MAGIC AD1 ETI Decoder

DAB & DAB+ Audio Monitoring Decoder

Hardware/Software Manual

Audio
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MAGIC AD1 ETI Audio Decoder

Hardware/Software Manual

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Content

INTRODUCTION

The ***MAGIC AD1 ETI Decoder*** allows the monitoring of DAB and DAB+ signals with ETI (NA, G.704) and ETI (NI, G.703) format. The system monitors all audio and data channels in the ETI data stream and can decode one audio channel. Via the 2-Mbit/s output further MAGIC AD1 ETI Decoders can be cascaded, so that several programmes can be decoded simultaneously.

The configuration of the system can be carried out via the LAN interface unsing the Windows application software included in delivery or via the front keypad and display of the unit. With the implemented SNMP fucntionality the system can also be integrated into a network management system via its LAN interface.

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

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 saftey 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 personal 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 and override safety measures, and to carry out the maintenance of the system.
- External software is used at one’s own risk. Use of external softwarecan affect the operation of the system.
- Use only tested and virus-free date 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 top observe. In case of non-observance malfunctions and even system errors are possible.

1 CONSTRUCTION

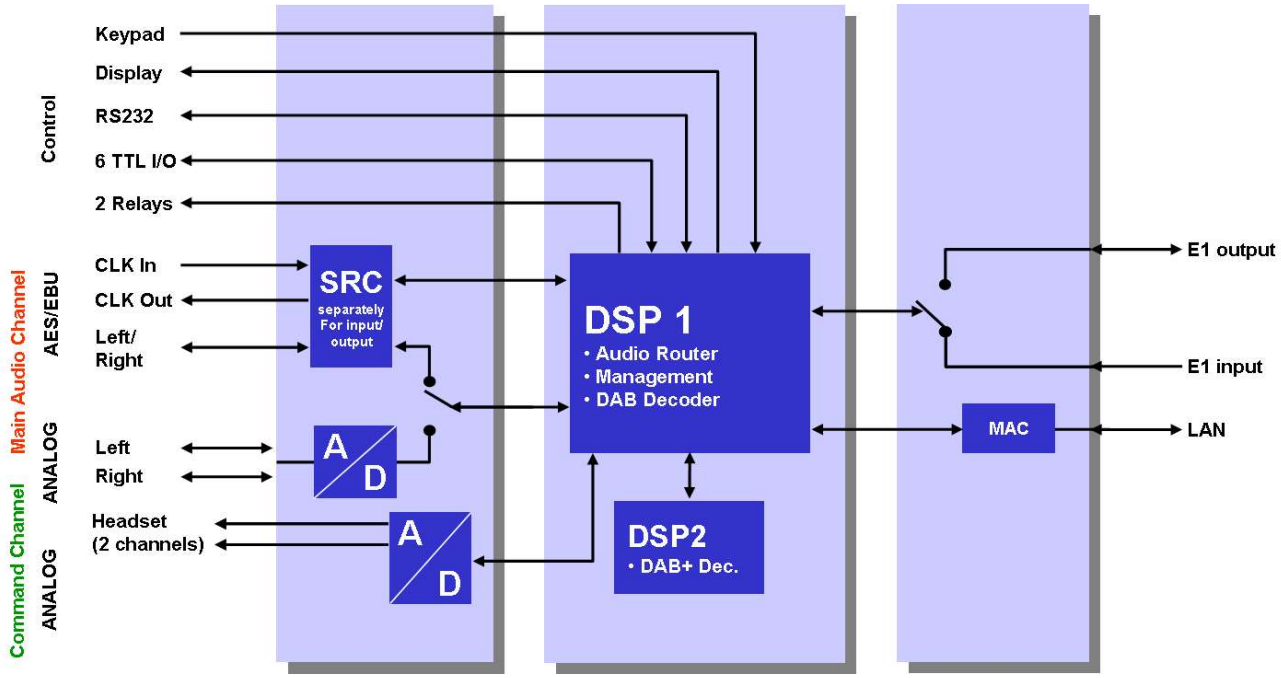
The functions of the ***MAGIC AD1 ETI Decoder*** are implemented in a single unit. The system is carried out as 19'' x 1 U unit and has an integrated power supply.

FIG. 1 FRONT SIDE: MAGIC AD1 ETI DECODER

2 SYSTEM DESCRIPTION

The functional elements of the system are pictures in Fig. 2.

FIG. 2 FUNCTIONAL ELEMENTS OF THE MAGIC AD1 ETI DECODER



2.1 Functionality

With the ***MAGIC AD1 ETI Decoder*** an ETI output signal of an Ensemble Multiplexer can be monitored. The system allows a simultaneous monitoring of all DAB & DAB+ Audio data streams. The system can be connected anywhere in the 2-Mbit/s signal (NA, G.704 and NI, G. 703) to be monitored or it can be connected in parallel with the signal path. All Audio programmes in the data stream are monitored and an individual programme can be extracted and decoded. Additionally, the internal protocol file can be activated to store upcoming error messages.

In case of a power breakdown the E1 signal is automatically looped back via a relay.

The currently decoded Audio signal is available at the analogue or the digital Audio outputs. 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 ETI Decoder incorporates a Headphone interface for monitoring the Audio programm that is currently selected to be decoded.

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 AD1 ETI Windows PC software*** which is included in delivery and which communicates with the system via the LAN interface.

An external alarm signalling can be carried out via six programmable ***TTL*** contacts. Two ***relays*** are available for status indication.

With the implemented ***SNMP*** fucntionality the system can also be integrated into a network management system via its LAN interface.

3 PUTTING THE MAGIC AD1 ETI DECODER INTO OPERATION

3.1 Mounting

With its dimensions (W × H × D) of 440 mm × 44,5 mm (1 U) × 260 mm the ***MAGIC AD1 ETI*** System can be used either as desktop device or mounted in 19 inch racks. Corresponding 19“ mounting brackets are included in delivery.

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

When the ***MAGIC AD1 ETI Decoder*** is installed in a rack, 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 threshold are especially to observe if the system is inserted in a rack. The system works without ventilation.

TIP

The temperature of the system can be indicated on the display (*MENU STATUS INFORMATION*)

During operation 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 voltage in the range from 90 V to 253 V via the internal power supply and the mains type appliance cable. 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 EMC regulations. The earthing can be carried out via the earthing screw on the back side of the unit.

The unit has a circuit closer. After plugging in the mains type appliance cable and pressing the circuit closer, the system boots within a few seconds. In stand-by mode the AVT logo is shown on the display[1].

[1] Depending on the delivery status all menus are possibly displayed in German. The configuration of the menu language is described in CHAPTER 5.1.1.

3.3 Earthing of the system

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

ATTENTION

Earthing

A lacking earthing can cause functional deficiencies within the unit. Because of the "pending" potential, unlike the protective earth conductor potential, slight electric shocks can occur by touching the rack. These are absolutely not dangerous, however they can be avoided totally by earthing.

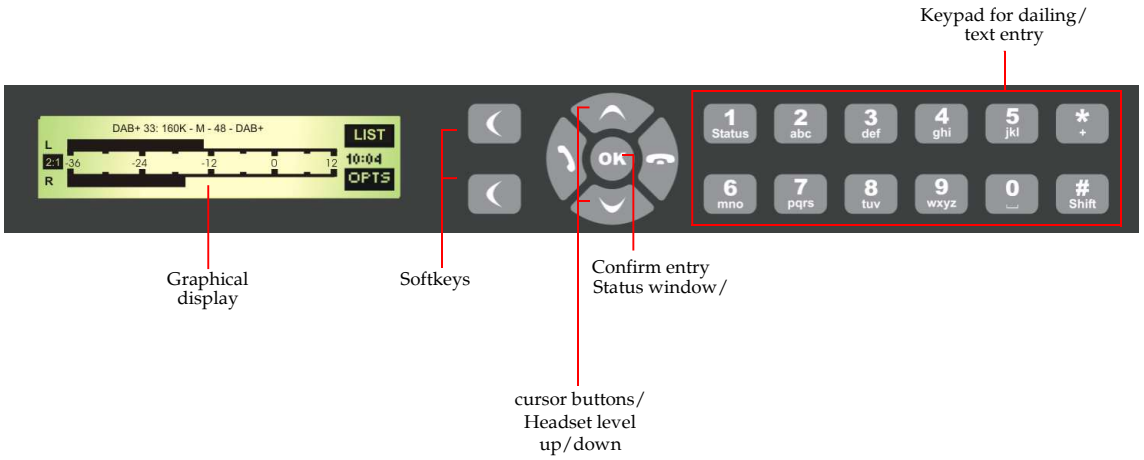
3.4 Operational elements on the front side

The system has an illuminated graphical display with a resolution of 160 x 32 pixel and 19 operating buttons.

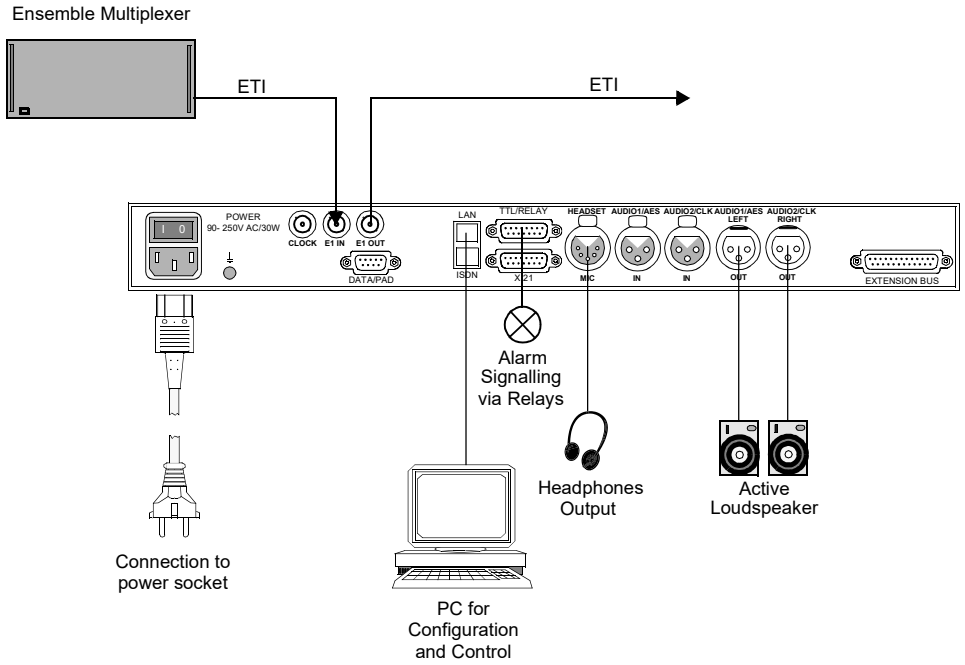
On the right next to the display there are two softkeys whose current functions are indicated on the display. In the middle there are two cursor buttons (upwards/downwards) as well as an *OK* button. The numerical pad supports in addition to the numerical characters *0...9*, the '*'- and '#'-key. For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

During a connection additional functions are possible that are explained in chapter 5 - "Operation via display and keypad".

FIG. 3 OPERATIONAL ELEMENTS ON THE FRONT SIDE



3.5 Wiring diagram



4 WINDOWS PC SOFTWARE

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

4.1 Hardware requirements

The PC must meet the following minimum requirements:

- IBM PC AT, IBM PS/2 or 100% compatible
- Windows XP/7
- 6 MB available hard disc space
- Screen resolution with 1024 x 768 Pixels
- LAN interface for configuration
- Microsoft, IBM PS/2 or 100% software compatible mouse

4.2 User Registration

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

http://www.avt-nbg.de

Go to **Create an account** under the **Log In** section and enter your name and email address. Define a user name and click on **Register**. You will receive a confirmation email that includes a link which allows you to activate your account.

4.3 Installing the Windows PC Software

Please insert the CD (430306) 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 read also the ***Release Letter*** that will inform you about the latest functions and about the corrected bugs.

Please press under ***Software Updates*** the ***MAGIC AD1 ETI***[1]button. Subsequently the setup programm is executed.

[1] Alternatively, you can also install the MAGIC AD1 ETI Multi Software for control of up to 20 systems via LAN.

Alternatively, you can install the software directly from the CD. You will find the installation file ***setup.exe*** in the folder ***Software\MAGIC AD1 ETI*** on the CD.

Please follow the instructions of the installation routine.

After the installation the software can be started by clicking on the ***MAGIC AD1 ETI Decoder*** symbol on the desktop.

Connect the system via the LAN interface with your network. If you do not have a network you can also connect the unit to your PC directly via a so-called cross over network cable.

How to configure the LAN interface is described below (see CHAPTER 4.7.1, Page 32).

4.4 Software update from the internet

Software updates can be downloaded from our homepage

http://www.avt-nbg.de

free of charge. Please note that you need to register yourself on our homepage to have access to the download area. Go to **Create an account** under the **Log In** section and enter your name and email address. Define a user name and click on **Register**. You will receive a confirmation email that includes a link which allows you to activate your account. If you are already registered, you just need to log in.

Now, please go to our **Download** section and select **Software**. Under **MAGIC DAB** please download the file with the order number **430360**. When the download is completed, 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 AD1 ETI Decoder*** Software displays an error message when it is started. The instructions for a Firmware update are described in CHAPTER 4.8.4, Page 57.

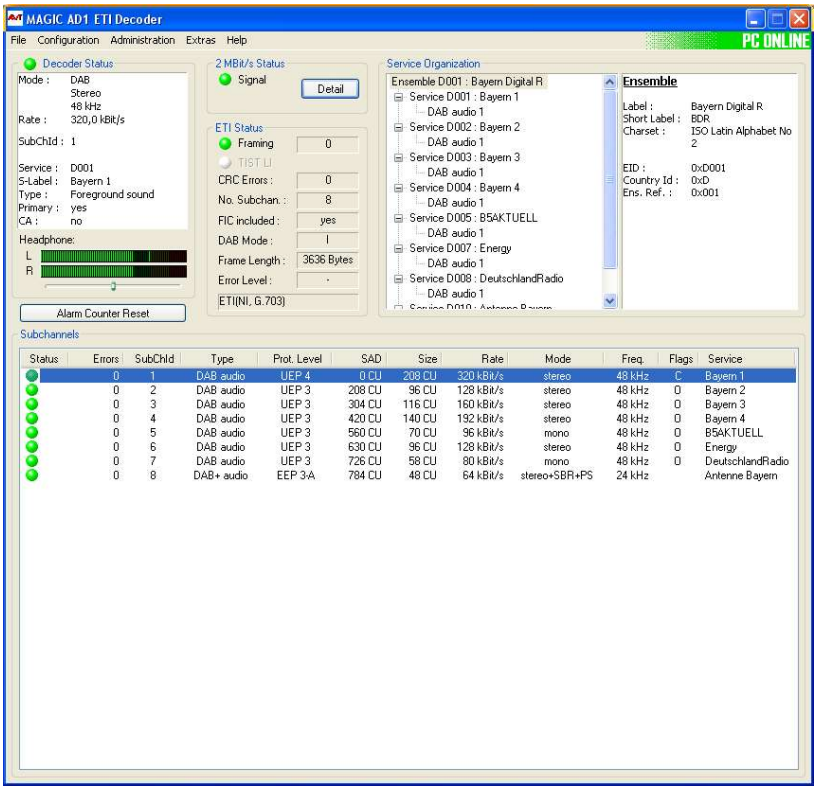
4.5 Operation via the Windows PC Software

In the following chapter all functions of the PC Software are described in detail.

