



Ditronic



## Operating Manual

PMS, HTE and MobiScan Family  
with Standard Program Version 6

# Manual



## Operating Manual

PMS, HTE and MobiScan Family  
with Standard Program Version 6

## **We do not only deliver our mobile Terminals with Standard Software...**

we are also developing custom specific

- applications for these devices,
- PC applications,
- hardware

and consult you concerning

- creation of mobile data capturing concepts,
- questions coming up with barcodes,
- hardware problems,
- PC problems.

Please contact:

aitronic GmbH  
Max-Planck-Str. 19  
D-33104 Paderborn

Phone: +49(0)5254/9969-0  
Fax: +49(0)5254/9969-40  
Internet: <http://www.aitronic.de>  
eMail: [info@aitronic.de](mailto:info@aitronic.de)

---

Copyright © aitronic GmbH, 2004

All rights reserved, especially also excerpts for translation, printing, copying or similar processes.

Possibility of delivery and technical modification reserved.

- 1. Introduction ..... 1-1**
- 2. Warning Hints ..... 2-1**
  - Laser Scanner Module..... 2-1
  - Accus..... 2-1
- 3. Security & Regulatory ..... 3-1**
- 4. Care Instructions ..... 4-1**
  - Care of the Scanner ..... 4-1
  - Dealing with the Devices Markings ..... 4-1
  - Repairing Screen Damages..... 4-1
- 5. Communication/Charging Adapter ..... 5-1**
- 6. Installation of PC Software MTWIN..... 6-1**
- 7. Introduction to Operation ..... 7-1**
  - Switching on/off ..... 7-3
  - LCD Displays ..... 7-3
  - Scanner Handling ..... 7-4
  - Manually Data Entry ..... 7-5
  - Deleting Characters ..... 7-5
  - Deleting Entry Field ..... 7-5
  - Select next Entry Field..... 7-6
  - Closing Entry and storing the Record ..... 7-6
- 8. System Functions ..... 8-7**
  - 8.1 Cold Start / Initialization..... 8-7**
  - 8.2 Reset Button ..... 8-9**
    - Warm Start ..... 8-11
    - Cold Start / Initialization..... 8-11
    - Calling the Boot Program..... 8-11
  - 8.3 Battery Low Procedure ..... 8-12**
  - 8.4 Menu System ..... 8-13**
    - Calling/leaving the Menu System..... 8-13
    - Selecting Menus ..... 8-13
    - Selecting Menu Functions ..... 8-14

Executing Menu Functions .....	8-14
Returning to Menu System .....	8-14
Menü: 1 APPLICATION.....	8-14
Menü: 2 DATA MEMORY.....	8-15
Menü: 3 COMMUNICATION .....	8-15
Sub-Menü: 3 DECT Functions.....	8-16
Menü: 4 SETUP .....	8-17
<b>8.5 Function Barcodes.....</b>	<b>8-18</b>
Commands.....	8-18
Program Selection.....	8-19
Standard Barcode Menu .....	8-20
<b>8.6 Charging the integrated Accumulators .....</b>	<b>8-26</b>
<b>8.7 Error Messages .....</b>	<b>8-27</b>
<b>8.8 Error Diagnostics .....</b>	<b>8-31</b>
<b>9. Software Update .....</b>	<b>9-1</b>
<b>10. Technical Data .....</b>	<b>10-1</b>
Mobile Terminals PMS 1200/1500 .....	10-1
Mobile Terminals HTE 1800/1900 and MobiScan-6x/8x.....	10-2
Scanner Modules .....	10-3
<b>11. Accessories .....</b>	<b>11-1</b>
Protection cap for PMS .....	11-1
Belt Holster for MobiScan 6x.....	11-1
Redirection Optic for HTE .....	11-1
RS-232 Cable for HTE and MobiScan.....	11-2
2-Bay Charging Cradle for HTE 1900.....	11-2
Cradle MobiScan 6x PTR.....	11-2
2-Bay Cradle MobiScan 6x/8x UDS.....	11-3
1-Bay Cradle UDS with RS-232 and LAN Interface.....	11-3
Cradle 1-fach UDS .....	11-3
Accesspoint for DECT RF Network .....	11-4
<b>12. Recycling Orders .....</b>	<b>12-1</b>
Battery Order.....	12-1
IT Salvage Devices Order .....	12-1
<b>13. Additional Manuals TECHNICAL MANUAL .....</b>	<b>13-1</b>
APPLICATION PROGRAMMING MANUAL .....	13-1
CONNECTIVITY & APPLICATIONS .....	13-1

WINDECT ..... 13-1  
DECT RF NETWORK ..... 13-1

**14. Standard Program MTSTD ..... 14-1**

    Initialization following Cold Start ..... 14-1  
    Data Capturing ..... 14-2  
    Displaying Records ..... 14-3  
    Modifying/deleting/undeleting a Record ..... 14-3  
    Function Keys ..... 14-3  
    Data Transmission ..... 14-4  
    Erasing the Data Memory ..... 14-6  
    Test Barcodes ..... 14-7

---

Before working with your device you should study this manual carefully.

All informations in this manual are given without any guarantee and may be altered by us without any prejudice. We take care to keep our products errorfree and on the latest technical level. As possible we try to stay compatible to our delivered products. Although we take much care in producing and testing our software it is not possible to guarantee the functionality allways and completely under all thinkable operating conditions.

**Attention:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For personal or material damage resulting directly or indirectly from the usage of our devices or software aitronic GmbH cannot take over liability.

This manual or parts of it are not allowed by aitronic GmbH to be copied or mailed in any way. Copies of the software may only be used for backup purposes but may be not given to third ones.

Trade-marks and trade-names in this manual which are not specially be marked are only therefore not free of any rights.

We are willingly to help you with any problems or questions concerning our products. Please consult:

aitronic GmbH  
Max-Planck-Str. 19  
D-33104 Paderborn

Phone: +49(0)5254/9969-0  
Fax: +49(0)5254/9969-40  
Internet: <http://www.aitronic.de>  
eMail: [info@aitronic.de](mailto:info@aitronic.de)

# 1. Introduction

The mobile terminals **PMS 1200/1500**, **HTE 1800/1900** and **MobiScan** from aitronic are usable in several ways for scanning barcodes and manually data capturing.

Different device types and options are available (refer to **Technical Manual**, chapter **1 Device Types**).

Depending on the type of the serial interface off- and online network applications can be implemented.

For all devices in this manual the designation **MT** (Mobile Terminal) is used.

All **PMS 1200/1500** device types in this manual are named **PMS**, all **HTE 1800/1900** device types are named **HTE**. In general devices with keyboard include all functions of devices without keyboard. In function descriptions which concern only to devices with keyboards a particular reference is made.



## 2. Warning Hints

### Laser Scanner Module

The mobile terminals **PMS/HTE/MobiScan** are equipped with a low power laser diode for visible light. The wave length is 650 nm and the nominal laser power is 1,2 mW. The laser scanner meets the CDRH/IEC Class II requirements.

As with other strong light sources the operator should avoid looking directly into the laser beam. Occasionally irradiation with CDRH/IEC Class II laser light is not known to be injurious.

The required security labels are located below the laser light window.

Never open the laser module or perform any maintenance work at the module because the laser security specification may be injured. The laser module may only be repaired in the factory.

### Accus

**Attention!** In case of improper handling of the accus there will be danger of explosion. In case of waste disposal of used accus you should pay attention to the Recycling Orders (look for chapter **Recycling Orders/Battery Order**).

**At this point we want to explicitly attention to that we don't overtake guarantee for damages which are the consequence of wrong dealing with the devices.**

### **3. Security & Regulatory**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

## 4. Care Instructions

Your data capturing device with integrated laser scanner module is a high grade and robust unit consisting of electronic and laser optic devices. An faulty treatment of this device can considerable affect function and efficiency. To guarantee lasting and constant operation you should consider the following care instructions!

