Programming Guide

PSW500

V 2.01, November 17TH 2004

Swissphone Telecom AG, Fälmisstrasse 21
8833 Samstagern, Switzerland

Art. No.0343286

PROGRAMMING INSTRUCTIONS FOR THE DV500

CONTENTS

1. **General comment**

With this programming and servicing device you can read and programme the DV500 family of pagers. These options are summarised in a programming set.

1.1 Programming set

This set is available as **SWISSPHONE - Art. No. 0951 461.**

PROGR. SET for DV500		**SW Art. No. 0951 461**
Set comprises:	Programmer PGM300/429	SW Art. No. 0951 450
	RS232 Connecting cable	SW Art. No. 0240 130
	DV500 Hurricane programming software	SW Art. No. 0991 865
	DV500 Programming instructions	SW Art. No. 0343 285

What can be done with the programming set for the DV500:

*** Read, change and programme DV500 functions**

*** Select software and hardware configurations**

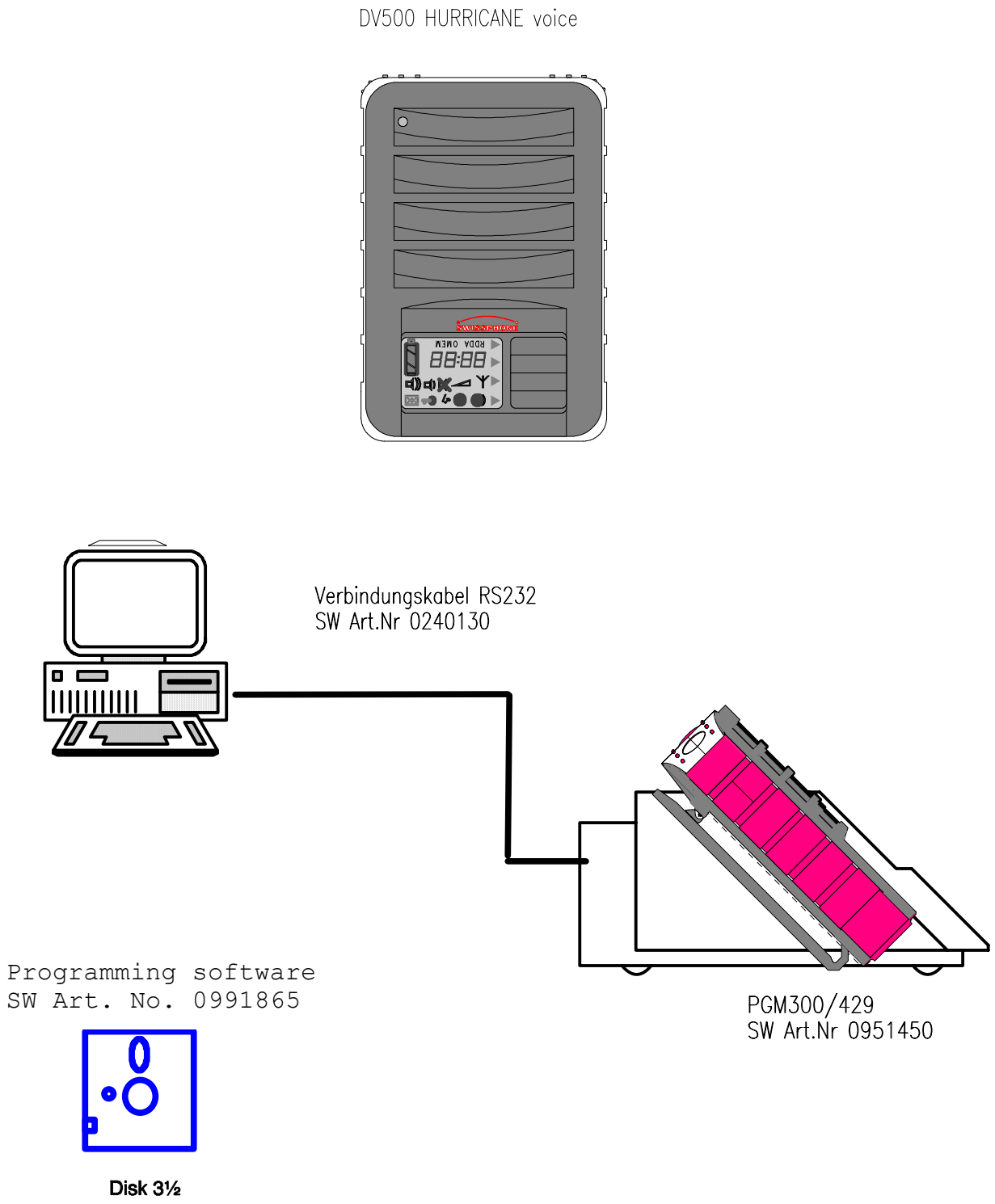
*** Save device configurations and programming parameters to files**

*** Generate messages**

*** Test stored sound patterns and vocabulary**

1.2 Program architecture

In order to run the program, you need to have installed the following components:



1.3 PC system requirements

- Pentium II 200MHz or higher
- 32 Mbyte RAM
- WIN95, WIN98, ME
- Mouse: recommended

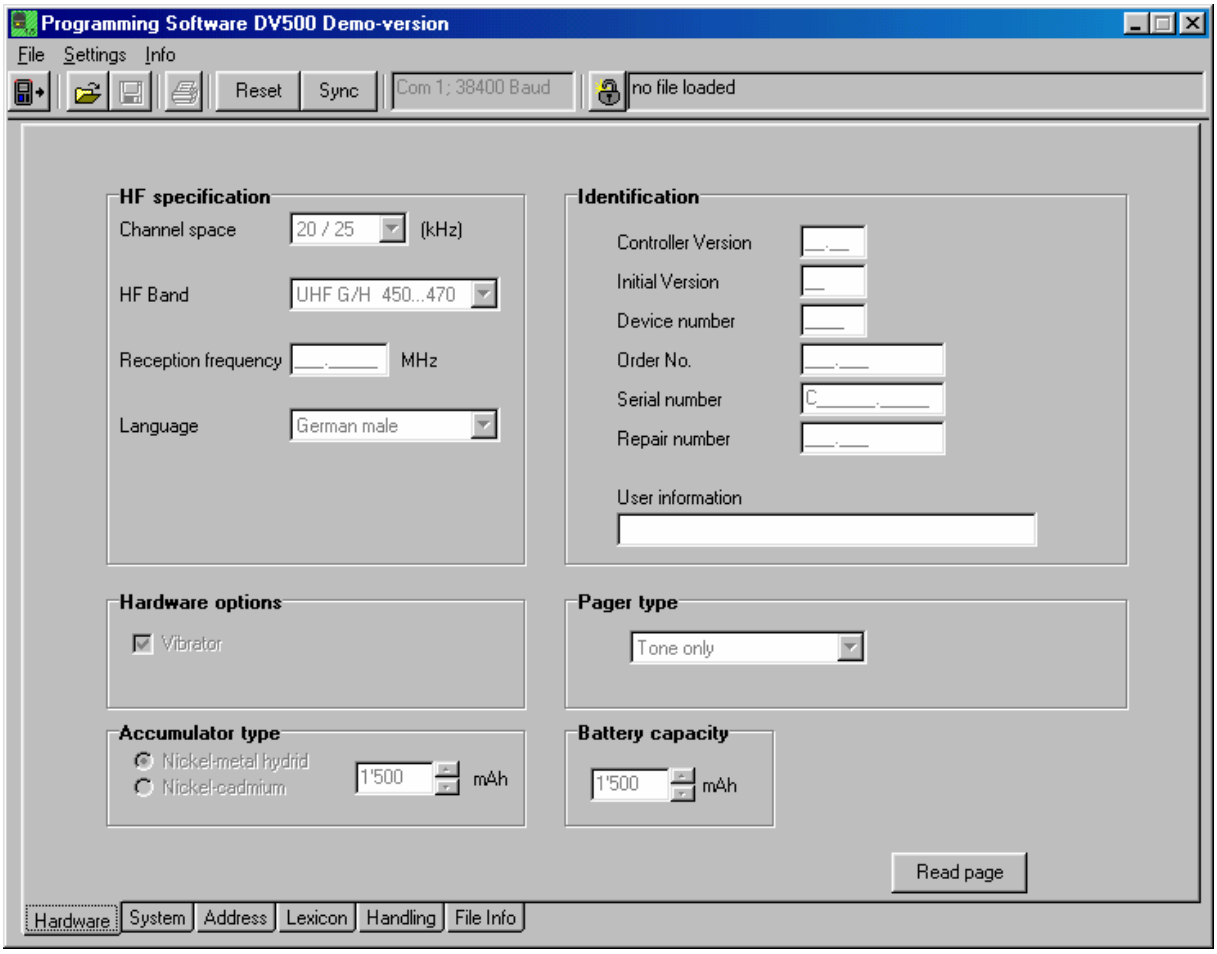
1.4 Programming hints

- The programming must take place with a current source appliaed to the DV500.