4.5.1 The MAGIC AD1 ETI Decoder main window

After starting the ***MAGIC AD1 ETI Software*** the main window is automatically displayed.

FIG. 4 MAIN WINDOW



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

PC ONLINE: Connection to the PC is ok

PC OFFLINE or ***NO CONNECTION***: Connection to the PC is faulty

The following status messages are also possible:

PC ONLINE ALARM: An alarm has occured
(see ***System Monitor***)

BOOT MODE: No valid firmware on the system (orange). Please download the latest software (see CHAPTER 4.8.4)

TIP

If you click on the status message, the ***System Monitor*** is displayed which shows the system status in detail (see CHAPTER 4.9.1).

NOTE

If the connection is faulty, please check the following points:
- Power supply cable is plugged in
- Circuit switch of the system is in the ON position (display is available)
- Network cable is connected to the PC and the system
- Right IP address and right Control Port are selected in the software (***Configuration*** → ***Control Interface***, see Page 32)

Meaning of the LEDs

The LEDs can be displayed in three different colors:

- ***green:*** no error
- ***red:*** error
- ***blue:*** error has occured

To reset all LEDs to green, you need to press the ***Alarm Counter Reset*** button (see CHAPTER 4.5.7, Page 29).

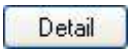
4.5.2 2 Mbit/s Status

In this window the status of the 2-Mbit/s signal is displayed. If the system is configured in the right way and connected to the 2-Mbit/s network, the ***Signal*** LED is displayed in green.

FIG. 5 DISPLAY OF THE 2 MBIT/S STATUS

Signal

The LED signals an error, if there is no signal on the 2-Mbit line.

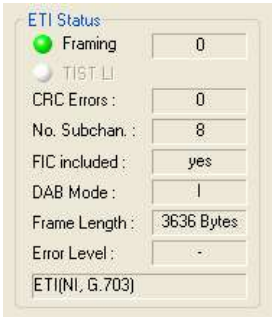


By pressing the ***Detail*** button the System Monitor window is opened.

4.5.3 ETI Status

Under the ETI Status window all information regarding the ETI signal is displayed.

FIG. 6 DISPLAY OF THE ETI STATUS.



The LED ***Framing*** is displayed in green, if the ETI frame can be synchronised. On the right, the number of the occurred ETI framing alarms is displayed.

In the next line the number of ***CRC Errors*** is shown.

The number of Audio and Data subchannels is displayed under ***No. Subchan.*** (Number of Subchannels).

Under ***FIC included*** you can see if the Fast Information Channel (FIC) is included into the ETI Data stream .

Further information displayed:

- ***DAB Mode***
- ***Frame Length***
- ***Error Level***
- ***ETI Mode***

4.5.4 Service Organization

The ***Service Organization*** window gives you information about the structure of each service in the ETI data stream. If an entry is selected, the detailed information of the **Ensemble**, the **Service** or **Service Component** will be shown on the right side of the window.

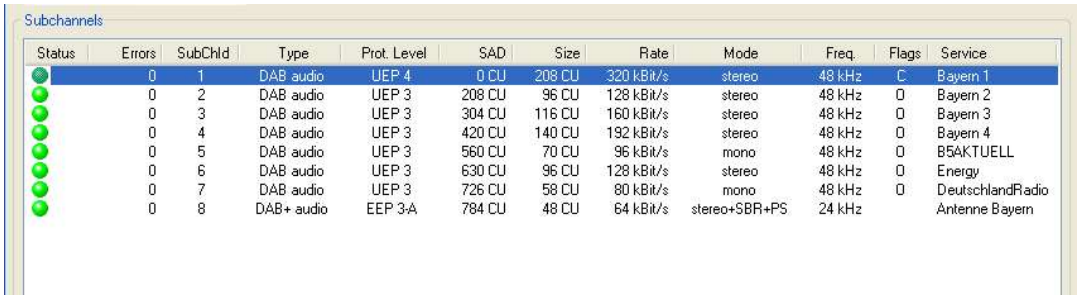
To select a component for decoding, you need to double-click on the corresponding entry. The currently selected programm is displayed under the ***Decoder status*** window.

FIG. 7 DISPLAY OF SERVICE ORGANIZATION

4.5.5 Subchannels

All subchannels of the data stream are displayed in the ***Subchannels*** list.

FIG. 8 DISPLAY OF SUBCHANNELS



The LED under ***Status*** signalises if the ISO/MPEG frame of the Audio programm can be synchronised.

The ***Errors*** column shows the number of errors ocurred for each subchannel.

Under ***SubChId*** the ID of the Subchannel is displayed.

In the ***Type*** column the component type is shown (DAB audio, DAB+ audio or data).

Under ***Prot. Level*** the selected protection level for the subchannel is displayed.

The columns ***SAD*** (Start Address) and ***Size*** inform you about the start adress and the size of the subchannel in the ETI data stream. The information is given in Capacity Units (***CU***).

Under ***Rate*** the data rate and under ***Mode*** the coding mode is shown. The sampling frequeny is displayed under ***Freq.***.

In the column ***Flags*** shows if an MPEG flag is set.

- ***O*** stands for Original
- ***C*** stands for Copyright
- ***P*** stands for Private

The Service Label of the subchannel can be found under ***Service***.

4.5.6 Decoder Status

Via the ***Decoder status*** you get detailed information about the currently monitored programme.

FIG. 9 DISPLAY OF THE DECODER STATUS

The following information is displayed:

- Transmission mode (***Mode***)
  - Coding algorithm (DAB or DAB+)
  - Coding mode (Mono, Dual Channel, Stereo, Joint Stereo, SBR, PS)
  - Sampling frequency (16 kHz, 24 kHz, 32 kHz, 48 kHz)
- Bit rate (***Rate***) for the Audio transmission
- Subchannel ID (***SubChId***) of the decoded component
- Service ID (***Service***)
- Service Label (***S-Label***)
- ***Type*** of the monitored component (audio or data)
- Indication if it is a ***Primary*** component (yes) or not (no);
  for e.g. Audio services in two language there are always a primary and a secondary Audio component
- ***CA*** (Conditional Access): yes or no

Under ***Headphone*** you can see the levels of the left (***L***) and the right (***R***) channel and adjust the volume via the slide controller.

4.5.7 Alarm Counter Reset

Below the Decoder status window you will find the ***Alarm Counter Reset*** button. If you press this button, all LEDs will be reset to green and all error counters are reset to 0.

4.6 Menu File

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

4.6.1 Submenu Operation Settings Presets

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

With ***Export All*** you save all already existing preset configurations 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 4.7.3.2).

4.6.2 Submenu System Settings

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

The following settings are imported:

– ***System Settings***

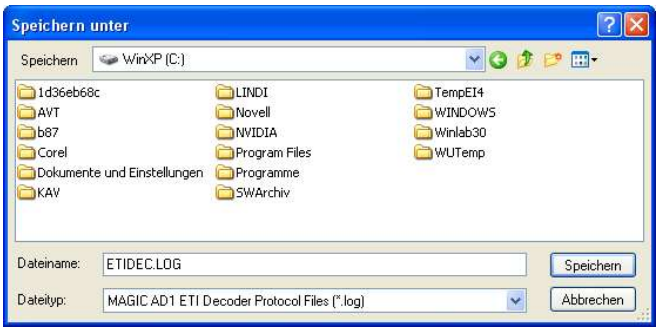
– All ***Operation Settings***

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

4.6.3 Submenu Protocol File

With the selection ***File*** → ***Protocol File*** → ***Export*** you save the internal ETI decoder file of the system. The file is saved with the extension '***.log***'.

FIG. 10 EXPORT THE PROTOCOL FILE



NOTE

A Protocol file is only generated in the system, if the function ***ETI Decoder Protocol*** has been activated in the system configuration under ***Operation Settings - Protocol***.

4.6.4 Submenu Exit

Via the submenu ***Exit*** you can close the ***MAGIC AD1 ETI Decoder*** software.

4.7 Menu Configuration

4.7.1 Submenu Control Interface

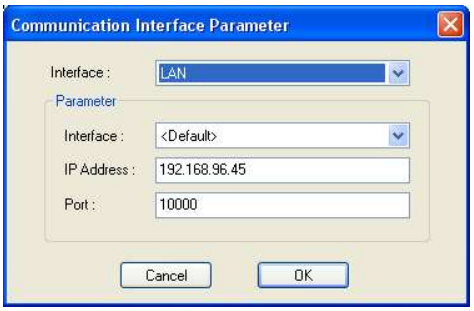
The system is configured and operated via the LAN interface.

Select under ***Configuration*** → ***Control Interface*** the option ***Configuration.***

LAN

For controlling the system via the LAN interface please select ***Interface*** → ***LAN***.

FIG. 11 LAN PARAMETERS



Under ***Parameter*** → ***Interface*** edit ***<Default>***. If there should be more than one network interface card in your PC, select the desired one.

The standard ***IP Address*** of the system is ***192.168.96.102*** and the standard control ***Port 10000***.

To enable a connection with your PC, you have to be in the same **subnet**. Therefore, please enter an IP address from your subnet[1].

To change the IP address at the front keypad of the system, press the softkey *MENU* → *SYSTEM SETTINGS* → *LAN SETTINGS*→ *IP ADDRESS*. Enter now the desired IP address. When entering manually you have to be sure that the IP address is not already used by another unit[2].

NOTE

Maybe further settings are necessary (e.g. sub-net mask, standard: 255.255.255.000). In that case please contact your network administrator, who can tell you the correct settings.

TIP

The currently allocated IP address of the system can be displayed by pressing the right telephone button if currently no Audio connection is established.

Please enter the correct IP address of the system under ***IP Address***.

[1] In this way you can find out your own subnet: Under ***Windows XP*** click on ***Start*** → ***Execute ...***. Enter ***cmd*** in the command line. An entry window is displayed in which you must enter ***ipconfig***. Your IP address is displayed (e.g. 192.168.12.35). Your subnet is accordingly 192.168.12.xxx.

[2] To check if the IP address is already used in the network, follow the instructions: Under ***Windows XP*** click on ***Start*** → ***Execute ...***. Enter ***cmd*** in the command line. An entry window is displayed in which you must enter ***ping*** xxx.xxx.xxx.xxx. Whereas xxx stands for the IP address you want to check.

Control Interface List

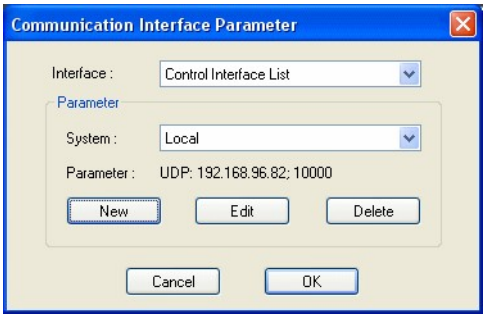
If you want to manage several units with the PC Software, you can enter all systems by selecting under ***Interface*** the option ***Control Interface List***.

NOTE

Please note that with this software a PC connection is only possible with one system at a time. If you want to control several units simultaneously, you must use the ***MAGIC AD1 ETI Multi Software*** (see CHAPTER 6, Page 71).

To create a new list entry, press the ***New*** button. Please enter the settings for the LAN parameters as described above. Additionally, you can enter a ***Name*** for the list entry.

FIG. 12 CONTROL INTERFACE LIST PARAMETER



By the key ***Edit*** you can edit the currently selected entry. With ***Delete*** you can cancel the list entry.

4.7.2 Submenu MAGIC AD1 ETI Decoder

Via the submenu ***MAGIC AD1 ETI Decoder*** 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.

The configuration differentiates between ***System Settings***, which usually do not have to be changed during th operation and the actual ***Operation Settings*** for the current operational case. The System Settings cannot be saved as ***Preset*** (see CHAPTER 4.7.3) - whereas Operation Settings can be saved as Preset.

For clarification:

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

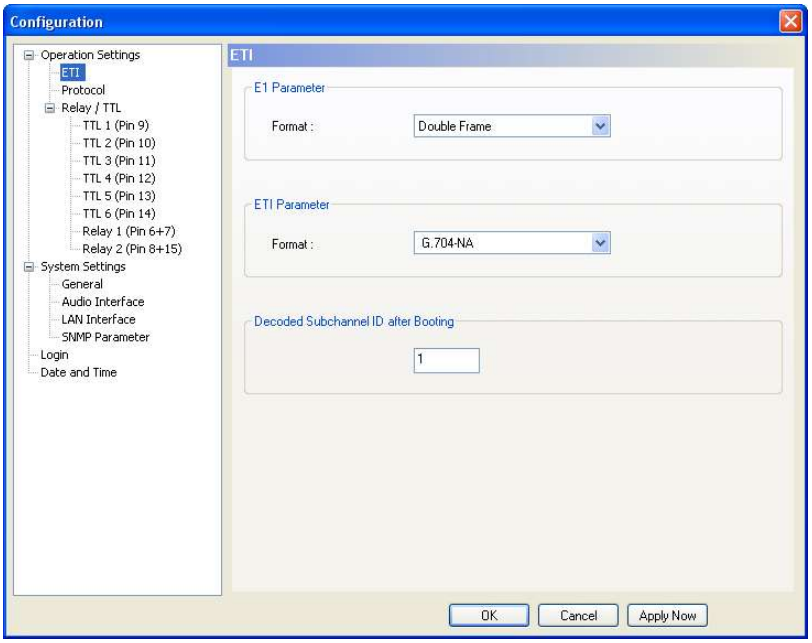
4.7.2.1 Operation Settings

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

4.7.2.1.1 ETI

The menu item ***ETI*** allows a configuration of the E1 and the ETI parameters. Additionally, you can select which subchannel is to be decoded after booting the system.

FIG. 13 ETI



E1 Paramter

Please select the ***Format*** of your E1 (2-Mbit/s) network. You can choose between ***Double Frame*** and ***CRC Multi Frame***.

NOTE

This selection depends on the network and is a setting in the last E1 transmission equipment before it is connected to the ETI Decoder. All countries except Germany are normally using ***Double Frame*** format. If you select the wrong format you will get immediately signal errors.
In case you do not know which E1 (2-Mbit/s) format you use, please ask your network provider.

