AMEDTEC ECG pro®

Installation Manual

v5.50

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Hardware and Software Requirements

- PC with Intel x86 / amd64 compatible processor, at least 1 GHz clock frequency.
  For stress test systems or AMEDTEC *ECGpro* Holter ECG at least 2 GHz.
  For database server at least 2 x 2 GHz.
  Multi-core CPUs are recommended.
- Min. 2 GByte random access memory.
  For stress test systems or AMEDTEC *ECGpro* Holter ECG at least 4 GByte RAM.
  For database server minimum 4 GByte RAM.
- Min. 5 GByte free hard disc storage
- 1 free USB 2.0 port for *CardioPart 12 USB* as well as printer and other devices.
  Please refer to the instruction manuals for devices supplied by AMEDTEC to get detailed information about connectivity and requirements.
- Supported operating systems are Microsoft Windows 11, Microsoft Windows 10, Microsoft Windows 8.1, each in the 32-bit or 64-bit edition.

  For server operating system we recommend Microsoft Windows Server 2022,
  Microsoft Windows Server 2019, Microsoft Windows Server 2016 or Microsoft Windows Server 2012 R2.
- Min. screen resolution 1024x768 pixel and 24 bit colour depth, for stress test systems at least 1280x960 px.
  Recommended screen resolution is 1280x1024 px, or 1920x1080 px for Holter ECG.
- The installation process of the AMEDTEC *ECGpro* software requires administrative privileges.
  For normal application usage, privileges of the predefined user group “Users” are sufficient.
- The AMEDTEC *ECGpro* software requires write access for the following directories and below:

```
%Temp%
%AllUsersProfile%\AMEDTEC ECGpro
%AllUsersProfile%\AMEDTEC Medizintechnik Aue GmbH
%ProgramFiles(x86)%\AMEDTEC ECGpro\Log
```

- Estimated hard disk usage:

AMEDTEC *ECGpro* application files	approx. 2.7 GB
Database server	approx. 600 MB
one Resting-ECG recording	approx. 40 Kbyte
one Rhythm-ECG recording	approx. 100 Kbyte
one Stress Test recording	approx. 3.5 MB
one Holter ECG recording	approx. 40 MB
one Holter ECG analysis	approx. 80 MB
one Holter ECG report	approx. 3 MB
one Holter-RR recording (24h ambulatory BP)	approx. 10 kByte



IMPORTANT:
In order to install AMEDTEC *ECGpro*, Windows administrator rights are required!



IMORTANT, WHEN USING INTERLINK:
An update might lead to incompatibility between linked AMEDTEC *ECGpro* Interlink systems.
Wherefore with applying an update, all other AMEDTEC *ECGpro* systems connected via Interlink will require an update to the identical version of AMEDTEC *ECGpro* as well.
Please contact your local AMEDTEC support for further assistance.

Variants of application and procedure

There are two operating modes for AMEDTEC *ECGpro*.

I. Single workstation with a local database

II. Network with shared database and at least one workstation



The basic network variant "AMEDTEC *ECGpro* NetworkLight" is restricted to a maximum of 3 fixed clients.
To remove this limitation, a network dongle licence is required.

Important!
If you plan to update an AMEDTEC ECGpro version 1.xx, 2.xx or 3.xx to 4.xx and above, and you have AMEDTEC ECGpro dongles in use, each of these dongles must be updated. Please make sure that you have done the dongle update before you start the software update.
Please contact your local distributor or AMEDTEC Medizintechnik Aue GmbH in a timely manner.

Are you using AMEDTEC ECGpro Holter-RR with AMEDTEC ECGpro version 3.33 or earlier?
Please install AMEDTEC ECGpro version 3.88 first to keep your existing ABDM recordings!
In AMEDTEC ECGpro version 3.88 enter the Holter-RR settings and synchronize the databases.

The installation of AMEDTEC *ECGpro* for network should be done in the following order:

1. install Microsoft SQL Server

   This step is optional. Alternatively, you can install the Microsoft SQL Server Express edition with help of AMEDTEC *ECGpro* setup. Any other edition of SQL Server must be installed before starting the AMEDTEC *ECGpro* setup.

   If you decide to install SQL Server by yourself, please take care to enable "Mixed Authentication Mode". This will allow Windows users as well as database users (like 'sa') to access the database.

   Further notes on configuring SQL Server can be found in chapter "Setting up existing Single Workstations for using a central database".

