

CONNECT *Solo*

Dual POTS Telephone Hybrid

Hardware/Software Manual

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Hardware/Software Manual

A publication of:

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Printed in Germany, July 2006
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Subject to changes.

Release date: (07.06)

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INTRODUCTION

Intelligent and seamless interfacing to the outside world is the key to success in many intercom applications. **Connect Solo** interfaces your intercom system via analogue telephone connections to PSTN public telephone networks.

Connect Solo combines two independent analogue POTS telephone hybrids in one half-rack/1U device. One unit – two hybrids: This saves rackspace and is a valuable advantage, especially for mobile production units.

The system has analogue as well as digital AES/EBU Audio interfaces.

The configuration of the system can be carried out via the Windows application included in delivery or via the front keypad of the unit.

SAFETY

Introduction

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

In normal operation the unit is safe.

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

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

General safety requirements

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

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

Text Conventions

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

Accentuation: Product names or important terms

LCD TEXT: Labelling on the front display of the system

PC Text: Labelling in the PC Software

TIP

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

NOTICE

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

ATTENTION



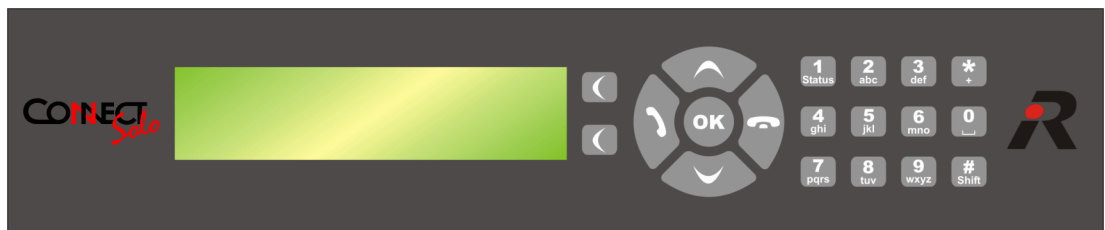
The symbol **ATTENTION** marks very important advice that is absolutely to observe. In case of non-observance disfunctions and even system errors are possible.

1 CONSTRUCTION

The functions of the **Connect Solo** are implemented in a single unit. The system is designed for mounting in a half 19" rack (1 U).

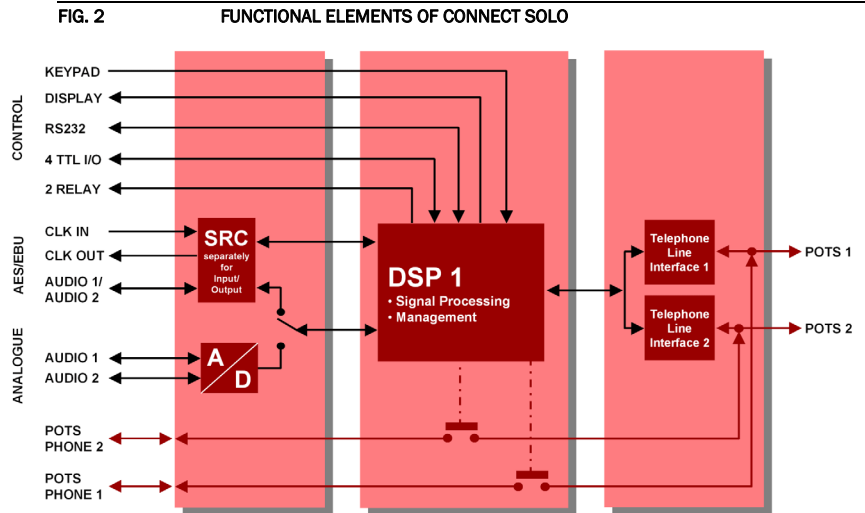
Optionally, a **Connect Solo 19" Dual Mounting Kit** is available for the installation of two **Connect Solo** Systems next to each other.

FIG. 1 FRONT VIEW OF CONNECT SOLO



2 SYSTEM DESCRIPTION

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



2.1

Functionality

The **Connect Solo** System incorporates two independent analogue **POTS** interface.

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

DSP:

- Signal Processing
- Signalising Management
- Control of the complete system (Keypad, display, relays, TTL, RS232)

Via the main Audio channels the Audio signal is inserted or output analogue or digitally. 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

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

Configuration and control is especially comfortable with the **Connect Solo Windows PC Software** which is included in delivery and which communicates with the system via the RS232 interface.

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

3 PUTTING THE SYSTEM INTO OPERATION

3.1 Mounting

With its dimensions (W × H × D) of 220 mm × 44,5 mm (1 U) × 220 mm the **Connect Solo** System can be used either as desktop device or mounted in 19 inch racks. Corresponding 19" mounting brackets are included in delivery. Optionally, a mounting kit to install two **Connect Solo** next to each other is available.

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

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

TIP

The system temperature can be indicated on the display (**MENU STATUS INFORMATION** (see CHAPTER A1.4, Page 73))

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

ATTENTION



Incorrect ambient temperature and humidity can cause functional deficiencies

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

3.2 Connection to the mains voltage

The system can be operated with mains voltages in the range from 90 V to 253 V via the external power supply¹ included in delivery. The line frequency can vary from 45 Hz to 65 Hz. The maximum power consumption is 15W. The rack must be earthed according to the VDE² Regulations. The earthing can be carried out via the earthing screw on the back side of the unit.

The unit does not have a circuit closer and a circuit breaker. After plugging in the external power supply the system boots within a few seconds. In standby mode the **Connect Solo** logo is shown on the display.



¹ Depending on your country it can be necessary to change the power plug of the power supply. Country specific power plug adapter are included in the delivery.

² The VDE is the German Association for Electrical, Electronic and Information Technologies, a professional body based in Frankfurt am Main. The role of the VDE in Germany is comparable to that of the IEE in the United Kingdom and the IEEE in the United States.

3.3 Earthing of the system

For EMC¹ reasons an earthing via the earthing screw of the system must be carried out in either case.

ATTENTION



Earthing

A lacking earthing can cause functional deficiencies within the unit.

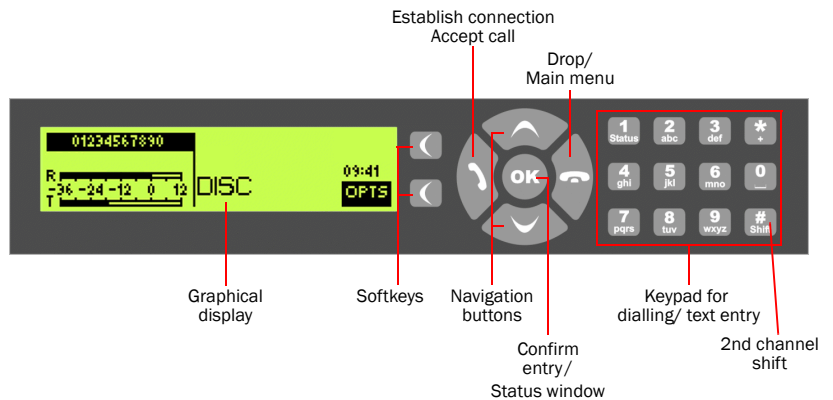
3.4 Operational elements on the front side

The system has an illuminated graphical display with a resolution of 160 x 32 pixels and 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 buttons for navigation (selection upwards/downwards), two buttons for accepting/dropping calls as well as an **OK** button. The numerical pad supports in addition to the numerics **0...9** the '*' and '#' key. For text entries the numerical pad can also be used as normal keypad.

The operation is similar to standard mobile telephones.

FIG. 3 OPERATIONAL ELEMENTS ON THE FRONT SIDE



¹ EMC = ElectroMagnetic Compatibility

3.5 Operating modes of the system

The figures below show the systems in a typical operation and their wirings.

NOTICE

In the wiring diagrams the AES/EBU interface is used for normal operation with the Digital Matrix equipped with CAT5 cards. The AES/EBU interface allows then direct dial-out and accepting of incoming calls.

The available analogue Audio interface can also be used (AIO cards), but remote control (dialling, accepting a call) is in this case not possible.

ATTENTION



Earthing

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

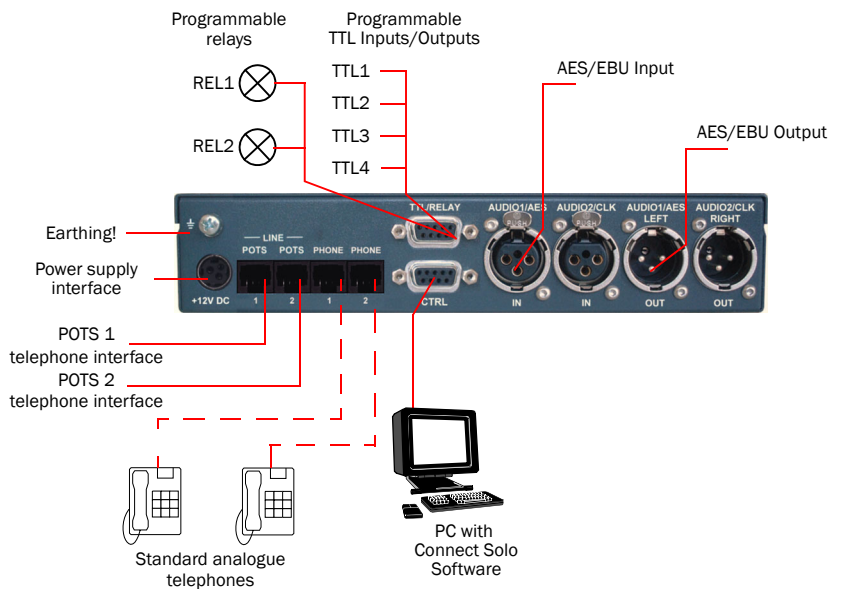
The minimum wiring for the operation with an analogue telephone line is pictured in Fig. 4.

FIG. 4 MINIMUM WIRING FOR SINGLE POTS OPERATION



The maximum wiring with all options is shown in Fig. 5. Via the RS232 control interface a PC with **Connect Solo Software** can be connected as alternative to the operation by the front keypad and display or the matrix.

FIG. 5 MAXIMUM WIRING FOR DUAL POTS OPERATION



4 OPERATION VIA DISPLAY AND KEYPAD

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

Of course, all configurations can also be comfortably made via the **Connect Solo Software** included in delivery.

NOTICE

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

4.1 Basic configurations

In the following some specific basic configurations of **Connect Solo** are described in detail.

NOTICE

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

Menu reference number



4.1.1 Keypad lock


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



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

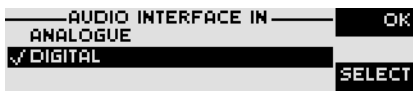
4.1.2 Setting the Audio interface: Analogue or digital


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

NOTICE

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

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



- Please mark the option **AUDIO INTERFACE IN** or **AUDIO INTERFACE OUT** using the cursor keys \wedge and \vee and press again **SELECT**. Now the options **ANALOGUE** (using with AIO cards) and **DIGITAL** (using for CAT5 cards) are displayed.
- Select the desired interface with the help of the cursor keys \wedge and \vee and by pressing the softkey **SELECT**.
- Confirm your entry by pressing the **OK** button or the softkey **OK**.
- To get back to the main menu please press the  button. Now you are asked if you want to **SAVE SETTINGS?** Via the softkey **YES** the setting is stored permanently in the system.


TIP

You reach the settings for the **AUDIO INTERFACE IN** or **AUDIO INTERFACE OUT** via the key sequence: **MENU 1 1 1** or **MENU 1 1 2**

4.2 Working with the Connect Solo

In the next chapters basic functions like establishing a connection, dropping a connection, accepting calls etc. are described in detail. All these functions are also possible via a Digital Matrix.

NOTICE


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

4.2.1 Calling a partner

TYPE NUMBER	DELETE
020229290	123
	OPTS

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


With the softkey **DELETE** misentries can be corrected.

The connection is established after the entry of the phone number by pressing the telephone receiver button .

Under the softkey **OPTS** (Options) the entered phone number can be saved in the phone book (see CHAPTER 4.2.6, Page 27) or stored as Quick Dial number (see CHAPTER 4.2.7, Page 27).

Miller		M. Harris		
R	T	R	T	15:11
-36	-12 0 12	-36	-12 0 12	
T		T		OPTS


To enter a second calling number please press the **SHIFT** key (**#**) to select the desired channel and enter the second calling number.

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

4.2.2 The Status Display - Operation during a connection

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

TIP

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

The window is split if two independent connections have been established.


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

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

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

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

4.2.3 Dropping a connection

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

NOTICE

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

If the caller hangs up the system will recognise it after a few seconds.

NOTICE


Depending on the country it is possible that the **Auto Disconnect** doesn't work. Please inform in that case immediately our support.

4.2.4 Accepting a call

If the **Connect Solo** receives a call (automatic **Ring Detection**), it is automatically signalled in the status window by **CALLIN**. The phone number will be shown automatically on the display if the CLIP¹ function is supported on the POTS line and if the caller transmit the number (CLIR²).

NOTICE

Additionally, a system ringing tone can be enabled.

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

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



For standard operation the option **AUTO ANSWER** is set (**OPERATION SETTINGS → POTS → AUTO ANSWER**). That means the system is answering the call without further action.

