



MTWin-5
Operating Manual
Edition 24.05.2019

Manual

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but also develop to customers wishes

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- 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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Delivery and technical changes are subject to change.

Edition History

Edition	Changes
22.12.2014	First Edition
17.03.2015	File name passing within STX line by MDE device
03.06.2015	Extensions for LogiScan-1500
13.03.2017	Edition Date on title sheet and in footer
24.05.2019	New Parameter %F

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General

MTWin-5 is contained in the standard software package and is delivered by aitronic together with the hardware. MTWin-5 provides functions for configuration of these terminals and for data exchange with a PC.

MTWin-5 is executable under Windows XP/7/8/10.

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Installation

MTWin-5 is required for data exchange with MDE devices of **PMS**, **HTE**, **LogiScan** and **PocketScan** family. There are two ways for the installation of MTWin-5:

- Download MTWin-5 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-5. Execute SETUP.EXE in the directory, which contains the files and follow the installation instructions.

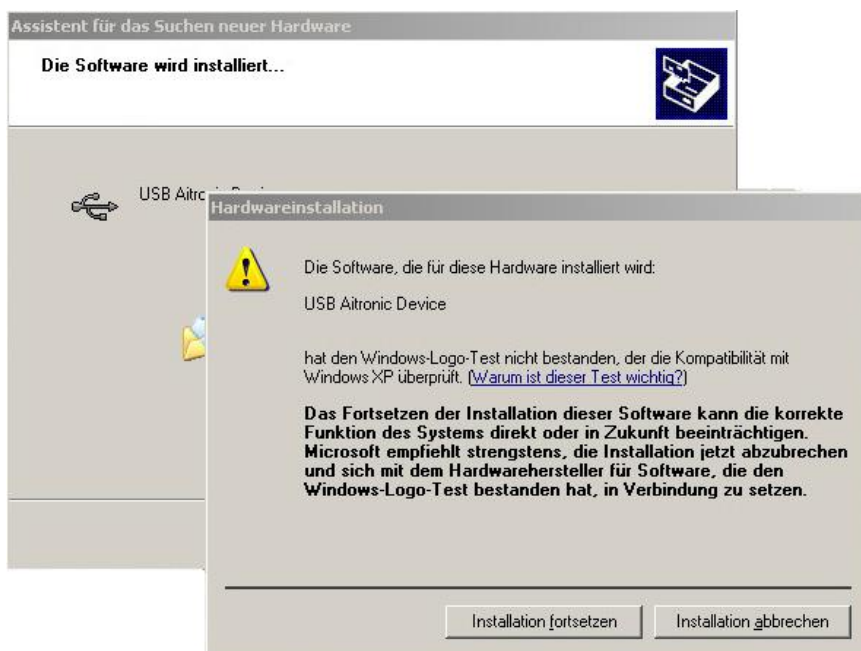
When connecting a MDE device to an USB connector for the first time Windows automatically starts the installation of the required USB driver. Follow the installation instructions as follows:



Choose „Nein, diesmal nicht“ and click „Weiter“.



Choose „Software automatisch installieren“ and click „Weiter“.

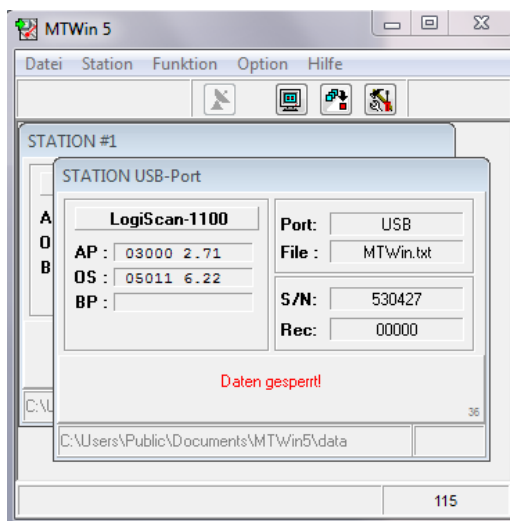


Choose „Installation fortsetzen“.



