



Instruction Manual  
**thermoIMAGER** TIM NetPC

**Mini Industrial PC for TIM series**

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Certified acc. to DIN EN ISO 9001: 2008

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## 1. Safety

The handling of the system assumes knowledge of the instruction manual.

### 1.1 Symbols Used

The following symbols are used in the instruction manual:



Indicates a hazardous situation which, if not avoided, may result in minor or moderate injuries.



Indicates a situation which, if not avoided, may lead to property damage



Indicates a user action.



Indicates a user tip.

Measure

Indicates a hardware or a button/menu in the software

### 1.2 Warnings



Connect the power supply and the display/output device in accordance with the safety regulations for electrical equipment.

> Danger of injury

> Damage to or destruction of the sensor and/or controller



Avoid shock and vibration to the PC.

> Damage to or destruction of the PC

The power supply must not exceed the specified limits.

> Damage to or destruction of the PC

Avoid static electricity and keep away from very strong EMF (electromagnetic fields) e.g. arc welders or induction heaters.

> Damage to or destruction of the PC

### 1.3 Notes on CE Identification

The following applies to the thermoIMAGER NetPC:

- EU directive 2004/108/EC
- EU directive 2011/65/EC, "RoHS" category 11

Products which carry the CE mark satisfy the requirements of the quoted EU directives and the European standards (EN) listed therein. The EC declaration of conformity is kept available according to EC regulation, article 10 by the authorities responsible at

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The system is designed for use in industry and laboratory and satisfies the requirements of the standards

- EN 61326-1: 2006
- EN 61326-2-3: 2006
- EN 61010-1: 2010

The system satisfies the requirements if they comply with the regulations described in the instruction manual for installation and operation.

### 1.4 Proper Use

- The thermoIMAGER NetPC is designed for use in industrial and laboratory areas. It is used for non-contact temperature measurement.
- The system may only be operated within the limits specified in the technical data, see Chap. 2.
- Use the system in such a way that in case of malfunctions or failure personnel or machinery are not endangered.
- Take additional precautions for safety and damage prevention for safety-related applications.

### **1.5 Proper Environment**

- Protection class: IP 30
- Operating temperature: 0 ... 50 °C
- Storage temperature: -20 ... 75 °C
- Humidity: 10 ... 95 %, non-condensing
- EMC acc. to: EN 61326-1: 2006  
EN 61326-2-3: 2006  
EN 61010-1: 2010

## 2. Technical Data

### 2.1 Functional Principle

The thermoIMAGER TIM NetPC is a miniaturized industry PC which expands the TIM series to a stand-alone solution or which works as a USB to Ethernet converter. This mode enables larger possible distances between process (IR camera) and process control (PC).

The thermoIMAGER NetPC includes a Windows 7 Embedded operating system that allows the user to install additional software. The housing of the thermoIMAGER NetPC is made of anodized aluminum.

### 2.2 General Specifications

Operating temperature	0 ... 50 °C (+32 ... +122)
Storage temperature	-20 ... 75 °C (-4 ... +167)
Relative humidity	10 ... 95 %, non-condensing
Material (housing)	Anodized aluminum
Dimensions	117.5 mm x 165 mm x 64.5 mm (L x B x H)
Weight	1000 g
Vibration	IEC 68-2-6: 3 G, 11 - 200 Hz, any axis
Shock	IEC 68-2-27: 50 G, 11 ms, any axis
Operating system	Windows 7 Embedded



## 2.3 Electrical Specifications

Power supply	12 ... 24 VDC
Power consumption	10 W (+additional 2.5 W for IR camera)
Cooling	passive
Processor	Intel® Atom™ 2600 Dual Core CPU, 1.6 GHz
Hard disc	64 GB SSD
RAM	2 GB (DDR2, 533 MHz)
Ports	4 x USB 2.0
	2 x RS 232
	VGA
	Ethernet (Gigabit Ethernet)
Additional functions	Status LED

## 3. Delivery

### 3.1 Unpacking

1 TIM NetPC inclusive SSD (64 GB)

1 USB Recovery stick including instruction manual

➡ Check the delivery for completeness and shipping damage immediately after unpacking.

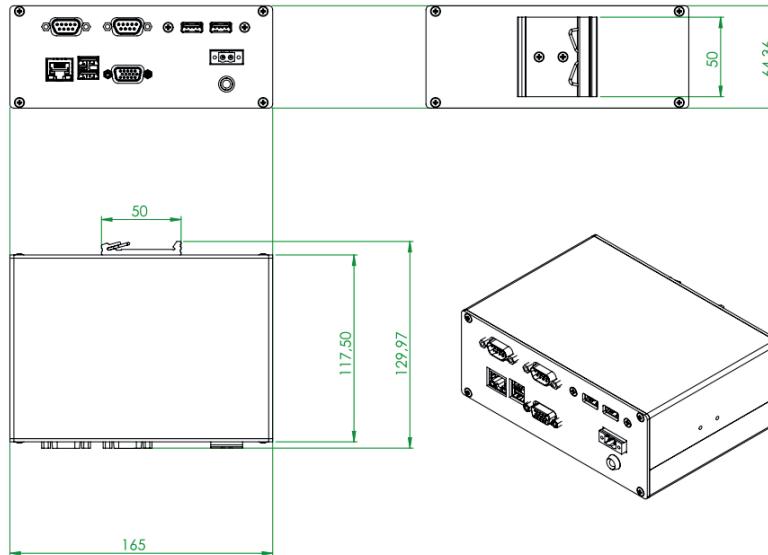
➡ In case of damage or missing parts, please contact the manufacturer or supplier.

### 3.2 Storage

- Storage temperature: -20 ... 75 °C (-4 ... +167)
- Humidity: 10 ... 95 %, non-condensing

## 4. Mounting and Installation

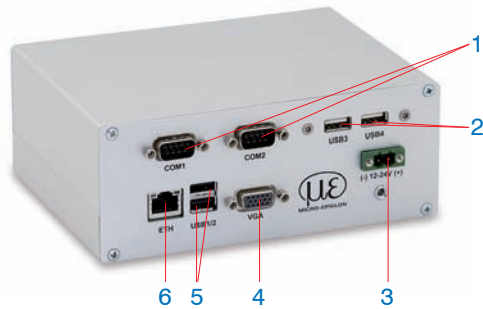
The thermoIMAGER TIM NetPC can be mounted easily on a DIN rail (TS35) according EN50022 using the rail mount adapter on the backside of the box.



