AMEDTEC *ECGpro* v5.10 – System Requirements

	Resting ECG	ECG Diagnostic	Holter ECG Review Module	Holter-RR	Stress Test	Holter ECG Analyser	Pulmonary tests with Blue Cherry	Server
CPU	Intel compatible min. 1 GHz				Intel compatible min. 2 GHz	Intel compatible min. 2 x 2 GHz	Intel compatible min. 2 GHz	Intel compatible min. 2 x 2 GHz
RAM	min. 2 GB				min. 4 GB		min. 2 GB	min. 4 GB
Hard Disk	min. 5 GB available *a solid-state drive is recommended*							
Display	min. 1024x768 (at 96 dpi)				min. 1280x960 (at 96 dpi)	min. 1280x960 recommended 1920x1080	min. 1024x768 (at 96 dpi)	min. 1024x768 (at 96 dpi)
Interfaces	1x USB 2.0			1x USB 2.0 or RS232	1x USB 2.0 and RS232 for Ergometer	1x USB 2.0	1x USB 2.0 or RS232	1x USB 2.0 (for licence dongle) 100 Mbit LAN
Operating System *32bit + 64bit*	Windows 10 Windows 8.1 Windows 7 SP1					Windows 10 Windows 8.1 Windows 7 SP1 *64bit recommended*	Windows 10 Windows 8.1 Windows 7 SP1	Windows 2019 Windows 2016 Windows 2012 R2 Windows 2008 R2 Windows 10 Windows 8.1 Windows 7 SP1
Software	Adobe® Reader® starting with version 9							

General Notes

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 to the following directories and below:

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

The CardioPart 12 USB ECG acquisition device should be operated on a separate USB channel. The device has a power consumption of up to 250 mA, which must be provided by the computer.

All AMEDTEC devices requiring a USB 2.0 port are also compatible with USB 3.x.

Virus scanner

1. AMEDTEC *ECGpro* Software accepts installed virus scanners.
2. Files that AMEDTEC *ECGpro* requires for operation, must not be blocked, moved to quarantine containers or otherwise prevented them from being executed. This relates to the AMEDTEC *ECGpro* program- and data files, all their dependencies (i.e. the .NET-Framework, the C++-Runtime, device driver, Windows-DLLs), the MS SQL Server and their dependencies, as well as the database files.
   Taking these preconditions into consideration virus scanners can be safely used.

Windows Updates

1. In general, AMEDTEC recommends installing Windows security updates.
2. AMEDTEC develops according to relevant software development standards and regularly tests its software on the operating systems listed above.
3. Nevertheless, it is impossible to test all the configurations of Windows Updates on the various hardware environments and to guarantee the unlimited operability of the software at any time. It is the responsibility of the operator to hold backups of running systems.

Approx. hard disk usage

AMEDTEC *ECGpro* application files	approx. 2.7 GB
Database server application files	approx. 600 MB
1 Resting-ECG recording (10sec.)	approx. 40 kB
1 Rhythm-ECG recording (30sec.)	approx. 100 kB
1 Stress Test recording (20min.)	approx. 3.5 MB
1 Holter ECG recording (24h)	approx. 40 MB
1 Holter ECG analysis (24h)	approx. 80 MB
1 Holter ECG report (12 pages)	approx. 3 MB
1 Holter-RR recording (24h ambulatory BP)	approx. 10 kB

Compatible SQL Server versions

- Microsoft SQL Server 2005
- Microsoft SQL Server 2008 / 2008 R2
- Microsoft SQL Server 2012
- Microsoft SQL Server 2014
- Microsoft SQL Server 2016
- Microsoft SQL Server 2017

All available editions of Microsoft SQL Server (Express, Standard, Enterprise, Datacenter, etc.) are supported, except for Compact and other embedded variants.

AMEDTEC *ECGpro* software keys

All software keys used with AMEDTEC *ECGpro* will expire 2 years after the date of issuance.

