MAGIC EEC

ETI/EDI Converter

Software Manual

Audio
Video
Technologies

Content

1 WINDOWS PC SOFTWARE

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

1.1 Hardware requirements

Any current PC with Windows 8 or higher can be used.

1.2 Software and firmware updates

Download software updates from our website. No registration required.

https://www.avt-nbg.de

Navigate to Downloads > Software.

1.3 Support

Our support is available on working days:

Monday to Friday from 09:00 - 16:30 CET.

Support portal:	**https://avt-nbg.zammad.com**
Email:	**support@avt-nbg.de**
Phone number:	**+49 911 5271-110**

To deal with your problem efficiently please note down the factory number of the unit as well as the software version that you use.
The factory number is visible in the software under
Administration > Registration.

If you bought the system via your local dealer, please contact them first.

1.4 Repairs

If your unit is defective, please contact us before sending in the device.

To send in the unit, please fill in the included Service Request and send the unit to the following address:

AVT Audio Video Technologies GmbH
- Repairs -
Nordostpark 91
90411 NÜRNBERG
GERMANY

1.5 Operation via the Windows PC Software

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

1.5.1 The MAGIC EEC main window - General

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

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 occurred
(see ***System Monitor***)

BOOT MODE: No valid firmware on the system (orange). Please download the latest software (see CHAPTER 1.8.4)

TIP

If you click on the status message, the ***System Monitor*** is displayed which shows the system status in detail (see CHAPTER 1.9.1).

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***)

Layout

The main window is splitted into two parts:

- Left side: Information & alarms relevant for the Multiplexer connected to ***Interface 1***
- Right side: Information & alarms relevant for ***MAGIC EEC***

Meaning of the LEDs

The LEDs can be displayed in three different colours:

- ***green:*** no error
- ***red:*** error
- ***yellow***: warning

– ***blue:*** error has occured

To reset all LEDs to green, you need to press the ***Reset Counter*** button.

1.5.1.1 Interface 1

Under ***Interface 1*** and ***Interface 2*** the input state of the connected systems is displayed. The status messages can be

– ***OK***

– ***FAILURE***

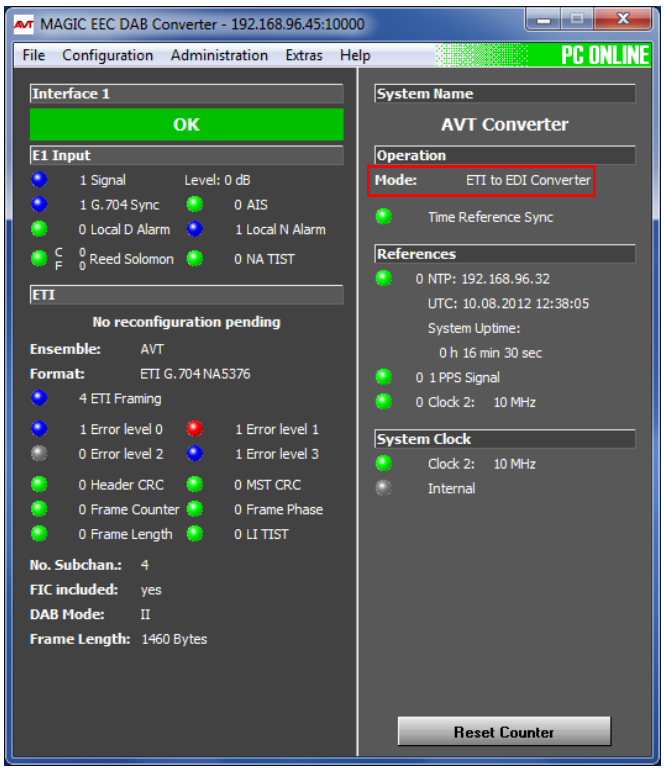
1.5.1.2 Reset Counter

On the bottom right side you will find the ***Reset Counter*** button. If you press this button, all LEDs will be reset to green and all error counters are reset to 0.

1.5.2 The MAGIC EEC main window - ETI to EDI Converter

To operate the *MAGIC EEC* as ETI to EDI Converter, please select under ***Configuration → System → Operation Settings → EEC Parameters → Mode*** the option ***ETI to EDI Converter*** (see CHAPTER 1.7.2.1.1).

FIG. 3 MAIN WINDOW - ETI TO EDI CONVERTER



1.5.2.1 E1 Input

The following alarms are displayed under ***E1 Input*** if the system is operated as ETI switch. Next to the LEDs you can see the number of the occured alarms.

- ***Signal***: No 2-Mbit/s signal is received.
- ***G.704 Sync***: No 2-Mbit/s framing can be found. This alarm is only signalled if „G.704-NA“ has been selected as ETI format.
- ***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.
- ***NA TIST***: The NA TIST is not continuous.This alarm is only signalled if „G.704-NA“ has been selected as ETI format.
- ***Local D Alarm*** (Local Deferred Alarm): The local error bit rate is higher than $10e^{-03}$. If this alarm occurs, the 2-Mbit/s signal cannot be decoded anymore. 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.
- ***C Reed Solomon***: Errors have been corrected by the Reed Solomon code.This alarm is only signalled if „G.704-NA“ has been selected as ETI format.
- ***F Reed Solomon***: Errors couldn’t be corrected by the Reed Solomon code (Failure). This alarm is only signalled if „G.704-NA“ has been selected as ETI format.

1.5.2.2 ETI

Directly below the ***ETI*** bar it is displayed if and when a reconfiguration is pending.

In the next line the name of the ***Ensemble*** is shown followed by the detected ***Format***.

Additionally, the following alarms and status messages are displayed. Next to the LEDs you can see the number of the occured alarms.

- ***ETI Framing***: This alarm occurs if the ETI frame cannot be found.
- ***Error Level 0***: This LED indicates that the Error Level is 0.
- ***Error Level 1***: This LED indicates that the Error Level is 1.
- ***Error Level 2***: This LED indicates that the Error Level is 2.
- ***Error Level 3***: This LED indicates that the Error Level is 3.
- ***Header CRC***: This alarm is set if the CRC header is faulty.

– ***MST CRC***: This alarm is set if the CRC MST is faulty.

– ***Frame Counter***: The frame counter is not continuous.

– ***Frame Phase***: The frame phase is not continuous.

– ***Frame Length***: The indicated frame length is wrong.

– ***LI TIST***: The LI TIST is not continuous.

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.

Also displayed are the ***DAB Mode*** and the ***Frame Length***.

1.5.2.3 Operation

The operation mode of *MAGIC EEC* is indicated under ***Mode***.

Additionally, the following status messages are displayed:

– ***Time Reference Sync***: This LED shows when the newly generated time information (time reference and TIST) is valid.

1.5.2.4 References

Under ***References*** the following alarms and status messages are indicated:

– ***NTP***: Display of the IP address of the connected NTP Server. The alarm is set if both NTP servers are not available.

– ***1 PPS***: The 1 pps clock is faulty.

– ***Clock 2: 10 MHz*** or ***2,048 MHz***: The reference clock is faulty.

1.5.2.5 System Clock

Here it is indicated which system clock is currently used.

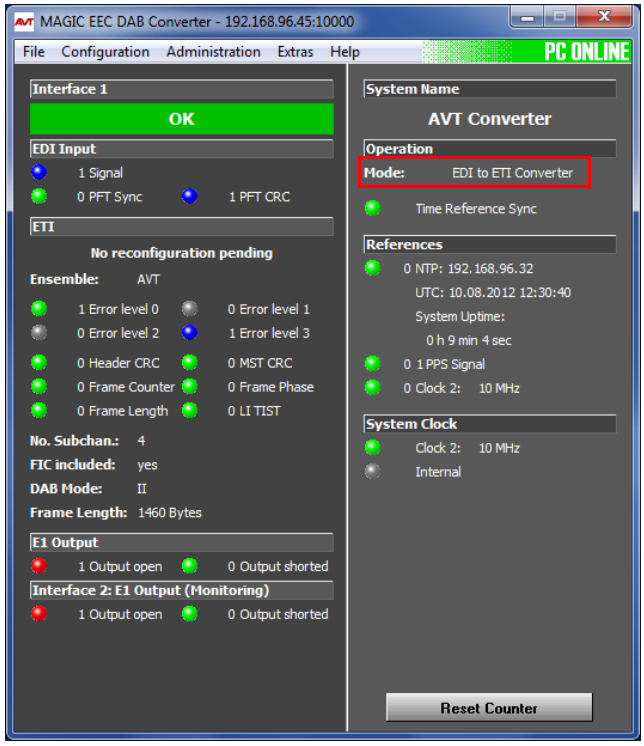
– ***Clock 2: 10 MHz*** or ***2,048 MHz*** (see CHAPTER 1.7.2.1.1)

– ***Internal***

1.5.3 The MAGIC EEC main window - EDI to ETI Converter

To operate the *MAGIC EEC* as EDI Switch, please select under ***Configuration*** → ***System*** → ***Operation Settings*** → ***EEC Parameters*** → ***Mode*** the option ***EDI to ETI Converter*** (see CHAPTER 1.7.2.1.1).

