

Example Programming for a Shopping Mall:

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1. Start of Design

Start the software PROMATRIX Designer at your PC

Start a new project with the symbol



Fill in the data into the automatically appearing project data window:

Common project data

Project name: shopping mall

Project number: 1234

Company: EVI Audio

Address: Hirschberger Ring 45, D 94315 Straubing

System call number: 0049 9421 706-0

Author: M. Hofmann

Date: 17.1.2003

Filename (without ext): shopping-mall

☐ Password

Project description: example for a shopping mall
3 paging stations, telephone interface,
prerecorded text messages
5 speaker lines

☐ DPM 4000
☒ DPM 4000 Upgrade

OK Cancel

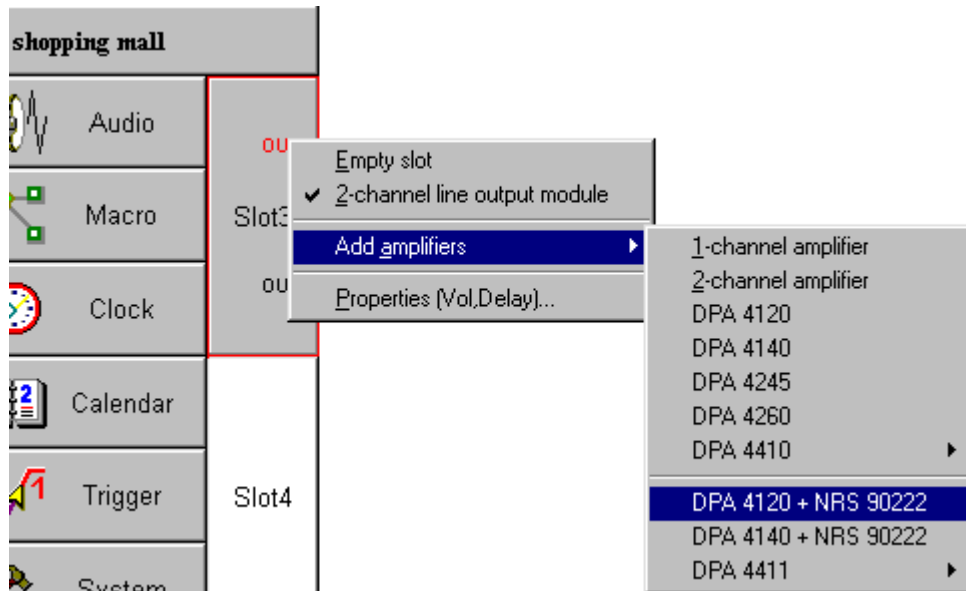
After closing the common project data window, the following block diagram appears:

shopping mall		
Slot1	 Audio	OUT1
	 Macro	Slot3
	 Clock	OUT2
Slot2	 Calendar	Slot4
	 Trigger	
	 System	
RS232	Interface	READY
DCF 77		
INP1		MONITOR
INP2		
POWER 24V		REMOTE
IN1	Slot 5 8 I/O Control module	SC
IN2		OUT2
IN3		OUT3
IN4		OUT4
IN5		OUT5
IN6		OUT6
IN7		OUT7
IN8		OUT8

2. Amplifiers and Speaker Circuits

Insert amplifiers with a right mouse click at slot 3:

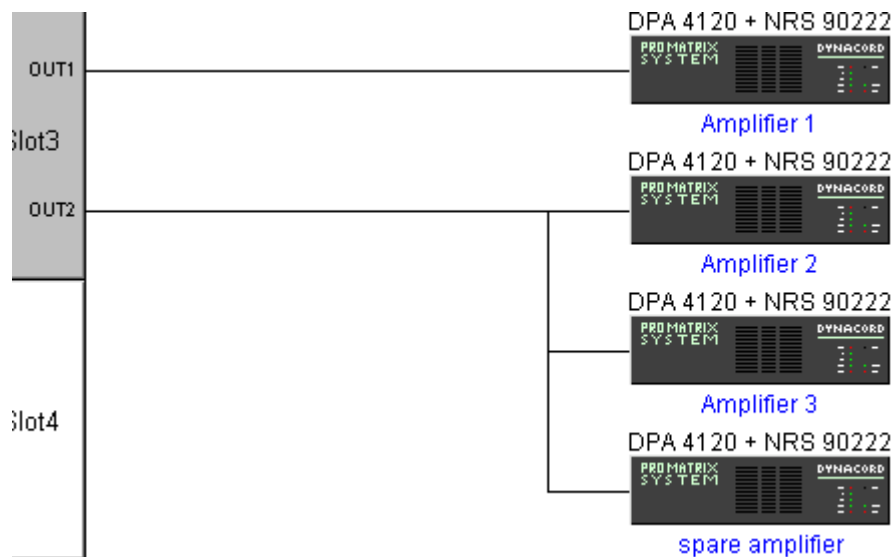
Open the menu with a right mouse click on <OUT 1>, select the corresponding amplifier type and insert it with a left mouse click.



Complete amplifiers:

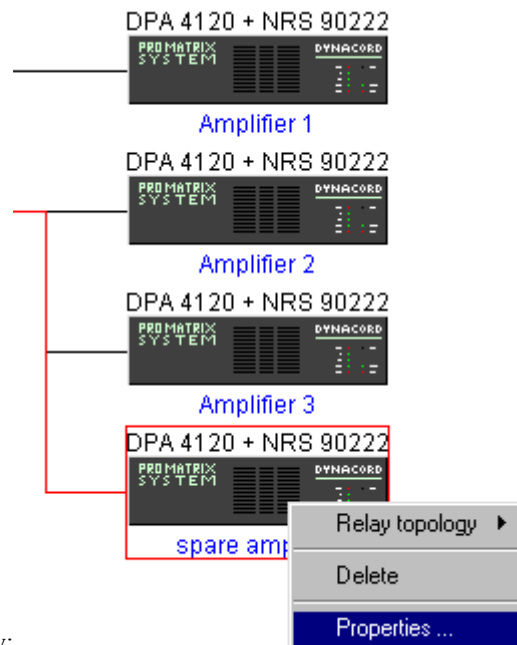
The name of an amplifier can be changed with a left mouse click on the term „amplifier 4“. Change the name and save it with “return”.

The following diagram appears:

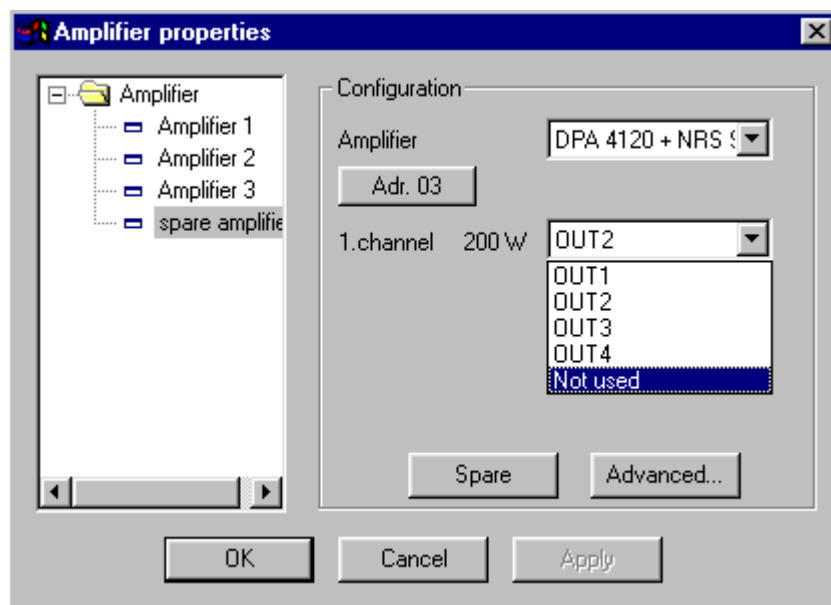


Define spare amplifier:

With a right mouse click on the spare amplifier, the following menu is opened. The spare amplifier can then be defined with a left mouse click on “properties”.

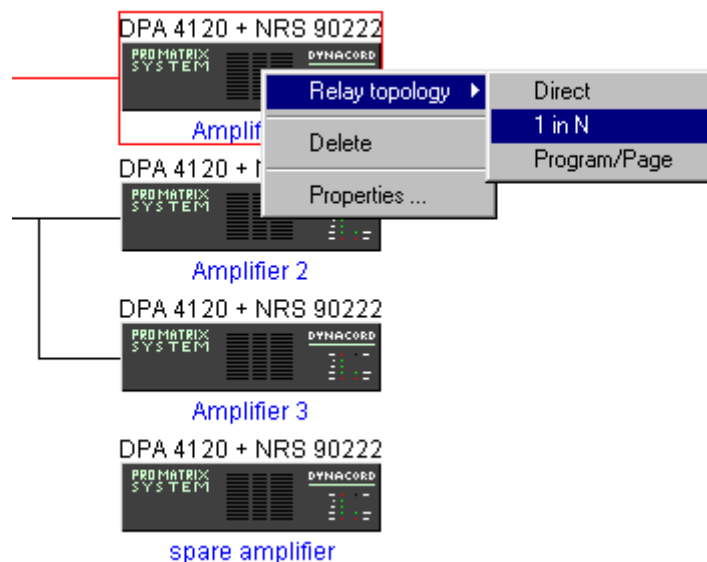


Choose „not used“ in the following pop-up window:

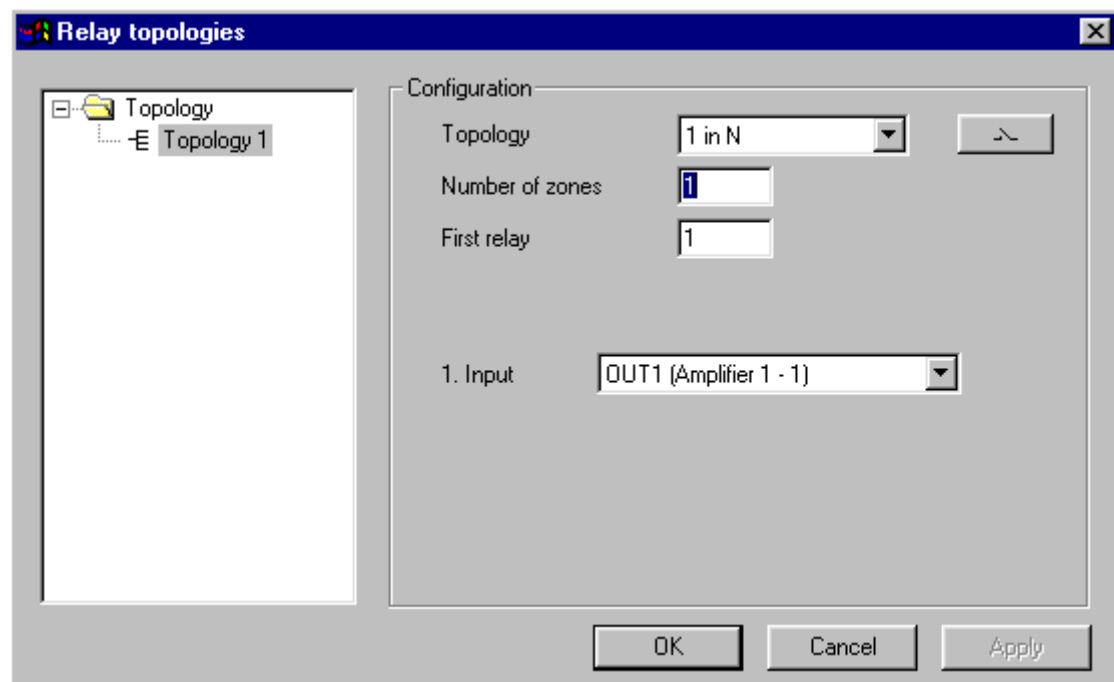


Connect speaker lines:

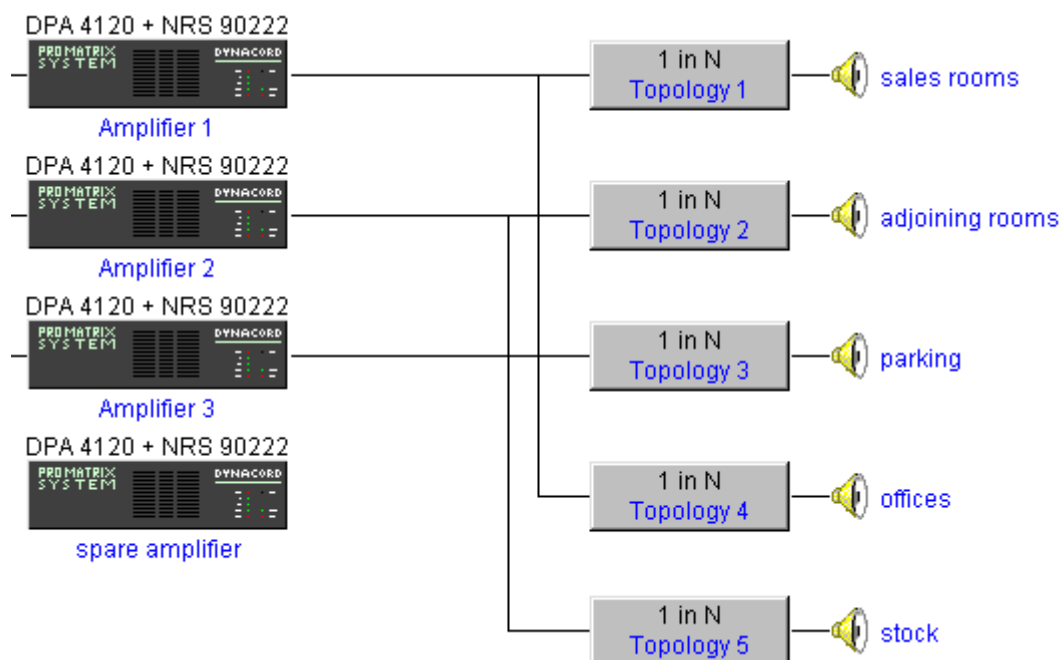
A right mouse click on “amplifier 1” opens the following menu where the corresponding relay topology can be selected:



Pop-up window for defining relay topologies:



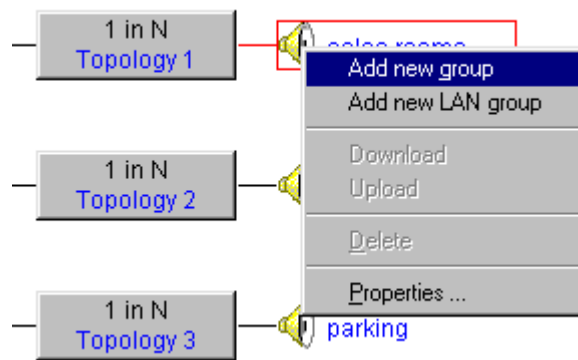
Complete and rename speaker lines: (also establishing of groups):



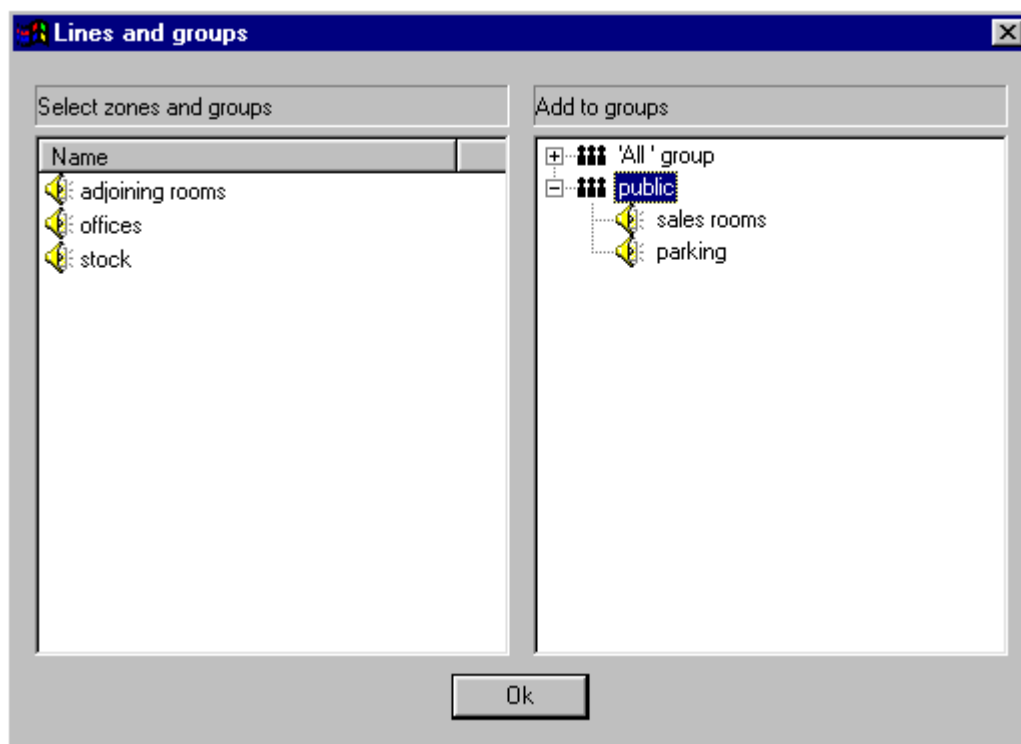
Hint: Topologies and amplifiers can be moved vertically with the left mouse button.

Establishing of groups:

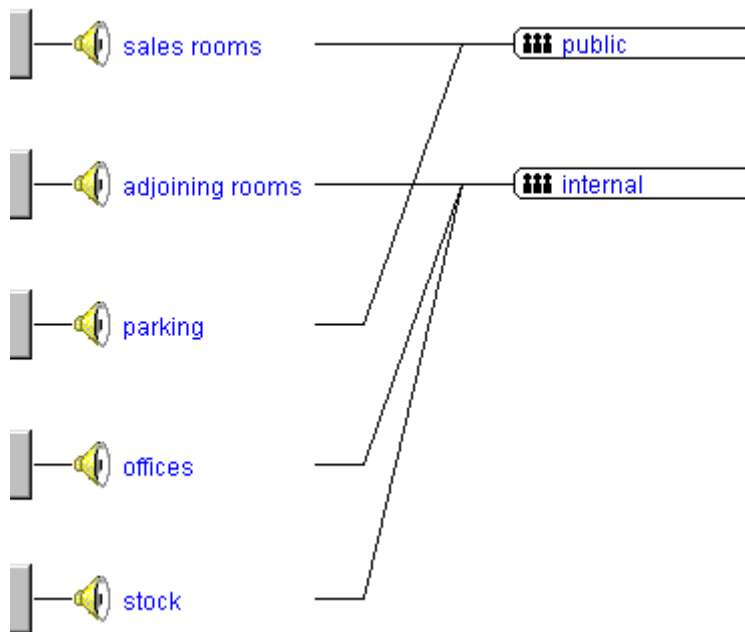
The following menu is opened with a right mouse click on the speaker symbol. Choose “add new group” and save the entries with a left mouse click.



Define speaker line groups after a double click at the group symbol  :
Select the lines via drag and drop.



Completing of groups:

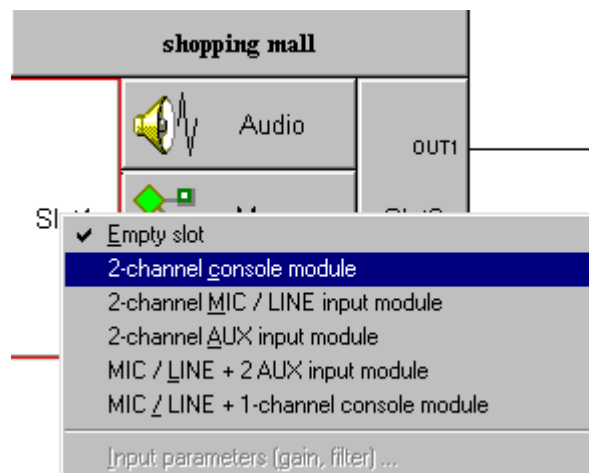


Hint: Save the design from time to time

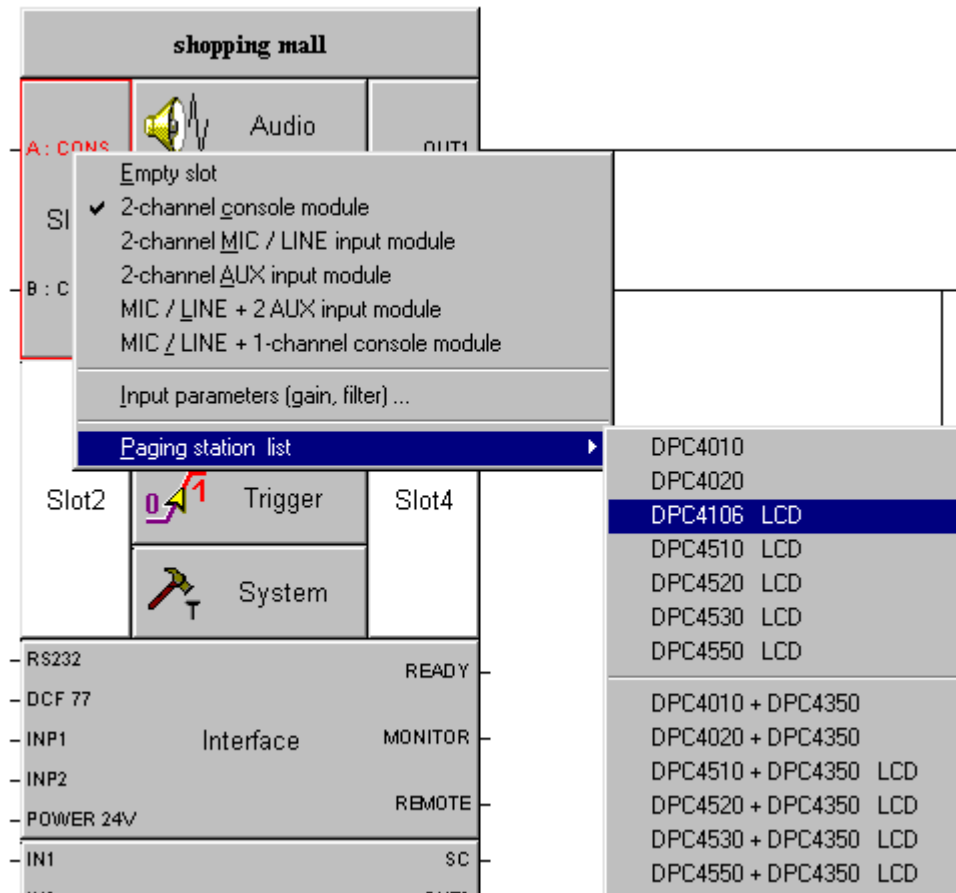
3. Input Modules

Outputs are now ready, start with input modules:

Insert 2-channel paging module into slot 1:

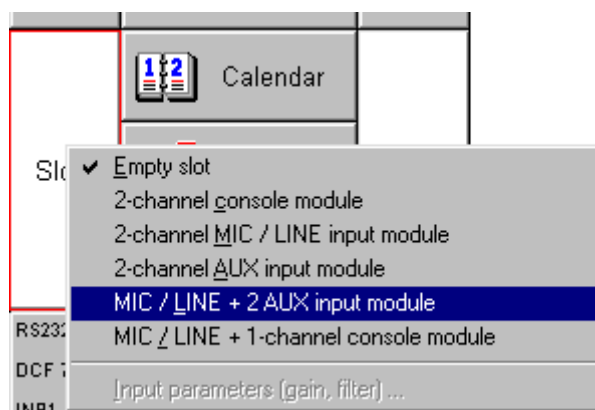


Add paging stations:

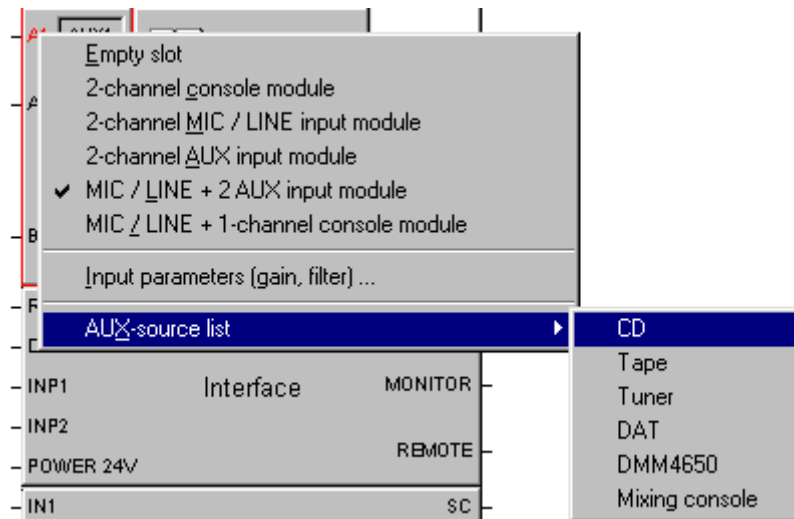


Hint: paging stations can be moved horizontally.