¹ Calling Line Identification Presentation

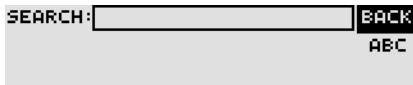
² Calling Line Identification Restriction

4.2.5

Comfort Functions

4.2.6

Redialling



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

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

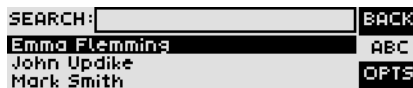
NOTICE

To enter characters you can use the alphanumeric keypad. You reach the desired character by pressing the respective key several times. To type e.g. a 'K' you need to press the button '5' twice. Misentries can be corrected with the help of the softkey **DELETE**.

To switch between upper and lower case please press the **SHIFT** key. The display changes from **ABC** to **abc**.

4.2.7

Using the phone book



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



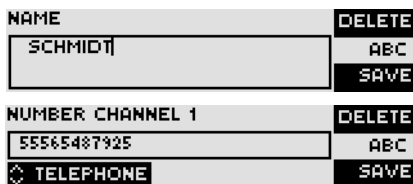
In the input field **SEARCH** you can search for a certain partner. As soon as you enter a character the corresponding phone book entries are filtered out.

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

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

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

Then enter the phone number of the partner. Confirm it as well with **SAVE**.



TIP

It is also possible to store two different telephone numbers with different modes in one phone book entry. After entering the first number please press the **OK** button instead of the softkey **SAVE**. Now you can enter a second number and mode. Confirm the entry with **SAVE**. If you select such an entry to be called both connections will be setup simultaneously.

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



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

TIP

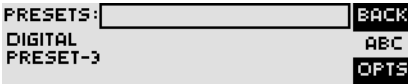
The phone book functions can also be reached directly via the **QuickBook** function. Please press the following key sequence: **NAMES OPTS <DIGIT>**
 Example: **SAVE AS QUICK DIAL - NAMES OPTS 5**

4.2.8 Working with Presets

The **Connect Solo** differentiates between **SYSTEM SETTINGS** and **OPERATION SETTINGS**.

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

Operation Settings like e.g. the **RING TONE, SIGNAL PROCESSING** etc., need to be reconfigured depending on the application. To easily recall recurring configurations you can store up to 10 Presets in the system.



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

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

Alternatively, you can select a Preset from the list using the cursor keys **▲** and **▼**.

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

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

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




NOTICE

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

4.3



Settings for operation with an Artist System

POTS settings and Audio Mode/Auto Answer

- Press the softkey **MENU** and use the cursor keys  and  to select **OPERATION SETTINGS**. Confirm it with **SELECT**.
- Select **POTS** and then **AUTO ANSWER**, enable it with **SELECT**. Confirm with .




Press **BACK** to get back to **OPERATION SETTINGS**.


Depending on the hardware configuration of your Artist System you must configure the Audio Input and output in the right way:

- **Artist System with CAT5 card: Digital AES/EBU Audio interface**
 - Use the cursor keys to select **SYSTEM SETTINGS**. Confirm with **SELECT**.
 - Select **AUDIO** and set **AUDIO INTERFACE IN** and **AUDIO INTERFACE OUT** to **DIGITAL** by pressing **SELECT** and confirm it with .
 - Remain in **AUDIO SETTINGS** and set the **AES/EBU CLOCK SOURCE** to **RECOVERED**, press **SELECT** and confirm it with .
- **Artist System with AIO card: Analogue Audio interface**

NOTICE

Analogue connection to the Artist requires additional GPIO to TTL/Relay cable in order to dial from the intercom system. Using the analogue connection in conjunction with a GPI cable allows dialing from the Artist. In this case the telephone number has to be stored in the codec previously (see CHAPTER 5.5.2.2.3).

- Press the softkey **MENU** and use the cursor keys  and  to select **SYSTEM SETTINGS**. Confirm it with **SELECT**.
- Select **AUDIO** and set **AUDIO INTERFACE IN** and **AUDIO INTERFACE OUT** to **ANALOGUE** by pressing **SELECT** and confirm it with .

Press button  to get back to the main menu. You will now be asked whether you want to save the settings. Press the **YES** softkey to store the new settings permanently.

5 WINDOWS PC SOFTWARE

The configuration of the system is particularly comfortable via the Windows PC Software included in delivery.

5.1 Hardware requirements

The PC must meet the following minimum requirements:

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

5.2 Installing the Windows PC Software

Please insert the CD included in delivery in your CD-ROM drive. You will find the installation file **setup.exe** on the CD.

Please follow the instructions of the installation routine.

After the installation the software can be started by clicking on the **Connect Solo** icon.



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

The standard **COM Port** settings are: **PC (38400 Baud)**

Operation via Windows PC software

In the following chapters all functions of the PC software are described in detail.

5.3 The Connect Solo main window

After starting the **Connect Solo Software**, the main window is displayed automatically (see Fig. 6).

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

PC ONLINE: Connection is okay.

NO CONNECTION: Connection with PC is faulty

Following further status messages are possible:

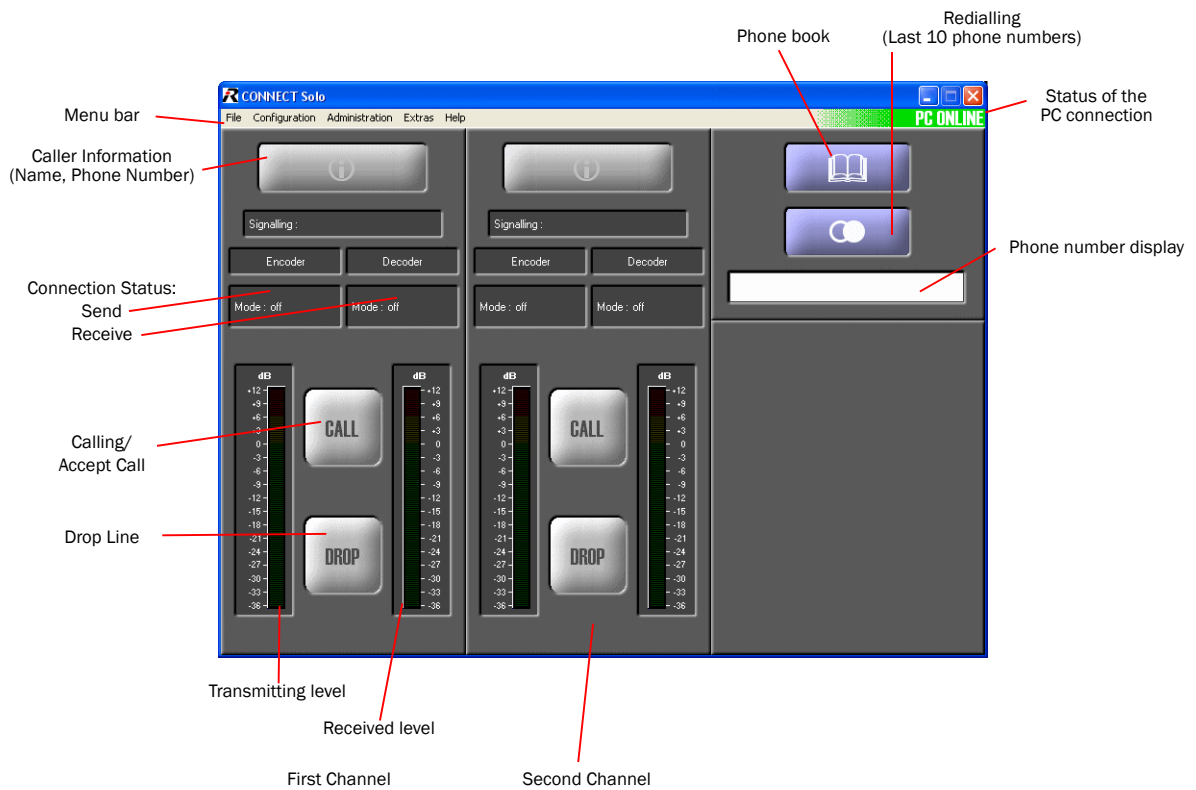
PC ONLINE ALARM: Upcoming alarm (see **System Monitor**, green-dark green blinking)

NOTICE

If the connection is faulty, please check the following points:

- External power supply of the system is plugged in (display available)
- Serial 1:1 cable is connected with PC and system
- Correct COM port and correct baud rate are selected in the software (**Configuration** → **COM Port**, see Page 59)

FIG. 6 MAIN WINDOW OF THE CONNECT SOLO SOFTWARE



5.3.1 Operating elements

5.3.1.1 Info button



On the **INFO** button the information about the caller is shown. If transmitted the phone number of the caller is displayed. If additionally a phone book entry is available, the caller's name is displayed.



During Call In or Call Out the **INFO** button will be displayed in yellow, during a connection the **INFO** button is red.

By pressing the **INFO** key the **phone book** (see CHAPTER 5.3.1.4) is opened and the entry can be edited immediately.



The button **CALL** initiates a call in the selected transmission mode to the phone number which is displayed in the phone number display.

If there is an incoming call a blinking **ACCEPT** button is displayed instead of the **CALL** button.

If the connection is established a green **CONNECT** button is shown.

Via the **DROP** key the connection to the caller can be dropped.



When there is an **incoming** call, **all** keys are displayed in yellow and blinking. Respectively, each of these keys can be selected.

In contrast to this, when there is an **outgoing** call, the key **CALL** will be labelled with **CALLING** whereas the key **DROP** is displayed yellow and blinking. Only the **DROP** button can be selected.

5.3.1.2 Level indicators

The outgoing transmitting level as well as the received level of the caller are displayed via separate level meters.

5.3.1.3 Redialling



Via the **Redialling** button the ten last dialled telephone numbers are available. The redialling list is indicated with transmission mode as well as the phone number.

After selection an entry the **outgoing** call will be immediately initiated.

5.3.1.4 Phone book



With the use of the **Phone Book** key telephone numbers can be saved comfortably in the phone book.

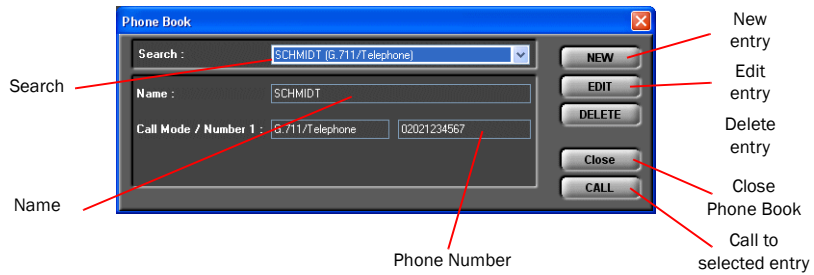
NOTICE

The phone book is stored in the **Connect Solo** system and **not** in the PC. Via the menu **File** → **Phone Book** → **Import/Export** a phone book can be imported from a data file or exported as data file (see CHAPTER 5.4.1).

To open the phone book, please press the phone book button (see Fig. 7).

In the **Search** field you can search directly for a name in the phone book. As soon as a match is found the corresponding record is displayed with **Name** and **Number**.

FIG. 7 PHONE BOOK

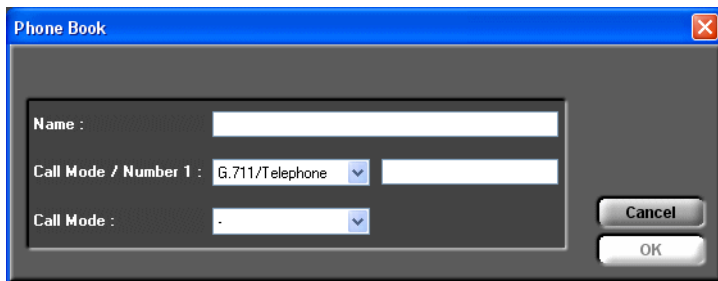


To create a new entry, please press the button **NEW** whereby an empty phone book entry is displayed. There you can enter the name and the phone number.

TIP

It is also possible to store two different telephone numbers in one phone book entry. If you select such an entry to be called both connections will be setup simultaneously.

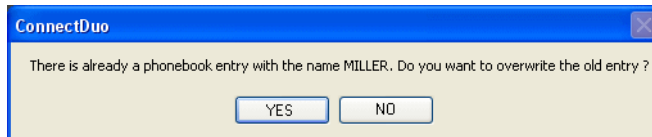
FIG. 8 EDIT NEW PHONE BOOK ENTRY



ATTENTION



The name entered in the phone book has to be unique. Identical names are not permitted. The best way to provide a clear identification is to enter the last name and the first name. If the name already exists, an error message is displayed.



By the use of the **EDIT** button an already existing record can be edited. The search function is not available here.

Via the button **DELETE** the currently displayed record is deleted. To avoid unintentional deleting, you have to confirm that you really want to delete the entry with **Yes**.

By using the **Close** button the phone book will be closed.

Via the **CALL** button a direct call to the displayed phone book entry is possible.

Status elements

The **Connection Status** will be displayed for each channel and separated for **Encoder** and **Decoder** in the connection status field.

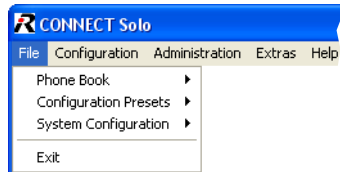
The following information is available:



- **Signalling:** Transmission mode **Telephone** for the connection.
- **Mode:** **3.1 kHz** or **off**

5.4 Menu File

FIG. 9 MENU FILE



5.4.1 Phone Book

Via the submenu **Phone Book** a complete phone book can be imported or exported from a data carrier (e.g. disk, USB stick) to the system or from the system to a data carrier.