*Fig. 1 Dimensional drawing thermoIMAGER TIM NetPC*

Dimensions in mm, not to scale

## 5. Control Elements and Connections



- 1 RS 232 Interface connections (two)
- 2 USB 2.0 connections (two)
- 3 DC power supply with power LED
- 4 VGA connection
- 5 USB 2.0 connections (two)
- 6 Ethernet connection

## 6. Operation

### 6.1 Operation Modes

The thermoIMAGER NetPC can be used in three different operation modes:

1. Converter USB – Ethernet with direct connection to a PC (point-to-point connection)
2. Converter USB – Ethernet with connection of a PC via a network or via the internet
3. Stand-alone operation with an IR camera

For powering the thermoIMAGER NetPC you can use any suitable industrial power supply with a voltage output between 12 VDC and 24 VDC, see Chap. 2.3.

### 6.2 Remote Access to the thermoIMAGER TIM NetPC

For settings on the thermoIMAGER TIM NetPC you can connect a keyboard and a mouse to the available USB sockets as well as a monitor to the VGA socket, see Chap. 6.8.

Another very simple way are remote control software, for example remote desktop (RDP) which is available on each Windows system or Ultra VNC which you will find on your software CD TIMConnect of thermoIMAGER TIM. After installation you can have access to the thermoIMAGER TIM NetPC either from a PC directly connected over an Ethernet cable or from a PC which is located anywhere and connected to the same network. Also remote connection via the internet is possible.

➡ To install Ultra VNC on your PC please start `install.bat` which is located on your thermoIMAGER TIMConnect-CD in the folder `\TIM NetPC`.

After installation you will find two short cuts on your desktop:



Fig. 2 Shortcuts - Icons on your desktop

- ➡ Please use the short cut `SyncViewer` for access to a TIM NetPC which is directly connected to your PC over an Ethernet cable.

After starting the UVNC viewer using this shortcut you should see immediately a window which shows the screen on the NetPC.

- ➡ Please use the short cut `IP Adressfinder` and `UltraVNC Viewer (Start button)` for access to a NetPC inside your network.

After starting UVNC using this short cut you should see at first the following screen:

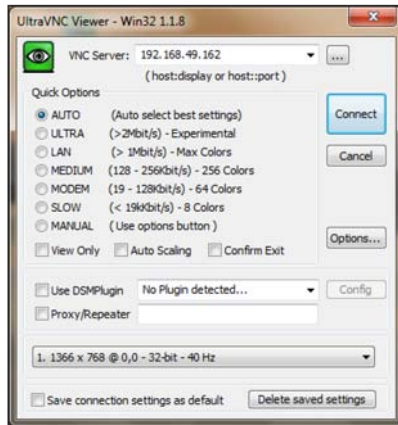


Fig. 3 Screen Ultra VNC Viewer-Setup

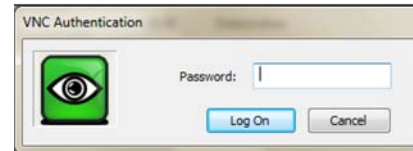


Fig. 4 Screen Password request

- ➡ After input of the IP address of the thermoIMAGER TIM NetPC, which in this case comes from a DHCP<sup>1</sup> server, please press `Connect`, see Fig. 3.
  - ➡ In the following screen, see Fig. 4, you have to enter the password `Remote` and after this press `Log On`.
- Now you should see the screen of the thermoIMAGER TIM NetPC.

1) DHCP – Dynamic Host Configuration Protocol: allows the automatic integration of a computer into an existing network.

### 6.3 Applications and Start Options

On the Desktop of the thermoIMAGER TIM NetPC you will find the following short cuts:



Fig. 5 Screen Shortcuts Application Start Config / Manager

Application Start Config	Starts the configuration dialog (Config Server), see <a href="#">Fig. 6</a> .
Application Start Manager	Starts the program selected in the configuration dialog.

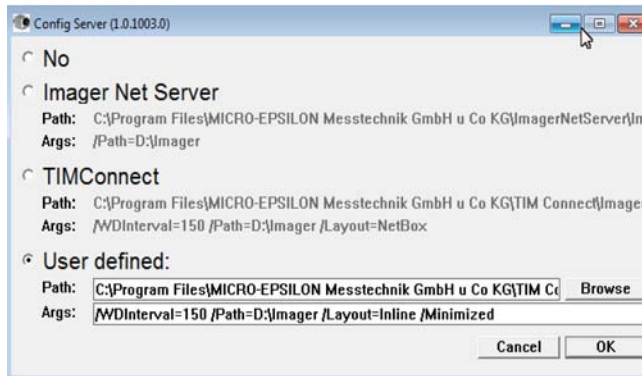


Fig. 6 Screen configuration dialog (Config Server)

In the configuration dialog you can select programs which start automatically after booting the thermoIMAGER TIM NetPC:

No	No automatic program start
Imager Net Server	Automatic start of the server application
TIM Connect	Automatic start of the thermoIMAGER TIMConnect software
User defined	User defined start of one of the both programs above

- For the Stand-alone operation with an IR camera please start `Application Start Config`, see [Fig. 5](#) and then select `TIM Connect`, see [Fig. 6](#).
  - In case you would like to start `TIM Connect` or `Imager Net Server` with changed command line parameters [`Args`] please select `User defined`.
  - In case you would like to start the `Imager Net Server` please select `Imager Net Server`.
- i** The start options selected in the configuration dialog are saved automatically in the thermoIMAGER TIM NetPC and are available after a restart.

