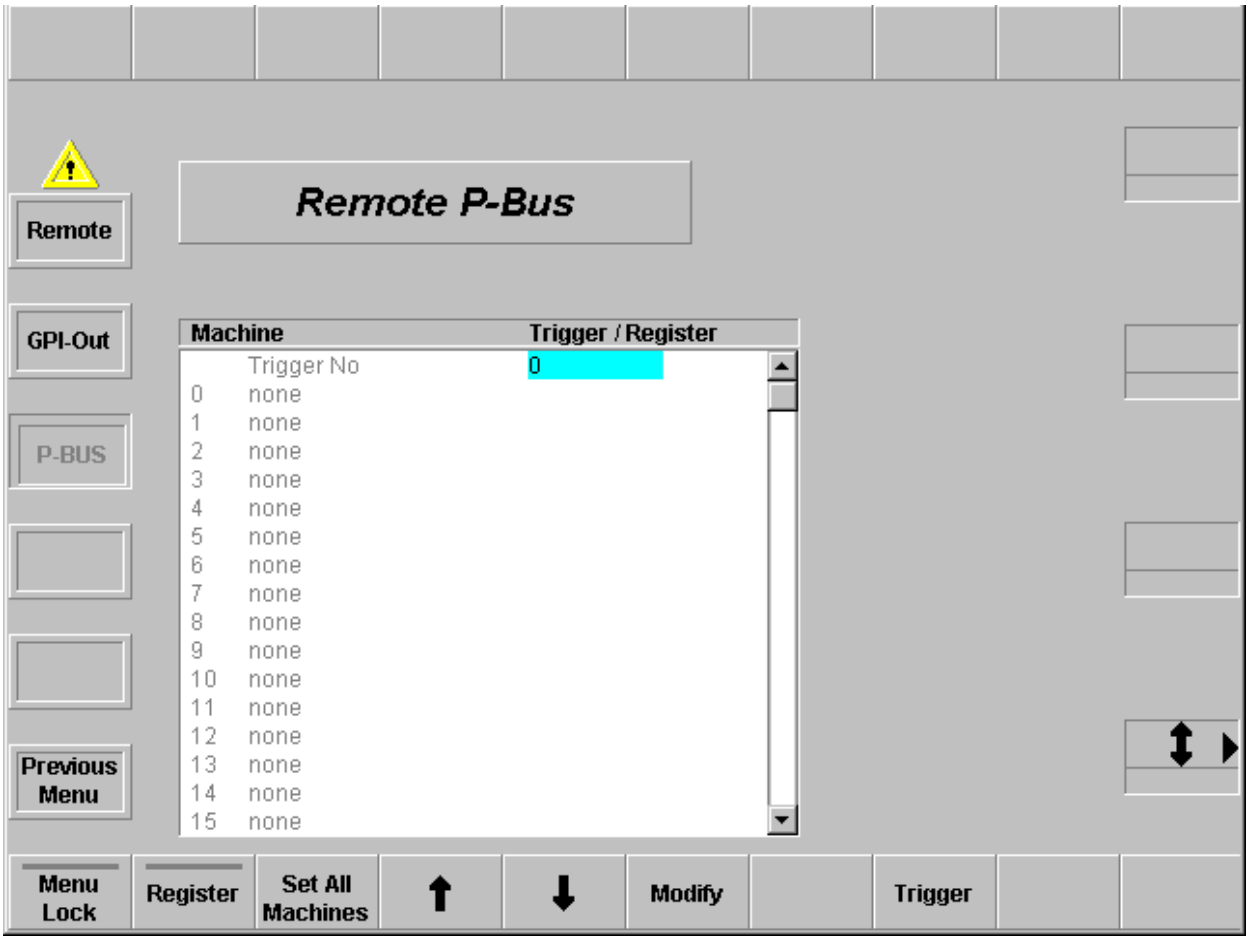
P-BUS Selecting **P-Bus** menu

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.13.2.2 Function Buttons

Menu Lock	For details refer to section ***Introduction.***
Trigger attached GPOs: ***– P/P*** ***– M/E1 ... 3***	In preparation
Cursor ↑ ↓	Moving the bar in the list box and select a GPO channel
Trigger	Set a manual trigger

3.13.3 REMOTE P-BUS



3.13.3.1 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.***

3.13.3.2 Function Buttons

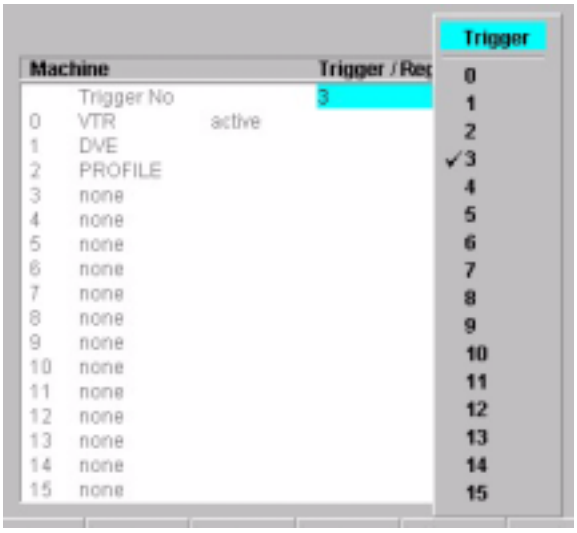
Remote P-Bus / Trigger

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:

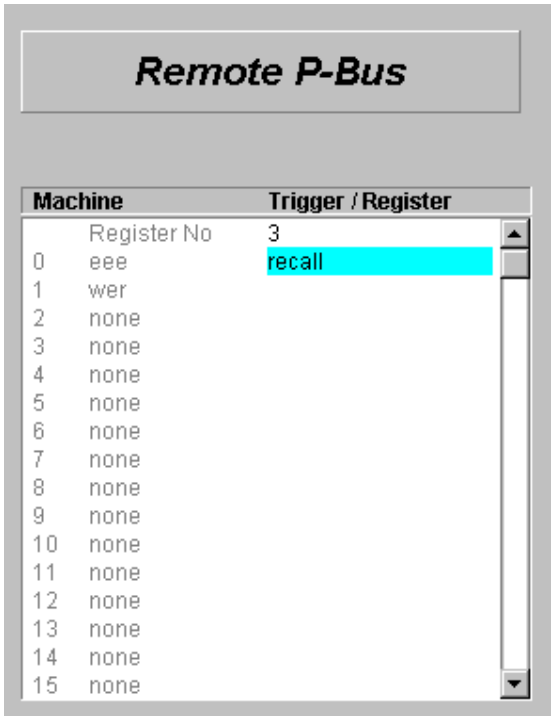
no Command:	this machine does not get any trigger
default Command:	this machine gets the trigger number being in the 1st line
all other lines:	here, each trigger is specified with the name being provided for this machine. A selection in this area also changes the general trigger number in the 1st line 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.



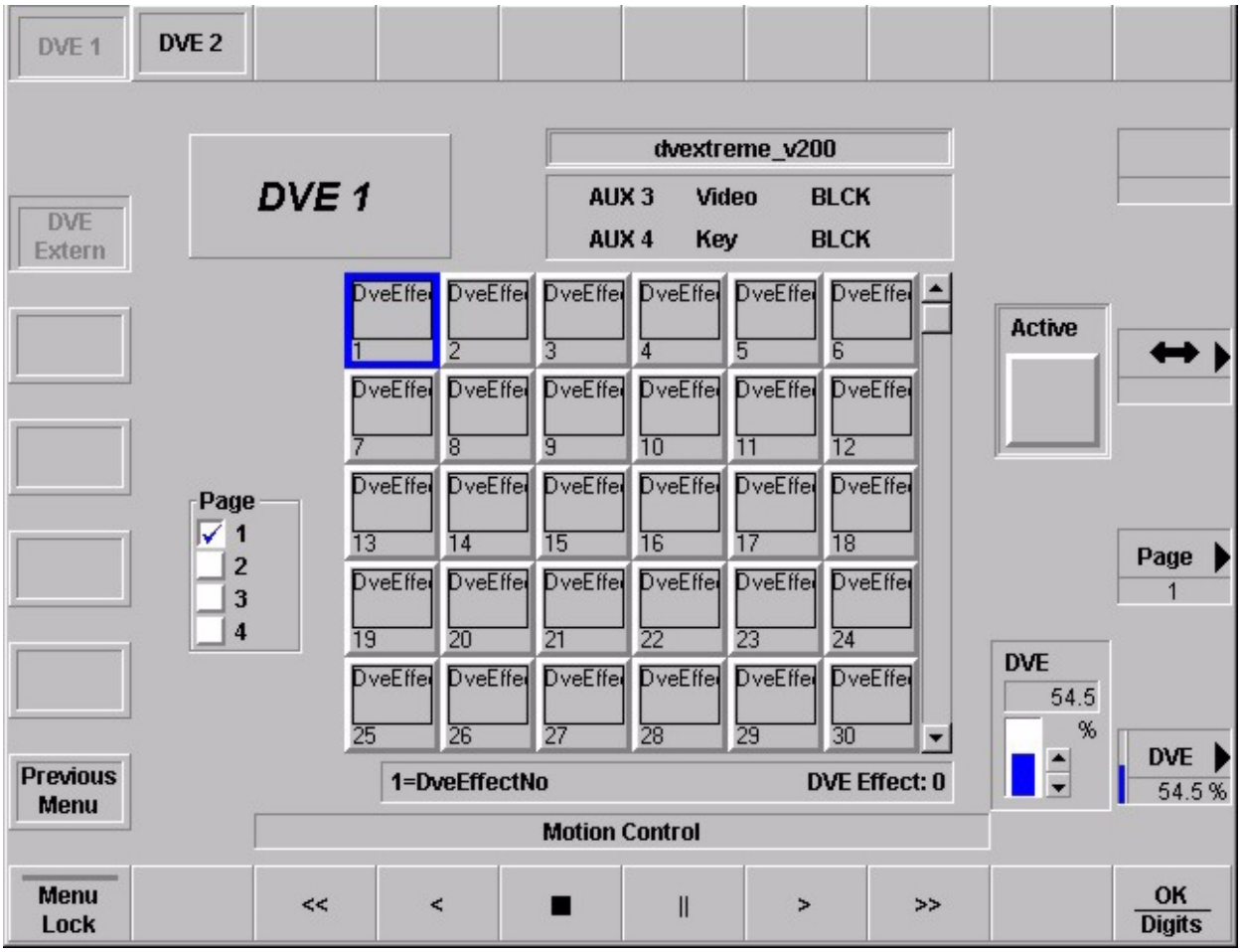
Remote P-Bus / Register

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.



Storing or recalling is performed with the buttons **Save Register** and **Recall Register**.

3.14 DVE CONTROL MENU



3.14.1 Dialoge Buttons

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.14.2 FUNCTION BUTTONS

Menu Lock For details refer to section ***Introduction.***

DVE1 / DVE2 Selecting the DVE channel.

DVE effects can be selected either by positioning the blue cursor box with the digipot 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 transition*) 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.***

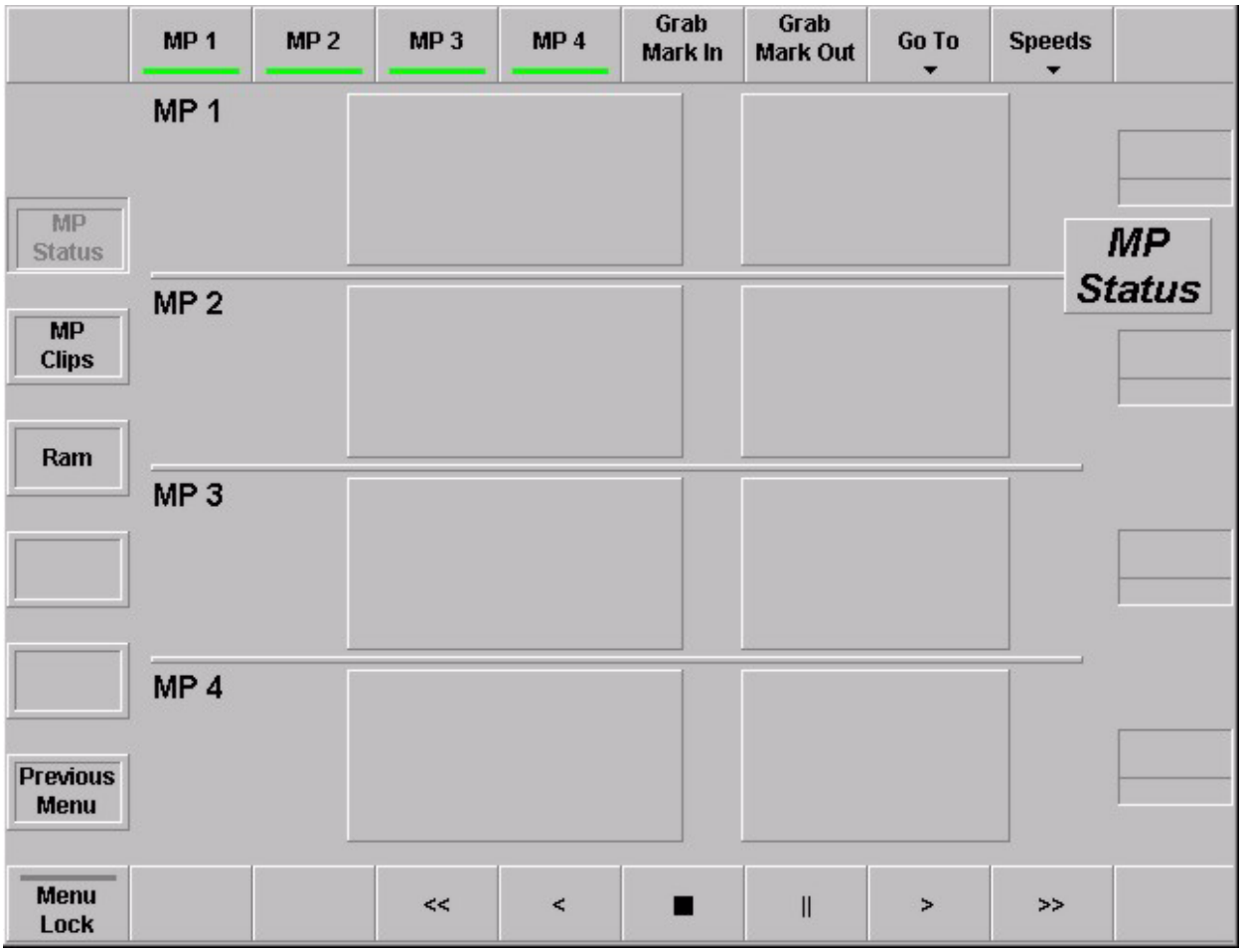
Motion Control:

< <	Fast rewind
<	Rewind
■	Stop
I I	Pause
>	Play
> >	Fast forward

OK / Digits For details refer to section ***Introduction.***

3.15 MEDIA PLAYER MENU

3.15.1 STATUS MENU



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.

3.15.1.1 Dialog Buttons

MP Clips Selecting the Media Player Clip menu.

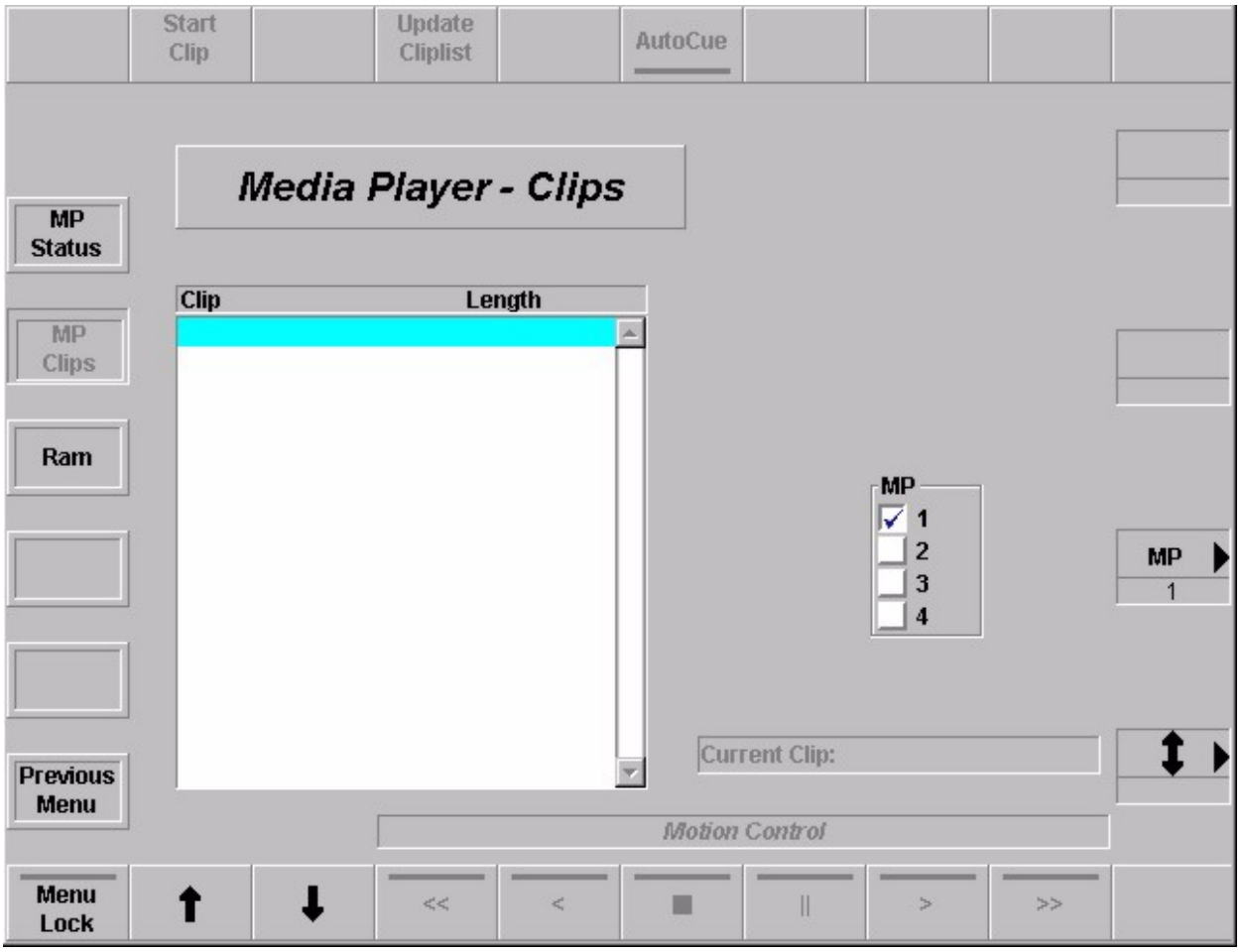
RAM Selecting the internal RAM Recoder menu.

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.15.1.2 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

3.15.2 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.

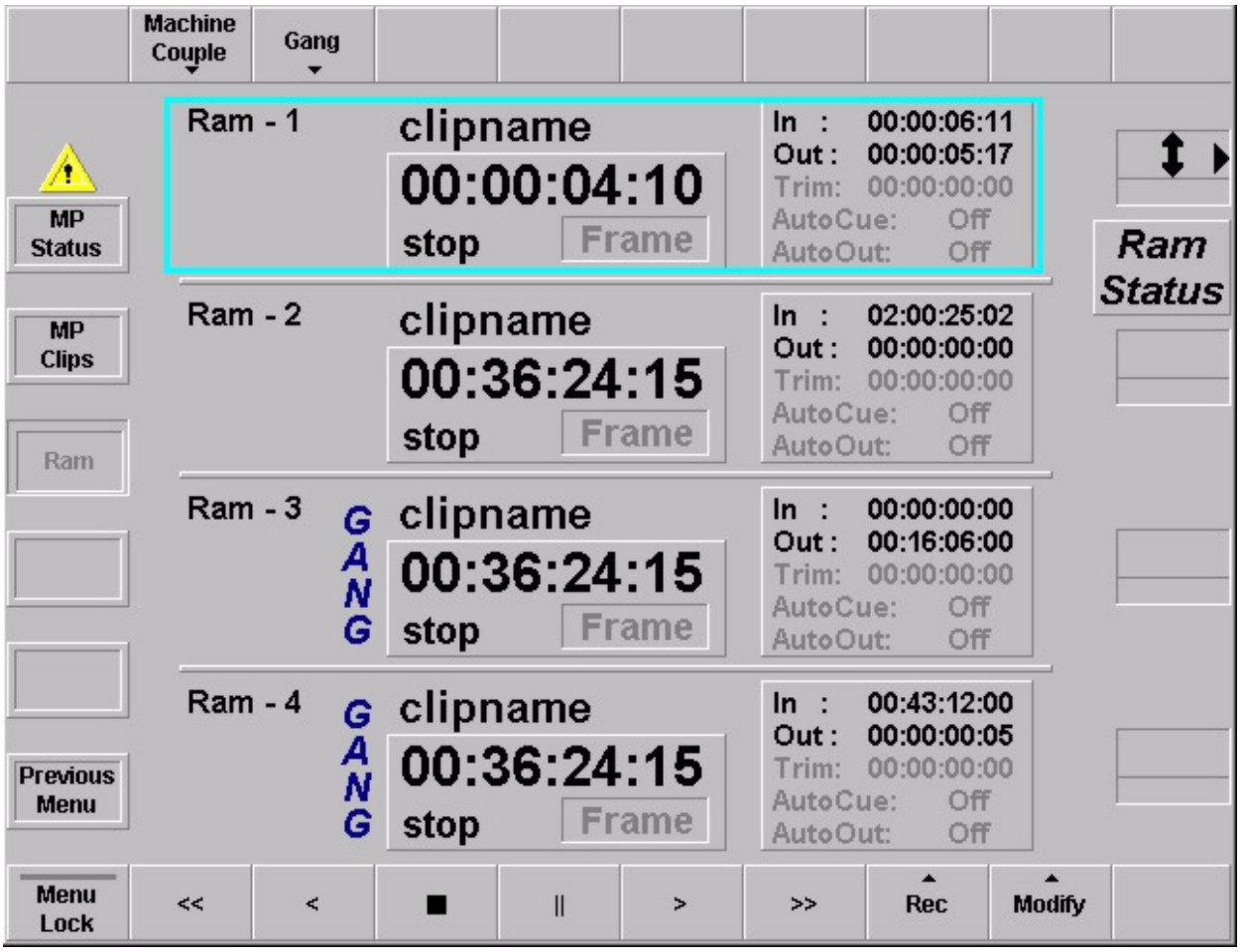
3.15.2.1 Dialog Buttons

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.***

3.15.2.2 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 buttons	Fast rewind Play reverse Stop Pause Play forward Fast forward

3.15.3 RAM RECORDER MENU



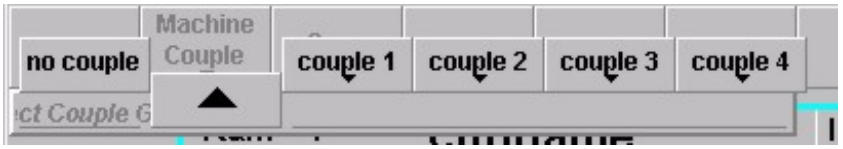
Further function not yet implemented!

3.15.3.1 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.***

3.15.3.2 Dialog Buttons

Machine Couple



(not yet implemented)

With machine couple you will be in a position to gang machines (see below) with a constant timecode offset. In contrary to gang–mode o***ne machine is defined as master and the rest of the machines are "coupled".***

Gang

(not yet implemented)

All machines belonging to one gang (up to 4 gangs are possible) will be controlled in parallel, that means, a tape motion command send to one of the machines is duplicated for all machines in the gang.

Motion control buttons

got to start
play reverse
stop
play
go to end
record

In the actual software version recording per channel will always start from 00:00:00:00 and will record the total time.

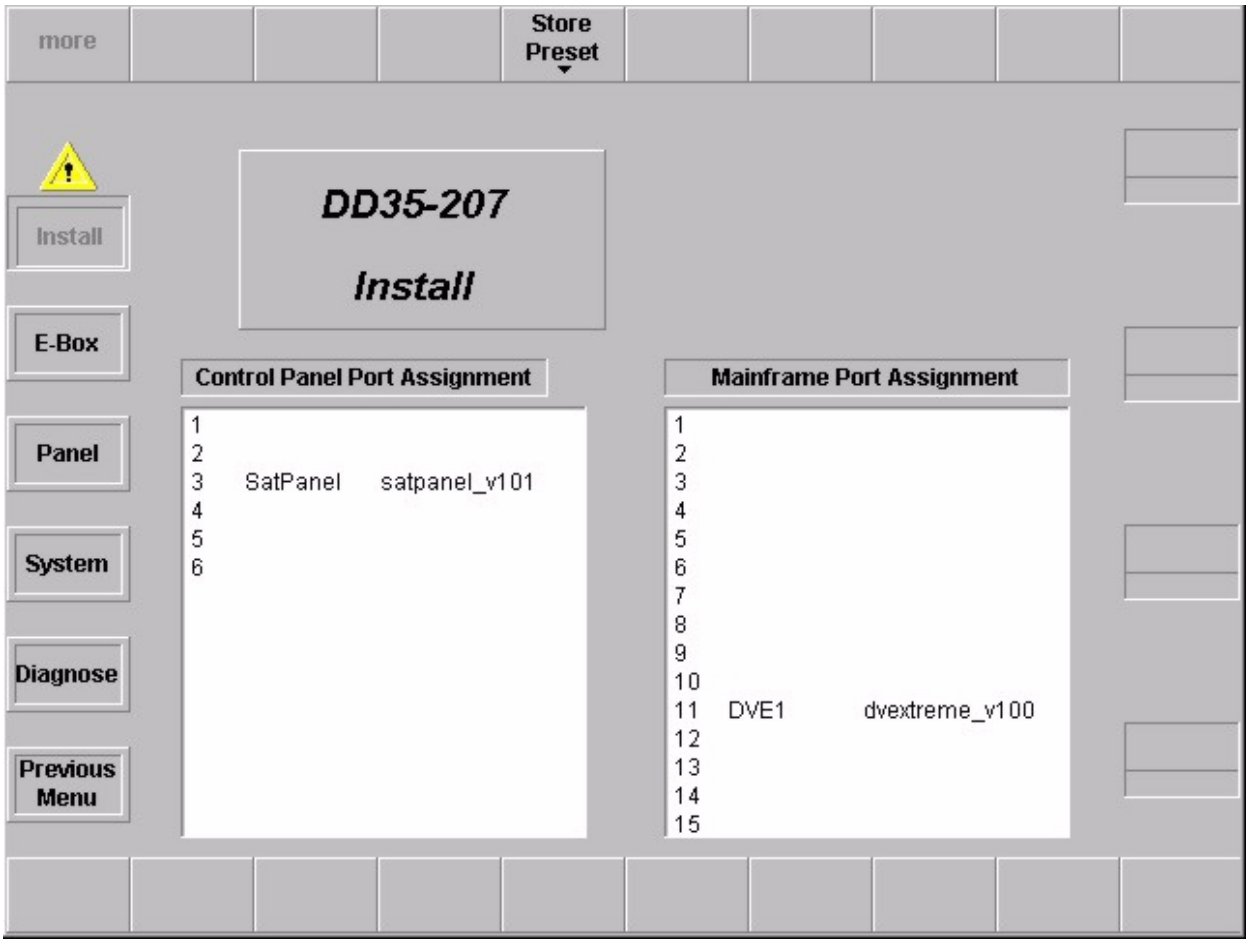
If you want to use a channel as a stillstore, for this sw–version it is recommended to pre–edit the stills to one sequence and record this sequence in total.

With "**Modify/Settings**" you can set in–points and out–points for the selected machine (light blue border).
With "**Modify/Goto**" you can goto the according in–points and out–points or to an absolute timecode.

Macros with "**Modify/Goto/Timecode**" can be used to recall stills.

3.16 INSTALLATION MENU

3.16.1 INSTALL MAIN MENU



Main menu with displays of the current control panel and mainframe port assignment.

3.16.1.1 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.***

3.16.1.2 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.

3.16.2 INSTALL E-BOX MENU

3.16.2.1 Dialog Buttons

Install Selecting **Install** main menu.

Panel Selecting **Install Panel** menu.

Global Seiings Selecting **Application Main** menu. See section ***Application Menu***.

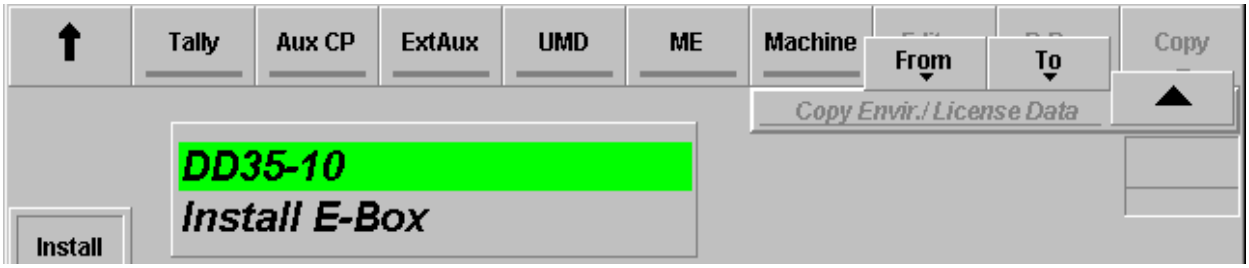
Panel Setting Selecting **Application Panel Setup** menu. See section ***Application Menu***.

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.16.2.2 Function Buttons

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.

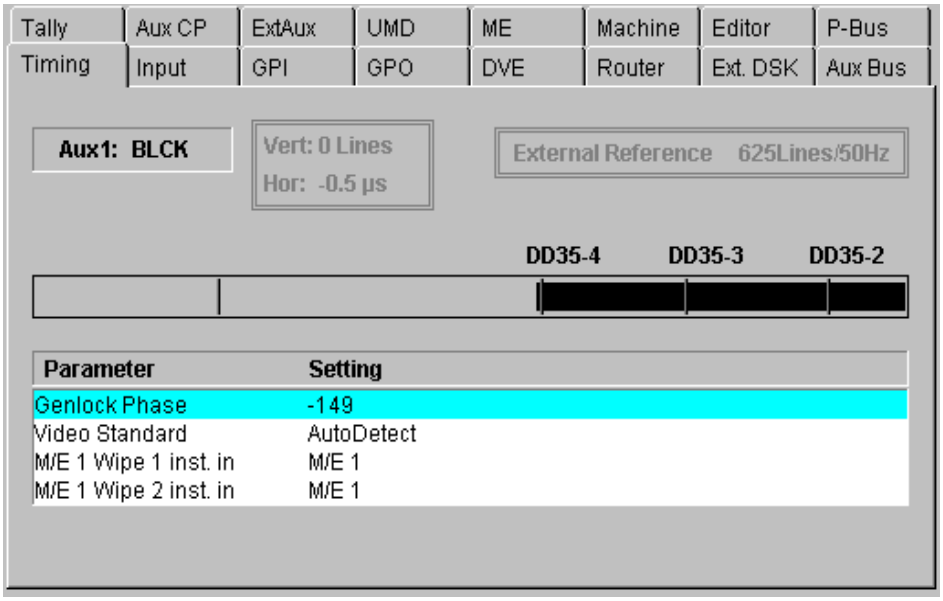


CAUTION: **After loading the environment file, the switcher will reset!**

Timing

Different index cards for DD35 and Seraph HD! The index cards serves for setting the video standard, delegation M/E1 wipe generator and modifying the timing parameter. For details refer to section 3.16.2.3 ***Timing Adjustment*** below.

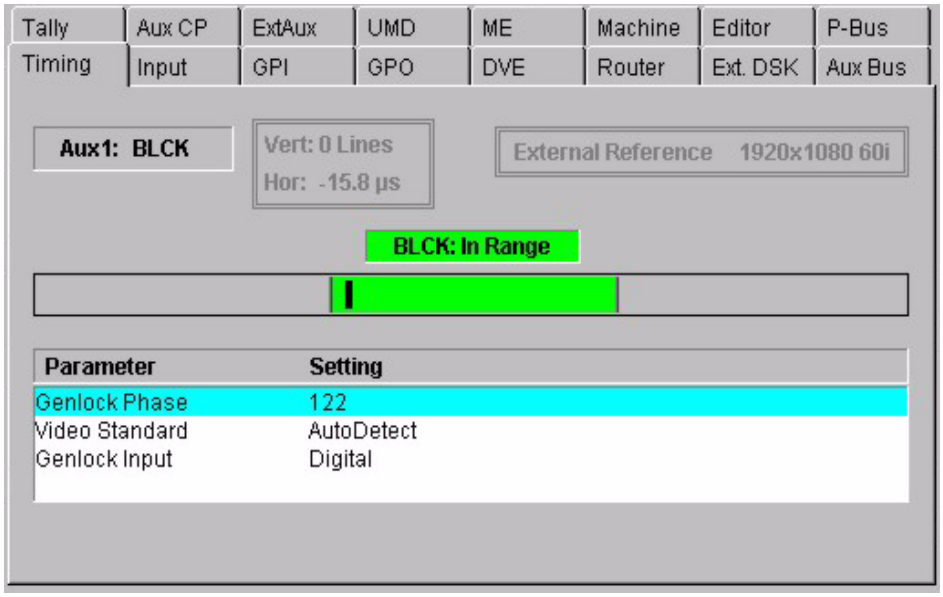
DD35



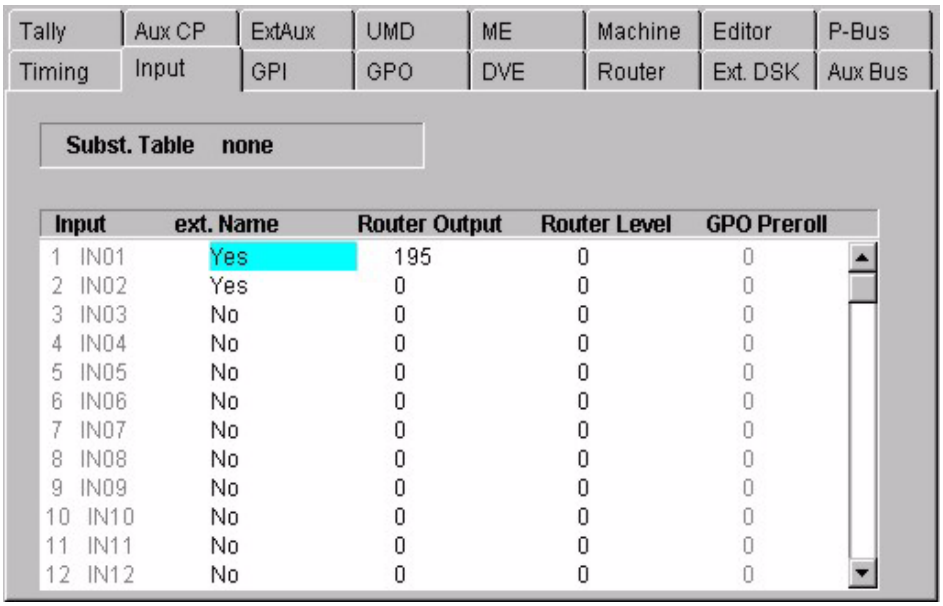
With the parameters **ME1 Wipe 1/2 inst. in**, one of the wipe generators of M/E1 can be assignet to the P/P stage of the switcher.

Note: **This delegation is only possible in connection with the DD35-4 EBox!**

Seraph HD


Tally
Aux CP
ExtAux
UMD
ME
Machine
Editor
P-Bus
Timing
Input
GPI
GPO
DVE
Router
Ext. DSK
Aux Bus
Aux1: BLCK
Vert: 0 Lines
Hor: -15.8 µs
External Reference 1920x1080 60i
BLCK: In Range
Parameter
Setting
Genlock Phase
122
Video Standard
AutoDetect
Genlock Input
Digital

Input Index card for setting the input name transfer parameters.



ext. Name: Enable / Disable the name transfer mode with **Yes/No**

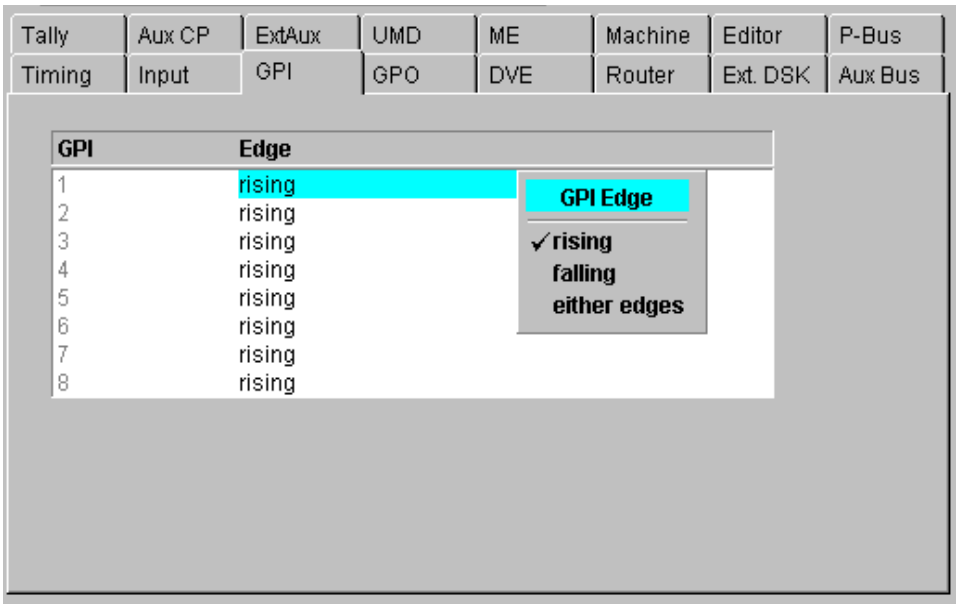
Router Output: Select the router output channel

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"**.

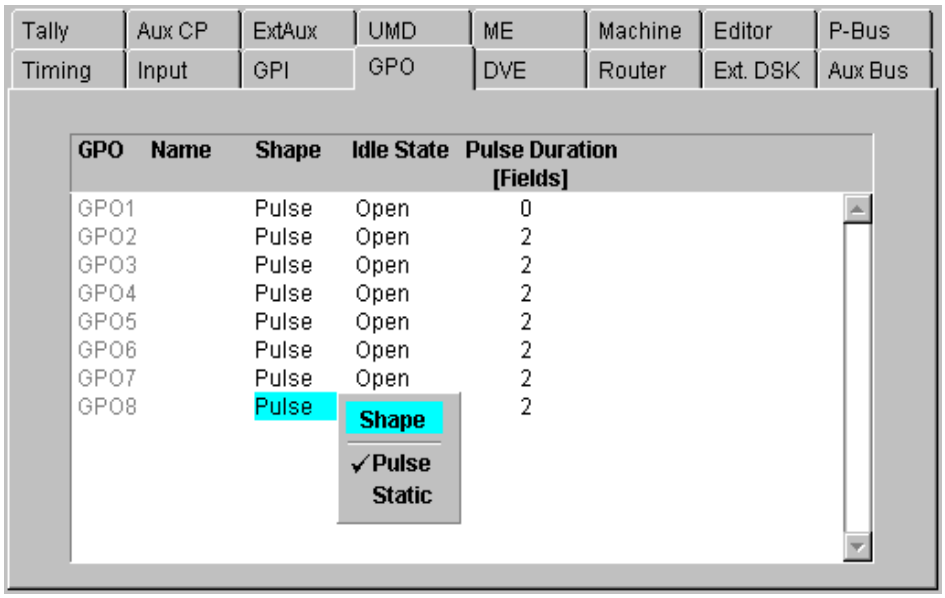
GPI Index card for modifiying the GPI parameters.



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**.

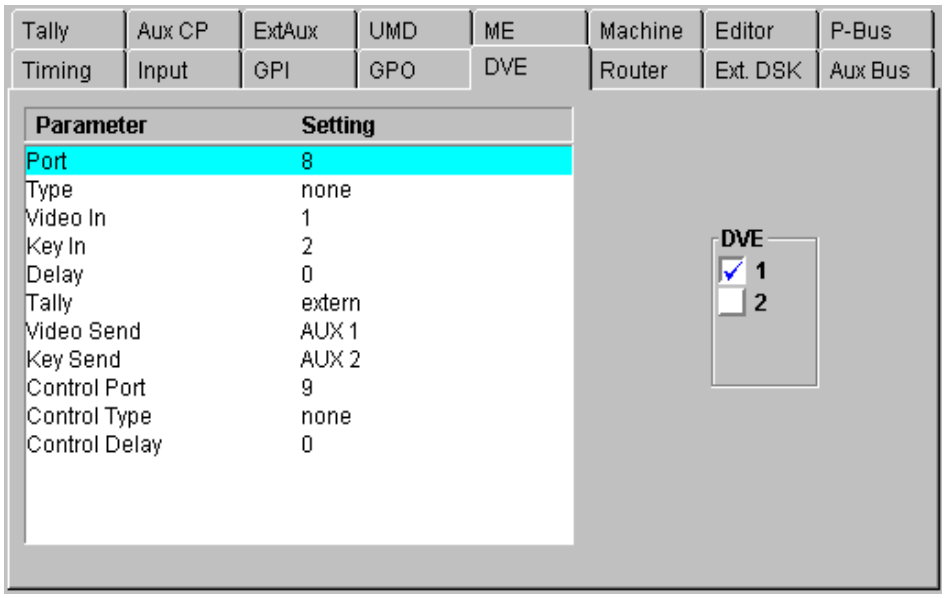
GPO Index card for selecting and modifying the GPO parameters.



Select **Modify** to change the parameters:

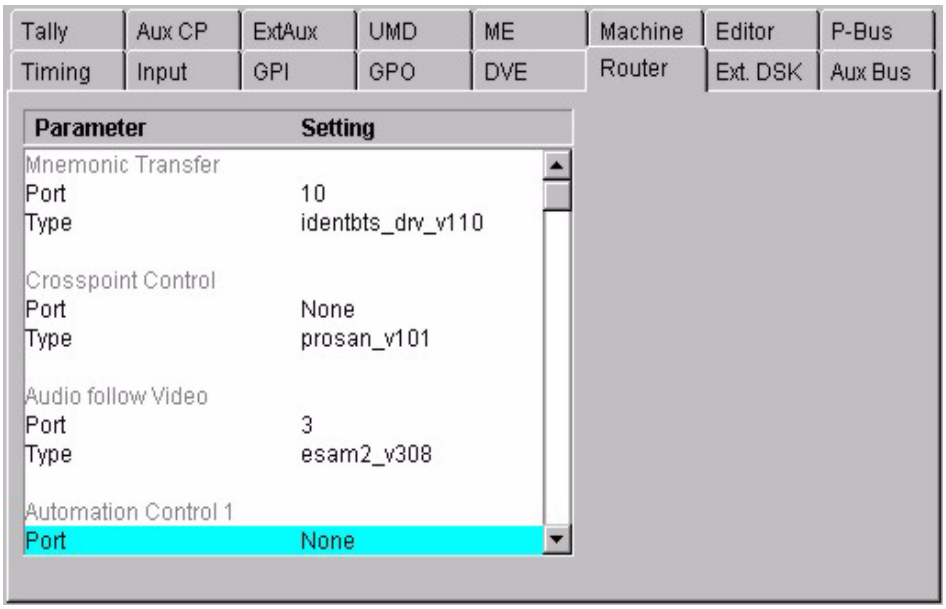
Shape:	Pulse / Static
Idle State:	Open / Closed
Pulse Duration:	Enter the preroll time in frames (max 255 frames)
Attached to:	Assign a fixed video source to the GPI channel

DVE Index card for selecting and modifying the DVE parameters.



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.



Two protocols and the assigned ports are selectable:

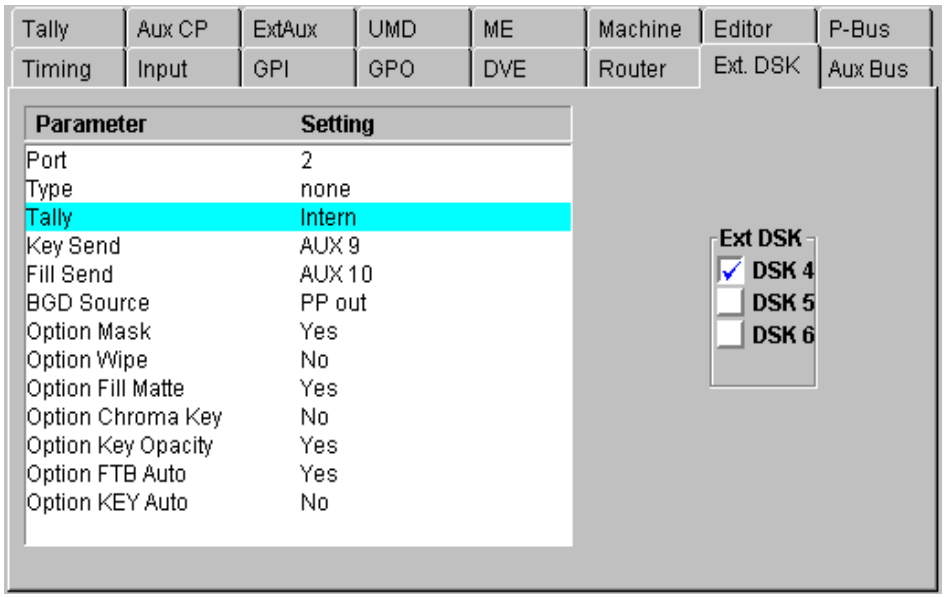
Mnemonic Transfer: Name transfer from the external router to the switcher control.

Crosspoint Control: Control protocol for the external Aux busses.

Audio follow Video: Control protocol for Audio follow Video, e.g. “**esam2_V308**”

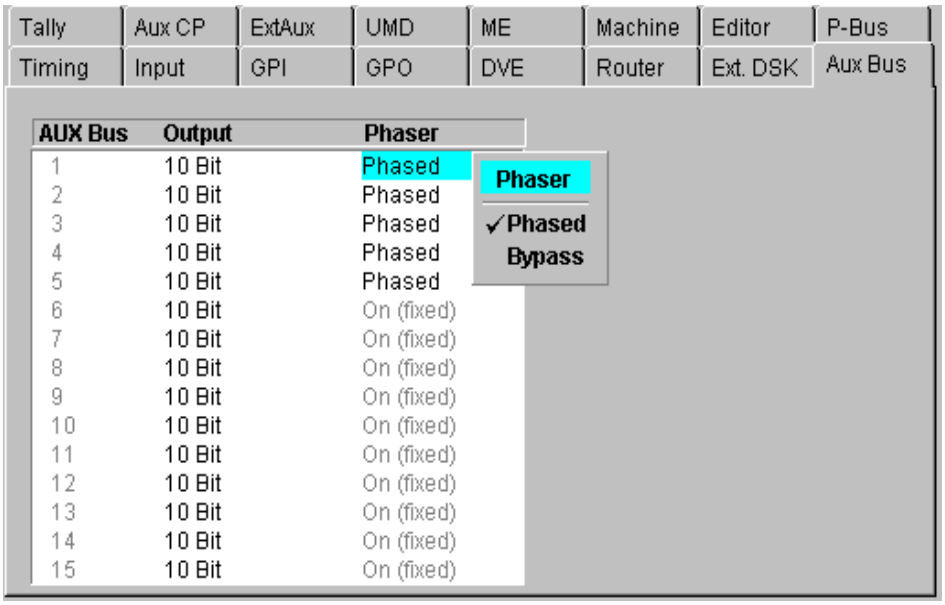
Automatic Control: Control protocol for Autom. control system protocol , e.g. “**acos_V300**”

Ext DSK Index card for installation the external DSK parameters.

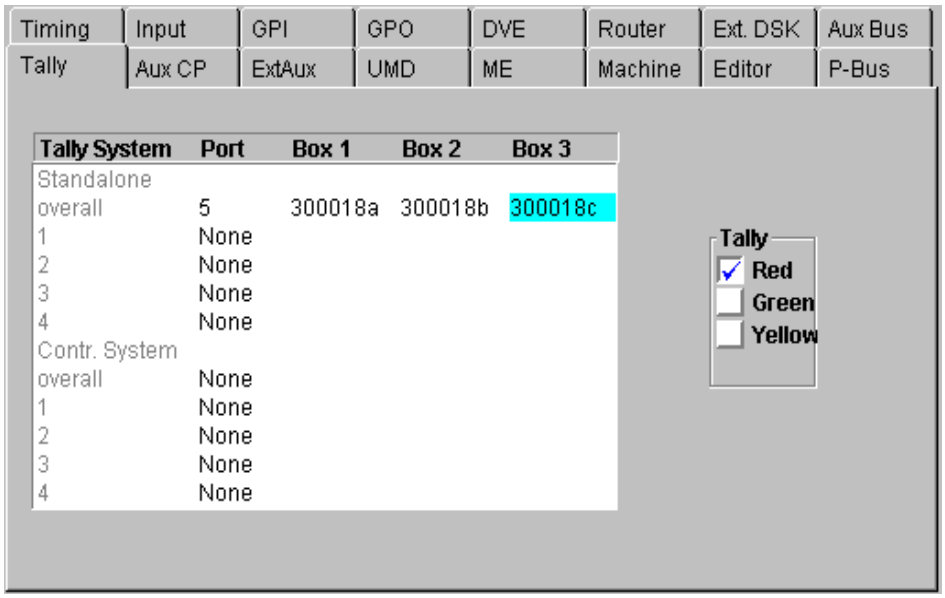


For details refer to the section ***External Downstream Keyers*** in your Planning & Installation Manual.

Aux Bus Index card for installation the Aux Bus parameters.



Tally Index card for selecting Tally ports and setting the MI-3040 box addresses.