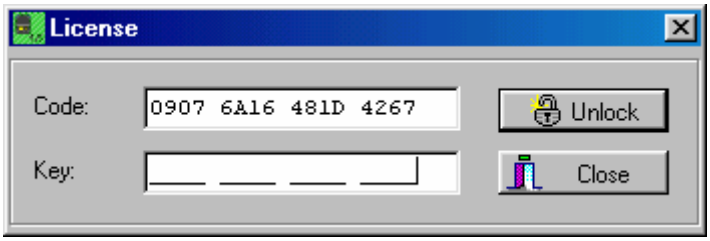
- Correctly programme the PC PORT used or set it with the programming software.

1.5 Installing the software

Copy the file PSW_DV 500 to a new directory, e.g. called PSW_DV500. Select the icon from the PSW_DV 500.exe file and drag it to your Desktop (create a shortcut). Now you can start the software by double-clicking the file name or directly from the desktop.
Now you see the following screen displayed:



The demonstration version permits you to view all the programming functions but you cannot programme the pager, store data on any medium or print with it. If you would like to start the programming version, click the button with the padlock symbol and the software generates a CODE from your computer.



Transfer this code to the "Password request" form and communicate it to SWISSPHONE. SWISSPHONE will let you have the password for your programming PC, which you then enter into the "Key" [*Schlüssel*] box. The software can now be used as a programming version.
Also, once you have done this, you can start up the programming version by double-clicking on the file "PSW_DV 500_xx" or directly by double-clicking the shortcut on the Windows desktop.
Note: If you want to install on another computer, you will require a new password.

2 Programming parameters

2.1 Menu bar

The menu bar, contains 3 main menus with submenus as they are also called in Windows.

2.1.1 File

- Open... [Ö]	Ctrl + O	Open file
- Save...	Ctrl + S	Save the programming in a file
- Save as...		Save the programming in a new file
- Printer setup		Printer and port setup
- Print [D]	Ctrl + P	Print the program
- Exit	Alt + X	End the program

The lower part shows the latest files used including the path. The files can be loaded directly from there.

2.1.2 Settings

- COM Port	choose any port from COM1 to COM4
- Language [S]	choose between German [D] and English
- Default directory	
- Change Licence	

2.1.3 Info

Information on the manufacturer and version

2.2 Toolbar

The 4 symbols on the toolbar represent the following functions:


- Read data — As function Ctrl + R


- Save file — As function Ctrl + S

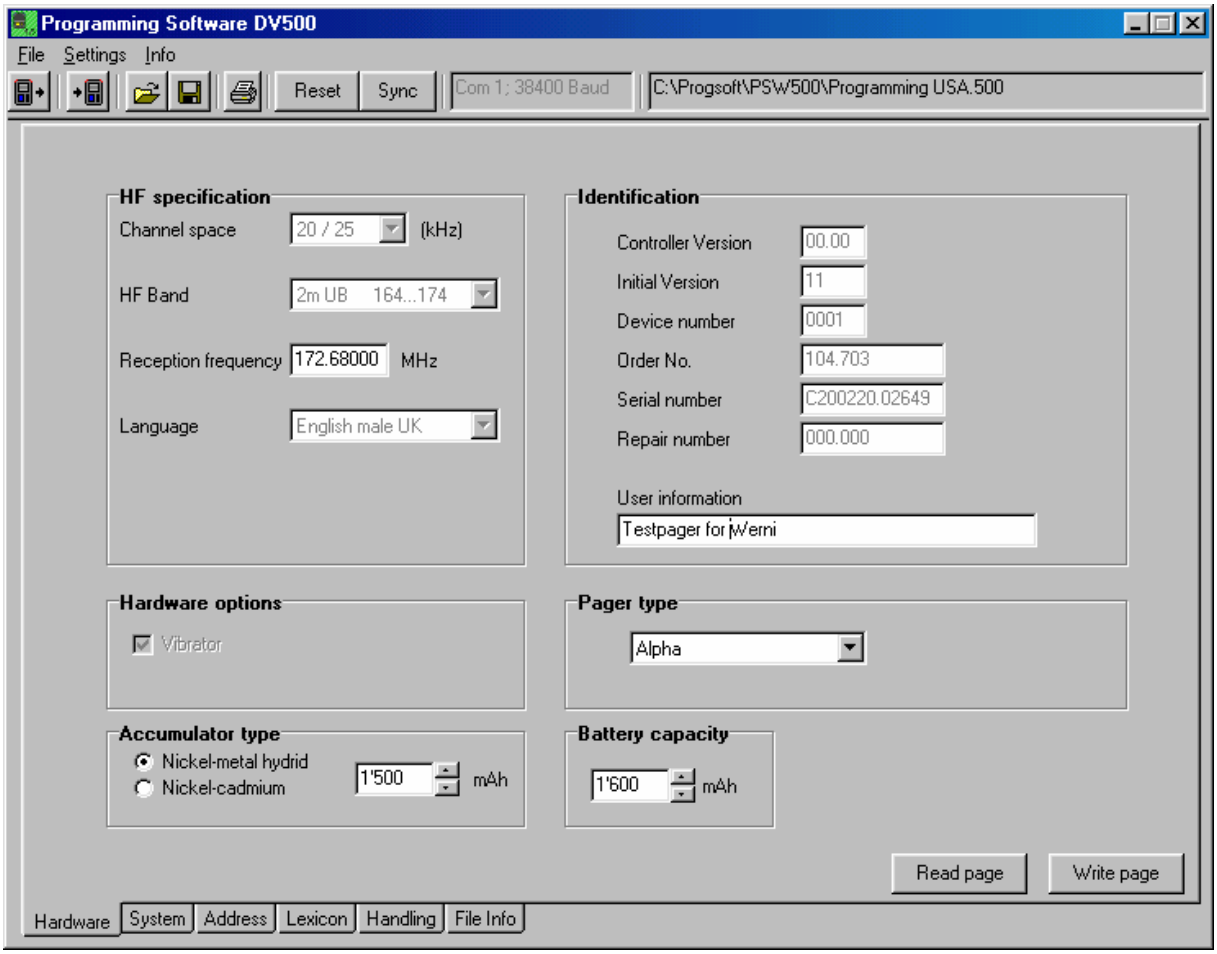

- Open file — As function Ctrl + O


- Print file — As function Ctrl + P

3 Programming windows

The programming software offers 7 programming windows: hardware, system, addresses, lexica, operation, file information and servicing (only in the case of service software)

4 Hardware



The "hardware" window provides information about the HF specification, identification, hardware options, pager type, battery capacity and accumulator type.

HF specification:

Modulation	PM / FM
Channel spacing	12.5 or 20/25 KHz
HF band	Frequency range (e.g. 164-174 MHz), within this band the pager can be requartzed and retuned.
Reception frequency	If this changes, the hardware (new quartz) also has to be changed and the pager retuned. *Note:* If changes are made in these fields, the software warns about the necessary hardware changes.

Identification:

Controller version	Indicates the microprocessor version
Initial version	Details of the version of the initialising data
Device No.	Manufacturer's internal data

Order No.	Manufacturer's internal data
Serial No.	Serial number of the pager, identical with the serial number on the model tag
Repair number	7-digit number that can be used for repair numbers
User information	20 characters available e.g. to write the name of the owner or other information and to store it in the pager.
Hardware options:	
Vibrator	Information as to whether vibrator is built in or not.
	Note: If changes are made in these fields, the software warns about the necessary hardware changes.
Pager type	Information on the type of pager
Accumulator type	Information on the type and capacity of the accumulator
Battery capacity	Information on the battery capacity