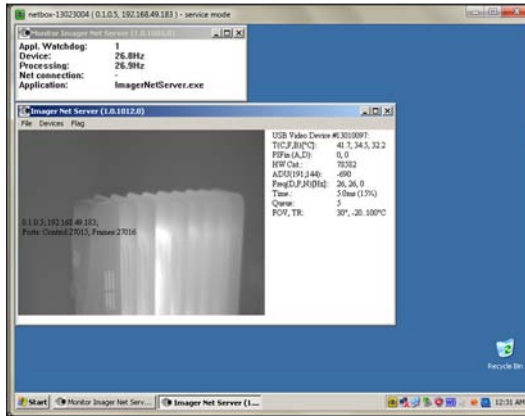


Fig. 7 Screen of the NetPC - Imager Net Server

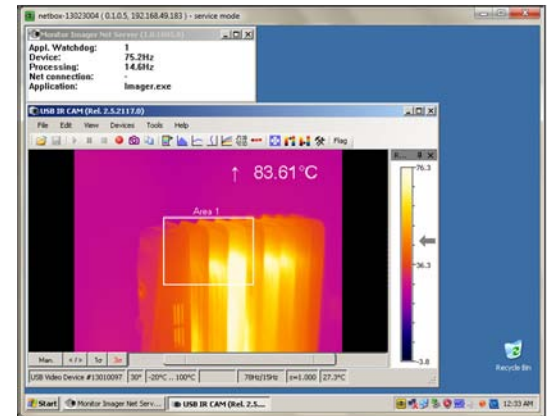


Fig. 8 Screen of the NetPC - TIM Connect

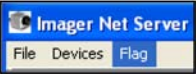
If an thermIMAGER TIM is connected to the thermIMAGER TIM NetPC you should see two active applications:

Monitor Imager Net Server and Imager Net Server or TIM Connect.

<b>Monitor Imager Net Server</b>	
Appl. Watchdog	Counter for the application monitoring function
Device	Device frequency
Processing	Processing frequency
Net connection	Network frequency
Application	Monitored software application


Fig. 9 Information in the Monitor Imager Net Server - application window



Imager Net Server			
Menu	File	Exit of the program	
	Devices	Shows the connected thermoIMAGERS TIM	
	Flag	Manual operation of the camera flag	
USB video device	Serial number of the connected imager device		
T (C, F, B)	Device temperatures (*C)	C: FPA-Chip	
		F: Flag temperature	
		B: Housing temperature	
PIFin (A, D)	Status of the PIF input	A: Analog IN (AI)	
		D: Digital IN (DI)	
HW Cnt.	Hardware-Counter (frame counter)		
ADU (192, 144)	ADU value of the center TIMxel (e.g. 192, 144 at TIM4xx)		
Freq (D, P, N)	Frequency (Hz):	D: Device/ P: Processing/ N: Network	
Time	Time per single frame		
Queue	Number of frames in network queue		
FOV, TR	Field of view (horizontal) of the imager lens, temperature range		

*Fig. 10 Information in the Imager Net Server - application window*

## 6.4 File Transfer between thermoIMAGER TIM NetPC and PC

- ➡ To exchange files between the thermoIMAGER TIM NetPC and a directly connected or in the network located PC please move the cursor to the title bar of the UltraVNC Viewer window and press the right mouse button.
- ➡ Start File Transfer.
- ➡ Alternatively you can also press the following button in the tool bar: 

In the following explorer window, see [Fig. 11](#), you see on the left side your local PC (LOCAL MACHINE) and on the right side the thermoIMAGER TIM NetPC (REMOTE MACHINE).

- ➡ Now you can copy files between both computers via the network link by marking them and pressing Send or Receive.

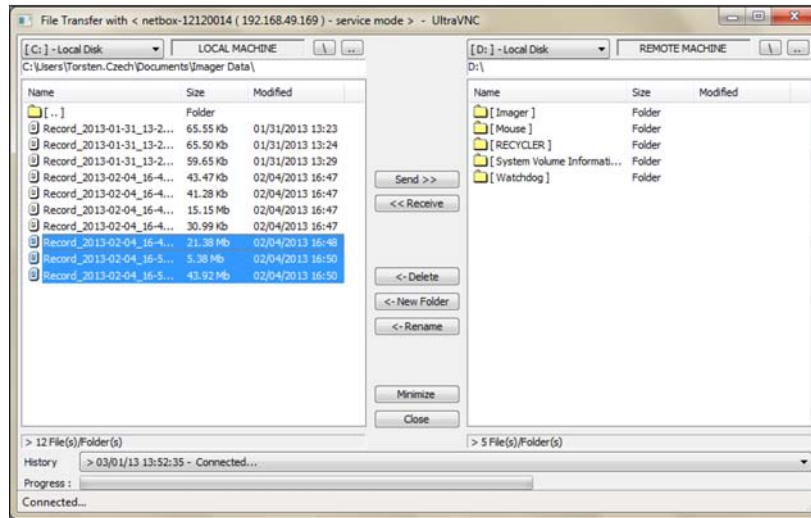
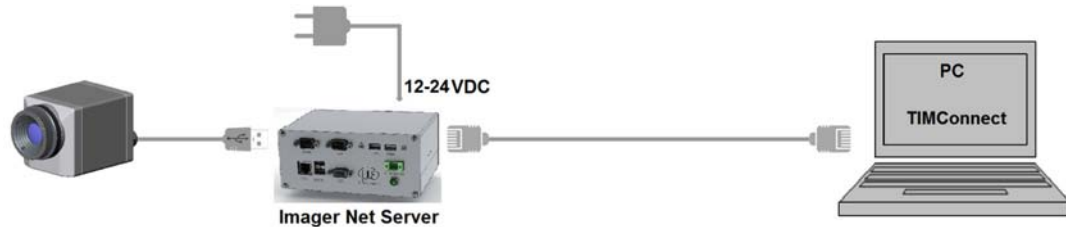


Fig. 11 Screen File transfer

## 6.5 Direct Ethernet Communication

- Please connect the thermoIMAGER TIM with the supplied USB connection cable with the thermoIMAGER TIM NetPC.
- Please connect your PC with an Ethernet cable with the thermoIMAGER NetPC.
- Now connect the power supply cable to the thermoIMAGER NetPC and to the mains supply.

The thermoIMAGER NetPC will start to boot the system and should be ready to use after 2 - 3 minutes.



*Fig. 12 Ethernet direct connection (point-to-point connection)/ thermoIMAGER TIM NetPC powered via power supply*

- i** The used Ethernet cables should be at least category 5 cables (Cat-5 according ISO/IEC 11801).

## 6.6 Connection to the thermoIMAGER TIM NetPC

The communication with the TIM NetPC is done via the TCP/ IP protocol (Transmission Control Protocol/ Internet Protocol). The TIM NetPC can get its IP address (Internet Protocol address) either from a DHCP server or it can work with a fixed IP address.

➡ First switch on the thermoIMAGER NetPC, see Chap. 6.

On a direct connection to a PC both, the thermoIMAGER TIM NetPC as well as the PC must use a fixed IP address because no DHCP server is available here. The thermoIMAGER TIM NetPC is using in this case the IP address 192.168.0.100.

On your PC you have to do the following settings once (depending on the operating system the procedure can differ from the here shown – the following description refers to a Windows 7 system).

