



# Instruction manual

## X-Remote<sup>®</sup> Local



Industrial IT

Read these instructions carefully before using and store for future reference. The instructions contain important information on the installation, configuration, security and practical use of the software.

If resold, include the instructions with the product.

These instructions can be downloaded from: [www.ads-tec.de](http://www.ads-tec.de) in the download area.

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# 1 Notes

## 1.1 Relevant documentation

The following documents are decisive for software setup and operation:

Instruction manual (this document):

Includes information on the installation, configuration, security and practical use of the software.

Website

You can download current drivers, software updates, user manuals, brochures and flyers from the **Download** section of our website [www.ads-tec.de](http://www.ads-tec.de).

## 1.2 Explanation of used symbols

### ATTENTION

Indicates a possibly damaging situation. If not avoided, the system or something in its surroundings could be damaged.



### Recommendation for use:

Indicates terms and/or conditions that strictly need to be observed to ensure optimised and/or zero-defect operation. Tips and suggestions for the efficient use of the device and software optimisation are also provided.

## 1.3 Data, figures and modifications

All texts, data and figures are non-binding. We reserve the right to make changes that serve technical development. At the point in time that the products leave our premises, they comply with all currently applicable legal requirements and regulations. The operator/operating company is independently responsible for compliance with and observance of any subsequently introduced technical innovations or new legal requirements, as well as for all usual obligations of the operator/operating company.

## 1.4 Trade marks

It is noted that any software and/or hardware trademarks and any company brand names as mentioned in this documentation are all subject to the general trademark, brand name and patent protection rights. Windows® is a registered trade mark of the Microsoft Corp. Any other additional trade marks and/or brand names herein, be they domestic or international, are hereby duly acknowledged.

## 1.5 Copyright

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Infringements or violations shall result in an obligation to provide compensation for damages.

## 2 Basics

### 2.1 Features of X-Remote<sup>®</sup> Local

- X-Remote<sup>®</sup> Local is a software program for industrial remote control and remote maintenance in local production networks.
- It enables the simultaneous display of screen information of a master computer on multiple operating stations that themselves require no server operating system.
- Operating rights are uniquely assigned: only one station may operate the master computer. This eliminates the possibility of inconsistencies caused by simultaneous operation by multiple stations.

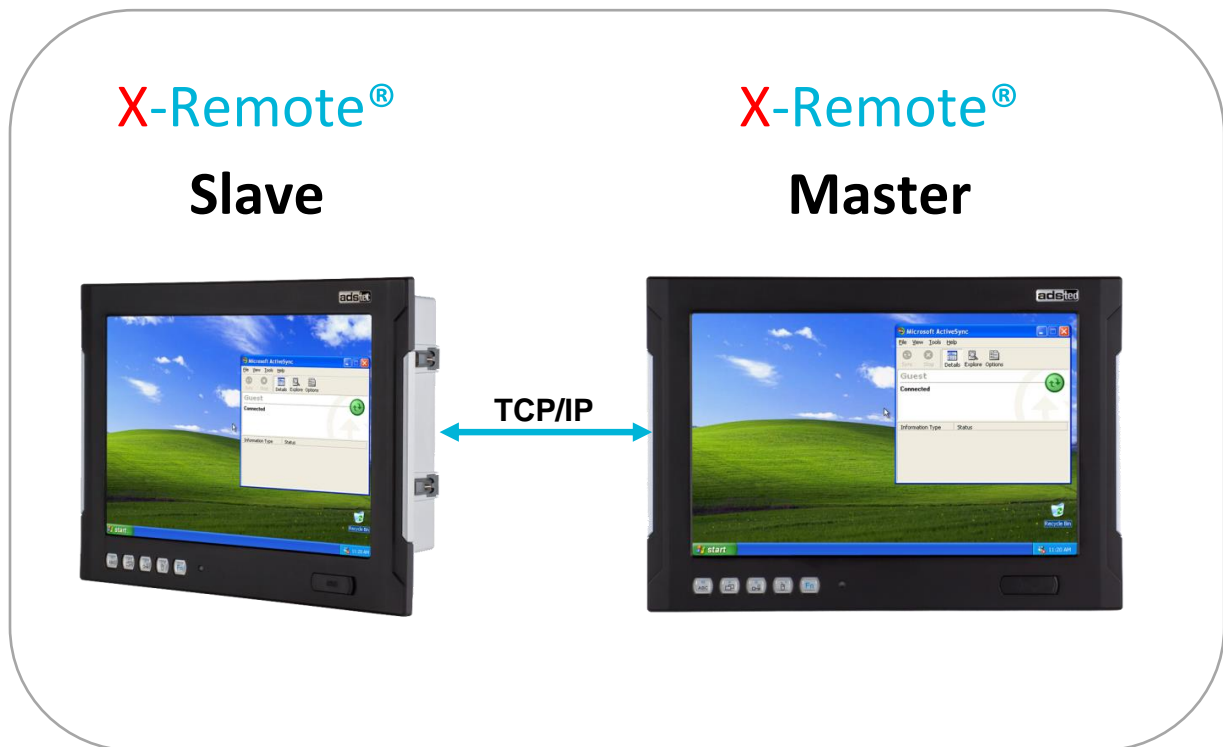
Other features:

- File transfer between computers, e.g., for software updates
- Clipboard: exchange information between computers by means of the clipboard
- Compact memory requirements: < 50 MB
- Simple installation
- Communication via the existing TCP/IP network infrastructure
- Prepared for use in embedded systems.

## 2.2 Basics

X-Remote consists of two software components. The master or image supplier sends its screen content to one or more image recipients (slaves). TCP/IP and UDP are used as connection protocols.

Either a master or a slave is typically installed on a given computer. For special applications, these programs can, however, run simultaneously on one computer.



## 2.3 Point-to-point connection

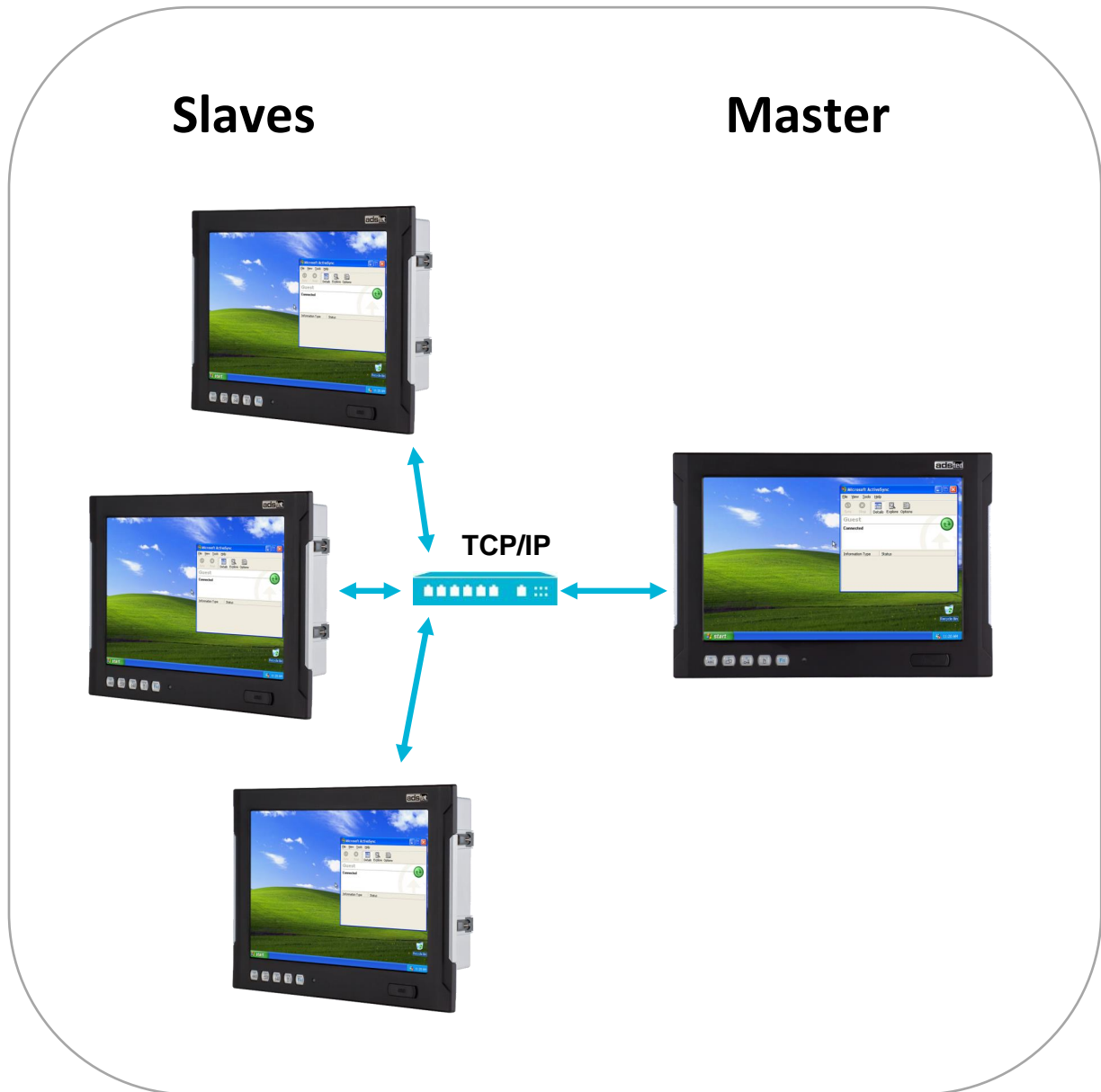
With a point-to-point connection (P2P), only a single slave computer is connected to a master computer. For example, a service technician could use a patch cable to directly connect his laptop to a computer that controls a machine.

If a slave is running on a laptop and a master is running on the machine computer, the service technician can take over operation of the machine computer. The keyboard and, if applicable, touch screen of the machine computer are then disabled for other users.



## 2.4 Multiple connections: n slaves

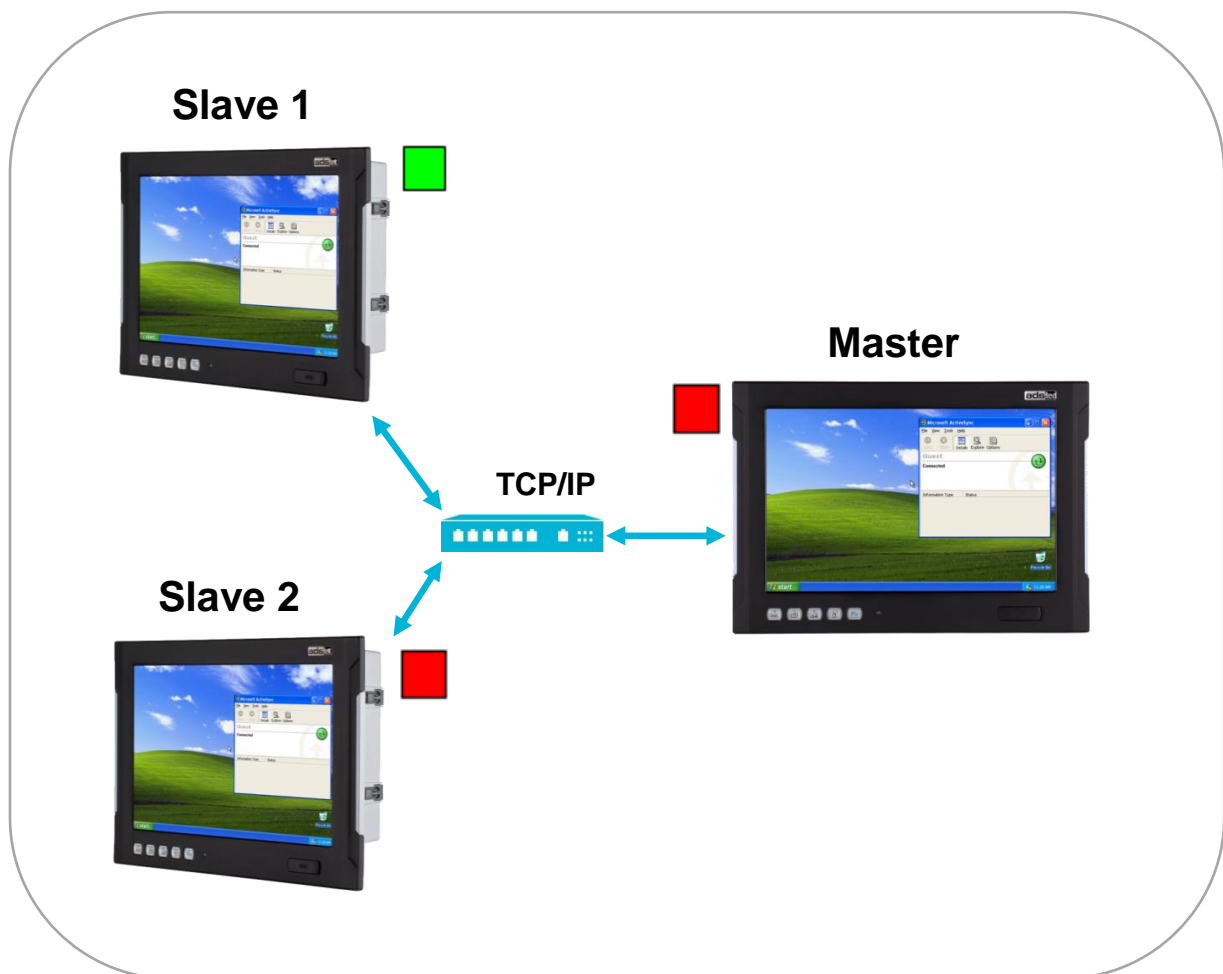
Up to 8 slaves can be connected to a single master with X-Remote Local. All slaves simultaneously display the screen interface of the master, but only a single slave can operate it. The speed of the screen display is dependent on the network infrastructure. The computers can be connected to one another by means of, e.g., a switch.



## 2.5 Management of operating rights

To eliminate inconsistencies in the configuration of a master computer, only a single client at a time is authorised to operate a master ("operating rights"). Simultaneous parallel operation of a master computer by multiple clients is prevented by X-Remote.

In the following example, **Slave 1** has the operating rights for the master computer. It sees the screen of the master computer on its own screen and can perform work on the master computer, such as install software updates. The master computer is now blocked for all other users. While **Slave 2** can see the screen of the master computer, it cannot perform any actions on it.