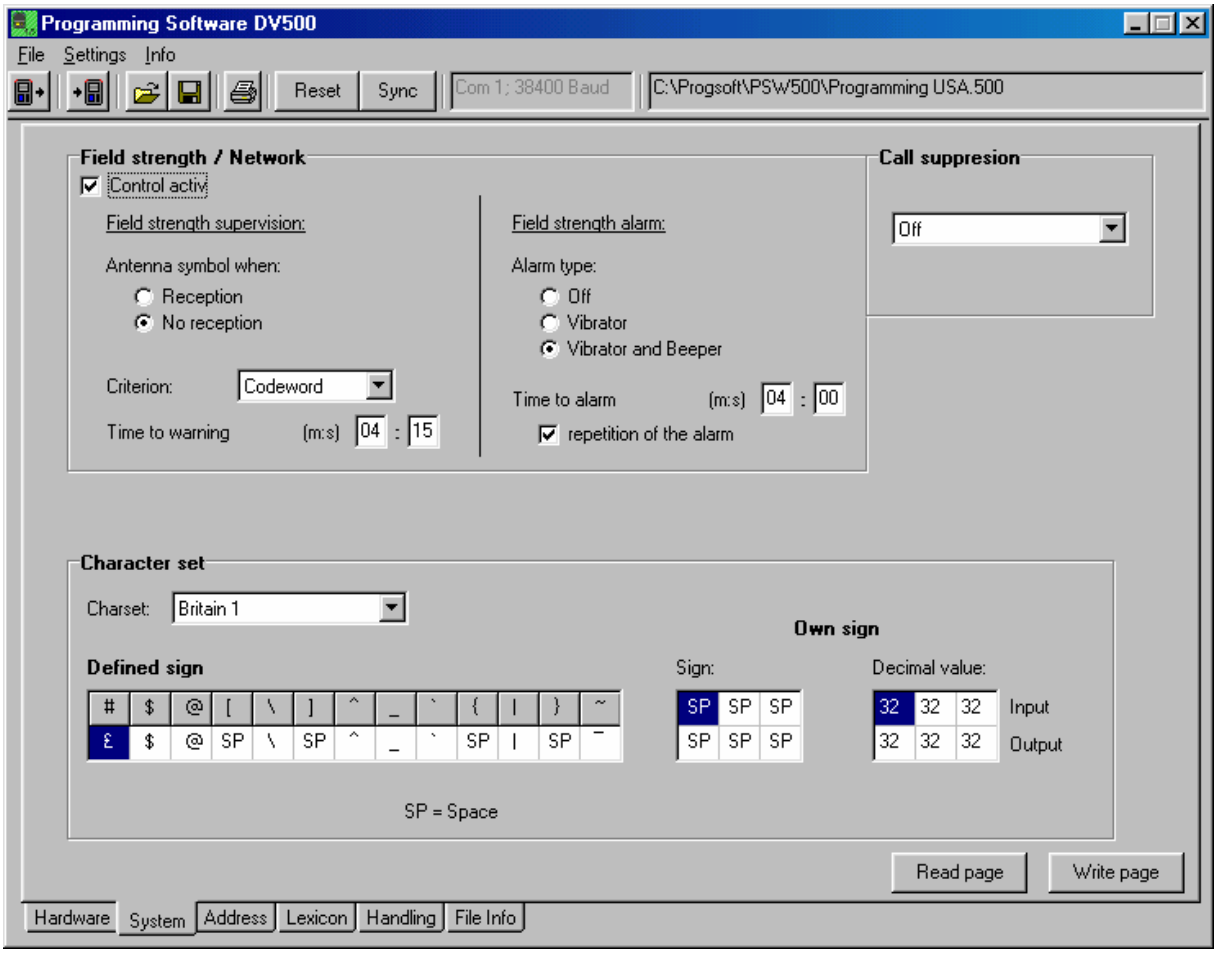
5 System

Field strength / network:

- Supervision active	Field strength monitor is actively programmed
- Antenna symbol	With or without reception

Criterion

- Synchronisation code word	The field strength monitor reacts to the synchronisation code word
- RIC + sub-address	The field strength monitor reacts to a defined RIC sub-address



Delay times:

Time to warning — Time can be set between 0 min, 0.5 sec. and 34 min, 7 sec.
Function: The antenna symbol appears when the set time on the LCD display runs out.

Time to alarm — Time can be set between 0 min, 0.5 sec. and 34 min, 7 sec.
Function: When the set time runs out, a warning peep sounds and the antenna symbol begins to blink.

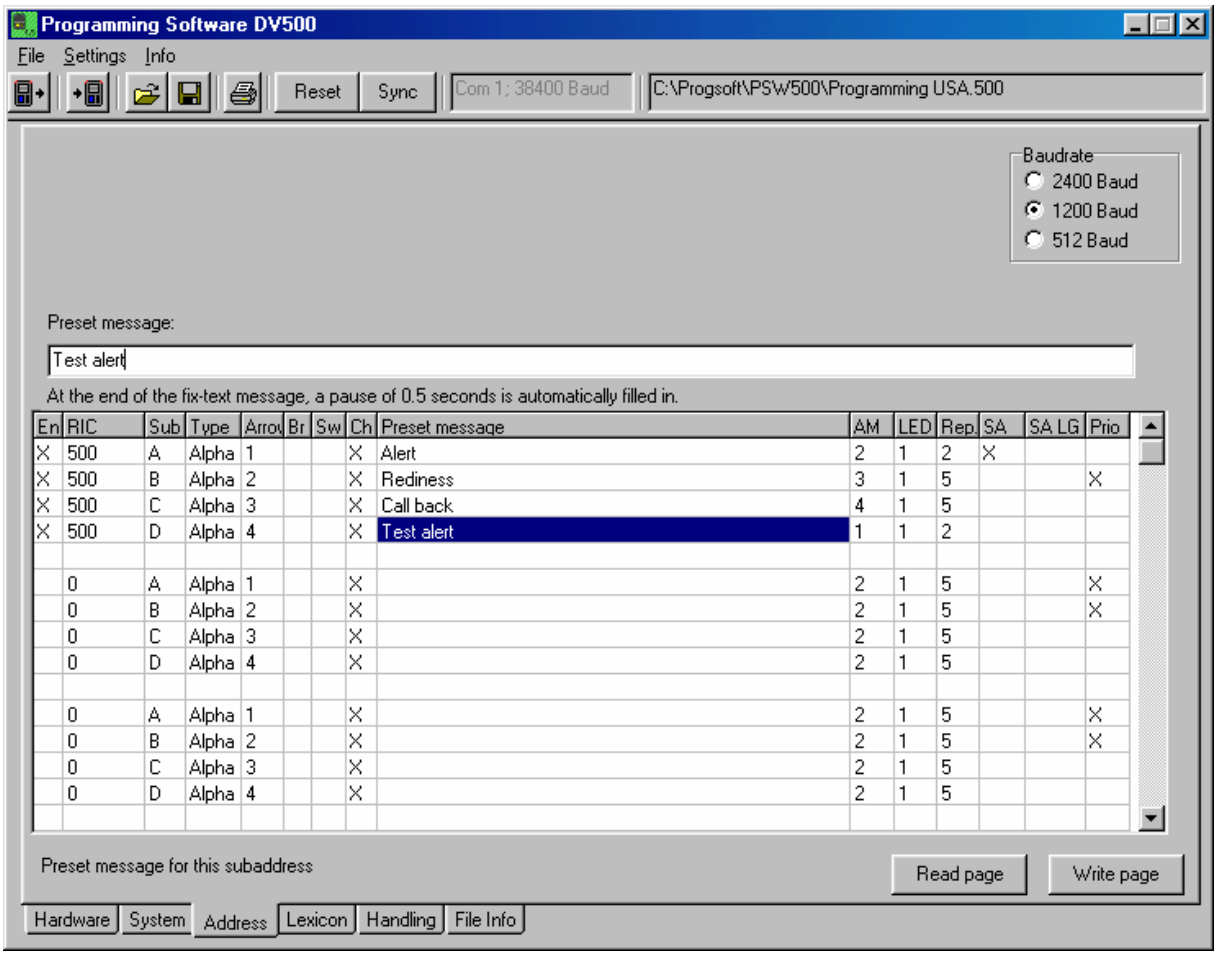
Call suppression: Suppression of the alarm on the previously received address within the selected time (see table) – when “none “ is selected, there is no call suppression.

Field strength control: There is a choice Field strength alarm "Off" or signalisation by vibrator or by vibrator and beeper.

6 Address

The address characteristics are defined in the "address" window.

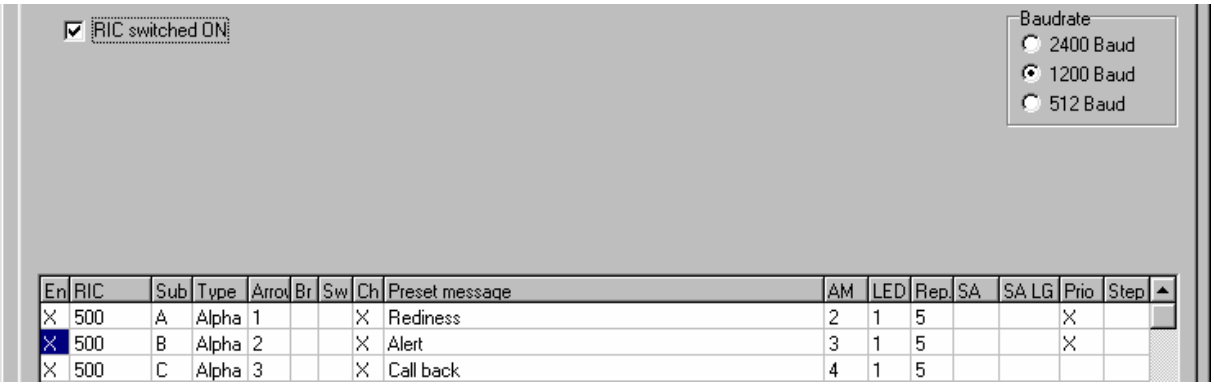
By clicking on a field, in the overview mask, the relevant entry box for changing the parameters appears above the overview.



