aitronic

MTWin-3

Operating Manual

Manual

We deliver not just our mobile Data Capturing Devices with Standard Software...

but also develop to customers wishes

- Applications for this units
- PC Applications
- Hardware

and advise you on

- Creating concepts for mobile data collection,
- Queries surrounding the Bar code,
- Hardware problems,
- PC-Problems.

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13.10.2014	New chapter „Propagation of Destination File with AutoHexkey"

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General

MTWin and MTW are contained in the standard software package and are delivered by aitronic togehter with the hardware. MTWin provides functions for the configuration of this terminals and for the data exchange with a PC.

MTW offers a subset of the MTWin functionality and can used especially for for Background Operation.

MTWin and MTW require Windows 95 and higher.

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System Requirements

Operating System
Microsoft Windows 95
Microsoft Windows 98
Microsoft Windows ME
Microsoft Windows XP
Microsoft Windows 2000
Microsoft Windows 7 (32 Bit)

Processor
Pentium System

Memory Required
200 kB

Disk Space
5 MB

Interfaces
min. 1 x RS-232 or 1 x USB

Other Hardware
Maus (recommended)
Keyboard
Monitor, min. Resolution 800 x 600

For Installation
Floppy Disk Drive, CD ROM-Drive or Internet Connection

MTWin-3 or MTWin-4?

Due to the fact that the installation of MTWin-4 isn't unproblematic because of the combined driver installation, MTWin-4 should only then be used when devices must be supported which are directly connected via USB.

The two different MTWin versions have the following properties.

MTWin-3
- MTWin-3 is able to communicate wiht devices which are connected via COM ports (real and virtual) or via LAN.
- Any count of COM ports may be served.
- Devices which are communicated with directly via USB (don't confuse it with a virtual COM port which is generated by a RS-232/USB adapter) can't be served.
- For a software update of a device which is connected via a COM port MTWin-3 will call the program M16Start. For a software update M16Start may be used without MTWin-3.
- Software updates via LAN are not possible.

MTWin-4
- MTWin-4 must be used for devices which are communicated with directly via USB (don't confuse it with a virtual COM which is generated by a RS-232/USB adapter) I.e. when a LogiScan-1100 is directy connected with an USB cable. For such devices the station window will be automatically opened when the device is connected and will be closed when the device is disconnected.
- MTWin-4 may also communicate with devices which are connected via a COM port (real and virtual) or via LAN.
- MTWin-4 may serve max. one COM port.
- MTWin-4 handles Software updates of connected devices itself.
- Software updates via LAN are not possible.

MTWin Installation

The program MTWin is required for data exchange with MDE device of **PMS, HTE, LogiScan and PocketScan** family. There are two ways for the installation of MTWin:

- Download MTWin from the download area of our website www.aitronic.de, open it and follow the installation instructions.
- Use an appropriate CD, which contains a directory MTWIN. Execute SETUP.EXE in the directory, which contains the files and follow the installation instructions.

Desktop

Main Window

Symbol Bar

Status Window

Status Bar

Size of reception file
MTWin000001.TXT
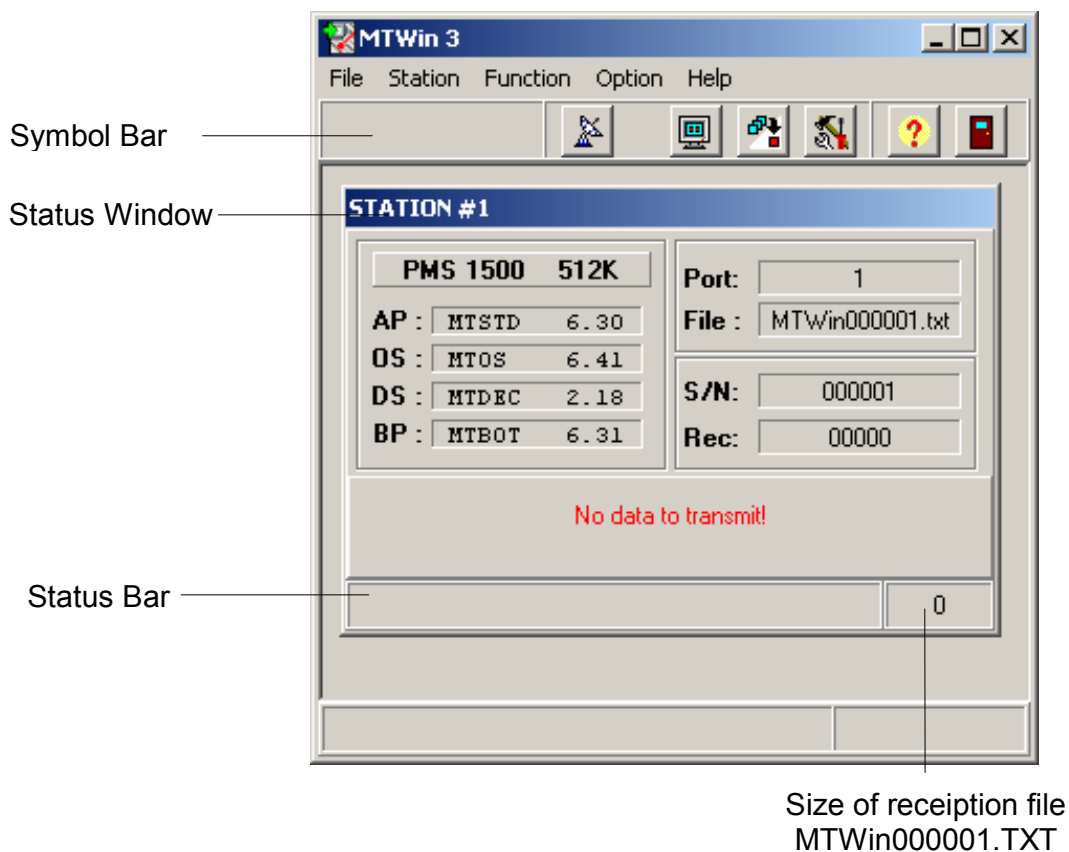
Menu Bar