Choose „Fertig stellen“.

When connecting a device to an USB connector MTWIN-5 automatically recognizes the device and opens a station window. When disconnecting the device the station window will be automatically closed by MTWIN-5.



Fix serial stations #1 - x can be added or removed by means of menu Station.

First Steps

1. After completion of the installation a serial station (Com Port 1) will be shown. If no serial station is required, it can be removed under *Station/Close*.

If more than one serial station is required they can be added under *Station/New*.

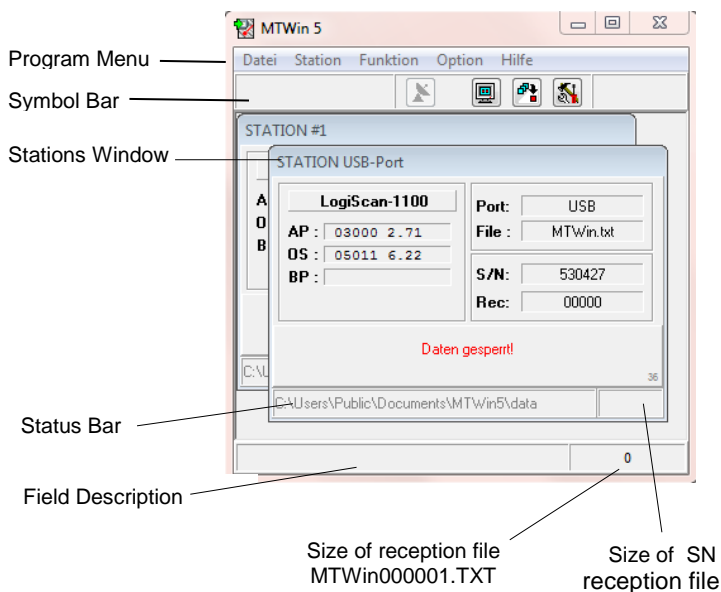
An USB station will open automatically as soon as an aitronic MDE device will be connected and closes itself when the device was removed!

The aitronic LogiScan Cradle uses an USB Serial Bridge. Hereby a virtual Com Port will be generated. The Windows Device Manager will show a Silicon Labs CP21xx Bridge Device under *Connections (COM & LPT)*. The COM number has to be registered in MTWin under *Options/Port*. Another possibility is to search for a connected atronic device under *Options/Port*.

2. Serial stations has to be configured particular. The settings of an USB station apply to all connected USB MDE device devices. Chosse the station (for USB an USB device has to be connected) and execute menu function *Options/Settings*.
 - Define whether after a successful data transmission the data on the MDE device should be erased or not.
 - Define whether the STX line (contains date/time of data transmission and the amount of data records) and the ETX line (marks the end of data) should be stored in the data file or not.
 - Should the data of all transmission should be stored in one collection file or should there be generated a single file using the serial number for each device?
3. By default the transmitted data are stored into folder *Öffentliche Dokumente\MTWin5\data* or *%PUBLIC%\Documents\MTWin5\data* (with Explorer: *Dokumente/MTWin5/data*). The destination folder can be changed under *Options/Directories*.
4. **Before using the software for real operation, make test transmissions and check if all settings work as intended!**

Desktop

Main Window



Menu Bar

File

- **Open File** Opens a file in the editor which is selected under Option/General. The Extension for file listing can be set to „all“ or „text file“.
- **Exit** Exit MTWin.

Station

- **Cascade** Arranges station windows cascaded
- **Tile** Arranges station windows tiled
- **New** Opens a new station window
- **Close** Closes the active station window.

Function

- **Utilities** Programming of serial number and real time clock, deleting data memory and data transmission lock of the MDE device.
- **Receive Data** Calls the captured data from the MDE device
- **Software Update** Loads a program into the MDE device
- **Load Table** Loads a table into the MDE device
- **Cancel** Cancels active function
- **Edit Configuration** Displaying and modifying the MDE devices configuration

Option

- **Port** Selection of communication port for the active status window
- **Transmission** Setting options for data reception and storing of received data
- **Verzeichnisse** Providing of directories and file name
- **General** Setting password, selecting Editor, selecting symbol after program start

Help

Opens the MTWIN Operating Manual.