2. install AMEDTEC *ECGpro* on server

   To set up the database for AMEDTEC *ECGpro*, you have to install AMEDTEC *ECGpro* on the server PC. If step 1 is not applicable, you have to select "Install Microsoft SQL Server" during setup process now.

   Please select the option "network server" at AMEDTEC *ECGpro* setup.

3. install AMEDTEC *ECGpro* on every client

   You have to install AMEDTEC *ECGpro* with the option "Network Client" or "Network Client with local database" selected on every PC in the network that is desired to work with central data on server.

This installation order should be maintained for program updates to.

Installing AMEDTEC *ECGpro*

In case of a **software update** of AMEDTEC *ECGpro*, it is recommended to attach all acquisition devices to the PC before the installation of AMEDTEC *ECGpro*. This will guarantee a safe operation further on.

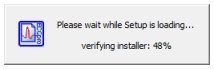
Make sure that all system requirements from paragraph **Hardware and Software** are fulfilled.

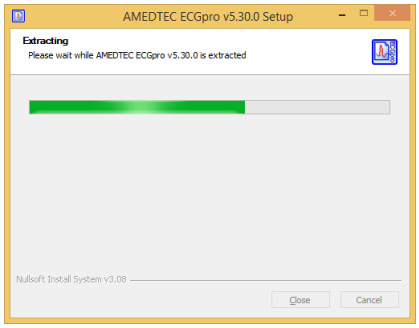
Insert the AMEDTEC *ECGpro* installation CD.

If the setup does not start automatically, please start "**Install.exe**" from CD.

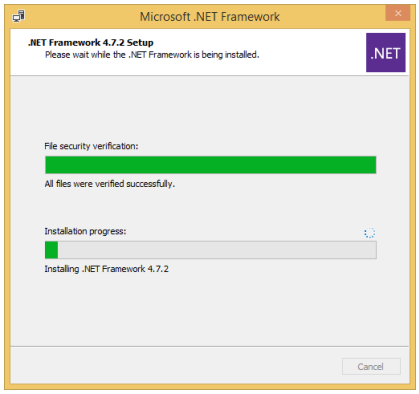


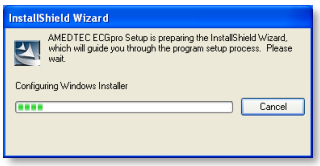
The starting process may take some minutes since system components have to be configured and files unpacked.

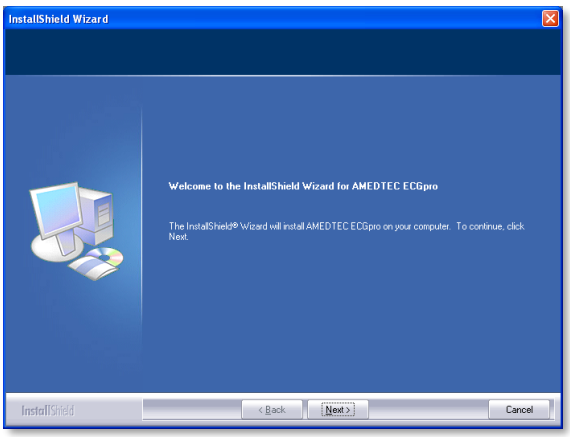




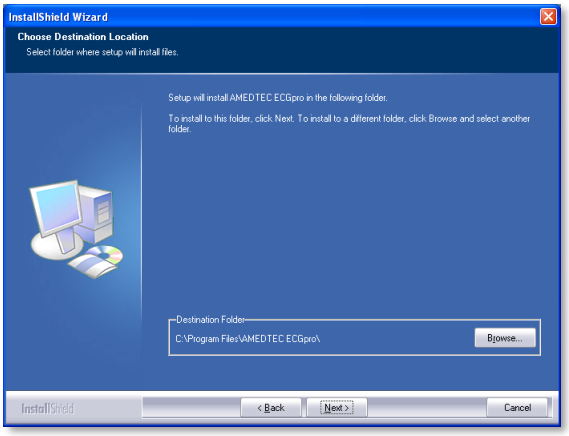
If your system does not have .NET Framework 4.7.2 installed, it will be installed now.