En	RIC	Sub	Type	Arrow	Br	Sw	Ch	Preset message	AM	LED	Rep.	SA	SA LG	Prio
X	500	A	Alpha	1			X	Alert	2	1	2	X		
X	500	B	Alpha	2			X	Rediness	3	1	5			X
X	500	C	Alpha	3			X	Call back	4	1	5			
X	500	D	Alpha	4			X	Test alert	1	1	2			
	0	A	Alpha	1			X		2	1	5			X
	0	B	Alpha	2			X		2	1	5			X
	0	C	Alpha	3			X		2	1	5			
	0	D	Alpha	4			X		2	1	5			
	0	A	Alpha	1			X		2	1	5			X
	0	B	Alpha	2			X		2	1	5			X
	0	C	Alpha	3			X		2	1	5			
	0	D	Alpha	4			X		2	1	5			

6.1 En

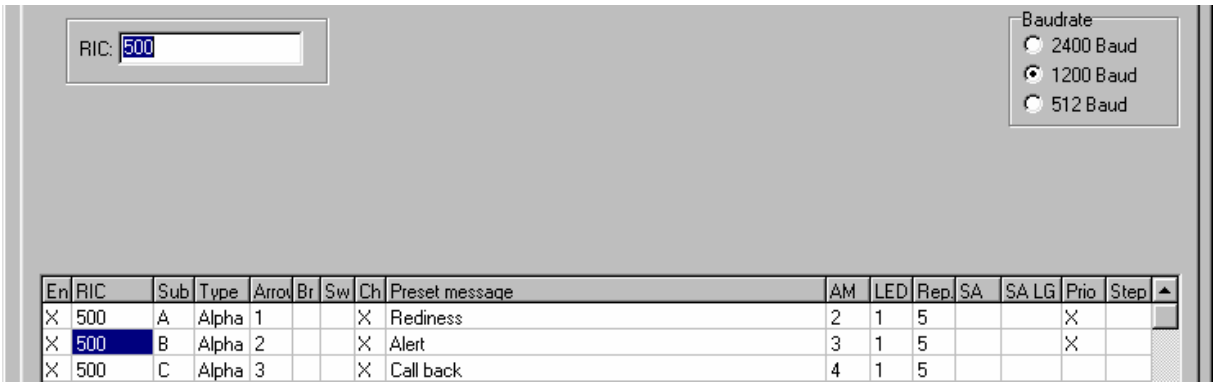
X address actively programmed
- address not actively programmed



En	RIC	Sub	Type	Arrow	Br	Sw	Ch	Preset message	AM	LED	Rep.	SA	SA LG	Prio	Step
X	500	A	Alpha	1			X	Rediness	2	1	5			X	
X	500	B	Alpha	2			X	Alert	3	1	5			X	
X	500	C	Alpha	3			X	Call back	4	1	5				

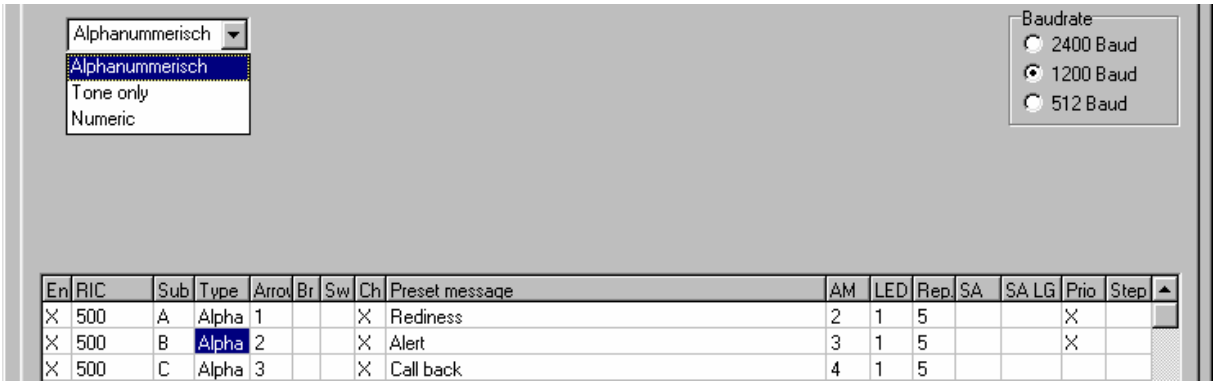
6.2 RIC

Define the call address (loop). Sub-addresses A,B,C,D can be activated or deactivated in "En". Valid RIC addresses are 0 - 2097152.



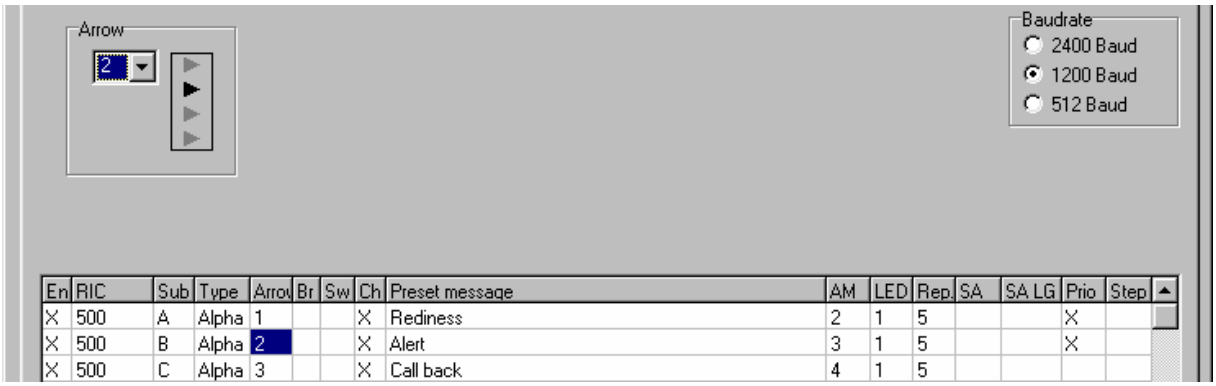
6.3 Type

Each of the sub-addresses must be selected from the three different types: tone only, numeric or alphanumeric.



6.4 Arrow

Each of the arrows in the display must be assigned to a sub-address.

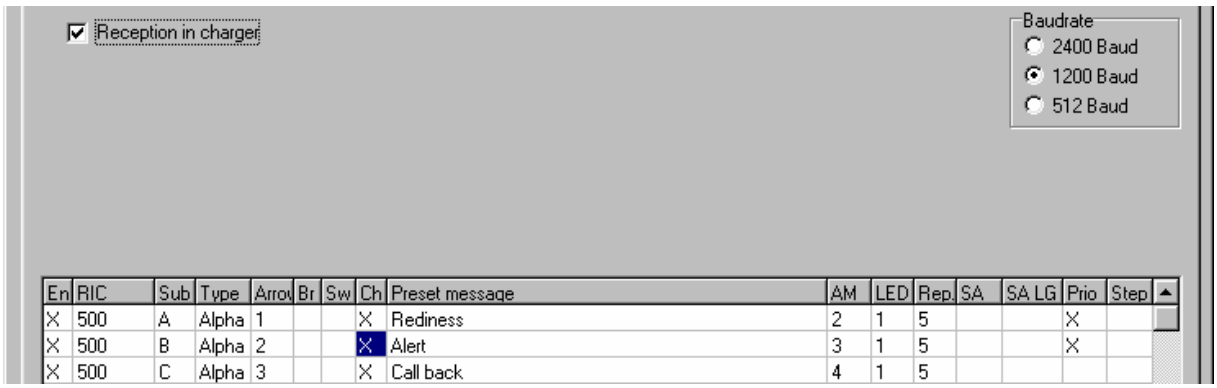


6.5 Br - reserved for future applications

6.6 Sw - reserved for future applications

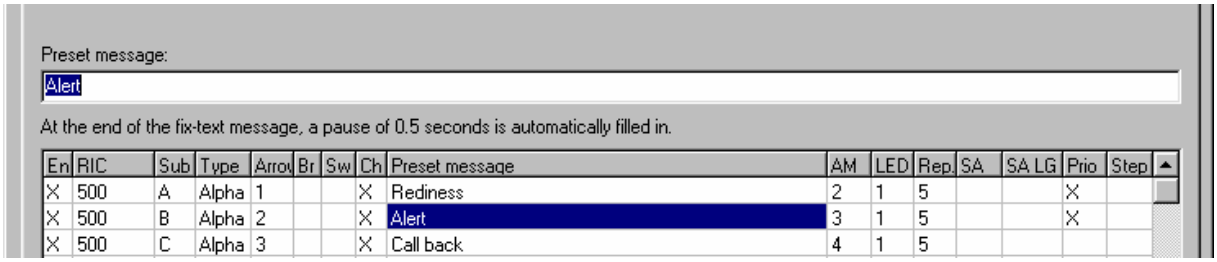
6.7 **Ch** reception in charger

Defines that the pager is ready to receive also when in the charger.