### Care of the Scanner

The red scanner screen of your terminal forms and the inner resided scanner module form an optical unit. This screen is provided with a special coating. A damage of this coating i.e. by scratches may lead to problems when scanning barcodes. Because of this a clean and moist cloth should be used when cleaning the screen. Before rough dirt may be removed with a soft brush. Cleaning agents may not be used for the screens care and cleaning.

Terminal of the MobiScan family habe an aluminum case. All other scanners from ours have a plastic case. Although both are robust materials for cleaning only a soft cleaning angent should be used.

### Dealing with the Devices Markings

The attached marking labels (warning and security labels) may not be removed on principle. They are the legitimation for the operation with this terminal. Making the terminals data plate or informations on the data plate (i.e. the serial number) unrecognizable should be avoided. Missing information on the data plate may lead to a more difficult identification. This may further lead to problems which couldn't be solved by telephone. In this case the terminal must be sent in.

Further we recommend the attachment of additional information (i.e. department or personal numbers) labels with plastic back. Simple paper back labels aren't durable enough. In that way sticking parts may smudge the scanner screen. In this case on the one hand the scanner function will be affected, on the other hand a cleaning without ignoring the above instructions woun't possible because a solvent would be required.

### Repairing Screen Damages

In case of overstress the screen may be loosen. We explicitly attention to that self repairing with short time glue may affect in such strong way that the screen or the casing must be changed.

## 5. Communication/Charging Adapter

The Communication/Charging-Adapter deals for connection a mobile terminal to an RS-232 port of a PC or other computer. The Communication/Charging-Adapter is equipped with a fast charging device, which also deals for loading the integrated mobile terminal accus.



### Starting Operation

1. Switch of your computer.
2. Connect the RS-232 cable to the desired COM port of your PCs.
3. Connect the Communication/Charging-Adapters main plug to a 220 V AC outlet. The ground protection must be connected. The Communication/ Charging-Adapters LED glows green.
4. Now switch on your computer an start your application program.
5. Connect the mobile terminal to the am Communication/Charging-Adapter. The Communication/Charging-Adapters LED now glows orange. The trickle charging mode is active an the mobile terminal is ready for data communication.

## 6. Installation of PC Software MTWIN

The PC Software MTWin is used for data exchange with mobile terminals.

To install the software execute SETUP.EXE in the directory MTWin of the supplied CD and follow the installation instructions.

You also can download MTWIN from our website [www.aitronic.de](http://www.aitronic.de) and then Service/Downloads/Communcation Software.

## 7. Introduction to Operation

The following table shows the standard key functions of devices with **numerical** keyboard:

Key	Function without Shift Key	Function with Shift Key
<b>0...9</b>	<b>Digits 0 - 9</b>	Holding down the shift key and inputting a decimal number from 32 to 127 any printable ASCII character can be entered in input fields which allow these kind of input.
*	In case of empty entry mask: <b>MENU.</b>  In decimal entry fields (quantity field in Standard Program1): decimal point.	<b>OFF</b>
◀	scan one position backward	<b>HOME</b>
▶	scan one position forward	<b>END</b>
<b>SHIFT</b>	<b>SHIFT</b>	
<b>C</b>	<b>CE</b>	<b>CANCEL</b>
<b>+</b>	<b>ENTER</b>	

By means of the **Standard Barcode Menu** (refer to page 8-20) the same functions can be performed as with the keyboard. This can be required with devices missing a keyboard (**PMS 1200**).

The following table shows the standard key functions of devices with **alpha-numerical** keyboard:

Key	Function without Shift Key	Function with Shift Key
ⓘ	<b>On/Off</b>	
<b>SHIFT</b>	<b>Shift</b>	
<b>0...9</b>	<b>Characters 0 - 9</b>	<b>Alpha Character</b>
<b>Sonderzeichen</b>	<b>Special Character</b>	<b>Alpha Character</b>
<b>CLR</b>	<b>CE</b>	<b>Alpha Character</b>
<b>DEL</b>	<b>CANCEL</b>	<b>Alpha Character</b>
↵	<b>ENTER</b>	
<b>MENU</b>	<p style="text-align: center;">In case of empty entry mask: <b>MENU</b>.</p> <p style="text-align: center;">In decimal entry fields (quantity field in Standard Program1): decimal point.</p>	
<b>F1...F8</b>	<b>Function Keys</b> Are not used in the Standard Software but can be used in the application programming.	<b>Alpha Character</b>
◀	scan one position backward	Input Mask: <b>Alpha Character</b> Data memory: <b>HOME</b>
▶	scan one position forward	Input Mask: <b>Alpha Character</b> Data memory: <b>END</b>

## Switching on/off

The device switches on in case of

- hitting the keyboard (devices with numerical keyboard) respectively the power on key (upper left, devices with alphanumerical keyboard),
- pressing the scanner switch,
- connecting the serial interface to a PC where an application is active which has activated the RTS signal of the serial interface (**not** with devices with RF module and LAP-EC).

In case of inactive signal CTS (this means: no charging/ transmission adapter is connected or on the PC no application is active which has set the serial interfaces signal RTS) and for the duration which is adjusted with configuration parameter **Power Off Time** no operation is performed (hitting of keyboard/scanner switch or data transmission with a RF device) the device powers off automatical to economize the integrated accumulators and therefore to guarantee an long operation time.

Manually switching off is performed by

- holding down key **SHIFT** and pressing key \* in case of using a device with **numerical keyboard**. After releasing both keys the device switches off itself.
- pressing the power on key (upper left) in case of using a device with **alphanumerical keyboard**.

## LCD Displays

Normally the actual entry mask for article number (Standard Program 1 and 2) and quantity (only Standard Program 1) is shown. Another display content (program message or the a stored record in case of scanning through data memory) keeps staying on LCD until the scanner switch or the keyboard is hit or until the device is switched off.

With RF devices (only in case of an actual entry mask) the data net activity is shown on the last LCD position. The symbol \* indicates that the device was polled from the RF server with its address (serial no.). The symbol **o** indicates that the device was polled from the RF server with the login address (000000). Normally this two symbols are changing alternately in case of an logged in device. If only the symbol **o** is shown the device is not logged in. If a device resides outside the active RF area or the RF server is not active no one of those two symbols are shown.



## Scanner Handling

### Testing the Scanner

Hold the scanner above a light surface and press the trigger. Now you should see the red laser beam on the surface and with the **PMS 1500** the LED 'Scanning' should be on.

### Scanning Barcodes

Hold the scanner in front of a barcode and press the trigger. Notice the following operating tips:

- Vary the scanner position in that way that the laser beam sweeps the middle of the barcode and overlaps it at both sides.
- The larger the barcode, the farther away you should hold the scanner.
- Hold the scanner closer for barcodes which are printed with a higher density.
- Hold the scanner not in a right angle to the barcode. In this position light can bounce back into the scanner and influence the decoding performance or even prevent decoding at all.

When the scanner has read the barcode

- you will hear the 'Decode Beep' (standard configuration: short double beep),
- with the **PMS 1500** the LED 'Good Read' will turn on for a short time (standard configuration: 3 seconds),
- and the laser beam will be switched off.

If you follow these instructions and fail to scan read section "If nothing functions" below.

### What does the different beeps mean?

Listen to the 'Decode Beep' (standard configuration: short double beep). This means that the barcode has been decoded successfully.

A long error beep means that the selected function respectively the read barcode is not valid.

### If nothing functions

If you follow previous instructions and fail to scan:

- Ensure that the accumulators are charged.
- Make sure that the MT is configured for the barcode type which should be read.
- Make sure that the barcodes are not damaged or dirty. Check the barcode print quality.