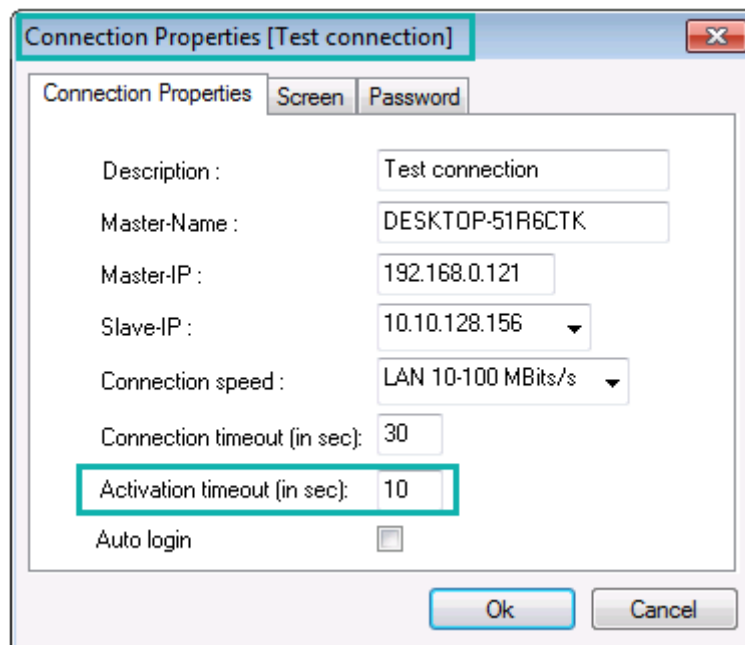
The operating rights are visually indicated by a green "virtual LED" (a small square: ■) – in the example: slave 1. A blocked master and a connected slave without operating rights (in the example: slave 2), on the other hand, display a red LED ■ on their screens. Clients with operating rights are considered to be "active". This authorisation indicator can be freely positioned on the screen by moving it with the mouse.

## 2.6 Requesting operating rights

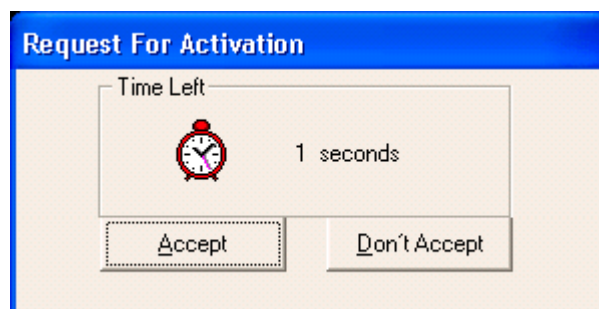
Every user who communicates via X-Remote can request and return operating rights by **pressing a button** or, if applicable, **with a key switch**. Ex factory, function key F2 on the keyboard serves this purpose (for default settings of keyboard shortcuts: see appendix).

In the previous example, a service technician seated at the computer of slave 2 could request the operating rights for the master by pressing F2. With the default configuration, it then immediately receives the operating rights (becomes the "active" station), while the other slave loses the operating rights and can only passively follow further actions.

If a **reaction time** was configured in the "Connection Properties" of slave 1 ("Activation timeout"), it receives a message that another client has requested the operating rights.



Within this time, it can decide whether it would like to give up or keep the operating rights. If it does not respond, slave 2 automatically receives the operating rights.



## 2.7 Key switch

The operating rights can also be requested by means of a key switch.



You can connect the key switch to serial interfaces COM1 ... COM6 of your computer. To ensure unambiguous operation, the simultaneous configuration of key-switch activation and keyboard activation on the same computer is not possible. Each X-Remote client can, however, be assigned an individual activation type.

### The key switch modes:

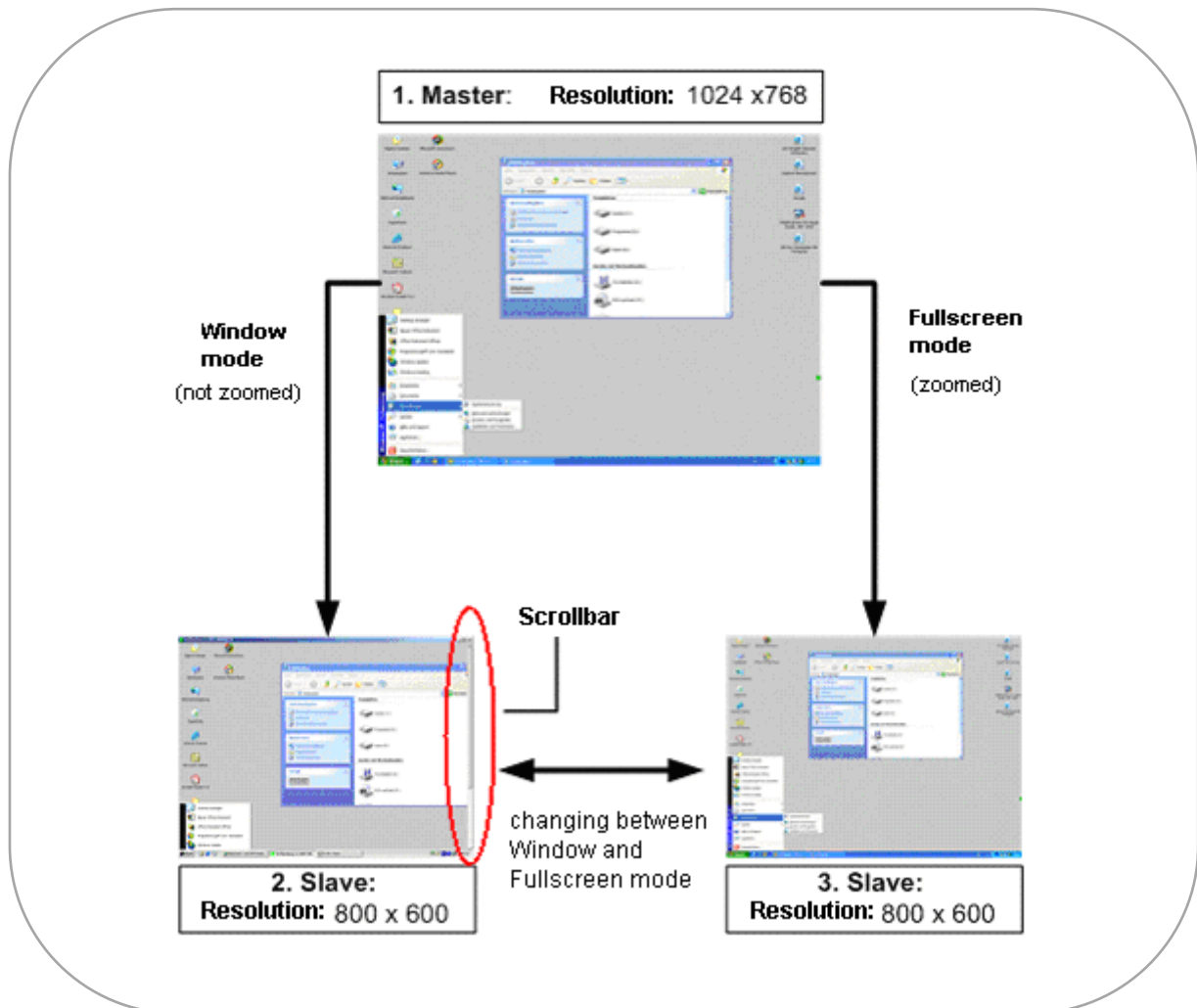
- "Switch 2": Switch with 2 positions (0 and 1)  
0 means "Block station", 1 means "Activate station"  
The circuit diagram for the connection can be found in section 8.2.
- "Switch 4": Switch with 4 positions (1, 2, 3, 4)  
The individual positions set the respective flag (1, 2, 3, 4) on the master side.
- "Toggle switch"  
Independent of the key switch position (0 or 1), this key switch type simply reverses the operating rights. If the station is already active, it is blocked. If the station is blocked, it is activated.

## 2.8 Zoom functionality

X-Remote enables a full-screen display. This means that if the master and slave have different screen resolutions, the screen content is displayed either enlarged or reduced in size. If the screens have different aspect ratios (4:3, 16:9 ...), the screen content may be displayed distorted.

To correct this problem, X-Remote offers various display modes, e.g., full-screen display with/without scroll bars, reduced display with/without scroll bars, among others.

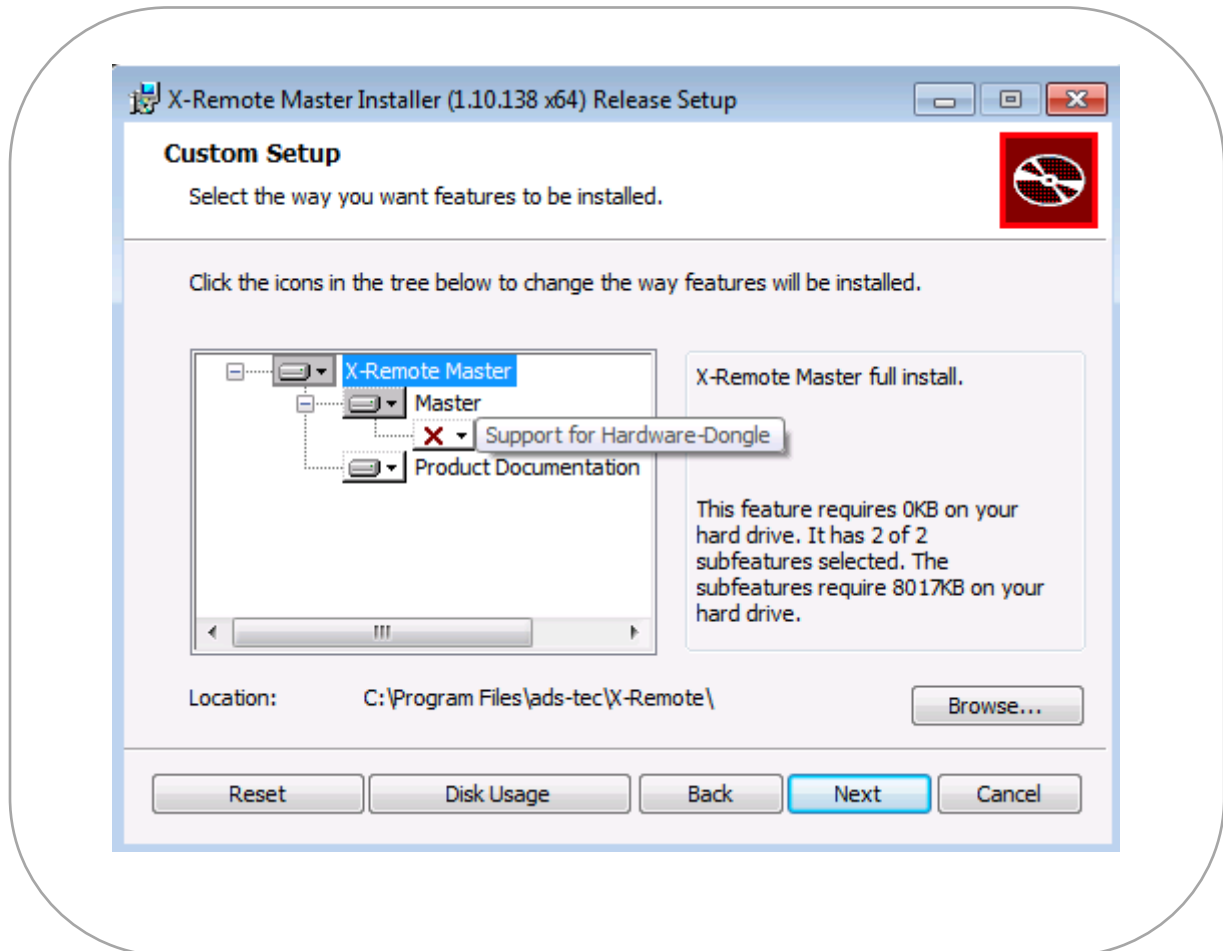
Ex factory, you can cycle through the different display modes by pressing the **F5** function key.



## 3 Installation

### 3.1 Initial installation of master and slave

Either a master or a slave is typically installed on a given computer. For special applications, these programs can, however, run simultaneously on one computer.



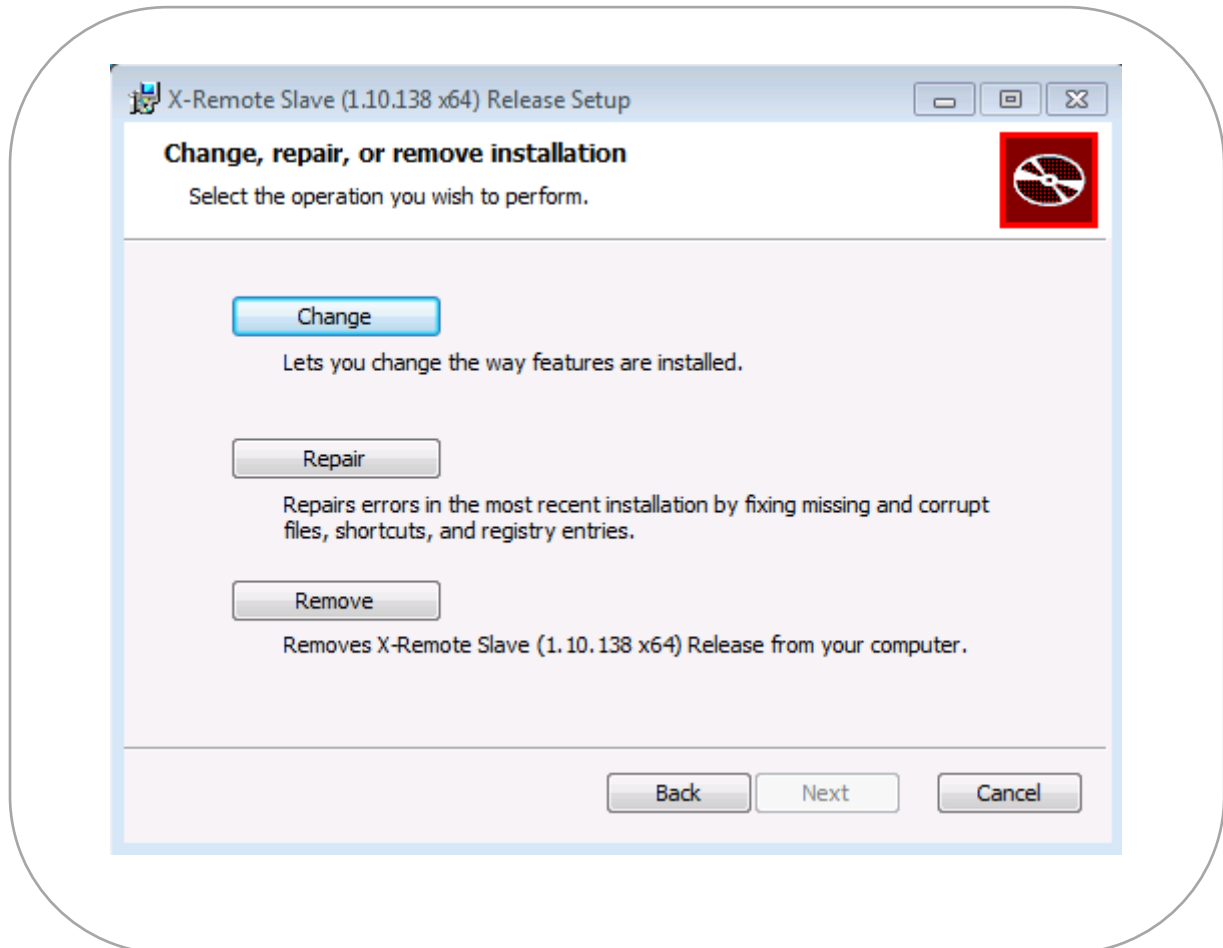
Option when installing the master:

#### "Support for Hardware Dongle"

Instead of entering TAN and key codes, license management of X-Remote can be performed with a so-called dongle. To save memory space, you should only select this option if you would actually like to use a dongle.

