MAGIC DC7

Dual 7-kHz Audio Codec

MAGIC AC1

ISDN Audio Codec

Hardware/Software Manual

Audio Video Technologies

MAGIC DC7 & MAGIC AC1

ISDN Audio Codecs

Hardware/Software Manual

To get always information on the latest software please register on our Homepage:

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First click on the menu item **Service** and then select **Software Registration**. Please select as product

MAGIC DC7

or

MAGIC AC1

and enter your contact details. You need to indicate a valid **email address** at least.

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Content

INTRODUCTION

The system ***MAGIC DC7/AC1*** is implemented as portable ISDN Audio Codec and has analogue and digital AES/EBU Audio interfaces.

In addition to the ISDN interface for Audio coding of higher quality, the system also incorporates a POTS telephone interface whereby at least an Audio transmission in 3.1-kHz telephone quality is possible, if ISDN is not available.

The configuration of the system can be carried out via the Windows application software included in delivery or via the front keypad of the unit. Optionally, the ***MAGIC DC7/AC1 Keypad*** is available for separate operation without PC.

SAFETY

Introduction

The unit described has been designed to the latest technical parameters and complies with all current national and international safety requirements. It operates on a high level of reliability because of long-term experience in development and constant and strict quality control in our company.

In normal operation the unit is safe.

However, some potential sources of danger for person, material and optimal operation remain - especially if daily routine and technical errors coincide.

This manual therefore contains basic safety instructions that must be observed during configuration and operation. It is essential that the user reads this manual before the system is used and that a current version of the manual is always kept close to the equipment.

General safety requirements

To keep the technically unavoidable residual risk to a minimum, it is absolutely necessary to observe the following rules:

- Transport, storage and operation of the unit must be under the permissible conditions only.
- Installation, configuration and disassembly must be carried out only by trained personnel on the basis of the respective manual.
- The unit must be operated by competent and authorised users only.
- The unit must be operated in good working order only.
- Any conversions or alterations to the unit or to parts of the unit (including software) must be carried out by trained personnel authorised by the manufacturer. Any conversions or alterations carried out by other persons lead to a complete exemption of liability.
- Only specially qualified personnel is authorised to remove or override safety measures, and to carry out the maintenance of the system.
- External software is used at one’s one risk. Use of external software can affect the operation of the system.
- Use only tested and virus-free data carriers.

Text Conventions

In this manual the following conventions are used as text markers:

Accentuation: Product names or important terms

LCD TEXT: Labelling on the front display of the system

PC Text: Labelling in the PC Software

TIP

The symbol **TIP** marks information which facilitates the operation of the system in its daily use.

NOTE

The symbol **NOTE** marks general notes to observe.

ATTENTION

The symbol **ATTENTION** marks very important advice that is absolutely to observe. In case of non-observance malfunctions and even system errors are possible.

1 CONSTRUCTION

The functions of the ***MAGIC DC7*** are implemented in a single unit. The ***MAGIC AC1*** is additionally equipped with a module for MPEG Coding. The system is designed for mounting in a half 19" rack (1 U).

Optionally, a ***MAGIC DC7/AC1 DUAL 19“ Mounting Kit*** (ID: 800212 (DC7) and ID: 800232 (AC1)) is available for the installation of two ***MAGIC DC7/AC1*** Systems next to each other.

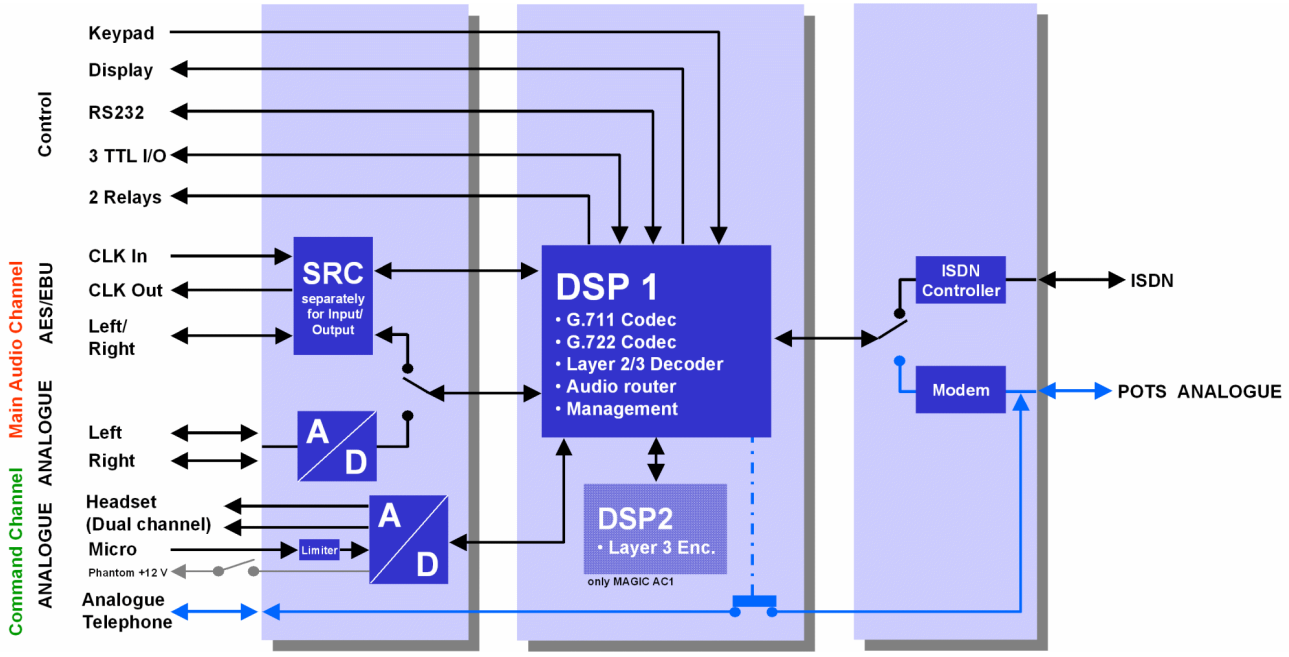
FIG. 1 FRONT VIEW: MAGIC DC7 DUAL 7-KHZ AUDIO CODEC

FIG. 2 FRONT VIEW: MAGIC AC1 ISDN AUDIO CODEC

2 SYSTEM DESCRIPTION

The functional elements of the system are pictured in Fig. 3.

FIG. 3 FUNCTIONAL ELEMENTS MAGIC DC7/AC1 ISDN AUDIO CODEC



2.1 Functionality

The ***MAGIC DC7/AC1*** System incorporates an analogue ***POTS*** interface as well as an ***ISDN*** telephone interface. The operating modes can be configured by software. If the ***ISDN interface*** is used, depending on the operating mode two independent channels are available that can be used independently from each other.

The complete signal processing is taken over by two digital signal processors. In this way the following functions are realised:

DSP1:

- G.711 Audio encoding and decoding
- G.722 Audio encoding and decoding
- ISO/MPEG Layer II/III Decoder
- digital Audio router, digital Audio mixer (optional)
- Signalling management (J.52, proprietary modes)
- Control of the complete system (Keypad, display, relays, TTL, RS232)

DSP2:

- ISO/MPEG Layer III Encoder (only for MAGIC AC1)

Via the main Audio channel the high quality Stereo or Mono Audio signal is inserted or output analogue or digitally. At the same time, the command channel can be used in parallel. If the digital AES/EBU Audio interface is used, two separate Sample Rate Converters are available for automatic clock synchronisation. For external clocking a clock input and a clock output are available.

Additionally, the Audio Codec incorporates a Headset interface for Stereo tone or Dual Channel tone with a microphone input, Limiter and 12V phantom power which can be switched off.

By the integrated Audio router all input and output signals can be configured freely. If you use the optional Software Plug In ***MAGIC DC7/AC1 Mixer Tool***, even all signals can be mixed in a flexible way.

The configuration and operation can be carried out via the ***front keypad*** and the illuminated ***display***.

Configuration and control is especially comfortable with the ***MAGIC DC7/AC1 Windows PC Software*** which is included in delivery and which communicates with the system via the RS232 interface.

The basic operating functions like accepting a call, dropping a connection and establishing a connection with a pre-programmed number can be carried out via three programmable ***TTL contacts***. Two ***relays*** are available for status indication.

Optionally, the system can also be operated separately via the ***MAGIC DC7/AC1 Keypad*** that can be connected to the RS232 interface instead of the ***PC Software***.

3 PUTTING THE MAGIC DC7/AC1 INTO OPERATION

3.1 Mounting

With its dimensions (W × H × D) of 220 mm × 44,5 mm (1 U) × 220 mm the ***MAGIC DC7/AC1*** System can be used either as desktop device or mounted in 19 inch racks. Corresponding 19“ mounting brackets are included in delivery. Optionally, a mounting kit (ID: 800202) to install two ***MAGIC DC7/AC1*** next to each other[1] is available.

When mounting the unit please keep in mind that the bending radius of the cables is always greater than the minimum allowed value.

When the ***MAGIC DC7/AC1*** Audio Codec is installed, please make sure that there is sufficient ventilation: It is recommended to keep a spacing of ca. 3 cm from the openings. In general, the ambient temperature of the system should be within the range of +5°C and +45°C. These thresholds are especially to observe if the system is inserted in a rack. The system works without ventilation.

TIP

The system temperature can be indicated on the display (*MENU STATUS INFORMATION* (see CHAPTER A1.4, Page 133))

During operation air humidity must range between 5% and 85%.

ATTENTION

Incorrect ambient temperature and humidity can cause functional deficiencies

Operation outside the threshold values indicated above leads to a loss of warranty claim.

3.2 Connection to the mains voltage

The system can be operated with mains voltages in the range from 90 V to 253 V via the external power supply included in delivery. The line frequency can vary from 45 Hz to 65 Hz. The maximum power consumption is 15W. The rack must be earthed according to the VDE Regulations. The earthing can be carried out via the earthing screw on the back side of the unit.

The unit does not have a circuit closer and a circuit breaker. After plugging in the external power supply the system boots within a few seconds. In stand-by mode the AVT logo is shown on the display[2].

[1] Likewise the DC7/AC1 can be combined with the product MAGIC TH2.

[2] Depending on the delivery status all menus are possibly displayed in German. The configuration of the menu language is described in CHAPTER 4.1.2.

3.3 Earthing of the system

For EMC reasons an earthing via the earthing screw of the system must be carried out in either case.

ATTENTION **Earthing**

A lacking earthing can cause functional deficiencies within the unit.

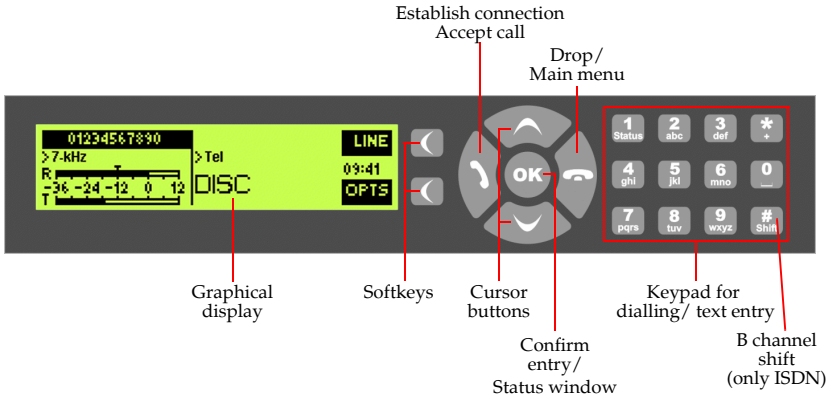
3.4 Operational elements on the front side

The system has an illuminated graphical display with a resolution of 160 x 32 Pixels and 21 operating buttons.

On the right next to the display there are two softkeys whose current functions are indicated on the display. In the middle there are two cursor buttons (upwards/downwards), two buttons for accepting/dropping calls as well as an *OK* button. The numerical pad supports in addition to the numerical characters *0...9*, the '*' and '#' key. For text entries the numerical pad can also be used as normal keypad.

The operation is similar to standard mobile telephones.

FIG. 4 OPERATIONAL ELEMENTS ON THE FRONT SIDE



3.5 Operating modes of the system

The figures below show the systems in the different operating modes and their wiring.

3.5.1 Analogue POTS operation

ATTENTION

Earthing

If the analogue POTS interface is in operation the system must be earthed via earthing screw for EMC reasons. If the earthing is not carried out, the Audio signal can be faulty on the caller's side (humming).

The minimum wiring for the operation with an analogue telephone line is pictured in Fig. 5.

FIG. 5 MINIMUM WIRING FOR ANALOGUE POTS OPERATION

3.5.2 ISDN operation

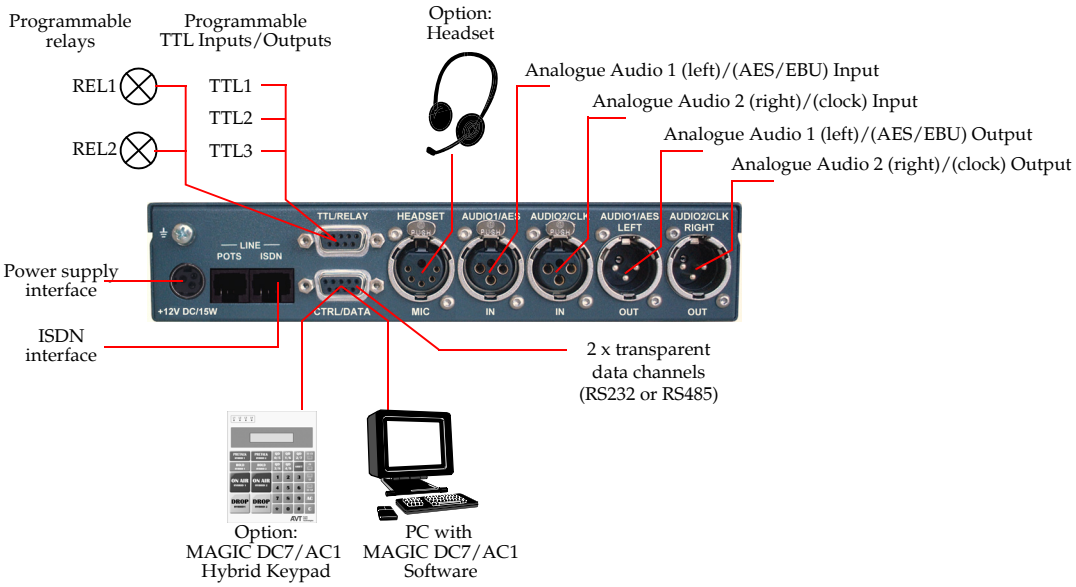
In contrast to the analogue POTS operating mode, in the ISDN operating mode two independent B channels are available which can be used separately for mono transmissions or in combination for a stereo transmission.

For live reports a professional Headset can be connected.

FIG. 6 MINIMUM WIRING FOR ISDN OPERATION

The maximum wiring with all options is shown in Fig. 7. Via the RS232 control interface a PC with ***MAGIC DC7/AC1 Software*** or a ***MAGIC DC7/AC1 Keypad*** can be connected as alternative to the operation by the front keypad and display.

FIG. 7 MAXIMUM WIRING FOR ISDN OPERATION



4 OPERATION VIA DISPLAY AND KEYPAD

In this chapter all basic configurations for the operation of the ***MAGIC DC7/AC1*** system are explained. An overview of the menu structure you will find in the annex under CHAPTER A1.

Of course, all configurations can also be comfortably made via the ***MAGIC DC7/AC1 Software*** included in delivery.

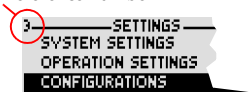
NOTE

For the details of most functions please see the PC Software description from CHAPTER 5.

4.1 Basic configuration

In the following, some specific basic configuration of ***MAGIC DC7/AC1*** are described in detail. The configurations for ***MAGIC DC7*** and ***MAGIC AC1*** differ only in a few aspects. Major differences are marked in the text.

Menu reference number



NOTE

All menus can be reached directly via a ***QuickMenu*** key sequence. For this purpose each menu item is marked with a cypher in the upper left corner (in the example on the left it is e. g. 3). To reach a certain menu directly please enter from the main menu the key sequence MENU <DIGIT> <DIGIT> whereby <digit> marks the respective menu reference number. Please notice that the menu reference number can change depending on the configuration.

4.1.1 Keypad lock

To avoid that keys are pressed accidentally, you can enable a keypad lock. For activation please press the MENU key followed by the ✱(star) button. If the keypad lock is enabled, the display illumination is turned off immediately.

The keypad lock is deactivated by entering the key sequence MENU ✱ a second time.

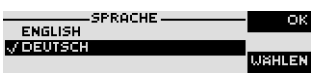
4.1.2 Setting the menu language

In delivery status ENGLISH is selected as standard menu language. To select DEUTSCH as menu language please follow the instructions below:

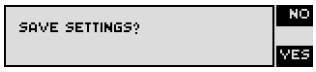
NOTE

If you are not in the main menu please press the ☎ key first.

First press the softkey ❮ MENU and select SYSTEM SETTINGS using the softkey ❮ SELECT. Press the cursor key ^ once until the option LANGUAGE is displayed in the menu. Via the SELECT softkey you directly reach the options for the desired language. With the help of the cursor keys ^ and v please choose the language and press again SELECT.



Please confirm your entry by pressing the OK button or the OK softkey.



To get back to the main menu, please press the key. Now you are asked if you want to *SAVE SETTINGS?*. Via the *YES* softkey the settings are stored permanently in the system.

NOTE If you press *NO*, all settings that you made are lost when the unit is switched off.

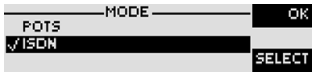
TIP You reach the settings for the *LANGUAGE* directly via the key sequence: *MENU 1 9*

4.1.3 Setting the operating mode: Analogue POTS or ISDN

To set the operating mode *POTS* or *ISDN* the following steps are required:

NOTE If you are not in the main menu, please press the key first.

- Press the softkey *MENU*.
- Via the cursor key please select the option *OPERATION SETTINGS* and press the softkey *SELECT*.
- Press again the softkey *SELECT* to get to the menu *MODE*.



- Now please select the desired operating mode *ISDN* or *POTS* using the cursor keys and and confirm your selection with the softkey *SELECT*.
- The entry is accepted by pressing the *OK* button or the softkey *OK*.
- Please press the button to get back to the main menu. Now you are asked if you want to *SAVE SETTINGS?*. Via the *YES* softkey the setting is stored permanently in the system.

TIP You reach the settings for the *MODE* directly via the key sequence: *MENU 2 1*

4.1.4 Setting the Audio interface: Analogue or digital

MAGIC DC7/AC1 incorporates analogue as well as digital Audio interfaces which you can adjust separately. The digital *AES/EBU interfaces* have integrated *Sample Rate Converters* to adjust the digital Audio source to the transmission clock. Additionally, clock inputs/outputs are also available. To configure the Audio interface please follow the instructions below:

NOTE If you are not in the main menu please press the button first.

- First press the softkey *MENU* and select *SYSTEM SETTINGS* via the softkey *SELECT*.
- With the use of the *SELECT* softkey you reach the option *AUDIO SETTINGS*.

- Please mark the option *AUDIO INPUT* or *AUDIO OUTPUT* using the cursor keys and and press again *SELECT*. Now the options *ANALOGUE* and *DIGITAL* are displayed.
- Select the desired interface with the help of the cursor keys and and by pressing the softkey *SELECT*.

– Confirm your entry by pressing the OK button or the softkey OK.

– To get back to the main menu please press the button. Now you are asked if you want to SAVE SETTINGS?. Via the softkey YES the setting is stored permanently in the system.

TIP

You reach the settings for the AUDIO INPUT or AUDIO OUTPUT via the key sequence: MENU 111 or MENU 112

4.2 Working with MAGIC DC7/AC1

In the next chapters basic functions like establishing a connection, dropping a connection, accepting calls etc. are described in detail.

NOTE

If you are not in the main menu please press the button first.
From the main menu you reach the status window via the *OK* button.

4.2.1 Calling a partner

From the main menu just enter the phone number using the keys *0...9*. The input field for the phone number is displayed automatically after entering the first cypher.

With the softkey *DELETE* wrong entries can be corrected.

The cursor keys and allow you to select the transmission mode *TELEPHONE, 7 KHZ G.722 (AUTO)* (*MAGIC AC1* additionally: *15KHZ 1B (AUTO), 15KHZ 2B (AUTO)*), as well as all defined transmission modes (see CHAPTER 5.7.2.2.1). As soon as the partner accepts the call, the system tries to synchronise the Audio signal in the selected Audio mode.

The connection is established by entering the calling number and pressing the phone key .

ATTENTION

Information about the synchronisation procedure ***ADS*** (Auto Dynamic Sync) can be found in CHAPTER A2, Page 137.

Under the softkey *OPT.* (Options) the entered phone number can be saved in the phone book (see CHAPTER 4.3.1, Page 29) or stored as Quick Dial number (see CHAPTER 4.3.2, Page 29).

4.2.2 B channel connections (only in ISDN mode)

In the ***ISDN*** operating mode two independent Audio codecs respectively a Stereo ISO/MPEG transmission with 128-kBit/s are available because of the two B channels. The following modes are possible:

TAB. 1 COMBINED OPERATING MODES

B channel 1	B channel 2
Modes of the MAGIC DC7	
Telephone	Telephone
7-kHz	Telephone
7-kHz	7-kHz
Telephone	7-kHz
Additional modes with the MAGIC AC1	
MPEG MONO	Telephone
MPEG MONO	7-kHz
MPEG STEREO	

To enter a second calling number please press the **OK** button and enter the second calling number. Using the cursor keys ^ and v you can select the desired Audio mode for the second connection.

NOTE

If you choose **MPEG STEREO** (only MAGIC AC1) as Audio mode, you usually need to enter the phone number only once. The system automatically establishes two connections with the same phone number.
If the phone numbers are meant to be different for the first and the second channel in a stereo connection, you can press the OK button for entering a second phone number. Alternatively, it is also possible to enter the two phone numbers separated by the * key („-“ character is displayed). It is also sufficient to enter as second number only the difference to the first phone number.
Examples:

0123456789-0123456790
0123456789-90

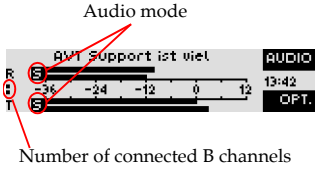
The connection is established after the entry of the calling numbers by pressing the telephone receiver button .

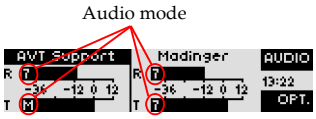
4.2.3 The Status Display - Operation during a connection

After the telephone receiver button is pressed the partner is called and the status window is displayed automatically.

TIP

The status window can always be reached by pressing the **OK** button.





During a stereo connection the number of the connected B channels is displayed to the left of the level indication.

In the *ISDN* operating mode the window is split if two independent connections have been established.

To switch between the two connections, please press the **SHIFT** key (#). The name of the selected channel is displayed inversely.

An outgoing call is signalled by **DIALLING...** . The dialled number (or the name if a phone book entry is selected) is displayed in the first line.

NOTE

In the POTS operating mode the phone number or the name is only displayed for outgoing calls. The ***CLIP***[a] function is not supported by analogue telephone lines.

a CLIP = Calling Line Identification Presentation

When the connection is established the level indication for the incoming signal(***R***eceive) and for the outgoing signal(***T***ransmit) is displayed.

If the Audio connection is synchronised the corresponding Audio coding algorithm is displayed for each channel:

- **T** Telephone 3.1-kHz
- **7** G.722 7-kHz
- **M** ISO/MPEG Mono
- **S** ISO/MPEG Stereo
- **?** no synchronising

By pressing the softkey *AUDIO* you reach the options for the Audio sources via which all Audio signals can be selected.

With the use of the softkey *OPT.* the displayed phone number can be stored and it is also possible to directly switch to the phone book.

4.2.4 Dropping a connection

The connection is dropped by pressing the telephone receiver button . If no further connection exists, the main menu is displayed after a few seconds.

NOTE Please make sure that you have selected the right channel if you want to drop a connection.

4.2.5 Accepting a call

If the *MAGIC DC7/AC1* receives a call, it is automatically signalled in the status window by *CALLIN*.

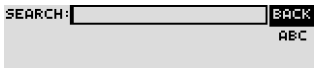
NOTE Additionally, a system ringing tone can be enabled.

The call can be directly accepted with the telephone receiver button .

If you want to reject the call, please press the following telephone receiver button .

4.3 Comfort Functions

4.3.1 Redialling



You reach the redialling function by pressing again the telephone receiver button for the line on which no connection currently exists. The recently called partners are displayed in a list. In the input field *SEARCH* you can search for a certain partner or select a partner from the list using the cursor keys and .

To call a partner please press again the telephone receiver button .

NOTE

To enter characters you can use the alphanumeric keypad. You reach the desired character by pressing the respective key several times. To type e.g. a '*K*' you need to press the button '*5*' twice. Wrong entries can be corrected with the help of the softkey *DELETE*.
To switch between upper and lower case please press the *SHIFT* key. The display changes from *ABC* to *abc*.

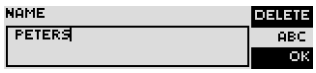
4.3.2 Using the phone book

The system incorporates a comfortable phone book function. You reach the phone book from the main menu via the softkey *NAMES*.

In the input field *SEARCH* you can search for a certain partner. As soon as you enter a character the corresponding phone book entries are filtered out.

Alternatively, you can select a partner from the list using the cursor keys and .

By the softkey *OPT.* (Options) the following functions, which you can select via the softkey *SELECT*, are realised:



- *NEW ENTRY*: With the help of this function you create a new phone book entry.
  First enter the name and confirm your entry with *OK*.

  Then enter the phone number of the partner and select your desired transmission mode with the cursor keys and confirm it as well with *OK*.
- *EDIT*: This function allows you to edit already existing phone book entries.
- *DISPLAY*: The selected phone book entry is displayed with name and phone number.
- *DELETE ENTRY*: The selected phone book entry is deleted. For safety reasons you are asked if you really want to delete the entry.
- *SAVE AS QUICK DIAL*: Your 10 most important phone numbers can be programmed as Quick Dialling numbers on the numerical keys '*0*' ... '*9*'. Please select the key from the list on which you want to programme the phone number.

To activate a Quick Dialling number just press from the main menu the desired Quick Dial key for at least 3 seconds. The connection to the partner is established automatically.

TIP

The phone book functions can also be reached directly via the *QuickBook* function. Please press the following key sequence: *NAMES OPT. <DIGIT>*
Example: *SAVE AS QUICK DIAL - NAMES OPT. 5*

4.3.3 Working with Presets

The *MAGIC DC7/AC1* differentiates between *SYSTEM SETTINGS* and *OPERATION SETTINGS*.

System Settings are settings that do **not** change during normal operation like e.g. language, date/time etc. These parameters **cannot** be saved as Preset since a configuration is usually only required when the system is put into operation.

Operation Settings like e.g. the line interface ISDN or Analogue POTS, Ringing Tone, etc., need to be reconfigured depending on the application. To easily recall recurring configurations you can store up to 10 Presets in the system.

You reach the menu for the Presets by pressing the *MENU* softkey once, the cursor key ⌄ twice and by pressing the softkey *SELECT* once as confirmation.

In the input field *PRESETS* you can search for a certain Preset. As soon as you enter a character, the corresponding entries of the Preset list are filtered out.

Alternatively, you can select a Preset from the list using the cursor keys ⌃ and ⌄ .

If you now press the *OK* button, the selected Preset is loaded immediately.

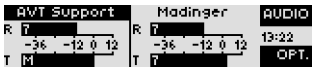
By the softkey *OPT.* (Options) the following functions which you can select via the softkey *SELECT* are realised:

- *LOAD*: The stored Preset is loaded.
- *NEW*: With the help of this function you can create a new Preset. All current Operation Settings are stored.
- *SAVE*: The currently selected Preset is overwritten with the current Operation Settings. For safety reasons a confirmation is required.
- *DELETE PRESET*: The currently selected Preset is deleted. For safety reasons a confirmation is required.

NOTE

If the configuration has changed, you are asked if you want to *SAVE SETTINGS?* when you leave the Preset menu. Via the *YES* softkey the configuration is stored permanently in the system. This Preset is loaded automatically by the system after the unit is connected to the power supply.

4.3.4 Configuration of the Audio sources



When a connection exists, the ***AUDIO*** function is automatically assigned to the upper softkey via which all Audio sources can be configured. Via the integrated Audio router, each Audio input can be routed to each Audio output and the headset according to your requirements.

TIP

The configuration of the Audio sources is especially comfortable via the ***Audio Mixer*** of the PC Software (see CHAPTER 5.9.2).

After the ***AUDIO*** softkey has been pressed, all available Audio outputs are displayed for which you can select a source:

- *SOURCE HEADSET*
- *SOURCE AUDIO OUT 1*
- *SOURCE AUDIO OUT 2*
- *SOURCE TRANSMIT CH. 1*
- *SOURCE TRANSMIT CH. 2*

The option ***HEADSET MONITOR*** allows you to monitor both Audio outputs and both transmit signals

Please select the desired Audio interface with the cursor keys ^ and v and press the ***SELECT***.

Afterwards all available Audio sources for the selected Audio interface are displayed. The Audio interface can be selected by pressing the ***SHIFT*** button (***#***). The currently selected interface is marked by a frame. Via the ***MODE*** softkey you can activate (***ON***) or deactivate (***OFF***) the interface. If an interface is activated, the current level of the Audio source is displayed and can be adjusted with the cursor keys ^ and v within the range of -16 dB ... +16 dB.

When one of the transmit signal sources (e.g. ***SOURCE TRANSMIT CH. 1***) is selected, the option Auto Ducking (***DCK***) is additionally available. In this configuration, the Audio signal of the Audio inputs is treated automatically according to the selected Auto Ducking Parameters if the microphone input is used.

NOTE

If the fee-based software option ***Mixer Tool Plug-In*** (see CHAPTER 7) is not enabled for your system, you can always activate only **one** Audio source at a time.

Additionally, you can load or save the Audio interface settings with the options ***LOAD AUDIO PRESET*** and ***SAVE AUDIO PRESET***. In total, three presets can be used.

The Audio interface setting which is stored under the ***STANDARD PRESET*** is loaded automatically when the system is switched on.

With the selection ***DEFAULT SETTINGS***, all Audio interfaces are reset to the delivery status:

- output 1 = receive signal 1 (RX1)
- output 2 = receive signal 2 (RX2)
- transmit signal 1 = input 1 (IN1)

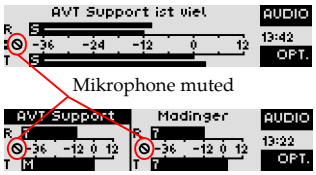
– transmit signal 2 = input 2 (IN2)

– all other sources are deactivated

NOTE

When a Stereo transmission (only ***MAGIC AC1***) is made, the inputs and outputs are combined correspondingly and controlled jointly.

Mute microphone



The microphone can be muted during a connection by pressing the ***OK*** button. By pressing the button a second time, you deactivate the muting. In the status window, a blinking symbol is displayed on the left side next to the level meter.

NOTE

If connections with two different partners are established, the microphone is always muted for **both** connections.

Adjust headphones level

If a headphone is connected to the Headset interface, you can adjust the headphones level with the cursor keys ^ and v within the range of -40 dB ... 0 dB during a connection.

Display connection parameters

If the ***STATUS*** key (***1***) is pressed during a connection, the Audio transmission parameters are displayed.

Display system name

If no connection exists, you can display the system name by pressing the phone button .

5 WINDOWS PC SOFTWARE

The configuration of the system is especially comfortable with the Windows PC Software included in the delivery.