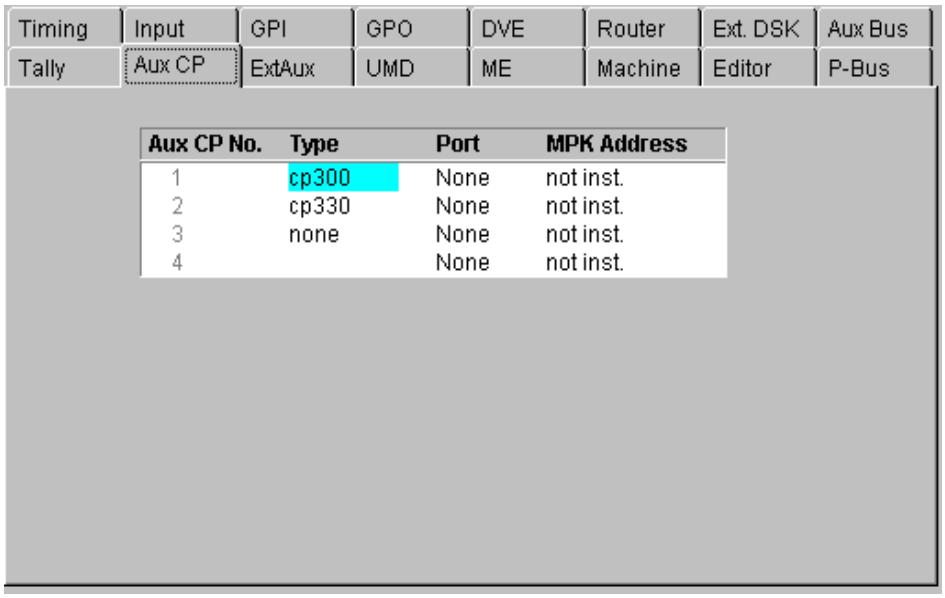


Please note:
Two MI–3040 boxes can be addressed as to be one box with 80bits if they have the same MPK address and if they are installed in neighbour colums in the table obove. Within a tally system (Red, Green, Yellow) same box addresses may be used. However, a box address cannot be used in different colours.

For details refer to the section “Tally Signalling” in your Planning & Installation Manual.

Aux CP

Index card for installing the Aux Control Panels connected with the mainframe. For Details refer to the Planning and Installation Manual.



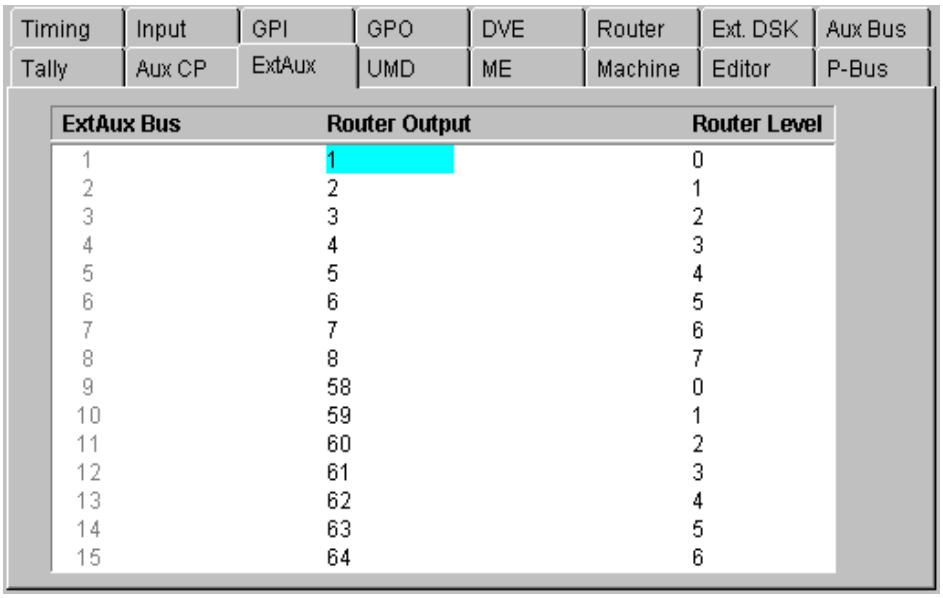
Type opens a pop-up window with all types of Aux Control Panels**.**

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.



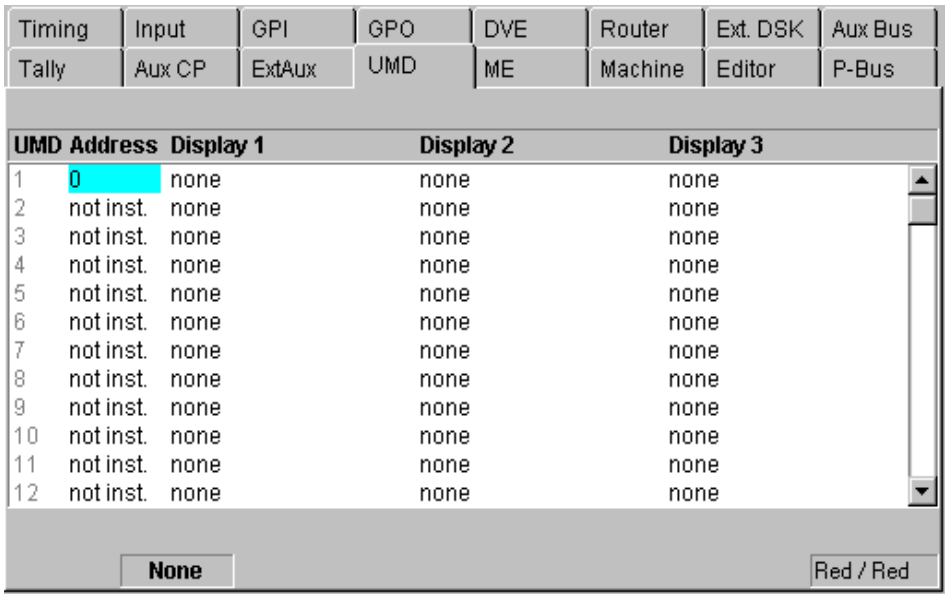
ExtAux Bus	Router Output	Router Level
1	1	0
2	2	1
3	3	2
4	4	3
5	5	4
6	6	5
7	7	6
8	8	7
9	58	0
10	59	1
11	60	2
12	61	3
13	62	4
14	63	5
15	64	6

The card enables the ability to select a special output at a defined level of the router.

Example:

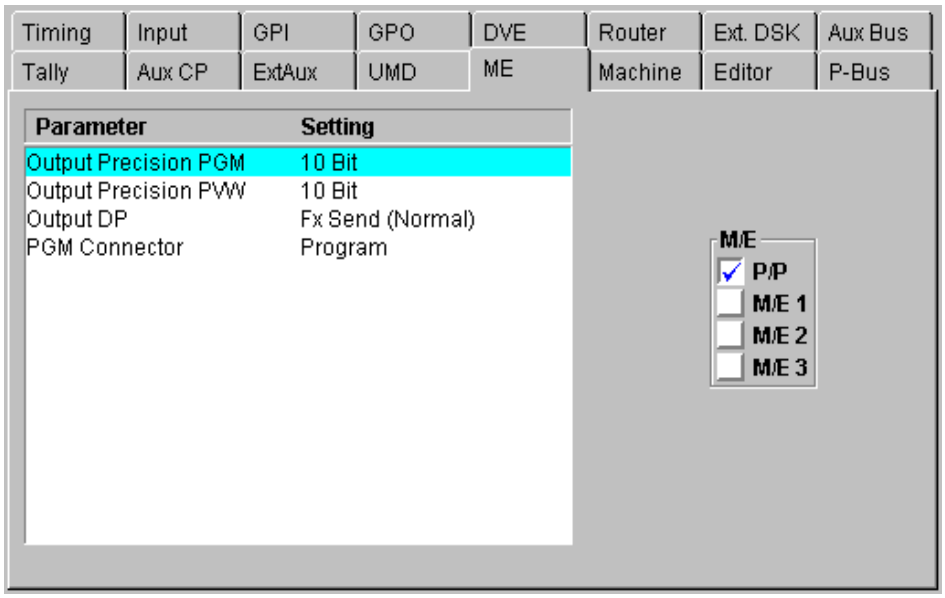
If you select in the column **Router Output** the number 6 and in the column **Router Level** the number 1 then it corresponds to the specification that External Aux Bus 1 ist connected with the router output 6 at level 1. The number of the levels and router outputs depends of the router control protocol.

UMD Index card for installation the Under Monitor Displays and set the tally mode.

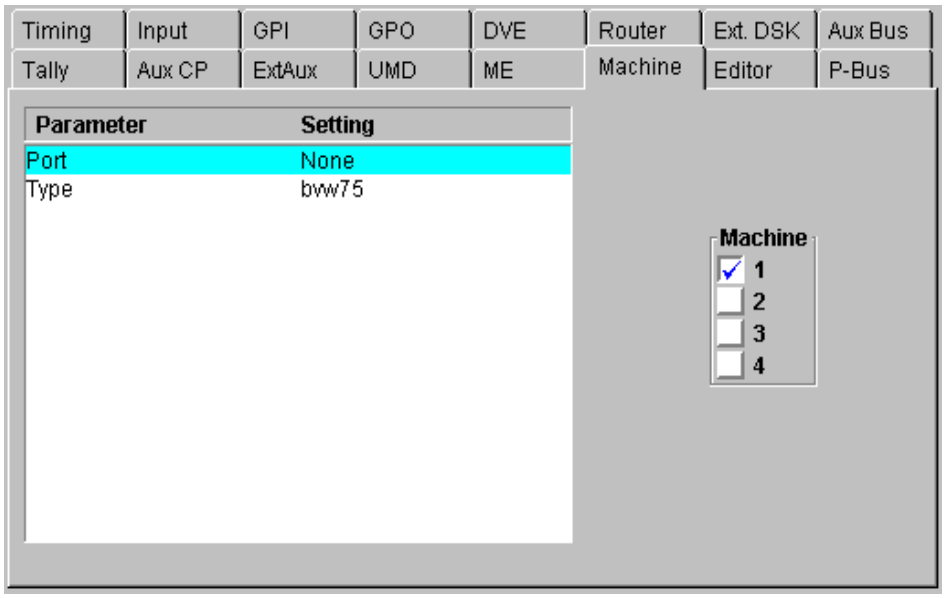


For details refer to the section “Under Monitor Displays” in your Installation Manual.

ME Index card for installation M/E specific output parameters.

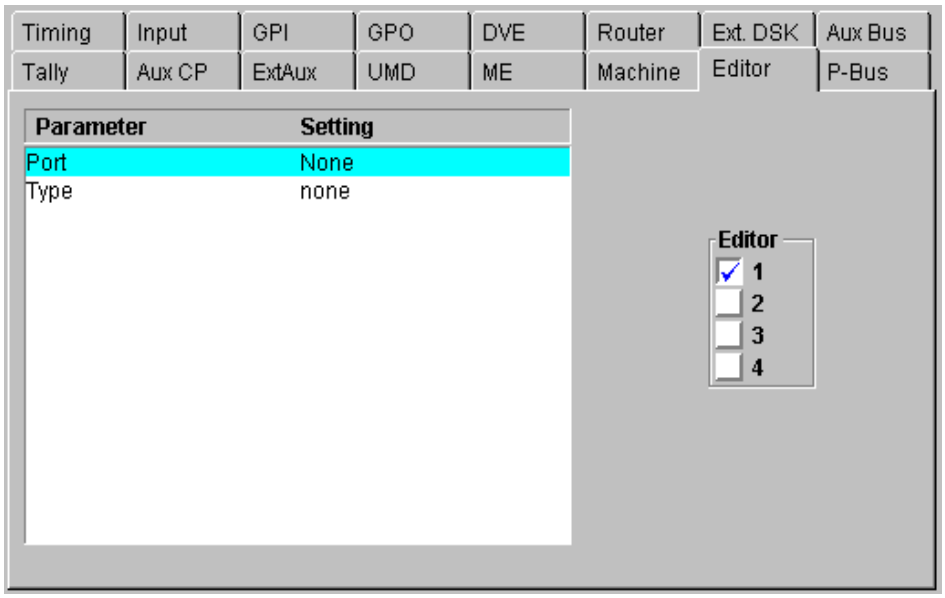


Machine Index card for installation the machine (e.g. VTR) parameters.



For operationg refer to section ***Machine Control.***

Editor Index card for installation the Editor parameters.

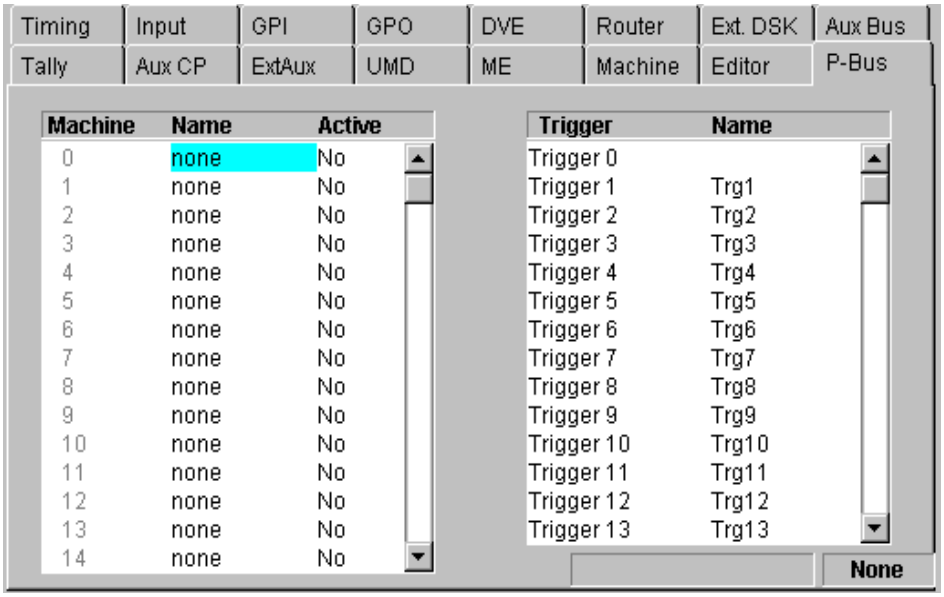


For details refer to the section “Editor Control” in your Installation Manual.

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.



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**.

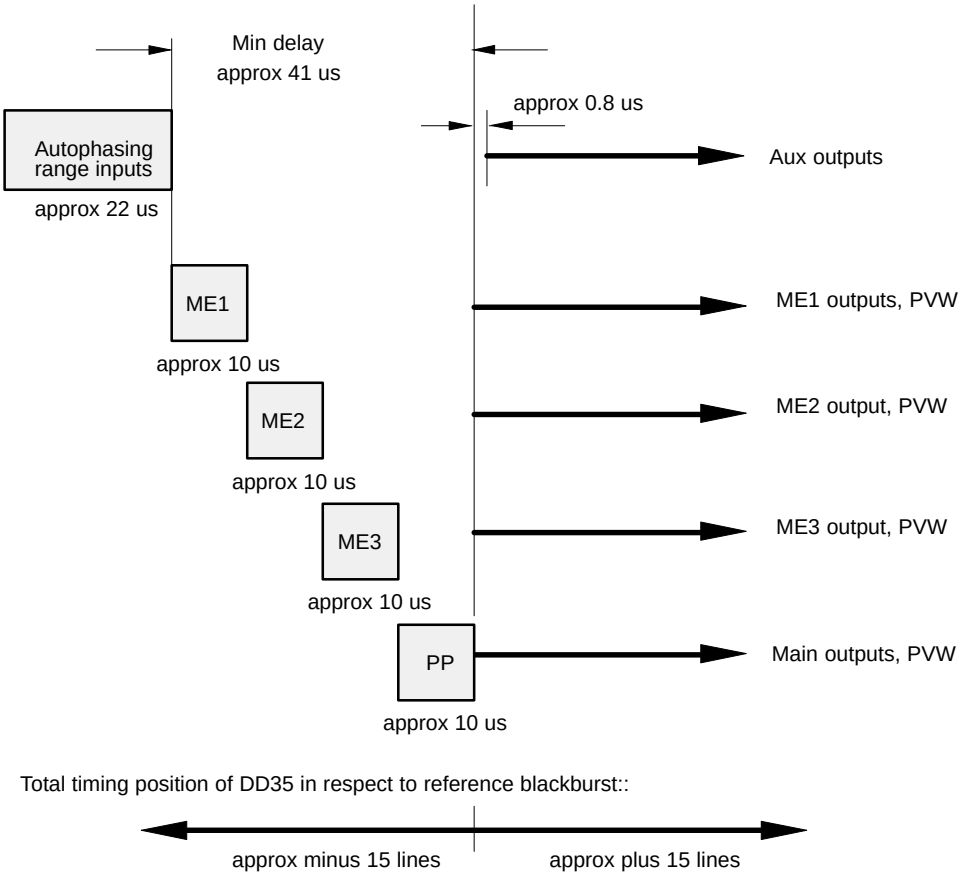
For controlling the machines refer to section **Remote P-Bus / Trigger**

3.16.2.3 Timing Adjustment DD35

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 (DD35 = 22 µs). 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 –15 line to +15 lines.

Timing reference diagram for DD35-4

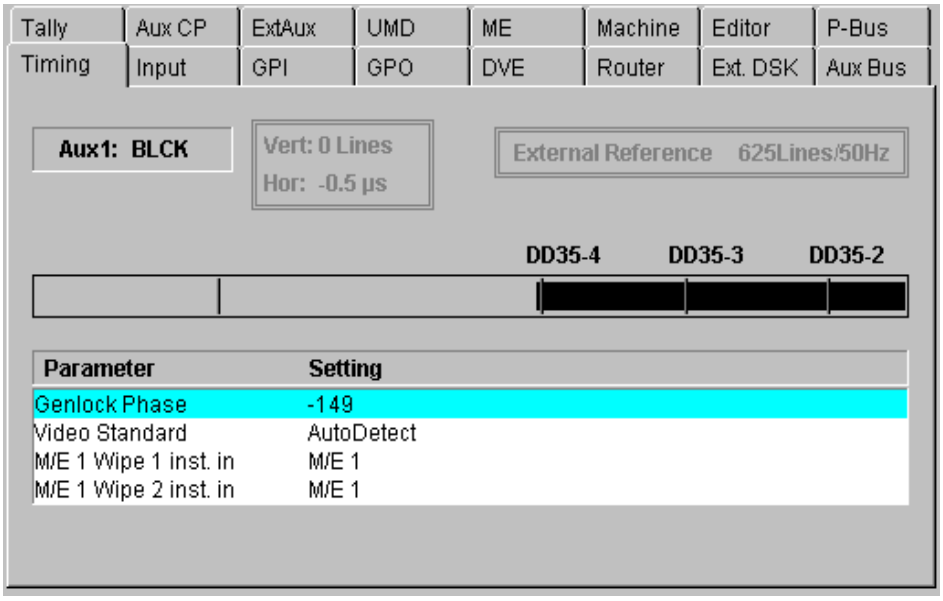


Refer to the Installation Manual for detailed information for DD35-2 and DD35-3 switchers.

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:



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 ... –22 us. 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 ... –22 us

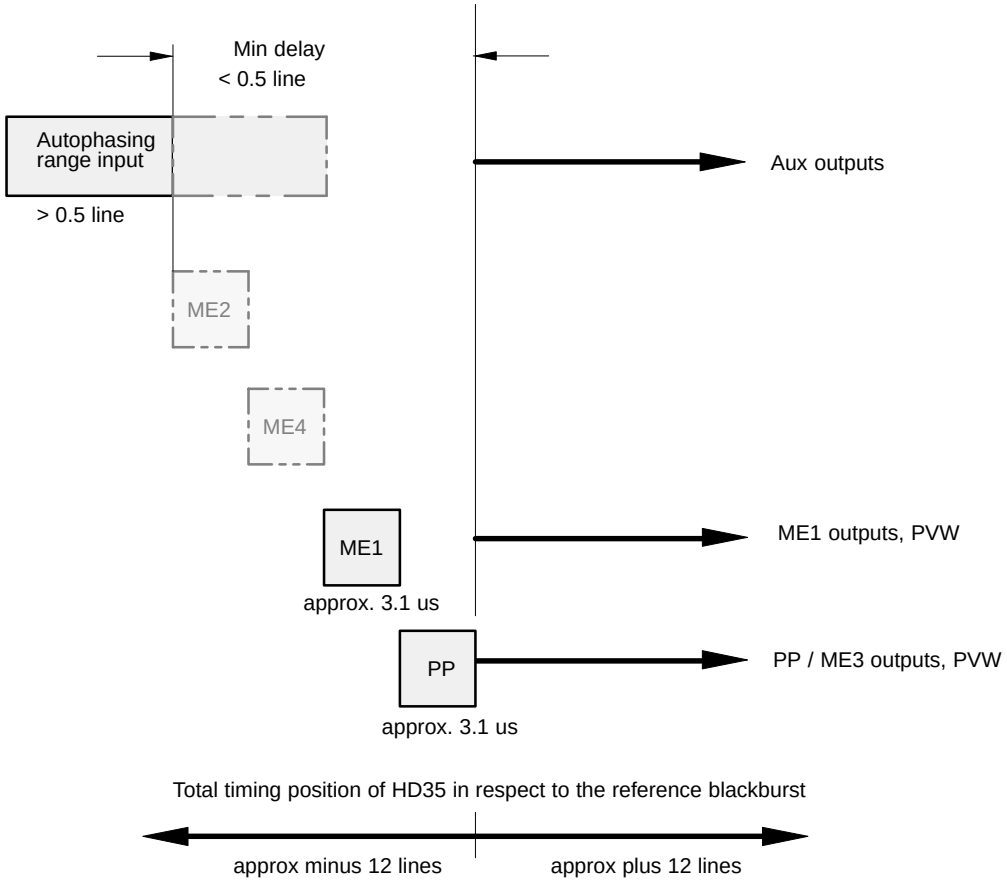
Note: *The sources on **Aux1** (Timing index card) can also be selected by clicking with the mouse on Aux1 and selecting a source from the overlay. Adjusting the genlock phase may cause disturbances on monitors especially during coarse adjustment.*

3.16.2.4 Timing Adjustment Seraph HD

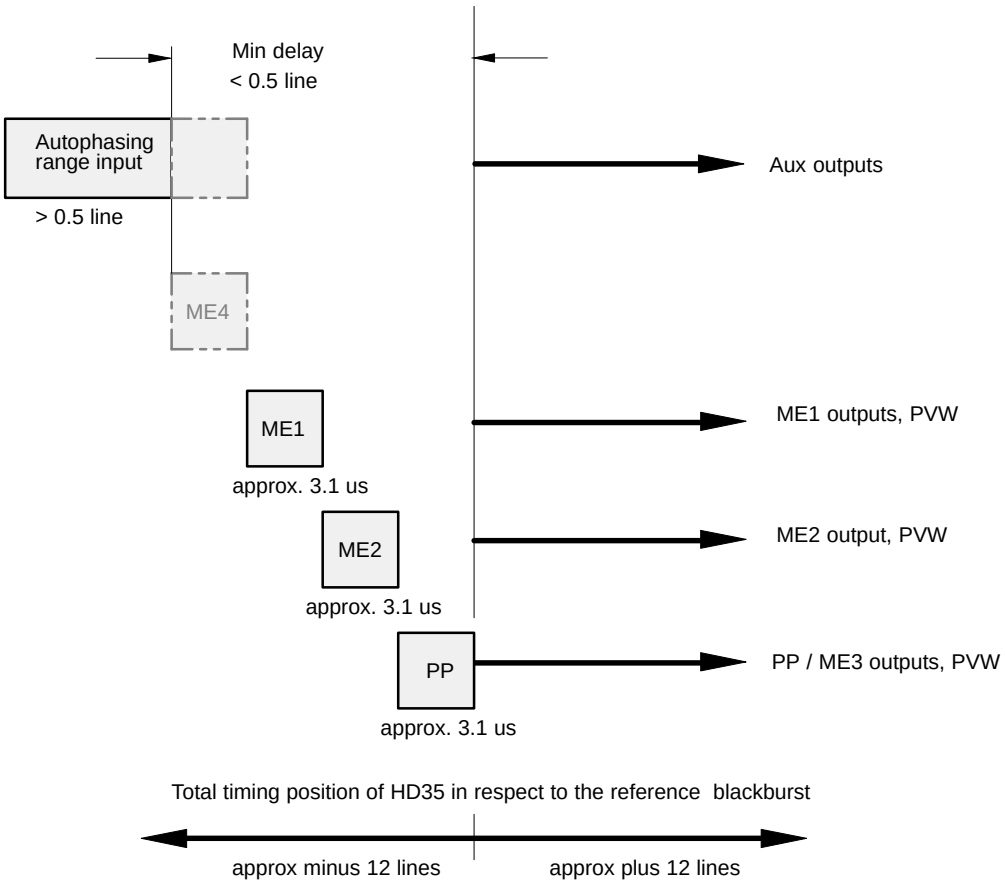
When source signals are fed into the switcher, it must be ensured that the time difference between the sources is not outside the operating range of the internal switcher autophasers. The output signals of the sources must correspond to the timing customary in operation. For instance, no EE picture in a VTR, PB-Ref on CCVS etc.

The switcher's Genlock Phase can be adjusted to the fed reference signal in the range of – 12 lines to + 12 lines.

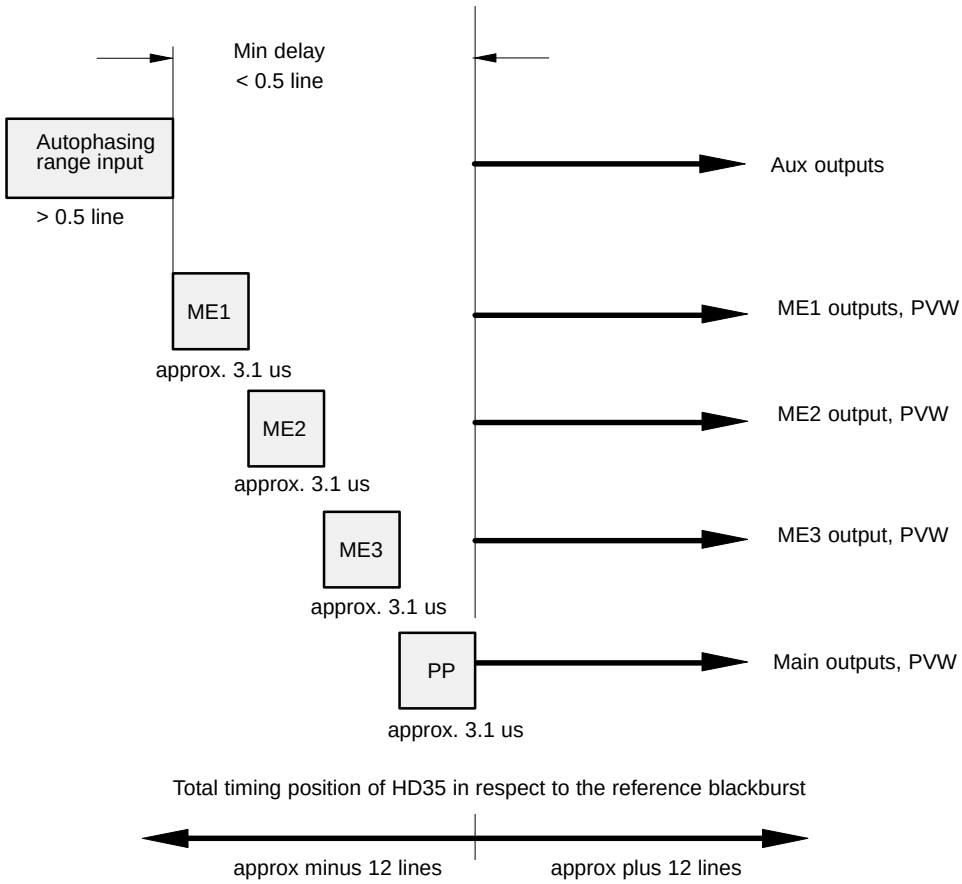
Timing reference diagram HD35-2



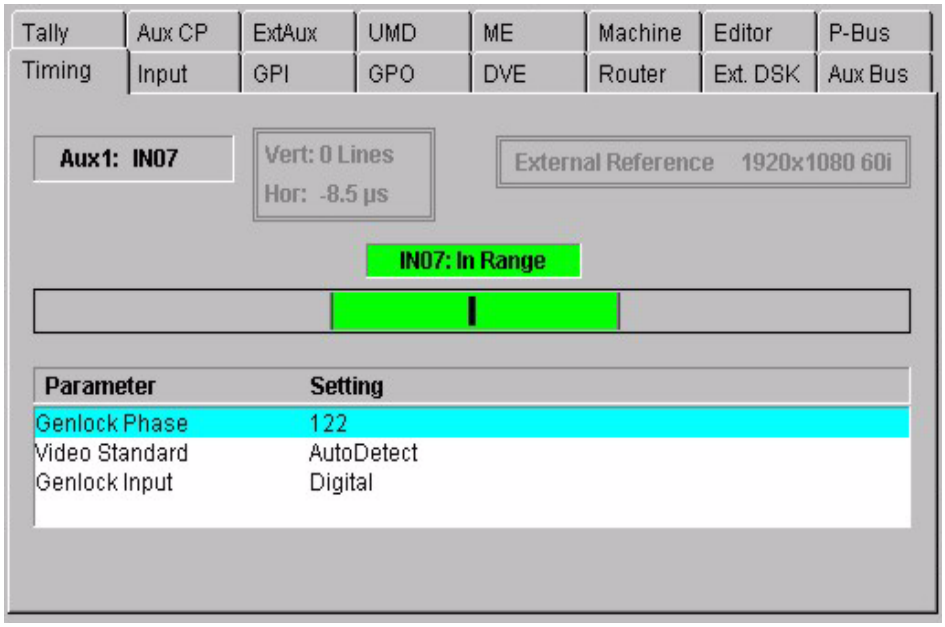
Timing reference diagram HD35-3



Timing reference diagram HD35-4



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:



With **Genlock Phase**, the phase relation of the mixer can be shifted +12/–12 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 us the source is off in comparison to the switcher timing (only if Vert=0).

External Reference:

Shows the standard of the external reference signal at the genlock input.

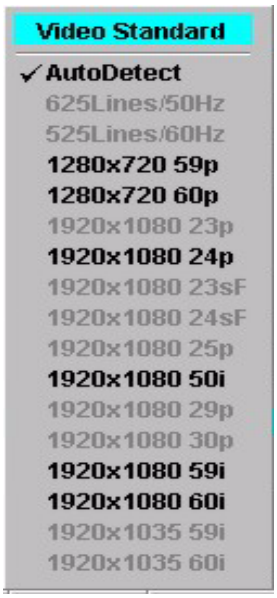
The bar diagram shows the timing of the input source relatively to the autophasing range. All sources should be timed between the two marker lines in the middle area of the bar. The right line (with the respective switcher type name) marks the earliest mixer input (latest timing of the sources).

The left line marks the earliest timing of the sources. The bar is displayed green, 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.
- Select the external reference input as connected at the Seraph mainframe:
  – Analog reference (tri level sync or blackburst*) or
  – Digital reference (HD or SD* serial composed reference video), **recommended**

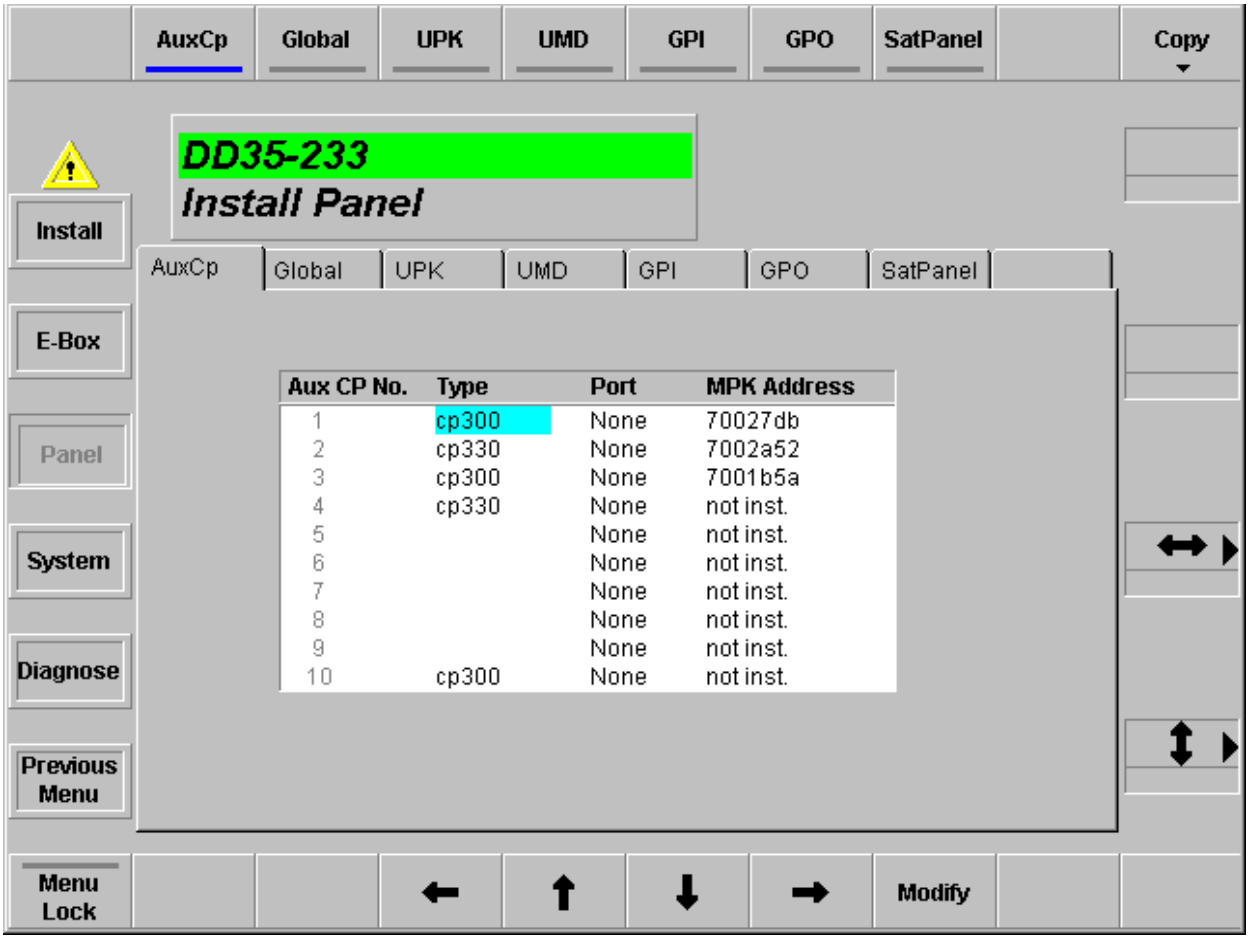
  * in preparation
- The video standard of the switcher can be modified by selecting the parameter **Video Standard** in the **Install E-Box** menu. Then push **Modify** to open an overlay with the selection modes **Auto Detect** (default),



- 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 phasing range is also displayed in the horizontal bar. For a correct adjustment the bar should be green.
- Select all inputs on Aux1 and correct the timing if necessary.
- Finally all inputs should be in the green area

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 the monitor especially during coarse adjustment.*

3.16.3 INSTALL PANEL MENU



3.16.3.1 Dialog Buttons

Install Selecting **Install** main menu.

E-Box Selecting **E–Box Install** menu.

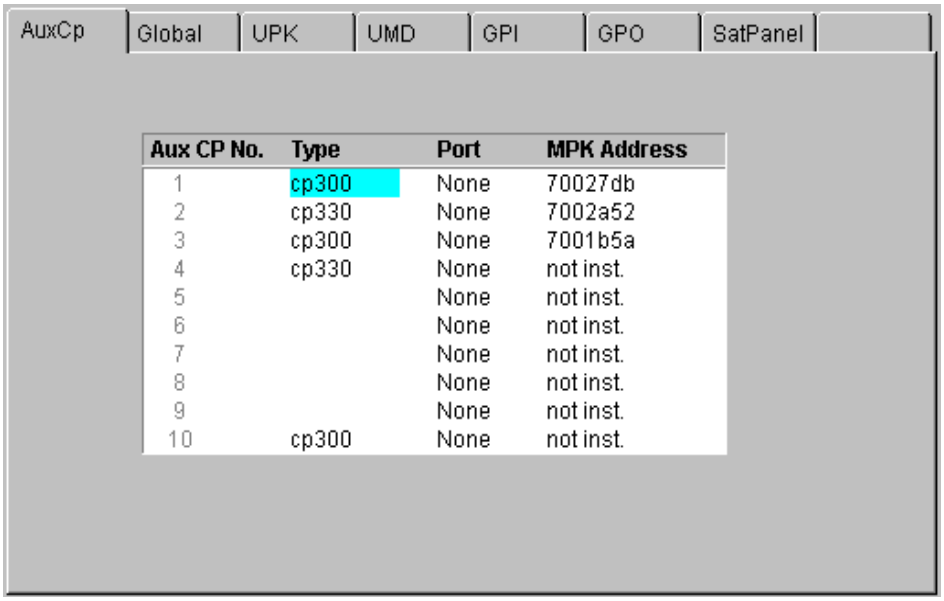
Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.16.3.2 Function Buttons

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.



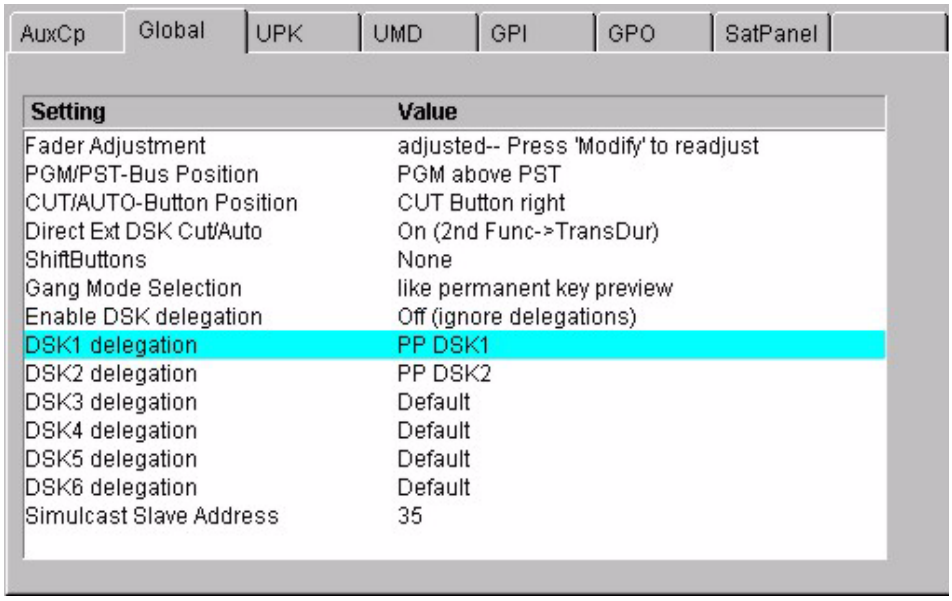
Type opens a pop-up window with all types of Aux Control Panels**.**

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.



Fader 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!

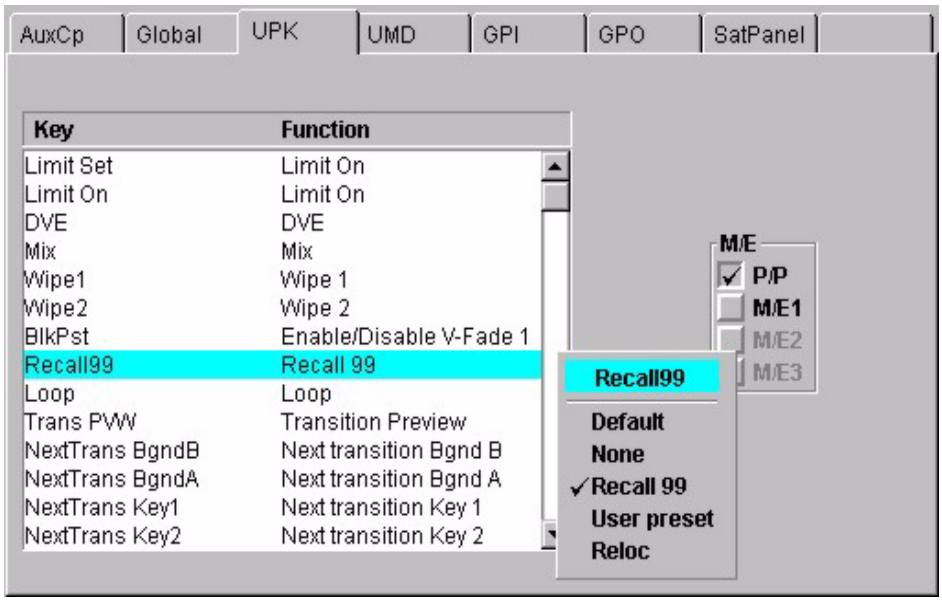
The following settings can be selected and/or adjusted:

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**

For more personal settings refer to section 3.18 ***(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.



From Software Release V2.3.9 onwards, all **Next Transition** buttons (**Bgd A**, **Bgd B**, **Key 1,2,3**) are UPKs.
That means that they can be assigned to any UPK function of the Transition panel, and that the original functions of the buttons are now also available as UPK function of the Transition panel. The purpose is to shift the button assignment for RPS35–4 panels which are not provided with the button Next–Trans–Key 3:

Old:	**Bgd B**	**Bgd A**	**Key 1**	**Key 2**
New:	**Bgd A**	**Key 1**	**Key 2**	**Key 3**

This causes the problem that the Key 3 button operates in the Layered mode **Bgd A**, but **Bgd B** is missing so that the following assignment would be obtained:

(Layered mode)

Old:	**Bgd B**	**Bgd A**	**Key 1**	**Key 2**
New:	**Bgd A**	**Key 1**	**Key 2**	**Bgd A**

For this reason, in the UPK index card there is still a special UPK function ”**Bgd A (Bgd B in layered mode)**” available for the Layered mode, which normally operates **Bgd A**, but in the Layered mode it operates **Bgd B**. With this function on the first button, the following assignment is obtained:

(Non–layered mode)

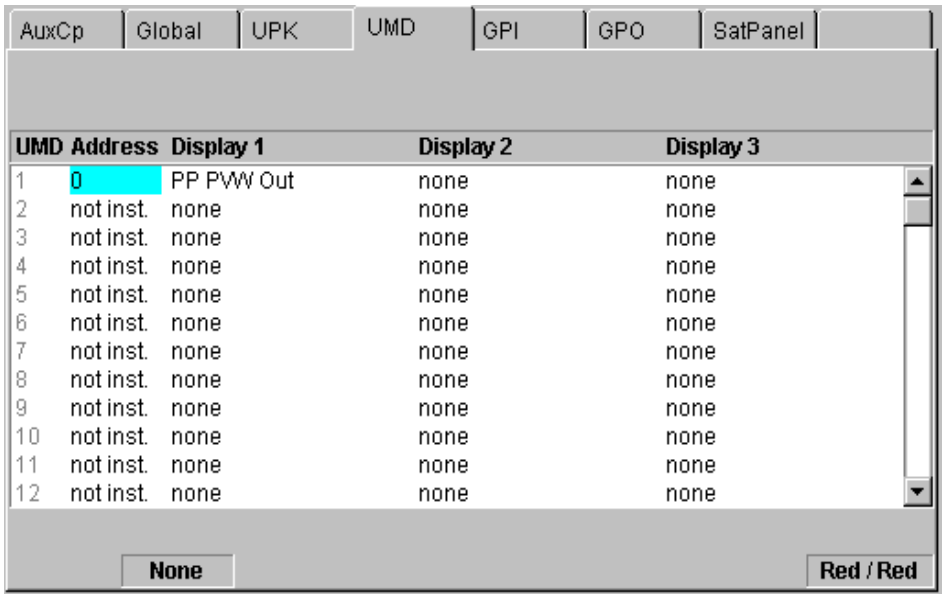
New:	**Bgd A**	**Key 1**	**Key 2**	**Key 3**

(Layered mode)

New:	**Bgd B**	**Key 1**	**Key 2**	**Bgd A**

The **2nd** button in the Aux section can be used as follow:
– DD35 mainframe: Selecting the DVE sources /Ch1...Ch4 with the buttons Mont Proc1/2
– HD35 mainframe: Aux bus selection (sources 16 ...20)

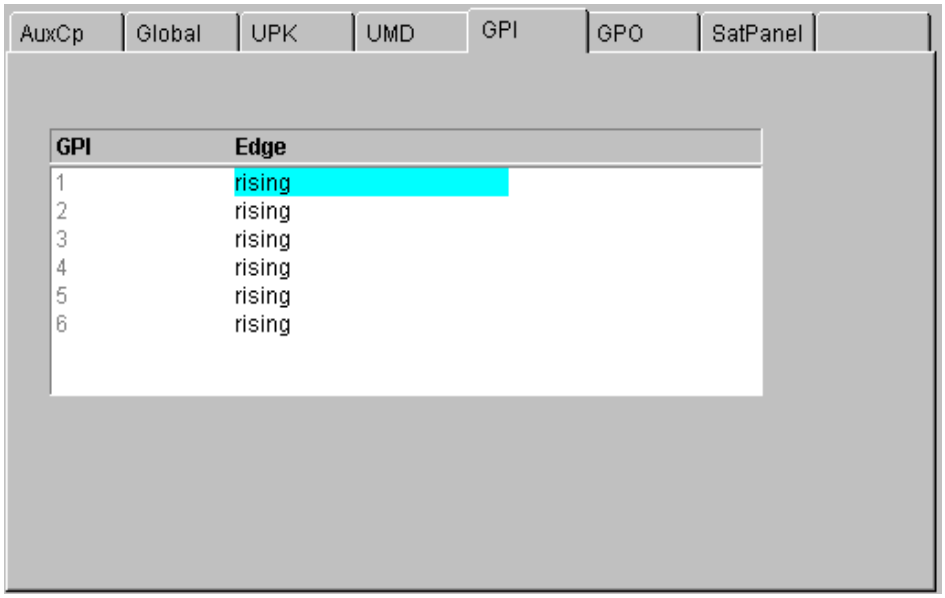
UMD Index card for installation the Under Monitor Displays and set the tally mode.



For details refer to the section ***Under Monitor Displays*** in your Planning & Installation Manual.

GPI

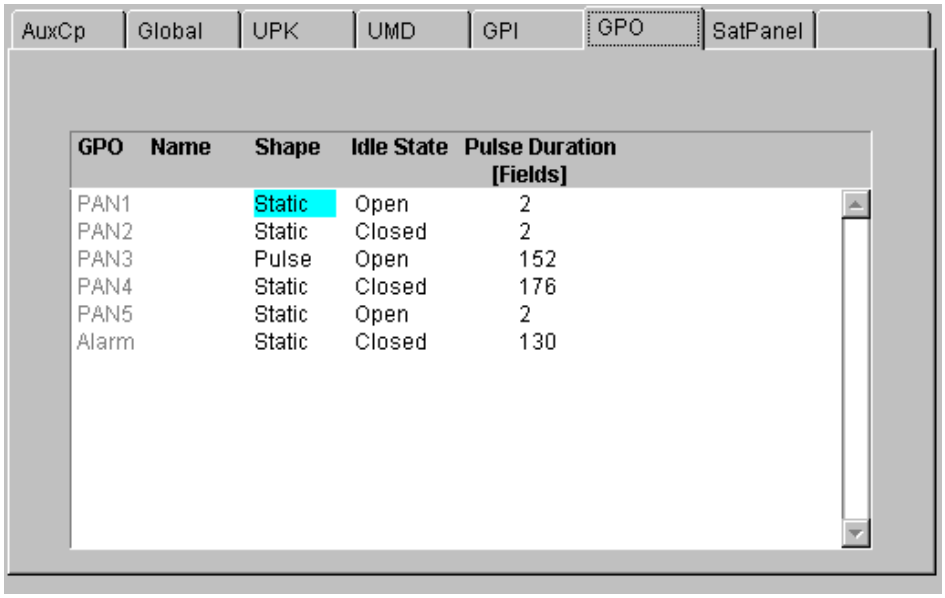
Index card for installation the panel GPIs.



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.