➡ 1. Go to *System controls*; open *Network and Sharing Center*.

➡ 2. If you have an existing connection to a network (company network e.g.) you should see the following information:

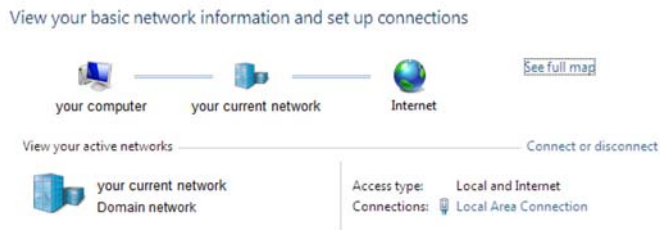


Fig. 13 Network center

➡ If your PC is not connected to any network, please go to *Change adapter settings* after you opened the *Network and Sharing Center*. Now go to *Local Area Connection*, right mouse button: *Properties*, continue at item 4.

➡ 3. Go to *Local Area Connection* - a status screen according, see Fig. 14, will be shown. Then go to *Properties*.

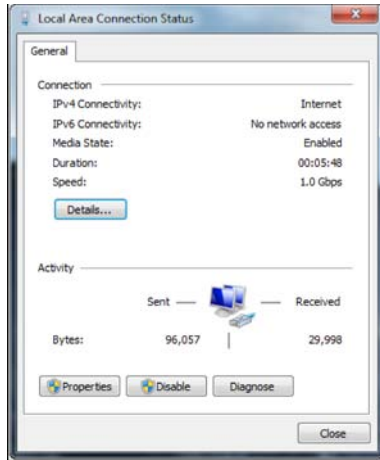


Fig. 14 Local Area Connection Status

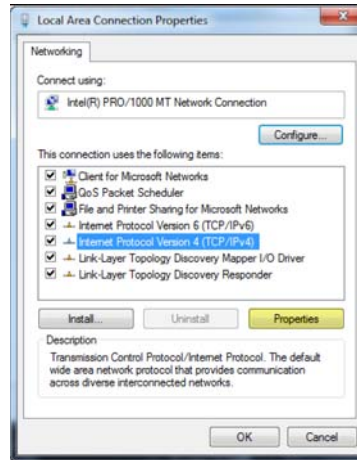


Fig. 15 Local Area Connection Properties

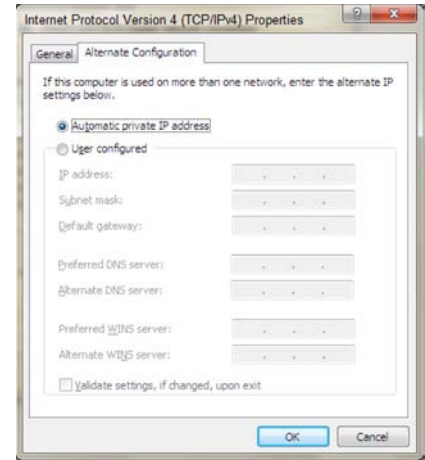


Fig. 16 Internet Protocol Version 4 (TCP/IPv4) Properties

- ➡ 4. In the Properties- window, see Fig. 15, mark Internet protocol version 4 (TCP/IPv4) and go again to Properties.
- ➡ 5. Please open now in window, see Fig. 16, the register Alternate Configuration and activate the checkbox User configured.
- ➡ 6. Now you can enter a user defined IP address for your PC. Please take care that the network part of the address has to be identical with the network part of the IP address of the thermoIMAGER TIM NetPC, thus 192.168.0. For the host part you have to use an address which is different from the one of the thermoIMAGER TIM NetPC (100), so you may use 1 for example, see Fig. 17.

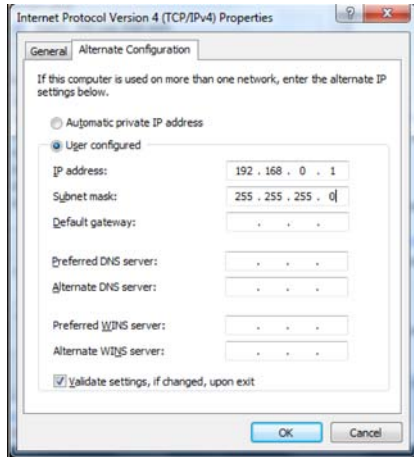


Fig. 17 Internet Protocol Version 4 (TCP/IPv4) - User configured IP address

After you have made these settings and connected your PC with the thermoIMAGER TIM NetPC using an Ethernet cable your PC will establish a point-to-point connection. This procedure can take several minutes. In the Network and Sharing Center your network will now be shown up as a non-identified network.

- ➡ Please start now the thermoIMAGER TIMConnect on your PC and open the menu item `Tools/ Extended/ Remote devices...`
- ➡ In the window which is appearing, see Fig. 18, you should set a hook on `Enable` and enter the IP address of thermoIMAGER TIM NetPC (192.168.0.100) at IP address of current remote device.
- ➡ Press `OK`.

The software will establish a connection to the remote device thermoIMAGER NetPC automatically.

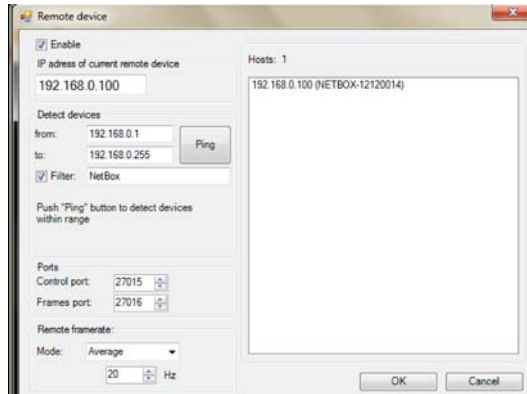


Fig. 18 Search for network devices in TIMConnect

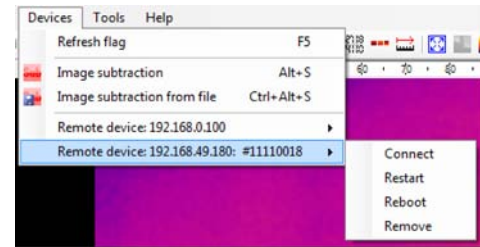


Fig. 19 Device selection in TIMConnect

Under Remote framerate, see Fig. 18, you can enter the desired frame rate which should be transmitted via the network.