## 3.2 Changing the installation

Options that were not installed when calling up the installer for the first time can be added later by calling up the installer again.



## 4 Master

### 4.1 Starting the master

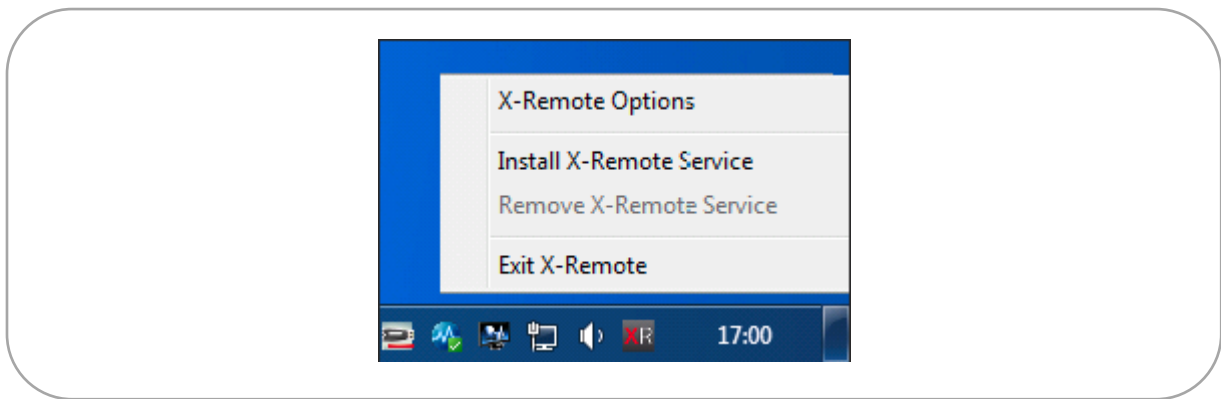
The X-Remote master can be started as follows:

- **Manually** by selecting the master icon in the X-Remote group.
- **Semi-automatically** by inserting the icon in the Autostart group.
- **Automatically** as a **service** in the operating system. Setup as a service allows the master to start even before the operating system has prompted the login of the local user (login screen).

After starting the master, a small coloured square appears on the screen. This "virtual" LED serves as an authorisation indicator (green: client active, red: client blocked). To open the master window, you can now press the **F1** function key.

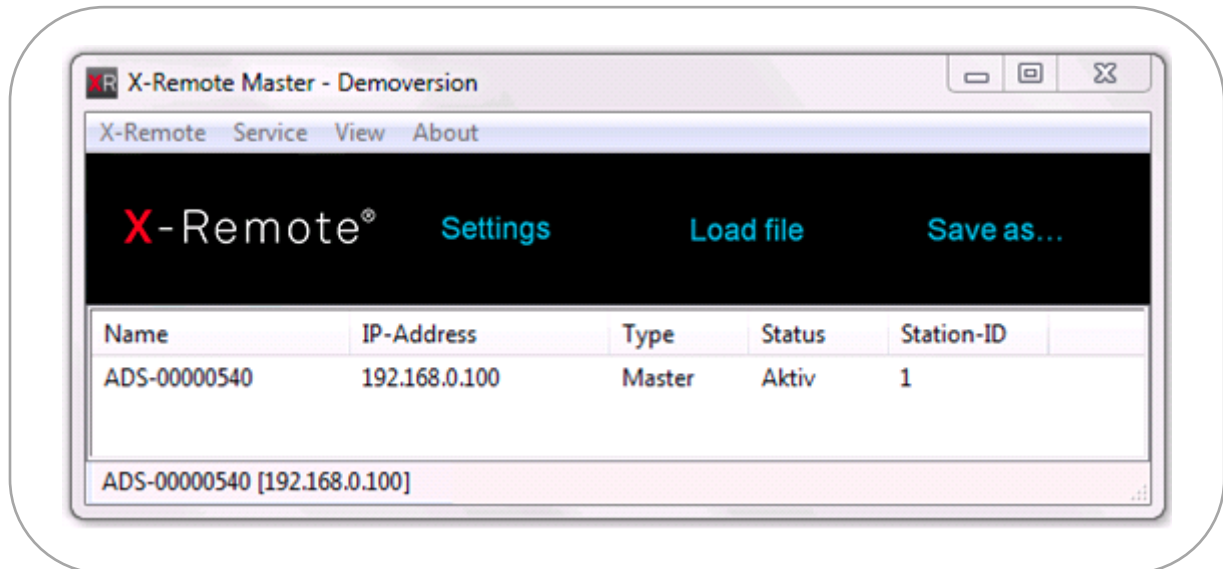


In addition, the X-Remote icon appears in the Windows task bar. You can also open the master window by clicking on the X-Remote icon and selecting "X-Remote Options".

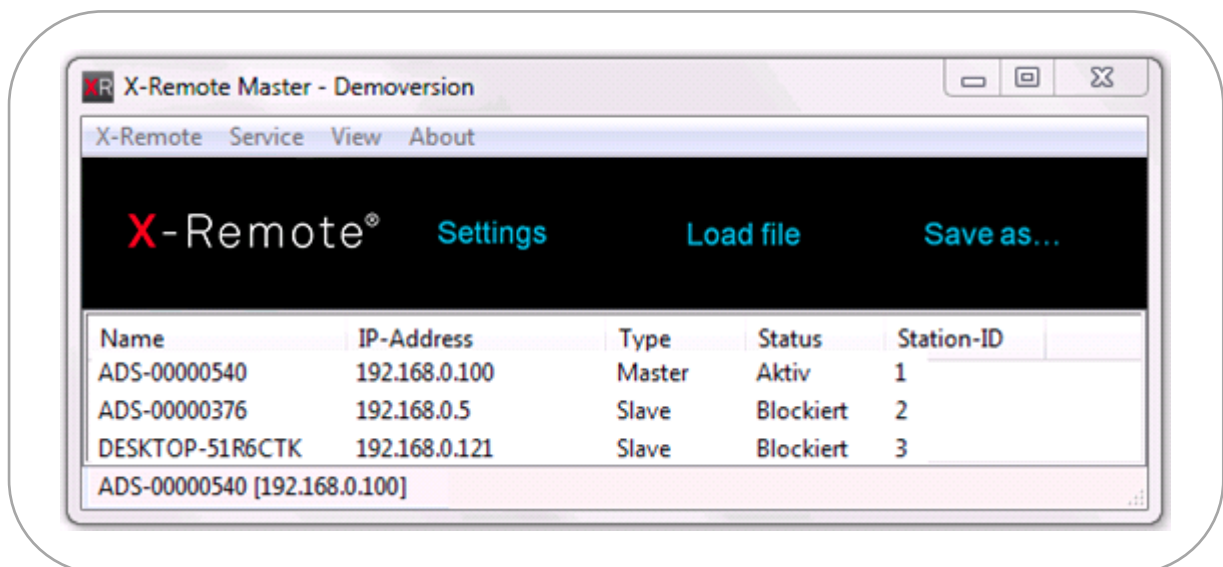


## 4.2 The master window

The following figure shows the master window immediately after the initial installation. It displays the name of the computer and the IP address of the network adapter and shows that the master is "active". For a master, active means that its keyboard and, if applicable, its touch screen are not blocked.



In the following figure, two slaves have already established connections with this master.



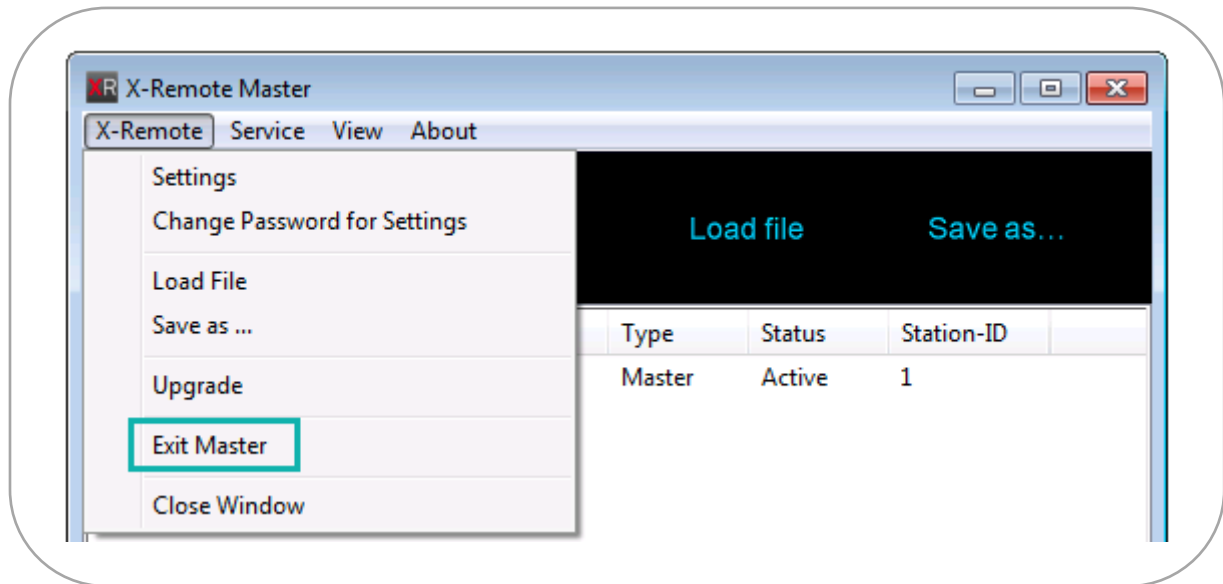
Every connected participant, whether master or slave, is identified by a station ID.

To prevent simultaneous operation of the master, only one participant may possess the operating rights for the master, i.e., be "active". This participant has the mouse and keyboard control. In the figure above, that is the master itself. While the slaves can see the screen of the master, they cannot manipulate it.

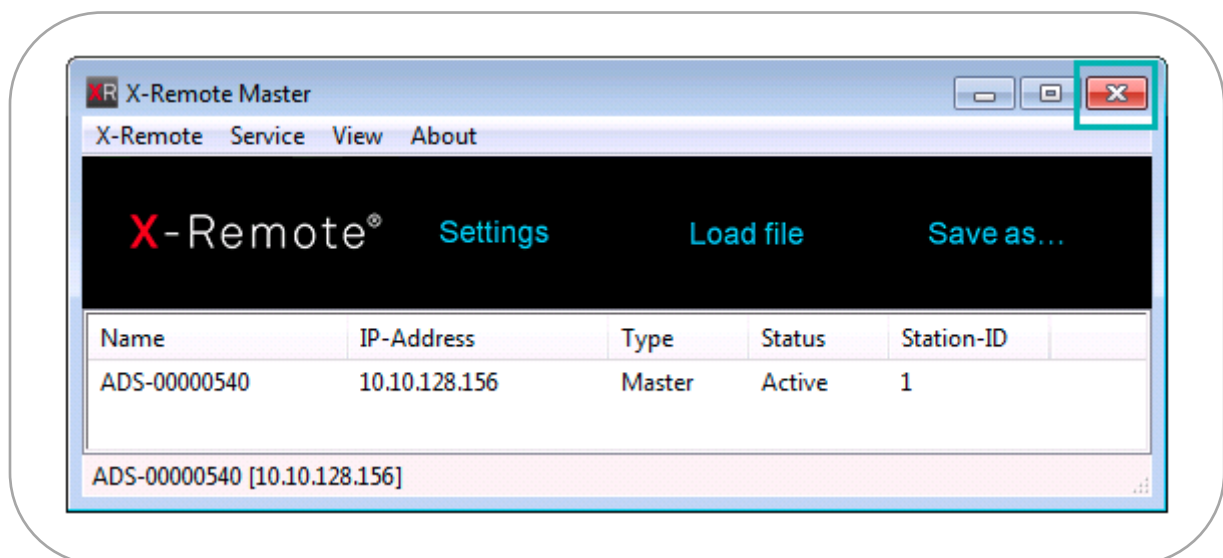
Masters cannot "see" other masters in the same network (special case "super master": see section "Activate Super Master"). Conversely, slaves can see multiple masters (provided there is more than one).

To exit the master:

- Select "X-Remote / Exit Master". This exits the program, regardless of whether it is running as a process or as a service.

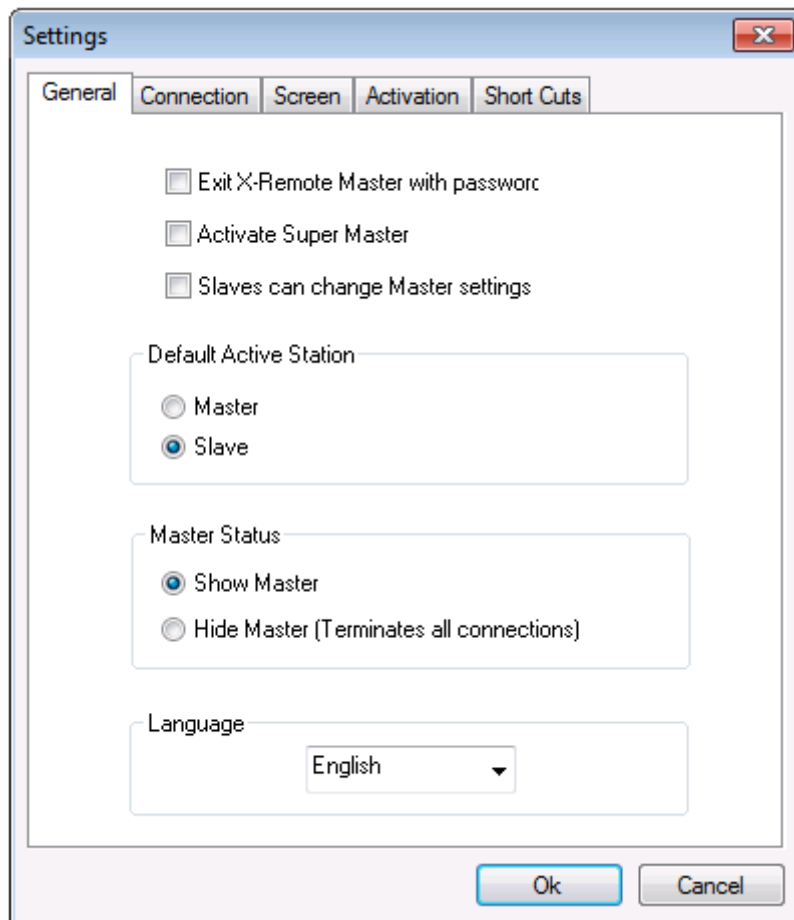
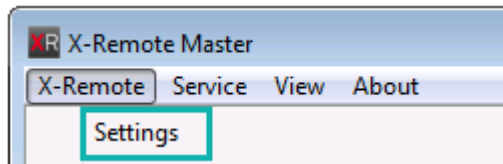


Clicking/touching the "close" button (upper right) only closes the master window; the program remains active in the background, however.