ETI Parameter

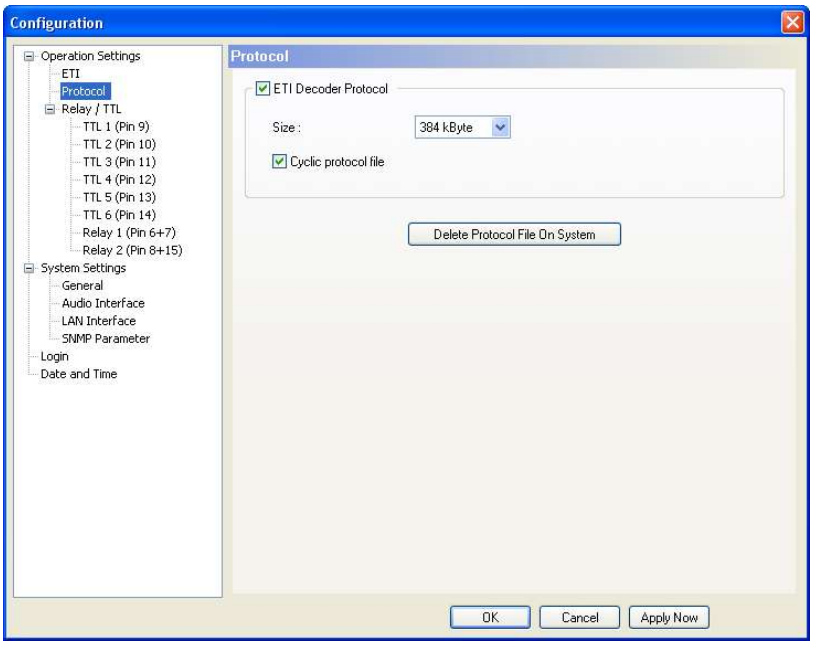
Please select which ETI ***Format*** you use. MAGIC AD1 ETI supports ***G.704-NA*** and ***G.703-NI.***

Decoded Subchannel ID after Booting

If you want to select a certain subchannel to be decoded after the system has been switched on, you can enter its Subchannel ID under ***Decoded Subchannel ID after Booting***.

4.7.2.1.2 Protocol

FIG. 14 PROTOCOL



The *MAGIC AD1 ETI Decoder* allows an internal storage of alarm messages. To activate the Protocol function please enable the option ***ETI Decoder Protocol***.

Under ***Size***, you can configure the size of the protocol file. The available options are ***64 kByte***, ***128 kByte***, ***192 kByte***, ***256 kByte***, ***320 kByte*** and ***384 kByte***.

If you select the option ***Cyclic protocol file***, the alarm messages are stored in a ring buffer. If the option is not enabled, the alarms are recorded until the internal storage is full.

If you want to delete the internal protocol file, you need to press the button ***Delete Protocol File On System***.

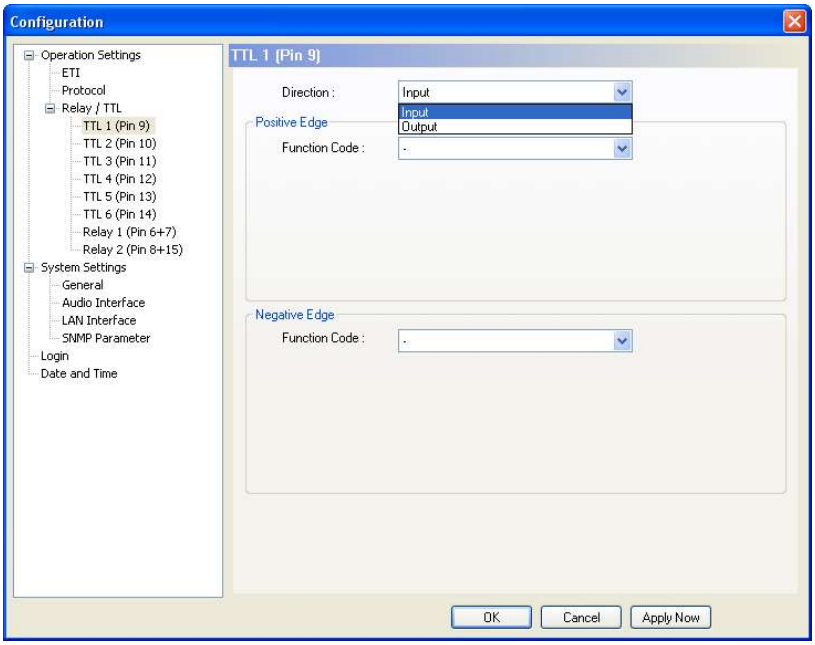
NOTE

You can also export the protocol file via the main menu bar under ***File*** → ***Protocol File*** → ***Export*** (see CHAPTER 4.6.3, Page 30).

4.7.2.1.3 Relay/TTL

The *MAGIC AD1 ETI Decoder* has **six GPIO Pins (TTL)** which can be programmed individually as input or output. Additionally, two **relays** are available.

FIG. 15 RELAY/TTL



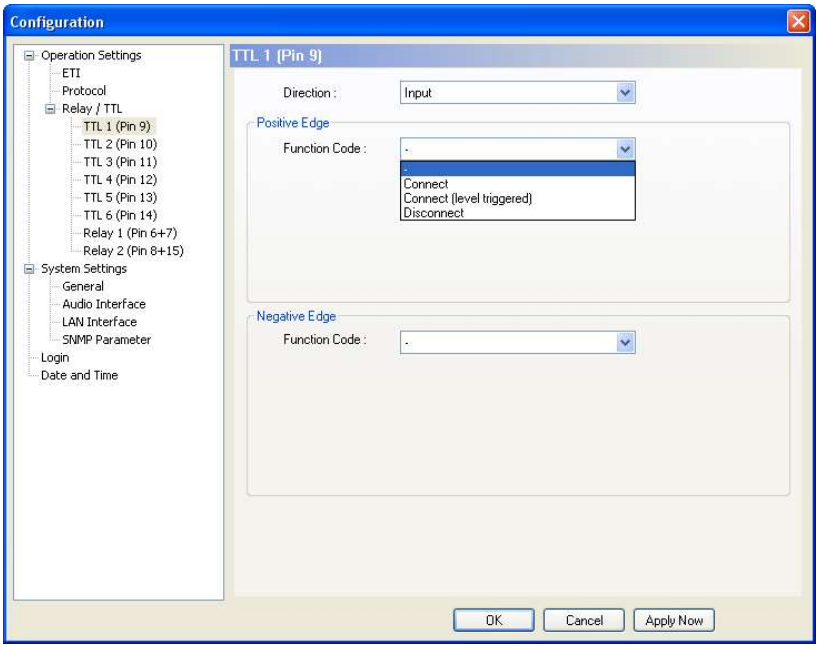
Under ***Relay/TTL,*** general parameters for the GPIO contacts can be configured.

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

The following description applies to all six configuration windows ***TTL 1 (Pin 9)***, ***TTL 2 (Pin 10)***, ***TTL 3 (Pin 11)***, ***TTL 4 (Pin 12)***, ***TTL 5 (Pin 13)*** and ***TTL 6 (Pin 14)***.

TTL Pin as Input

FIG. 16 TTL PIN AS INPUT



If you use a TTL Pin as ***Input***, you can program two different functions when the edges change:

- ***Positive edge***: The event is triggered when the voltage at the TTL Pin changes from 0V to +3.3V.
- ***Negative edge***: The event is triggered when the voltage at the TTL Pin changes from +3.3V to 0V.
- ***The following Function Codes are programmable:***
  - **-** (Not used): No function, the Pin is not used.
  - ***Connect***: With this function a connection can be established.
  - ***Connect (level triggered)***: Same function as above, however, except that here the level is analyzed and not the edge.

TIP

With this function, you can configure that the connection is automatically re-established if there is an unexpected disconnection. Please configure this function under ***Positive edge***. Since the TTL Pin has a 3.3V 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.

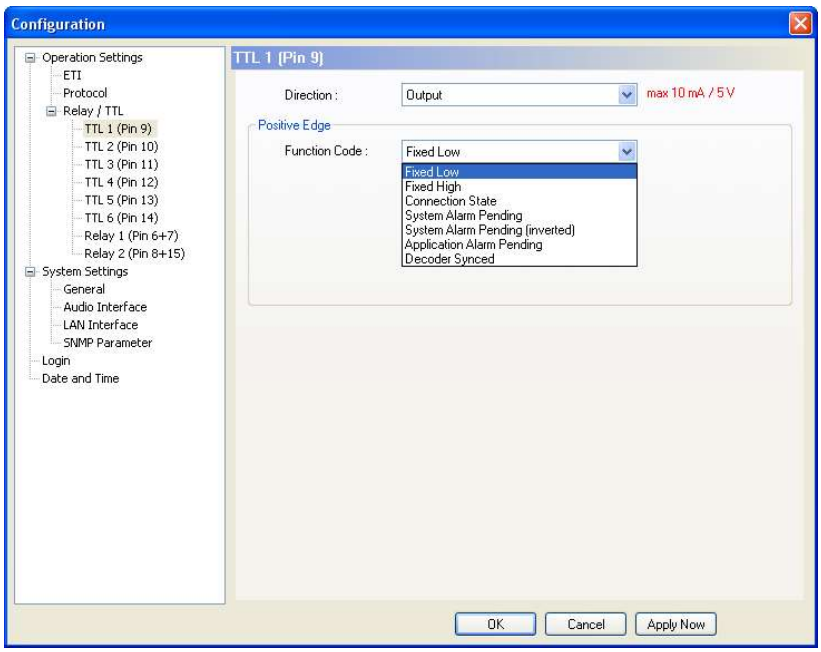
  - ***Disconnect***: By enabling this function a connection can be disconnected.

TTL Pin as Output

ATTENTION

Please note that the maximum switching current is 10 mA and the maximum switching voltage is 3.3V per TTL output.

FIG. 17 TTL PIN AS OUTPUT



If a TTL Pin is configured as an ***Output***, the event is signalled when the voltage at the TTL Pin changes from 0V to +3.3V.

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

- ***Fixed Low (0V)***: The TTL Pin is fixed to 0V.
- ***Fixed High (3.3V)***: The TTL Pin is fixed to +3.3V.
- ***Connection State***: Via this function you can signal the connection state. Please select the desired connection state under ***Connection State.*** The following options are available:
  - ***Disconnect***
  - ***Connect***
- ***System Alarm Pending***: This function signals a pending system alarm (see CHAPTER 4.9.1).
- ***System Alarm Pending (inverted)***: Same function as above, except that here the inverted signal is transmitted.
- ***Application Alarm Pending***: This function signals a pending application alarm.
- ***Decoder synced***: If the Audio decoder is synchronized, the TTL pin is set.

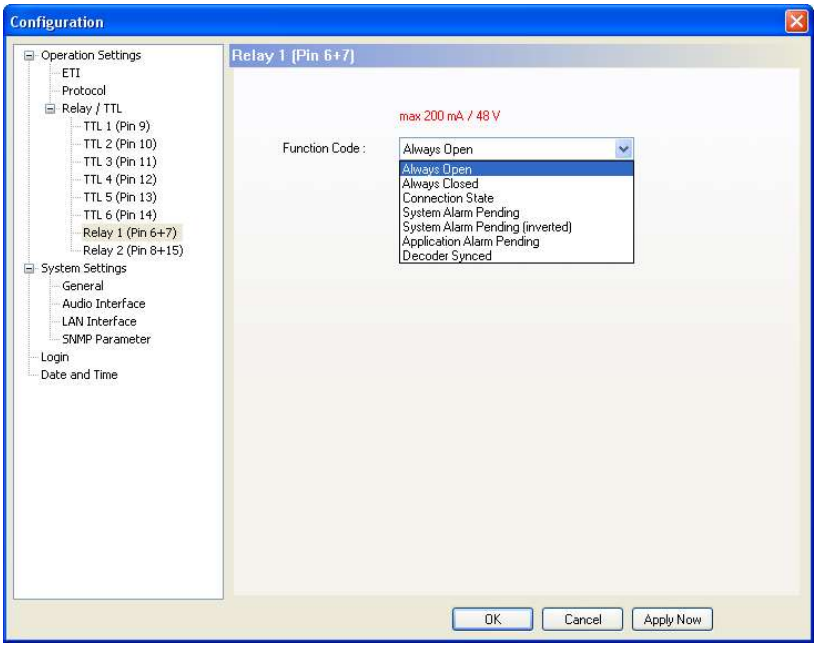
Relay

ATTENTION

Please note 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+15)***.

FIG. 18 RELAY



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

- ***Always open***:The relay contacts are always open.
- ***Always closed***: The relay contacts are always close.
- ***Connection State***: Via this function you can signal the connection state. Please select the desired connection state under ***Connection State.*** The following options are available:
  - ***Disconnect***
  - ***Connect***
- ***System Alarm Pending***: This function signals a pending system alarm (see CHAPTER 4.9.1).
- ***System Alarm Pending (inverted)***: Same function as above, except that here the inverted signal is transmitted.
- ***Application Alarm Pending***:This function signals a pending application alarm.

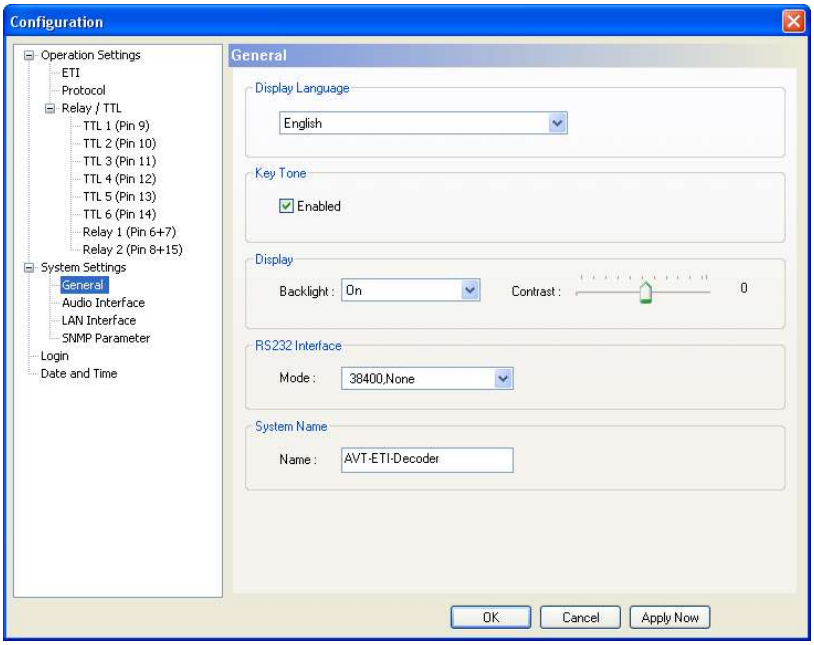
– ***Decoder synced***: If the Audio decoder is synchronized, the Relay Pins are closed.

4.7.2.2 System Settings

NOTE All settings made under ***System Settings*** **cannot** be saved as ***Preset*** (see CHAPTER 4.7.3.3).

4.7.2.2.1 General

FIG. 19 GENERAL



Display Language

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

Key Tone

- To activate 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.

RS232 Interface

This interface is currently not in use.