Under the menu item Devices, see Fig. 19, the thermoIMAGER TIM which is connected to the thermoIMAGER NetPC shows up now. The following functions can be selected here:

- Connect     Manual connection with the remote device
- Restart     Restart of the Imager Net Server application on the thermoIMAGER TIM NetPC
- Reboot      Reboot of the thermoIMAGER TIM NetPC
- Remove      Remove of the device entry in this menu

If the used thermoIMAGER TIM is connected for the first time to the thermoIMAGER TIM NetPC the following message appears:

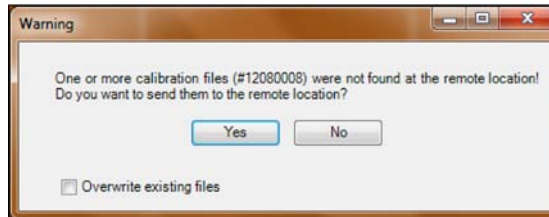


Fig. 20 Screen Warning

➡ Please confirm with **Yes**.

The calibration files will be transferred automatically from your PC to the thermoIMAGER TIM NetPC and stored there. Now you should see the live TIM picture from the thermoIMAGER TIM on your PC.

Alternatively you can copy the calibration data also manually via an USB stick into the thermoIMAGER TIM NetPC folder `D:\Imager\Cali`.

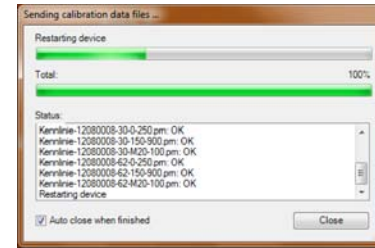


Fig. 21 Screen Sending calibration data files ...



## 6.7 Ethernet Network Communication

- ▶ Please connect your thermoIMAGER TIM with the supplied USB connection cable with the thermoIMAGER TIM NetPC.
- ▶ Please connect the Ethernet connection of the thermoIMAGER TIM NetPC with a network or internet (via a router e.g.).
- ▶ Now connect the power supply to the thermoIMAGER TIM NetPC and to the mains. The thermoIMAGER TIM NetPC will start to boot the system and should be ready to use after 2 - 3 minutes.

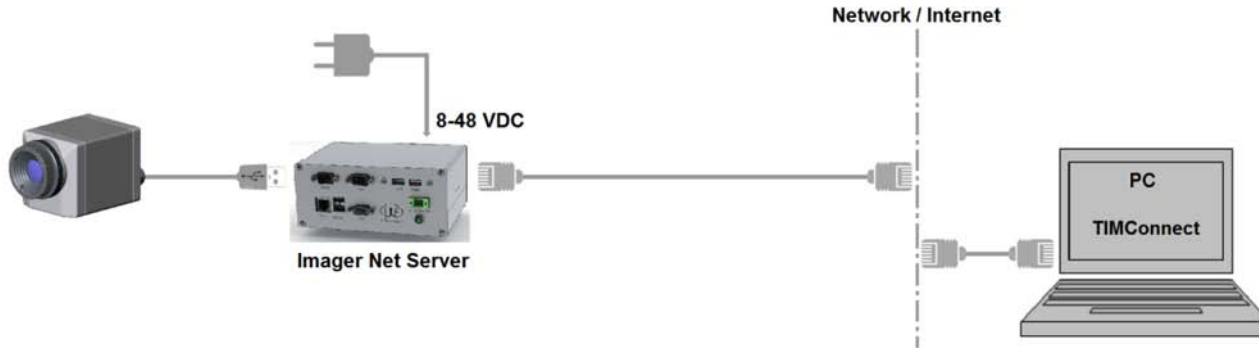


Fig. 22 Ethernet network connection/ TIM NetPC powered via power supply

If the NetPC is used in a network it gets its IP address from a DHCP server. In order to find the thermoIMAGER TIM NetPC in the thermoIMAGER TIMConnect of your local PC the address range of the local network must be known.

- ▶ Thereto please open the Network and Sharing Center on your local PC, go to Local Area connection, see Fig. 23 and open Details, see Fig. 24.

The Window Network Connection Details, see Fig. 25, shows now your own IPv4 address.

- ▶ Please start now the thermoIMAGER TIMConnect on your local PC and open the menu Tools > Extended > Remote devices ....
- ▶ In the window which opens, see Fig. 26, set a hook on Enable and enter the address range of your local network under Detect devices.

The fourth block should have the range 0 to 255.

➡ If you now press Ping all computers inside the selected address range will be shown.



Fig. 23 Screen Network center: Local Area Connection

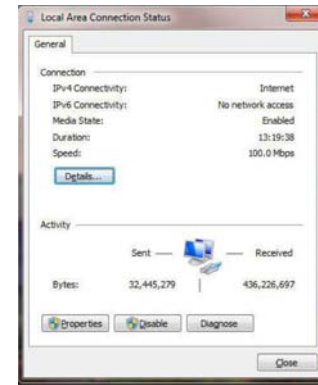


Fig. 24 Screen Local Area Connection Status



Fig. 25 Screen Network Connection Details

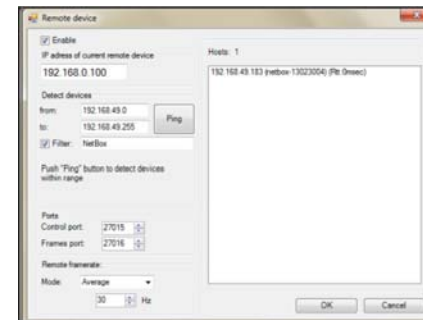


Fig. 26 Screen Remote device

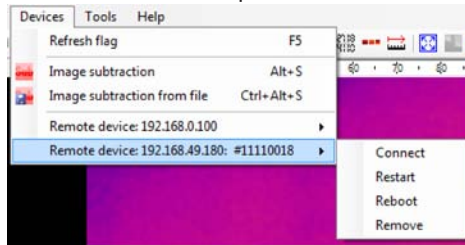
Under `Remote framerate`, siehe [Fig. 26](#), you can enter the desired frame rate which should be transmitted via the network.

➡ For a faster search you should activate the filter, see [Fig. 26](#) and enter `NetPC`.

Now only computers with `NetPC` in their name will be shown.

Under `Hosts` you should see now your `thermoIMAGER NetPC`.

Please mark this and press `OK`.



*Fig. 27 Device selection in TIMConnect*

Under the menu item `Devices`, see [Fig. 27](#), the `thermoIMAGER TIM` which is connected to the `thermoIMAGER NetPC` shows up now.