FIG. 4 MAIN WINDOW - EDI TO ETI CONVERTER



1.5.3.1 EDI Input

The following alarms are displayed under ***EDI Input*** if the system is operated as EDI Switch. Next to the LEDs you can see the number of the occured alarms.

- ***Signal***: No EDI signal is received.
- ***PFT Sync***: This alarm is set if the PFT Sync is faulty.
- ***PFT CRC***: This alarm is set if the PFT CRC is faulty.

1.5.3.2 ETI

Directly below the ***ETI*** bar it is displayed if and when a reconfiguration is pending.

In the next line the name of the ***Ensemble*** is shown followed by the detected ***Format***.

Additionally, the following alarms and status messages are displayed:

- ***ETI Framing***: This alarm occurs if the ETI frame cannot be found.
- ***Error Level 0***: This LED indicates that the Error Level is 0.

– ***Error Level 1***: This LED indicates that the Error Level is 1.

– ***Error Level 2***: This LED indicates that the Error Level is 2.

– ***Error Level 3***: This LED indicates that the Error Level is 3.

– ***Header CRC***: This alarm is set if the CRC header is faulty.

– ***MST CRC***: This alarm is set if the CRC MST is faulty.

– ***Frame Counter***: The frame counter is not continuous.

– ***Frame Phase***: The frame phase is not continuous.

– ***Frame Length***: The indicated frame length is wrong.

– ***LI TIST***: The LI TIST is not continuous.

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.

Also displayed are the ***DAB Mode*** and the ***Frame Length***.

1.5.3.3 E1 Output

The following alarms are displayed under ***E1 Output***. Next to the LEDs you can see the number of the occured alarms.

– ***Output open***: There is no further processing unit.

– ***Output shorted***: 2-Mbit/s output is shorted.

1.5.3.4 Interface 2: E1 Output (monitoring output)

NOTE This information will only be displayed if your *MAGIC EEC* system has the optional Monitoring Output (system version ID 800891).

The following alarms are displayed under ***Interface 2: E1 Output (monitoring output)***. Next to the LEDs you can see the number of the occured alarms.

– ***Output open***: There is no further processing unit.

– ***Output shorted***: 2-Mbit/s output is shorted.

TIP The output alarm messages can be disabled for ***Interface 2*** under ***Configuration → System → Operation Settings → E1 Interface***.

1.5.3.5 Operation

The operation mode of ***MAGIC EEC*** is indicated under ***Mode***.

The following status messages are also displayed:

– ***Time Reference Sync***: This LED shows when the newly generated time information (time reference and TIST) is valid.

1.5.3.6 References

Under ***References*** the following alarms and status messages are indicated:

– ***NTP***: Display of the IP address of the connected NTP Server. The alarm is set if both NTP servers are not available.

– ***1 PPS***: The 1 pps clock is faulty.

– ***Clock 2: 10 MHz*** *or* ***2.048 MHz***: The reference clock is faulty.

1.5.3.7 System Clock

Here it is indicated which system clock is currently used.

– ***Clock 2: 10 MHz*** or ***2.048 MHz*** (see CHAPTER 1.7.2.1.1)

– ***Internal***

1.6 Menu File

1.6.1 Submenu Exit

Via the submenu ***Exit*** you can close the *MAGIC EEC* software.

1.7 Menu Configuration

1.7.1 Submenu Control Interface

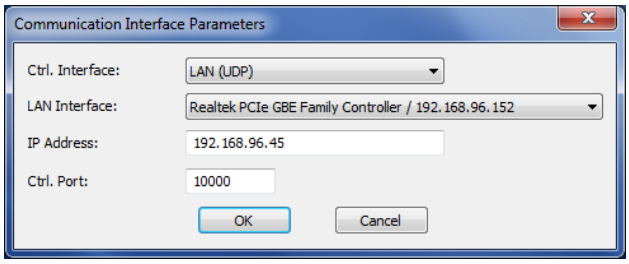
The system is configured and operated via the LAN interface.

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

LAN

For controlling the system via the LAN interface please select ***Ctrl. Interface → LAN (UDP)***.

FIG. 5 LAN PARAMETERS



Under ***LAN Interface*** please select ***<Default>***. If there should be more than one network interface card in your PC, select the desired one. If more than one IP address is assigned to a network interface, please make sure you the select the correct one. The IP addresses are displayed together with the network interfaces.

Under ***IP Address*** you need to enter the IP address of the *MAGIC EEC*. The standard IP address of the system is ***192.168.96.102*** and the standard control ***Port 10000***. The default interface is the ***LAN 1*** interface.

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 of the *LAN 1 interface* at the front keypad of the system, press the softkey MENU → SYSTEM SETTINGS → LAN INTERFACES → 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 ☎ .

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.

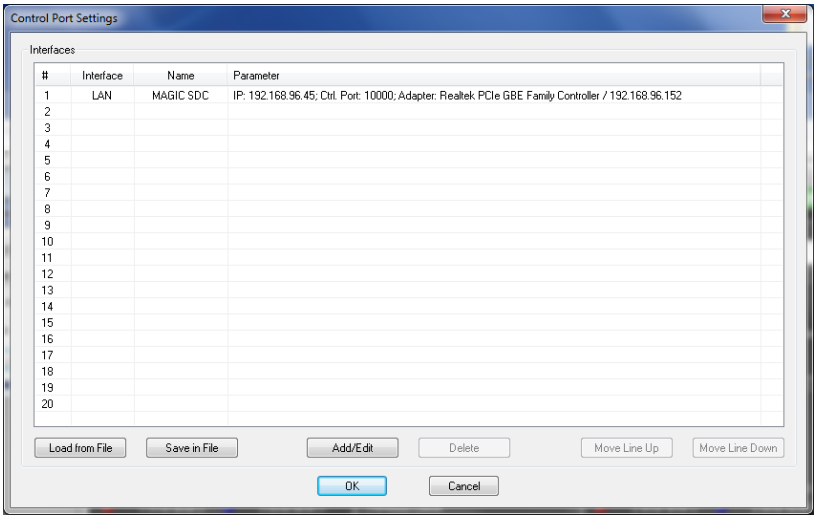
[2] To check if the IP address is already used in the network, follow the instructions: Under *Windows XP* click on ***Start → Execute ...***. Enter ***cmd*** in the command line. An entry window is displayed in which you must enter ***ping*** xxx.xxx.xxx.xxx. Whereas xxx stands for the IP address you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

Control Interface List

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

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

FIG. 6 CONTROL INTERFACE LIST PARAMETER



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

To save the control list in a file, press the ***Save in File*** button. The list will be saved as ***.ifl*** (control interface list) file. The storage location can be selected when saving the file.

Vice versa, you can also import a control interface list from a file. Press the ***Load from File*** button and select the ***.ifl*** file to be imported.

With the buttons ***Move Line Up*** and ***Move Line Down*** you can change the order of the entries.

The entries of the control interface list will be displayed under ***Configuration*** → ***Control Interface*** and can be directly selected.

1.7.2 Submenu System

Via the submenu ***System*** *MAGIC EEC* 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.

