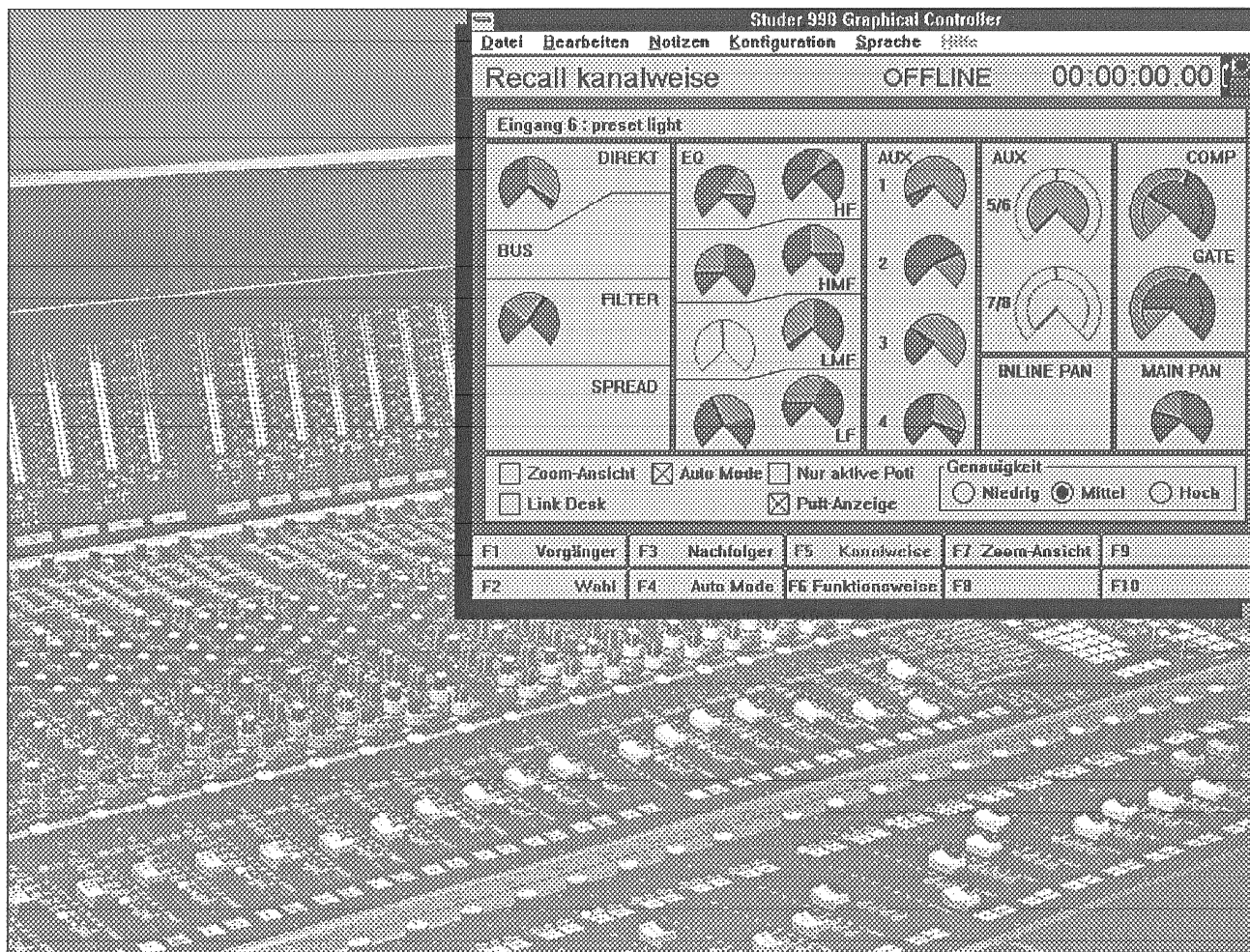


STUDER

Professional Digitally Controlled Mixing Console 990

Graphical Controller



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1. Scope of functions and installation of the graphical controller

1.1 Scope of functions

The graphical controller performs functions that can also be executed on the mixing console. In addition it supports new capabilities that are not feasible with the controls of the mixing console.

- Version 2.3**
- Recall of potentiometer settings
 - User management and data management
 - Personal configurations
 - Signal- and track lists
 - Labelling of the channels with 8-character display
 - Snapshot functions
 - Creation and execution of sequences
 - Processing of selections
 - Backup and restore program

Recall	A convenient, automatic RECALL function is available for setting the potentiometers to stored values. Signal or track names can be displayed on the alphanumeric display above the main fader. The possibility of naming any type of data and to attach comments to them increases the transparency and reproducibility of the productions.
User registration	The user management with four levels of access privileges controls the data processing and offers security against unauthorized manipulations in a multi-user environment.
Libraries	The concept of generally available presets has been expanded. Various snapshot and preset libraries are available, and each user can create his own library. Also significantly enhanced is the handling of the selections which can now also be assigned a name and stored in a library.
Lists	Eight synoptical lists are used for recalling and processing signals, tracks, snapshots, presets and selections.
Scope of the program	The current version supports numerous functions that enhance the capabilities of the 990 mixing console and ideally supports all static automation functions.
Extended features	<ul style="list-style-type: none"> • Dynamic fader automation • Dynamic automation with cue and trigger points

1.2 Installing the graphical controller Version 2.3 and higher

Before the graphic user interface can be put into service, the hardware and software of the mixing console and the PC must be properly configured.

1.2.1 Configuration requirements of the mixing console

Hardware

- An ArcNet controller board (1.990.945) is used for communication with the PC.
- Module processor boards type 1.990.190.30 must be installed. The older types 1.990.190.21 can be upgraded to the new level by adding the memory board 1.990.193.
- The host processor (1.990.930) and HDLC controller (1.990.940) must have the index level .30. Older boards (.21) can be upgraded by changing the EPROM.

Software

- The mixing console must be operated with the software version 2.5 or higher.

1.2.2 Configuration requirements of the personal computer

The graphical controller is a PC application that runs under MS Windows Version 3.0 or higher. The following minimum configuration is required for efficient operation:

Hardware

- Min. processor power: 80486 / 33 MHz
- Min. storage capacity: 8 MB / 120 MB hard disk
- VGA video adapter (256 colors mode)
- Peripherals: STUDER keyboard or special AT keyboard with 24 function keys, mouse or trackball, printer port, 3½" HD diskette drive
- ArcNet interface 16-bit bus

Software

- MS DOS version 5.0 or higher
- MS Windows version 3.0 or higher

1.2.3 Putting the controller into service

The Windows program manager now displays the program group GC STUDER 990 and the symbol of the graphical controller. Double click this symbol to start the program.

We recommend to close all other Windows applications before starting the Graphical Controller. Switching to other programs should be avoided because reliable operation of the GC could be impaired and computing power is unnecessarily absorbed.

2. Introduction to the program structure

If the user is familiar with certain basic structures of the Graphical Controller, the operation becomes virtually intuitive.

User	Each user is assigned an ID that defines his access privileges to the files and functions.
Production	The first step is to open a production. It is the directory in which the data are subsequently stored or read.
Title	The title corresponds to a file in a PC program. The title contains all created data such as snapshots, sequences and lists. When a new title is opened, new snapshots can be stored. The different libraries are used to make settings from other titles generally available and to apply them in any title.
Program	The Graphical Controller works in various program areas. These can be called in any sequence by pressing the labelled keys. Within a program area, different operations are available. These are selected with function keys F1 to F10; the corresponding functions are explained on the bottom of the screen. The menu bar on the top makes part of the screen layout. Many functions are only enabled in the appropriate context.

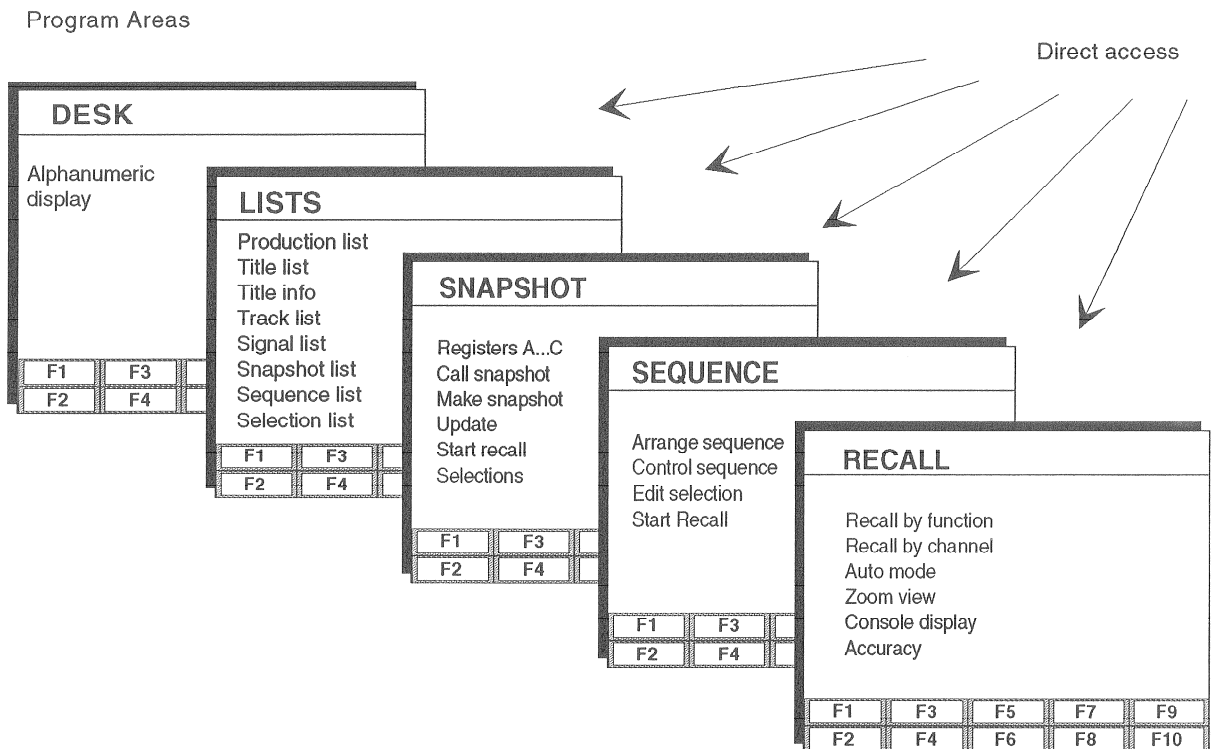
2.1 Program areas

The graphical controller combines the mixing console functions with the processing capabilities of a PC.

- The **mixing console functions** are accessed via labelled function keys. The commands available within an operation, e.g. Snapshots, the commands are listed on the bottom of the screen. The function keys F1 to F10 change dynamically according to the momentary activity.
- The **PC functions** are arranged in the menu bar on the top of the screen. Certain menus adapt their functions to the current operation.

Function overview: The current software version of the Graphical Controller supports the following mixing console functions:

- **DESK:** On this page the menu for labelling and using the alphanumeric display above the fader is active.
- **LISTS:** The lists are only used for displaying or labelling data and to attach comments to them. To commands are output to the mixing console. The following lists are accessible:
 - Production list
 - Title list
 - Title information
 - Signal
 - Track list
 - Snapshot list (containing also presets)
 - Sequence list
 - Selection list



- **SNAPSHOT:** This page provides access to the known snapshot- and preset functions. Each snapshot can be labelled with a name and special comments. The selection of a snapshot or the mixing console is editable and can be switched on and off. Detailed snapshot options can be called by pressing the function key F9 or via the 'Configuration' menu.
- **SEQUENCE:** A sequence can be built from snapshots, or presets of the title, or a library. It is a synoptical list of settings with names and comments. The execution is controlled with the function keys. In the 'File' menu existing sequences can be stored or recalled from the library.
- **RECALL:** Recall is a process through which the stored potentiometer positions of a snapshot can be manually reestablished. Several methods are available according to the different requirements of operation. Potentiometers can be recalled by channel or by function with individual display options. The accuracy with which the set point has to be matched can be defined in three steps. Besides the automated procedure for recalling the whole console single channels or single functions can be processed.
Of course, it is also possible to adjust individual functions or channels.

2.2 Screen layout

Menu bar

The functions of the menu bar concern as a rule the management of data. Many menu items are context sensitive.