File

Save Desktop	Saving all settings,
Open File	Opening a file with the editior with is selected under **Option/General**. The Extension for file listing can be set to „all" or „text file".
Delete File	Deleting a file. The Extension for file listing can be set to „all" or „text file".
Exit	Exit MTWin.

Station

General WINDOWS window functions for the station window.

Function

Utilities	Programming serial number and real time clock, deleting data memory and data transmission lock of the MDE device.
Receive Data	Calling the captured data from the MDE device
Software Update	Loading a program into the MDE device
Load Table	Loading a table into the MDE device
Load Configuration	Loading a configuration file into the MDE device
Edit Configuration	Displaying and modifying the MDE devices configuration.

Option

Language	Setting the language of MTWin
Communication Port	Selection the communiction port for the active Status window
Transmission	Setting options for data reception and storing of received data
General	Setting password, selecting Editor, selecting symbol after pogram sart

Help

Calling MTWin Help.

Symbol Bar

The symbol bar contains 5 keys for often used functions:

Receive Data

Starts reception of data from the MDE device which status is shown in the active status window and stores it in the form which is set in the transmission parameter of this status window.

Status Window

Returns back from transmission parameter or utilities window to the status window.

Transmission Parameter

Switches from status window to transmission parameter window.

Utilities

Switches from status window to utilities.

MTWin Help

Calls the MTWin help system.

MTWin Exit

Exit MTWin (as menu function File/Exit). When some settings were changed "Save Desktop?" will be displayed. With confirmation "ok" all settings will be stored and will be active with the next start of MTWin.

Status Bar

The status bar resides at the bottom of the main window of MTWin and is devided into two fields:
- in the left field a short explanation of the element to which is pointed by the mouse pointer will be shown,
- in the right field the size of the reception file MTWIN.TXT will be shown.

Status Window

A new status window can be opened with menu function Window/New and will be assigned to a distinct COM port and therefore to the connected MT.

MTWin can serve several MDE devices which are connected to different COM ports at the same time. The provided menu functions and function keys are assigned to the active status window.
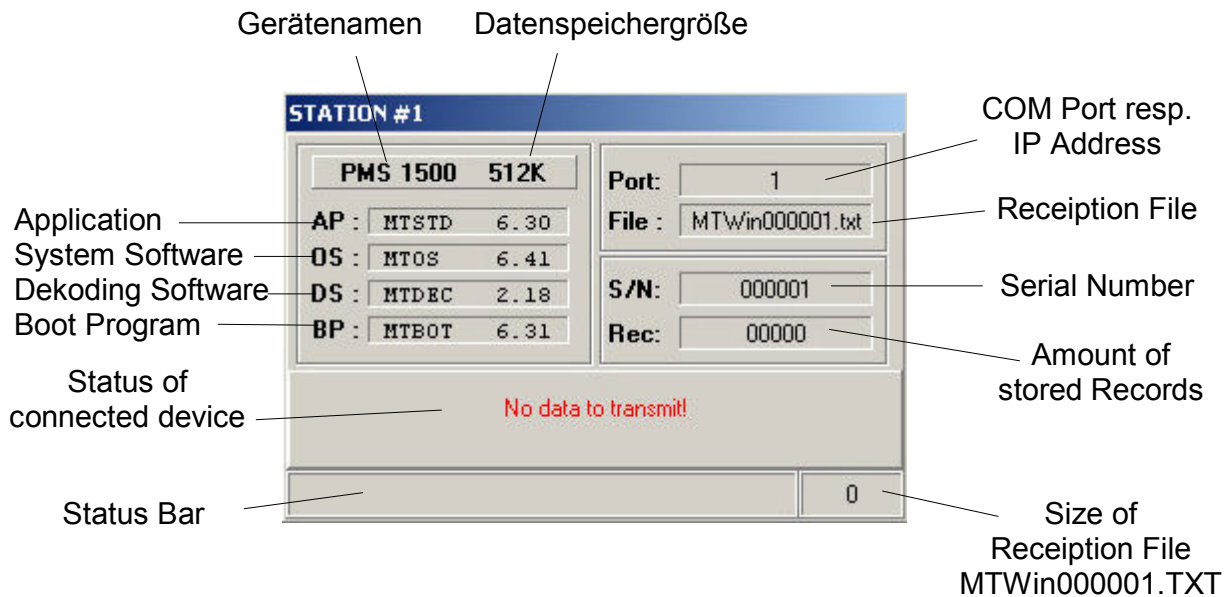
Device Name
The device name can be changed in Configuration/Hardware.

Data Memory Size
The size of data memory can be 32K, 128K, 512K, 2MB or 4MB.

Application
Name and version of application (here it is the Standard Software v6.30).

System Software
Name and version of operating system (also refer to Software Update).

Decoding Software
Name and version of Dekoding Software.

Boot Program

Name and version of Boot Program (also refer to Software-Update).