Select the desired function **Import** or **Export**.

Used formats:

- The phone book is saved as **CSV** file. This format can be opened with any text editor or edited with MS EXCEL.

Example:

```

Connect Solo;3;2
Name;Call Mode 1;Call Mode 2;Number 1;Number 2
MEYER;1;1;02024567890;02024567891
MILLER;1;0;130;

```

Please note: The first two lines form the header and must not be missing.

Call modes syntax:

- 0 = not used
- 1 = Telephone
- 2 = Reserved

5.4.2 Basic Settings

To **Import/Export** the basic settings of a system please use the submenu **Basic Settings**. The file format is binary and cannot be edited (see CHAPTER 5.4.2).

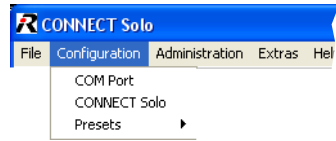
5.4.3 Submenu Exit

Via the submenu **Exit** you exit the **Connect Solo** software.

5.5

Menu Configuration

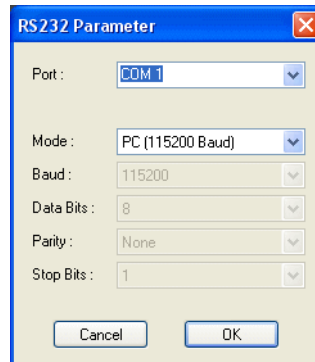
FIG. 10 MENU CONFIGURATION



5.5.1 Submenu COM Port

The system is connected via the serial RS232 interface with a 1:1 connecting cable to a PC. The configuration of the COM Port of the PC can be carried out under **Configuration** → **COM Port**.

FIG. 11 RS232 PARAMETER OF THE COM PORT



As **Port** you select the interface of your PC which is connected to the **Connect Solo**.

Under **Mode** you can set the desired operating mode:

- **PC (9600 Baud)**
- **PC (19200 Baud)**
- **PC (38400 Baud): Default setting**
- **PC (57600 Baud)**
- **PC (115200 Baud)**

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

5.5.2 Submenu Connect Solo

Via the submenu **Connect Solo** the system can be configured comfortably. It is distinguished between **Basic Settings**, which do not have to be changed during the operation and the actual **Configuration** for the current application. In contrast to a configuration, the basic settings **cannot** be saved as **Preset** (see CHAPTER 5.5.3).

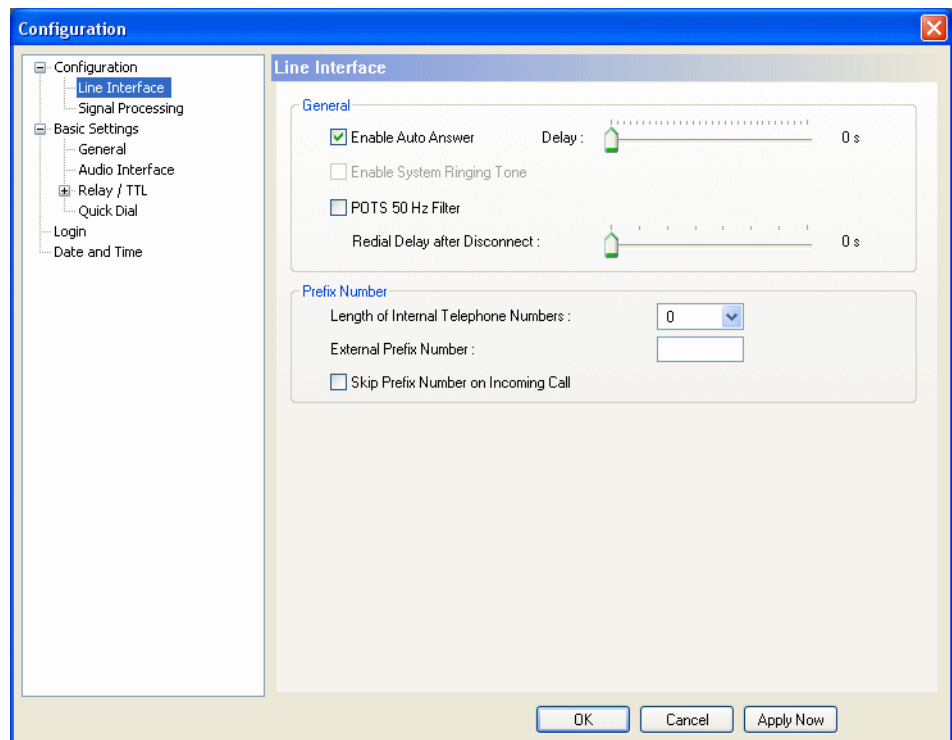
5.5.2.1 Configuration

All settings made under **Configuration** can be saved as **Preset**.

5.5.2.1.1 Line Interface

Via the option **Line Interface** the POTS telephone interface can be configured.

FIG. 12 LINE INTERFACE



General

- Via the function **Enable Auto Answer** the auto answer can be activated. Using the **Delay** slider a period in a range from **0 ... 31** seconds can be configured after the system should answer a call.
- It is possible to activate a ring tone as audible signal for incoming calls via the function **Enable System Ringing Tone**. This function is only enabled if **Enable Auto Answer** is **not** activated.
- If the **POTS 50 Hz Filter** is activated, a disturbing 50 Hz humming is filtered out. The spurious signal is injected via the POTS connection in the system. The reason is in the majority of cases an incorrect cabling of the private branch extension.

- The option **Redial Delay after Disconnect** avoids permanent re-dialling (e.g. via a TTL pin) without a pause. After a disconnect you must normally wait a few seconds before you can re-dial. The delay can be configured in a range from **0...7** seconds.

Prefix number

NOTICE

The following configurations are only necessary if the system is operated with a private branch exchange.

- Under **Length of internal telephone numbers** the length of your internal telephone numbers is set. Subsequently, the prefix number is automatically dialled first if the length of the telephone number exceeds the length specified in this setting.

If you do not want to use this function or if you operate the system with a main telephone station, enter **0**.

Examples:

Length of internal telephone numbers: 3
Entered telephone number: 130
Dialling: 130

Length of internal telephone numbers: 3
Entered telephone number: 292130
Dialling: **0** 292130

- Under **External prefix number** please enter the prefix number that you need to get an external line. In most cases it is **0**.

ATTENTION



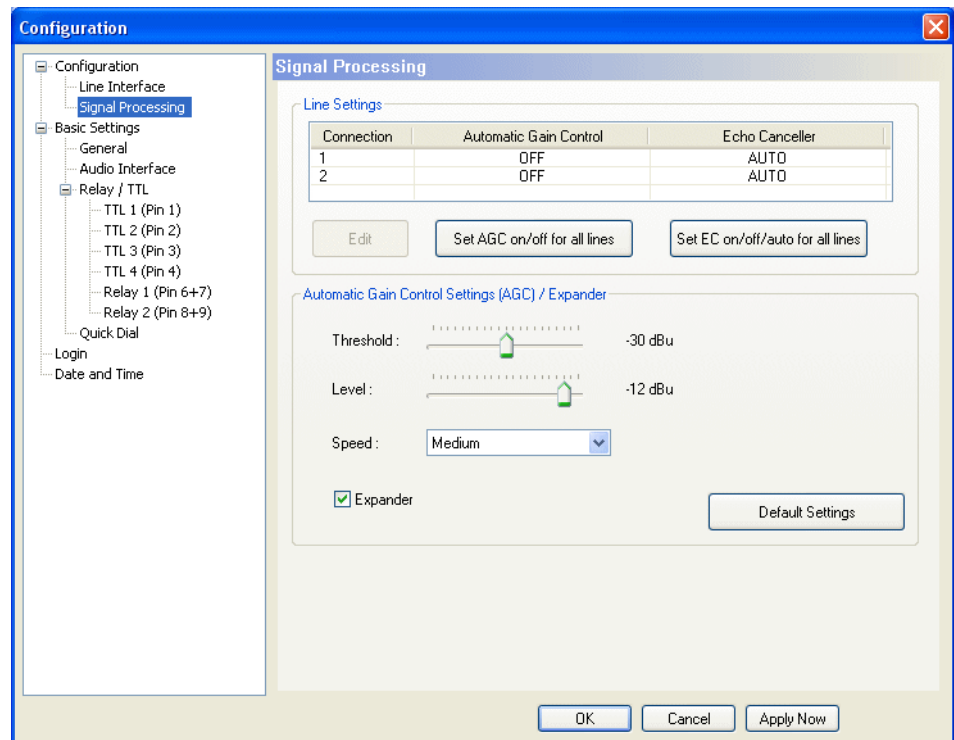
You need to enter the prefix number at any rate if you work with a private branch exchange because otherwise the system does not wait for the free-line signal. Without dialling the prefix number at a private branch extension the telephone number is transmitted too fast and no connection can be established.

- Some private branch exchanges transmit telephone numbers with prefix number to the system. If you enable the function **Skip prefix number on incoming call**, you can save a displayed number in the phone book without prefix number since the prefix number of the displayed number is deleted automatically.

5.5.2.1.2 Signal Processing

With the option **Signal Processing** configurations to optimise the caller signals can be carried out. It is possible to configure the **AGC** (Automatic Gain Control), the **Echo Canceller** as well as the **Expander**.

FIG. 13 SIGNAL PROCESSING



Line Settings

- A separate Automatic Gain Control (**AGC**) can be switched on for both channels.

ATTENTION

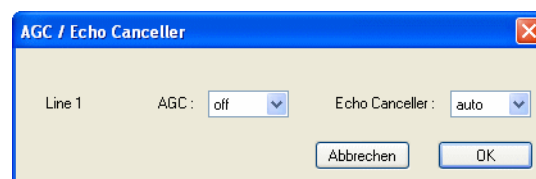


An Automatic Gain Control is reasonable if you do not have the possibility to adjust the level manually.

But: An AGC is no wizard. Extremely low callers cannot be boosted boundlessly. Extremely loud callers cannot be toned down boundlessly.

Please select the desired line with your mouse and press the button **Edit**, which opens the configuration window. To switch off the **AGC** select **Off**. To switch it on select **On**.

FIG. 14 CONFIGURATION AGC AND ECHO CANCELLER



Via the button **Set AGC on/off for all lines** you can switch on respectively switch off the **AGC** for all lines.

- An **Echo Cancellor** can be set on or set off separately for each channel.

NOTICE

In general, the use of the Echo Cancellor is recommended. When a subscriber calls on the system with an **analogue** telephone, a line echo is produced which can interfere with the incoming signal. Digital telephones (e.g. ISDN or mobile phones) do not produce these line echoes. In this case an Echo Cancellor would worsen the incoming signal. For this reason the system sends a short test tone when a connection is established (only in the **Auto** mode) and detects the level of the echo. If a certain threshold value is not exceeded, the Echo Cancellor is set off because the use of a digital phone on the counterpart is anticipated. If the level is too high, the Echo Cancellor is set on automatically.

But: Echo Cancellers can only suppress echoes if the delay of the signal lies within a certain scope. Telephone connections via satellite have such a long delay that the Echo Cancellor cannot work properly anymore.

Select the desired line with your mouse and press the button **Edit**, which opens the configuration window (see Fig. 14). To generally set the **Echo Cancellor** off select **Off**.

If you always want to have the **Echo Cancellor** activated select **Always ON**. In this case, no test tone to detect the echo is sent.

If the option **Auto** is selected, the Echo Cancellor is switched on or switched off dynamically. The system sends a short test tone to determine if an Echo Cancelling is required or not.

Via the button **Set EC on/off/auto for all lines** you can select the same operating mode of the **Echo Cancellor** for all lines.

Automatic Gain Control Settings (AGC)/Expander

The correct functioning of the **AGC** can be optimised via several parameters.