## 4.3 Settings / General

Use "X-Remote / Settings" to open the "Settings" window.



### "Exit X-Remote Master with password"

If the check box is selected, the X-Remote master can only be exited with a valid password. For this option, a password must be set up. You can set up this password under "X-Remote / Change Password for Settings".

**"Activate Super Master"**

If the check box is selected, the master can collect information about other masters. This information can be read out of file InterfaceDLL.dll (in the installation directory of X-Remote).

**"Slaves can change Master settings"**

If the check box is selected, the slaves can change the settings of the master.

**"Default Active Station"**

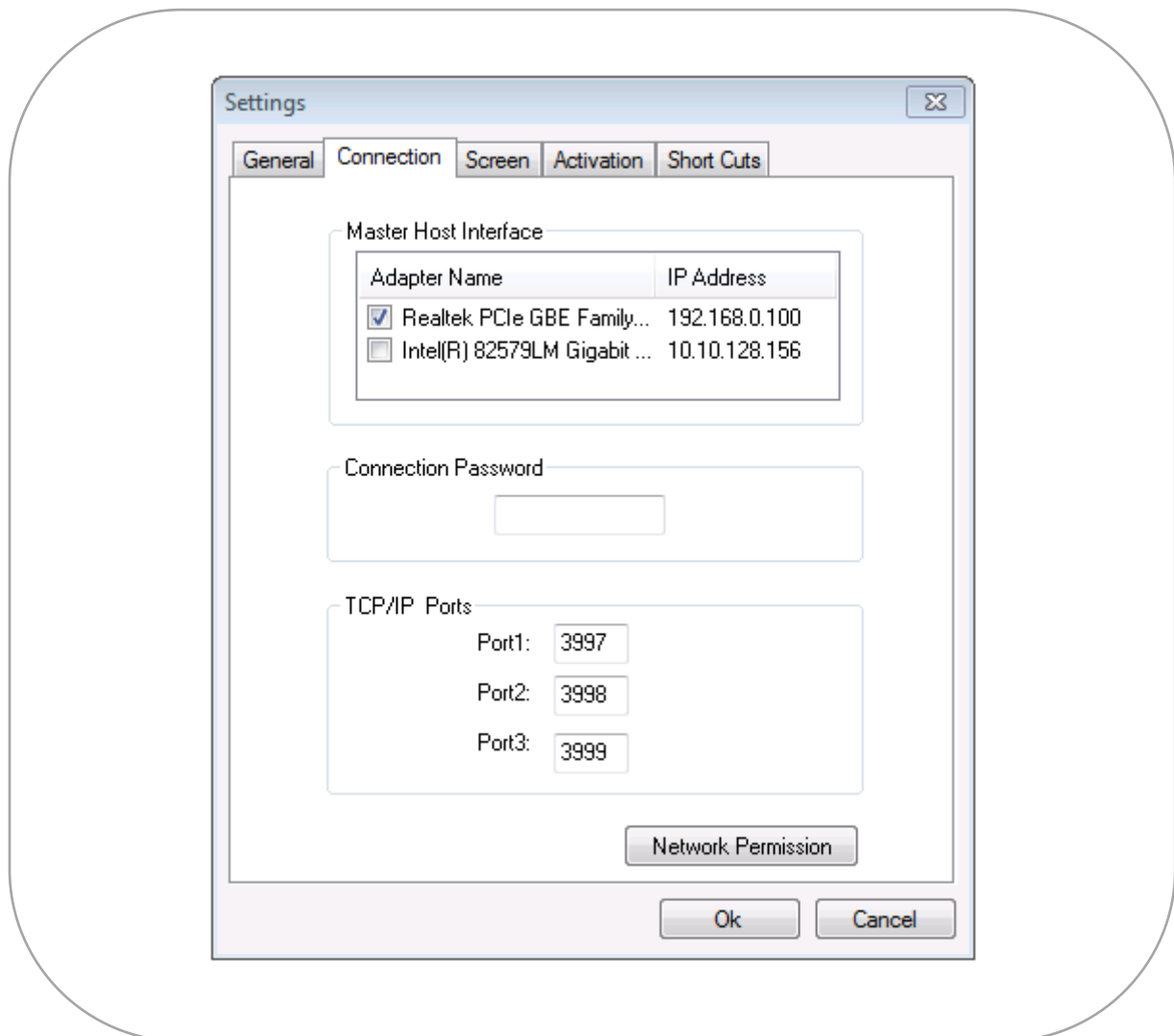
With a point-to-point connection, this setting defines whether the master or the slave receives the operating rights first after a connection is established, i.e., becomes the active station. With multiple connections, the most recently registered slave always receives the operating rights.

**"Master Status"**

For maintenance work on the master that should not be interrupted by a login, the master can be set to "hidden". All connections with this master are then terminated. It is then no longer visible to the slaves.

## 4.4 Settings / Connection

Located on this tab are all connection settings for the master.



### "Master Host Interface"

If multiple network adapters are available, select the desired adapter here.

### "Connection Password"

The registration of a slave on the master can be secured by means of a password. This password is queried when a connection is established. It is up to 16 characters long and is stored unencrypted by default. You can store the passwords in encrypted form by means of a registry entry.

Master: "HKEY\_LOCAL\_MACHINE\SOFTWARE\ads-tec\X-RemoteMaster"

Encryption = 0 (encryption off), Encryption = 1 (encryption on)

Slave: "HKEY\_CURRENT\_USER\SOFTWARE\ads-tec\X-RemoteSlave"

Encryption = 0 (encryption off), Encryption = 1 (encryption on)

If this value is set to "1", all passwords are stored encrypted. The passwords read in from the registry or INI file are likewise accepted as "encrypted". Authentication of the slaves on the master takes place in encrypted form independent of this registry entry.

### "TCP/IP Ports"

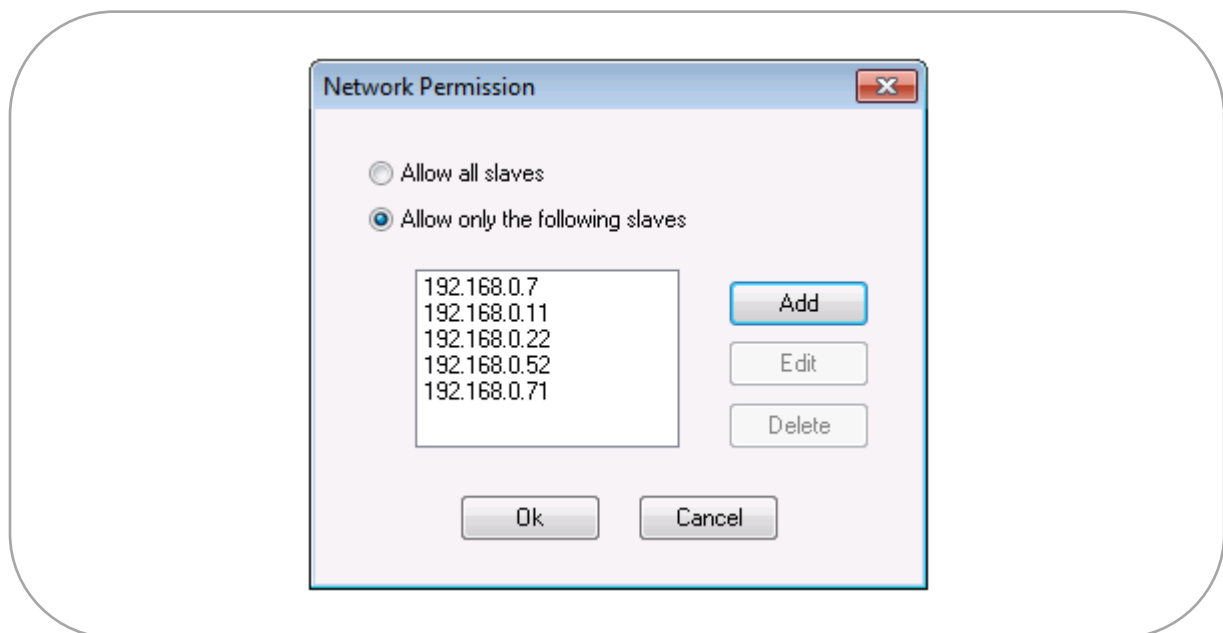
X-Remote uses three TCP/IP ports, the numbers of which can be defined in the three input fields. To be able to establish a connection between master and slave, the settings must be the same on master and slave. The factory settings are Port 1: 3997; Port 2: 3998; Port 3: 3999.

The ports can be freely redefined if **using a firewall** and must be enabled for TCP and UDP communication.

If a master should not be accessible for a **group of slaves**, another range of port numbers can be created. The master then no longer appears in the overview list of connections of the unauthorised slaves. For this configuration, the changed port numbers must also be entered for all authorised slaves.

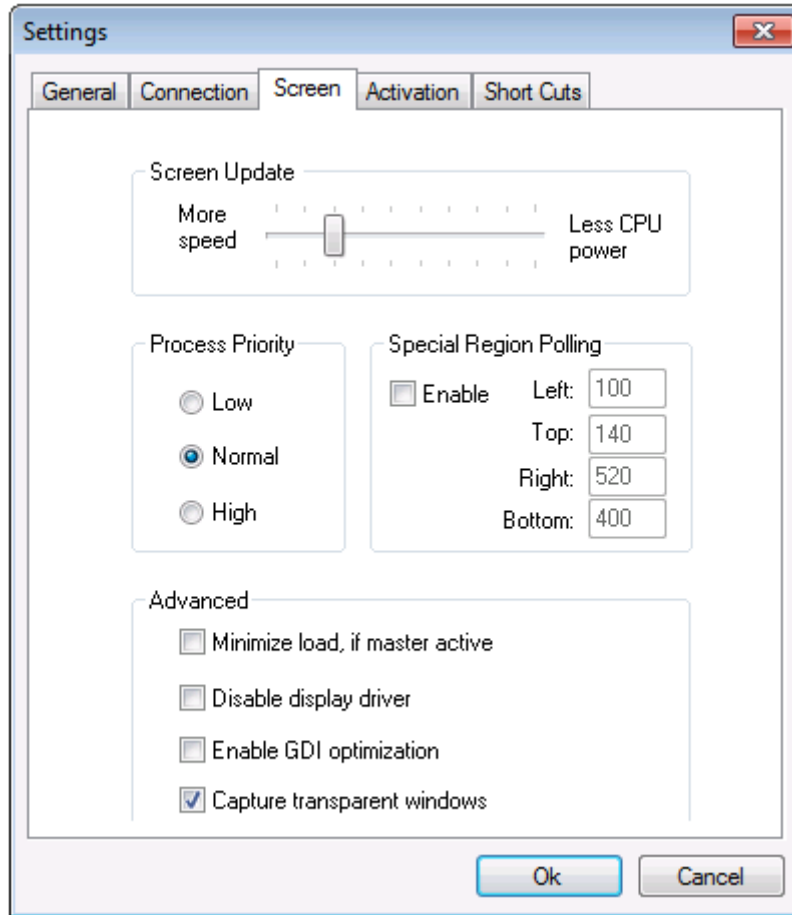
### "Network Permission"

By default, all slaves are able to automatically recognise all masters in the network by means of broadcast signals and establish a connection with them. It is, however, possible to configure a master so that only certain slaves can recognise and establish a connection with it.



## 4.5 Settings / Screen

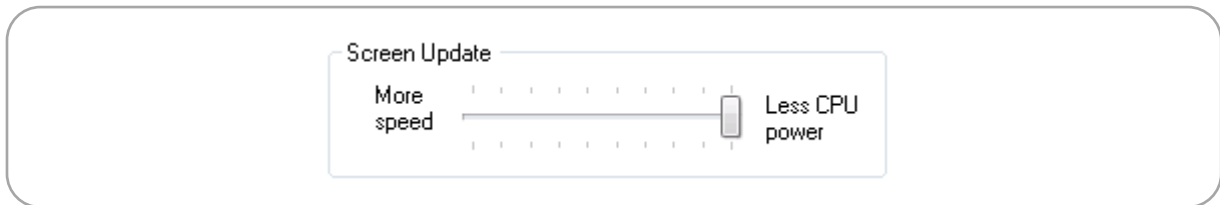
The "Screen" tab contains all configuration options for screen display and speed.



### "Screen Update"

The speed slider changes the ratio between the required computing power of the master computer and the refresh rate of the screen content that is to be displayed.

**Example 1:** The following setting requires little of the processor's computing time and the refresh rate of the screen content is low. More CPU time is thereby available for other applications and the network load remains low. This setting is recommended in cases of low CPU power.



**Example 2:** The following setting requires more of the processor's computing time and the refresh rate of the screen content is high, thereby allowing faster processes to be visualised.



### "Process Priority"

The process priority should typically be set to "Normal". It should be set to "Low" if other programs are impaired. If an especially fast and secure connection is important, the process priority is to be set to "High".

### "Special Region Polling"

Here, you can specify the coordinates of a screen area that should be monitored.

### "Minimize load, if master active"

With this setting, the master's process priority is withdrawn upon activation of the master. Other processes thereby receive more resources. This setting is useful if the entire system is already noticeably under load.

### "Disable display driver"

To increase the performance of image transmission, X-Remote is supported by a display driver. In the event of problems, this display driver can be deactivated via this setting (e.g., if the computer performance is impaired due to insufficient resources for certain Windows colour schemes).