Status of connected Device

Here it will be shown whether the connected terminal contains data to be transmitted.

Status Bar

The data transmission progression will be shown here when transmitting data or running a software update.

COM Port respectively IP Address

COM port number, respectively IP address of the connected MDE device.

Reception File

Name of reception file depending on Option/Transmission/
Destination File (either MTWIN.TXT or MTssssss.TXT, ssssss = Serial Number).

Serial Number

Serial Number of connected MDE device.

Amount of stored Records

Amount of records stored in the MDE device.

Size of Receiption File

If under Option/Transmission destination file name generation with serial number is selected, the size of this file is shown here. In case of collection file MTWIN.TXT, the size of this file is shown in the status bar of the main window.

Functions

Utilities

Progam Serial Number

PLEASE NOTE: This function is only designated for old (*PMS, THE 1800/1900, LogiScan-6x/7x/8x*). The serial numbers of new devices (*PocketScan, LogiScan-600/800* and *HTE-200*) can't be modified.

Each MDE device contains a 6-digit numerical serial number stored in Flash ROM which is identical to the serial number on the name plate at handle grip of the PMS respectively at the back of the HTE.

The serial number
- is output at the beginning of the data transmission,
- is used as RF network address,
- is shown in the status window of MTWin. To retrieve the serial number MTWin uses the SIO command S,
- can be changed with the MTWin function Program Serial No. (menu Functions/Utilities). This MTWin function uses the SIO command S/N:ssssss.
- '000000' sets the MDE device to permanent Test Mode.

Set Date/Time
The MDE device contains an integrated real time clock which must be set after coldstart either via the MDE device keyboard or with the MTWin function Set Date/Time (menu Functions/Utilities)

This MTWin function takes the actual PC time and sends it by using SIO command SETTIM:wwttmmjjhhmmss to the MT.

Delete Data Memory

The MTWin function **Delete Data Memory** from the menu **Functions/Utilities**

- sets at first the Data Transmission Lock by using SIO command T1. The MDE device now resides in state "Data transmitted",
- then the data memory of the MDE device is deleted by using SIO command CLRMEM.

Having deleted the data memory the first entry mask of the application program is shown.

Reset Data Transmission Lock

The MTWin function **Reset Data Transmission Lock** from the menu **Functions/Utilities** resets the Data Transmission Lock by using SIO command T0. Having executed this function the MDE device shows the last selected entry mask again.

ATTENTION: This function should only be used if it is required to transmit data once more which were already transmitted correctly respectively to append new captured data to already transmitted data.

Receive Data

Starts reception of data from the connected MDE device, which status is shown in the active status window and stores it in that way which is selected in the transmission parameter of this window.

Software Update (*PMS, HTE and LogiScan-6x/8x*)

The MTWin function Software Update from the menu Functions deals to load a new software module or a complete software into the MT. Loadable are

- the Boot Program.
- the standard software (nomenclature of the different S file types refer to section downward). This requires that the appropriate Boot Program is already installed (refer to table below
- a client specific application which was compiled with the C-Development-Kit . This requires that the appropriate standard software is already installed.
- a client specific application packed with the standard software. This requires that the appropriate Boot Program is already installed (refer to table below

Following items must be noticed for software update:

- In case of operating system versions below 4.0 before running the software update it is required to install the appropriate Boot Program (refer to table below).
- Before updating from standard software below v4.4 to v4.4 or higher the appropriate Boot Program must be installed twice (because of the Boot Program checksum in v4.4 and higher).
- Boot Program v4.4 and higher carries over the serial number when running a software update.

Distinct Operating System versions are only runnable with distinct Boot Program versions. Following table shows these dependencies:

Operating System	Boot Program
93017 v4.00 ... v4.3x	94065 v4.32
93017 v4.4x	94065 v4.4
93017 v4.5x	94065 v4.5
MTOS v5.x	MTBOT v5.x
MTOS v6.0x	MTBOT v6.0x
MTOS v6.0x	MTBOT v6.1x
MTOS v6.2x	MTBOT v6.2x
MTOS v6.3x	MTBOT v6.3x
MTOS v6.3x	MTBOT v6.4x

Although the standard software MTSTD v5.0 is full configurable concerning hard- and software (exception: MTSTD cannot be configured for the PSC Scanner hardware with serial display interface. In this case the appropriate S file must be loaded), for different device types and communication types ready S files are available. The nomenclature of these S files correspond to following sheme:

MTSTD.S   Standard Software for *PMS*, *HTE* and *LogiScan* without SIO
                    protocol.

MTSTD_F.S   Standard Software for *PMS*, *HTE* and *LogiScan* with RF module
                    and communication protocol LAP-EC.

The Boot Program (v4.40 and higher) performs the software update with the actual
SIO parameters. When the Boot Program is called it saves the actual parameters
into Flash ROM to make it permanent in case of an error during the update and a
following cold start.

Should it not be possible for any reason to run a software update with the actual
parameters the Boot Program can be caused to switch to the standard SIO
parameters by pressing the reset button during the RAM test phase after cold start.

Software Update (*PocketScan, LogiScan-800*)

M16Start Installation

M16Start is required to run a software update with a PocketScan. For the installation of There are two ways to install M16Start:

- Download M16Start from our websites www.aitronic.de download area, open it and follow the intallation instructions.
- Use an appropriate CD, which contains the directory M16Start. Execute SETUP.EXE in this directory and follow the intallation instructions.

Afterwards the following step is required:

- At the first double click on a MOT file the EXPLORER opens the window „Open with". Here this file type must be linked with M16START.EXE.