5.1 Hardware requirements

The PC must meet the following minimum requirements:

- IBM PC AT, IBM PS/2 or 100% compatible
- Pentium Processor (> 500 MHz) recommended
- Windows 2000/XP
- ca. 600 kilobyte available RAM
- 5 MB available hard disk space
- Screen resolution with 800 x 600 Pixels
- at least one available serial interface RS-232
- Microsoft, IBM PS/2 or 100% software compatible mouse

5.2 User Registration

To get always information about the latest software automatically, please register on our Homepage:

http://www.avt-nbg.de

First select the menu item **Service** and then choose **Software Registration**. Select as product

MAGIC DC7

or

MAGIC AC1

- and enter your contact details. You need to indicate a valid email address at any rate.

5.3 Installing the Windows PC Software

Please insert the CD included in delivery in your CD-ROM drive. The software automatically starts your Internet browser. Possible safety warnings can be ignored for the moment. Please press under ***Install Software*** the ***MAGIC DC7/AC1*** button. Subsequently, the setup program is executed.

Alternatively, you can install the software directly from the CD. You will find the installation file ***setup.exe*** in the folder ***Software\MAGIC DC7 & AC1*** on the CD.

Please follow the instructions of the installation routine.

After the installation the software can be started by clicking on the ***MAGIC DC7/AC1***.

Please connect your PC via a serial 1:1 cable (only Pin 2 and Pin 3 are used, Pin 5=ground) with the system.

The standard ***COM Port*** settings are: ***PC (19200 Baud)***

5.4 Software update from the internet

Software updates can be down loaded from our homepage

http://www.avt-nbg.de

free of charge. Please go o to the **Service** section on our webpage and select **Software Download**. Under **MAGIC Audio Codecs** please download the file with the Id-Nr. **490196**. When the download is complete, execute setup and follow the instructions.

In addition to the PC Software, the setup also includes the **firmware** for the system. If it also has to be updated, the ***MAGIC DC7 & AC1*** Software display an error message when it is started. The instructions for a firmeware update is described in CHAPTER 5.8.6, Page 98.

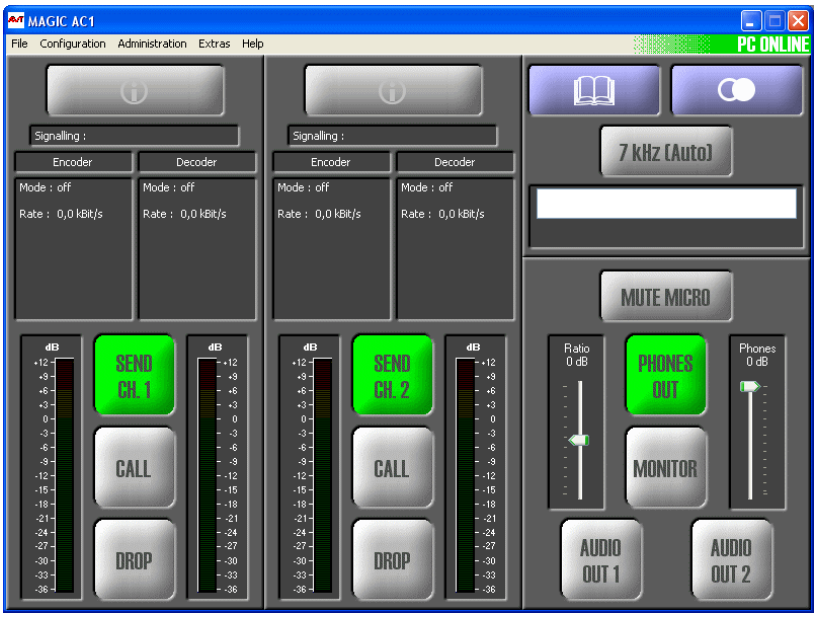
5.5 Configuration and control with the Windows PC Software

In the following chapters, all functions of the PC Software are described in details.

5.5.1 The MAGIC DC7/AC1 main window

After starting the *MAGIC DC7/AC1 Software*, the main window (ISDN mode) is automatically displayed.

FIG. 8 MAIN WINDOW IN THE ISDN MODET



The connection status between PC and the system is displayed in the upper right corner of the window:

PC ONLINE — ***PC ONLINE***: connection to the PC is ok

PC OFFLINE / NO CONNECTION — ***PC OFFLINE*** or ***NO CONNECTION***: connection to the PC is faulty

The following status messages are also possible:

PC ONLINE ALARM — ***PC ONLINE ALARM***: an alarm has occurred (see ***System Monitor*** for alarm message, blinking green-dark green)

ISDN REMOTE — ***ISDN REMOTE***: A remote connection is established (blinking red-white)

ISDN REMOTE ALARM — ***ISDN REMOTE ALARM***: an alarm has occurred in the remote system (blinking blue-dark blue)

WRONG APPLICATION — ***WRONG APPLICATION***: you are using the software with the wrong unit (e.g. *MAGIC TH2*)

BOOT MODE — ***BOOT MODE***: no valid firmware on the system (orange). Please download the latest software (see CHAPTER 5.8.6).

TIP If you click on the status message, the ***System Monitor*** is displayed which shows the system status in detail (see CHAPTER 5.9.1).

NOTE

If the connection is faulty, please check the following points:
- External power supply of the system is plugged in (display available)
- Serial 1:1 connecting cable is connected to the PC and the system
- Correct COM Port and baud rate are selected in the software (***Configuration*** → ***COM Port***, see Page 51)

5.5.2 Connection status

Via the connection status, you get detailed information about the current transmission separately for transmit and receive direction.

FIG. 9 DISPLAY OF CONNECTION STATUS

Displayed are:

- the signalling mode (***Signalling***)
  - Telephone
  - SRT (Statistical Recovered Timing)
  - MPEG 64 kBit/s unframed
  - J.52
  - MusicTaxi
  - CCS-L2
  - Fixed Multiplex
- the operating mode (***Mode***)
  - Coding algorithm (G.711, G.722, ISO/MPEG Layer II/III)
  - Coding mode (Mono, Dual Channel, Stereo, Joint Stereo)
  - Sampling frequency (16 kHz, 24 kHz, 32 kHz, 48 kHz)
- the bit rate (***Rate***) for the Audio transmission
- the data (***Data***) for J.52 transmissions
  - Gross data rate
  - Net data rate
- the ***PAD*** data rate (Program Associated Data) in the MPEG data stream
  - Net data rate

5.5.3 Operating elements

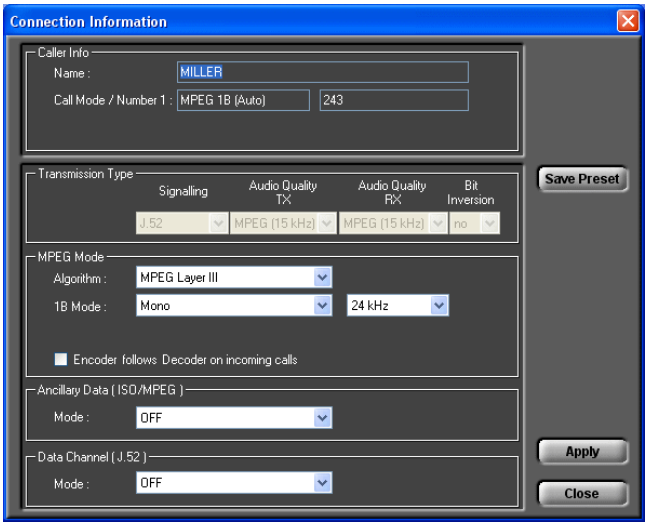
Info button

The ***Info*** button is either displayed in grey, yellow or green:

- ***grey***: No connection
- ***yellow***: Incoming or outgoing call. If a telephone book entry exists for the caller, the corresponding name is displayed. If you click on the ***Info*** button, the ***Connection Information*** window is displayed.

- ***green***: Existing connection. If you click on the ***Info*** button, the ***Connection Information*** window is displayed.

FIG. 10 CONNECTION INFORMATION



- Under ***Caller Info*** the telephone book entry - if available - is displayed. Otherwise you see only the calling number, if it is transmitted.
- The type of the current transmission is displayed under ***Transmission Type*** (further details you will find from Page 69 onwards). Parameters which cannot be changed for this transmission are displayed in light grey.
- If the transmission is an ISO/MPEG connection, the Audio parameters are additionally displayed under ***MPEG Mode***. These parameters can also be changed **during** a connection. You can select the ISO/MPEG algorithm (***Algorithm***) Layer III and optionally Layer II, the coding mode and the sampling frequency. Additionally, you can select if the encoder should work with the same parameters as the decoder. In this case, please enable the option ***Encoder follows Decoder on incoming calls***.
- ISO/MPEG connections and/or J.52 connections allow additionally the transmission of transparent data channels in parallel, which can be configured under ***Ancillary Data (ISO/MPEG)*** respectively ***Data Channel (J.52)*** (for further details please see Page 66 onwards).

- You can save changes as new transmission modes. Please press the button ***Save Preset***. The new mode can be found under ***Configuration → MAGIC DC7/AC1 → Transmission → User Defined***, where you can also

check or change the settings. When you want to establish a connection, you can select the new transmission mode directly from the front keypad of the system or in the PC Software.

- Changes are applied by pressing the ***Apply*** button.

- The window is closed by ***Close***.

Selection of the Audio sources for the transmit direction

By pressing the button ***SEND CH.1*** respectively ***SEND CH.2*** the window, in which the Audio sources (***Audio Source***) **for the transmit direction** can be selected, is displayed.

Depending on the configuration of the Audio mixer, the ***SEND CH.*** button can have the following colours:

no Audio source selected

at least one Audio source selected

Auto-Ducking activated

Mute activated

grey: No Audio source is selected for the transmit direction, i.e. the remote side would hear nothing.

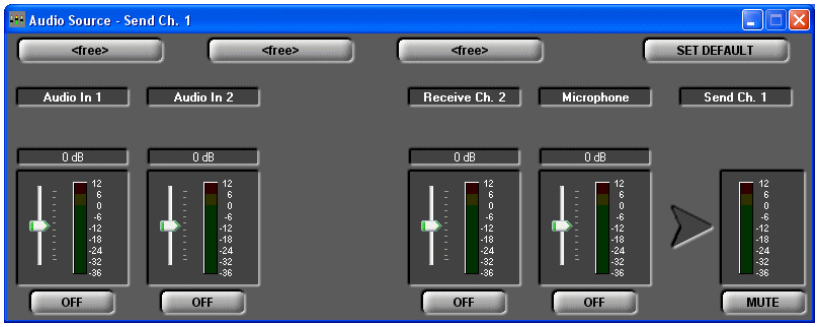
green: At least one Audio source is activated

blinking in red: The ***Mute*** function is enabled for the selected channel, i.e. the remote side would hear nothing.

yellow: The ***Auto-Ducking*** function is enabled (see page 77).

Depending on the transmission procedure, the available levels are displayed. Details for the configuration of the Audio mixer can be found under CHAPTER 5.5.3.1.

FIG. 11 AUDIO MIXER TRANSMIT DIRECTION



CALL/ACCEPT/CONNECT button

grey: With the ***CALL*** button, the connection can be established after the calling number has been entered and the mode has been selected.

blinking in yellow: An incoming call can be accepted with the ***ACCEPT*** button if the auto answer is disabled.

green: Connection is established. If you click on the ***CONNECT*** button and the *Security* Option is enabled, a control panel is displayed.

DROP button

grey: With the ***DROP*** button you can disconnect a connection.

blinking in yellow: Incoming or outgoing call can be rejected or stopped.

Telephone book

By clicking on the ***Telephone book*** button, the phone book is opened. Details can be found in CHAPTER 5.6.1 from Page 45.

Redialling

Via the ***Redialling*** function, the 10 most recently dialled calling numbers are available. After pressing the key, a context menu is displayed with all existing entries. Together with the calling number, the***Transmission Mode*** which was used is also saved. If you want to call a displayed number with a different transmission mode, you must re-enter the calling number and the desired transmission mode.

With ***Cancel*** you can close the context menu without making a call.

Transmission mode

With***Transmission mode*** you select the desired transmission parameters for your connection, which you can set under ***Transmission Modes*** in the software (see CHAPTER 5.7.2.2.1, page 64)

In the delivery status the following modes are displayed:

- ***Telephone***
- ***7 kHz (Auto)***
- ***MPEG 1B (Auto)***
- ***MPEG 2B (Auto)***

If you configured your own transmission modes (see ***User Defined Transmission Modes***, CHAPTER 5.7.2.2.2, Page 68), these modes are also displayed if you click on the transmission mode button.

With ***Cancel*** you can close the context menu without changing the transmission mode.

NOTE

Further details about the transmission modes can be found in the chapter „The Auto Dynamic Sync Procedure“ from Page 137.

When a connection is dropped, the system is automatically reset to the default transmission mode, if you have set a default transmission mode under ***Configuration → MAGIC DC7/AC1 → Transmission Modes → Default Audio Mode → Mode***. If you have selected the option ***Off***, the most recently selected mode is activated.

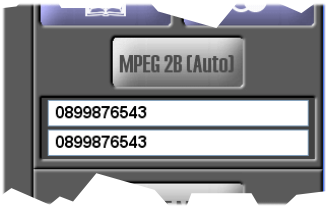
TIP

You should select one of the **Auto** Modes as default transmission mode, since only in this way you can be sure that the automatic synchronisation procedure (**ADS**) is used when there is an incoming call.

Manual Dialling

Via the entry field for the calling number, you can dial manually instead of using the telephone book. Depending on the operating mode, one or two fields are available.

FIG. 12 MANUAL DIALLING



TIP

You can copy a phone number with <***CTRL***>+<***c***> and paste it with <***CTRL***>+<***v***>.

For the entry field, all numeric characters ***'0'...'9'*** as well as the characters ***'*'*** and ***'#'*** are allowed. The length of the calling number must not be **more than 20 characters**.

With a ***'-'*** placed in front of the calling number (e.g. „-123“) you can temporarily suppress the prefix number for getting an outside line (see also Page 55, Prefix Number).

Mute microphone

By clicking on the ***MUTE MICRO*** button, the microphone connected to the headset interface is muted.

grey: Mute function is not active

blinking in red: Mute function is active. Additionally, in the Audio mixer ***MUTED*** is displayed at the microphone level.

Headphones output (Phones Out)

Via the button ***PHONES OUT*** you select the Audio signals which you want to hear at the headphones if connected.

NOTE

If the fee-based option ***Mixer Tool Plug-In*** (Order number 430201), you can select only one signal from all sources.

Depending on the configuration of the Audio mixer, the ***PHONES OUT*** button can be displayed in the following colours:

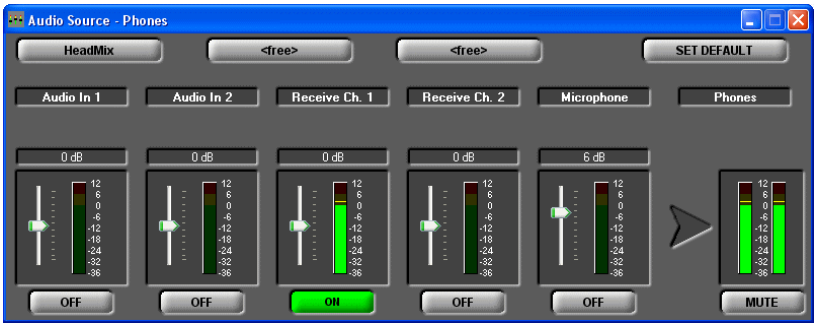
grey: No Audio source activated. In this case, nothing could be heard at the headphones output.

green: At least one Audio source is activated

blinking in red: The ***Mute*** function is enabled. In this case, nothing could be heard at the headphones output.

Please consider also the further configuration possibilities of the headphones interface from Page 76, which allow an allocation of the left and right channel.

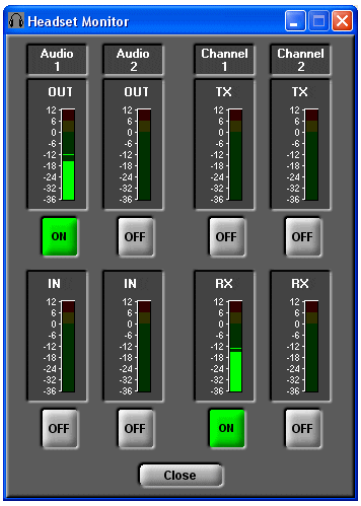
FIG. 13 AUDIO MIXER HEADPHONES OUTPUT



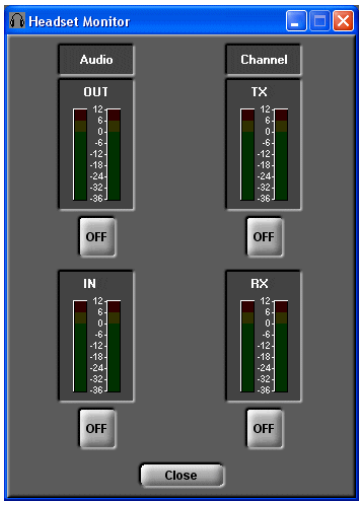
Monitor

By pressing the ***MONITOR*** button the window ***Headset Monitor*** is opened with which you can monitor all Audio inputs and outputs.

FIG. 14 HEADSET MONITOR



Display with two independent mono channels



Display during a stereo transmission

NOTE

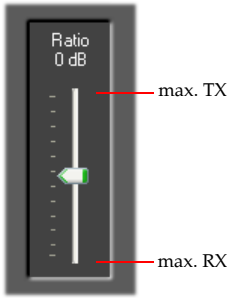
If the fee-based option *Mixer Tool Plug-In* (Order number 430201) is not enabled for your system, you can only monitor one signal at a time.

Depending on the selected transmission mode, the display is adjusted (see Fig. 14). With the ***ON***/***OFF*** button, you can activate/deactivate monitoring for a signal.

With ***Close*** you can close the window.

When the ***Headset Monitor*** window is opened, the ***MONITOR*** button is displayed in ***red*** to indicate that currently you are not listening to the Audio signals which you have selected for the headphones under ***PHONES OUT*** (see page 40). If the window is closed, the button is displayed in ***grey***.

Transmit-receive level ratio for the headphones

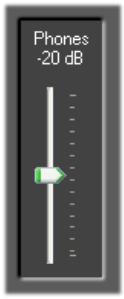


Via the ***Ratio*** level meter you can set the **level ratio for the headphones output** between the transmitted and the received Audio signal.

The ratio can be adjusted within the range of ***0...+16 dB***. If you select ***TX+16 dB*** your transmitted signal is amplified to the maximum and if you select ***RX+16 dB*** the received signal is amplified to the maximum.

Especially for live reporting, in this way you can adjust the levels as you like.

Headphones volume



With the ***Phones*** level meters, the volume of the headphones is selected.

The level can be adjusted within the range of ***0...-40 dB***.

Selection of the Audio sources for the Audio output

By pressing the ***AUDIO OUT 1*** respectively ***AUDIO OUT 2*** button the window for the selection of the ***Audio Source*** **for the Audio output** is opened.

NOTE

If the fee-based option *Mixer Tool Plug-In* (Order number 430201) is not enabled for your system, you can only select one Audio source for the Audio output.

Depending on the configuration of the Audio mixer, the ***AUDIO OUT*** button can be displayed in the following colours:

no Audio source selected

at least one Audio source selected

Mute function activated

grey: No Audio source activated. In this case, nothing can be heard.

green: At least one Audio source is activated

blinking in red: The ***Mute*** function is activated for the selected channel. In this case, nothing can be heard on the remote side.

Depending on the transmission procedure, the available level meters are displayed. Details about the configuration of the Audio mixer can be found in CHAPTER 5.5.3.1.

FIG. 15 AUDIO MIXER AUDIO OUTPUT

5.5.3.1 Audio mixer to select sources and output equipment

MAGIC DC7/AC1 provides and integrated Audio mixer which allows you to configure Audio sources and output devices according to your requirements..

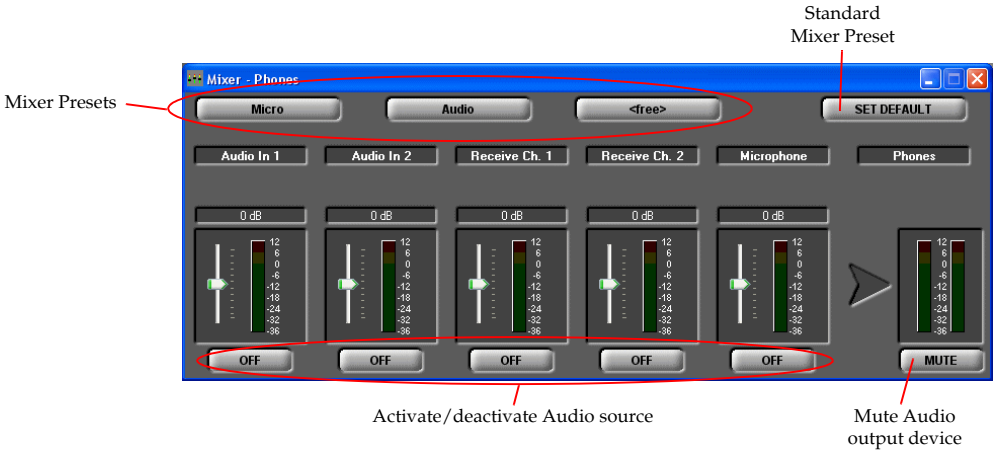
NOTE

If the fee-based software option ***Mixer Tool Plug-In*** (order number 430201) is not enabled, you can always select only one signal for an output device at a time.

The Audio mixer can be configured via the overview matrix which opens via ***Extras → Audio Mixer*** (see CHAPTER 5.9.2, page 103) or via the respective **Audio output device**:

- ***SEND CHANNEL 1/2***
- ***AUDIO OUT 1/2***
- ***PHONES OUT***

FIG. 16 AUDIO MIXER



Depending on the selected transmission mode, the following **Audio sources** are available:

- ***Audio In 1/2***
- ***Receive Channel 1/2***
- ***Microphone***

Each of these Audio sources has a digital level setting which allows an increasing or decreasing of the level of 16 dB.

With the button ***ON/OFF*** you can activate or deactivate each Audio source for the Audio output device.

For the Audio output device ***SEND CHANNEL 1/2***, it is possible to activate the Auto-Ducking functionality for the Audio source ***Audio In 1/2*** if the *Mixer Tool Plug-In* option is enabled.

Each Audio output device can be switched off by pressing the ***MUTE*** button.

Mixer Presets

In the system, up to three ***Mixer Presets*** can be saved and reloaded by a key-press.

NOTE

The Mixer Presets apply to **all** Audio sources and output devices, even if they are not displayed.

Please follow the instructions below:

– Adjust the Audio mixer for all Audio sources and output devices according to your requirements.

– Press one of the ***Mixer Preset*** buttons for about two seconds. The dialogue for the entry of a Preset Name is displayed. the length of the names must not exceed 8 characters.

FIG. 17 ENTRY OF A PRESET NAME

– After the ***OK*** button is pressed, a confirmation is displayed that the ***Mixer Preset*** has been saved successfully.

FIG. 18 MIXER PRESET SAVED

– To reload a mixer configuration, please click on the ***Mixer Preset*** button for a second.

– To reset the system to the default settings, please click on the ***SET DEFAULT*** button. The mixer is configured in the following way:

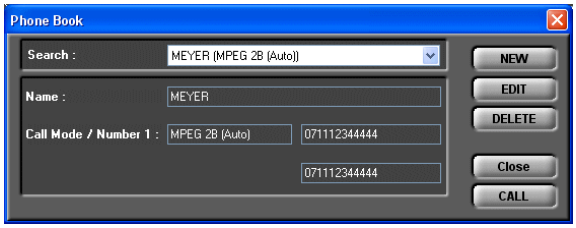
- all levels to 0 dB
- Receive Channel 1 → Audio Out 1
- Receive Channel 2 → Audio Out 2
- Audio In 1 → Send Channel 1
- Audio In 2 → Send Channel 2

That means, the received signal is available at the Audio output and the signal from the Audio input is transmitted to the remote side.

5.5.3.2 Telephone book

By pressing the telephone book button, the telephone book dialogue is opened.

FIG. 19 TELEPHONE BOOK DIALOGUE

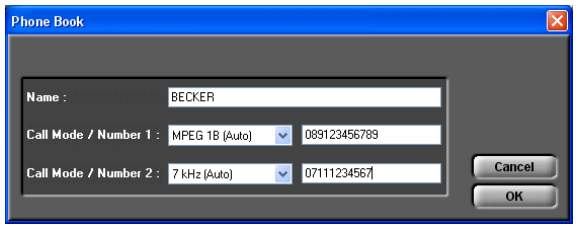


You can search an already existing entry via the die DropDown list ***Search*** or you simply enter the first character of the name for which you want to search. A search by calling numbers is not possible.

In the detailed view below, the ***Name,*** the ***Call Mode*** (transmission mode) and the calling numbers (***Number 1/2***) are displayed.

A new entry can be created with ***NEW***.

FIG. 20 NEW TELEPHONE BOOK ENTRY



Please enter the ***Name*** of the caller you want to add to the telephone book. The length of the name is limited to 20 characters.

Under ***Call Mode/Number 1*** you need to select the transmission mode, which is to be used when the entry is called and then enter the calling number.

If you select a 1 B transmission mode you can configure a second completely independent connection for the second channel (***Call Mode/Number 2***). However, as transmission mode you can only select ***Telephone*** or ***7 kHz (Auto)***. In this way, you have the possibility to call two participants at the same time via one telephone book entry.

TIP

You can copy a calling number with <***CTRL***>+<***c***> and paste it with <***CTRL***>+<***v***>.

For the entry field, all numeric characters ***'0'...'9'*** as well as the characters ***'*'*** and ***'#'*** are allowed. The length of the calling number must **not exceed 20 characters**.

With a ***'-'*** placed in front of the calling number (e.g. „-123“) you can suppress the prefix number for getting an outside line temporarily (see also Page 55, Prefix Number).

With ***OK***, the entry is saved, with ***Cancel*** you can cancel the entry at any time.

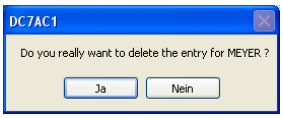
NOTE

Please notice that the telephone book entries are stored in the system and not on the PC. Via the menu ***File*** → ***Phone Book*** → ***Import/Export*** you can also load a telephone book from your PC or save a phone book on your PC.

An already existing entry can be edited with the button ***EDIT***.

To delete a telephone book entry, please press the ***DELETE*** button. To avoid that entries are deleted by accident, you have to confirm your selection.

FIG. 21 CONFIRMATION TO DELETE AN ENTRY



With ***Close*** you can close the dialogue without any further action.

To establish a connection with a telephone book entry directly, please press ***CALL***.

5.6 Menu File

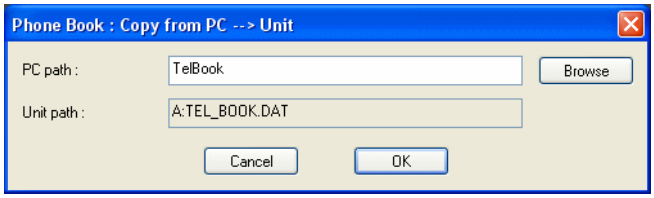
Under the Menu File you can find all functions for the export/import of system files.

5.6.1 Submenu Phone Book

To import a telephone book from the PC, please select ***File*** → ***Phone Book*** → ***Import***.

With ***Browse*** you can search for the telephone book which you want to import. The file extension for a telephone book is '***.csv***'. Such a file can be edited with e.g. MS® EXCEL.

FIG. 22 IMPORTING A TELEPHONE BOOK



File format (Example):

```
DC7AC1;3;2
Name;Call Mode 1;Call Mode 2;Config File;Number 1;Number 2
JERRY LEE;8;0;;160;
ULRIKE LAUTERBACH;2;0;;141;
AVT SUPPORT;0;0;MUSICTAX;123456;
DIANA  EL-TATTAN;1;0;;123;
WOLFGANG PETERS;0;0;DEMO;130;131

;Presets
1;MUSICTAX;17;0201031F016800670069006C007A82980C
1;DEMO;17;0201031F016800670069006C007A829108
```

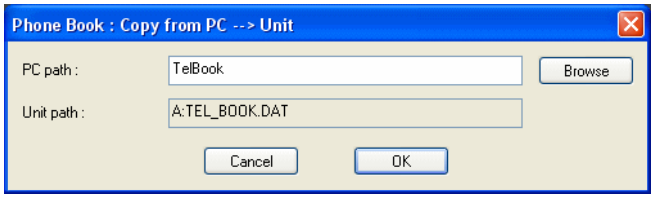
Attention: The first two lines form the header and must not be missing.The lines „Presets" are only available, if you work with ***Transmission Modes***.

Possible values for Call Mode 1/2:

Value	Call Mode 1	Call Mode 2
0	configuration file used	no connection
1	Telephone	Telephone
2	7 kHz	7 kHz
8	MPEG 1B	-
9	MPEG 2B	-

To export a telephone book, please go to ***File*** → ***Phone Book*** → ***Export***. The file is saved with the extension '***.csv***'. The desired directory path can be selected via ***Browse***.

FIG. 23 EXPORTING A TELEPHONE BOOK



5.6.2 Submenu Operation Settings Presets

Via ***Import***, a ***Preset*** can be imported from a data carrier (disk, USB stick, etc.). The file extension of the configuration file is always '***.pst***'. After clicking on the button, the file browser is opened, via which the desired file can be selected.

With ***Export All*** you save all already existing presets in a directory of your choice. For each preset, a file with the extension '***.pst***' is generated.

The functions are identical with the ***Import*** and ***Export All*** functions under ***Configuration*** → ***Presets*** → ***Manage Presets*** (see CHAPTER 5.7.3.2).

5.6.3 Submenu User Transmission Modes

The option ***Import*** allows you to import a ***User Transmission Modes*** from a data carrier (disk, USB stick, etc.). The file extension of the file is always '***.tmm***'. After clicking on the button, the file browser is opened, via which the desired file can be selected.

With ***Export All*** you save all already existing ***User Transmission Modes*** in a directory of your choice. For each mode, a file with the extension '***.tmm***' is generated.

5.6.4 Submenu System Settings

With the selection ***File*** → ***System Settings*** → ***Import***, you can import a complete system configuration from a data carrier. The file extension of the system configuration file is always '***.tcg***'.

The following settings are imported:

- ***Basic Settings*** (see CHAPTER 5.7.2.3)
- All ***Operation Settings*** (see CHAPTER 5.7.2.1)
- All user-defined ***Transmission Modes*** (see CHAPTER 5.7.2.2.2)
- All ***Mixer Presets*** (see CHAPTER)

Correspondingly, via ***File*** → ***System Settings*** → ***Export,*** the complete system configuration can be saved. The storage location and position can be chosen by yourself.

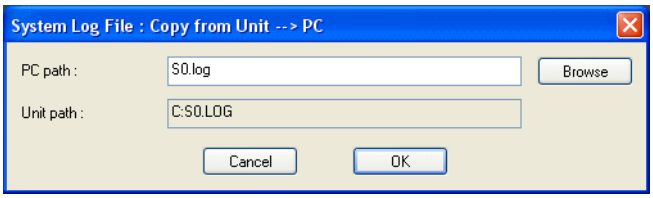
NOTE

Please note that the telephone book is **not** saved with the system configuration.

5.6.5 System Log File

With the selection ***File*** → ***System Log File*** → ***Export*** you save the internal ISDN Log File of the ***MAGIC DC7/AC1*** system. The file is saved with the extension '***.log***'. The desired directory path can be selected with ***Browse***.

FIG. 24 EXPORTING THE ISDN LOG FILEI



NOTE A log file is only generated in the system, if the function ***System Logfile*** (CHAPTER 5.9.1, Page 102) has been activated in the ***System Monitor***.

The log file can be opened and analysed with the optional ***ISDN S_0 Monitor*** (see CHAPTER 8.2, page 120).

5.6.6 Submenu Exit

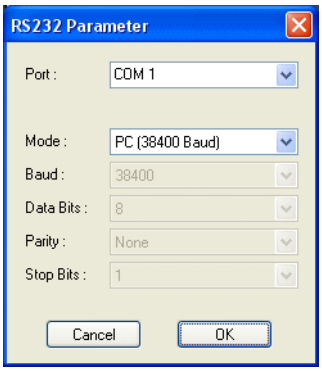
Via the submenu ***Exit*** you can close the ***MAGIC DC7/AC1*** PC software.