If you have performed these checks and the barcode still cannot be decoded contact your authorized distributor.

## What should be notice with laser light devices

The laser scanners use a low-power laser diode for visible laser light. As with any bright light source the user should avoid staring directly into the laser beam. Momentary exposure to a CDRH Class II laser is not known to be harmful.

The required safety labels are placed below the laser light window and above the trigger switch.

## Manually Data Entry

Enter article number and quantity manual with keys **0...9** The cursor points to the next entry position.

Use key **C** (respectively **CLR** in case of devices with alphanumeric keyboard) to delete the character left beside the cursor.

Use key **+** to close the entry of the article number and to go to the quantity entry field.

Use key **\*** (respectively **MENU** in case of devices with alphanumeric keyboard) to enter the point in case of decimal entries.

Pressing key **+** when the cursor resides in the quantity entry field the article number and the quantity will be stored into data memory and the empty entry mask is shown again.

## Deleting Characters

By pressing key **C** (respectively **CLR** in case of devices with alphanumeric keyboard) the character left beside the cursor is deleted. In case of empty entry field the cursor jumps to the previous entry field. Single digits of a scanned barcode can't be deleted. In this case there is only the option to delete the entire entry field.

## Deleting Entry Field

### Devices with numerical Keyboard

By holding down key **SHIFT** and pressing key **C** the entire entry field in which the cursor resides is deleted.

### Devices with alphanumerical Keyboard

Press key **DEL** instead of **SHIFT C**

## Select next Entry Field

If there has been at least one digit entered in the article number field and there is a quantity field available (Standard Program 1) this may be selected by pressing key +.

## Closing Entry and storing the Record

If there has been at least one digit entered in the last entry field the whole entry is closed by pressing key +.

**Storing** of the record is performed if

- the configuration parameter **Data Destination Memory** is set,
- or the configuration parameter **Data Destination SIO** is set but the RS-232 signal DTR is not active.

The record is transmitted to the serial interface if the configuration parameter **Data Destination SIO** is set and the RS-232 signal DTR is active.

After storing respectively transmitting the record to the serial interface the next empty entry mask is shown.

## 8. System Functions

### 8.1 Cold Start / Initialization

Enable Function Barcodes



Initialization (Cold Start)



**ATTENTION:** Stored data will be lost and the device will be initialized completely.

Disable Function Barcodes



At first power up of the **PMS/HTE** after a software update or after loss of the RAM voltage the initialization takes place with the execution of the following steps:

- Boot program start and initialization.
- Indication of hardware type with a distinct count of clicks:
  - 2 clicks: **PMS 1200,**
  - 3 clicks: **PMS 1500, HTE 1800/1900, MobiScan,**
- Test of keyboard/display interface in case of devices with keyboard,
- Output of a long beep,
- RAM Check, is indicated by a distinct count (depends on the size of data memory) of short beeps:
  - 2 short beeps: 32 K data memory,
  - 8 short beeps: 128 K data memory,
  - 32 short beeps: 512 K data memory.
- Flash ROM Check.
- In case of errorfree checksums of all 4 Flash ROM Banks the operating system is started and initialized. Otherwise the device remains in the boot program and the required software update must be loaded.
- Display of the Device Information.
  - Device name and size of data memory,
  - Application program name and version (AP),
  - Operating System name and version (OS),
  - Decoding Software name and version (DS),
  - Boot Program name and version (BP),
  - Library name and version (LB).

- Keyboard Controller name and version (KC).
- Loading of **user configuration**.
- Optional input of a **password** up to 15 digits (only devices with keyboard; with devices without keyboard the password must be entered via the appropriate menu function). The password must be confirmed by entering it a second time. Only in case of confirmity the password is stored. If there is no password used both inputs can be skipped with key +. The password is used by the operating system to protect the distinct menu functions.
- RF communication devices now perform an automatic login into the RF net in case of configuration parameter 'Auto Login' set (is set in the Standard Program). In case of configuration parameter 'Manual Login' set the login must be performed via the appropriate menu function.

## 8.2 Reset Button

### ATTENTION

**Don't** press the reset button during the device programmes a Flash ROM sector (i.e. at software update or when saving the User Configuration). Otherwise the Flash ROM sector will be destroyed and the software must be loaded new. In case of sector 1 (contains the boot program) the Flash ROM must be changed.

By means of the reset button

- a warm start can be performed,
- a cold start can be performed,
- the boot program can be called.

In this way the device can be resetted. This function is only required when the device not reacts when the keyboard is hit or when it receives a SIO command.

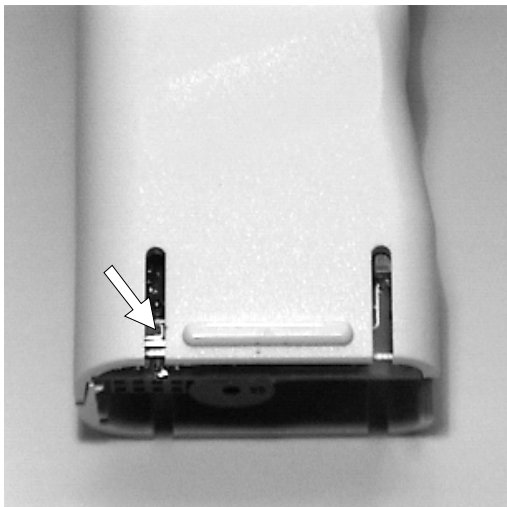
Two pages ahead this three functions are described detailed.

To get to the reset button

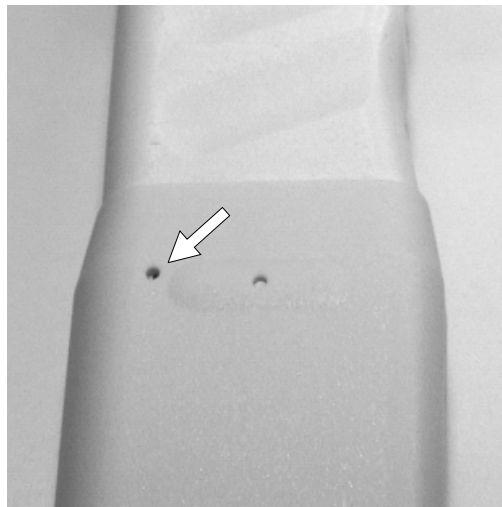
- of Mobile Terminals from type PMS 1200/1500 with RS-232- or IR-Interface the handle grip cap must be removed.
- of Mobile Terminals from type MobiScan-60 the casing lid on the right side must be removed.

With all other Mobile Terminals the reset button can be pressed by means of a thin tool (i.e. bowed up paper clip) through a little hole in the housing. The pictures on the next page show the position of the reset button at the different Mobile Terminals types.

**PMS 1200/1500 with  
RS-232-or IR-Interface**



**PMS 1200/1500  
with RF Module**



**HTE 1800/1900**



**MobiScan-60**



## Warm Start

- Switch device on,
- press reset button only **one time**,
- wait until device powers off,
- switch device on. Device works as it was powered off and on again.

## Cold Start / Initialization

- Switch device on,
- press reset button,
- wait until device powers off,
- switch device on and press reset button once more during "**For Cold Start press RESET...**" is displayed (is displayed about 3 seconds),
- switch device on.

## Calling the Boot Program

- Perform a cold start (as described above),
- Press reset button once more within the RAM test phase.
- If the User Configuration was active "**Saving Default Konfiguration...**" is shown and the Default Configuration is activated. If the User Configuration was active "**Saving User Konfiguration...**" is shown and the User Configuration is activated.
- The device programmes the serial interface with the selected parameters, remains in the boot program and is ready to load software.
- The configuration for the boot program which was selected in this way is stored into Flash ROM and is conserved for a new start of the boot program.
- If the default configuration is active a star is displayed at the end of the boot program name.