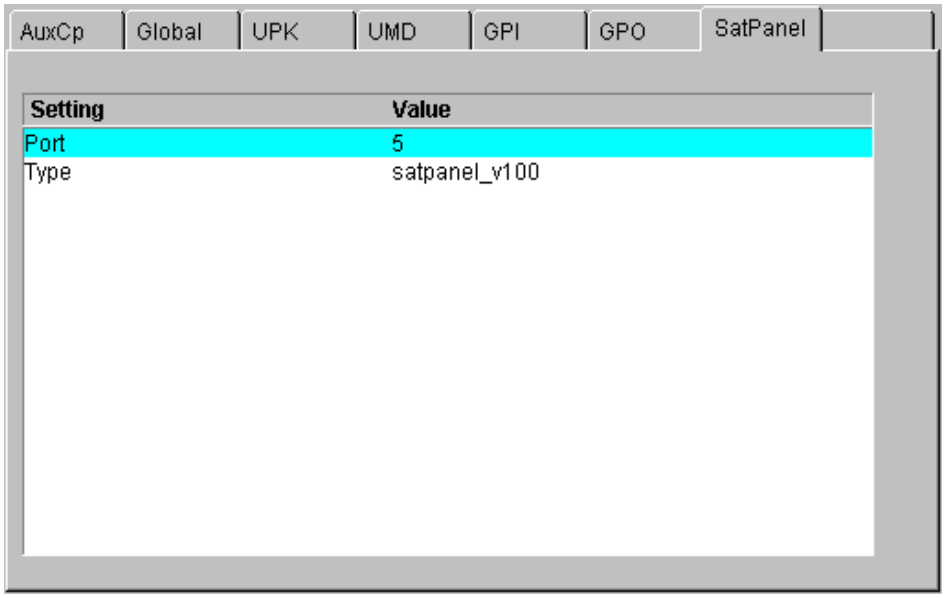
Select **Modify** to change the parameters:

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:

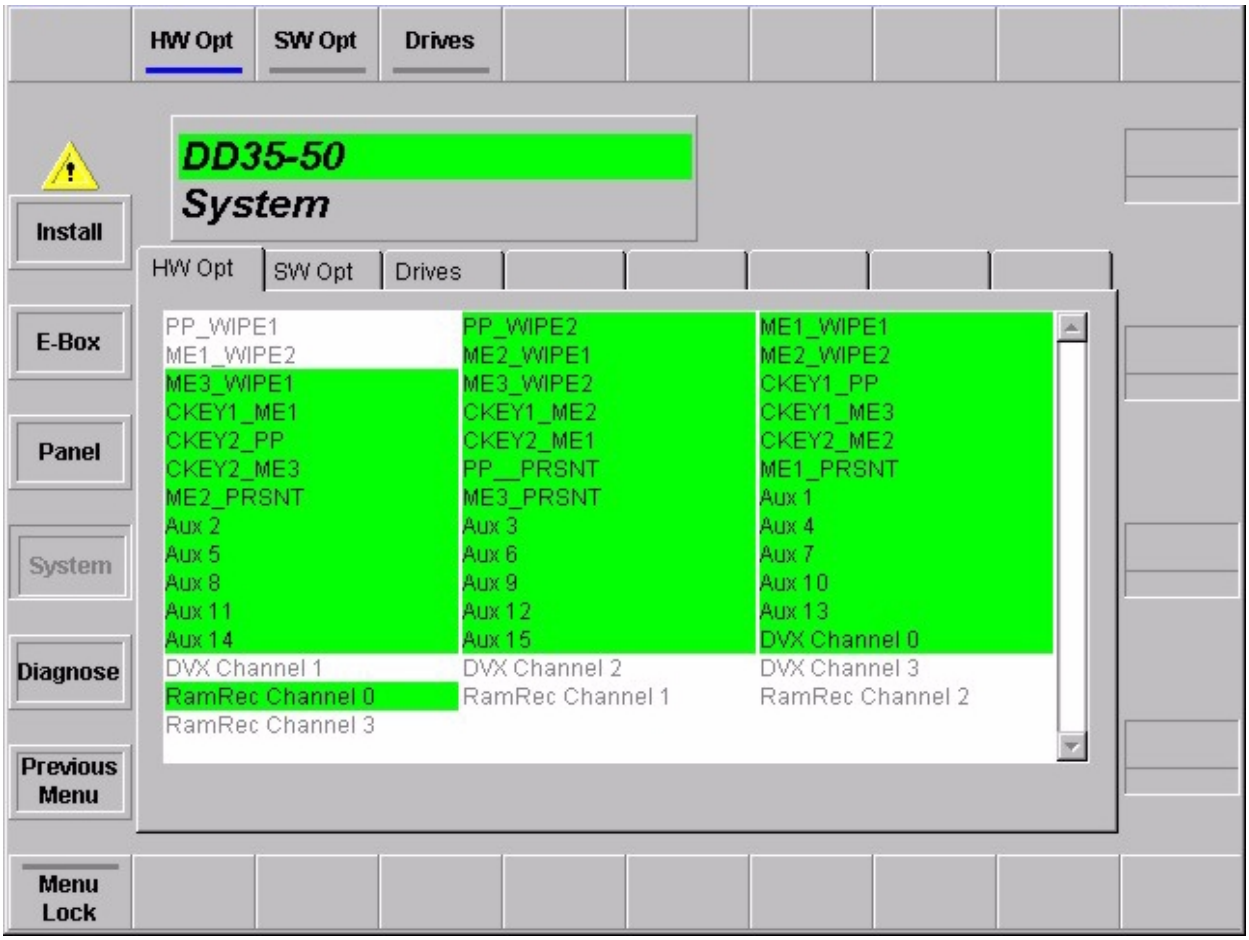
Panel GPO6 is reserved for the ALARM function.

Sat Panel Index card for installation the Satellite Panel RSAT.



Select **Modify** to set the port number and protocol type.

3.16.4 SYSTEM MENU



3.16.4.1 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.***

3.16.4.2 Hardware Options

The menu serves the entry of the “License Key” for the different hardware options of the switcher system.
In the menu, options marked “green” are availableenabled, options marked “white” have to be enabled by entering a “License Key”. You get a “License Key” when buying the respective option. All ordered options are installed by the manufacturer.

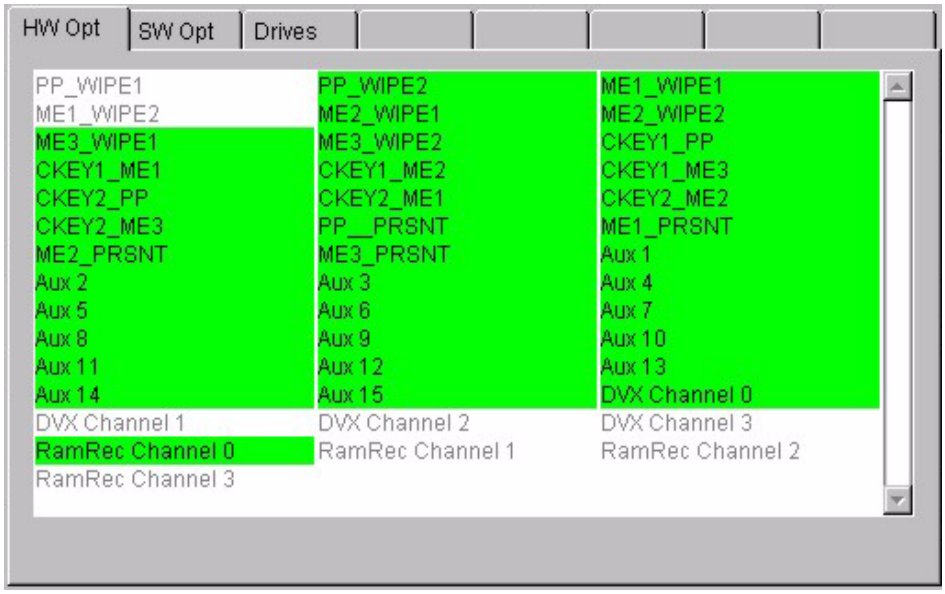
The “License Document” is part of the delivery. Please note that the key code is indicated only in this License Document – keep it save!

For example, in the **DD35** at present, the following options are available:

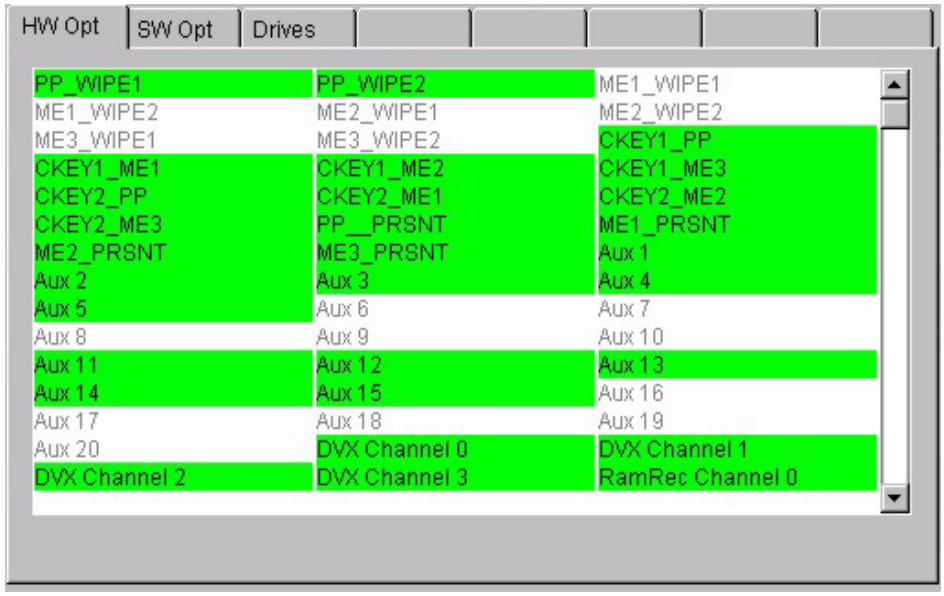
Device Types:		coupled with serial no. of:
DD35–1	M/E3 slot enabledBackplane mainframe	
DD35–2	M/E1, M/E3 slot enabled	Backplane mainframe
DD35–3	M/E1, M/E2, M/E3 slot enabled	Backplane mainframe
DD35–4	DD35, all M/E slots enabled	Backplane mainframe

Hardware Options:		coupled with serial no. of:
M/E1_Wipe 1	1st Wipe Generator in M/E1	–
M/E1_Wipe 2	2nd Wipe Generator in M/E1	–
M/E2_Wipe 1	1st Wipe Generator in M/E2	–
M/E2_Wipe 2	2nd Wipe Generator in M/E2	–
M/E3_Wipe 1	1st Wipe Generator in M/E3	–
M/E3_Wipe 2	2nd Wipe Generator in M/E3	–
PP_Wipe 1	1st Wipe Generator in P/P	–
PP_Wipe 2	2nd Wipe Generator in P/P	–
INP_EXTEN	Input Extension 32 ... 48	–
MNTG_PROG	Mantage Processor	–
AUX_5	Aux Bus	–
AUX_10	Aux Bus Extension	–
AUX_12	Aux Bus Extension	–
AUX_15	Aux Bus Extension	–
CKEY1_ME1	1st Chroma Keyer in M/E1	–
CKEY2_ME1	2nd Chroma Keyer in M/E1	–
CKEY1_ME2	1st Chroma Keyer in M/E2	–
CKEY2_ME2	2nd Chroma Keyer in M/E2	–
CKEY1_ME3	1st Chroma Keyer in M/E3	–
CKEY2_ME3	2nd Chroma Keyer in M/32	–
NUM_INPUT62	Input Extension 33 ... 62	–
DVX Ch0..3	Fx Processor	–
RamRec Ch0..3	Fx Processor	–

DD35 Index card for installation the hardware options:



Seraph HD Index card for installation the hardware options:



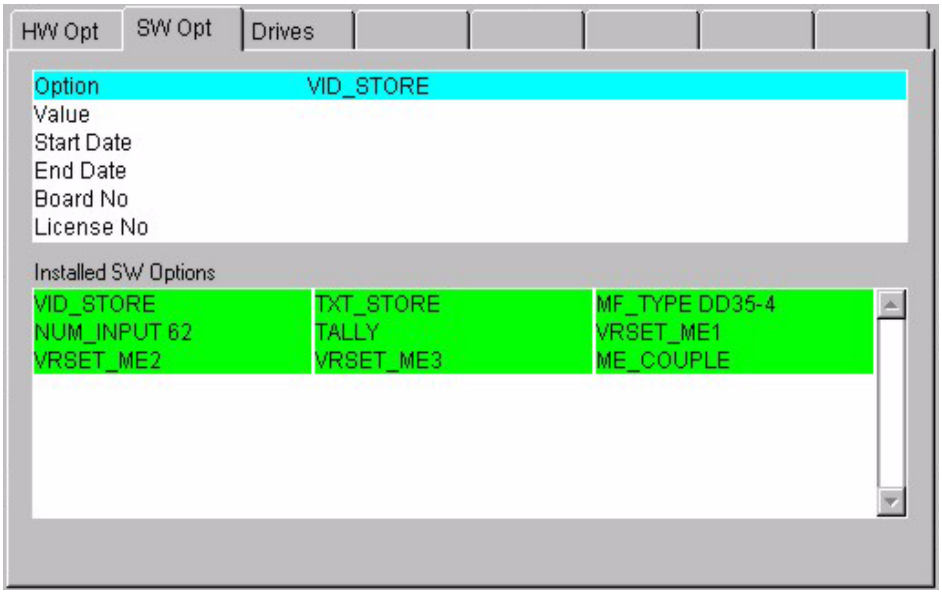
3.16.4.3 Software Options

For example, in the **DD35** at present, the following options are available:

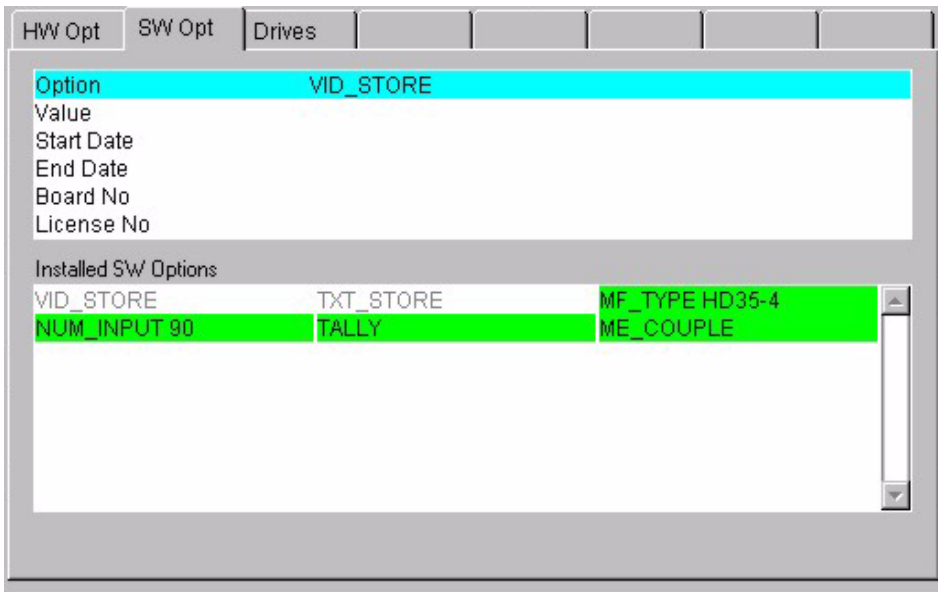
Output Processor Options:		coupled with serial no. of:
RC2182	Image Store	Output processor board
RC2181	Texture/Matte Store	Output processor board

Software Options:		coupled with serial no. of:
ATL	Advanced Timelines	Backplane mainframe
TALLY	Tally Software	–

DD35 Index card for installation the software options and the mainframe type:



Seraph HD Index card for installation the software options and the mainframe type:



3.16.4.4 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**.

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 DD35–x to DD35–x+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**.

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 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).

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.

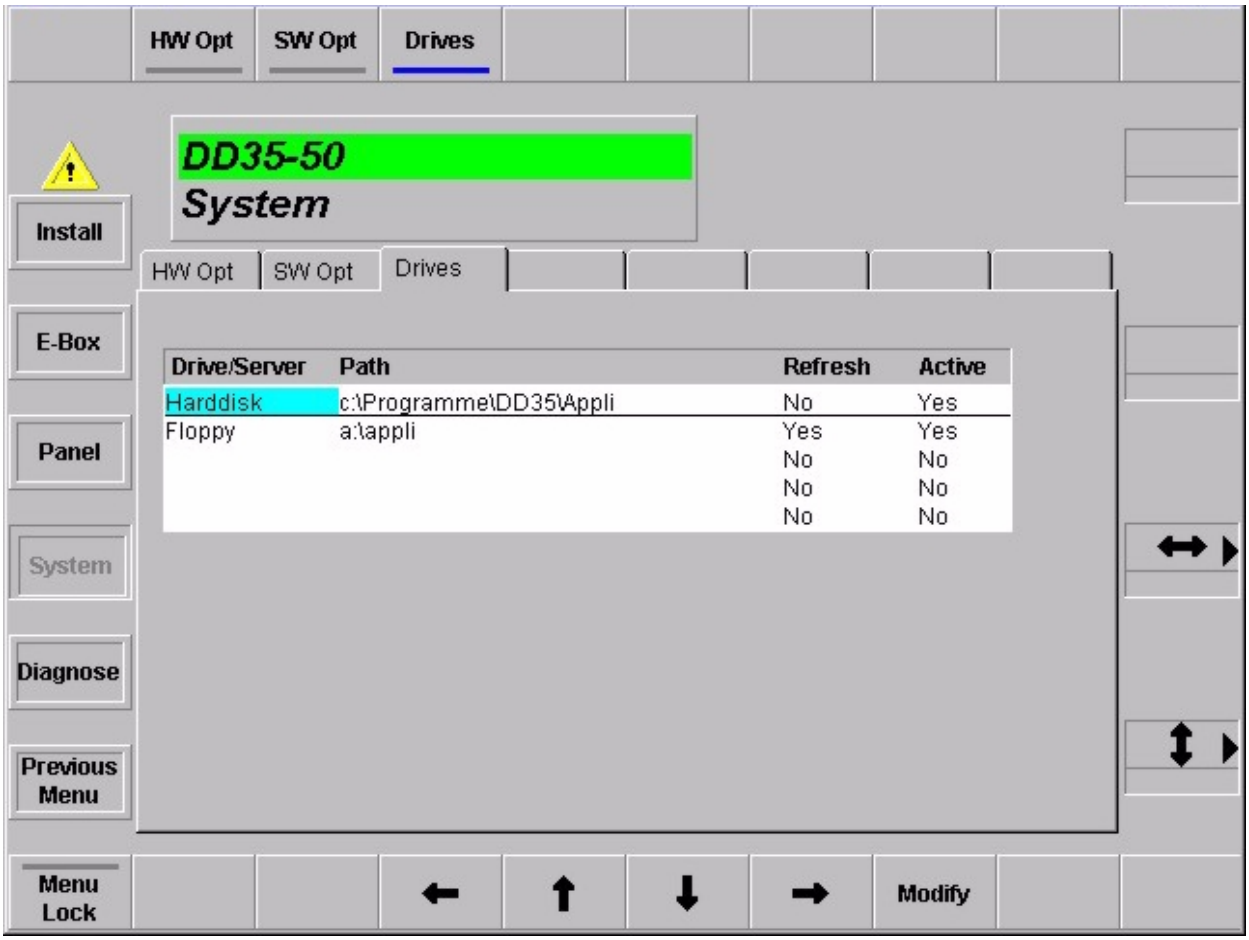
SerialBoard# Controller: xxx
SerialBoard# Backplane: xxx
SerialBoard# OutputProc: xxx

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** menu.

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!.*

3.16.4.5 Drives



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**.

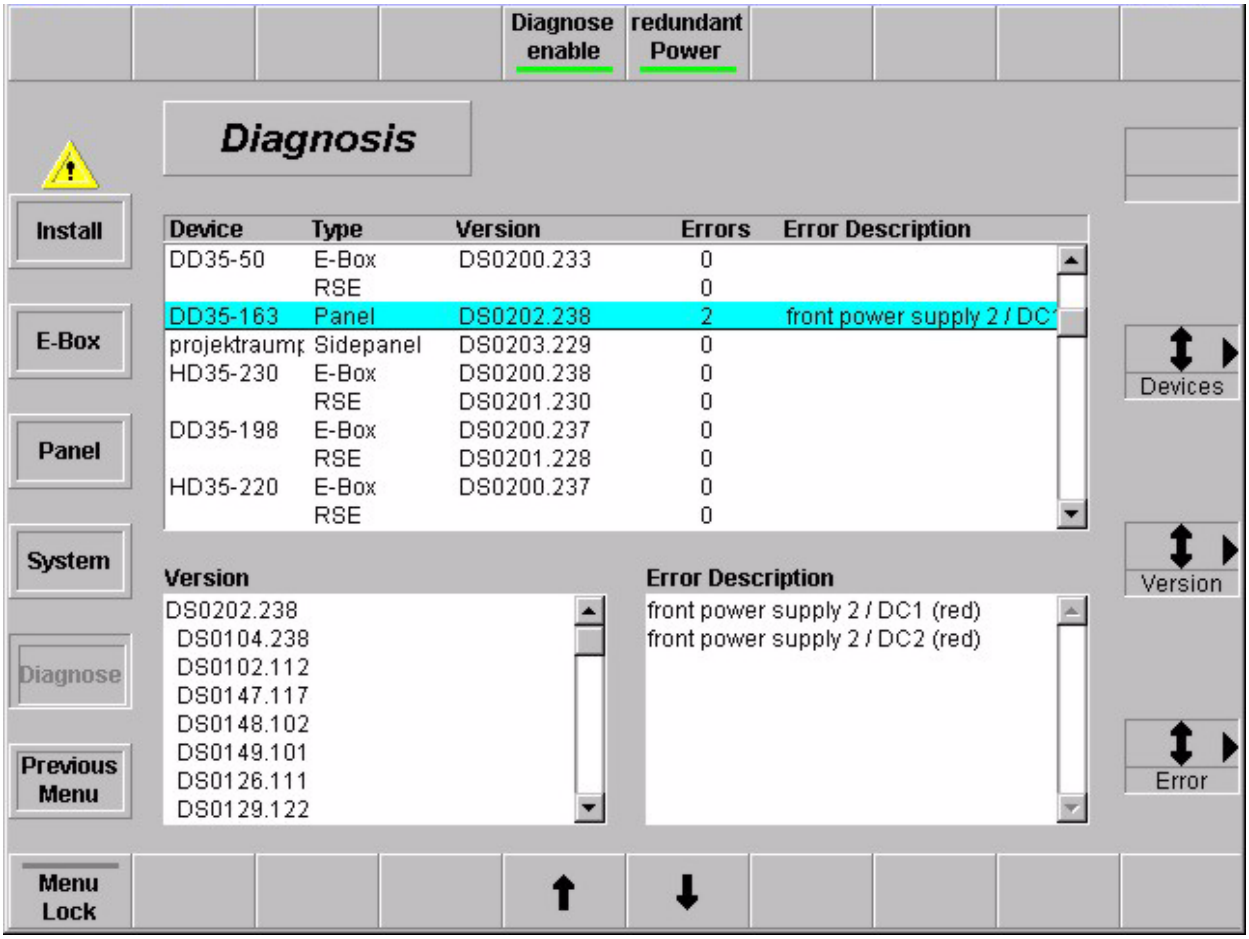
Drive/Server: Name of the drive

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.

3.16.5 DIAGNOSIS MENU



3.16.5.1 Dialog Buttons

Install Selecting **Install** main menu.

E-Box Selecting **E–Box Install** menu.

Panel Selecting **Panel Install** menu.

System Selecting **System** menu.

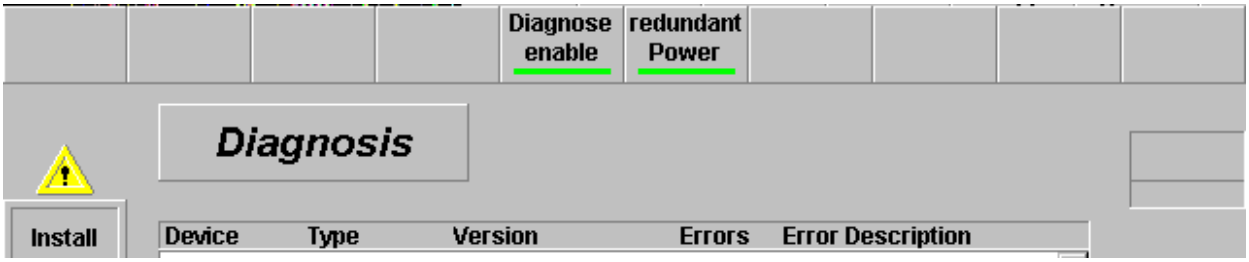
Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.16.5.2 Hardware Requirements

The diagnostics menu is only fully workable in connection with the panel controller RY 2156, board index 07. With older controller boards a fan error message is reported although the fan works faultlessly.
These error message can be suppressed. Please contact the Philips service in order to suppress the error message or to modify the controller board.
If the redundant power supply units were retrofitted on site, for the diagnostics they have to be registered in the DD switcher system. This entry has to be undertaken by the service personnel as well.

3.16.5.3 Enable / Disable Diagnosis Menu

In the menu, the softkey **Diagnose enable** and **Redundant Power** are added. Now it is possible to enable and disable each diagnosis function.



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.

3.16.5.4 Possible Error Messages

Mainframe

x___ power supply 1 / fan (red)
x___ power supply 1 / AC (red)
x___ power supply 1 / DC (red)

_x__ power supply 2 / fan
_x__ power supply 2 / AC
_x__ power supply 2 / DC

__x_ power supply 3 / fan (red)
__x_ power supply 3 / AC (red)
__x_ power supply 3 / DC (red)

___x power supply 4 / fan
___x power supply 4 / AC
___x power supply 4 / DC

rear fan 1
rear fan 2
rear fan 3

micro computer battery
micro computer +5V

mf temperature to high

Temperature and fans on INPUT processor:

Input processor board 1:

input 1 / fan crossbar 1
input 1 / fan crossbar 2
input 1 / temperature crossbar 1
input 1 / temperature crossbar 2
input 1 / –2V

Input processor board 2:

input 2 / fan crossbar 1
input 2 / fan crossbar 2
input 2 / temperature crossbar 1
input 2 / temperature crossbar 2
input 2 / –2V

Input processor board 3:

input 3 / fan crossbar 1
input 3 / fan crossbar 2
input 3 / temperature crossbar 1
input 3 / temperature crossbar 2
input 3 / –2V

Pulses on OUTPUT processor.

output / H1 pulse
output / H2 pulse
output / H3 pulse
output / H4 pulse
output / HIN pulse
output / HOUT pulse
output / HAUX pulse
output / HBGDST pulse
output / F pulse
output / AUXBL pulse
output / V pulse
output / CLK pulse
output / FC pulse
output / no genlock reference

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.

Note: *The displayed characters "**X**____" symbolizes the position of the power supply unit in the rack.*

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

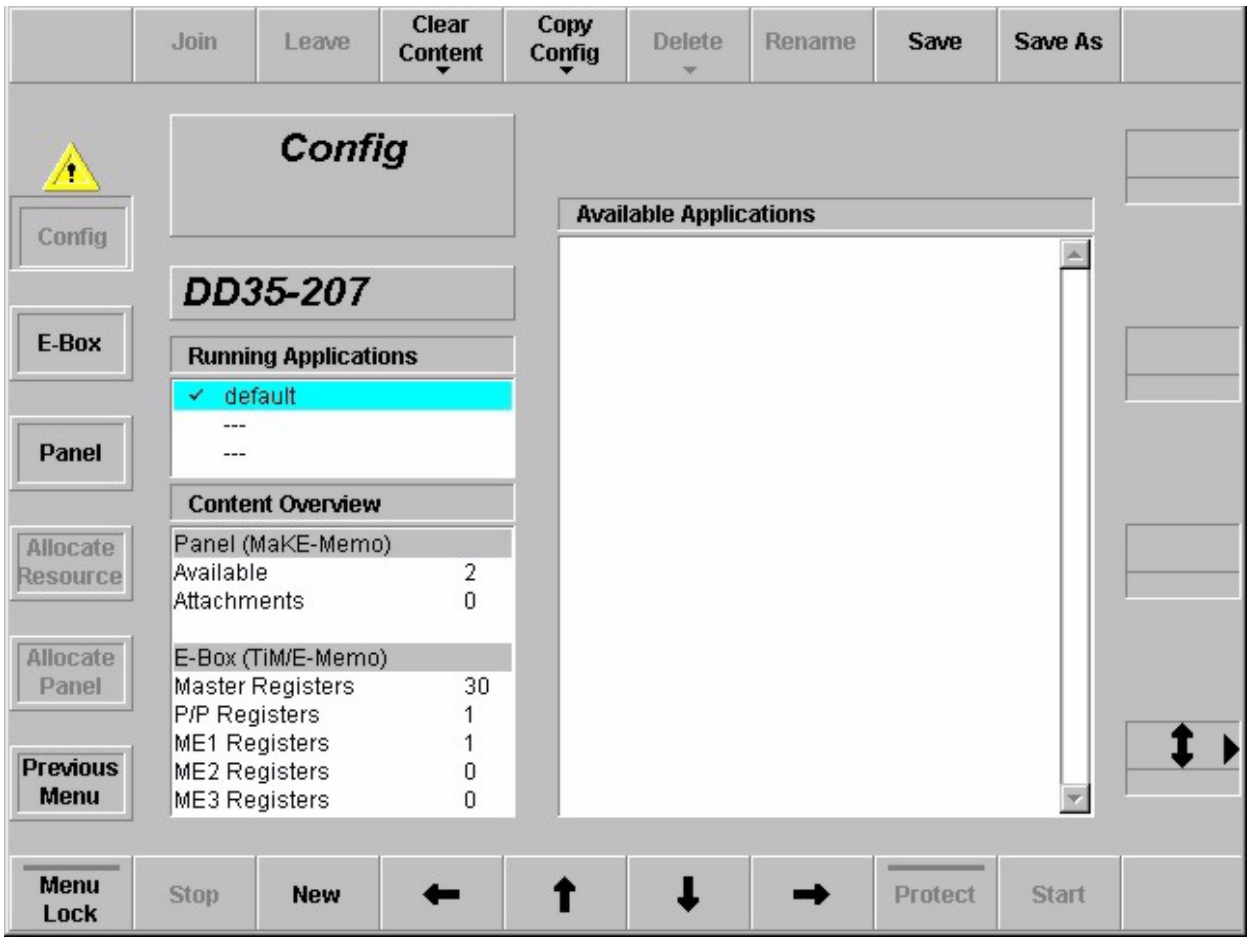
The fan (1) on the RY 2370 controller is temperature controlled. The cooling starts at 40^{o}C, also the diagnosis of fan.

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.

3.17 CONFIGURATION MENU

3.17.1 CONFIG MAIN MENU



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 "**Default**" application that is always available is the top entry. It is followed by four userdefined applications. If less than four 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).

3.17.1.1 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.

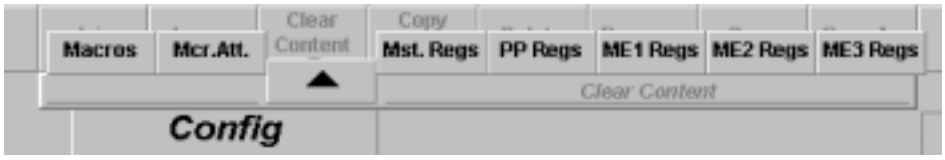
Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.17.1.2 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.



Copy Config For details refer to section ***3.17.1.3 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 → ← ↑ ↓ 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.

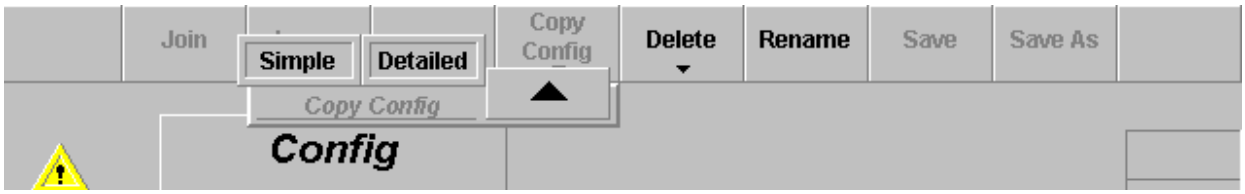
Protect Write protection of the selected application in the list box "**Available Applications**". Protected applications are marked with a cross.

Start Loads an application from the local harddisk and starts it.

3.17.1.3 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:

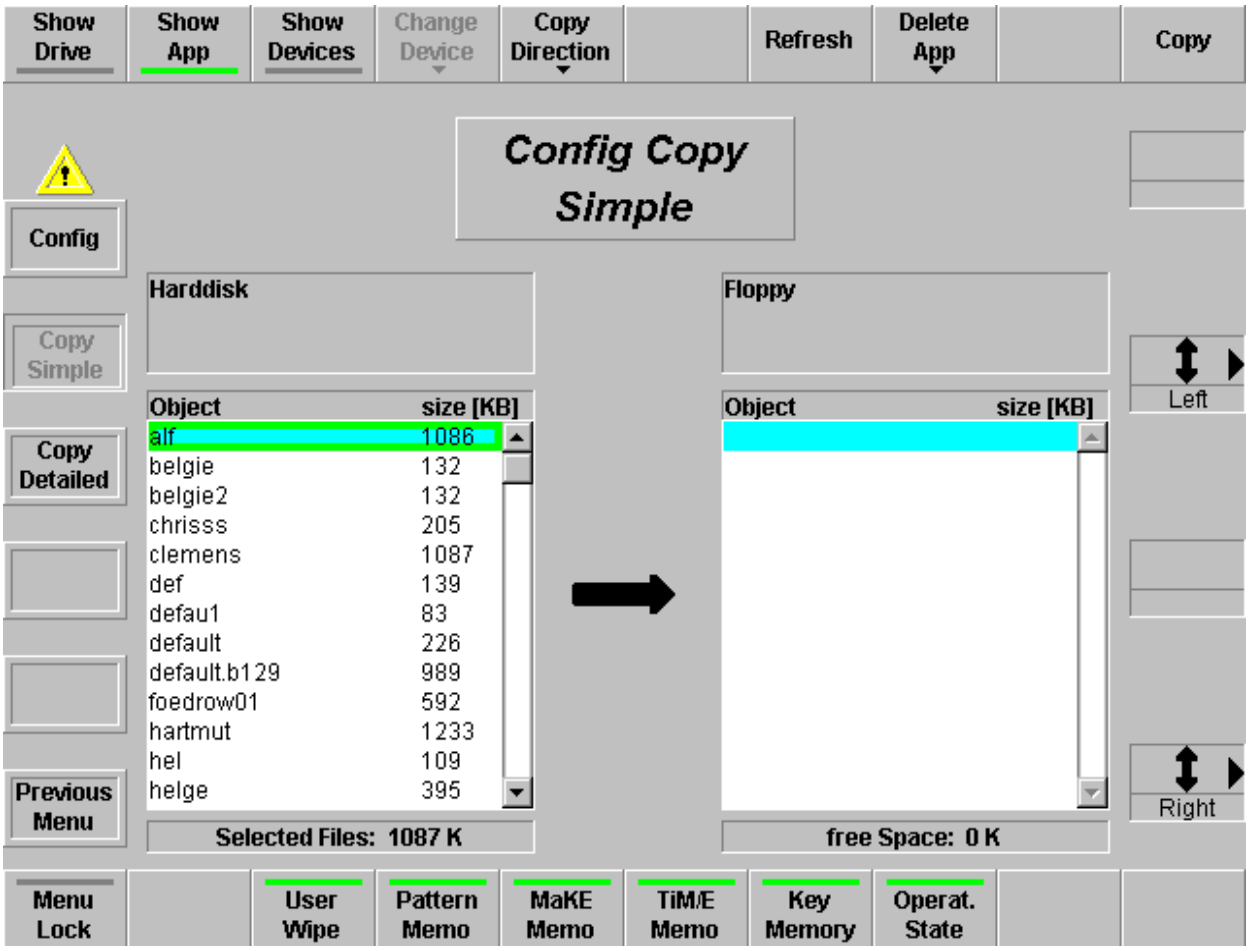


Simple Complete applications can be stored.

Detailed Single files can be stored.

3.17.1.4 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 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***	Buttons act as a filter for the shown application. Only the selected file types are copied.

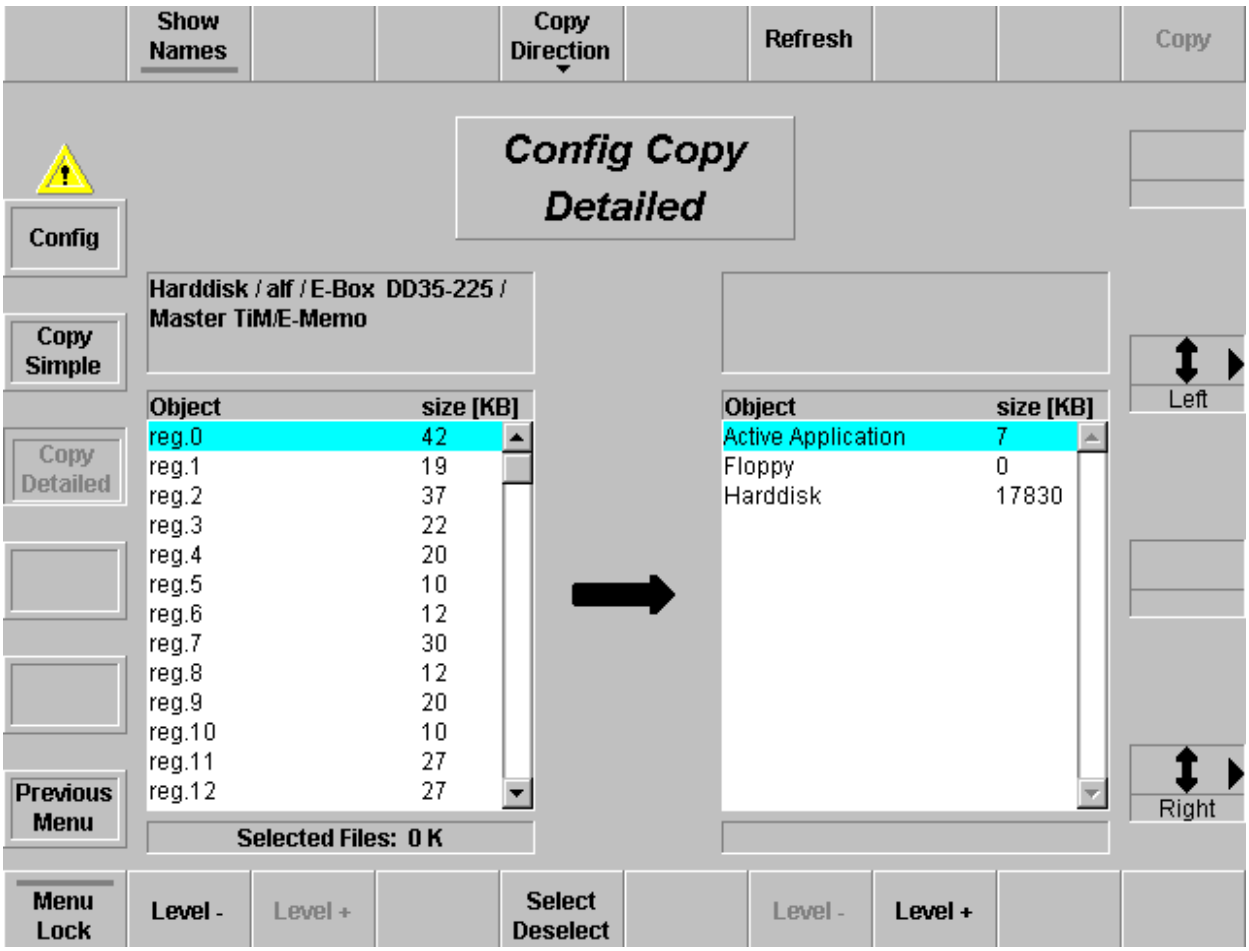
3.17.1.5 Config Copy Detailed Menu

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.*

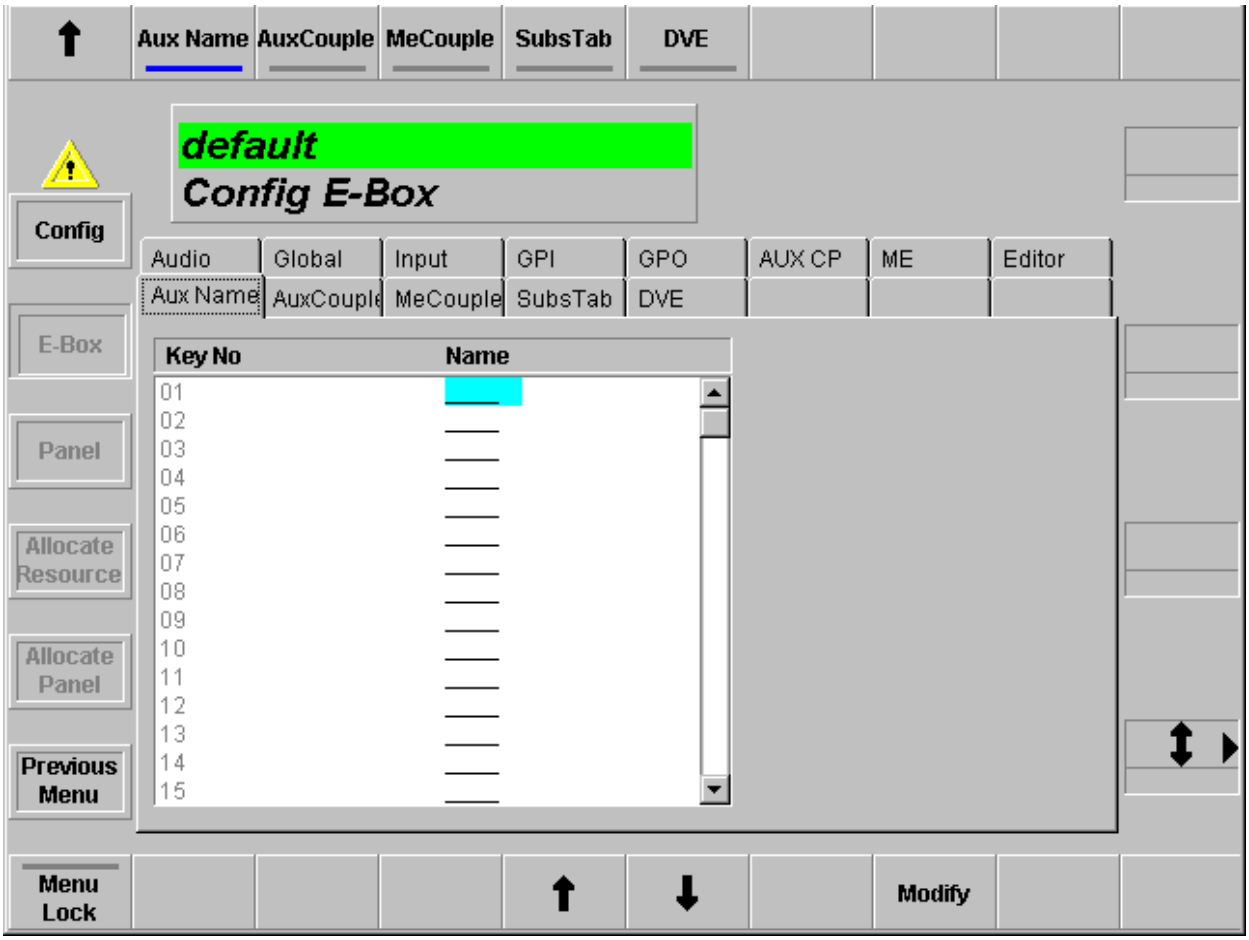
On the highes level, all drives activated in the ***Install / System / Drives menu*** and the Active Application are listed.
Use the **Level+** and **Level–** buttons to navigate in the directory tree of the application. File types and files can be selected using the **Select** button or by double-clicking 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.

3.17.2 CONFIG E-BOX MENU



3.17.2.1 Dialog Buttons

Config Selecting **Config** menu.

Panel Selecting **Panel** menu.

Allocate Resource Selecting **Allocate Resource** menu.

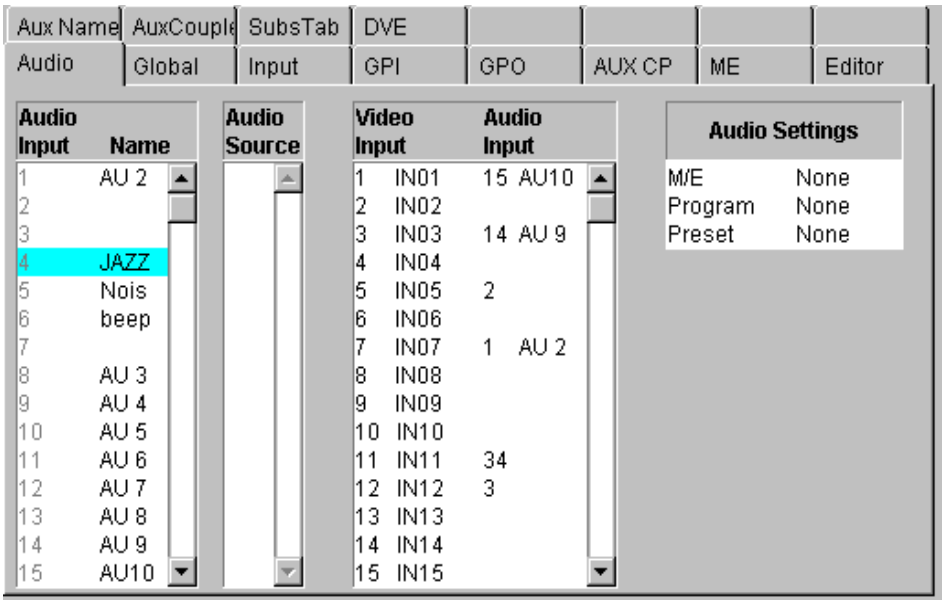
Allocate Panel Selecting **Allocate Panel** menu.

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.17.2.2 Function Buttons

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.



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.

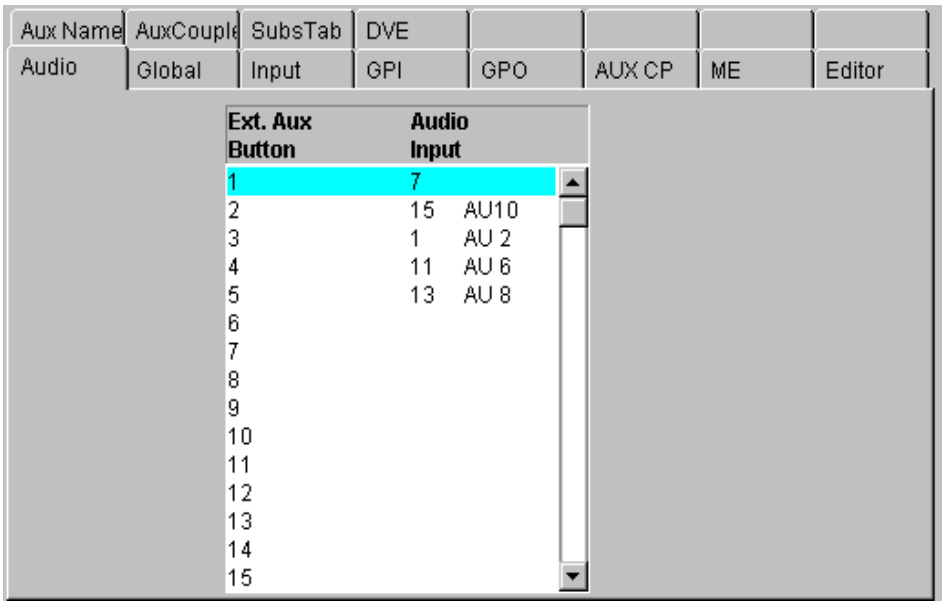
To each video input can be assigned an internal audio channel. This is indicated in the third listbox.

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**.



Operating:

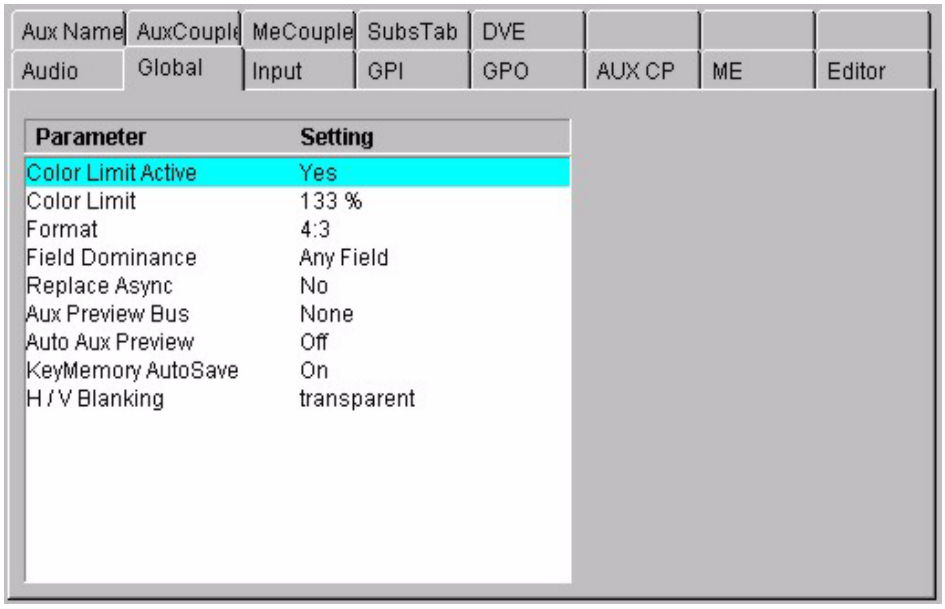
The audio switcher follows only PGM (PST). Only PGM is always to be heard. The crossbar selection only is switched. If there is no audio assigned to the video, the last audio source stays.

CUT AUTO	PGM and PST sources swap according to the video 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.