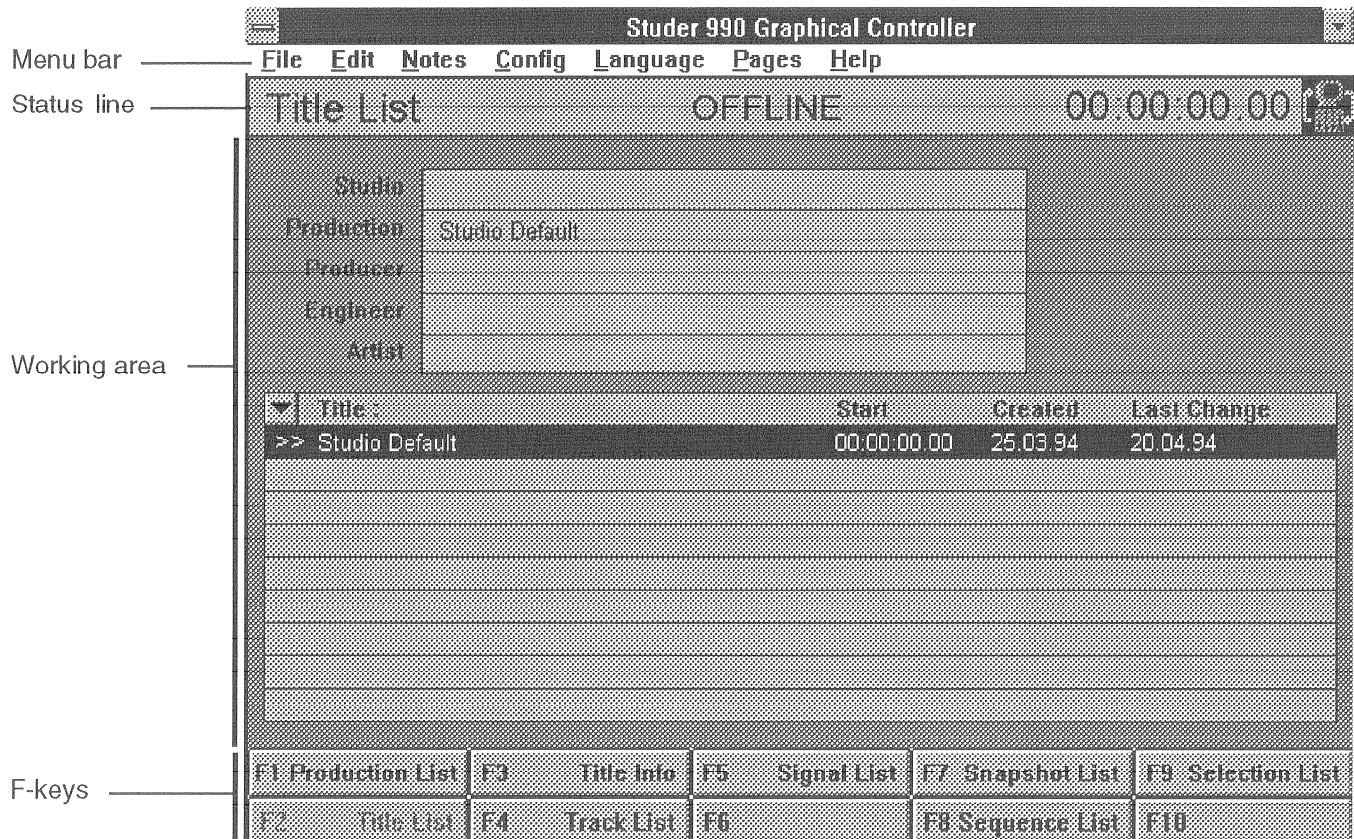
The mixing console functions are accessed rather by the function keys than by the menu bar.

The menu bar can also be operated via the **keyboard**. The menu bar is activated as soon as the ALT key is pressed once. Press the arrow keys to move to the desired menu heading and pull down the menu by pressing ENTER. Move the cursor to the desired command and press ENTER.

Instead of stepping through the menu with the cursor keys you can use the **short cut commands**. These are identified in each menu by an underscored character. After the menu bar has been activated type in the letter that corresponds to the desired menu or command.

Combinations of keys provide **direct access** to the most frequently used menu functions. The direct access keys are identified in the menu. They execute the corresponding command directly without calling up the menu.

Please note that **all operations in the working area are inhibited** as soon as the **menu bar is active**. To deactivate it press ALT again or click on any point in the working area.



Status line Below the menu line there is a status line that provides information on the current program area, the automation state and symbolically the data connection to the mixing console. If this symbol is crossed out with a red line this means that no data exchange is possible with the mixing console. The OFFLINE status indication and the time code indication are only applicable if the dynamic automation option is installed.

Working area The working area shows the content of the current page.

Function key layout The function keys are so-called softkeys with dynamically changing functions. For this reason the current function is always displayed on the bottom of the screen. These keys can also be operated with a mouse click.

2.3 Basic operating procedure

- The GC can only be used after a **production** and a **title** have been opened.
- The mixing console functions are grouped in **program areas**. Each group can be called directly via a labelled key (alternatively Control + F-key).
- Within the displayed program area the operations are executed with the **function keys F1 to F10**. The functions of these keys change with each area; their momentary functions is always shown on the bottom of the screen.
- Parameters are entered in **dialog boxes**. These must be confirmed or cancelled before another group can be activated. The same applies to message windows or error indications.
- The **menu bar** is operated in accordance with the Windows concept. When a menu item is **clicked on**, a menu is pulled down in which the desired commands can be entered with mouse clicks.
- The **ALT key** activates the menu bar. When it is active, the control symbol in the upper left corner is displayed in reverse video. In this state only the menu can be operated. All other functions, also the change to a different program area, are disabled. Deactivate the menu bar by clicking on the working area or by pressing the ALT key.
- In the **lists** an entry must be marked by clicking it on before any processing can take place.
- **Memo fields** can be processed by clicking anywhere into the field. A text window with an EDIT menu is opened. You can now enter text, change text, and close the text window with the OK action button.
- **Action buttons** are represented as 3-dimensional keys. These can be clicked on to execute the corresponding command.
- **Options** are identified with check boxes or radio buttons. Symbols containing a cross or a spot are active.



Check box: Several options can be chosen independently.



Radio button: Only one selection per criterion is allowed. One option must be selected.

2.4 User registration

If several persons use a program alternately, rules concerning the memory allocation and common data must be established. Each user is entered in a control file that defines the access privileges to the following areas:

- 1) Access to the functions
- 2) Access to the production files
- 3) Access to the libraries

Under **STARTUP OPTIONS** you can choose whether or not the previously processed title is to be reloaded or whether you want to select a new title. Choose **OK** to start the program. The program functions are only enabled when a production and a title have been opened. In this way it is impossible to create data with an undefined name or storage status.

LOG OFF

To quit the program without closing it, select **LOG OFF** in the **FILE** menu. The program remains active for the next user who has to start work with **LOG IN**.

EXIT

The **EXIT** command in the **FILE** menu completely closes the program and leads back to the program manager.

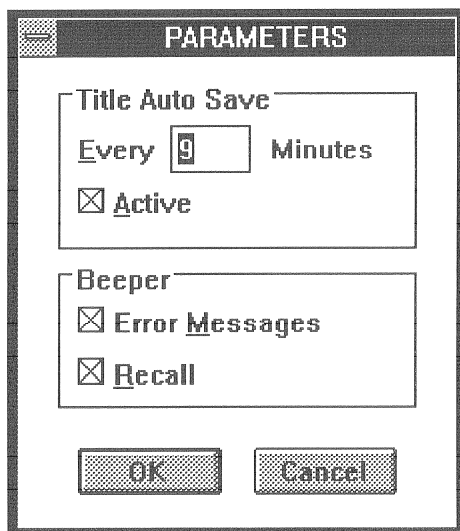
2.6 Configuration and options

After the program start you can make the following basic settings in the **CONFIGURATION** menu.

Display options

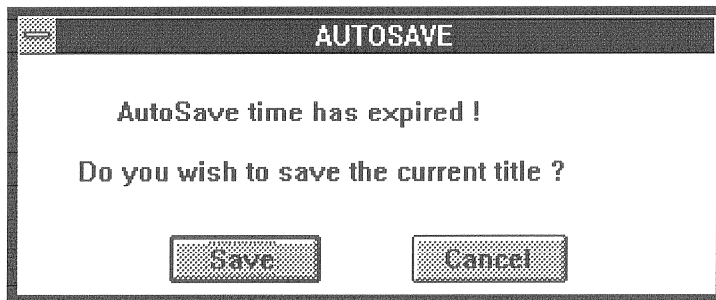
Snapshot options

These settings are described in detail in the chapter 'Snapshots'.



Parameters

Here you will find the Title Auto Save function. You can insert time between 5 and 999 minutes. Activate the function via the check box. When the inserted time has elapsed, a message box appears on screen if the current title should be saved.



The PC beeper can be set to sound when an Error Message appears or if you require audible feedback during potentiometer recall.

Track list

Enter the multitrack tapes being used and the corresponding audio mixer channels. For details refer to TRACK LIST.

Disk Drives

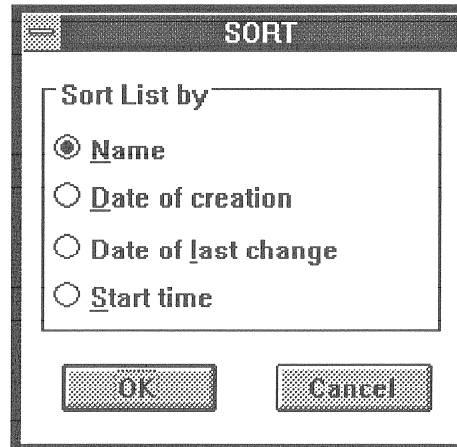
A second drive can be accessed for storing user data. This can be either another partition of the hard disk, a second hard disk, or a removable hard disk. This path is designated as DATABASE 2 (database 1 is defined automatically at the time of installation).

User registration

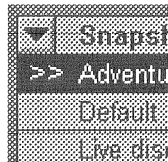
A user with the status SUPER is authorized to register new users and to assign their personal status. Existing entries can be modified.

Sort list by...

Choose the criteria by which the displayed list may be sorted.



The same sort function can be activated by clicking on the sort symbol in the upper left corner of the displayed list.

**Personal configuration**

The settings described above are treated as a personal configuration for the user that is currently signed on.

2.7 Data management

Work with the 990 mixing console generates an enormous amount of data. The Graphical Controller stores these in a hierarchically structured data base. This data base can only be processed as a single entity. Individual snapshots cannot be isolated. Manipulations on the existing data must always be made in the program itself, i.e. renaming, copying or deleting a snapshot.

Data bases

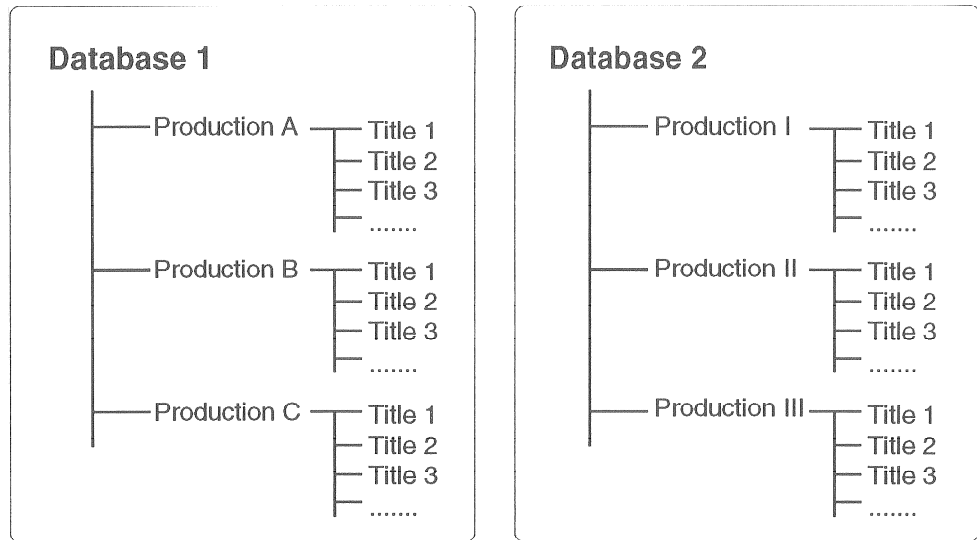
Two data bases can be created. The data of two applications can thus be separated clearly. A removable hard disk is a good choice for the second database. It can be used efficiently as a backup medium. In the CONFIGURATION menu, DRIVES, you can specify a second data base. Only complete drives or partitions but no subdirectories can be specified.

Production

The top hierarchical level is the production. It contains all associated mixing console data (snapshots, presets, sequences) as well as specific libraries and notes. As soon as a production is opened these data become available in the program and the mixing console, and new settings are updated.

Title

To improve the data structure of a production, they are subdivided into titles. Each title comprises information on snapshots, sequences, track and signal list as well as specific title notes. All data are stored with the SAVE TITLE command in the FILE menu. It is recommended to save data regularly during work. If not all data are to be stored, a selection can be made under 'Option'. See also menu CONFIGURATION/Parameters function Title Auto Save.



Libraries

Some of the settings may possibly be useful also in other titles. They can be copied into different libraries for snapshots, presets and sequences. The libraries are accessible via the FILE menu from any production and title and from both data bases. The access is subject to the personal status of the user.

3. Lists

Program area LISTS

The program area LISTS is displayed immediately after the log-in. It provides an overview of all information to which the registered user has access. To display the LIST functions, press the LIST key or choose the menu item PAGES / LISTS [CTRL] + [F5]. You can switch between the following lists by pressing the function keys F1 to F10.

F1	Production List	Shows all productions stored in the database
F2	Title List	Shows all titles of the selected production
F3	Title Info	Information on the current title
F4	Track List	Track designations of the multitrack tapes being used
F5	Signal List	Designations of the audio console signals
F6	unassigned	
F7	Snapshot List	Shows all snapshots / presets of the current title
F8	Sequence List	Shows all sequences of snapshots related to the current title
F9	Selection List	Shows the selections of the current title
F10	unassigned	

Using the "Browser Mode" (menu FILE / BROWSER MODE ON) it is possible to look into data of other productions or titles without leaving the current title. That means, this mode allows the user to open productions and titles without loading any data into the console.

A fast overview is given over existing productions and titles.

When the Browser-Mode is on, the background of the screen is white. Only list functions can be accessed.

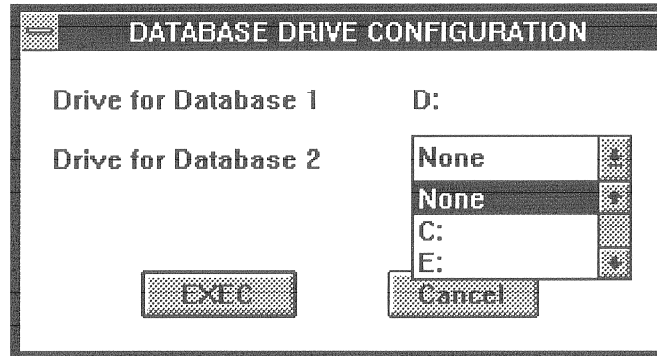
To quit the function use the menu item FILE / BROWSER MODE OFF.

3.1 Production list (F1)

All data created in the course of a production are recorded in a directory called Production. This list contains title files with the actual production data. Opening a production and a title is absolutely essential for operating the Graphical Controller. The production list is accessible via the function key F1 or by clicking on the action button. It shows all productions stored in the selected data base. The opened production is identified in the list with a double arrow >>. Studio default production → see 3.2 Title List.

Data base option

In the "Option" check box the currently active data base is shown. A new data base can be selected here. Data bases must be defined in the **CONFIGURATION / DISK DRIVES** menu as a complete drive (hard disk partition or a removable hard disk). Data base 1 has been set up at installation time where as data base 2 can be configured in this menu as required.