Insert mic/line+ 2 AUX module into Slot 2:



Insert aux sources:



Insert microphone:

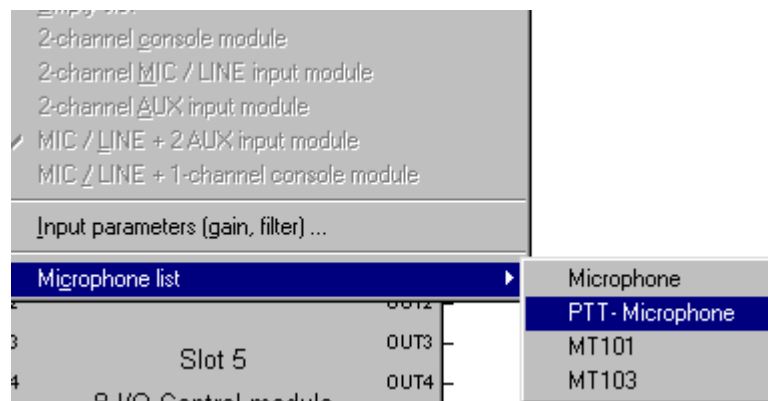
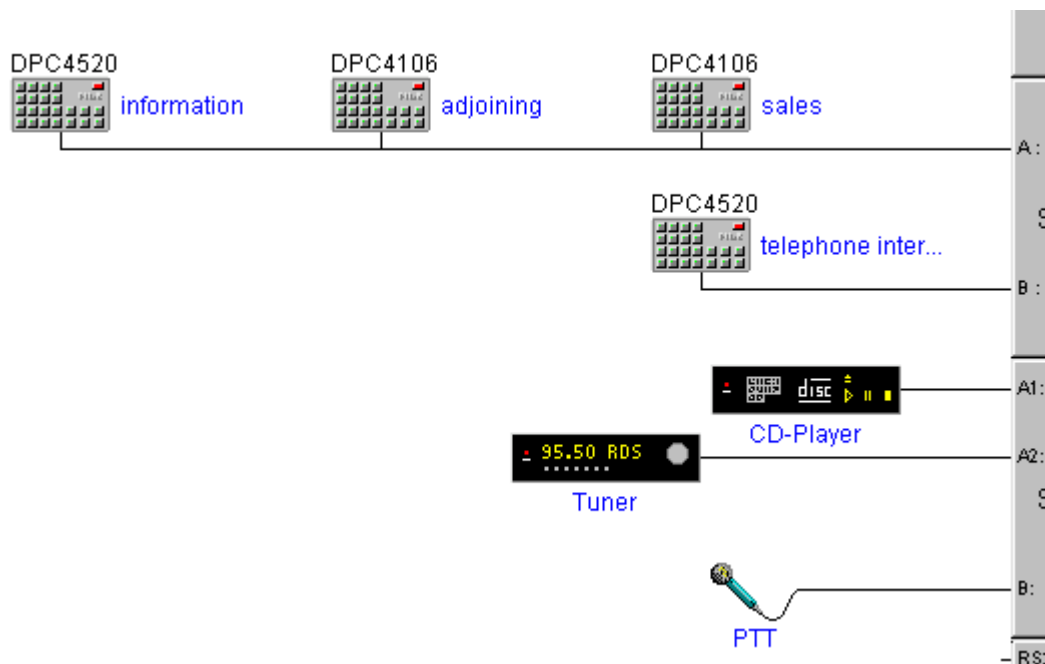
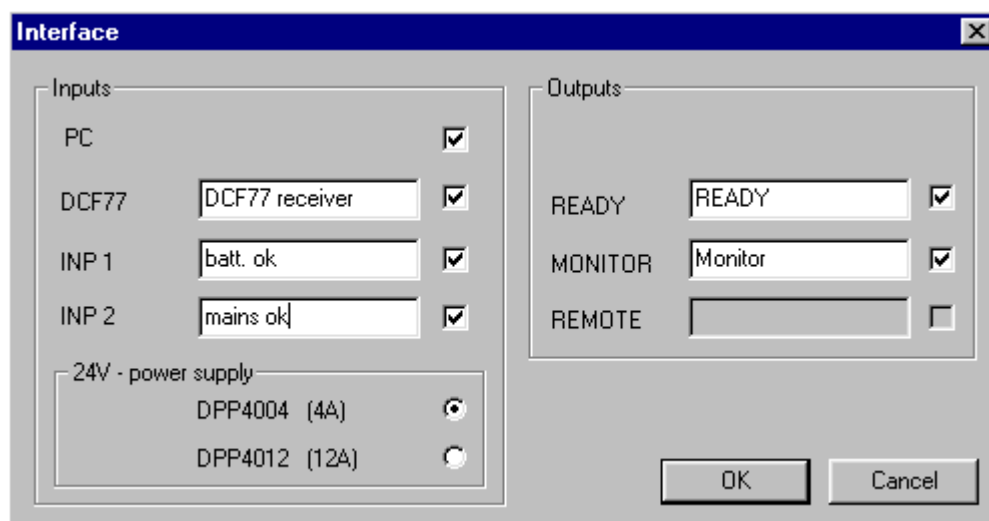


Diagram of complete inputs:



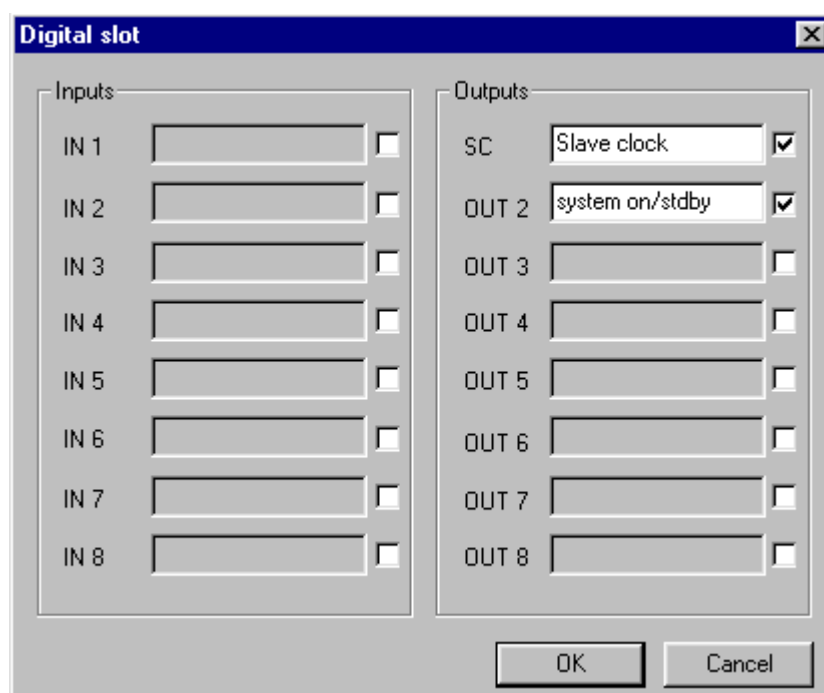
4. Power Management

Configuration of inputs for modem/PC, time code receiver, mains and battery surveillance, outputs for ready-contact and audio monitor:



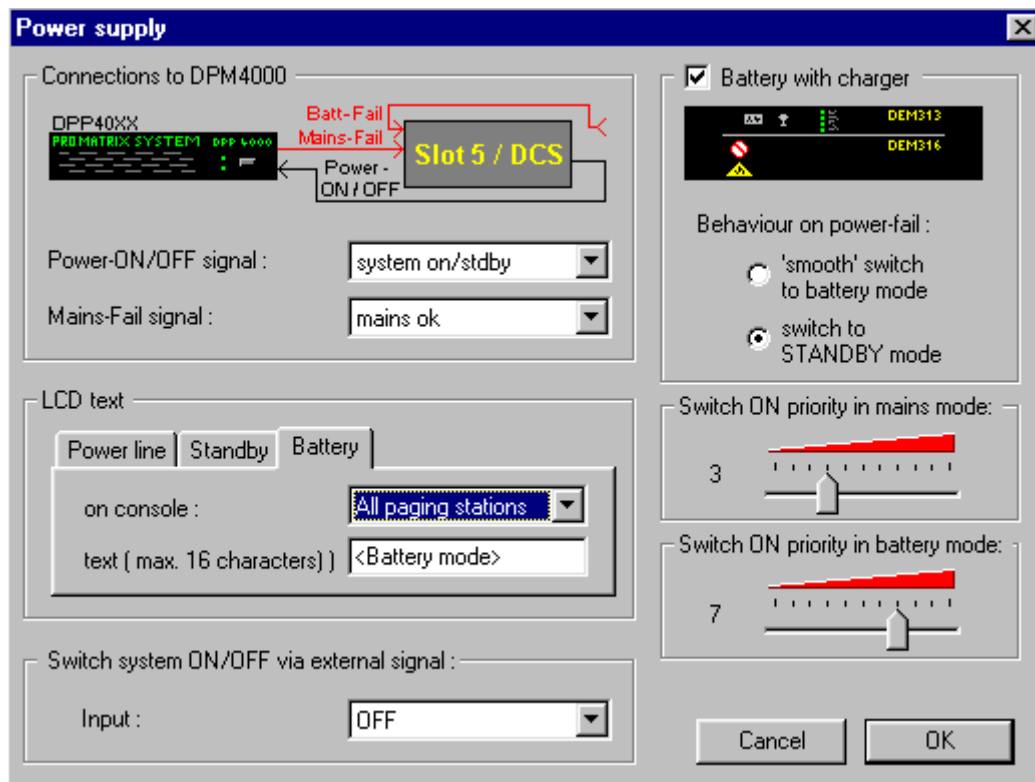
Define logical outputs for slave clocks and on/standby:

A right mouse click on SLOT 5 and after that on the option “properties” opens a menu where the following entries are to be made:

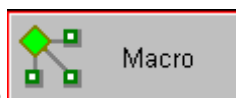


Carry out the power management dialogue:



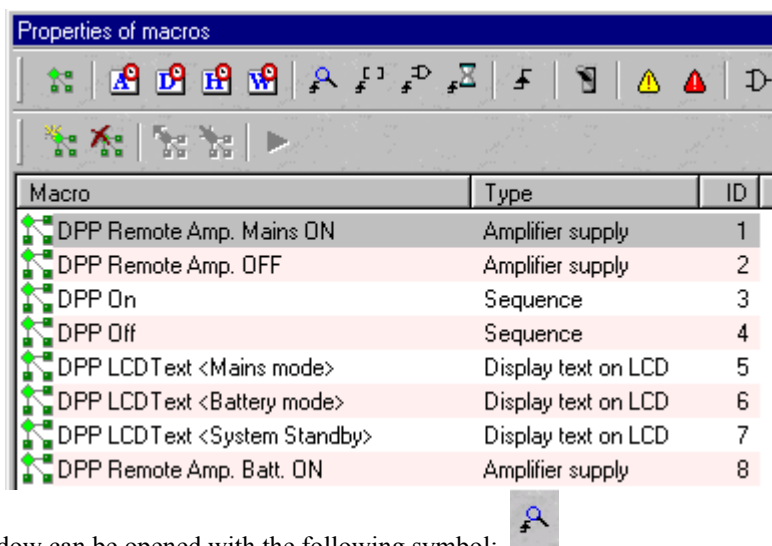


Automatically, some macros, conditions, triggers, and logic entries are created:



After a double click on the block macro , the main configuration window of the Designer appears, and you are in the common macro window:

The following pop-up window appears:



The conditions window can be opened with the following symbol:



The following pop-up window appears:

Properties of generic conditions			
Condition	ID	Selection	Level
DPP mains ok ON Condition	1	mains ok	ON
DPP mains ok OFF Condition	2	mains ok	OFF
DPP Operating voltage ON	3		ON
DPP Operating voltage OFF	4		OFF



The trigger window can be opened with the following symbol:
The following pop-up window appears:

Trigger properties					
Trigger	ID	Condition	Duration...	ON Macro	OFF Macro
DPP Trigger 1	1	DPP mains ok ON Condition	0.0	DPP Off	DPP Off
DPP Trigger 2	2	DPP Operating voltage ON	0.0	DPP Off	DPP Off

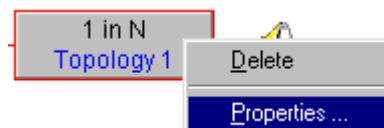


Open the list of logic entries with the following symbol:
The following pop-up window appears:

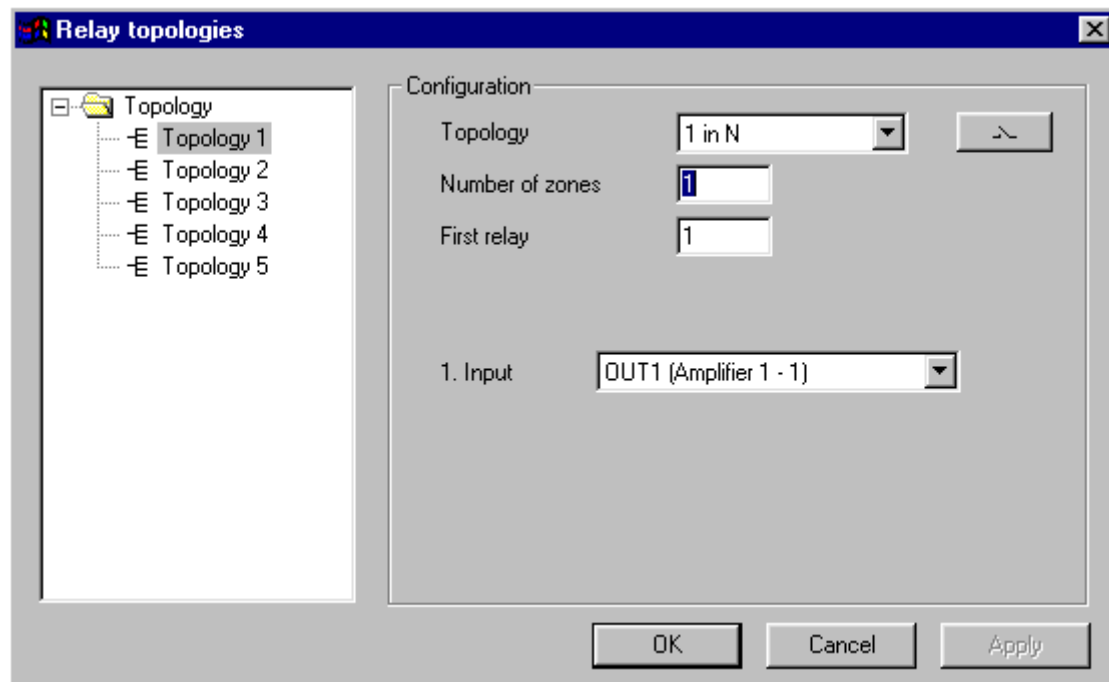
Properties of logic outputs				
Logic state	ID	Output	Condition	Inv.
DPP Logic state 1	1	system on/stdby	DPP Operating voltage ON	OFF

5. Relay topologies and DCS configuration

Insertion of additional relays and logical input cards in the relay topology window (DCS408, DCS409 und DCS 412):

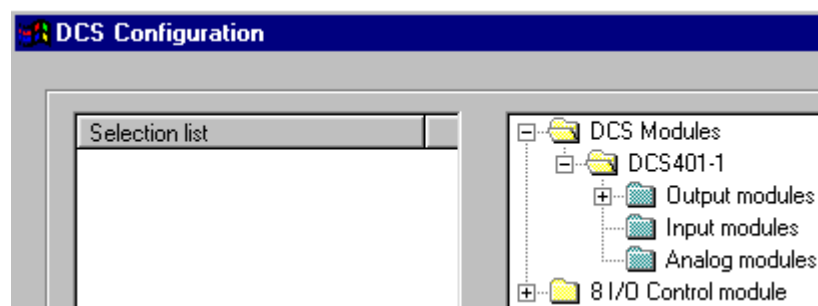


The following pop-up window appears:

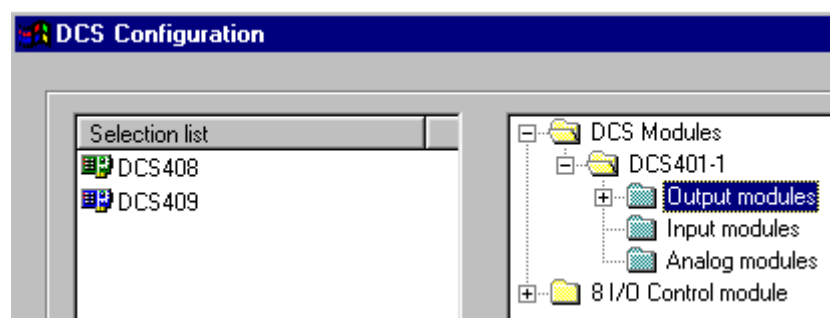


Hint: with „delete“, speaker lines, DCS cards or functions can be deleted.