Symbol Bar

The symbol bar contains 5 keys for often used functions:



Receive Data

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



Utilities

Switches from the status window to the utilities window.



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

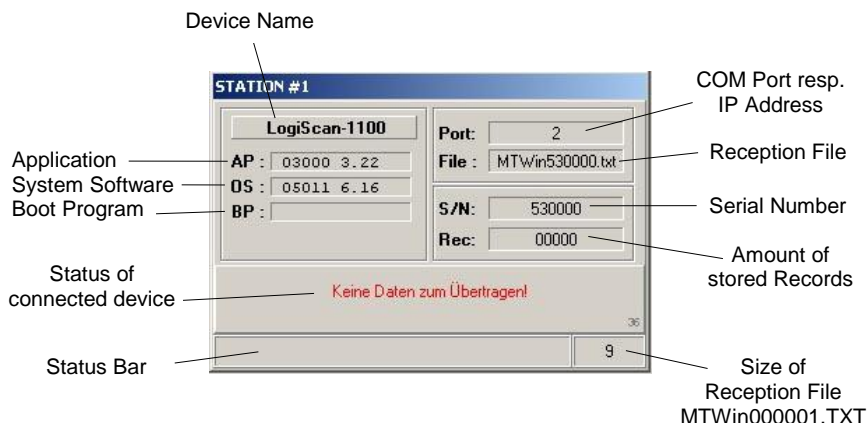
The status bar resides at the bottom of the main window of MTWin and is divided into two fields:

- 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.

Station 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 MDE device.

MTWin can serve several MDE devices which are connecte 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*. For a device of the old series the data memory size is shown following the device name.

Application Name and version of application (here it is the Standard Application v3.22).

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

Boot Program Name and version of Boot Program (only with devices of old series, 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 respectively USB Port or IP Adresse

No. of COM respectively USB port to which the MDE device is connected or IP address at which the MDE device can be accessed.

Reception File

Name of reception file depending on
Options/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 Reception 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

Set Date/Time

The MDE device contains an integrated real time clock which must be set after cold start either via the MDE devices 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 MDE device.

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-5 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, which were already transmitted correctly, once more respectively to append new captured data to already transmitted data.

Receive Data

This function starts the data reception from the connected MDE device which status is shown in the active status window and stores it corresponding to the transmission parameter of this window.

Software Update

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 whether 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 MDE device. How the reset can be done depends on the terminal type:

- **PocketScan** and **LogiScan-800** of newer type: Pressing simultaneously of keys **2**, **5** and **7**.
- **LogiScan-600**: Pressing simultaneously of keys **F1**, **F3** and **9**.
- **LogiScan-1100**: Pressing simultaneously of keys **F1**, **F4** and **9** (older types: press simultaneously of keys **2**, **5** and **7**).

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.

This function is application specific and is not included in the standard application.

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>
articlenumber;amount<CR><LF>
articlenumber;amount<CR><LF>
      .           .   .   .
      .           .   .   .
      .           .   .   .
articlenumber;amount<CR><LF>
articlenumber;amount<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

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 parameters are divided into the 6 following groups which can be selected like index cards:

- Common
- System
- Keyboard
- Sound
- Display

For each index card the following function keys are available:

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

Option

Port

COM

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

Device Type

By selecting the device type the appropriate COM port properties are set. **PMS**, **HTE** and **LogiScan-80** (old device series) communicate 9600 Bd by default, **PocketScan** and **LogiScan-800** (new device series) with 19200 Bd and the **LogiScan-1500** with 115.200 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 presetted by „10001“ and may be modified as desired.