Opening a production

A **new production** can be opened in the FILE / NEW menu. The name of the production cannot be longer than the displayed text field.

The easiest way to open an **existing production** is to double click the corresponding line in the list of productions. Alternatively you can also click on a production once in the list and then chose the menu item FILE / OPEN.

Before another or a new production is opened, the program asks whether or not the current data (title) are to be saved. As is the case when loading a production, intensive data exchange with the mixing console takes place which means that storing the data requires a certain amount of time.

Users with the 'Guest' and 'Standard' access privilege can open only their own productions. 'Advanced' users, however, may also open productions to other productions on a read-only basis. Only the user classified as "Super" has unrestricted access to all productions.

"Saving" a production

A production can be opened or deleted, but not saved directly, because all data are located in titles. Before a new title or a production is opened, the program inquires whether or not the current data are to be saved. If you want to save while work is in progress, choose the menu item FILE / SAVE TITLE or use the AUTO SAVE OPTION (menu item CONFIG / PARAMETERS) to periodically store the title.

Copying a production

Use the EDIT / COPY menu to perform the following steps for copying the production marked in the production list:

- Copy the production under the same or a different name into the second data base.
- Copy the production under a new name in the same data base.

Production information

The FILE / PRODUCTION INFO menu opens an dialog box with data concerning the production. This information can be modified at any time. They constitute the header of the title list and can be edited there by clicking on the header.

The screenshot shows a dialog box titled "PRODUCTION INFO". It contains five text input fields, each with a label to its left: "Studio", "Production", "Producer", "Engineer", and "Artist". The labels are underlined. At the bottom of the dialog are two buttons: "OK" and "Cancel".

Cancelling production data

When a production is deleted, all corresponding data are irretrievably lost. Mark the production to be deleted by clicking it on. A production that is currently open cannot be deleted. To delete the production, press the DEL key or choose the menu EDIT / CLEAR. The program prompts you to confirm that the production is to be deleted. All users who do not have the "Super" status can delete only their own productions.

3.2 Title list (F2)

This list shows all titles of the current production. The current title is identified by a double arrow on the left-hand side. The title contains snapshot and sequence data.

Create new title

The FILE / NEW menu option opens an dialog box in which you enter the name of the new title. This title is created as soon as you choose EXEC.

Default title

The studio default production contains a default title that can be processed by a user having the "Super" status. Each new title is a copy of this default title and contains information such as signal list, track list and track list installation.

The basis of a new production or a new title is always the studio default production and the default title.

All data stored in the default title such as the signal list, track list and names entered into the alphanumeric display will appear in the newly created title.

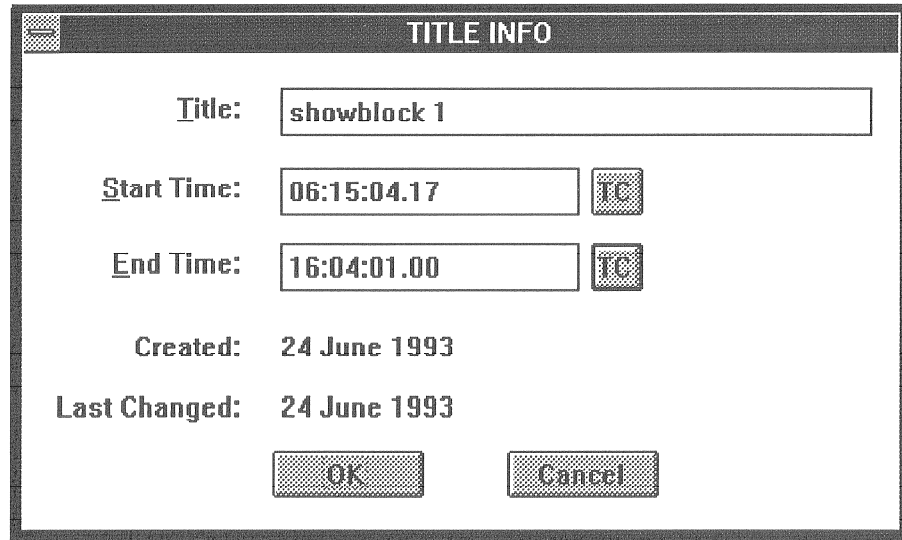
Frequently used entries can be stored into the default title. They will appear automatically when creating a new title (title list menu FILE / NEW).

Load title

To open a title shown in the list, click on the corresponding line. A title marked in the list can also be loaded via the FILE / OPEN menu option.

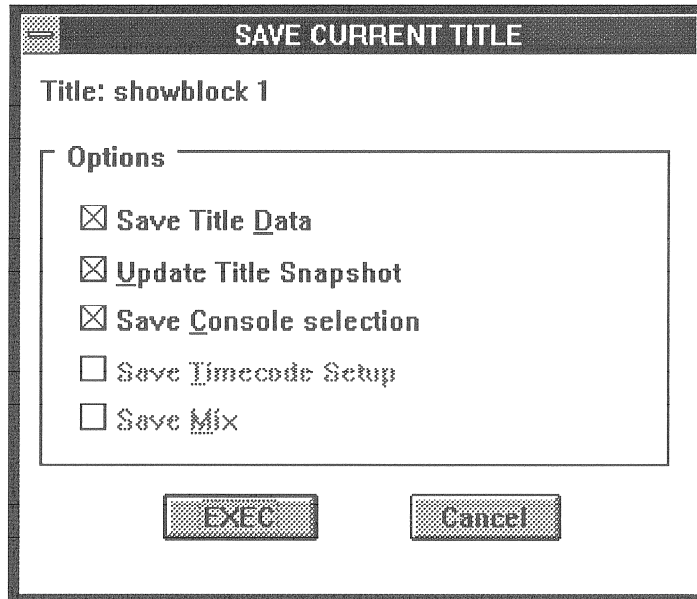
Title information

The **FILE / TITLE INFO** menu opens a dialog box in which the name of the title can be changed. For the configuration with dynamic automation the start and end time are shown.



Save title

A title can be saved at any time with the **FILE / SAVE TITLE** menu. The following options are available.



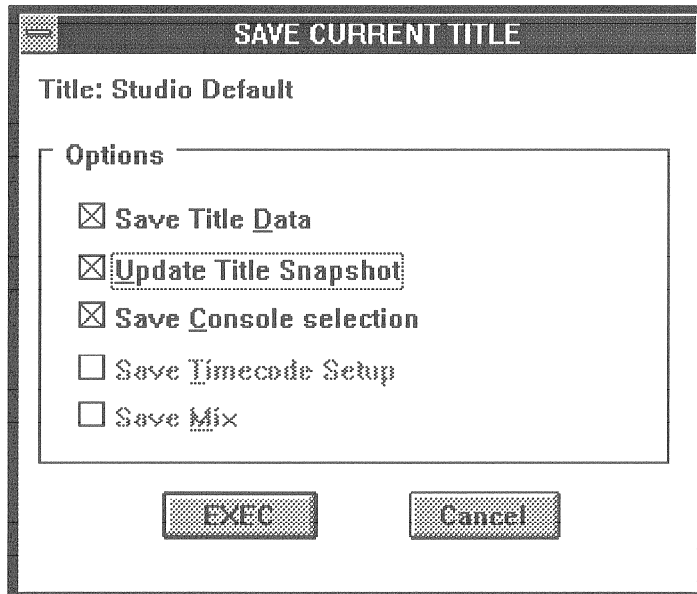
The checked options are executed. To achieve optimum computer performance save only the data that you really need.

Title snapshot

When saving a title (e.g. **FILE / SAVE TITLE**) the current console configuration will be stored in the "title snapshot".

When confirming the save title function you can choose via the check box "UPDATE TITLE SNAPSHOT" if you want to overwrite an existing title snapshot.

When opening a title your may decide (check box CALL TITLE SNAPSHOT) whether the current console configuration should be overwritten by the title snapshot.



3.3 Title information (F3)

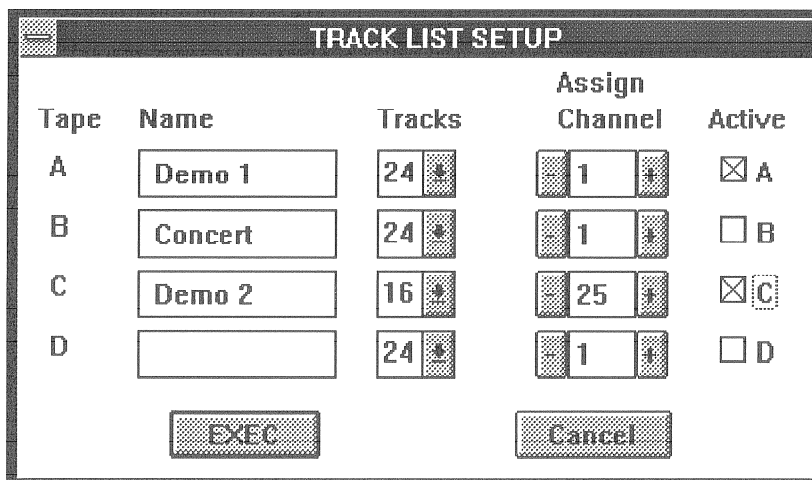
With the function key F3 you can retrieve comprehensive information on the current title. In addition to the name and time code values (which are also displayed in the FILE / TITLE INFO menu), statistical information on the title data are shown. Clicking in the on screen MEMO field opens the notepad window. These correspond with the title notes in the NOTES menu.

3.4 Track list (F4)

The purpose of the track list is to name the tracks of one or several multitrack tape machines. The signal names can be copied directly from or to the input or monitor channels and be shown in abbreviated form on the alphanumeric display of the mixing console.

Defining a multitrack tape

Before the track list can be used, the connected tape machine must be defined in the CONFIGURATION / TRACK LIST menu.



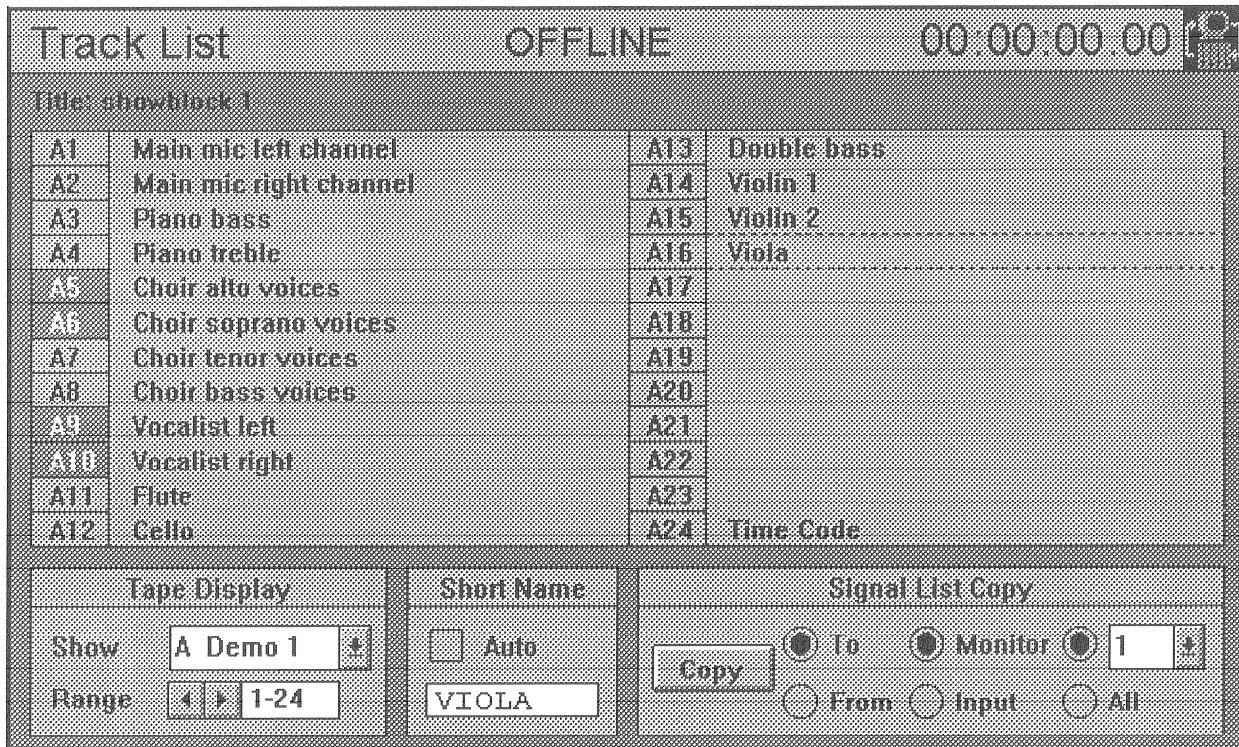
In the **Tape** column you can designate up to four tapes used in the current title, and specify the number of **tracks** of the tape machine. The "**assign channel**" specifies the audio mixer channel recorded on track 1. In the "**Active**" column, click on the tape that you currently want to use in the track list. If more than one multitrack machine is connected simultaneously, the assigned tracks must not overlap. Close the configuration menu by activating EXEC.

Selecting the tape

In the TAPE DISPLAY field select one of the tapes set to active. Those are listed in the DISPLAY field. The easiest way is to browse through all possibilities with the arrow keys in the RANGE field in which all tracks are displayed.

Naming the tracks

Double click the line of the track to be named. An dialog box is displayed in which you can now enter the track name and preferably also a short name. The AUTO SHORT NAME option takes the first eight characters of the full name as the short name.