5.7 Menu Configuration

5.7.1 Submenu COM Port

The system is connected with a PC or the ***MAGIC DC7/AC1 Keypad*** via the serial RS232 interface and a 1:1 connecting cable. The settings of the COM Port at the PC can be edited under ***Configuration → COM Port***.

FIG. 25 RS232 PARAMETER OF THE COM PORT



Please select the interface of the PC, which is connected with the ***MAGIC DC7/AC1,*** as ***Port***.

Under ***Mode*** you can configure the desired mode:

- ***PC & Keypad (9600 Baud)***: to connect the Keypad or a PC
- ***PC (19200 Baud)***: to connect a PC
- ***PC (38400 Baud)***: to connect a PC
- ***PC (57600 Baud)***: to connect a PC
- ***PC (115200 Baud)***: to connect a PC

NOTE

The ***MAGIC DC7/AC1 Keypad*** only supports the baud rate 9600 Baud. Therefore, please select always the setting ***PC & Keypad (9600 Baud)*** if you use the Keypad. Of course, this baud rate can also be used if a PC is connected.

If the PC is used via the RS232 interface, the selected baud rate must match with the baud rate of the COM port (see also configuration of the RS232 Interface, Page 73).

All further parameters such as ***Data Bits***, ***Parity*** and ***Stop Bits*** cannot be configured.

5.7.2 Submenu MAGIC DC/AC1

Via the submenu ***MAGIC DC7/AC1***, the system can be configured completely.

After the configuration has been changed, the following options are available:

- With ***OK*** the configuration dialogue is closed and all settings are saved and applied to the system.
- The function ***Apply Now*** allows you to save the current settings without closing the configuration dialogue.
- ***Cancel*** cancels all settings made.

In the configuration, it is differentiated between ***Basic Settings***, which usually do not have to be changed during the operation and the actual ***Operation Settings***. The Operations Settings also include the ***Transmission Modes***. Basic Settings can **not** be saved as ***Preset*** (see CHAPTER 5.7.3) - whereas Operation Setting can be saved as Preset.

For clarification:

A ***Preset*** includes **all** settings made under ***Operation Settings*** and ***Transmission Modes***. Various ***Presets*** can be saved in the system and loaded by the user.

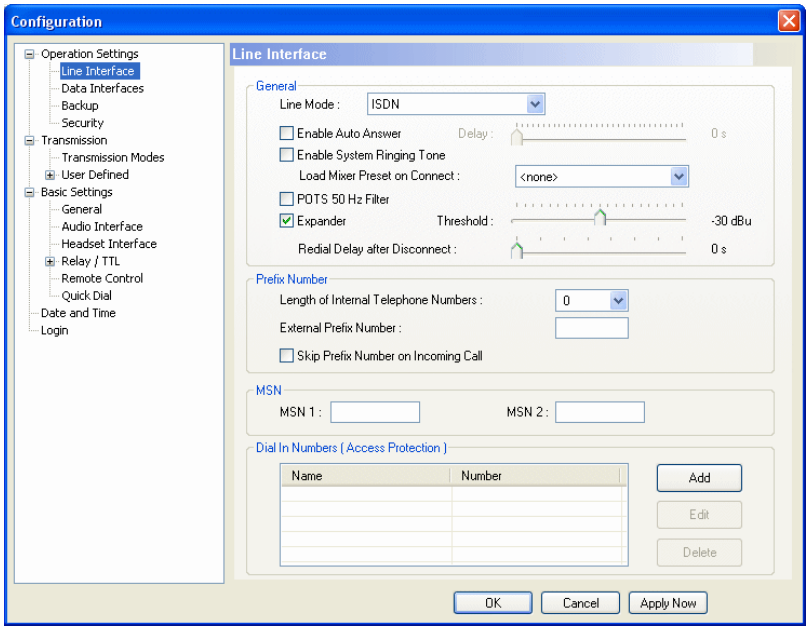
5.7.2.1 Operation Settings

All settings made under ***Operation Settings*** can be saved as ***Preset***.

5.7.2.1.1 Line Interface

The menu item ***Line Interface*** allows a configuration of the ISDN respectively the POTS line interface.

FIG. 26 LINE INTERFACE



General

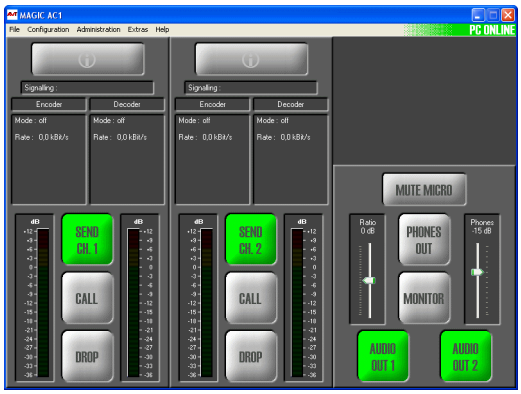
- Under ***Line Mode*** you select the line interface which you want to use. The following options are possible:

  – ***ISDN***: the system is connected to the ISDN network and two independent channels are available.

  – ***ISDN leased line***: the system is connected to the ISDN network and two independent channels are available. In contrast to the dial-up ISDN mode, in the ISDN leased line mode, no dialling information is transmitted. As soon as you connect the system to an ISDN leased line, a connection is established.

NOTE Please notice that no calling numbers can be entered in this mode.

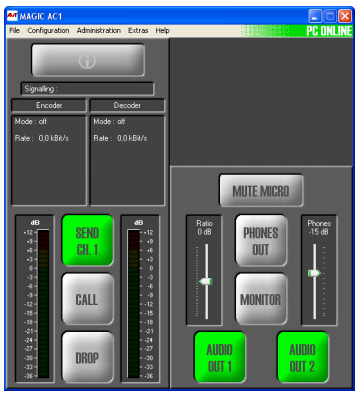
FIG. 27 MAIN WINDOW IN THE LEASED LINE MODE



– ***ISDN leased line (B1/2 only)***: Same functionality as above, except that only B channel 1 (***B1***) or B channel 2 (***B2***) is analysed.

NOTE Please notice that only one channel is displayed in the main window. Additionally, no calling number can be entered in this mode.

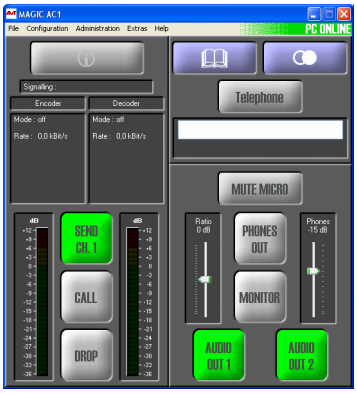
FIG. 28 MAIN WINDOW IN THE LEASED LINE B1/B2 MODE



– ***POTS***: the system is connected to a POTS telephone line. In this operating mode, only one channel is available. Therefore, an Audio transmission is only possible with a 3.1 kHz bandwidth (G.711).

NOTE Please notice that only one channel is displayed in the main window.

FIG. 29 MAIN WINDOW IN THE POTS MODE



- With the function ***Enable Auto Answer*** you can enable the system to accept the calls automatically.

- If the automatic answer is activated, you can adjust a delay before the call is accepted by the system. Via the scroll bar ***Delay*** you can select a delay between ***0*** ... ***31*** seconds. The default setting is ***0 s***.

- With the function ***Enable System Ringing Tone*** you can switch on the acoustic call signalling.

- ***Load Mixer Preset on Connect*** allows you to load a mixer preset automatically as soon as the connection is established.
  If you do not want to use this function, please select the option ***<none>***.
  Please also consider the remarks in CHAPTER 5.8.7, ***Submenu Create 15-kHz Telephone Mixer Presets***.

  The following settings are only available in the ***Line Mode POTS***:

POTS
- If you activated the ***POTS 50 Hz Filter***, a disturbing 50 Hz humming is filtered out. The disturbing signal is fed into the system via the POTS line. The reason is mostly a wrong cabling of the PABX.

POTS
- An ***Expander*** turns down the caller signal automatically, if its level falls below a certain threshold value. The aim is to completely filter out background noises of callers who are not currently speaking. The ***Expander*** is activated by checking the respective box. With the scroll bar ***Threshold*** you can adjust the threshold for the Expander within the range of ***-40*** ... ***-20 dBu***. The default setting is ***-30 dBu***.

POTS
- Via the scroll bar ***Redial Delay after Disconnect*** you can adjust the redialling delay after a connection has been dropped since the POTS telephone line is not immediately ready for redialling. This function is possibly necessary when the dialling function via a TTL contact is used (see CHAPTER 5.7.2.3.4, page 78).

Prefix Number

NOTE

The following settings are only necessary, if the system is operated with a PABX.
In the ***ISDN Leased Line Mode,*** these settings are not available.

- Under ***Length of Internal Telephone Numbers*** you indicate the length of your internal telephone numbers. In this way, the prefix number is dialled automatically, if the length of the entered calling number exceeds the ***Length of Internal Telephone Numbers*** you indicated here. If you do not want to use this functionality, or if you use the system with a main connection, please enter a ***0*** into the respective field.

  Examples: Length of internal telephone numbers: 3
  Calling number entered: 130
  It is dialled: 130

  Length of internal calling numbers: 3
  Calling number entered: 5271130
  It is dialled: **0** 5271130

TIP

To skip the automatic prefix number temporarily, you can place a „**-**“ in front of the calling number (e.g. „-130“)

- Under ***External Prefix Number*** you enter the external prefix number which you must dial to get an outside line. In most cases it is ***0***.

ATTENTION

You must enter the external prefix number at any case if you operate the system with a PABX since only in this case the system waits for a dial tone. Without an external prefix number, the calling number is transmitted too fast and the connection cannot be established.

- Some PABXs transmit the calling number with prefix number to the system. If you want to transfer the displayed calling number without the prefix number directly into the telephone book, you can enable the function ***Skip prefix number on incoming call***.

MSN (Multiple Subscriber Number

NOTE

A ***MSN*** can only be entered if the ***ISDN*** operating mode has been selected.

Usually the entry of a MSN is not necessary. However, if several systems are operated with one ISDN interface, you can allocate a certain calling number to a certain system by entering a MSN.

Example: A telephone, an ISDN PC card and a ***MAGIC DC7/AC1 system*** unit are operated with one ISDN interface. From your provider you got the following MSN: 5271011, 5271012, 5271013.
Without a MSN entry, all three units respond to the incoming call - no matter which of the three calling numbers was dialled. However, if a different MSN is allocated to each unit, the system only responds if exactly this MSN was dialled by the caller. If you enter e.g. the MSN ’5271013’ for the ***MAGIC DC7/AC1 system***, the system will only signal the call, if the caller dialled ’5271013’. However, precondition for this example is that you enter the same MSN for ***MSN 1*** and ***MSN 2***.

Enter the desired MSN under ***MSN 1*** respectively ***MSN 2***. Of course, the same MSN can be allocated for both B channels. Please notice that a MSN is always entered **without** area code.

NOTE

Some PABX require the entry of a ***MSN*** since otherwise no operation is possible.
If you cannot establish a connection between the *MAGIC DC7/AC1 system* and a partner system, but you are sure that the ISDN line is working, you should try if it works after entering a MSN.

Dial In Numbers (Access Protection)

Via the ***Dial In Numbers*** function an access protection for the system can be activated. All calling numbers which are entered in the list can establish a connection with the system. Please enter ***Name*** and ***Number*** for each list entry.

NOTE

Please consider that only numeric characters which are actually entered are analysed, i.e. if you only enter „130“, all participants with a calling number which ends with „123“ are allowed to call the system.

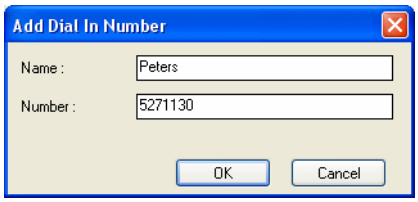
The total character length of all entered telephone numbers must not be higher than 127. With an average length of a telephone number of 12 characters about 10 calling numbers can be saved.

For this functionality the calling number of the participants in the list needs to be transmitted (CLIP[a] function).

[a] Calling Line Identification Presentation

- With ***Add*** you can create a new entry.

FIG. 30 ADD A NEW ENTRY



- The button ***Edit*** allows to edit already existing entries
- With ***Delete*** an entry can be deleted. For safety reasons you must confirm that you really want to delete the entry.

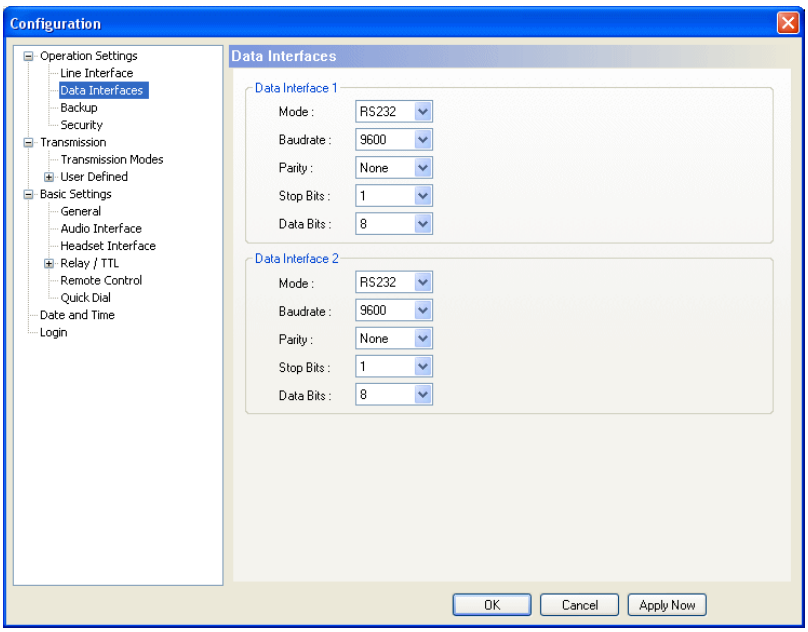
5.7.2.1.2 Data Interfaces

Under ***Data Interfaces*** you can configure the two available data interfaces which allow a transmission of transparent data in parallel to the Audio signal.

NOTE

It depends on the selected Audio ***Transmission Mode*** (see CHAPTER Fig. 35) if a data transmission is possible.

FIG. 31 CONFIGURATION OF THE DATA INTERFACE



The configuration options for ***Data Interface 1*** and ***Data Interface 2*** are identical. The parameters must match with the settings of the corresponding data source.

- Via the dropdown list ***Mode*** you can select the interface type ***RS232*** or ***RS485***.

  The ***RS232*** interface can be used with a maximum cable length of 15m and is available at many data end devices. The transmission is unsymmetrical, i.e. only one wire is used for the transmit and one for the receive channel. The procedure is more interference-prone and limits the maximum cable length.

  In contrast to this, the ***RS485*** interface works with symmetrical transmission (one pair of wires each for transmit and receive direction), whereby the transmission is less interference-prone and cable lengths of maximum 100m are possible.

- As baud rate the values ***300***, ***1200***, ***2400***, ***4800***, ***9600***, ***19200*** and ***38400*** can be adjusted.

- Under ***Parity*** you select the desired parity: ***None***, ***Even*** or ***Odd***.

- The number of the ***Stop Bits*** can be set to ***1*** or ***2***.

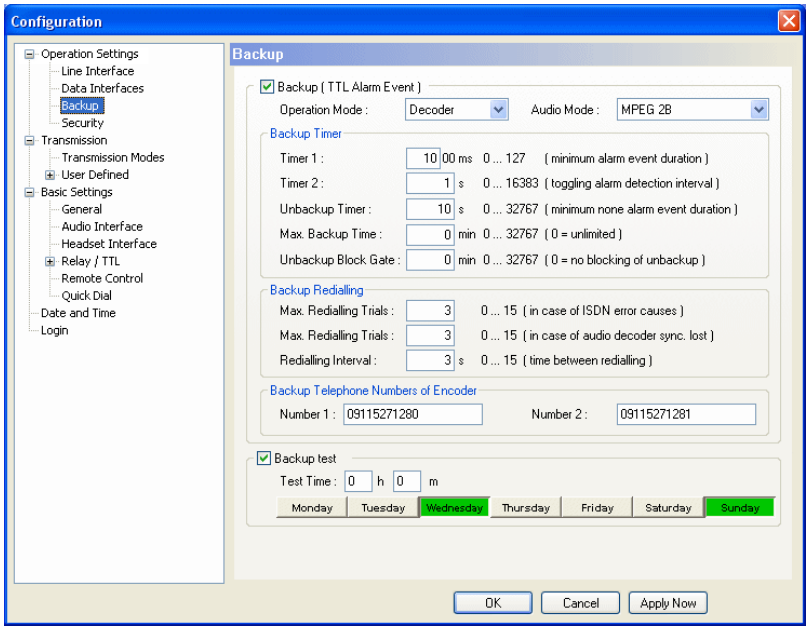
- The number of the ***Data Bits*** can be set to ***8*** or ***9***.

5.7.2.1.3 Backup

MAGIC AC1 offers the possibility to use the system as ISDN backup Audio codec.

Under ***Backup*** you find a variety of parameters to adjust the backup functionality to your requirements.

FIG. 32 CONFIGURATION OF BACKUP FUNCTION



- To activate the backup function, please enable the checkbox ***Backup (TTL Alarm Event)***. The backup is triggered by a TTL Pin (e.g. error output of an external system) (see CHAPTER 5.7.2.3.4, configuration of a TTL-Signal: ***Backup Alarm Signal***).

- Under ***Operation Mode*** you decide if the system works as ***Encoder*** or ***Decoder***. In the backup mode, the system works with a fixed multiplexing scheme without *Capability Exchange* of the J.52 to guarantee that the connection is established as fast as possible. The backup is always triggered by the decoder side (e.g. at the transmission site).

  With the selection ***Encoder*** you simply switch on the fixed multiplexing scheme. Except the ***Audio Mode,*** no further parameters can be configured. The operating mode should be selected, if the system is installed e.g. in the studio.

  With the selection ***Decoder*** all available parameters can be configured. This operating mode should be selected, if the system is installed e.g. at a transmission site.

- Under ***Audio Mode*** you set the number of the B channels for the backup connection and the signalling.

  – ***MPEG 1B***: Fixed multiplexing scheme according to J.52 with one B channel. The Audio data rate is 62.4 kbit/s.

  – ***MPEG 2B***: Fixed multiplexing scheme according to J.52 with two B channels. The Audio data rate is 124.8 kbit/s.

  – ***MPEG 1B Unframed***: The transmission is made without J.52 signalling with ones B channel. The Audio data rate is 64 kbit/s.

Backup Timer

The timing of the backup can be adjusted with the following timers:

- ***Timer 1*** (Minimum alarm event duration) in milliseconds: Under this setting you can select the minimum duration of a TTL alarm to trigger a backup. This is to avoid that a backup is established because of very short disturbances.
  The timer can be configured within the range of ***0*** ... ***12700*** ms in steps of 100 ms.

- ***Timer 2*** (Toggling alarm detection interval) in seconds: This timer ensures that a backup is also triggered when the alarm signal is „toggling". If the alarm signal is detected for a second time within the selected interval, the backup connection is established in any case.
  The timer can be configured within the range of ***0*** ... ***16383*** sec in steps of 1 second.

- ***Unbackup Timer*** (Minimum none alarm event duration) in seconds: With this timer you can configure the maximum time during which no alarm must occur before the backup connection is released.
  The timer can be configured within the range of ***0*** ... ***32767*** sec in steps of 1 second.

- ***Maximum Backup Time*** in minutes: Via this timer the maximum backup time can be selected. The backup connection is dropped after this time, even if the alarm signal still exists.
  The timer can be configured within the range of ***0*** ... ***32767*** min in steps of 1 minute. if you select the setting ***0***, the backup time is unlimited.

- ***Unbackup Block Gate*** in minutes: If a second backup connection is established within the selected time interval, the backup connection is **not** disconnected automatically anymore. In this case, the backup connection has to be dropped manually (by pressing the ***DROP*** button) or it is dropped after the maximum backup time the latest. In this way, we want to make sure that a connection which is sporadically disturbed does not trigger a backup connection and backup disconnection permanently.
  The timer can be configured within the range of ***0*** ... ***32767*** min in steps of 1 minute. If you select ***0***, this function is deactivated and the backup connection is dropped automatically as soon as all criteria are met.

Backup Redialling

Different redialling options are available:

- ***Maximum Redialling Trials*** (in case of ISDN error causes): Under this setting, you can adjust how often the decoder tries to redial, if the connection could not be established because of an ISDN error, such as e.g. „Busy" or „No route", etc.
  The number of redialling trials can be adjusted within the range of ***0 ... 15***.

- ***Maximum Redialling Trials*** (in case of audio decoder synchronisation lost): Under this setting, you can adjust how often the decoder tries to redial, if the connection can be established but the decoder does not synchronise.
  The number of redialling trials can be adjusted within the range of ***0 ... 15***.

- The pause between two redialling attempts can be configured with the parameter ***Redialling Interval***.
  The timer can be adjusted within the range of ***0*** ... ***15*** s in 1 second steps.

Backup Telephone Numbers of Encoder

The calling number of the Backup Encoder (e.g. in the studio) you enter under ***Number 1*** and ***Number 2*** (if ***MPEG 2B*** is selected).

Backup Test

To ensure that the ISDN connection and the Audio Codecs work correctly, a ***Backup Test*** can be done. Please activate the relevant option for this.

- Under ***Test Time*** you enter the time when the backup test is to be done. The entry has to be made in the 24h notation (e.g. 19h 25m).
- The weekdays (***Monday*** ... ***Sunday***) on which the test is to be done can be selected by clicking on the relevant weekday button.

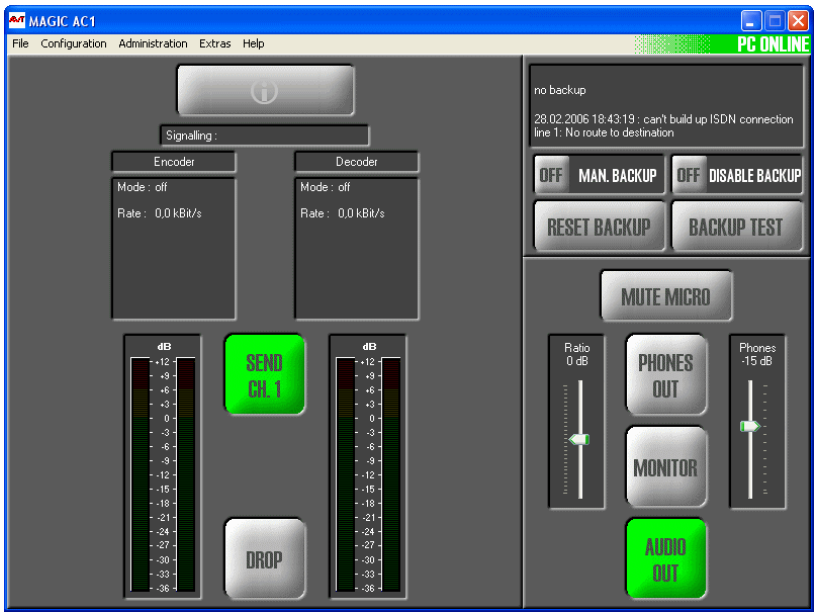
5.7.2.1.4 Functions in the main window with activated backup

The main window is adjusted according to your configuration if the backup is activated.

In the operating mode ***Encoder***, only the operating elements for the calling number entry and the selection of the transmission type is displayed. The Info field indicates the Backup Encoder configuration.

In the operating mode ***Decoder***, the same operating elements do not apply.

FIG. 33 MAIN WINDOW FOR ACTIVATED BACKUP DECODER



Additionally, an information window is displayed which informs you about the backup status. Further operating elements are available:

- ***Man. Backup ON/OFF***: Via this button, a backup can be triggered manually e.g. for maintenance.
- ***Disable Backup ON/OFF***: This button allows you to switch off the backup function temporarily.
- ***Reset Backup***: By clicking on this button, all backup timers are reset and if a connection exists, it is dropped.

- ***Backup Test***: Via this button, a backup test can be done. The result is displayed in the information field.

5.7.2.1.5 Security

NOTE

This configuration dialogue is only available, if the fee-based option ***Security*** (order number 430240) is enabled. Details concerning this option can be found under CHAPTER 10, Page 125.

5.7.2.2 Transmission

Under ***Transmission*** all Audio and data parameters concerning the transmission can be configured.

In delivery status, four standard ***Transmission Modes*** are available:

- ***Telephone***: Audio transmission with 3.1 kHz (G.711). On the second B channel, an independent telephone or 7 kHz connection can be established.
- ***7 kHz (Auto)***: Audio transmission with 7 kHz (G.722). The two standard signalling procedures ***ITU-T J.52*** (often also named ***H.221***) and ***SRT*** (Statistical Recovered Timing) are supported. On the second B channel, an independent telephone or 7 kHz connection can be established.
- ***MPEG 1B (Auto)***: Audio transmission with ISO/MPEG Layer III or optionally Layer II (order number 450305) and a data rate of 64 kbit/s (1 B). For the signalling, the most important procedures are available. On the second B channel, an independent telephone or 7 kHz connection can be established. However, a second MPEG connection cannot be established.
- ***MPEG 2B (Auto)***: Audio transmission with ISO/MPEG Layer III or optionally Layer II (order number 450305) and a data rate of 128 kbit/s (2 B). For the signalling, the most important procedures are available.

NOTE

The standard transmission modes work with ***AutoDynamicSync (ADS)***, which guarantees an automatic synchronisation - also with systems from other manufacturers. Further details can be found in CHAPTER A2 Page 137.

You can create further user defined transmission modes according to your requirements under ***User Defined***. These transmission modes are also available when the system is controlled via the front keypad and display.

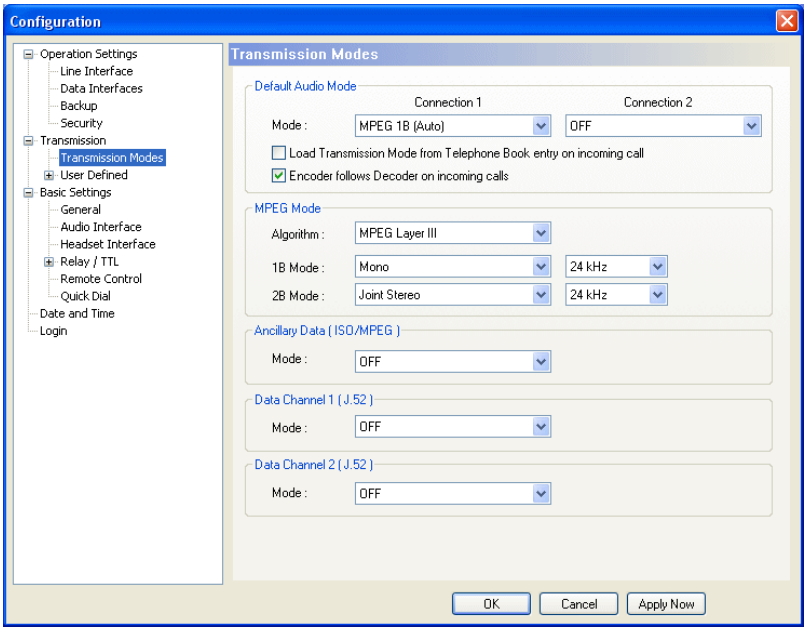
5.7.2.2.1 Transmission Modes

Via the configuration menu ***Transmission Modes*** you can configure all parameters for the Audio transmission and the transparent data transmission.

TIP

In contrast to ***AutoDynamicSync (ADS)*** (see CHAPTER A2, page 137), you enforce the transmission mode. If you know which system and which transmission procedure is used at the remote side, you should work with a defined ***Transmission Mode*** to avoid missynchronisations.

FIG. 34 TRANSMISSION MODES



Default Audio Mode

- With ***Default Audio Mode*** you define the transmission mode for each B channel which is to be displayed by default. Under ***Mode***, the four standard modes (***Telephone***, ***7 kHz (Auto)***, ***MPEG 1B (Auto)***, ***MPEG 2B (Auto)***) as well as all user defined modes for ***Connection 1*** are available. If you select ***OFF***, the most recently used mode is always displayed first.

NOTE

Restrictions *Connection 2*:

If you have selected the 2 B mode ***MPEG 2B*** for ***Connection 1***, it is not possible to select a mode for ***Connection 2***.

If you have selected a 1 B channel MPEG mode for ***Connection 1***, only the ***Telephone*** and ***7 kHz*** modes can be selected for ***Connection 2***.

- If the option ***Load Transmission Mode from Telephone Book entry on incomig call*** is enabled, the transmission mode which is saved together with the caller number of the incoming call in the telephone book is loaded automatically (see CHAPTER , page 39) (if the caller is saved in the telephone book and the number is transmitted).

- With the option ***Encoder follows Decoder on incoming calls*** you make sure that the encoder works with the same settings (such as e.g. Audio coding algorithm and sampling frequency) as the decoder.

TIP

Since some Audio codecs only allow the same parameters in transmit and receive direction, this setting should be always enabled to guarantee maximum compatibility.

This setting only refers to incoming calls. If you establish a connection yourself, you can select different parameters for Encoder and Decoder if the called end supports this configuration.

MPEG Mode

Under ***MPEG Mode,*** you configure the transmission parameters for the ISO/MPEG Layer III or Layer II (Option) Audio coding algorithm.

- ***Algorithm***: Please select the desired coding algorithm ***Layer III*** or ***Layer II***.

NOTE

Layer II is only available, if the fee-based option *ISO/MPEG Layer II Upgrade* (order number 450305) is enabled.

We recommend - if possible - to use Layer III, since at data rates of maximum 128 kbit/s this algorithm provides much better quality as Layer II does. Layer II should only be selected if the remote side can only decode Layer II signals.

- ***1 B Mode***: Under this setting, you can configure the Audio mode (***Stereo***, ***Joint Stereo***, ***Dual Channel***, ***Mono***) and the sampling frequency (***16 kHz***, ***24 kHz***, ***32 kHz***, ***48 kHz***), if **only one B channel** (64 kbit/s) is used for an MPEG connection.

- ***2 B Mode***: Under this setting, you can configure the Audio mode (***Stereo***, ***Joint Stereo***, ***Dual Channel***, ***Mono***) and the sampling frequency[1] (***16 kHz***, ***24 kHz***, ***32 kHz***, ***48 kHz***), if **two B channels** (128 kbit/s) are used for an MPEG connection.

[1] If Layer II is used, depending on the signalling not all sampling frequencies are available.

Ancillary Data (ISO/MPEG)

ATTENTION

In the following, all available transparent data channels are described. Two physically independent interfaces can be configured according to your requirements.

Since the implementation of the data channels is not completely defined, they usually work only between systems from the same manufacturer.

The usage of an ISO/MPEG Audio coding algorithm[1] allows a transmission of a transparent inband data channel (***Ancillary Data***). The data is included in the MPEG data stream.

NOTE

Please consider that in this way the full bit rate is no longer available for the Audio signal. The Audio quality is reduced depending on the ancillary data rate. Special attention should be paid to the fact that the size of the data channel is dynamic: If data is available, a channel with the needed band width is opened. If no data is to be transmitted, all available bits are used for the Audio coding.
The maximum data rate can be selected under ***Configuration → Data Interfaces*** (see CHAPTER 5.7.2.1.2, page 57).
In maximum, 15% of the gross MPEG data rate can be used for ancillary data (e.g. at 128 kbit/s → maximum ancillary data rate: 19,2 kbit/s)

- Under ***Mode*** you decide which physical interface (***ON - using Data Interface 1*** or ***ON - Using Data Interface 2***) is used for the ancillary data.
  Please select ***OFF***, if you do not want to transmit ancillary data.

Data Channel 1/2 (J.52)

ATTENTION

If you already use an interface for ***Ancillary Data***, you must deactivate the data interface which is used under ***Data Channel 1/2 (J.52)*** by selecting ***OFF***.

In addition to the transmission of ***Ancillary Data*** in the MPEG data stream, a further transparent data channel (***LSD Low Speed Data***) can be used when the ***ITU-T Standard J.52*** is used. For transmitting LSD, a channel with fixed band width is opened in parallel to the Audio signal.