Reconnecting a LAN connection following line interruption lasts about 450 seconds. This time may be shortened by setting the LAN adapters TCP Keep Alive Time to 10 (100 seconds because this parameters dimension is 10 seconds) by means of the Lantronix **DeviceInstaller**. A value below 10 may lead to problems and should not be used.

Search

With this function a connected MDE device can be searched for. All ports and baud rates 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.TXT.

Generation with Serial No.

For the storing of the received data of the connected MDE device a file with the name MTssssss.DAT (ssssss is the serial number of the concerning MDE device) will be generated.

After Data Reception

Set Data Transmission Lock

After errorfree data reception the `Data Transmission Lock` in the MDE device will be set.

Delete Data Memory

After errorfree data reception 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 Reception

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 (new terminal series)

If this option is selected and after data transmission a software update file is available the update will be performed.

Confirm Update (new terminal series)

If this option is selected, a new application version is available and option Autom. Update is selected, at the MDE device „Update available, to Download press ENTER“ will be shown. If this request is confirmed with **ENTER** by the user, the software update will be done. Each other key cancels this function. For this functionality the MDE device has to contain DeOS v5.75 or higher.

Directories

Destination Directory

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

Reception File Name

If Option/Transmission/Collection File is selected or the file name is transmitted within the STX line from the MDE device, the following parameters may be inserted into the file name for the reception file:

%S	6 digit serial number of the MDE device
%N	Station number (1 . . . n)
%D	Date with format jjjmmtt
%T	Time with format hhmmss
%F	File name or file name part passed in the STX record

The file name or the extension (or parts of one of that) may be set to ### (but not if the file name or file name part in the STX record is transferred from the MDE device). The concerning part 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
Reception File:	###
1. stored file:	g:\inventurdaten\001ssssss.TXT
2. stored file:	g:\inventurdaten\002ssssss.TXT
3. stored file:	g:\inventurdaten\003ssssss.TXT

General

Password

Here a password can be provided which will then be used to protect the 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`.

Editor

Here the path and file name of the editor which should be used with function `File/Open` has to be provided. Default is `NOTEPAD.EXE`.

Symbol after Programm Start

If this option is selected MTWin is shown as an icon after program start.

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!

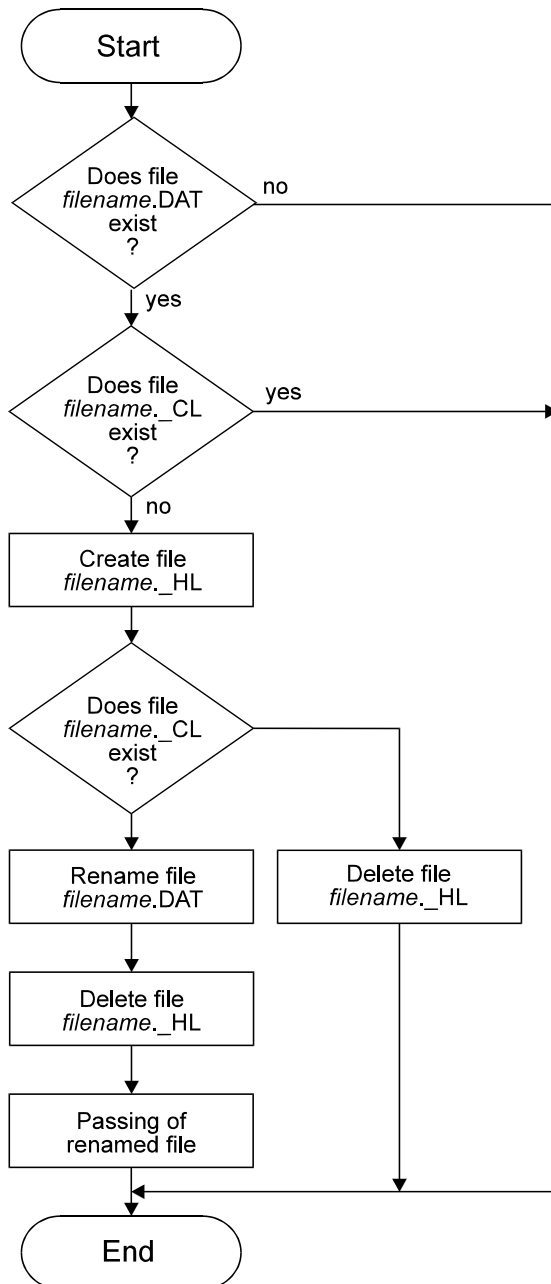
In order to pass the destination file filename.DAT (filename = collection file MTWIN.DAT respectively MTssssss.DAT, in which ssssss is the serial number of the connected MDE device) to another application under WINDOWS and in network environments without producing file access conflicts the following 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 existence 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 existence 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*.