System Name

Under ***System Name*** you can enter a name for the system. The name is displayed in the headline of the PC software as well as in the ***MAGIC AD1 ETI Multi*** Software (see CHAPTER 6, Page 71) which allows a simultaneous control of up to 20 systems.
If you select the tree view of the ***MAGIC AD1 ETI Multi*** Software, you can use the following structure under ***System Name*** to create a tree:

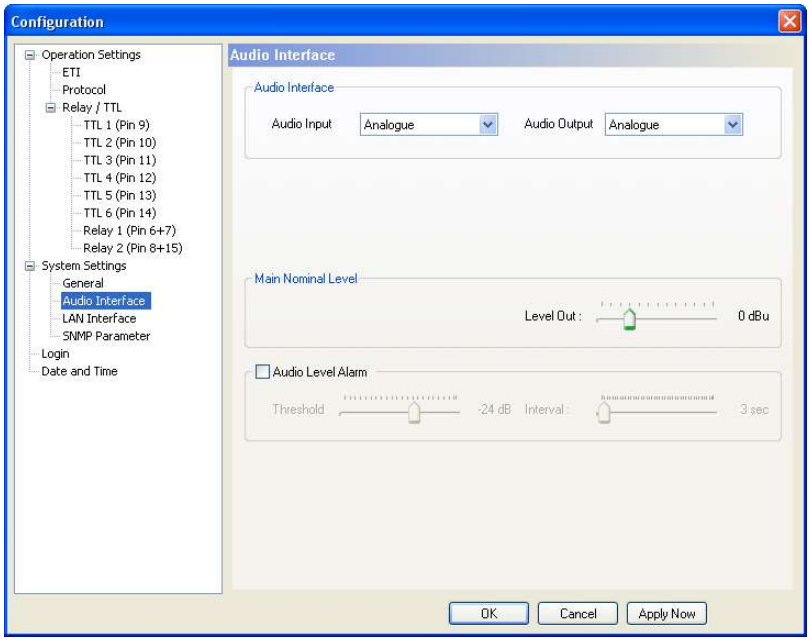
Name of Parent node - Name of Child node

For further details, please have a look at CHAPTER 6.

4.7.2.2.2 Audio Interface

MAGIC AD1 ETI supports analogue as well as digital AES/EBU Audio interfaces. 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. 20 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 within a range of ***-3 ... +9 dBu*** in steps of 1-dB. The headroom 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.

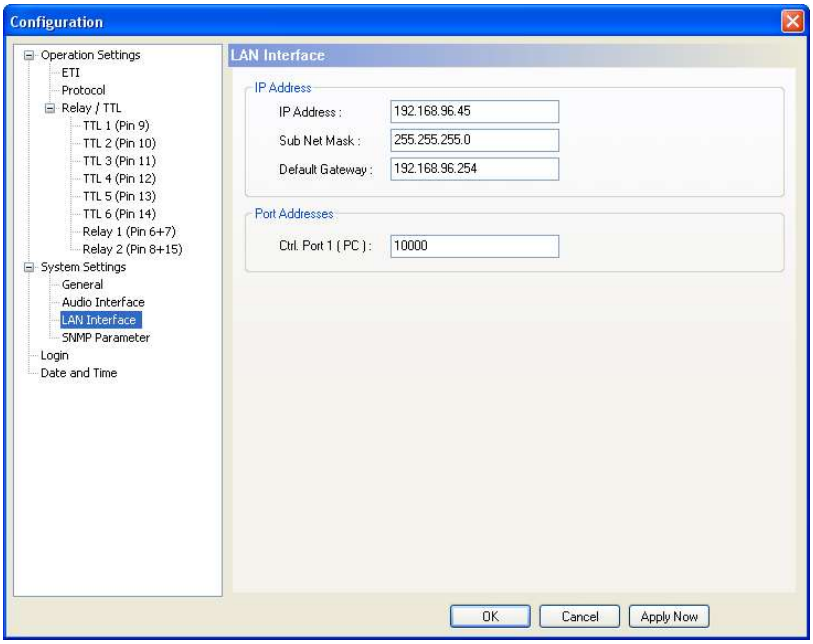
Audio Level Alarm

The ***Audio Level Alarm*** function checks the level at the Audio output of the *MAGIC AD1 ETI Decoder*. If the audio level falls below a certain threshold value for an indicated time interval, the alarm will be set (see CHAPTER 4.9.1, Page 59). The threshold value can be selected under ***Threshold***. The time frame can be set under ***Interval***.

4.7.2.2.3 LAN Interface

Under LAN Interface you ned to enter the configuration details of the LAN interface.

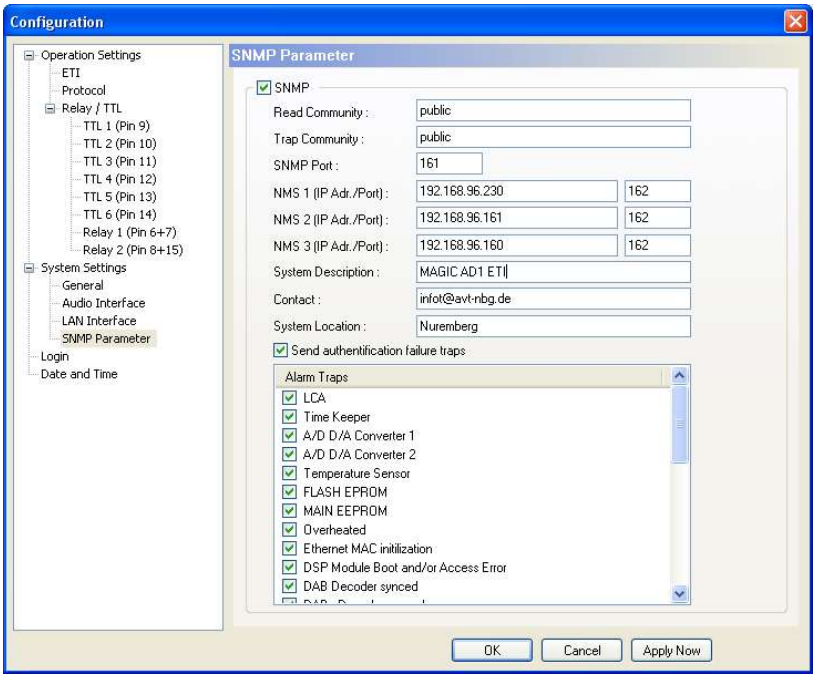
FIG. 21 LAN INTERFACE



4.7.2.2.4 SNMP Parameter

To integrate the *MAGIC AD1 ETI Decoder* into a network management system, the SNMP function can be used. Currently, the system supports SNMP V2.

FIG. 22 SNMP PARAMETER



Under SNMP Parameter the function can be activated by enabling the option ***SNMP***.

Please ask your network management system administrator for the correct SNMP settings.

– The ***Read Community*** entry is an identifier to read data. The name has to be identical with the name in your Management System. By default, the name ***public*** is used.

– Under ***Trap Community*** you define the name for the trap datagrams. The name has to be identical with the name in your Management System.

– Please enter the port on which MAGIC AD1 ETI receives messages under ***SNMP Port***. The default setting is usually ***Port 161***.

– The *MAGIC AD1 ETI Decoder* allows the addressing of up to three different Network Management Systems. Please enter the corresponding IP addresses and Ports under ***NMS 1 (IP Adr./Port)***, ***NMS 2 (IP Adr./Port)*** and ***NMS 3 (IP Adr./Port)***.

– Under ***System Description*** you can assign a name for the *MAGIC AD1 ETI Decoder*.

– Under ***Contact*** an email address can be entered.

– Under ***Location*** you can enter the location of the decoder.

– If a trap is to be sent when wrong community names are used, please enable the option ***Send authentication failure traps***.

In the ***Alarm Traps*** window all system alarms that can be monitored with a network management system are listed.

4.7.2.3 Login

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

ATTENTION

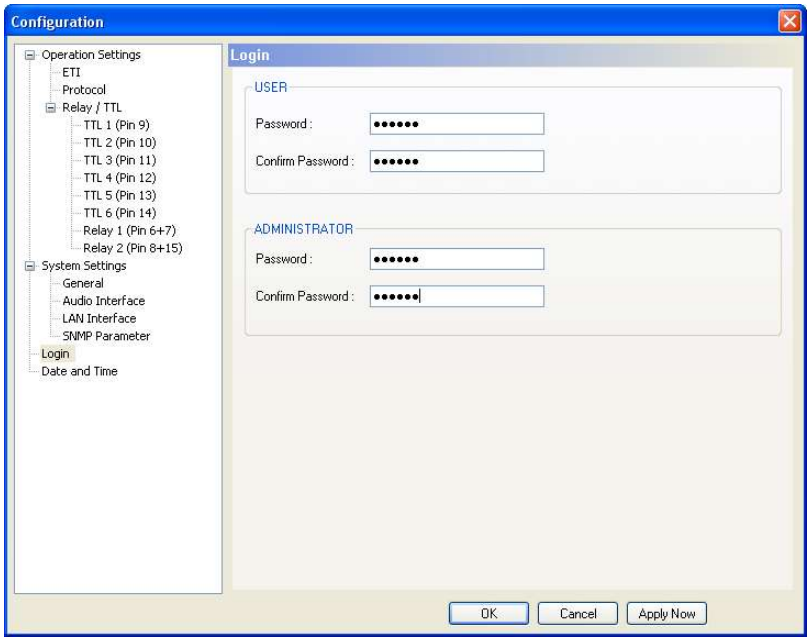
The entered passwords are stored in the system. Take care in entering a password. If you forget your password, the system can only be unlocked by the AVT Service.

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

NOTE

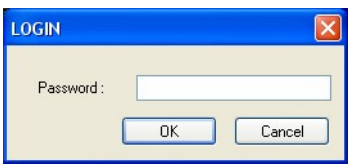
It is not differentiated between upper and lower case when a password is entered.

FIG. 23 LOGIN



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

FIG. 24 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***

(3) **User** and **Administrator Password** configured: A password is always required.

- **User Password** is entered:

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

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

  Immediately available menus:

- ***Extras → System Monitor***

Administrator Password is entered: All menus are available.

NOTE

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

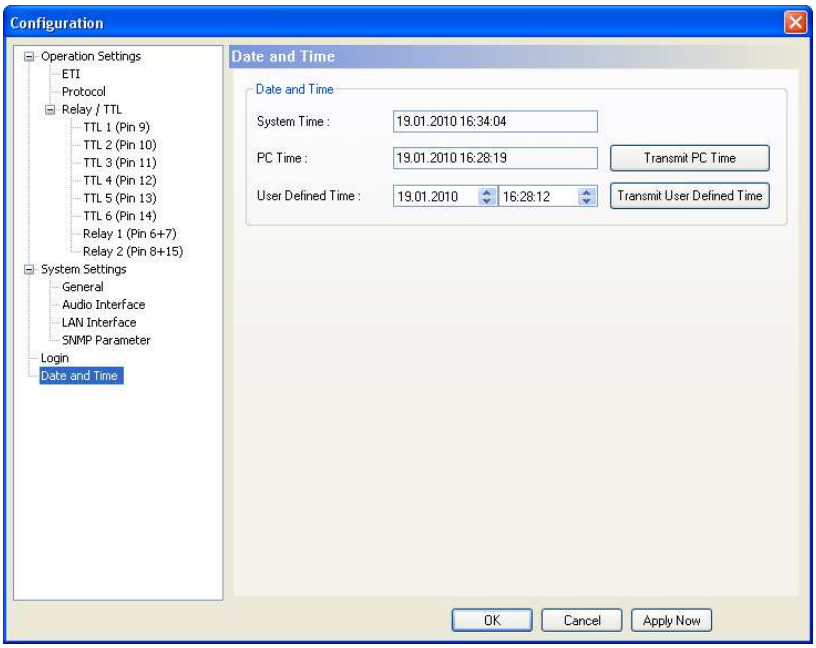
4.7.2.4 Date and Time

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

Via the button ***Transmit PC Time*** you can synchronise the system time with the 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. 25 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

NOTE

If the FIG 0/10 is transmitted by the Ensemble Multiplexer, the time will be adjusted automatically.

4.7.3 Submenu Presets

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

4.7.3.1 Save as ...

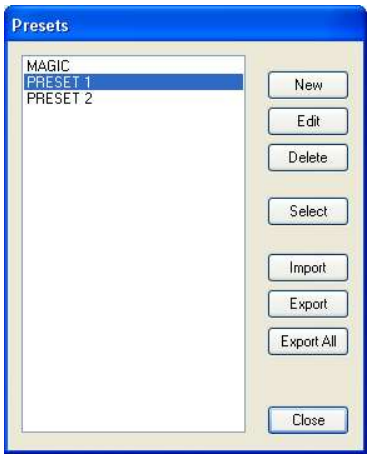
Via the option ***Save as ...***, the current configuration can be saved as ***Preset*** under any name (max. 8 characters). Special characters and space characters are **not** allowed. Please make sure that you use clear-cut names, otherwise an error message is displayed asking you if you want to overwrite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

FIG. 26 SAVE PRESET

4.7.3.2 Manage Presets

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

FIG. 27 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. 28 CREATE A NEW PRESET

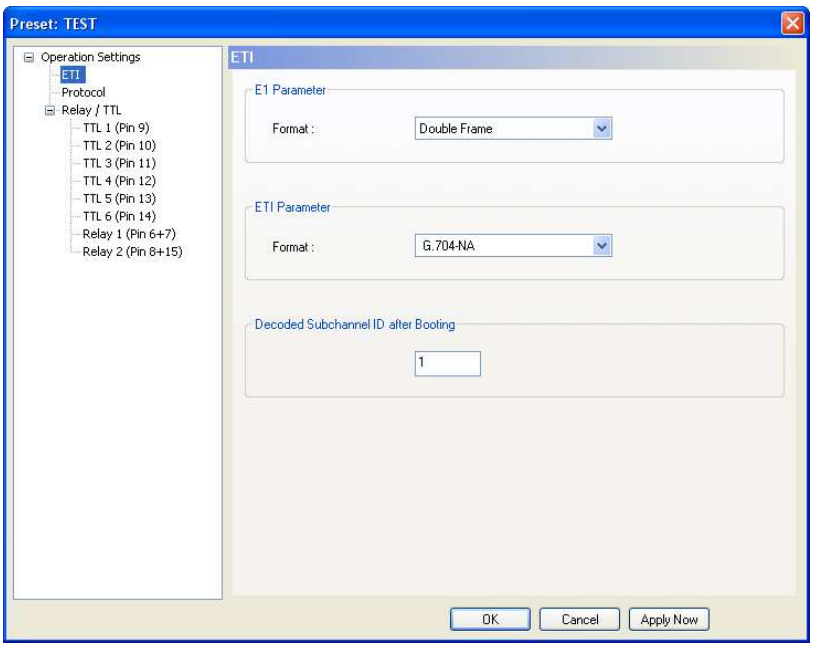
NOTE

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 ***Presets***, which can be adapted according to your requirements. The following settings can be saved in a Preset:

- ETI (see PAGE 35)
- Protocol (see PAGE 36)
- Relay/TTL (see PAGE 37)

FIG. 29 EDIT PRESET



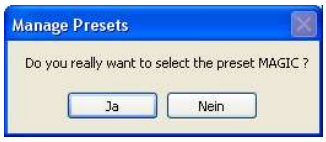
The ***Edit*** button allows you to edit the configuration which is currently selected in the list. The current configuration of the system is not changed or loaded.

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

FIG. 30 CONFIRMATION TO DELETE A PRESET

To activate a confirmation selected from the list, please press the ***Select*** button. For safety reasons a confirmation is required.