**"Enable GDI optimization"**

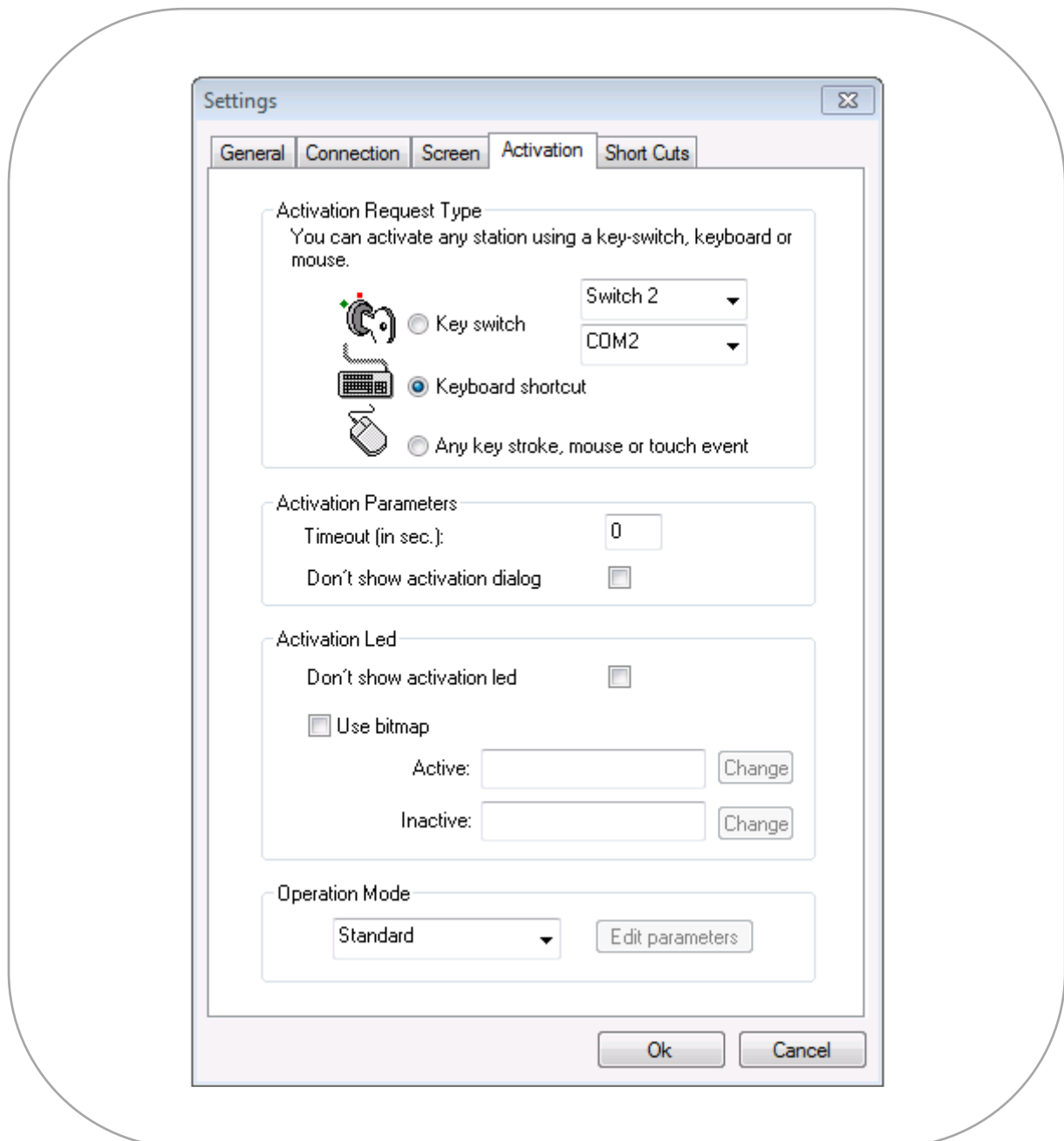
By means of this option, you can optimise the screen operations of the graphic card (GDI = Graphics Device Interface). It can be deactivated in the event of problems.

**"Capture transparent windows"**

Some applications support the so-called alpha-blending technique to display certain window areas transparently. Activate this option to enable the display of such transparent areas. This technique can, however, cause mouse flickering and higher CPU load.

## 4.6 Settings / Activation

On the "Activation" tab you can configure the granting of operating rights.



### "Activation Request Type"

Here, you can select the preferred method for requesting the operating rights on the master. To ensure unambiguous operation, the simultaneous configuration of key-switch activation and keyboard activation on the same computer is not possible. Each X-Remote client can, however, be assigned an individual activation type.

- If using a keyboard, the preferred **key combination** can be set on the "Short Cuts" tab.
- A **key switch** can be connected to one of the serial interfaces COM1 ... COM6.

- Alternatively, the operating rights can be requested by an **arbitrary keyboard, mouse or touch event**, e.g., by pressing any key on the keyboard.

#### **"Activation Parameters / Timeout"**

The time entered here elapses until an activation request is automatically accepted. This gives the master opportunity to decline the request. Valid values are in the range from 0 ... 999 seconds.

Corresponding values for the slaves are entered in their connection properties, see section 6.2.

#### **"Activation Parameters / Don't show activation dialog"**

If there is a change in operating rights, an activation dialogue is displayed for a short time. The display of this dialogue can be suppressed with this setting.

#### **"Activation LED / Don't show activation LED"**

For both the master as well as for the slave, the status of the operating rights is indicated by a "virtual LED" (a small square). Green means active, red means blocked. The display of this LED can be suppressed with this setting.

#### **"Activation LED / Use bitmap"**

Instead of the virtual LED, images can also be used to indicate the authorization status.

#### **"Operation Mode"**

The operation mode defines how the management of operating rights is handled / how a station can be activated. The following modes are supported:

- Standard mode
- Service mode
- Flying Master mode
- Quick mode
- Exclusive mode

These modes are described individually below.

### 4.6.1 Standard mode

If a station requests the operating rights, a corresponding message appears for the currently active station. The active station can accept or decline the request. If the station does not respond within a potentially set activation timeout, the respective station is automatically assigned the operating rights.

### 4.6.2 Service mode

In this mode, a station does not receive the operating rights until the currently active station explicitly gives them up.

- If no station is active, any station can request – and immediately receive – the operating rights.
- If a station is in possession of the operating rights, the other stations can no longer receive them. In this case, the station requesting the operating rights receives a message that the master is running in Service mode and that the operating rights cannot be changed at the present time. Only after the active station has explicitly given up the operating rights can other stations again request and receive them.

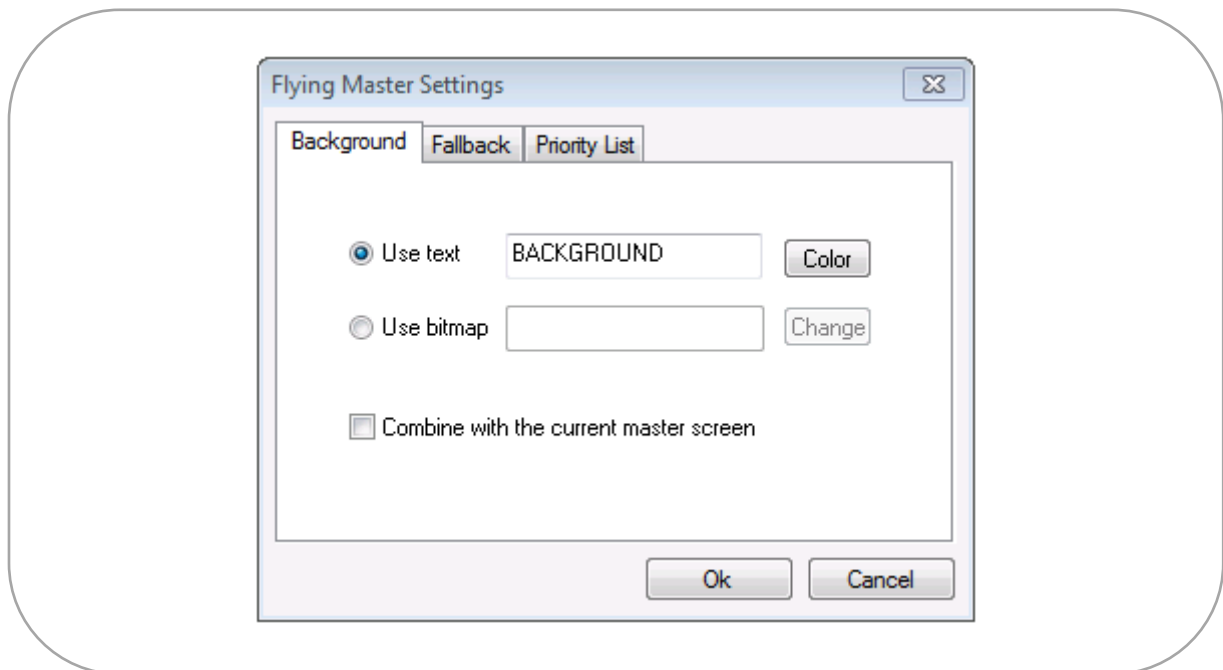
### 4.6.3 Flying Master mode

In this mode, only the active slave may display the screen content of the master.

- All connections are established automatically.
- All inactive slaves display a predefined image (background or idle image).
- After the connection has been established, the operating rights initially remain with the master.
- If an active slave does not make use of its operating rights for a certain time (adjustable), the operating rights are automatically returned to the master (fallback behaviour).

#### Background

All inactive slaves initially display a predefined text (max. 100 characters) or a predefined image in BMP format.



By default, the master uses a transparency of 100% for the text display and 50% for the bitmap display if the "Combine with the current master screen" option was selected. These values can be set separately via the Windows registry:

- "HKEY\_LOCAL\_MACHINE\SOFTWARE\ads-tec\X-RemoteMaster"
- BackgroundBitmapTransparency = 0x32 (decimal 50)
- BackgroundTextTransparency = 0x64 (decimal 100)

The master must be exited before these parameters are edited in the registry.

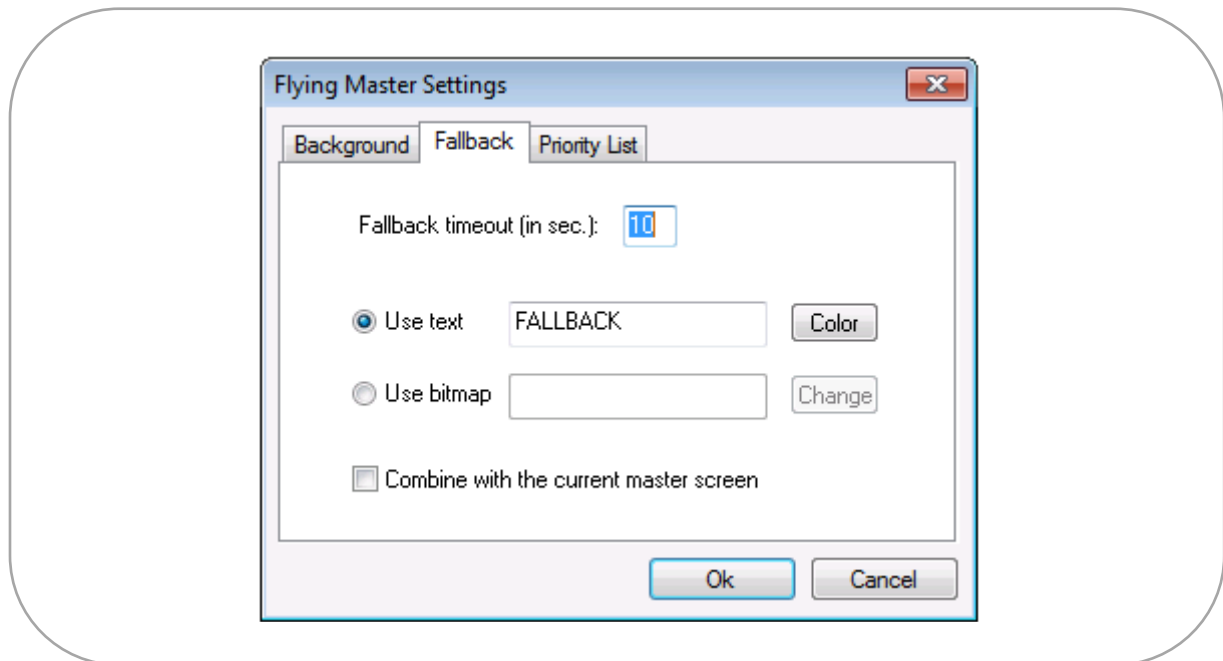
The master updates the slave screen in intervals of approximately 10 seconds if the "Combine with the current master screen" option was selected, so as not to affect the network load.

The size of the bitmap is automatically adapted to the screen.

## Fallback

"Fallback timeout": If an active slave does not make use of its operating rights within this time, the master automatically receives the operating rights and they are thereby made available for other slaves.

Value range: 0 ... 999 s. Default value: 10 s.



As long as no other slave requests the operating rights, the slave maintains the connection to the master – without being in possession of operating rights, however. If another slave would like the operating rights, the operating rights are immediately passed to this slave and the old slave switches to its background image.

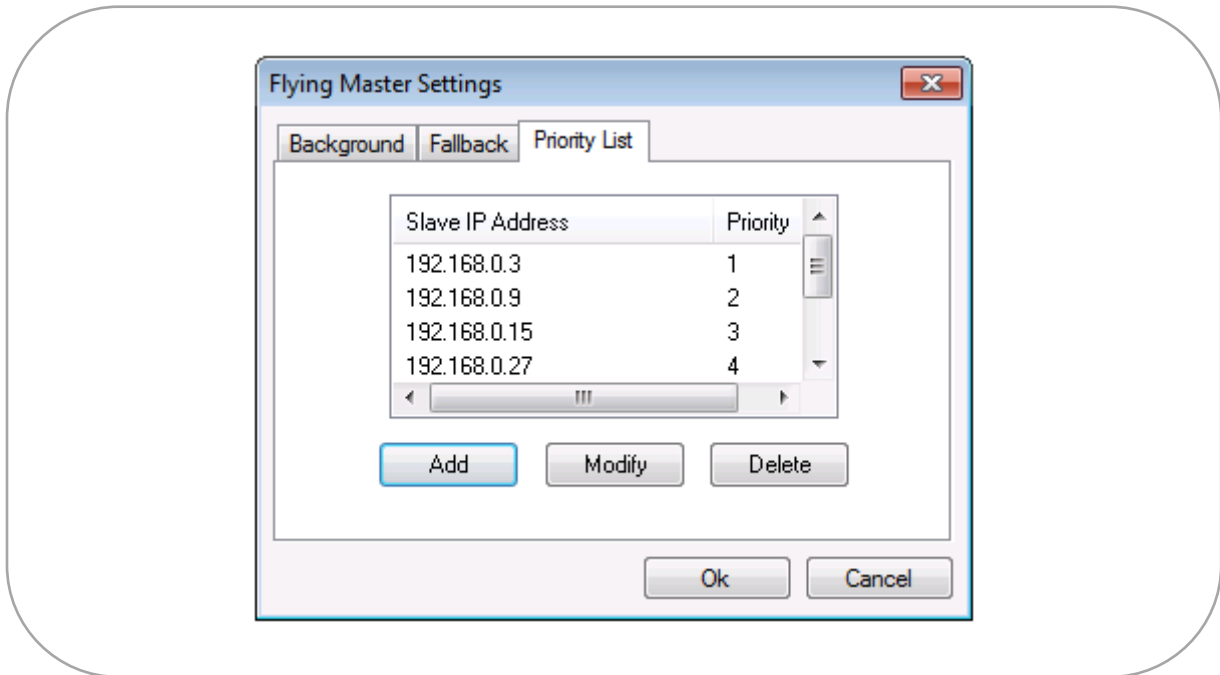
By default, the master uses a transparency of 100% for the text display and 50% for the bitmap display if the "Combine with the current master screen" option was selected. These values can be set separately via the Windows registry:

- "HKEY\_LOCAL\_MACHINE\SOFTWARE\ads-tec\X-RemoteMaster"
- FallbackBitmapTransparency = 0x32 (decimal 50)
- FallbackTextTransparency = 0x64 (decimal 100)

The master must be exited before these parameters are edited in the registry.