NOTE

If you selected ***7 kHz*** as Audio mode, you can use one transparent data channel for each B channel independently from each other.

[1] The transmission of Ancillary Data is currently only possible with ISO/MPEG Layer III.

- The actual available data rate depends on the number of the B channels used and the ***Mode*** setting. Please select ***OFF***, if you do not want to use the data channel.

TAB. 2 BIT RATE IN THE J.52 DATA CHANNEL

Mode Data Channel 1/2	Number of B Channels	Bit Rate MPEG Audio	Bit Rate Data Channel
LOW	1	56 kbit/s	6,4 kbit/s
	2	112 kbit/s	12,8 kbit/s
HIGH	1	48 kbit/s	14,4 kbit/s
	2	96 kbit/s	28,8 kbit/s

The actual bit rates are displayed in the main window:

– ***Rate***: actual Audio data rate

– ***Data***: band width J.52 data channel and actual net bit rate (***x kbit/s net***)

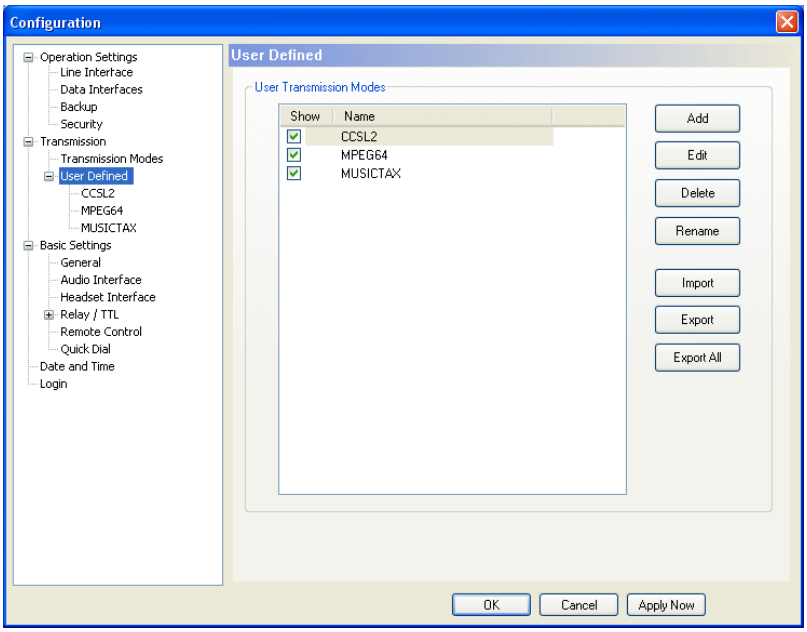
– ***PAD***: actual net bit rate (***x kbit/s net***) Ancillary Data

FIG. 35 DISPLAY OF THE BIT RATES IN THE MAIN WINDOW

5.7.2.2.2 User Defined

The configuration ***User Defined*** allows you to generate your own transmission modes. These user defined modes are display when a call is established via the front keypad and display as well as in the main window of the PC Software.

FIG. 36 USER DEFINED TRANSMISSION MODES



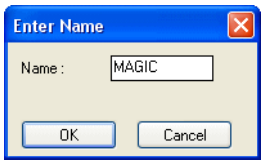
User Transmission Modes

In the list ***User Transmission Modes***, all already created transmission modes are displayed.

NOTE Up to 20 different modes can be saved.

- Via the checkbox ***Show*** you can decide if the selected transmission mode is to be displayed in the PC Software or/and in the front display of the system. If you display too many entries, the selection of the transmission mode becomes very unclear for the user - especially when using the front display - therefore you should not display modes that are not required.
- Under ***Name,*** the name of the transmission mode is displayed. The length of a name must not exceed eight characters.
- With ***Add*** a new transmission mode can be created. After entering the name, the configuration dialogue (see page 69) is displayed.

FIG. 37 ENTER A NAME



- The ***Edit*** button allows you to edit the selected transmission mode.

- With ***Delete*** you can delete a mode which is not required anymore. You have to confirm if you really want to delete the mode.
- To change the name of a transmission mode, you can press the button ***Rename***. The length of the name must not exceed eight characters.
- Via the function ***Import*** you can load a transmission mode from a data carrier.

NOTE

During the installation common transmission modes for a variety of Audio codecs from other manufacturers are saved in the directory

<Installation directory>\transmissionmodes

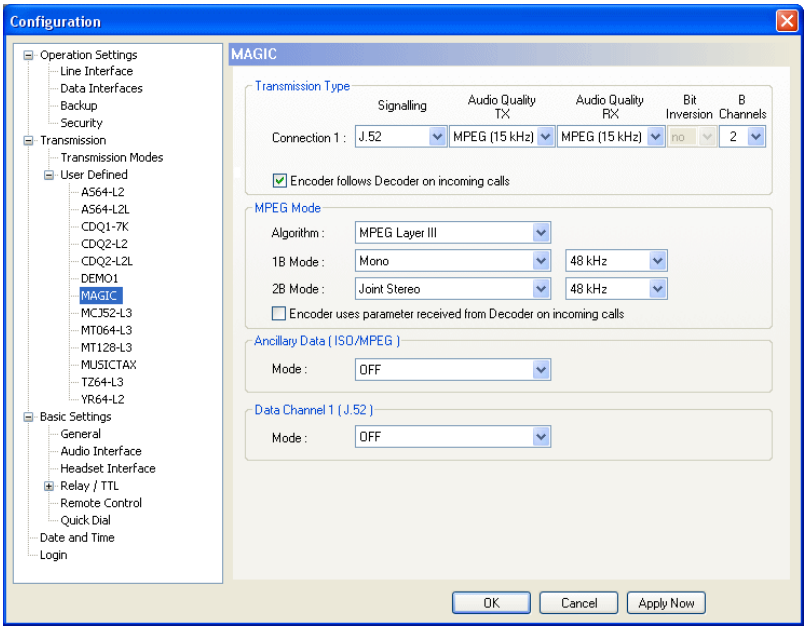
Further details concerning the transmission modes can be found in CHAPTER A3, Page 138.

Via the file browser you select the file which you want to import. Transmission mode files have the extension .tmm.

- With ***Export*** you can store individual modes on a data carrier. Via ***Browse*** you select the storage location.
- To store all modes on a data carrier, please use the function ***Export All*** and select the desired target directory. Each mode is saved in a separate file.

If you create a new transmission mode or if you edit an existing one, the configuration dialogue is displayed.

FIG. 38 CONFIGURATION DIALOGUE USER DEFINED TRANSMISSION MODES



Transmission Type

First, select the transmission type for ***Connection 1***:

- Under ***Signalling*** the following procedures are available:
  - ***Telephone***: Normal telephone connection with 3.1 kHz band width in transmit and receive transmission.

- ***J.52***: IUT-T Standard, which allows a so-called Capability Exchange[1] and a permanent delay compensation[2] when 2 B channels are used. Depending on the implementation, transparent data channels can be also transmitted. An unsymmetrical Audio transmission (e.g. MPEG with 2 B in transmit direction, 7 kHz in receive direction) is also possible. This procedure is supported by several manufacturers (e.g. MAYAH Centauri). For ***MAGIC DC7/AC1*** this procedure is set by default.
- ***OFF***: No signalling is used. The encoded Audio data is transmitted without any further framing. With this way of signalling, only one B channel can be used. The procedure is possible with almost every available Audio codec on the market.
  If ***G.722 (7 kHz)*** is selected as Audio quality (see below), the so-called ***SRT*** procedure (***Statistical Recovered Timing***) is used when no signalling is selected.
- ***MusicTaxi***: This proprietary signalling is used by Audio codecs from the company Orban (former Dialog4) and has been also implemented by some other manufacturers for compatibility reasons. 2 B channels can be transmitted. The Audio transmission is symmetrical, i.e. the same coding algorithm must be used in transmit and receive direction.
- ***CCS-L2***: A further proprietary signalling from the company Musicam USA (in Europe formerly CCS). The procedure supports only a symmetrical Audio transmission with ISO/MPEG Layer II with up to 2 B channels. Therefore, the fee-based option ***ISO/MPEG Layer II Upgrade*** (order number.: 450305) is required to use this signalling.

- Under ***Audio Quality TX*** you select the Audio quality for the transmit direction. Depending on the selected ***Transmission Type*** the following settings are available:
  - ***G.722 (7 kHz)***
  - ***MPEG (15 kHz)***
- The Audio quality in receive direction (***Audio Quality RX***) can only be selected for the transmission type ***J.52*** , since all other procedures only allow a symmetrical Audio transmission. The following options are available[3]:
  - ***G.722 (7 kHz)***
  - ***MPEG (15 kHz)***
- The option ***Bit Inversion*** allows an inversion of the encoded Audio signal and is only available when ***OFF*** is selected as signalling type.

NOTE

If you defined only a 1B connection for ***Connection 1***, you can define additionally a ***Telephone*** or ***7 kHz (Auto)*** connection for the second B channel. You can also establish connections with two different partners at the same time.

[1] Capability Exchange: At the beginning of the connection, the systems exchange information about how many B channels are possible, which Audio coding algorithms and specific codec parameters are available etc. After this exchange, the best possible transmission mode is set automatically. However, you have also the possibility to force a certain procedure, e.g. when you only need a 7 kHz connection.

[2] B channels are routed individually in the ISDN network. When Audio signals are transmitted with 128 kbit/s, the two B channels have to be set together at the same time at the receiver which is done by a delay compensation. This procedure is called Inverse Multiplexing. If B channels are re-routed in the network because of line errors during a connection, an Audio transmission with a static delay compensation, which was measured at the beginning of the connection, would not work anylonger. J.52 adapts the delay compensation dynamically and is protected from delay variations.

- With the option ***Encoder follows Decoder on incoming calls*** you ensure that the Encoder always works with the same settings (such as e.g. Audio coding algorithm and sampling frequency) as the Decoder does.

TIP

Since some Audio codecs only allow the same parameters in transmit and receive direction, this setting should be always enabled to guarantee maximum compatibility.

This setting only refers to incoming calls. If you establish a connection yourself, you can select different parameters for Encoder and Decoder if the called end supports this configuration.

MPEG Mode

Identical settings as under ***Transmission Modes → MPEG Mode*** (see page 65).

Ancillary Data (ISO/MPEG)

Same settings as under ***Transmission Modes → Ancillary Data (ISO/MPEG)*** (see page 66).

Data Channel 1/2 (J.52)

Same settings as under ***Transmission Modes → Data Channel 1/2 (J.52)*** (see page 66).

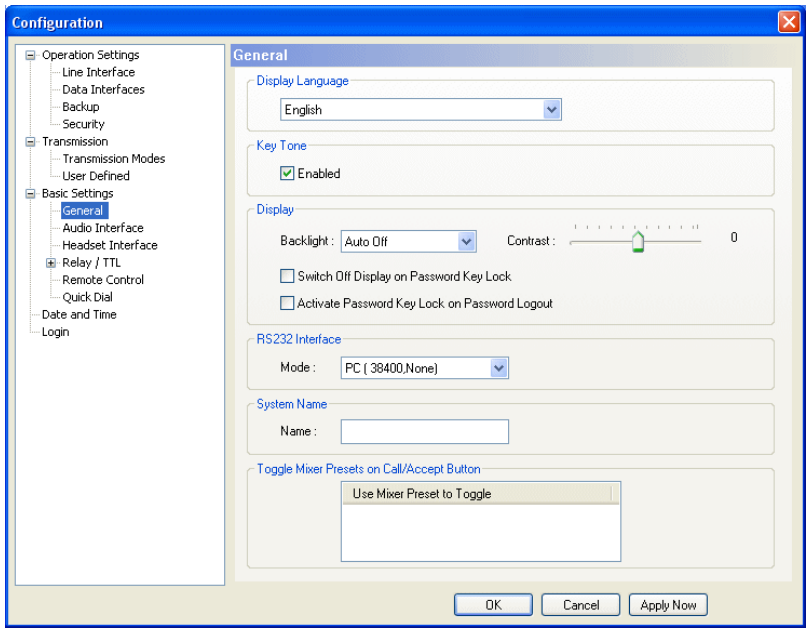
[3] If you select G.722 (7 kHz), the system signals to the remote side that only a 7 kHz Decoder is available, although you have an MPEG Decoder with MAGIC AC1. In this way, the remote side is forced to encode with 7 kHz.

5.7.2.3 Basic Settings

NOTE All settings made under ***Basic Settings*** **cannot** be saved as ***Preset*** (see CHAPTER 5.7.3.3).

5.7.2.3.1 General

FIG. 39 GENERAL



Display Language

- Currently the languages ***English*** and ***German*** are supported as display languages.

Key Tone

- To active the key tone for the system, please select the check box ***Enabled***.

Display

The ***Display*** has a backlight. Under ***Backlight*** you can set it on permanently if you select ***On***. If ***Auto off*** is selected, the backlight is automatically turned off **60** seconds after the last keystroke. The backlight can be activated again by pressing any key (e.g. ***OK***)

NOTE Please notice that if the key lock is enabled, the backlight is not activated before you press the key sequence ***MENU*****.

- With the slide controller ***Contrast*** you can set the desired contrast for the display within the range of ***-16 ... 15***. The default setting is 0.

NOTE To use the following functions a user or administrator password must be entered under ***Login*** (see CHAPTER 5.7.2.5).

- If the option ***Switch Off Display on Password Key Lock*** is selected, the display is automatically switched off after **60** seconds after logging out. Any keystroke activates the display. Dialling is possible.

- If the function ***Activate Password Key Lock on Password Logout*** is enabled, the key lock is automatically activated **60** seconds after logging out. Next to the clock a key symbol is displayed. In addition to the configuration lock by entering a password under ***Login***, dialling via the numerical keypad is no longer possible.

RS232 Interface

If you want to operate the system with a PC, you need to configure the data rate of the interface. The following five baud rates are available: ***PC & Keypad (9600, None)***, ***PC (19200, None)***, ***PC (38400, None)***, ***PC (57600, None)***, ***PC (115200, None)***. The default setting is ***PC (38400, None).***

NOTE

The *MAGIC DC7/AC1 Keypad* supports only a baud rate of 9600 Baud. Therefore, if you use the keypads, always select ***PC & Keypad (9600, None)***. This baudrate can also be selected if a PC is used.

If a PC is connected via the RS232 interface, the selected baudrate must be identical with the baudrate of the COM interface.

System Name

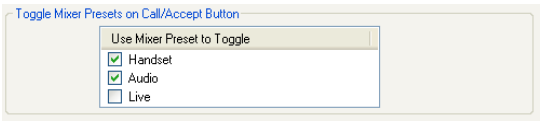
Under ***System Name*** you can enter a name for the system. The name is displayed in the optional software plug-in *MAGIC DC7/AC1 LAN* (see CHAPTER 9) which allows a simultaneous control of up to 10 systems.

Toggle Mixer Presets on Call/Accept Button

The function ***Toggle Mixer Presets on Call/Accept Button*** allows a fast switching between maximum three Mixer Presets by pressing the button on the front keypad.

All already existing Mixer Presets are displayed in the list.

FIG. 40 SELECTION OF THE MIXER PRESETS



By activating the Checkbox you select which Mixer Presets are loaded when the button is pressed.

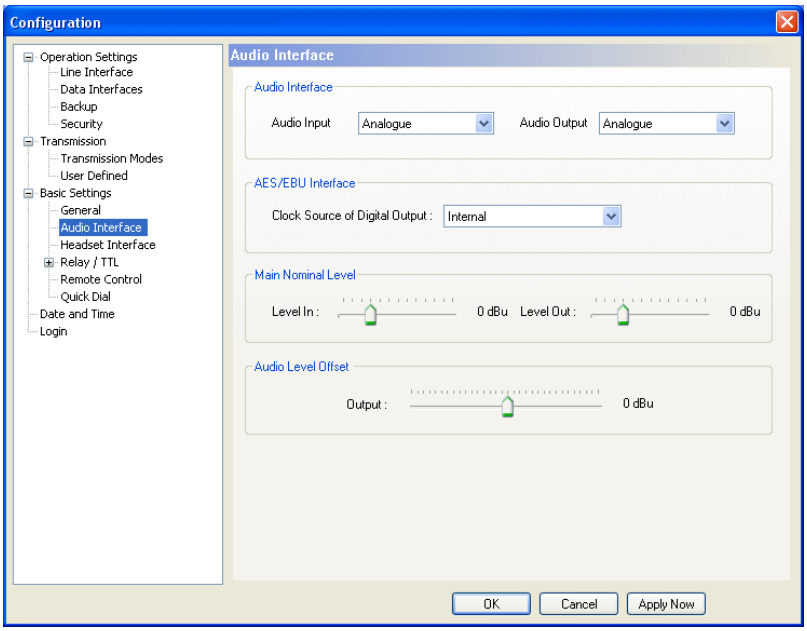
NOTE

Please consider also the function for the emulation of the 15-kHz/PKI 7-kHz ISDN Telephones (see CHAPTER 5.8.7).

5.7.2.3.2 Audio Interface

MAGIC DC7/AC1 supports analogue as well as optionally digital AES/EBU Audio interfaces (order number 430230). If the digital interface is used, separate Sample Rate Converters for input and output are available which supersedes external adjustments for different digital sources.

FIG. 41 CONFIGURATION OF THE AUDIO INTERFACES



Audio Interface

- The operating modes ***analogue*** or ***digital*** can be individually adjusted for the ***Audio Input*** and the ***Audio Output***.

AES/EBU Interface

- If you select the option ***digital*** for the output, the configuration for the ***AES/EBU Interface*** is displayed. Under ***Clock Source of digital output*** the following settings are available:

  – ***Internal***: The AES/EBU output clock is adapted to the internal system clock.

  – ***External***: The AES/EBU output clock is adapted to the external clock which is supplied by the ***Audio 2/CLK IN*** interface. The clock frequency of the supplied clock needs to be 48-kHz.

  – ***Recovered***: The AES/EBU output clock is recovered from the digital input signal of the ***Audio 1/AES IN*** interface. This configuration should be selected if you use the digital input of the system. In this way, a synchronous working of the transmission chain is ensured.

NOTE

An AES/EBU input always works with recovered clock. Therefore, only a configuration of the output is required.
For clock synchronisation with other systems, you can use the clock output ***Audio 2/CLK OUT***. The clock frequency of the output clock is 48-kHz.

Main Nominal Level

- If you select the analogue mode for input or output, the corresponding slide controller is displayed to set the nominal Audio level of the XLR Audio interfaces (***Main Nominal Level***). The main nominal level can be adjusted separately for the input (***Level In***) and for the output (***Level Out***) within a range of ***-3 ... +9 dBu*** in steps of 1-dB. The head room is **6 dB**. If you want to have the maximum level of 15 dBu for the system, you need to set 9 dBu as main nominal level. The default setting is 0 dBu.

Audio Level Offset

- Via the scroll bar ***Audio Level Offset*** you can adjust the Audio ***Output*** signal within the range of ***-16 ... +15 dBu*** digitally in 1-dB steps. The default setting is 0 dBu.

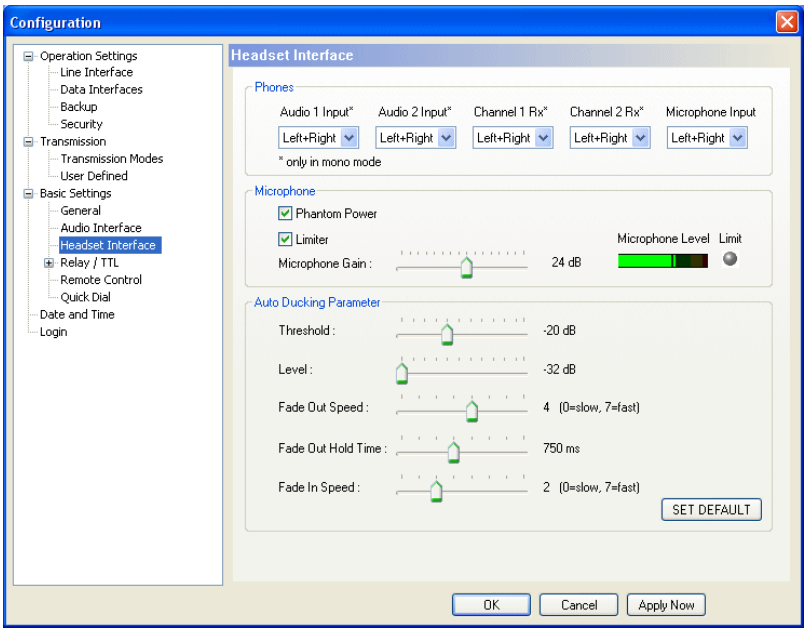
NOTE

Changing the ***Audio Level Offset*** is only seldom required if e.g. the signal of the remote side is always much too loud or much too low. Please note that if the Audio level Offset is increased, the head room is decreased correspondingly.

5.7.2.3.3 Headset Interface

MAGIC DC7/AC1 provides a headset interface to connect a standard professional headset (e.g. beyerdynamic DT291 PV).

FIG. 42 CONFIGURATION OF THE HEADSET INTERFACE



Phones

Via the setting ***Phones*** you configure the Audio signal assignment of the headphones.

- For all available signal sources ***Audio 1 Input***, ***Audio 2 Input***, ***Channel 1 Rx***, ***Channel 2 Rx*** and ***Microphone Input*** you can decide if you want to hear the signal - as soon as it is activated - either on both channels (***Left+Right***) of the phones or only on the ***Left*** or ***Right*** channel of the phones.

  Reasonable applications are Live reports of commentators or translations of interpreters: For example, the original signal of the speaker (e.g. via ***Audio 1 Input*** or ***Channel 1 Rx***) is available on the left channel and the interpreter's own translated signal (e.g. via ***Microphone Input***) is available on the right channel for checking purposes.

NOTE

The settings for the different signal sources apply only for transmissions in Mono. During a Stereo transmission, the left channel is always available on the left earphone and the right channel is always available on the right earphone. The microphone signal is generally only available in Mono.

Microphone

Under ***Microphone*** you configure the microphone input of the headset interface.

- If your microphone requires phantom power, you can activate it via the option ***Phantom Power***. A voltage of 12V is applied to the microphone wires.

- To avoid an overdrive of the system, the microphone input has a switchable ***Limiter***.

- Via ***Microphone Gain*** you can adapt the sensitivity of your microphone to the limiter. The gain can be set within the range of ***0 ... +45 dB*** in 1-dB steps. For a simple adaptation you should use the ***Microphone Level***. When the setting is optimal, the ***Limiter*** LED should never be illuminated or only for a short time. The setting ***Limiter*** is not relevant for the level setting.

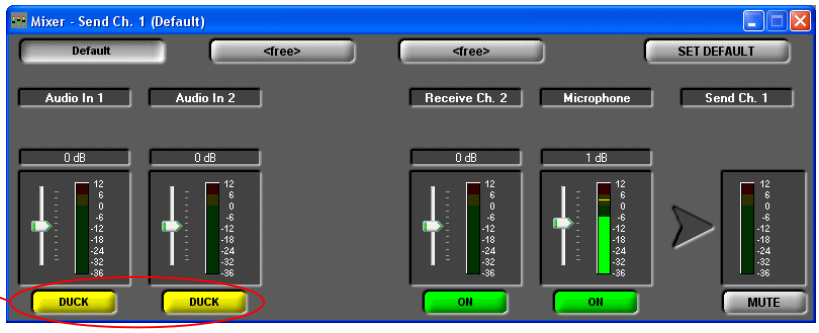
Auto Ducking Parameter

NOTE

This function is only available if the fee-based option *Mixer Tool Plug-In* (order number 430201) is enabled.

For the two Audio inputs, the Autoducking function can be activated if the microphone is used. As soon as you talk into the microphone, the level of the Audio inputs is turned down.

FIG. 43 ACTIVATED AUTO DUCKING IN THE AUDIO MIXER



The following parameters can be changed to adjust the Autoducking behaviour:

- ***Threshold***: Via this setting you select the threshold value at which the reducing of the Audio input level starts. Available range: ***-32... 0 dB*** in 1-dB steps. Default setting: -20 dB.

- ***Level***: This setting defines the level to which the Audio input level is to be reduced. Available range: ***-32... 0 dB*** in 1-dB steps. Default setting: -32 dB.

- ***Fade Out Speed***: Here you select the speed with which the Audio input signal is turned down. Available range: ***0*** (***slow***) ***... 7*** (***fast***). Default setting: 4.

- ***Fade Out Hold Time***: This value defines the minimum time during which the Audio input signal is faded out. If nobody talks into the microphone anylonger, the signal is faded in again after the time you set here. Available range: ***0 ... 1750 ms***. Default setting: 750 ms.

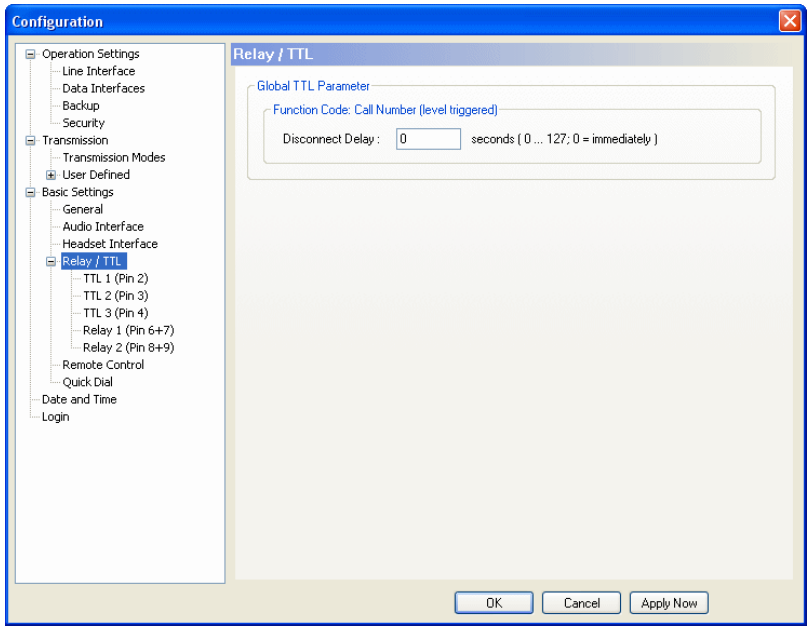
- ***Fade In Speed***: Here you select the speed with which the Audio input signal is faded in. Available range: ***0*** (***slow***) ***... 7*** (***fast***). Default setting: 2.

- The button ***Set Default*** resets all parameters to the default settings.

5.7.2.3.4 Relay/TTL

The *MAGIC DC/AC1 System* has *three GPIO Pins* (TTL) which can be programmed individually as input or output. Additionally, two *relays* are available.

FIG. 44 GLOBAL SETTINGS



Under ***Relay/TTL***, general parameters for the GPIO contacts can be configured.

Global TTL Parameter

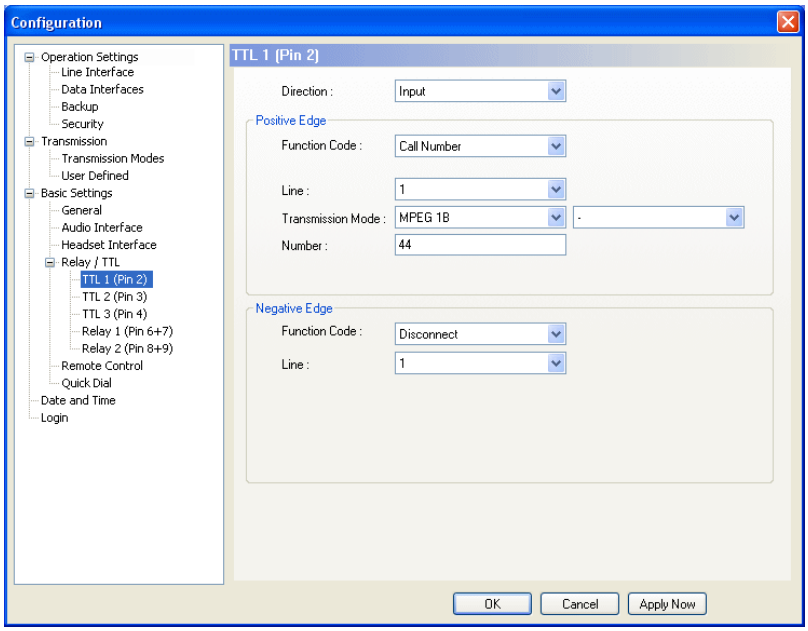
- For the ***Function Code: Call Number (level triggered)*** (see page 79) you can program a delay for the disconnection within the range of ***0...127*** seconds. If you select ***0***, the connection is dropped immediately.
  This setting is helpful, e.g. if you realised an automatic dialling via VOX control. If nobody is speaking, the connection would be dropped immediately by default. If you have set a delay, short breaks in the speech/Audio signal do not result in an immediate disconnection.

The functionality of a TTL Pin - ***Input*** or ***Output*** - can be selected with the option ***Direction***.

The following description applies to all three configuration windows ***TTL1 (Pin 2)***, ***TTL2 (Pin 3)*** and ***TTL3 (Pin 4)***.

TTL Pin as Input

FIG. 45 TTL PIN AS INPUT



If you use a TTL Pin as ***Input***, you can configured two different functions[1] when the edges change:

- ***Positive edge***: The event is triggered when the voltage at the TTL Pin changes from 0V to+5V.
- ***Negative edge***: The event is triggered when the voltage at the TTL Pin changes from +5V to 0V.

  The following ***Function Codes*** can be selected:

  – **-** (Not used): No function, the Pin is not used. This option is to be selected for remote control via the function ***Output → Remote TTL Input*** (see page 82).

  – ***Call Number*** :
  With this function you can establish a connection with a certain calling ***Number***. With ***Line*** you select the line (***1*** or ***2***) on which the connection is to be established (only in the *ISDN* operating mode). Under ***Transmission Mode*** you select the desired mode for the transmission.

  – ***Call Number (level triggered)***:
  Same function as above, however, except that here the level is analysed and not the edge.

TIP

With this function, you can configure an automatic redialling to ensure that the partner is automatically re-dialled if there is an unexpected disconnection. Please configure this function under ***Positive edge***. Since the TTL Pin has a 5V level by default, a connection to the given number is established immediately.
Attention: This function can only be ended by setting the Pin to the 0V level or switching off this function via the configuration.

  – ***Disconnect***: ***Disconnect***: By enabling this function a connection on the indicated line (***1*** or ***2***) can be disconnected.

[1] Except function code ***Call Number (level triggered)***, if this code is selected only one edge can be used.

- ***Load Preset***: Via this function you can load a Preset which you must indicate under ***Preset***.
- ***Backup Alarm Signal***: With this function it is possible to feed in an external TTL alarm signal whereby an ISDN Backup (see CHAPTER 5.7.2.1.3, page 58) is established.
- ***Backup Disable***: Via this external control signal you can avoid that an ISDN Backup is established although the ***Backup Alarm Signal*** is active (see CHAPTER 5.7.2.1.3, page 58).
- ***Set Information Base Entry***: Special function for projects.
- ***String Command***: Special function for projects.

Example:

With ***TTL1*** a call is to be accepted on line 1. The system is to be configured automatically to the ***MPEG 1B*** Mode. After the conversation is over, the connection is to be dropped also with ***TTL1***.