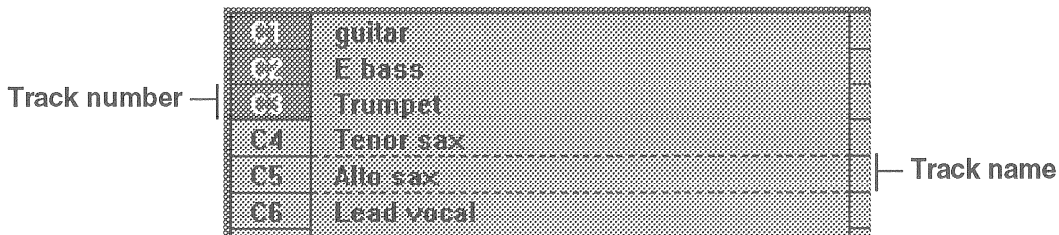


Auto short name

In the SHORT NAME field you can activate the AUTO option. The effect is that the short name is automatically created when a new track name is entered. This setting has no influence on the display of previously entered short names.

Mark / Select:

Track numbers and track names can be selected independently.



Several **track numbers** can be **marked** by clicking them on consecutively. The functions CUT, COPY and DELETE in the **EDIT menu** affect only the marked tracks. If you click into the text line behind a track number, two dotted lines appear. The **line selected** in this way is also displayed in the SHORT NAME field and applies to **signal list copies** and the **PASTE function** of the EDIT menu.

Signal list copy

Coinciding signal and track names need to be entered only once. In the SIGNAL LIST COPY field you can specify whether you want to copy the name FROM or TO the signal list. Possible choices are the names of MONITOR paths or INPUTS.

Then you have to define what should be copied and where the copy is to be used.

- **All:** All fields, also those without text, are copied to fields with the same number.
- **Single:** The copy function of an individual name relates to the selected track in the track list (click on the track name). This line is also displayed in the SHORT NAME field. Depending on the copying direction it is either the source or the target of the operation. You can set the corresponding item number of the signal list in the small numeric field.

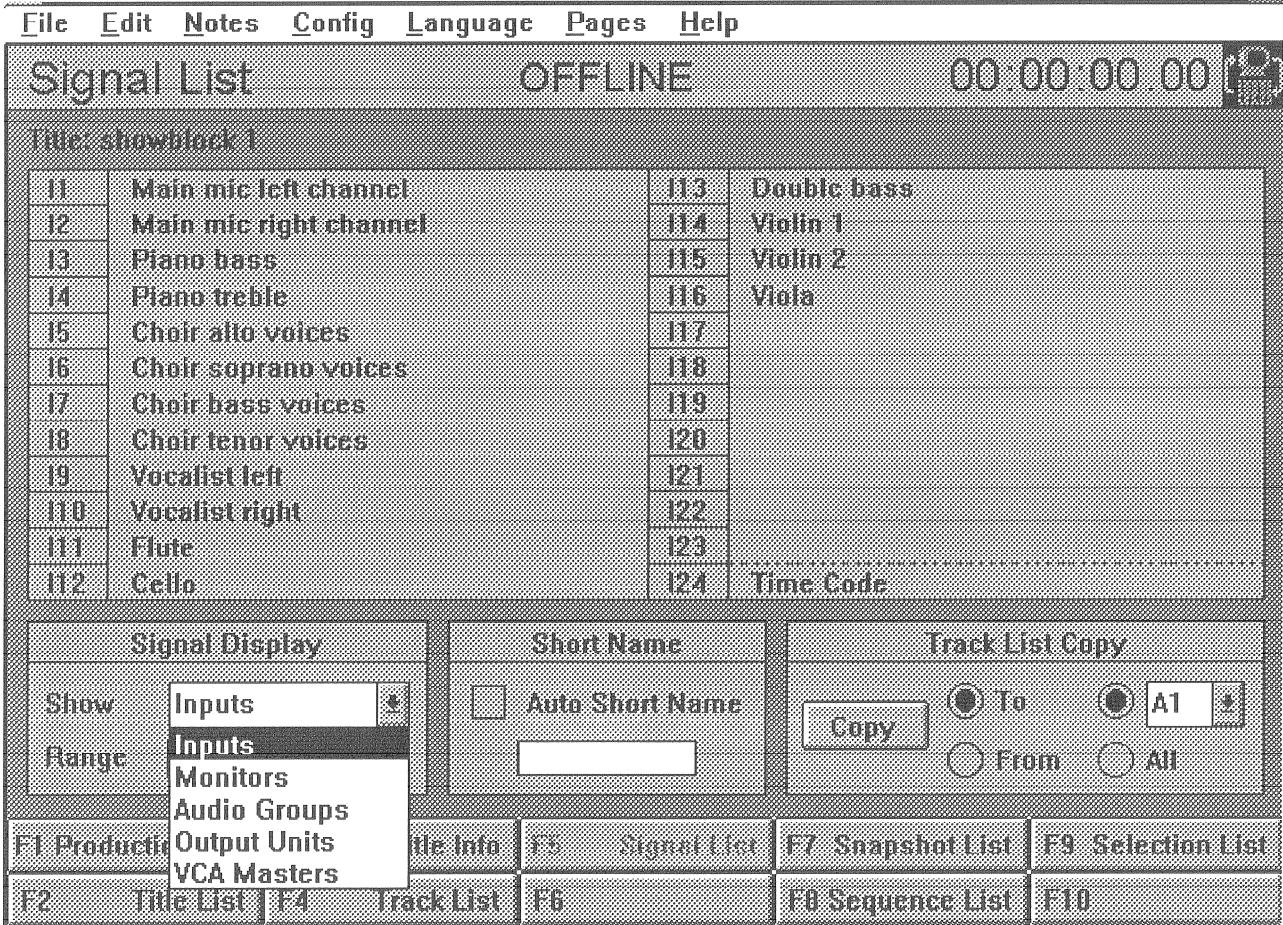
As the last step click on the COPY action button.

3.5 Signal list (F5)

In the signal list you can name inputs, monitor paths (of in-line consoles), audio groups, masters, and VCA master. These names can be used in different views of the controller and as a short name for the alphanumeric display on the mixing console.

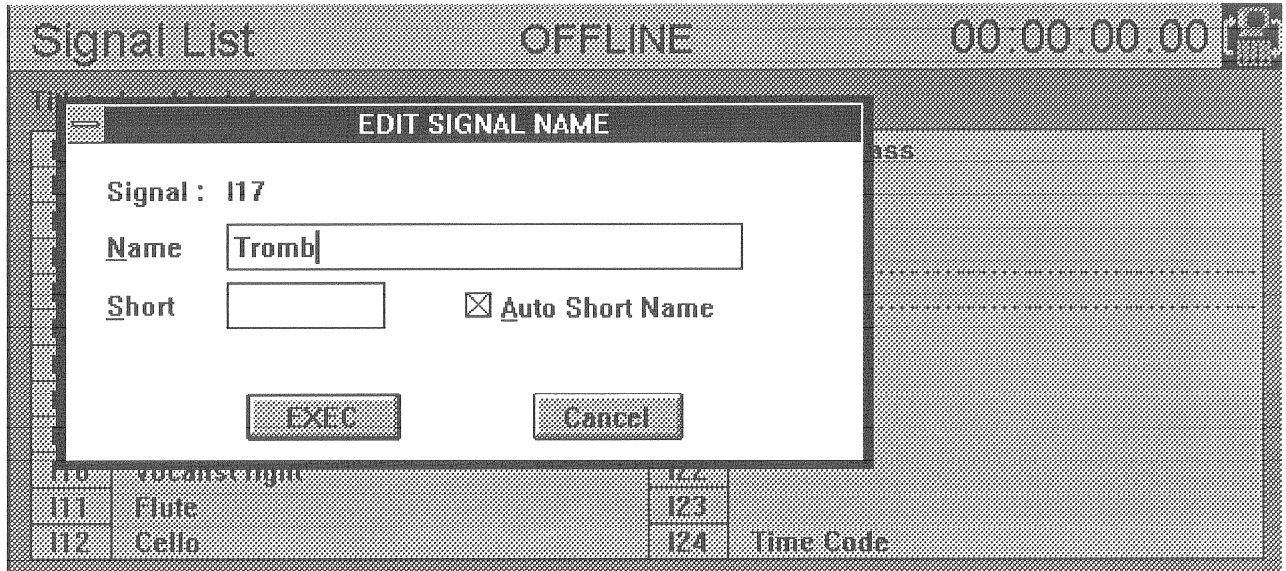
Signal Display

In the SIGNAL DISPLAY field select the names you want to review or edit. The screen always shows 24 signals of the same type. To view additional signals, click one of the arrows in the RANGE field. With the arrows you can browse through all signal types and numbers in either direction.



Entering the signal name

Click twice into the line behind the desired signal number. A dialog box is displayed in which you can enter the signal name and a short name, if desired. If the AUTO SHORT NAME option is set, the abbreviation is constructed from the first eight characters of the full name.

**Editing the signal name**

The functions of the **EDIT** menu are applicable to the signal names. Click on one or several signal designations (e.g. 15 or AG2) to select them. The **CUT**, **COPY** and **DELETE** functions are applied to the marked signals. The **PASTE** option functions differently: The last copied name(s) are copied from the clipboard into the line marked with dots. Existing names of this line and any continuation lines will be overwritten.

Copying the track list

The signal names can be exchanged through the track list. When the names of the input or monitor signals are displayed in the signal list, the TRACK LIST COPY field is active. Select the copying direction FROM or TO the track list. The second entry defines the range of names to be copied and where the copy is to be inserted.

- **All**: All fields, also those without text, are copied to fields with identical number.
- **Single**: The copy function of an individual name relates to the line selected in the signal list. This name is also shown in the SHORT NAME field. Depending on the copying direction it is either the source or the target of the operation. You can set the corresponding item number of the track list in the small numeric field.

3.6 Snapshot list (F7)

The snapshot list shows all snapshots that are created within the current title or which are loaded from a library. In the DISPLAY field the list can be changed over to show presets. It is not possible to call snapshots from the list.

If you want to call or make snapshots you must swap to the snapshot page (PAGES/ SNAPSHOT menu).

Display

The snapshot list is used for editing and analyzing snapshots and presets of a title. The name, creation date and modification date are shown in the list. Two symbols provide information on the snapshot type:



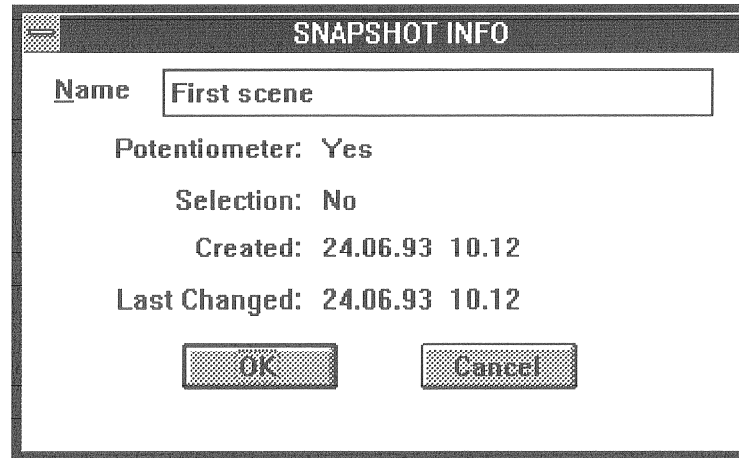
Snapshot contains potentiometer settings



Snapshot setting has been changed

Renaming a snapshot

The **FILE / INFORMATION** menu opens the following dialog box in which the snapshot name can be changed:



Deleting a snapshot

Mark the snapshot to be cancelled in the list and activate the **CLEAR** command in the **EDIT** menu. You are prompted to confirm the removal of the snapshot.

Snapshot library

The **FILE** menu contains commands for accessing various libraries. From the snapshot list it is possible to add snapshots to one of the libraries, to load snapshots from the libraries, or to rename snapshots already stored in the libraries. The access privileges to the libraries are governed by the user status.

3.7 Sequence list (F8)

Opening a sequence

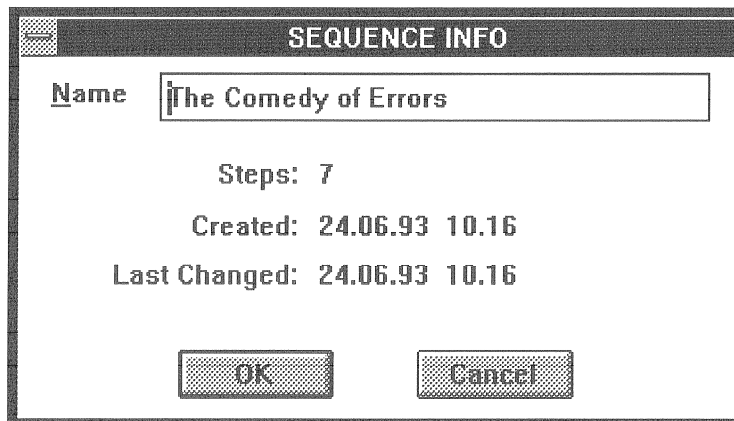
The sequence list contains sequences that have been created with the existing snapshot settings of the current title. Open the desired sequence by double clicking the corresponding line or choose the **FILE / OPEN** menu option. The double arrow on the left of the name marks the opened sequence. As is the case for the snapshot list, the data and scope of the sequence are displayed in the list.

Creating a new sequence

The **FILE / NEW** command creates a new sequence. Enter a name and confirm with **EXEC**.

Renaming a sequence

The **FILE / INFORMATION** command opens the following dialog box in which the sequence name can be changed.



Deleting a sequence

Mark a sequence and cancel it with the **EDIT / CLEAR** command. You will be prompted to confirm the deletion.