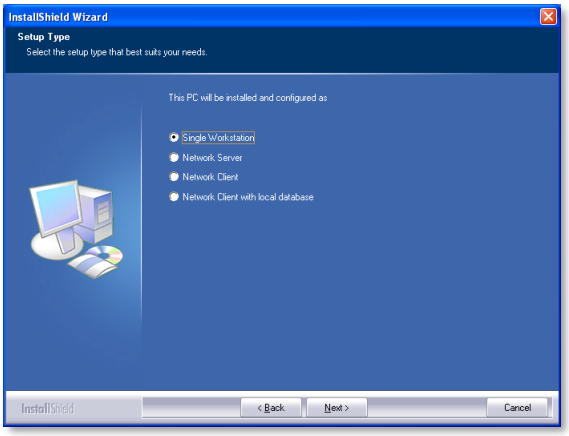


Confirm the suggested directory by clicking “Next“. Alternatively select another local directory for the installation of AMEDTEC *ECGpro*.

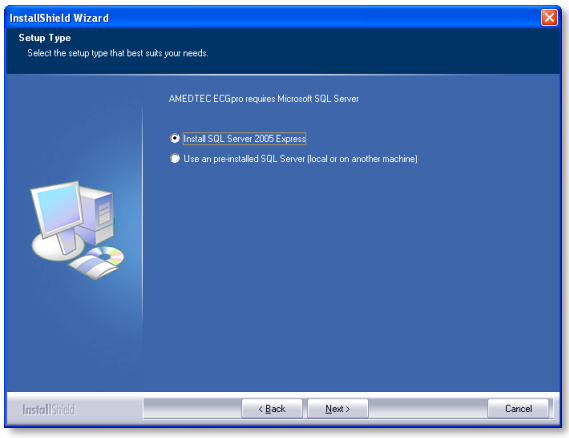


A PC with AMEDTEC *ECGpro* can be configured for the following purposes:

- **Single Workstation**
  AMEDTEC *ECGpro* is working on a local database that is used by this PC only.
- **Network Server**
  This PC is offering a database for any workstation that is configured as *Network Client*.
- **Network Client**
  An AMEDTEC *ECGpro* workstation that is using the central database.
- **Network Client with local database**
  An AMEDTEC *ECGpro* workstation with enhanced reliability and possibility to work temporary disconnected from the central database.



Microsoft SQL Server is the mandatory data storage for AMEDTEC *ECGpro*. You can decide whether to install the bundled Microsoft SQL Server Express or use any other preinstalled and preconfigured SQL Server.

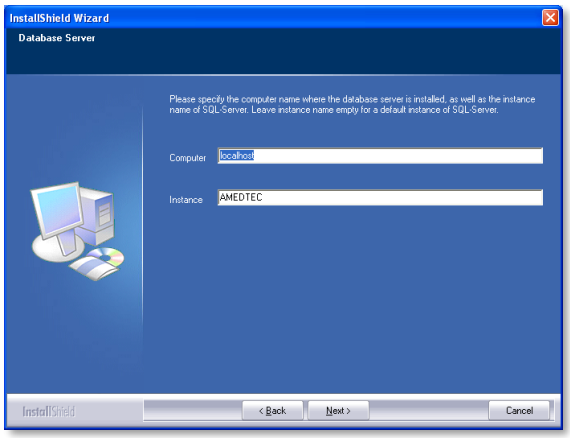


Note:
A network server can be supplied by the SQL Server Express Edition as well, but we recommend to select an edition of Microsoft SQL Server that fit your needs best. There are performance and volume restrictions that do not recommend using the Express Edition as server.

This dialog is shown when the option "**Network Client**" was selected before. You have to specify the address of the AMEDTEC *ECGpro* database here.

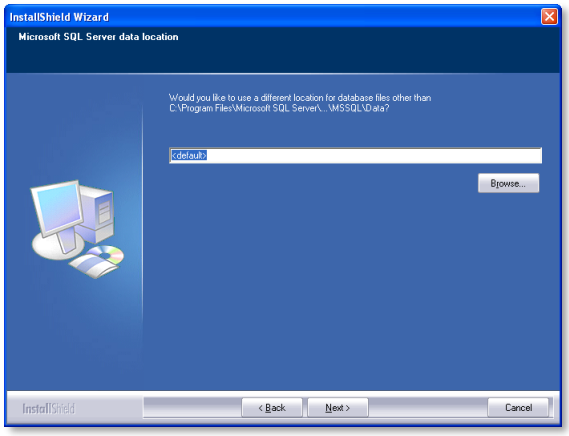
The computer name is the DNS name by that the PC is known in network, the FQDN or its IP address.