## 8.3 Battery Low Procedure

In order to continue operation for a distinct time after the battery low level is reached the first time (either about 3 minutes without switching on the scanner or switching on the scanner about 25 times), the following 3-Phase-Procedure was implemented:

**Phase 0** Normal operation, supply voltage above battery low level, internal Battery Low Counter = 0. If the battery low level is reached the first time

- the message "**Battery gets low, Close Operation!**" is displayed,
- the internal **Battery Low Counter** is set to 25,
- a change to **Phase 1** happens.

**Phase 1** Each 7 seconds respectively each time switching on the scanner

the Battery Low Counter is incremented if the supply voltage further stays beyond the battery low level. If the Battery Low Counter reaches the value 50 "**Charge Battery!!**" is displayed, a change to **Phase 2** happens and the device is switched off.

or

the Battery Low Counter is decremented if the supply voltage is above the battery low level. A change to **Phase 0** happens if the Battery Low Counter reaches the value 0.

**Phase 2** Each 7 seconds respectively each time switching on the scanner

the Battery Low Counter is decremented if the supply voltage is above the battery low level. A change to **Phase 0** happens if the Battery Low Counter reaches the value 0.

or

if the supply voltage one more time reaches the battery low level the Battery Low Counter is set to the value 565, "**Charge Battery!!**" is displayed and the device is switched off.

## 8.4 Menu System

The menu system consists of 4 singel menus and has the following structure:

1 APPLICATION	2 DATA MEMORY	3 COMMUNICATION	4 SETUP
Not available!	1 Data Records	1 SIO Parameter	1 SW-Version
	2 Data Mem./Byte	2 Hndshk/Prot.	2 Seriennr.
	3 Del. Data Mem.	3 Timeouts	3 Datum/Uhrzeit
		4 PROT/AutoLogin	4 Password
		5 PROT.-Monitor	5 Initialisieren
		3 DECT Functions	
		1 DECT-IPUI	
		2 DECT-RFPI	
		3 DECT-RSS/RLQ	
		4 DECT-Cfg.prog.	
		5 DECT-Cfg.snd.	
		6 LAP Monitor	
		7 DECT-SubsOnAir	

In case of an entered password the menu items marked grey can be executed only by entering this password.

### Calling/leaving the Menu System

#### Devices with numerical Keyboards

The menu system is called with key \* and also left in this way. Calling the menu system is only possible in case of empty entry mask. When entering the menu system the menu item which was selected when leaving the menu system the last time is displayed.

#### Devices with alphanumerical Keyboards

Press key **MENU** instead of key \*.

### Selecting Menus

Selecting the next menu is done by holding down key **SHIFT** and pressing key **▶**. Leaving menu 4 menu 1 is selected. Selecting the previous menu is done by holding down key **SHIFT** and pressing key **◀**. Leaving menu 1 menu 4 is selected. In each menu the last menu item keeps selected.

The desired menu can also be selected directly by holding down key **SHIFT** and pressing key **1...4**.

## Selecting Menu Functions

The next menu item is selected with key **▶**. Leaving the last menu item the first menu item of the next menu is selected. The previous menu item is selected with key **◀**. Leaving the first menu item the last menu item of the previous menu is selected.

The desired menu item can also be selected directly with keys **1...9**. If the desired menu item is not available the last menu item of the actual menu is selected.

## Executing Menu Functions

The actual menu function is executed with key **+**.

## Returning to Menu System

After execution of menu functions which don't leave the menu system respectively which lead to other display outputs an exit from the the menu system can be performed by

- pressing key **+**, **C** (only if this key isn't used for other functions) or **SHIFT C** when using **devices with numerical keyboard**.
- pressing key **+**, **CLR** (only if this key isn't used for other functions) or **DEL** when using **devices with alphanumerical keyboard**.

## Menü: 1 APPLICATION

### Not available!

This menu is normally not available. But it may be configured by means of PC programs MTWIN 2.0 whereby all of the system menu functions can be used (refer to **TECHNICAL MANUAL**).

## Menü: 2 DATA MEMORY

### 1 Data Records

Displaying the amount fo stored and deleted records. The appropriate function keys return back to the menu system.

### 2 Data Mem./Byte

Displaying the amount of occupied and free data memory in byte. The appropriate function keys return back to the menu system.

### 3 Del. Data Mem.

After confirming the question "Delete Data Memory?" with function key + the data memory is deleted and the first input mask of the selected program is displayed. Any other key returns back to the menu system.

## Menü: 3 COMMUNICATION

### 1 SIO Parameter

Displaying the adjusted baudrate and parity bit. The appropriate function keys return back to the menu system.

### 2 Hndshk/Prot.

Displaying the adjusted SIO handshake respectively protocol. The appropriate function keys return back to the menu system.

### 3 Timeouts

Displaying the adjusted timeout(s) depending on the SIO handshake respectively protocol. The appropriate function keys return back to the menu system.

### 4 DECT Functions

Calling sub menu ‚DECT Functions’.

## Sub-Menü: 3 DECT Functions

### 1 DECT-IPUI

Displaying the IPUI (International Portable User Identification) of the integrated DECT module.

### 2 DECT-RFPI

Displaying the 6 entered RFPI (Radio Fixed Part Identification) of the integrated DECT module, as well as the status (0=inactive, 1=active) right below on the LCD. The base stations RFPI, to which an active connection existst, is marked with \*. When pressing key **ENTER** the next RFPI will be displayed. After pressing key **C** resp. **CLR** the actual entry may be modified. With **SHIFT C** resp. **DEL** the function will be leaved.

### 3 DECT-RSS/RLQ

Displaying the **R**adio **S**ignal **S**trength and the **R**adio **L**ink **Q**uality of the active DECT connection. This function may be used to „measure out“ the area in which the DECT communication should take place ,.

### 4 DECT-Cfg.prog.

Programming the loaded Konfiguration into the DECT module.

### 5 DECT-Cfg.snd.

Sending the loaded DECT module configuration via the serial interface.

### 6 LAP Monitor

Displaying the amount of the sent/received LAP-EC protocol data blocks as well as the repeated data blocks.

### 7 DECT-SubsOnAir

Calliing the DECT **S**ubscription **o**n **A**ir procedure. With this procedure a connection to next reachable base station which RFPI is entered and activated will be established automatical.

## Menü: 4 SETUP

### 1 SW Version

Displaying the device information on the LCD. The device information consists of three displays and is scrolled forward by function key **+**. With devices missing a keyboard the scrolling happens automatical.

### 2 Serial Number

Displaying the 6 digit serial number which is permanently stored in Flash-ROM. The appropriate function keys return back to the menu system.

### 3 Date/Time

Conitinous displaying of date and time. By pressing key **C** (respectively pressing key **CLR** when using **devices with alphanumerical keyboard**) date/time can be modified. The appropriate function keys return back to the menu system.

### 4 Password

Displaying the password. By pressing key **C** (respectively pressing key **CLR** when using **devices with alphanumerical keyboard**) the password can be modified. To confirm this input the password must be entered a second time. The appropriate function keys return back to the menu system.

### 5 Initialize

After confirming the question "Exec. Boot Prog/Initialize?" with key **+** the boot program is called (→ software update). Any other key returns back to the menu system. This command can only be executed in case of empty or transmitted data memory.

After calling the boot program initialization of the device takes place (→ cold start) even if there was no software update loaded.

## 8.5 Function Barcodes

### Commands

Show Software Version



Displaying the device information. With a **PMS** scrolling can be stopped with the scanner switch.

Transmit Data



Transmits data via the serial interface (as SIO command **D**).

Set Data Transmission Lock



Setting the Data Transmission Lock (as SIO command **T1**).

Reset Data Transmission Lock



Resetting the Data Transmission Lock (as SIO command **T0**).