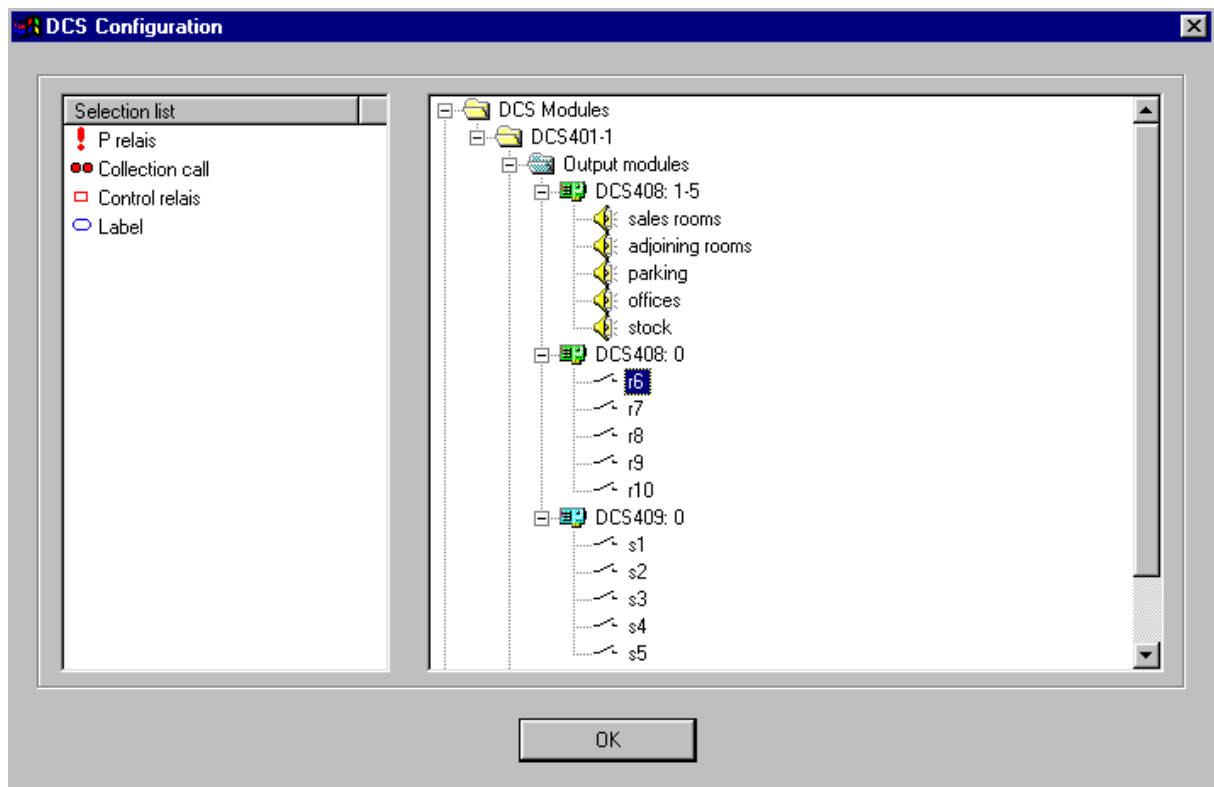
With a click on the symbol  you enter the DCS and input card configuration:
The following pop-up window appears:



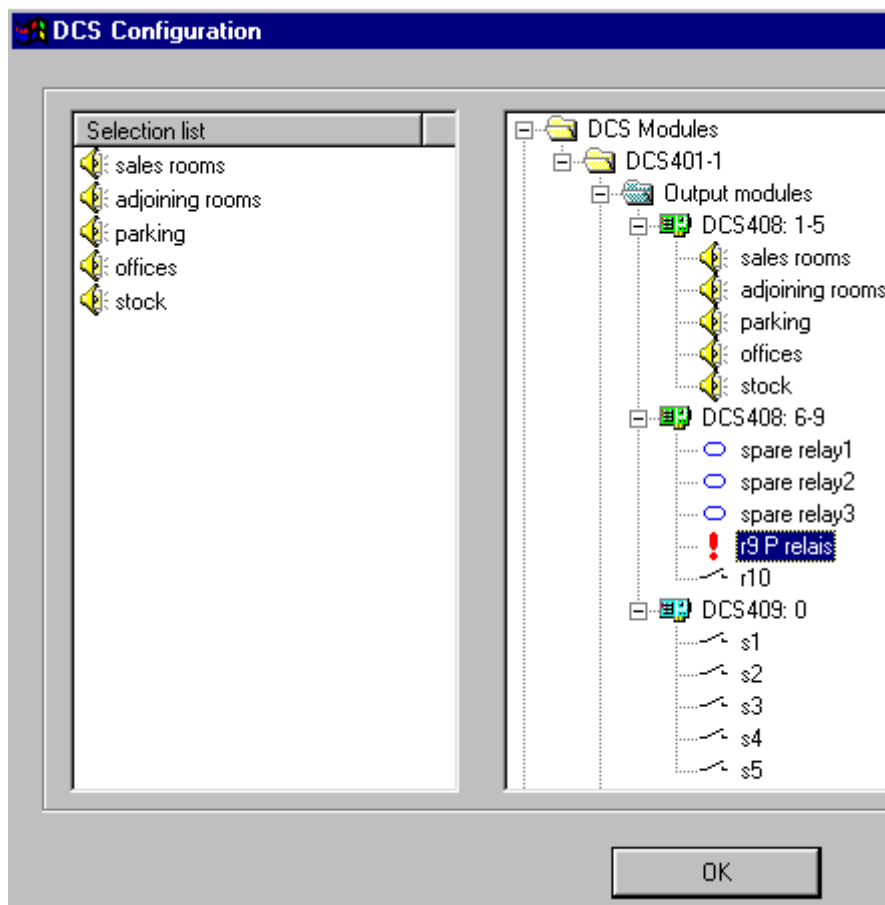
Insert the DCS cards required via drag und drop:



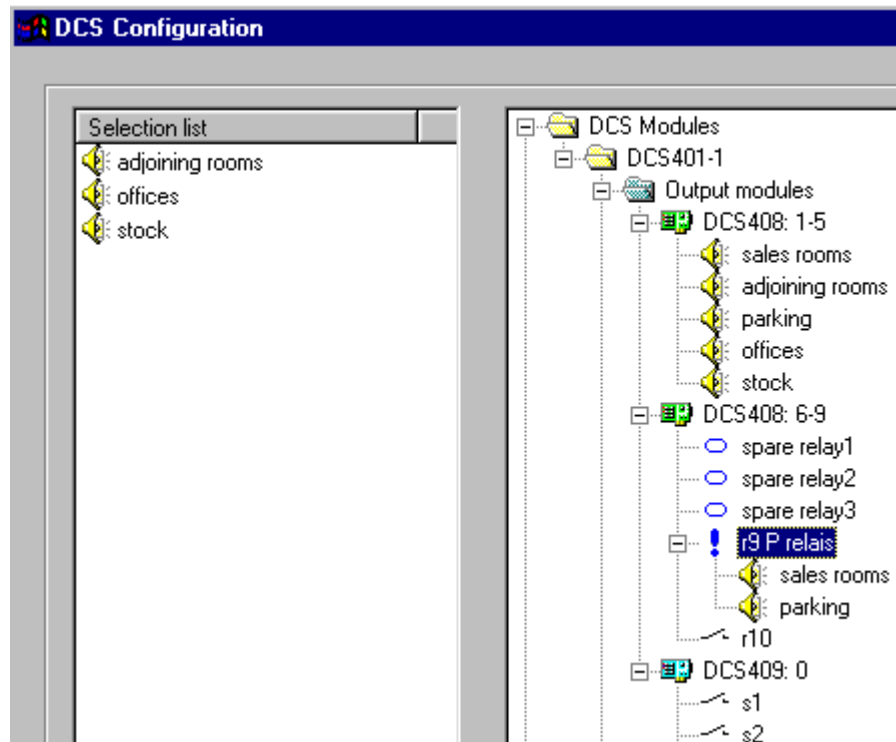
Define function of relays:



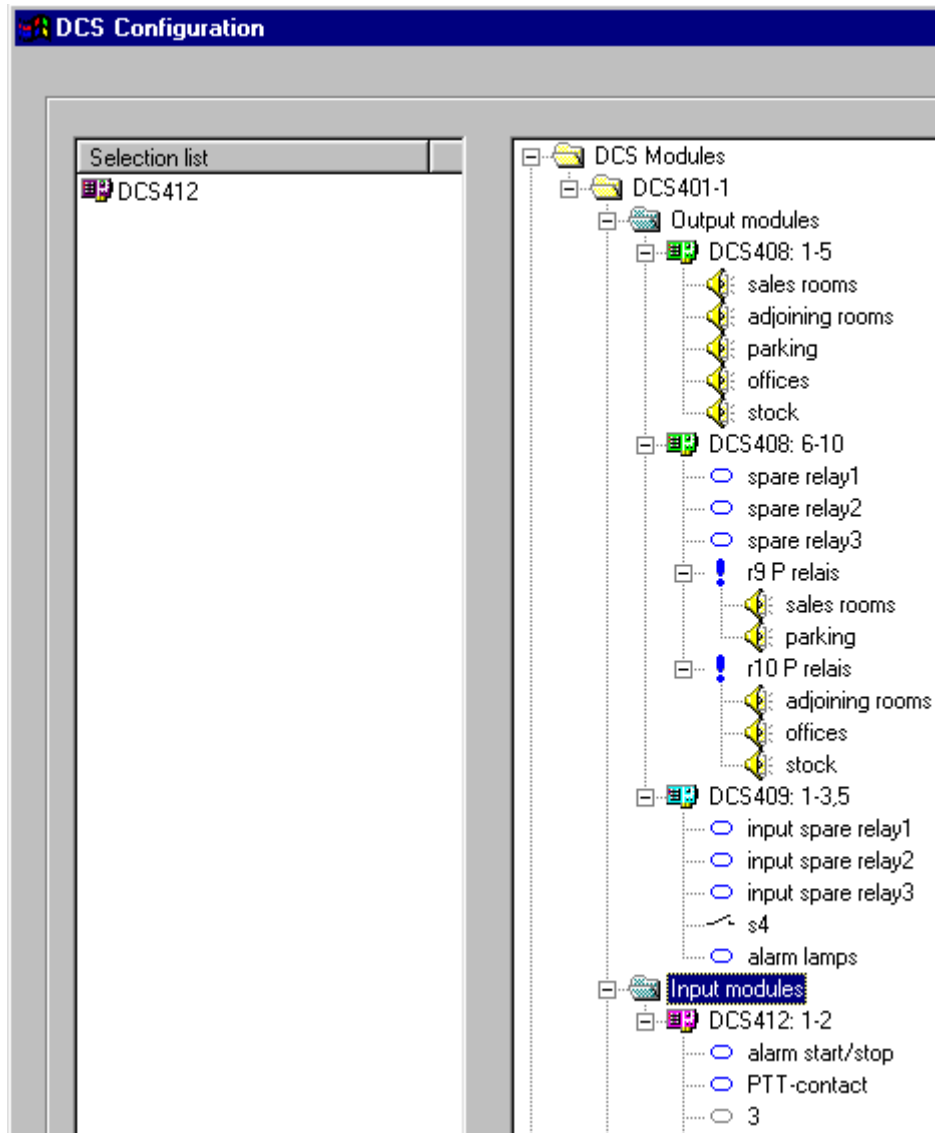
With drag und drop, assign the priority relays to the speaker lines:



The following pop-up window appears:

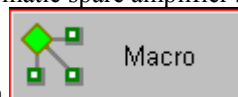


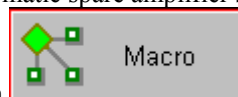
The configuration of the DCS cards is now ready, the following window is the result:

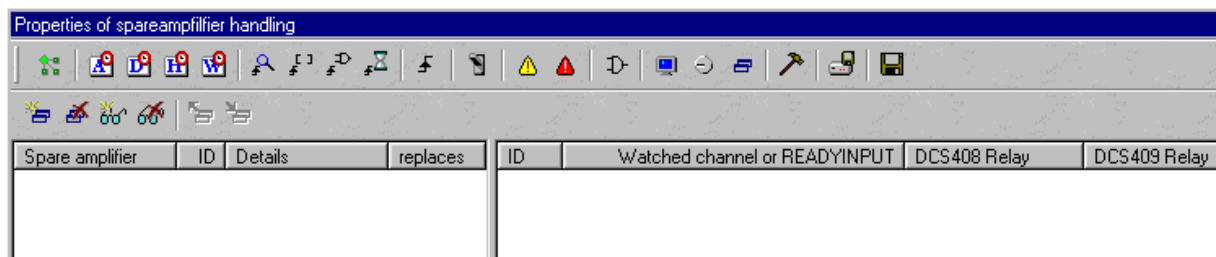


6. Automatic Spare Amplifier Switching

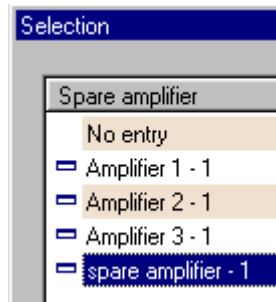
Adjustment of the automatic spare amplifier switching:



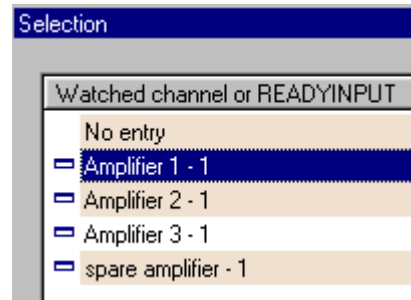
After a double click on  and a click on the symbol  (in the main configuration window), the following window opens:



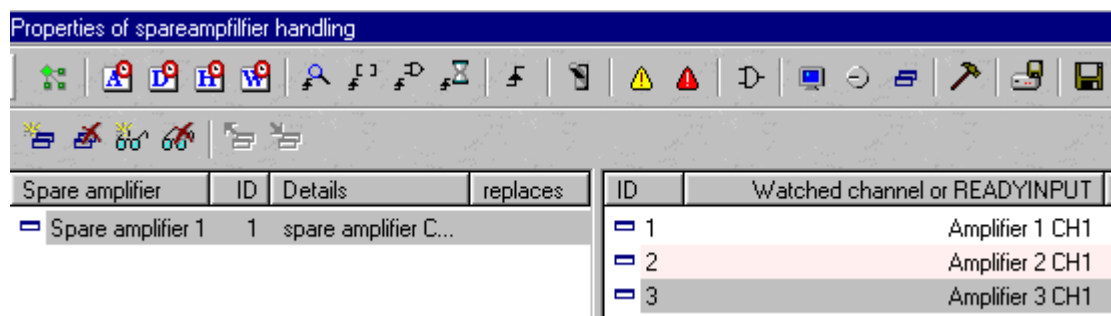
Create a new spare block with 



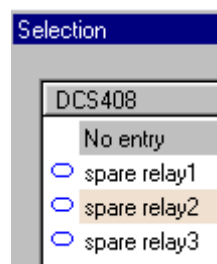
Amplifiers that have to be replaced automatically are defined with the symbol  :



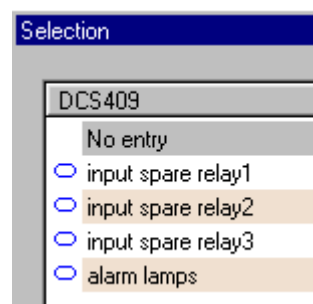
Select the monitored amplifiers with a double click.



A double click on the cell for 100 V relays (DCS 408) leads to the window for choosing the particular relays:



A double click on the cell for audio input relays (DCS 409) leads to the window for choosing the particular relays:

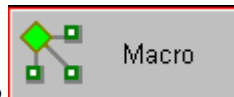


After completion of all entries, the spare amplifier switching window appears as follows:

Properties of spareamplifier handling			
Spare amplifier	ID	Details	replaces
Spare amplifier 1	1	spare amplifier C...	
ID	Watched channel or READYINPUT	DCS408 Relay	DCS409 Relay
1	Amplifier 1 CH1	spare relay1	input spare relay1
2	Amplifier 2 CH1	spare relay2	input spare relay2
3	Amplifier 3 CH1	spare relay3	input spare relay3

7. PTT Microphone and Priority Call

Macro functions:



After a double click at the block macro , the main maintenance menu of the Designer appears, and you are in the macro window:

The following window appears:

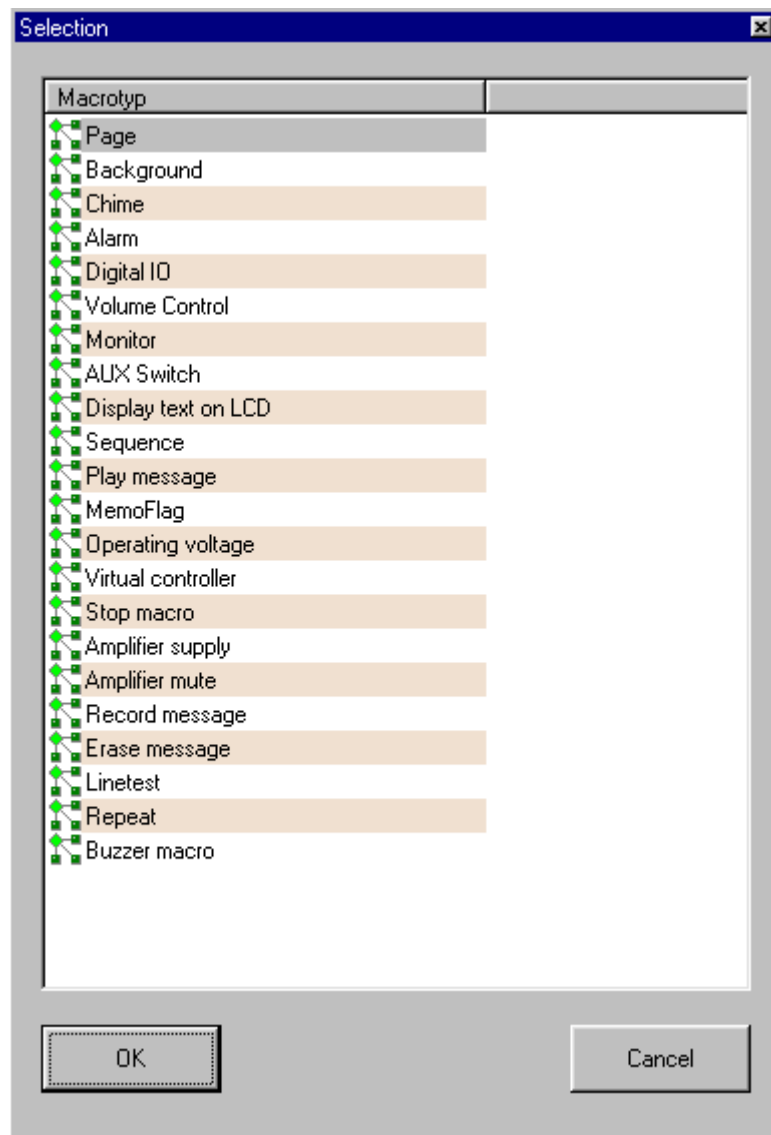
Properties of macros		
Macro	Type	ID
DPP Remote Amp. Mains ON	Amplifier supply	1
DPP Remote Amp. OFF	Amplifier supply	2
DPP On	Sequence	3
DPP Off	Sequence	4
DPP LCDText <Mains mode>	Display text on LCD	5
DPP LCDText <Battery mode>	Display text on LCD	6
DPP LCDText <System Standby>	Display text on LCD	7
DPP Remote Amp. Batt. ON	Amplifier supply	8

Creating of a new macro:

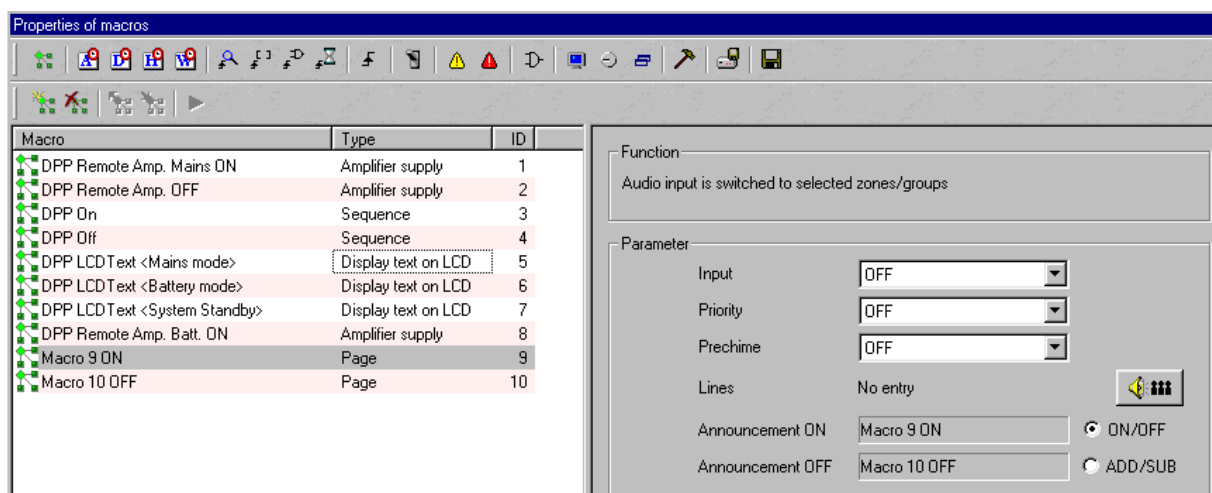


A click on the symbol leads to the possibility for the creation of a new macro. In some cases, two macros belonging together will be created (e. g. alarm start and alarm stop). The macro(s) are created with a double click on the macro type in the selection window (or select and click “ok”).

The following picture shows the selection window:



Double click on „page“:



The following parameters must be defined:

Parameter

Input

Priority

Prechime

Lines All 

Announcement ON ☒ ON/OFF

Announcement OFF ☐ ADD/SUB

Changing (editing) of macro name:

When creating a new macro, it is suggested to give a name to it indicating the function (e. g. „general call“). The new name can be given as follows: select the macro by a single click. Wait a little bit, and after that click again at the macro name.

Properties of macros

Macro	Type	ID
DPP Remote Amp. Mains ON	Amplifier supply	1
DPP Remote Amp. OFF	Amplifier supply	2
DPP On	Sequence	3
DPP Off	Sequence	4
DPP LCDText <Mains mode>	Display text on LCD	5
DPP LCDText <Battery mode>	Display text on LCD	6
DPP LCDText <System Standby>	Display text on LCD	7
DPP Remote Amp. Batt. ON	Amplifier supply	8
Macro 9 ON	Page	9
Macro 10 OFF	Page	10

Result with edited macro names:

Properties of macros

Macro	Type	ID
DPP Remote Amp. Mains ON	Amplifier supply	1
DPP Remote Amp. OFF	Amplifier supply	2
DPP On	Sequence	3
DPP Off	Sequence	4
DPP LCDText <Mains mode>	Display text on LCD	5
DPP LCDText <Battery mode>	Display text on LCD	6
DPP LCDText <System Standby>	Display text on LCD	7
DPP Remote Amp. Batt. ON	Amplifier supply	8
priority call start	Page	9
priority call stop	Page	10

Conditions are internal states in the system. These states can change by external events (e. g. a button is pressed), or by internal events (e. g. failure of an amplifier). There can be automatic reactions to these changings (e. g. surveillance of logical inputs by the so-called „ready inputs“, or specially programmed in the trigger menu).