## Priority List

List in which all slaves are listed with the respective priorities.



Order when searching for a master following a request for operating rights by a slave:

1. A search for a free master is performed first. If this search is successful, a connection is established with this master.
2. If all masters are occupied, a search for a master without an active slave is performed. This means that the slave was connected, but the busy time has elapsed and the slave still displays the last master screen.
3. If multiple masters were found according to item 2, a connection is established with the master whose slave has the lowest priority.

10: Highest priority

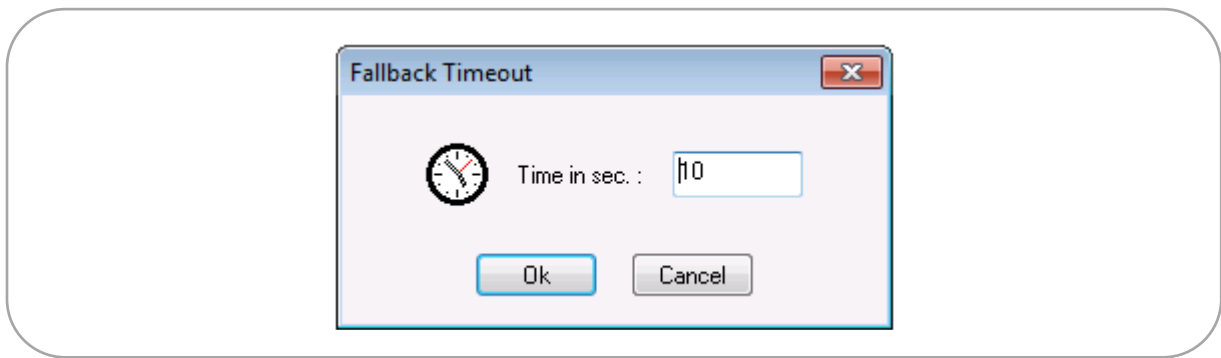
1: Lowest priority

No operating rights are revoked.

### 4.6.4 Quick mode

This mode enables quick and easy management of operating rights.

- For an inactive station, mouse, touch-screen and keyboard events trigger an operating rights request.
- An active station for which the "fallback" timeout has elapsed remains active until another station requests the operating rights.
- The operating rights are immediately passed to the requesting station.
- If the "fallback" timeout has not yet elapsed for an active station, the request for the operating rights by another station is declined without any notification.
- In general, no message boxes are displayed during activation.

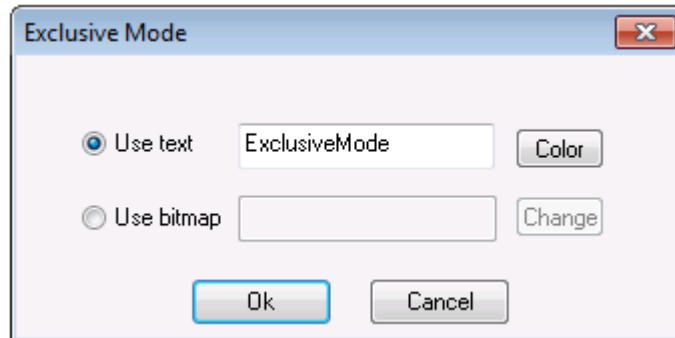


"Fallback Timeout": If an active station (master or slave) does not make use of its operating rights within this time, another station could receive the operating rights.

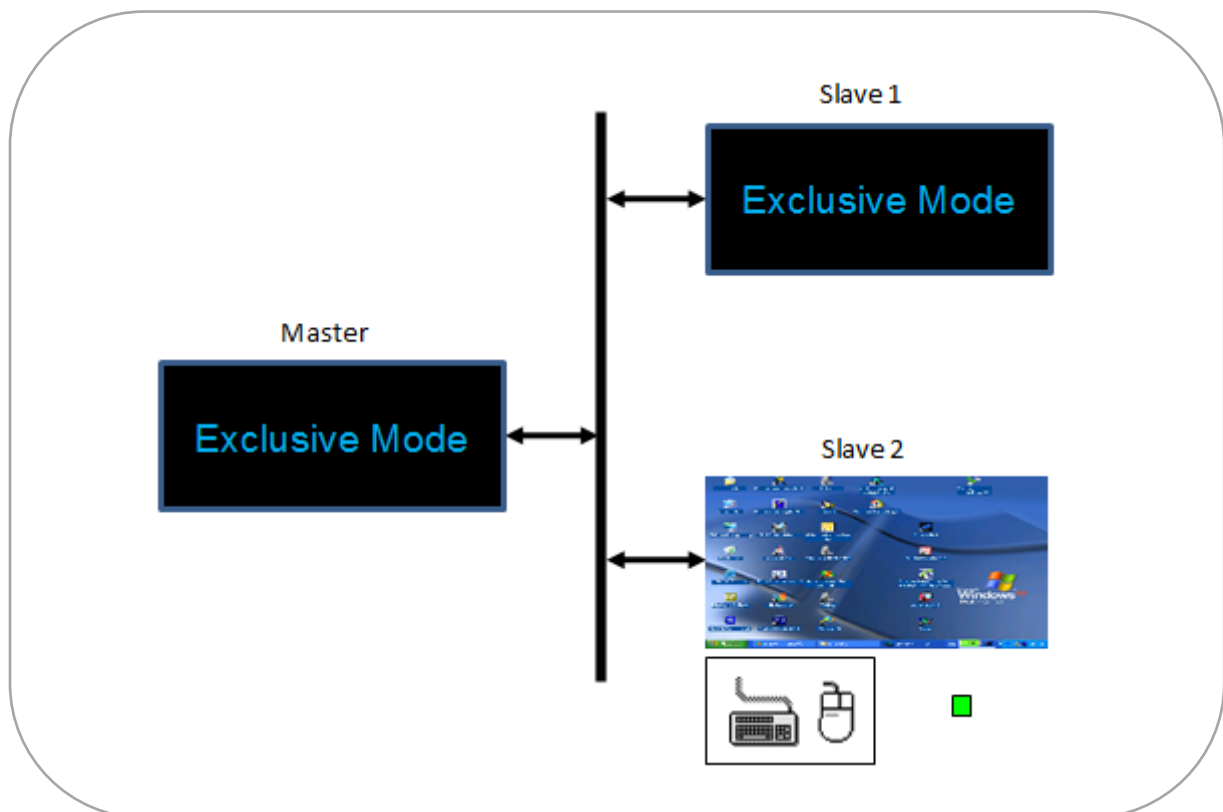
### 4.6.5 Exclusive mode

In this mode, only the active station displays the actual screen content. All other stations display a neutral screen, which can be configured in the settings for Exclusive mode.

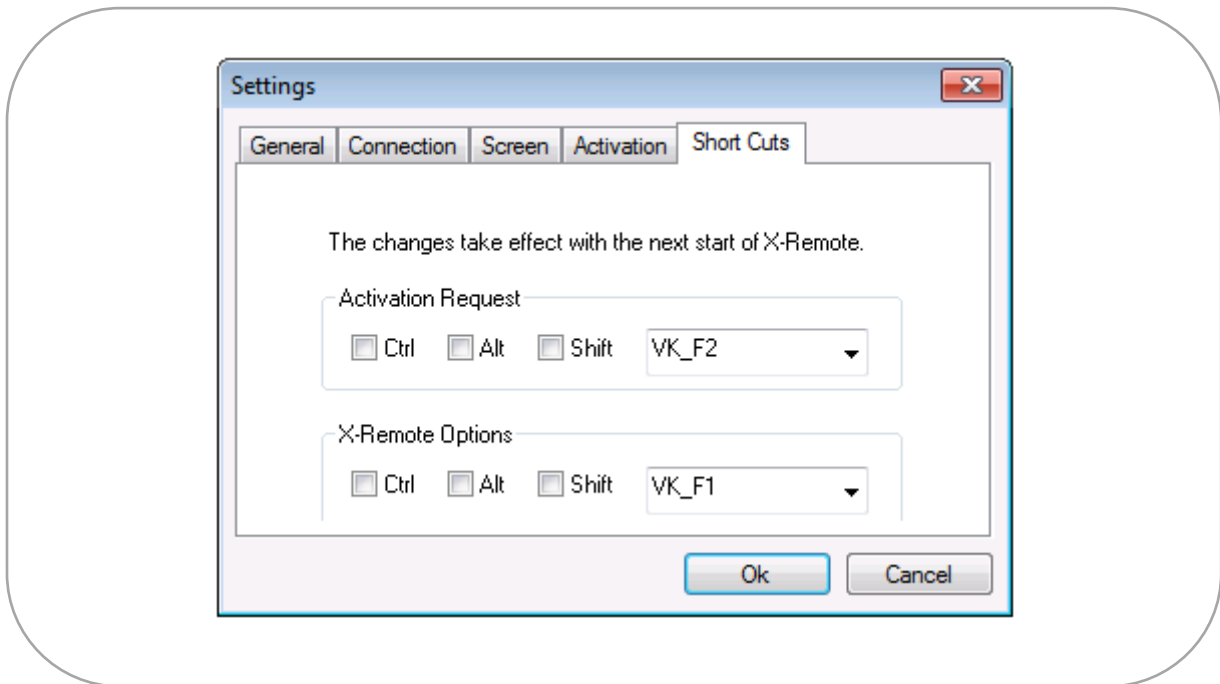
This prevents the screen actions from being observed by other users.



Example: All inactive stations display a predefined text.



## 4.7 Settings / Short Cuts



### "Activation Request"

Defines how the blocked master can retrieve the operating rights from a slave. By default, this occurs by pressing the **F2** function key.

### "X-Remote Options"

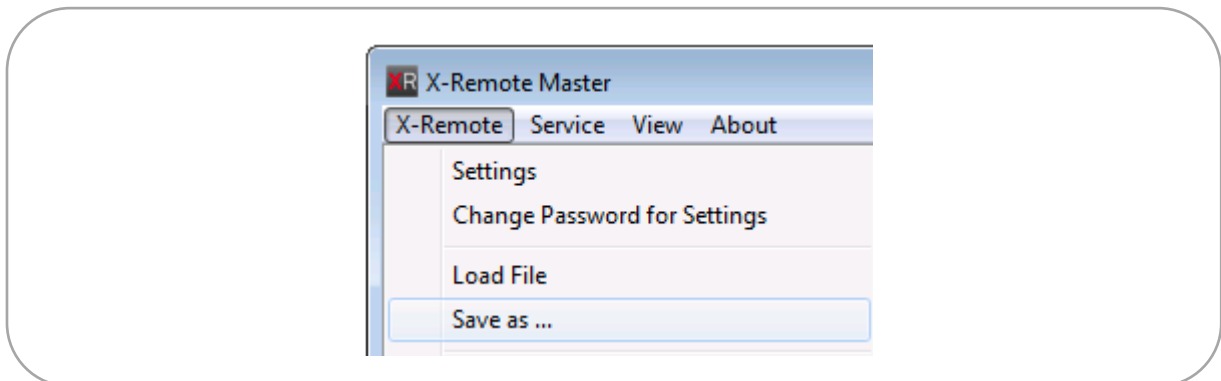
Defines how the master window can be called up. By default, this occurs by pressing the **F1** function key.



Changes to the configuration of the key combinations are not applied until after the **master is restarted**.

## 4.8 Save as ...

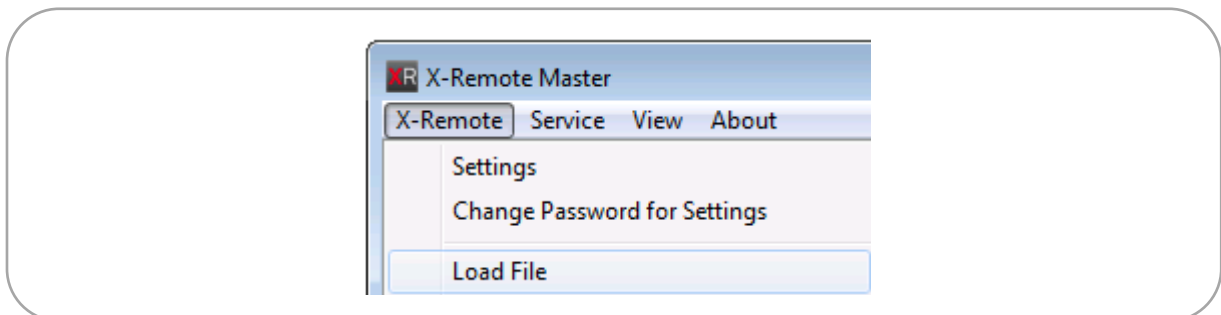
The current settings of the master can be saved as an \*.mco file.



These files are linked to the master so that an exited master can be started by double-clicking on the file icon or via the context menu of the icon (right mouse-key and "open").

## 4.9 Load File

Load the saved \*.mco master configuration files as follows:



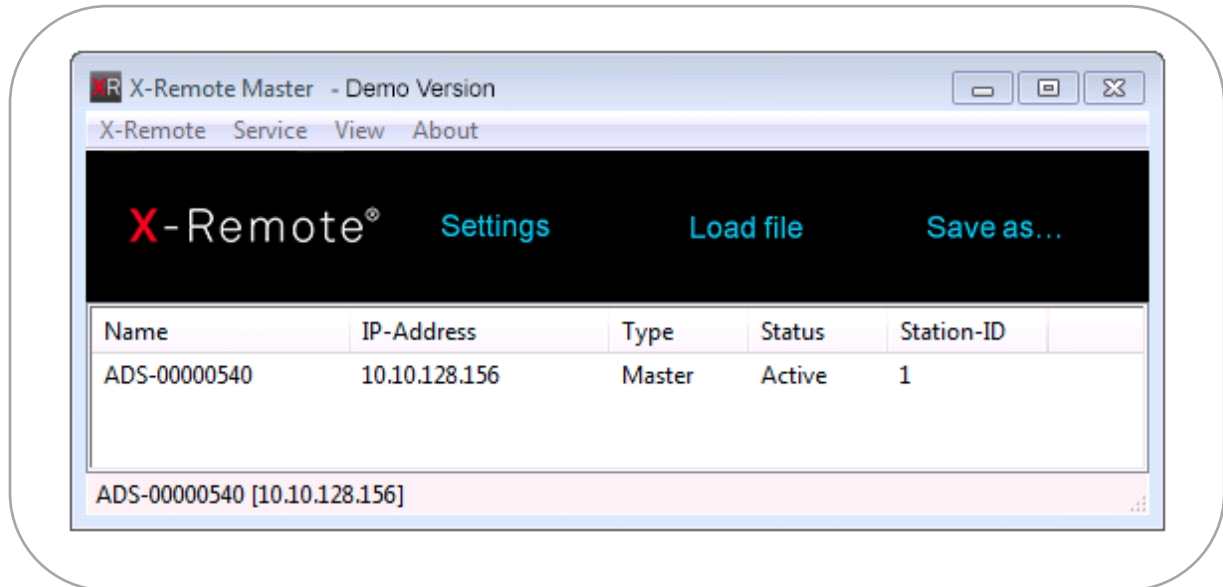
Alternatively, this can also be performed using the command line.