Automatic Update

If MTWIN detects an available file for a software update after a data transmission the user is informed about that. The user can choose wether to run the update or to cancel. If the user selects the update M16Start will be executed.

Manual Update

If there is no data transmission M16Start must be executed manually with MTWIN function **Function/Software Update**.

M16Start prompts the user to do a reset with the connected PocketScan. This is normally done by holding down key **SHIFT** and pressing key **ESC** two times. Only if the PocketScan doesn't react to this keys the reset must be done by pressing the reset switch with a paper clip through the small hole below the keyboard.

ATTENTION: Don't demage the loudspeaker which resides below the 6 small holes near by each other.

Load Table

The MTWin function **Load Table** from the menu **Functions** serves to fill the MDE devices data memory with data. This command is executed only in case of empty or transmitted data memory.

In case of **PocketScan** this function is application specific and not included in the standard software.

After receiving SIO command **L** the MDE device displays the message **"Receiving Data ..."** and is ready to receive the following data. The required data format is:

```
L<CR><LF>
artikelnummer;menge<CR><LF>
artikelnummer;menge<CR><LF>
        .        .    .    .
        .        .    .    .
        .        .    .    .
artikelnummer;menge<CR><LF>
artikelnummer;menge<CR><LF>
<CR><LF>
```

In general the format of data to load can be the same as the format of data transmitted. The only exception is the empty line following the last data record.

Configuration (*PMS*, *HTE* and *LogiScan-6x/8x*)

A MDE device contains three configuration sets with all of the same structure:

- The actual configuration resides in RAM and may be manipulated as desired at runtime by means of the function barcodes from the PMS 1200/1500, HTE 1600 MANUAL. The actual configuration can be stored in the application Flash ROM area as user configuration.
- The user configuration resides in the applications Flash ROM area and is loaded as actual configuration into the RAM when the MDE device is initialized.
- The default configuration resides in the operating systems Flash ROM area. and contains the default configuration parameter (these are marke with the symbol * in the PMS 1200/1500, HTE 1600 MANUAL). The default configuration cannot be overwritten.

Especially in case of using the standard software it is important to have the possibility to modify the configuration parameter at runtime.

When programming a client specific application all configuration parameter in the applications Flash ROM area can be presetted. Additional the configuration parameters manipulation is also possible at runtime.

Load Configuration

The MTWin function **Load Configuration** from the menu **Functions** is used to load a configuration set directly from a file into the MDE device.

Edit Configuration

The MTWin function Edit Configuration from the menu Functions is used to read the user configuration out of the connected MDE device (for editing it or to store it into a file).

The configuration parameter are devided into the 6 following groups which can be selected like "file cards":

- **Hardware**
- **Communication**
- **Barcode Decoding**
- **Barcode Lengths Fixing**
- **Data Management**
- **General**

In each "file card" the following function keys are available:

Load   Loads a configuration set from a file.
Save   Stores the configuration set which is just edited into a file.
OK   Closes editing of a configuration set. It is questioned whether
                  the edited configuration set should be stored into the M
Cancel   Breaks editing of the configuration set.
Help   Calls the help for the shown "file card".

Configuration (*PocketScan und LogiScan-800*)

Load Configuration

The MTWin function **Load Configuration** from the menu **Functions** is used to load a configuration set directly from a file into the MDE device.

Edit Configuration

The MTWin function Edit Configuration from the menu Functions is used to read the user configuration out of the connected MDE device (for editing it or to store it into a file).

The configuration parameter are devided into the 6 following groups which can be selected like "file cards":

- **Common**
- **System**
- **Keyboard**
- **Sound**
- **Display**

In each "file card" the following function keys are available:

Load	Loads a configuration set from a file.
Save	Stores the configuration set which is just edited into a file.
OK	Closes editing of a configuration set. It is questioned whether the edited configuration set should be stored into the M
Cancel	Breaks editing of the configuration set.
Help	Calls the help for the shown "file card".

Destination File Passing Procedure

This procedure described as follows is only activated in case of Ini-file parameter `CtrlFilesEnable=1` set. Per default this function is disabled!

In order to pass the destination file filename.DAT (filename = collection file MTWIN.DAT respectively MTssssss.DAT, in which ssssss is the serial number of the connected MT) to another application under WINDOWS and in network environments without producing file access conflicts the following algorithm is used. The handshaking in this algorithm is done with two files. In this way it is possible to implement the passing procedure with a command language under any operating system (i.e. under DOS with a DOS-Batch).

*filename.*_CL   This 'Client Lock File' is created and deleted by MTWin. The existance of this file signals that the destination file is used by MTWin at this time and could not be passed to the application.

*filename.*_HL   This 'Host Lock File' is created and deleted by the application to which the destination file should be passed. The existance of this file signals that the destination file is passed to the application at this time and could not be used by MTWin.

On the following page the flow chart for the file destination procedure is shown.