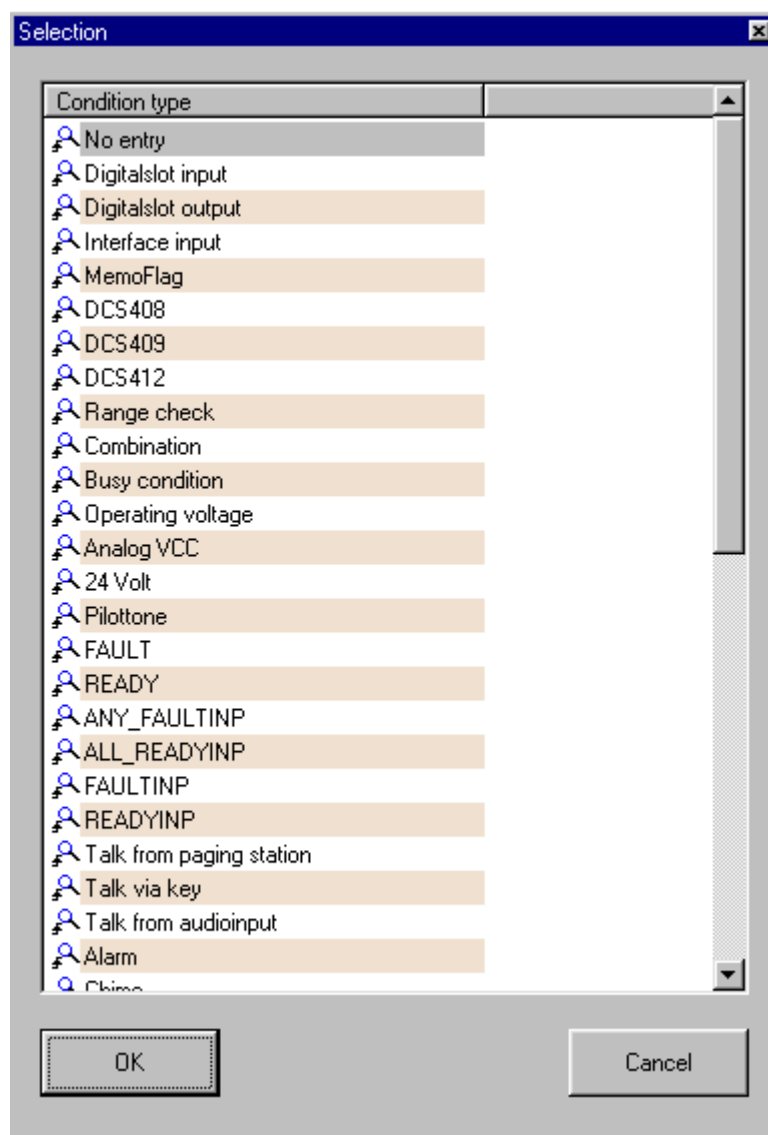


The window for the administration of conditions can be opened by a click on the symbol for conditions:

This is what you get:

Properties of generic conditions				
Condition	ID	Selection	Level	State
DPP mains ok ON Condition	1	mains ok	ON	
DPP mains ok OFF Condition	2	mains ok	OFF	
DPP Operating voltage ON	3		ON	
DPP Operating voltage OFF	4		OFF	

Create a new condition with the symbol :
The following selection window appears:



With a double click on the field DCS412, a new entry is made, which leads to an input of the DCS 412:

Properties of generic conditions				
Condition	ID	Selection	Level	State
DPP mains ok ON Condition	1	mains ok	ON	
DPP mains ok OFF Condition	2	mains ok	OFF	
DPP Operating voltage ON	3		ON	
DPP Operating voltage OFF	4		OFF	
DCS412 OFF Condition	5		OFF	

The cell is edited by a double click on the cell under “selection”. The following selection window for all existing DCS 412 inputs appears:

Selection

DCS412

No entry

☐ alarm start/stop

☒ PTT-contact

With a double click on the field ☒ PTT-contact , this input is used as source for the entire condition.

The following pop-up window appears:

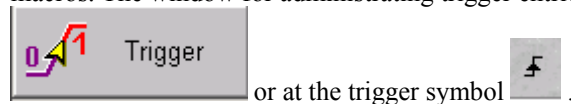
Properties of generic conditions				
Condition	ID	Selection	Level	State
DPP mains ok ON Condition	1	mains ok	ON	
DPP mains ok OFF Condition	2	mains ok	OFF	
DPP Operating voltage ON	3		ON	
DPP Operating voltage OFF	4		OFF	
PTT-contact OFF Condition	5	PTT-contact	OFF	

A double click on **OFF** changes the entry to „ON“, i.e. the condition is true, when this logical input is on.

The result can be seen here:

Properties of generic conditions				
Condition	ID	Selection	Level	State
DPP mains ok ON Condition	1	mains ok	ON	
DPP mains ok OFF Condition	2	mains ok	OFF	
DPP Operating voltage ON	3		ON	
DPP Operating voltage OFF	4		OFF	
PTT-contact ON Condition	5	PTT-contact	ON	

Triggers in the PROMATRIX system are functional elements, that establish the connection from conditions to macros. The window for administrating trigger entries can be reached with a double click at



or at the trigger symbol .

There are already some entries from the power management dialogue:

Trigger properties					
Trigger	ID	Condition	Duration...	ON Macro	OFF Macro
DPP Trigger 1	1	DPP mains ok ON Condition	0.0	DPP Off	DPP Off
DPP Trigger 2	2	DPP Operating voltage ON	0.0	DPP Off	DPP Off

A new trigger can be created with .

Trigger properties					
Trigger	ID	Condition	Duration...	ON Macro	OFF Macro
DPP Trigger 1	1	DPP mains ok ON Condition	0.0	DPP Off	DPP Off
DPP Trigger 2	2	DPP Operating voltage ON	0.0	DPP Off	DPP Off
Trigger 3	3		0.0		

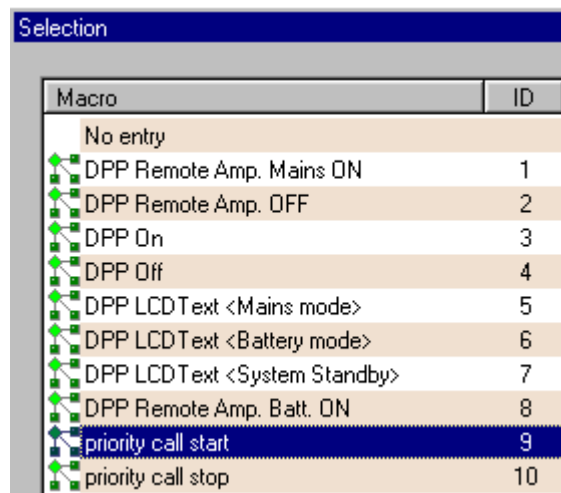
With a double click on the cell under „condition“, a selection window appears as follows.

Selection	
Condition	ID
No entry	
DPP mains ok ON Condition	1
DPP mains ok OFF Condition	2
DPP Operating voltage ON	3
DPP Operating voltage OFF	4
PTT-contact ON Condition	5

With a double click on the cell PTT-contact ON Condition , this condition is taken over for the trigger.

Trigger properties					
Trigger	ID	Condition	Duration...	ON Macro	OFF Macro
DPP Trigger 1	1	DPP mains ok ON Condition	0.0	DPP Off	DPP Off
DPP Trigger 2	2	DPP Operating voltage ON	0.0	DPP Off	DPP Off
Trigger 3	3	PTT-contact ON Condition	0.0		

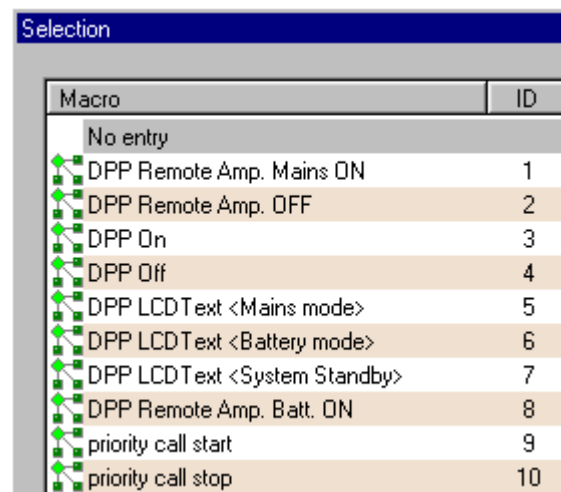
With a double click on the cell under „ON Macro“, a selection window for all existing macros opens. There we have to choose which macro must be executed when the condition becomes true.



With a double click on the field  priority call start , the macro is assigned to the trigger entry.

Trigger properties					
                                          					
Trigger	ID	Condition	Duration...	ON Macro	OFF Macro
 DPP Trigger 1	1	DPP mains ok ON Condition	0.0	DPP Off	DPP Off
 DPP Trigger 2	2	DPP Operating voltage ON	0.0	DPP Off	DPP Off
 Trigger 3	3	PTT-contact ON Condition	0.0	priority call start	

With a double click on the cell under „OFF Macro“, a selection window for all existing macros opens. Here we have to choose which macro must be executed when the condition becomes false.



With a double click on the field  priority call stop , the macro will be assigned to the trigger entry.
The following picture shows the result:

Trigger properties					
Trigger	ID	Condition	Duratio...	ON Macro	OFF Macro
DPP Trigger 1	1	DPP mains ok ON Condition	0.0	DPP Off	DPP Off
DPP Trigger 2	2	DPP Operating voltage ON	0.0	DPP Off	DPP Off
Trigger 3	3	PTT-contact ON Condition	0.0	priority call start	priority call stop

Explanation of the macro / condition / trigger:

When the PTT button of the microphone is pressed, then the „PTT contact ON condition“ becomes true, and the macro „priority call start“ is executed, and therefore a high priority call is made from input 4 to all speaker lines. When the button is released again, the condition becomes false, and the call is stopped.

8. Alarm Start and Stop from External Logical Input

Alarm start and stop (external input from a fire detecting system). The following procedure is described shorter, because it is similar to the procedure concerning ptt- macros.

Open macro administration with the symbol .

Create a new alarm macro with .

Edit macro names to “alarm start” and “alarm stop”, and insert the following parameters:

Parameter	
Alarm	Alarm 1
Priority	9
Lines	All 
Alarm ON	alarm start ☒ ON/OFF
Alarm OFF	alarm stop ☐ ADD/SUB

Go to the conditions with the symbol .

Make a new entry with , select DCS 412 as condition type, then make the condition entry as shown in the following window:

Properties of generic conditions				
Condition	ID	Selection	Level	State
DPP mains ok ON Condition	1	mains ok	ON	
DPP mains ok OFF Condition	2	mains ok	OFF	
DPP Operating voltage ON	3		ON	
DPP Operating voltage OFF	4		OFF	
PTT-contact ON Condition	5	PTT-contact	ON	
alarm start/stop ON Condition	6	alarm start/stop	ON	

Switch to the trigger entries with .

Create a new trigger with .

The trigger entry is completed as follows:

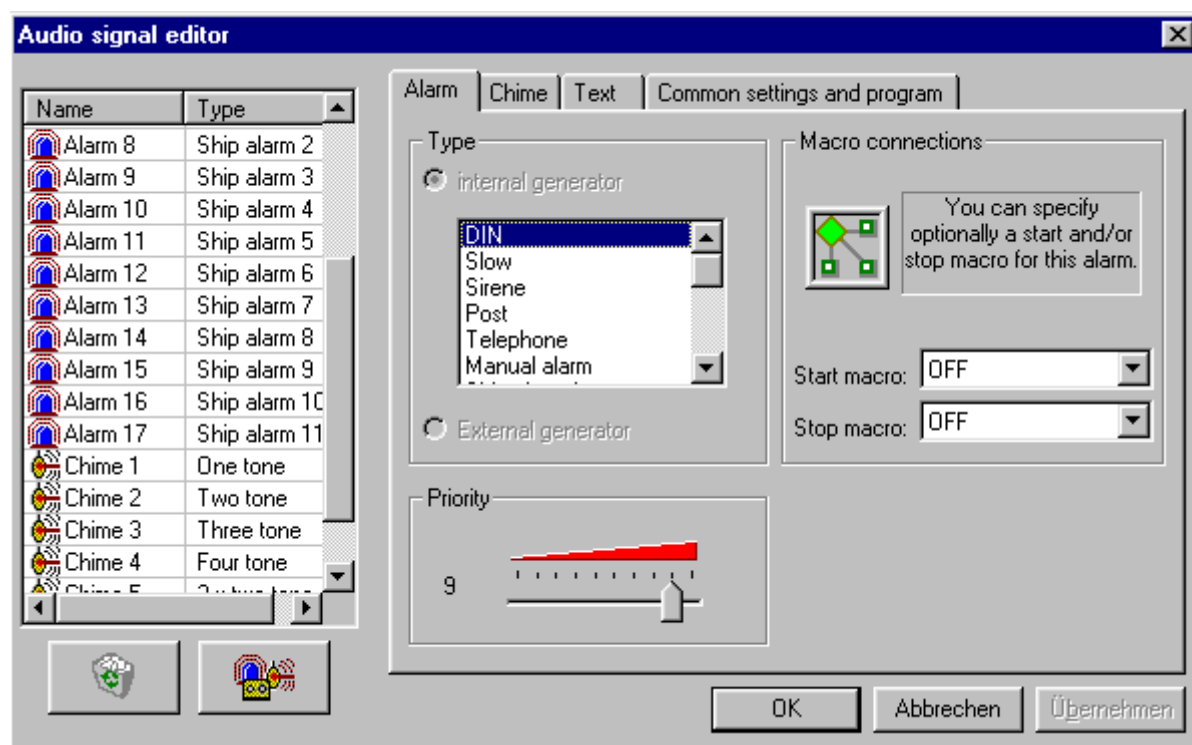
Trigger properties					
Trigger	ID	Condition	Duration...	ON Macro	OFF Macro
 DPP Trigger 1	1	DPP mains ok ON Condition	0.0	DPP Off	DPP Off
 DPP Trigger 2	2	DPP Operating voltage ON	0.0	DPP Off	DPP Off
 Trigger 3	3	PTT-contact ON Condition	0.0	priority call start	priority call stop
 Trigger 4	4	alarm start/stop ON Condition	0.0	alarm start	alarm stop

9. Message Play and Record

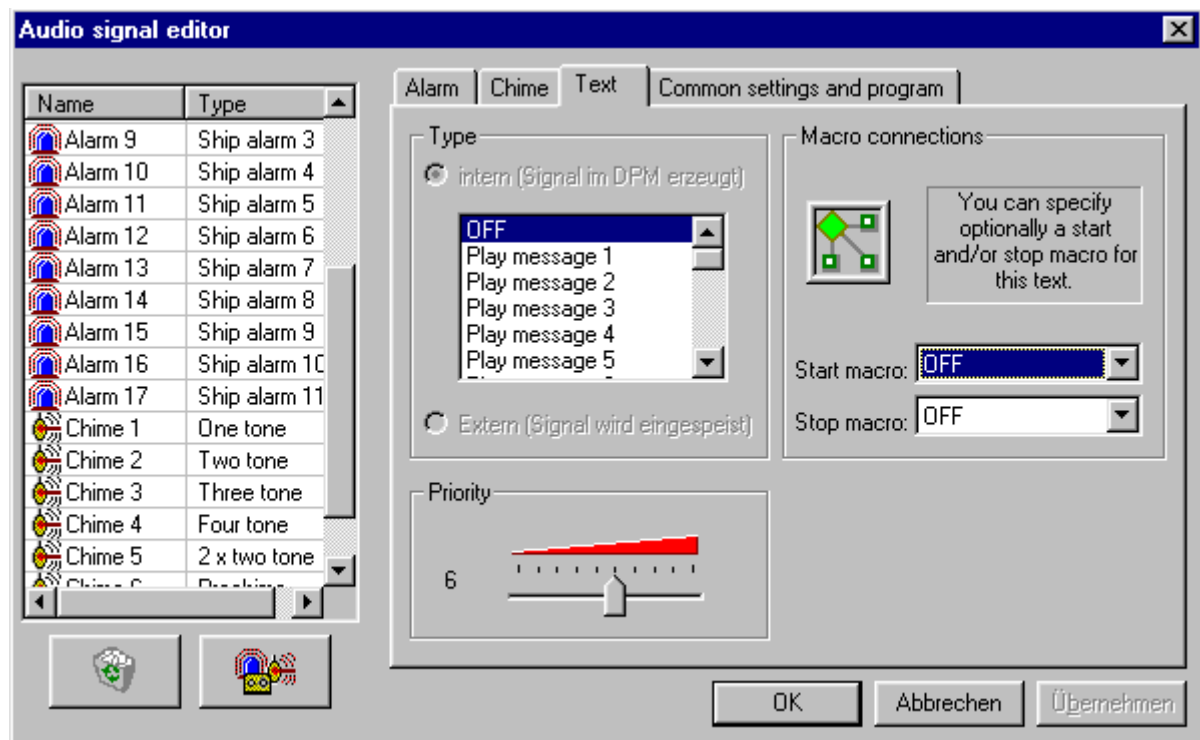
Definition prerecorded text messages:



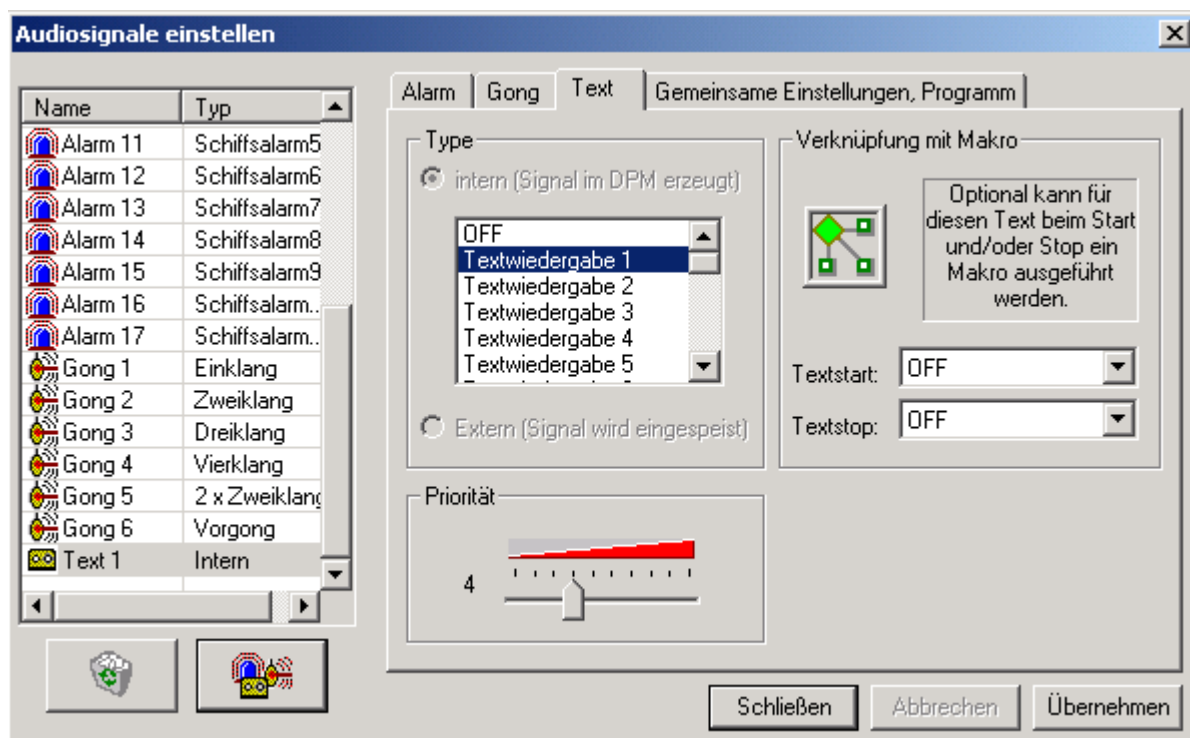
Close the trigger window and make a double click on the block:



Open the register for prerecorded text messages with .

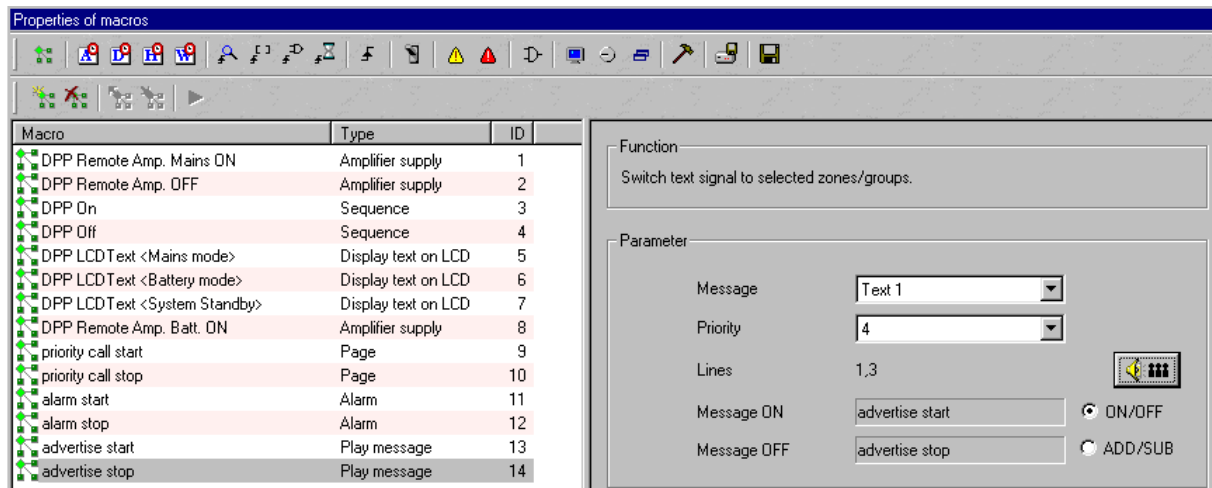


Select **Play message 1**, and adjust the corresponding priority with the Priority bar. After that, click on the function key for new signal  to define a new prerecorded text message.



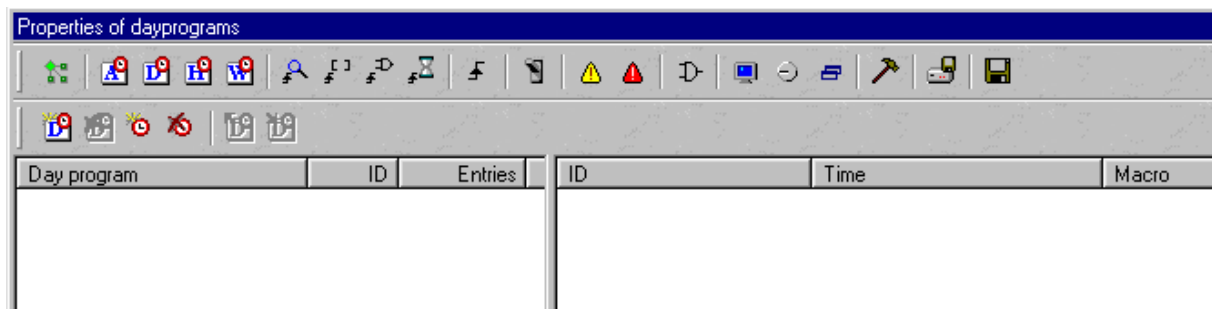
These adjustments will be valid after clicking on „apply“.

To be able to start that text message, a macro of the type  **Play message** must be created. Rename the new macros to „advertise start“ and „advertise stop“.

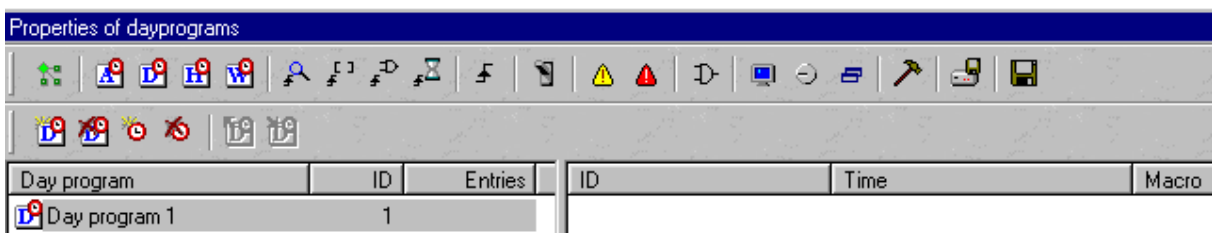


The advertising shall be started periodically by the internal clock. With a mouse click on the symbol , the window for daily entries opens.