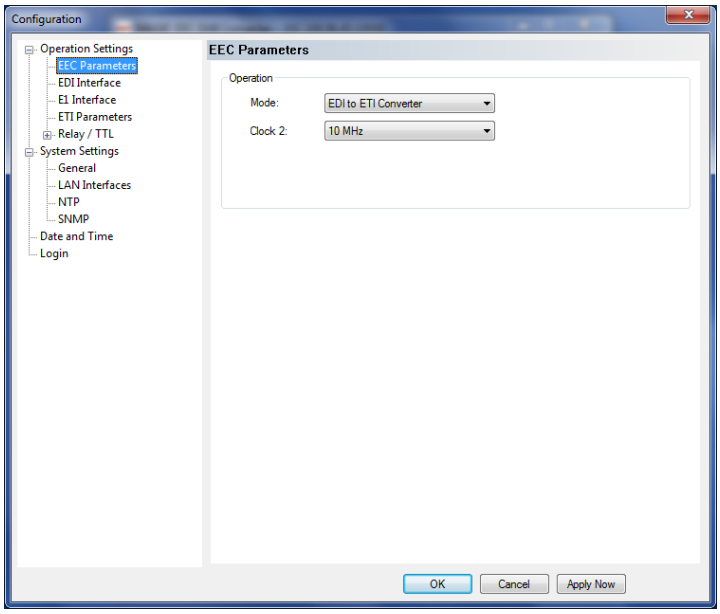
The configuration differentiates between ***System Settings***, which usually do not have to be changed during the operation and the actual ***Operation Settings*** for the current operational case.

1.7.2.1 Operation Settings

1.7.2.1.1 EEC Parameters

Under ***EEC Parameters*** the operating mode for *MAGIC EEC* is configured.

FIG. 7 EEC PARAMETERS



Operation

- Please select the desired operation mode for the system under ***Mode***. You can chose between
  - ***ETI to EDI Converter***
  - ***EDI to ETI Converter***
- Under ***Clock 2*** you can select if you want to operate the system with a ***10 MHz*** clock or a ***2.048 MHz*** clock.

1.7.2.1.2 EDI Interface

The menu item ***EDI Interface*** allows a configuration of the EDI inputs and outputs.
If you use *MAGIC EEC* as ***ETI to EDI Converter***, only the configuration for the ***EDI output***(s) will be displayed. If you operate *MAGIC EEC* as ***EDI to ETI Converter***, only the configuration for the ***EDI input*** will be displayed.

FIG. 8 EDI INTERFACE - ETI TO EDI CONVERTER

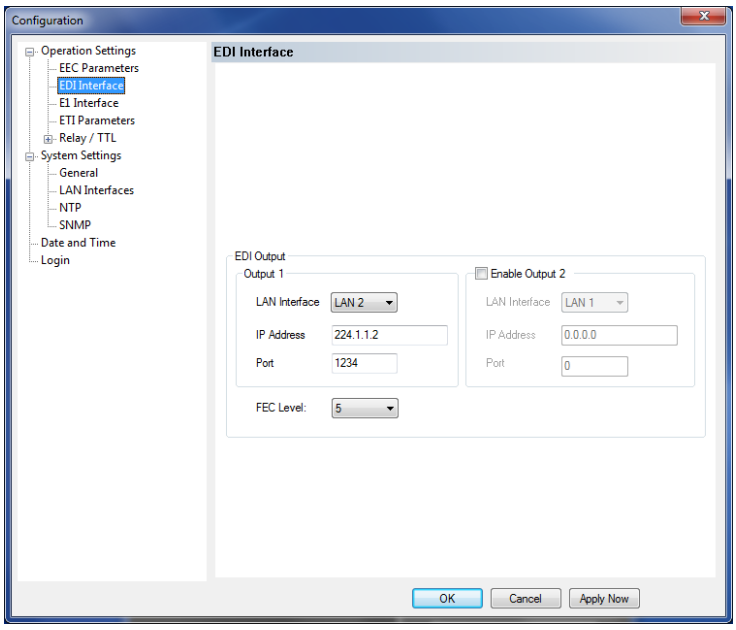
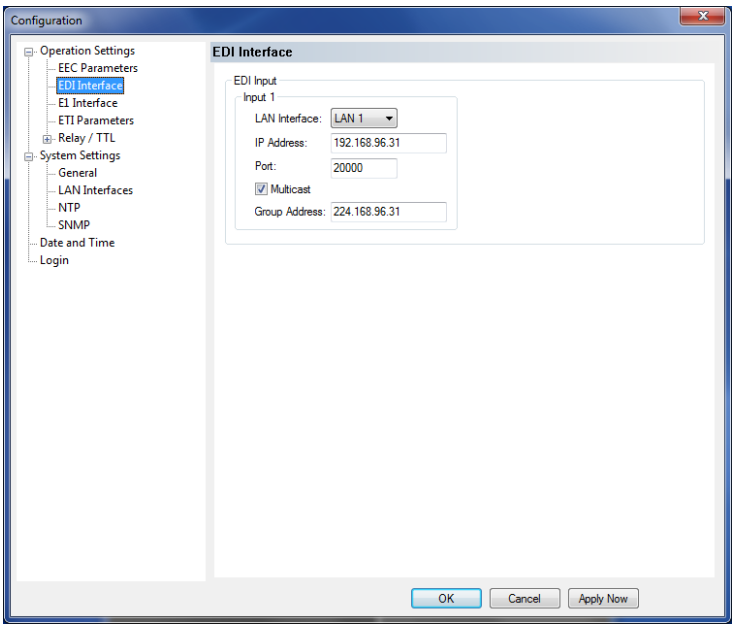


FIG. 9 EDI INTERFACE - EDI TO ETI CONVERTER



EDI Input

- Under ***Input 1*** you need to enter the ***IP Address*** and the ***Port*** of Input 1. Additionally, you must select which ***LAN Interface*** you want to use for the EDI stream.

- ... ***Multicast***....

EDI Output

- Under ***EDI Output*** you can select the ***LAN Interface***, ***IP Address*** and ***Port*** used for ***Output 1***. Optionally you can ***Enable Output 2*** as monitoring output.

TIP

Since the *MAGIC EEC* provides two LAN interfaces, you can use e.g. one for data and the other one for control. The configuration of the LAN interfaces can be done under the menu item ***LAN Interfaces*** (see CHAPTER 1.7.2.3.2).

- ***FEC Level***: Please select the desired level of the Forward Error Correction..

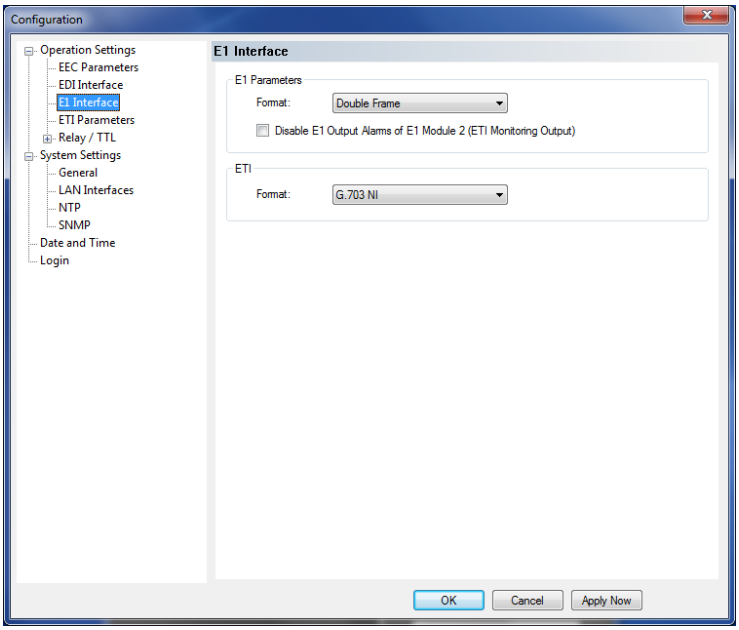
NOTE

The FEC Level defines how many packets can be restored at the receiver's side. The higher the FEC Level is the more traffic is generated.

1.7.2.1.3 E1 Interface

The menu item ***E1 Interface*** allows a configuration of the E1 parameters.

FIG. 10 E1 INTERFACE



E1 Parameters

- 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 converter. 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.

- Via the option ***Disable E1 Output Alarms of E1 Module 2 (ETI Monitoring Output)***, you can deactivate the output alarms for the E1 Interface 2. If you select this option, the alarms will be no longer displayed in the main window.