Enable Function Barcodes

---



## Program Selection

The selection of another program is only allowed in case of empty data memory!  
The selection of application programs 1 - 10 requires a special application program which provides this function.

Standard Program 1  
Article Number/Quantity



Standard Program 2  
Article Number



Appl.-Prog. 1



Appl.-Prog. 6



Appl.-Prog. 2



Appl.-Prog. 7



Appl.-Prog. 3



Appl.-Prog. 8



Appl.-Prog. 4



Appl.-Prog. 9



Appl.-Prog. 5



Appl.-Prog. 10





# Standard Barcode Menu



1



2



3



4



5



6



7



8



9



0



\*



SHIFT ◀



SHIFT ▶



◀



▶



C



SHIFT C



+

### Function Keys



**SHIFT 0**



**SHIFT 1**



**SHIFT 2**



**SHIFT 3**



**SHIFT 4**



**SHIFT 5**



**SHIFT 6**



**SHIFT 7**



**SHIFT 8**



**SHIFT 9**

### Alpha Characters





>



?



@



A



B



C



D



E



F



G



H



I



J



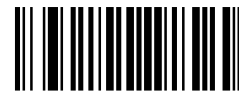
K



L



M



N



O



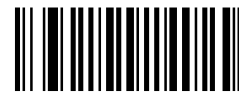
P



Q



R



S





j



k



l



m



n



o



p



q



r



s



t



u



v



w



x



y



z



{



|



}



~

## 8.6 Charging the integrated Accumulators

The integrated accus should be charged periodical (in case of intensive usage at least once a day). If the accu capacity runs empty because the accus were not charged the device displays the message "Battery gets low, Close Operation!". After this message about 25 barcodes can be still read respectively the device can be operated with still for about 3 minutes. Then the device displays the message "Charge Battery!!!" and switches off automatical.

Detailed informationen concerning special charging devices refer to the **TECHNICAL MANUAL FOR MOBILE TERMINALS OF PMS, HTE AND MOBISCAN SERIES.**

## 8.7 Error Messages

Error Message	Description	Cause respectively Help
Battery gets low Close Operation!	The accus only contain a remaining capacity. The first time this message is displayed with a 5 seconds long pulsing beep sequence. Within this duration the Good-Read-LED is switched on. During the following operation this message is displayed with a shorter beep sequence every 7 seconds respectively after each scan.	The current procedure should be closed and the <b>MT</b> should be connected to mains by means of the Charging/Transmission Adpater because after this error message only about 25 barcodes can be scanned respectively there is only a remaining operation time of about 3 minutes before the device displays the error message "Charge Battery" and then powers off.
Charge Battery!!!	The accus doesn't supply the required voltage.	Connect <b>MT</b> with Charging/Transmission Adapter to mains.
BP: MTBOT vvv Err nn, load SW!	An error was detected during Flash-ROM-Check. The error code <i>nn</i> contains the number(s) of the <b>erroneous</b> banks (bitmapped). Perhaps a software update was broken or a Software Module is missing. <b>Help:</b> Execute software update once more. In case of error code Bit 4 = 1 a boot program checksum error was detected. In this case the boot program must be loaded once more.	
BP Version < 5.0 required!	An attempt was made to load an operating system version < 5.0.	At first load the required boot program version, then repeat the operating system software update..
Data Memory contains Data!	A function that requires the data memory cannot be executed because data are stored.	Transmit data and execute desired function once again.
Data Memory full!	Data memory is full.	Transmit data and delete data memory.
Error Message	Description	Cause respectively Help



Receive Timeout!	When receiving data (i.e. software update) there was a delay longer than <b>Rx Timeout</b> (configuration parameter).	Check Computer and Charging/Transmission Adapter. Perhaps enlarge <b>Rx Timeout</b> (configuration parameter). Execute desired function once again.
Function not implemented!	Selected function is not implemented in used device type.	Selected function cannot be executed (i.e. switching LCD illumination on/off with <b>PMS 1200</b> ).
Handshake Timeout!	The RS-232 Handshake (XON/XOFF respectively RTS/CTS) was missing for a duration longer than programmed under <b>HndShk Timeout</b> (configuration parameter).	The connected computer (application) is not active anymore, doesn't handle the handshake correct, produces to long time delays or the Charging/Transmission-Adapter is erroneous.  Try to enlarge <b>HndShk Timeout</b> (configuration parameter).
Invalid AP Version!	An attempt was made to load an application which was compiled for another operating system version.	At first load the required operating system version, then repeat the loading of the application.
Invalid DS Version!	An attempt was made to load a Decoding Software version which was compiled for another operating system version.	At first load the required operating system version, then repeat the loading of the Decoding Software .
No connection!	Missing RS-232 signal CTS.	The connected computer (application) is not active anymore or the Charging/Transmission Adapter is erroneous.
Mask Buffer Overflow!	The mask buffer got overflowed.	Error in the application program. When buffering input masks there must also be precautions of removing mask numbers from the mask buffer again.
<b>Error Message</b>	<b>Description</b>	<b>Cause respectively Help</b>

Not possible with S/N:000000!	The device resides in Test Mode (serial no. '000000'). The executed function requires a serial no. different from '000000' (i.e. LAP-EC).	Program serial no. and execute desired function once more.
No OS loaded!	An attempt was made to start a non existing operating system.	Load operating system and application.
Par.Overr.Fram. Error!	A character with erroneous parity or stop bit was received via the serial interface.	Check SIO parameter and set it to the correct values. Start aborted procedure once more.
Protocol abort!	XModem or LSV-2 protocol was aborted.	Start aborted procedure once more.
S-File Checksum Error!	Error in S-File-Checksum detected.	Check S-File and execute software update once more.
S-File Format Error!	Erroneous S-File format.	Check S-File and execute software update once more.
Transmission Timeout!	While communicating via LAP-EC the transmission buffer was full for a duration longer than the time defined by <b>Tx Timeout/LAP-EC</b> (configuration parameter).	The application which communicates with <b>MT</b> produces to long time delays while receiving data. Try to enlarge <b>Tx Timeout/ LAP-EC</b> (configuration parameter) or solve the problem in the application.
LAP-EC: Blkcnt Error, press +	Fatal error while communicating via LAP-EC in the operating system.	The <b>MT</b> must be manual (menu function) logged in again. Start PC software again. The block counters will be resetted in that way.
LAP-EC: Block Counter Error!	Fatal error while communicating via LAP-EC in the boot program.	Perform cold start of the <b>MT</b> . Start PC software again. The block counters will be resetted in that way.
LAP-EC: No Kommunikation!	RF net not active respectively <b>MT</b> resides outside of the RF area. Refer to explanation (1).	Check NARF and RF module of <b>MT</b> and start PC software respectively return with <b>MT</b> back to the active RF area.
LAP-EC not active!	Selected function requires LAP-EC.	Activate LAP-EC and execute desired function once more.

<b>Error Message</b>	<b>Description</b>	<b>Cause respectively Help</b>
LAP-EC: Not logged in!	<b>MT</b> not logged in. Refer to explanation (1).	Check initialization file on the PC and start PC software again, the RF Scanner will be logged in again.
Line Buffer Overflow!	The line buffer for the serial interface has got overflowed because there were more than 255 characters received without a CR.	The application which communicates with <b>MT</b> sends more than 255 characters without a CR.

### Explanations

- (1) These error messages are not displayed with the Standard Program but can be activated in a special application by means of the corresponding configuration parameter.

## 8.8 Error Diagnostics

The following table should help with errors that are not indicated by an error message but appearing as unexpected behaviour of the **MT**.