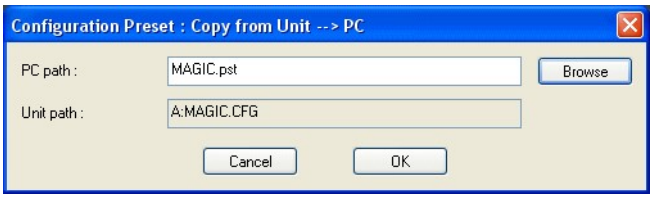
FIG. 31 CONFIRMATION TO ACTIVATE A PRESET



The ***Import*** button allows you to import a configuration preset from 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. 32 EXPORT A PRESET

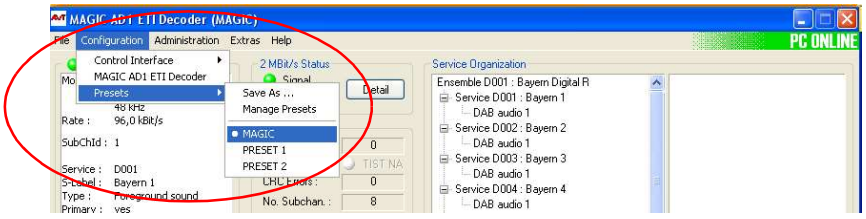


With ***Export All*** you can save all configurations displayed in the list in a direction of your choice. For each configuration an individual file with the extension '***.pst***' is generated.

4.7.3.3 Activate a Preset

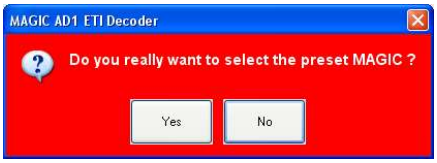
All presets are displayed under ***Configuration*** → ***Presets*** → ***„Preset Name"*** and can be activated by simply clicking on them.

FIG. 33 ACTIVATE A PRESET



For safety reasons a confirmation is required.

FIG. 34 CONFIRMATION TO ACTIVATE A PRESET

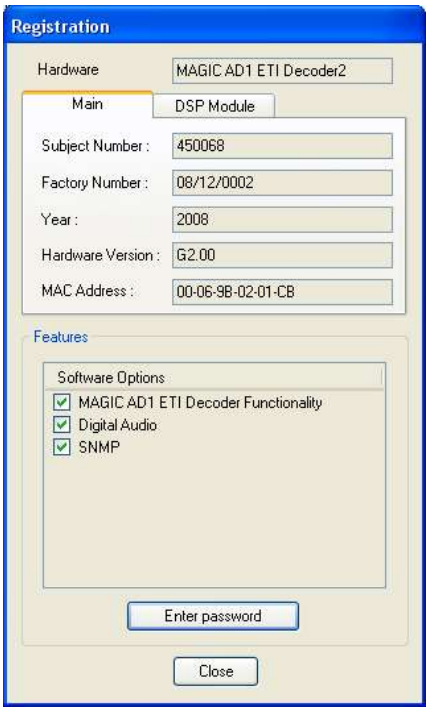


4.8 Menu Administration

4.8.1 Submenu Registration

Via the submenu ***Registration*** you can check the activated Firmware options.

FIG. 35 REGISTRATION



Under ***Hardware*** the system type (here: ***MAGIC AD1 ETI Decoder***) is displayed. On the tab ***Main*** all relevant features for identification like ***Subject Number***, ***Factory Number***, ***Year***, ***Hardware Version*** as well as the ***MAC Address*** are displayed.

Under the ***DSP Module*** tab you find the identification features for the DSP module.

Under ***Features*** all available software options are listed.

Upgrade of Firmware Options

NOTE

We need the serial number (***Factory Number)*** of the system for an upgrade. 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** later, please enter the password, which you received from us, in the dialogue which opens when you click on the button ***Enter Password***.

FIG. 36 PASSWORD ENTRY

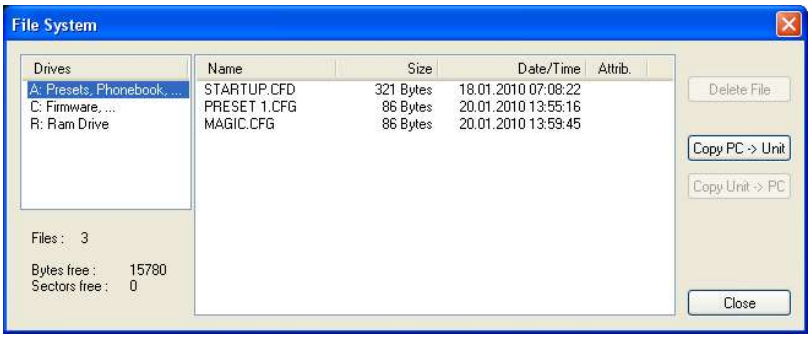
4.8.2 Submenu File System

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 4.6).

FIG. 37 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 button ***Copy PC -> Unit*** allows you to copy a file from a PC to the system.

ATTENTION

Please use only the function ***Firmware Download*** (see CHAPTER 4.8.4) respectively the import functions in the menu ***File*** (see CHAPTER 4.6) to copy files to the system.

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

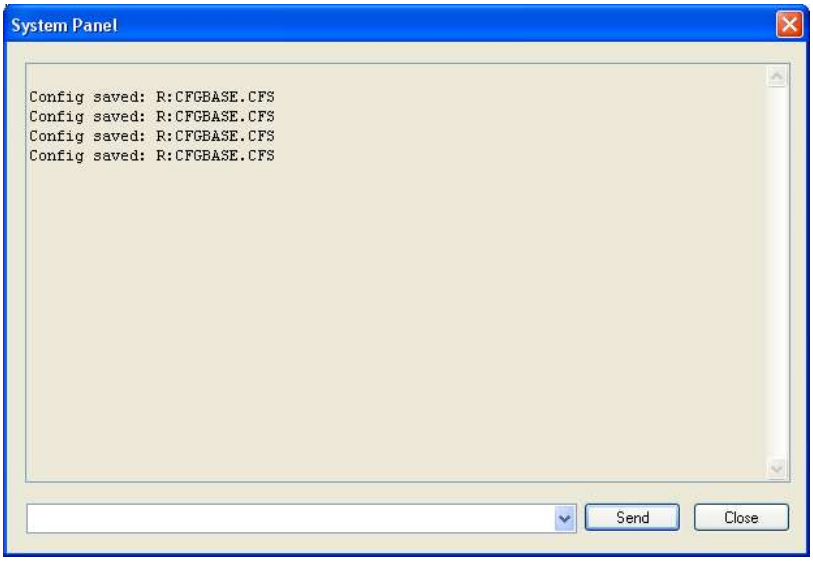
ATTENTION

Pleae use only the export functions under the menu ***File*** (see CHAPTER 4.6) to copy files to a PC.

4.8.3 Submenu System Panel

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

FIG. 38 SUBMENU SYSTEM PANEL



4.8.4 Submenu Firmware Download

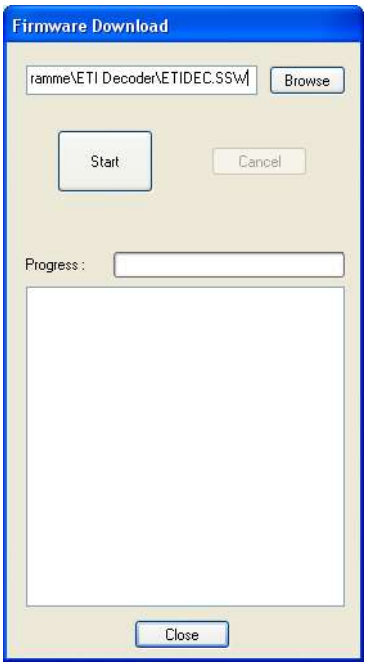
The firmware required for the *MAGIC AD1 ETI Decoder* is always included in the PC software. Via the ***Firmware Download*** the firmware can be comfortably loaded on the system.

With the ***Browse*** button you select the firmware file. The file is always stored in the directory in which you installed the *MAGIC AD1 ETI Decoder* application. The standard installation directory is:

C:\Programme\MAGIC AD1 ETI Decoder

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

FIG. 39 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

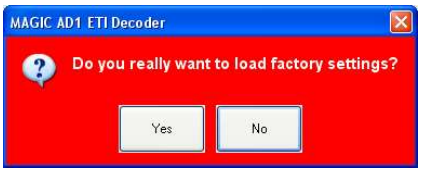
If a download had been faulty, you can simply switch off the unit and then switch it on again. The new software is only written in the flash memory, if a download had been successful. Otherwise the old firmware is maintained.

4.8.5 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. 40 CONFIRMATION TO SET FACTORY SETTINGS



NOTE The presets are not deleted.

4.9 Menu Extras

4.9.1 Submenu System Monitor

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

FIG. 41 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 occured since the unit has been switched on. You can reset the alarm counter by pressing the ***Alarm Counter Reset*** button.

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)***: FPGA error; the communication with a programmed component is faulty.
- ***TIME KEEPER***: The communication with the integrated clock module is faulty.
- ***A/D D/A Converter 1***: The communication with the first AD/DA converter is faulty (responsible for the Audio interface).
- ***A/D D/A Converter 2***: The communication with the second AD/DA converter is faulty (responsible for the Headphone interface).
- ***DSP Module Boot Error:*** The DSP module is not booting.

- ***Temperature Sensor***: The communication with the temperature sensor is faulty.
- ***FLASH EPROM***: The communication with the permanent memory is faulty. Configurations cannot be stored or read anymore.
- ***MAIN EPROM***: The communication with the permanent memory is faulty. Configurations cannot be stored or read anymore.
- ***Overheated***: The system sets this alarm, if the system temperature is higher than 57°C. Please disconnect the system from electricity or cool down the ambient air temperature.
- ***DSP Module Access***: The communication with the module is faulty.
- ***Ethernet MAC initialization***: The initialization of the ethernet hardware has failed.

TIP

You can also configure a system alarm as relay output (see PAGE 37).

- 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 occurs since the unit has been switched on. You can reset the alarm counter by pressing the ***Alarm Counter Reset*** button .
  - ***DAB Decoder synced***: This alarm occurs if the DAB decoder is not synchronized. This alarm is only signalled if the decoded stream is a DAB stream.
  - ***DAB+ Decoder synced***: This alarm occurs if the DAB+ decoder is not synchronized. This alarm is only signalled if the decoded stream is a DAB+ stream.
  - ***DAB Decoder sampling clock***: The DAB decoder receives a sampling clock that doesn't correspond with the expected one. This alarm is only signalled if the decoded stream is a DAB stream.
  - ***ETI Framing***: ETI framing cannot be found.
  - ***TIST Signalling***: The LI or NA TIST is not continiously.
  - ***Audio Out level left***: There is no signal on the left Audio output. This alarm is only signalled if the audio level alarm is enabled (see CHAPTER 4.7.2.2.2, Page 44).
  - ***Audio Out level right***: There is no signal on the right Audio output. This alarm is only signalled if the audio level alarm is enabled (see CHAPTER 4.7.2.2.2, Page 44).
- Under ***AES/EBU status*** the following alarm can be displayed:
  - ***AES3 Framing***: This alarm is set, if the digital Audio output is used with recovered clock and no digital input signal is available.
- Under ***2-Mbit/s alarms*** all possible 2-Mbit/s (E1) alarms are displayed: A red LED signals a currently existing alarm. It is also displayed how often the alarm occurs since the unit has been switched on. You can reset the alarm counter by pressing the ***Alarm Counter Reset*** button .
  - ***No Signal***: No 2-Mbit/s signal is received.
  - ***No Sync***: No 2-Mbit/s framing can be found.
  - ***AIS*** (Alarm Indication Signal): Two or less „0" are received within the last two frames. This alarm is only signalled if „G.704-NA" has been selected as ETI format.

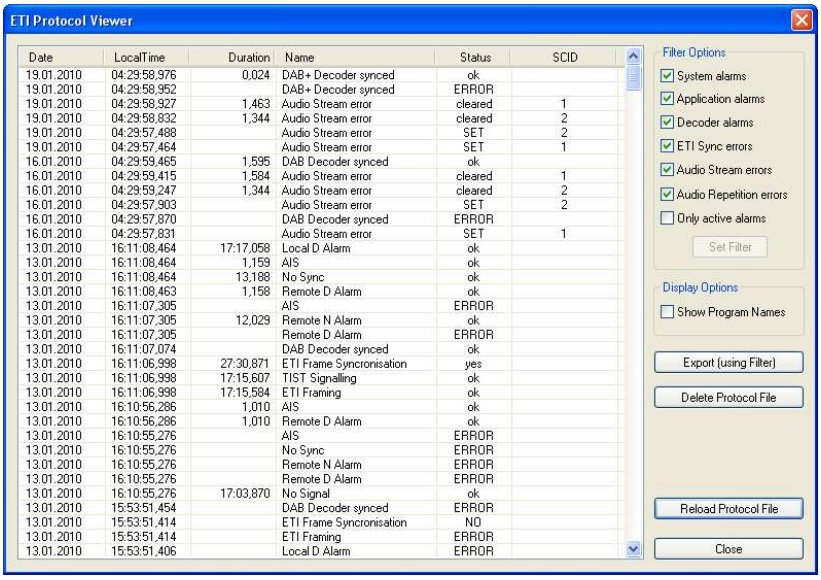
- ***Local N Alarm*** (Local Nondeferred Alarm): The local error bit rate is higher than 10e-06. This corresponds to one bit error in four minutes. This alarm usually occurs, when the system is switched on and when the line interface is connected. The alarm should not last longer than four minutes. This alarm is only signalled if „G.704-NA“ has been selected as ETI format.
- ***Remote N Alarm*** (Remote Nondeferred Alarm): The remote error bit rate is higher than 10e-06. This corresponds to one bit error in four minutes. This alarm usually occurs, when the remote 2-Mbit/s transmission system is switched on and when the line interface is connected. This is usually only the case if a 2-Mbit/s transmission system is used between Multiplexer and ETI Decoder.
- ***Local D Alarm*** (Local Deferred Alarm): The local error bit rate is higher than 10e-03. If this alarm ocurrs, the 2-Mbit/s signal cannot be decoded anymore. This alarm is only signalled if „G.704-NA“ has been selected as ETI format.
- ***Remote D Alarm*** (Remote Deferred Alarm): The remote error bit rate is higher than 10e-03. No 2-Mbit/s input signal can be decoded at the remote side, i.e. the transmitting 2-Mbit/s system. This is usually only the case if a 2-Mbit/s transmission system is used between Multiplexer and ETI Decoder.
- ***Output shorted***: 2-Mbit/s output is shorted.

- Under ***System Parameter*** you will find the following information:
  - The actual system temperature can be found under ***System Temperature***. The temperature is measured in °C. A normal system temperature lies around 30...45°C.
  - Under ***DSP Load*** the load of the system is displayed.
- Under ***Ethernet status*** you can find information about your ethernet connection.
- Under ***Abs. data rates*** the absolute data rates of your ethernet connections are displayed. TX stands for transmit direction and RX for receive direction.
- Under ***Ethernet physical flags*** the following ethernet flags are displayed:
  - ***Extended***
  - ***Auto***
  - ***Negot.***
  - ***Jabber***
  - ***Remote Fault***

4.9.2 Submenu Protocol File Viewer

Via the menu ***Protocol File Viewer*** you can display the ETI Protocol File.