The SQL Server Instance name was specified on SQL Server setup and is set to 'AMEDTEC' for all servers installed by AMEDTEC *ECGpro* setup. When you did install SQL Server as "**Default Instance**" the field instance name must be blank.



If you want all database files to be located on a drive other than the system volume C: \, enter the desired path here.

The '<default>' option will use the standard SQL Server installation directory on drive C:\.



The database of AMEDTEC *ECGpro* is protected by password.

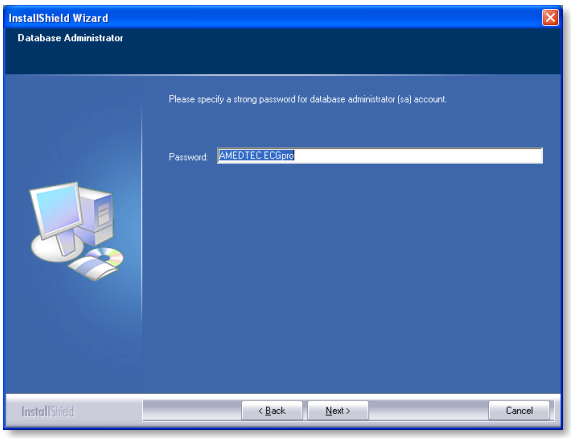
This password is required if you login to AMEDTEC *ECGpro* in "**Database Maintenance Mode**". This holds e.g. for the user administration.



The password for the database is subject to the "Strong Password" conventions.

Passwords are safe when they are hard to guess and when they cannot be decoded by a computer program. Please note the following guidelines when deciding for a password:

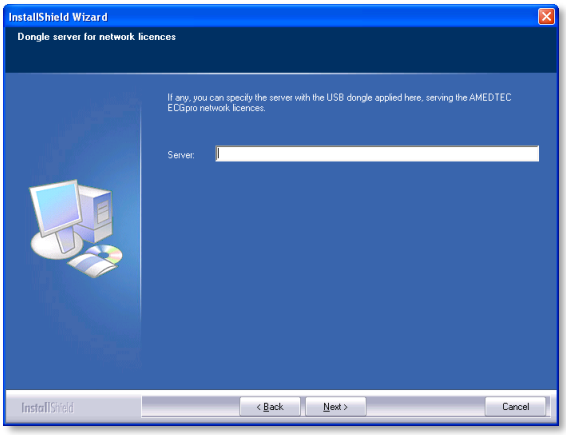
1. Safe passwords should not contain impermissible conditions or expressions:
   - an empty or NULL password
   - "password", "codeword"
   - "admin"
   - "administrator"
   - "sa"
   - "sysadmin"
2. A safe password should not contain the following expressions in connection with the computer on which the program shall be installed:
   - name of the user currently logged in to the PC
   - PC name
3. A safe password consists of at least 8 characters and fulfils at least three of the following criteria:
   - It must contain capital letters.
   - It must contain small letters.
   - It must contain numerals.
   - It must contain non-alphanumeric signs, e.g. #, %, or ^.



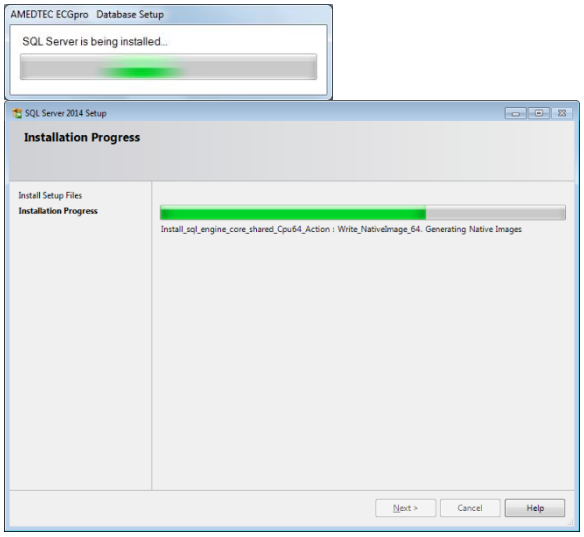
If you have already purchased additional network licences and already know the PC / server to which you want to connect the licence dongle, enter the computer name or IP address of the dongle server.