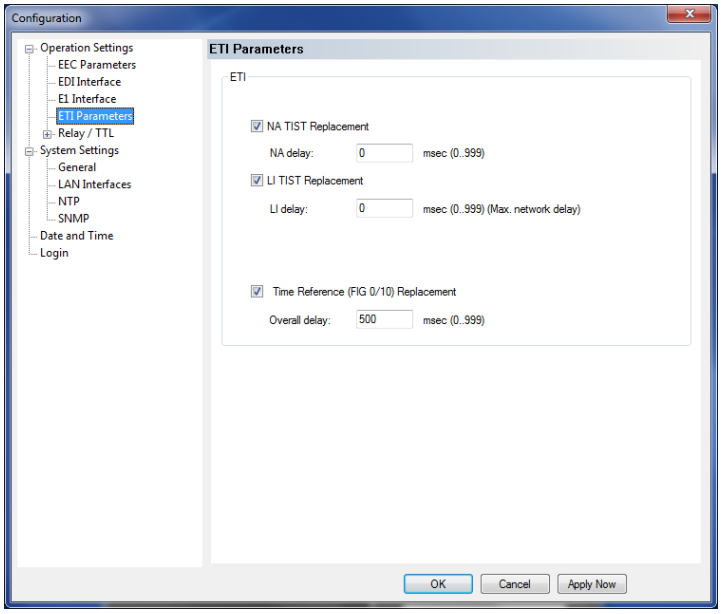
ETI

- Please select which ETI ***Format*** you use. *MAGIC EEC* supports ***G.704 NA 5592, G.704 NA 5376*** and ***G.703 NI***.

1.7.2.2 ETI Parameters

The menu item ***ETI Parameters*** allows a configuration of the ETI parameters.

FIG. 11 ETI PARAMETERS



ETI

Please select the option that you want to apply:

- ***NA TIST Replacement***: You can enter a value for the ***NA delay*** between ***0 ... 999 msec***.

NOTE

The ***NA TIST Replacement*** can only be selected if you operate *MAGIC EEC* as ***EDI to ETI Converter*** and your ***E1 Format*** is ***G.704 NA***.

- ***LI TIST Replacement***: You can enter a value for the ***LI delay*** between ***0 ... 999 msec***.
- ***Time Reference (FIG 0/10) Replacement***: You can enter a value for the ***Overall delay*** between ***0 ... 999 msec***

1.7.2.2.1 Relay/TTL

The *MAGIC EEC* has **eight GPIO Pins (TTL)** which can be programmed individually. Furthermore, eight **relays** are also available.

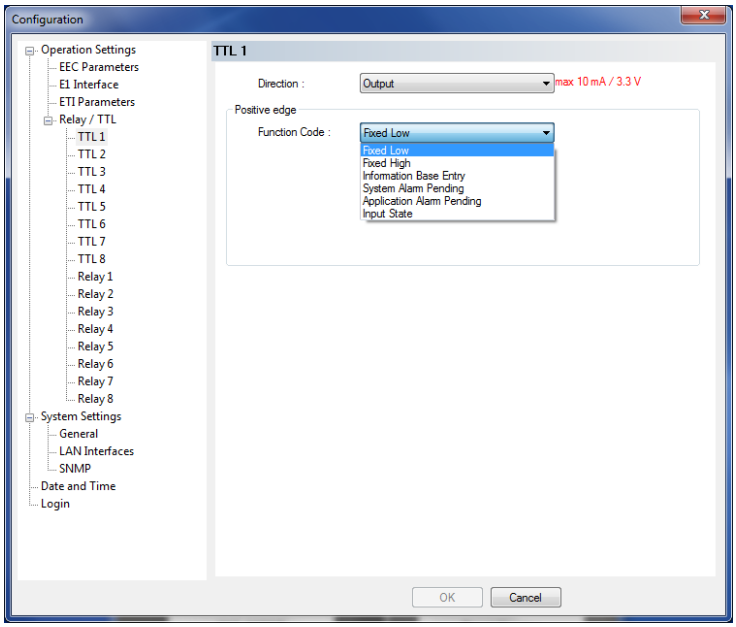
The following description applies to all eight configuration windows***TTL 1 (Pin 1)***, ***TTL 2 (Pin 2)***, ***TTL 3 (Pin 3)***, ***TTL 4 (Pin 4)***, ***TTL 5 (Pin 5)***, ***TTL 6 (Pin 6)***, ***TTL 7 (Pin 7) and TTL 8 (Pin 8)***.

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. 12 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***: The TTL Pin is fixed to 0V.
- ***Fixed High***: The TTL Pin is fixed to +3.3V.
- ***Information Base Entry***: Special function for projects
- ***System Alarm Pending***: This function signals a pending system alarm (see CHAPTER 1.9.1).
- ***Application Alarm Pending***: This function signals a pending application alarm. You can select up to three specific alarms or the options ***Any Clock Alarm*** or ***Any input Alarm***.

– ***Input State***: You can signal a certain ***Input State*** (see CHAPTER 1.5.1.1) for the E1 ***Module 1*** or ***2***.

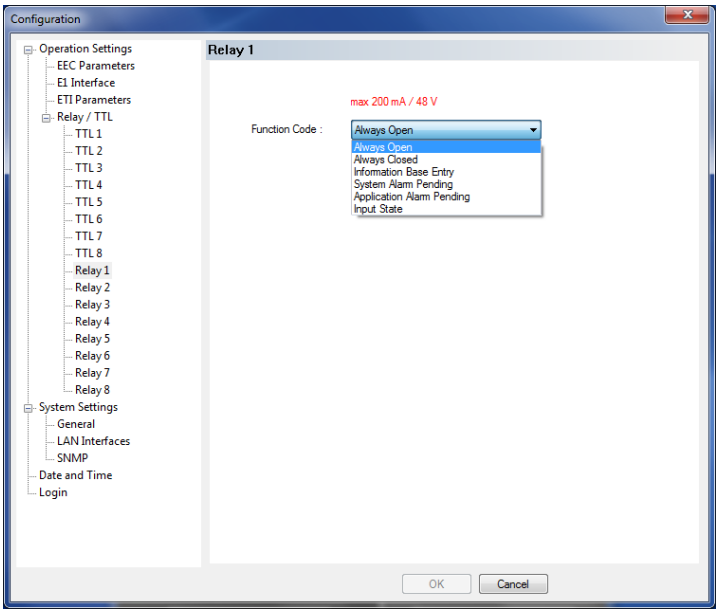
Relay

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 all eight configuration windows ***Relay 1 (Pin 14+15)***, ***Relay 2 (Pin 17+18)***, ***Relay 3 (Pin 19+20)***, ***Relay 4 (Pin 21+9)***, ***Relay 5 (Pin 22+10)***, ***Relay 6 (Pin 23+11)***, ***Relay 7 (Pin 24+12)*** and ***Relay 8 (Pin 25+13)***.

FIG. 13 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.

– ***Information Base Entry***: special function for projects

– ***System Alarm Pending***: This function signals a pending system alarm (see CHAPTER 1.9.1).

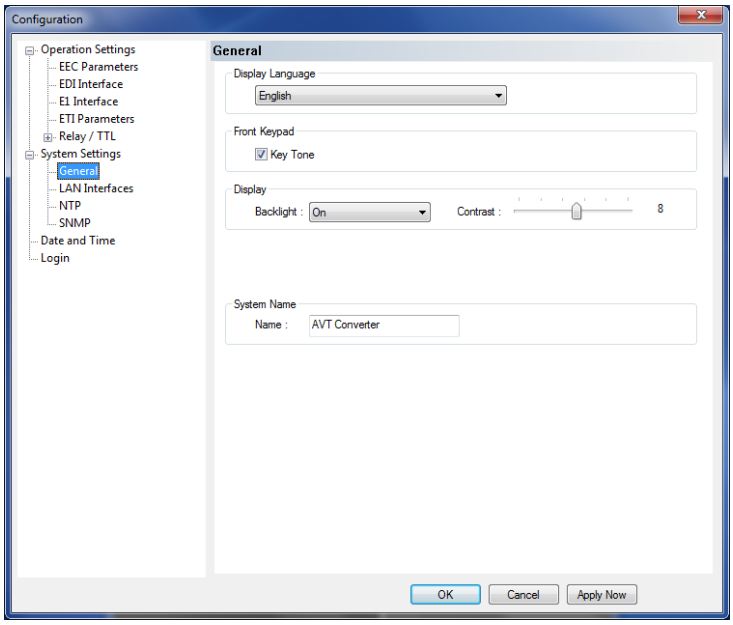
– ***Application Alarm Pending***: This function signals a pending application alarm. You can select up to three specific alarms or the options ***Any Clock Alarm*** or ***Any input Alarm***.