FIG. 42 PROTOCOL FILE VIEWER



In the window the alarms are listed with the following information:

- ***Date***
- ***LocalTime***
- ***Duration***
- ***Name***
- ***Status***
- ***SCID***

Under ***Filter Options*** you can select which alarms and errors are to be displayed in the window. To apply your selection, please press the ***Set Filter*** button.

Under ***Display Options*** you can chose if you want to display the Program Names in the alarm list. If the Program Names are to be displayed, please enable the option ***Show Program Names***.

With the button ***Export (using Filter)*** you can export the protocol file with your selected Filter options.

With the button ***Delete Protocol File*** you can delete the ETI protocol file of the system.

With the button ***Reload Protocol File*** you can reload the protocol file and in this way update the displayed list.

With the button ***Close*** the window will be closed.

4.10 Menu Help

4.10.1 Submenu About MAGIC AD1 ETI Decoder

In the ***About MAGIC AD1 ETI Decoder*** 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. 43 SUBMENU ABOUT MAGIC AD1 ETI DECODER

5 OPERATION VIA DISPLAY AND KEYPAD

In this chapter all basic configurations for the operation of the ***MAGIC AD1 ETI Decoder*** via the front keypad and display are explained.

A few settings are not adjustable on the unit. All settings can also be made comfortably via the ***MAGIC AD1 ETI Decoder Software*** included in delivery.

NOTE

For the details of most functions please see the PC Software description from CHAPTER 4.

5.1 Basic configuration

In the following some basic configuration of ***MAGIC AD1 ETI Decoder*** are described in detail.

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 number 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 note that the menu reference number can change depending on the configuration.

5.1.1 Setting the menu language

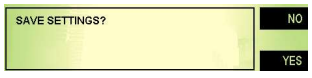
In delivery status ENGLISH is selected as standard menu language. In order to select GERMAN as menu language, please follow the instructions below:

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 be pressing the OK button or the OK softkey.

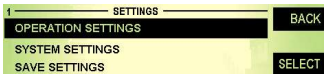


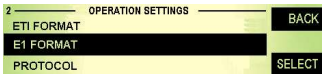
To get back to the main menu, please press the ☎ key. Now you are asked if you want to SAVE SETTINGS? Via the YES softkey the settings are stored permanently in the system.

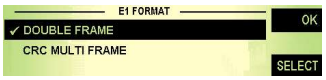
NOTE

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

5.1.2 Setting the E1 and ETI parameters







You can select the format of your 2-Mbit/s (E1) network in the following way:

– First press the softkey ❮ *MENU* and select the submenu *OPERATION SETTINGS* using the cursor keys ⌃ and ⌄. Confirm your selection by pressing the softkey *SELECT*.

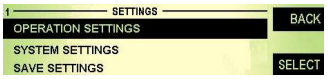
– With the cursor keys ⌃ and ⌄ you reach the submenu *E1 FORMAT*. To view the available options, please press the softkey *SELECT*.

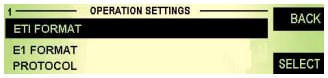
– Select the desired format (*DOUBLE FRAME* or *CRC MULTI FRAME*) with the cursor keys ⌃ and ⌄ and confirm it by pressing the softkey *SELECT*.

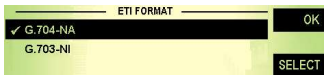
– Confirm your entry by pressing the *OK* button or the softkey *OK*.

– 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.

To select the ETI format please follow the instructions below:







– First press the softkey ❮ *MENU* and select *OPERATION SETTINGS* by using the cursor keys ⌃ and ⌄. Confirm your selection by pressing the softkey *SELECT*.

– With the use of the cursor keys ⌃ and ⌄ you reach the submenu *ETI FORMAT*. To view the available options, please press the softkey *SELECT*.

– Select the desired format (*G.703-NI* or *G.704-NA*) with the cursor keys ⌃ and ⌄ and confirm it by pressing the softkey *SELECT*.

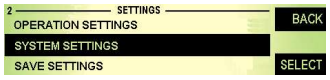
– Confirm your entry by pressing the *OK* button or the softkey *OK*.

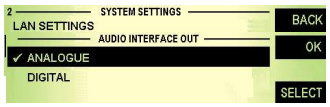
– To get back to the main menu please press the ☎ button. Now you are asked if you want to *SAVE SETTINGS?* Via the softkey *YES* the setting is stored permanently in the system.

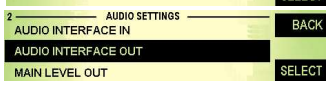
5.1.3 Setting the Audio interface: Analogue or digital

MAGIC AD1 ETI has 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 ☎ key 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*.

– Using the cursor keys ⌃ and ⌄ please mark the option *AUDIO INTERFACE OUT* or the option *AUDIO INTERFACE IN*, respectively, and press again *SELECT*. Now the options *ANALOGUE* and *DIGITAL* are displayed.

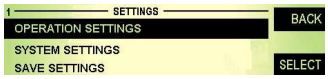
– Select the desired option with the cursor keys ⌃ and ⌄ and by pressing the softkey *SELECT*.

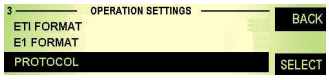
– Confirm your entry by pressing the OK button or the softkey OK.

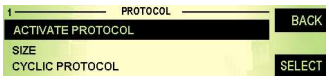
– To get back to the main menu please press the button. Now you are asked if you want to SAVE SETTINGS? Via the softkey YES the setting is stored permanently in the system.

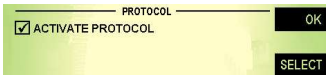
5.1.4 Activating the ETI protocol file

The *MAGIC AD1 ETI Decoder* allows an internal storage of alarm messages. To activate the Protocol function please follow the instructions below.









– First press the softkey MENU and select OPERATION SETTINGS via the cursor keys and and the softkey SELECT.

– With the use of the cursor keys and and the SELECT softkey you reach the option PROTOCOL.

– Select the option ACTIVATE PROTOCOL 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.

5.2 Working with the MAGIC AD1 ETI Decoder

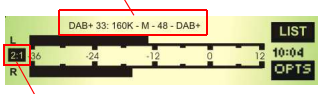
In the next chapters basic functions such as selecting a component for monitoring, displaying the service organization or the alarm messages, etc., are described in detail.

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.

5.2.1 The Status display - Operation during a connection

Information about the decoded program



Service no.and Component no. in the list

The status display shows the subchannel which is currently selected to be decoded. In the top line the following information is displayed:

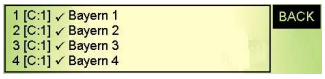
Service Label: Bit rate - Cod. Mode - Sampling frequency - Cod. Algorithm

Example: Bayern 1 : 96K - DC - 48 - DAB
The Service Label of the monitored subchannel is „Bayern 1“, the coding mode is Dual Channel (DC), the sampling rate is 48-kHz and it is a DAB programm.

The following Coding Modes are possible: Mono (M), Mono +SBR (M), Stereo (S), Stereo + SBR (S), Joint Stereo (JS), Dual Channel (DC) and Parametric Stereo (PS).

On the left side of the display you can see the Service number and the Component number of the currently decoded programm.

Displaying the Service Components



To display all monitored service components please press the *LIST* button. A ✓ signalises that there are no problems with the service component. If an error occurs, *ERR* is displayed instead of the ✓. For scrolling up and down, please use the cursor keys ^ and v at the front keypad.

To get back to the main menu, you can press the *BACK* button.

Selecting a subchannel for monitoring

To select a subchannel to be decoded, press the numerical key of the front keypad which corresponds to the Service number in the displayed list, i.e. if the Service number for the programm is 2, press the button *2* at the front keypad.

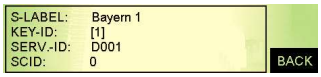
To display the detailed information of the currently decoded programm, press the *SHIFT* button and then the *STATUS* button of the front keypad.

STATUS button

SHIFT button

The following information is displayed:

- Service Label (*S-LABEL*)
- *KEY-ID* to select a channel via front keypad
- Service ID (*SERV.-ID*)
- Service Component ID (*SCID*)
- Subchannel ID (*SUBCH.-ID*)
- *CODING*
- *AUDIO RATE*



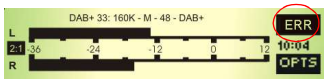
– Coding Mode (*MODE*)
– Sampling frequency (*SAMPLING*).

For scrolling up and down, please use the cursor keys ⌃ and ⌄ at the front keypad.

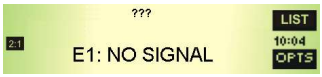
Adjusting the Headphones Level

To adjust the headphones level you can use the cursor keys ⌃ and ⌄ at the front keypad.

Alarm Messages



If you see a blinking *ERR* button instead of the *LIST* button on the top right corner of the display, an error has occurred in one of the subchannnels. To see which subchannel has generated the alarm message, please press the *ERR* button.



If there is a problem with the 2-Mbit/s connection, the following error messages are displayed:

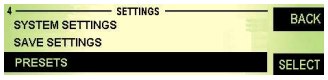
– *E1: NO SIGNAL*
– *E1: NO SYNC.*

5.2.2 Working with Presets

The *MAGIC AD1 ETI Decoder* differentiates between *SYSTEM SETTINGS* and *OPERATION SETTINGS*.

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

Operation settings need to be reconfigured depending on the application. To easily recall recurring configurations you can store up to 10 *PRESETS*.



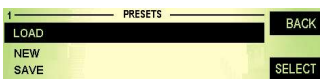
You reach the menu for the *PRESETS* by pressing the *MENU* softkey once, the cursor key ⌄ three times and by pressing the softkey *SELECT* once as confirmation.

In the insert field *PRESETS* you can search for a certain *PRESET*. As soon as you enter a character with the help of the alphanumerical keypad of the system, the corresponding entries of the Preset list are filtered out.

Alternatively, you can select a preset with the cursor keys ⌃ and ⌄ from the list.

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 realized:



– *LOAD*: The selected *PRESET* is loaded.
– *NEW*: With the help of this function you can create a new *PRESET*. All current Operation Settings are stored as basic and can be adjusted afterwards.

– *SAVE*: The selected *PRESET* is overwritten with the current Operation Settings. For safety reasons a confirmation is required

– *DELETE*: The currently selected *PRESET* is deleted. For safety reasons a confirmation is required.

– *SET FACTORY SETTINGS*: This function resets the system into the standard settings. Presets are not deleted.

NOTE

If the *PRESET* 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 with the power supply.

6 MAGIC AD1 ETI MULTI SOFTWARE

The ***MAGIC AD1 ETI Multi*** allows you to control and monitor up to twenty ***MAGIC AD1 ETI Decoders*** within a network.

6.1 Installing the MAGIC AD1 ETI Multi Software

Please insert the CD (430306) 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 read also the ***Release Letter*** that will inform you about the latest functions and about the corrected bugs.

Please press under ***Software Updates*** the ***MAGIC AD1 ETI Multi*** button. Subsequently the setup programm 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 AD1 ETI Multi*** on the CD.

Please follow the instructions of the installation routine.

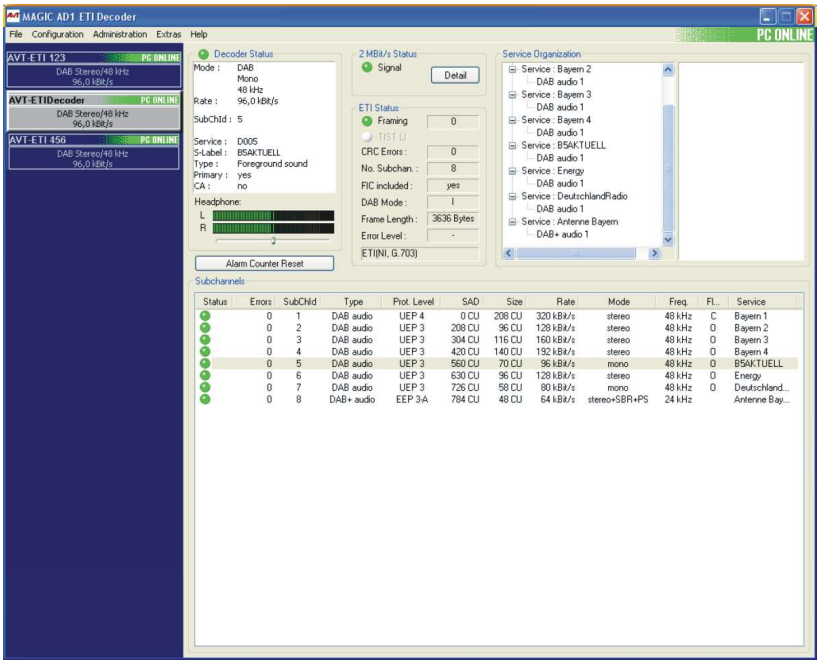
After the installation the software can be started by clicking on the ***MAGIC AD1 ETI Decoder Multi*** symbol on the desktop.

Connect the systems via the LAN interface with your network. How to configure the LAN interface is described below (see “Add a MAGIC AD1 ETI Decoder to the control list“, Page 74).

6.2 User Interface of the MAGIC AD1 ETI Multi Software

The standard display of the MAGIC AD1 ETI Multi Software is shown in the figure below.

FIG. 44 STANDARD WINDOW TO CONTROL SEVERAL ETI DECODERS



On the left side of the main window, each MAGIC AD1 ETI Decoder installed within the network is displayed. In the status line, the name of the system (see Page 43, System Name) and the PC status is displayed.

FIG. 45 INFO FIELD OF ONE ETI DECODER

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

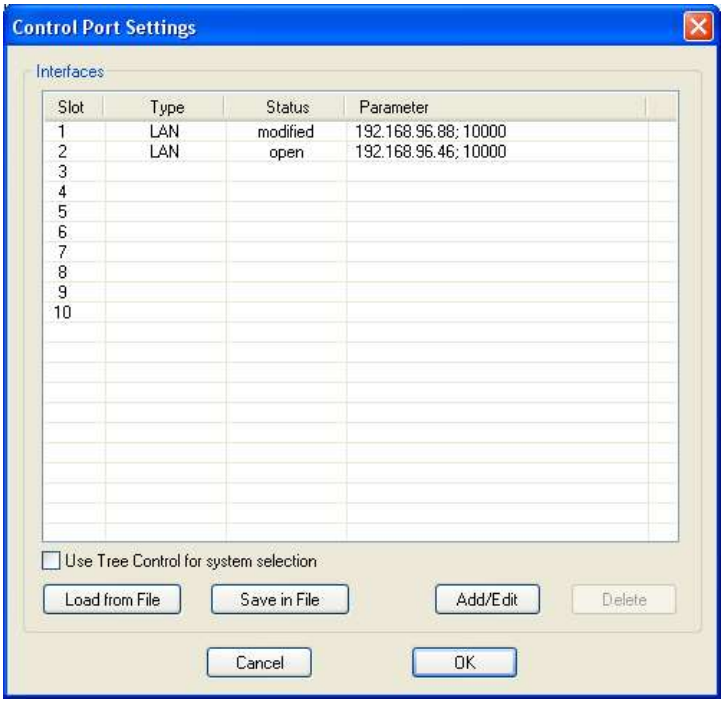
If you double-click on the info field, the ***System Monitor*** is displayed.

If you click on the info field with the right mouse key, you can select if you want to open the System Monitor (***Open System Monitor***) or open the configuration dialogue (***Open Configuration Dialogue***).