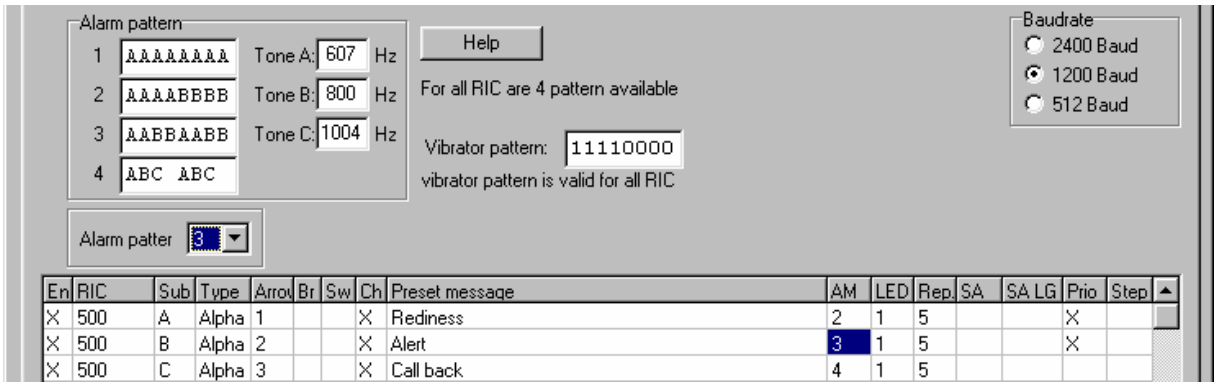
6.8 Preset message

A preset message of maximum length 240 characters can be assigned to each sub-address.



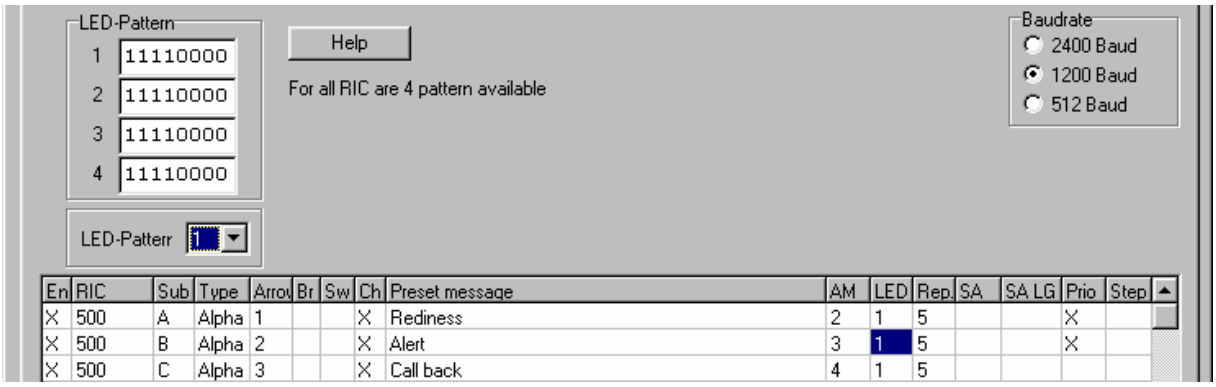
6.9 AM alarm sequence

Four different alarm sequences (1,2,3,4,) can be defined where the letters A, B and C represent the related frequencies with a length of 0.125 seconds each. The programmed sequence – comprising 8 letters and/or pauses " -" (hyphen) represents a duration of one second and is repeated as often as is defined under "Rep". Vibrator sequences apply to all RICs and the duration is 0.125 sec. per digit, the same as with the alarm sequence. The number of repetitions is defined as under "Rep".



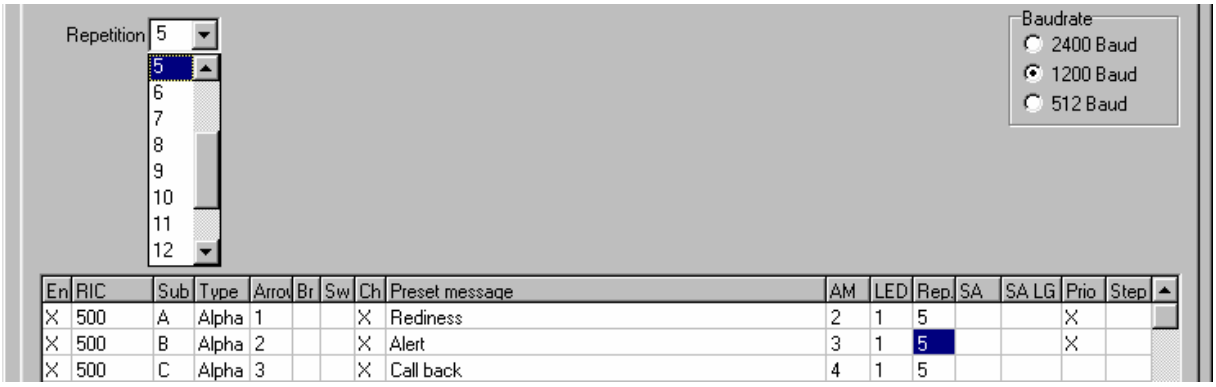
6.10 LED combinations

Four different blink sequences (1,2,3,4,) can be defined with each digit 0 and 1 having a length of 0.125 seconds. The programmed pattern - 8 digits "1" and/or pauses "0" represents a lapse of one second and is repeated as often as is defined under "Rep". Likewise, the relative baud rate is defined in window by a dot.



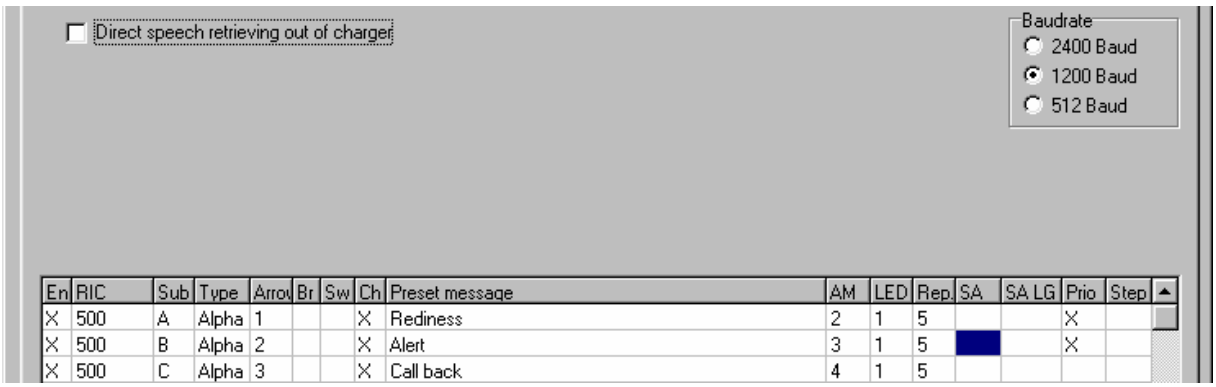
6.11 Repetition

The duration of the alarm signal – the standard being 5 seconds, can be set to 1-30 repetitions of the specified alarm sequence. The duration of an alarm sequence (comprising 8 tones or pauses) is 1 second.



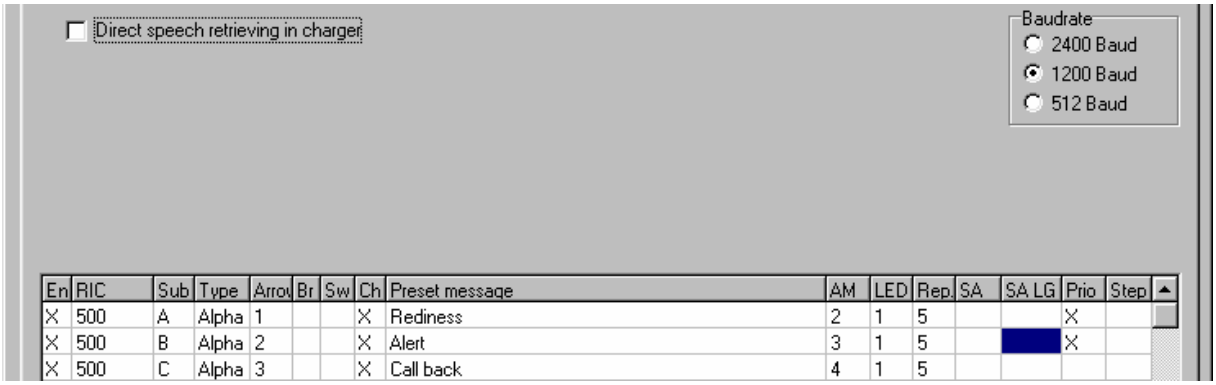
6.12 SA audio response

Mark the box for direct audio response when not in the charger.