Symptom	Cause respectively Help
Barcodes are read badly	<ul style="list-style-type: none"> <li>• Screen at the front of the device (<b>PMS</b>) has become dirty or scratched,</li> <li>• Barcode printed badly, dirty or scratched.</li> <li>• Too much barcode types activated. Activate only those barcode types which are required.</li> </ul>
Serial communication is erroneous	Serial interface parameters (baudrate, parity at <b>MT</b> or PC side or both) are not selected correct .
Serial communication doesn't work at all	<p><b>With Charging/Communication Adapter (RS-232)</b></p> <ul style="list-style-type: none"> <li>• Charging/Transmission Adapter not connected to mains,</li> <li>• Connector of Charging/Transmission Adapter not connected completely to the device,</li> <li>• Charging/Transmission Adapter not connected correctly to the PC,</li> <li>• Serial interface of <b>MT</b> or PC erroneous.</li> </ul> <p><b>With Infrared Cradle</b></p> <ul style="list-style-type: none"> <li>• Device not pushed completely into the Cradle,</li> <li>• Cradle not connected correctly to the PC,</li> <li>• Infrared interface of <b>MT</b> or Cradle dirty or erroneous,</li> <li>• Serial interface of the PCs erroneous.</li> </ul> <p><b>With RF or RS-485-Cradle or INAP and LAP-EC</b></p> <ul style="list-style-type: none"> <li>• NARF respectively. NAC not switched on or not connected correctly,</li> <li>• LAP-EC and/or concerning application on PC not active,</li> <li>• Device is not logged in (at the right bottom of LCD only the symbol <b>o</b> is shown),</li> <li>• Device resides outside the RF area (at the right bottom of LCD neither <b>o</b> nor <b>*</b> is shown),</li> </ul>

For a software update the following steps must be performed:

- Connect device via charging/transmission-adaptor to the desired COM to the PC.
- Start program MTCAN on the PC.
- If COM2 should be used this must be selected under **Options/Serial Interfaces**.
- Read the two following function barcodes:

Enable  
Function Codes



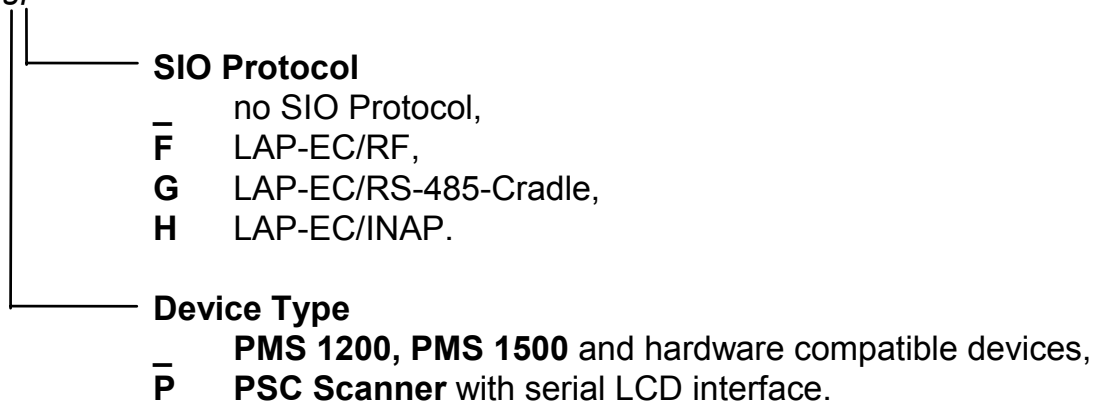
Load default  
Configuration



- Load desired S-File with function **Functions/Software Update/S-File**.
- If the required boot program version isn't already loaded (refer to table on previous page) load boot program MTBOT.S with function **Functions/Software Update/S-File**.
- When the boot program prompts ready load standard software MTSTDxxx.S with function **Functions/Software Update/S-File**.

Although the standard software MTSTD is configurable concerning hard- and software (exception: MTSTD can't be configured for the PSC Scanner with serial LCD interface, with this device the special S-File must be loaded) for the different device and communication types S-files are available. The nomenclature of the S-files conforms to the following scheme:

**MTSTD<sub>gp</sub>.S**



The underline '\_' is only used if there are more parameters different from the underline before the file extension.

Examples:	<b>MTSTD.S</b>	Standard Software for <b>PMS 1200/1500</b> and compatible devices without SIO Protocol for software update with <b>MTCON</b> or terminal emulation program.
	<b>MTSTD_G.S</b>	Standard-Software für <b>PMS 1200/1500</b> and compatible devices for connection to a RS-485-Network. A software update must be performed with <b>MTCON</b> or a terminal emulation program.

The boot program (from v4.4) runs the software update with the actual parameters (SIO parameter, protocol), so that it is possible to load software update via LAP-EC. When the boot program is called it stores the actual parameters in Flash-ROM, so that even after breaking off a software update a new run with these parameters is possible. If it is not possible to run the software update with the actual parameters the boot program can be set to the standard parameters if the reset button is pressed during the RAM test after cold start.

# 10. Technical Data

## Mobile Terminals PMS 1200/1500

	PMS 1200	PMS 1500
<b>Keyboard</b> [Rows x Columns]	-	4x4
<b>LC Display</b> [Lines x Character]	2x16 with background illumination	
<b>Data Memory</b> (RAM)	128 K	
<b>Program Memory</b> (Flash ROM)	128 K for System Software and Application Program	
<b>Serial Interface</b>	RS-232, 300 - 19200 Bd	
	RS-485, 300 - 19200 Bd	
	Face-to-Face Infrared with IR Cradle, 300 - 9600 Bd	
	connectable RF transceiver module, carrier frequency 433 or 434 MHz, active area up to 200 m (depending on environment), 4800 Bd, weight 50 g, length 60 mm	
<b>Real Time Clock</b>	day of week, date and time with seconds resolution	
<b>Power Supply</b>	5 NiCd cells 1.2 V, 600 mA, quick chargeable	
<b>Audio Signal</b>	beeper, configurable volume	
<b>Barcode Formats</b>	EAN/UPC, CODE 39, CODE 128, Code 2 of 5 int/std/matrix, Codabar, CODE 93, Code 11	
<b>Parametrization</b>	with barcode menu or PC software MTWIN (v2.0 and higher).	
<b>Programming</b>	free application programming with C Development Tool MTC	
<b>Measures</b> LxBxH [mm]	100x70x170	100x70x185
<b>Weight</b>	340 g	400 g
<b>Environmental Temperature.</b>	5 - 50° C	
<b>Storing</b>	-40 - 70° C	
<b>Relative Humidity</b>	5 - 95%, not condensing	

## Mobile Terminals HTE 1800/1900 and MobiScan-6x/8x

	HTE 1800	HTE 1900	MobiScan-6x
<b>Keyboard</b> [Rows x Columns]	7x4 + 2		2
<b>LC Display</b> [Lines x Character]	2x16 without background illumination		2x16 with back-ground illumin.
	4x20 with background illumination		
<b>Data Memory</b> (RAM)	128 K		
	512 K		
<b>Program Memory</b> (Flash-ROM)	128 K for System Software and Application Program		
<b>Serial Interface</b>	RS-232, 300 - 19200 Bd		
	RS-485, 300 - 19200 Bd		
	Infrared up to a distance to about 50 cm with INAP, 19200 Bd		
	<b>Only HTE 1900 with NiMH-Accus:</b> RF transceiver module, carrier frequency 433 or 434 MHz, active area up to 200 m (depending on environment), 4800 Bd.		
<b>Real Time Clock</b>	day of week, date and time with seconds resolution		
<b>Power Supply</b>	3 NiMH cells 1.2 V, 580 mA, quick chargeable		
		changeable 9 V block battery	
<b>Audio Signal</b>	beeper, configurable volume		
<b>Barcode Formats</b>	EAN/UPC, CODE 39, CODE 128, Code 2 aus 5 int/std/matrix, Codabar, CODE 93, Code 11		
<b>Parametrization</b>	with barcode menu or PC software MTWIN (v2.0 and higher).		
<b>Programming</b>	free application programming with C Development Tool MTC		
<b>Measures</b> LxBxH [mm]	156x76x35	156x76x160	220x60x35
	295 g	380 g	450 g
<b>Environmental Temperature.</b>	5 - 50° C		
<b>Storing</b>	-40 - 70° C		
<b>Relative Humidity</b>	5 - 95%, not condensing		no restriction
<b>Housing Material</b>	ABS		Aluminium
<b>Protection Class</b>	-		IP 65