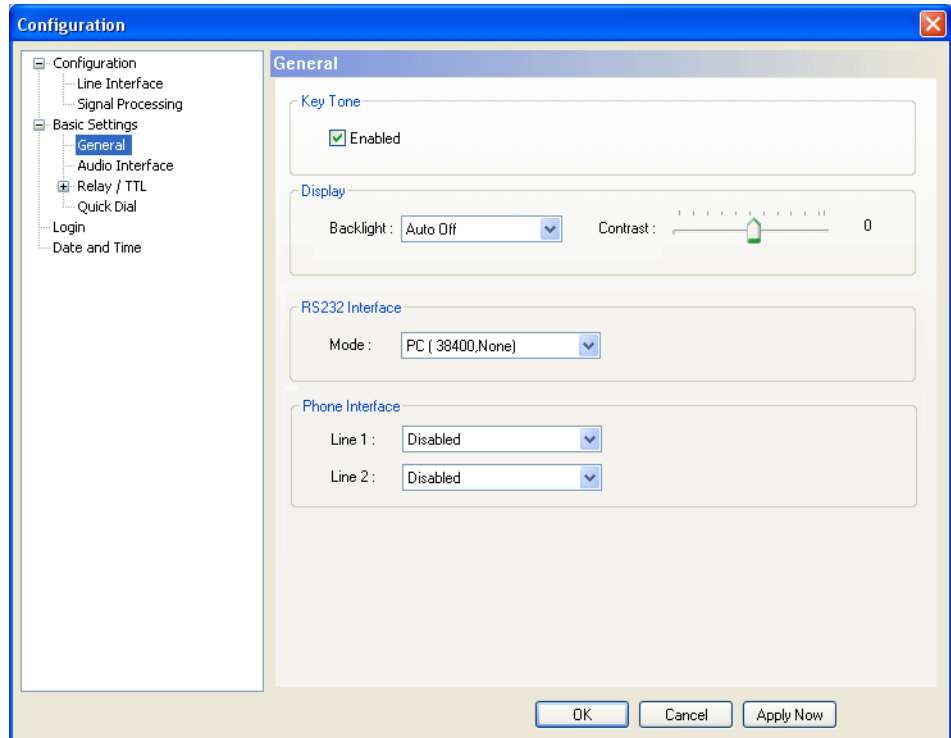
- **Threshold** : The **AGC** does not start before the signal exceeds the threshold value set here. The default setting is -30 dBu.
- **Level** :The level set here corresponds with the average desired level. Please consider sufficient head room. The default setting is -12 dBu.
- **Speed** : Depending on the desired speed of the level adjustment (**Slow** or **Fast**) the setting of the AGC speed can be configured here. The faster the AGC must work the more noticeable are the inconsistencies. If the set speed is too slow, the caller signal is too low or too loud on average. The default setting is **Medium**.
- An **Expander** tones down the caller signal automatically, if its level falls below a certain threshold value. The aim is to completely filter out background noises of callers who are not currently speaking. The **Expander** is activated by checking the respective box.
- With the use of the key **Default Settings** the default settings named above can be configured and the **Expander** can be activated.

5.5.2.2 Basic Settings

NOTICE All configurations made under **Basic Settings** cannot be saved as **Preset** (see CHAPTER 5.5.3).

5.5.2.2.1 General

FIG. 15 GENERAL



Key Tone

- To activate the **Key Tone** of the front keypad, check the **Enabled** box.

Display

- The **Display** has a backlight. Under the setting **Backlight** you can switch it **ON** permanently. If you select the option **Auto** the backlight is turned off automatically **60** seconds after the last keystroke. The backlight is activated again by pressing any key (e.g. **OK**).

NOTICE

Please notice that if the keypad lock is activated, the backlight is only switched on again by pressing the key sequence **MENU ***.

- Via the slide control **Contrast** you can adjust the contrast in the range **-16 ... 15** for the display. The default setting is **0**.

RS232 Interface

- If you want to operate the system with the PC, you must set the data rate in accordance with the interface. There are five baud rates available: **PC (9600 Baud)**, **PC (19200 Baud)**, **PC (38400 Baud)**, **PC (57600 Baud)** and **PC (115200 Baud)**.

Phone Interface

- If you have connect a normal telephone to one of the two available phone interfaces you can use it for e.g. dialling. In this case select **Enabled** for **Line 1/2** otherwise **Disabled**.

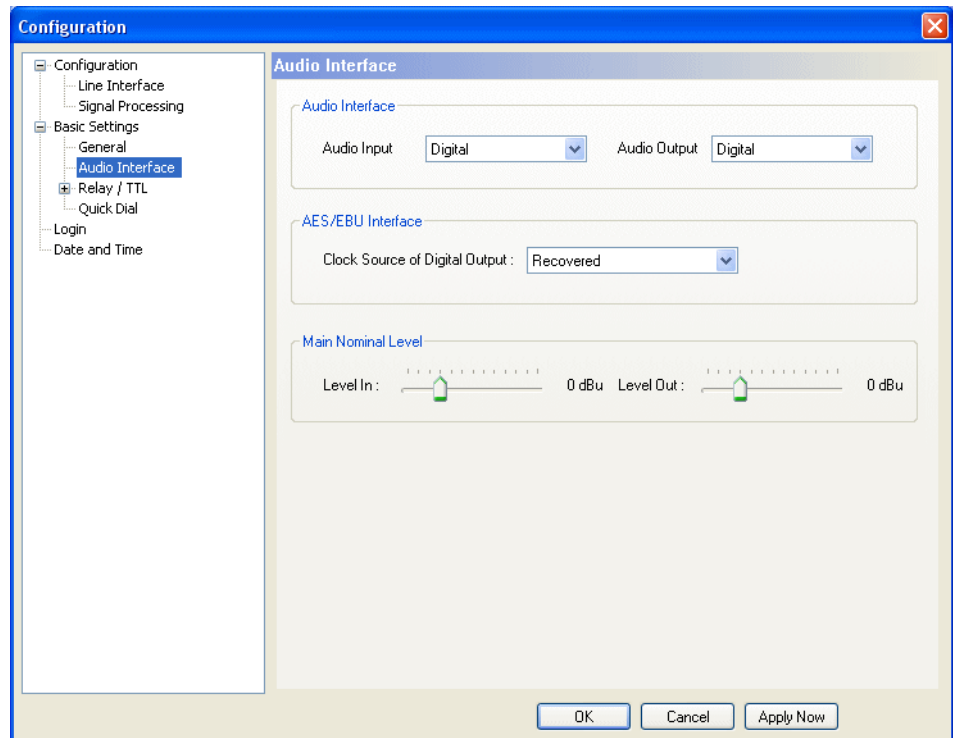
5.5.2.2.2 Audio Interface

Connect Solo supports analogue as well as digital AES/EBU Audio interfaces. If the digital interfaces are used, a separate Sample Rate Converter is available for the input and the output so that external adjustments are not required if there are different digital sources and drains.

NOTICE

The digital AES/EBU Audio interface should be used as standard Audio interface. Otherwise a remote control from a Digital Matrix is not possible (dialling, accepting a call etc.).

FIG. 16 AUDIO INTERFACE



Audio Interface

- The operating mode **analogue** or **digital** can be set separately for the **Audio Input** and the **Audio Output**.
- If the output is set **digital**, additionally the configuration for the **AES/EBU Interface** is displayed. Under **Clock Source of digital output** you can select the following options:
 - **Internal:** The AES/EBU output clock is derived from the internal system clock.
 - **External:** The AES/EBU output clock is derived by the external clock connected via the interface **Audio 2/CLK IN**. The clock rate of the connected clock must be 48-kHz.

- **Recovered:** The AES/EBU output clock is derived from the digital input signal of the interface **Audio 1/AES IN**. This configuration is usually to be selected if you use the digital input of the system. In this way a synchronous functioning of the transmission chain is ensured

NOTICE

The AES/EBU input always works with recovered clock, therefore a configuration of the output is required.

For clock synchronisation to other systems you can use the Audio Output **Audio 2/CLK OUT**. The clock rate of the output clock is 48-kHz.

- If you operate the input or the output in an analogue mode, the corresponding slide control for adjusting the nominal Audio level of the Audio interface (**Main Nominal Level**) is displayed. The nominal level can be adjusted separately for the input (**Level In**) and for the output (**Level Out**) in the range of **-3 ... +9 dBu** in 1-dB steps. The head room is **6 dB** in general. If you want to have the maximum level of 15 dBu for the system, you must set 9 dBu as nominal level. The default settings are 0 dBu.

5.5.2.2.3 Relay / TTL

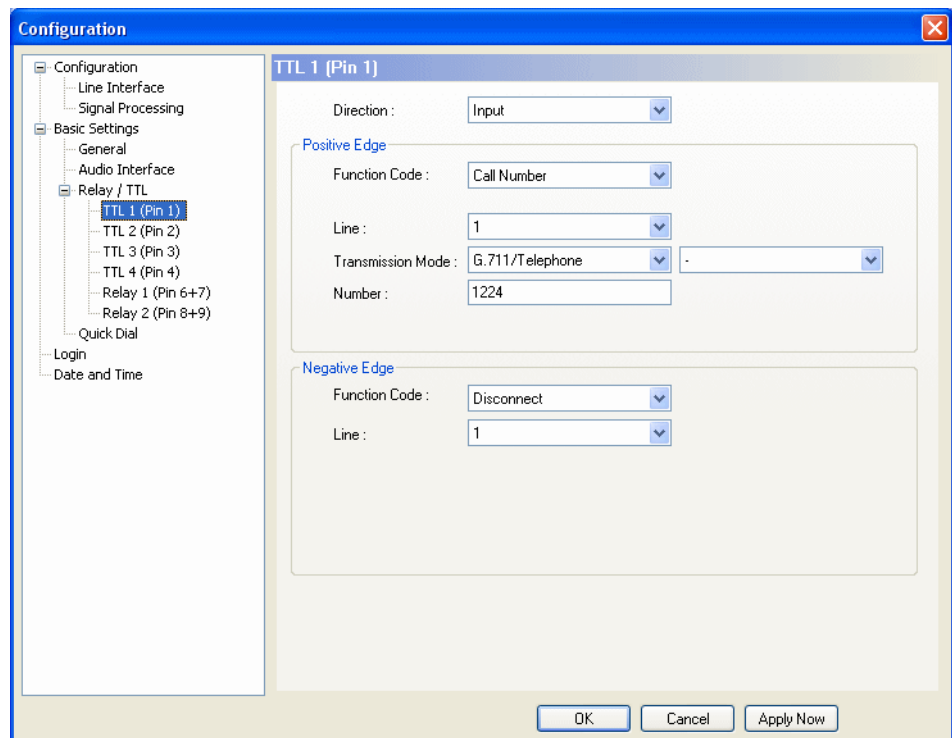
The **Connect Solo** system incorporates four **GPIO** Pins (TTL) which can be programmed separately as input or output. Additionally, two **Relays** are available.

The operating mode of a TTL-Pin - **Input** or **Output** is selected via the option **Direction**.

The following specification accounts for all three configuration windows **TTL1**, **TTL2**, **TTL3** and **TTL4**.

TTL-Pin as input

FIG. 17 TTL-PIN AS INPUT



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

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

The following functions can be configured (**Function Code**):

- -: No function, the negative edge is not used.
- **Call Number:**

Via this function you can establish a connection to a certain **Number** with desired **Transmission Mode**. Under **Line** you select the line (**1** or **2**) on which the connection is established. If you select **1** it is possible to setup **two** independent connections with different numbers.

- **Call Number (level triggered):**
Same function as **Call Number**, but the event is activated level triggered and not edge triggered.
- **Disconnect:** If you activate this function, a connection on the selected **Line (1 or 2)** can be disconnected.
- **Load Preset:** Via this function it is possible to load a preset which you have to select under **Preset**.
- **Set Information Base entry:** Reserved for future applications.
- **String Command:** Reserved for future applications.

Example:

You want to initiate a call on line 1 with TTL 1. After the transmission has been finished the connection is to be cleared with TTL 1.

Programming:

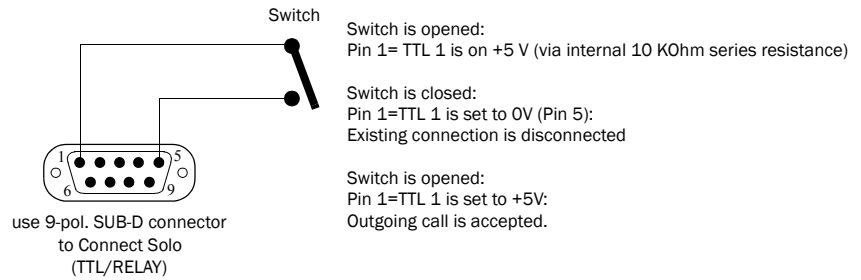
Positive egde:

Function Code: Call Number
Line: 1
Transmission Mode: G.711/Telephone
Number: 0202292130

Negative egde:

Function Code: Disconnect
Line: 1

FIG. 18 SEQUENCE OF EVENTS FOR THE EXAMPLE

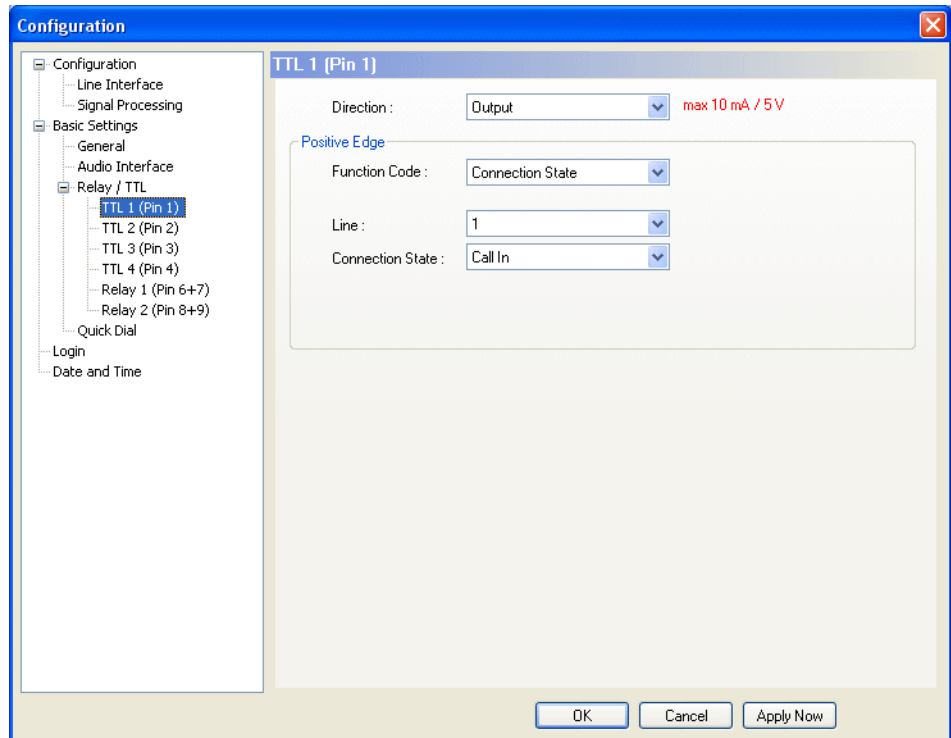


TTL-Pin as Output

ATTENTION

Please pay attention to the maximum switch current of 10 mA respectively the maximum switch voltage of 5V per TTL output.