6.13 **SA LG** audio response charger unit

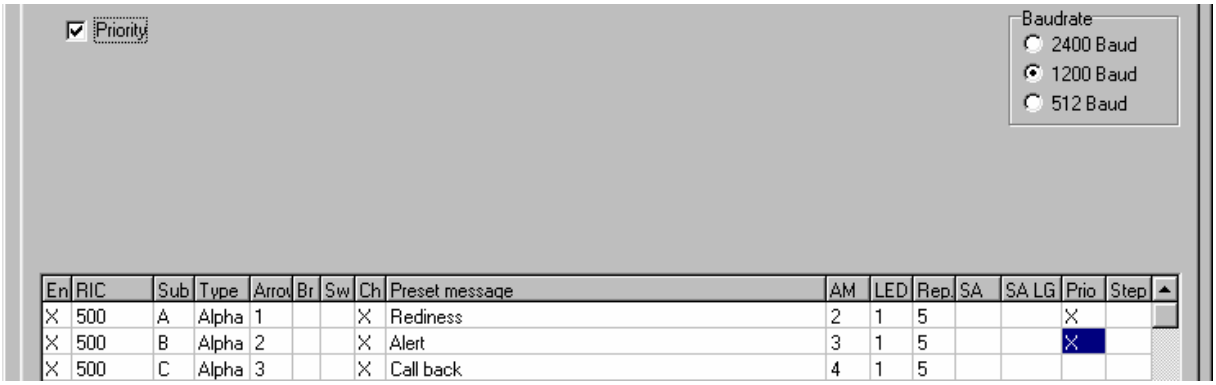
Mark the box for direct audio response when not in the charger.



En	RIC	Sub	Type	Arrow	Br	Sw	Ch	Preset message	AM	LED	Rep.	SA	SA LG	Prio	Step
X	500	A	Alpha	1			X	Rediness	2	1	5			X	
X	500	B	Alpha	2			X	Alert	3	1	5			X	
X	500	C	Alpha	3			X	Call back	4	1	5				

6.14 **Priority**

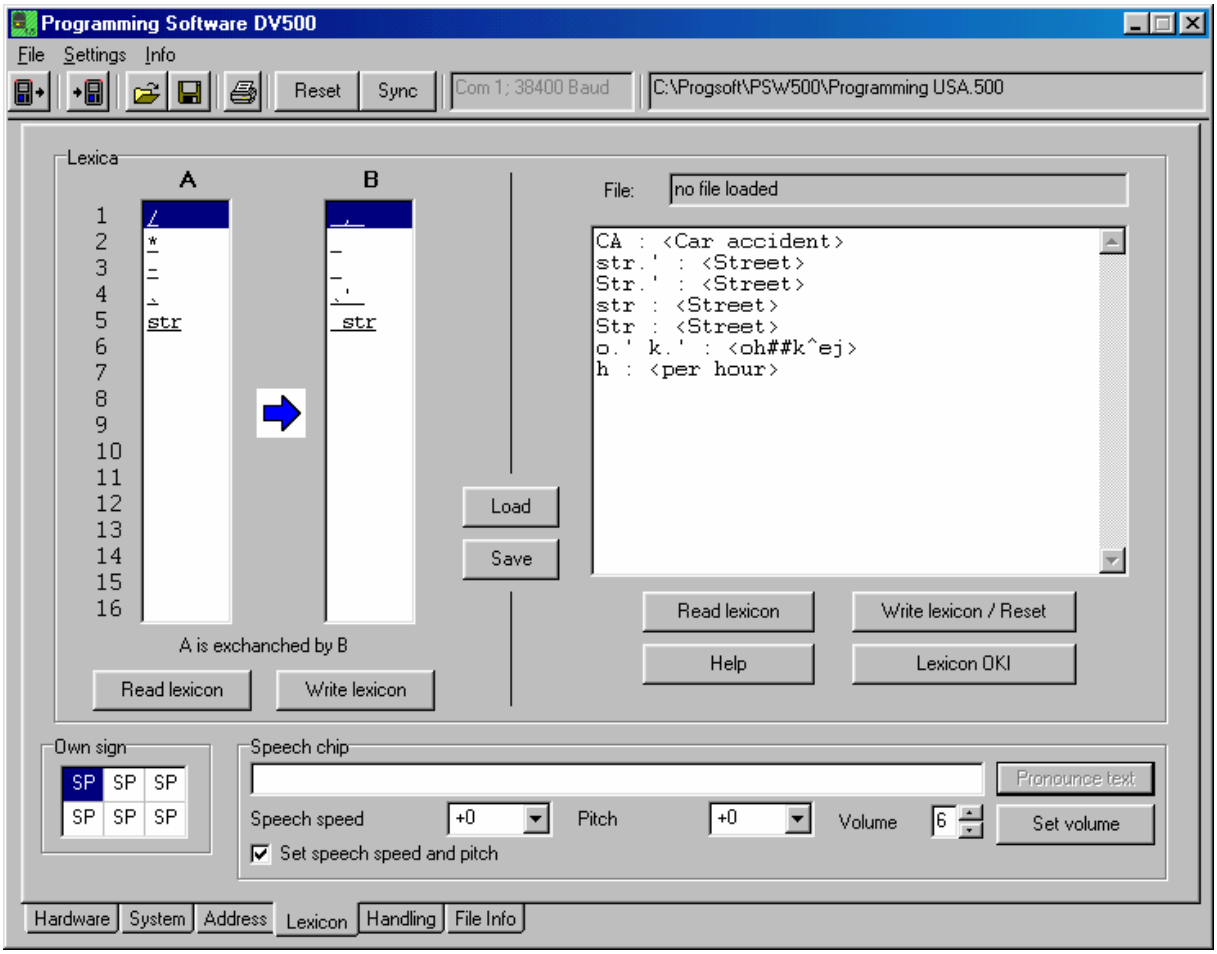
Mark the box for call priority.



En	RIC	Sub	Type	Arrow	Br	Sw	Ch	Preset message	AM	LED	Rep.	SA	SA LG	Prio	Step
X	500	A	Alpha	1			X	Rediness	2	1	5			X	
X	500	B	Alpha	2			X	Alert	3	1	5			X	
X	500	C	Alpha	3			X	Call back	4	1	5				

Step - Reserved for future applications

7 Lexica



The DV500 provides various lexica and abbreviation conversions.

OKI lexicon

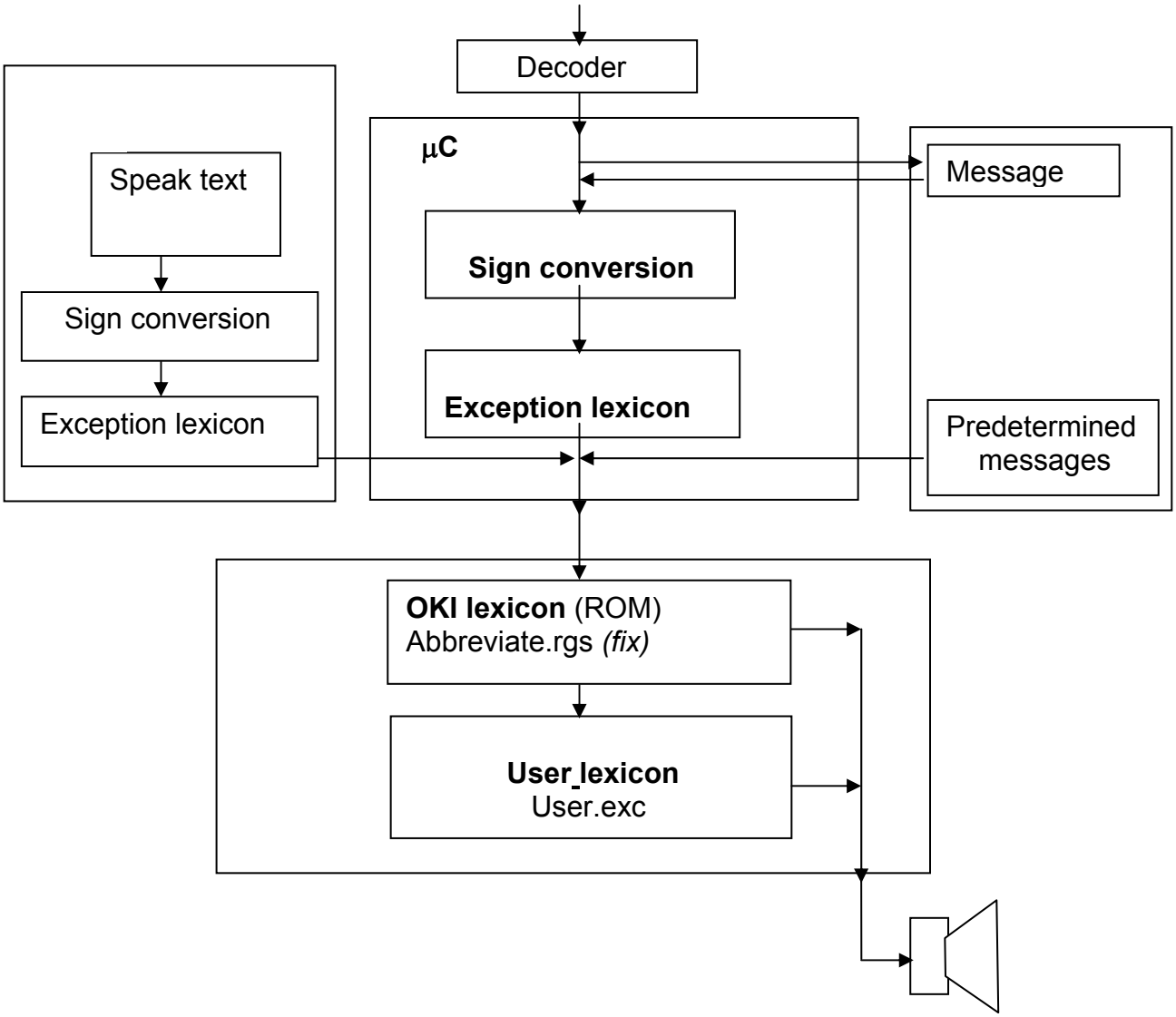
User lexicon

Exception lexicon

Abbreviation conversions

The following sketch shows how, when a message is received from the decoder, it traverses the pager.