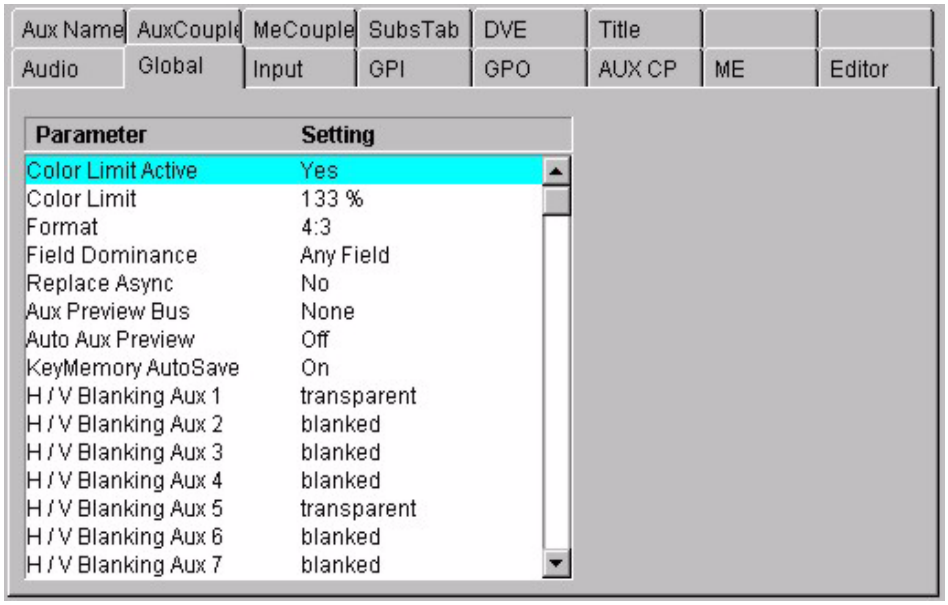
With the ESAM2 protocol, transition with the fader is not possible.

Global Index card for global settings

DD35



Seraph HD



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**
  (Seraph HD: **Aux1 ... Aux20**)

- **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

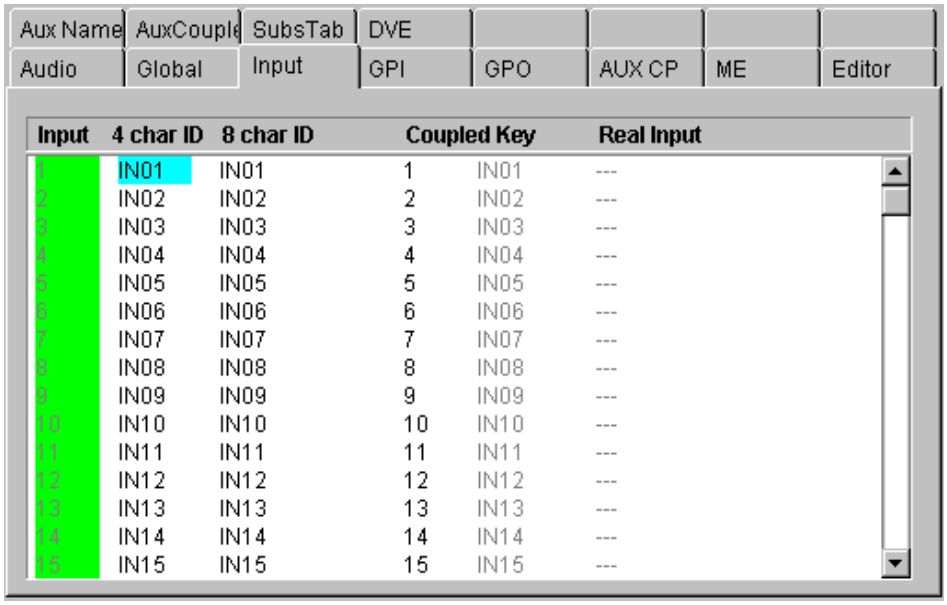
Key Memory AutoSave=Off. For storing the current settings into the key memory, press the button of the respective Fill source approx. 2 seconds. The storing is confirmed by a short beep in the control panel.

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.

  Seraph HD:
  This function can be selected for each output and aux busses separately

Input Index card for input settings



Entries belonging to the own application are marked with a green background, entries belonging to other applications are marked with a yellow background.

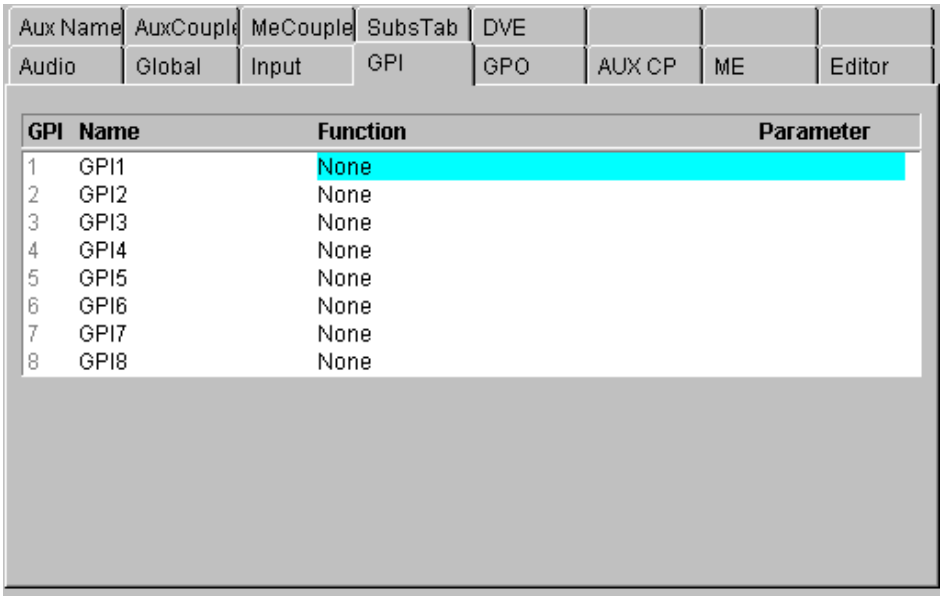
Take Takes the input source selected with the cursor to the own application.

Release Releases the input source selected with the cursor from the own application.

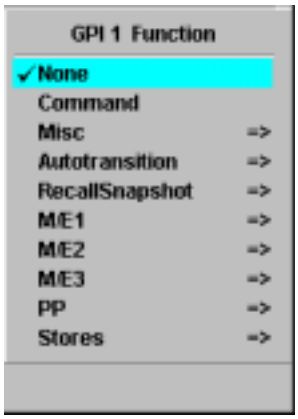
Show All In the on-state, all input sources are displayed. In the off-state only the own (green marked) inputs are displayed.

Coupled Key Set all coupled keys to **Default** (=self) or **White**.

GPI Index card for GPI settings



Douple-cklick or pressing the **Modify** button calls a pop-up menu and in some cases pop–up lists.



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

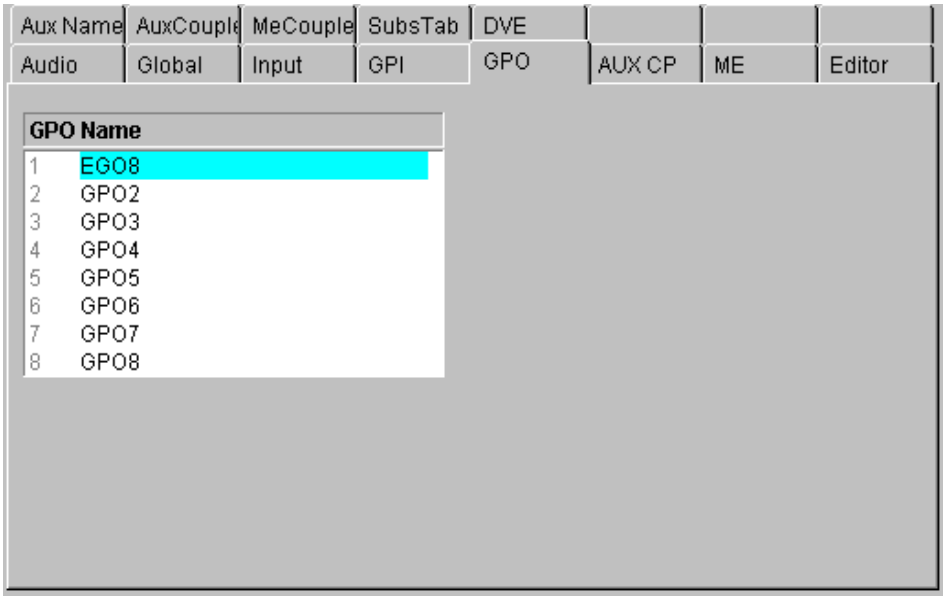
  VideoStandard (625/50, 525/60) (Example für DD35)
  Inactive = 625/50
  Active = 525/60
  This is a very redundant function because the switcher can auto detect the video standard from the signal at the reference input.
  See also **Install/EBox/Timing** menu.
- **Autotransition:** Starting **Auto Transition**, 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**.*

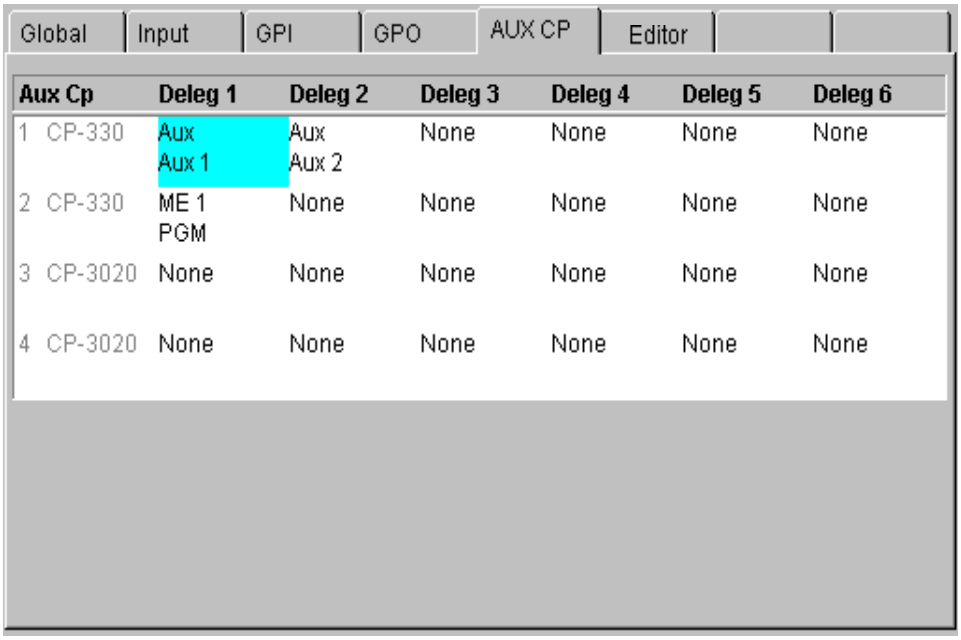
For entry, a special syntax has to be considered. It is possible to add predefined parameters to the command, the available commands are listed in these files. For editing, it is best to copy and match existing entries. In any case, the DD35 command set is required.

GPO Index card for GPO settings.



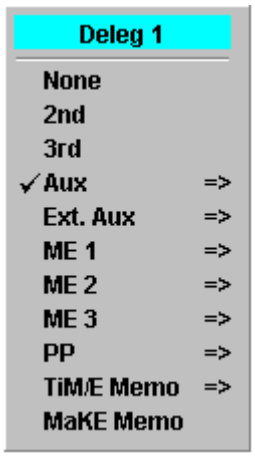
With the **Modify** button, names can be assigned to the GPOs.

Aux CP Index card for configuration the Aux Control Panels connected to the DD35 mainframe.



Cursor → ← ↑ ↓ Movement of the marker.

Modify Opens a pop-up window with the functions that can be programmed.



–––	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, P/P Bus, M/E 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 **–––, 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.

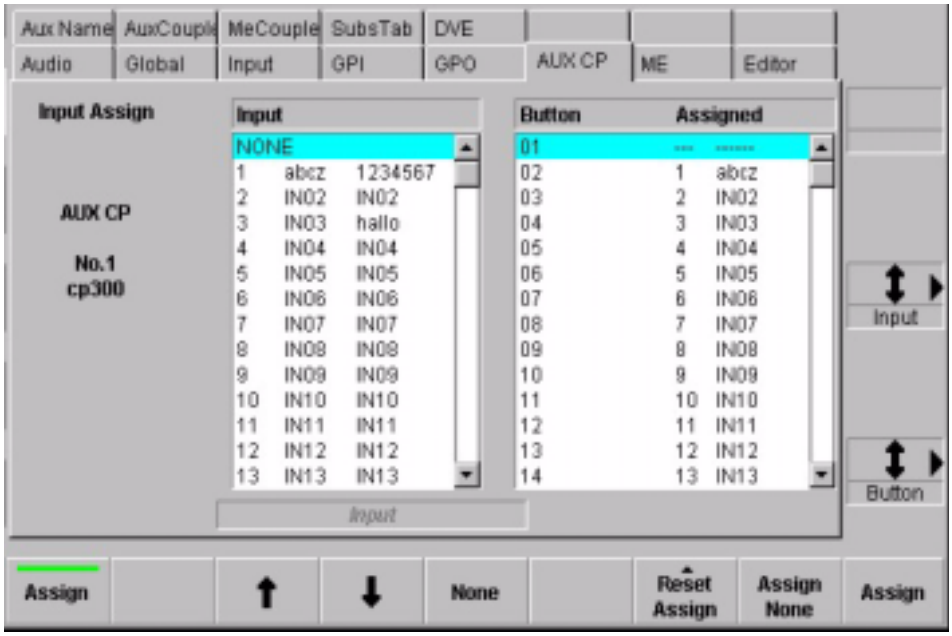
Assign

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.



Reset Assign

All None all buttons are assigned to no input.

Default sets the factory default input assign (see table below)

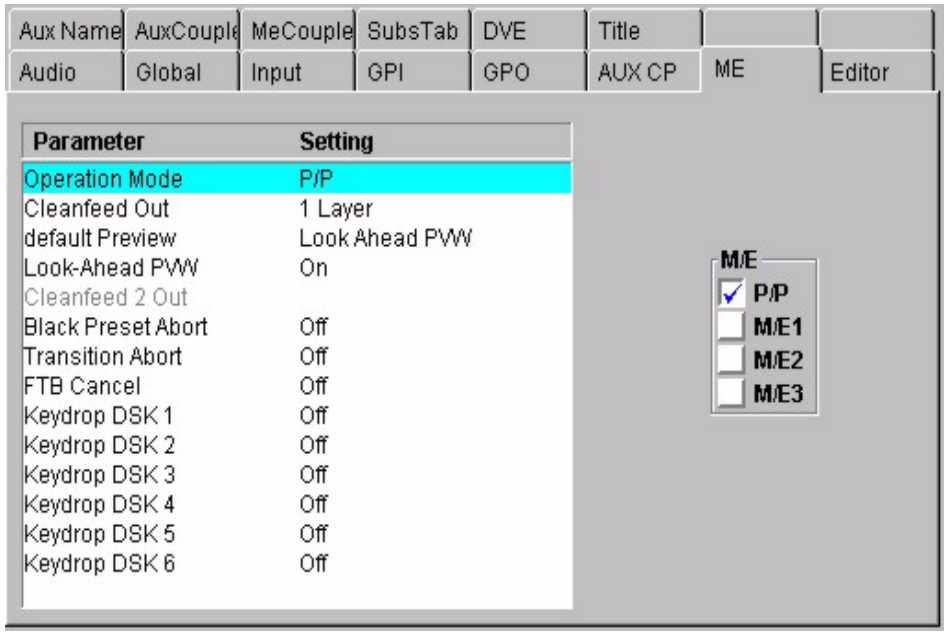
= **All** sets the input assign like the input assign for bus row ALL (*control panel only)*

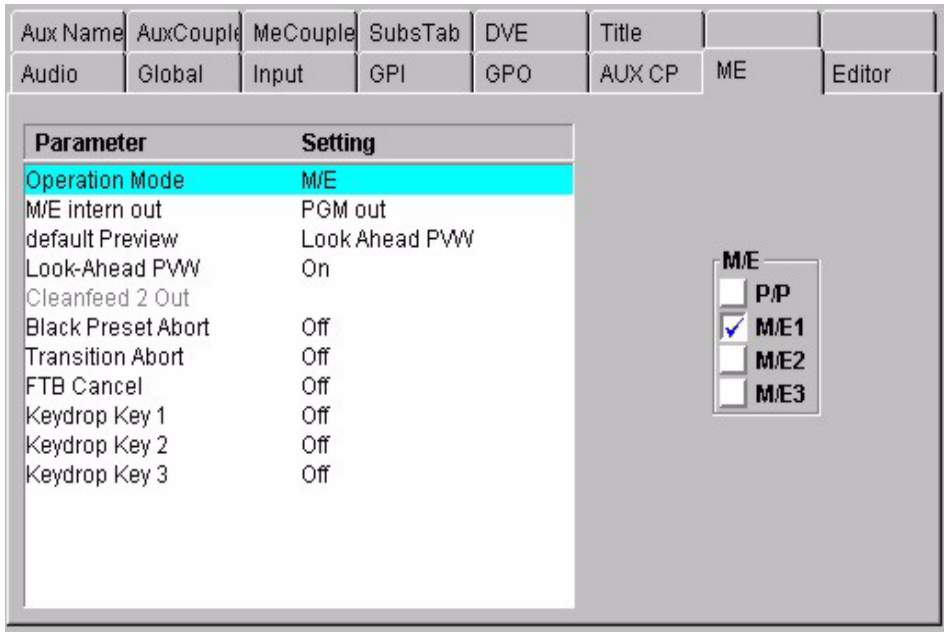
= **Aux All** sets the input assign like the input assign for bus row AUX ALL (*control panel only)*

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	MPR1	MPR2	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	—	—	—	—	—	—	—	—	—	—

ME Index card for global settings for M/E1, M/E2, M/E3 and P/P





With button **Modify** the following parameters are selectable:

- **Re-Entry-Feed**
  Defines the signal that an M/E feeds back to the main internal router for re-entry in other M/Es. For P/P it defines the signal known as **Cleanfeed**.

Non-layered mode:	PGM Out BGD only BGD + Under-key BGD + Key1 + Key 2 BGD + Key1 + Key2 + Key3
Layered mode:	PGM out 1 layer from bottom 2 layer from bottom 3 layer from bottom 4 layer from bottom

- **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

- **Operation Mode**
  Defines the general operation mode for M/E:

  act as M/E
  act as P/P

- **Clean 2 Out**
  Defines the effect of Cleanfeed 2, if Cleanfeed 2 is enabled by Fx-send settings:

Non-layered mode:	PGM Out BGD only BGD + Under-key BGD + Key1 + Key 2 BGD + Key1 + Key2 + Key3
Layered mode:	PGM out 1 layer from bottom 2 layer from bottom 3 layer from bottom 4 layer from bottom

- **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.

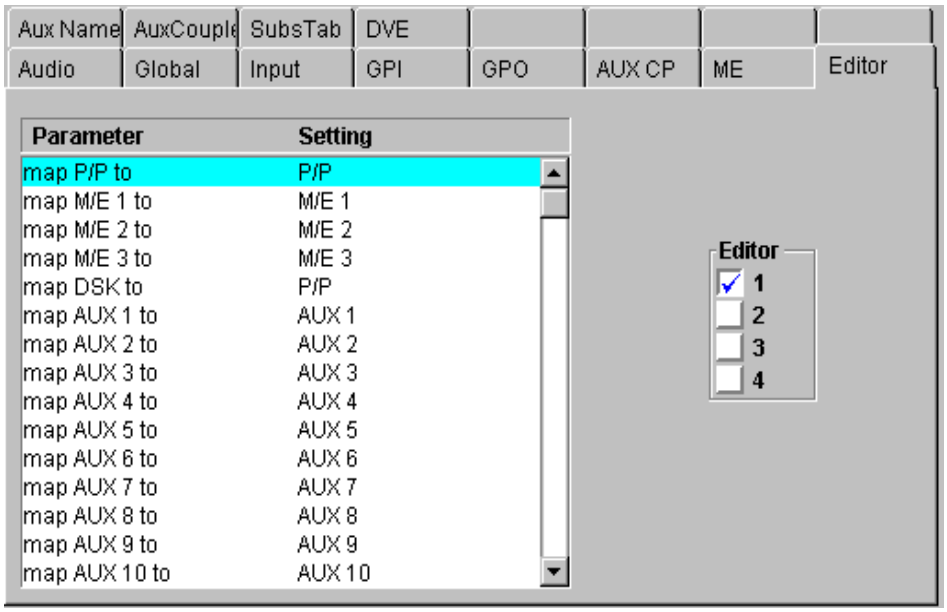
  In Layered mode:
  If a currently running transition with **BLK PST** on is at the black limit, it will be aborted, the **BLK PST** button lamp turns off, the switcher changes to non-layered mode and the selected source is taken as program.

- **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.

- **Key Drop**
  In non-layered mode the selected keys will be dropped, i.e. cutout, when another program source is selected. Mainly used for DSKs**.**

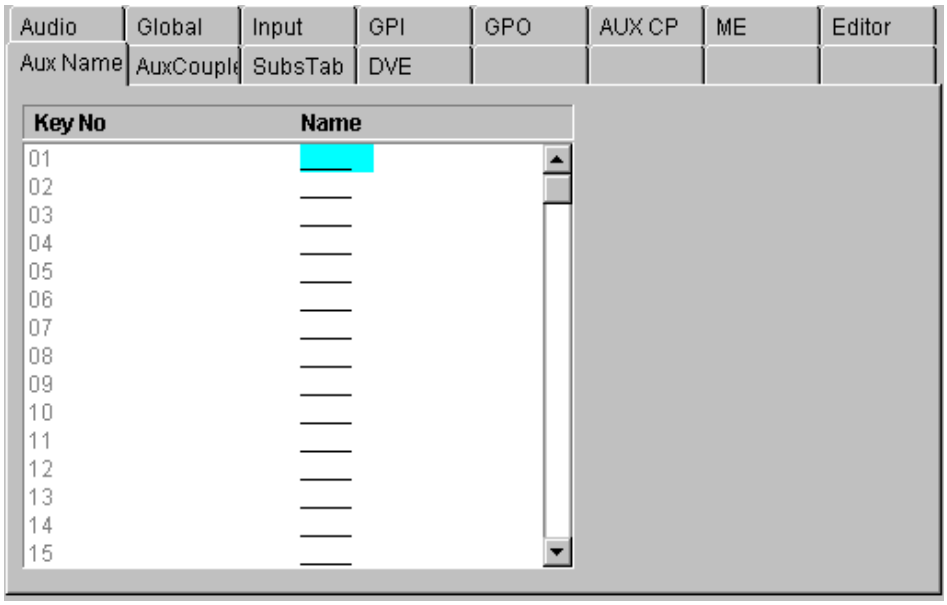
Editor Index card for editor settings.



For details refer to your ***Installation Manual***

Aux Name

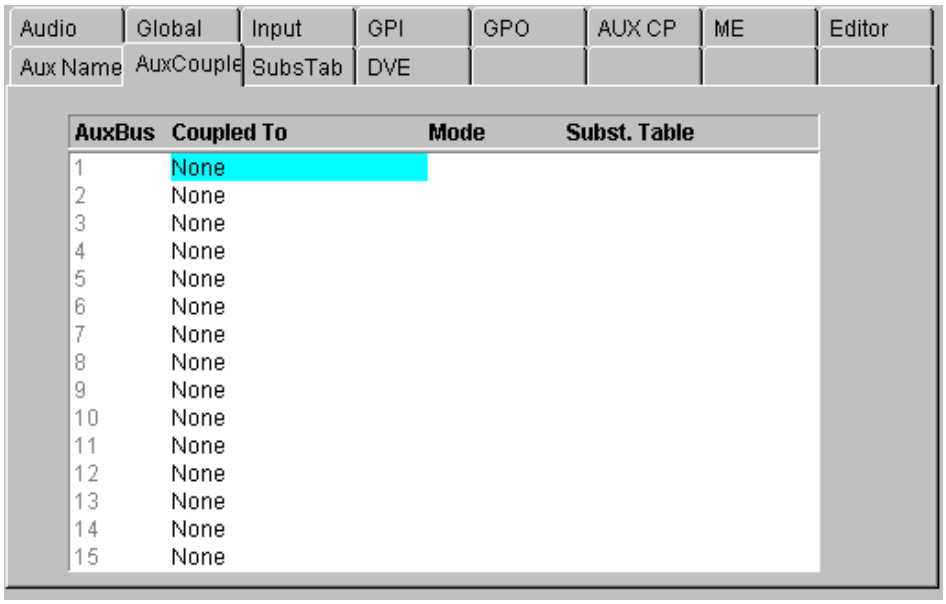
Index card for aux bus name settings.



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.



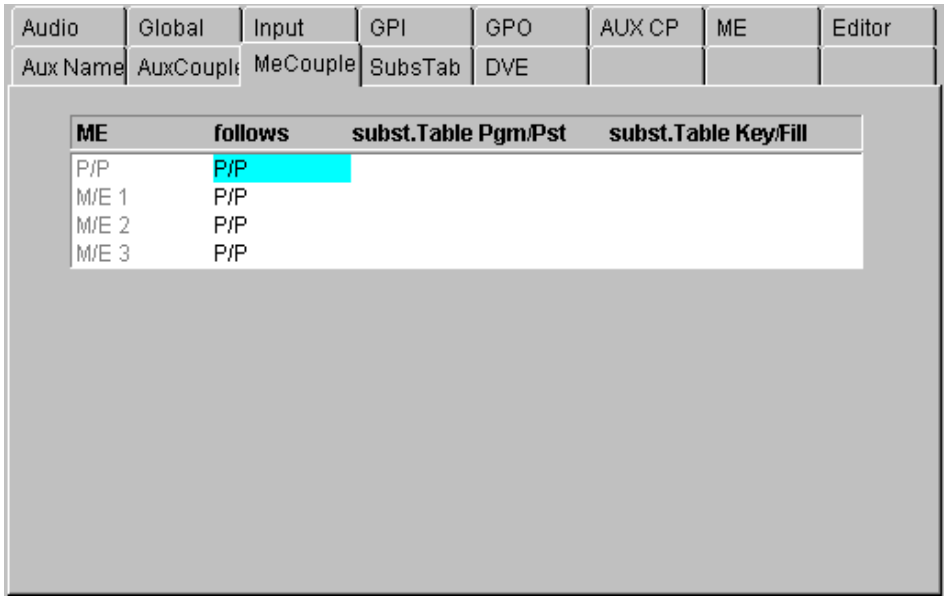
Coupled to: Select the desired switcher bus

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.



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 (→) 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)

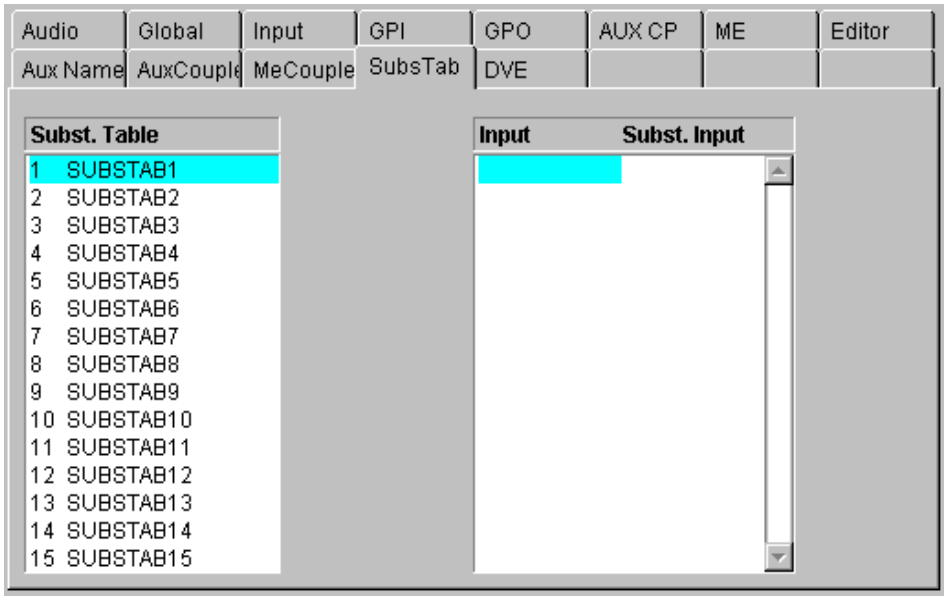
TiM/E-Memo handling:

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.

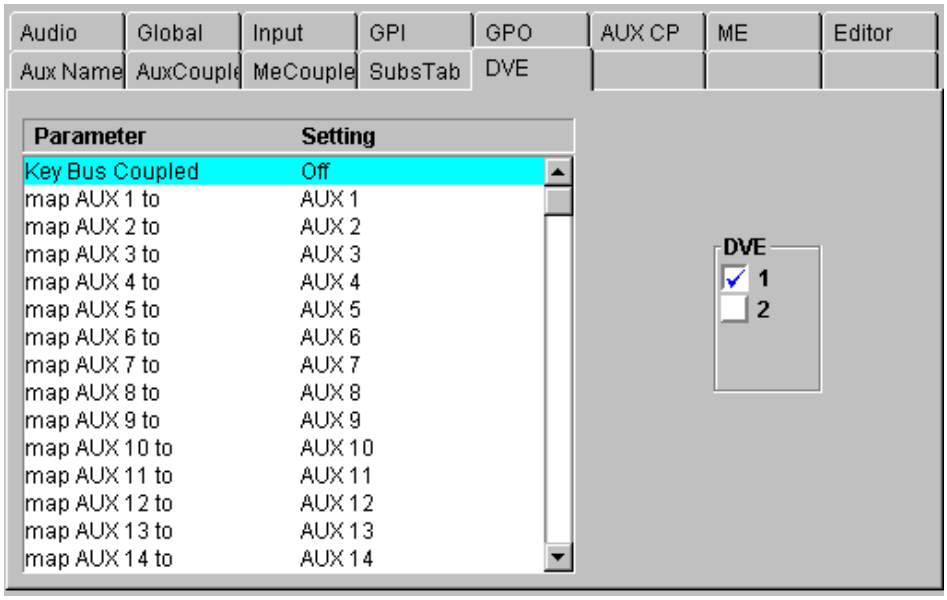
Add Subst: Enter a new substitution pair in the selected table.

Remove Subst: Remove a substitution pair from the selected table.

Modify Subst: Modify the selected table.

DVE

Index card for DVE settings.

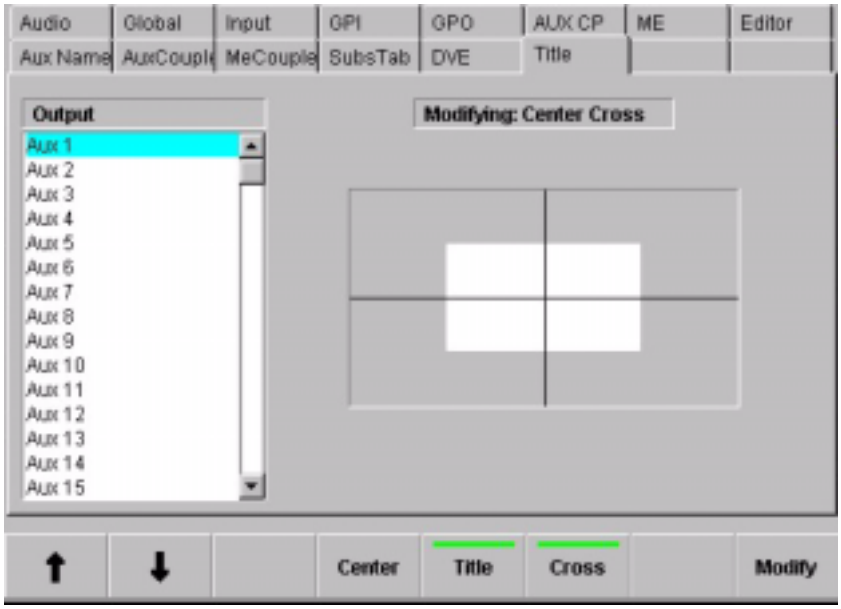


For DVE control, the Aux busses supplying the video and key signals have to be directly indicated in the GVG200 protocol. In order to keep an assignment variable, this index card is available enabling an Aux bus mapping. Thus, not only the permanently entered Aux busses can be used but also all the other 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.



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

3.17.2.3 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
               ==== ==== ==== ====
...

[AUXBUS3]
PermanentInput=0x05,0x00,0x00,0x00
               ====
...