The following functions can be selected here:

- `Connect`     Manual connection with the remote device
- `Restart`    Restart of the Imager Net Server application on the `thermoIMAGER TIM NetPC`
- `Reboot`      Reboot of the `thermoIMAGER TIM NetPC`
- `Remove`      Remove of the device entry in this menu

If the used thermoIMAGER TIM is connected for the first time to the thermoIMAGER NetPC the following message appears:

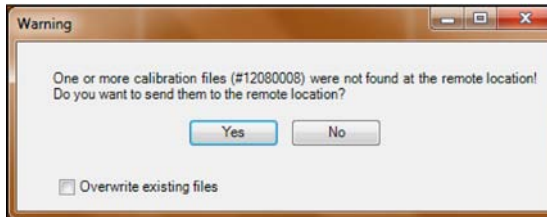


Fig. 28 Screen Warning

➡ Please confirm with **Yes**.

The calibration files will be transferred automatically from your PC to the thermoIMAGER TIM NetPC and stored there. Now you should see the live TIM picture from the thermoIMAGER TIM on your PC.

Alternatively you can copy the calibration data also manually via an USB stick into the thermoIMAGER TIM NetPC folder `D:\Imager\Cali`.

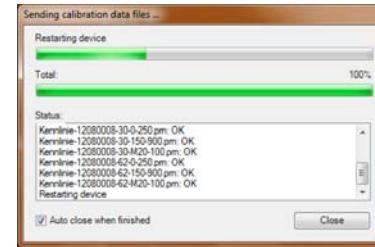


Fig. 29 Screen Sending calibration data files ...

## 6.8 Stand-alone Operation

As a stand-alone PC the thermoIMAGER NetPC can expand a IR camera to a separate system. For this operation mode you should connect a VGA display and a USB keyboard to the thermoIMAGER NetPC. In addition the system can also be controlled via a remote access over an Ethernet connection, see Chap. 6.2.

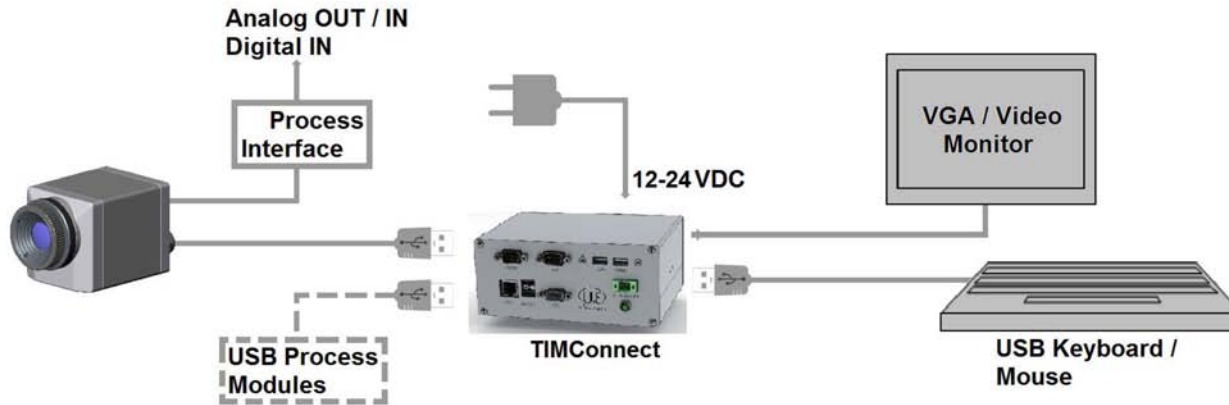


Fig. 30 Stand-Alone operation/ thermoIMAGER TIM NetPC powered via power supply

After booting the thermoIMAGER NetPC the first time you will see the Imager Net Server application.

- ▶ Please close the monitor program and change it to thermoIMAGER TIM Connect in the configuration dialog (Application Start Config), see Chap. 6.3

## 6.9 Write Protection Filter

The thermoIMAGER TIM NetPC has a factory pre-installed write protection filter. This filter, if activated, is protecting reliably the operating system and the complete drive C and allows a switch-off of the device without a shut down of the operating system. The status write protection filter can be seen as symbol in the task bar.



Fig. 31 Screen Write Protection - Customize

If you want to save the new settings or to install additional software, the write protection has to be temporarily disabled.

➡ To disable the write protection please move the cursor to the lock icon in the task bar and push the right mouse button:

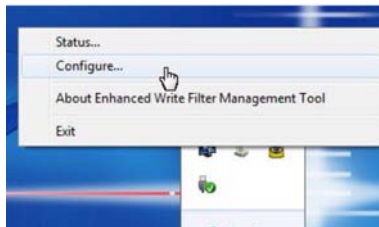


Fig. 32 Screen Write Protection - Configure

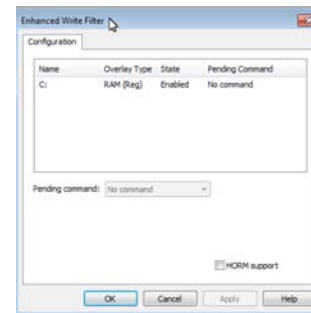


Fig. 33 Screen Write Protection - Enhanced Write Filter

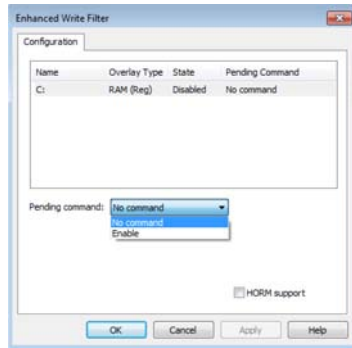
You can select between four different actions for deactivation:



No command	Do nothing
Disable	Disable write protection after restart
Commit	Not needed
Commit and disable live	Not needed

Fig. 34 Screen Write Protection Filter - Pending command 1

The SSD drive of the thermoIMAGER NetPC has by factory default two partitions. The write protection refers to partition C only. On the partition D you can save application data. On drive D also the calibration data of the des thermoIMAGER TIM are stored.



No command	Do nothing
Enable	Enables write protection after reboot

Fig. 35 Screen Write Protection Filter - Pending command 2

## 6.10 System Recovery

In case a recovery of the Windows operating system of the thermoIMAGER NetPC is necessary you should use the supplied USB recovery stick. Follow the steps described hereafter.