– ***Input State***: You can signal a certain ***Input State*** (see CHAPTER 1.5.1.1) for the E1 ***Module 1*** or ***2***.

1.7.2.3 System Settings

1.7.2.3.1 General

FIG. 14 GENERAL



Display Language

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

Front Keypad

- 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.

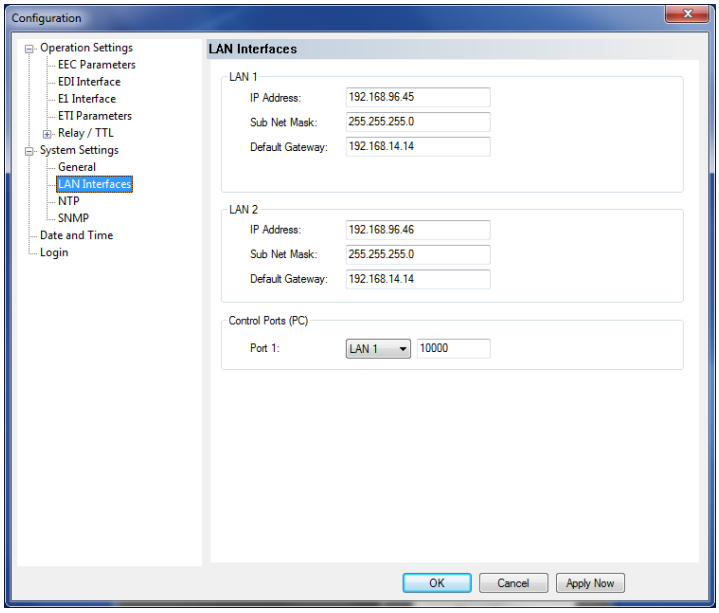
System Name

Under ***System Name*** you can enter a name for the system. The name is displayed in the user interface of the PC software under ***System Name***.

1.7.2.3.2 LAN Interfaces

Under ***LAN Interfaces*** you need to enter the configuration details of the LAN interfaces.

FIG. 15 LAN INTERFACE



LAN 1/ LAN 2

- Under ***IP Address*** please enter the IP address for the LAN 1 and the LAN 2 interface of your system.
- Under ***Subnet Mask*** you need to enter the correct subnet mask. The default value is ***255.255.255.0***.
- Under ***Default Gateway*** please enter the IP address of your default gateway.

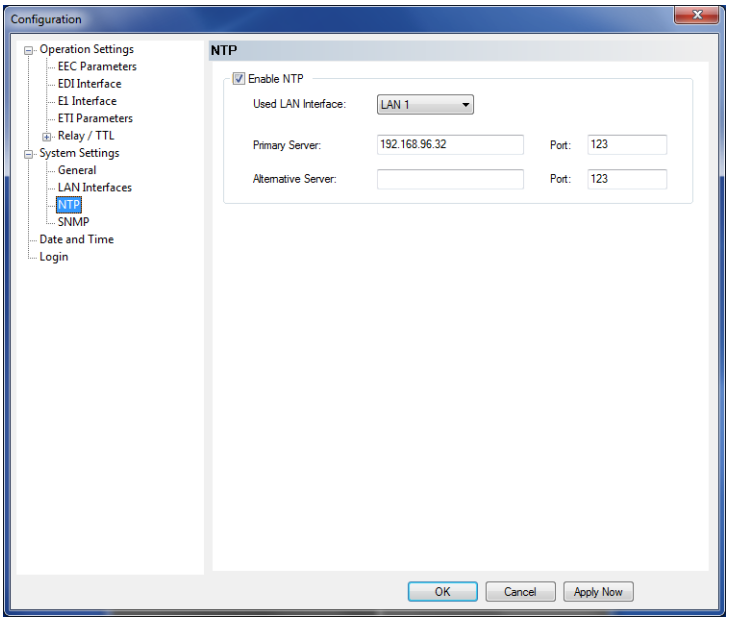
Control Ports (PC)

- Please select the LAN interface (***LAN 1*** or ***LAN 2***) which you want to use for the control of the system and enter the Control ***Port*** that is used.

1.7.2.3.3 NTP

Under the menu item ***NTP*** you can enable NTP and configure the NTP settings for your system.

FIG. 16 NTP

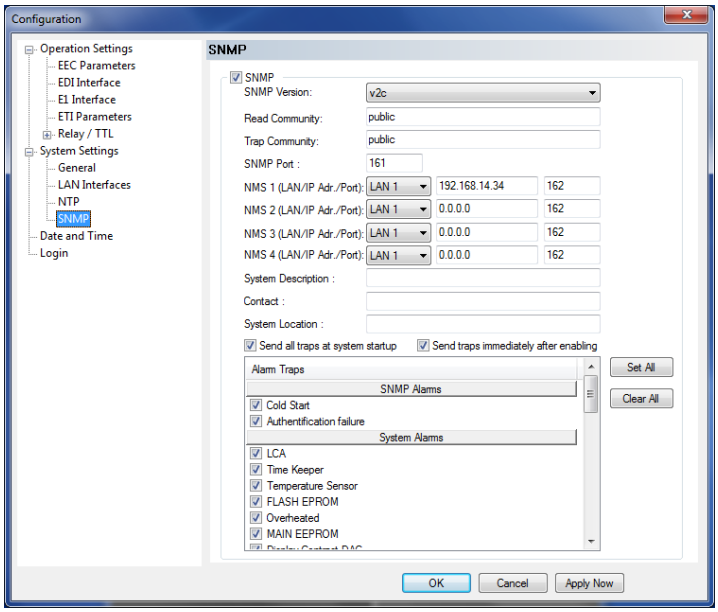


- To activate NTP, please select ***Enable NTP***.
- Under ***Used LAN Interface*** you must select which LAN interface you want to use for NTP.
- Enter the IP address and the ***Port*** for your NTP Server under ***Primary Server***.
- If you want to add a second NTP Server as backup you can enter the IP address and ***Port*** under ***Alternative Server***.

1.7.2.3.4 SNMP Parameter

To integrate the *MAGIC EEC* into a network management system, the SNMP function can be used.

FIG. 17 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.

- First you need to select which ***SNMP Version*** you use. Currently SNMP ***v1*** and ***v2c*** are supported.
- 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***.
- *MAGIC EEC* allows the addressing of up to four different Network Management Systems. Please enter the corresponding IP addresses and Ports under ***NMS 1 (IP Adr./Port)***, ***NMS 2 (IP Adr./Port)***, ***NMS 3 (IP Adr./Port)*** and ***NMS 4(IP Adr./Port)***.
- Under ***System Description*** you can assign a name for *MAGIC EEC*.
- Under ***Contact*** an email address can be entered.
- Under ***System Location*** you can enter the location of the switch.

NOTE

The settings ***System Description***, ***Contact*** and ***System Location*** are values of the standard *System Group* in ***RFC1213 MIB-II*** (if SNMP v1 is used) and ***RFC3418 SNMPv2-MIB*** (if SNMP v2 is used).

- To ***Send all traps at system startup***, please enable the respective option.
- If you want to ***Send traps immediately after enabling*** them, please tick the corresponding option. As soon as you select a alarm trap from the list, it will be sent via SNMP.
- Under ***Alarm traps*** you can select which traps should be sent via SNMP. To enable all listed traps, you can press the ***Set All*** button. Via the ***Clear All*** button the selection will be cleared.