7.1 Conversion and progress of a message through the DV500



7.2 OKI lexicon

Abbreviate.rgs (ROM abbreviation lexicon) is predetermined for each language. This lexicon is stored on the OKI chip-set ROM and cannot be changed.
The content of the Abbreviate.rgs file can be opened with the "OKI lexicon" button.

Abbrev_ge.doc	German
Abbrev_fr.doc	French
Abbrev_us.doc	US English
Abbrev_uk.doc	British English

7.3 User lexicon

Customised abbreviations can be defined with *User.exc* (abbreviation lexicon). This lexicon is loaded from EEPROM via the C when the language processor is booted. This lexicon can be defined by the programming software.

To create and edit this lexicon, the syntax must be precisely observed.

The word to be converted must be to the left of the colon. To the right is indicated how the word should be spoken. Here, 2 different spellings are possible; the normal spelling in < > or the phonetic spelling in [ ].
It is important to know that abbreviations are recognised only if a space is left before and after them or if they are positioned right at the start or end of a text string.

To find out more about syntax, click on the "Help" button or check with "English_TTS_1-2.PDF" in the User's Manual

7.4 Exception lexicon (A-B lexicon)

Abbreviations which already exist in the ROM lexicon can be defined or redefined with the exception lexicon.
Example: If "AG" is meant to stand for the Swiss place name "Aargau" and not for "age" as is pre-determined in the OKI lexicon.

The lexicon is also very useful, for example, for correctly pronouncing country names that end in ___shr (Hampshr.). In this case shr. would be changed to _SHIR_; the _SHIR_ will then become "Shire" in the User lexicon.

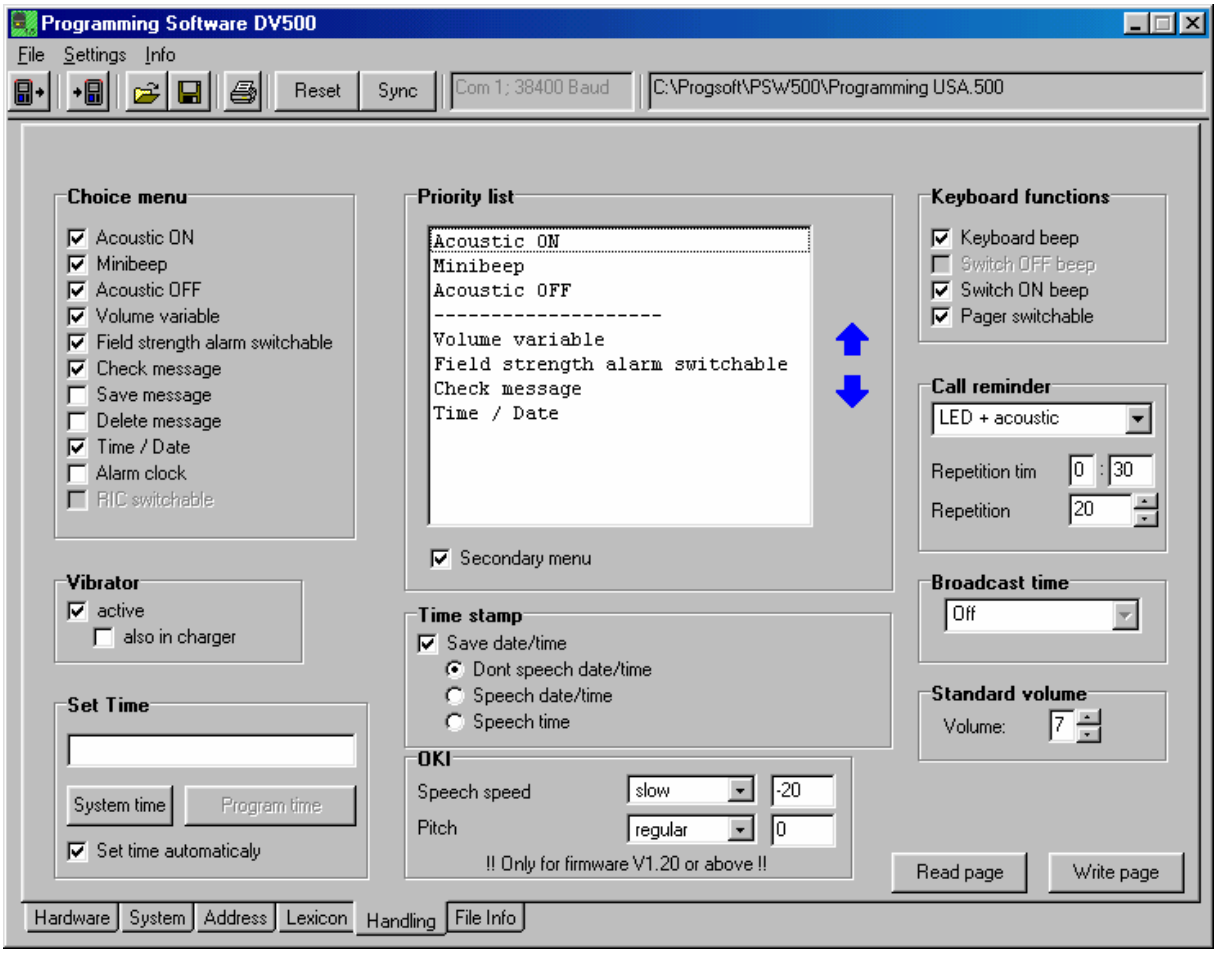
According to the syntax, no final full-stop is allowed in the User lexicon, that means that the abbreviation nr. cannot be properly converted to sound like "near". This is because a full-stop is always interpreted as being the end of a sentence. To solve this problem, each . is given as .' (full-stop + apostrophe).

The character-conversion table is pre-defined specific to each country. With this table, certain 7-bit characters are converted to country-specific signs. It has been found advisable to replace / with a space as (in German) the slash "/ " is normally used to mean " ÷ " and is pronounced "divided by".

7.5 Explanation of the individual buttons

Load/Save:	The User's lexicon and the Exception lexicon are saved in a *.exc file.
Read lexicon:	The User's lexicon or the Exception lexicon are read.
Write lexicon:	The User's lexicon or the Exception lexicon are written. When writing the Exception lexicon a reset is automatically performs as this lexicon is active only after a reset.
Help:	Syntax for User's lexicon
OKI Lexicon:	Content of the predetermined OKI lexicon is displayed
File:	Name of the downloaded Lexicon file is displayed
Speech Chip	Text written in to the "Speech chip" window will be by pushing the button "Pronounce text" pronounced. "Speech speed" and "Pitch" can be varied between -99 to +99 likewise "Volume" can be set between 1 and 8.

8 Servicing



Selection menu
In the selection menu field you define the user-activated pager operating functions. All the operating functions appear in the pager display with an affiliated symbol as shown in the following section after the respective function names.

Sound on Loud signal, call light and vibration

Mini beep 10 sec. vibration (initial vibration) and call light, followed by loud signal

Sound off Loudspeakers turned off - only vibration and call light

Volume Volume setting for speech playback in 8 steps, step change with ENTER. The confirmation is a "gong" sound.

Field-strength alarm Weak field strength signal: Select between ON (optical warning with sound signal) and OFF (optical warning only) - confirm with SELECT and the device will CONFIRM your choice.

Retrieve message Retrieve messages from the message memory MEMO 1-15 (1 = latest message). The message is played with ENTER (see Retrieving messages).

Protect message  Retrieve the message to be protected (select with ENTER) and it will start to be played back. Once it has finished, or by pressing SELECT as it is playing, “Prot” (Protect) will appear for 5 seconds during which you can protect the message with ENTER.

Delete message  Proceed as for protecting message – in this case "DEL" (Delete) appears in the display

Set time and date  Time-setting is activated with ENTER; the first two digits (hours) blink; repeatedly press SELECT to change the number. Now select the minute digits with ENTER and change them with SELECT. By now pressing ENTER again, you can adjust the date. Proceed as with the time-setting – starting with the month, then the day.