Starting 30 days before the license will expire, AMEDTEC *ECGpro* will show a respective notice on every program start. The customer will need to contact his distribution partner or AMEDTEC directly in order to extend the license for a fee.

In case of an existing maintenance agreement, AMEDTEC themselves will regularly check the corresponding software keys for expiring licenses and will contact the customer if necessary.

The expiry date of a software license can always be extended by a further 2 years (part no. 100 727).

Notes:
- When extending a software license date, the new expiry date will be set to 2 years after the current expiry date.
- The earliest possible date to extend a license is 3 months before the expiry date.
- If existing licenses will be extended by additional licenses (for example by purchasing additional network licenses or additional options/features), the validity is automatically extended to 2 years from the date of issuance of the extension.

Software keys in physical computers

Software keys used in physical computers running AMEDTEC *ECGpro* are bound to the following components:

computer's/server's mainboard ID
hard disks present in the computer/server at the time of issuance of the software key

Note: Hard disks added to the computer/server after the software key was issued do not affect the validity of the software key.

If one or both components will be changed, the software license will become invalid. Such keys will be marked as CLONED in the *Sentinel Admin Control Center*, available under http://localhost:1947.

To ensure proper functionality, the following must be payed attention to:

Whenever a mainboard or a hard disk relevant for the software key is to be replaced, the customer needs to **get in contact with AMEDTEC <u>before</u> the replacement**. AMEDTEC will then assure that the existing software key will still be valid with the new components.

Software keys in virtual machines

Software keys used in virtual machines (VMs) running AMEDTEC *ECGpro* are bound to the following components:
a) MAC address(es) of the (virtual) network card(s) of the virtual machine
b) UUID of the virtual machine
c) CPU features of the host system

If any of these components will be changed, the software license will become invalid. Such keys will be marked as CLONED in the *Sentinel Admin Control Center*, available under http://localhost:1947.

To ensure proper functionality, the following must be payed attention to:

To a) It is necessary to ensure that all network card(s) present in the virtual machine at the time of the software key issuance use **static MAC address(es)**, so that those MAC address(es) will not change over time.
Please note that many host systems assign dynamic MAC addresses by default. Please check this setting carefully before issuing an AMEDTC *ECGpro* software key.

Notes:
- Virtualization systems typically use different, not-overlapping MAC address ranges for dynamic vs. static addresses.
- If the MAC address should change after issuance of the license, and if it's not possible to switch back to the previous MAC address, a new software license will need to be issued for an according fee.

To b) If the VM is moved between different hosts, the software key will only work (i.e. be valid) as long as the CPU properties of the different hosts are the same. So, in server clusters a rule should be defined, if possible, which ensures that the VM is only moved between hosts of identical CPU properties.

If this is not possible, AMEDTEC can issue up to a few secondary software keys (part no. 100 726) for the other CPU types. With this setup, always one of the installed software keys will be valid on the particular host.

Whenever a host is to be replaced, the customer needs to **get in contact with AMEDTEC before the replacement**. Together with the customer, AMEDTEC will untie the key from the existing host and bind it to the new one. Please note that this is only possible at a time when **both the old and the new host are running and available**.

CardioPart 12 WLAN

For the communication of the CardioPart 12 WLAN with AMEDTEC *ECGpro*, a certificate for server/client authentication (Web SSL) is required on the AMEDTEC *ECGpro* application server.

The CardioPart 12 WLAN can be connected to a network via LAN 100Base-T and Wi-Fi 4 802.11b/g/n using 2.4 GHz.
The security standards WEB, WPA, WPA 2 PSK and WPA 2 EAP "Enterprise" (WPA-802.1X) are supported in the WLAN.

Nonin WristOx2 BLE

Windows 10, version 1703 or higher is required to use the pulse oximeter Nonin WristOx$_2$® Model 3150 with Bluetooth® Low Energy.