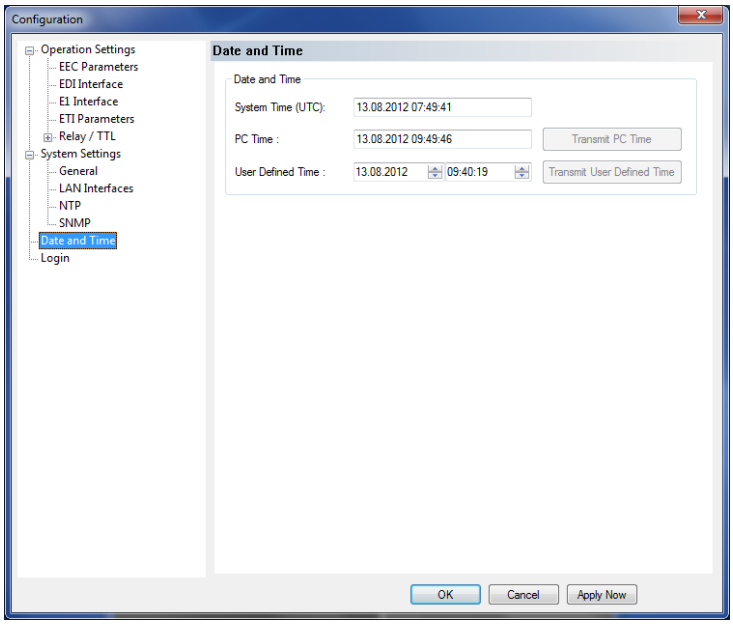
1.7.2.4 Date and Time

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

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

NOTE The settings ***Date and Time*** cannot be changed when NTP is enabled.

FIG. 18 DATE AND TIME



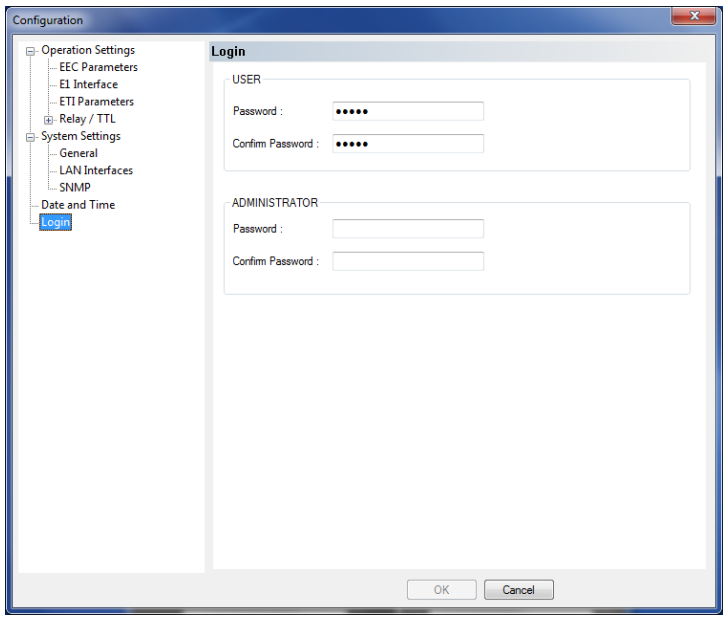
ATTENTION During a power breakdown the integrated system clock is buffered by an internal battery[a]. The life time of a battery is typical ca. 7 years. The replacement should only be done by the AVT Service.

[a] Type: 3V Lithium Battery Renata CR1220

1.7.2.5 Login

Under Login you can configure a User and an Admistrator Password.

FIG. 19 LOGIN

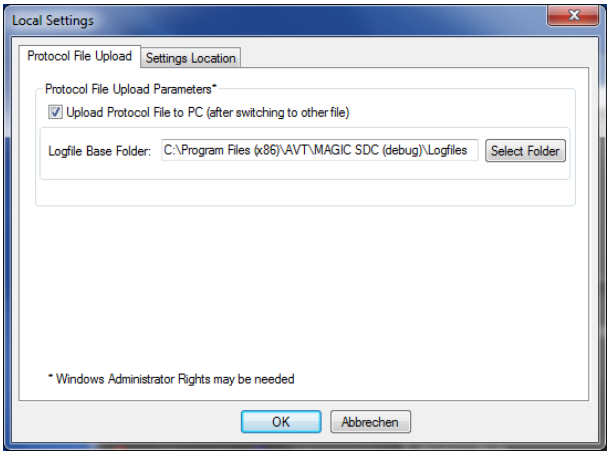


1.7.3 Submenu Local Settings

Under ***Local Settings*** you can configure an automatic upload of the protocol file and decide if you want to store the settings of your configuration only for the current user or globally for all users.

NOTE Please note that Windows Administrator Rights may be needed for these settings.

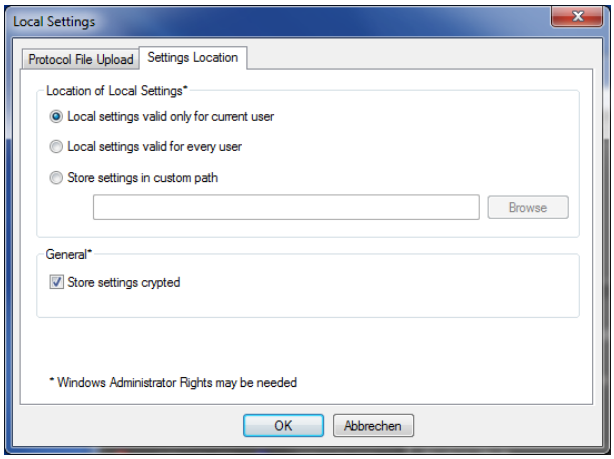
FIG. 20 PROTOCOL FILE UPLOAD



Protocol File Upload Parameters

If you want to upload the internal protocol file of the system to a PC when it is full, please select the option ***Upload Protocol File to PC (after switching to other file)***. Under ***Logfile Base Folder*** you can select the path of the folder in which you want to store the logfile.

FIG. 21 SETTINGS LOCATION



Settings Location

- To store your settings only for the current user, select the option ***Local settings only valid for current user***.

- To store the settings globally for all users, select the option ***Local settings valid for every user***.

- Alternatively, you can select the option ***Store settings in custom path*** to define a specific folder in which your settings are stored.

General

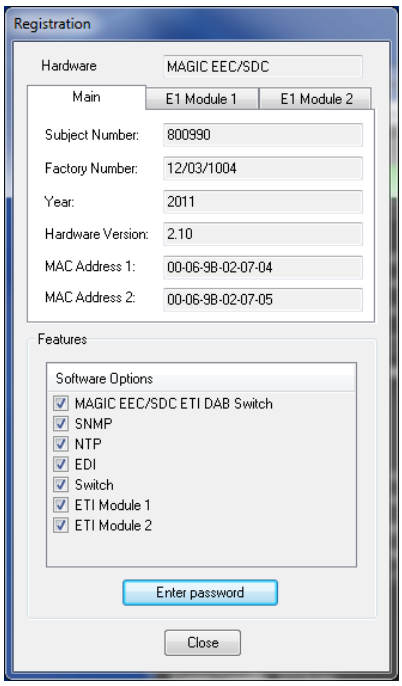
- To store your settings encrypted, you can activate the option ***Store settings crypted***.

1.8 Menu Administration

1.8.1 Submenu Registration

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

FIG. 22 REGISTRATION



Under ***Hardware*** the system type (***MAGIC EEC/EEC***) is displayed. On the tab ***Main*** all relevant features for identification like ***Subject Number***, ***Factory Number***, ***Year***, ***Hardware Version*** as well as the ***MAC Addresses*** are displayed.

Under the ***E1 Module 1/2*** tabs you find the identification features for the E1 modules.

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

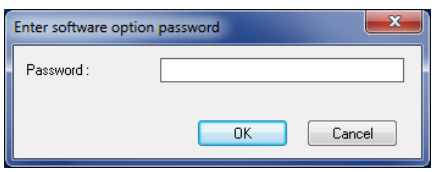
Upgrade of Firmware Options

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. 23 PASSWORD ENTRY



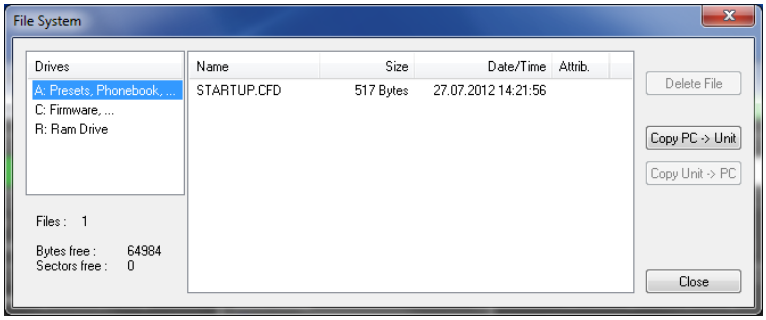
1.8.2 Submenu File System

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 1.6).