[AUXBUS4]
PermanentInput=0xFF,0xFF,0xFF,0xFF
```

AUX Bus 1 is permanently set to M/E3 Preset

AUX Bus 1 is permanently set to Input 5

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

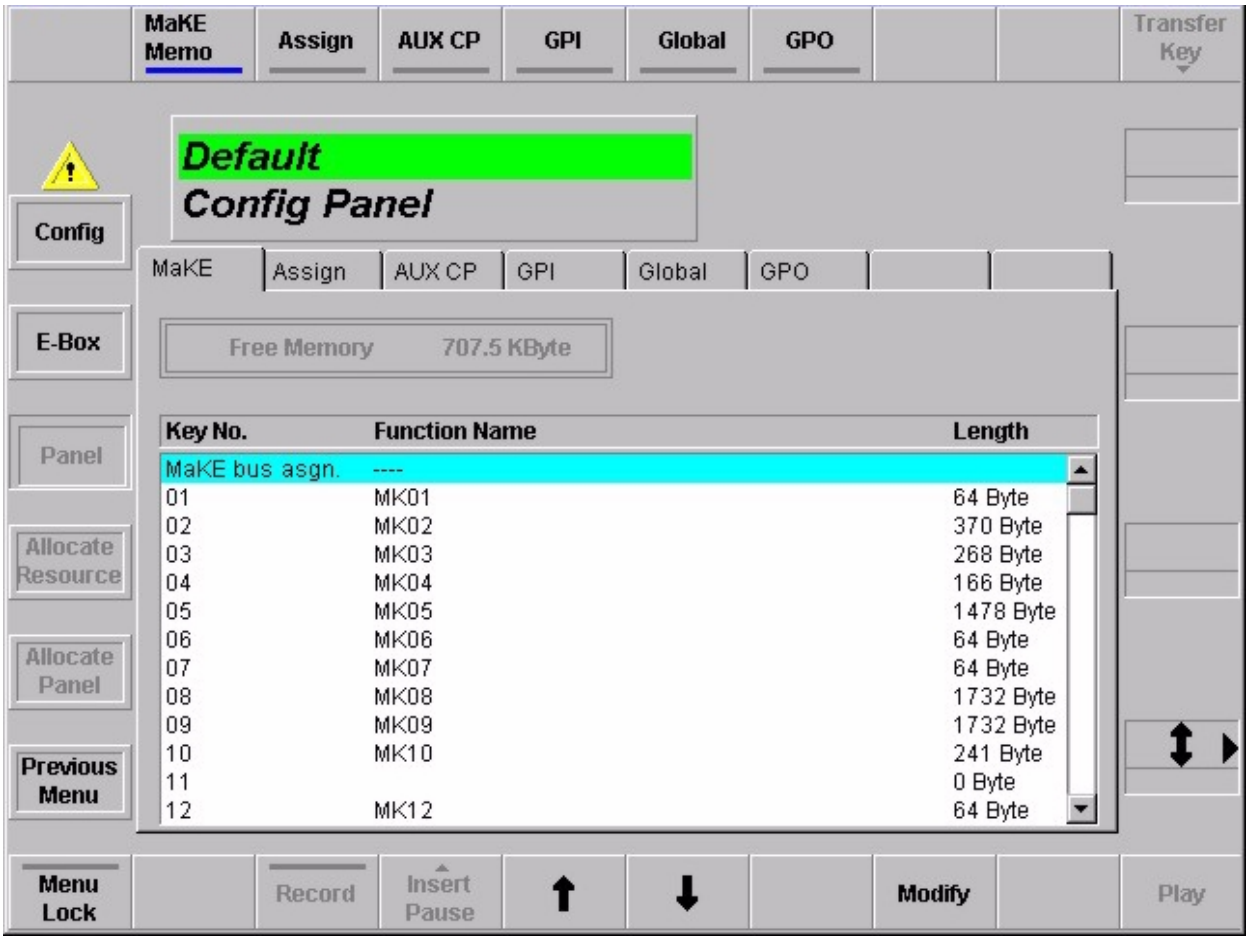
Other codes will be ignored.

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.

3.17.3 CONFIG PANEL MENU



3.17.3.1 Dialog Buttons

Config Selecting **Config** menu.

E-Box Selecting **Config E-Box** menu.

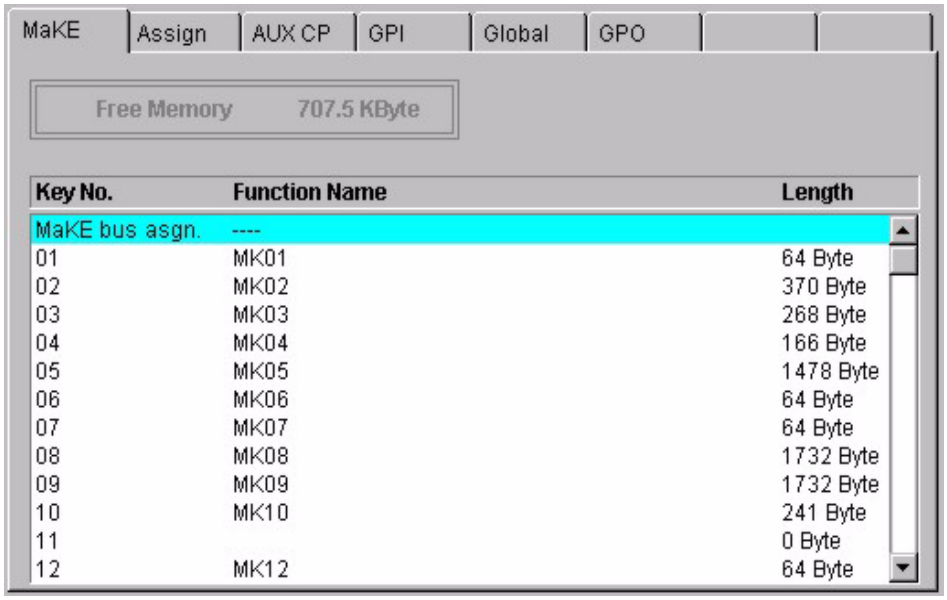
Allocate Resource Selecting **Allocate Resource** menu.

Allocate Panel Selecting **Allocate Panel** menu.

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.17.3.2 Function Buttons

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.



Record Start and stop recording macros.

Insert Pause Only active, if Record button is selected.

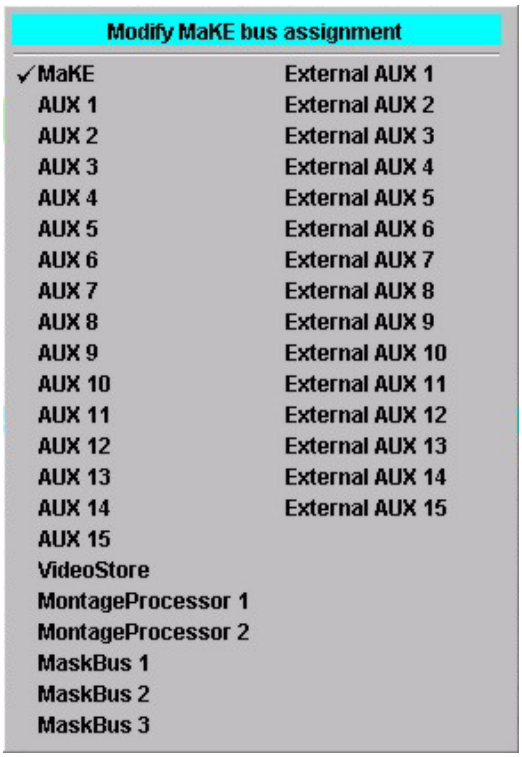
Cursor ↑ ↓

The vertical cursor softkeys and the vertical cursor digipot are used to navigate within a list box. The complete cursor control is always relevant.

Modify

Modifying the macro. For details refer to section ***How to store a macro*** below.

Modify:
MaKE Bus assignment



Modify:
MaKE button assignment

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 ↑ ↓, 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.

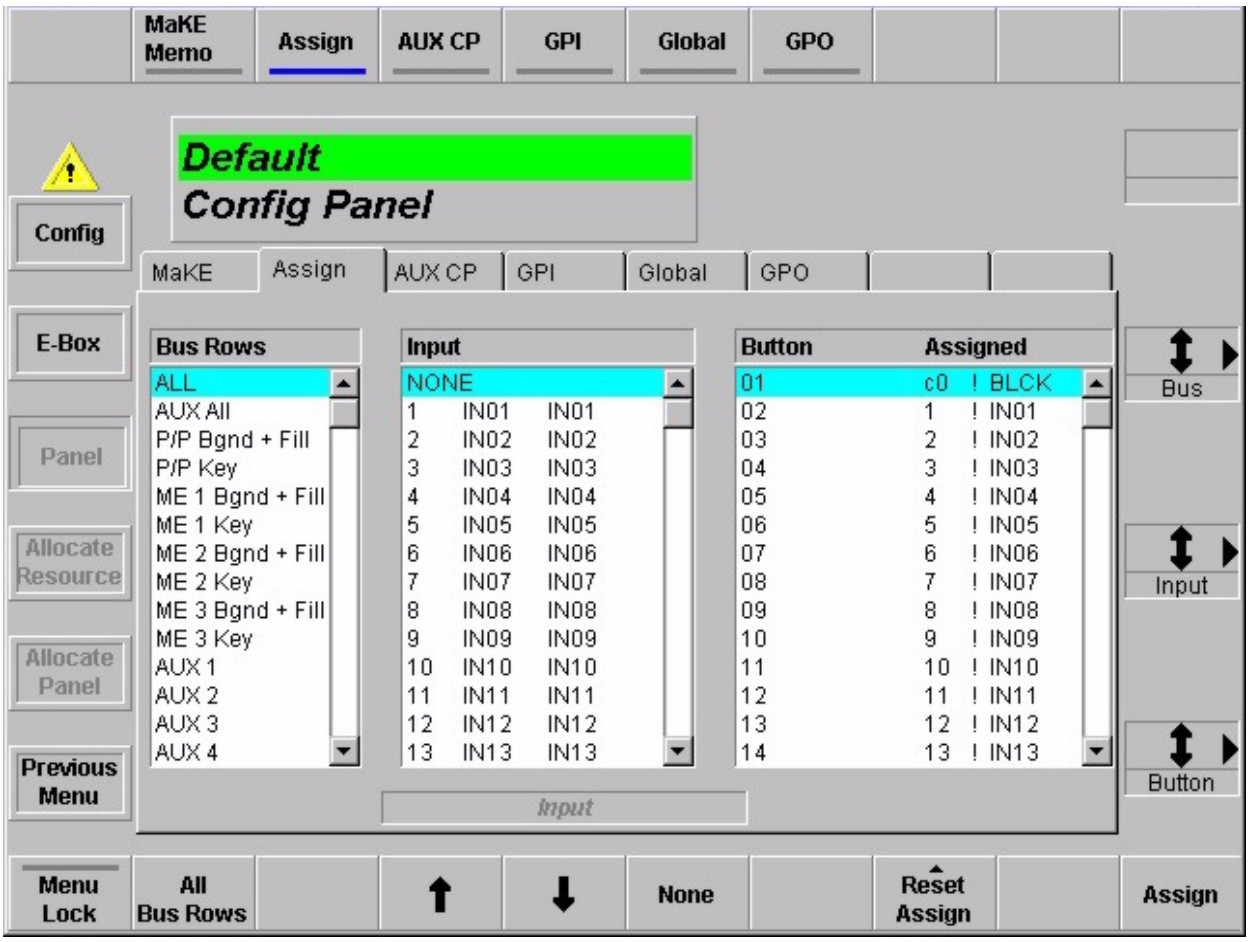
  Note: If no pause is inserted all commands were executed immediately.
- If you want to rename the stored commands push **Modify** and select **Rename** in the overlay. Type in the name with the keyboard overlay.
- To copy a macro to another **Key No.** select the macro and push **Modify**. Select **Copy** 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.



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 15
Video Store
Mont Proc 1 ... 2
Mask Bus 1 ... 3

Note: Extern AUX is NOT selectable.

All Shortcut for pre-selecting bus row **ALL.**

CP Assign Enables the input assignment from the control panel. I.e. enables the running light.

*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**.

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.

None Shortcut to select **None.**

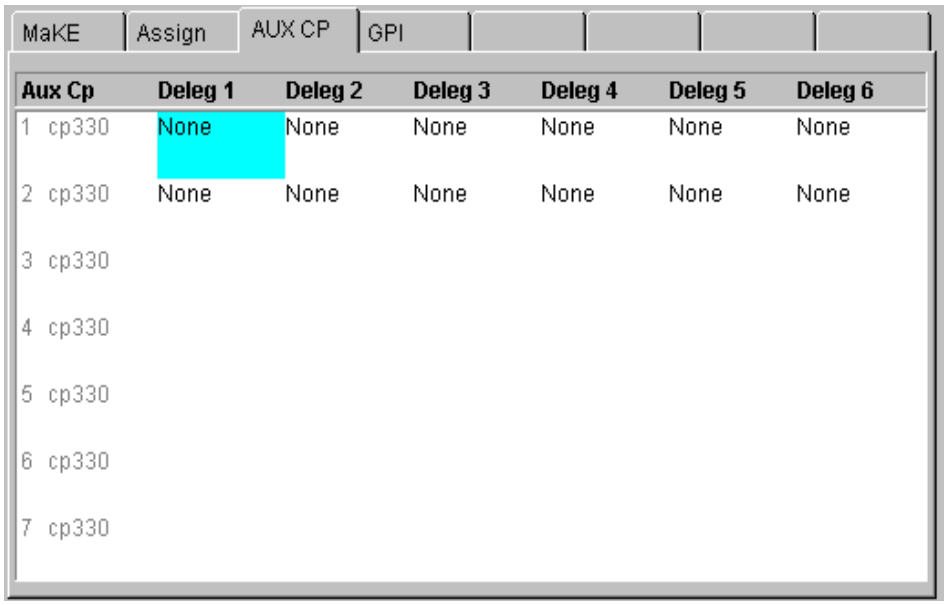
*Box **Button*** Shows a sorted list of all assignable crosspoint buttons.
The arrow in column 1 indicates the buttons which are assigned to the input currently marked in box **Input.**
Column 2 is the numeric list of all buttons.
Column 3 is a helper to show whether the Button is in first 2nd or 3rd level.
Column 4 and 5 show the number and the four char ident of the assigned input.
Dashes (– – –) indicate that no input is assigned.

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.



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		

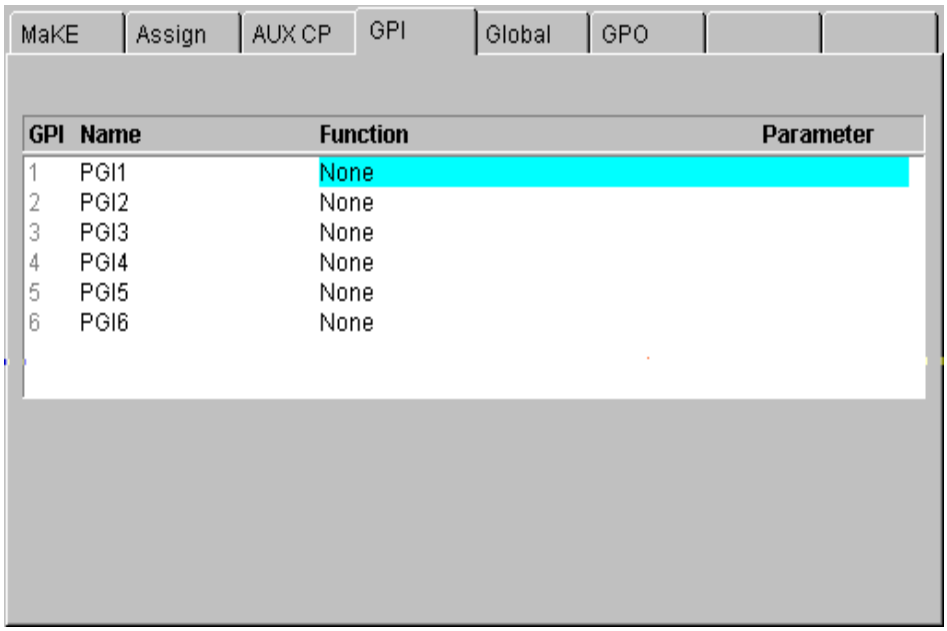
Source Buttons

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.

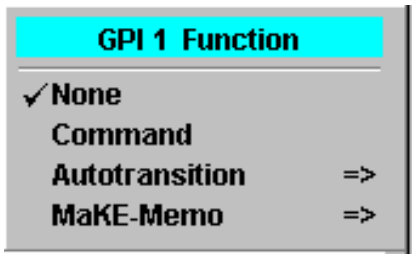
AUX-CP Enable

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.



Douple-cklick or pressing the **Modify** button calls a pop-up menu

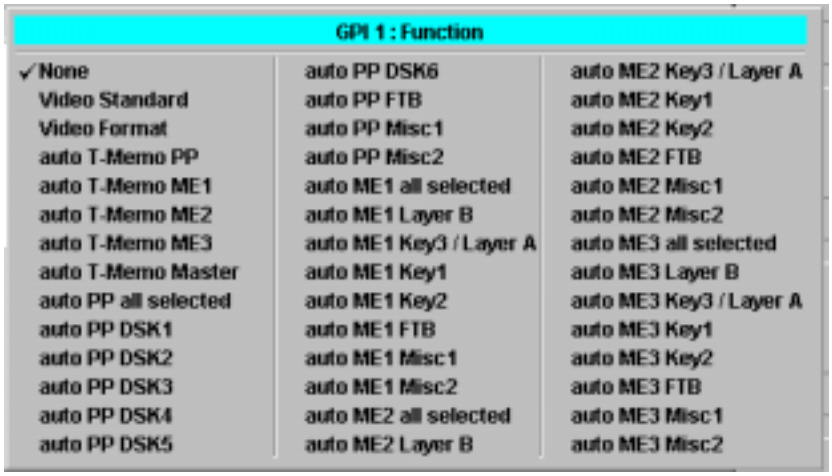


The selected function will be triggered on the edge defined in Install menu when GPI ENABLE is ON. However, there are some exceptions where the GPI works as a ”static” input. i.e. actions take place after a change in the GPI state but the value depends on the GPI’s state after the change. Also GPI ENABLE 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



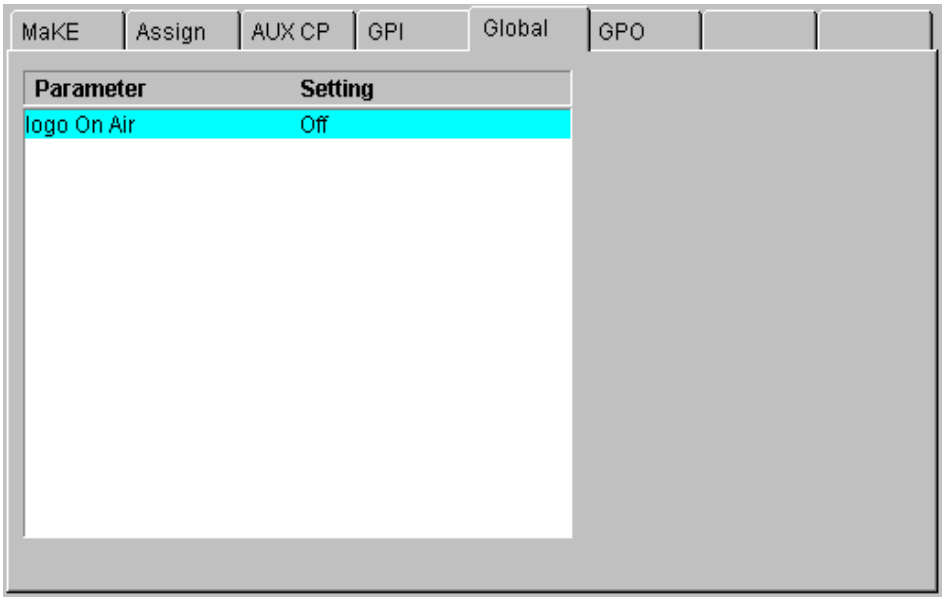
MaKE Memo: Starting a macro (0 .. 99).

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.

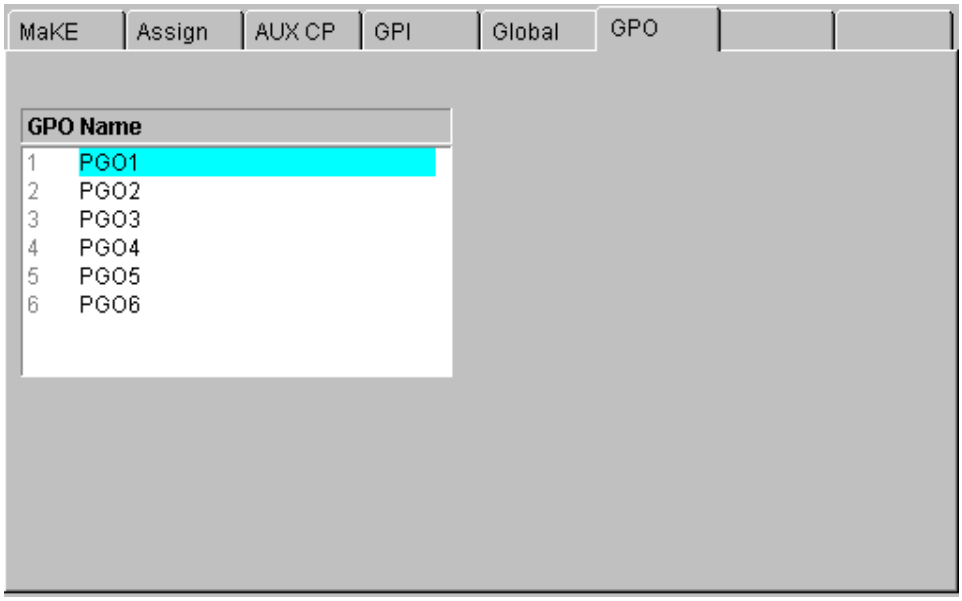
Global Index card for global panel settings.



Logo OnAir
Selecting the panel log as OnAir display.

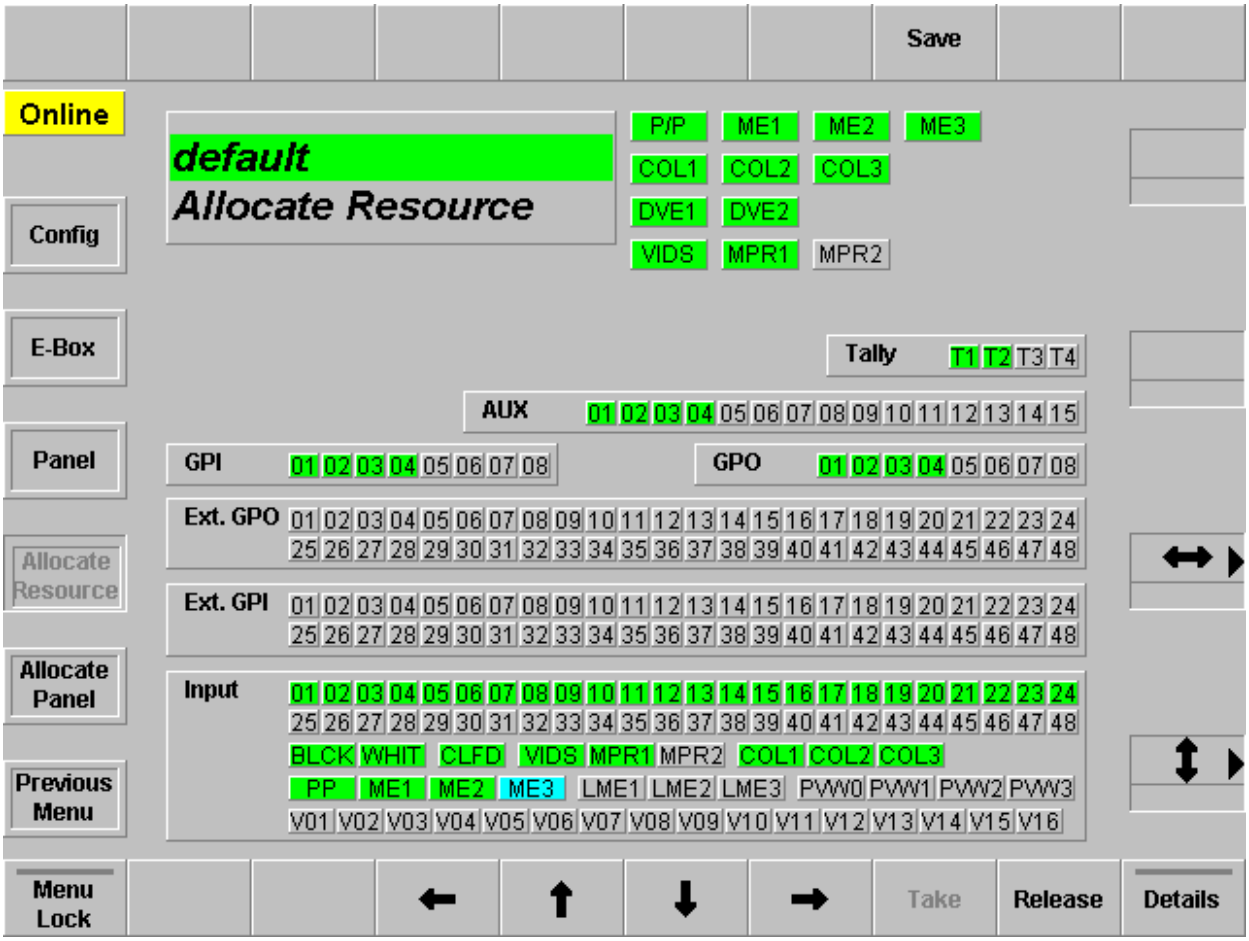
Modes:	**On**	Logo always lit
	Off	Logo off
	OnAir	Logo shows the OnAir information.

GPO Index card for GPO settings



With the **Modify** button, names can be assigned to the GPOs.

3.17.4 ALLOCATE RESOURCES MENU



The mainframe resources menu is a submenu of the Application Main menu. It can be used to allocate hardware resources from the connected mainframe to the given application.

The dialog title holds the application name (selected in the Application Main menu) as resource and the title "**Mainframe Resources**" as the addressed area. The application name is backlighted green which is the color that identifies the actual application.

Online / Offline

The online indicator displays the editing status determined by the Application Main menu.

Select buttons

Each logical video hardware resource of the mainframe is represented by a select button within the menu. Basically a select button can be displayed in one of three colors which represents the relation to available applications:

grey	is used if the resource belongs to the "default" (0) application.
yellow	is used if the resource is allocated by a foreign, userdefined application.
green	is used if the resource is allocated by the application that is just edited.

The color of the cursor is **blue**.

3.17.4.1 Dialog Buttons

Config	Selecting **Config** menu.
E-Box	Selecting **Config E-Box** menu.
Panel	Selecting **Config Panel** menu.
Allocate Panel	Selecting **Allocate Panel** menu.
Previous Menu	Return to the previous menu. For details refer to section ***Introduction.***

3.17.4.2 Function Buttons

Save Starts saving an application on the local harddisk.

Menu Lock For details refer to section ***Introduction.***

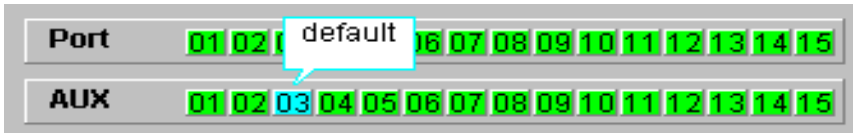
Cursor → ← ↑ ↓ All cursor softkeys and cursor digipots are used to navigate the cursor along the select buttons. The complete cursor control is always relevant.

Take The function is used to allocate a mainframe resource to a running application. This button is relevant if the cursor is located on a resource not yet allocated by the application.

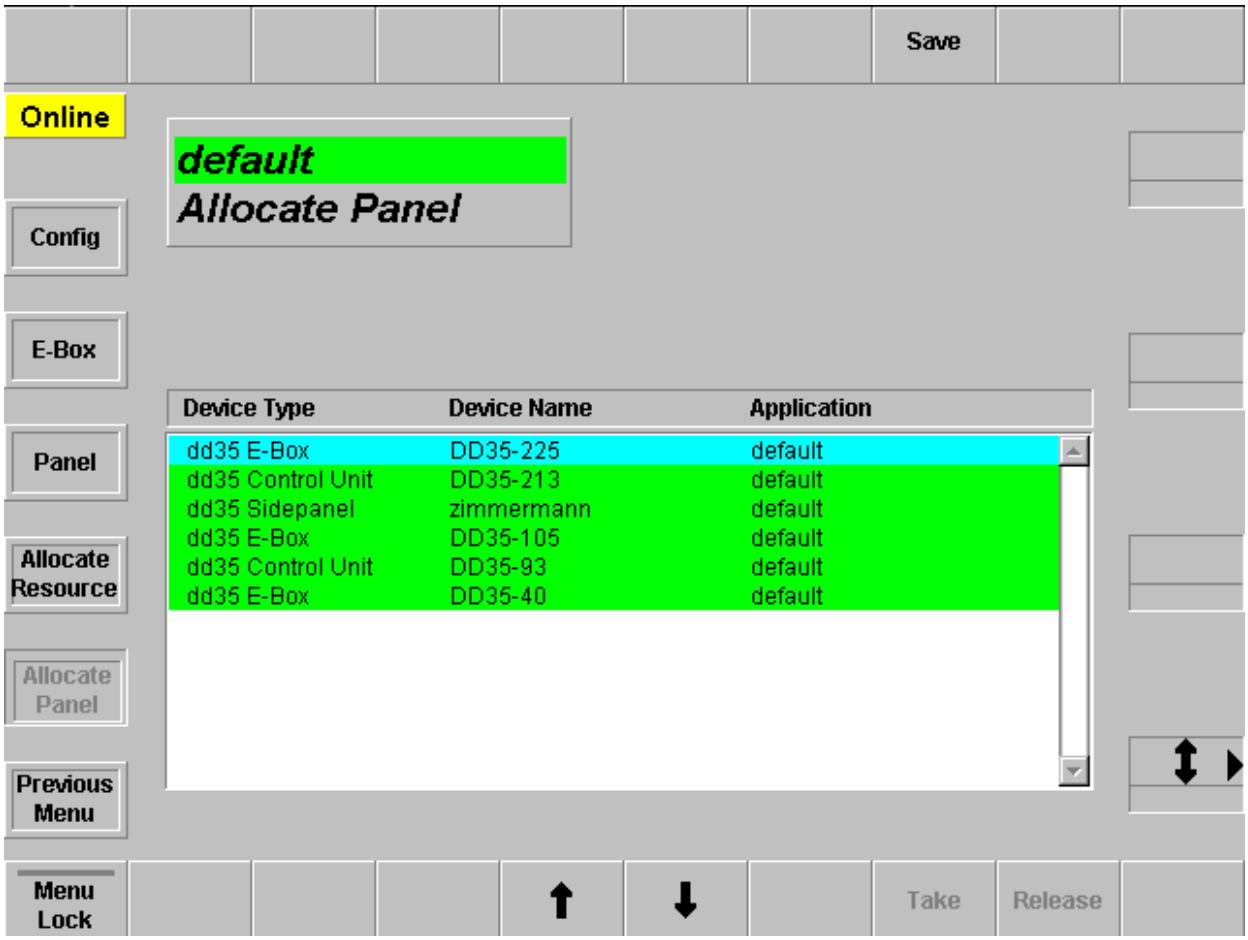
Release This function is used to release a mainframe resource that is allocated by the selected application. This button is only relevant if the cursor points to an allocated resource.

Details This button is used to activate the information box. For each hardware resource additional informations can be displayed in an information box that follows the cursor.

Example:



3.17.5 ALLOCATE PANEL MENU



The edit devices menu is a submenu of the application overview menu. It can be used to allocate devices for a chosen application. Therefore all devices, their name and their application are displayed in the list box. Instead of the device name the IP-address is displayed if the device name is not available. The allocation can be done **online** or **offline**.

The dialog title holds the application name (selected in the Application Main menu) as resource and the title "**Allocate Devices**" as the addressed area. The application name is backlighted green which is the color that identifies the actual application.

Online / Offline The online indicator displays the editing status determined by the Config Main menu.

Mainframe connection The name of the connected mainframe is displayed in a separate display field.

Device list box The list box displays all device resources available for an application at the DD35 network.

Such resources are:

- All mainframes
- All stand alone sidepanels
- All stand alone control panels
- All control units (SP + attached CP)

Control units should be represented as two devices, marked as one unit. Entries belonging to the own application are marked with a **green** background. The color background at the cursor position is **blue**.
The enter conditions of the edit devices menu ensures, that a mainframe is allways allocated to an application. Thus the connected mainframe is always marked with the green background. If the name of a device is not available, the IP-address is displayed instead.

3.17.5.1 Dialog Buttons

Config Selecting **Config** menu.

E-Box Selecting **Config E-Box** menu.

Panel Selecting **Config Panel** menu.

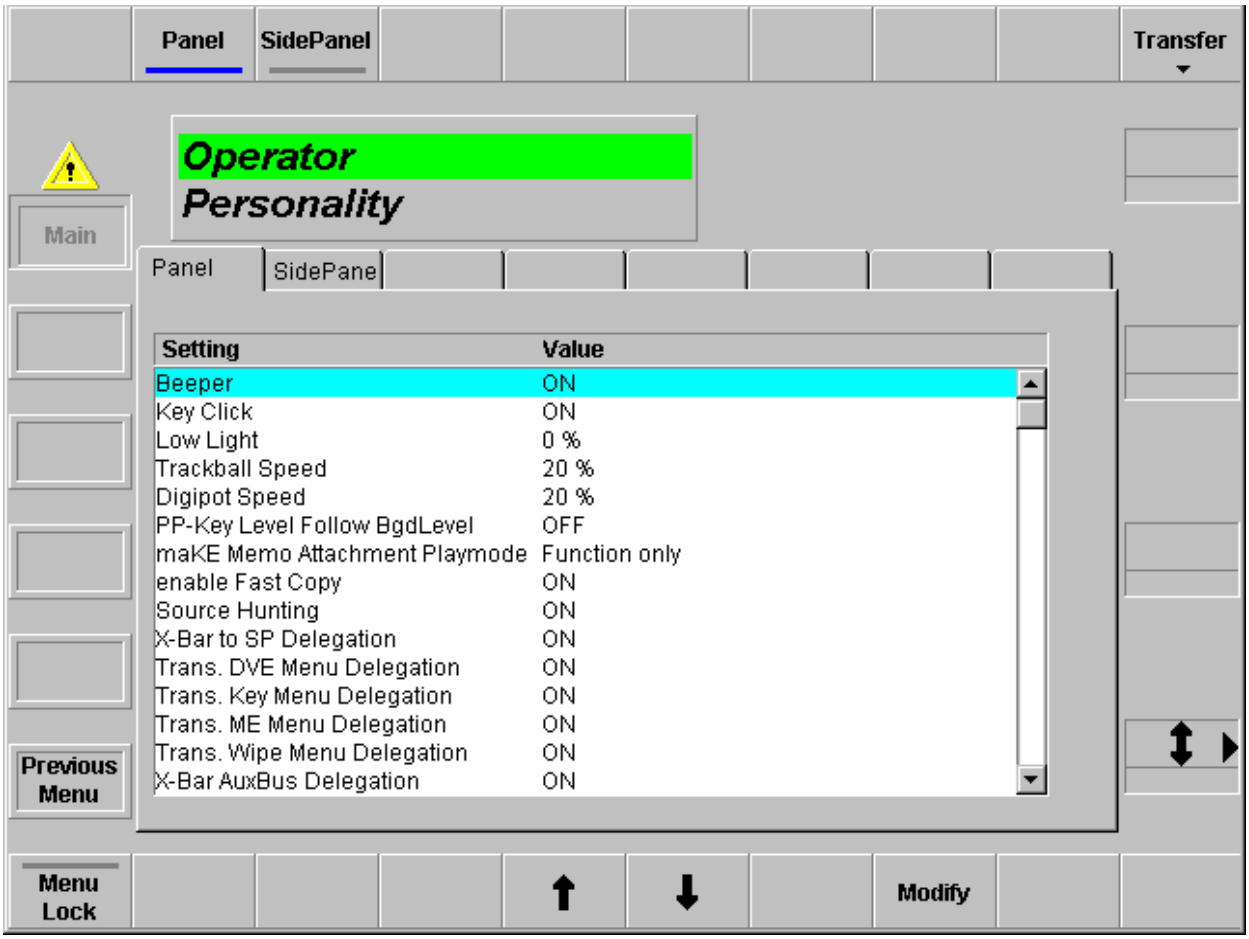
Allocate Resources Selecting **Allocate Resources** menu.

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.17.5.2 Function Buttons

Save	Starts saving an application on the local harddisk.
Menu Lock	For details refer to section ***Introduction.***
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.
Take	The function is used to join a control panel, sidepanel or control unit to a running application. In case of a control unit, the command below is sent for the related control panel only. This button is relevant if the cursor is located on any panel.
Release	This function is used to leave the application the selected panel is joined to. This button is only relevant if the cursor points to an allocated panel.

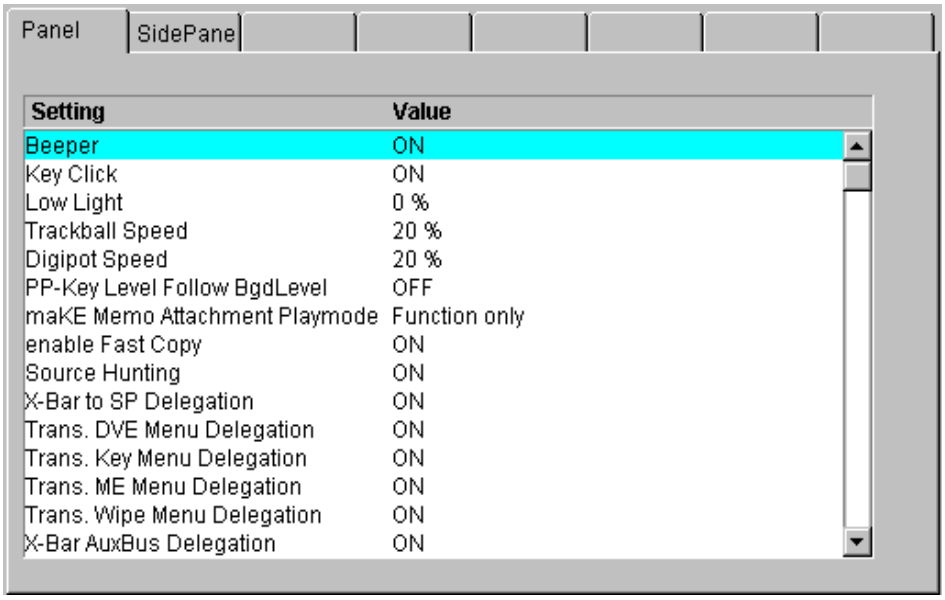
3.18 PERSONALITY MENU



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.

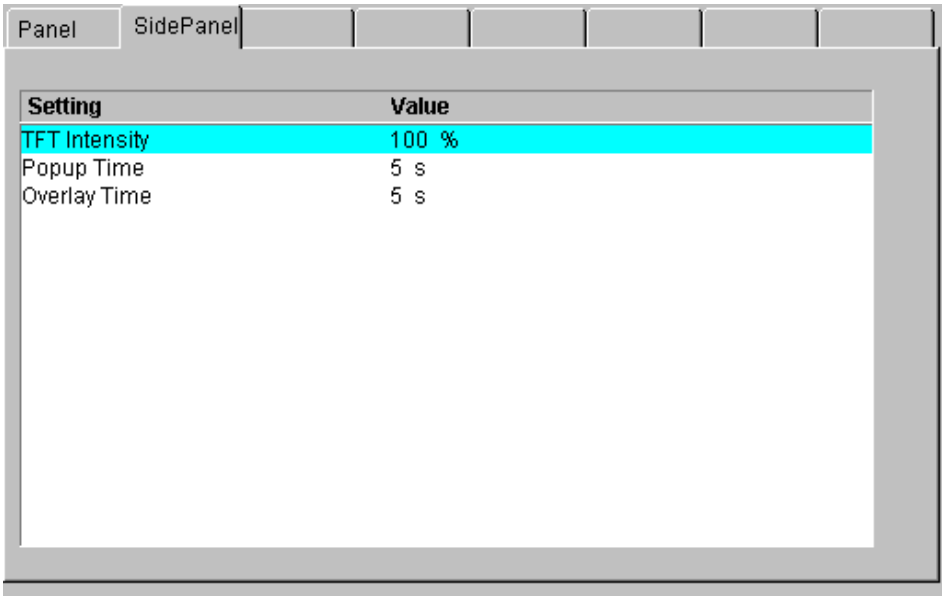
Panel Index card for panel settings.



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**
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.

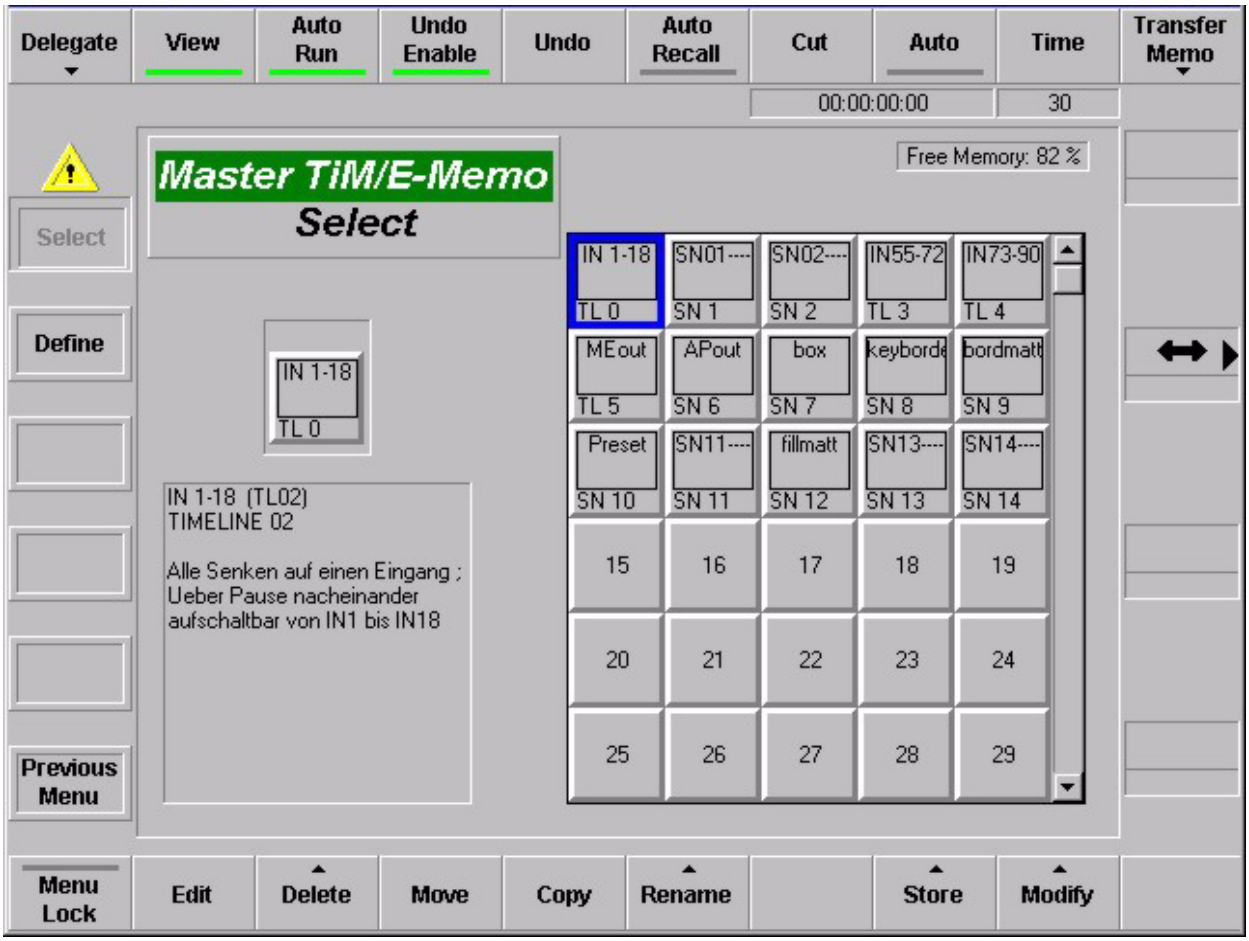


With button **Modify** the following settings are selectable:

TFT Itensity	**100%**
Popup Time	**5 s**
Overlay Time	**5 s**

3.19 TiM/E MEMO MENU

3.19.1 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.

3.19.1.1 Dialog Buttons

Define Selecting the **Define** menu.

Previous Menu Return to the previous menu. For details refer to section ***Introduction.***

3.19.1.2 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

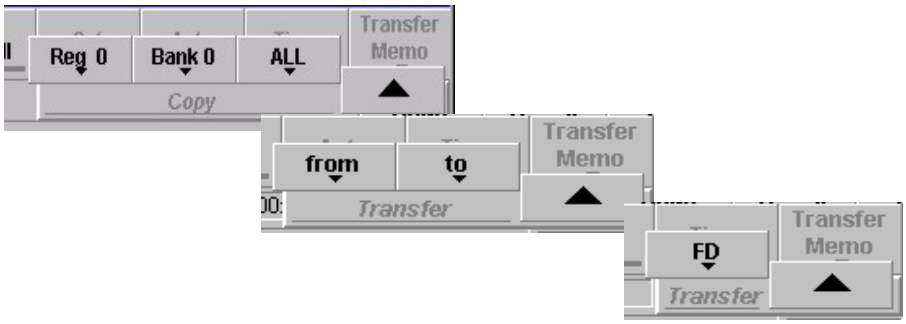