ATTENTION: If the file filename._HL exists for longer than 10 seconds MTWin forces the access to filename.DAT again and deletes *filename.*_HL.

```
                    ┌──────────────┐
                    │    Start     │
                    └──────┬───────┘
                           │
                           ▼
                        ◇ Does file
                        filename.DAT      no
                          exist ──────────────────────┐
                           ?                           │
                           │ yes                       │
                           ▼                           │
                        ◇ Does file                    │
                        filename._CL      yes          │
                          exist ──────────────────┐    │
                           ?                       │    │
                           │ no                    │    │
                           ▼                       │    │
                    ┌──────────────┐               │    │
                    │ Create file  │               │    │
                    │ filename._HL │               │    │
                    └──────┬───────┘               │    │
                           │                       │    │
                           ▼                       │    │
                        ◇ Does file                │    │
                        filename._CL               │    │
                          exist ─────────┐         │    │
                           ?             │         │    │
                           │             ▼         │    │
                           ▼       ┌──────────────┐│    │
                    ┌──────────────┐│ Delete file ││    │
                    │ Rename file  ││ filename._HL││    │
                    │ filename.DAT ││             ││    │
                    └──────┬───────┘└──────┬──────┘│    │
                           ▼               │       │    │
                    ┌──────────────┐       │       │    │
                    │ Delete file  │       │       │    │
                    │ filename._HL │       │       │    │
                    └──────┬───────┘       │       │    │
                           ▼               │       │    │
                    ┌──────────────┐       │       │    │
                    │  Passing of  │       │       │    │
                    │ renamed file │       │       │    │
                    └──────┬───────┘       │       │    │
                           ▼◄──────────────┘       │    │
                    ┌──────────────┐               │    │
                    │     End      │               │    │
                    └──────────────┘
```
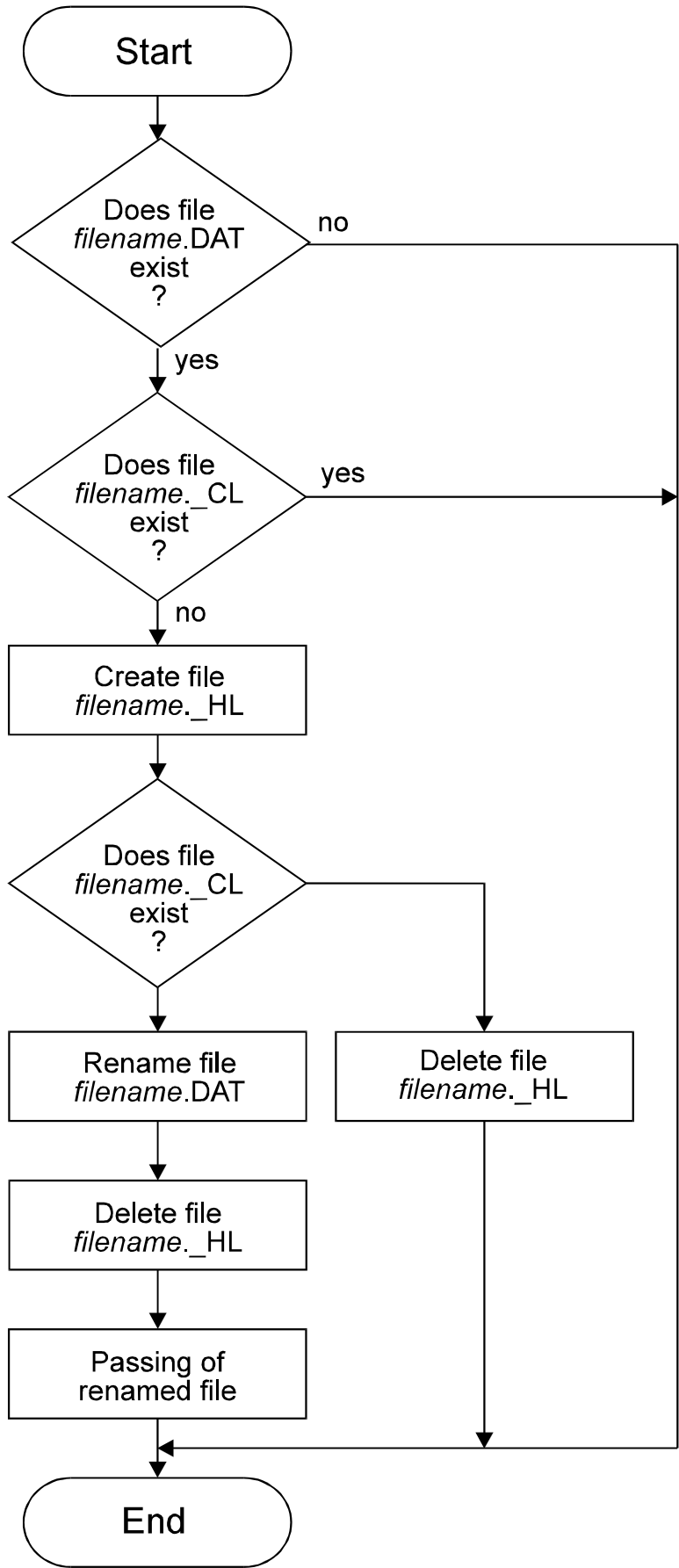
Option

Language

Here the MTWin user interfaces language can be selected.

Port

COM

The desired COM port must be choosed from the list. If the MDE device is connected via a LAN adapter LAN must be selected. In this case the IP address and the IP port must be provided under LAN Options.

Device Type

By selecting the device type the appropriate COM port properties are set. Durch Auswahl des Gerätetyps ausgewählt werden. *PMS, HTE* and *LogiScan-80* (old device series) communicate 9600 Bd by default, *PocketScan* and *LogiScan-800* (new device series) with 19200 Bd.

LAN Option

The IP communication between MTWIN and a MDE device requires the installation of an RS-232/LAN Module in the concerning network.