FIG. 24 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

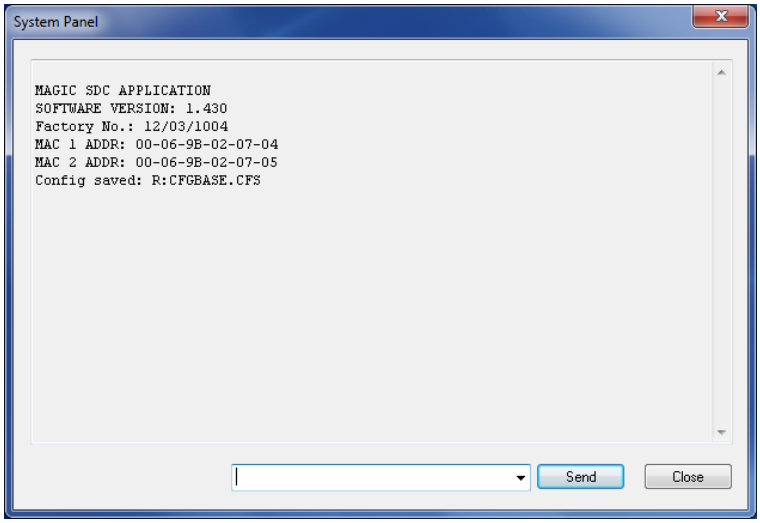
Please use only the function ***Firmware Download*** (see CHAPTER 1.8.4) respectively the import functions in the menu ***File*** (see CHAPTER 1.6) to copy files to the system.

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

1.8.3 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. 25 SUBMENU SYSTEM PANEL



1.8.4 Submenu Firmware Download

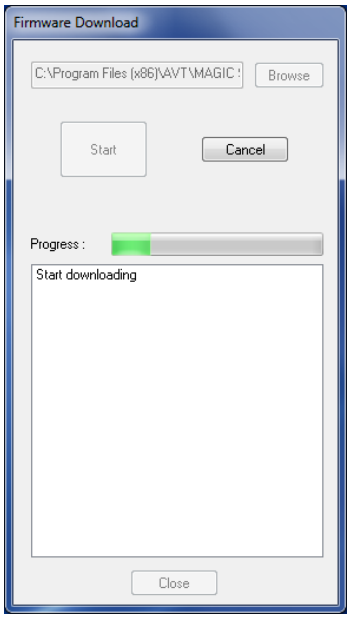
The firmware required for the *MAGIC EEC* Switch is always included in the PC software. Via the ***Firmware Download*** the firmware can be comfortably loaded on the system.

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

C:\Programme\MAGIC EEC

The name of the firmware file is „***EEC.ssw***“.

FIG. 26 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

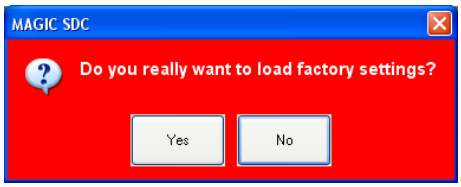
If a download had been faulty, you can simply switch off the unit and then switch it on again. The new software is only written in the flash memory, if a download had been successful. Otherwise the old firmware is maintained.

1.8.5 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. 27 CONFIRMATION TO SET FACTORY SETTINGS

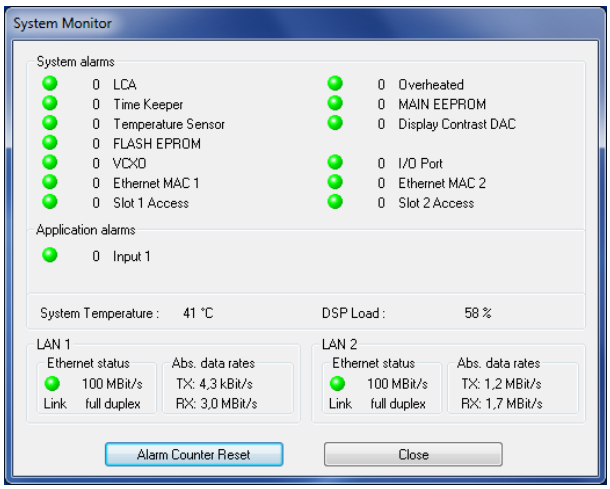


1.9 Menu Extras

1.9.1 Submenu System Monitor

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

FIG. 28 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.
- ***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.
- ***TIME KEEPER***: The communication with the integrated clock module is faulty.
- ***MAIN EPROM***: The communication with the permanent memory is faulty. Configurations cannot be stored or read anymore.
- ***Temperature Sensor***: The communication with the temperature sensor is faulty.
- ***Display Contrast DAC***: The communication with the display contrast DAC is faulty.
- ***FLASH EPROM***: The communication with the permanent memory is faulty. Configurations cannot be stored or read anymore.
- ***VCXO***: The communication with the voltage-controlled oscillator is faulty.

- ***I/O Port***: Currently not in use (Audio).
- ***Ethernet MAC 1***: The initialization of the ethernet module 1 has failed.
- ***Ethernet MAC 2***: The initialization of the ethernet module 2 has failed.
- ***Slot 1 Access***: The communication with the E1 interface 1 is faulty.
- ***Slot 2 Access***: The communication with the E1 interface 2is faulty.

TIP

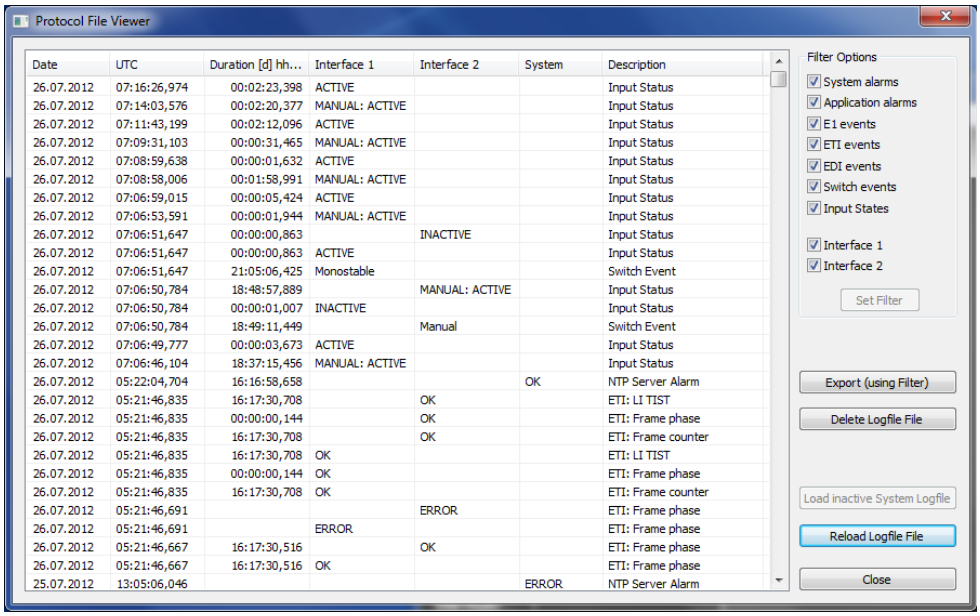
You can also configure a system alarm as relay output.

- 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 .
  - ***Input 1***: No input signal available
- The current system temperature can be found under ***System Temperature***. The temperature is measured in °C. A normal system temperature lies around 30...45°C.
- The current DSP load is displayed under ***DSP Load***.
- Under ***Ethernet status*** you can find information about the connection status of the ***LAN 1*** and ***LAN 2*** interfaces.
- Under ***Abs. data rates*** the absolute data rates of your ethernet connections are displayed. TX stands for transmit direction and RX for receive direction.