## Scanner Modules

	<b>PSC- Standard Optic <sup>1)</sup></b>	<b>Symbol SE 900</b>	<b>Symbol SE 923</b>
<b>Mobile Terminals</b>	<b>PMS 1200/1500</b>	<b>HTE 1800/1900</b>	<b>HTE 1800/1900, MobiScan-6x/8x</b>
<b>Resolution</b>	<b>Depth of Field</b>		
5,0 mil/0,13 mm		5,7 - 6,4 cm	5,7 - 6,4 cm
6,0 mil/0,15 mm	8 - 13 cm		
7,5 mil/0,19 mm	5 - 20 cm	4,5 - 15 cm	4,5 - 15 cm
10 mil/0,25 mm	2.5 - 25 cm	4,1 - 18 cm	4,1 - 18 cm
100% UPC		4,7 - 25 cm	4,7 - 25 cm
20 mil/0,51 mm	0 - 36 cm	0 - 16 cm	0 - 16 cm
30 mil/0,76 mm	13 - 76 cm		
40 mil/1,02 mm		0 - 51 cm	0 - 51 cm
55 mil/1,40 mm		0 - 64 cm	0 - 64 cm
<b>Scan Distance</b>			
<b>Laser Power</b>		0,94 mW ±0,06 mW	0,94 mW ±0,06 mW
<b>Printing Contrast</b>	min. 50 %	min. 20 %	min. 20 %
<b>Scan Rate</b>	35 Scans/s	36 (±3) Scans/s	36 (±3) Scans/s
<b>Scan Angle</b>		bis 60°	bis 60°
<b>max. Pitch</b>	±55°	±60°	±60°
<b>max. Scew</b>	±65°	±65°	±65°
<b>Laser Diode Wave Length</b>	670 nm	650 nm	650 nm
<b>Immunity against environmental light</b>			
<b>Sun Light</b>		107640 Lux	107640 Lux
<b>Halogen Light</b>		4844 Lux	4844 Lux
<b>Flourec. Light</b>			

- 1) The technical data of the other types are contained in the appropriate PSC data sheets.
- 2) The laser beam of this module can picture a narrow ellipses instead of a horizontal line. There can also be a picture of a small dot near the laser beam line. These phenomens don't prejudice the scanning performance at all.

## 11. Accessories

### Protection cap for PMS



Rubber protection cap to soften beats onto the PMS

### Belt Holster for MobiScan 6x



The belt holster made of leather makes it possible carrying the MobiScan at the belt, i.e. when both hands must be free for working.

### Redirection Optic for HTE



The mirror optic for the laser scanner makes it possible to scan horizontal oriented barcodes in an ergonomic way (i.e. out of order lists).

## RS-232 Cable for HTE and MobiScan



Steckverbindung:  
zum Scanner: HCL Interconnectron  
zum Computer: SubD 9 pol.

## 2-Bay Charging Cradle for HTE 1900



Fast Charging Cradle for HTE 1900  
Max. charging time 1,5 h  
Interface: RS-232, RS-485, LAN (Ethernet)

## Cradle MobiScan 6x PTR



Communication/Charging Cradle for MobiScan 6x  
Max. charging time 1,5 h  
Interface: RS-232, LAN (Ethernet)

## 2-Bay Cradle MobiScan 6x/8x UDS



Charging Cradle with two UDS connectors  
Charging Time: 1,5 h  
Interface: RS-232, RS-485, LAN (Ethernet)

## 1-Bay Cradle UDS with RS-232 and LAN Interface



Charging Cradle with UDS connector  
Charging Time: 1,5 h  
Interface: RS-232, LAN (Ethernet)

## Cradle 1-fach UDS



Charging Cradle with UDS connectors  
Charging Time: 1,5 h

## Accesspoint for DECT RF Network



RF Module: MD-32  
Interfaces: RS-232, LAN

Connection up to 16 mobile terminals per each  
Accesspoint possible

## 12. Recycling Orders

### Battery Order

Following the 'Verordnung über die Rücknahme und Entsorgung gebrauchter Batterien und Akkumulatoren' (shortcut: Batterieverordnung - BattV) BGBl I page 658 from 27.3.1998 manufacturers and distributors only may put batteries and accumulators containing poisonous material into circulation if they ensure that the consumer may return it back after usage. This Battery Order is also valid for salvage devices which contain fixed installed batteries and accumulators.

In the same manner the consumer is bound to recycle used batteries and accumulators following this Battery Order.

The complete (german) Battery Order may be inspected under Internet address <http://www.umweltrecht.de/recht/abfall/bat.htm>  
Our home page contains a corresponding link.

Therefore we offer a feeless returning back service (free to the door) for used batteries and accumulators coming from our devices and also for complete salvage devices coming from us which contain fixed installed batteries and accumulators to our clients.

### IT Salvage Devices Order

At the time this manual was printed only a draft of the 'Verordnung über die Entsorgung von Geräten der Informations-, Büro- und Kommunikationstechnik' (IT-Altgeräte-Verordnung - ITV) which was passed from the Bundeskabinett at 19.5.1998. Following this draft manufacturers and importers must take back salvage IT devices to recycle it.

The draft of the IT Salvage Devices Order may be inspected under Internet address <http://www.nordschwarzwald.ihk.de/umwelt/un-na2-98.htm>  
Our home page contains a corresponding link.

We offer to our clients already now a feeless returning back service (free to the door) for salvage devices which come from our production.

### **13. Additional Manual TECHNICAL MANUAL for Mobile Terminals of PMS, HTE, and MobiScan Series, Single Connection Components, Network Components and Accu Charging Devices**

Manual for device administrators and service purposes.

#### **APPLICATION PROGRAMMING MANUAL**

##### **for Mobile Terminals of PMS, HTE, and MobiScan Series**

This manual is included in the standard delivery package of **MTC** (C-Development-Kit for MTs) and deals as a reference for MT application programmer.

#### **CONNECTIVITY & APPLICATIONS**

##### **with Mobile Terminals of PMS, HTE, and MobiScan Series, Single Connection Components, Network Components and Accu Charging Devices**

This manual contains an overview about Mobile Terminals of PMS, HTE and MobiScan Series, about the single connection components Communication/Charging Adapter and IR Cradle, about network components NAC, NARF, IR Cradle, INAP, NA-485 and about accu charging devices and shows the application of these devices. Another chapter contains applications examples.

#### **WINDECT**

##### **FileExchLib, ODBCLib, COMLib, PortServ**

##### **Windows-Software-Paket für den Betrieb eines DECT- Funknetzwerkes mit den mobilen Terminals der PMS-, HTE-, MobiScan- und PocketScan-Reihe**

This manual documents the functionality and parametrization of the WinDECT Software.

#### **DECT RF NETWORK**

##### **Concept & Installation**

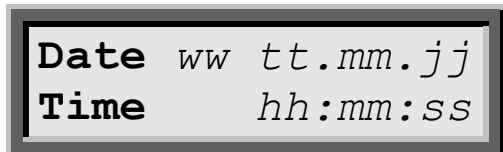
##### **for mobile Terminals of PMS, HTE, MobiScan and PocketScan Family**

This manual introduces the concept of the RF Network and contains instructions for the installation of it.