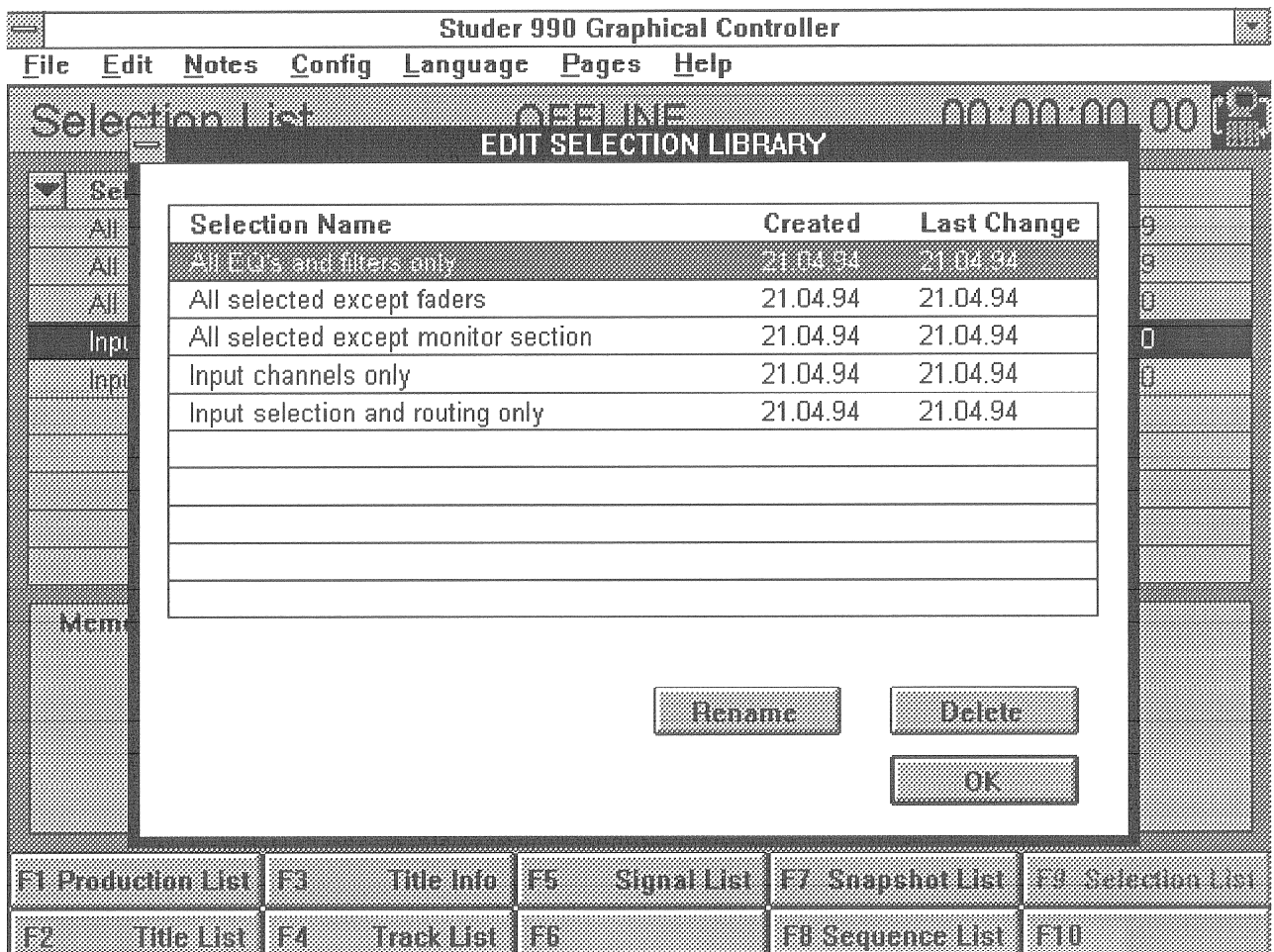
3.8 Selection list (F9) (Global Console Selection)

The global console selection can be edited in the SNAPSHOT and SEQUENCE function groups and saved under a name. The selections created in the current title are shown in the selection list. In the MEMO field a note can be attached to the selections.

Library

The library functions applicable to the selections are only accessible from this list. The selection library applies to all users and all productions. However, only users with the Advanced or Super status are authorized to write into this library. Guest and Standard users have read-only access.

All library options are available in the **FILE** menu.



Renaming a selection

As in the case of snapshots and sequences, the FILE / INFORMATION menu can be used for changing the name.

Deleting a selection

As in all lists, the EDIT / CLEAR command affects the marked selection.

Loading a selection

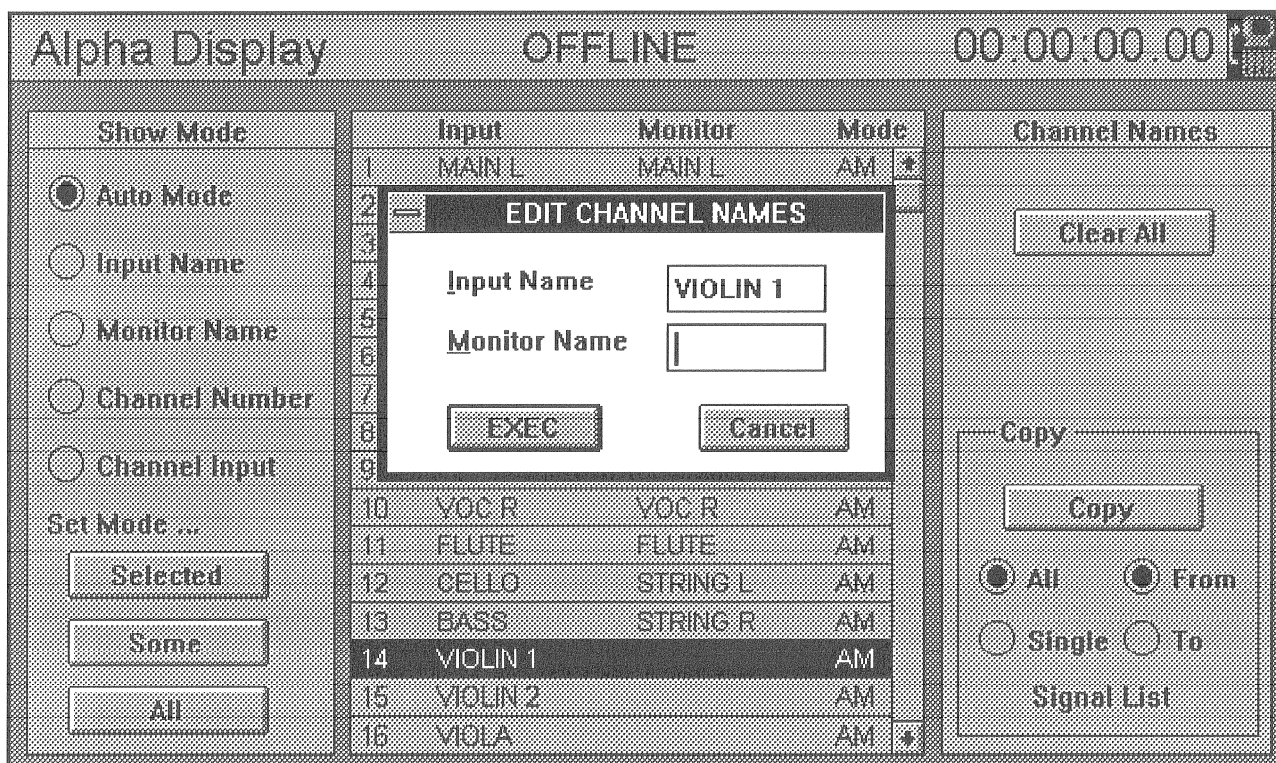
The mixing console selection can be loaded in the SNAPSHOT or SEQUENCE function groups. Switch to the corresponding group with one of these keys (or with CTRL + F7 or CTRL + F8). The 'Mixing Console EDIT' command opens a dialog box with all editing possibilities for selections.

4. Mixing console views DESK

In this program area the channel labelling with the alphanumeric display is active. It can be called with the DESK key (or Ctrl. + F1). The 8-position display modules are installed as options above the fader in the mixing console.

4.1 Alphanumeric display

The alphanumeric display shows different information in fixed or cyclic mode. The display page shows a list with the channel number, the name of the input signal, the name of the monitor signal and the short name of the display mode.



Listing the short names

The list in the center of the screen shows all channel units of the mixing console. You can browse through it by moving the cursor bar. The INPUT and MONITOR entries are intended for short names. They can be loaded from the signal list (program area LISTS) in the COPY field.

Abbreviations can also be entered directly on the display page. When you double click a line of the list, a dialog box appears in which you can enter a short name comprising up to 8 characters.

Copying the short names

The short names can be copied back and forth between the Alpha Display page and the signal list. This means that in the signal list either a short name must be entered or the Auto Short Name option must be active (see Lists/Signal List). Clicking on the COPY command button starts the copying operation based on the following settings.

- **FROM:** The copying direction is from the signal list to the Alpha Display page.
- **TO:** If short names have previously been entered on the Alpha Display page, they can be copied to the signal list.
- **ALL:** Copies all short names.
- **SINGLE:** Copies the marked channel strip to the corresponding position with the same channel number.

Display mode

- **Input name:** Display the short name entered in the INPUT column.
- **Monitor name:** Display the monitor short name from the list.
- **Channel number:** Display the channel number with abbreviation according to the table below.
- **Input selection:** Display the selected input of the channel strip.
- **Auto mode:** Display the name of the signal that is currently being processed with the main fader (input name, monitor name or master name in the case of VCA mastering).

Channel number	Explanation
1 ...##	Input channels
AG1 ... AG16	Audio Groups
A-L, A-R, ... D-L, D-R,	Stereo masters
FG1 ...FG8	VCA master Free Groups
SG1 ... SG8	VCA master Separate Groups

Display mode	Explanation
AM	Auto Mode
IN	Input Name
MN	Monitor Name
CN	Channel Number
CI	Channel Input

Setting the mode

The selected display mode is set in a single or all channel units by means of the three command buttons **SELECTED**, **SOME** or **ALL**. In the right-hand column (mode) of the list the display mode is indicated with an abbreviation.

All

 Some

- First select the **display mode**, e.g. input name.
- If you prefer this display mode for all channels of the console, click on the **ALL** action button. In the MODE column of the list the short name "IN" (input name) will be shown for all channels.
- If you want to operate only certain channels in the selected display mode, click on **SOME**. In the dialog box you can now make your choices for inputs, groups and master. Enter the individual channels and separate them with a space. Use the same designations as in the list on the left-hand edge.

ALPHANUMERIC SET SHOW MODE

	All	None	Some	
Input	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input style="width: 100%;" type="text" value="5-8,10,14"/>
Group	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input style="width: 100%;" type="text" value="1 3,5"/>
Master	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input style="width: 100%;" type="text" value="A B"/>

Link Desk

Selected

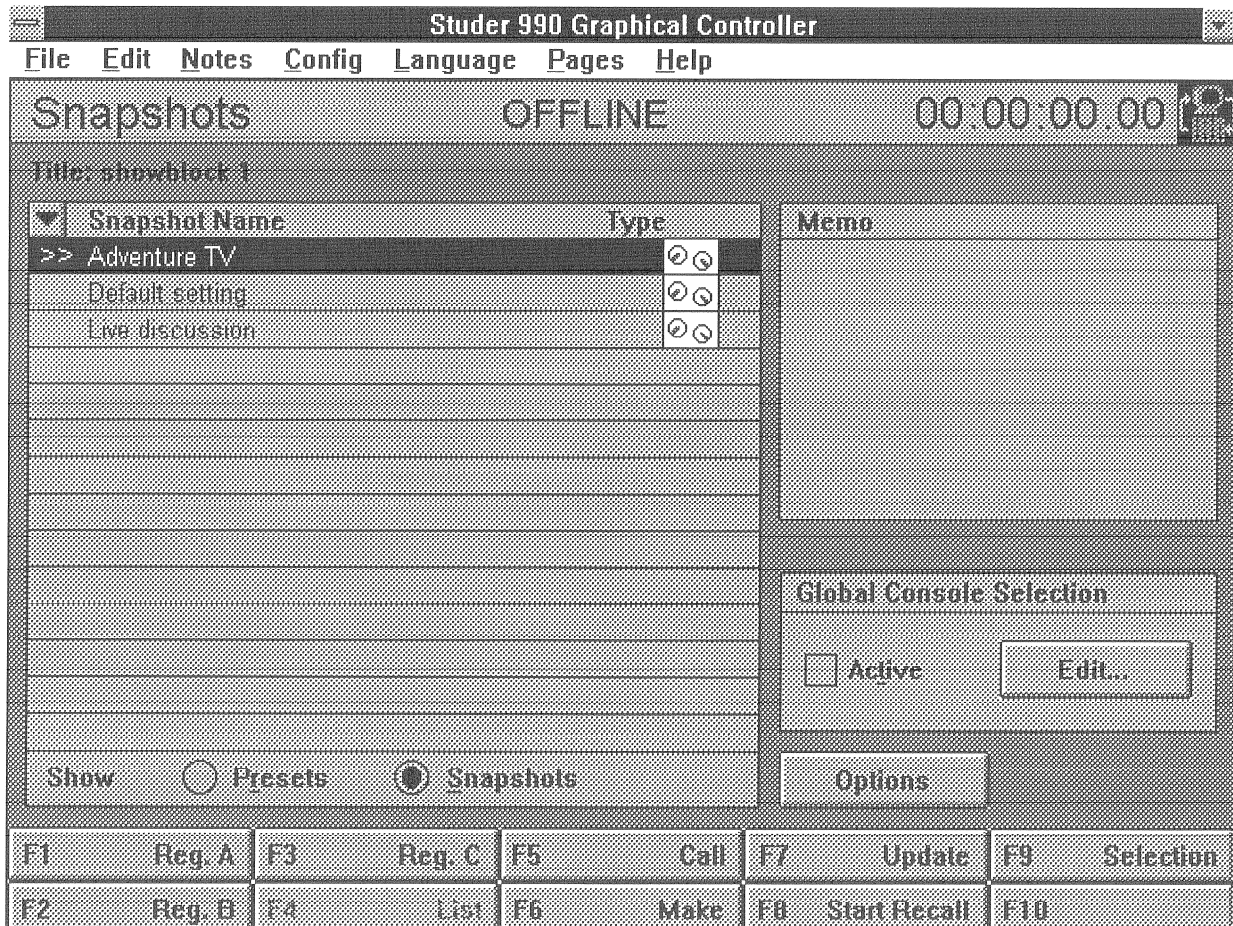
- The **SELECTED** action button offers a third possibility of setting the display mode: the **channel currently marked** in the list is switched to the specified display mode.