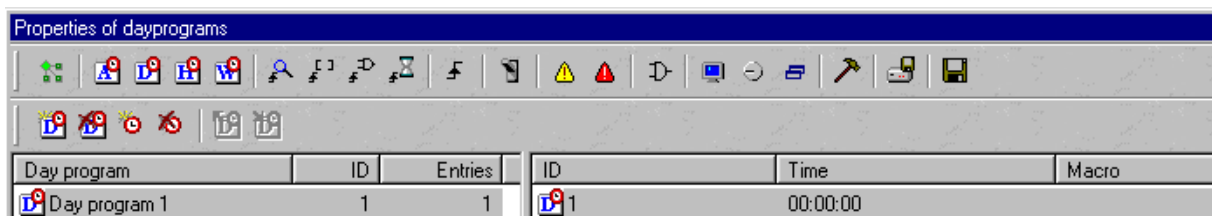
In that window, it is possible to establish 20 different daily programs, which can be used in the weekly program or in the holiday program. Each daily program can keep 100 entries.



With the symbol , there will be created a new daily program:



With the symbol , a new entry for the daily program can be made:



With a double click on the cell under „Time“, it is the possible to adjust the time when the event is to happen.

Properties of dayprograms					
Day program	ID	Entries	ID	Time	Macro
Day program 1	1	1	1	09:00:00	

The time entry must be finished with the return key.

After that, define the macro to start at this point of time with a double click on the cell under „macro“.

Selection	
Macro	ID
No entry	
DPP Remote Amp. Mains ON	1
DPP Remote Amp. OFF	2
DPP On	3
DPP Off	4
DPP LCDText <Mains mode>	5
DPP LCDText <Battery mode>	6
DPP LCDText <System Standby>	7
DPP Remote Amp. Batt. ON	8
priority call start	9
priority call stop	10
alarm start	11
alarm stop	12
advertise start	13
advertise stop	14

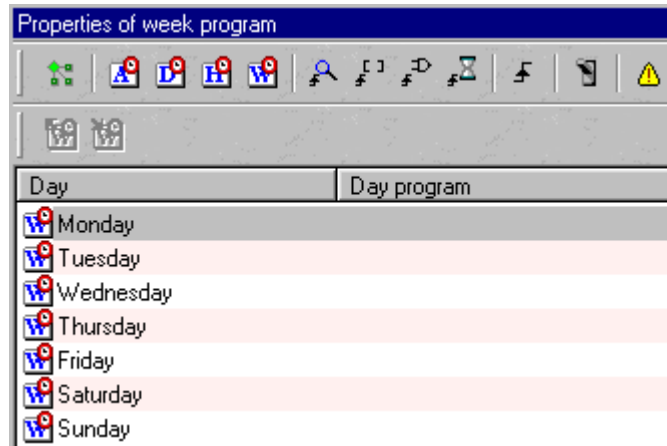
After a double click on „advertise start“, the first entry is ready.

Properties of dayprograms					
Day program	ID	Entries	ID	Time	Macro
Day program 1	1	1	1	09:00:00	advertise start

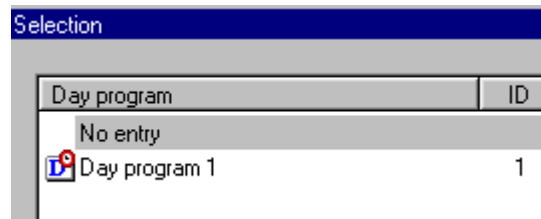
For more entries on the same day, repeat the last few steps:

Properties of dayprograms					
Day program	ID	Entries	ID	Time	Macro
Day program 1	1	3	1	09:00:00	advertise start
			2	13:30:00	advertise start
			3	18:00:00	advertise start

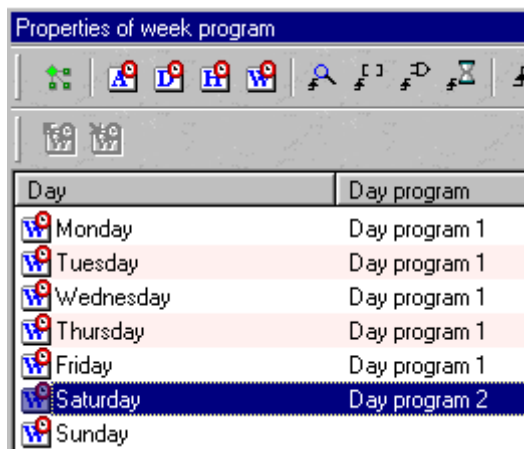
Now, the relation from the days of the week to the daily programm is to be established. This can be done with the symbol :



A double click on the cell under „Day program“ leads to the selection of the daily program for the particular day of the week:

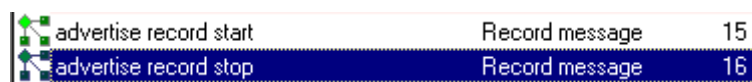


With a double click on  Day program 1 , that daily program will be related to that particular day of the week. This must be repeated for all days. The result can be as follows:



The advertising message should be recorded from the paging station. Therefore we go back to the macro

administration with the symbol  .After a click on  , we create new macros of the type  Record message with a double click and change the macro names to „advertise record start“ and advertise record stop“.



The following parameters must be added:

Parameter

Record message	Play message 1
Input	IN1
Format	10KHZ μ -LAW
Recording time	0.0 (0.0 .. 360.4 s ; 0.0 no time limit)
Record ON	advertise record start
Record OFF	advertise record stop

The source for the advertising message should be the paging station „information“. Therefore this unit must be configured for being able to operate this function. In this example, it is done with a secured button (of course this function can also be programmed to another button). Open the paging station „Information“ with a double click:

Paging station parameters

Overview of consoles

- DPC - paging station
 - adjoining
 - information
 - sales
 - telephone interface

Common Key programming

1:1

1 2 3 4

sales rooms adjoining parking offices

5 6 7 8

stock

9 10 11 12

13 14 15 16 102

17 18 19 20 101

Clear

DYNACORD DF

information

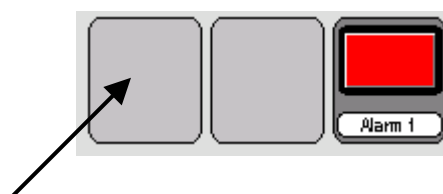
103 104

On Stop Pr

106 107

Chime 4

OK Abbrechen Übernehmen



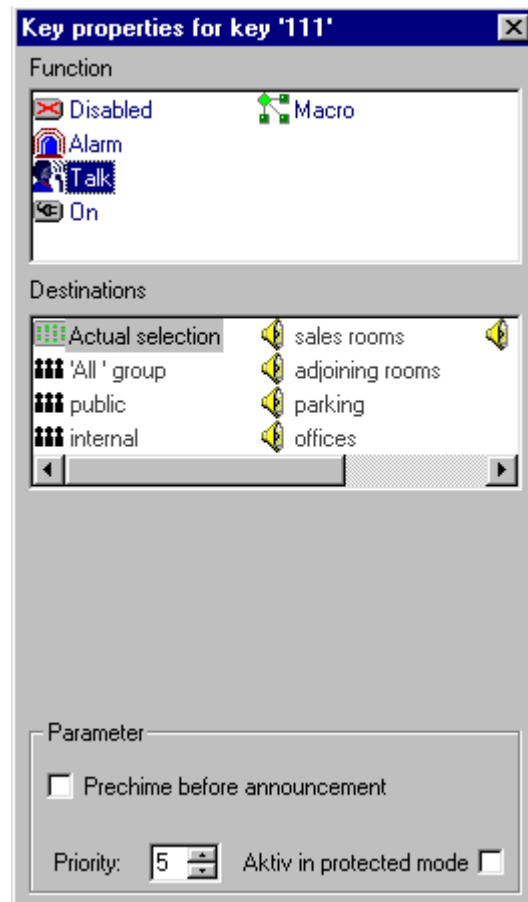
With a double click on that field, the following selection window opens:

Key properties for key '111'

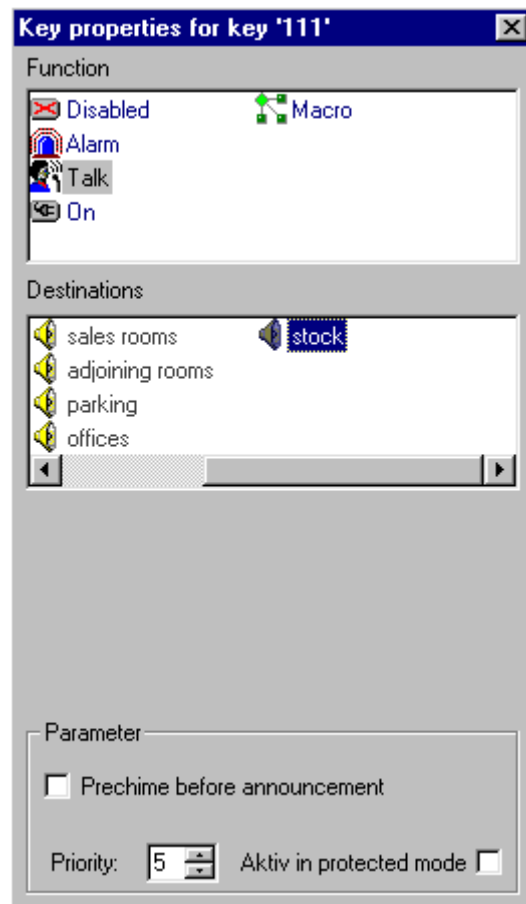
Function

- Disabled
- Alarm
- Talk
- On
- Macro

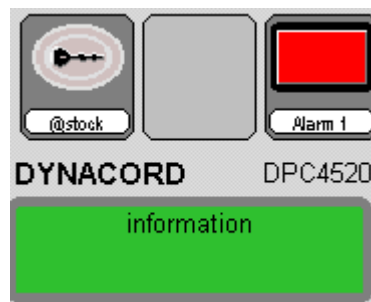
A mouseclick on the symbol  Talk makes the selection of the following parameters possible:



The stock is to be the target for this announcement. The reason for that is the fact that the recording from a paging station can only be made during an announcement:



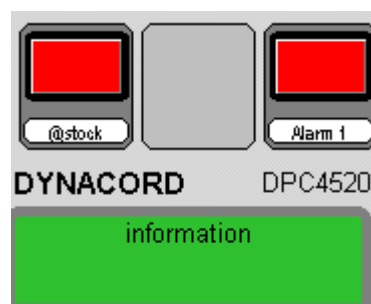
Close the key properties window and click on apply. The adjustments are now valid in the design, which now looks like that:



This diagram shows a key-switch. The graphics of the button can be changed to a normal button:



It now looks like that:



Click on apply, then on  and close the window for the paging station.

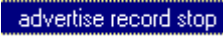
The above function only releases an announcement to the stock, but does not record automatically. The following procedure shows the programming to do this automatically without any other action:

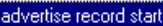
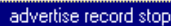
Make a double click on  Macro, then go to the conditions with . The conditions window opens. Create a new condition with , select the type of the condition with  Talk via key, and make it valid with a double click. Change the cell  to  and change the level to .

We now have the following entry:

After that, a trigger must be made to establish the connection from that condition to the recording macro, which was made before:

Click on (Triggersymbol), make a new trigger, select the condition , select the ON-Macro , and select the OFF-Macro . The complete entry looks like that:

Attention: The flash-memory for the text message must be formatted before making recordings. The formatting procedure must be done only one time, and is explained in a later chapter.

10. Preparing of Macros for Operation from Paging Station

Macros for the aux-switches:

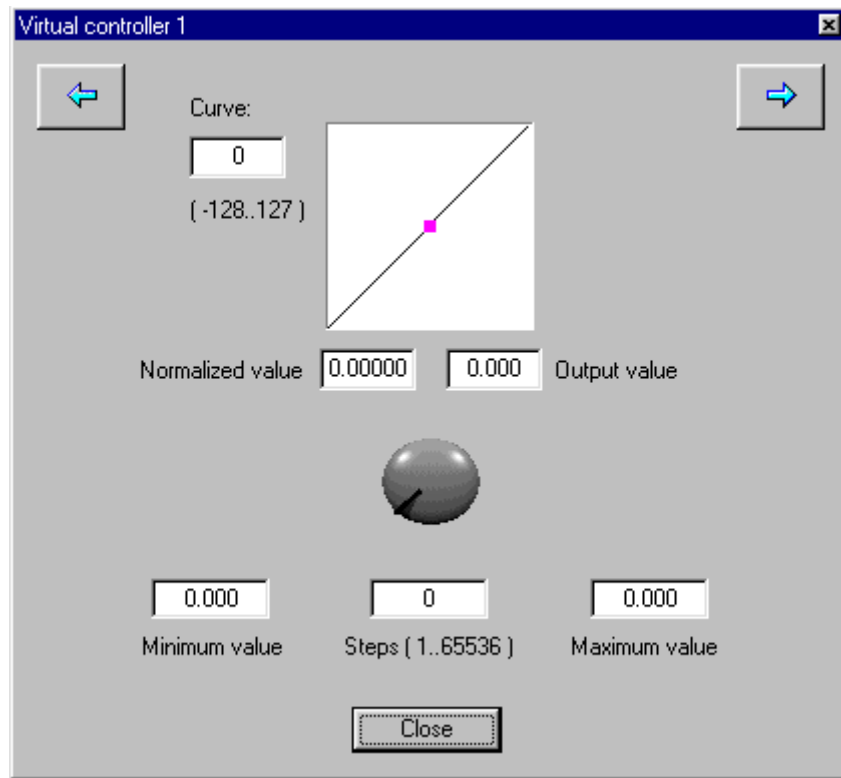
Create 2 new macros of the type  after clicking on the symbols  and . Change the names of these macros to „CD-Player on“ (Macro 17) and „Tuner on“ (Macro 18). For the parameters, choose the input named  for the CD-Player, and  for the tuner.

Virtual controllers for having volume control:

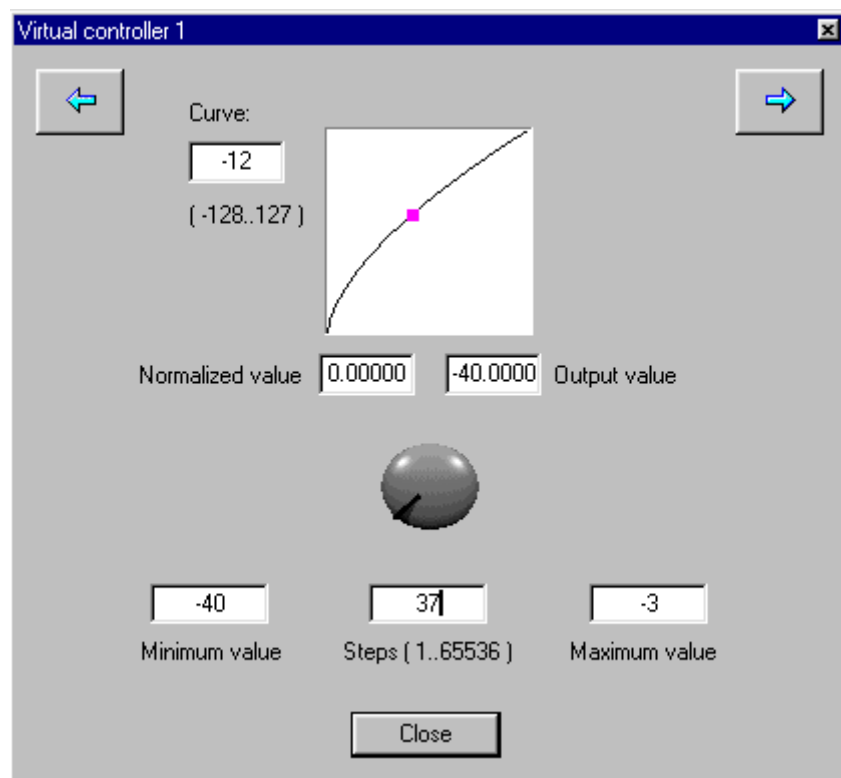
Click on the symbol  to open the pop-up window „properties of virtual controllers“, then make a new controller entry with a click on .

There is created a new entry  Virtual controle... 1

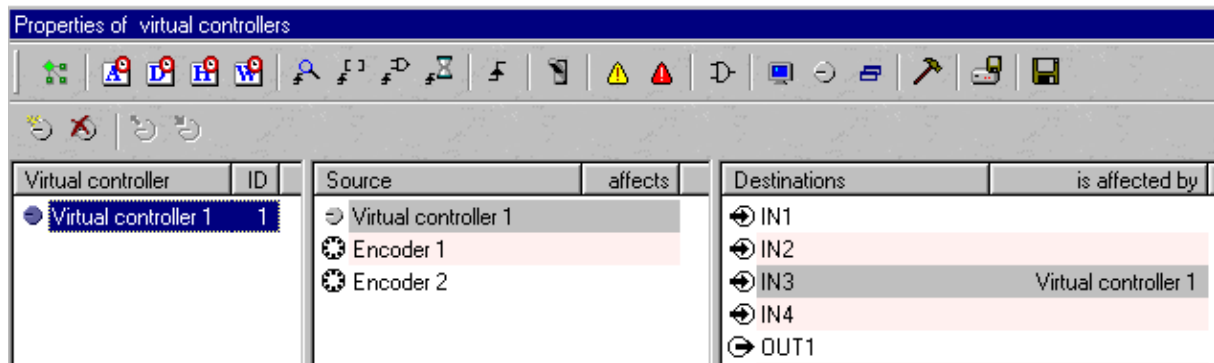
Make a double click on  Virtual controle... 1 for adjusting the properties of that virtual controller. The following pop-up window appears:



Adjust the parameters for the curve, minimum and maximum value and the number of steps to the following picture:



Close that window and give a destination to that  Virtual controle... 1 by dragging that controller to . You now have the following entry:



Now go back to the macro window and create a new macro of the type Virtual controller. There are created two entries at the same time.

Macro 19 UP	Virtual controller	19
Macro 20 DOWN	Virtual controller	20

Change the names of the macros like this:

music UP	Virtual controller	19
music DOWN	Virtual controller	20

Select now „music UP“ and change the parameters for that macro. Automatically the parameters for the „music DOWN“ macro will be adjusted as well.

Parameter

VC

Virtual controller 1

Steps

1

(0: absolute, -127..-1: decrement, +1..+127 increment)

Value

0.000000

Text

music

Unit

dB

Digits behind point

0

When you select the macro „music DOWN“, you can also see the following parameters, that have been created automatically:

Parameter

VC

Virtual controller 1

Steps

-1

(0: absolute, -127..-1: decrement, +1..+127 increment)

Value

0.000000

Text

music

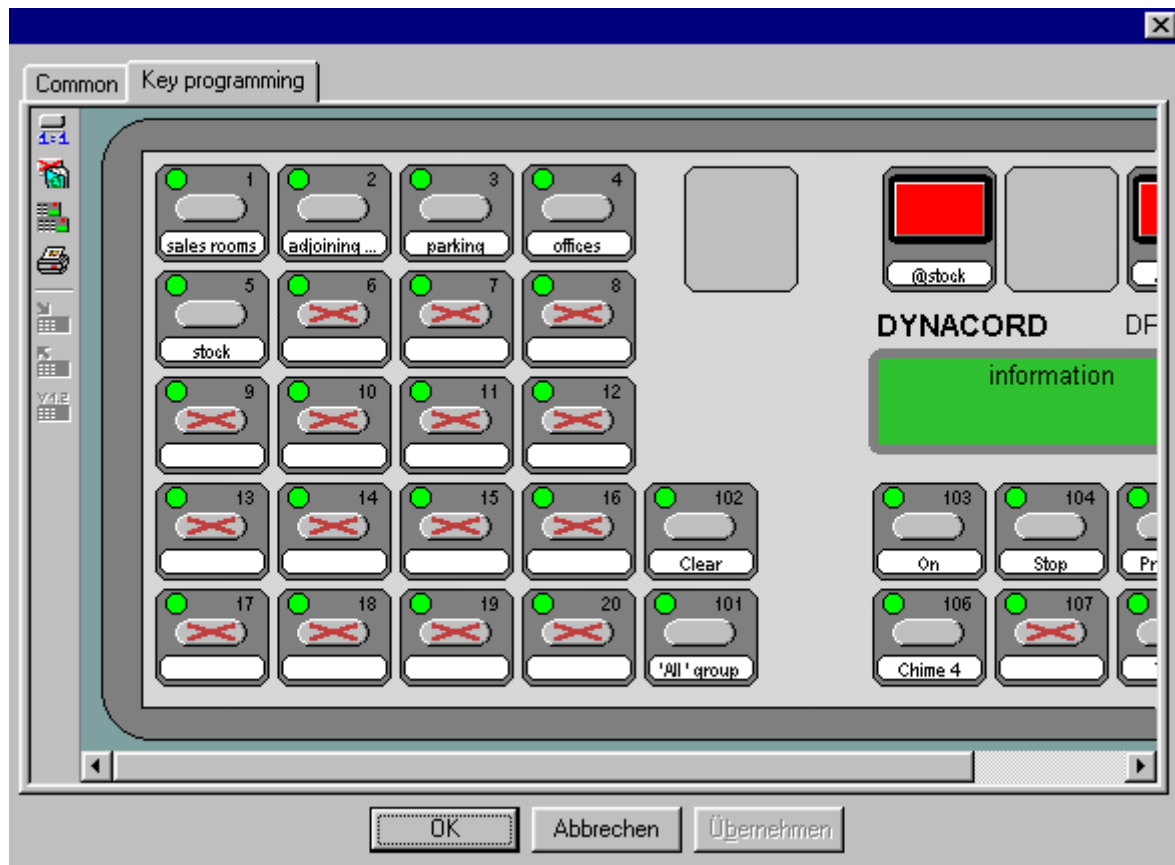
Unit

dB

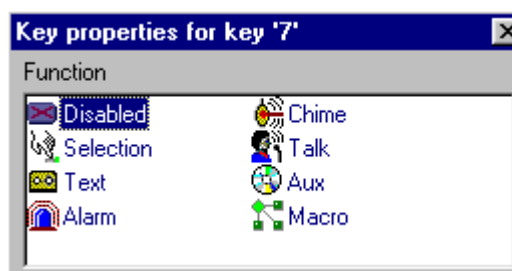
Digits behind point

0

Adjustment of paging station buttons for operation with macros:

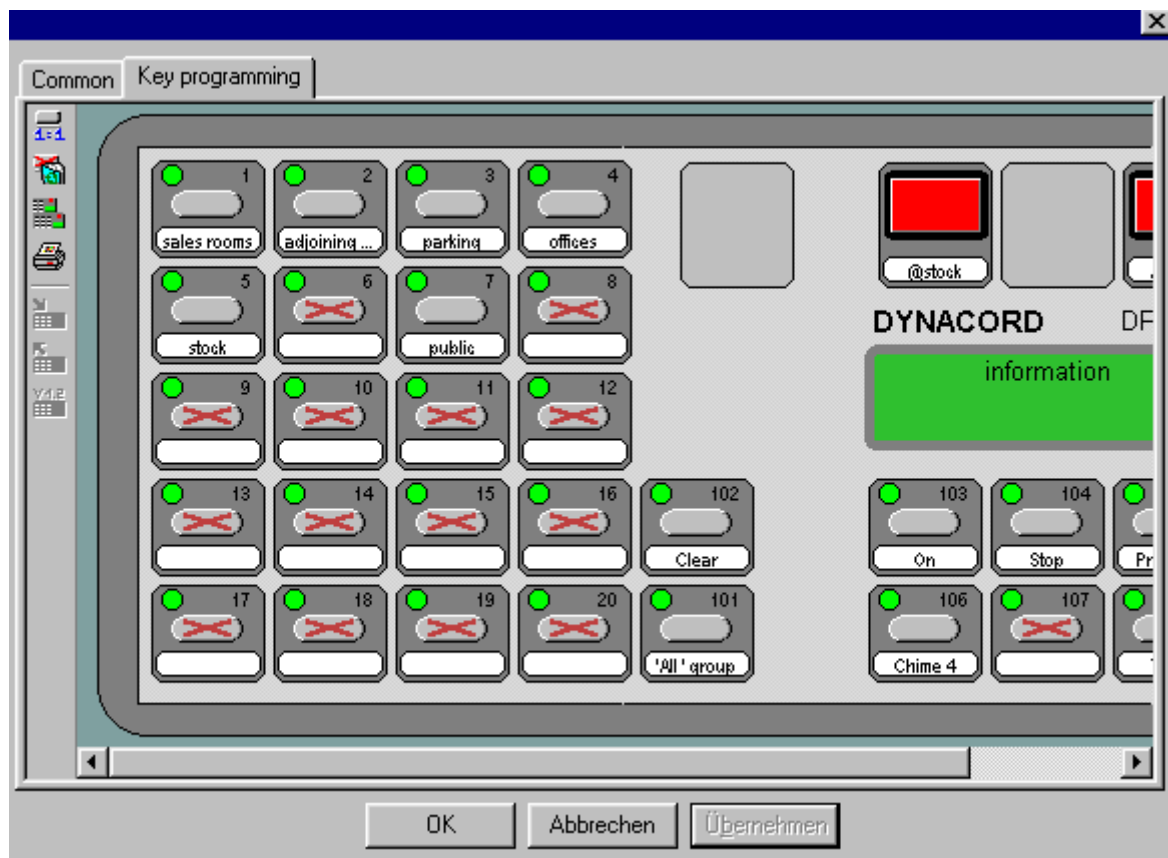


Key 7 shall become the selection key for the group „public“. Make a double click on that key, and have a look at the following selection window:

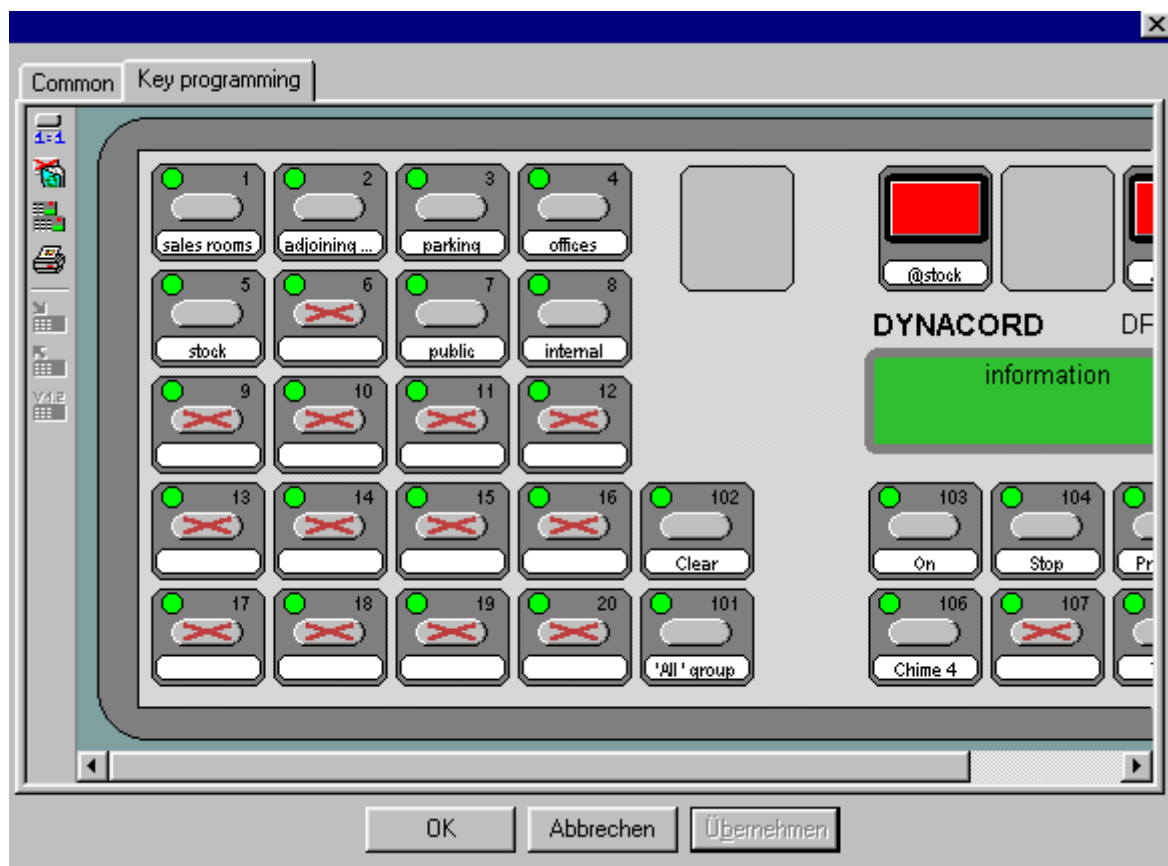


Click on  **Selection**, and you can see all available speaker lines and groups. Select  **public** and close that window.

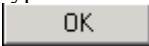
You will get the following picture:

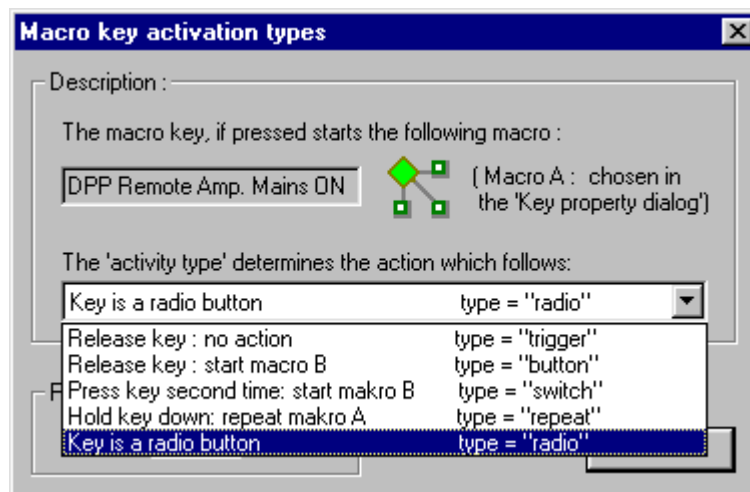


Key 8 must be programmed in the same way as key 7 for the group “internal”.



Keys 17 and 18 are intended to operate the switching for the source of the BGM. For that, make a double click on key 17.

Again, a selection window opens, and now the function  must be selected. Select the macro  from the macro list. In the field , you have the possibility to select the type of activation for these keys. In that case we need „Key is a radio button“. Make the selection valid with  and close the window.

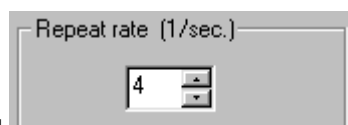
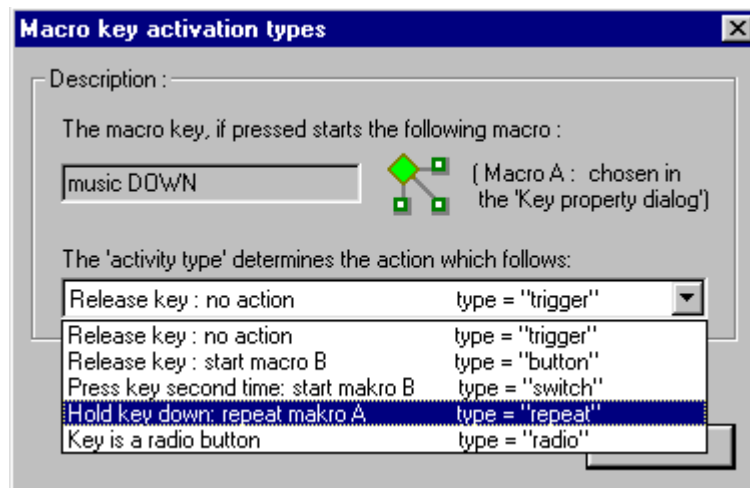


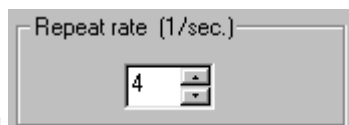
For „tuner on“, do the same with key 18.

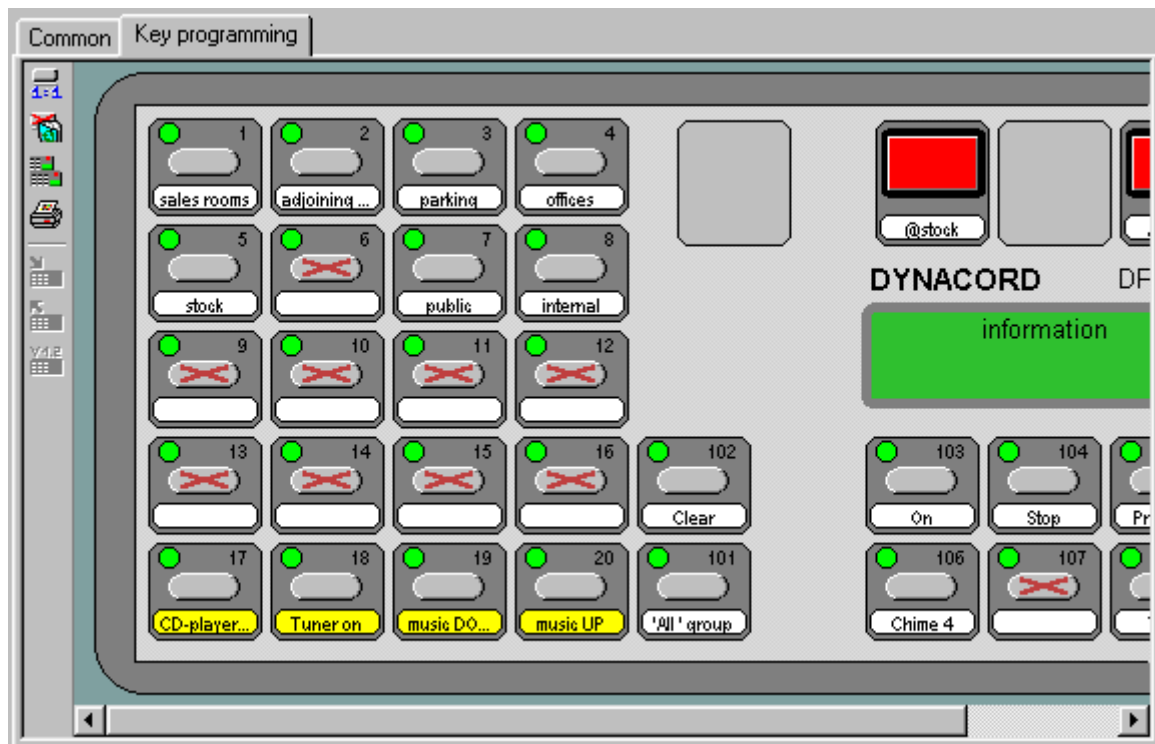
Configuration of the volume control at keys 19 and 20:

To configure the volume control at key 19, open the window for the key properties by a double click on key 19. Select , then select  from the macro list.

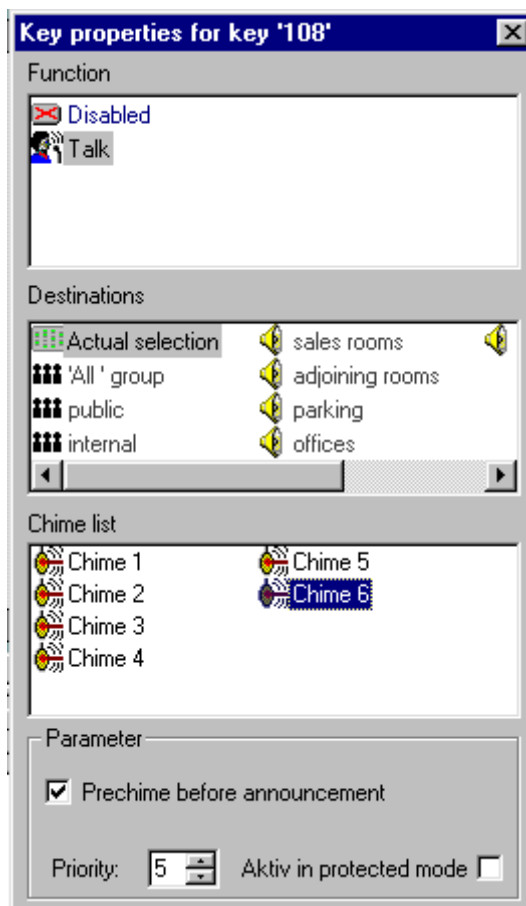
In the field „parameter“, click on , and a new selection window opens. Select from the list „Hold down key: repeat macro A“.



After that, in the field , change the repeat rate to 4, i.e. while holding down the button, the related macro is started 4 times per second. With key 20, do the same with the macro „music up“. You have now the following entries at the paging station:



For configuring a prechime at the talk button, make a double click on „Talk“, switch „prechime before announcement“ to on, and select „chime 6“ as the prechime:



Include the data into the file with „apply“ and close the window.

Changing of some common properties of the paging station:

Go to the **Common** - folder of the paging station

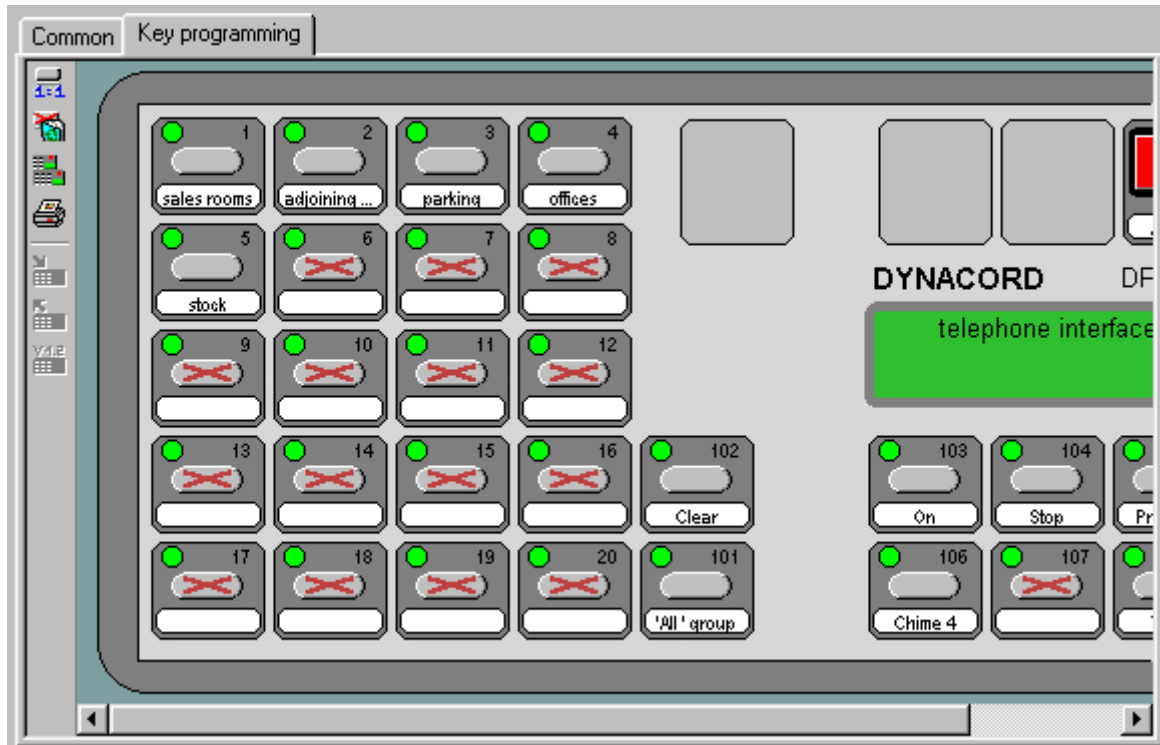
Switch the German date format to off, and “included in FAULT Handling” to on. The last entry enables an error message, if there is any fault at the paging station. After that, press “apply” and then **OK**. The window closes.

Open the paging station “adjoining” and change the keys 106 .. 108 for use as direct call buttons with the - function as described above. (Direct call means, that no special talk button exists.)

Do the same with the paging stations “sales”.

Hint: with the symbol  , the adjustments of a paging station can be copied completely to another paging station.

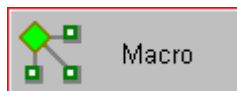
The telephone interface „DTI2000“ is treated like a paging station in the Designer. The entries have been made automatically as shown in the following window. It is also possible to add some other groups, or functions, if necessary:

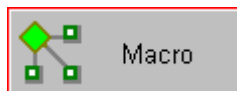


The use of the DTI 2000 is described in the user's manual in detail.
Close the paging station window.

11. Ready Inputs

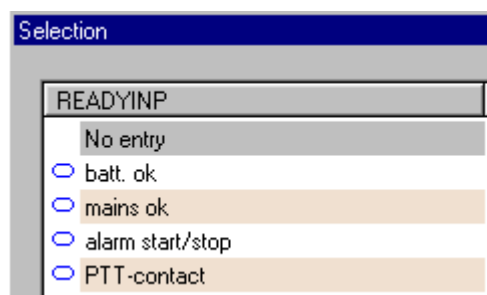
Ready inputs are logical inputs, which are monitored regarding their predefined logical level. If the level is not as predefined, the fault relay of the DPM 4000 is activated and an error message can be generated on the display of the paging station.



Click on  and open the macro window, after that click on the symbol  to open the properties of ready inputs.

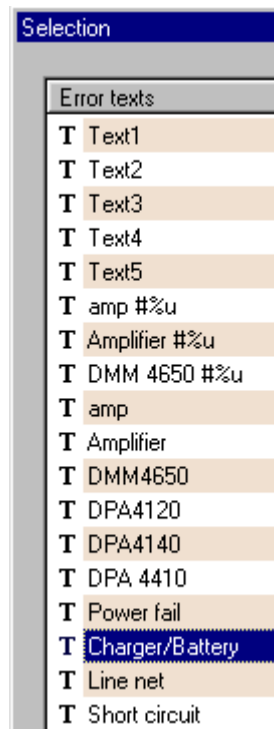
Create a new entry with .

With a double click on the empty field under „input“, you will get a selection window as follows:



With a double click on  batt. ok that entry is included into the design. In the cell „level“, the entry must be changed to „on“ by a double click. I.e. that only when the input is off, there will be generated an error message.

For defining a display at the paging station, make a double click on „Text1“ in the column Text, and in the following selection window again choose  **Charger/Battery** with a double click for including this text into the design.