FIG. 19 TTL-PIN AS OUTPUT



If a TTL-Pin is configured as **Output**, the event is signalled as change of voltage on the TTL-Pin from 0V to+5V.

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

- **Fixed to Low (0V)**: The TTL-Pin is set to 0V permanently.
- **Fixed to High (5V)**: The TTL-Pin is set to +5V permanently.
- **PC Controlled**: Reserved for future applications.
- **Connection State**: Via **Connection State** you can signalise the connection state of a line. The following configurations are possible:
 - **Disconnect**
 - **Call Out**
 - **Call In**
 - **Connect**
 - **Call Setup**

Under **Line** you select the line whose status you want to signalise. In addition to line **1** and line **2** you can monitor the connection status of both lines if you select the option **all**. As soon as one of the two lines meets the criteria, the signal is set on the TTL-Pin.

- **Information Base entry**: Reserved for future applications.
- **System Alarm Pending**: If one of the possible system errors (see CHAPTER 5.7.1) occurs, it can be signalised by selecting this option.

Relay

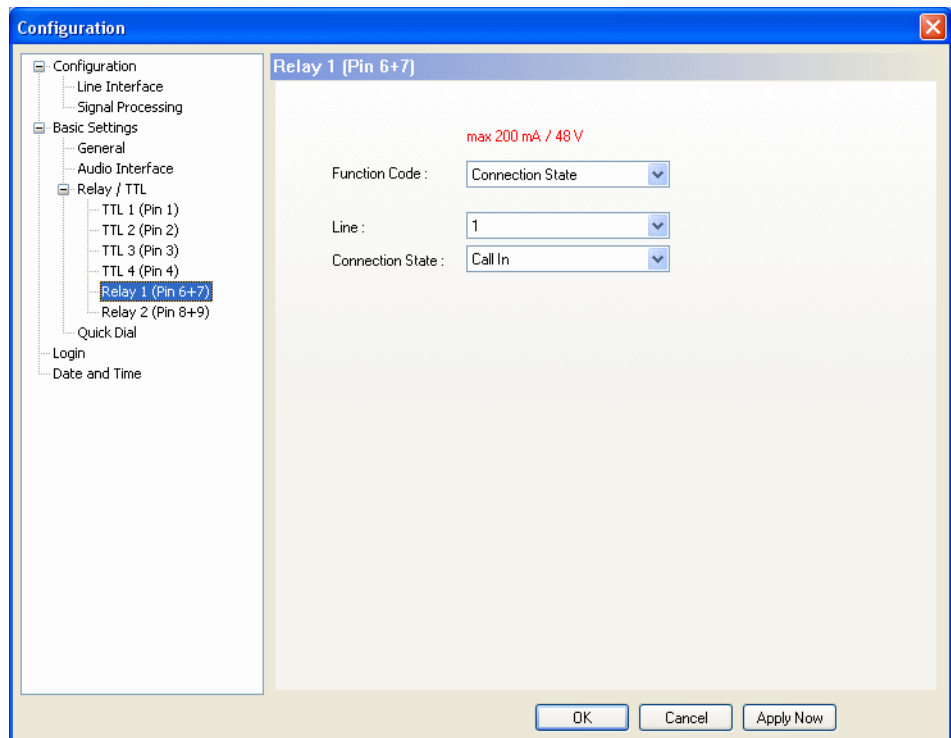
ATTENTION



Please pay attention to the maximum switch current of 200 mA respectively the maximum switch voltage of 48V per relay output.

The following description applies for both configuration windows **Relay 1** and **Relay 2**.

FIG. 20 RELAY



The options for the relay configuration are identical with the configuration of a TTL-Pin. The following **Function Codes** are available:

- **Always open** : The relay contacts are always open.
- **Always closed** : The relay contacts are always closed.
- **Connection State** : With the use of **Connection State** you can signalise the connection state of a line. The following configurations are possible:
 - **Disconnect**
 - **Call Out**
 - **Call In**
 - **Connect**
 - **Call Setup**

Under **Line** you select the line whose status you want to signalise. In addition to line **1** and line **2** you can monitor the connection status of both lines if you select the option **all**. As soon as one of the two lines meets the criteria, the signal is set on the TTL-Pin.

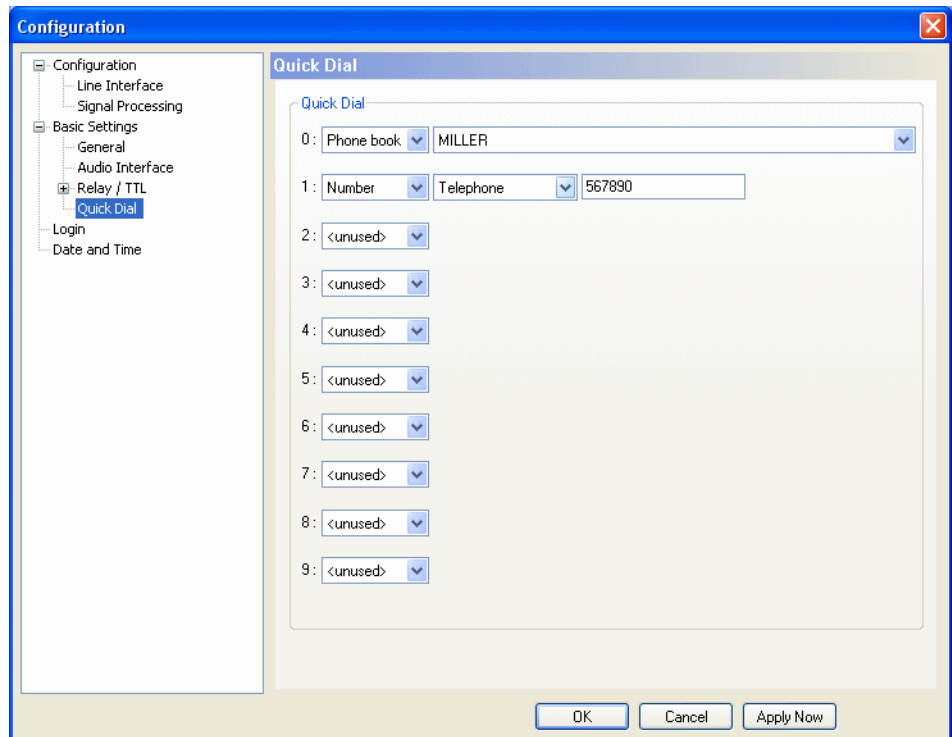
- **Information Base entry**: Reserved for future applications.

- **System Alarm Pending:** If one of the possible system errors (see CHAPTER 5.7.1) occurs, it can be signalled by selecting this option.

5.5.2.2.4 Quick Dial

Up to 10 Quick Dial keys **0... 9** can be programmed in the system. The Quick Dial keys are displayed in the right part of the main window.

FIG. 21 QUICK DIAL



Select **<unused>** if the Quick Dial is not used.

If you want to program a number, select the option **Number** and the phone number in the right fields. A possibly required prefix number must not be added if you have already configured it (see Page 40, Prefix number).

Alternatively, you can select an entry directly from the phone book. Select the option **Phone book**. In the right field the list of all available phone book entries is displayed.

5.5.2.3 Login

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

ATTENTION



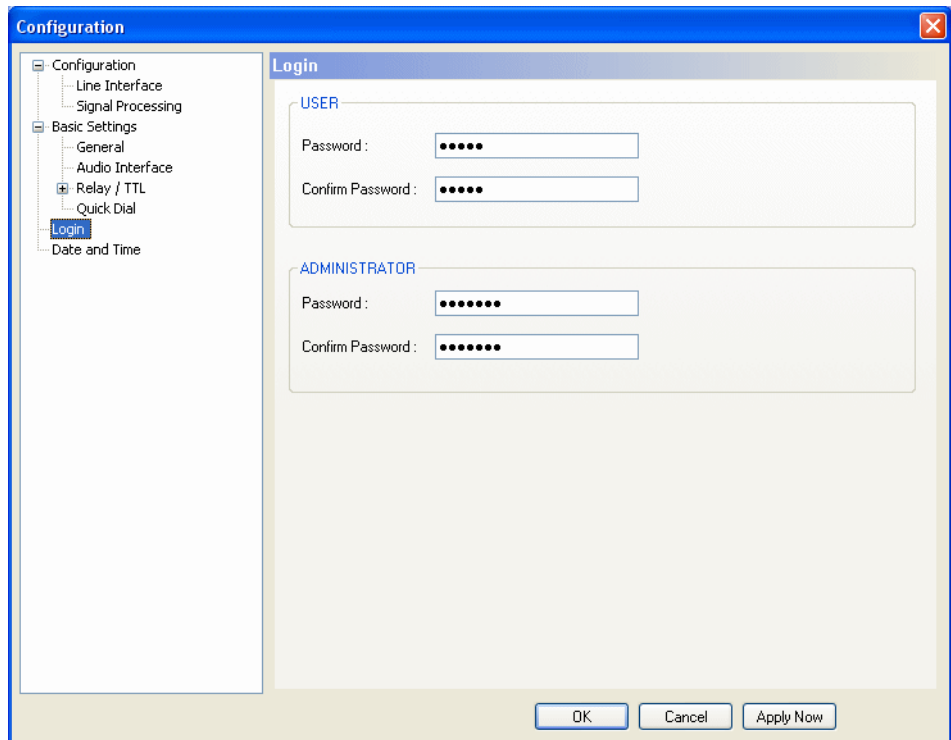
The entered password is saved in the system. It is highly important that you enter your password carefully. If you have forgotten your password, only the Riedel Service can re-activate the system.

- Under **USER** you assign the user **Password**. For safety reasons you must confirm the password under **Confirm Password**.
- Under **ADMINISTRATOR** you assign the Administrator **Password**. For safety reasons you must confirm the password under **Confirm Password**.

NOTICE

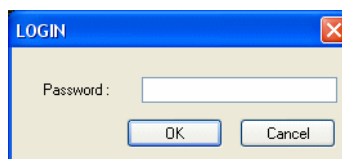
There is no differentiation between upper and lower case for the password entry.

FIG. 22 LOGIN



When you have assigned a password, the window for the password entry is automatically displayed when you click on a menu with password protection. Please enter the User Password or the Administrator Password.

FIG. 23 PASSWORD LOGIN



The authorisation levels are defined as follows:

- (1) Only **Administrator Password** is configured: The password must be entered for configuration changes. Immediately available menus:
 - **File** → **Phone Book** → **Export**
 - **File** → **Basic Settings** → **Export**
 - **Configuration** → **Presets** → „**Configuration Name**“
 - **Administration** → **Registration**
 - **Extras** → **System Monitor**
 - **Help** → **About Connect Solo**
- (2) Only **User Password** is configured: The password must be entered always. Afterwards all menus are available. Immediately available menus:
 - **Help** → **About Connect Solo**
- (3) **User Password** and **Administrator Password** are configured: The password must always be entered.

User Password is entered:

Under **Configuration** → **Configuration** → **Login** the **USER** password can now be changed.

Via **Configuration** → **Presets** the desired configuration can be loaded.

Immediately available menus:

- **Extras** → **System Monitor**

Administrator Password is entered: All menus are available.

NOTICE

Please pay attention to the configuration options of the system if a password is assigned (see CHAPTER A1).