6.3 Submenu Control Interface

To edit the system control list select the submenu ***Control Interface*** under ***Configuration.***

FIG. 46 CONTROL PORT SETTINGS



With the standard user interface of the *MAGIC AD1 ETI Multi* Software up to **ten** systems can be displayed in the control list. Alternatively, you can select the option ***Use Tree Control for system selection*** to display the control list as tree with parent nodes and child nodes. In the tree view up to **twenty** systems can be displayed.

FIG. 47 TREE VIEW OF MAGIC AD1 ETI MULTI SOFTWARE

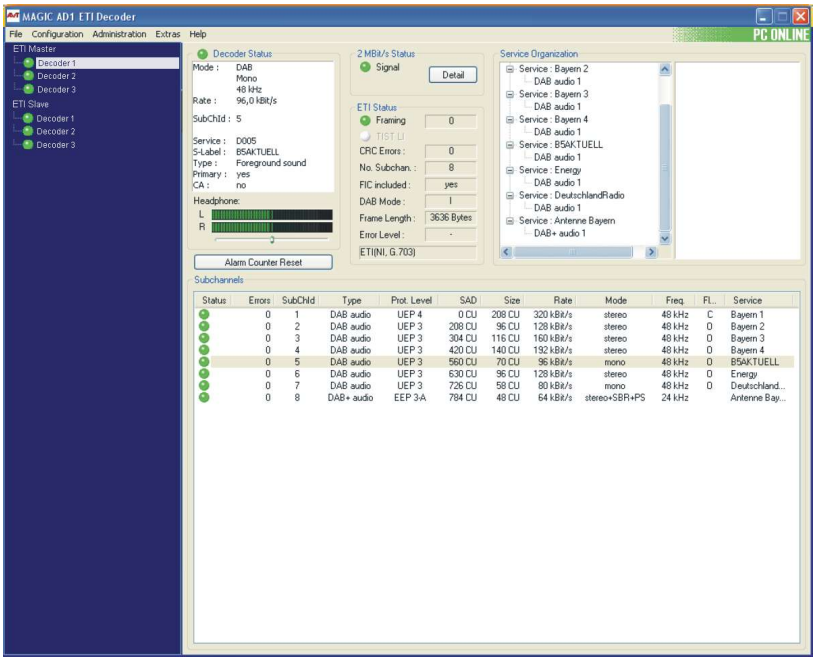
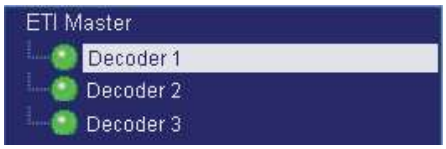


FIG. 48 DETAILED VEW OF TREE CONTROL LIST



A green LED next to the system name shows that the connection is ok and that no alarms have ocurred.
If the LED is displayedin blue, an alarm has been ocurred.
A red LED shows a current alarm or a faulty PC connection.

If you double-click on the system name or the LED, the ***System Monitor*** is displayed.

If you click on the system name or the LED with the right mouse key, you can select if you want to open the System Monitor (***Open System Monitor***) or open the configuration dialogue (***Open Configuration Dialogue***).

The tree structure with parent nodes (e.g. ***ETI Master*** in Fig. 48, Page 74) and child nodes (e.g. ***Decoder 1***, ***Decoder 2*** and ***Decoder 3*** in Fig. 48, Page 74) can be created by using the following name structure under ***System name*** (see Page 43) in the configuration:

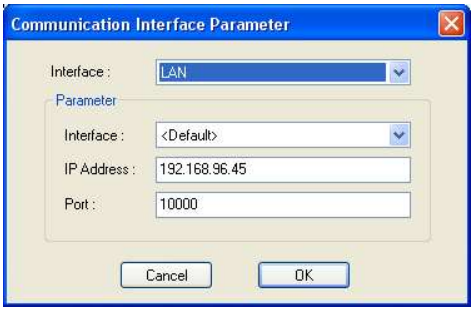
Name of parent node - Name of Child node

Example: **ETI Master - Decoder 1**

Add a MAGIC AD1 ETI Decoder to the control list

To add a new system, click on the ***Add/Edit*** button in the ***Control Port Settings*** window (Fig. 46, Page 73). The window for the ***Communication Interface Parameters*** is displayed. Please select the option ***LAN*** under ***Interface***.

FIG. 49 LAN PARAMETERS



Under ***Parameter*** → ***Interface*** edit ***<Default>***. If there should be more than one network interface card in your PC, select the desired one.

The standard ***IP Address*** of the system is ***192.168.96.102*** and the standard control ***Port 10000***.

To enable a connection with your PC, you have to be in the same **subnet**. Therefore, please enter an IP address from your subnet[1].

[1] In this way you can find out your own subnet: Under *Windows XP* click on ***Start*** → ***Execute ...***. Enter ***cmd*** in the command line. An entry window is displayed in which you must enter ***ipconfig***. Your IP address is displayed (e.g. 192.168.12.35). Your subnet is accordingly 192.168.12.xxx.

To change the IP address at the front keypad of the system, press the softkey *MENU → SYSTEM SETTINGS → LAN SETTINGS→ IP ADDRESS*. Enter now the desired IP address. When entering manually you have to be sure that the IP address is not already used by another unit[1].

Please enter the correct IP address of the system under ***IP Address***.

NOTE

Maybe further settings are necessary (e.g. sub-net mask, standard: 255.255.255.000). In that case please contact your network administrator, who can tell you the correct settings.

TIP

The currently allocated IP address of the system can be displayed by pressing the right telephone button if currently no Audio connection is established.

Edit a MAGIC AD1 ETI Decoder of the control list

To edit a system of the control list, select the desired entry and click on the ***Add/Edit*** button. The window for the ***Communication Interface Parameters*** is displayed. Now you can make your changes to the entry.

Delete a MAGIC AD1 ETI Decoder from the control list

To delete a system from the control list, select the desired entry and click on the ***Delete*** button. For safety reasons you have to confirm that you really want to delete the entry.

Import/Export a control list

With the button ***Load from File*** you can import a complete control list from a data carrier. The file extension of the system configuration file is always '***.ifl***' (Control Interface List Files).

Correspondingly, via ***Save in File*** a complete control list can be saved. The storage location and position can be chosen by yourself.

To save your settings, press the ***OK*** button.

To cancel your settings, press the ***Cancel*** button.

[1] To check if the IP address is already used in the network, follow the instructions: Under ***Windows XP*** click on ***Start*** → ***Execute ...***. Enter ***cmd*** in the command line. An entry window is displayed in which you must enter ***ping*** xxx.xxx.xxx.xxx. Whereas xxx stands for the IP address you want to check.

A 1 MENU STRUCTURE

On the following pages you will find the menu structure if *ENGLISH* is selected as language.

With the softkey *MENU* you reach the configuration settings of the system. The settings are divided into five submenus:

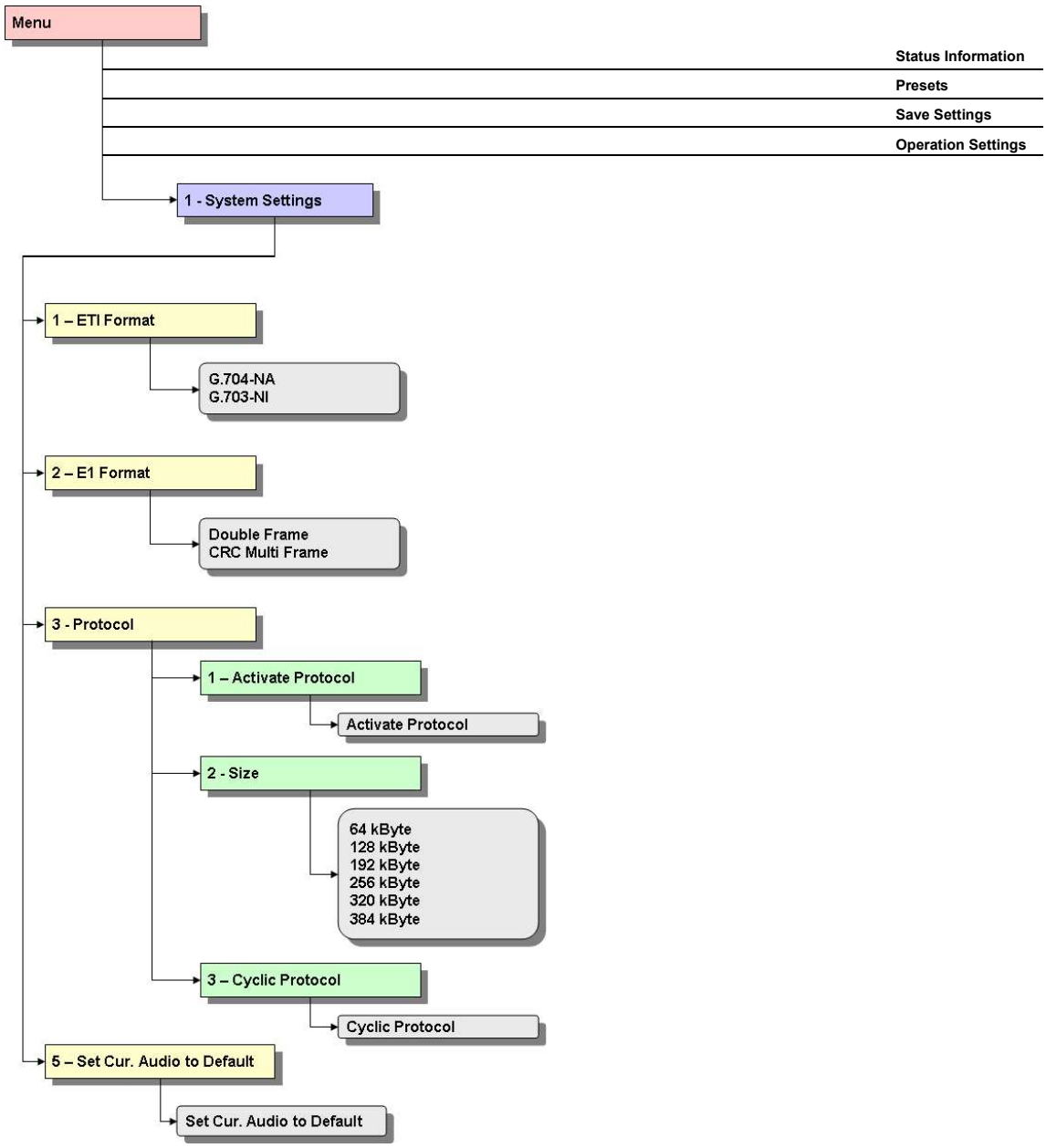
- *SYSTEM SETTINGS*
- *OPERATION SETTINGS*
- *SAVE SETTINGS*
- *PRESETS*
- *STATUS INFORMATION*

NOTE

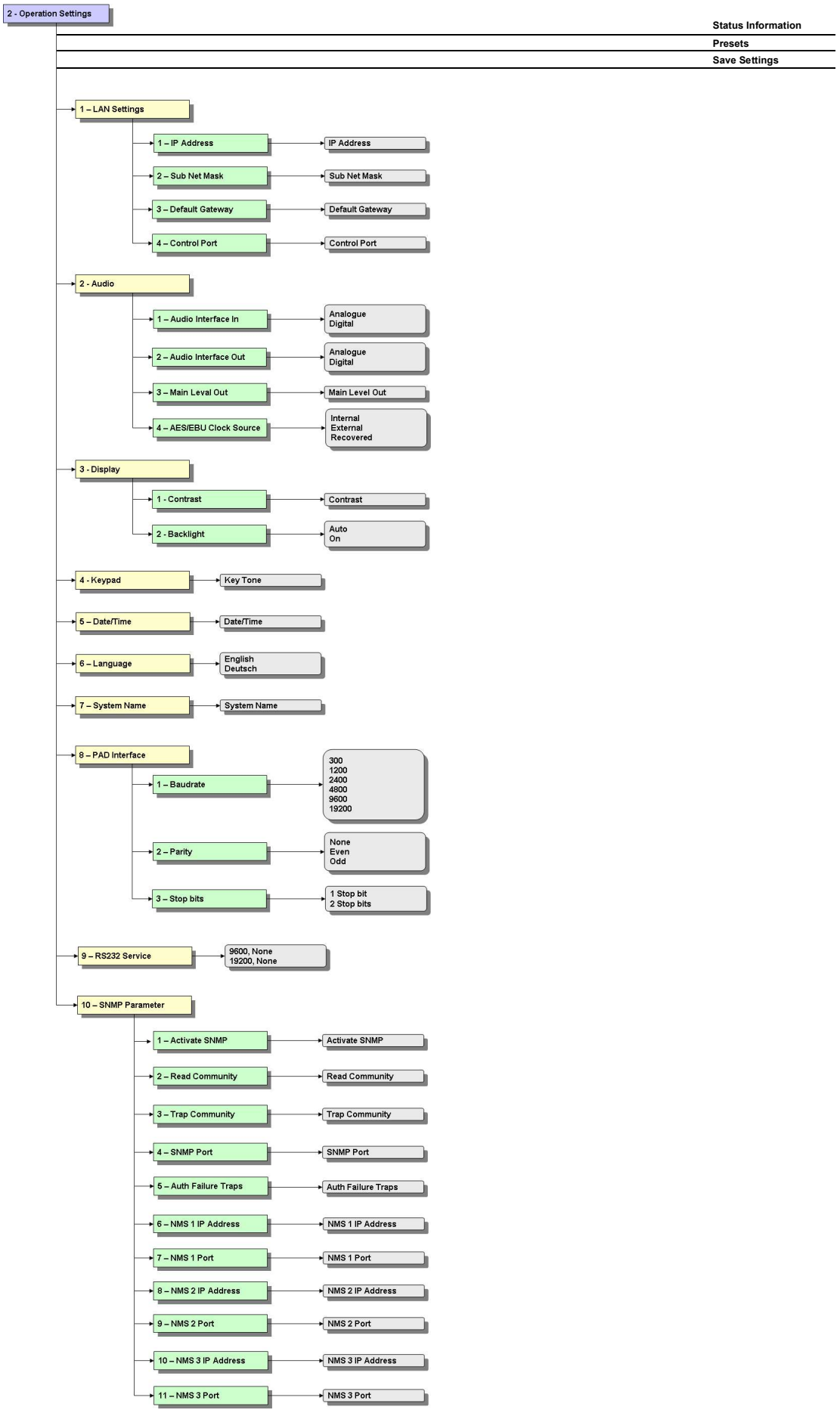
If you have configured a user or/and an administrator password, some menu items will not be available before you have entered the required password.

When the password is entered, it is not differentiated between upper and lower case.