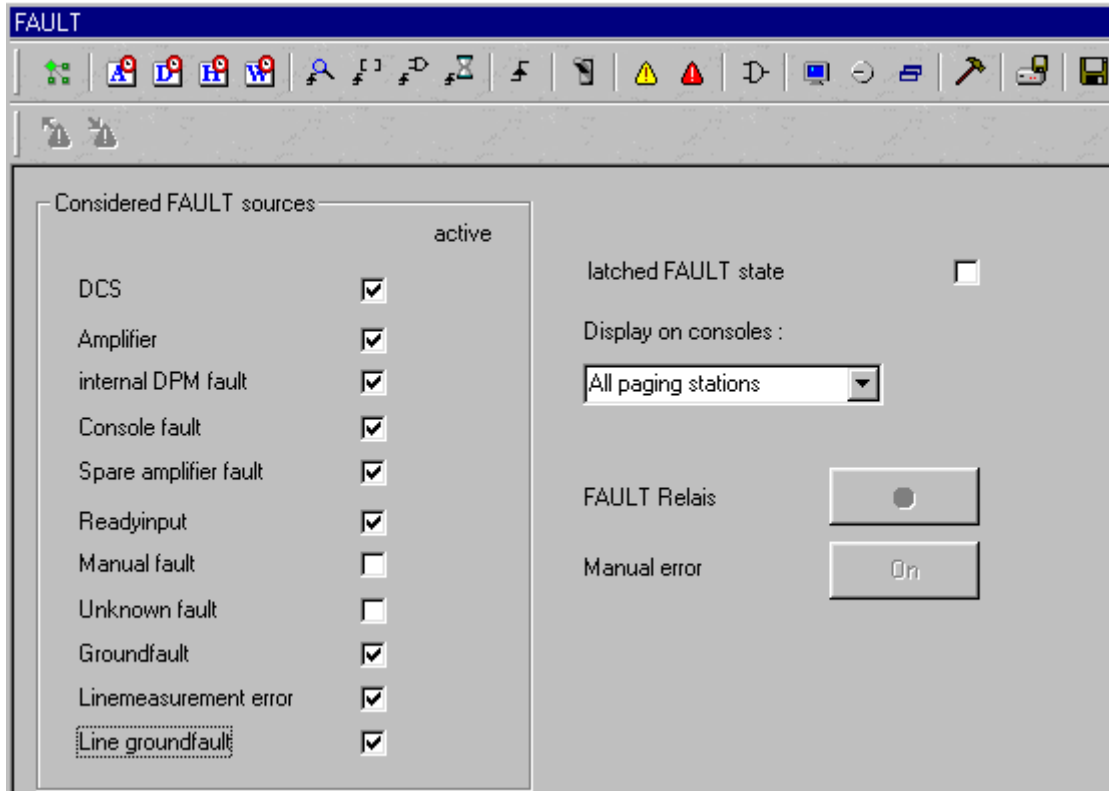


Create a second readyinput for the mains power as shown in the following picture:

READYINP	ID	Input	Level	Masked	Text	Nr	State
 READYINP 1	1	batt. ok	ON	OFF	battery/ch...	0	
 READYINP 2	2	mains ok	ON	OFF	Power fail	0	

12. Fault Handling

With a click on the symbol , you will get the window for configuring fault adjustments. Every checked item will generate a fault message at the paging station and will deactivate the ready – relay in the DPM 4000:

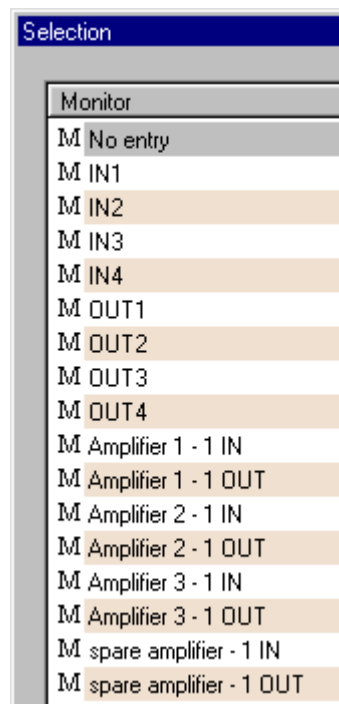


13. Audio-Monitoring

(listen to audio sources with the DCS 420)

Open the monitor selection window with 

With a click on , a selection window opens including all audio sources, which can be selected in the system:

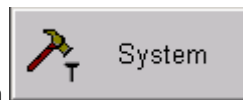


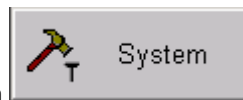
With a double click on **M IN1** this entry is included into the monitor table. Repeat this until you have the following table:

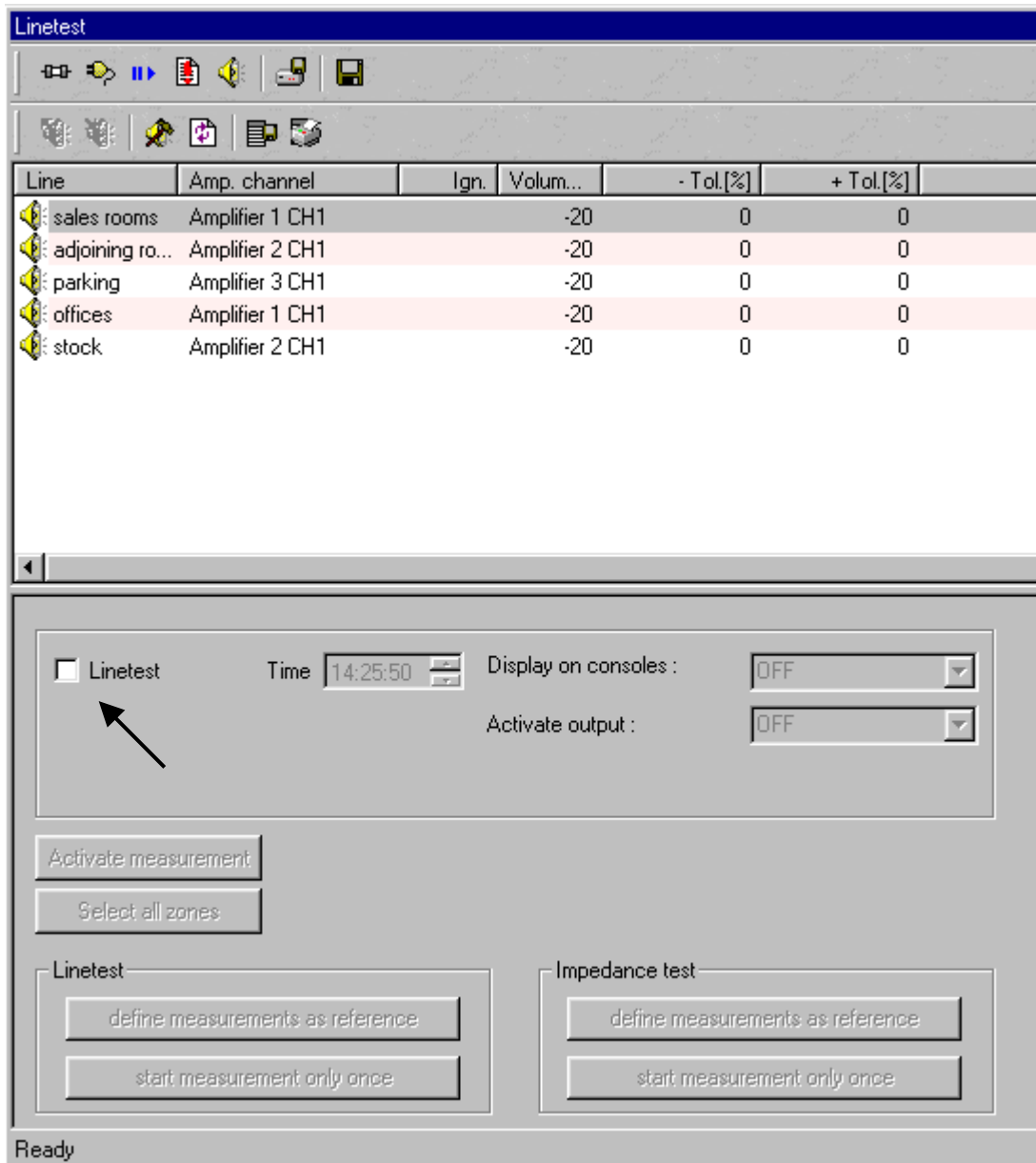
Properties of monitor entries		
Monitor	ID	Entries
M	1	IN1
M	2	IN2
M	3	IN3
M	4	IN4
M	5	OUT1
M	6	OUT2
M	7	Amplifier 1 - 1 OUT
M	8	Amplifier 2 - 1 OUT
M	9	Amplifier 3 - 1 OUT
M	10	spare amplifier - 1 OUT

Close the window.

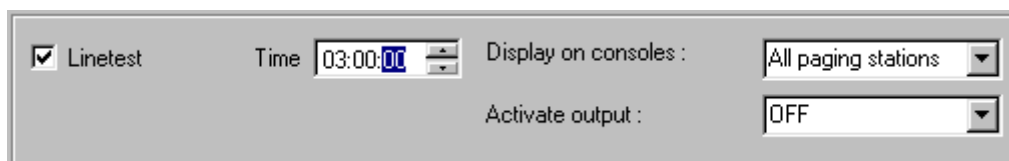
14. Speaker Line Surveillance



With a double click on , a new pop-up window opens. Click on  to open the properties of the speaker line measurement window:



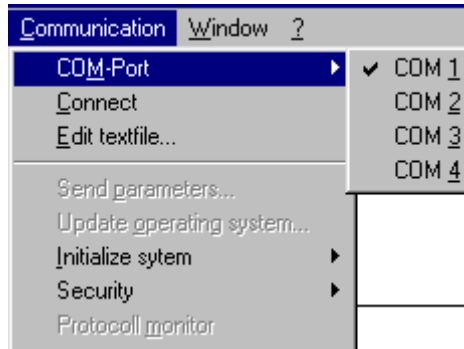
After checking on „linetest“, it is possible to insert the time, when the daily speaker line measurement shall be carried out automatically.



15. Adjustment of the COM-Port

In the menu item communication COM-Port, the use of the corresponding RS 232 interface must be adjusted in order to have the possibility to establish a connection from the PC to the DPM 4000. Usually it is COM 1, with older PC it may be COM 2.

With a left mouse click on **Communication**, the following menu opens:

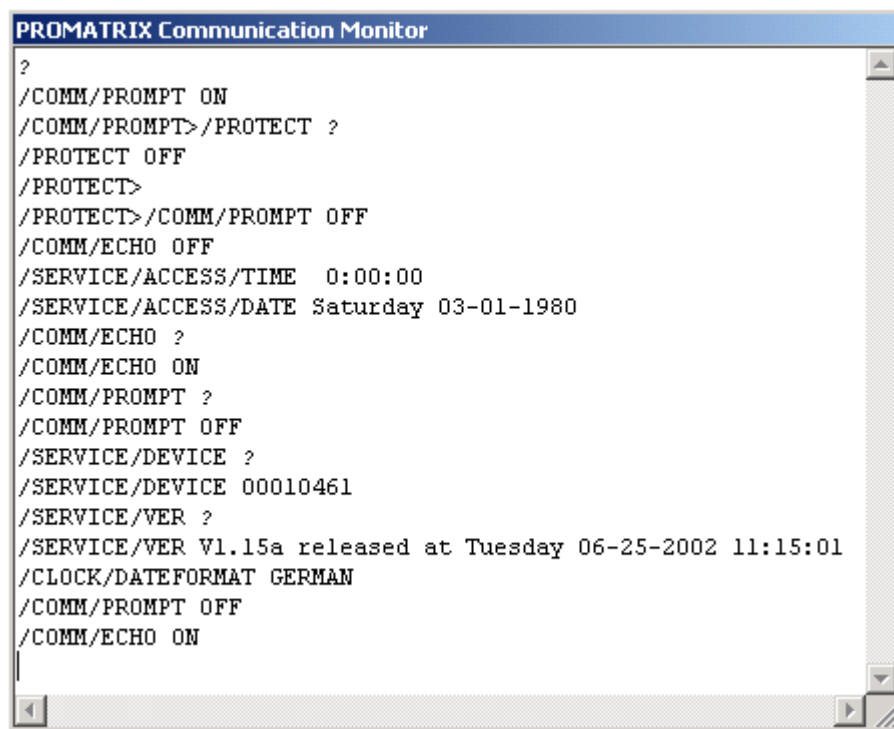


Go to **COM-Port** with the cursor and then to COM 1. With a left mouse click, select the particular COM-Port. The window closes automatically.

With the selection of the COM-Port, all other parameters are selected accordingly (9600 Bd, 8 bit, 1 stopbit, no parity).

16. Connection of the DPM 4000 to the PC

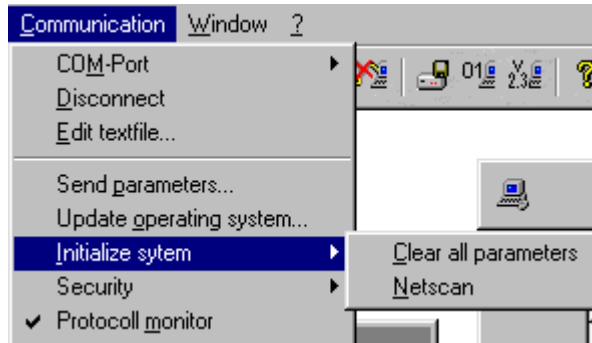
With a left mouse click on , it is possible to establish a data connection from the PC to the DPM 4000. When the connection is ready, the protocol monitor appears (if not disabled). The following window shows all activities at the interface. Automatically, all data transfer is saved to filename.log.



17. Netscan

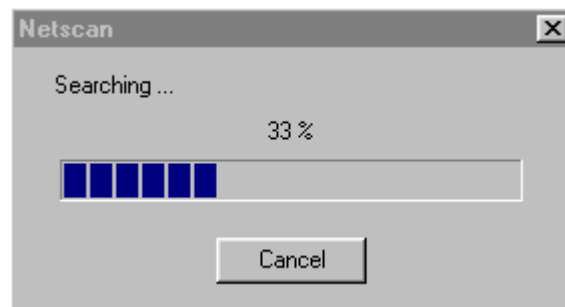
Performing a netscan with the DPM 4000 means that the unit searches for all devices connected to the DPM 4000, and saves their existence in its memory. For doing that correctly, at this point of time the DPM 4000 must be connected to all functions of all external devices. If there are changes by fault at a later time, the DPM 4000 can find that out and release an error message to the user. If any changes are necessary at a later point of time, they can be carried out by a new netscan.

With a left mouse click on **Communication**, the following window opens:

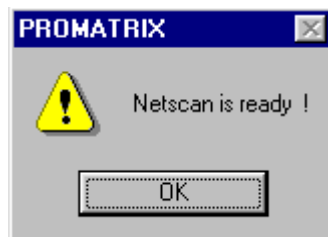


Choose **Initialize sytem** , then click on **Netscan**

The following window appears which informs about the progress of the netscan.



After the netscan is ready, please confirm the following window with ok. The window will be closed.

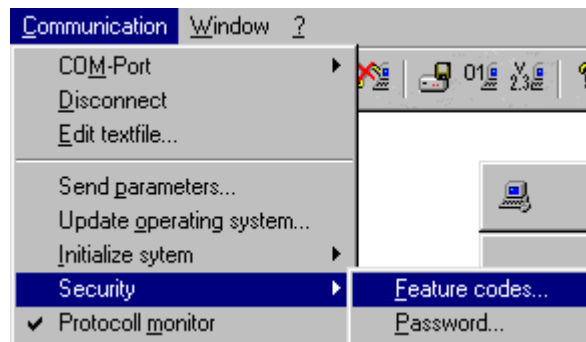


18. Feature Codes

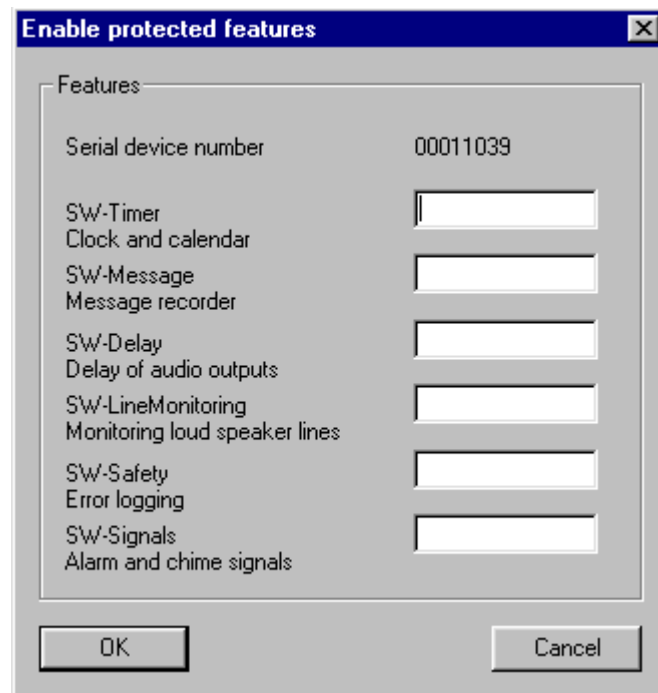
In the PROMATRIX System, certain features can only be used after entering a special code into the feature code window. The following functions require a feature code:

<i>name</i>	<i>description</i>
<i>SW-Clock</i>	<i>clock and calendar</i>
<i>SW-Message</i>	<i>message recording and playback in the DPM 4000</i>
<i>SW-Delay</i>	<i>audio delay in the audio outputs of the DPM 4000</i>
<i>SW-LineMonitoring</i>	<i>monitoring of loudspeaker lines</i>
<i>SW-Safety</i>	<i>logging of errors and events</i>
<i>SW-Signals</i>	<i>chime and alarm signals in the DPM 4000</i>

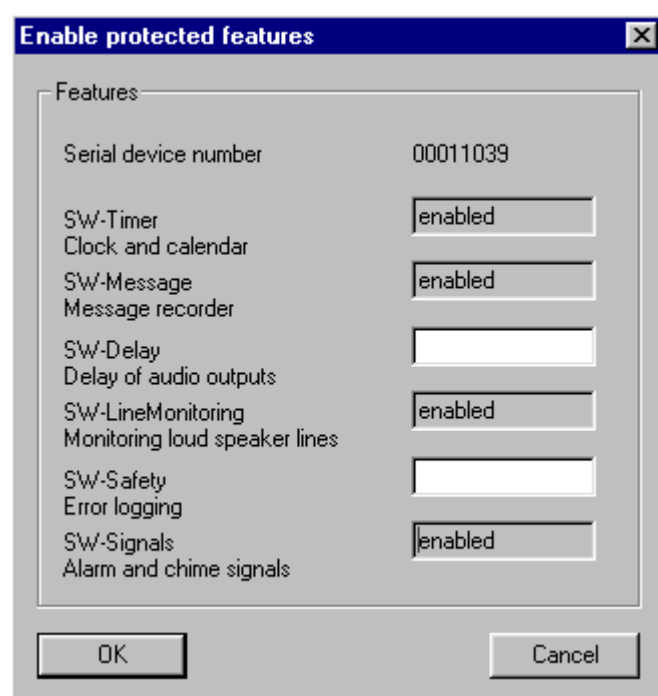
With a left mouseclick on **Communication** , the following window opens:



Select „security“, then „feature code“.

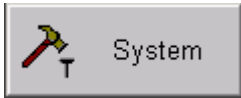


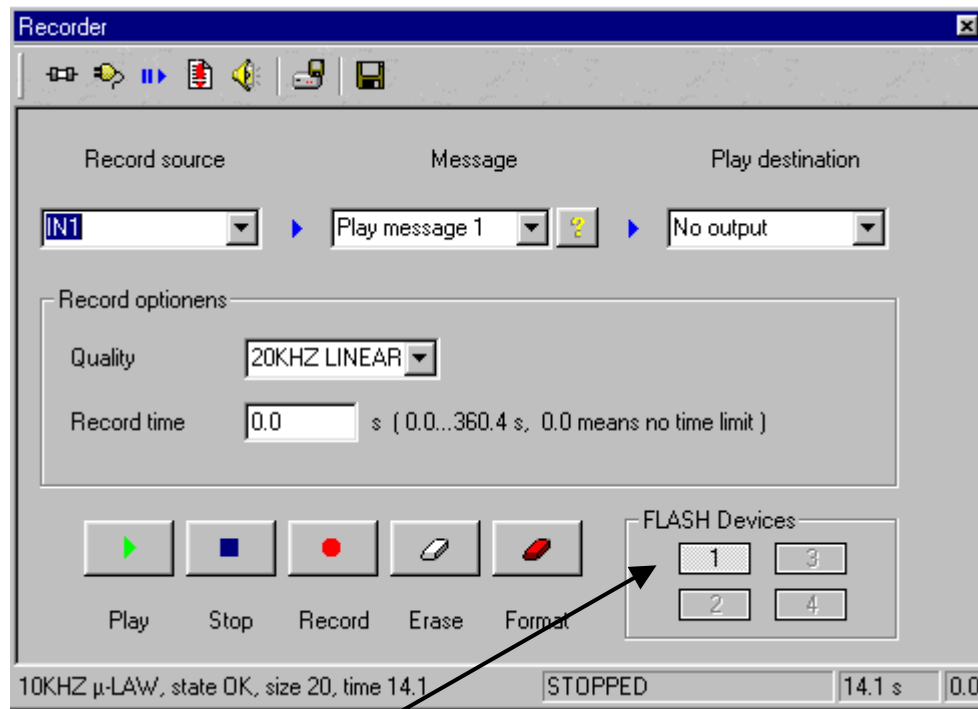
Enter into each field the according feature code and press enter. After that, the following entries are shown:



Close the window with .

19. Formatting of the Flash Memories

With a double click on the block , a pop-up window is opened. In this window, click on  to open the recording window.



Here you can see that there is already inserted one flash memory in position 1 of the internal memories. Positions 2, 3, and 4 are free.

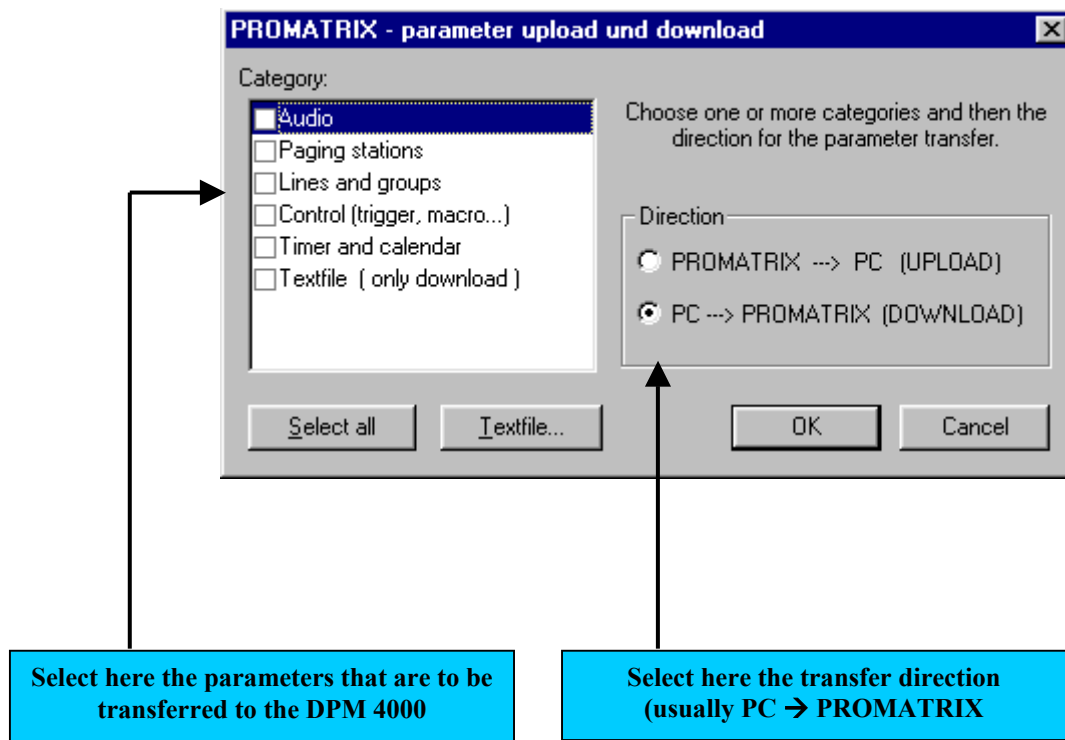
With a left mouse click on , the formatting of the flash-memory is started.