5. Snapshots, presets and selections

SNAPSHOT

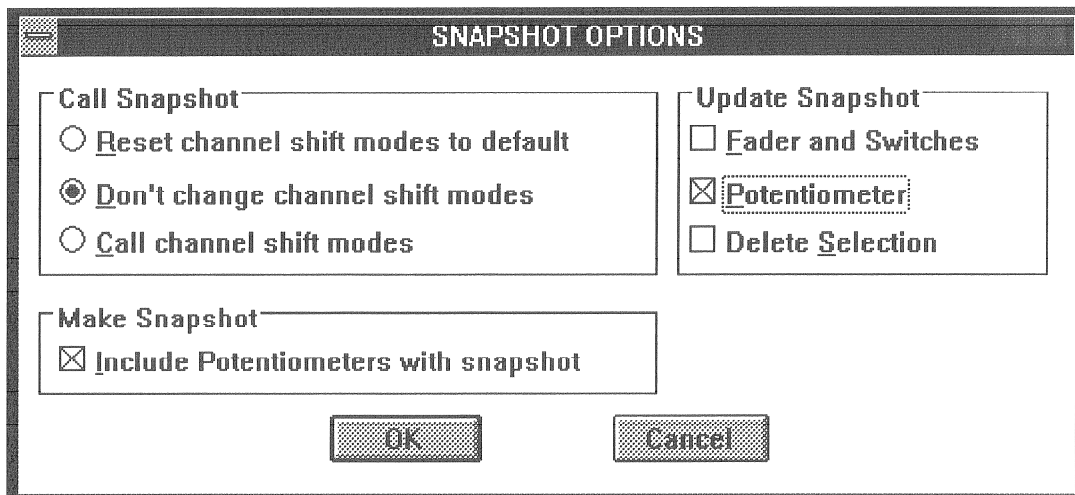
The **SNAPSHOT** key or **PAGES / SNAPSHOT** menu (CTRL. + F7) activates the Snapshot program area. This list shows the snapshots created in the current title. This list can be switched to showing the title presets. Function keys F1 to F10 have the following effect:

F1	Register A	Operations with memory register A
F2	Register B	Operations with memory register B
F3	Register C	Operations with memory register C
F4	List	Switch between operation with memory registers and snapshots from the list
F5	Call	Call the marked snapshot or a memory register on the console
F6	Make	Save current settings as a snapshot either with name (list) or in one of the three registers
F7	Update	Save the mixing console state under the marked snapshot name. Change existing snapshots.
F8	Start Recall	Start the potentiometer recall for the snapshot marked in the list
F9	Selection	Display the selections of the marked snapshot or register
F10	unassigned	



5.1 Snapshot options

For the Make, Call, Update operations for snapshots certain options can be selected. They are part of the personal configuration of the program and have to be set in the CONFIGURATION / SNAPSHOT OPTIONS menu. The OPTIONS action button on the snapshot screen is an alternative for opening the same dialog box.



Call snapshot

These snapshot options relate to the handling of dual functions. The changeover to the two function levels can either be set to default values, be left unchanged, or be recalled by the snapshot.

Make snapshot

When the RECALL function will be used later, the potentiometer settings must also be stored.

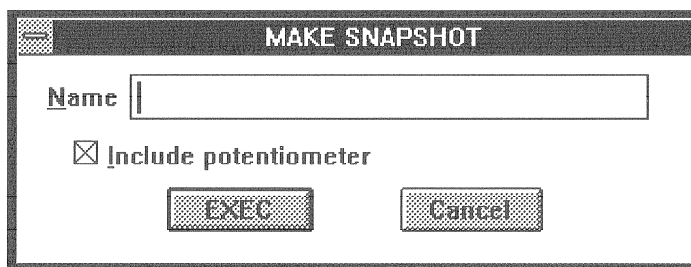
Update snapshot

The UPDATE function can be executed selectively for faders and switches, or for potentiometers, or for the mixing console selection. Those functions that are selected (with an X) will be replaced by the current mixing console setting when UPDATE fader and switch settings of the snapshot is performed, and the current potentiometer settings are read in. Thirdly, the selection of the snapshot can be cancelled, causing all functions to be selected.

5.2 Creating and updating the snapshots

Make snapshot

The current mixing console setup is recorded by the **MAKE (F6)** function. A dialog box for entering the snapshot name appears. The option for storing the potentiometer settings can be changed again. To save the snapshot in one of the registers A to C (F1 ... F3), select the desired register. However, these registers cannot be saved.



Normally the List will be active. In this case the key F4 will be displayed in light grey. If one of these registers is activated, all subsequent commands are applied to this register. The LIST action button is now enabled. Click it on again if you want to work with the snapshots of the list.

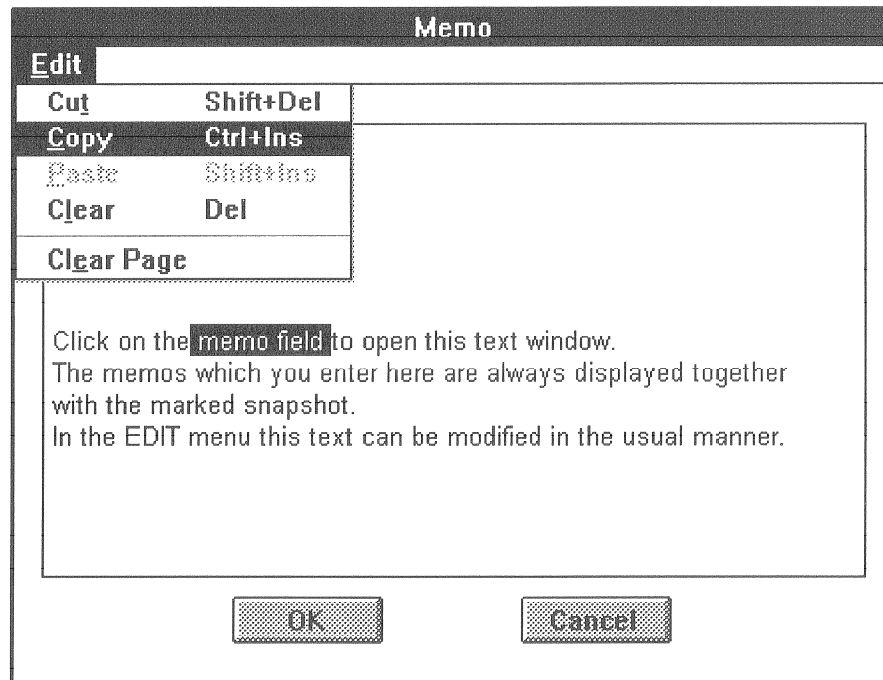
Snapshots / Presets The entire list can be changed over to displaying and editing presets. Click on the appropriate word in the DISPLAY field below the list.

Update snapshot The **UPDATE (F5)** function overwrites the currently marked snapshot of the list or a selected register with the current mixing console setup. In accordance with the snapshot options only individual areas are updated.

Change name Open the **FILE** menu and select **INFORMATION**. In the Snapshot Info dialog box you can now change the name.

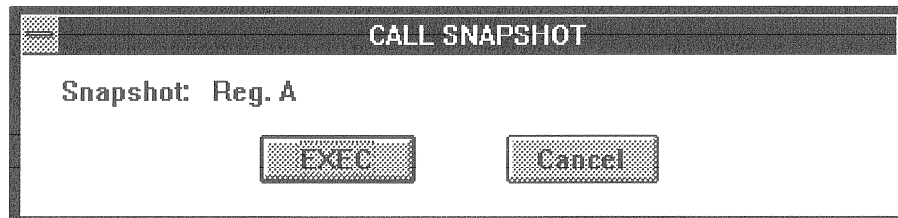
Delete snapshot Mark the snapshot to be deleted and enter the **DELETE** command in the **EDIT** menu. The list (F4) must be active.

Snapshot memo For each snapshot you can enter a note in the Memo field.



5.3 Calling snapshots

Call from register Snapshots can be loaded from the list or a register. Actuate a **register key** and then function key **F5** to call the snapshot on the mixing console. If the registers are empty, the **CALL** function is inactive.



The content of the registers also remain after changing the title.

Call from list

More frequently you will work with an active **list** (F4). Select a snapshot and enter the **CALL** (F5) command. The program asks you to confirm this action before the settings are transferred to the mixing console. The call can also be initiated by **double clicking** the snapshot name or hitting the ENTER key of the Keyboard. In this case no confirmation will be requested.

5.4 Snapshot libraries

Three different snapshot libraries exist. Access to these libraries is governed by the user status. Regardless of the current production and the data base (see production list), the same libraries are always available.

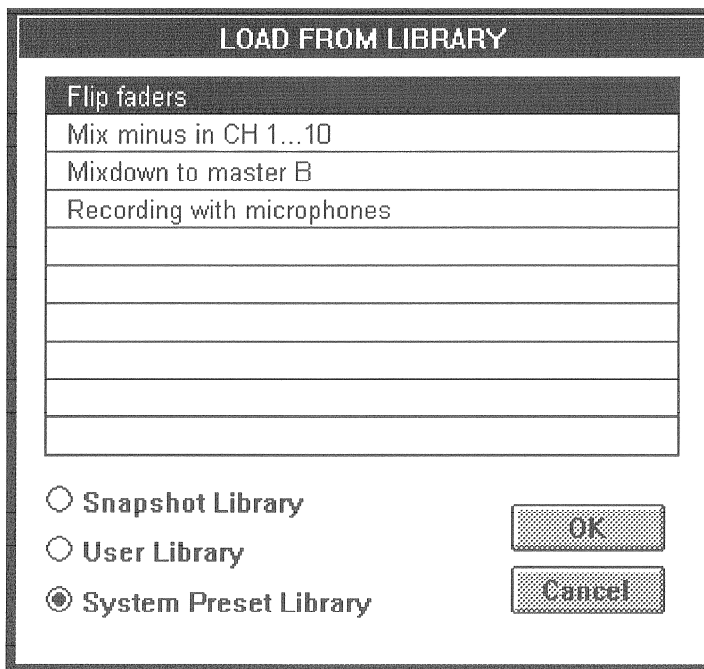
User status	SNAPSHOT library	USER library	SYSTEM PRESET library
SUPER	load / save	load / save	load / save
ADVANCED	load / save	load / save	load
STANDARD	load	load / save	load
GUEST	load	load / save	load

The privileges for processing the libraries are the same as for saving.

The snapshot and preset library are available to all users. However, each user can create his personal user library to which only he has access.

Loading from library

Open the **FILE** menu and choose **LOAD FROM LIBRARY**. Click on the desired library and subsequently one of the snapshots. After confirmation this snapshot is transferred into your snapshot list.



Storing in the library

In the **FILE** menu enter the **STORE IN LIBRARY** command and then click on the desired library. The snapshot name is accepted but it can subsequently be edited in the library.

These library entries are continuously stored on hard disk.

Editing the library

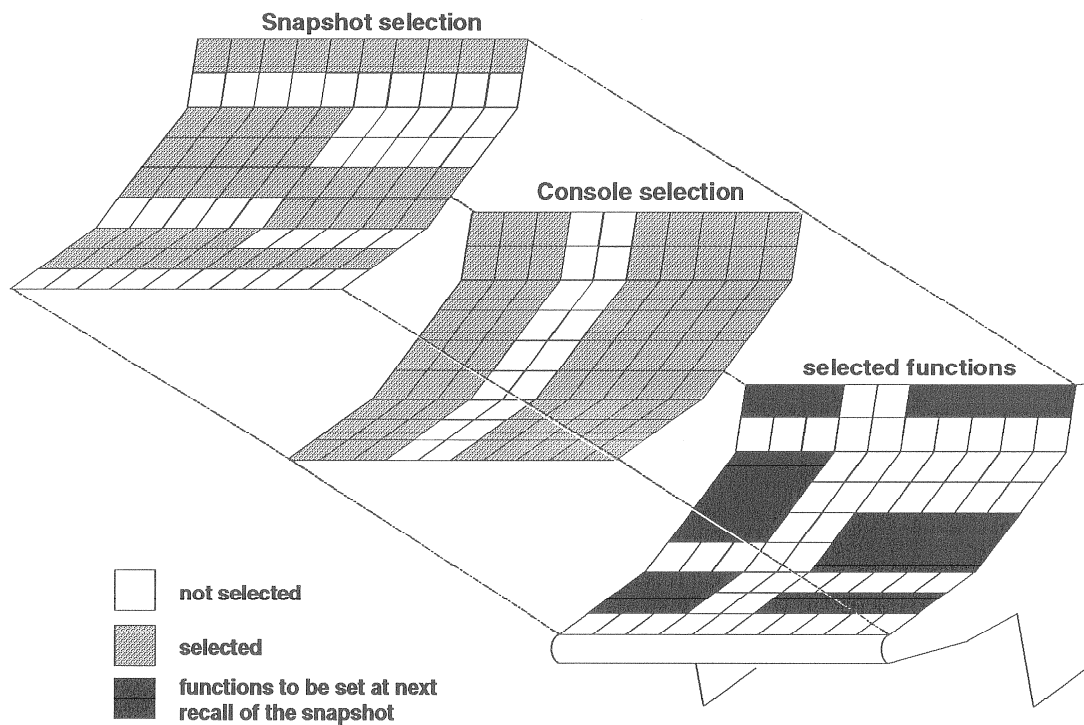
In the **FILE** menu select **EDIT LIBRARY**. After you have selected the library, mark a snapshot and activate the operation **RENAME** or **DELETE**.

5.5 Snapshot selection

Snapshots provide even more flexibility if single functions can be handled separately. The **snapshot selection** (Function Key **SELECTION** or **F9**) offers this feature; it defines the functions that shall be recalled on the console. The console selection **Global Console SELECTION** offers the same option but it is rather used for those console settings that shall not be changed by any snapshot.

Combination

The snapshot- and console selections are simultaneously effective. Only functions selected in both selections can be recalled by a snapshot. Parameters that are deselected in at least one of the selections won't be changed at a snapshot call.



Function key **F9 SELECTION** opens a dialog box for editing the selection of the marked snapshot. The selections of the memory register cannot be edited. Different approaches are implemented for determining which functions of a snapshot are to be transferred (selected) to the mixing console and which are to be hidden (deselected).