The IP communication is enabled by selection of **Port/LAN** (refer to previous section). The IP address of the RS-232/LAN Module must be entered under **LAN Option/IP Address**. **LAN Option/IP Port** is preset by „10001" and may modified as desired.

A reconnect of a LAN connection after line interruption durates about 450 seconds. This time may be shortend by setting the LAN adapters TCP Keepalive Time to 10 (100 seconds because this parameters dimension is 10 seconds) by means of the Lantronix **DeviceInstaller**. A value below 10 leads to problems and should not be used.

Search

With this function a connected MDE device can be searched for. All ports an baudrates will be scanned. MDE devices of old series (LogiScan-65/75/85 and HTE 1800/1900) have to be switched on before starting the search function.

Transmission

Destination File
Collection File MTWIN.TXT
The received data of all connected MDE devices are stored into the collection file with the name MTWIN.DAT.

Generation with Serial No.
For the storing of the received data of the connected MDE device a file with the name MT*ssssss*.DAT (*ssssss* is the serial number of the concerning MDE device) will be generated.

After Data Receiption
Set Data Transmission Lock
After errorfree data receiption the Data Transmission Lock in the MDE device will be set.

Delete Data Memory
After errorfree data receiption the **Data Transmission Lock** in the MDE device will be set. Following that the data memory will be deleted by sending SIO command **CLRMEM** to the MDE device.

Storing of Frame Lines
Header Line %%STX...
The header line of the received data (starting with `%%STX...`) will be stored into the destination file.

Trailer Line %%ETX...
The trailer line of the received data (starting with `%%ETX...`) will be stored into the destination file.

Options
Automatic Receiption
If this option is selected the data of a MDE device is called automatically when the MDE device is connected to MTWin.

Auto.Prog.Update (only *PocketScan*)
If this option is selected and a software update file is available after data transmission the update will be performed.

Directories

Destination Directory

Here a path name for the data to receive can be provided. If no path is provided destination directory is the MTWIN directory. In other case the provided directory is used. It must be taken care for the access rights for the concerning directory.

Reception File Name

If `Option/Transmission/Collection File` is selected, into the file name for the receiption file the following parameter may be inserted:

`%S`   6 digit serial number of the MDE device.
`%N`   Station number (`1...n`)
`%D`   Date with format `jjjjmmtt`
`%T`   Time with format `hhmmss`

The file name or the extension (or parts of one of that) may be set to ###. The concerning part then will then be replaced by 000 and incremented after each storing of this file. After reaching 999 it will be continued beginning with 000 again.

Example 1

Destination File: Collection File
Destination Directory: `f:\inventur\2003`
Reception File: `mtwin###.TXT`

1. stored file: `f:\inventur\2003\mtwin001.TXT`
2. stored file: `f:\inventur\2003\mtwin002.TXT`
3. stored file: `f:\inventur\2003\mtwin003.TXT`

Example 2

Destination File: Collection File
Destination Directory: `c:\mt\datenimport`
Reception File: `mtwin.###`

1. stored file: `c:\mt\datenimport\mtwin.001`
2. stored file: `c:\mt\datenimport\mtwin.002`
3. stored file: `c:\mt\datenimport\mtwin.003`

Example 3

Destination File: Generation with Serial Number (*ssssss*)
Destination Directory: `g:\inventurdaten\###.TXT`
Receiption File: `###`

1. stored file: `g:\inventurdaten\001`*ssssss*`.TXT`
2. stored file: `g:\inventurdaten\002`*ssssss*`.TXT`
3. stored file: `g:\inventurdaten\003`*ssssss*`.TXT`

General

Password
Here a password can be provided which is then used to protect following functions:

- The functions of menu File excluding the functions Open File and Delete File,
- The functions of menu Function excluding the function Receive Data,
- The functions of menu Option excluding the function Language.
- Die Funktionen des Menüs Option bis auf die Funktion Sprachen.

Editor
Here the path and file name of the editor which should be used with function File/Open File to edit data files must be provided. NOTEPAD.EXE is default.

Symbol after Programm Start
If this option is selected MTWin is shown as icon after program start.

Logging

After MTWIN installation you have to execute MTWIN and terminate it one time. After that you will find the following entries in `MTWin.ini`:

```
LogLevel=0
LogDelimiter=32
LogPath=.\Log
LogFileValidityPeriod=30
```

Make sure that directory `.\MTWin\Log` exists. The parameter `LogDelimiter` indicates the seperator character. This must be provided in decimal ASCII code. For a semicolon you must use the decimal ASCII code 59. The option `LogFileValidityPeriod` indicates after which count of days the log files will be automatically be deleted. Each day a new log file with file name `JJJJ-MM-DD.log` (i.e. `2008-12-05.log`) will be generated. The log file entries have the following structure:

```
[Uhrzeit] [Station] [StatusNo] [SerialNo] [Records] [StatusText]
```

Example:

```
12:49:01 1 05 209589 00001 data received
```

This entry means that a data record at 12:49:01 from station 1 from a terminal with serial number 209589 was received.