Programming:

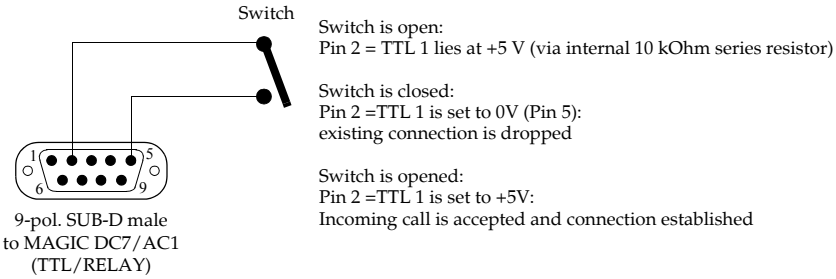
Positive edge:

Function Code: Call Number
Line: 1
Transmission Mode: MPEG 1B
Phone Number: -

Negative edge:

Function Code: Disconnect
Line: 1

FIG. 46 FUNCTION SEQUENCE OF THE EXAMPLE

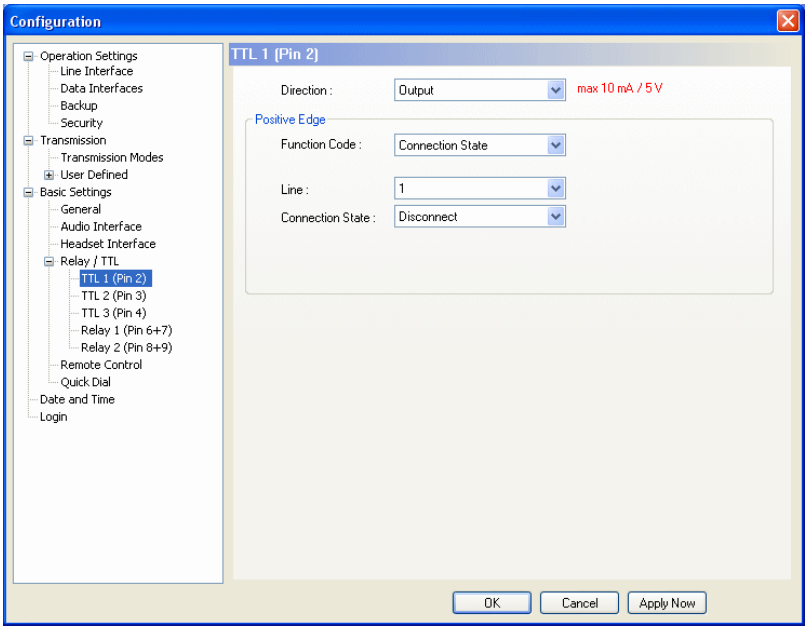


TTL Pin as Output

ATTENTION

Please note that the maximum switching current is 10 mA and the maximum switching voltage is 5V per TTL output.

FIG. 47 TTL PIN AS OUTPUT



If a TTL Pin is configured as ***Output***, the event is signalled when the voltage at the TTL Pin changes from 0V to +5V.

Under ***Positive edge*** you can select the following ***Function Codes***:

- ***Fixed Low (0V)***: The TTL Pin is fixed to 0V.
- ***Fixed High (5V)***: The TTL Pin is fixed to +5V.
- ***PC Controlled***: Special function for projects.
- ***Connection State***: Via this function you can signal the connection state of a line. Please select the desired connection state under ***Connection State***. The following options are available:
  - ***Disconnect***
  - ***Call Out***
  - ***Call In***
  - ***Connect***
  - ***Call Setup***

  Under ***Line*** you can select for which line you want to signal the connection state. In addition to line ***1*** and line ***2*** you can monitor the connection status of both lines if you select ***all***. As soon as one of the two lines meets the criteria, the signal is triggered at the TTL Pin.
- ***Information Base Entry***: Special function for projects.
- ***System Alarm Pending***: This function signals a pending system alarm (see CHAPTER 5.9.1).

- ***Remote TTL Input***: If this function is selected, you can signal the TTL status of the selected ***Remote TTL input*** Pin (***1***, ***2***, ***3***) of the remote system. In this way. remote systems can be controlled remotely or information about the hardware status can be transmitted. On the remote side the function ***Input → -*** (not used) must be programmed for the corresponding TTL Pin to enable remote control. If a TTL Pin of the remote side is configured as output, the status of the Pin is transmitted.
- ***Inverted Remote TTL Input***: Same function as above, except that here the inverted signal is transmitted.
- ***Remote PC Controlled***: Special function for projects.
- ***MPEG Decoder synced***: If the ISO/MPEG Audio decoder is synchronised, the TTL Pin is set.
- ***Backup Established***: If you activated the Backup function of the system (see CHAPTER 5.7.2.1.3, page 58), you can signal the backup status (Backup established Yes/No) via this function.
- ***Backup Error***: If you activated the Backup function of the system (see CHAPTER 5.7.2.1.3, page 58) and the Backup could not be established for some reason, the TTL Pin is set. The Pin is also set when the ***Backup Test*** failed (see page 60).

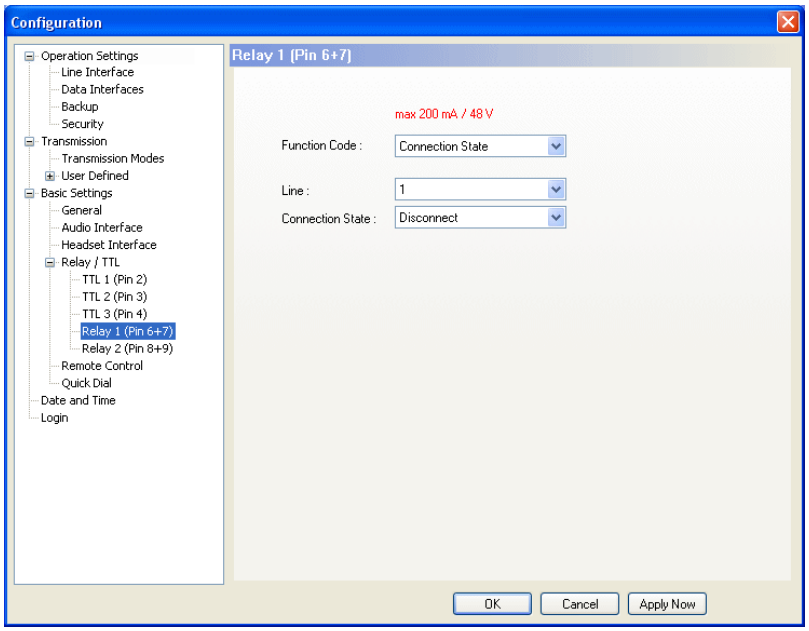
Relay

ATTENTION

Please consider that the maximum switching current is 200 mA and the maximum switching voltage is 48V per relay output.

The following description is valid for both configuration windows ***Relay 1 (Pin 6+7)*** and ***Relay 2 (Pin 8+9)***.

FIG. 48 RELAY



The functions for programming the relays are identical with the function codes for the TTL output. The following options (***Function Codes***) are available:

– ***Always open***: The relay contacts are always open.

– ***Always closed***: The relay contacts are always closed.

All further function codes are explained under ***TTL Pin as Output*** (Page 81).

5.7.2.3.5 Remote Control

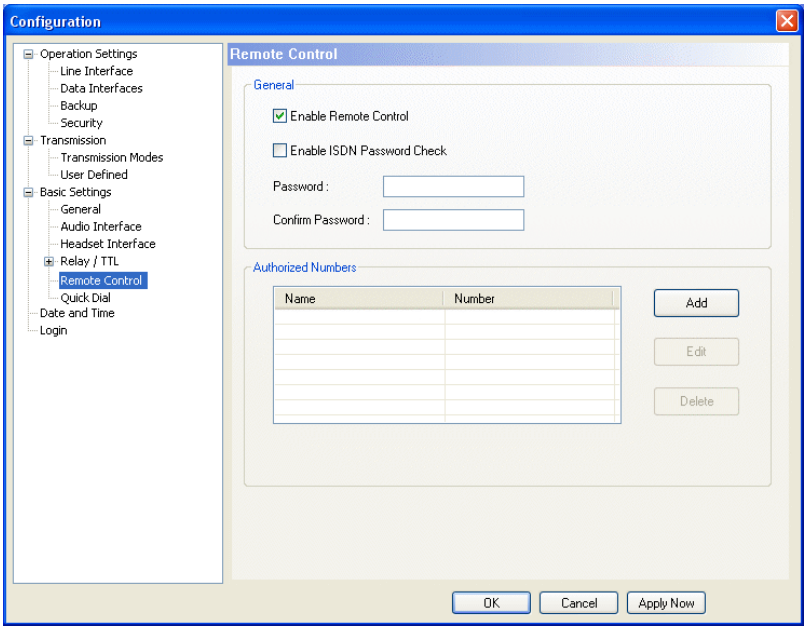
General

To allow remote control for the system (see CHAPTER 8, page 117), you must activate the function ***Enable Remote Control***.

ATTENTION

Without any further security measures, anybody who knows the calling number of the system and has the fee-based ***Option: Remote Control Software*** can control the system remotely.
Therefore, please activate the security system described below at any rate.

FIG. 49 REMOTE CONTROL



By assigning a password, the caller needs to authorise himself first before he can control the system remotely. The password check can be done in two different ways:

- If the option ***Enable ISDN Password Check*** is activated, the password check is done in the D channel (signalling channel) of the ISDN connection.
  If the passwords do not match, the caller is rejected immediately without establishing a connection[1].
  If the password check is successful, the call is accepted automatically, even if the automatic answer of calls is **not** enabled (see Page 54, ***Enable Auto Answer***).

NOTE

The password check in the D channel is only available if the feature **sub addressing** is enabled for the ISDN connection.

- If this function is not supported by the ISDN connection, the password check is not done before the connection has been established.
  A call to the system which is to be controlled remotely **must be accepted manually**, if the automatic answer of calls is not activated (see Page 54, ***Enable Auto Answer***).

[1] In this case, the caller does not have to pay any connection charges.

The password has to be entered under ***Password*** and confirmed by retyping it under ***Confirm Password***.

Authorized Numbers

Via the function ***Authorized Numbers*** a remote control access protection can be realised. Only person whose number is entered in the list can control the system remotely. Please enter ***Name*** and calling ***Number*** for each list entry.

NOTE

Please consider that only numerical characters which are actually entered are analysed, i.e. if you only enter „130“, all participants with a calling number which ends with „123“ are allowed to call the system.

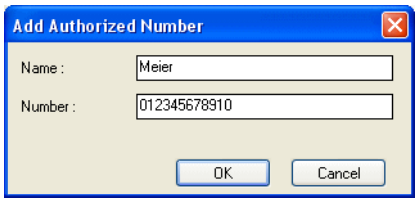
The total character length of all entered telephone numbers must not be higher than 127. With an average length of a telephone number of 12 characters about 10 calling numbers can be saved.

For this functionality the calling number of the participants in the list needs to be transmitted (CLIP[a] function).

[a] Calling Line Identification Presentation

- With ***Add*** you can dd a new entry.

FIG. 50 ADDING AN ENTRY

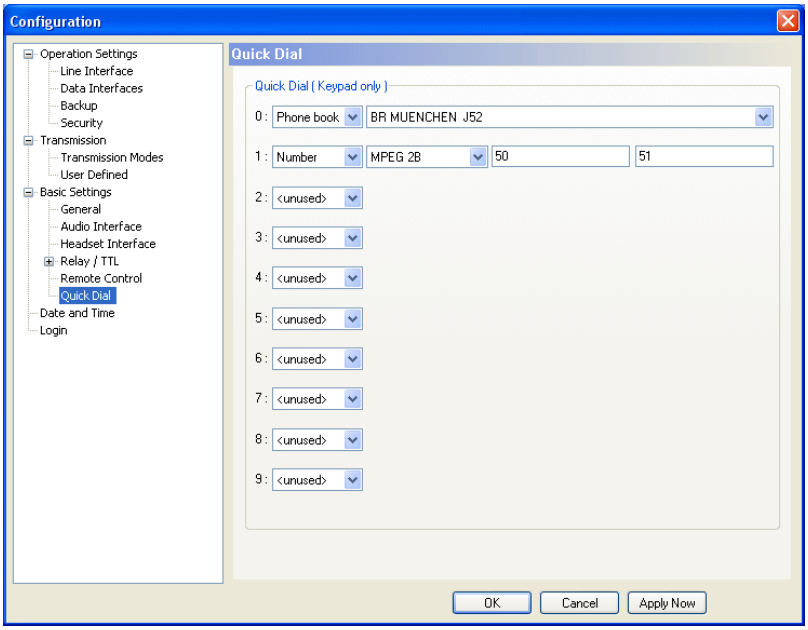


- The button ***Edit*** allows to edit already existing entries
- With ***Delete*** an entry can be deleted. For safety reasons you must confirm that you really want to delete the entry.

5.7.2.3.6 Quick Dial

The system allows you to call directly up to 10 partners via the numerical keys **0** ... **9** of the front display. The quick dial keys can be programmed via the menu ***Quick Dial***.

FIG. 51 QUICK DIAL



Please assign an already existing ***Phone Book*** entry to a key or define a new ***Number*** with a selected ***Transmission Mode*** (see Chapter 5.7.2.2.1, page 64).

NOTE The quick dial functionality can only be used on the system. The PC Software has no quick dial keys.

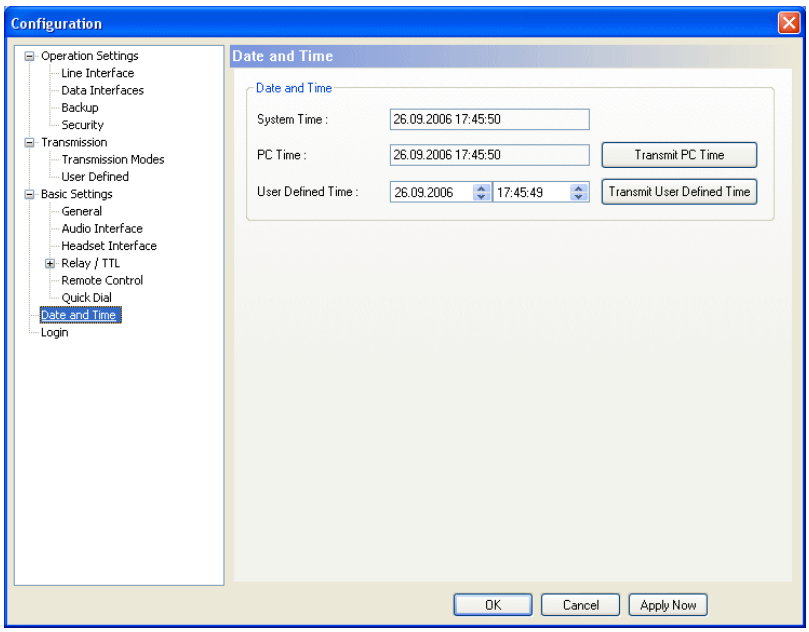
5.7.2.4 Date and Time

Via the dialogue ***Date and Time*** you can program the system date and time.

Via the button ***Transmit PC Time*** you can synchronise the system time with your PC time.

The button ***Transmit User Defined Time*** allows you to set a different time. This function is helpful, if you want to use the system later on e.g. in a different time zone.

FIG. 52 DATE AND TIME



ATTENTION

During a power breakdown the integrated system clock is buffered by an internal battery[a]. The life time of a battery is typical ca. 7 years. The replacement should only be done by the AVT Service.

[a] Type: 3V Lithium Battery Renata CR1220

5.7.2.5 Login

To protect the system from reconfiguration, two password levels with different user rights are available

ATTENTION

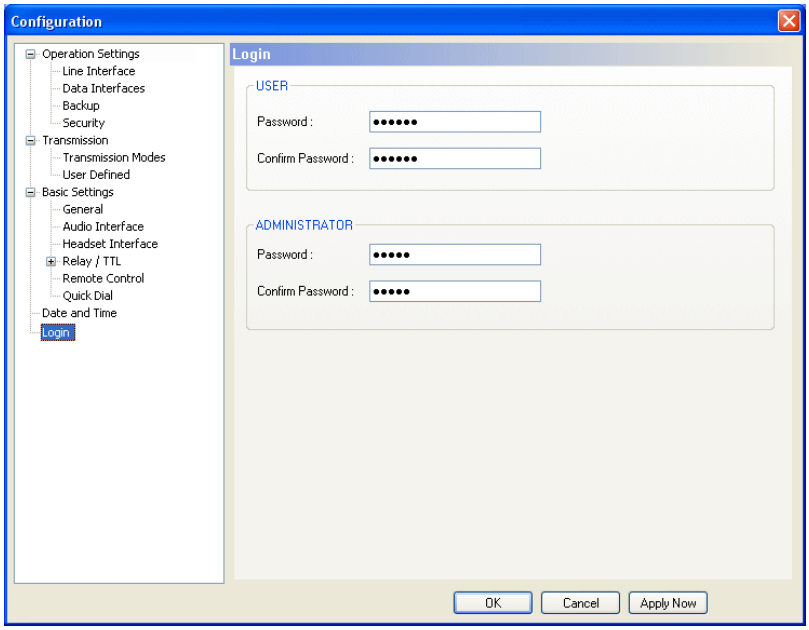
The entered passwords are stored in the system. Take care in entering a password. If you forgot your password, the system can only be unlocked by the AVT Service.

- Under ***USER*** you can assign the User ***Password***. For safety reasons the password needs to be confirmed under ***Confirm Password***.
- Under ***ADMINISTRATOR*** you can assign the Administrator ***Password***. For safety reasons the password needs to be confirmed under ***Confirm Password***.

NOTE

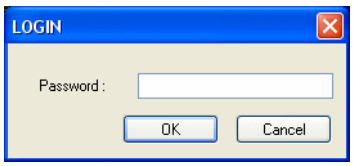
It is not differentiated between upper and lower case when a password is enterd.

FIG. 53 LOGIN



As soon as you assigned a password, a Login window is automatically displayed when you click on a menu which is protected by the password. Please enter the user or the administrator password there.

FIG. 54 PASSWORD LOGIN



The user and administrator rights are allocated in the following way:

(1) Only **Administrator Password** configured: Password is required for changes in the configuration. Immediately available menus:

– ***Configuration → Presets→ „Preset Name“***

– ***Extras → System Monitor***

(2) Only **User Password** configured: The password is always required. After the password has been entered, all menus are available. Immediately available menus:

– ***Extras → System Monitor***

User and **Administrator Password** configured. A password is always required. Immediately available menus:

– ***Extras → System Monitor***

User Password is entered:

– Under ***Configuration → Configuration → Login*** only the ***USER*** Password can be changed.

– With ***Configuration → Presets*** the desired preset can be loaded.

Administrator Password is entered: All menus are available.

NOTE Please notice also the effect on the possibilities for configuration, if a password is assigned.

5.7.3 Submenu Presets

Via ***Presets*** you can save, load and edit configuration presets.

5.7.3.1 Save as ...

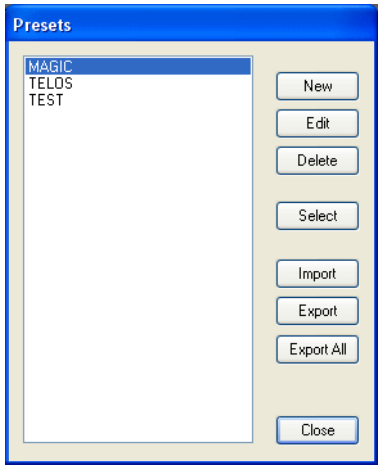
Via the option ***Save as ...***, the current configuration can be saved as ***Preset*** under any name (max. 8 characters). Special characters and space characters are **not** allowed. Please make sure that you use clear-cut names, otherwise an error message is displayed asking you if you want to overwrite the already existing preset.

FIG. 55 SAVE PRESET

5.7.3.2 Manage Presets

You can manage your ***Presets*** via the menu ***Configuration*** → ***Presets*** → ***Manage Presets***.

FIG. 56 MANAGE PRESETS



In the list, all already created configuration presets are displayed.

With the ***New*** button, a new configuration can be created. The current configuration of the system is not changed or loaded. First enter a reasonable name.

FIG. 57 CREATE NEW PRESET

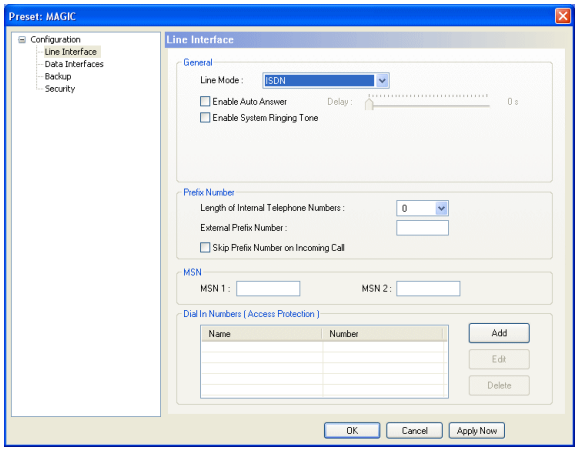
NOTE

The length of the name must not exceed 8 characters. Special characters and space characters are **not** allowed. Please make sure that you use clear-cut names, otherwise an error message is displayed asking you if you want to overwrite the already existing preset.

Now, the configuration dialogue is opened to edit the ***Presets***. The current configuration is always displayed as basis of the ***Preset***, which can be adapted according to your requirements. The following settings can be saved in a Preset:

- Line Interface (see page 52)
- Data Interfaces (see page 57)
- Backup (see page 58)
- Security (see page 62)
- Display of the Bit rates in the main window (see page 67)

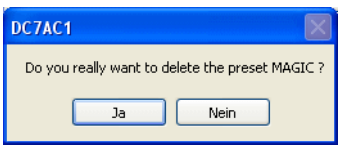
FIG. 58 EDIT PRESET



The ***Edit*** button allows you to edit the configuration which is currently selected in the list. The current configuration of the system is not changed or loaded.

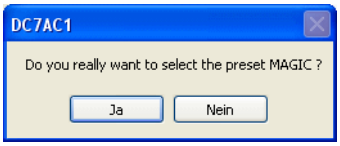
With the ***Delete*** button you can delete the configuration which is currently selected. A confirmation is required.

FIG. 59 CONFIRMATION TO DELETE A PRESET



To activate a configuration selected from the list, please press the ***Select*** button. A confirmation is required.

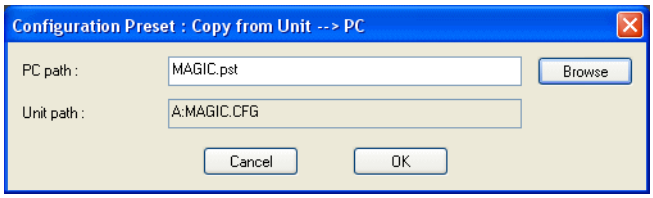
FIG. 60 CONFIRMATION TO ACTIVATE A PRESET



The ***Import*** button allows you to import a configuration preset form a data carrier (disk, USB stick etc.). The file extension of a preset file is always '***.pst***'. After clicking on the Import button, the file browser is displayed via which the desired file can be selected.

It is also possible to export configurations to a data carrier. The ***Export*** button saves the configuration preset selected from the list as '***.pst***' file. After clicking on the Export button, the file browser is displayed via which the desired storage location can be selected with ***Browse***.

FIG. 61 EXPORT A PRESET



With ***Export All*** you can save all configurations displayed in the list in a directory of your choice. For each configuration, an individual file with the extension '***.pst***' is generated.

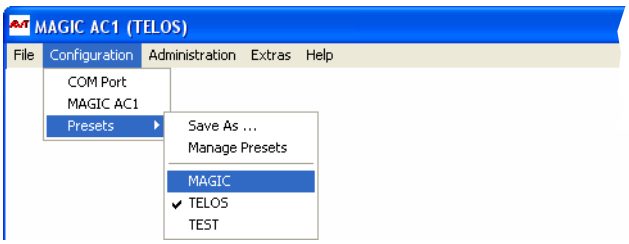
TIP

If you have to configure several systems in the same way, please save the complete system configuration with ***File → System Settings → Export*** (see CHAPTER 5.6). Please note that the telephone book is not saved with the configuration.

5.7.3.3 Activate a Preset

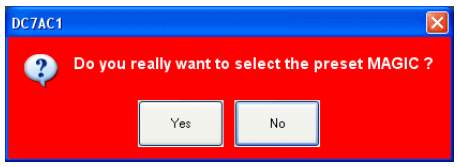
All Presets are displayed under ***Configuration → Presets → „Preset Name"*** and can be activated by simply clicking on them.

FIG. 62 ACTIVATE A PRESET



For safety reasons a confirmation is required.

FIG. 63 CONFIRMATION TO ACTIVATE A PRESET

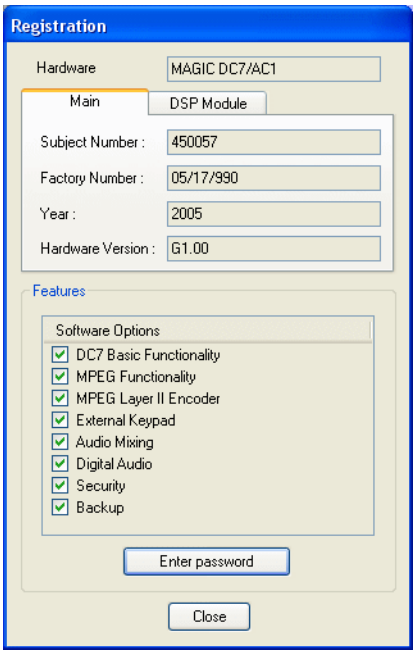


5.8 Menu Administration

5.8.1 Submenu Registration

Via the submenu Registration you can check the activated Firmware Options.

FIG. 64 REGISTRATION



Under ***Hardware***, the system type (here: ***MAGIC DC7/AC1***) is displayed. On the Main tab, all relevant features for identification like ***Subject Number***, ***Factory Number***, ***Year*** of production and ***Hardware Version*** are displayed.

Under the ***DSP Module*** tab you find the features for the DSP Module (only *MAGIC AC1*).

Under ***Features*** all available Software Options are listed.

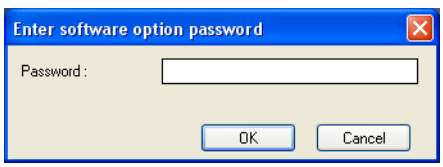
Upgrade of Firmware Options

NOTE

For an Upgrade, we need the serial number (***Factory Number***) of the system. Please read out the serial number **always** from the ***Registration***, since the serial number on the system label could be different.

To activate further **Firmware Options** at a later time, please enter the password, which you received from us, in the dialogue which opens when you click on the button ***Enter Password***.

FIG. 65 PASSWORD ENTRY



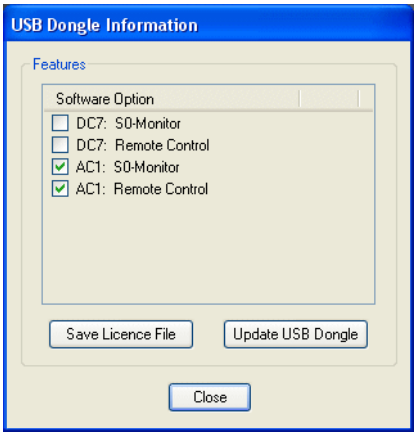
5.8.2 Submenu USB Dongle Information

NOTE The submenu ***USB Dongle Information*** is only displayed if the USB-Dongle for fee-based options is connected to the PC.

In the window ***USB Dongle Information*** you see the PC Software Options which are enabled for your system.

NOTE Please consider that we differentiate between PC Software Options (e.g. S_0 Monitor) and Firmware Options (e.g. Mixer Tools).

FIG. 66 USB DONGLE INFORMATION



Upgrade of PC Software Options

If you want to activate further **PC Options** at a later time, please press the button ***Save Licence File***, whereby the current licence key is stored in a file.

The standard name is ***LicenceInfo.c2v***, the storage location can be chosen by yourself.

With the file ***LicenceInfo.c2v*** - which you send us e.g. by email to **support@avt-nbg.de** - we can activate the Upgrade.

Afterwards, we send you the file ***LicenceUpdate.v2c***, which you can load to your system by clicking on the ***Update USB Dongle*** button.

Now the new function is available.

NOTE In Fig. 66 you can see that in a USB-Dongle several system versions can be managed. For example, if you want to control *MAGIC DC7* **and** *MAGIC AC1* systems remotely, it is possible with **one** USB-Dongle, if the options are activated for it.

5.8.3 Submenu Remote Control

NOTE

The submenu ***Remote Control*** is only available, if the fee-based ***Option: Remote Control Software*** (see CHAPTER 8) is enabled and the USB dongle is plugged in.

Further details concerning the function ***Remote Control*** can be found under CHAPTER 8, Page 117.

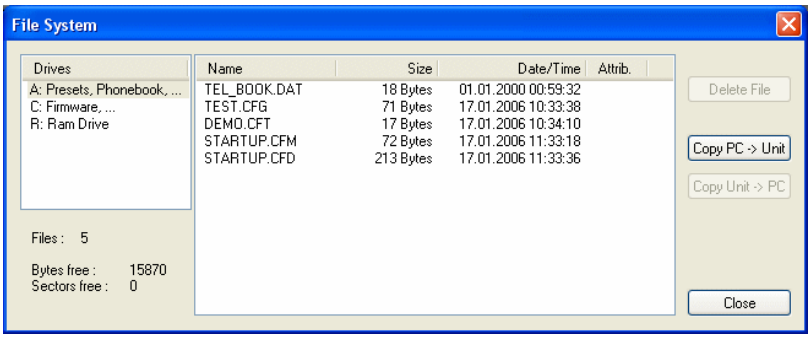
5.8.4 Submenu File System

By selecting the submenu ***File System*** the file directory of the system (similar to the harddisk of a PC) is displayed.

ATTENTION

Please do not carry out any actions under ***File System*** unless our support asked you to. All user import/export functions can be found under the menu ***File*** (see CHAPTER 5.6).

FIG. 67 SUBMENU FILE SYSTEM



Via the button ***Delete File*** the currently selected file is deleted from the system.

ATTENTION

Do not delete a file unless our service told you to delete the file. Otherwise a malfunction of the system can occur.

The ***Copy PC -> Unit*** button allows you to copy a file from a PC to the system.

ATTENTION

Please use only the function ***Firmware Download*** (see CHAPTER 5.8.6) respectively the import functions in the menu ***File*** (see CHAPTER 5.8.4) to copy files on the system.

The ***Copy Unit -> PC*** button allows you to copy a file from the system to the connected PC.

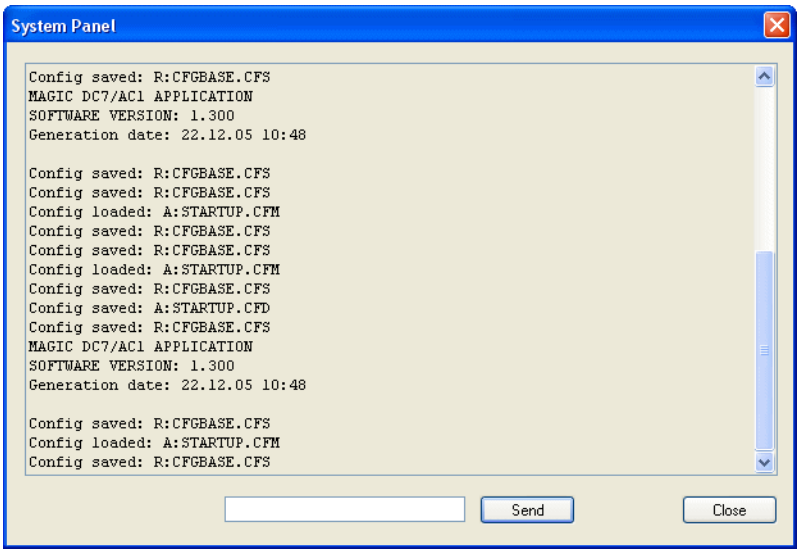
ATTENTION

Please use only the export functions under the menu ***File*** (see CHAPTER 5.6), to copy files to a PC.

5.8.5 Submenu System Panel

The ***System Panel*** is only for service purposes. Please only enter commands in the prompt, if our support asked you to do so.

FIG. 68 SUBMENU SYSTEM PANEL



5.8.6 Submenu Firmware Download

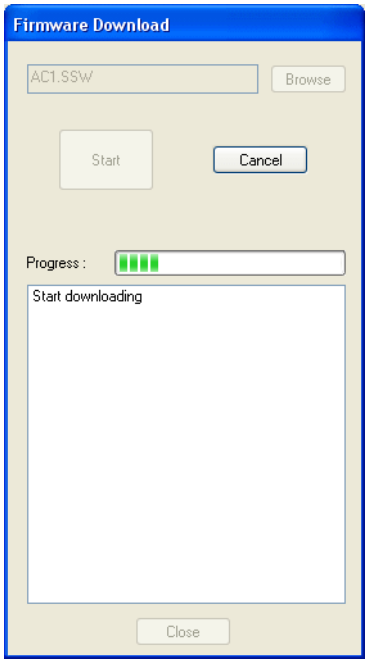
The Firmware required for the *MAGIC DC7/AC1* system is always included in the PC software. Via the ***Firmeware Download*** the firmware can be comfortably loaded on the system.