This input allows the client to find licenses of the dongle server outside of its own subnet.

This value is optional and can be set / changed later at any time. Open your internet browser and go to **http://localhost:1947/_int_/config_to.html**.
Enter the dongle server computer name into the field "**Remote License Search Parameters**".

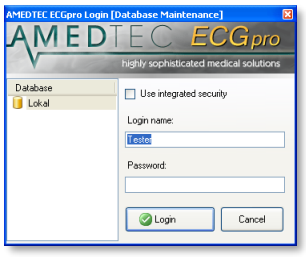


The AMEDTEC *ECGpro* Database Microsoft SQL Server 2014 Express is being installed.

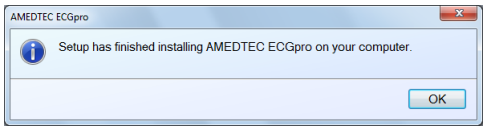


If you see this login dialog, please activate "**Use integrated security**" and confirm with "**Login**".

When it fails unexpected, uncheck integrated security and use Login name 'sa' and the database password from the SQL Server installation.



The installation of AMEDTEC *ECGpro* was completed successfully.



For further information about how to use AMEDTEC hardware please refer to the enclosed manuals.

Instruction Manuel CardioPart 12 USB	*011-0411-6*
Instruction Manuel CardioPart 12 Blue	*016-0411-6*
Instruction Manuel CardioPart 12 WLAN	*022-0460-6*
Setup Guide CardioPart 12 WLAN	*022-0471-6*
Instruction Manual EP830	*019-1923-6*
Instruction Manual EP820	*019-0823-6*
Instruction Manual Holter-RR	*020-0451-6*
AMEDTEC ECGpro Settings	*015-0017-6*



Holter ECG:
For reasons of speed and data size, we strongly recommend to store *Holter ECG recordings* and *analyses* on an AMEDTEC *ECGpro* Medium, which is a storage location outside the SQL Server.

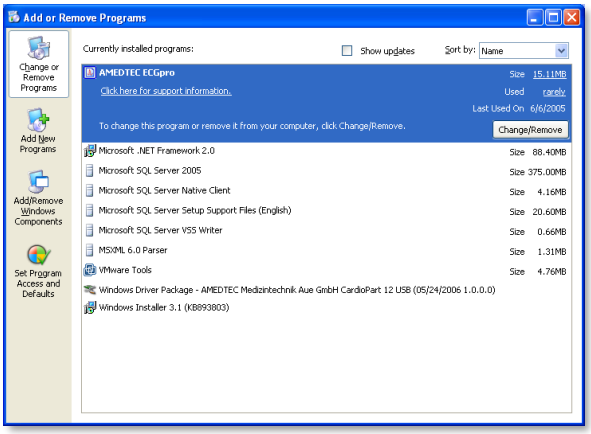
In order to set this up, open the Media Management via AMEDTEC *ECGpro* "File" menu → "Settings" → "Database" → "Media management", and follow those two steps:

1. Create a new medium on a file share which all AMEDTEC *ECGpro* clients running Holter ECG have read/write access rights on. It is much recommended to enter the share's UNC network path here, to make sure that all AMEDTEC *ECGpro* workstations will be able to find that share. (In contrast to using mapped drive letters, which might differ between the various machines.)
   Note: Media located on a local drive rather than a file share will not be accessible from other clients in the network!

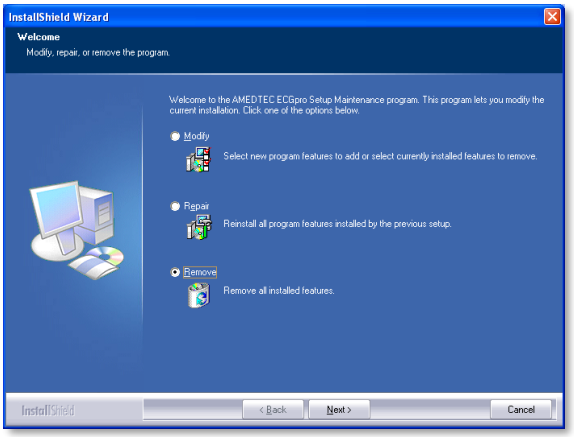
2. Switch to the "Default location for data" tab, and assign the medium as the "Default location" for "Holter Recording" and "Holter Analysis".