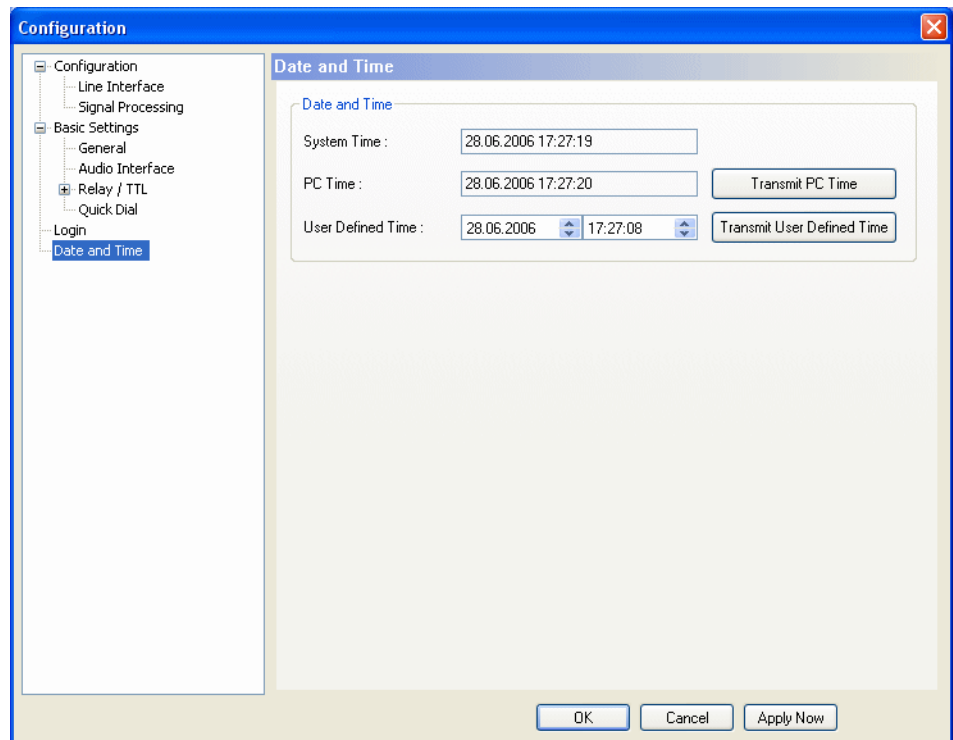
5.5.2.3.1 Date and Time

Via the panel **Date and Time** it is possible set the internal clock of the system.

To synchronise the **System Time** to the **PC Time** press the button **Transmit PC Time**.

To setup another time e.g. for other time zones you can enter a **User Defined Time**. To set the time in the system press the button **Transmit User Defined Time**.

FIG. 24 DATE AND TIME



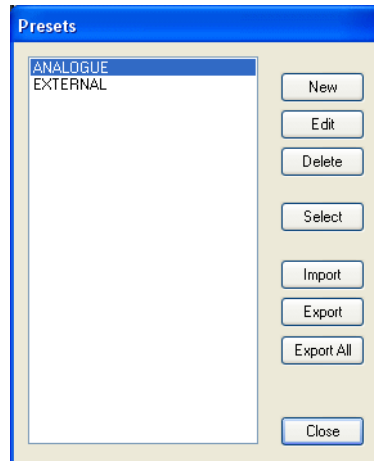
5.5.3 Submenu Presets

Via **Presets** you can load already created configurations.

5.5.3.1 Manage Presets

Your created **Presets** can be managed via the menu **Configuration** → **Presets** → **Manage Presets**.

FIG. 25 MANAGE PRESETS



All already existing configurations are displayed in the list.

- With the use of the **New** button you create a new configuration. The current configuration of the system is not changed or loaded by this function. First, select an expedient name. The length of the name must not surpass 8 characters. Special characters and space characters are **not** allowed. Please mind that you use unique names.

Subsequently, the configuration dialogue is opened for the editing of the **Presets**. The current configuration is always displayed as basis of a **Preset** which you can adjust according to your wishes. The following configurations can be saved as Preset:

- Line Interface (see Page 39)
- Signal Processing (see Page 41)
- By using the button **Edit** the currently selected configuration can be edited. The current configuration of the system is not changed or loaded with this function.
- Via the button **Delete** the configuration selected from the list is deleted. For safety reasons you have to confirm your selection.
- To activate a configuration selected from the list, press the **Select** button. For safety reasons you have to confirm your selection.
- Via the button **Import** a configuration can be imported from a data carrier (disk, USB stick etc.). The file extension of the configuration file is always **.psf**. A click on the button opens the file browser in which the desired file can be selected.

- Likewise, it is possible to export configurations to a data carrier. The button **Export** saves the configuration selected from the list as **.pst** file. By clicking on the button the file browser is opened and you can choose the location where the file is saved.

With **Export All** all configurations displayed in the list are saved in a directory of your choice. A separate data file with the file extension **.pst** is generated for each configuration.

TIP

If you need to configure several systems in the same way, set up one system first and export all configurations to a disk. To configure all further systems easily, import the configurations from the disk.

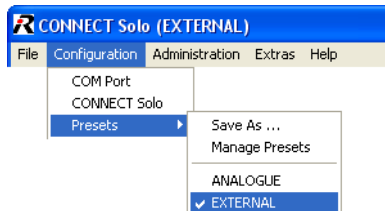
This is also possible for the **Phone Book** and **Basic Settings**. Via the **Import/Export** function under **File** (see CHAPTER 5.4) you can comfortably save all information and load on other systems.

5.5.3.2

Activation of a Preset

All Presets are displayed under **Configuration** → **Presets** → „Preset Name“ and can be activated with a click.

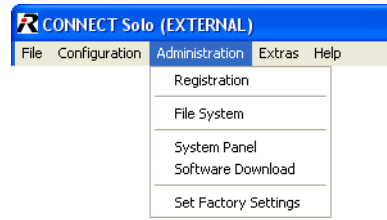
FIG. 26 ACTIVATION OF A PRESET



For safety reasons a confirmation is required.

5.6 Menu Administration

FIG. 27 MENU ADMINISTRATION



5.6.1 Submenu Registration

The data concerning production as well as the enabled options can be displayed under the submenu **Registration**.

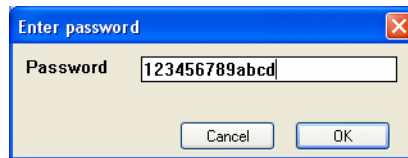
FIG. 28 SUBMENU REGISTRATION

This number is required to enable software options supplementarily

The data of the unit include the following information:

- **Hardware**
- **Subject Number**
- **Factory Number**
- **Year** of production
- **Hardware Version**
- Under **Features** the available and activated **Software Options** of the **Connect Solo** are displayed. Deactivated options can be activated via a password. This password is assigned according to the **Factory Number**. If you bought an option supplementarily, please enter the password that you received from us under **Enter Password**.

FIG. 29 PASSWORD ENTRY TO ENABLE AN OPTION



Subsequently, the system executes a warm start. Afterwards, the functions are activated.

ATTENTION



Please enter the password carefully.

If you enter a wrong password **three times**, you must switch off the system and switch it on again.

5.6.2 Submenu File System

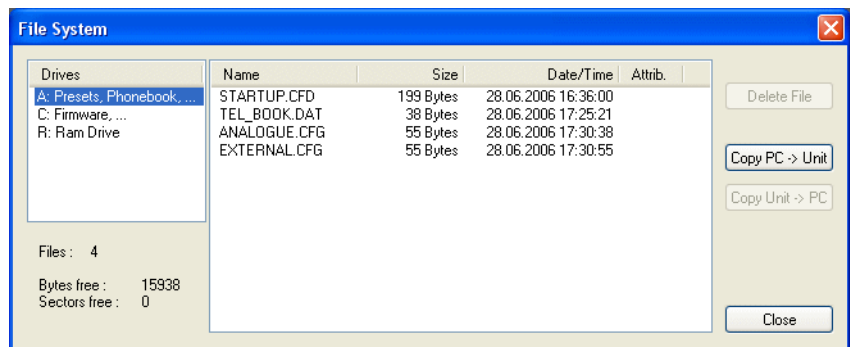
Selecting the submenu **File System** the storage system (similar to a PC's hard drive) of the system is displayed.

ATTENTION



Please do not use the File System unless our Service requested a specific action.

FIG. 30 SUBMENU FILE SYSTEM



- The button **Delete File** deletes the currently selected file **from the system**.

ATTENTION



Please do not delete any file unless our Service requested a specific action. Otherwise a disfunction of the system is possible.

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

ATTENTION



Please use the Software Download and the File Import functionalities respectively to copy files to the system.

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

ATTENTION

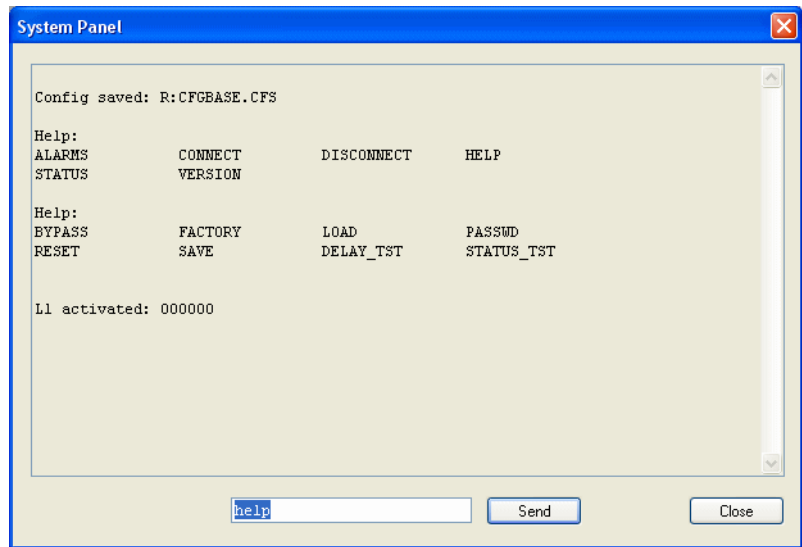


Please use the File Export functionalities to copy files to the PC.

5.6.3 Submenu System Panel

The **System Panel** is only for service purposes. Please enter only commands in the prompt, if our Support requested it from you.

FIG. 31 SUBMENU SYSTEM PANEL



5.6.4 Submenu Software Download

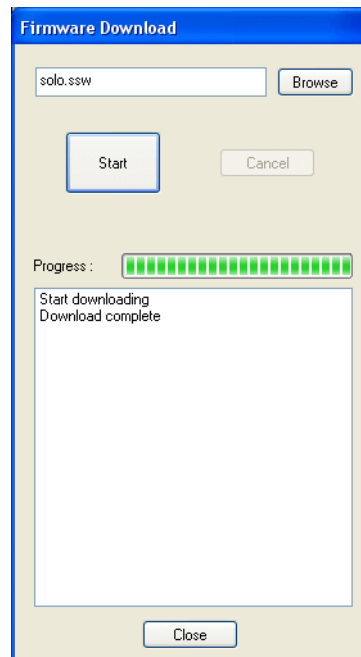
The required firmware for the **Connect Solo** system is always included in the PC software: Via the **Software Download** you can comfortably download the firmware on your system.

By using the **Browse** button you select the firmware file. It is always located in the same directory in which you installed the **Connect Solo** application. The standard installation directory is:

C:\Program Files\Connect Solo

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

FIG. 32 SUBMENU SOFTWARE DOWNLOAD



Please press the **Start** button to download the firmware. The **Progress** bar displays the progress of the download. The process is finished after about two minutes. If the download was successful, a corresponding message is displayed. After your confirmation the system is reset.

NOTICE

If the download was not successful, you can simply switch off the unit and switch it on again. The new software is only written in the flash memory if the download was successful. Otherwise the old firmware is maintained.

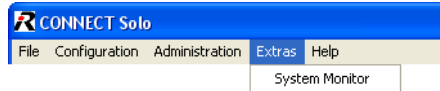
5.6.5 Submenu Set Factory Settings

By using the submenu **Set Factory Settings** the system can be reset to the initial state.

For safety reasons you have to confirm your selection.

5.7 Menu Extras

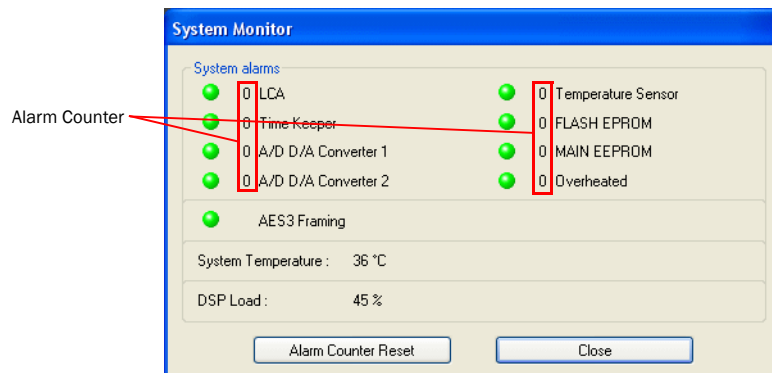
FIG. 33 MENU EXTRAS



5.7.1 Submenu System Monitor

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

FIG. 34 SUBMENU SYSTEM MONITOR



- Under **System alarms** all potential alarms are displayed. A red LED signals a currently existing alarm. How often the error occurred since switching on is displayed by the corresponding alarm counter. To reset the alarm counter press the button **Alarm Counter Reset**.

NOTICE

If an alarm occurs frequently or over a longer period disconnect the unit from electricity. If the error occurs again after switching on, there is probably a hardware defect.

The following errors are signalled:

- **LCA**: The communication with a programmable 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 ADDA converter is faulty.
- **A/D D/A CONVERTER 2**: The communication with the second ADDA converter is faulty.
- **TEMPERATURE SENSOR**: The communication with the temperature sensor is faulty.
- **FLASH EPROM**: The communication with the permanent memory is faulty. Configurations cannot be saved or read anymore.
- **MAIN EEPROM**: The communication with the permanent memory is faulty. Configurations cannot be saved or read anymore.
- **OVERHEATED**: The system sets this alarm if the system temperature is higher than 57 °C. Disconnect the unit from electricity or cool down the ambient temperature.

- **AES3 Framing:** This status LED informs about the AES/EBU input signal.