If this button is pressed and a snapshot is selected, a dissolve operation with the Auto transition time for this snapshot will be done. If a timeline is selected and then the Auto button is pressed, the selected timeline will be played in the given Auto Time. While the dissolve or auto play operation 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

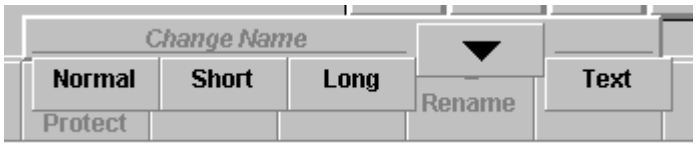
Deletes the register selected with the blue cursor framer.

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.



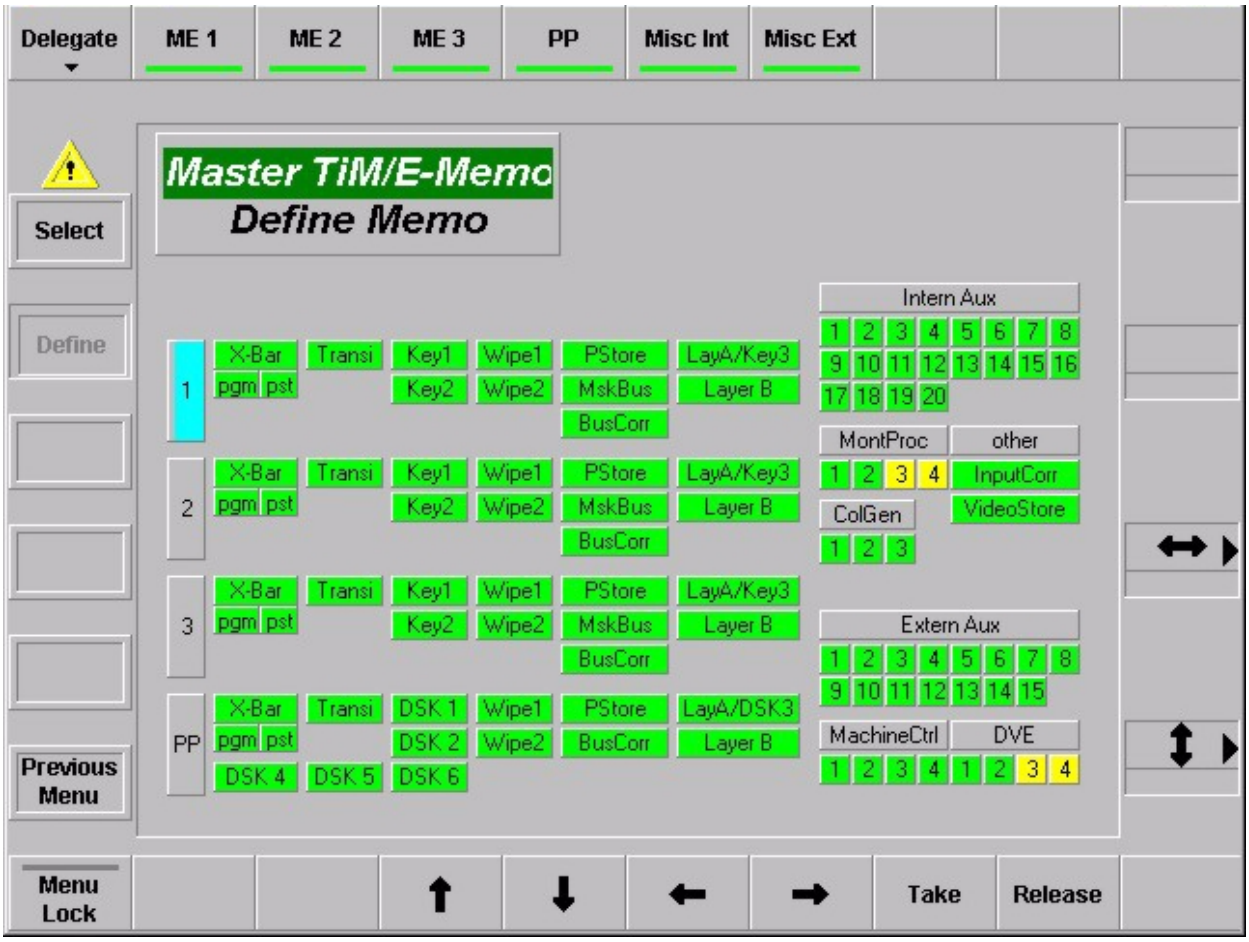
Store

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.

3.19.2 DEFINE MEMO MENU

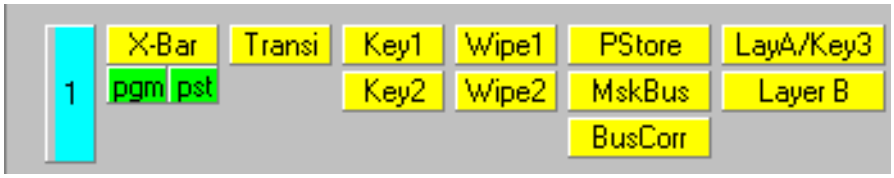


The menu indicates which switcher ressources are stored in snapshots and timelines. For this purpose, a symbolic representation of the switcher appears in the menu.

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:

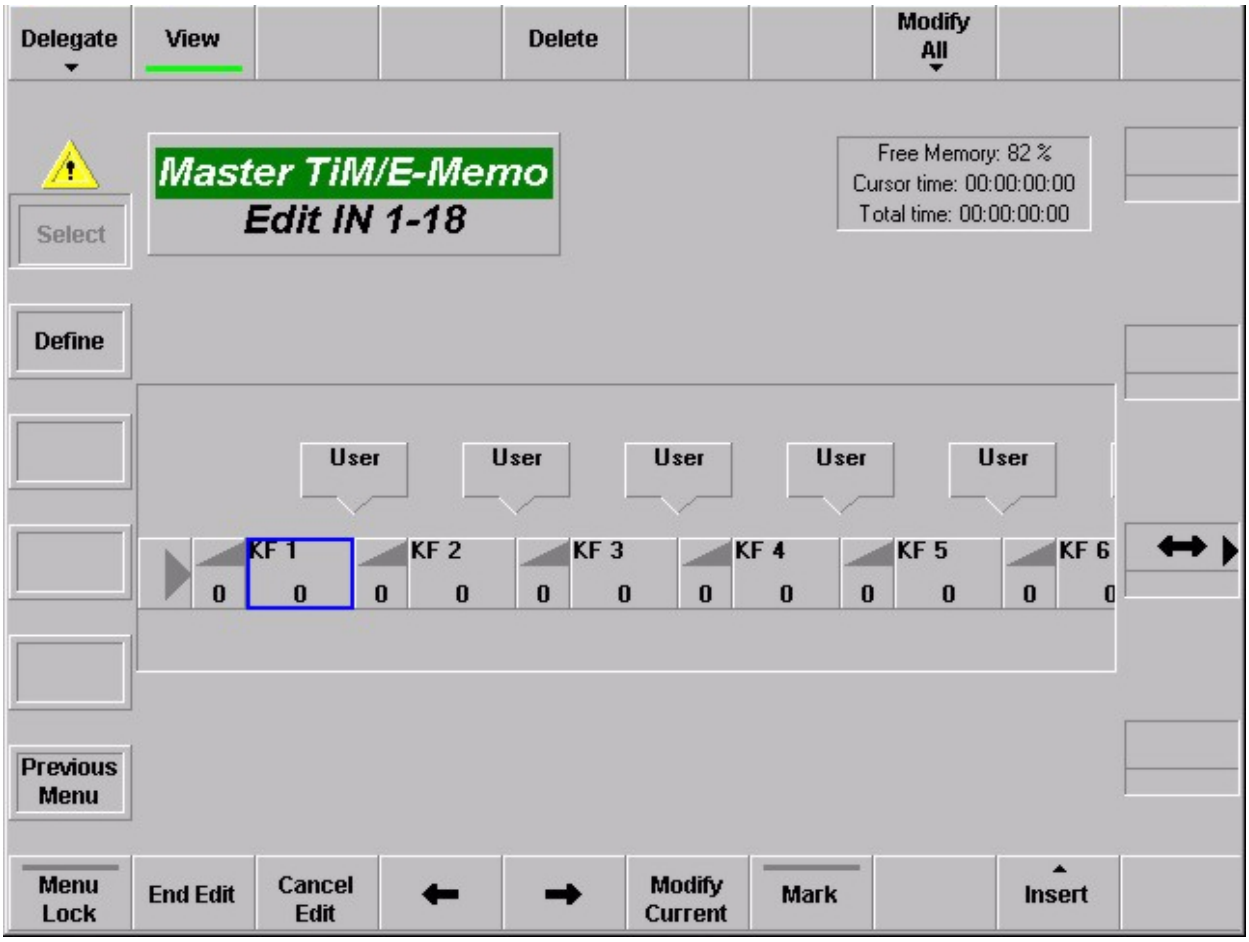
If PGM is disabled during **Recall**, the PGM row of the selected M/E is not affected by the snapshot recall (or timeline).

It is not recommended, to disable only one bus (PGM or PST) during **Recall**, in case of timelines that are including background transitions.

3.19.2.1 Dialog Buttons

Select Menu	Selecting the **TiM/E Memo Select** menu.
Previous Menu	Return to the previous menu. For details refer to section ***Introduction.***

3.19.3 EDIT MENU



3.19.3.1 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.*

3.19.3.2 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.

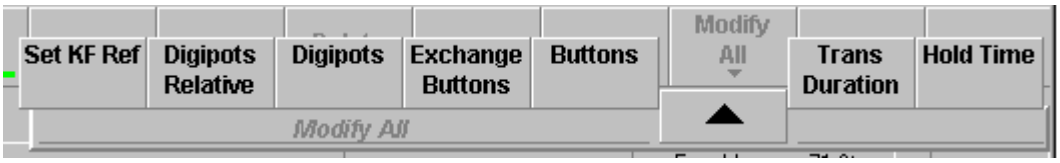
Modify All

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:

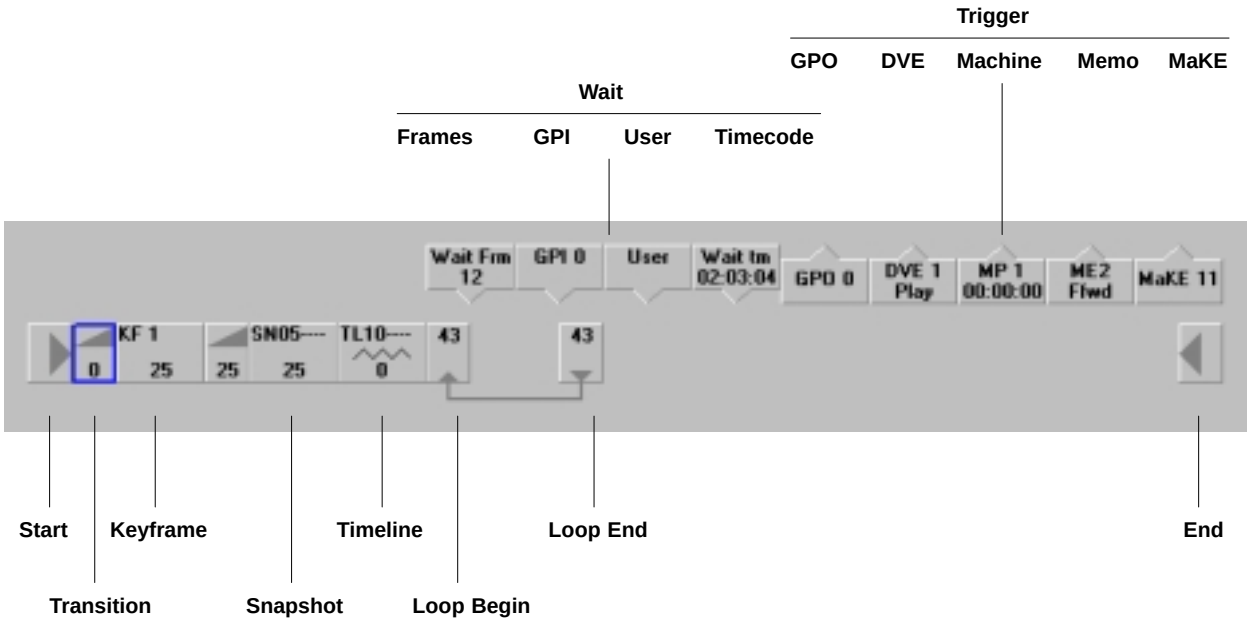
Under Insert > Trigger > PBus, a Trigger PBus command or a PBus Register command can be inserted into the timeline.

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.

3.19.3.3 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]

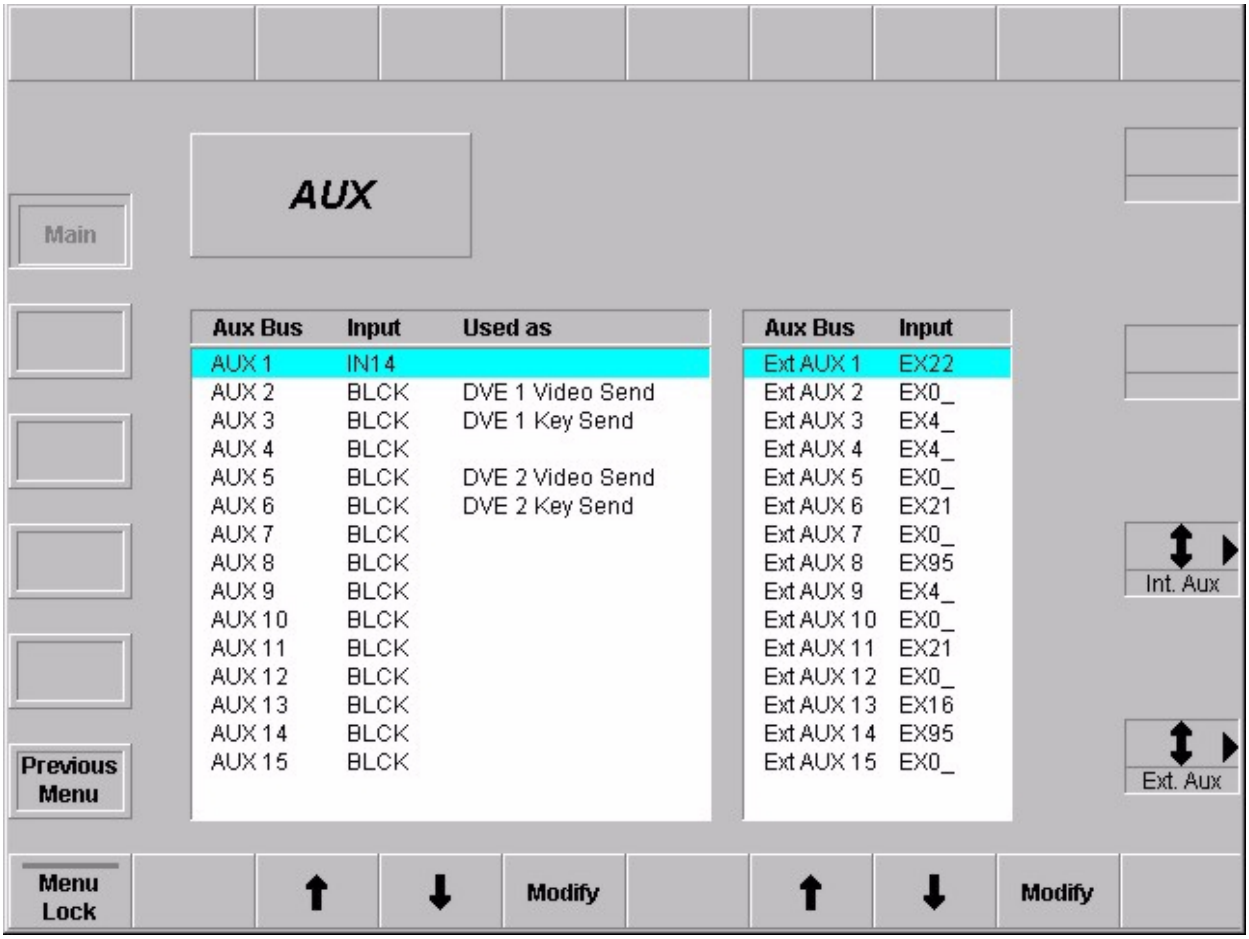
Trigger Machine MP Parameters: **Machine [1]**
Commands: Play, Stop, FFWD, FREW, Cue In, Cue Out, Goto, Variable [1]
Speed: only with command “Variable” [2]
Timecode: only with command “Goto” [2]

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

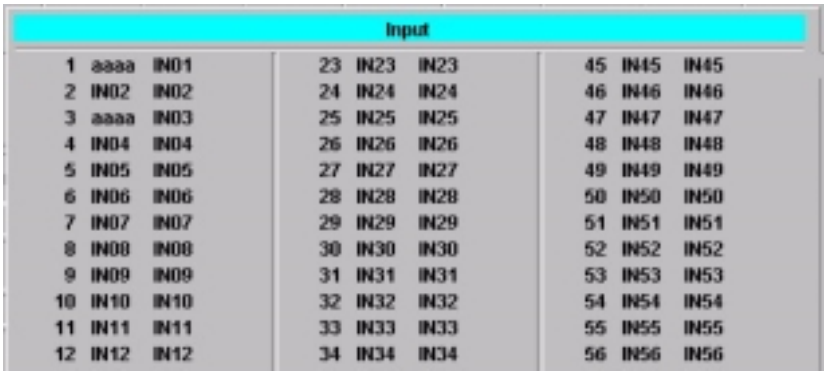
Trigger P-Bus Trigger	Parameters:	**Trigger No** **Machine 1: recall, no recall** **:** **Machine 24: recall, no recall**
Trigger P-Bus Register	Parameters:	**Register No** **Machine 1: recall, no recall** **:** **Machine 24: recall, no recall**
Trigger MaKE Memo	Parameters:	**Memo No.**
End	Object is always available. Cannot be erased or inserted.	

3.20 AUX MENU



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.



3.21 INTERNAL DVx PROCESSOR !PRELIMINARY DESCRIPTION!

3.21.1 DVX GENERAL

The FX Processor is a powerful option for the DD35 switcher mainframe. It improves the feature set and the value of DD35 significantly for all production purposes. It supports the user of DD35 to increase the efficiency of productions and investments.

The FX Processor provides internal DVx (DVE) and huge video storage capabilities to the DD35 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 DD35 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 RAM Recorder can be used as large still store, for trailers and intros, animated logos, and more.

- **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.

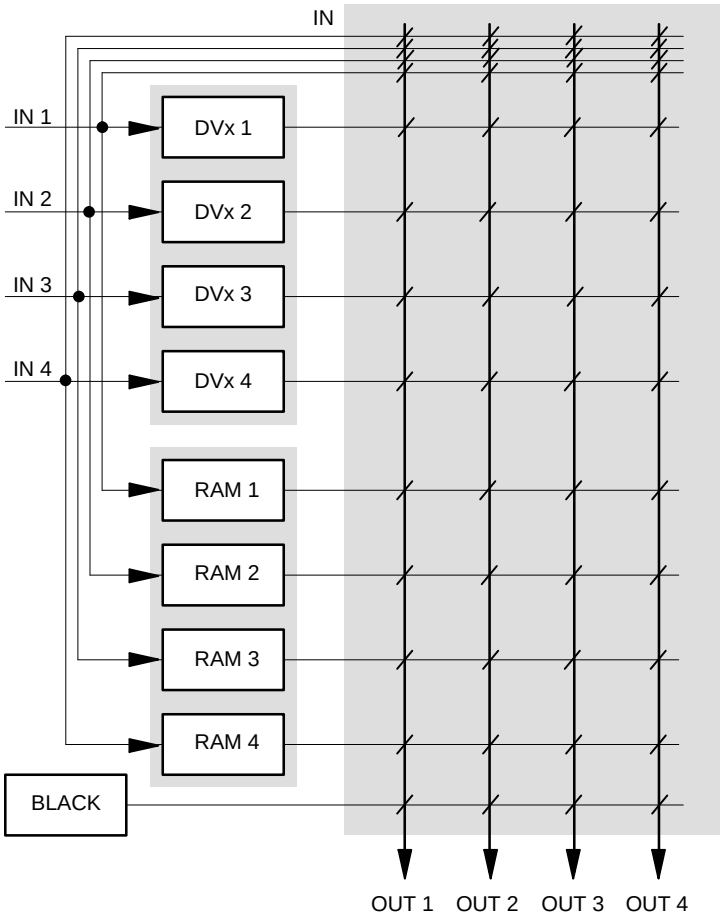
3.21.2 VIDEO ARCHITECTURE

The DD35 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.

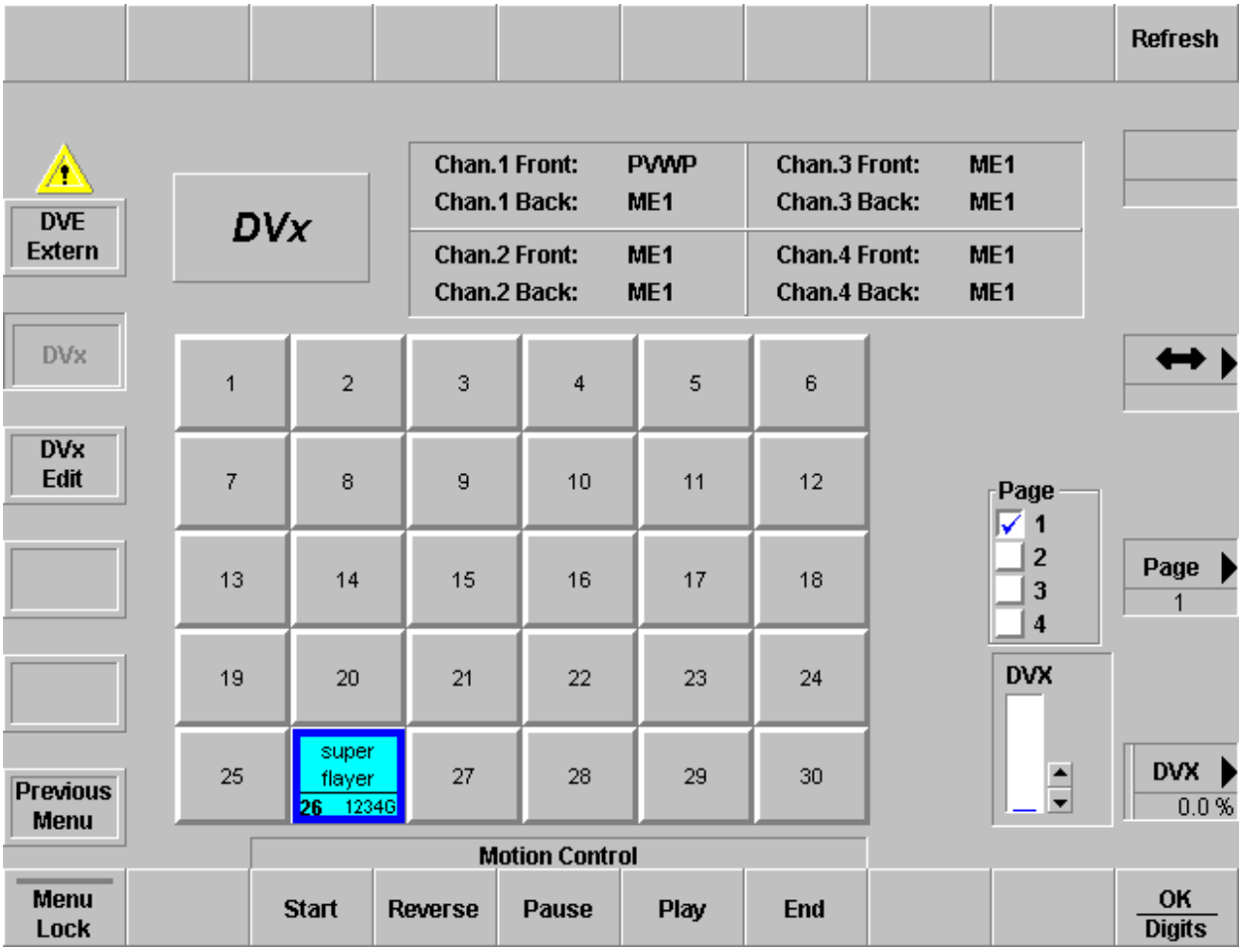
It is also possible to break down the architecture into two 2–channel DVxs each with a video and key signal. Both DVxs can be controlled independently.

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.



3.21.3 DVx MAIN MENU



3.21.3.1 Dialog Buttons

DVE Extern	Switch to control page for extern DVE 1 + 2.
DVx	Current page.
DVx Edit	Switch to edit page for intern DVx.
Previous Menu	Return to the previous menu. For details refer to section ***Introduction.***

3.21.3.2 Function Buttons

Motion Controls: ***– Start*** ***– Reverse*** ***– Pause***	Motion control buttons for selected effect, see below Inner Window, middle part

3.21.3.3 Inner Window

Input selection for the 4 FX processor channels, click on the according fields for source selection:

Chan.1 Front:	COL1	Chan.3 Front:	BLCK
Chan.1 Back:	COL1	Chan.3 Back:	BLCK
Chan.2 Front:	BLCK	Chan.4 Front:	COL1
Chan.2 Back:	BLCK	Chan.4 Back:	COL1

The ”Front–Inputs” are also used as inputs for the associated channels of the ram–recorder. The ”Back–Inputs” are used for the backside of the DVx channels.

Inner Window, middle part:

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.

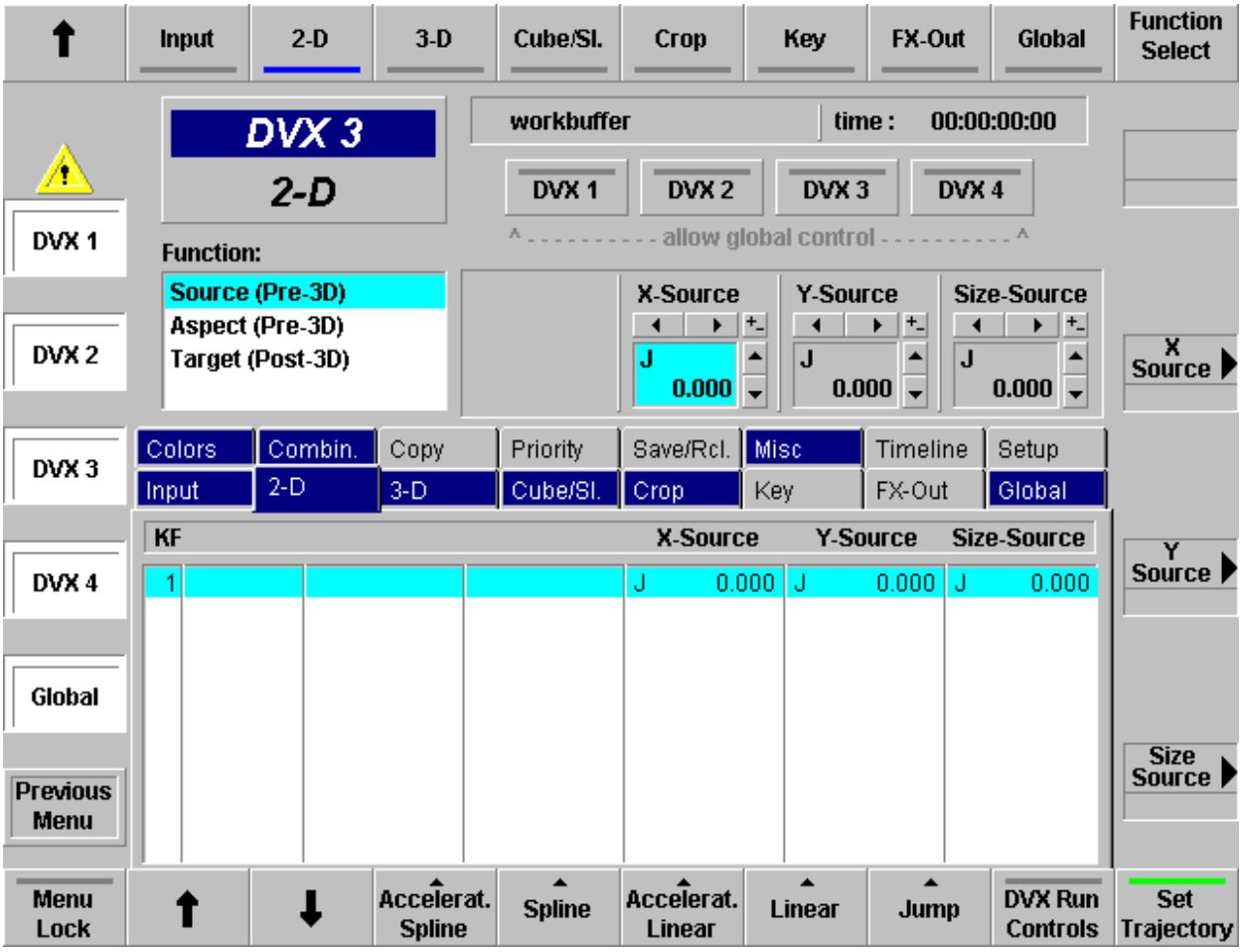
Tip

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.

3.21.4 DVX EDIT MENU



3.21.4.1 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 rigtht 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:

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.

3.21.4.2 Dialog Buttons

DVx 1
DVx 2
DVx 3
DVx 4

When selected, the associated channel is preset for function controls.
Since only the values of one channel can be displayed at a time (the colored name in the inner window),
You may not see a change in values, because e.g. the display is set for the values 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
- FX–OUT
- 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.***

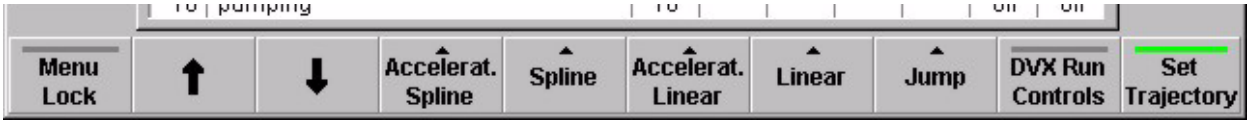
3.21.4.3 Function Buttons

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***

3.21.4.4 Standard edit controls

In general the commands below are executed for the selected channels (with Dialog buttons) only.

Default

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.

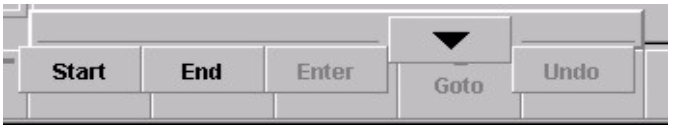
Selected Set the selected (light blue) control to user default.

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

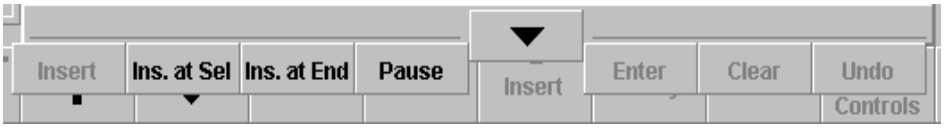


Start Go to start of timeline (first keyframe).

End Go to end of timeline (last keyframe).

Other commands not yet supported.

Insert



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

Sel. KF Modify the selected keyframe

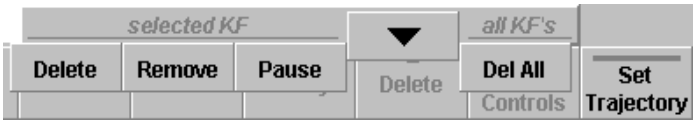
Selected Allows numeric input for geometric parameters.
If you use the keypad in the Master–Ti/ME–Memo section of the main control panel:

Toggle **+/–** is the relocate button.

Decimal point is achieved by pressing the digit "**8**" twice.

Other commands not yet supported

Delete



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.

3.21.4.5 Motion Controls

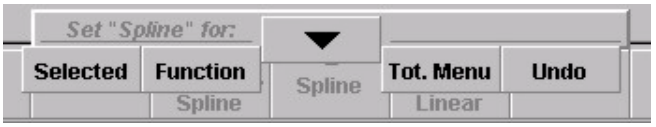
Start:	Set effect to begin (first keyframe)
Reverse:	Play effect in reverse direction
Pause:	Pause effect
Play:	Play effect in normal direction
End:	Set effect to end (last keyframe)

3.21.4.6 Trajectory Controls

There are 5 types of trajectory for transitions between keyframes:

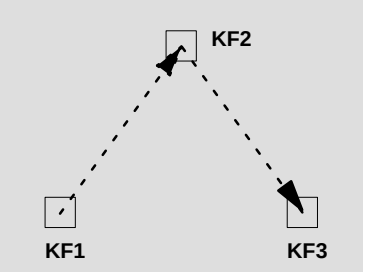
Accelerated Spline	Spline curve with variable speed (slow start and end).
Spline	Spline curve with constant speed.
Accelerated Linear	Linear interpolation with variable speed.
Linear	Linear interpolation with constant speed.
Jump:	No interpolation at all, just switch to the values of the next keyframe.

These 5 types can be set selectively:

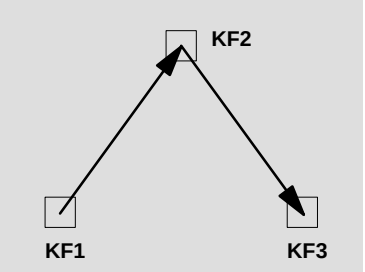


Selected	Set the selected.
Function	Set all controls of a page.
Menu	Set all controls of all pages of an index cards.

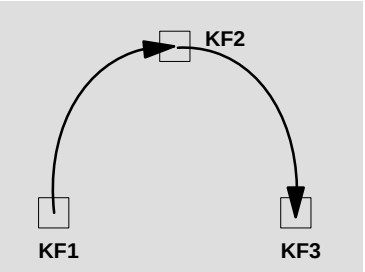
- **Jump**



- **Linear**
  (with constant speed)
- **Accelerated Linear**
  (with variable speed,
  slow start, slow end)



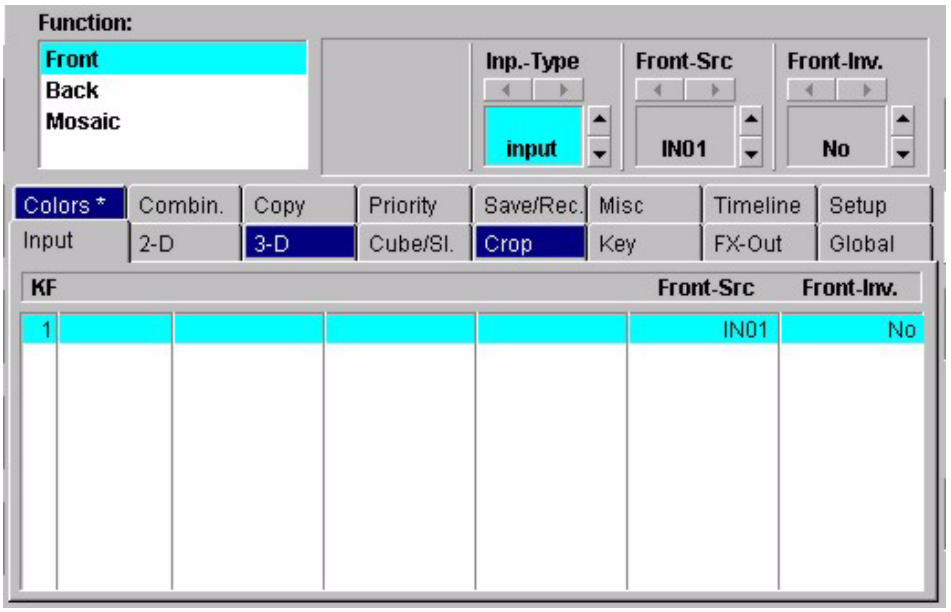
- **Spline**
  (with constant speed)
- **Accelerated Spline**
  (with variable speed,
  slow start, slow end)



3.21.5 INDEX CARDS

3.21.5.1 Input Index Card

Index card with 3 pages: **Front**, **Back**, **Mosaic**



Page "Front"

Inp.–Type	**"no x–pts"**	The input sources set in "Front–Src" and "Back–Src" are ignored
	"input"	The input sources set in "Front–Src" and "Back–Src" are set per keyframe

This control is an overall control, independent from the recalled effect.

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"

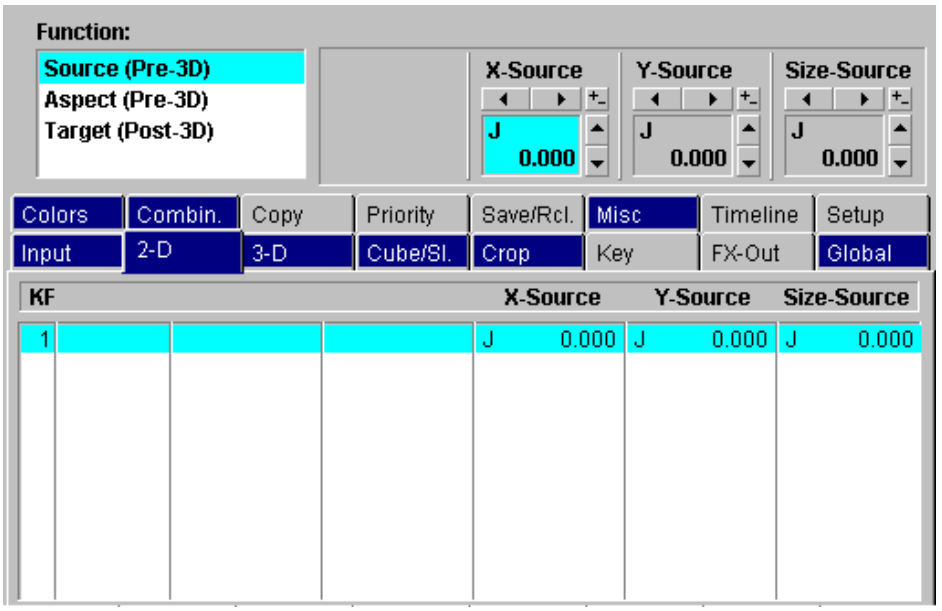
Inp.–Type		Same control as on page Input
Back–Src		The selected input is set for this keyframe when the back side of the DVx is visible
Back–Inv	**"No"**	The back source is shown directly
	"Horiz."	The back source is horizontally mirrored
	"Vert."	The back source is vertically mirrored
	"H & V"	The back source is horizontally and vertically *mirrored.*

Page “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

3.21.5.2 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

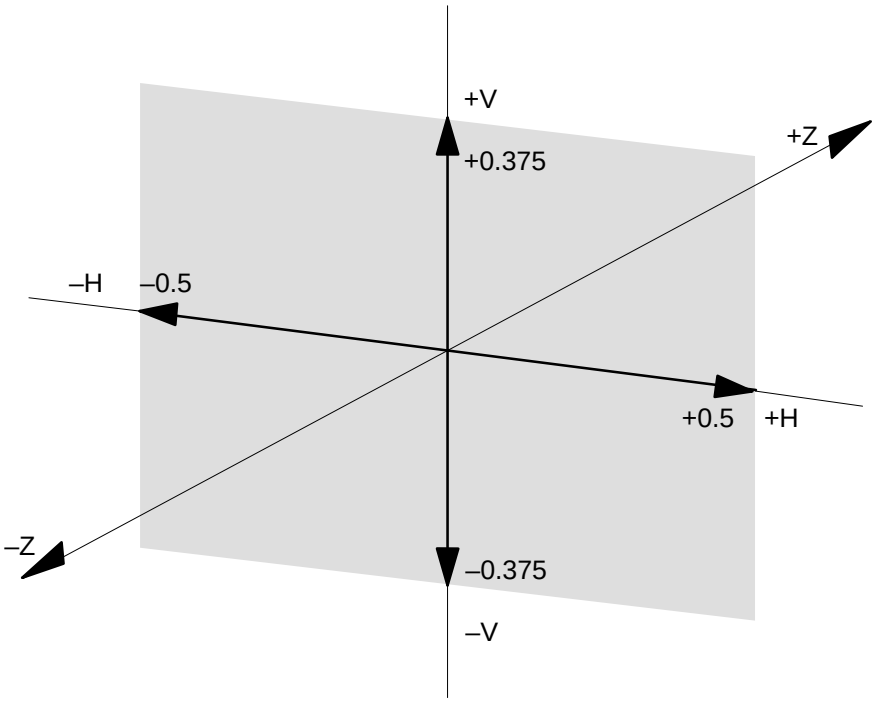
Y–Target y–position in 2–dimensional space after 3–D manipulation for local channel

Z–Target Size in 2–dimensional space after 3–D manipulation for local channel

Tip

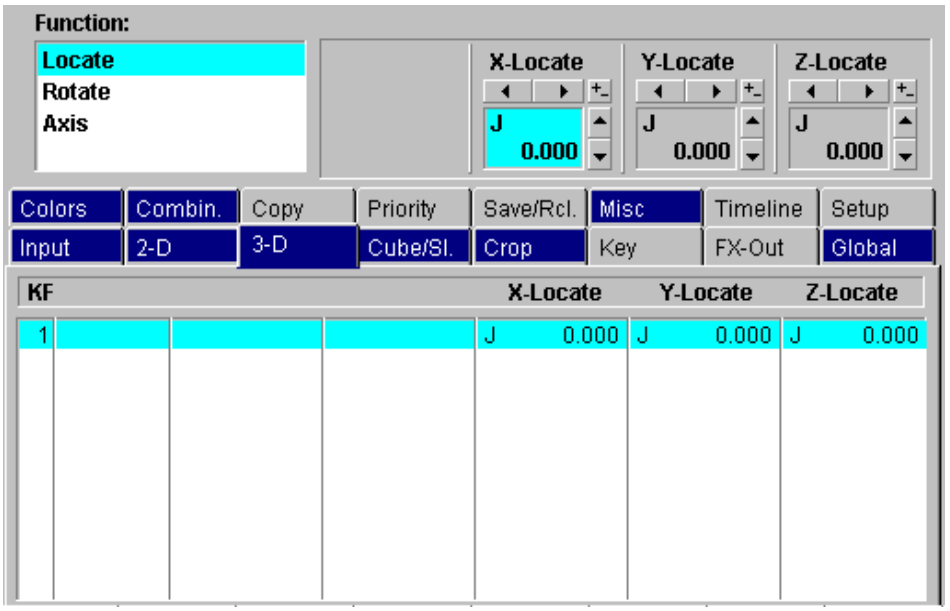
Values of X, Y, and Z Parameters in the 2D Space:

X = Horizontal Axis
Y = Vertical Axis
Z = Rotation Axis



3.21.5.3 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

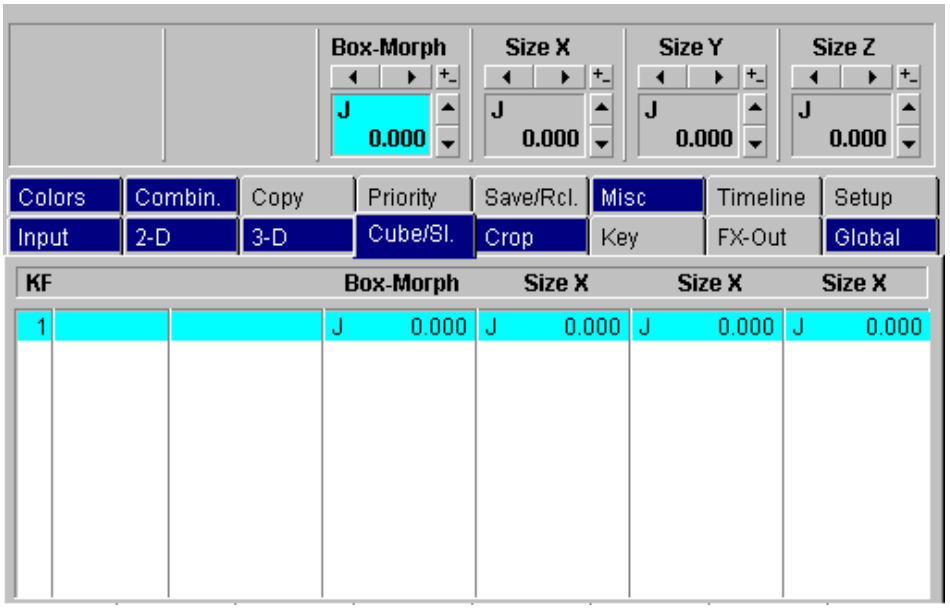
X–Axis position of x–axis for rotation in 3–dimensional space for local channel

Y–Axis position of y–axis for rotation in 3–dimensional space for local channel

Z–Axis position of z–axis for rotation in 3–dimensional space for local channel

3.21.5.4 Cube / Slab Index Card

Index card with one page:



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 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.

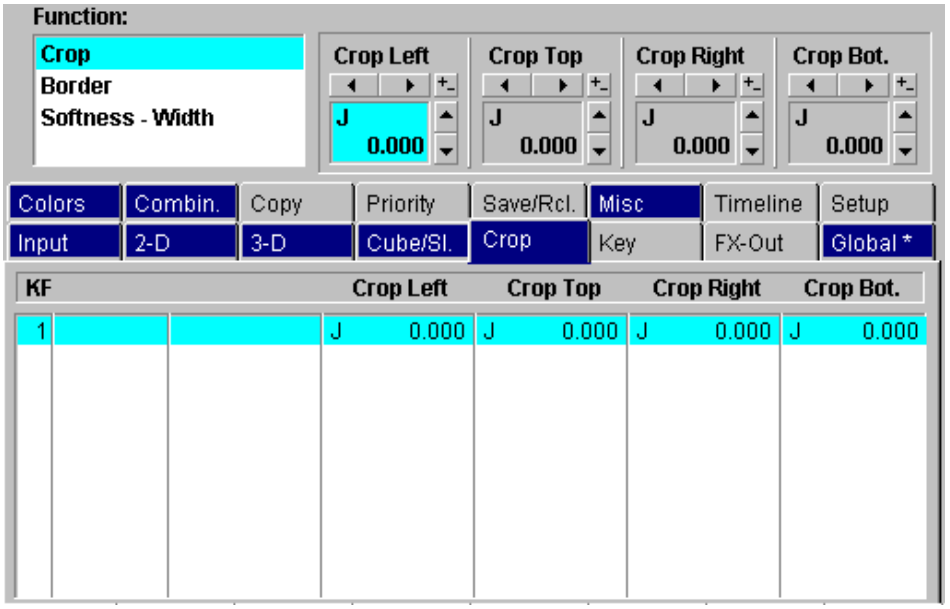
Size–X x–size of the cube

Size–Y y–size of the cube

Size–Z z–size of the cube

3.21.5.5 Crop Index Card

Index card with 3 pages: **Crop**, **Border**, **Softness–Width**



Page Crop

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