Setting `LogLevel=0` no log events will be recorded. `LogLevel=1` will record all events. The following table shows which events at which log level will be recorded:

Event	LogLevel					
	0	1	2	3	4	5
start MTWin		x	x			
close MTWin		x	x			
start station		x	x			
close station		x	x			
reset		x	x			
disconnect		x	x			
offline		x	x	x		
online		x	x	x		
data receiving		x	x	x		
data received		x	x	x	x	x
data transmitted		x	x	x		
data locked		x	x	x		
command mode		x				
software update		x	x	x		
booting		x	x			
not uses		x				
load table		x	x	x	x	
port error		x				
set option		x				
wait of response		x				
reading config		x				
read config		x				
writing config		x				
written config		x				
error log reading		x				
error log read		x				
error log clear		x				
file error		x				
dir read		x				

Automatic Table loading

MTWin offers automatic table loading. For this function the following parameters must be inserted in file `MTWin.ini` beneath section `[DEFAULT]` and `[STATION1]` (and perhaps for further stations):

```
AutoUpload=1
UploadPath=<full path of table to be load>
```

The loading of a table requires an empty data memory. If the data memory contains data, these are tranmitted to MTWIN before loading the table.

Background Operation with MTW

MTW offers the functionality of MTWin excluding Software Update and Configuration. MTW has vice versa MTWin two additional options which supports background operation.

Options

Clicking with the right mouse button a popup menu opens by which execution and adjustment of mostly MTWin like functions can be performed. Providing a password in file MTW.INI the opening of this popup menu will be suppressed.

MTW has two additional parameters vice versa MTwin:

Exit after Receive

MTW is automatically terminated after data or table transfer. If you want to receive data automatically and terminate MTW after that you must activate the parameters autom.Reception and Exit after Receive.

Exit after Timeout

To terminate MTW in each case after a timeout of 1 to 65 seconds this time value must be provided in the field Exit after Timeout. A value of 0 seconds disables this function. The timeout count starts new after each transaction.

Command Line Parameter

Following options with an additonal filename can be provided as command line parameter:

MTW /t*filename*   The file **filename** will be loaded into the connected MT.

MTW /d*filename*   The captured data is called from the connected MDE device and is stored into file **filename**.

MTW /p*filename*   The program memory of the connected MTwill be programmed with file Datei **filename**.

MTW /s   Returns the devices status. When a device is detected the program terminates with return code 3 or 4.

MTW /v   When a device is detected the program terminates with the application version number as return code.

MTW /z   Sets the maximum time in seconds after that the program will terminate without executing the command. Return code is 2.

Following commands may be used in combination:

	/s	/v	/d	/t	/p	/z
/s	x	-	-	-	-	+
/v	-	x	-	-	-	+
/d	-	-	x	+	+	+
/t	-	-	+	x	+	+
/p	-	-	+	+	x	+
/z	+	+	+	+	+	x

(Priorities in order of table sequence)

Return Code:

```
0 - Command executed without error
1 - Error during command execution
2 - Terminated after timeout or abort
3 - Device contains no data
4 - Device contains data
```

Missing Command Line Parameter
The data are called from the connected MDE device and are stored into receiption file with the name MTW.DAT (collection file) bzw. MTssssss.DAT (file name generation with serial no. ssssss).

Solving Communication Problems

The MDE devices and the cradles offer various connection options. The following table shows an overview. The subsequent chapter explains what has to be considered with the different connection types.

Device Type		RS-232	LAN	USB to UART-Bridge	USB direkt
old series 9600 Bd	PMS 1200/1500	x			
	HTE 1800/1900	x			
	LogiScan-65/75/85, direct or via Docking Station	x			
	LogiScan-65/75/85-Cradle	x	x		
new series 19200 Bd	LogiScan-600/800 via Dockingstation	x			
	LogiScan-600/800-Cradle	x	x	x	
	LogiScan-1100	x			x
	LogiScan-1100-Cradle	x	x	x	
	LT-300			x	

RS-232
The connected MDE device should be found with function Option/Port/Search. Devices of the old series (except PMS 1200/1500) have to be switched on manually before starting the search.

LAN
The IP address and the port have to be set in MTWin under Option/Port/LAN. With the appropriate tool (contained on the aitronic-CD) the devices IP adress/port may be changed.

USB to UART-Bridge
For devices connected via USB and software communication via a COM port the USB-to-UART-Bridge driver (contained on the aitronic-CD under Software/Silabs or as download from www.aitronic.de) has to be installed. A connected USB device has to be shown under `System Control/System/Hardware/Device Manager/Connections` with „`CP2101 USB to UART Bridge Controller (COMn)`". If desired the COM port no. may be changed via properties (right mouse button) and then under `Connection Settings/Extended`.

USB direct

Für Geräte, die über USB direkt angeschlossen werden, wird MTWIN-4 benötigt. Bei Installation von MTWIN-4 wird der entsprechende aitronic-USB-Treiber installiert. Ein angeschlossenes USB-Gerät muss unter `Systemsteuerung/ System/Hardware/Gerätemanager/USB-Controller` mit „`USB Aitronic Device`" angezeigt werden.

When searching for errors the following items are relevant:

1. Is the port selected in the Option window to which the MDE device is connected?

2. Is the baudrate selected in the Option window with which the MDE device communicates?

3. Is there a response from the MDE device when sending the command S<CR> with the Windows Hyperterminal (19200 Bd, 8 Bit, no Parity, 1 Stopbit, XON/XOFF)?

4. Shows Windows for the releative port under `Systemsteuerung/System/Hardware/Gerätemanager/Anschlüsse` a problem? If it's so, this problem has to be solved (perhaps by installing the appropriate driver).

5. With devices directly connected via USB: Is there shown „`USB Aitronic Device`" under `System Control/System/Hardware/Device Manager/USB Controller`?

6. If there are no port problems, the MDE device does not react and no firmware update is possible, please try to load the file `Defibrillator.mot.` Loading of this file with M16Start clears the program flash. After that the actual firmware update has to be performed. This file is also contained within the standard program directory for LogiScan-600/800/1100/PocketScan/HTE-200 of the aitronic CD or may be downloaded from Support/Downloads of the aitronic website www.aitronic.de.