Example: `master.exe -configfile my_config.mco`

## 5 Registration

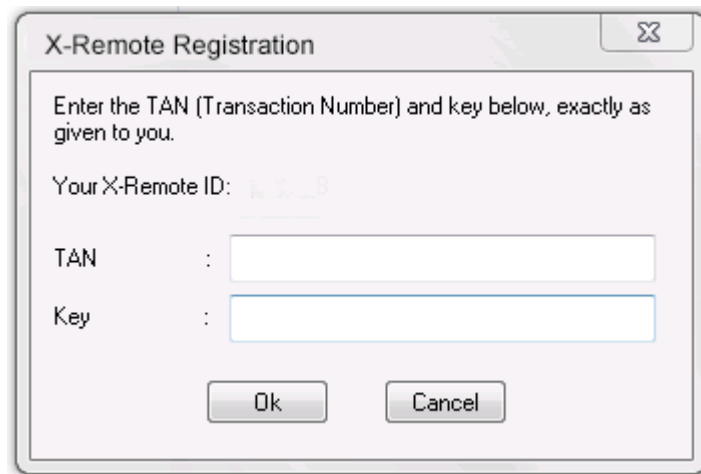
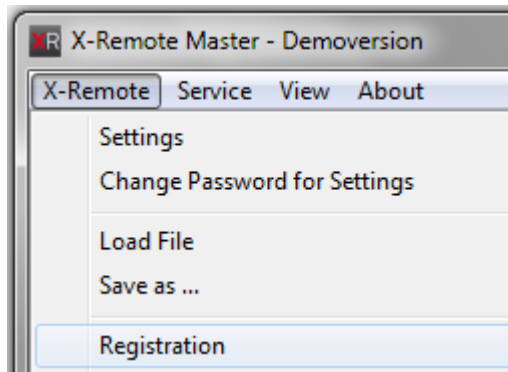
### 5.1 Registering the master

Registration enables unrestricted use of the X-Remote master. The slaves do not need to be registered. A demo version is converted to a full version through registration. Displayed in the title bar of the master window for clear distinction is the text "Demo Version". The X-Remote demo version functions for a limited time. It expires after 30 days. To continue to use the X-Remote master, it must be registered.



### 5.1.1 Registering by means of TAN and key

Registration by means of TAN and key can be performed via the "X-Remote / Registration" menu.



#### "X-Remote ID"

An eight-digit hexadecimal value that uniquely identifies your system hardware.

#### "TAN"

You receive the transaction number upon purchase of a license. It allows for the one-time activation of the software.

#### "Key"

You receive a key after X-Remote has been successfully activated.

### 5.1.2 Registering via the online portal

You can also register the X-Remote master on the following website:

<http://www.ads-tec.de/industrial-it/x-remote/download.html>

To do so, you only need to open this page in a browser and follow the "Online Registration" link. From here, you are guided through the registration process.

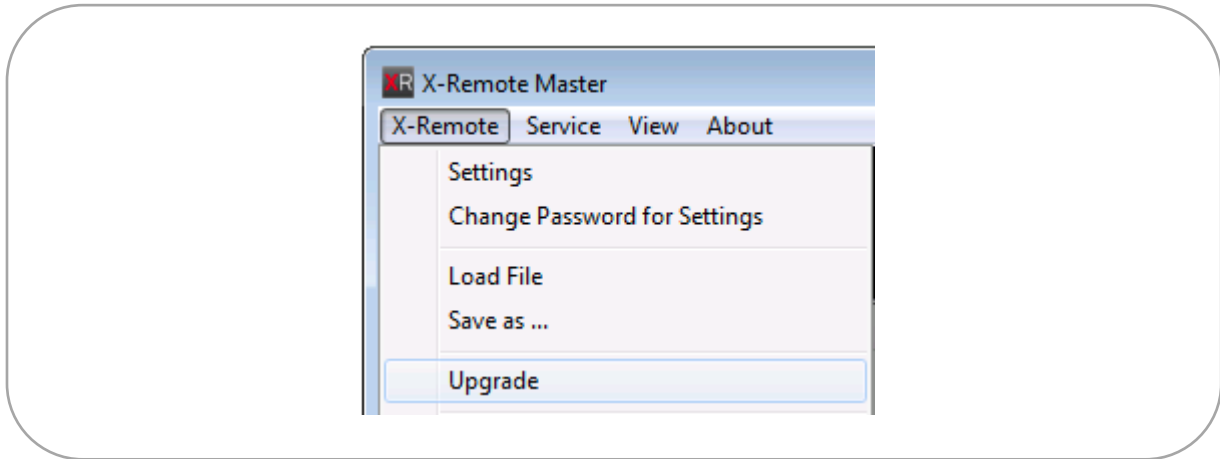
### 5.1.3 Registering with a USB dongle

X-Remote can also be activated with a hardware dongle instead of a TAN/key combination.



## 5.2 Upgrade

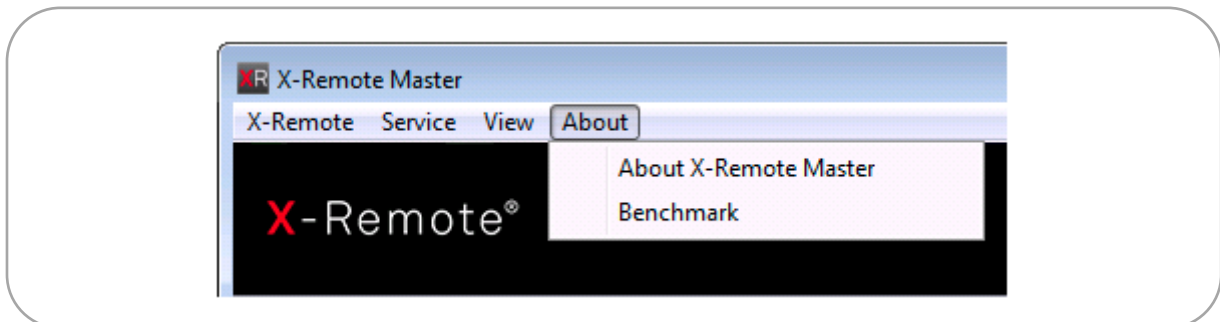
With a registered version, the number of slaves can be increased at a later point in time. Once registration has been successfully completed, the "Upgrade" item appears in the menu instead of the "Registration" menu item.



The upgrade process is performed in the same manner as registration. Downgrades are not supported.

## 5.3 Version

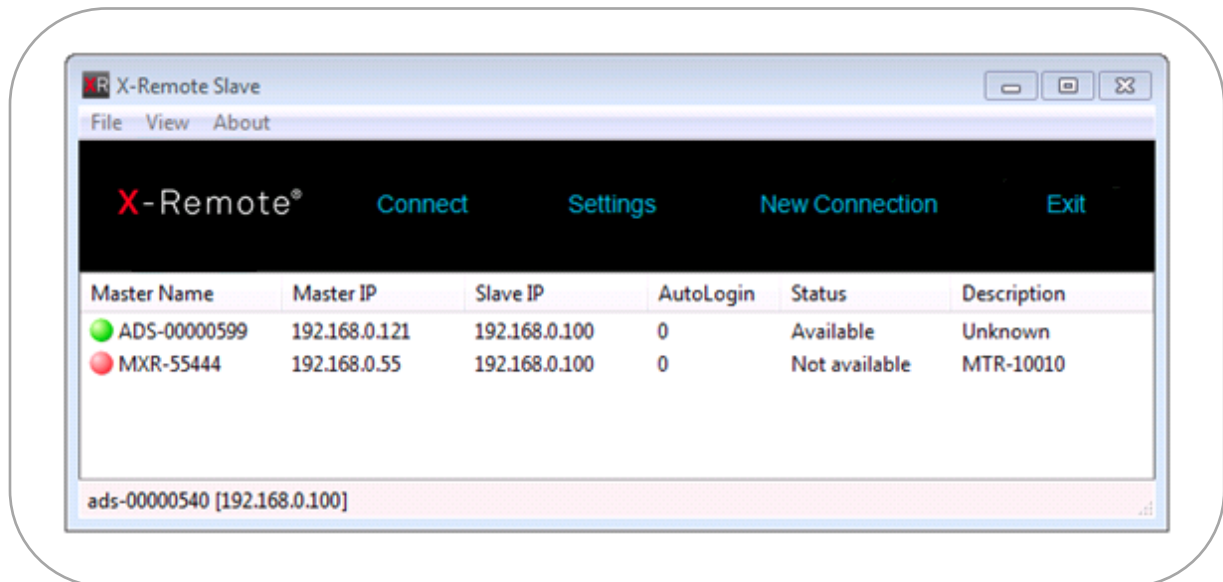
You can find the version number of the X-Remote software via the "About" menu item.



## 6 Slave

### 6.1 The slave window

The started X-Remote slave displays all found masters in its main window.

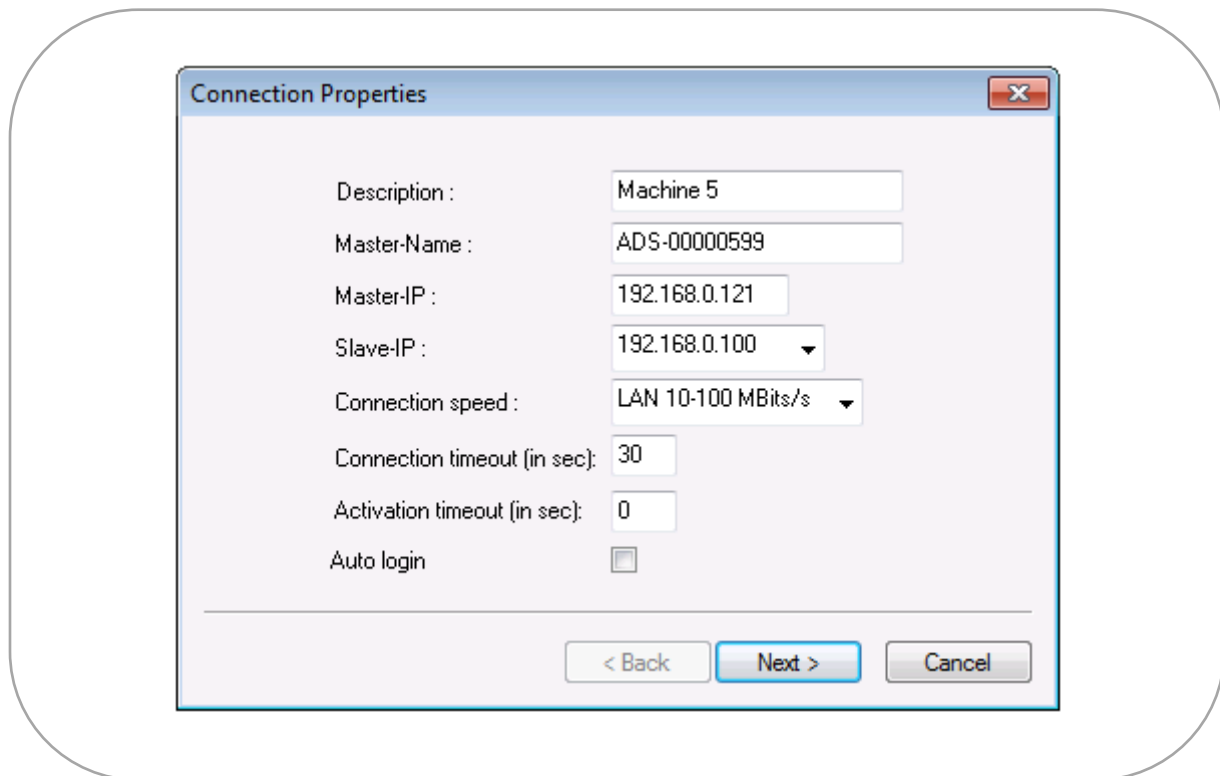
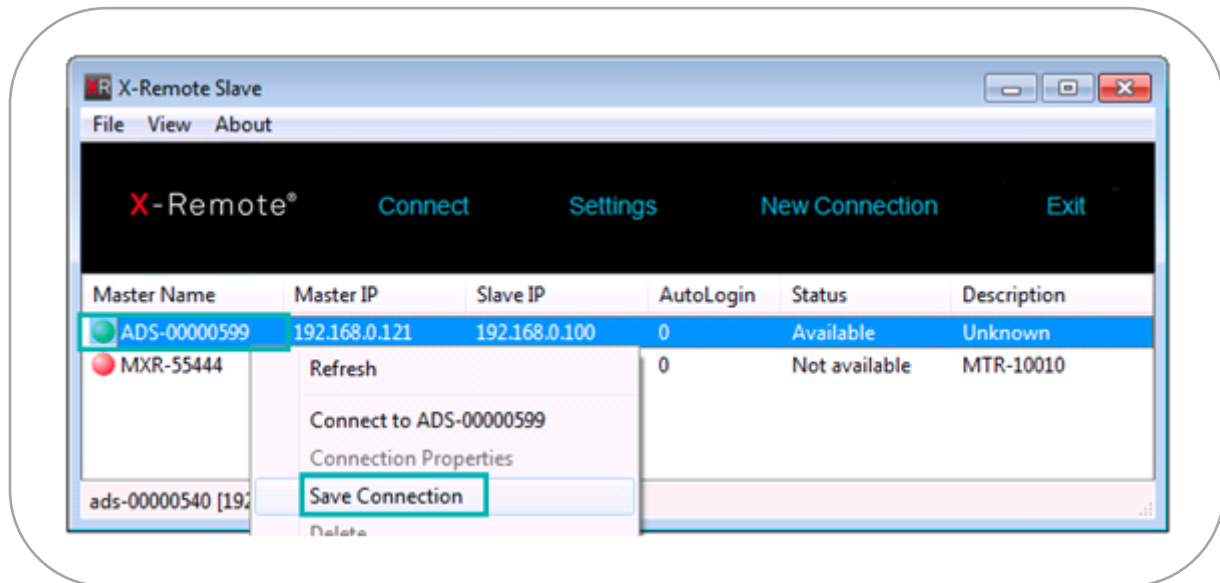


Green icons indicate available masters.