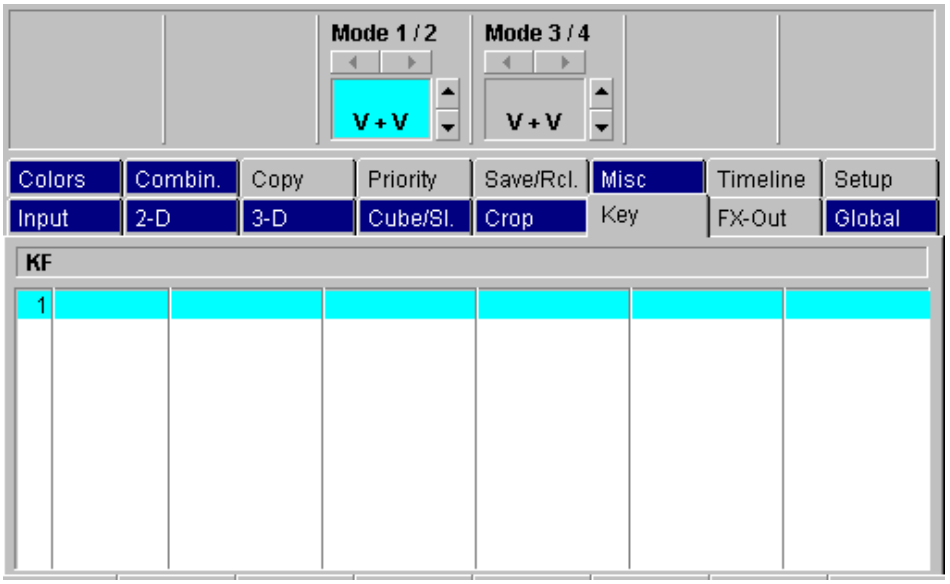
Border Left	Set width for left edge border of the image
Border Top	Set width for top edge border of the image
Border Right	Set width for right edge border of the image
Border Bot	Set width for bottom edge border of the image

Page Softness – Width

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

3.21.5.6 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

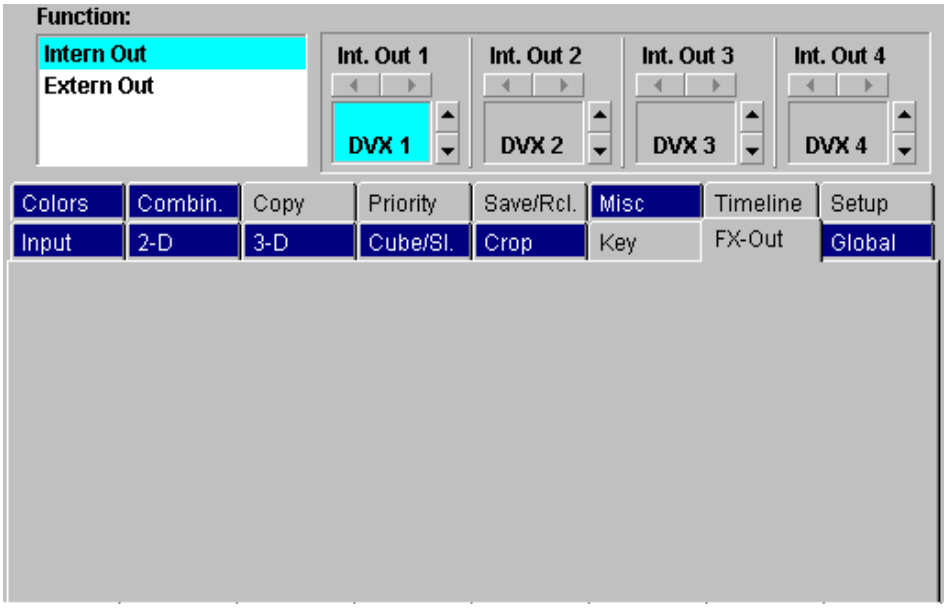
V + V Channel 3 and 4 process both a video signal. The key signals for both channels are generated internally in the DVx. Both channels can be controlled individually.

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".

3.21.5.7 Fx Out Index Card

Index card with 2 pages: **Intern Out**, **Extern Out**



Settings on this index card are general settings and NOT part of an effect!

Intern Out

Int–Out 1 Select the signal from the FX–processor for internal matrix input ”DVX1”.

Int–Out 2 Select the signal from the FX–processor for internal matrix input ”DVX2”.

Int–Out 3 Select the signal from the FX–processor for internal matrix input ”DVX3”.

Int–Out 4 Select the signal from the FX–processor for internal matrix input ”DVX4”.

Extern Out

The 4 external outputs for the FX–processor are an option, only available for the large mainframe

Ext–Out 1 Select the signal from the FX–processor for external FX–Out 1.

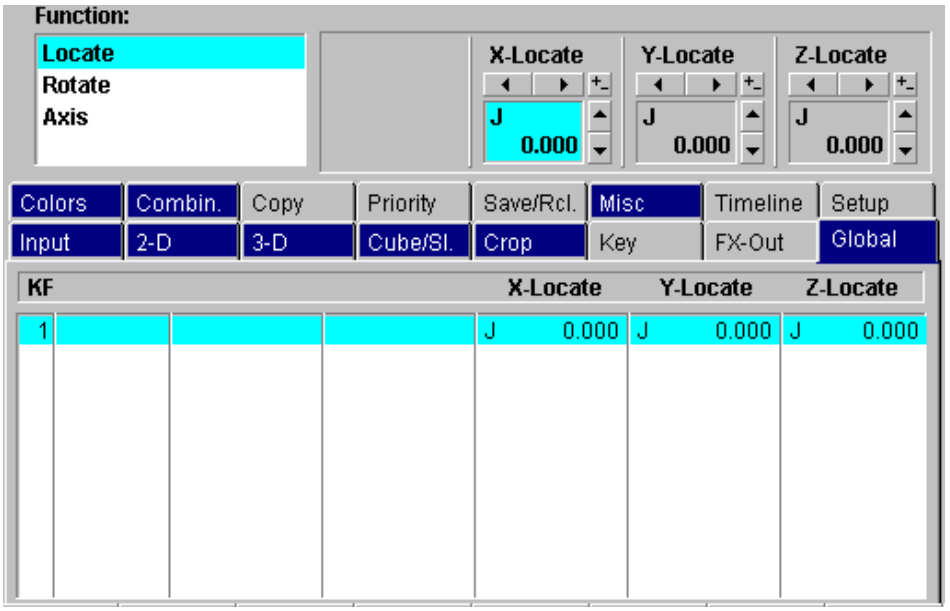
Ext–Out 2 Select the signal from the FX–processor for external FX–Out 2.

Ext–Out 3 Select the signal from the FX–processor for external FX–Out 3.

Ext–Out 4 Select the signal from the FX–processor for external FX–Out 4.

3.21.5.8 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

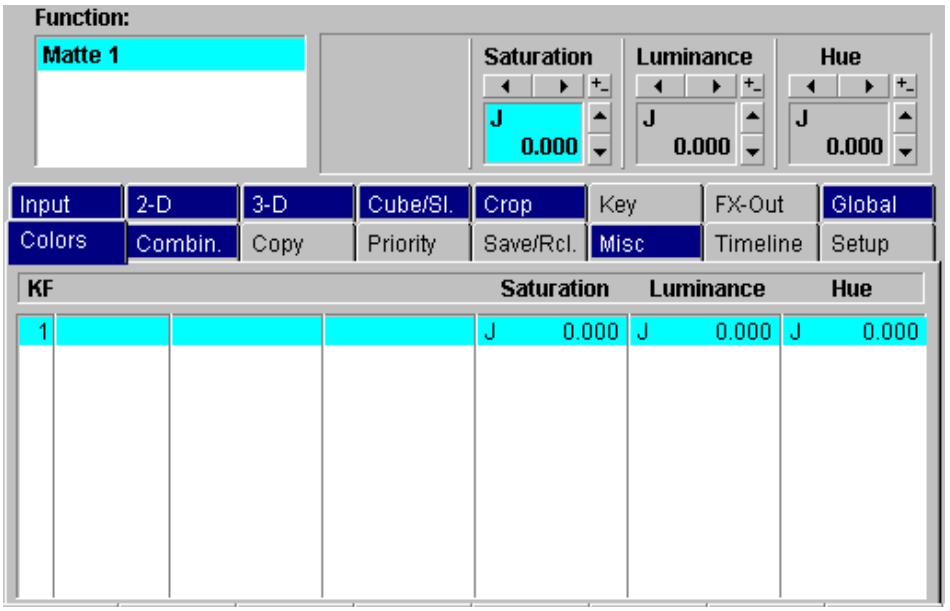
X–Axis Position of x–axis for rotation in 3–dimensional space for global channel.

Y–Axis Position of y–axis for rotation in 3–dimensional space for global channel.

Z–Axis Position of z–axis for rotation in 3–dimensional space for global channel.

3.21.5.9 Colors Index Card

Index card with one page: **Matte 1**



Page Matte 1

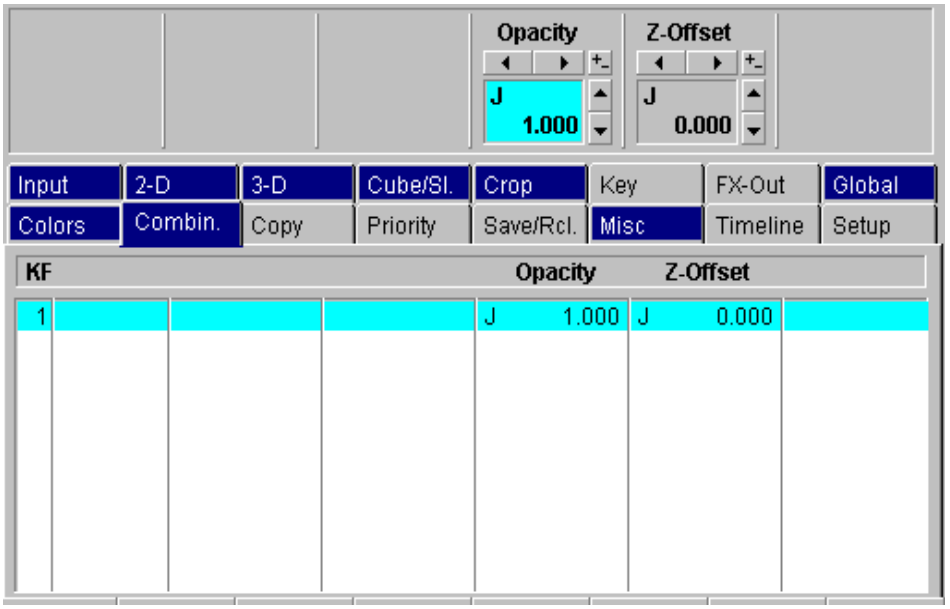
Saturation Range 0.000 through 1.000, saturation of the border color

Luminance Luminance of the border color.
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

3.21.5.10 Combiner Index Card

Index card with one page:



Opacity Opacity for local channel.

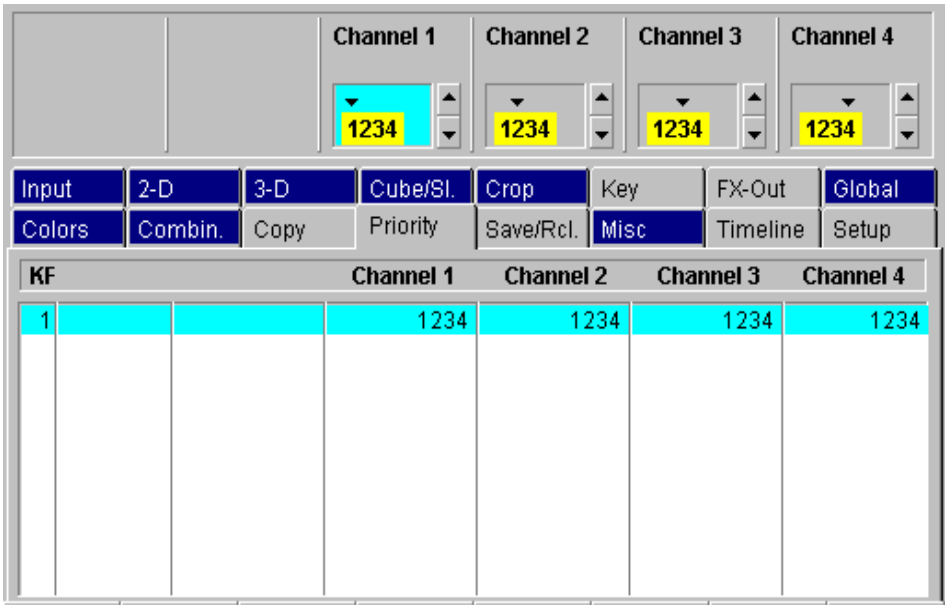
Z–Offset Z–offset for this channel. Only effective if the priority for this channel is set to Z–key in the Priority index card.

3.21.5.11 Copy Index Card

This index card is not yet supported in the actual software version!

3.21.5.12 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.

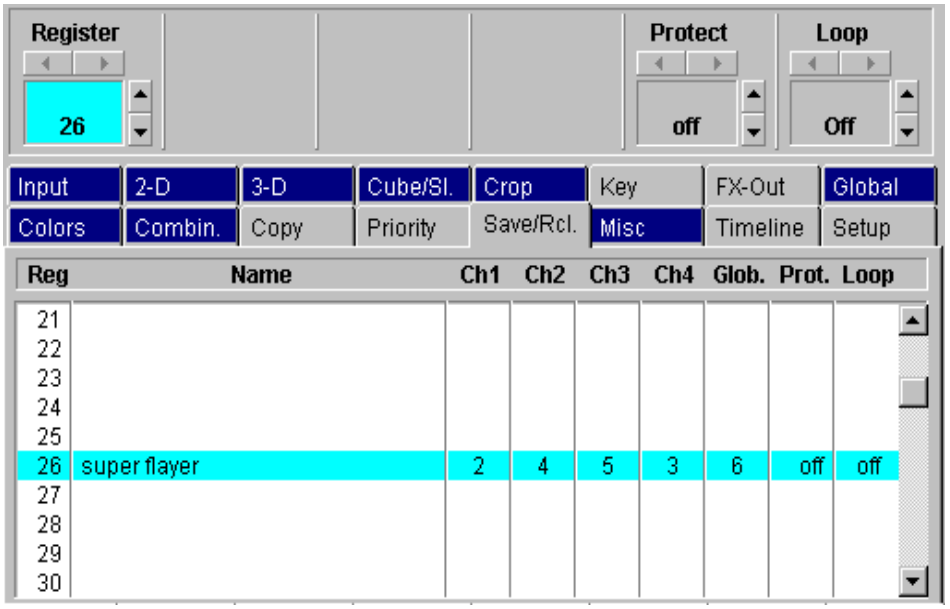
Channel 2 See channel 1

Channel 3 See channel 1

Channel 4 See channel 1

3.21.5.13 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)

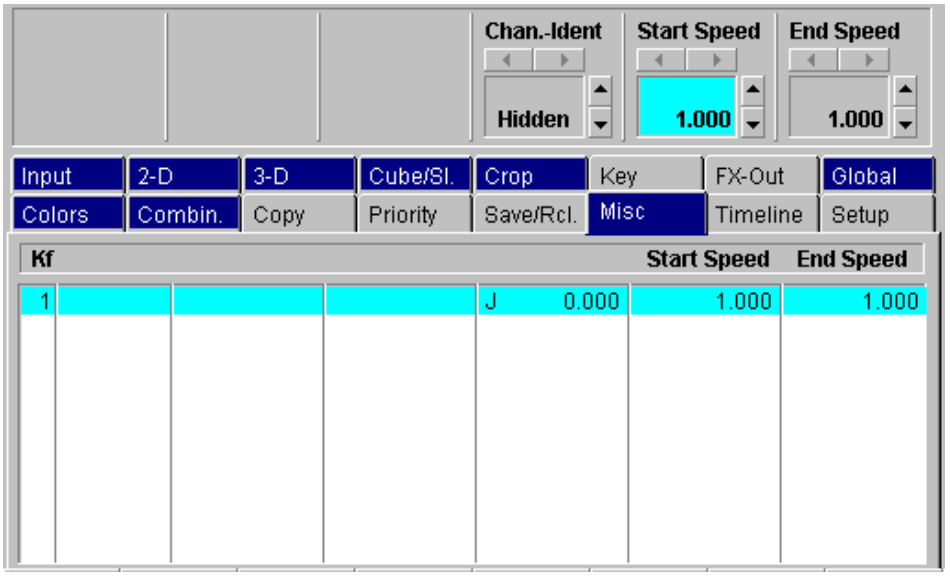
Protect
”on”: register cannot be saved, renamed, or deleted
”off”: all operations are allowed

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.

3.21.5.14 Misc Index Card

Index card with one page:



If you have selected ”accelerated spline” or ”accelerated linear” as trajectory between keyframes, these two parameters define the amount of acceleration.

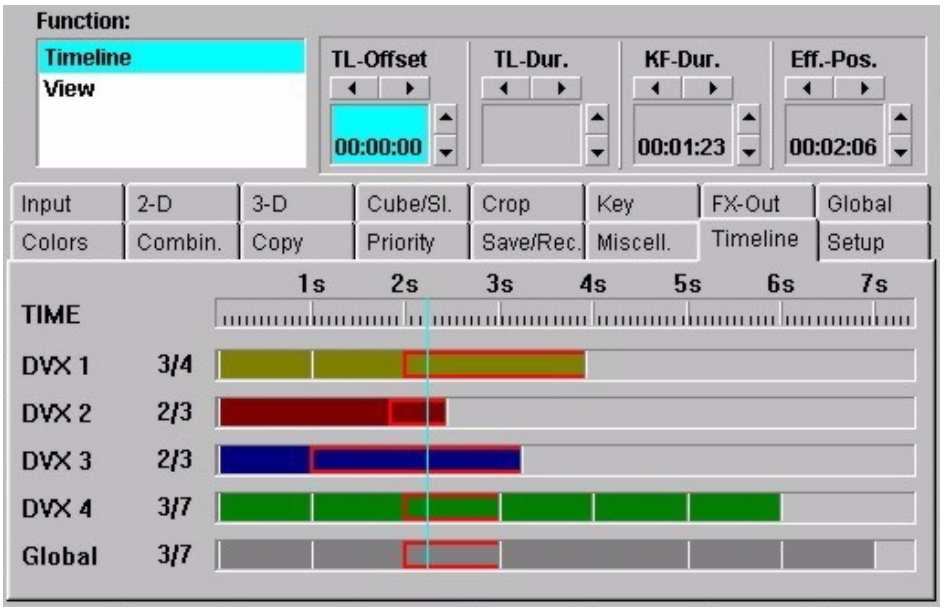
”**0.000**” = strongest acceleration.
”**1.000**” = constant speed.

Start Speed Acceleration at the begin of the movement

End Speed Acceleration at the end of the movement

3.21.5.15 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

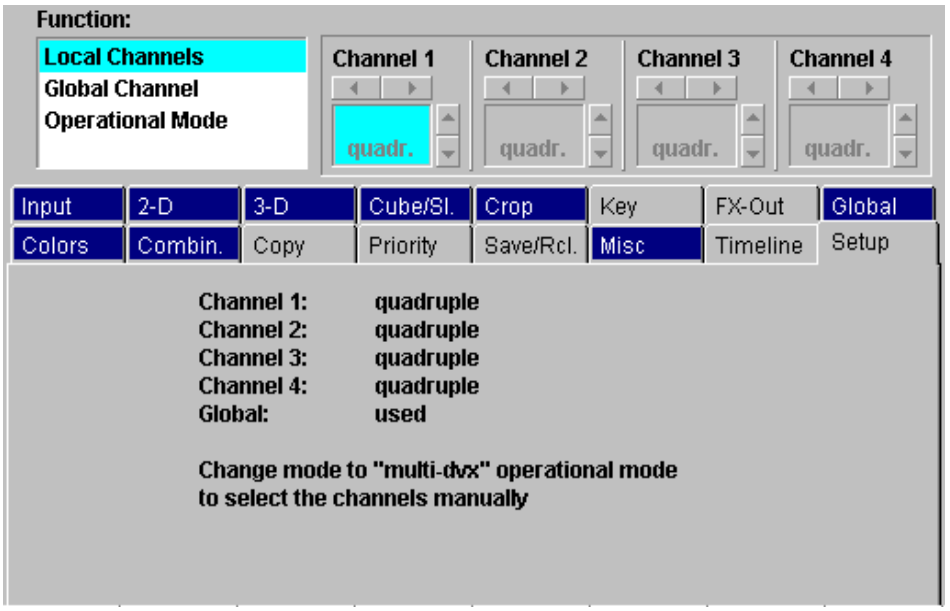
Scroll Set the start timecode for the display.

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.

3.21.5.16 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

The simple way:
If you choose to work with the DVx as one device only (this is the way you work with common DVEs), you choice should be ”quadruple” for all 4 channels and global channel used. If you need less channels for a certain effect, just set the size of the channels not needed to zero. In this case the operation of the DVx is very simple, but you are limited to one DVx–transition at a time.

The powerful way:
If you want to use the DVx in a more powerful way, you should only use the channels you really need.
E.g., if you need a 2–way–box, or you want to fly a title of a character generator (in both cases you only need 2 channels) you should select either ”Pair 1 / 2” for channel 1 + 2, or ”Pair 3 / 4” for channel 3 + 4.
Set the resting channels to unused.

Example:

Channel 1:	Pair 1 / 2
Channel 2:	Pair 1 / 2
Channel 3:	unused
Channel 4:	unused

The combiner output for this setting will only show the combined signal of channel 1 + 2. When you recall this effect, the settings of channel 3 + 4 are untouched and can be used simultaneously in another effect.

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:

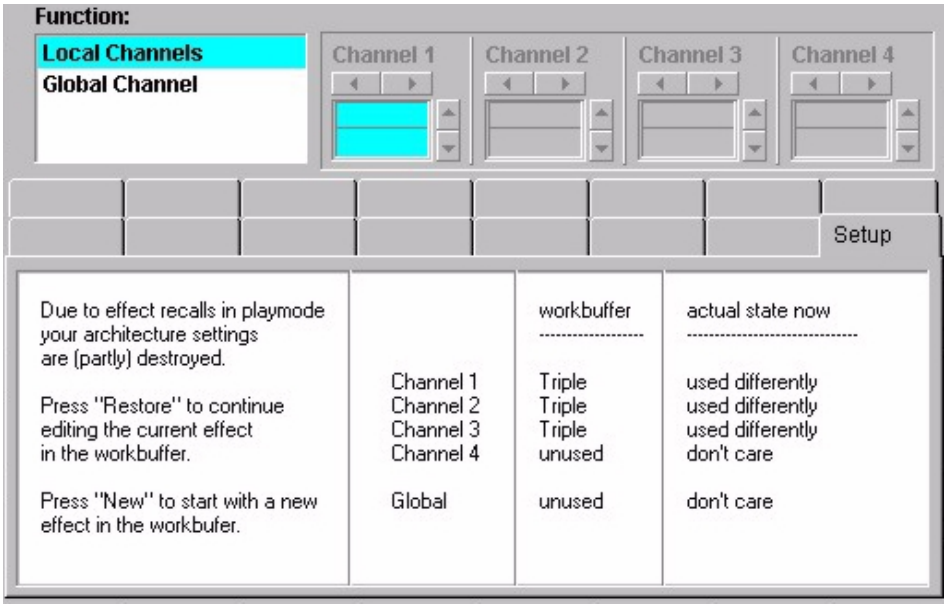
Single:	DVX4 (video on superblack)
Pair 3 / 4:	Combiner output video DVX 3, combiner output key DVX 4
Triple:	not possible on channel 4
Quadruple:	Combiner output video DVX 1, combiner output key DVX 2

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.

Editing of DVx effects is only possible for one at a time.
The contents of the workbuffer is not effected by effect recalls from the main DVx page, but effect recalls from the main DVx page can cause architecture conflicts.



Example:

You are editing with a ”Triple in the workbuffer and in the main DVx page you recall a ”Pair 3 / 4”.
According to the ”last one wins” philosophy the ”Pair 3 / 4” will steel channel 3 from your ”Triple” architecture.
When you now enter the DVx edit dialog, you are forced to the Setup index card which shows a conflict listbox, telling you that your channel 3 is used differently.
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.

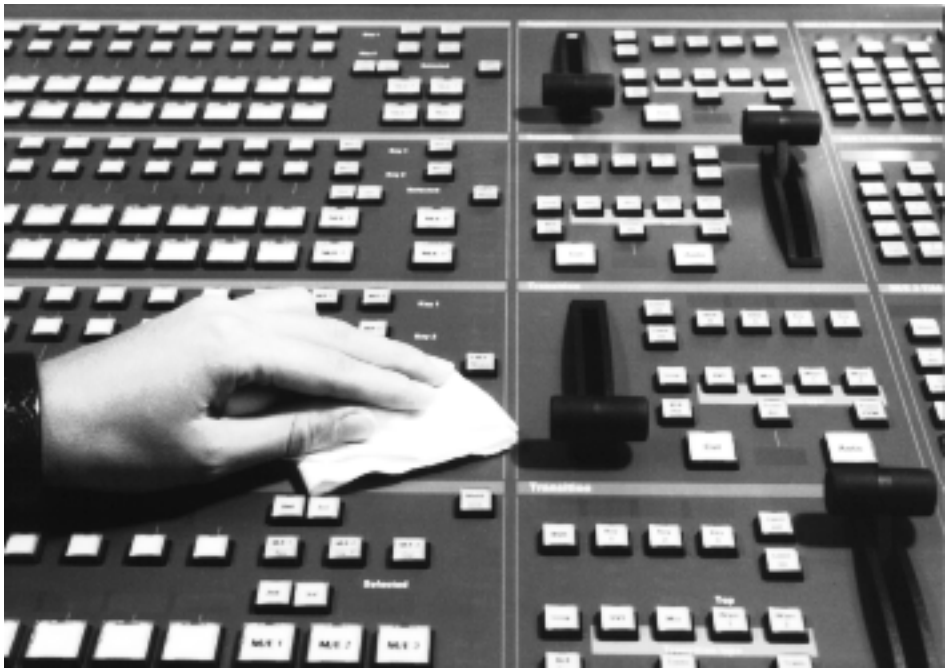
New: The workbuffer architecture is set to ”unused” for all channels (”unused” means the workbuffer does not touch any channel, you will not disturb any recalled effect) and you can set the architecture of your choice.

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”.

4. SETUP AND MAINTENANCE

4.1 CLEANING THE CONTROL PANEL

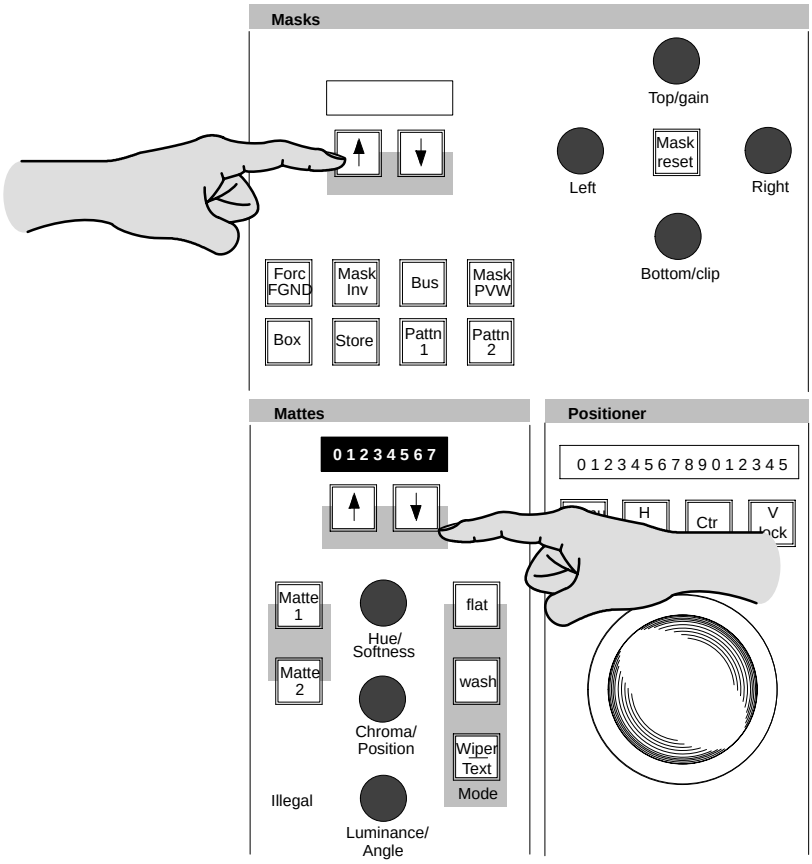
The surface of the control panel is covered with a plastic foil. Should dirt be on surface and keyboard, in form of adhesive remainders, dust, stains or similar, they have to be removed with a clean cloth and some spirit or another mild cleaning agent such as window cleaner.



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 Panel Controller

For resetting the panel controller please press and hold down the up/down buttons and then press the up button in the masks panel section

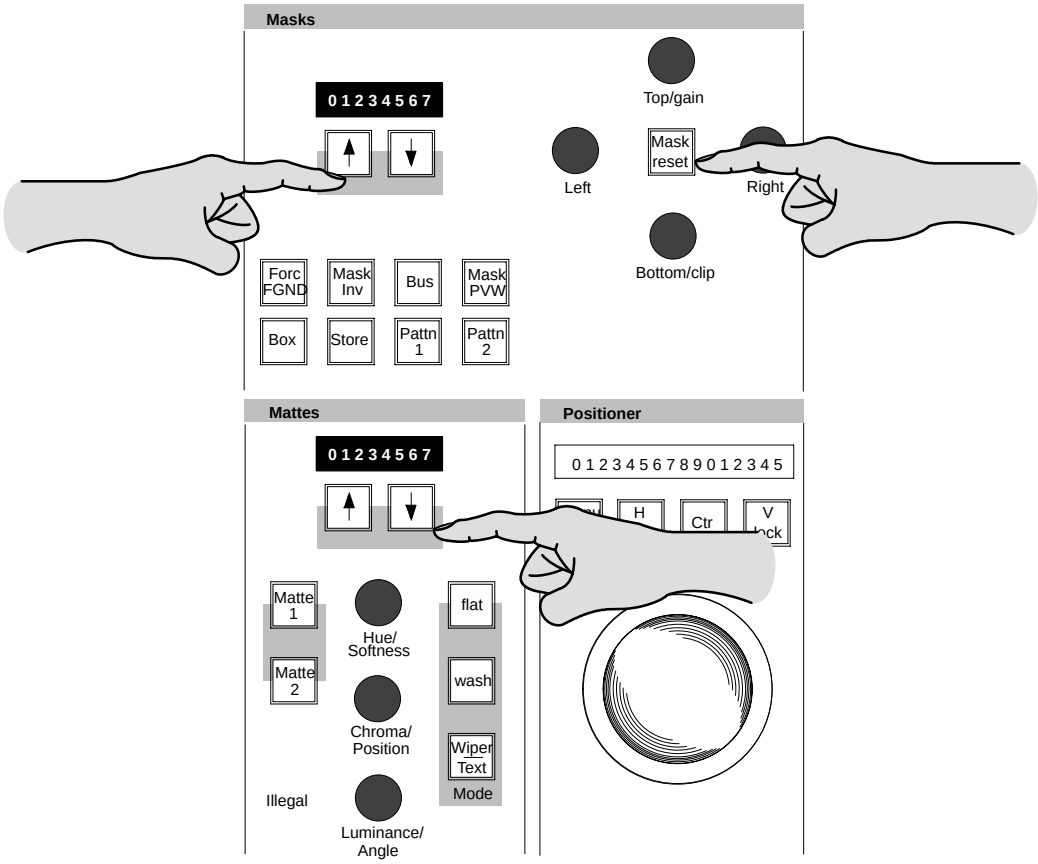
Mattes panel **Masks panel**

Reset Panel PC Board

For resetting (rebooting) the panel PC motherboard please press and hold down the up/down buttons and then press the down button in the masks panel section.

Mattes panel **Masks panel**

4.3 RUNNING PANEL TESTS



4.3.1 LAMP AND DISPLAY TEST

For starting and canceling the panel lamp and display test please press and hold down the up/down buttons and then press the **Mask Reset** button.

Mattes panel

The following test are selectable:

- Test of the underlying display (OnAir, Uncal, ...)
  Press the marked button near the display position to check the respective lamp
- **Special tests** selectable in the P/P Program row:

  Beep: Check the beeper
  RedL: All red displays lights up
  YelL: All yellow displays lights up
  GrnL: All green displays lights up

LowL: Toggle the button low light. The test indicates the low-light level of the button lamps which can be adjusted in 16 steps (0 – 15). This test can also be used to check whether all LEDs in the keys will light.

Disp: Toggle the button to perform a complete test of the four-digit LED displays. The test enables checking the functions of the displays pixel segments. checked.
For this purpose, the following patterns **"####", "HHHH", "TTTT", "****"** are successively written into all LEDs.

4.3.2 INTERACTIVE BUTTON, FADER AND DIGIPOT TEST

For starting and canceling the interaktive panel tests please press simultaneous the buttons

Masks panel

The following test are selectable:

- **Button/Lamp Attachment**
  Pressing a button enables testing of the individual functions with associated lamp indicator.
  If a button is pressed, the built-in LED will light. The four-digit LED display nearby indicates the logic button number as long as it is pressed.
- **Fader Test**
  The four-digit LED display nearby indicates the logic value of the fader position.
- **Trackball Test**
  The four-digit LED display nearby indicates the logic H and V values of the fader position.
- **Digipot Test**
  The four-digit LED display nearby indicates the logic value of the digipot.

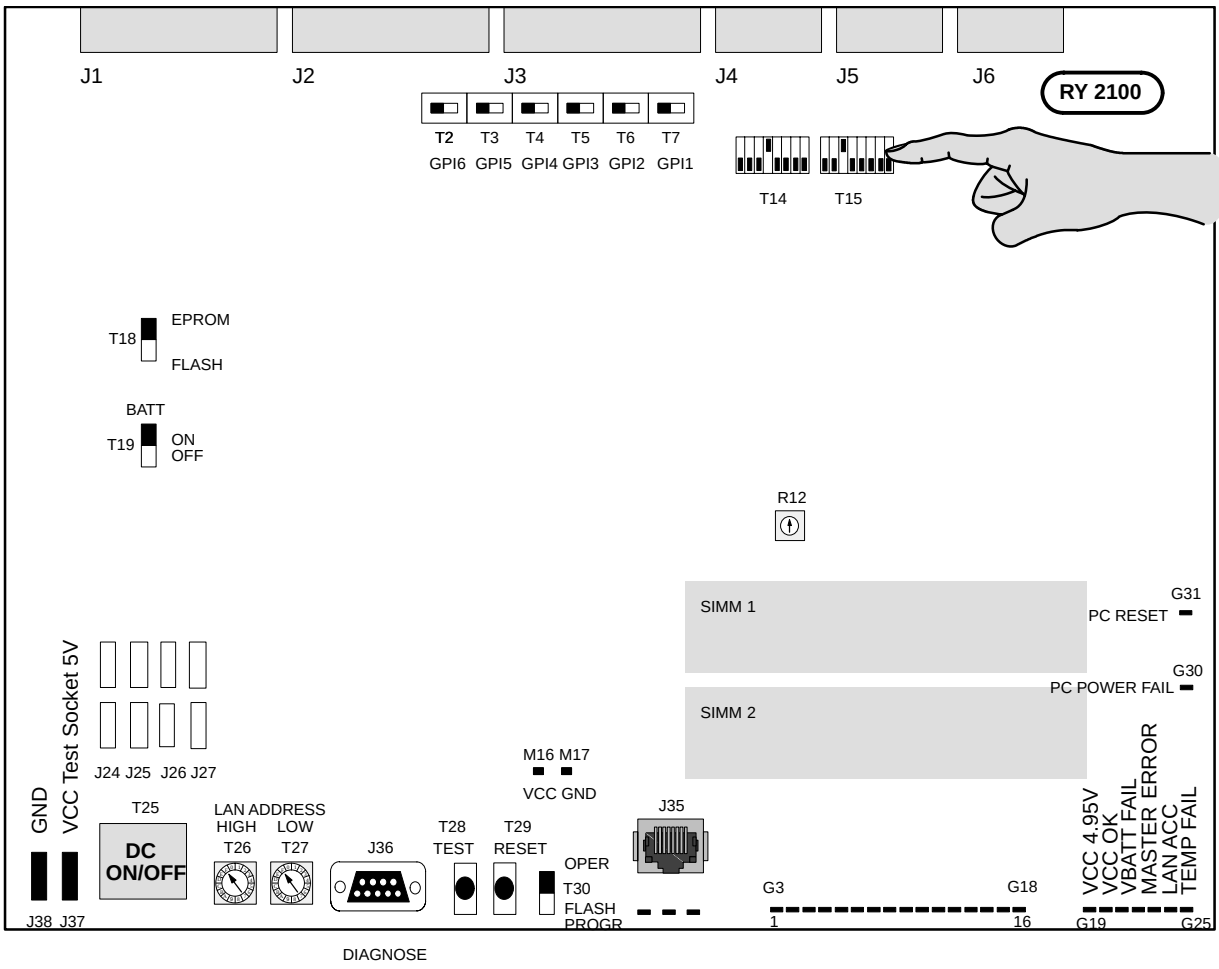
4.4 LOCAL PANEL SETUP

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

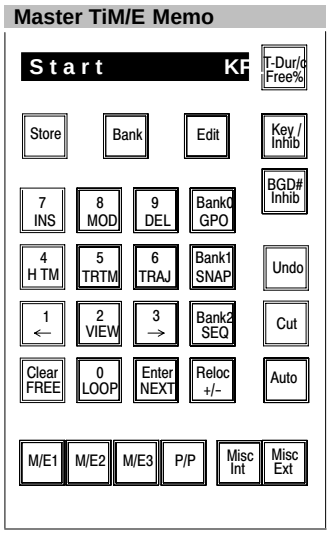
Enable the panel setup mode by setting the DIL switch **T15/3** (RY 2100) or **T28/3** (RY 2370) on the panel controller board to **ON** (upper position) :

Example:



4.4.2 SWITCHING ON THE SETUP MODE

Note: *Enabling the setup refer to section 4.4.1*



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	Quit Setup Mode
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 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**.

4.4.3.1 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**.

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**.

Beeper

Adjust the beep for the digipots.

Options: **on / off**

Key Click

Enable / disable key click