1.9.2 Submenu Protocol File Viewer

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

FIG. 29 PROTOCOL FILE VIEWER



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

- ***Date***
- ***UTC*** (Universal Time Coordinated)
- ***Duration***
- ***Interface 1***
- ***Interface 2***
- ***System***
- ***Description***

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.

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

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

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

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

1.10 Menu Help

1.10.1 Submenu About MAGIC EEC

In the ***About MAGIC EEC*** 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. 30 SUBMENU ABOUT MAGIC EEC

2 OPERATION VIA DISPLAY AND KEYPAD

In this chapter all basic configurations for the operation of the ***MAGIC EEC*** Switch 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 EEC*** Windows PC Software included in delivery.

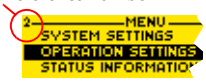
NOTE

For the details of most functions please see the PC Software description from CHAPTER 1.

2.1 Basic configuration

In the following some basic configuration of ***MAGIC EEC*** 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.

2.1.1 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**. Go to **GENERAL** and press ❮ **SELECT**. Now use the cursor keys to mark the option **LANGUAGE** in the menu. Via the **SELECT** softkey you directly reach the currently available languages. With the help of the cursor keys ^ and v please choose your desired 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

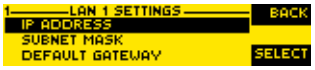
If you press **NO**, all settings that you have made are lost when the unit is switched off.

2.1.2 Configuration of the LAN 1 interface

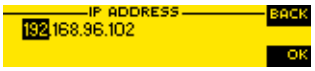
To configure the ***LAN 1 interface*** follow the instructions below:

– Press the ***MENU*** softkey.

– Please mark the option ***SYSTEM SETTINGS*** via the cursor keys ^ and v and press the ***SELECT*** softkey.



– Use the cursor keys ^ and v to get to the option ***LAN 1*** and press the ***SELECT*** softkey.



– To enter or change the IP Address of the system, mark the option ***IP ADDRESS*** and press the ***SELECT*** softkey.

– Now you can enter the correct IP Address via the numerical keypad.

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

– Now press the cursor key ***BACK*** to get back to the menu ***LAN 1***.

– Please mark the option ***SUBNET MASK*** via the cursor keys ^ and v and press the ***SELECT*** softkey.

– Now you can enter your Subnet Mask via the numerical keypad. The default value is ***255.255.255.0***.

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

– Now press the cursor key ***BACK*** to get back to the menu ***LAN 1***.

– Please mark the option ***DEFAULT GATEWAY*** via the cursor keys ^ and v and press the ***SELECT*** softkey.

– Now you can enter the IP Address of your Default Gateway via the numerical keypad.

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

– Now press the cursor key ***BACK*** to get back to the menu ***LAN 1***.

– Please mark the option ***UDP CTRL PORT*** via the cursor keys ^ and v and press the ***SELECT*** softkey.

– Now you can enter the UDP Control Port via the numerical keypad.

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

– Press the ☎ key to get back to the main menu. Now you are asked if you want to ***SAVE SETTINGS?*** . Via the ***YES*** softkey, the configuration is stored in the system.

A 1 MENU STRUCTURE

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

With the softkey *MENU* you get to the configuration of the system.

The configuration menu is divided in three subnemus:

- *SYSTEM SETTINGS*
- *OPERATION SETTINGS*
- *STATUS INFORMATION*

NOTE

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

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

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

- *STATUS INFORMATION*

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

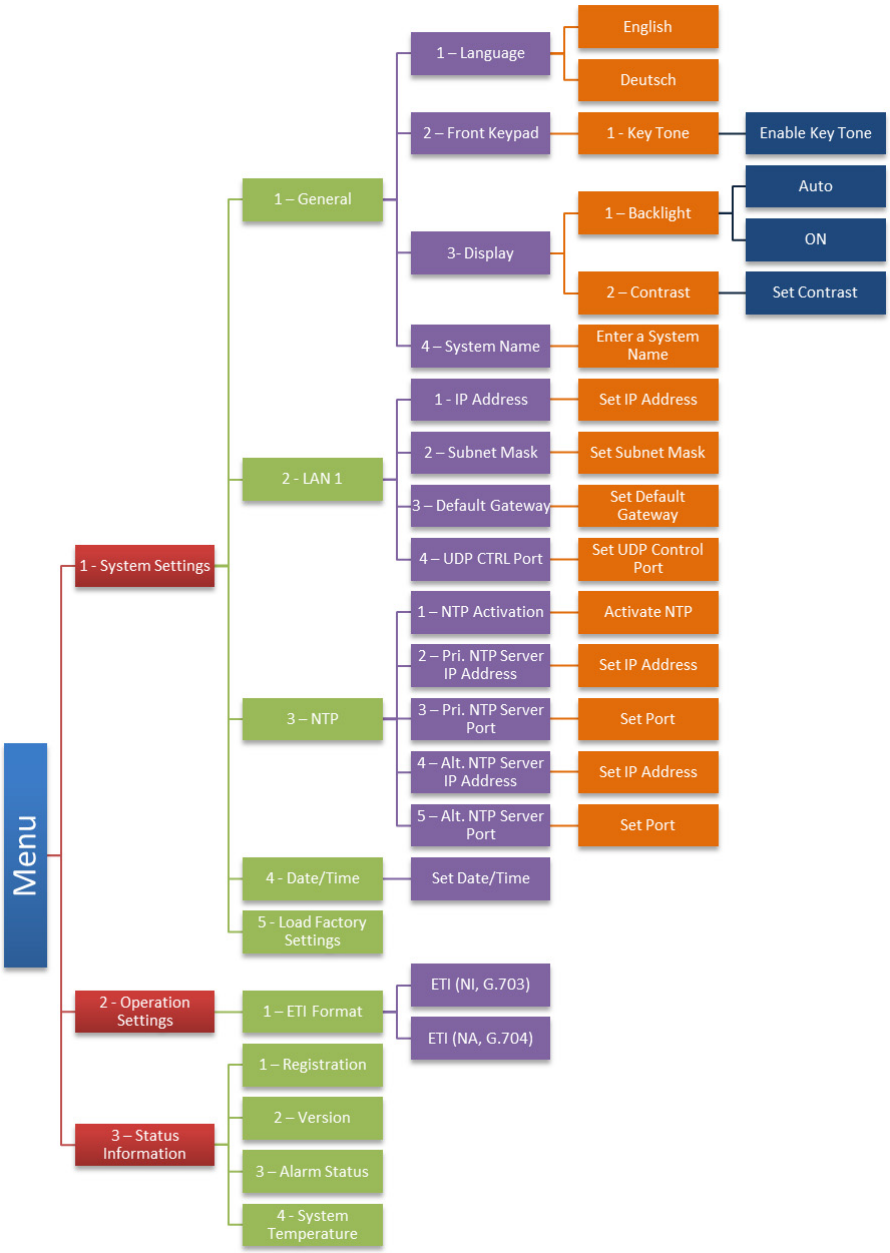
(3) **User-** and **Administrator Password** configured (instead of *MENU, LOGIN* is displayed):

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

NOTE

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

A1.1 Menu


Menu
1 - System Settings
1 – General
1 – Language
English
Deutsch
2 – Front Keypad
1 - Key Tone
Enable Key Tone
3- Display
1 – Backlight
Auto
ON
2 – Contrast
Set Contrast
4 – System Name
Enter a System Name
2 - LAN 1
1 - IP Address
Set IP Address
2 – Subnet Mask
Set Subnet Mask
3 – Default Gateway
Set Default Gateway
4 – UDP CTRL Port
Set UDP Control Port
3 – NTP
1 – NTP Activation
Activate NTP
2 – Pri. NTP Server IP Address
Set IP Address
3 – Pri. NTP Server Port
Set Port
4 – Alt. NTP Server IP Address
Set IP Address
5 – Alt. NTP Server Port
Set Port
4 - Date/Time
Set Date/Time
5 - Load Factory Settings
2 - Operation Settings
1 – ETI Format
ETI (NI, G.703)
ETI (NA, G.704)
3 – Status Information
1 – Registration
2 – Version
3 – Alarm Status
4 - System Temperature