Uninstalling AMEDTEC *ECGpro*

AMEDTEC *ECGpro* can be uninstalled at any time with help of
"*System Control/Software*".



Please note that neither the data generated by the program nor the database are removed.



Setting up existing Single Workstations for using a central database

Please define whether you will use AMEDTEC *ECGpro* as Single Workstation or network solution right before starting with installation process.
This instruction is intended to be used for a subsequent manual configuration only.

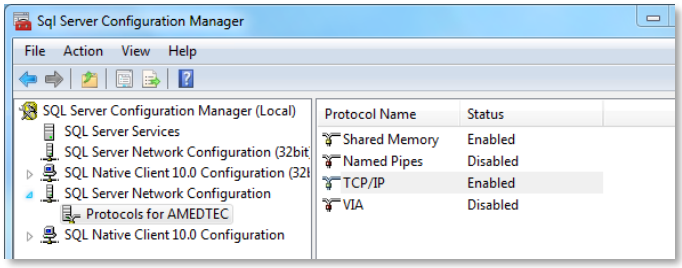
Workstations connected via a network can work with a shared database. For this purpose, a specific configuration of all involved systems is required.

We differentiate between client and server. A client is a system from which AMEDTEC *ECGpro* gains access to a shared database. A server is a PC in a network which provides the shared database. It is recommended to select the PC as server that offers the highest performance (especially random access memory). Furthermore, consider the fact that this PC must permanently be in operation if AMEDTEC *ECGpro* is run on one of the clients. By virtue of these facts, it is reasonable for a small network to adjust the acquisition station as Server. In this case, the acquisition station will be Server as well as Client.

Server

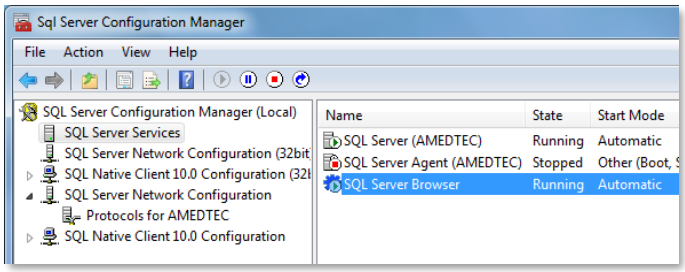
Launch the "*SQL Server Configuration Manager*" by searching the Windows start menu.

Go to "SQL Server Network Configuration -> Protocols for AMEDTEC".
Click on "**TCP/IP**" with the right mouse button and say "**Enable**".

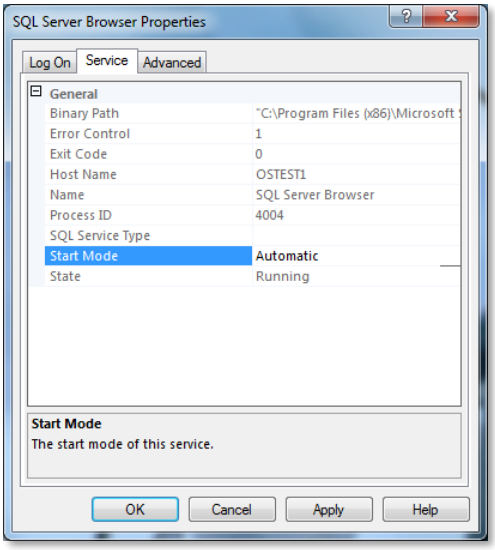


Go to "SQL Server Services".
Click on "**SQL Server (AMEDTEC)**" with the right mouse button and say "**Restart**".

Then click on "**SQL Server Browser**" with the right mouse button and select "**Properties**".



Go to file card “Service”.
Change “Start Mode” to “**Automatic**“.
Then go to file card “Log On” and click on “**Start**”.



Now you can continue with the client installation as explained before.

Firewall rules

Consider the fact that an activated firewall on the server machine will block connection to the SQL Server and SQL Browser.

Please configure the firewall rules to allow incoming connections to this programs or disable the firewall.