Via the ***Browse*** button you select the firmware file. The file is always stored in the directory in which you installed the *MAGIC DC7/AC1* application. The standard installation directory is:

C:\Programme\MAGIC DC7 & AC1

The name of the firmware file is „***ac1.ssw***".

FIG. 69 FIRMWARE DOWNLOAD



Please press the ***Start*** button to load the firmware on your system. The ***Progress*** bar shows the status of the download. After about three minutes the download will be finished. If the download had been successful, a message is displayed. After a confirmation the system executes a reset.

NOTE

If a download had been faulty, you can simply switch off the unit and then switch it on again. The new software is only written in the flash memory, if a download had been successful. Otherwise the old firmware is maintained.

5.8.7 Submenu Create 15-kHz Telephone Mixer Presets

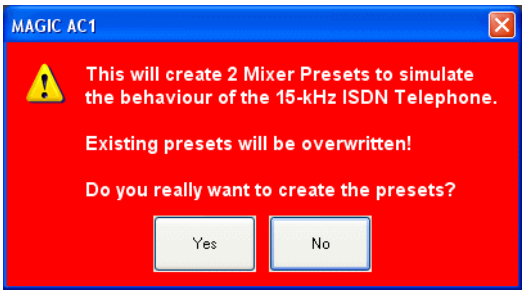
The function ***Create 15-kHz Telephone Mixer Presets*** allows you to work with the *MAGIC DC7/AC1* almost as with the *15-kHz ISDN Telephone* respectively, the old *PKI 7-kHz ISDN Telephone*. These systems offered a simple switching between the handset and the Audio interface with only one keystroke. First, the user could talk to his partner via the telephone handset and then start an external Audio transmission by pressing the Audio button at the telephone.

This functionality is also offered by *MAGIC DC7/AC1* if two Mixer Presets (see CHAPTER , page 44) are created. One preset is used to switch to a handset or headset and a second preset is used to switch to the Audio inputs/outputs. The presets can be adjusted according to your requirements later on.

First, please create the two presets by selecting the submenu ***Create 15-kHz Telephone Mixer Presets***.

Since already existing mixer presets are overwritten by this action, a warning is displayed.

FIG. 70 WARNING WHEN MIXER PRESETS ARE CREATED



If you agree to create the presets (***YES***), the Mixer Presets ***Handset*** and ***Audio*** are created.

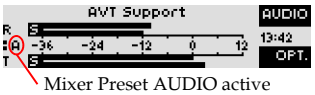
TIP

The settings of both Mixer Presets can be controlled and changed via the submenu ***Extras → Audio Mixer***.

The switching between the two Mixer Presets during a connection is made by pressing the -button.

Please assign the two Mixer Presets to the -button, by clicking on them (***Handset*** and ***Audio***) under ***Configuration → MAGIC AC1 (MAGIC DC7) → Basic Settings → General → Toggle Mixer Presets on Call/Accept Button***.

In the front display of the system, the **first** character of the currently activated mixer preset is displayed.



Mixer Preset AUDIO active

Mixer Preset HANDSET active

NOTE

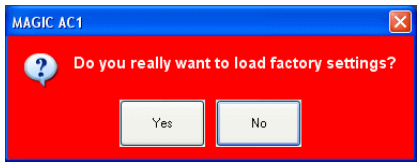
Please note that depending on the microphone you use, in certain cases you must activate the phantom power and the limiter via ***Configuration → MAGIC AC1 (MAGIC DC7) → Basic Settings → Headset Interface*** (see CHAPTER 5.7.2.3.3).

5.8.8 Submenu Set Factory Settings

Via the submenu ***Factory Settings*** all settings are reset to the factory settings.

For safety reasons a confirmation is required.

FIG. 71 CONFIRMATION TO SET FACTORY SETTINGS



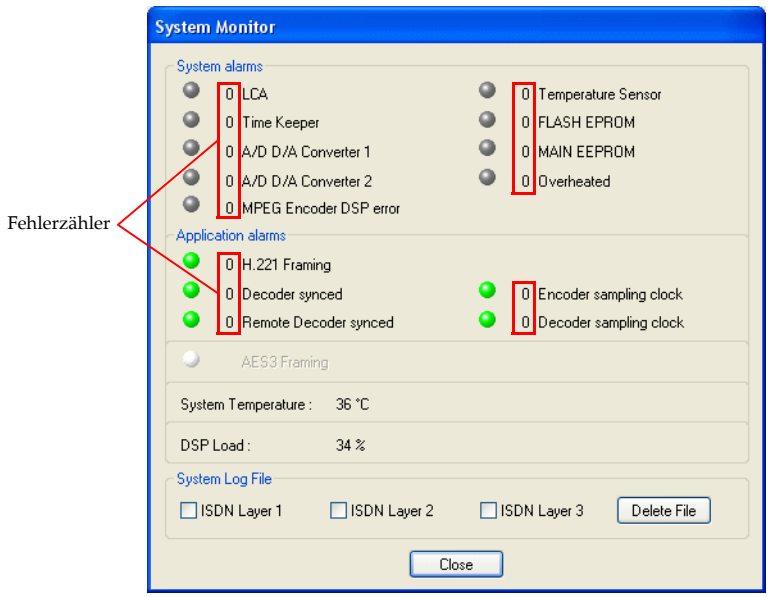
NOTE The telephone book, Presets, Transmission Modes and Mixer settings are not deleted.

5.9 Menu Extras

5.9.1 Submenu System Monitor

Via the menu ***System Monitor*** you receive all information about the status of the system.

FIG. 72 SUBMENU SYSTEM MONITOR



- Under ***System alarms*** all possible system alarms are displayed. A red LED signals a currently existing alarm. It is also displayed how often the alarm occurred since the unit has been switched on.

NOTE

If an alarm occurs several times or for a longer period of time, please disconnect the system from electricity. If you switch on the unit and the alarm occurs again, there is probably a hardware defect.

The following alarms are signalled:

- ***LCA (Logic Cell Array)***: The communication with a programmed component is faulty.
- ***TIME KEEPER***: The communication with the integrated time keeper is faulty.
- ***A/D D/A Converter 1***: The communication with the first AD/DA Converter is faulty.
- ***A/D D/A Converter 2***: The communication with the second AD/DA Converter is faulty.
- ***MPEG Encoder DSP error***: The communication with the DSP module is faulty (only *MAGIC AC1*)
- ***Temperature Sensor***: The communication with the temperature sensor is faulty.
- ***FLASH EPROM***: The communication with the non-volantile memory is faulty. Settings cannot be stored or read.
- ***MAIN EEPROM***: The communication with the non-volantile memory is faulty. Settings cannot be stored or read.

– ***Overheated***: The systems sets this alarms if the system temperature is higher than 57°C. Please disconnect the system from electricity or cool down the ambient air temperature.

TIP

You can also configure a system alarm as relay output (see page 78).

- Under ***Application alarms*** all possible application alarms are displayed. A red LED signals a currently existing alarm. It is also displayed how often the alarm occurred since the unit has been switched on.

  – ***H.221 Framing***: If the ITU-T J.52 inband signalling is used, faulty H.221 frames are displayed and filed.

  – ***Decoder synced***: This alarm occurs if the local decoder is not synchronised.

  – ***Remote Decoder synced***: This alarm signals that the remote decoder is not synchronised. It is only analysed if the ITU-T J.52 signalling is used between ***MAGIC*** Audio codecs.

  – ***Encoder sampling clock***: This alarm is currently not analysed.

  – ***Decoder sampling clock***: This alarm occurs when a sampling frequency of 44.1 kHz is signalled in the ISO/MPEG data stream. This sampling frequency cannot be decoded by the ***MAGIC AC1***.

  – If the optional, digital Audio output is selected, but no digital Audio signal is connected to **AUDIO1/AES/LEFT IN**, the ***AES3 Framing*** alarm occurs.

  – The actual system temperature can be found under ***System Temperature***. The temperature is measured in °C. A normal system temperature lies around 30...40°C.

  – Under ***DSP Load*** the load of the system is displayed. A normal DSP load is 30...60%.

- Under ***System Logfile*** a detailed ISDN logfile can be generated.

  – ***ISDN Layer 1***: (Physical Layer): All messages which concern the physical activation/deactivation of the ISDN interface are saved in Layer 1.

  – ***ISDN Layer 2***: (Data Link Layer): The Data Link Layer is responsible for packing the data from the physical layer into frames. It can detect and/or correct errors and manages the data flow between nodes. This layer is only to be activated for logging if problems are supposed to occur. Please notice that if it is activated every 8 seconds an entry is generated and therefore the memory is filled very fast.

  – ***ISDN Layer 3*** (Network Layer): The Network Layer handles the routing of the data (sending it in the right direction to the right destination on outgoing transmissions and receiving incoming transmissions at the packet level). For the logfile, this layer is the most important one since all connection data is recorded here.

  – The logfile can be deleted by pressing the ***Delete File*** button. For safety reasons a confirmation is required.

The system stores all messages of the activated ***ISDN Layer***. The internal memory capacity is 128-kByte[1]. The data is stored in a cyclic way.

NOTE

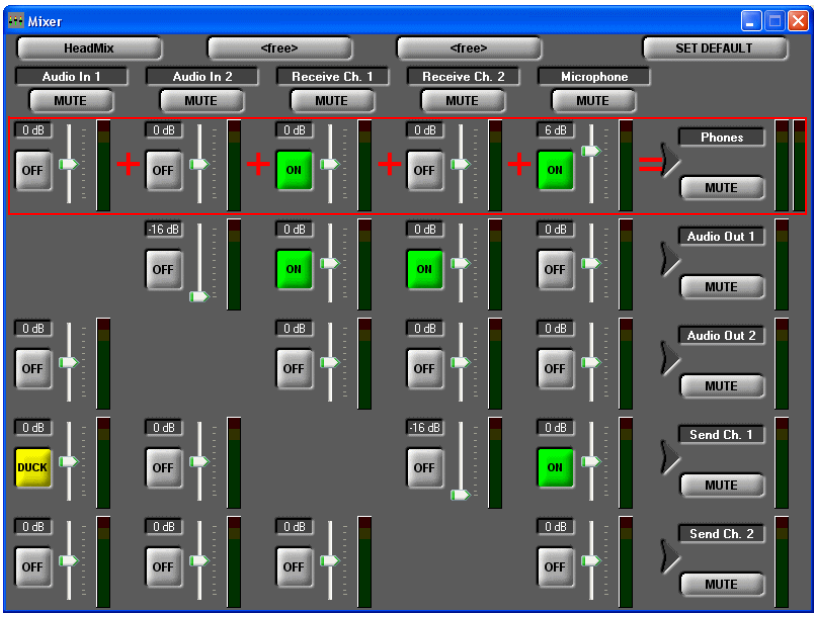
The data can be analysed with the ***Option: Remote Control Software*** (see CHAPTER 8.2, page 120). Our support is also able to read the data remotely. If you experience problems with your ISDN connection, please activate the desired ISDN Layer of the system logfile enabling us to analyse them.

5.9.2 Submenu Audio Mixer

Via ***Extras*** → ***Audio Mixer*** you can display an overview of the Audio Mixer settings. The settings are displayed as matrix. All Audio sources in one line which are marked with ***ON*** are mixed to the desired Audio output equipment.

For each source the Audio level can be adjusted individually within the range of ***-16...+16 dB***.

FIG. 73 AUDIO MIXER - OVERVIEW



The ***MUTE*** function is available for each Audio source and each Audio output device separately.

Likewise, all ***Mixer Presets*** can be selected and controlled.

With the ***SET DEFAULT*** button the mixer is reset to the default settings:

- all levels to 0 dB
- Receive Channel 1 → Audio Out 1
- Receive Channel 2 → Audio Out 2
- Audio In 1 → Send Channel 1
- Audio In 2 → Send Channel 2

[1] An entry of the ISDN protocol is about 15 Byte on average.

5.9.3 Submenu S_0 Monitor

NOTE

The submenu ***S0 Monitor*** is only displayed if the fee-based ***Option: Remote Control Software*** (see CHAPTER 8) is enabled and the USB dongle is plugged in.

Further details concerning the functions of the S_0-Monitor can be found under CHAPTER 8.2, Page 120.

5.10 Menu Help

5.10.1 Submenu About MAGIC DC7/AC1

In the ***About MAGIC DC7/AC1*** dialogue, you can find the software versions of the PC Software (***PC Version***) and of the system (***Firmware Version***). Furthermore, you can find our contact information.

FIG. 74 SUBMENU ABOUT MAGIC DC7/AC1

6 OPTION: MAGIC DC7/AC1 KEYPAD

6.1 MAGIC DC7/AC1 Keypad Basic

The optional ***MAGIC DC7/AC1 Keypad Basic*** (order number 800210) allows the user to control the system without a PC and without using the front display and keypad.

NOTE

To use the keypad with ***MAGIC DC7/AC1***, you need to configure the interface parameters of the RS232 interface in the following way: ***9600 Baud, no parity***. With the ***Quick Menu*** function you reach the setting of the RS323 parameters directly via the key sequence ***MENU 14***. Please select ***KEYPAD 9600, NONE***.

6.2 MAGIC DC7/AC1 Keypad Advanced

With the optional ***MAGIC DC7/AC1 Keypad Advanced*** (order number 800230) the integrated Audio mixer can also be controlled - which is not possible with the Basic version.

NOTE

To use the keypad with ***MAGIC DC7/AC1***, you need to configure the interface parameters of the RS232 interface in the following way: ***9600 Baud, no parity***. With the ***Quick Menu*** function you reach the setting of the RS323 parameters directly via the key sequence **MENU 14**. Please select **KEYPAD 9600, NONE**.

The following figure shows the operating elements of the Keypad.

FIG. 75 KEY ASSIGNMENT MAGIC DC7/AC1 KEYPAD ADVANCED

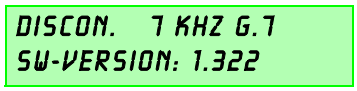
Please connect the 9-pole SUB-D connector of the ***MAGIC DC7/AC1 Keypad*** with the ***RS232*** interface (see CHAPTER A5.2, Page 142) of the ***MAGIC DC/AC1*** System. Since the ***MAGIC DC7/AC1 Keypad*** requires its own power supply, you must connect the 230V external power supply included in the delivery with a power socket and the 6-pole Mini-DIN female of the external power supply with the 6-pole Mini-DIN connector (violet) of the breakout cable. The 8-pole Mini-DIN connector (black or white) must be plugged into the socket of the ***MAGIC DC7/AC1 Keypad***. If everything is connected correctly, the display is now illuminated. After switching on the system[1], e.g. the status message on the left hand side is displayed after booting.

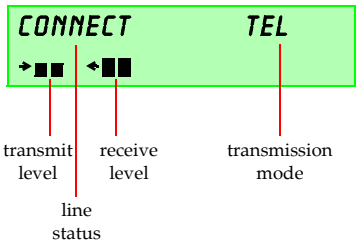
```
DISCON.   7 KHZ G.7
INTERFACE: ISDN
```

[1] If the system was already switched on, please press the „C“ or „AC“ button once

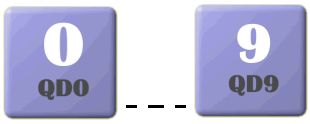
6.3 Functions of the Keypad

Below the functions of the keypad are listed in table form.

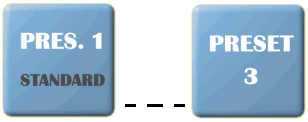




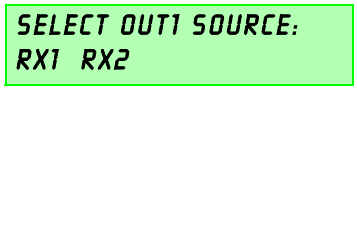
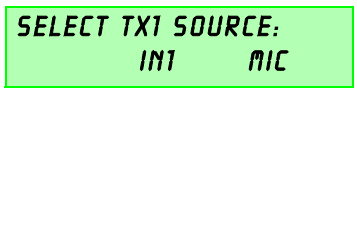
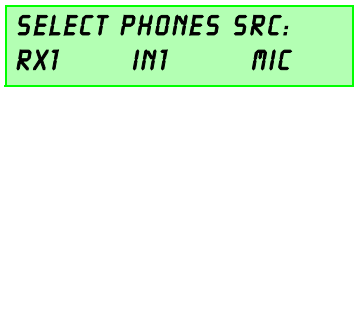
TAB. 3 FUNCTIONS OF KEYS

Key	Function
	Numerical block to enter the calling number *0*.. *9*. When the *SHIFT* button (^ symbol in the display) is pressed, a saved quick dial number *QD0* ... *QD9* is called. If no calling number is programmed, the message *NO QD ASSIGNED!* (no quick dial number assigned!). The *SHIFT* mode is left automatically after a quick dial key is pressed.
	* key to enter special function at a telephone system. When the *SHIFT* button (^ symbol in the display) is pressed, the current Firmware *VERSION* of the system is displayed. The *SHIFT* mode is left automatically after the key is pressed.
	# key to enter special function at a telephone system. When the *SHIFT* button (^ symbol in the display) is pressed, the display switches between calling number and level meter in the second line. The *SHIFT* mode is left automatically after the key is pressed.
	Via these keys, a telephone book entry can be selected. The cursor can be moved up and down in steps of 1. When the *SHIFT* button (^ symbol in the display) is pressed, the cursor moves in steps of 5. The *SHIFT* mode is left automatically after the key is pressed.
	By pressing the button *AC* the entered calling number is deleted completely.
	By pressing the button *C* the last numerical character of the entered calling number is deleted.
	The button *MODE 1* allows you to select the transmission mode (see page 64) for the first connection. To select the next available mode, please press the key again (see CHAPTER 5.7.2.2.1, Page 64). Please note that if you use the ring buffer of the *Security* Option (see CHAPTER 10, Page 125), the transmission mode cannot be changed anymore.

TAB. 3 FUNCTIONS OF KEYS

Key	Function
	The button **MODE 2** allows you to select the *Telephone* or *7 kHz* transmission mode for the second connection. A second connection is only possible, if only one B channel is used for the first connection (see CHAPTER 5.7.2.2.1, Page 64).
DISC 15K. |CONN 7 K. |.78772245 	To establish a connection, please enter first the desired calling number. Then, select the required transmission mode with the **MODE 1/2** buttons. By pressing the buttons **CALL 1/2** the calling number is dialled. If the calling number consists of more than 8 numerical characters, the last eight characters plus a „.“ placed in front are displayed.
	By pressing the button **DROP 1** or **DROP 2**, connection 1 or connection 2, respectively, is dropped.
DISCON. 15KHZ 1B PRESET LOAD OK! 	With the **PRESET 1**... **PRESET 3** buttons, predefined Audio mixer configurations can be loaded (see CHAPTER 5.9.2, Page 103). When the **SHIFT** button (**^** symbol in the display) is pressed, the **STANDARD** configuration for the Audio mixer is loaded by pressing the **PRESET 1** button. If no Preset is defined, the message **CANNOT LOAD PRESET!** is displayed. The **SHIFT** mode is left automatically after the key is pressed.
DISCON. 15KHZ 1B STORE PRES.: PRES./C 	To save an Audio mixer Preset or a quick dial number, respectively, please use the button **STORE PRESET QD**. Saving a **PRESET**: First please define the desired Audio mixer settings with the buttons for the Audio interface (e.g. **AUDIO OUT 1**) and the Audio source (e.g. **SELECT RX1**). Press the **STORE PRESET QD**. button. The message **STORE PRES.: PRES./C**. is displayed. Now press the desired Preset button **PRESET 1**... **PRESET 3**. To cancel the saving process please press the **C** button. Saving a quick dial number (**QD**): First please neter the calling number, which you want to save as quick dial, via the **0**...**9** buttons. Press the **STORE PRESET QD** button. The message **STORE QD: QD/C** is displayed. Now, please press the desired quick dial key **QD0** ... **QD9**. To cancel the saving process please press the **C** button.
DISCON. 15KHZ 1B ^ STORE QD: PRESS QD/C 	With the **SHIFT/OK** button you reach the „second level“functions of keys (grey labelling) or you can go back to the standard display, respectively. If **SHIFT** is activated, the **^** symbol is displayed.

TAB. 3 FUNCTIONS OF KEYS

Key	Function
	Via the *AUDIO OUT 1* or the *AUDIO OUT 2* button, respectively, you select the Audio sources which are to be available at the output of the Audio interface ***Audio 1*** or ***Audio 2***, respectively. The following Audio sources can be selected via the Audio source keys (dark blue): • *RX1*: receive signal connection 1 • *RX2*: receive signal connection 2 • *MIC*: local microphone signal Please note, that several Audio sources can only be selected at the same time for one Audio interface, if the fee-based ***Option: Mixer Tool Plug-In*** (see CHAPTER 7, Page 115) is enabled for your system. Otherwise, the Audio source which you selected most recently is activated.
	Via the *AUDIO TX 1* or the *AUDIO TX 2* button, respectively, you select the Audio sources which are to be activated for the Audio transmission. The following sources can be selected via the Audio source keys (dark blue): • *IN1*: Audio input signal ***Audio 1*** • *IN2*: Audio input signal ***Audio 2*** • *MIC*: microphone signal Please note, that several Audio sources can only be selected at the same time for one transmission, if the fee-based ***Option: Mixer Tool Plug-In*** (see CHAPTER 7, Page 115) is enabled for your system. Otherwise, the Audio source which you selected most recently is activated.
	Via the *PHONES* button, you select the Audio sources which you want to hear on the headphones. The following sources can be selected via the Audio source keys (dark blue): • *RX1*: receive signal connection 1 • *RX2*: receive signal connection 2 • *IN1*: Audio input signal Audio 1 • *IN2*: Audio input signal Audio 2 • *MIC*: microphone signal Please note, that several Audio sources can only be selected at the same time for the phones, if the fee-based ***Option: Mixer Tool Plug-In*** (see CHAPTER 7, Page 115) is enabled for your system. Otherwise, the Audio source which you selected most recently is activated.

TAB. 3 FUNCTIONS OF KEYS

Key	Function
SELECT MONITOR SRC: MONITOR: MIC	 With the *MONITOR* button you can monitor all Audio signals of the system via the headphones. The Audio signals are available in their actual levels. The following sources can be selected via the Audio source keys (dark blue): • *RX1*: receive signal connection 1 • *RX2*: receive signal connection 2 • *IN1*: Audio input signal Audio 1 • *IN2*: Audio input signal Audio 2 • *MIC*: microphone signal Please note that only one Audio source at a time can be selected for the monitoring.
DISCON. 15KHZ 1B PHONES RATIO: +8 DB	 The *RATIO* level buttons allow you to adapt the transmit/receive signal level ratio of the headphones within the range of -16 dB ... +16 dB.
DISCON. 15KHZ 1B PHONES LEVEL: -20 DB	 Via the *PHONES* level buttons you can adjust the headphones level within the range of -40 dB ... 0 dB.
DISCON. 15KHZ 1B INPUT LEVEL: +6 DB	 With the *AUDIO IN* level button you can vary the Audio input level within the range of -16 dB ... +16 dB.
DISCON. 15KHZ 1B MIC LEVEL: 0 DB	 Via the *MICRO* level button you can adjust the microphone amplifier within the range -16 dB ... +16 dB.
DISCON. 15KHZ 1B M INTERFACE: ISDN	 The *MUTE MICRO* button mutes the microphone. A blinking *M* is displayed (in first line on the right side)

6.4 ISDN alarm messages in the display

If the connection cannot be established, ISDN provides a variety of alarm messages. Please have a look at the table below for an explanation. The LCD display indicates the relevant B channel first followed by the alarm message.

TAB. 4 ISDN ALARM MESSAGES

Alarm message	Description
Unassigned number	The number is not known by the ISDN network. Please check your entry.
No route	Usually, the ISDN network is overloaded when this alarm message occurs. Please dial again.
Normal call clearing	The connection has been dropped.
User busy	The remote side is busy.
No user responding	The partner is not responding. Maybe the call was made with the wrong service indicator.
Call rejected	The call was rejected. Maybe the remote side rejected your call.
Number changed	The number you called has been changed.
Destination out of order	The remote side is not ready. Maybe the system is turned off.
Invalid number format	Invalid number format.
No channel available	Maybe both B channels are already busy (also with e.g. other systems connected to the ISDN Bus).
Network out of order	Please check your ISDN connection
Service indicator error	The required service indicator is not available.
ISDN error: x	General ISDN error because of reason x

7 OPTION: MIXER TOOL PLUG-IN

The fee-based Option ***Mixer Tool Plug-In*** (order number: 430201) allows you to mix all available Audio signals. Without this option, you can only switch between the Audio output devices and the Audio sources so that only one input or output, respectively, is active at a time.

The ***Auto Ducking*** Function is also only available if this option is enabled (see Auto Ducking Parameter, Page 77).

8 OPTION: REMOTE CONTROL SOFTWARE

The fee-based ***DC7/AC1 Remote Control Software*** enables you to access the ***MAGIC DC7/AC1*** System from any PC with an integrated ISDN card. A local ***MAGIC DC7/AC1*** System is not required. The software option is protected by an USB Dongle. A special highlight is the integrated ***ISDN S_0 Monitor*** which allows a detailed analysis of the D channel- locally as well as remotely.

8.1 Remote configuration of a MAGIC DC7/AC1 System

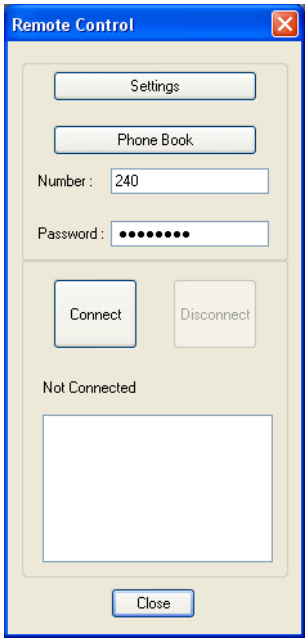
NOTE

The Remote Control Function is only available in the ***ISDN*** operating mode. The USB Dongle included in the delivery must be connected to your PC and an ISDN card[a] needs to be installed.

a We recommend to use an ISDN card from the company AVM (e.g. Fritz!Card)

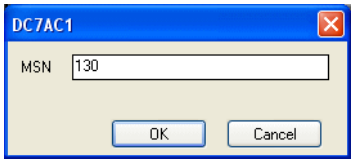
The remote control function can be activated via the menu ***Administration*** → ***Remote Control***.

FIG. 76 REMOTE CONTROL



Under ***Settings,*** please enter your **own *MSN*** if required. The MSN is only necessary, if you operate several systems at your ISDN Bus. However, some PABXs always require the entry of an MSN.

FIG. 77 MSN SETTINGS FOR REMOTE CONTROL



Under ***Number*** you enter the calling number of the remote system which you want to control remotely or you select a number from the phone book by pressing the ***Phone Book*** button.

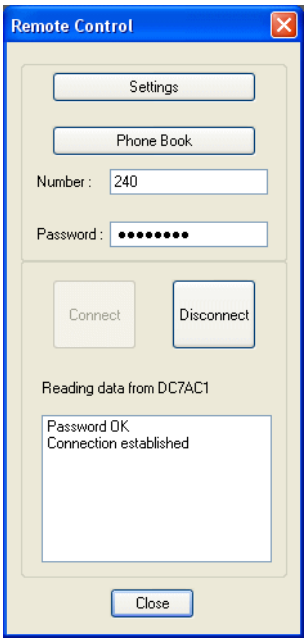
If the remote side is protected by a Remote Password, you need to enter this password under ***Password*** to get access to the remote system (see CHAPTER 5.7.2.3.5).

ATTENTION

If the remote system is additionally protected by authorised calling numbers, you must access the remote side by the ISDN line whose calling number is entered in the list. The transmission of the calling number has to be enabled for this line.

The connection with the remote side is established by pressing the ***Connect*** button and dropped by pressing the ***Disconnect*** button. The connection status is displayed in the status window below. If the connection has been established successfully, the message ***Remote control online*** is displayed (see figure below). Now you can close the ***Remote Control*** window.

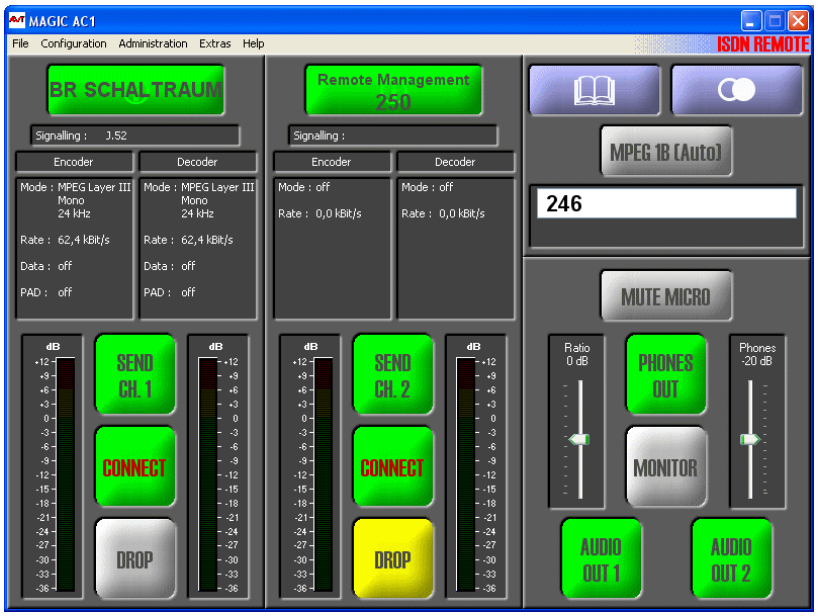
FIG. 78 REMOTE CONTROL ONLINE



The *MAGIC DC7/AC1* System can now be controlled and configured as usual. Please note that one of the two B channels is busy with the remote control so that the user can only work with one channel. The remote side can stop the remote control at any time.

The main window of the *MAGIC DC7/AC1* Software displays the existing connection under the name ***Remote Management*** on both sides. To stop the remote control, please press the ***DROP*** button blinking in yellow or open the ***Remote Control*** window and press the button ***Disconnect***.