Matrix Edit

This option allows convenient, graphical editing of the selection. Individual functions as well as complete channel strips (vertical) or entire function groups (horizontal) can be processed.

Console Edit

If this option is checked (X) the selection is displayed on the console (selection edit mode). The editing can now be conveniently monitored or executed on the console in the usual manner.

Horizontal processing

If Matrix Edit is not checked, processing takes place in function groups. However, you can select whether e.g. all inputs or only specific inputs are to be called.

Global editing

The operations in this function field apply to the entire selection.

LOAD Selection can be stored completely independently of the other snapshot data in a library that is accessible to all users. The LOAD action button opens the selection list. Choose a selection and confirm with OK to transfer it to the snapshot.

STORE The selection of the snapshot can be stored in a selection library. After the STORE command enter a name and confirm it.

ALL This button selects all functions in a single command. All functions of the snapshot can be called.

NONE The NONE command cancels all selections. The snapshot can then no longer transfer any functions to the console.

INVERT This function inverts all selection states: Selected functions are deselected and vice versa. This function allows interesting applications such as mixing the settings of two snapshots by calling them successively with inverse selections.

Individual editing

EDITING For the Inputs, Groups, AUX masters (AUX), monitor and VCA groups there is a separate **EDIT** action button. Where applicable there is a choice between **ALL** and **SOME** for each group.

To edit the selected channels, click on **SOME** and subsequently on the input field. Now enter the desired channel numbers and separate them with one blank each. The masters can be entered with a letter (A, B, etc.) or a number. If you edit **ALL** channels in between, this selection is preserved and can subsequently be called with **SOME**.

Matrix edit For each selectable function unit the matrix offers a square. The selection state is changed by clicking on the square.



Black square: function selected



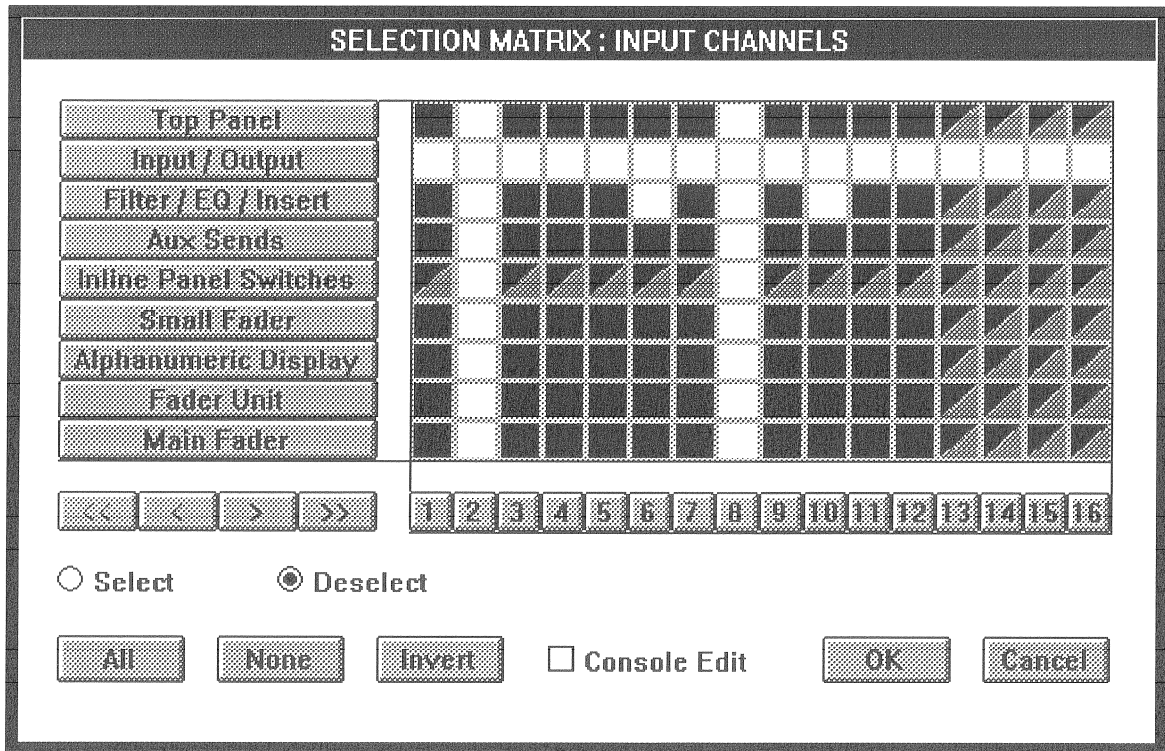
White square: function deselected



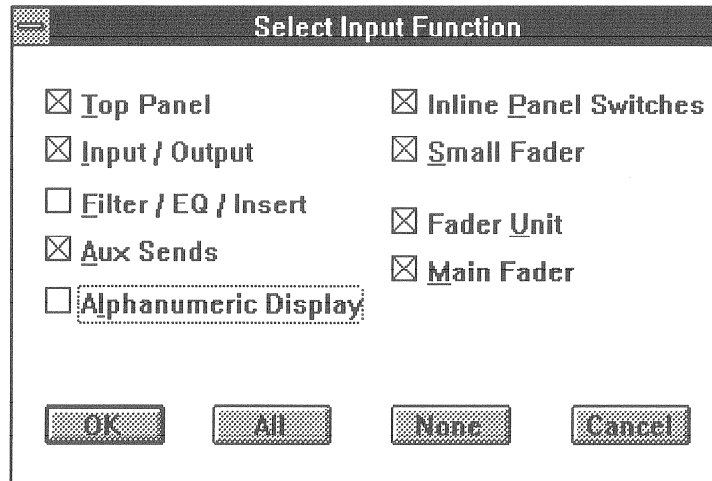
Split square: The function is selected in the snapshot list but not on the console. This means that in the snapshot call it cannot be transferred to the console.

You can now jointly switch also channels or complete function groups. Simply click on the action buttons with the function designations or channel number. The 'Select' and 'Deselect' options determine in this case where selection or deselection takes place.

- The section of displayed channels can be shifted with the arrows on the left-hand side of the channel numbers.
- In this context, the **ALL**, **NONE** and **INVERT** functions do not apply to all selections but only to the selection to be edited.



Horizontal editing Matrix edit is switched off. As in the case of Matrix edit choose whether ALL or SOME channels are to be edited. After the EDIT command an input is displayed that jointly selects or deselects each function group in all selected units. This mode does not show whether or not the selected functions are also selected in the mixing console selection which is a precondition for transferring them to the mixing console.



The settings are activated after confirmation with **OK**. After **CANCEL** to previous selection is reestablished.

5.6 Mixing console selection

The global mixing console selection can be edited in the corresponding EDIT field. The same display and selection modification facilities are available as for the snapshot selection.

A second editing possibility existing in the Sequence program area. There only the mixing console selection can be called.

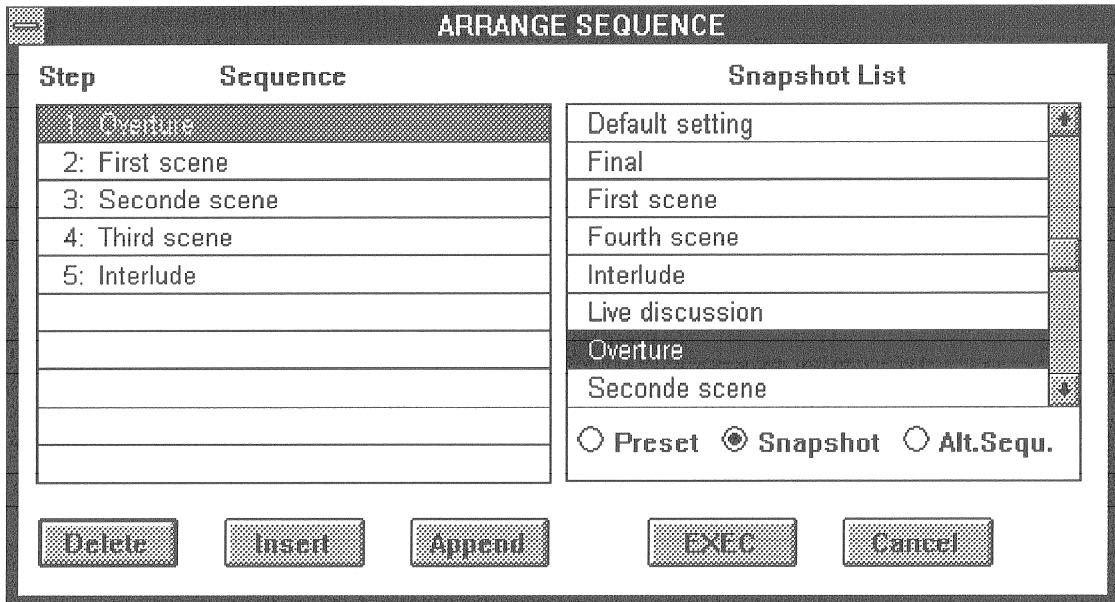
6. Sequences

In this program section you can create snapshots and presets from the current title sequences. A prerequisite is that the desired snapshots and presets are located in the corresponding list. First copy the snapshots from the libraries into the snapshot list.

Create new sequence

In the **FILE** menu choose **NEW** and enter the name of the new sequence.

- With the function key F5, **ARRANGE**, open a dialog box for creating the sequence. On the left-hand side you see the sequence steps with the assigned snapshots.
- Mark the first snapshot and choose **APPEND** to arrange it in the sequence.
- After a sequence has been arranged choose **OK**.
- Choose **CANCEL** to close the **ARRANGE SEQUENCES** dialog box without storing the input.



Inserting snapshots

APPEND adds the marked snapshot to the end of the sequence. With **INSERT**, however, it will be inserted into the sequence in front of the marked step.

Deleting snapshots

DELETE removes the marked snapshot from the sequence.

Joining sequences

Existing sequences can be inserted into another sequence. Choose **ARRANGE** and switch the snapshot list to **ALTERNATIVE SEQUENCES**. Existing sequences of the title are now displayed. They can be processed like snapshots and appended or inserted into the sequence.

Open existing sequence

The created sequences are stored with the **FILE / SAVE TITLE** or **FILE / SAFE** command. They can be recalled with the **FILE / OPEN** command. The list that is displayed contains all sequences of the current title.

Sequence control ...

The snapshots of the sequences can be recalled either with the mouse / trackball or with the function keys F1 to F4 on the mixing console.

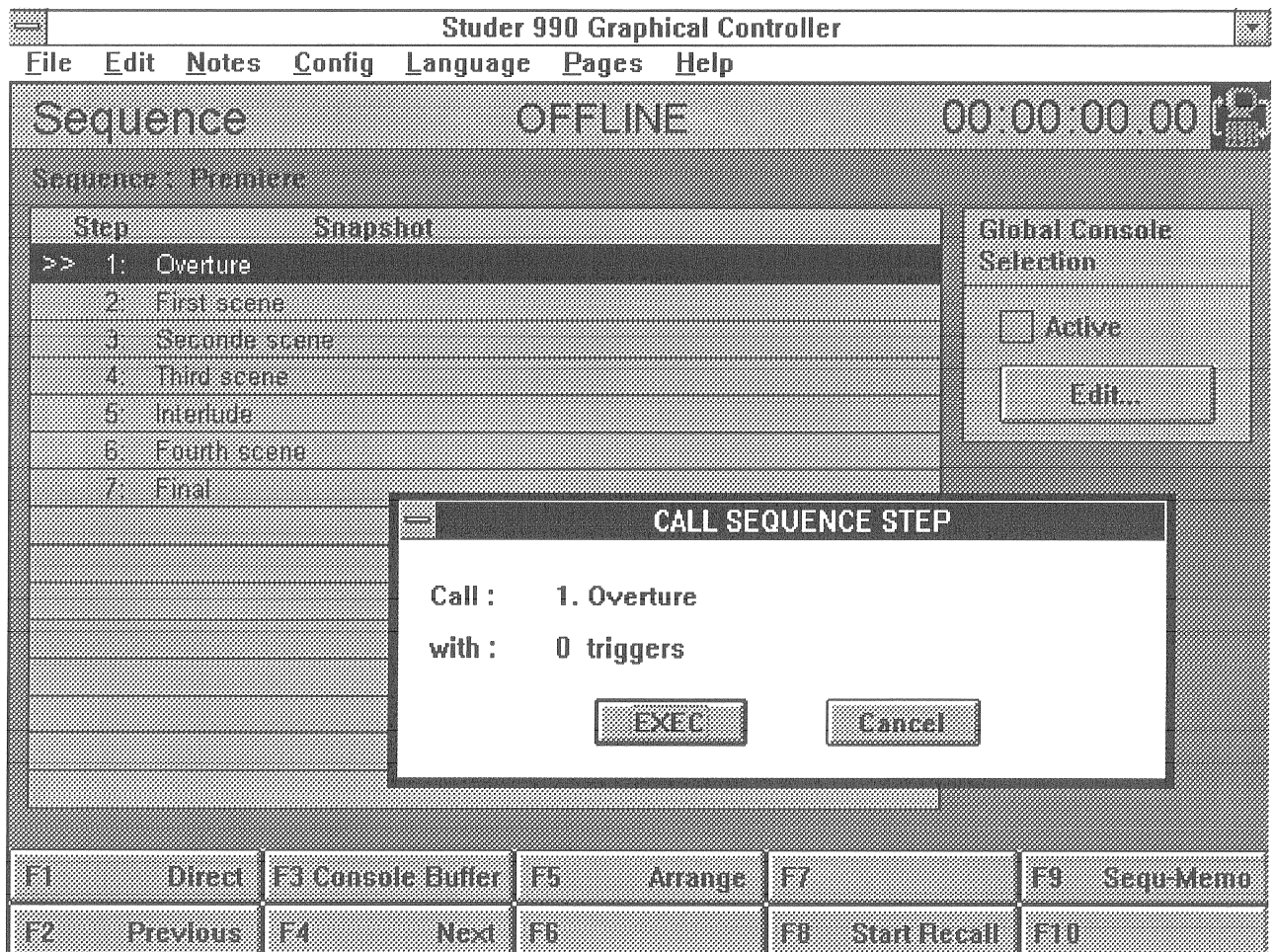
... via the keyboard

The **DIRECT** key loads the snapshot marked in the sequence with reverse video, into the console. The lettering of the sequence is identified with the double arrow ». Before the step is recalled you are prompted to confirm it. After the first step the **NEXT** (F4) key controls the execution of the sequence. The next step is first displayed as a prompt to be confirmed and then called on the console. If the current step needs to be repeated, e.g. after a preliminary adjustment, it can be recalled with **CONSOLE BUFFER**.