„c:\Program Files (x86)\Microsoft SQL Server\90\Shared\SqlBrowser.exe“

and

„c:\Program Files\Microsoft SQL Server\MSSQL10_50.AMEDTEC\MSSQL\Binn\SqlServr.exe“

Unattended Silent Installation

For an unattended and silent AMEDTEC *ECGpro* client installation process please follow this procedure:

1. Record the parameters:
   a. Take a fresh workstation PC
   b. Open command prompt
   c. Navigate to directory “`%allusersprofile%\AMEDTEC ECGpro\Setup`”
   d. Start recording with “`setup.exe -r -f1C:\setup.iss`”
   e. When client setup finished, open “`setup.iss`” with notepad and enclose each string parameter by “
2. Rollout the silent installation on every client:
   a. Copy all files from directory “`%allusersprofile%\AMEDTEC ECGpro\Setup`” to the target machine at the same location
   b. Copy “`setup.iss`” to C:\ of the target machine
   c. Run “`setup.exe -s -f1c:\setup.iss -f2install.log`”

   Note: “-f1<iss-File>” must include the entire path.

End User License Agreement

This licence agreement is entered into between yourself, hereinafter referred to as the “Customer” and AMEDTEC Medizintechnik Aue GmbH, hereinafter referred to as “AMEDTEC”. The object of the agreement is the granting of a licence for use of AMEDTEC ECGpro software, hereinafter referred to as "Software". This licence agreement also applies to new versions of the software and to upgrades and updates.
By installing, copying or using the software the customer confirms that he will acknowledge and observe the conditions of this licence agreement unreservedly. If the customer does not agree with the conditions of this licence agreement, he may not install, copy nor use the software.

1. Definitions

1.1 AMEDTEC ECGpro NetworkLight
AMEDTEC ECGpro NetworkLight includes a network licence for up to 3 workstations hard-coded into the ECGpro database (named user licence model). This licence is always limited to a maximum of 3 workstations with regard to a shared database, even if several NetworkLight licences are acquired.

1.2 AMEDTEC ECGpro xNet network licence
AMEDTEC ECGpro xNet includes a floating network licence (concurrent user licence model) for up to x workstations. X describes the maximum number of workstations which can simultaneously access the AMEDTEC ECGpro database.

1.3 AMEDTEC ECGpro Holter EP8 Net
AMEDTEC ECGpro Holter EP8 Net includes the licence for use of the Holter analysing software at a workstation. According to the scope of services, a distinction is made between licence models A Net, S Net and H Net. The number of Holter analysing licences available is not linked to the number of available network licences. A licence must be acquired for each workstation having access to the Holter analysing software simultaneously with other workstations within a network environment. The download of Holter recordings and the review of a Holter report does not require a Holter EP8 Net licence.

1.4 AMEDTEC ECGpro Interlink
AMEDTEC ECGpro Interlink includes the licence for transmission of records/investigations from a client (e.g. GP office) to a server (e.g. Evaluation Center) by FTP data transmission. For data security reasons, the transmission of patient information should be refrained from to the greatest possible extent. If patient information needs to be transmitted, Interlink's encryption option should be used. If desired, AMEDTEC can provide an FTP server. However, AMEDTEC accepts no guarantee and is not liable for data protection infringements.

1.5 Software keys
If agreed with the customer, software keys are used to give access to certain software functions. For security reasons, the term of the software keys is limited to 24 months. Software keys must then be reactivated. If the customer has entered into a maintenance contract with AMEDTEC, AMEDTEC will notify the customer of the pending reactivation in a timely manner by email, telephone or post. For reactivation, the customer will (a) facilitate remote access for AMEDTEC service or (b) undertake reactivation himself or (c) enable the service employee local access to the server or one of the clients.
Reactivation can take place 3 months before expiry of the licence at the earliest. If reactivation occurs within this period, the term is extended by 24 months. If reactivation occurs after expiry of the validity period, validity is extended by 24 months from the time of reactivation. If the customer extends his licence, e.g. by purchasing further options or by purchasing further network licences within the term of his software key, the validity is extended by 24 months from the time the extension is issued.
There is the option of acquiring so-called clone licences in order to enable automated shifting of a virtual server which contains software keys to hosts with other CPU characteristics.
If a relocation/modification of a server which contains software keys is pending, the customer must contact AMEDTEC in advance.

2. Licence

2.1 Scope
AMEDTEC hereby grants the customer the non-exclusive, non-transferrable and non-assignable right (a) to install the software and to execute it on hardware using the documentation which is specified in the “AMEDTEC ECGpro System Requirements” and (b) to create a copy of the software for archiving and back-up purposes.