## 14. Standard Program MTSTD

### Initialization following Cold Start

After the device performed cold start datum and time will be displayed:



```
Date  ww  tt.mm.jj
Time   hh:mm:ss
```

With key **+** resp. **ENTER** datum/time can be overtaken. Changing date/time can be done by pressing key **C** (devices with numerical keyboard) resp. **CLR** (devices with alphanumerical keyboard). After entering date/time a password may be entered.



```
Set Password
█
```

Entry is optional and may be stepped over with **+** resp. **ENTER**. An entered password must be confirmed :



```
Confirm Password
█
```

After confirming the entered password the entry mask for data capturing will be shown.



## Data Capturing

After entering date/time and password the Standard Program mask is shown.

**Standard Program 2** deals to capture article numbers and quantities.



When the cursor resides in the empty article number field an article number can be read by pressing the trigger switch.

The scanned article number is shown on the LCD with quantity "1". The symbol \* at the last position on the LCD shows that an article number was scanned just now. When pressing the trigger switch or any key again this symbol vanishes. The cursor resides under the "1" in the quantity field, so that this could be overwritten by the following entry.

The record may be stored into data memory by pressing key + or by the scanning the next article number.

**Standard Programm 2** deals to capture article numbers.



When the article number field ist empty an article number can be scanned.

The scanned article number will be shown on the LCD an is stored into data memory. The article number keeps staying on the display, the cursor is switched off and symbol \* at the last position on the LCD shows that an article number was scanned just now. By pressing the trigger switch the next time the empty input mask with the cursor at the first position is shown again.

The keys **0...9** deal for manually data entry. In case of devices with numerical keyboard the entry of alphanumerical characters can be done by entering the decimal ASCII Code by means of the **SHIFT** key or with the Standard Barcode Menu.

## Displaying Records

With the keys ◀ and ▶ record by record can be scanned forward and backward through data memory.

By holding down key **SHIFT** and pressing key Taste ◀ or ▶ a jump to the beginning respectively to the end of data can be performed. In case of devices with alphanumerical keyboard key ◀ or ▶ must pressed before this function can be executed.

The selected record ist shown and the cursro is switched off. When the trigger switch or any key is pressed the actual input mask is shown again..

## Modifying/deleting/undeleting a Record

### Devices with numerical Keyboard

The actual input mask must be empty for this functions. Display the record you want to change, delete or undelete (as described in previous section). Press key **SHIFT** and hold it down. Press key **C** as often until the desired function: "Change Record?", "Delete Record?" or "Undelete Record?" is displayed in line 2 of the LCD. Release both keys. If you now confirm with key **+**, the displayed function is executed. Each other key breaks the function. Deleted records are displayed with the symbol # at the last cursor position of the LCD.

### Geräte with alphanumerical Keyboard

Press key **DEL** instead of keys **SHFIT C**.

By pressing key **+** the displayed function will be performed. Each other key lead to cancelling the function. Deleted records are shown with symbol # at the last LCD position, in case of selected configuration parameter **Show deleted Record**.

## Function Keys

Functions are performed by holding down key **SHIFT** and pressing the appropriate key **0** to **9**.

## Data Transmission

Data transmission can be done with MTWIN or a client specific application.

### **With Charging/Communication Adapter or Infrared Cradle (offline)**

Connect the charging/communication adapter or the infrared cradle to the appropriate interface (default for MTWIN is COM1) of the PC and start MTWIN on the PC.

### **With RS-485 Cradle or LAP-EC (offline)**

Connect the RS-485-Cradle (resp. the RS-485 network) to the appropriate interface (COM1 or COM2) of the PC and start PRONET on the PC.

### **With RF Modue and LAP-EC (online)**

Connect the RF base station (accesspoint) to the appropriate interface (COM1 or COM2) of the PC and start PRONET on the PC (refer to **PRONET MANUAL**).

### **With Charging/Communication Adapter (RS-232) or Infrared Cradle**

The data transmission may be performed in several ways:

- Manual data transmission with the appropriate function codes or the appropriate menu function.
- Calling the data via the serial interface from PC program MTWIN or from a client specific application.
- In case of configuration parameter **Start Data Transmission: PowerOn+ CTS or SIO Command** set after switching on the terminal via interface line DTR "Ready for Data Transmission" will be show on the LCD.

At the beginning of data transmission "Data Transmission active..." will be shown an the captured data are transmitted. The end of data transmission will be shown with "Data Transmission completed" angezeigt.

If the terminal is connected to the serial interface during data capturing and therefor switched on all the time, the captured data may be called using the appropriate SIO command.

**ATTENTION:** In case of infrared data transmission a finally error rate can't be prevented (below 1 promille). Therefor when using an infrared cradle the XModem-protocol **muss** be used for data transmission!

### With RF Communication or RS-485 Network and LAP-EC

In case of active LAP-EC the captured data are first stored in data memory. The data transmission is then performed in background to the PC. An established data connection between terminal and PC is required. This data connection is active when the terminal is logged in and right below on the LCD the symbol **o** is shown. When using an RS-485 cradle the terminal must be put into the cradle.

After the data transmission is successful performed the data transmission lock should be set by SIO command **T1** ("Data transmitted" will be shown). In this condition the data memory may be cleared by SIO command **CLRMEM** or by holding down key **SHIFT** and pressing key **C** (resp. key **DEL** in case of alphanumerical keyboard).

The transmitted data have the following format:

```
%%STX-ssssss/rrrrr/tt.mm.jjjj/hh:mm:ss<CR><LF>
<artical no.><HT><quantity><CR><LF>
      :           :           :           :           :
<artical no.><HT><quantity><CR><LF>
%%ETX-cccc<CR><LF>
```

<i>rrrrr</i>	Amount of the following data records,
<i>ssssss</i>	Devices serial number (refer to data plate),
<i>tt.mm.jjjj</i>	Date of data transmission,
<i>hh:mm:ss</i>	Time of data transmission,
<i>cccc</i>	16-Bit checksum in hex format. The checksum is calculated starting with "%STX" up to "%ETX-" included by adding all printable ASCII characters (hex codes \$20 up to \$7E included).

## Erasing the Data Memory

To clear the data memory manually the "Data transmitted". Condition is required. This condition is reached after a succesful data transmission and/or by setting the data transmission lock by SIO command **T1**.

### Devices with numerical Keyboard

By holding down key **SHIFT** and pressing key **C** "Delete Data Memory?" will be shown. After confirming with key **+** data memory will be cleared. All other key will cancel this function.

### Devices with alphanumerical Keyboard

Press key **DEL** instead of key **SHIFT C**.

# Test Barcodes

## Code 39



CODE-39



01234

---

## UPC



---

## EAN



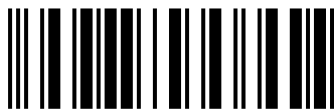
23456785



2345678901234

---

## Code 2/5 int.



4567890

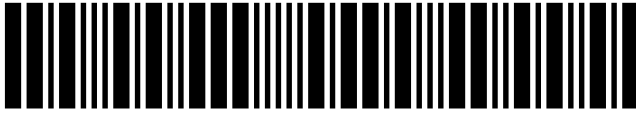


01223344556677

**Code 2/5 std.**



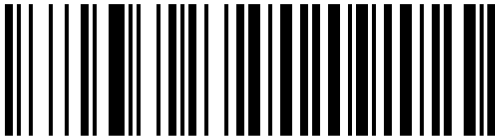
0123



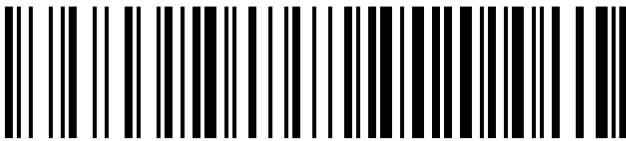
123456

---

**Code 128**



Code-128



abc-ABC-123