Options: **on / off**

RSatMac

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.

RSatLoadUser

Load user RSAT file no **XXX.**

Confirm item with **Enter**.

RSatSaveUser

Save user RSAT file no **XXX.**

Confirm item with **Enter**.

RSatKillUser

Delete user RSAT file no **XXX.**

Confirm item with **Enter**.

RSatClear

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**.

FaderTransPP:

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**

DigipotGain:%

Using the key pad or the buttons **T–Dur**/**Free%** and **Key/Inhib**, adjust the sensitivity of the digipots.

Confirm item with **Enter**.

TBallGain

Using the key pad or the buttons **T–Dur**/**Free%** and **Key/Inhib**, adjust the sensitivity of the trackballs.

Confirm item with **Enter**.

Memo–cp=PP:

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.

FastCopy:

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**

XBarMemo–ME1:

Starting a timeline or snapshot from the **Xbar**. When **on** is selected, the **TiM/E–Memo** button has to be active.

Options: **on / off**

MakeBuAttachClr:

Clears all attached macros.

Confirm item with **Enter**.

MakeBuAttPlay:

Make Memo Attachment Playmode
Attached macro button shows
Options: **F** = Function only
FM = Function and Macros
M = Macros only

Confirm item with **Enter**.

PPKeyFlwBgdLev:

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**

AsyncBlink:

The blinking indication of asynchron signals can be switched off.

Options: **on / off**

ShiftMode:

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 hold down to make any selection.

Confirm item with **Enter**.

4.4.3.2 Configuration Panel Setup Items

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:

The selected input signal can be assigned to any button from the **XBar**.

Confirm item with **Enter**.

Options for Example:
CAM1, Test, DVEV ....

4.4.3.3 Installation Panel Setup Items

P a n e l U P K

Define user programmable keys per M/E or P/P.

Changeable buttons:
LimitSet / **LimitOn** / **DVE** / **MIX** / **WIPE1** / **WIPE2** / **BLK PST** / **RELOC** / **LOOP** / **TransPVW** / **BLK Pst**

Options: **Reloc / UPS / R99 / GP8...1 / DVE / ADD / WP2 / WP1 / LON / LST /*** / DEF / 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
WP2	=	WP2 transition type
WP1	=	WP1 transition type
ADD	=	ADD transition type
DVE	=	DVE transition type
GP1..8	=	trigger GP Out 8..1
R99	=	recall 99
UPS	=	user preset
BLK PST	=	black preset
Reloc	=	relocate
NTBgA	=	Next transition background A
NTBgB	=	Next transition background B
NTKe1	=	Next transition key 1
NTKe2	=	Next transition key 2
NTKe3	=	Next transition key 3
MIX	=	MIX transition type
TrPVW	=	Transition preview
FtbCu	=	Fade to black cut
FtbAu	=	Fade to black auto
AK3..1	=	Auto Key 3..1
VF4..1	=	V-Fade Selections

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
JAP PGM above PST

DskTrnsDel

Define operation mode for direct DSK transition buttons.

Options: **2nd level / 2nd function**
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.

ShftBuPerBus

Individual 2nd/3rd buttons per M/E bus row.

Options: **off / left / right / left+right**

Confirm item with **Enter**.

FadeAdj

Adjustment of the fader end-position
1. Fade Adj: Upper
   Move all faders to the upper end-position and confirm item with enter.
2. Fade Adj: Lower
   Move all faders to the lower end-position and confirm item with enter.

GangModeSel:A

Enable / disable the Gang mode for the machine control.

Options: **A**, **B** (B is recommended)

Simulcast:

The Simulcast mode should cause a control unit of the DD35 or HD to control also a second Mainframe (Slave) beside the selected Mainframe (Master). It is the aim to synchronously produce a DD broadcast also in HD as far as possible.

Options: **Master, Slave, Both, Def**

SimulcastAdr:

Enter a three-digit numerical value (can be freely selected) as an address for the two connected mainframes.

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 (1-6) 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.***

4.4.3.4 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 : A u t o m a t i c

Selection of the different HD standards.

Options: **720x625_50i (interlace)**
720x525_59i
1280x720_59p (progressive)*
1280x720_60p*
1920x1080_23p*
or 24p*, 23s*, 24s*, 25p*, 50i,*
29p*, 30p*, 59i*, 60i*
1920x1035_59i*
1920x1035_60i*

**** 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**

Note:
Only selectable with HD mainframes.

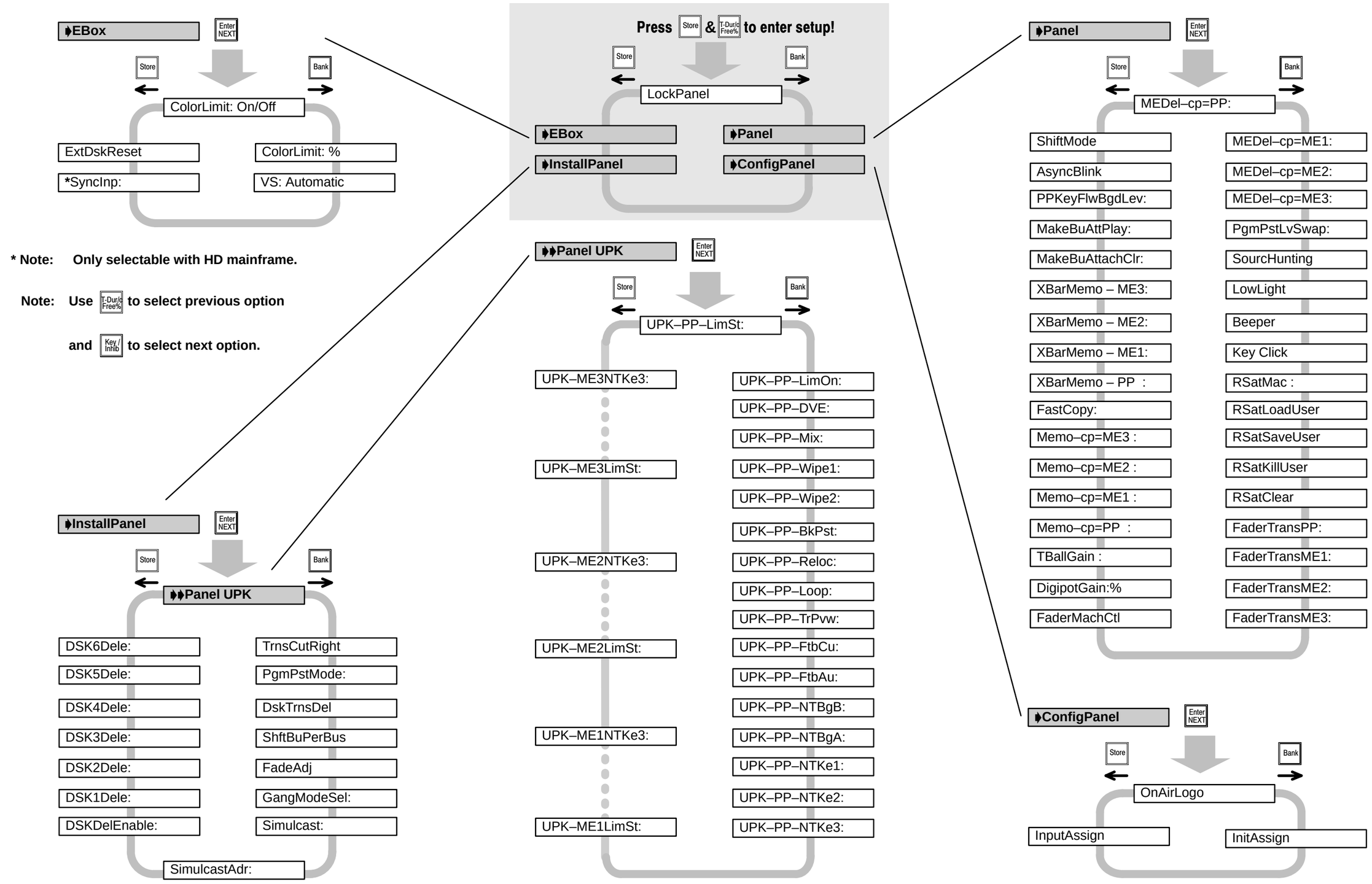
Confirm item with **Enter**.

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)

4.4.3.5 Setup Items Structure



4.4.3.6 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	SIDEPANEL MENUS									
	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.

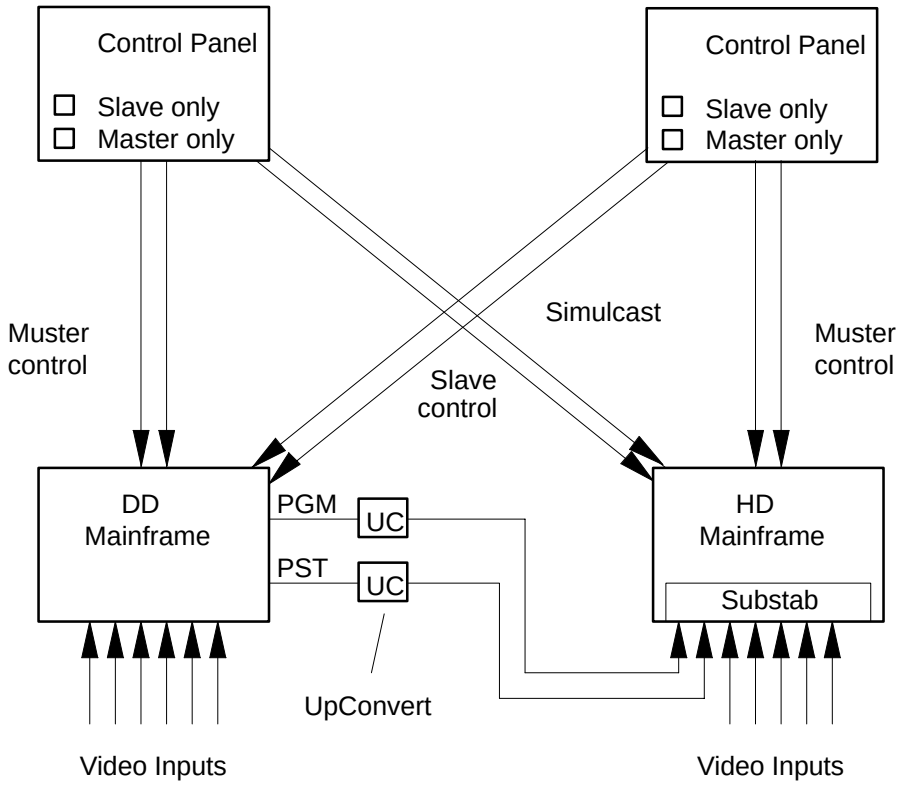


Figure 1 Simulcast Application

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 a SUBSTAB to Actuate Input (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 substitute source. Subsequently this substitute source copies itself with own Aux1 Substitution Table into the coupled busses.

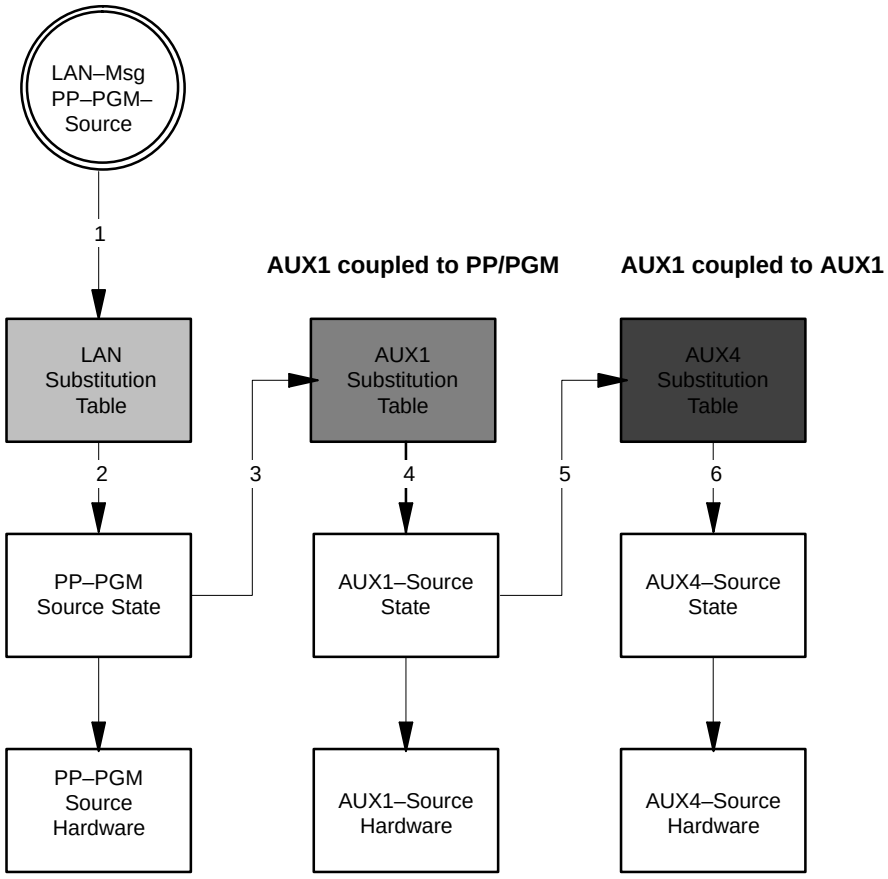


Figure 2 LAN Input Source Substitution & AUX Couple

- **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.

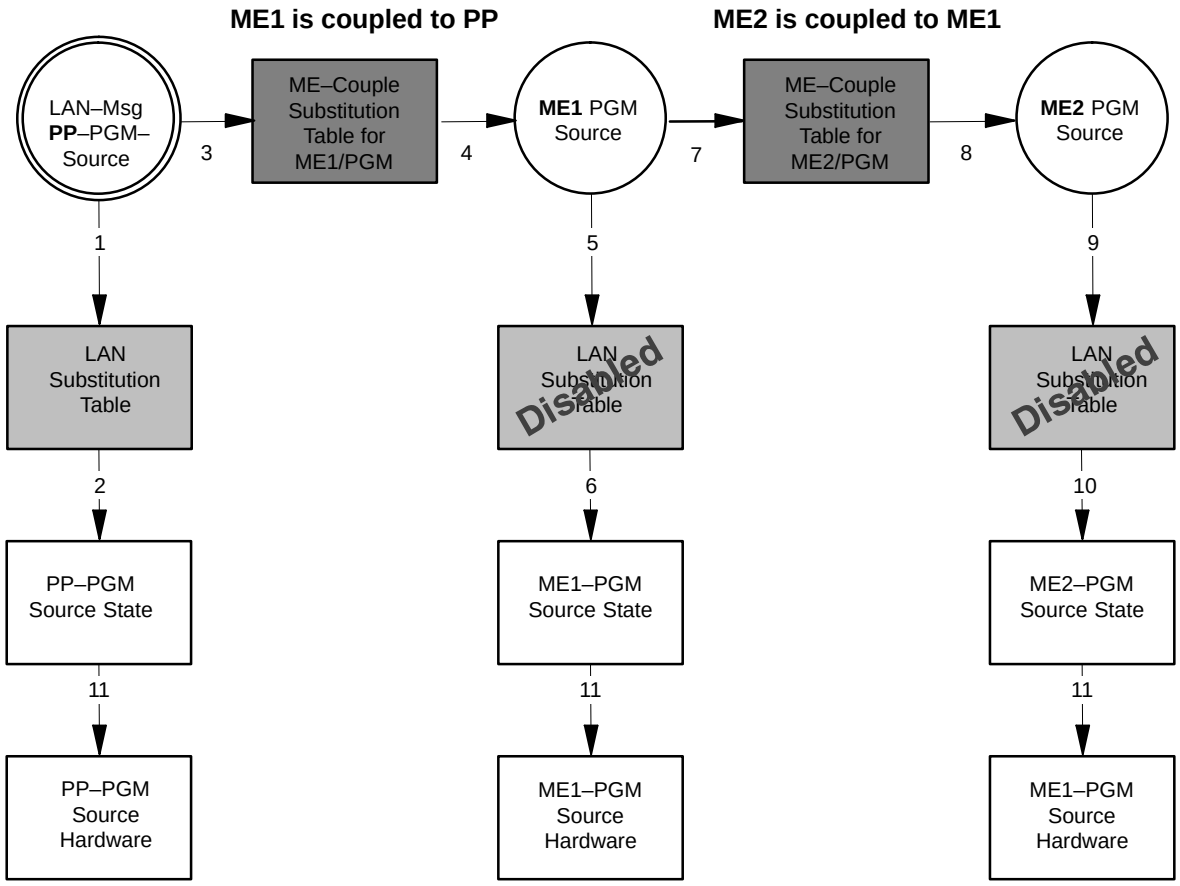


Figure 3 LAN Input Source Substitution & M/E Couple

- **Key4 as PST Slave**
  When changing a PST source in the NonLayered mode, procedure is as follows: PST is switched via the LAN Substitution Table to a substitute source. The original message is transmitted to Key4 where Key4Fill is also changed via LAN Substitution Table.

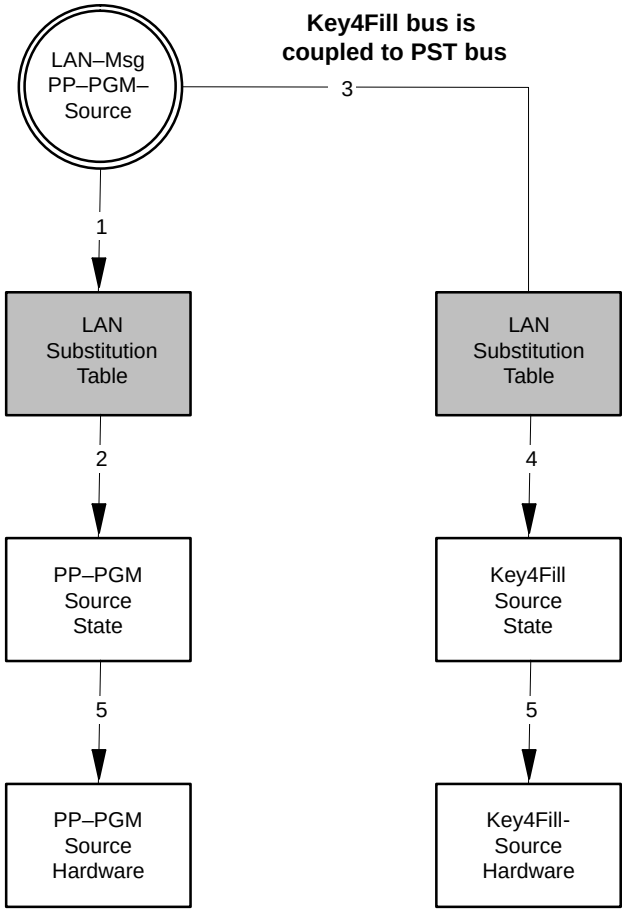


Figure 4 LAN Input Source Substitution & PST Bus to Key4Fill coupling

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 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:

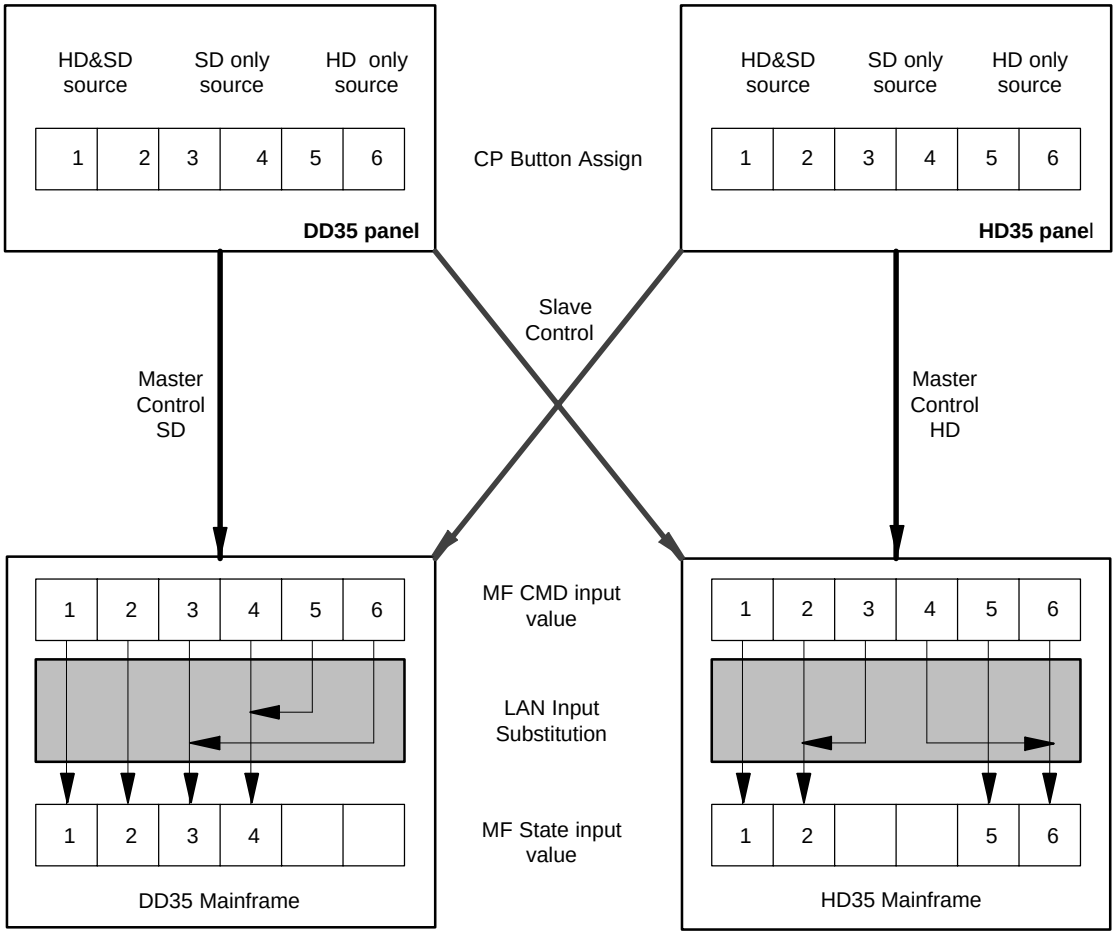


Figure 5 LAN Input Source Substitution & Input Assignment

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

Numbers

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U

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W

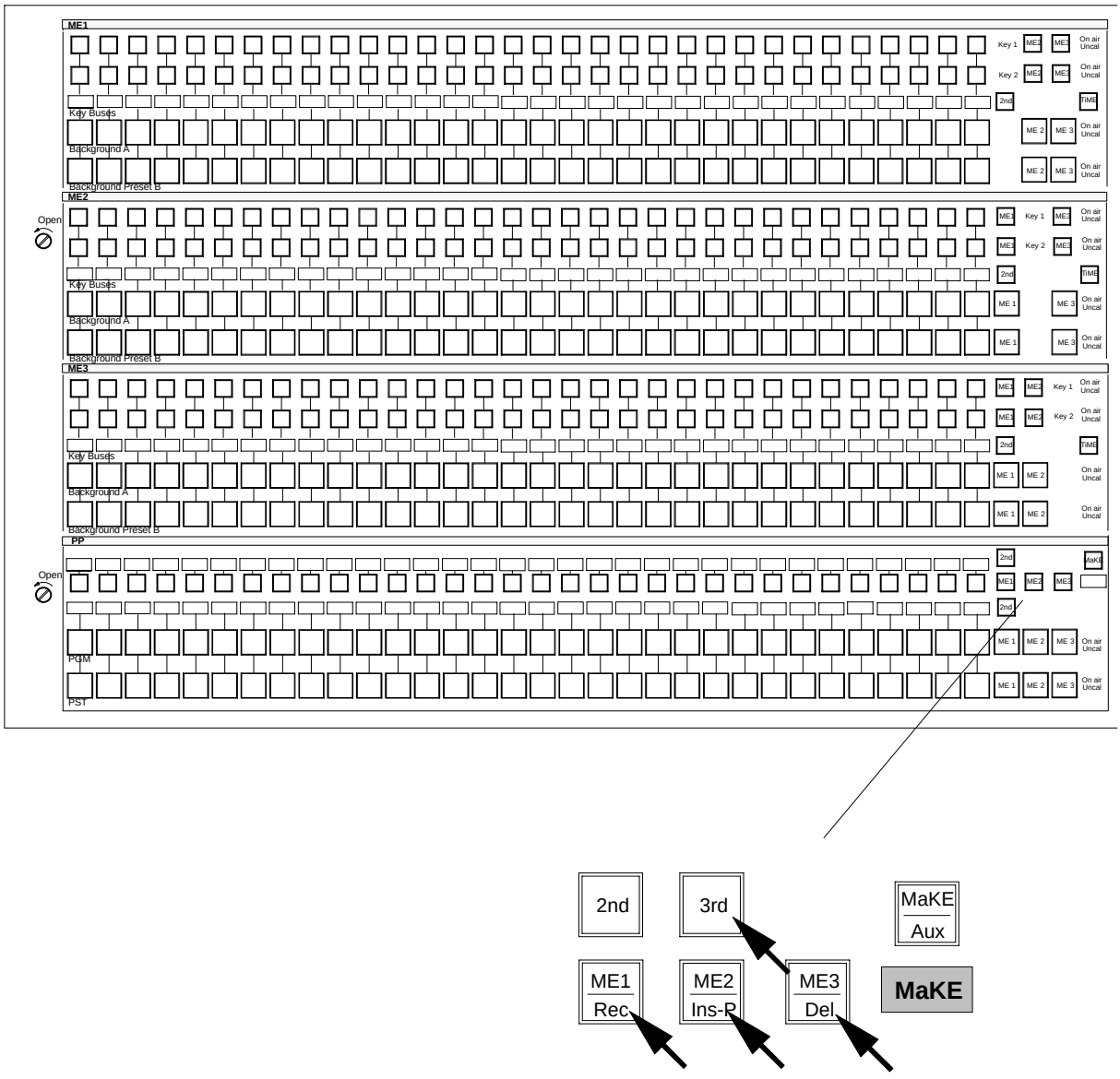
X

New button inlays for software release V 1.6.1

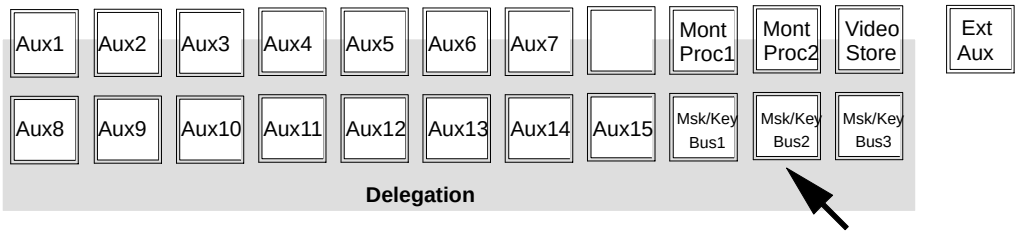
Dear Customer

Please compare with your control panel and exchange the button inlays against the new one. The new button inlay set will be delivered with the Software V 1.6.1 CD-ROM.

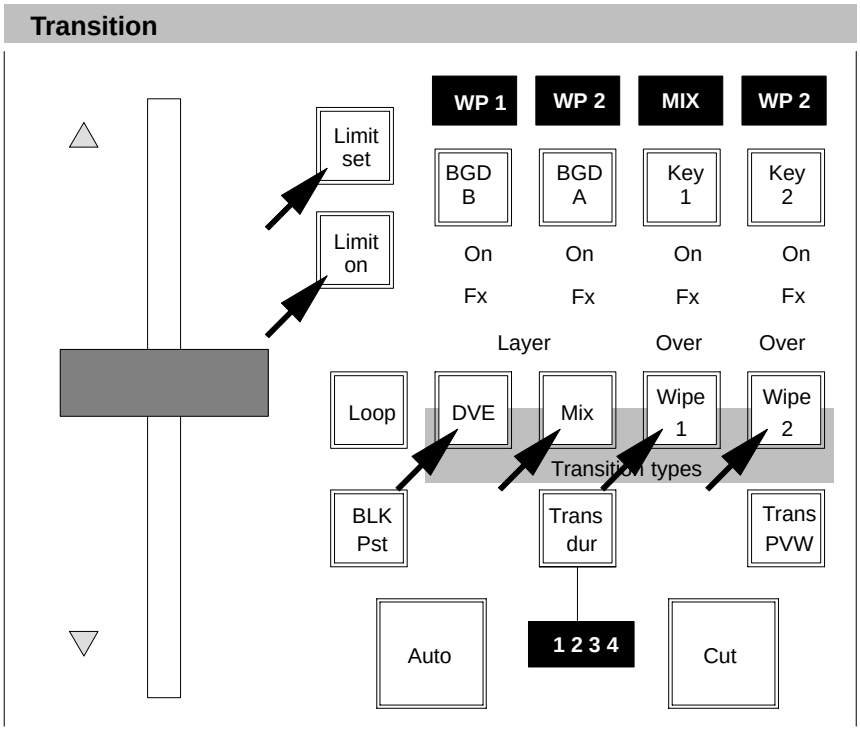
1. PROGRAM / PRESET PANEL SECTION



2. AUX PANEL SECTION

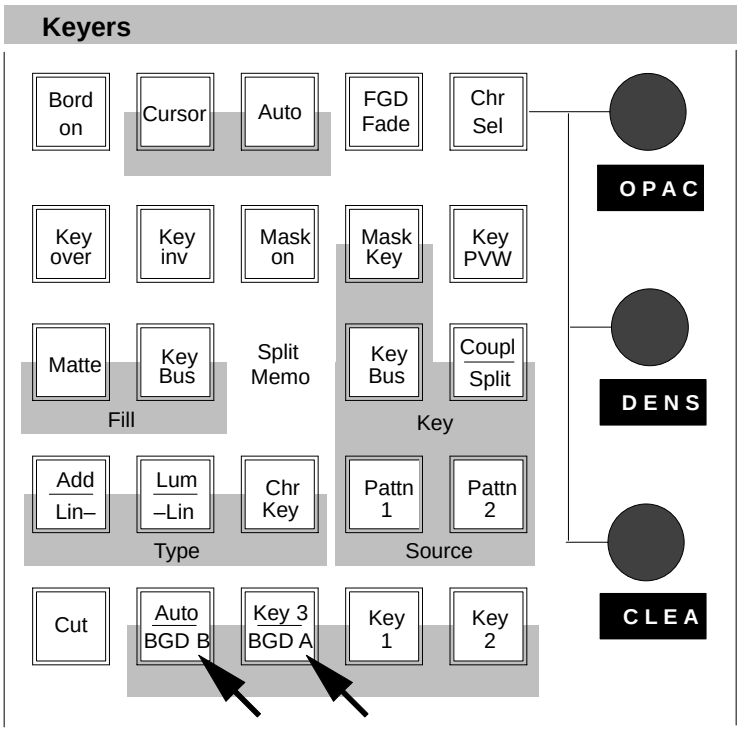


3. TRANSITION PANEL SECTION

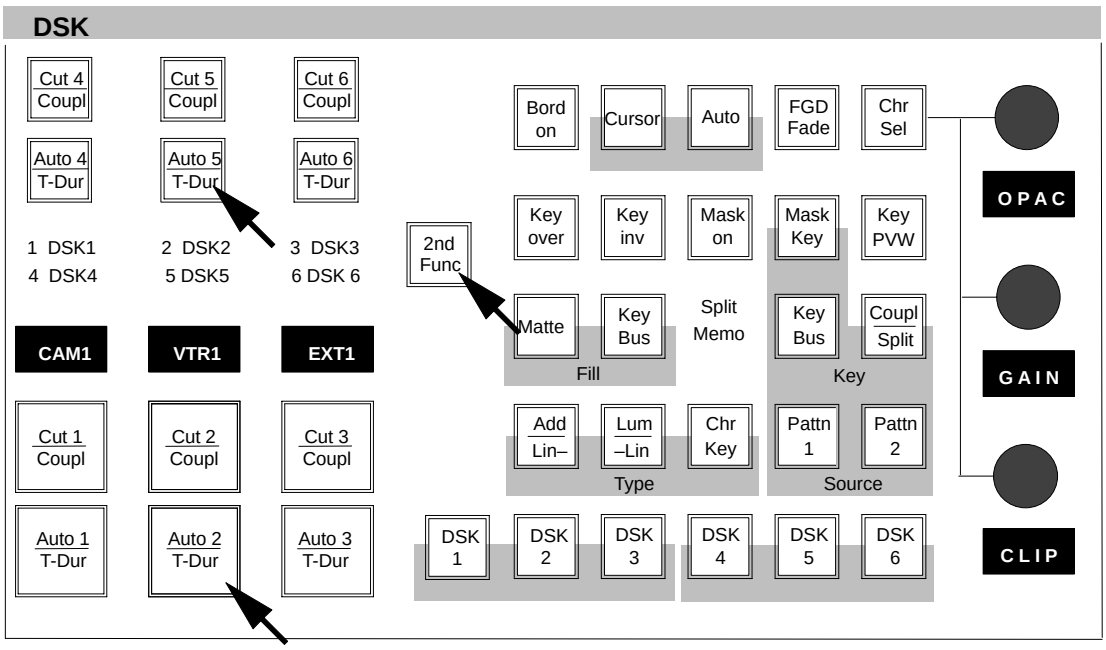


For details refer to section ***2.14 User programmable keys*** in your operation manual.

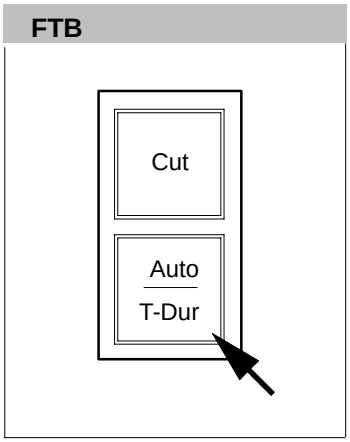
4. KEYERS PANEL SECTION



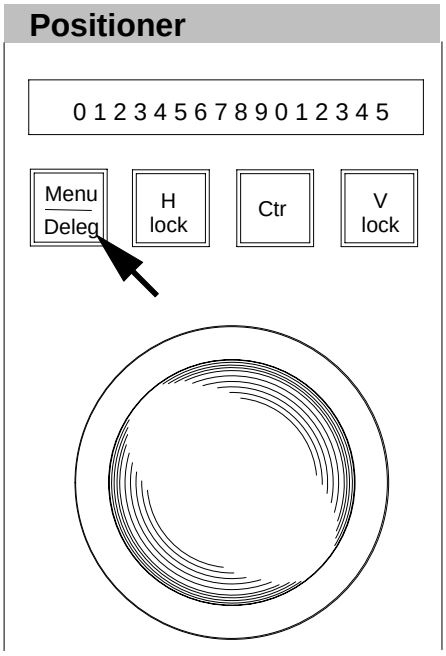
5. DOWNSTREAM KEYERS PANEL SECTION



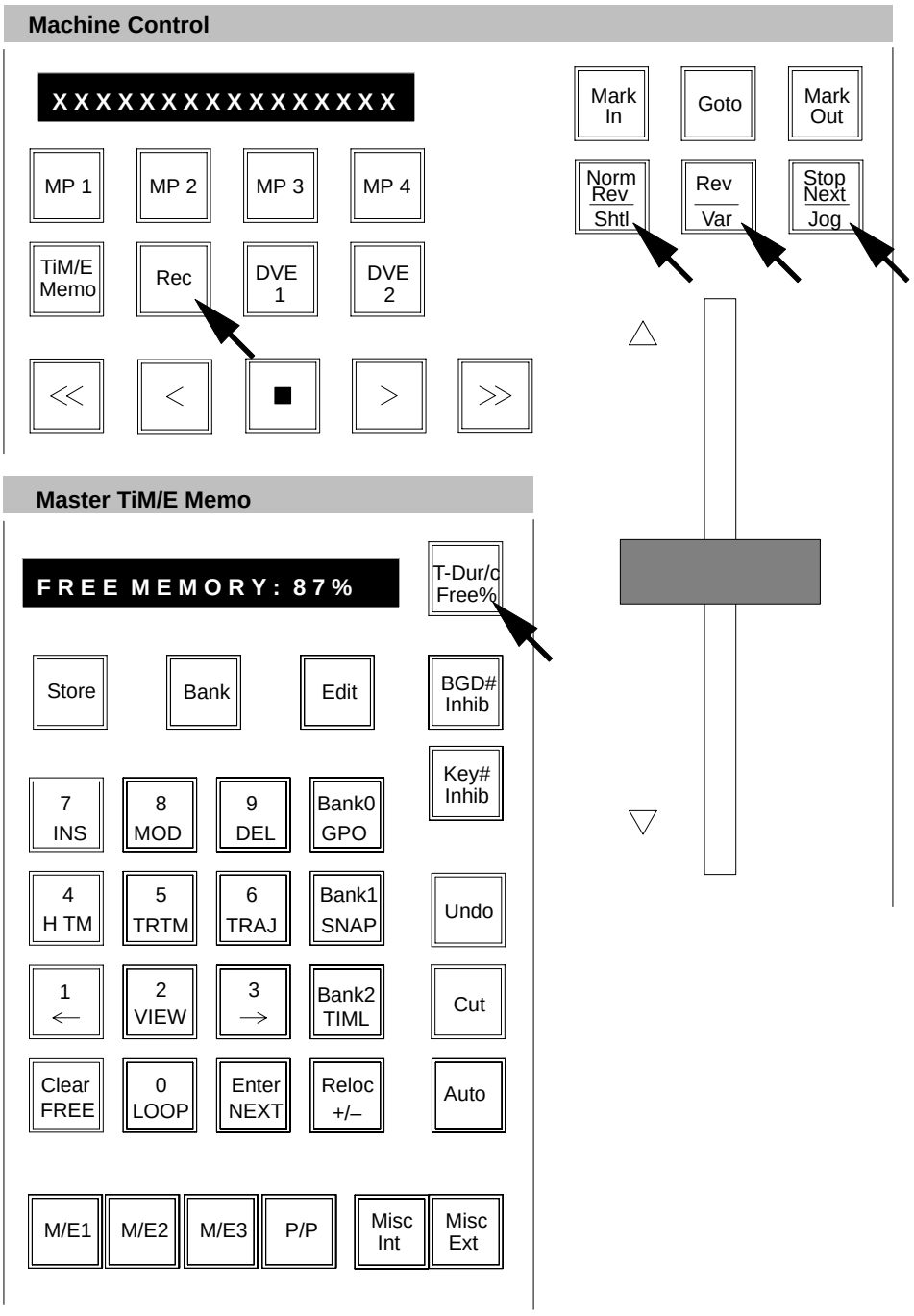
6. FADE-TO-BLACK PANEL SECTION



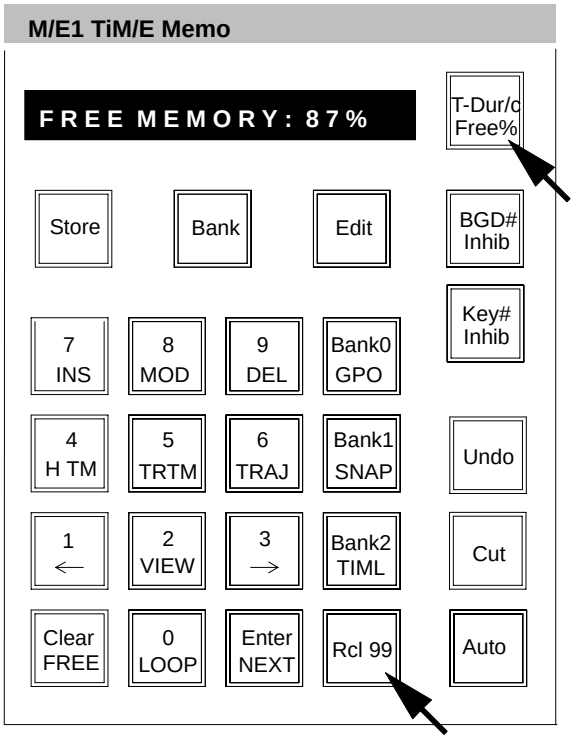
7. POSITIONER KEYERS PANEL SECTION



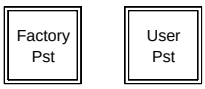
8. MACHINE AND MASTER TIM/E MEMO PANEL SECTION



9. M/E x TIM/E MEMO PANEL SECTIONS



or one of the following functions:

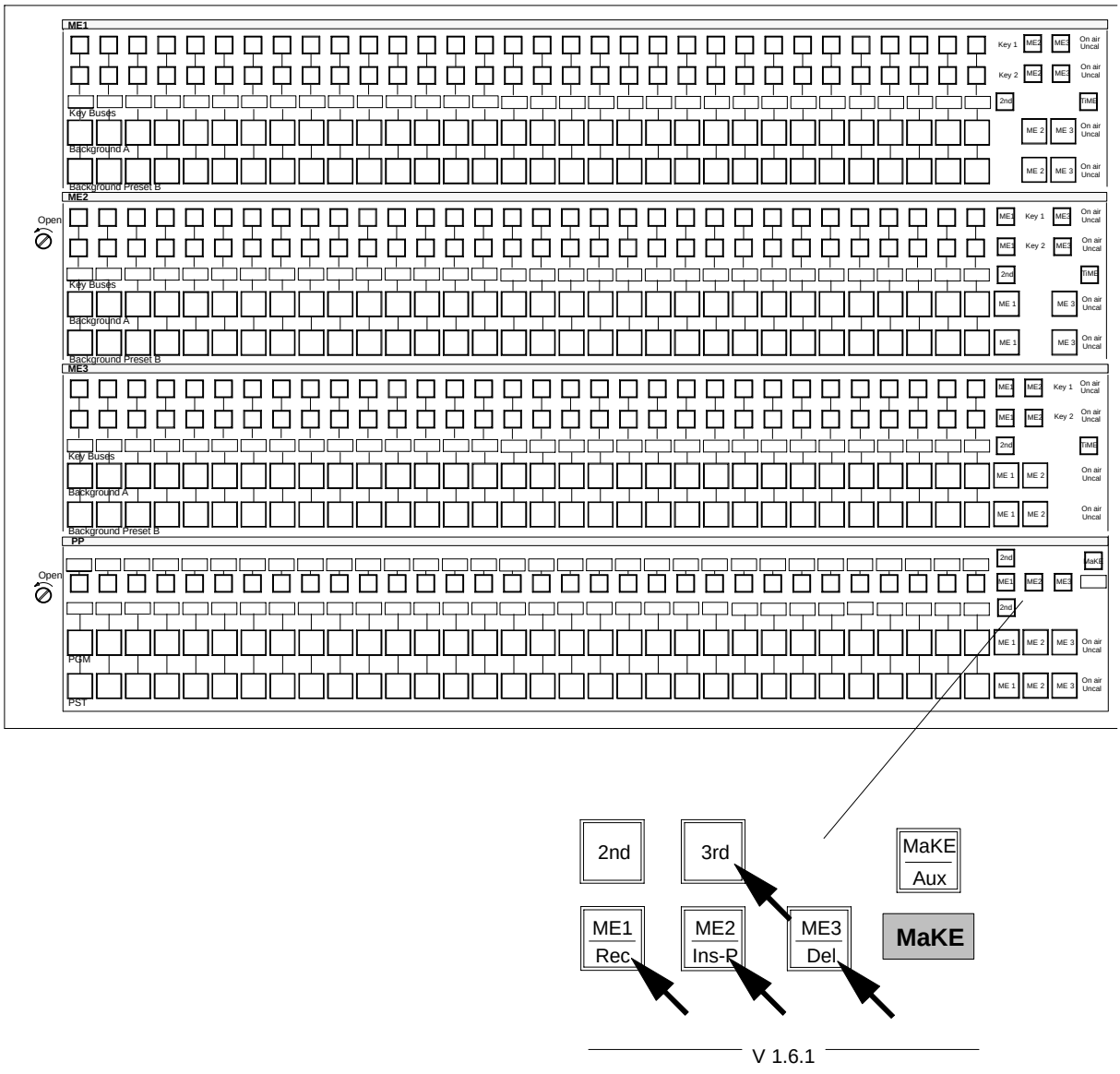


New button inlays
for software release V 1.6.1 and V 2.1.1

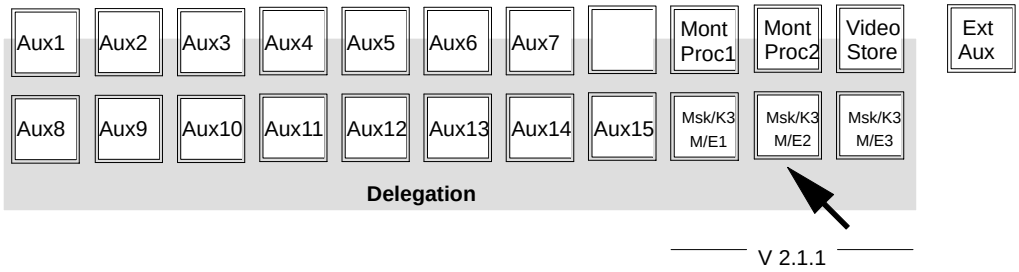
Dear Customer

Please compare with your control panel and exchange the button inlays against the new one. The new button inlay set will be delivered with the Software V 1.6.1 and V 2.1.1 CD-ROM.

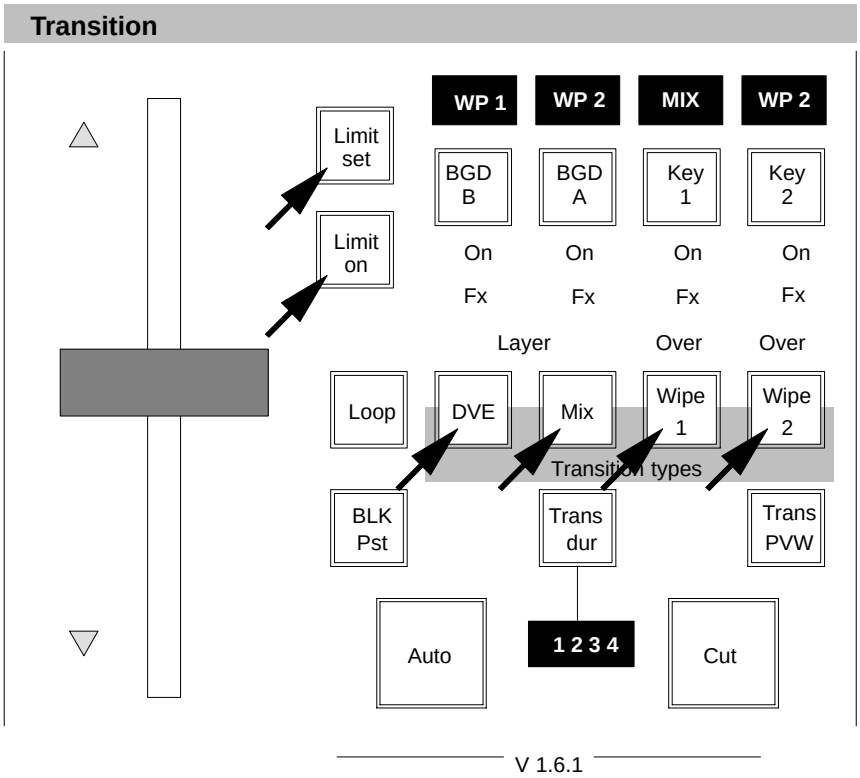
1. PROGRAM / PRESET PANEL SECTION



2. AUX PANEL SECTION

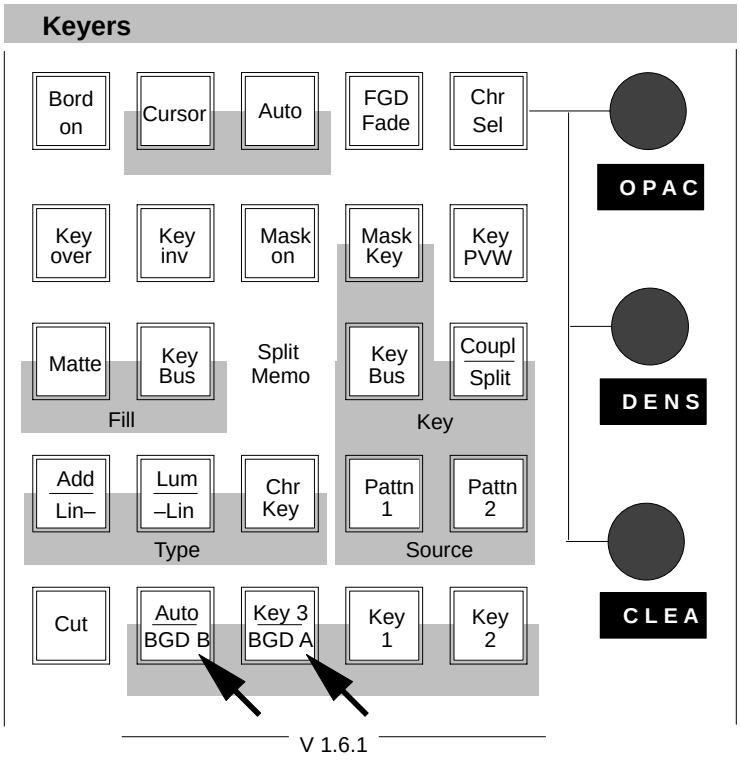


3. TRANSITION PANEL SECTION

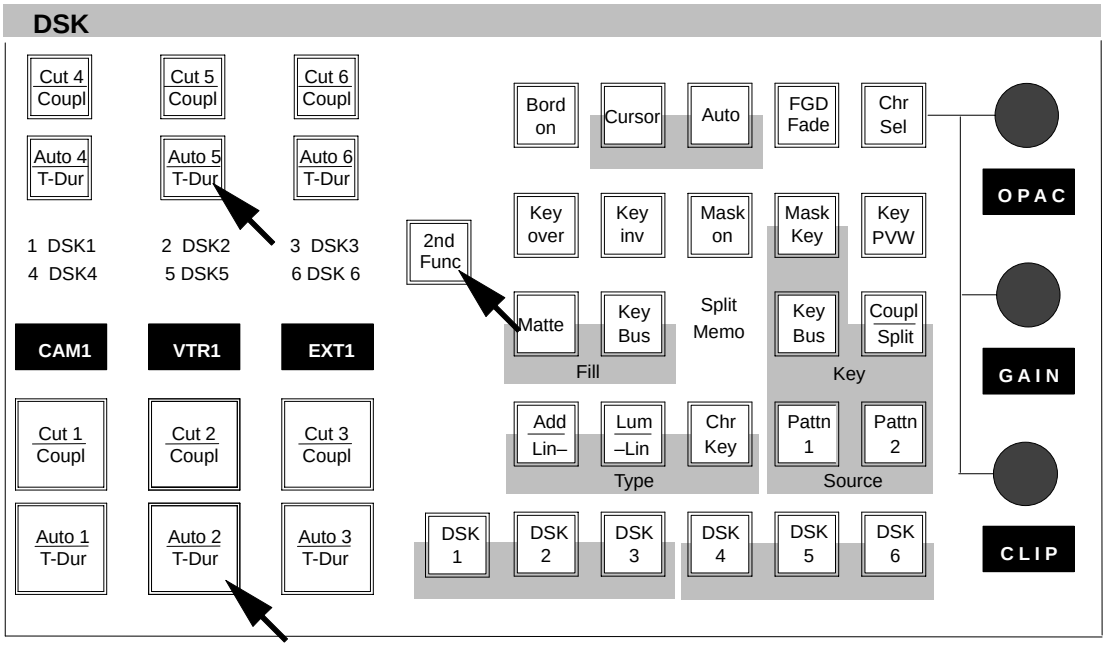


For details refer to section ***2.14 User programmable keys*** in your operation manual.

4. KEYERS PANEL SECTION

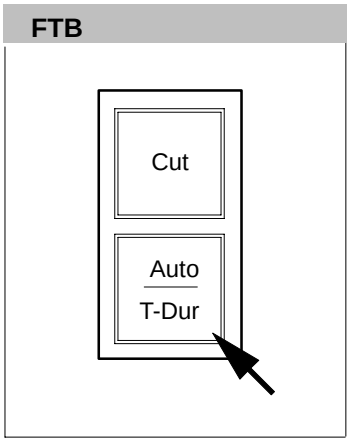


5. DOWNSTREAM KEYERS PANEL SECTION



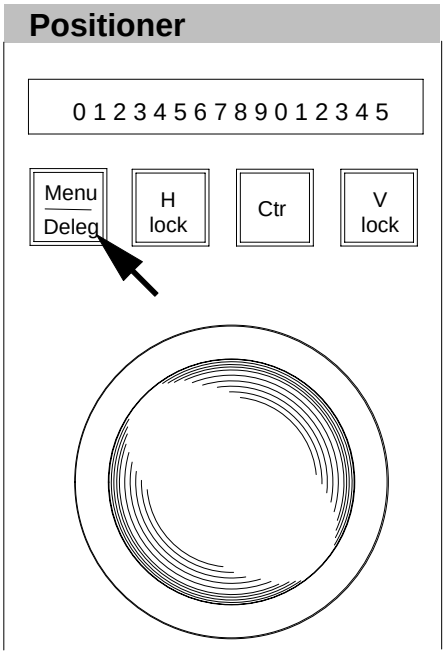
V 1.6.1

6. FADE-TO-BLACK PANEL SECTION



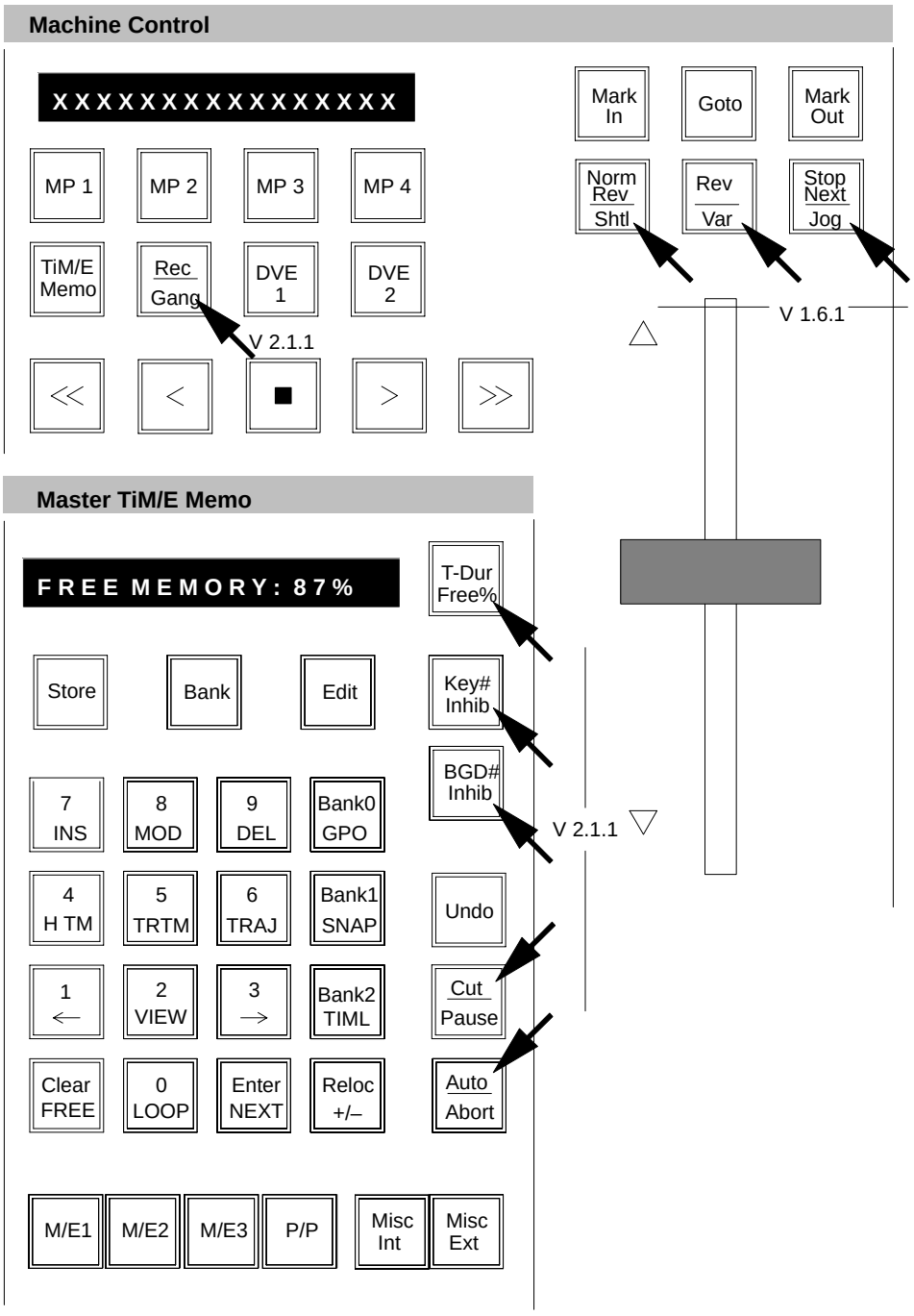
V 1.6.1

7. POSITIONER KEYERS PANEL SECTION

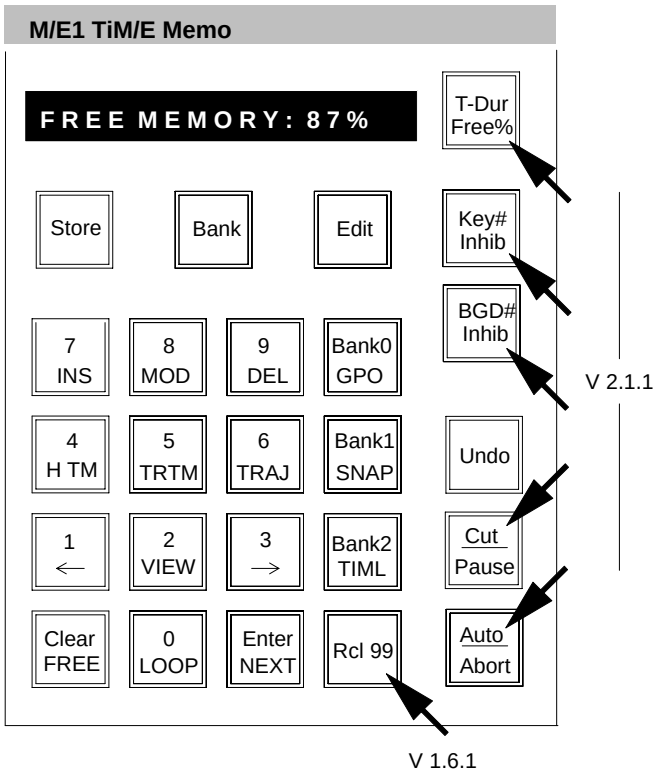


V 1.6.1

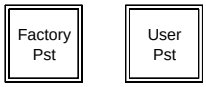
8. MACHINE AND MASTER TIM/E MEMO PANEL SECTION



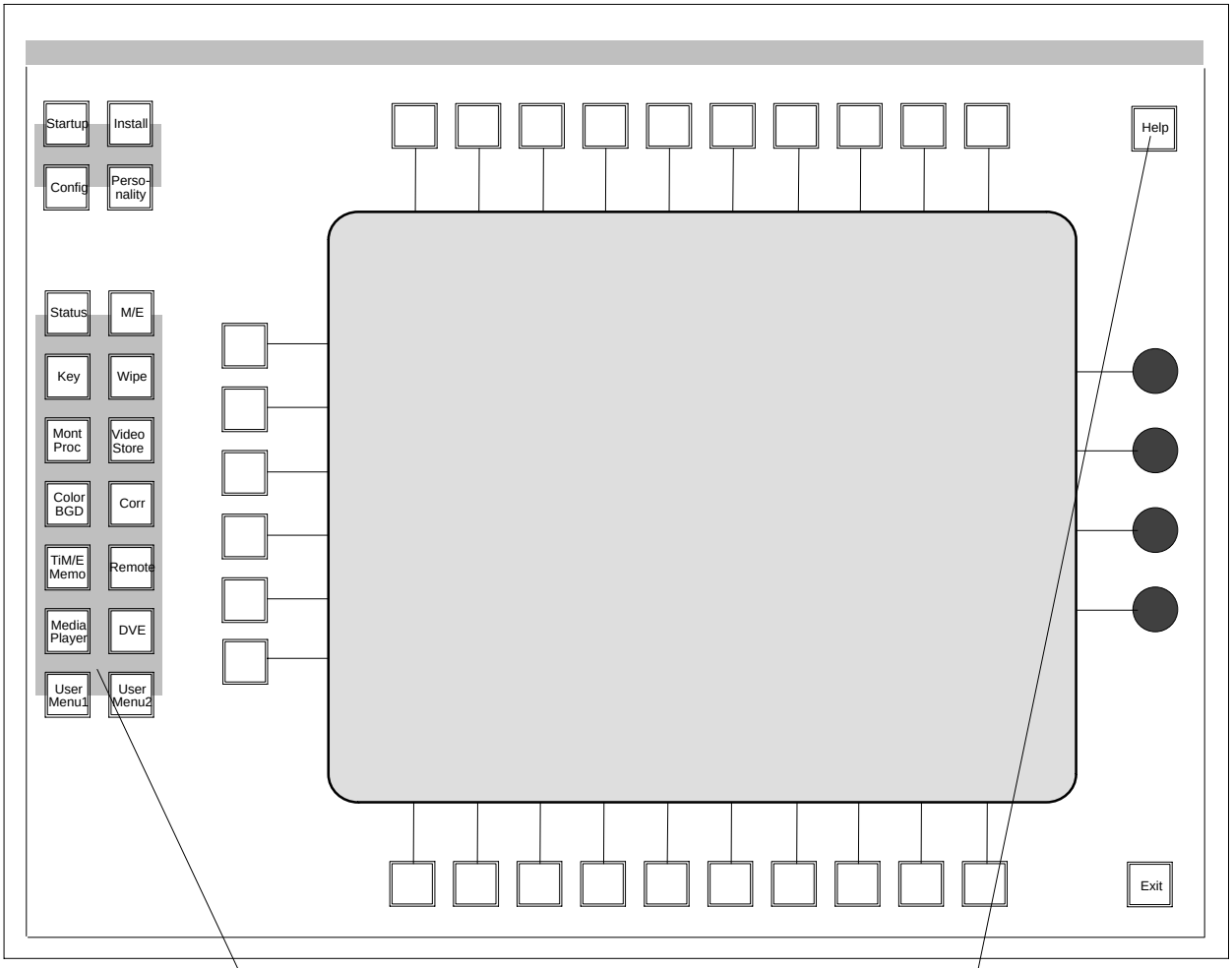
9. M/E x TIM/E MEMO PANEL SECTIONS



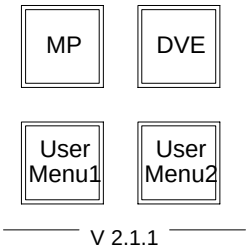
or one of the following functions:



10. DISPLAY PANEL



Remove button inlay



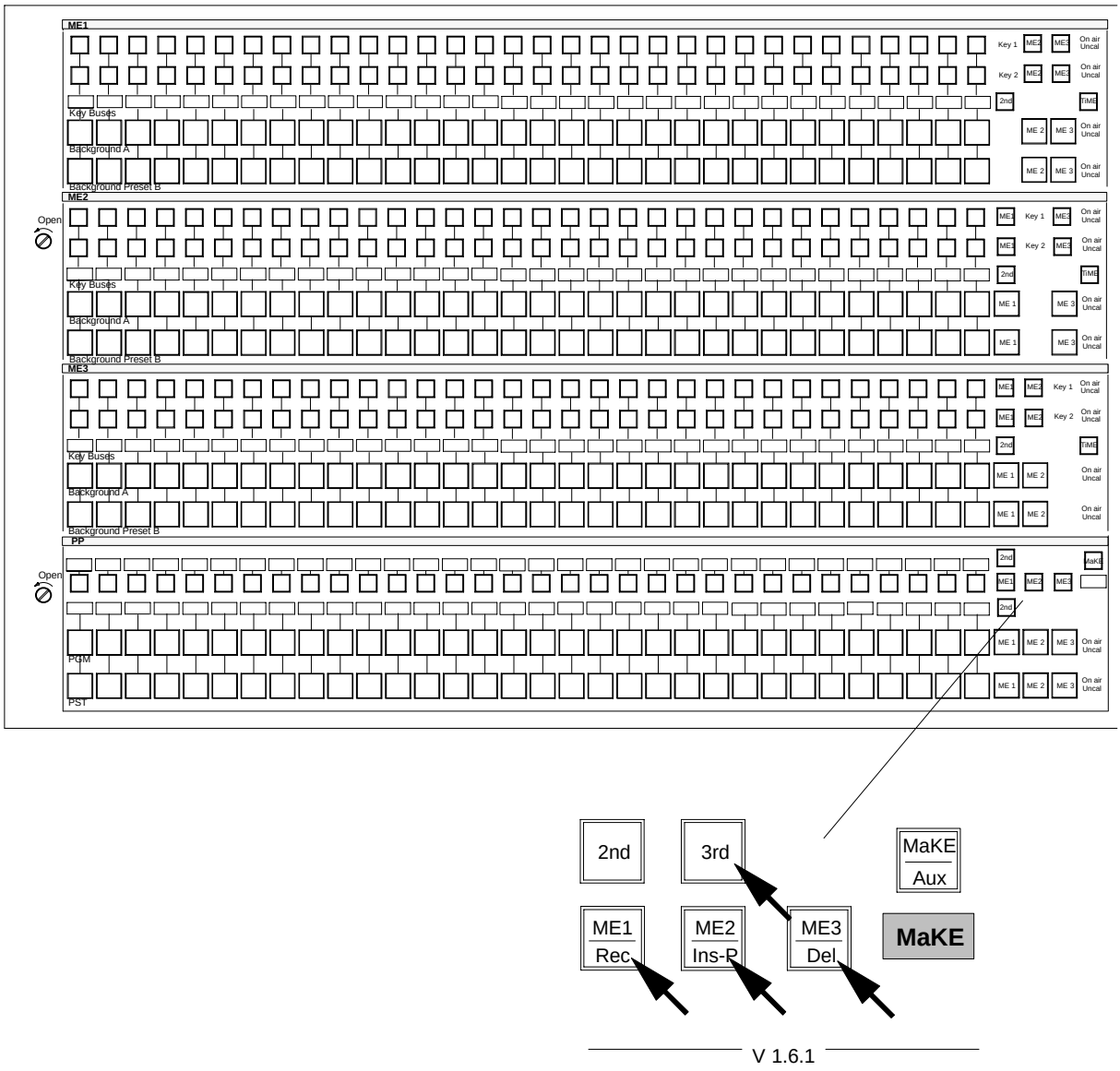
V 2.1.1

New button inlays
for software release V 2.1.4

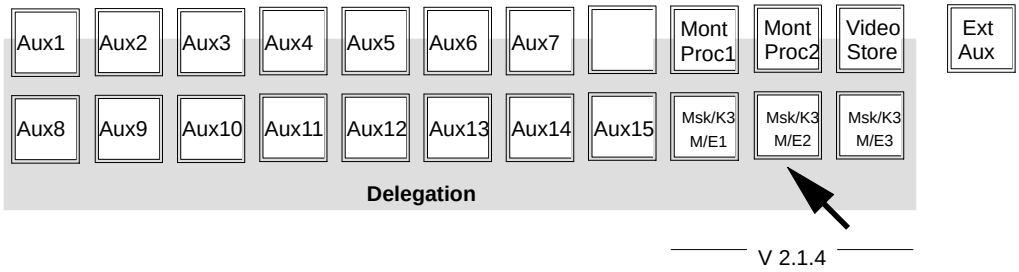
Dear Customer

Please compare with your control panel and exchange the button inlays against the new one. The new button inlay set will be delivered with respective software CD-ROM.

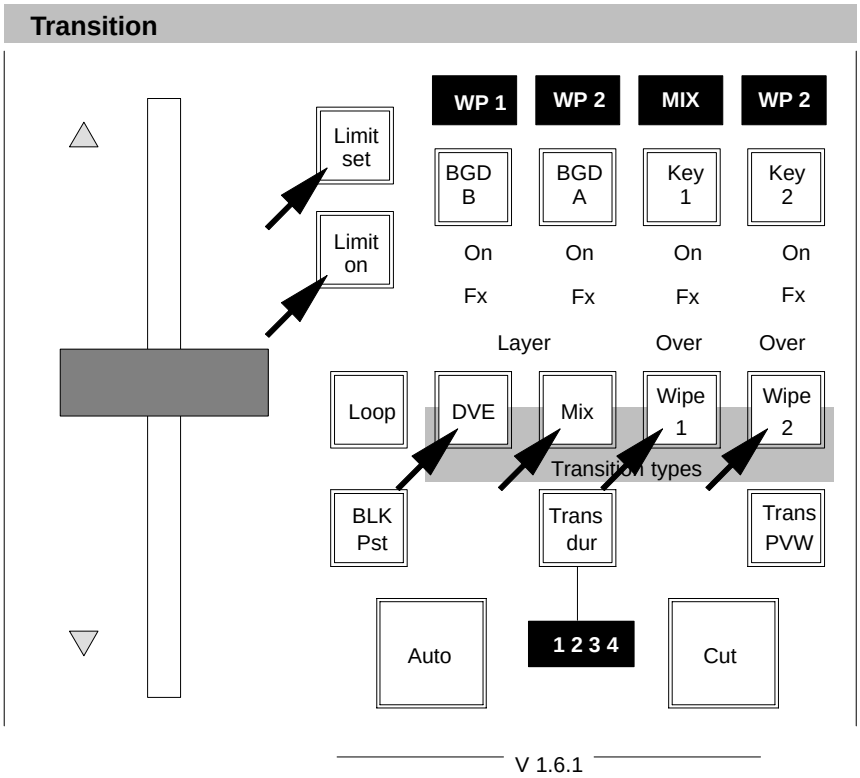
1. PROGRAM / PRESET PANEL SECTION



2. AUX PANEL SECTION

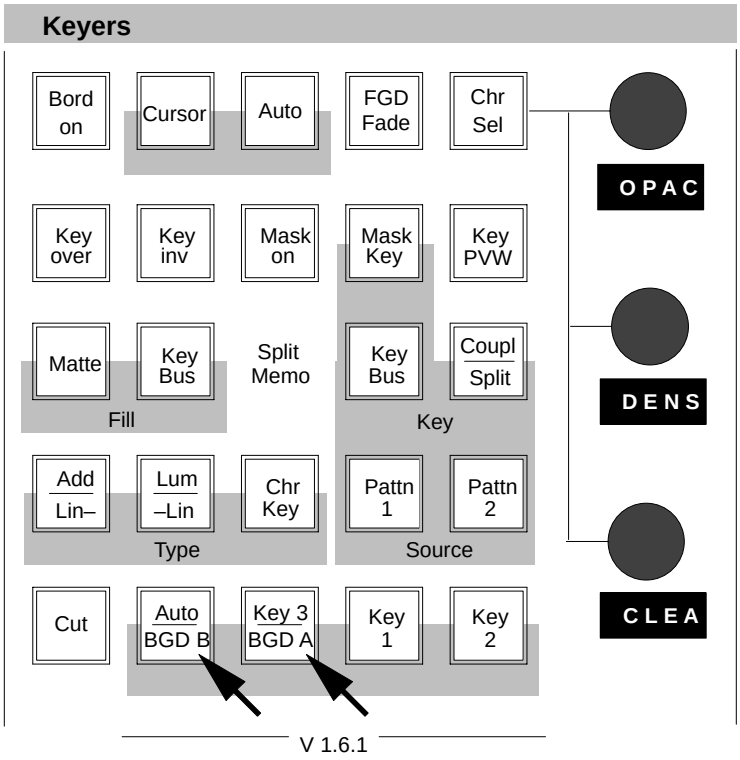


3. TRANSITION PANEL SECTION

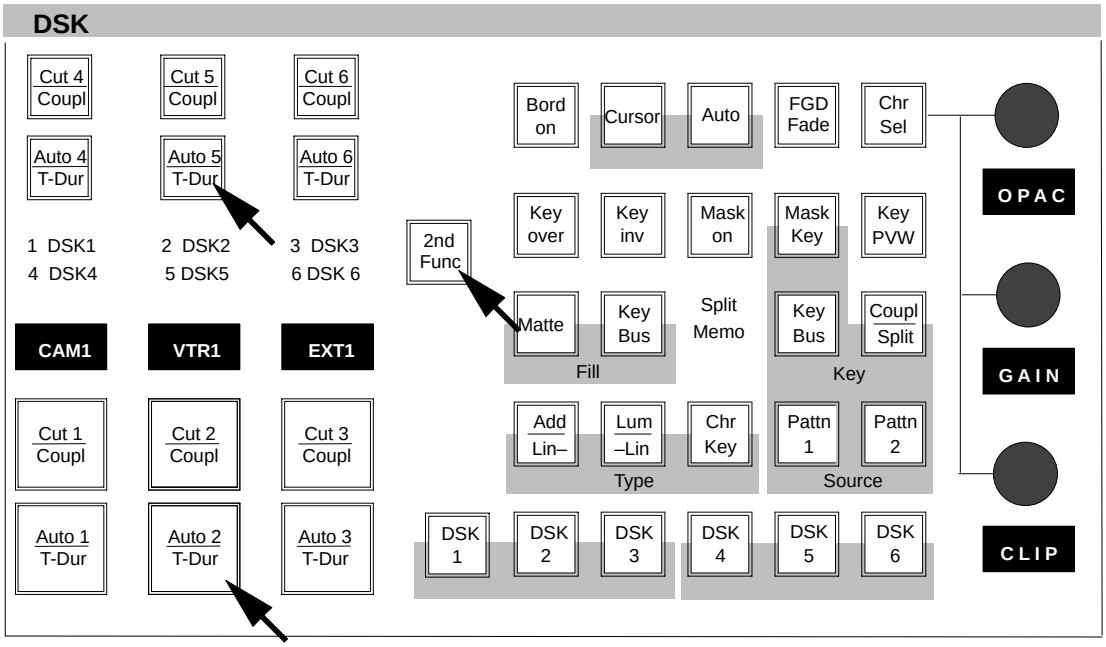


For details refer to section ***2.14 User programmable keys*** in your operation manual.

4. KEYERS PANEL SECTION

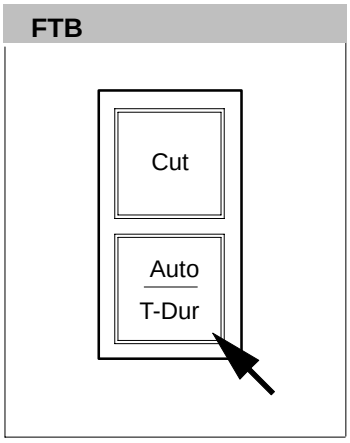


5. DOWNSTREAM KEYERS PANEL SECTION



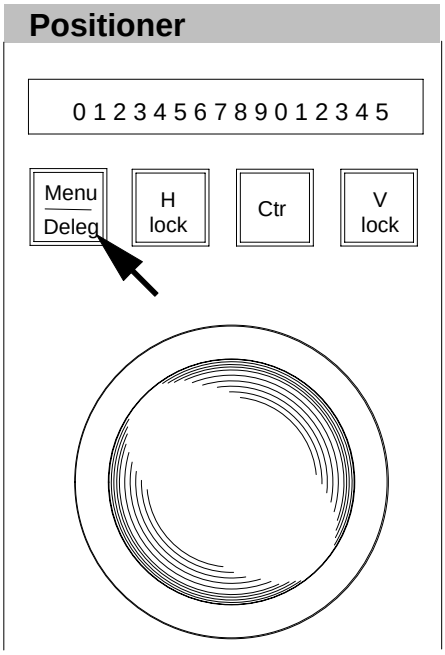
V 1.6.1

6. FADE-TO-BLACK PANEL SECTION



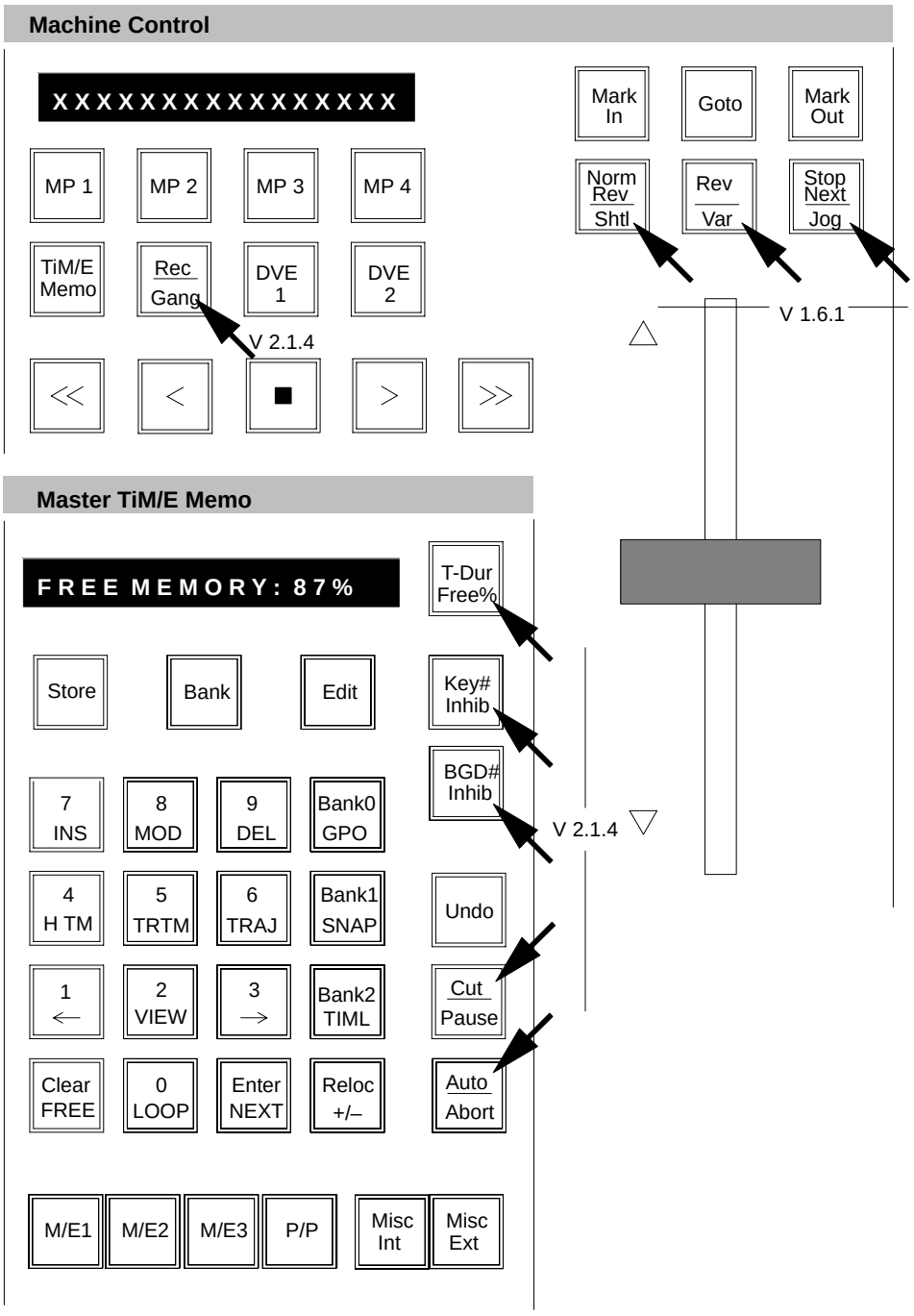
V 1.6.1

7. POSITIONER KEYERS PANEL SECTION

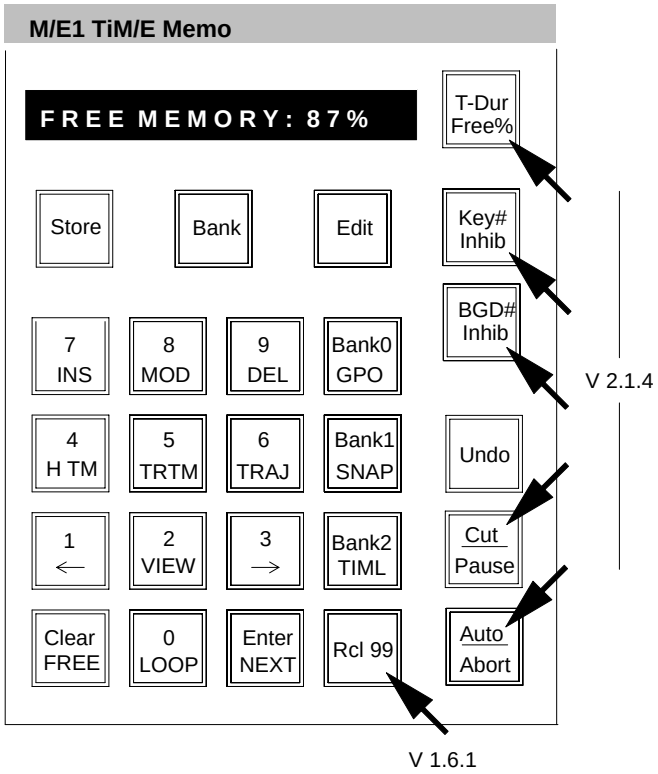


V 1.6.1

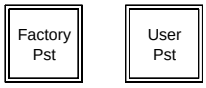
8. MACHINE AND MASTER TIM/E MEMO PANEL SECTION



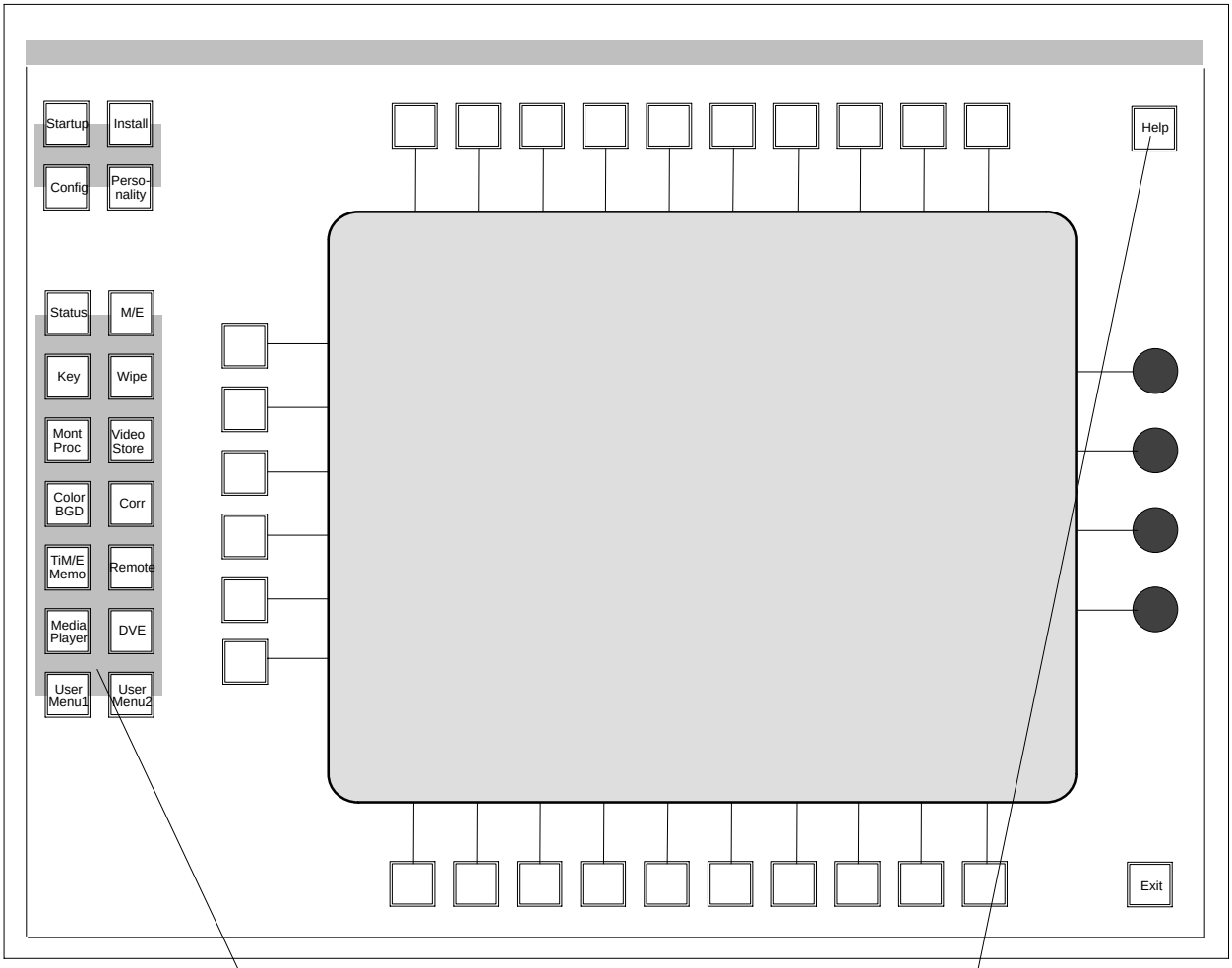
9. M/E x TIM/E MEMO PANEL SECTIONS



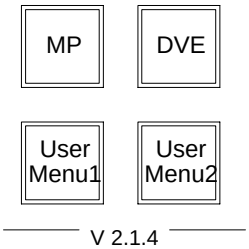
or one of the following functions:



10. DISPLAY PANEL



Remove button inlay



V 2.1.4