**i** Do not disconnect power from the thermoIMAGER NetPC during the recovery procedure.

After the system recovery the thermoIMAGER NetPC has the factory default settings. All data which was stored before on the SSD will get lost.

### Step 1:

- Please connect a VGA monitor and a USB keyboard with the thermoIMAGER NetPC.
- Connect the USB recovery stick to a free USB port and switch on the thermoIMAGER NetPC.
- If you see the following start screen, see [Fig. 36](#), please press the `DEL` button.

### Step 2:

Now you should see the following screen, see [Fig. 36](#).

- Select `Save & Exit`.

The next screen shows the available USB stick as `UEFI: USB 2.0 Flash Drive`, see [Fig. 37](#).

- Please select therefore the entry `USB 2.0 Flash Drive` and confirm with `Enter`.

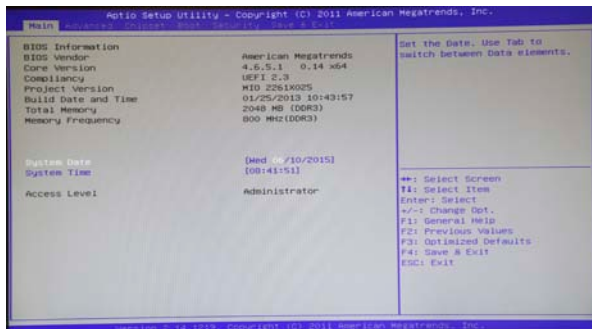


Fig. 36 View on 1 system recovery

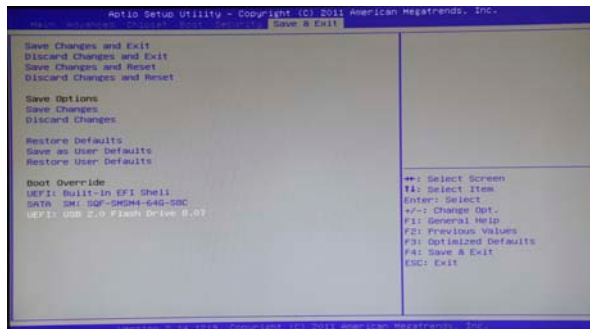


Fig. 37 View on 2 system recovery



From the USB stick the recovery software will be started as shown in the following figure, see Fig. 38:



Fig. 38 View on 3 system recovery

➡ Confirm with Enter.

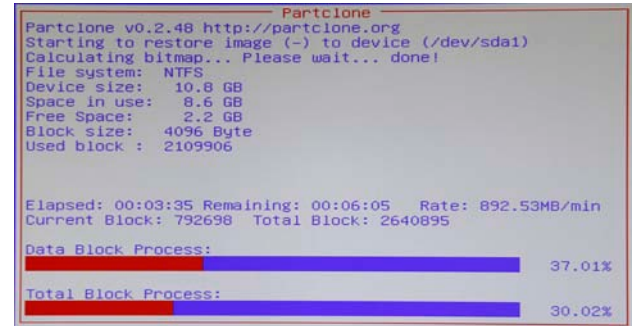


Fig. 40 View on 5 system recovery

**Step 3:**

After the complete system recovery the thermoIMAGER NetPC will be halted automatically.

➡ Now disconnect for a short time the power supply.

After reconnecting power and booting of the system you should see the following message:



*Fig. 41 View on 6 system recovery*

• Please be aware that after this selection the language can't be changed later anymore.

➡ Please select your language English or Deutsch, see [Fig. 41](#).



Fig. 42 View on 7 system recovery

➡ Please push the **Next** button.

The following window appears:

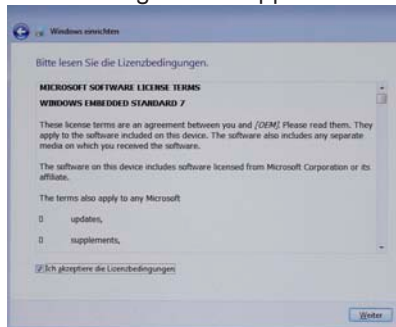


Fig. 43 View on 8 system recovery

➡ Accept the agreement and push the **Next** button.

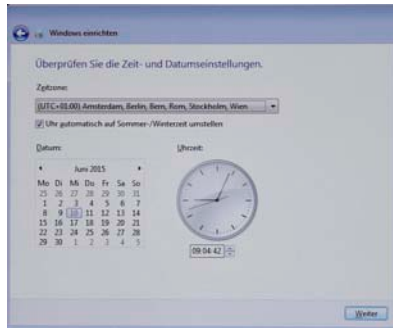


Fig. 44 View on 9 system recovery

➡ Select the time zone and push the Next button.

**Step 4:**

After the final reboot you will now see the Windows desktop.



➡ Now you must install the thermoIMAGER TIMConnect Software from the USB stick using the batch file NETPC-Restore.bat in the TIMConnect directory, see Fig. 45:

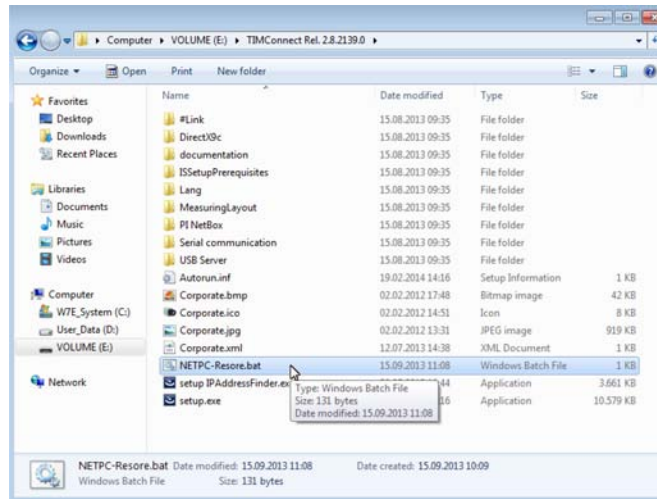
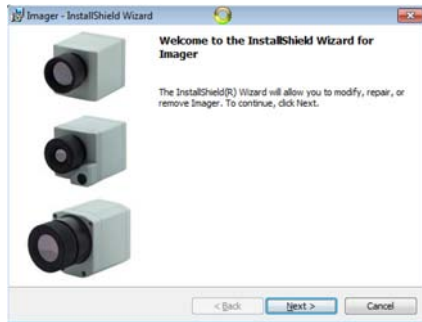


Fig. 45 View on TIMConnect directory

The process starts with the removal of preinstalled thermoIMAGER TIMConnect version.