TIP

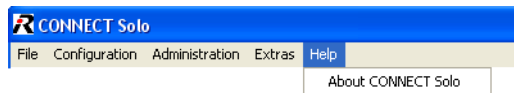
A system alarm can also be configured as relay output (see Page 47).

The actual system temperature is displayed in °C under **System Temperature**. The regular system temperature ranges from 30...40°C.

Under **DSP Load** the load of the system is displayed. The usual load is about 55 to 65%.

5.8 Menu Help

FIG. 35 MENU HELP



5.8.1 Submenu About Connect Solo

In the **About Connect Solo** dialogue you find the software versions of the PC software (**PC Version**) and of the systems (**Firmware Version**). Besides, you can find our contact details there.

FIG. 36 SUBMENU ABOUT CONNECT SOLO



A 1 MENU STRUCTURE

On the following pages you will find the complete menu structure.

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

The configuration menu is divided in five submenus:

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

NOTICE

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

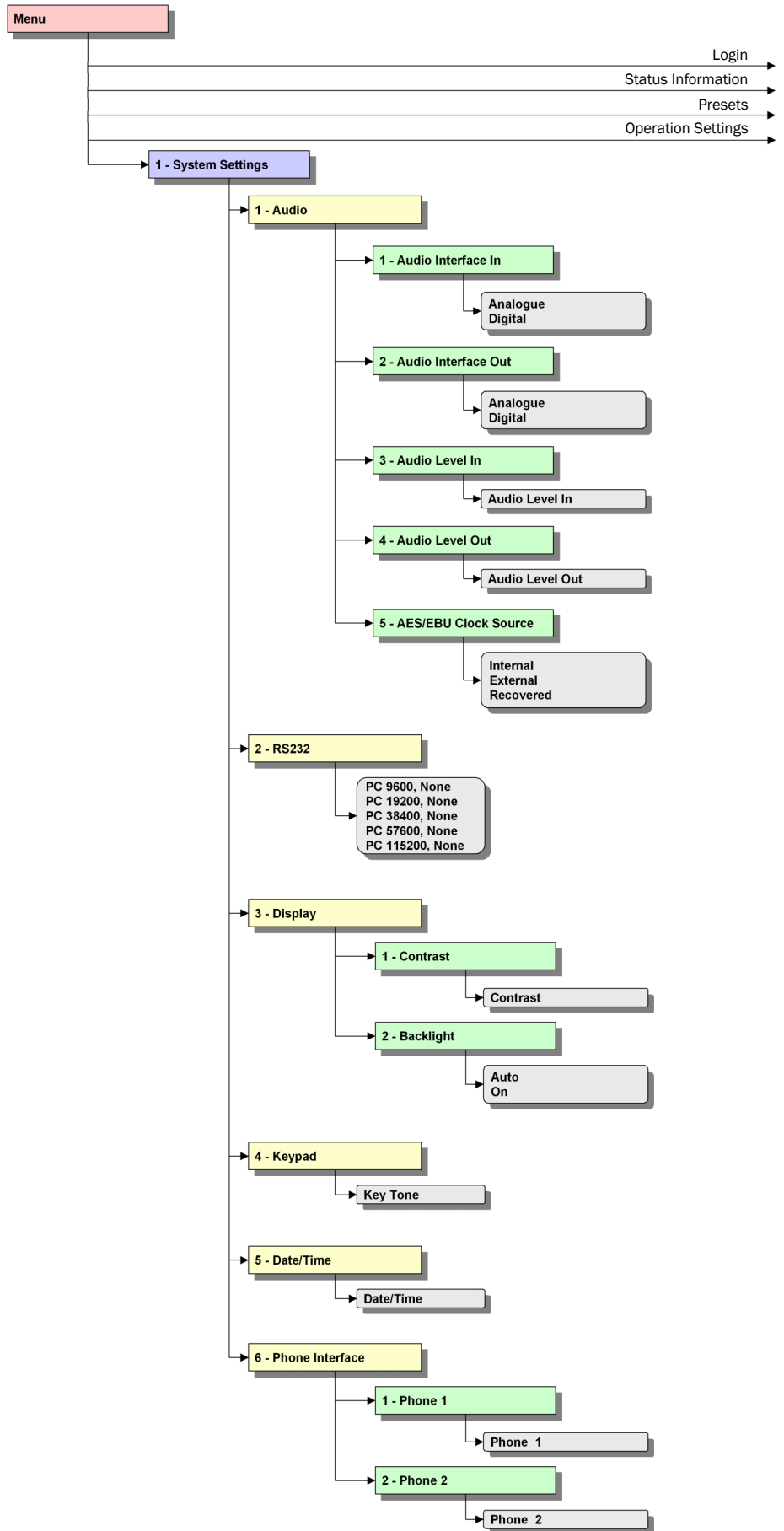
If you use an Administrator and/or User Password, the display looks as it is described below:

- (1) Only **Administrator Password** configured: The password must be entered for changes to the basic settings and operation settings only. Immediately available menus:
 - **PRESETS**
 - **STATUS INFORMATION**
 - **LOGIN**
- (2) Only **User Password** configured (instead of **MENU**, **LOGIN** is displayed): The password must always be entered. Subsequently, all menus are available.
- (3) **User** and **Administrator Password** configured (instead of **MENU** **LOGIN** is displayed):
 - **User Password** is entered: The menus **PRESETS**, **STATUS INFORMATION** and **LOGIN** are available
 - **Administrator Password** is entered: All menus are available.

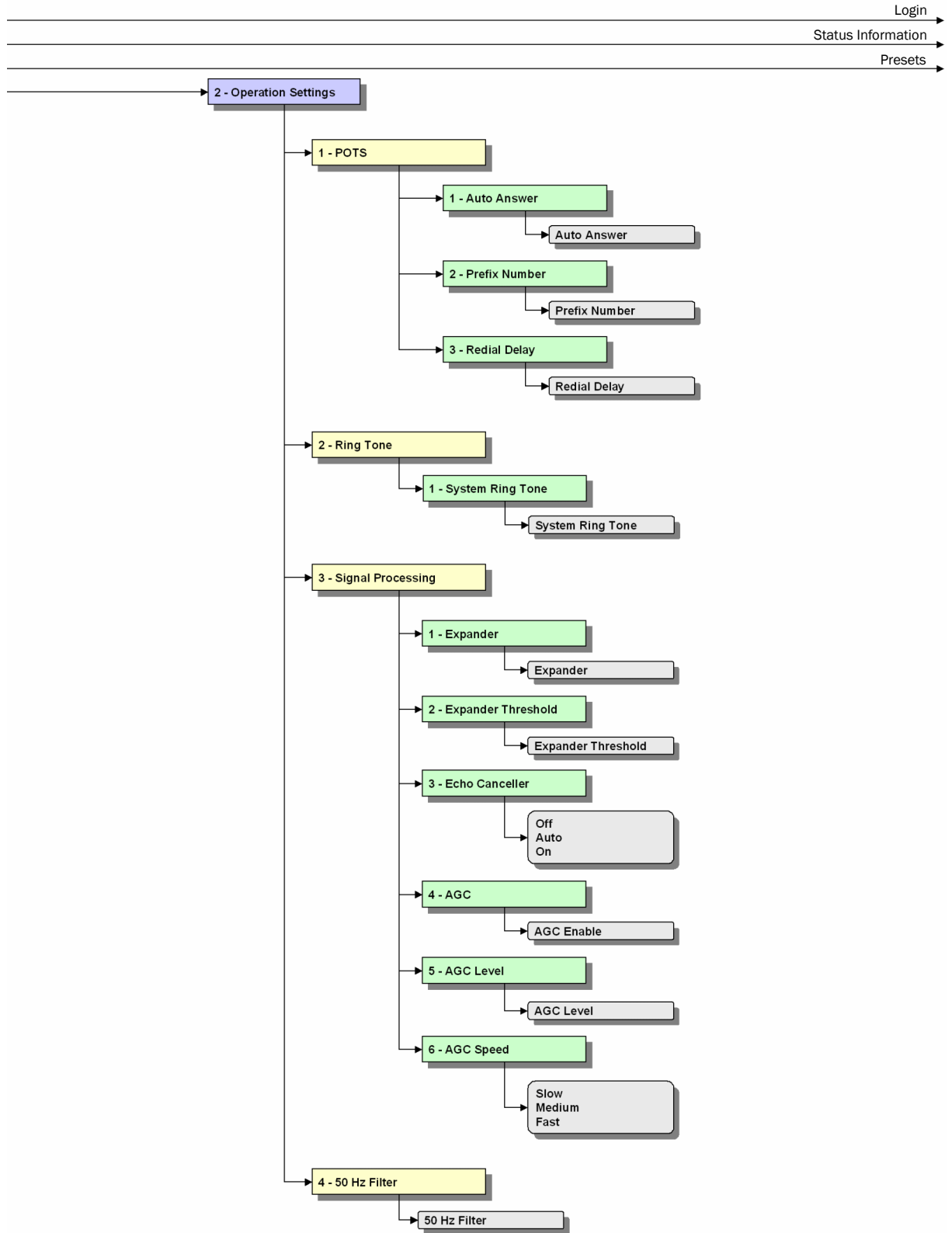
NOTICE

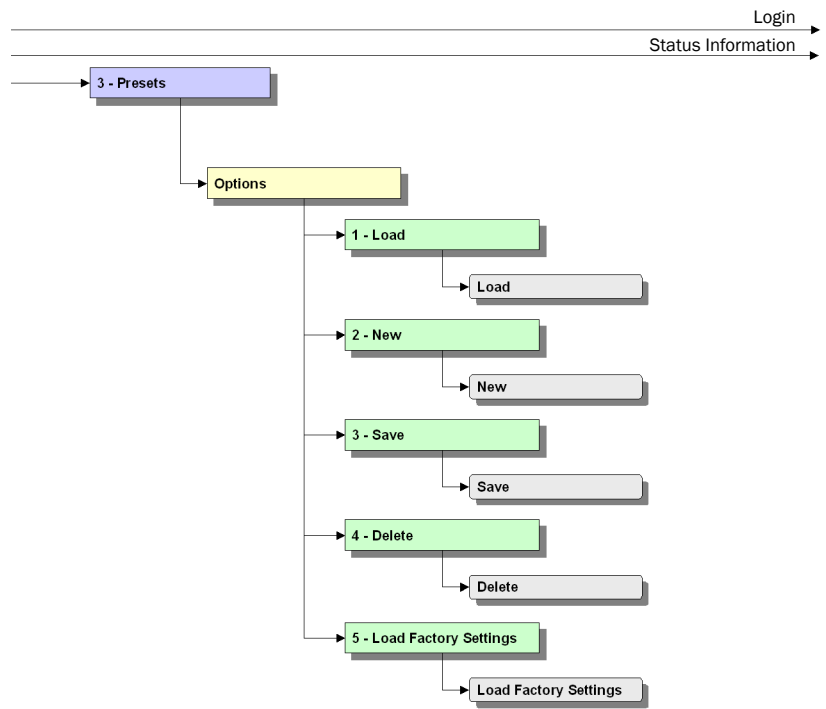
There is no differentiation between upper and lower case for the password entry.