The **PREVIOUS** key allows you to recall the previous step.

... with mouse / trackball

Double clicking a snapshot of the sequence causes it to be recalled on the console. The currently active step of the sequence is marked with the double arrow ». In this operating mode the user is responsible for ensuring that the sequence is executed in the proper order. The steps can be clicked on and recalled in any order.



Start recall

The recall of the potentiometer settings can be started directly from the sequence page with the function key **F8**. Please note that the recall is started for the sequence snapshot of displayed in reverse video and not the current step of the sequence (»). As a rule, however, the marking and the double arrow are on the same step.

- Global console selection** As described under snapshots the console selection can also be edited on the sequence page. These two parallel setup facilities access the same selection. The **ACTIVE** check box switches the entire selection on and off. In the checked condition the set selections are taken into consideration, i.e. only selected functions can be changed by snapshots. In the inactive state all functions of the console are enabled.
- Memo field** The memo field for the loaded sequence can be edited with the function key **F9**. It is handled in the same way as a notice field.

7. Recall

With the recall procedure you can establish potentiometer settings on the mixing console based on stored values. For this purpose the snapshot must be executed with the 'Potentiometer settings' option. The recall can be performed for the entire console or for selected channels or functions. The recall is initiated directly on the snapshot page, the sequence page, or the recall page.

Different display methods are used. The zoom function provides a magnified view of the potentiometer currently being processed. This picture is shown with colored segments so that the deviation from the desired value is well visible also from a distance. The accuracy with which the set point and actual value must coincide can be set in three steps.

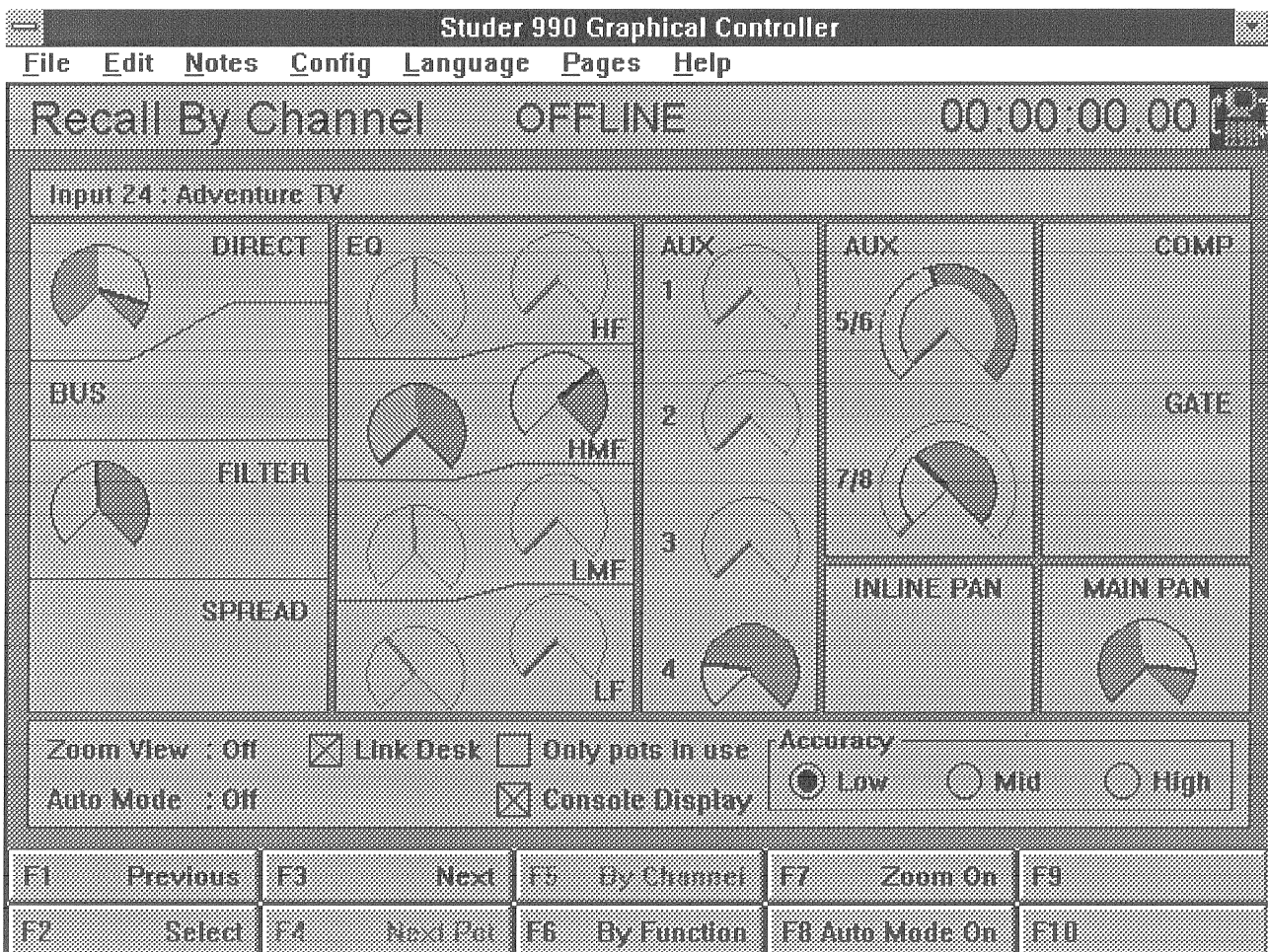
7.1 Preadjustments

Recall by channel	For each recall, all potentiometers of a channel as well as their deviations from the stored set point are displayed simultaneously on the screen.
Recall by function	For each function, the potentiometers of all channels of one function are shown together with the deviation from the set point. Up to 32 channels can be displayed on a monitor page.
Link desk	When the link desk option is active, a channel can be selected for recall by pressing the SELECT key on the mixing console. This option is only useful and available for recall by channel. If auto mode is simultaneously active, the recall is continued starting with the selected channel. The select key of the channel being processed is illuminated.
Console display	When the mixing console display is switched off, the mixing console retains its normal operating state during the recall. All information is displayed on the monitor. When the mixing console display is activated, the mixing console switches to recall display mode. In this case all displays on the mixing console relate to the recall of potentiometers, and the users functions are inhibited. Potentiometers with incorrect settings are identified by an adjacent LED. As soon as this key is pressed or the potentiometer is turned (link desk ON), this element is displayed. One column of the bargraph displays the desired setting, the other column the actual setting. Also the alphanumeric display can show the deviation or the function of the potentiometer. The type of display facility available (bargraph, alphanumeric) depends on the mixing console model. When the alignment is correct the display is blanked out and the next function can be processed.
Zoom view	If an illuminated key is pressed when the mixing console is switched on or if the corresponding potentiometer is turned, a magnified view showing only this function is produced. This means that the amount and direction of the required alignment is visible also from a distance. If the recall is based mostly on information displayed on the monitor, the zoom view is very useful, particularly in conjunction with Auto mode.
Accuracy	A setting is considered to be correct if the potentiometer setting is within the tolerance range around the set point. If this range is very narrow, a high accuracy is achieved but more alignment time is required than for medium or low accuracy. For coarse alignment the lower accuracy greatly simplifies the work. Choose the degree of accuracy that suits your application.

Only active potentiometers This option speeds up the recall since only the active potentiometers are processed. If an equalizer is switched off, its potentiometer deviations will be displayed in grey rather than a bright color. In auto mode these potentiometers are skipped. When the mixing console is switched on the disabled functions will not be shown.

7.2 Start channel-by-channel recall

In the basic mode, established with function key **F5 BY CHANNEL**, the recall proceeds on a channel-by-channel basis. It starts with the first channel and processes the mixing console units from left to right. In the upper left corner of the monitor the channel and the snapshot being processed are displayed. Below this line all potentiometers of the channel with their current settings (black marker) and the set point of the snapshot (white marker) are displayed. The segment between the two settings is emphasized by a different color.



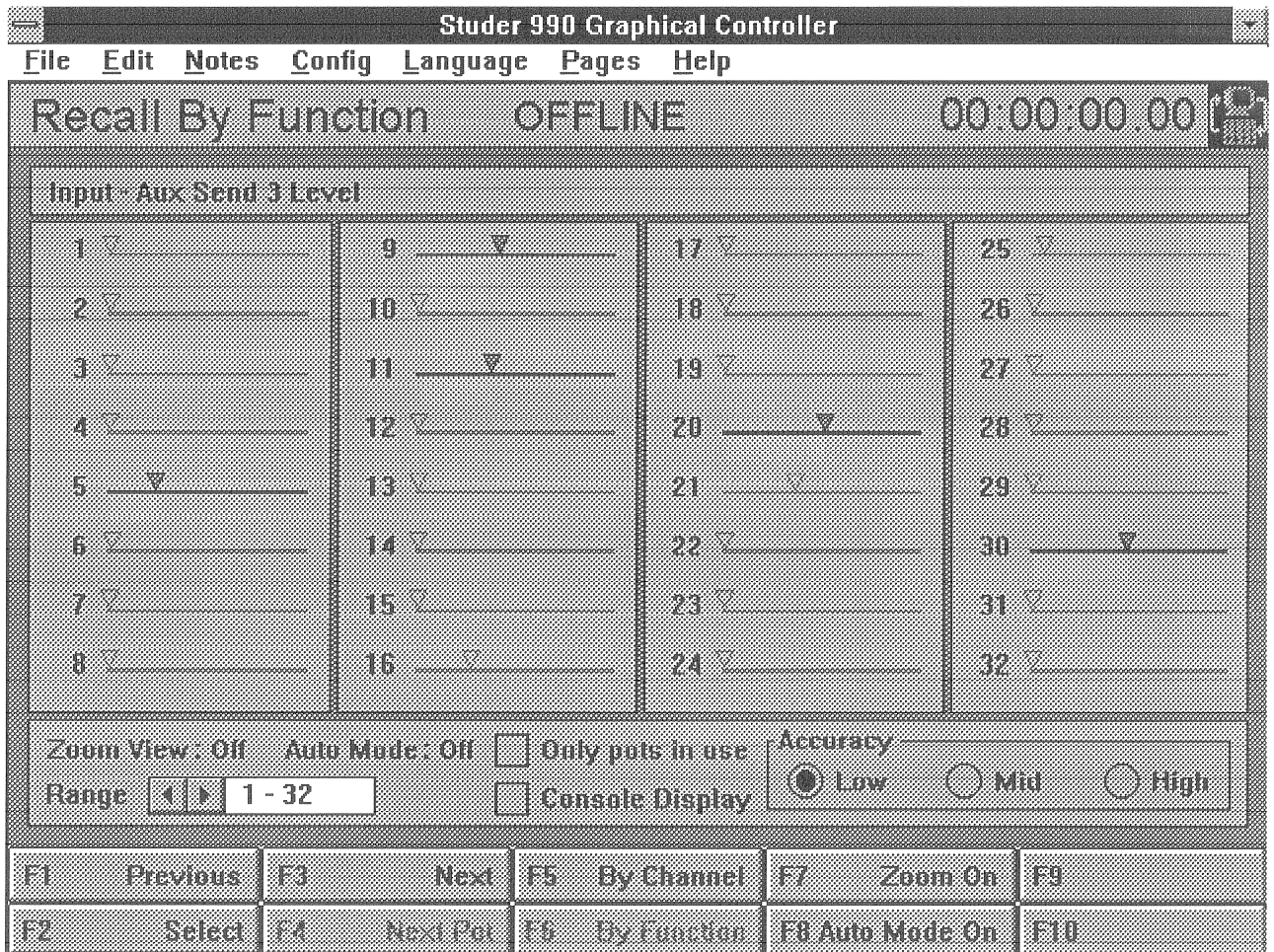
Auto mode

The **AUTO MODE** function key starts the recall with the first channel and continues toward the right. Only channels with incorrect potentiometer settings are displayed, until you have completed all alignments. The next channel is then searched immediately. The successful completion of the recall is confirmed at the end. Press the **SNAPSHOT** or **SEQUENCE** key to return to the previous program area. When an incorrect setting is detected, the **AUTO MODE (F8)** can be switched off when necessary.

- Selection** Function key F2 opens a field for selecting the desired input, group of master channel which, after the prompt has been confirmed, will be processed for recall. After the potentiometers have been aligned you can call the next channel with the keys F1 ... F3.
- Previous** F1 selects the previous channel for recall. The current channel is displayed in the upper left corner.
- Next** F3 displays the next channel
- Next Pot** Use F4 to skip a displayed potentiometer which requires no adjustment and jump to the next potentiometer in the same channel.
Next Pot works only if Auto Mode and Zoom On are activated.

7.3 Start function-by-function recall

As the name implies, this recall proceeds on a function-by-function basis across all channels. The set point and actual value of an individual parameter are displayed for up to 32 channels per monitor page. Their deviation is also emphasized by colored bars.



- Auto mode** Function key F4 starts the recall by function, starting with the function of the input and group units located on top of the mixing console. All potentiometers of this function can now be updated in horizontal order. Subsequently the next lower potentiometers are processed. After the main fader panorama the aux master and master units are processed. The completion of the successful recall is confirmed at the end. Press the SNAPSHOT OR SEQUENCE key to return to the previous program area.

Selection	Function key F2 opens a field for selecting the desired function group. The functions of the input and group units are displayed first. By selecting the RANGE via the arrows < and >, change to the summing function (A, B ...) to select their functions.
Previous	F1 selects the next higher function on the console for recall. The current function is displayed in the upper left corner of the monitor.
Next	F3 displays the next lower function.