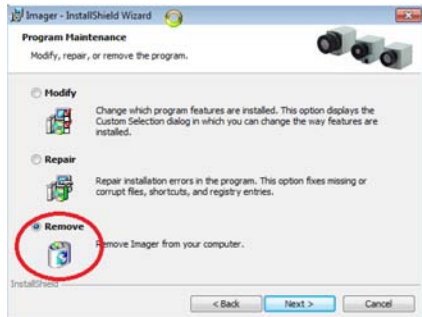
Following window appears:



The InstallShield(R) Wizard will allow you to modify, repair or remove thermoIMAGER TIM.

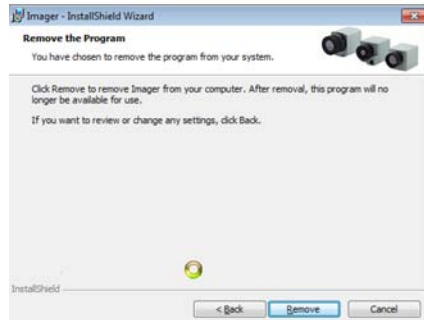
➡ Push the **Next** button to continue.

The following window appears:



➡ Select **Remove**, to remove thermoIMAGER TIM from your computer and then push the **Next** button.

The following window appears:



If you want to review or change all settings, click **Back**.

➡ Push the **Remove** button to remove the program from your computer.

After removal, this program will no longer be available for use.

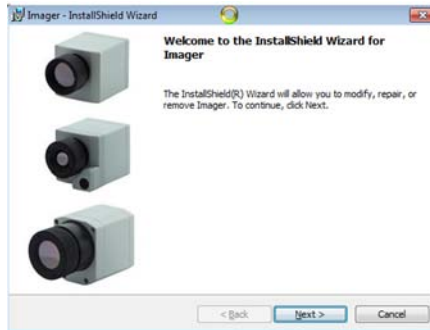
The following window appears:



The InstallShield Wizard is completed now respectively has successfully uninstalled thermoIMAGER TIM.

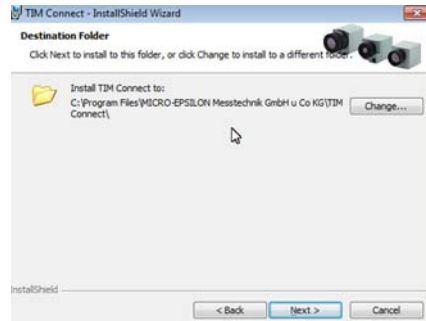
➡ Push the **Finish** button to exit the wizard.

Now the new installation starts and the following window appears:



➡ Push the Next button to continue.

The following window appears:

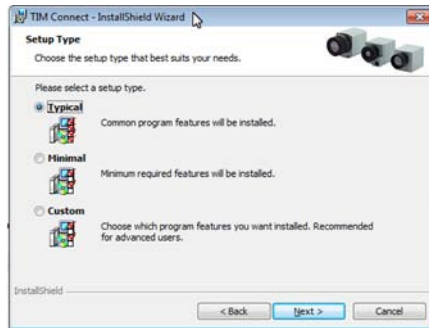


➡ Click Next to install thermoIMAGER TIMConnect to the standard path C:\Program Files\MI-CRO-EPSILON Messtechnik u Co KG \TIM Connect \.

**i** Do not change the standard path!



The following window appears:

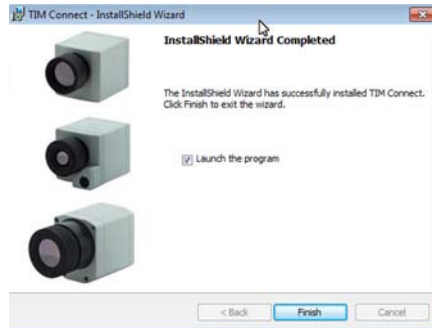


➡ Choose the setup type **Typical**, see [Fig. 46](#) and confirm with **Next**:

Typical	Common program features will be installed.
Minimal	Minimum required features will be installed.
Custom	Choose which program features you want installed. Recommended for advanced users.

*Fig. 46 Table setup selection*

The following window appears:



The InstallShield Wizard is completed and has successfully installed thermoIMAGER TIM Connect software.

➡ Push the **Finish** button to exit the InstallShield wizard.

The thermoIMAGER NetPC is now again ready for startup. The desktop should look like this, see [Fig. 47](#):



*Fig. 47 View desktop after installing the thermoIMAGER TIM Connect software*

## **7. Instructions for Operation**

### **7.1 Cleaning**

The housing of the thermoIMAGER NetPC can be cleaned with a soft, humid tissue moistened with water or a water based cleaner.

**NOTICE**

Never use cleaning compounds which contain solvents. Take care that no moisture infiltrates into the housing.

> Destruction of the Mini-PC

## **8. Warranty**

All components of the device have been checked and tested for perfect function in the factory. In the unlikely event that errors should occur despite our thorough quality control, this should be reported immediately to MICRO-EPSILON.

The warranty period lasts 12 months following the day of shipment. Defective parts, except wear parts, will be repaired or replaced free of charge within this period if you return the device free of cost to MICRO-EPSILON. This warranty does not apply to damage resulting from abuse of the equipment and devices, from forceful handling or installation of the devices or from repair or modifications performed by third parties.

No other claims, except as warranted, are accepted. The terms of the purchasing contract apply in full. MICRO-EPSILON will specifically not be responsible for eventual consequential damages. MICRO-EPSILON always strives to supply the customers with the finest and most advanced equipment. Development and refinement is therefore performed continuously and the right to design changes without prior notice is accordingly reserved.

For translations in other languages, the data and statements in the German language operation manual are to be taken as authoritative.

## 9. Service, Repair

In the event of a defect on the Mini-PC or the USB stick (USB recovery stick) please send us the affected parts for repair or exchange.

In the case of faults the cause of which is not clearly identifiable, the entire measuring system must be sent back to:



For customers in USA applies:

Send the affected parts or the entire measuring system back to:

For customers in Canada or South America applies:

Please contact your local distributor.

## 10. Decommissioning, Disposal

-  Disconnect the cable from the Mini-PC.
-  Do the disposal according to the legal regulations (see directive 2002/96/EC).

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