FIG. 79 DISPLAY DURING REMOTE CONTROL



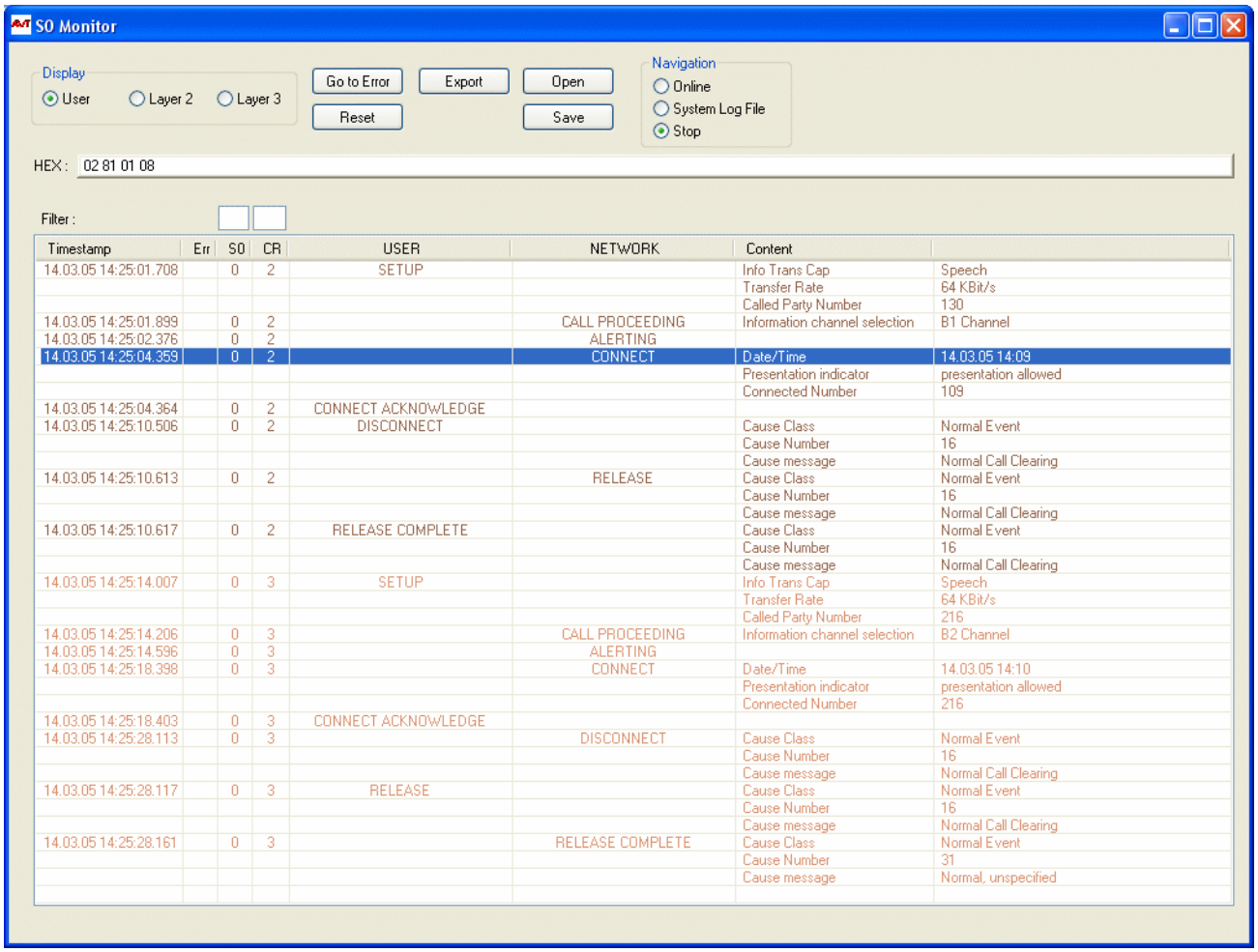
NOTE

For security reasons, the settings for ***Remote Control*** (see CHAPTER 5.7.2.3.5) and ***Login*** (see CHAPTER 5.7.2.5) are not visible on the remote side and cannot be changed.

8.2 The integrated S_0 Monitor

The integrated S_0 Monitor allows a detailed analysis of the D channel protocol.

FIG. 80 S_0 MONITOR USER



- The D channel protocol can be analysed ***Online*** or via the ***System Log File*** stored in the system. You can select the desired operating mode under ***Navigation***. ***Stop*** stops the current logging.
- The option ***Display*** switches between the ***User***, ***Layer 2*** and ***Layer 3*** display. The ***User*** view displays a summary of the most important information. Of course, for experts the options ***Layer 2*** and ***Layer 3*** are also informative.
- Errors in the log file are displayed red-shaded. Via the button ***Go to Error*** the next error in the log file is displayed.
- The button ***Reset*** resets the display window.
- With the use of the ***Export*** key the log file can be exported in the currently selected read-out as RTF (Rich Text Format). This file can be read with MS WORD for instance.
- Via the ***Open*** button a previously stored log file can be opened and analysed offline.

- By pressing the button ***Save*** the current log file is stored as binary file.
- In the line ***HEX*** the binary data of the currently selected log file line is displayed in hexadecimal form.
- Using ***Filter*** you can filter the log file for certain criteria. ***S0*** selects the ISDN interface of the system. For the *MAGIC DC7/AC1* this value must always be „**0**“ respectively be empty since the system incorporates only one ISDN interface.
  Using the filter ***CR*** (Call Reference) you can display all available entries for a transaction. Additionally, the colour in which the entries are displayed is changed for each new Call Reference.

FIG. 81 S_0 MONITOR LAYER 2

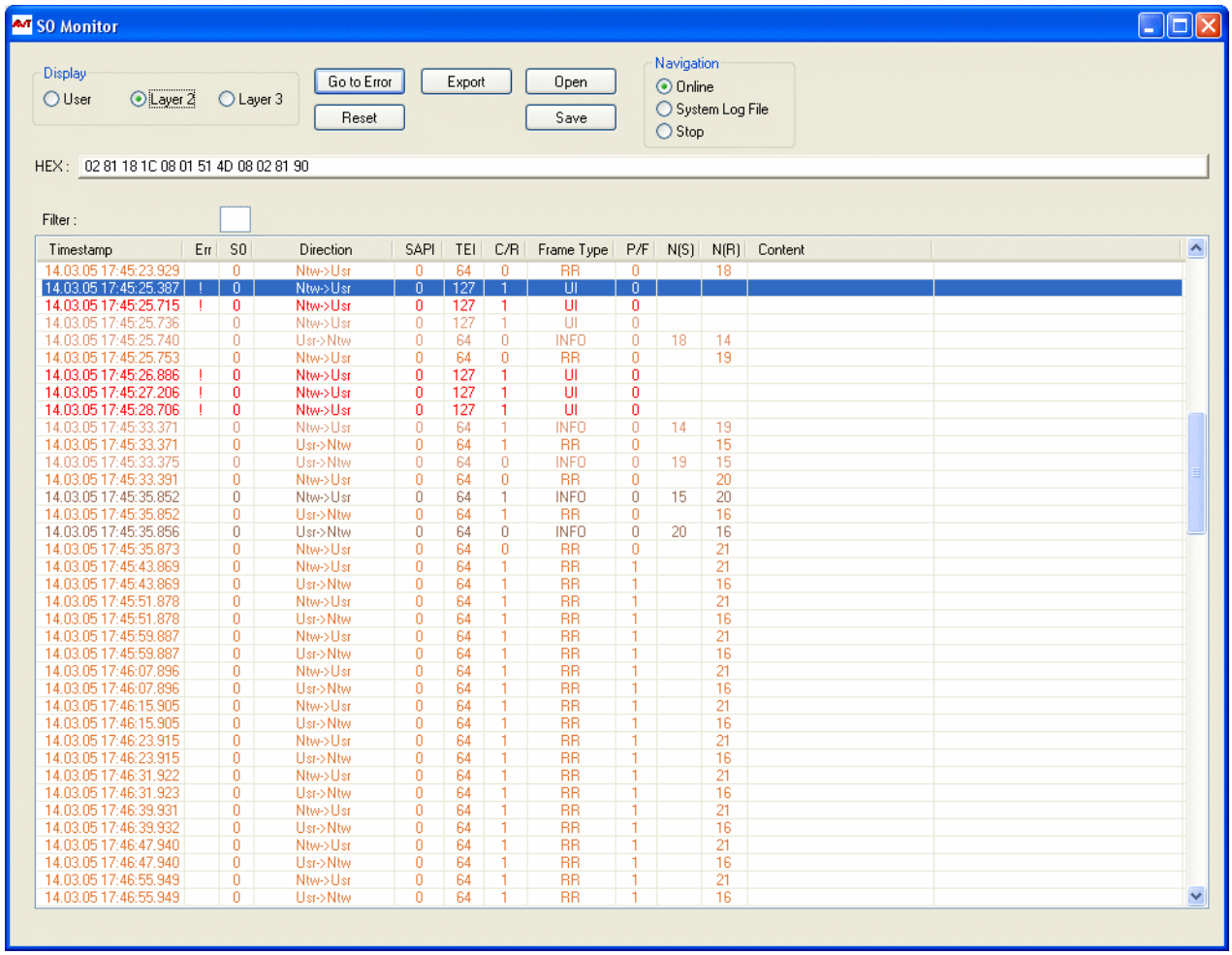
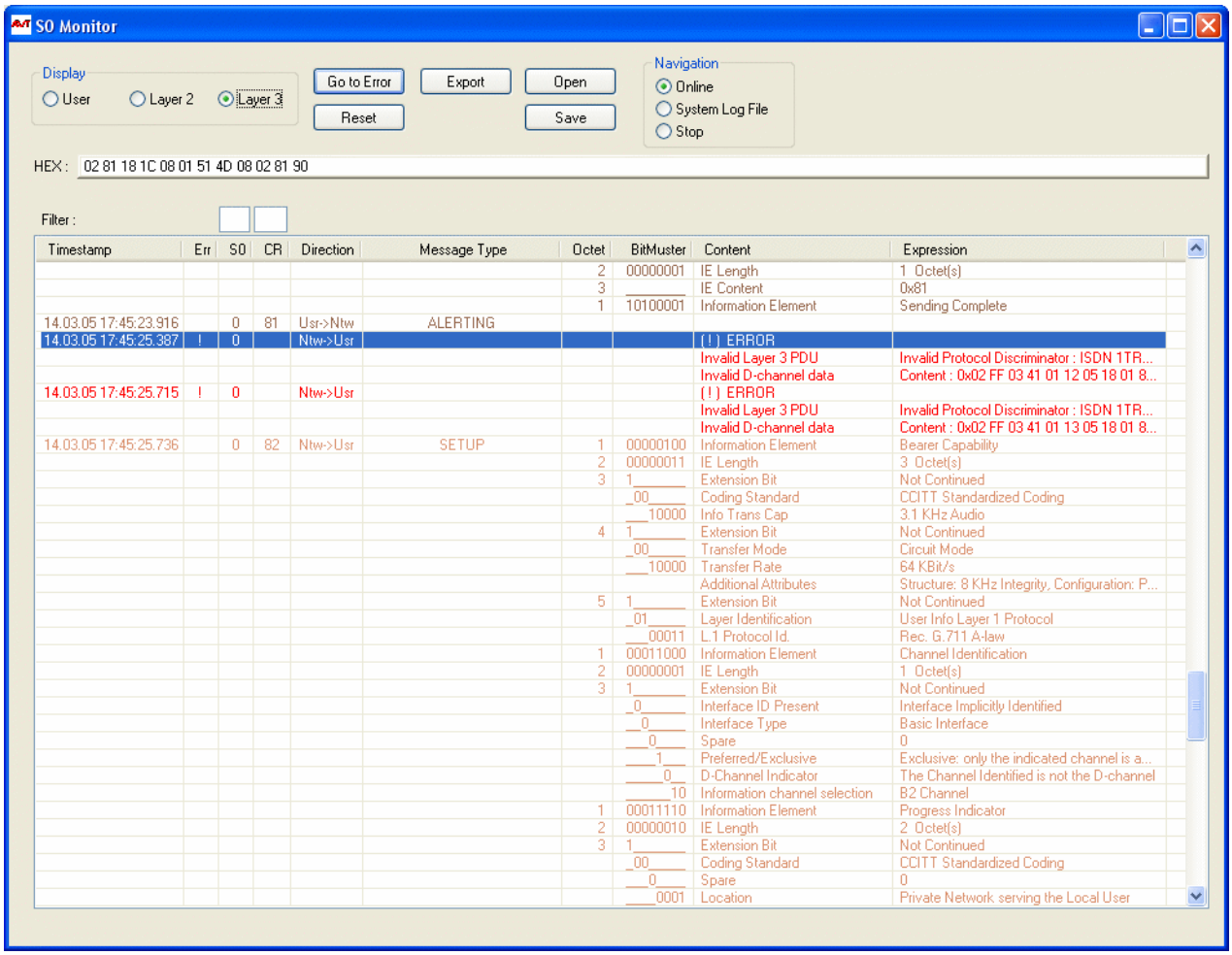


FIG. 82 S_0 MONITOR LAYER 3

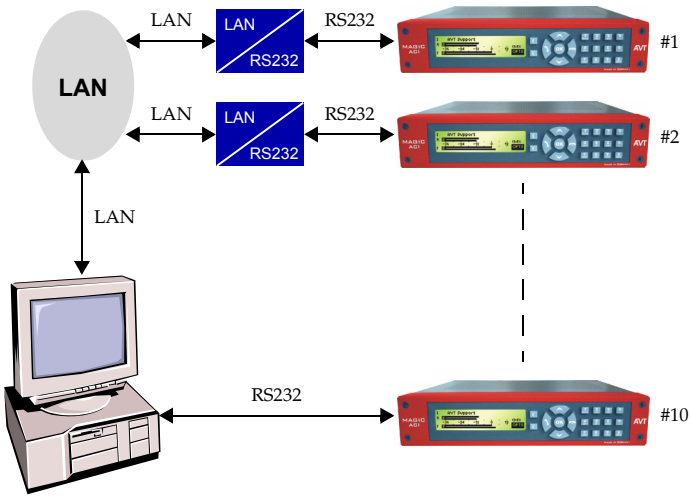


Timestamp	Err	S0	CR	Direction	Message Type	Octet	BitMuster	Content	Expression
						2	00000001	IE Length	1 Octet(s)
						3	_____	IE Content	0x81
						1	10100001	Information Element	Sending Complete
14.03.05 17:45:23.916		0	81	Usr->Ntw	ALERTING				
14.03.05 17:45:25.387	!	0		Ntw->Usr				(!) ERROR	
								Invalid Layer 3 PDU	Invalid Protocol Discriminator : ISDN 1TR...
								Invalid D-channel data	Content : 0x02 FF 03 41 01 12 05 18 01 8...
14.03.05 17:45:25.715	!	0		Ntw->Usr				(!) ERROR	
								Invalid Layer 3 PDU	Invalid Protocol Discriminator : ISDN 1TR...
								Invalid D-channel data	Content : 0x02 FF 03 41 01 13 05 18 01 8...
14.03.05 17:45:25.736		0	82	Ntw->Usr	SETUP	1	00000100	Information Element	Bearer Capability
						2	00000011	IE Length	3 Octet(s)
						3	1_____	Extension Bit	Not Continued
							_00____	Coding Standard	CCITT Standardized Coding
							___10000	Info Trans Cap	3.1 KHz Audio
						4	1_____	Extension Bit	Not Continued
							_00____	Transfer Mode	Circuit Mode
							___10000	Transfer Rate	64 KBit/s
								Additional Attributes	Structure: 8 KHz Integrity, Configuration: P...
						5	1_____	Extension Bit	Not Continued
							_01____	Layer Identification	User Info Layer 1 Protocol
							___00011	L1 Protocol Id.	Rec. G.711 A-law
						1	00011000	Information Element	Channel Identification
						2	00000001	IE Length	1 Octet(s)
						3	1_____	Extension Bit	Not Continued
							_0_____	Interface ID Present	Interface Implicitly Identified
							__0____	Interface Type	Basic Interface
							___0____	Spare	0
							____1___	Preferred/Exclusive	Exclusive: only the indicated channel is a...
							_____0__	D-Channel Indicator	The Channel Identified is not the D-channel
							_____10	Information channel selection	B2 Channel
						1	00011110	Information Element	Progress Indicator
						2	00000010	IE Length	2 Octet(s)
						3	1_____	Extension Bit	Not Continued
							_00____	Coding Standard	CCITT Standardized Coding
							___0____	Spare	0
							____0001	Location	Private Network serving the Local User

9 OPTION: MAGIC DC7/AC1 LAN

The fee-based option ***MAGIC DC7/AC1 LAN*** (order number: 430260) allows you to control and monitor up to ten ***MAGIC DC7/AC1*** Systems within a network.

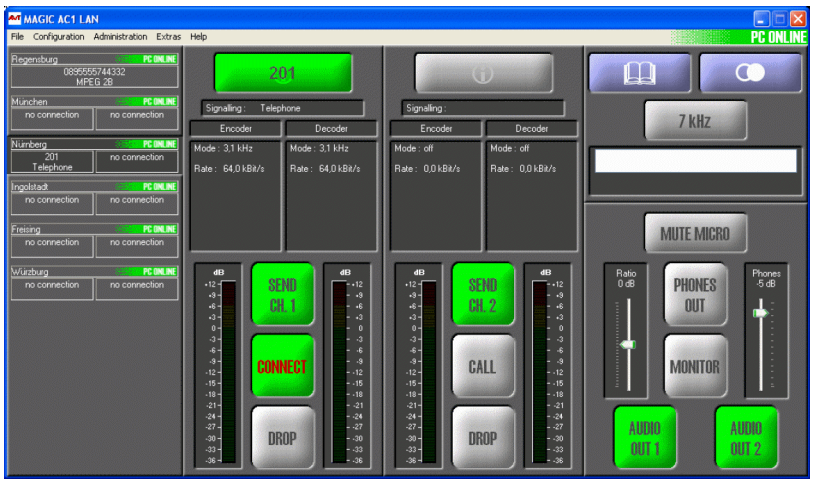
FIG. 83 APPLICATION WITH MAGIC DC7/AC1 LAN



The systems can be connected either directly via several serial interfaces or via RS232/LAN converters.

FIG. 84 MAIN WINDOW: CONTROL OF SEVERAL AUDIO CODECS

List of the available MAGIC DC7/AC1 Systems



On the left side of the main window, each Audio Codec installed within the network is displayed. In the status line, the name of the Codec and the PC status is displayed. Below, two fields inform you about the current connection status of the two available B channels. If a connection exists, the calling number and the coding procedure used are displayed.

FIG. 85 INFO FIELD OF ONE AUDIO CODEC

The detailed view and the control and configuration view you reach by clicking on the desired Codec on the left side.

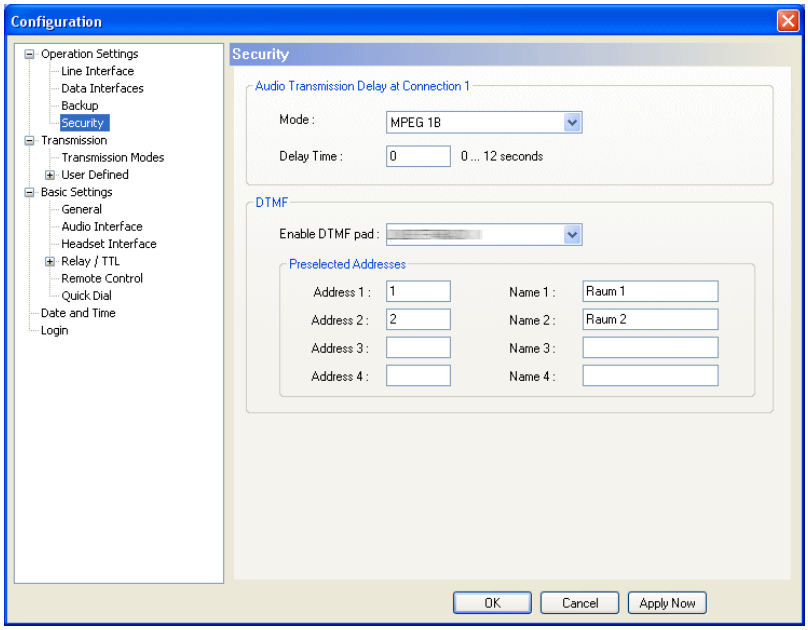
10 OPTION: SECURITY

Under ***Security***, an Audio ring buffer can be activated.

NOTE

This configuration dialogue is only available for *MAGIC AC1* Systems, if the fee-based Option *Security* (order number: 430240) is enabled.

FIG. 86 CONFIGURATION OF THE SECURITY OPTION



A typical application of this function is the event-triggered call, e.g. via a TTL contact (see CHAPTER 5.7.2.3.4, Page 78). Since the connection needs to be established and the systems need to synchronize, the real time transmission starts a few seconds after the event. In this way, important details could be lost. By activating the ring buffer, the signal is permanently buffered. If an event occurs, the signal is read out from the ring buffer and transmitted with the corresponding delay. In this way, no relevant Audio information is lost.

Audio Transmission Delay at Connection 1

- Under ***Mode*** please select the desired operating mode for the first connection.

ATTENTION

For a correct functioning, the same ***Mode*** **must** be set on both sides.

The following modes can be selected:

– ***OFF***: Audio ring buffer is switched off.

- ***Telephone***: Each telephone can be used as decoder
- ***7 kHz***: The Audio signal is coded with G.722 - 7 kHz
- ***MPEG 1B***: The Audio signal is coded with the ISO/MPEG Algorithm and J.52 signalling according to the settings in the dialogue ***Transmission Modes → MPEG Mode → 1B Mode***.
- ***MPEG 2B***: The Audio signal is coded with the ISO/MPEG Algorithm and J.52 signalling according to the settings in the dialogue ***Transmission Modes → MPEG Mode → 2B Mode***.
- ***MPEG 1B unframed***: The Audio signal is coded with the ISO/MPEG Algorithm without any further signalling according to the settings in the dialogue ***Transmission Modes → MPEG Mode → 1B Mode***.

NOTE

If a 1B connection (all modes except ***MPEG 2B***) is selected, you can dial in **in parallel on the second channel with a telephone or a 7-kHz Audio Codec** - independent from the coding. On this channel, the Audio signal can be monitored with 3,1 kHz (G.711) or 7 kHz (G.722) bandwidth in real time (no delay).

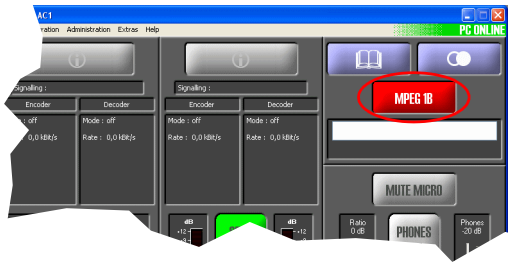
- Under ***Delay Time*** you select the desired size of the Audio ring buffer (in seconds). The signal is output with the delay you set here. Depending on the fact if you selected a 1 B or 2 B connection, you can set a maximum delay time of 12 seconds or 6 seconds, respectively.

DTMF

- Under ***Enable DTMF pad*** you can select your system for ***DTMF*** control (see special manual for MAGIC AC1 Security). The control window can be reached **during** a connection by pressing the ***Connect*** button.
- The configuration ***Preselected Addresses*** allows you to preselect up to 4 different addresses (***Address 1...4***), for which you can assign additionally alias names (***Name 1...4***).

In the main window, you recognise an activated Security Mode by a button displayed in red with which you can usually select the transmission mode. In the case of an activated Security Mode, the transmission mode cannot be changed anymore via this button.

FIG. 87 SECURITY MODE ACTIVATED



NOTE

Further details concerning the ***Security*** Mode can be found in the special manual for *MAGIC AC1 Security*.

A 1 MENU STRUCTURE

On the following pages you will find the complete menu structure if you select *ENGLISH* as menu language

From the main menu you reach the phone book directly via the softkey *NAMES*. With the use of the softkey *MENU* you get to the configuration of the system.

The configuration menu is divided in five submenus:

- *SYSTEM SETTINGS*
- *OPERATION SETTINGS*
- *PRESETS*
- *STATUS INFORMATION*
- *LOGIN*

NOTE Please note that depending on the selected operating mode some menu items are not displayed.

If you use an Administrator and/or User Password, the display looks as it is described below:

(1) Only **Administrator Password** configured: The password must be entered for changes to the basic settings and operation settings only. Immediately available menus:

- *PRESETS*
- *STATUS INFORMATION*
- *LOGIN*

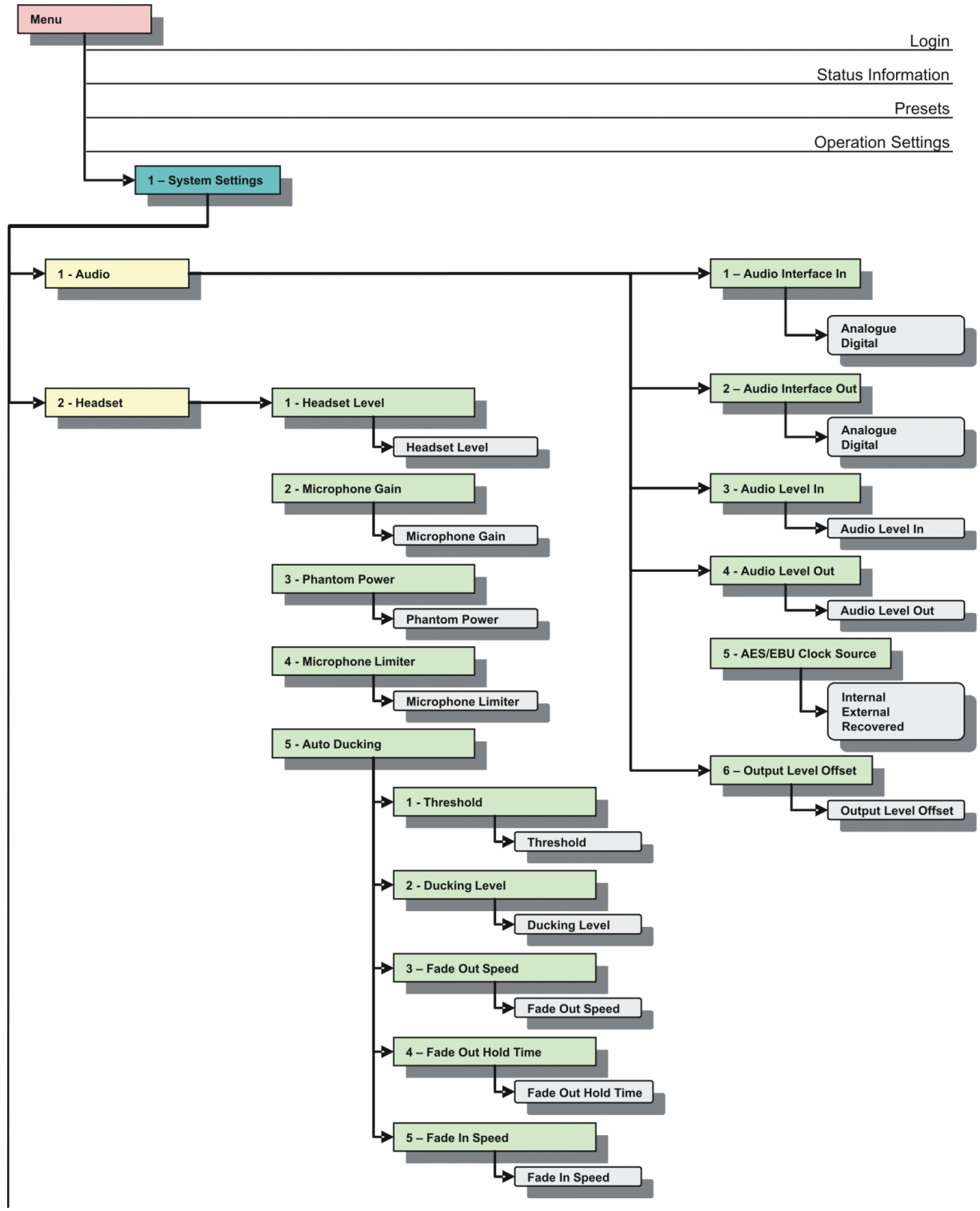
(2) Only **User Password** configured (instead of *MENU, LOGIN* is displayed): The password must always be entered. Subsequently, all menus are available.

(3) **User** and **Administrator Password** configured (instead of *MENU LOGIN* is displayed):

- **User Password** is entered: The menus *PRESETS*, *STATUS INFORMATION* and *LOGIN* are available
- **Administrator Password** is entered: All menus are available.

NOTE There is no differentiation between upper and lower case for the password entry.

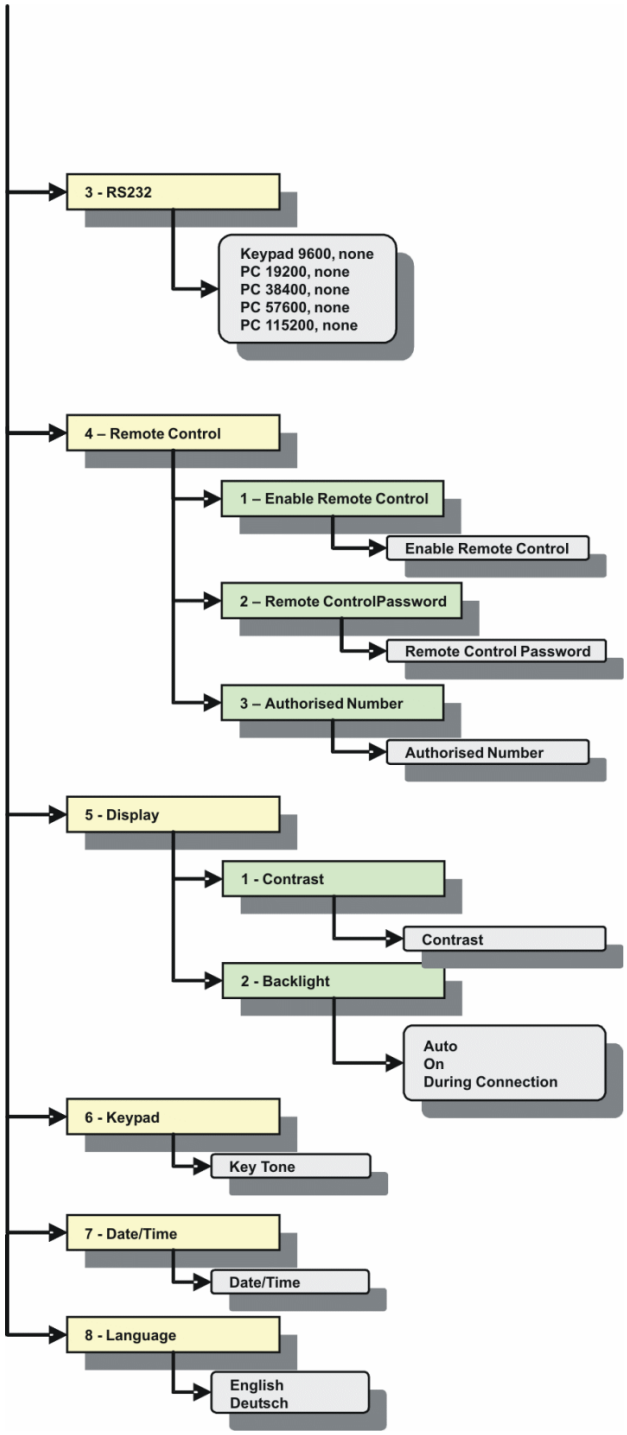
A1.1 System Settings



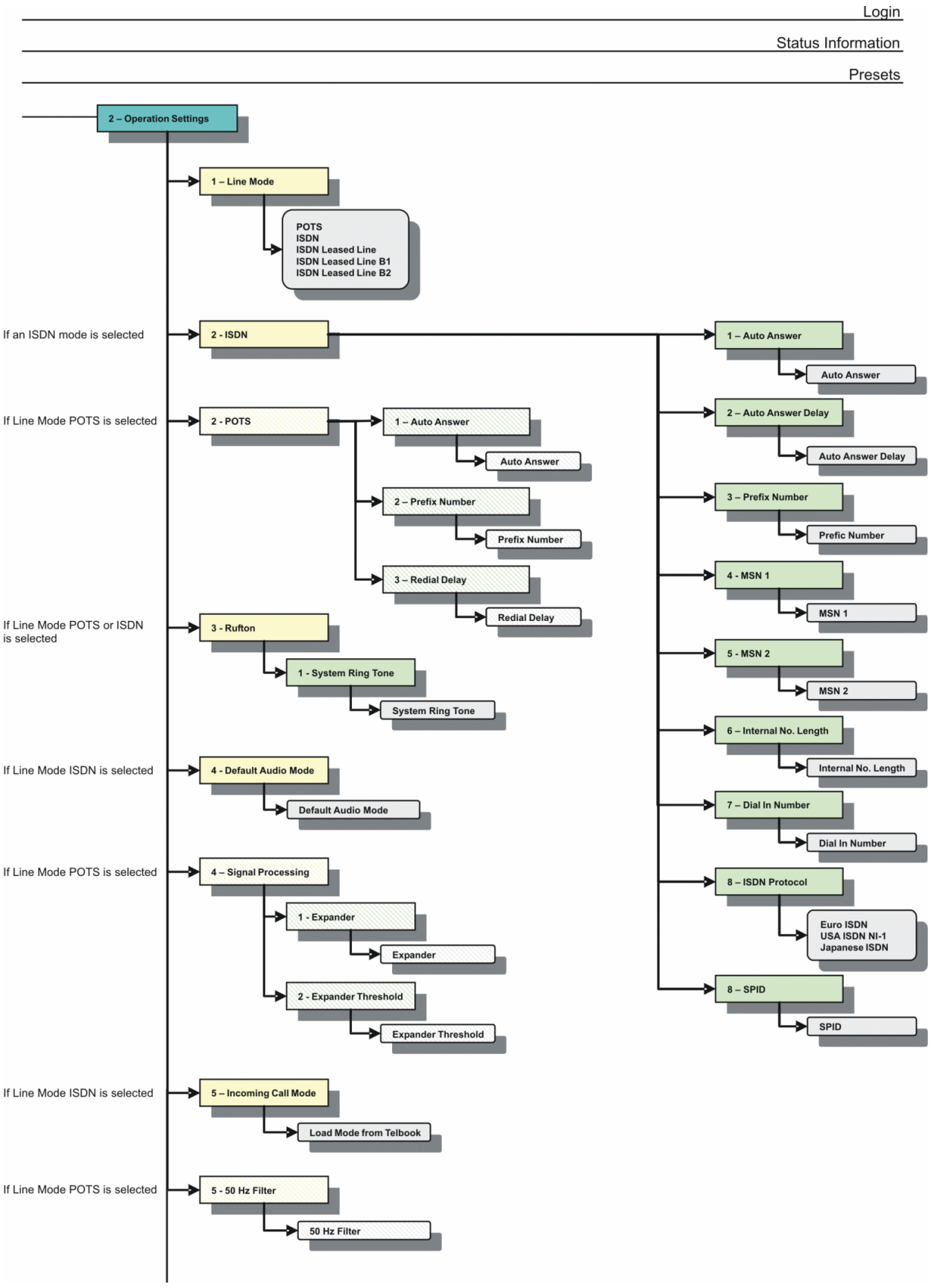
RS232 (see next page)