Here you can see the status and the progress of the all activities. After the formatting the status is „STOPPED“

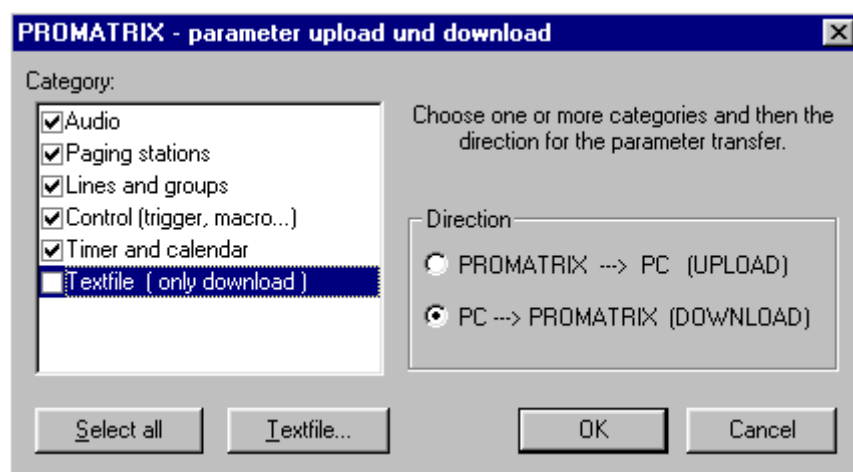
In that window, recordings are possible as well, but in this application, the recording is carried out online from the paging station.
Close the window after the formatting.

20. Loading of Parameters

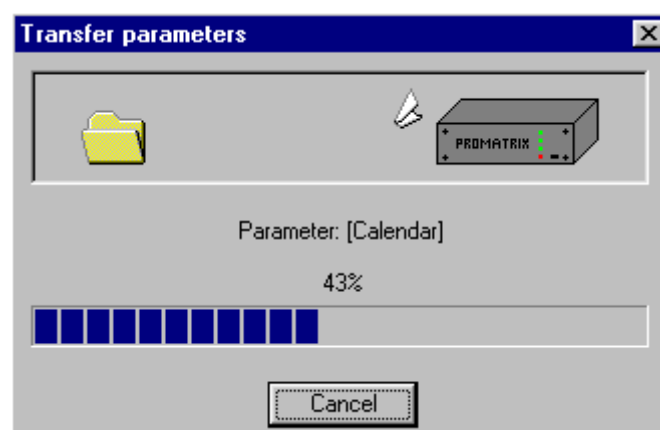
With a left mouse click on , the following window opens:



After selecting the categories of the parameters that have to be transferred to the system, (see following window) press **OK** to start the transfer.



The following window appears:

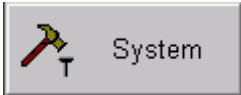


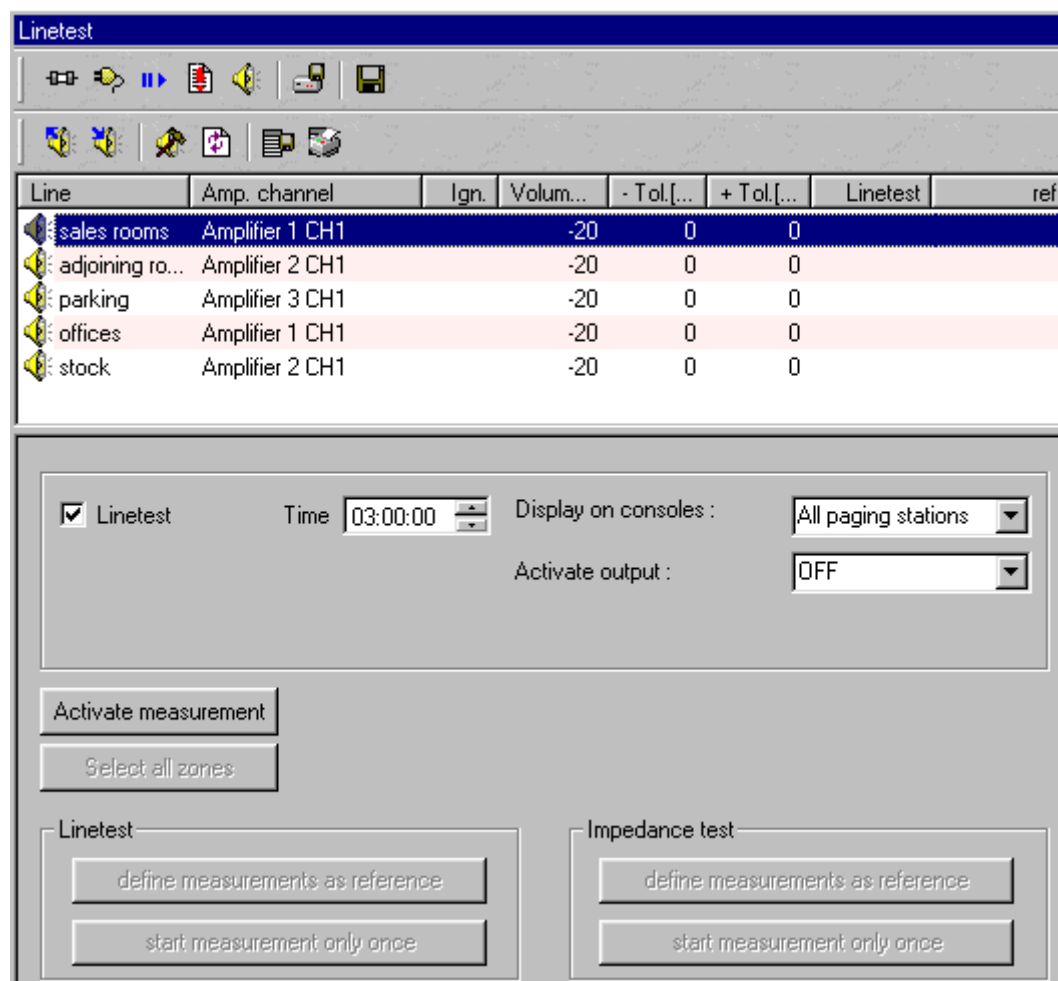
You can see the progress of the transmission and which parameter is being transmitted.

The window closes automatically after the transmission (download).

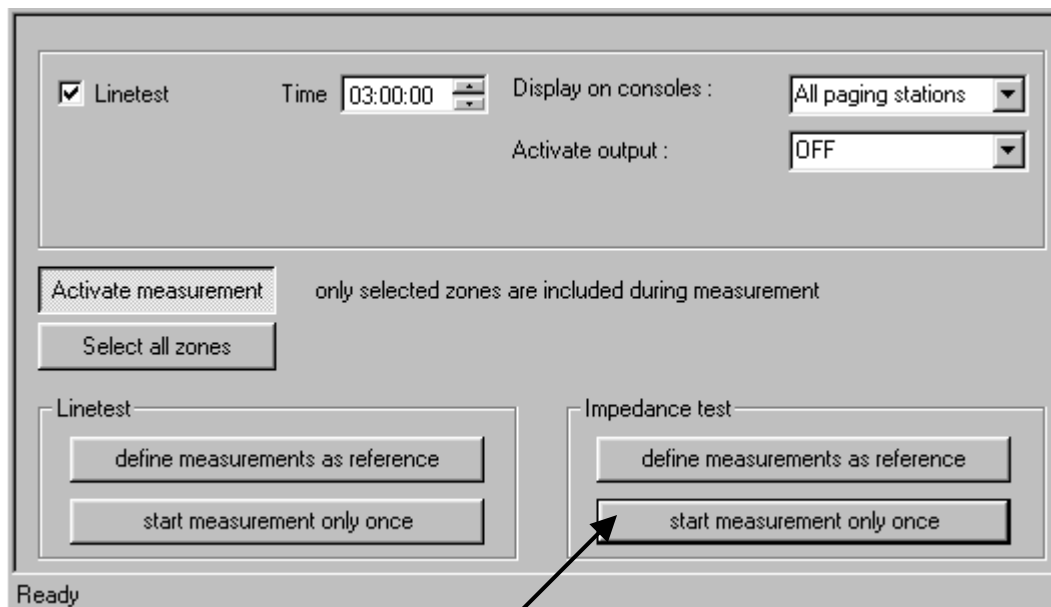
21. Adjustment of Speaker Line Surveillance

(Hint: for this example, there was only connected a 15Watt-speaker at line 1)

With a double click on  , a window opens. Then click at  to reach the linetest window.

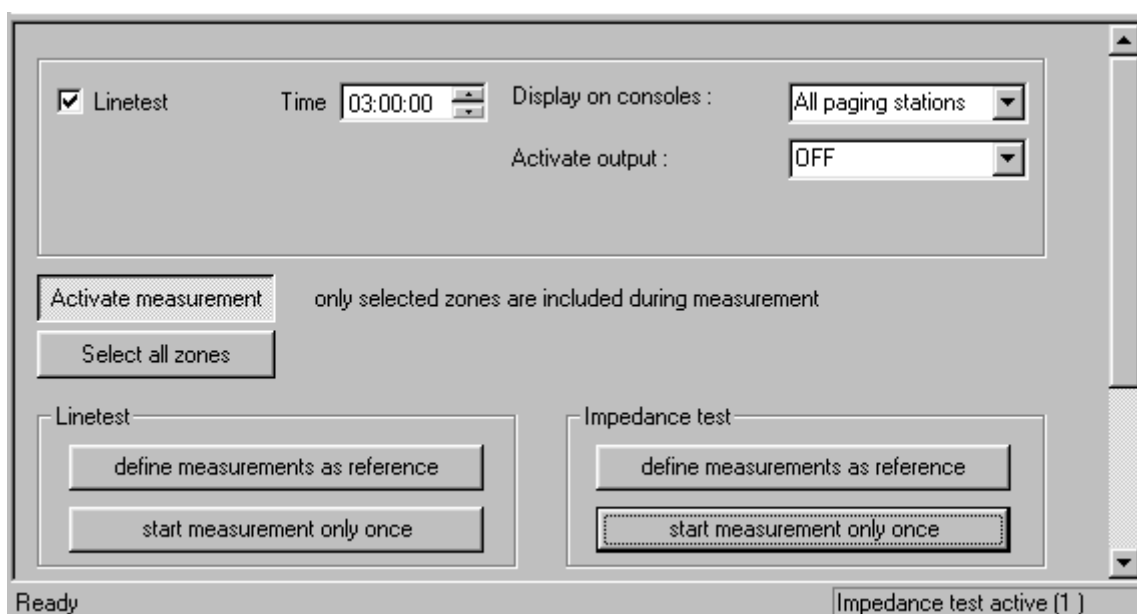


Press  , and after that, 



Here left mouse click

Now, the impedance test of all speaker lines will be started. These values are only intended for the check of the speaker network by an expert, not for daily surveillance. The measurement is done by a 1000 Hz – tone. In the following window you can see the voltage, the current, and the resulting impedance in V/A.



Status field

The status field shows which kind of measurement is done and which speaker lines are concerned (in the example impedance test for speaker line 1). After the measurement, you will see „none“.

With a left mouse click on , the display will be refreshed (it can take a little while) and you can see the following window:

Linetest										
Line	Amp. channel	Ign.	Volum...	- Tol. [...]	+ Tol. [...]	Linetest	reference	Impedancetest	reference	
sales rooms	Amplifier 1 CH1		-20	0	0	0.00V ...	0.00V 0.0mA	>10.00V 17.9mA	0.00V 0...	

Volume control

Result of measurement

Attention! When the maximum measurement value is exceeded, there will be a „>“ – Sign in the column for voltage or current in the results. In this case, the volume must be reduced to about – 25 dB.

Change the measuring level only in case the measurement range has been exceeded!

With a left mouse click on the cell volume control, the volume of the speaker line measurement for the selected speaker lines can be changed. See the following picture:

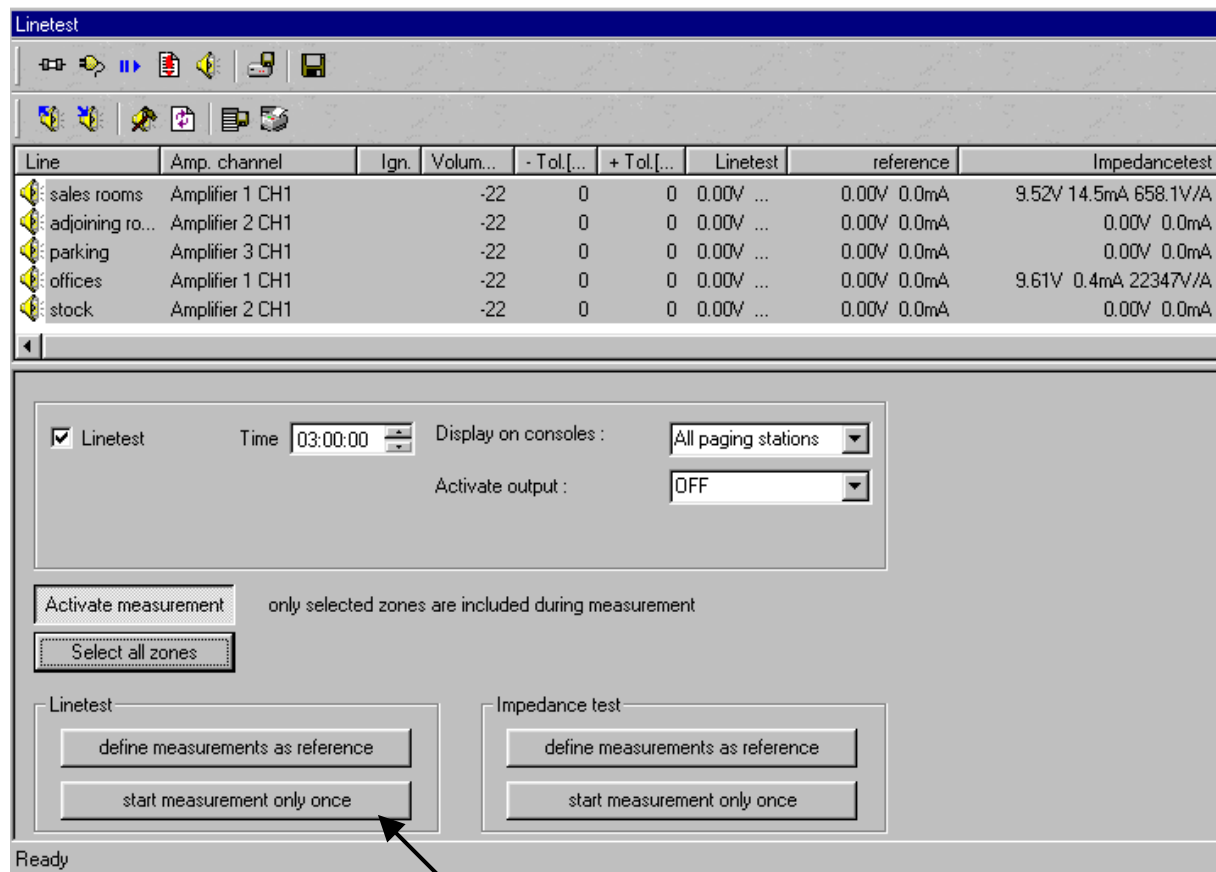
Linetest										
Line	Amp. channel	Ign.	Volum...	- Tol. [...]	+ Tol. [...]	Linetest	reference	Impedancetest	reference	
sales rooms	Amplifier 1 CH1		-22	0	0	0.00V ...	0.00V 0.0mA	>10.00V 17.9mA	0.00V 0...	

With a left mouse click on , the changing of the values must now be sent to the DPM 4000 (download). After the transmission is ready, start again the impedance measurement. When the measurement is ready, refresh the display again.

The result will be the following or similar entries (depends on your speaker lines):

Linetest										
Line	Amp. channel	Ign.	Volum...	- Tol. [...]	+ Tol. [...]	Linetest	reference	Impedancetest	reference	
sales rooms	Amplifier 1 CH1		-22	0	0	0.00V ...	0.00V 0.0mA	9.52V 14.5mA 658.1V/A		

With the formula ($P=U^2:R$), the power of the corresponding zone can be calculated. In this example, the result is as follows: $100V^2:658.1V/A = 15,19 W$.

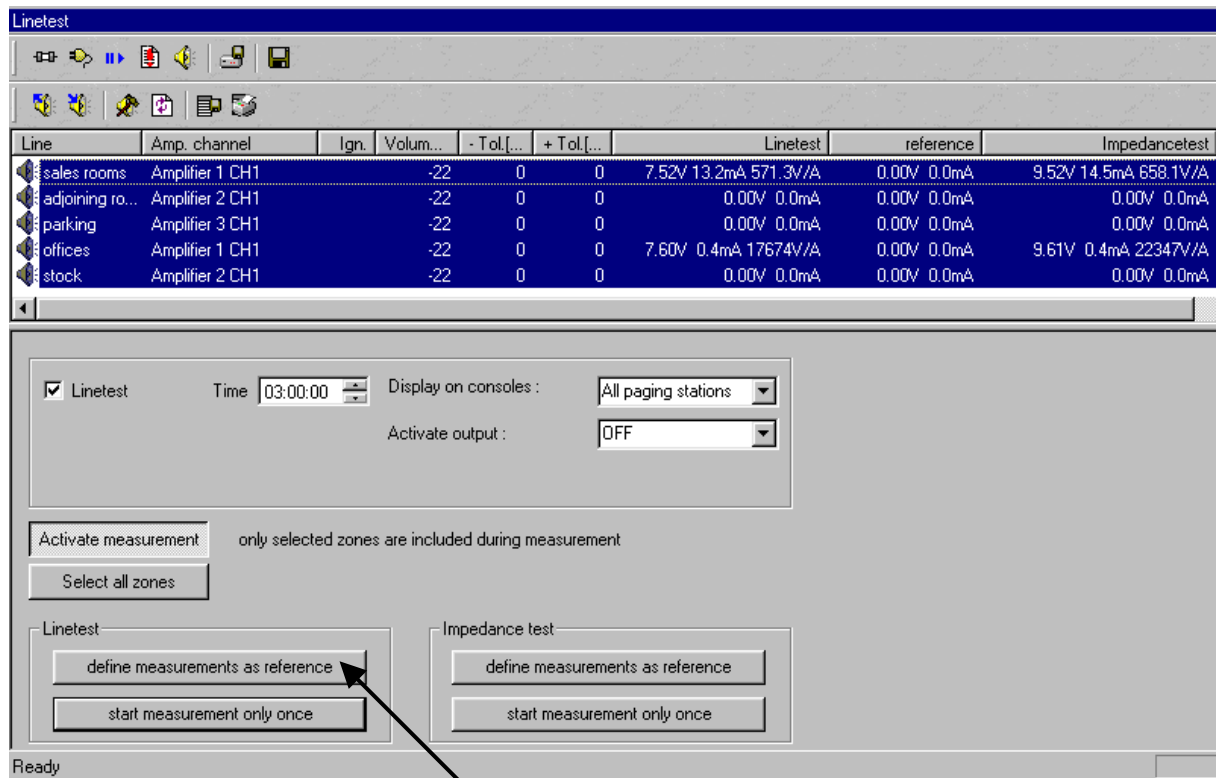


Here left mouse click

Now you can carry out the line measurement for all speaker lines. It is done with 66 Hz. These values will be taken for the daily measurement. The values will not be the same as those of the impedance test because of the different frequency.

Refresh the display after the measurement.

Now you can see the up-dated measurement values:



Here left mouse click

The values are now taken as reference data for the following days.

All values can be seen after refreshing the display again:

Line	Amp. channel	Ign.	Volum...	- Tol. [...]	+ Tol. [...]	Linetest	reference
sales rooms	Amplifier 1 CH1		-22	0 [57....]	0 [571...]	7.52V 13.2mA 571.3V/A	7.52V 13.2mA 571.3V/A

After that, -Tol / +Tol must be adjusted according the respective speaker lines. In our example, we took 20 %.

With a left mouse click on the cell -Tol or +Tol, all the selected values can be changed. All the changed values must be downloaded to the DPM 4000 with

After refreshing the display, you can see the following window:

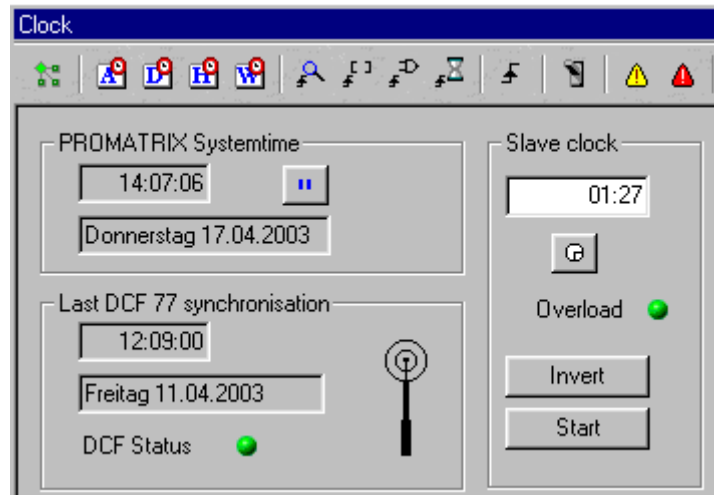
Line	Amp. channel	Ign.	Volum...	- Tol. [%]	+ Tol. [%]	Linetest	reference
sales rooms	Amplifier 1 CH1		-22	20 [457.0V/A]	20 [685.6V/A]	7.52V 13.2mA 571.3V/A	7.52V 13.2mA 571.3V/A

With a left mouse click on , immediately save all data permanently in the DPM 4000. Close the window.

22. Adjustment of Slave Clocks



After a double click on , you have the possibility to adjust slave clocks in the following window:



The PROMATRIX system time will automatically be synchronized, in case there is connected a time code receiver for the time code transmitter DCF 77. If not, the time can be adjusted by pressing  (clock stopped), then enter current time and date, and press  again. The slave clocks can be adjusted by entering the current slave clock time, then pressing , and after that pressing  to enable the DPM 4000 to synchronize the slave clocks with the system time.

With a left mouse click on , save all data in the memory in the DPM 4000 at once. Close the window.

The configuration is now ready and the system is ready for operation.