A1.1 System Settings



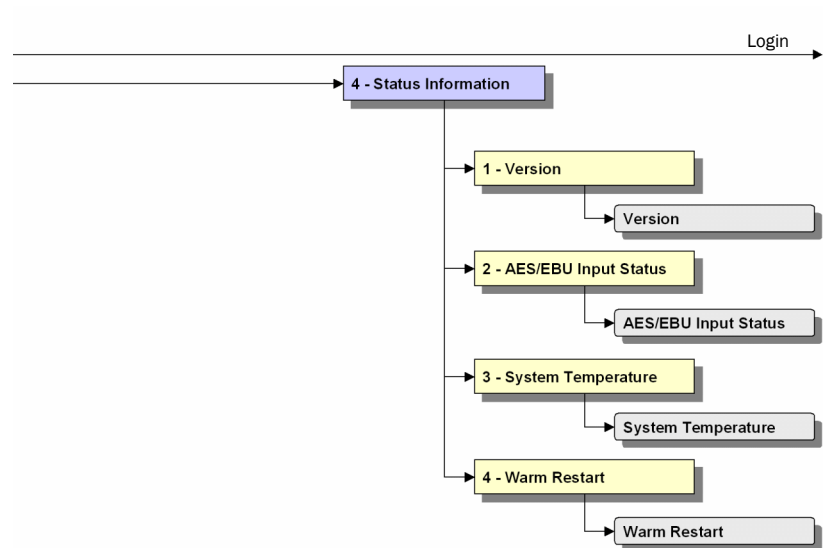
A1.2 Operation Settings





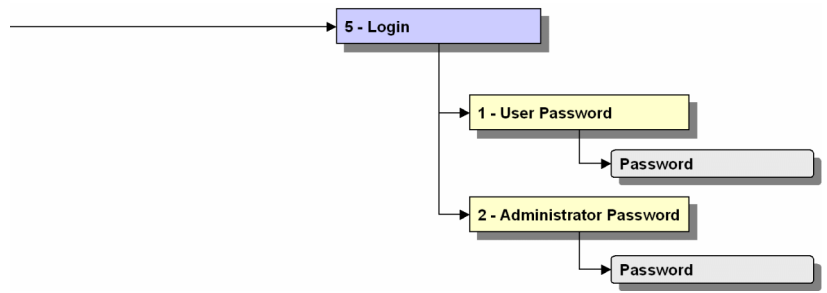
A1.4

Status Information



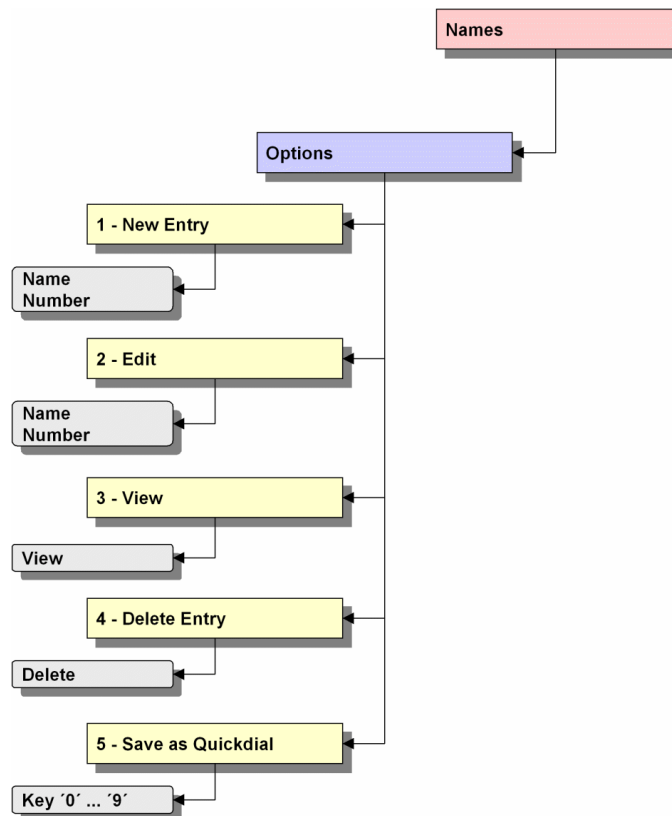
A1.5

Login



A1.6

Names



A 2 TROUBLE SHOOTING

TAB. 1 TROUBLE SHOOTING	
Problem	Possible cause
On the analogue telephone line no external connection can be established.	If you operate the system with a private branch exchange, a prefix number must be entered (see CHAPTER 5.5.2.1.1).
A radio signal is received.	Please check if the POTS line is twisted. The system must be earthed via the earthing screw (see Page 21).
There is a humming audible.	Please enable the 50 Hz filter. The humming is injected via the POTS connection (see CHAPTER 5.5.2.1.1).
The Echo Cancellor is not working.	<p>If you switch callers via a Call-In Center to the system the Echo Cancellor is possibly adjusted incorrectly. Enable the Echo Cancellor permanently (see CHAPTER 5.5.2.1.2). Please notice that echoes of more than 32 ms cannot be filtered out anymore.</p> <p>You are working with a Terminal Adapter. Often such a system has no attenuation and the send signal is reflected approximately one-to-one. In this case the system cannot decide if the signal is from the other side or a local echo. To avoid such problems use only standard POTS interfaces from Telecom operators.</p>
Auto Disconnect doesn't work.	Depending on your country this function is not supported. Please inform our support.
The re-dial functionality using a TTL pin works not properly.	Increase the re-dial delay after disconnect (see CHAPTER 5.5.2.1.1)

A 3 INTERFACES

The interfaces of the system are pictured in Fig. 37.

FIG. 37 REAR VIEW OF THE CONNECT SOLO SYSTEM

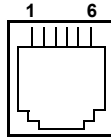


All interfaces are described below.

A3.1 Analogue telephone interfaces

A3.1.1 POTS¹ 1 & 2 interface

Via these interfaces the system can be connected to two independent analogue telephone lines. A connecting cable for phone jacks is included in delivery.



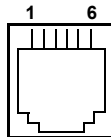
TAB. 2 PIN ASSIGNMENT: ANALOGUE POTS TELEPHONE INTERFACE (LINE POTS)

Socket: Western (6-pole) RJ12

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

A3.1.2 PHONE 1 & 2 interface

Via these interfaces a standard analogue telephone for operation can be connected.



TAB. 3 PIN ASSIGNMENT: ANALOGUE PHONE INTERFACE (LINE PHONE)

Socket: Western (6-pole) RJ12

Pin	Signal	Electrical characteristics
1	not used	
2	not used	
3	TEL LINE a	
4	TEL LINE b	
5	not used	
6	not used	

¹ POTS = Plain Old Telephone Service

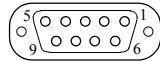
A3.2 Control interface

A3.2.1 CTRL interface

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

NOTICE

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



TAB. 4 PIN ASSIGNMENT: CTRL/DATA INTERFACE

Socket: SUB-D, 9-pole

Pin	Signal		Electrical characteristics
1		not used	PC interface RS232: Type: DCE ^a Level: V.24 Data rate: max. 115200 Baud Range: max. 15 m Protocol: 1 start bit 8 data bits 1 stop bit
2	RXD ^b	PC RS232 Receive Data	
3	TXD ^c	PC RS232 Transmit Data	
4		not used	
5	GND	Earth	
6		not used	
7		not used	
8		not used	
9		not used	

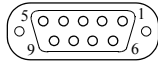
a DCE = Data Communication Equipment: to connect a PC a 1:1 cable is required

b ATTENTION: on this Pin the Connect Solo **transmits** data

c ATTENTION: on this Pin the Connect Solo **receives** data

A3.2.2 TTL/RELAY interface

Via this interface external control signals can be used.



TAB. 5 PIN ASSIGNMENT: TTL/RELAY INTERFACE (TTL/RELAY)

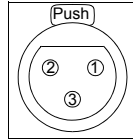
Socket: SUB-D, 9-pole

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

A3.3 Audio interfaces

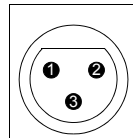
The system incorporates analogue and digital AES/EBU Audio interfaces. For switching you can use display and keypad or the PC software.

A3.3.1 Analogue Audio interface



TAB. 6 PIN ASSIGNMENT: ANALOGUE INPUT (AUDIO 1/2 IN)

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

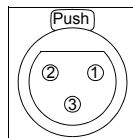


TAB. 7 PIN ASSIGNMENT: ANALOGUE OUTPUT (AUDIO 1/2 OUT)

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

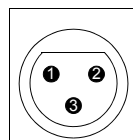
A3.3.2 Digital AES/EBU Audio interface

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



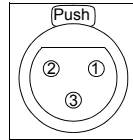
TAB. 8 PIN ASSIGNMENT: DIGITAL INPUT (AES IN)

Socket: 3-pole XLR		
Pin	Signal	Electrical characteristics
1	GND	IEC-958
2	AUDIO IN a	
3	AUDIO IN b	

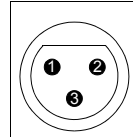


TAB. 9 PIN ASSIGNMENT: DIGITAL OUTPUT (AES OUT)

Connector: 3-pole XLR		
Pin	Signal	Electrical characteristics
1	GND	IEC-958
2	AUDIO OUT a	
3	AUDIO OUT b	



TAB. 10 PIN ASSIGNMENT: CLOCK INPUT (CLK IN)		
Socket: 3-pole XLR		
Pin	Signal	Electrical characteristics
1	GND	TTL
2	CLOCK IN	
3	not used	

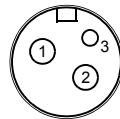


TAB. 11 PIN ASSIGNMENT: CLOCK OUTPUT (CLK OUT)		
Connector: 3-pole XLR		
Pin	Signal	Electrical characteristics
1	GND	TTL
2	CLOCK OUT	
3	not used	

A3.3.3

Power supply interface

The power supply is connected via an external power supply.

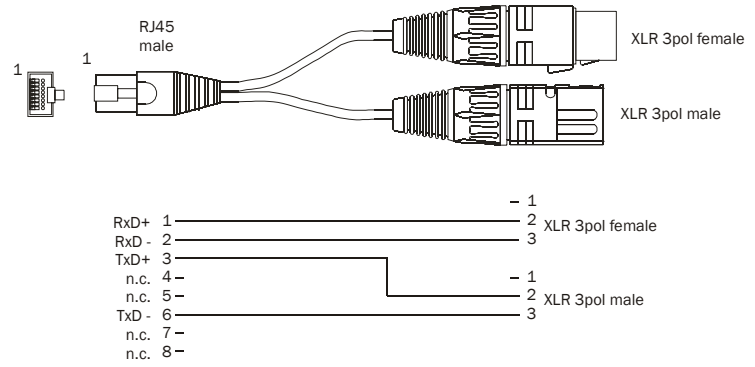


TAB. 12 PIN ASSIGNMENT: POWER SUPPLY		
Socket: KYCO KPI-S3		
Pin	Signal	Electrical characteristics
1	GND	Voltage: +12V
2	+12V	Power: max. 15W
3	not used	

A3.4

Cable to connect Connect Solo to Artist CAT5 cards

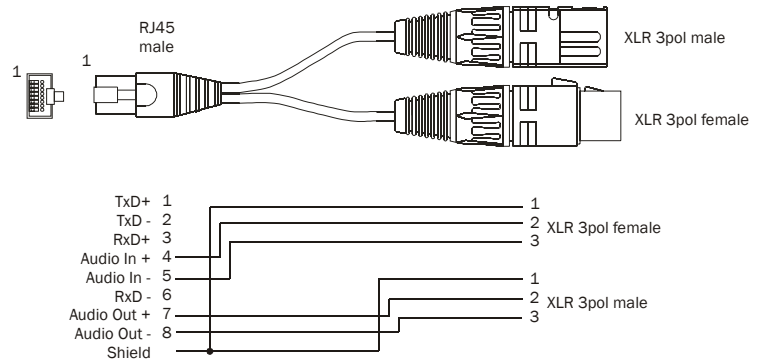
FIG. 38 CABLE DIAGRAM ARTIST CAT5 CARD TO CONNECT SOLO



A3.5

Cable to connect Connect Solo to AIO 108/109 cards

FIG. 39 CABLE DIAGRAM AIO CARD TO CONNECT SOLO



A 4 TECHNICAL DATA

LINE INTERFACES:

- POTS 1 & 2
 - 2 x POTS RJ12
 - Features: Ring Detection
Auto Disconnect
CLIP = Calling Line Identification
Presentation

TELEPHONE INTERFACES:

- PHONE 1 & 2 for standard POTS telephones for operation
 - 2 x PHONES RJ12

CONTROL INTERFACES

- RS232 V.24 9-pol. SUB-D socket
- TTL/RELAY 9-pol. SUB-D socket
 - 2 x Relay Capacitance function can be programmed 48V/200mA
 - 4 x TTL Input/Output Capacitance function can be programmed 5V/10mA

AUDIO INTERFACES

Analogue Audio 1/2:

- Electronic, balanced input XLR female
- Electronic, balanced output XLR male
- Nominal level -3 ... +9 dBu (can be programmed)
- Head room 6 dB
- Impedance Input: > 25 k Ω
Output: < 50 Ω
- Frequency response 300 Hz ... 3400 Hz
- Linearity < 0,2 dB

- Signal to Noise Ratio < - 90 dB
- Noise < -60 dB
- Crosstalk Audio 1/2 > 60 dB

Digital Audio AES/EBU:

- Format IEC-958 AES/EBU Professional
- Balanced input XLR female
- Balanced output XLR male
- Impedance Input: 110 Ω
Output: 110 Ω
- Clock input TTL/75 Ω XLR female
- Clock output TTL/75 Ω XLR male
- Separate Sample Rate Converter for Input/Output

SIGNAL PROCESSING

- AGC per B channel, configurable
- Echo Canceller per B channel (256 taps, 32 ms Echo Cancel Time)
- Expander per B channel, configurable

DISPLAY

- graphical resolution 160 x 32 Pixel
- illuminated (can be switched off)

POWER SUPPLY VIA EXTERNAL ADAPTER

Direct Voltage (DC)

- + 12 V

Power Consumption

- max. 15 W

DIMENSIONS

H x W x D

- 44 x 220 x 220 mm (1/2 x 19" x 1U)

WEIGHT

- ca. 1,7 kg

ADDITIONAL INFORMATION

Approvals

- CE, UL, FCC

EMC

- EN 55103

Electric safety

- EN 60950

Temperature Range

- +5 °C to 45 °C

Relative humidity

- 5% to 85%

A 6 SERVICE INFORMATION

A6.1 Software Updates

Software Updates you will find on our Homepage

A6.2 Support

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

+49 202 292 90

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

A6.3 Repairs

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

**Riedel Communications GmbH
- Repairs -
Uellendahler Strasse 353
D-42109 Wuppertal
Germany**

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.pst 57, 58

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Declaration of Conformity

Supplier's name: Riedel Communications GmbH

Supplier's address: Uellendahler Straße 232
D-42109 Wuppertal

declares, that the product

Product name(s): Connect Solo

conforms to the standards of the following European directives:

Number/title: EN 60950 A4 Safety

The conformity is evidenced by strictly meeting the following standards:

Harmonised Standards: EN 55022, EN 55024,
EN 300386,
FCC Part 15 B

Place, date: Wuppertal, 01.06.2006

Name: Thomas Riedel

Legally binding signatures:

Phone: +49 202 292-90

This declaration includes no warranty of properties.

The safety instructions specified in the product documentation delivered must be observed.