Continuation System Settings

Headset (see previous page)



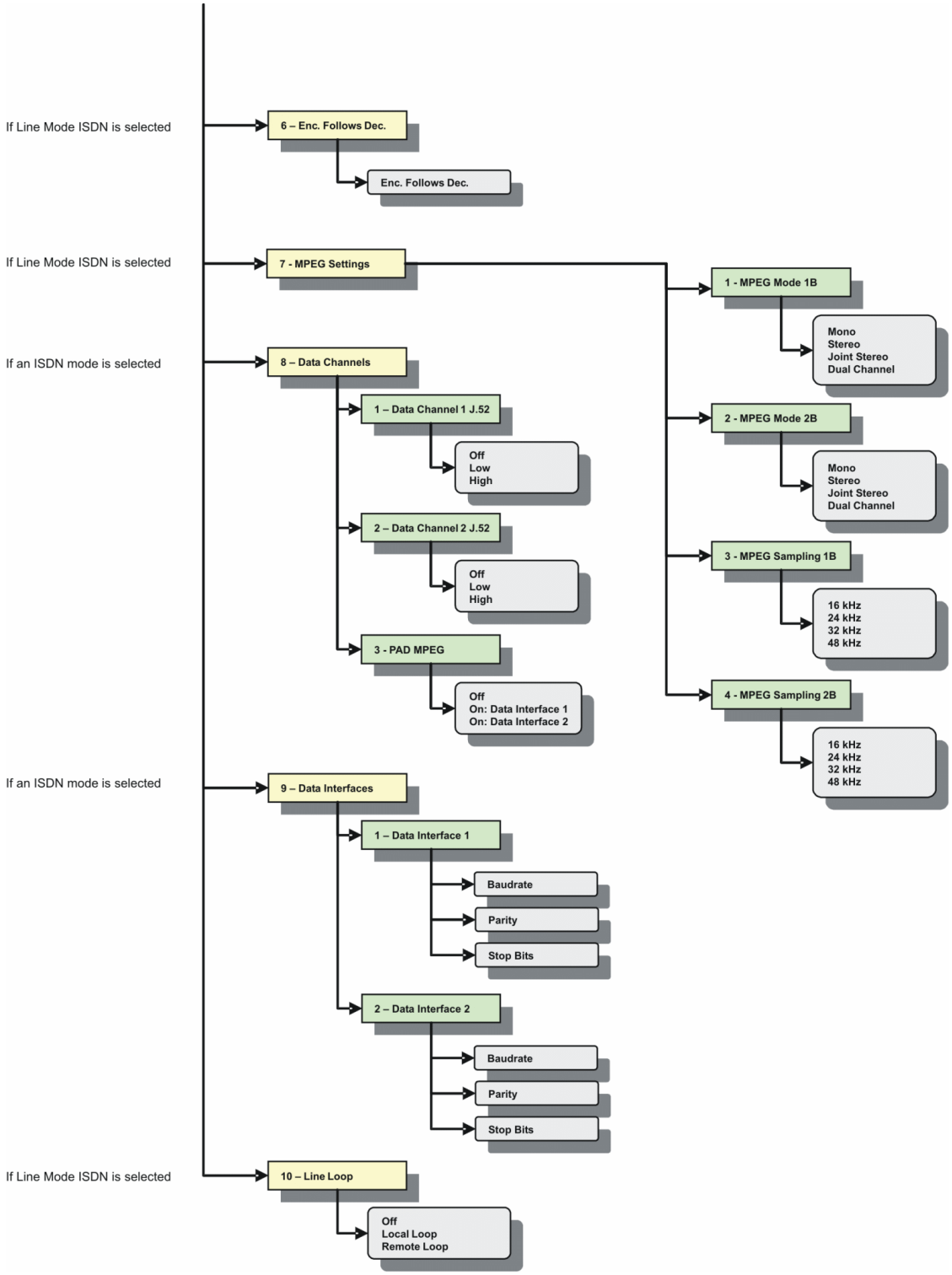
A1.2 Operation Settings



Enc. follows Dec. (see next page)

Continuation Operation Settings

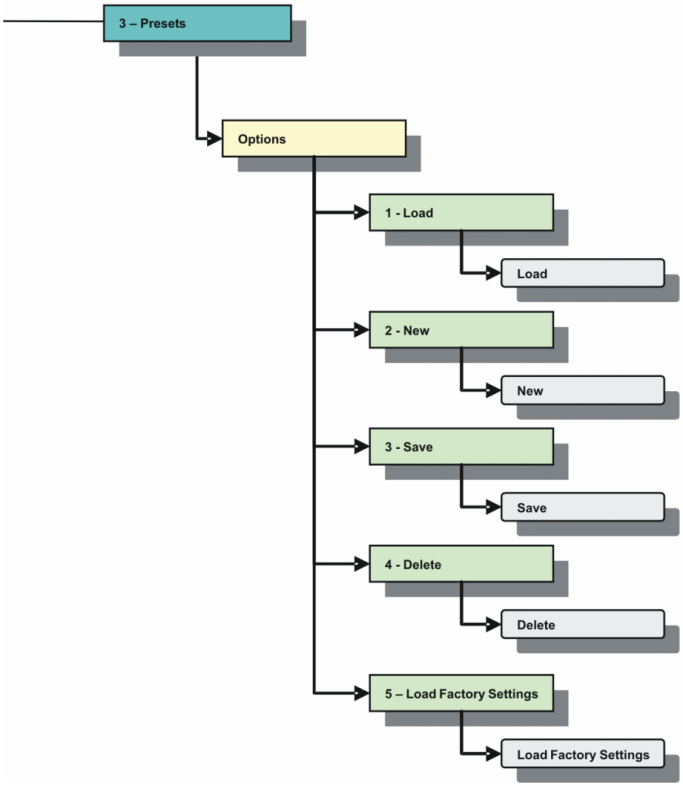
Incoming Call Mode/50 Hz Filter (see previous page)



A1.3 Presets

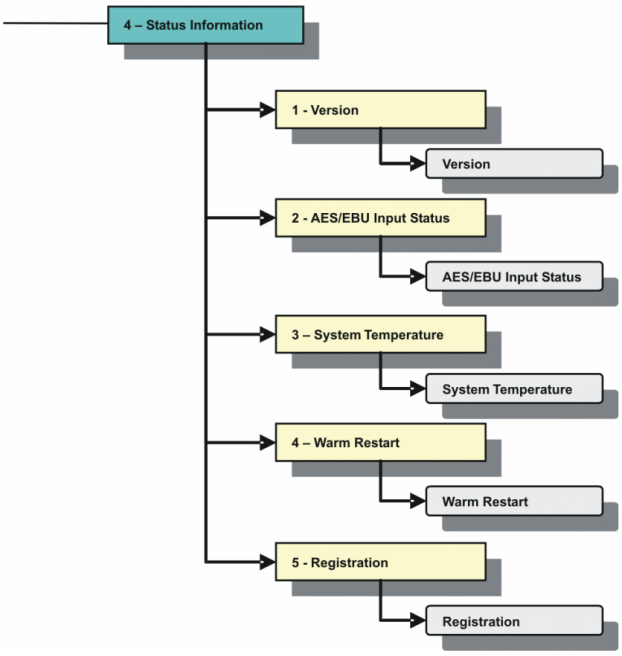
Login

Status Information

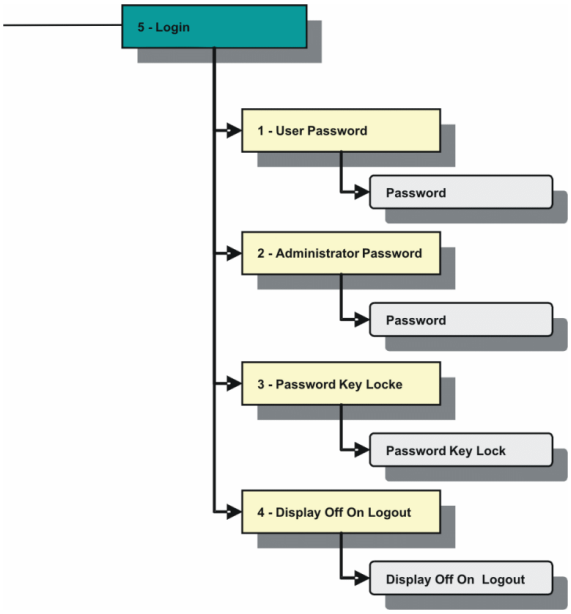


A1.4 Status Information

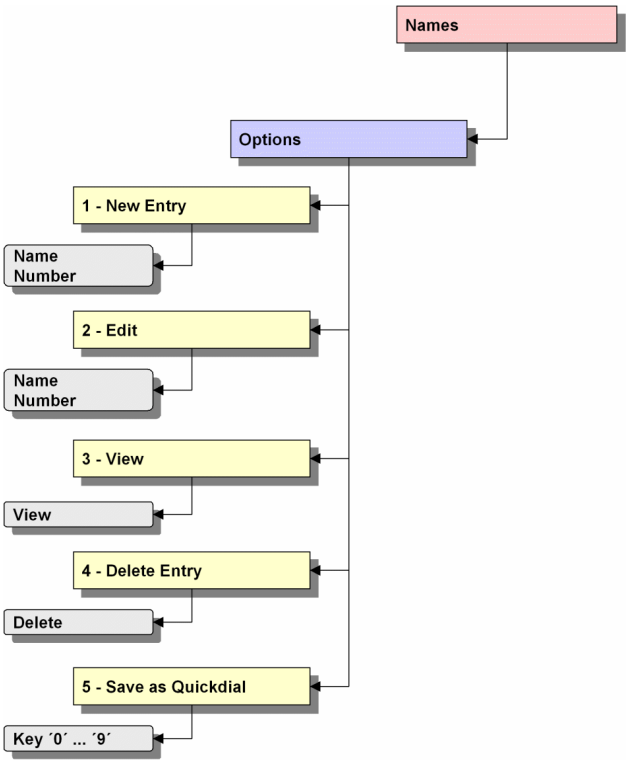
Login



A1.5 Login


5 - Login
1 - User Password
Password
2 - Administrator Password
Password
3 - Password Key Locke
Password Key Lock
4 - Display Off On Logout
Display Off On Logout

A1.6 Names


Names
Options
1 - New Entry
Name
Number
2 - Edit
Name
Number
3 - View
View
4 - Delete Entry
Delete
5 - Save as Quickdial
Key ´0´ ... ´9´

A2 THE AUTO DYNAMIC SYNC PROCEDURE

The newly developed ***Auto Dynamic Sync (ADS)*** procedure allows an automatic synchronisation of almost all available Audio codecs on the market.

The procedure differentiates between outgoing and incoming calls:

Outgoing call

When an outgoing call is made, the caller select the desired configuration when he enters the calling number. In this way, the desired Audio quality, the number of B channels and the signalling procedure is set. Since, usually the caller knows which Audio codec he calls on the remote side, a certain Audio transmission quality can be forced in this way. If, contrary to the expectations, the remote side uses a non-matching procedure, the ADS automatically searches for an ISO/MPEG frame or a G.722 signal.

ADS recognises ISO/MPEG frames with 64-kBit/s, Layer III or Layer II (if the option is enabled), any sampling frequency (also half sampling frequencies such as 16 kHz and 24 kHz, except 22,05 kHz and 44,1 kHz) and any mode (Mono, Dual Channel, Stereo, Joint Stereo). Additionally, an inverted ISO/MPEG signal is also decoded correctly.

If a G.722 signal is found instead of an ISO/MPEG frame, the synchronisation procedures according to H.221/H.242 and SRT (Statistical Recovered Timing) are supported.

In this way, it is ensured that at least a connection in 7-kHz quality is established.

Incoming call

If there is an incoming call, the calling Audio codec is recognised fully automatically. The procedure works with 1B channel as well as 2B channel connections. For accepting the call, you should configure the Audio codec to a mode marked with ***(AUTO)***.

TIP

Since some Audio codecs do not support different transmission parameters in transmit and receive direction, ***MAGIC DC7/AC1*** provides a special function to synchronise these parameters.
To ensure that the Encoder uses the same transmission mode as the Decoder for incoming call, you should activate the Option ***Encoder follows Decoder on incoming calls***.
For outgoing calls, you can still select the transmission mode.

A 3 LIST OF THE TRANSMISSION MODES

During the installation various standard transmission modes are saved in the directory

<Installation directory>\transmissionmodes

The following configurations are set for the transmission parameters after a certain transmission mode has been loaded:

TAB. 5 PREDEFINED TRANSMISSION MODES

Name	Signalling	Audio Quality		Bit Inversion	B Channels	MPEG Algorithm	1B Mode	2B Mode	Note
		TX	RX						
AS64-L2	OFF	MPEG (15kHz)	-	no	-	MPEG Layer II	Mono/48 kHz	-	AETA Scoopy
AS64-L2L	OFF	MPEG (15kHz)	-	no	-	MPEG Layer II	Mono/24 kHz	-	AETA Scoopy
CDQ1-7K	OFF	G.722 (7 kHz)	-	no	-	-	-	-	CDQ1000
CDQ2-L2	OFF	MPEG (15kHz)	-	no	-	MPEG Layer II	Mono/48 kHz	-	CDQ Prima
CDQ2-L2L	OFF	MPEG (15kHz)	-	no	-	MPEG Layer II	Mono/24 kHz	-	CDQ Prima
MAGIC	J.52	MPEG (15kHz)	MPEG (15kHz)	-	2	MPEG Layer III	Mono/48 kHz	Joint St./48 kHz	MAGIC, MAYAH Centauri
MCJ52-L3	J.52	MPEG (15kHz)	G.722 (7 kHz)	-	2	MPEG Layer III	Mono/48 kHz	Joint St./48 kHz	MAGIC + command channel
MT064-L3	Musictaxi	-	-	-	1	MPEG Layer III	Mono/48 kHz	-	MusicTaxi
MT128-L3	Musictaxi	-	-	-	2	MPEG Layer III	Mono/48 kHz	Joint St./48 kHz	MusicTaxi
PKI15KHZ	J.52	MPEG (15kHz)	MPEG (15kHz)	-	2	MPEG Layer III	Mono/48 kHz	Joint St./48 kHz	PKI 15 kHz ISDN Telephone
PKI-7KHZ	J.52	G.722 (7 kHz)	G.722 (7 kHz)	-	1	-	-	-	PKI 7 kHz ISDN Telephone
SRT-7KHZ	OFF	G.722 (7 kHz)	-	no	-	-	-	-	7 kHz in general (z.B. Glensound)
TLS64-L2	OFF	MPEG (15kHz)	-	no	-	MPEG Layer II	Mono/48 kHz	-	TELOS
TLS64-L3	OFF	MPEG (15kHz)	-	yes	-	MPEG Layer II	Mono/48 kHz	-	TELOS
TLS128L2	CCS-L2	-	-	-	2	MPEG Layer II	Mono/48 kHz	Joint St./48 kHz	TELOS
TZ64-L3	OFF	MPEG (15kHz)	-	yes	-	MPEG Layer III	Mono/48 kHz	-	TELOS
YR64-L2	OFF	MPEG (15kHz)	-	no	-	MPEG Layer II	Mono/48 kHz	-	YOUCOM Reporter
YR64-L2L	OFF	MPEG (15kHz)	-	no	-	MPEG Layer II	Mono/24 kHz	-	YOUCOM Reporter

A 4 TROUBLE SHOOTING

TAB. 6 TROUBLE SHOOTING

Problem	Possible cause
On the analogue telephone line no external connection can be established.	If you operate the system with a private branch exchange, a prefix number must be entered.
A radio signal is received in the analogue operating mode.	Please check if the POTS line is twisted. The system must be earthed via the earthing screw.
There is a humming in the analogue operating mode.	Please enable the 50 Hz filter. The humming is injected via the POTS connection.
The Echo Canceller is not working.	If you switch callers via a Call-In Centre to the hybrid the Echo Canceller is possibly adjusted incorrectly. Enable the Echo Canceller permanently. Please notice that echoes of more than 32 ms cannot be filtered out anymore.

A 5 INTERFACES

The interfaces of the system are pictured in Fig. 88.

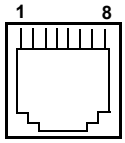
FIG. 88 REAR VIEW OF THE MAGIC DC7/AC1 AUDIO CODEC

All interfaces are described below.

A5.1 ISDN and analogue telephone interfaces

A5.1.1 S_0 interface

This interface supports two B channels in ISDN lines with EURO ISDN (DSS-1) protocol.



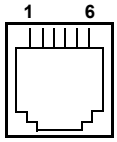
TAB. 7 PIN ASSIGNMENT: S_0 INTERFACE (LINE ISDN)

Socket: Western (8-pole) RJ45

Pin	Signal		Electrical characteristics	
1	not used		Recommendation:	I.430
2	not used		Data rate:	B channel: 2x64 kbit/s D channel: 16 kbit/s
3	TX a	Data out a		
4	RX a	Data in a		
5	RX b	Data in b		
6	TX b	Data out b		
7	not used			
8	not used			

A5.1.2 POTS[1] interface

Via this interface the system is connected to the analogue telephone line. A connecting cable for phone jacks is included in delivery.



TAB. 8 PIN ASSIGNMENT: ANALOGUE POTS TELEPHONE INTERFACE (LINE POTS)

Socket: Western (6-pole) RJ12

Pin	Signal	Electrical characteristics	
1	not used	Typical characteristics:	
2	not used	Bandwidth:	300 - 3.3 kHz
3	TEL LINE a	Signal to noise ratio:	45 dB
4	TEL LINE b	Average level:	-9 dBm (275 mV)
5	not used	Impedance:	600 ohms
6	not used	DC voltage:	48 V (±6 V typ)
		DC current:	20-26 mA (typ)
		Ringing voltage:	90 Vrms
		Ringing frequency:	20 Hz (2 sec. on, 4 sec. off)

[1] POTS = Plain Old Telephone Service

A5.2 Control and data interfaces

A5.2.1 CTRL/DATA interface

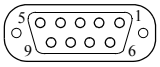
The CTRL/DATA interface is used for the configuration and operation of the ***MAGIC DC7/AC1*** System via a PC. To connect a PC you need a 1:1 connecting cable in which Pin 2 and Pin 3 are ***not*** crossed. Furthermore, Pin 5 GND must be connected.

Additionally, two further data interfaces for transparent data transmission are implemented by this interface. The two interfaces can be independently configured by software either as RS485 or as RS232 interface.

NOTE

Please note that the function of the Pins RXD1 and TXD1 - input or output - is determined by the interface type DCE or DTE. The pin assignment for Pin 2 is always RXD and for Pin 3 it is always TXD.

For both data interfaces RXD serves as receive path and TXD serves as transmit path.



TAB. 9 PIN ASSIGNMENT: CTRL/DATA INTERFACE

Socket: SUB-D, 9-pole

Pin	Signal		Electrical characteristics	
1		not used	**PC interface RS232:**	
2	RXD1[b]	PC RS232 Receive Data	Type (Pin 2, 3):	DCE[a]
			Level:	V.24
3	TXD1[c]	PC RS232 Transmit Data	Data rate:	38400 Baud
			Range:	max. 15 m
4	RXD3	Data RS232 (input)/RS485 (b)	Protocol:	1 start bit
				8 data bits
5	GND	Earth		1 stop bit
6	TXD3	Data RS232 (output)/RS485 (a)	**Data interfaces:**	
7	RXD2	Data RS232 (input)/RS485 (b)	Level:	V.24 (RS232)
				V.11 (RS485)
8	TXD2	Data RS232 (input)/RS485 (a)	Data rate:	38400 Baud
			Range:	max 15m (RS232)
9		not used		max. 100 m (RS485)
			Protocol:	1 start bit
				8 data bits
				1/2 stop bit
				Parity adjustable

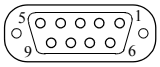
a DCE = Data Communication Equipment: to connect a PC a 1:1 cable is required

b ATTENTION: on this Pin the MAGIC DC7/AC1 **transmits** data

c ATTENTION: on this Pin the MAGIC DC7/AC1 **receives** data

A5.2.2 TTL/RELAY interface

Via this interface external control signals can be used.



TAB. 10 PIN ASSIGNMENT: TTL/RELAY INTERFACE (TTL/RELAY)

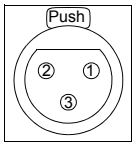
Socket: SUB-D, 9-pole

Pin	Signal	Electrical characteristics
1	+5V/300mA output	
2	TTL 1 IN/OUT	Capacity of the TTL outputs: Maximum voltage: 5V Maximum current: 10mA
3	TTL 2 IN/OUT	
4	TTL 3 IN/OUT	
5	GND	
6	Relay 1a	Capacity of the relays: Maximum voltage: 48V Maximum current: 200mA
7	Relay 1b	
8	Relay 2a	
9	Relay 2b	

A5.3 Audio interfaces

The system incorporates analogue and digital AES/EBU Audio interfaces. For switching you can use display and keypad or the PC software.

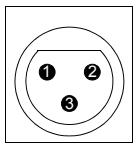
A5.3.1 Analogue Audio interface



TAB. 11 PIN ASSIGNMENT: ANALOGUE INPUT (AUDIO 1/2 IN)

Socket: 3-pole XLR

Pin	Signal	Electrical characteristics
1	GND	Input level: adjustable -3 .... +9 dBu
2	AUDIO IN a	Impedance: > 25 kΩ
3	AUDIO IN b	Head room: 6 dB



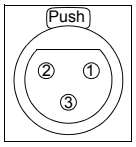
TAB. 12 PIN ASSIGNMENT: ANALOGUE OUTPUT (AUDIO 1/2 OUT)

Connector: 3-pole XLR

Pin	Signal	Electrical characteristics
1	GND	Output level: adjustable -3 .... +9 dBu
2	AUDIO OUT a	Impedance: < 50 Ω
3	AUDIO OUT b	Head room: 6 dB

A5.3.2 Digital AES/EBU Audio interface

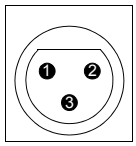
The ***MAGIC DC7/AC1*** System incorporates two digital inputs/outputs which are physically one AES/EBU interface. The input as well as the output has its own sample rate converter providing that a digital source with 32, 44.1 or 48-kHz can be connected directly. For external clocking (48-kHz only) the word clock input or output may be used.



TAB. 13 PIN ASSIGNMENT: DIGITAL INPUT (AES IN)

Socket: 3-pole XLR

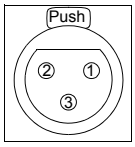
Pin	Signal	Electrical characteristics
1	GND	IEC-958
2	AUDIO IN a	
3	AUDIO IN b	



TAB. 14 PIN ASSIGNMENT: DIGITAL OUTPUT (AES OUT)

Connector: 3-pole XLR

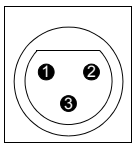
Pin	Signal	Electrical characteristics
1	GND	IEC-958
2	AUDIO OUT a	
3	AUDIO OUT b	



TAB. 15 PIN ASSIGNMENT: CLOCK INPUT (CLK IN)

Socket: 3-pole XLR

Pin	Signal	Electrical characteristics
1	GND	TTL
2	CLOCK IN	
3	not used	

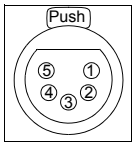


TAB. 16 PIN ASSIGNMENT: CLOCK OUTPUT (CLK OUT)

Connector: 3-pole XLR

Pin	Signal	Electrical characteristics
1	GND	TTL
2	CLOCK OUT	
3	not used	

A5.4 Headset/Micro Audio interface



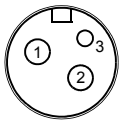
TAB. 17 PIN ASSIGNMENT: HEADSET/MICRO AUDIO INTERFACE

Socket: 5-pole XLR

Pin	Signal	Electrical characteristics
1	MICROPHONE a /+12V phantom power	Input level: adjustable -3 .... +9 dBu
2	MICROPHONE b	Impedance: > 25 kΩ
3	GND	Head room: 6 dB
4	HEADSET left channel	
5	HEADSET right channel	

A5.5 Power supply interface

The power supply is connected via an external power supply.



TAB. 18 PIN ASSIGNMENT: POWER SUPPLY

Socket: KYCO KPJ-S3

Pin	Signal	Electrical characteristics	
1	GND	Voltage:	+12V
2	+12V	Power:	max. 15W
3	not used		

A6 TECHNICAL DATA MAGIC DC7/AC1

A7 TECHNICAL DATA MAGIC DC7/AC1 KEYPAD

A7.1 Keypad

Matrix: 8 x 6

32 keys (4 quad keys, 4 double keys, 24single keys)

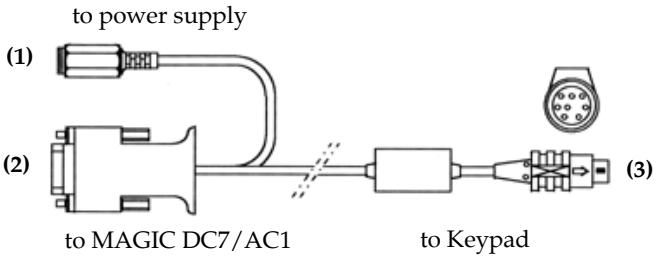
A7.2 LCD Display

2 x 20 characters

illuminated

A7.3 Connecting cable

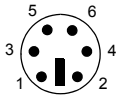
FIG. 89 CONNECTING CABLE MAGIC SYSTEM - KEYPAD



Protocol:

9600 Baud
no parity

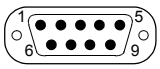
A7.4 Connection to power supply (1)



TAB. 19 PIN ASSIGNMENT: TO POWER SUPPLY

Connector: PS/2 male 6 pin		
Pin	**Signal**	**Electrical characteristics**
1		Voltage: 5V
2		Power: max. 1500 mA
3	GND	
4	+5V	
5		
6		

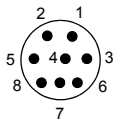
A7.5 Connection to MAGIC DC7/AC1 (2)



TAB. 20 PIN ASSIGNEMENT: CONNECTION TO MAGIC DC7/AC1

Connector: 9 pin SUB-D male		
Pin	**Signal**	**Electrical characteristics**
1		Baudrate: 9600 Baud
2	RXD	Parität: keine
3	TXD	
4		
5	GND	
6		
7		
8		
9		

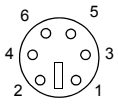
A7.6 Data connection to Keypad (3)



TAB. 21 PIN ASSIGNMENT: DATA CONNECTION TO KEYPAD

Connector: MINI-DIN male 8 pin		
Pin	**Signal**	**Electrical characteristics**
1		Baud rate: 9600 Baud
2	RX Data	Parity: none
3	GND	
4		
5	+ 5V	
6		
7		
8	TX Data	

A7.7 External power supply



TAB. 22 PIN ASSIGNMENT: POWER SUPPLY

Connector: 6-pin PS/2 socket		
Pin	**Signal**	**Electrical characteristics**
1		Voltage: 5V
2		Power: max. 1500 mA
3	GND	
4	+5V	
5		
6		

A 8 GENERAL

A8.1 Ordering numbers

MAGIC DC7	800211
MAGIC AC1	800231
Windows PC Software Update	430196[1]

Accessories

MAGIC DC7/AC1 Keypad	800210/800230
MAGIC DC7 DUAL 19“ Mounting Kit	800212
MAGIC AC1 DUAL 19“ Mounting Kit	800232
DC7 Reporting Kit (Headset + Mixer Tool)	800213
AC1 Reporting Kit (Headset + Mixer Tool)	800233

Software Options

DC7 Mixer Tool[2]	430202
DC7 Remote Control Software[2]	430198
AC1 Mixer Tool[3]	430201
AC1 Remote Control Software[3]	430199

A8.2 Scope of delivery

- MAGIC DC7 or MAGIC AC1
  - CD Windows PC Software 430227
  - External power supply
    - Input: 100 - 240V/24W, 50 - 60 Hz
    - Output: 12V
  - Self adhesive feet
  - 19’’ Mounting Brackets
  - Manual

[1] also available in the internet under this identity number

[2] An ISDN PC card and at least one USB interface are required for the Software Dongle

[3] An ISDN PC card and at least one USB interface are required for the Software Dongle

– 1 x S_0 cable

A8.3 Declaration of Conformity

You will find the declaration of conformity at the end of this manual.

A 9 SERVICE INFORMATION

A9.1 Software Updates

Free Software Updates you will find on our Homepage under

http://www.avt-nbg.de

Go to **Service** and click on the menu item **Software-Download**

The identity number of the **MAGIC DC7/AC1** Update Software is:

430195

A9.2 Support

You can contact our Support Hotline during the normal office hours between 09.00h - 17.00h under the following telephone number:

+49 911 5271 160

or via email:

support@avt-nbg.de

To deal with your problem efficiently please note the factory number of the unit as well as the software version that you use.

A9.3 Repairs

If, contrary to expectations, your unit is defective please fill in the attached status report and send the unit to the following address:

AVT Audio Video Technologies GmbH
- Repairs -
Nordostpark 12
D-90411 Nuernberg
Germany

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Audio Video Technologies

CE-Konformität

DECLARATION OF CONFORMITY

Name des Anbieters: Supplier's name:	AVT Audio Video Technologies GmbH
Anschrift des Anbieters: Supplier's address	Nordostpark 12 D-90411 Nürnberg
erklärt, daß das Produkt declares, that the product	
Produktname(n): Product name(s):	MAGIC DC7/MAGIC AC1

mit den Vorschriften folgender Europäischer Richtlinien übereinstimmt:
conforms to the standards of the following European directives:

Nummer/Text: Number/title:	EN 60950 A4 Gerätesicherheit

Die Übereinstimmung wird nachgewiesen durch vollständige Einhaltung folgender Normen:
The conformity is evidenced by strictly meeting the following standards:

Harmonisierte Normen: Harmonized Standards:	EN 55022, EN 55024, EN 300386, FCC Part 15 B
Ort, Datum: Place, date:	Nürnberg, 24.03.2005
Name(n): Name:	Wilfried Hecht
Rechtsverbindliche Unterschrift(en): Legally binding signatures:	
Telefon: Phone:	+49 911 5271-0

Diese Erklärung beinhaltet keine Zusicherung von Eigenschaften.
This declaration includes no warranty of properties.

Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.
The safety instructions specified in the product documentation delivered must be observed.

Declaration of Conformity