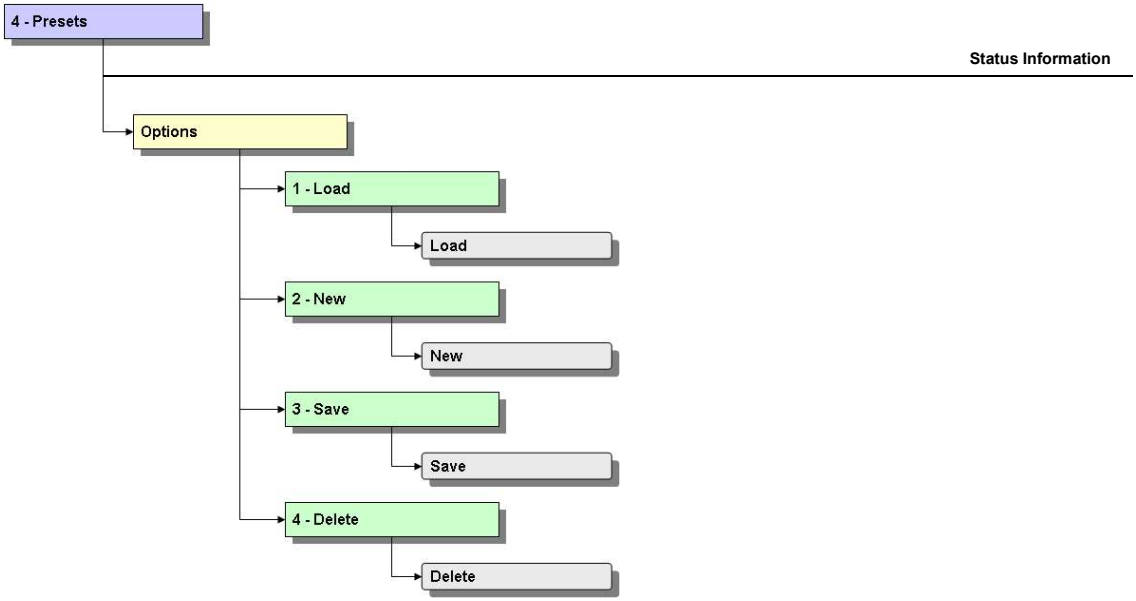
A1.1 System Settings



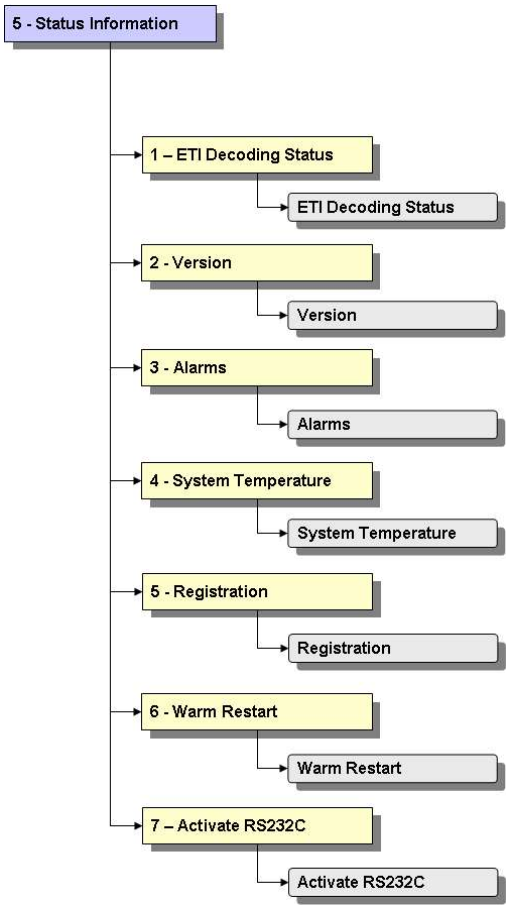
A1.2 Operation Settings



A1.3 Presets


4 - Presets
Status Information
Options
1 - Load
Load
2 - New
New
3 - Save
Save
4 - Delete
Delete

A1.4 Status Information



A 2 INTERFACES

A2.1 MAGIC AD1 ETI Decoder

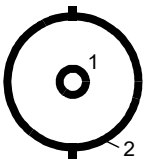
The interfaces of the system are shown in Fig. 50.

FIG. 50 REAR VIEW OF THE MAGIC AD1 ETI DECODER

All interfaces are described below.

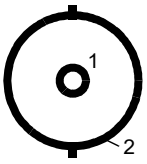
A2.2 Network interfaces

A2.2.1 E1 (2-Mbit/s) interface



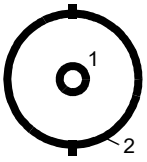
TAB. 1 PIN ASSIGNMENT: E1 IN

Socket: E1 in (BNC)		
Pin	**Signal**	**Electrical characteristics**
1	Data - F1 in	Amplitude: 3 V_{pp} Impedance: 75 Ω unbalanced Range: 100 m
2	Ground	



TAB. 2 PIN ASSIGNMENT: E1 OUT

Socket: E1 out (BNC)		
Pin	**Signal**	**Electrical characteristics**
1	Data - F1 out	Amplitude: 3 V_{pp} Impedance: 75 Ω unbalanced Range: 100 m
2	Ground	

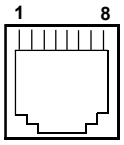


TAB. 3 PIN ASSIGNMENT: UNBALANCED CLOCK INTERFACE

Socket: Clock in / Clock out (BNC)		
Pin	**Signal**	**Electrical characteristics**
1	Data - T3 in / T3 out	Amplitude: 0.5 ... 1.9 V_{0p} (Input) 1.5 V_{0p} (Output) Impedance: 75 Ω unbalanced Range: 100 m
2	Ground	

A2.2.2 S_0 interface

NOTE This interface is not supported in the MAGIC AD1 ETI Decoder.

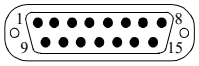


TAB. 4 PIN ASSIGNMENT: S_0 INTERFACE (ISDN)

Socket: Western (8 pole) RJ45			
Pin	**Signal**		**Electrical characteristics**
1	not used		
2	not used		
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		

A2.2.3 X.21 interface

NOTE This interface is not supported in the MAGIC AD1 ETI Decoder.



TAB. 5 PIN ASSIGNMENT: X.21 INTERFACE

Connector: SUB-D 15 pole

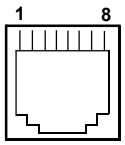
Pin	Signal		Direction	Electrical characteristics
1	shield			Type: DCE with Gender Changer
2	TX a	Transmit Data a	input	
3	CTL a	Control a	input	Level: V.11, symmetric
4	RX a	Receive Data a	output	
5	IND a	Indication a	output	Data rates: 8, 16, 24, 32,40, 48, 56, 64, 80, 96, 112, 128, 144, 160, 192, 224,256, 320, 384-kbit/s
6	SCLK a	Signal Element Timing a	output	
7	BCLK a[a]	Byte Timing a	output	Maximum cable length: 100 m
8	GND	Ground		
9	TX b	Transmit Data b	input	
10	CTL b	Control b	input	
11	RX b	Receive Data b	output	
12	IND b	Indicate b	output	
13	SCLK b	Signal Element Timing b	output	
14	BCLK b[a]	Byte Timing b	output	
15	not used			

[a] usually it will not be used

A2.3 Control and data interfaces

A2.3.1 LAN interface

Via this interface you have the possibility to control the system.



TAB. 6 PIN ASSIGNMENT: LAN INTERFACE

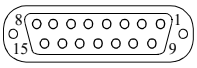
Socket: Western (8 pole) RJ45

Pin	Signal		Electrical characteristics	
1	TX+	Data out +	Recommendation:	IEEE 802.3/Ethernet
2	TX-	Data out -	Data rrate (automatical):	10BaseT (10-Mbit/s) 100BaseTX (100-MBit/s)
3	RX+	Data in +		
4	not used		Recommended:	CAT5
5	not used		Maximum cable length:	100m
6	RX-	Data in -		
7	not used			
8	not used			

A2.3.2 TTL/RELAY interface

This interface can be used for external signalling of alarms. The programming of the available functions is possible via the Windows PC Software:

- 6 x TTL input/output, programmable
- 2 x relay output, programmable



TAB. 7 PIN ASSIGNMENT: TTL/RELAY INTERFACE

Socket: SUB-D 15 pole

Pin	Signal	Direction	Electrical characteristics
1	not used		**TTL interface:**
2	not used		Capacity of the TTL outputs: Maximum voltage: 3.3V Maximum current: 10mA
3	not used		
4	not used		**Relay interface:**
5	GND		Capacity of the relays: Maximum voltage: 48V Maximum current: 200mA
6	RELAY 1 (A)	output	
7	RELAY 1 (B)	output	
8	RELAY 2 (A)	output	
9	TTL1	input/output	
10	TTL2	input/output	
11	TTL3	input/output	
12	TTL4	input/output	
13	TTL5	input/output	
14	TTL6	input/output	
15	RELAY 2 (B)	output	

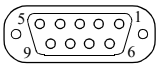
A2.3.3 DATA/PAD interface

The DATA/PAD interface can be used as RS232 data interface. This function is currentyl not implemented.

NOTE

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

RXD serves always as receive path and TDX serves always as transmit path.



TAB. 8 PIN ASSIGNMENT: DATA/PAD INTERFACE

Socket: SUB-D 9 pole

Pin	Signal	Electrical characteristics
1	not used	**RS232 interface:**
2	RXD[b] Receive Data	Type (Pin 2, 3): DCE[a] Level: V.24 (RS232) Data rate: max. 115200 Baud Range: max 15m Protocol: programmable
3	TXD[c] Transmit Data	
4	not used	
5	GND	
6	not used	
7	not used	
8	not used	
9	not used	

[a] DCE = Data Communication Equipment

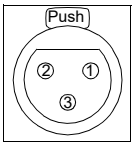
[b] ATTENTION: on this Pin the MAGICAD1 ETI **transmits** data

[c] ATTENTION: on this Pin the MAGICAD1 ETI **receives** data

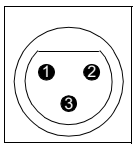
A2.4 Audio interfaces

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

A2.4.1 Analogue Audio interface

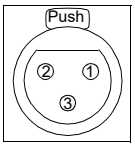


TAB. 9 PIN ASSIGNMENT: ANALOGUE INPUT (AUDIO 1/2 IN)		
Socket: 3 pole XLR		
Pin	**Signal**	**Electrical characteristics**
1	GND	Input level: adjustable -3 .... +9 dBu
2	AUDIO IN a	Impedance: > 25 kΩ
3	AUDIO IN b	Headroom: 6 dB

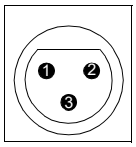


TAB. 10 PIN ASSIGNENT: ANALOGUE OUTPUT (AUDIO 1/2 OUT)		
Socket: 3 pole XLR		
Pin	**Signal**	**Electrical characteristics**
1	GND	Output level: adjustable -3 .... +9 dBu
2	AUDIO OUT a	Impedance: < 50 Ω
3	AUDIO OUT b	Headroom: 6 dB

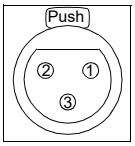
A2.4.2 Digital AES/EBU Audio interface



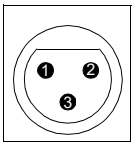
TAB. 11 PIN ASSIGNMENT: DIGITAL INPUT (AES IN)		
Socket: 3 pole XLR		
Pin	**Signal**	**Electrical characteristics**
1	GND	IEC-958
2	AUDIO IN a	
3	AUDIO IN b	



TAB. 12 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. 13 PIN ASSIGNMENT: CLOCK INPUT (CLK IN)		
Socket: 3 pole XLR		
Pin	**Signal**	**Electrical characteristics**
1	GND	TTL
2	CLOCK IN	
3	not used	



TAB. 14 PIN ASSIGNMENT: CLOCK OUTPUT (CLK OUT)

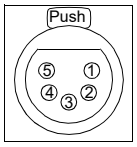
Connector: 3 pole XLR

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

A2.5 Headset interface

This interface allows a monitoring of the decoded audio signal as well as the audio inputs.

NOTE The microphone input is not available in this system.



TAB. 15 PIN ASSIGNMENT: HEADSET AUDIO INTERFACE

Socket: 5 pole XLR

Pin	Signal	Electrical characteristics
1	not used	Output Power: 0,15 W Load (Min.): 8 Ohm
2	not used	THD+N@1kHz: 0,25% (half power) PSRRa: 83 dB
3	GND	Level adjustment: 0 ... -40 dB
4	HEADPHONE right channel	
5	HEADPHONE left channel	

A 3 TECHNICAL DATA MAGIC AD1 ETI

LINE INTERFACES

– E1	2.048-MHz, G.703/G.704 Time slot 16 is not used Signal is bridged during power failure

SYNCHRONISATION

– ETI EN 300797
Ensemble Transport Interface

  – ETI (NA, G.704) 5592
  – ETI (NA, G.704) 5376
  – ETI (NI, G.703)
  – DAB-Modes: I, II, III, IV

DECODING

– DAB	ISO/MPEG Layer II (IRT license) DAB EN 300401
– DAB+	MPEG-4 HE-AAC V2 (FhG license) ETSI TS 102 563

SAMPLING FREQUENCIES

– DAB	24, 48 kHz
– DAB+	16, 24, 32, 48 kHz

AUDIO OUTPUT

– Analogue Audio 1/2	Electronically balanced output XLR connector
– Digital Audio AES/EBU	Format IEC-958 AES/EBU Professional Electrically balanced output XLR connector Integrated sample rate converter
– Headphones output	Electrically balanced output XLR connector

Data Interfaces

- PAD — not yet implemented
  V.24/RS232 IRT Rec. compliant
  38400, 57600, 115200 Baud
  max. 127 bytes per frame @ 115200 Baud

Control Iinterfaces

- LAN — RJ45
- TTL/RELAY — 15 pole SUB-D socket
  - 2 x relays — programmable
    max.switching capacity:
    48V/200mA
  - 6 x TTL input/output — programmable
    max. switching capacity:
    3.3V/10mA

Display

- graphical, resolution 160 x 32 pixel
- with backlight (can be switched off)

Power supply

- Integrated power supply
  - alternating voltage (AC) — 90...253V
  - current — max. 15W

Dimensions (H x W x D)

- 44mm (1U) x 19“ x 250 mm

Weight

- ca. 2,4 kg

Additional information

EMC

- EN 55103

Electrical safety

- EN 60950

Range of temperature

– +5 °C to 45 °C

Relative humidity

– 5% to 85%

A 4 GENERAL

A4.1 Order numbers

MAGIC AD1 ETI Decoder	800940

A4.2 Scope of delivery

- MAGIC AD1 ETI Decoder
  - CD Windows PC Software
  - Mains power supply cable
  - 19″ Mounting brackets
  - Manual

A4.3 Declaration of conformity

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

A 5 SERVICE INFORMATION

A5.1 Software Updates

Free Software updates you will find on our homepage under

http://www.avt-nbg.de

Before you can access the **Download** area, you need to register on our homepage. Go to **Create an account** under the **Log In** section and enter your name and email address. Define a user name and click on **Register**. You will receive a confirmation email that includes a link which allows you to activate your account. Now you can download the latest software updates under **Download - Software**.

A5.2 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 are using.

A5.3 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 Nürnberg
Germany

Symbols

Numerics

A

B

C

D

E

F

G

H

I

K

L

M

N

O

P

Q

R

S

T

U

V

W

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 91 D-90411 Nürnberg
erklärt, dass das Produkt declares, that the product	
Produktname(n): Product name(s):	MAGIC AD1 ETI Decoder 800940 MAGIC AD1 ETI Decoder

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, 23.06.2010
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