Loading Tables automatically

MTWin offers automatic loading of tables. For this function the following parameters has to be inserted into 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 transmitted to MTWIN before loading the table.

.

Logging

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

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

Make sure that the directory `.\MTWin\Log` exists. The parameter `LogDelimiter` indicates the separator character. This has to be provided in decimal ASCII code. For a semicolon you have to use the decimal ASCII code 59. The option `LogFileValidityPeriod` indicates the count of days after which the log files will 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] [StatusNr] [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				

Propagation of Destination File with AutoHexkey

There is often the question: „How can I transfer the destination file data into a particular Windows application which only provides a GUI (graphic user interface) without big effort?“

The AutoHotkey Demo which may be downloaded from www.aitronic.de and a script which has to be written for the particular 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/>.

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	Baudrate	RS-232	LAN	USB to UART Bridge	USB direct
PMS 1200/1500	9600 Bd	x			
HTE 1800/1900		x			
LogiScan-65/75/85, direct or via Docking Station		x			
LogiScan-65/75/85-Cradle		x	x		
LogiScan-600/800 via Docking Station	19200 Bd	x			
LogiScan-600/800-Cradle		x	x	x	
LogiScan-1100		x			x
LogiScan-1100-Cradle		x	x	x	
LT-300				x	
LogiScan-1500 via Dockingstation	115200 Bd	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 function.

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 address/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 by 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

With devices which are connected directly via USB MTWIN-5 will be required. At installation of MTWIN-5 the appropriate aitronic USB driver will be installed. A connected USB device has to be shown under `Systemsteuerung/ System Control/System/Hardware/Device Manager/USB Controller` with „USB Aitronic Device“.

When searching for errors the following items are important:

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 concerning port under `Systemsteuerung/System/Hardware/Gerätemanager/Anschlüsse` a problem? In this case 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 and the MDE device does not react and no firmware update is possible, please try to load the file `Defibrillator.mot`. Loading this file with M16Start clears the program flash memory. 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 the aitronic website www.aitronic.de.

INI File Parameter

Settings changes made by the user may be saved to the INI file with menu function *File/Save Settings*. In the following only INI file parameter are listed which can't be set through the user interface and which possibility to change may be important for the user.

[MainWnd]

ChildNo=*n* *n* is the max. amount of allowable station windows for COM and LAN

LogLevel=*n* *n*=0: no logging (refer to section **Logging** on page 23)
 n>1: Logging of events corresponding to the LogLevel (refer to section **Logging** on page 23)

LogDelimiter=*n* decimal value of ASCII character, which deals as field separator character in the log file (refer to section **Logging** on page 23)

LogPath=*path* Path for log files (refer to section **Logging** on page 23)

LogFileValidityPeriod=*n* Log files will be automatically deleted after *n* days (refer to section **Logging** on page 23)

USBEnable=*n* *n*=0: devices connected via USB will not be accepted
 akzeptiert
 n=1: via USB connected devices will be accepted

[DEFAULT]

Default settings for COM and LAN

[STATION*n*]

Settings for station *n*

[USB]

Settings for all USB station windows which are automatically opened/closed by MTWIN. The same parameters are used as beneath **[STATION*n*]**.

Glossary

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 separately for 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 device 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. The Flash ROM of the MDE device contains:

- 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 following 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.