2.2 Restrictions
Section 2.1 defines the customer’s right to use the software and documentation.
Furthermore, the customer is not entitled (a) to use the software otherwise than as regulated in this licence agreement, (b) to assign a sub-licence or rights to the software, (c) to develop a product derived from the software, (d) to reverse engineer the software, to decompile, reassemble, decrypt or otherwise modify the

software, (e) to develop the source code for the software, (f) to circumvent encryption by functions protected with technical means, (g) to copy software keys or to illegally use them on multiple occasions, (f) to remove, conceal or modify copyright notes in the software or documentation.

2.3 Retention of title

The software and documentation are protected by copyright. No right of ownership, copyright, patent right, trademark right or other commercial property right to the software and documentation is transferred to the customer. AMEDTEC reserves all rights and claims (including any copyrights without restriction) to the software and documentation.

3. Warranty

3.1 Area of application and duration

The warranty period is 12 months with respect to entrepreneurs, legal entities under private and public law or separate legal entities under public law.

3.2 Scope

AMEDTEC guarantees that (a) the software fundamentally corresponds to the specification shown in the documentation, (b) the data medium on which the software was supplied is free from defects and (c) the software is free from computer viruses and programs which are capable of infecting or damaging the software to the best of one's knowledge.
AMEDTEC shall make every economically justifiable effort to improve the software if this is defective for the purpose of the foregoing warranty, provided that the customer notifies AMEDTEC of the defect in writing within the warranty period.

3.3 Exclusion

AMEDTEC shall accept no liability if the software (a) is used otherwise than as described in the documentation, (b) has been modified or damaged by the customer or by a third party or (c) is operated on hardware which does not comply with the requirements specified in the "AMEDTEC ECGpro System Requirements".
It is explicitly pointed out and acknowledged by you that it is not possible according to the state of the art to develop software applications for PCs in such a way that they work in an error-free manner under all conditions. AMEDTEC Medizintechnik Aue GmbH therefore accepts no guarantee for the error-free operation of the software.
AMEDTEC does not guarantee the retention of all programs and data already present on the PC at the time of installation. Data must be backed up before installation.
Third party software programs can impair the software's function.
AMEDTEC Medizintechnik Aue GmbH shall accept no liability for the error-free functioning of the software if other software programs are simultaneously active on the PC.

4. Limitation of liability

In the case of damage which did not directly arise on the software, AMEDTEC shall only be liable in the case of intent or gross negligence on its part. Liability for compensation is limited to damage typically occurring which was foreseeable upon signature of the agreement. Other claims are precluded.
Follow-up claims are precluded. In particular, AMEDTEC shall not be liable for operational interruptions or lost profit.
The foregoing liability restrictions do not affect product liability claims. They shall not apply in the case of damage to body and health attributable to AMEDTEC or in the case of loss of life.

5. Use of virus scanners

5.1 AMEDTEC ECGpro software accepts installed virus scanners without limitation.

5.2 Virus scanners may not block files, shift files to quarantine containers or otherwise impede the execution of files which AMEDTEC ECGpro requires for operation. This relates to AMEDTEC ECGpro program and data files, all of their dependencies (including .NET Framework, C++-Runtime, device drivers, Windows-DLLs), the MS SQL server and its dependencies and the database files themselves.

6. Windows updates

AMEDTEC recommends the installation of Windows updates and service packs provided by Microsoft. New Windows versions should only be installed following consultation with AMEDTEC. You should therefore seek the consent of your distributor or AMEDTEC directly before installing a new operating system version. The operator is personally responsible for updating the PC systems he uses.

7. Term of the agreement

The term of this licence agreement starts upon delivery of the software. The licence agreement is valid for an unlimited time.

8. Place of fulfilment, place of jurisdiction, applicable law

The place of fulfilment for delivery and payment is Aue. The law of the Federal Republic of Germany applies with the exception of conflict of law rules. Application of UN sales law is precluded.
The place of jurisdiction for dealings with merchants is Aue. However, AMEDTEC is entitled to also assert a claim at any other legal place of jurisdiction.

9. Miscellaneous

Should individual clauses of these general terms and conditions of business be or become null, void and/or unenforceable this shall not affect the effectiveness of the remaining clauses. Null, void and/or unenforceable clauses must be substituted by such effective and enforceable regulations which are closest in meaning to the economic purpose striven towards. The same applies if these conditions contain a gap.

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Due to ongoing development, AMEDTEC reserves the right to change specifications and documentation without prior notice.

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