Set alarm  As with time-setting, plus with ON/OFF-setting option. With "ON", the symbol is visible in the display in normal mode. How to use alarm: When the alarm goes off, it can be stopped by pressing any of the buttons. "S" (Snooze) begins to blink and alarm repeats after 10 minutes. Press a key once again and the alarm is turned off for 24 hours.

Check messages Select check messages**.** Press the ENTER key and the DV500 automatically plays all your messages – starting with the latest. By repeatedly pressing ENTER while the messages are playing, you can move from one saved message to the next. If a message is played right through, the display shows the time and date the message was received for 2.5 seconds. If you press ENTER again during this time, the message will be repeated. The playing of a message can be interrupted by pressing the SELECT button.

---------- Secondary menu (secondary service level)

Depending how the device is programmed, the DV500 can have two service levels. To enter the secondary service level, press the SELECT button and hold it down for longer than 3 seconds. The secondary level offers the same functions as the primary level. After a confirmation in the secondary service level, the DV500 automatically reverts to the primary service level. If you are in the secondary service level and no button is pressed, the DV500 will automatically return to the primary service level after approximately 8 seconds.

Priority list

In this window, you can determine the selection sequence of the symbols (pager operating functions) on the LCD. Click the corresponding term and move it up or down with the arrow keys.

Key functions:

Key clicks	Each keystroke is acknowledged with a short "click".
*Turn-off beep	A series of sounds is emitted when the device is turned off.
Turn-on beep	A single "beep" sounds when the device is turned on
Turn-off pager	By holding both buttons down simultaneously for approximately 3 seconds, the pager switches off.

Call reminder:

Off	No call reminder
LED	LED blinks after the pre-defined time if a call is not accepted.
LED + sound	LED blinks and a peep sounds accompanied by a short vibration after the pre-defined time if a call is not accepted.
Repetition time	The time can be set to between 3 sec. and 4 min; 15 sec. after the programmed time, the sequence is repeated.
Repetition	Frequency of the repetitions (0, 10, 20 30 times)

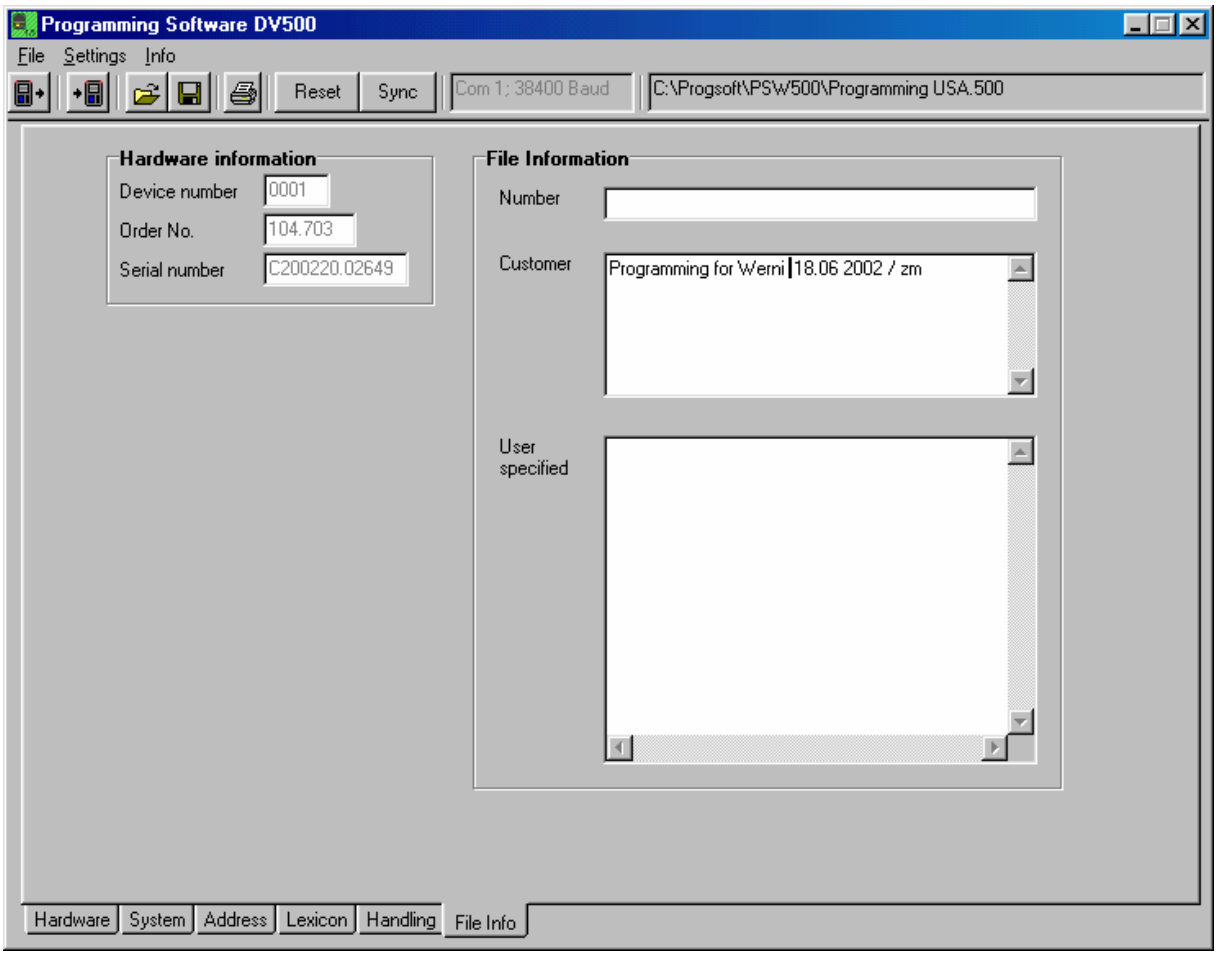
Standard volume	Standard volume step 6 (8 steps in all)

Vibrator

active	The vibrator is in principle activated
also in the charger	Vibrator is activated also while charging

Accumulator type:	Nickel-Cadmium (NC) or nickel-metal-hydride (NMHyd) **must** be set here.
System time	It is possible to set the system date and time or to download it from the PC itself
OKI	There can "Speech speed" an "Pitch" be set between -99 and +99
Broadcast time and OKI	Reserved for future applications

9 File information



This window offers you the possibility of saving customer and device data on your PC.

You can save hardware information (unchangeable) in the following fields:

- Device number
- Order number and
- Serial number

and entries under file information in the following fields:

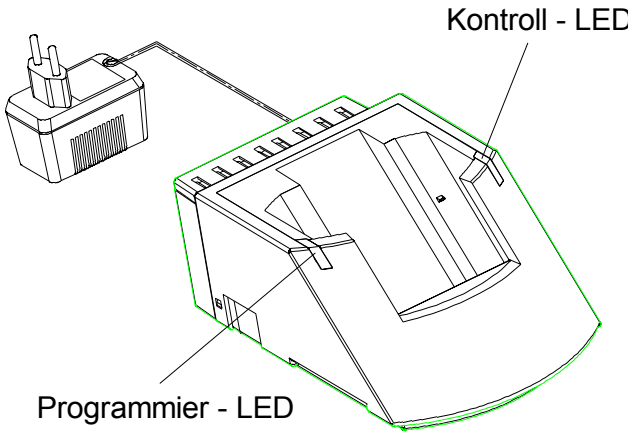
- Number
- Customer and
- User definitions

as well as all pager programming data and options in a ????????**.500** file.

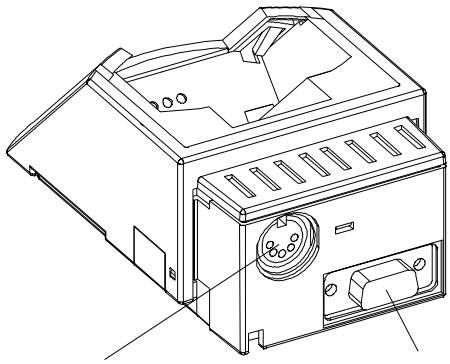
10 PGM 300/429 specifications

PGM 300/429:	**SW Art. No. 0951 450**
Power supply:	Mains - AC power adapter, AC 230V +/-10%,
Frequency:	50/60 Hz
Output voltage:	DC 12.6V / 450mA unregulated.
Power plugs:	Euro-plugs: CH, FRG, F, Scandinavia and sundry
Norms:	SEV, VDE, DEMKO, SEMKO, and so on
Indicator LED:	yellow LED = DC supply green LED = Data flow
Interfaces:	DIN socket RS-232, 9-pin D jack,
Labelling:	PGM 300/429 with ID No. 951 450

11 View of the PGM 300/429



Programming LED Indicator LED



Rx/Tx Data in Data Out RS 232

ATTENTION: The PGM 429/300 programmer is not a charger.