Propagation of Destination File with AutoHexkey

Often there is the question how get the destination file data into a particular Windows application which only provides a GUI (graphic user interface) without big effort.

With the Windows utility AutoHotkey and a script which has to be written for the paritcular Windows application this is no problem.

The AutoHotkey Demo which may be downloaded from www.aitronic.de and and a script which has to be written for the paritcular Windows application this is no problem.

The AutoHotkey Demo shows how the data which was received by means of MTWin can be transferred to a Windows application and consists of
- the Windows application AutoHotkeyDemo.exe,
- the AutoHotkey script AutoHotKeyDemo.ahk,
- and the batch file AutoHotkeyDemo.bat.

AutoHotkey is a Open Source Software and can be downloaded from http://www.autohotkey.com/.

Glossar

Add On Digits/EAN Code

Add-on digits of EAN codes are used for additional informations, i.e. the price.

The add-on digits are scanned and decoded together with the EAN cod. The Configuration Parameter/Barcode-Decoding must be edited to select whether add-on digits are allowed or not and whether the add-on digits should be output.

Barcode Lengths Fixing

With **Configuration Parameter/Barcode Lengths** lengths fixings seperately fo each barcode type can be acitvated. This means only barcodes which have the provided lenghts can be read.

Data Transmission Lock

The Data Transmission Lock of a MDE device is set by MTWin after an errorfree data transmission (or the data memory will be deleted).

In case of **Set Data transmission** Lock
- the MDE device shows "Data transmitted".
- the data transmission can't be performed once more. The data of the MDE device can be inspected by scanning through data memory.
- the MDE devices data memory can be deleted with function Delete Data Memory of menu Function/Utilities.
- the Data Transmission Lock can be resetted with function Reset Data Transmission Lock of menu Function/Utilities.

Flash ROM

Each MDE device contains as non volatile memory a Flash ROM. Into the Flash ROM of the MDE device is stored:

- the operating system and the application program,
- the hardware configuration,
- the default and the User Configuration,
- the operating systems and the user key table,
- the serial number.

The Flash ROM will be programmed with followin MTWin functions:

- Program Serial Number,
- Software Update,
- Load Configuration.

MOTOROLA S Format

The MOTOROLA-S-Format is used for data exchange of program code. All S files which are available for software updates of MDE devices have this format.

MTW

MTW is the MTWIN version for background operation.

MTWin

Mobile Terminal Console for Windows

Serial Number

Each MDE device contains a 6-digit serial number which matches the name plates serial number when the device is delivered.

The serial number is included in the status message which can be called via the serial interface and is included in the header line of the transmitted data.

The serial number can be changed via the serial interface with MTWin.

The serial number '000000' sets the MDE device to permanent Test Mode.

In case of using LAP-EC (RF Network) the serial number is used as network address. Therefore it must be noticed that all devices which are connected to a network contain different serial numbers.

Test Mode

There are two different Test Modes:

- **Temporary Test Mode**: This test mode is entered by scanning function barcode 'Enter temporary/permanent Test Mode' when the device resides in normal mode. The devices serial number remains unchanged. This test mode is left by scanning function barcode 'Leave temporary Test Mode' or by performing a cold start.
- **Permanent Test Mode**: If the device already resides in temporary test mode permanent test mode is entered by scanning function barcode 'Enter temporary/permanent Test Mode'. The serial numbers of boot program an operating system are programmed to '000000'. Even after further cold starts this test mode remains active. Permanent Test Mode is left by programming a serial number other than '000000'.

After entering temporary Test-Mode

- the standard SIO parameter (9600 Bd, 8 Bit, no Parity) ar loaded,
- the beeper volume is set to the lowest value,
- the character set 'USA' and the english display texts are selected,
- Standard Program 1 is selected.

After entering permanent Test-Mode

- a cold start is executed,
- the standard SIO parameter (9600 Bd, 8 Bit, no Parity) ar loaded,
- after cold start the results from Boot Program, RAM and Flash ROM test are written to the serial interface,
- the beeper volume is set to the lowest value,
- the character set 'USA' and the english display texts are selected,
- Standard Program 1 is selected.

After entering test mode

- a cold start is executed,
- the standard SIO parameter (9600 Bd, 8 Bit, no Parity) ar loaded,
- after cold start the results from Boot Program, RAM and Flash ROM test are written to the serial interface,
- the beeper volume is set to the lowest value,
- the character set 'USA' and the english display texts are selected,
- Standard Program 1 is selected.

In test mode the following functions differ from normal mode:

- the configuration of hardware parameter is allowed,
- the execution of test function (description below) is possible,
- Flash ROM patches in bank 0, 1 und 3 are allowed,
- when entering battery low state "Charge Battery!!!" is displayed immediately and the device is switche off,
- a keyboard/scanner lock (SIO command 'Z1') is not noticed.

XModem Protocol

The Xmodem Protocol is a file transfer protocol which guarantees a secured data transmission. It can be used for transmission and receiption of data.

MTWin uses the XModem-Protocol for following functions:

- receiving data from the MT,
- loading a table into the MT,
- Software Update,
- reading a configuration set from the MT,
- loading a configuration set into the MT.

For MDE devices with infrared interface which doesn't use LAP-EC XModem- or the LSV-2-Protocol should urgently be used the for data exchange. Otherwise data corruption can occur.