Red icons indicate user-defined connections to masters that are not currently available.

## 6.2 Connection Properties

An automatically found connection can be saved as a user-defined connection via the right mouse-key.



### "Description"

Use the description to give the connection a meaningful name (in the example figure: Machine 5).

**"Master-Name"**

The name of the automatically found master, on the other hand, must not be changed (unless a different master actually registers under this IP address at a later time with the different name). The name of the master must correspond to the name of the computer on which the master is running.

**"Connection timeout"**

This setting applies to the behaviour in the case of unstable network connections, as may occur, e.g., with wireless connections via WLAN. Following an interruption of the connection, the slave continues to display the screen of the master until the time entered here has elapsed. If the connection is restored during this time, the user of the slave does not need to do anything and may not even notice that a temporary interruption had occurred.

If the interruption exceeds the time entered here, the connection window disappears and the slave window is displayed. As soon as the connection is restored, however, the slave reopens the connection window.

The value for the connection timeout is typically given a larger value the less stable the connection is.

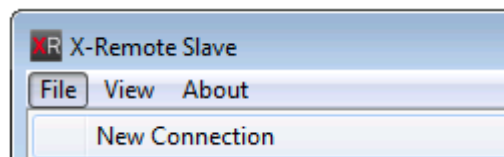
**"Auto login"**

With the help of the Auto login property, a connection to the specified master can automatically be established after the slave is started.

**"Activation timeout"**

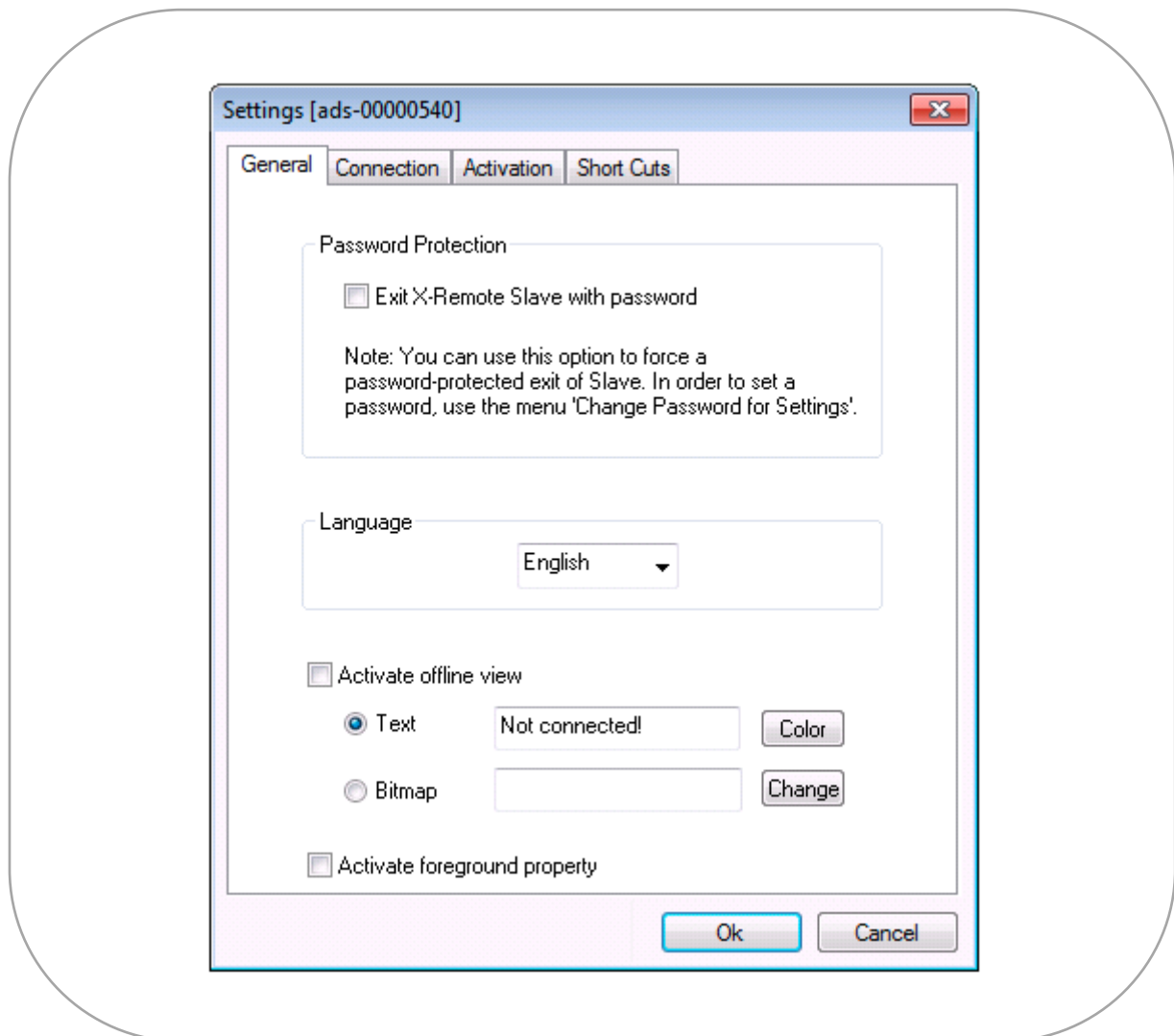
This setting only applies to this slave for exactly this connection to the specified master. Enter the time here that should be given to this slave to either accept or decline activation requests (i.e., requests for operating rights).

Tip: You can freely create user-defined connections via "File / New Connection".



## 6.3 Settings / General

Use "File / Settings" to open the "Settings / General" window.



### "Password Protection / Exit X-Remote Slave with password"

If the check box is selected, the slave can only be exited with a valid password. For this option, a password must be set up. You can set up this password under "File / Change Password for Settings".

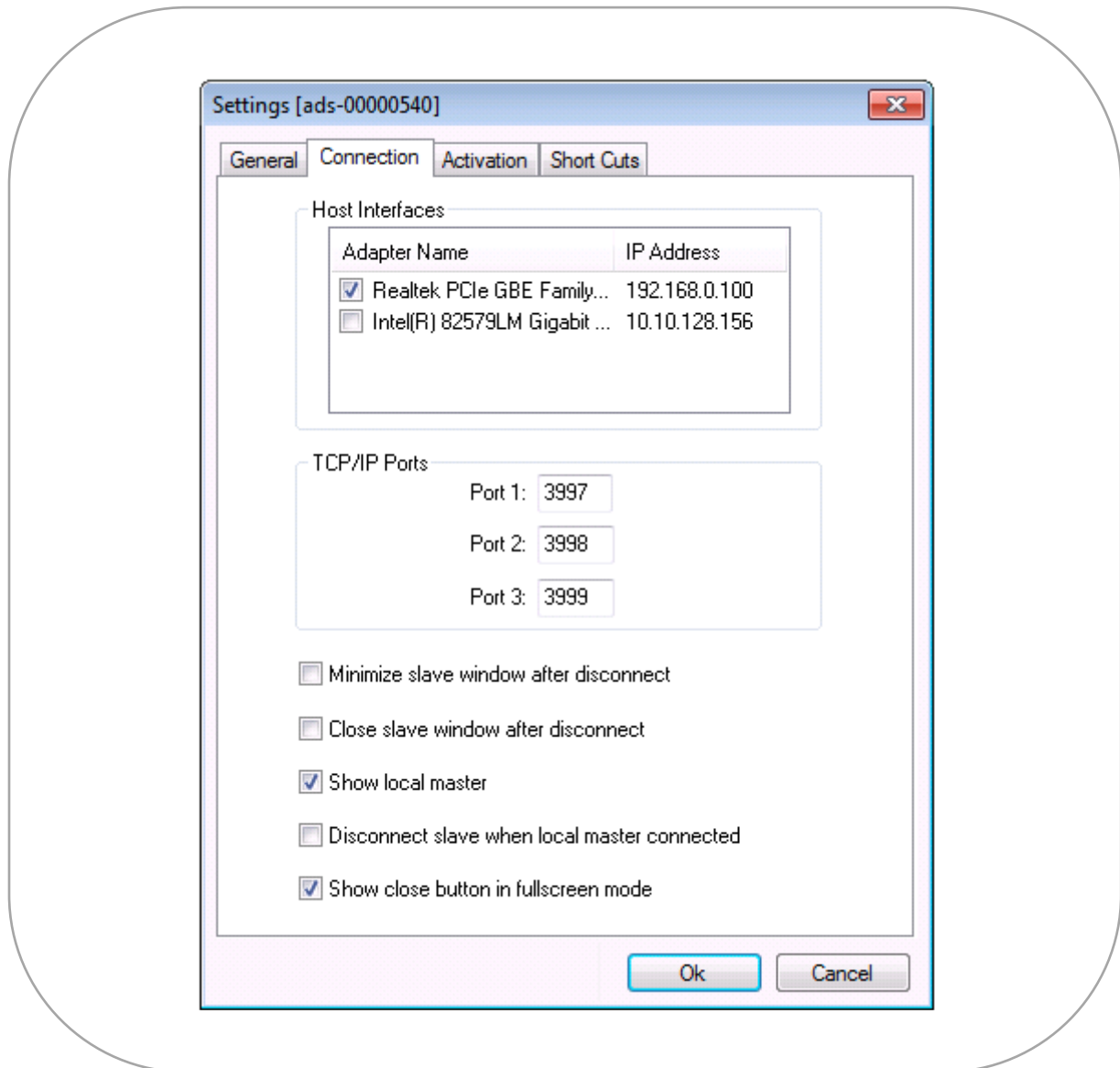
### "Activate offline view"

Defines the behaviour if there is no connection to a master: if the check box is selected, the selected information is displayed full-screen on the slave computer instead of the connection overview.

### "Activate foreground property"

Permanently moves the window for a connection to the foreground. Other windows may not be visible as a result (particularly in full-screen mode).

## 6.4 Settings / Connection



### "Host Interfaces"

If multiple network adapters are available, select the desired adapter here.

### "TCP/IP Ports"

X-Remote uses three TCP/IP ports, the numbers of which can be defined in the three input fields. To be able to establish a connection between master and slave, the settings must be the same on master and slave. The factory settings are Port 1: 3997, Port 2: 3998, Port 3: 3999.

The ports can be freely redefined **if using a firewall** and must be enabled for TCP and UDP communication.

**"Minimize slave window after disconnect"**

Minimises the main window of the slave as soon as a connection is ended.

**"Close slave window after disconnect"**

Exits the slave program as soon as a connection is ended. To re-establish a connection, the slave must be restarted.

**"Show local master"**

If, on the computer on which the slave is running, a master is running as well, it is displayed in the list of available connections, provided this option is selected.

**"Disconnect slave when local master connected"**

This option can be used to automatically disconnect a slave connection with a remote master if a connection is established with the local master. This is intended to prevent cascaded connections.

Example:

- Computer A: Master A
- Computer B: Master B and Slave B
- Computer C: Slave C

Default behaviour: Slave B connects to Master A and sees its screen content. If Slave C then connects to Master B, it sees the screen content of Computer B. But because Screen B displays Screen A, Computer C sees the screen of Computer A in this case.

If the option is activated, the behaviour is as follows: Slave B connects to Master A and sees its screen content. If Slave C then connects to Master B, the connection of Slave B to Master A is ended. Slave C thereby actually sees the screen content of Computer B. This is intended to prevent Slave Computer C from accidentally configuring Computer A when it actually wanted to configure Computer B.

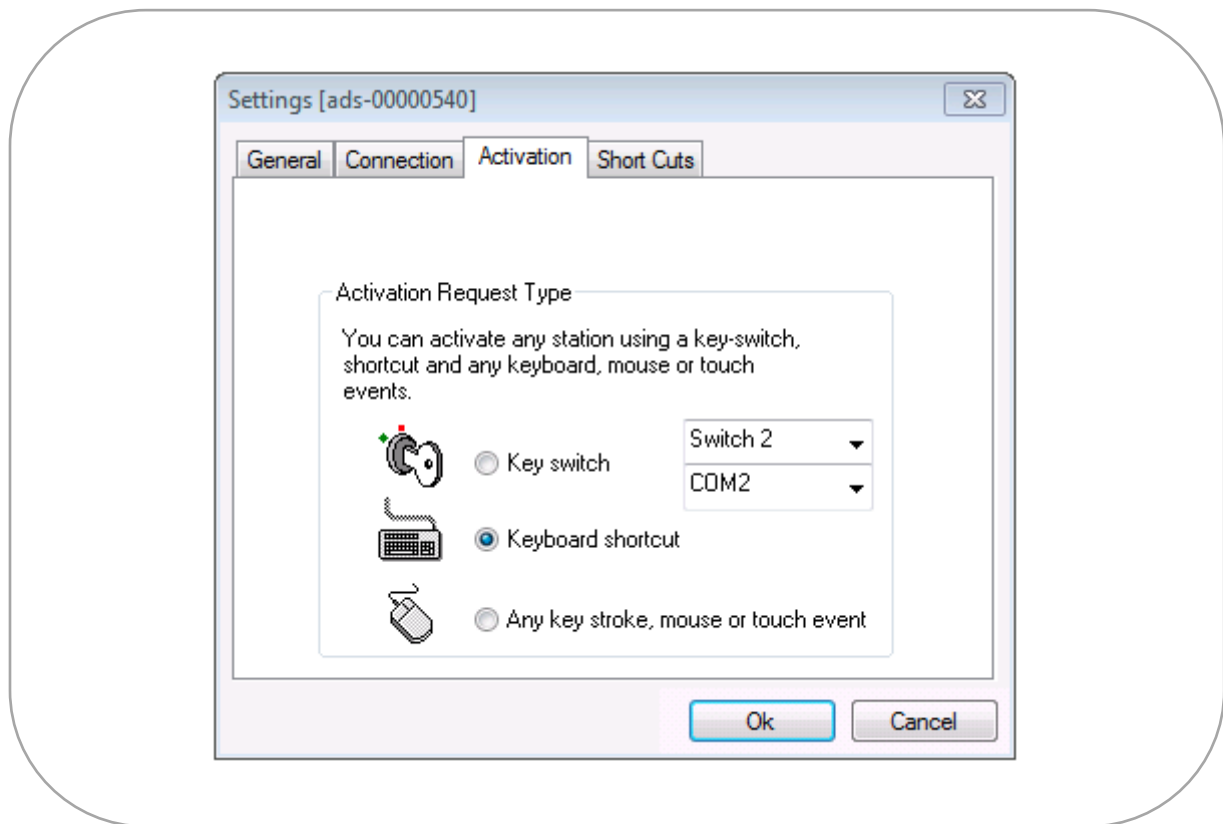
**"Show close button in fullscreen mode"**

If full-screen mode was defined for a user-defined connection in the settings for this connection, a corresponding button appears.



## 6.5 Settings / Activation

The "Activation" tab enables changes to the granting of operating rights.



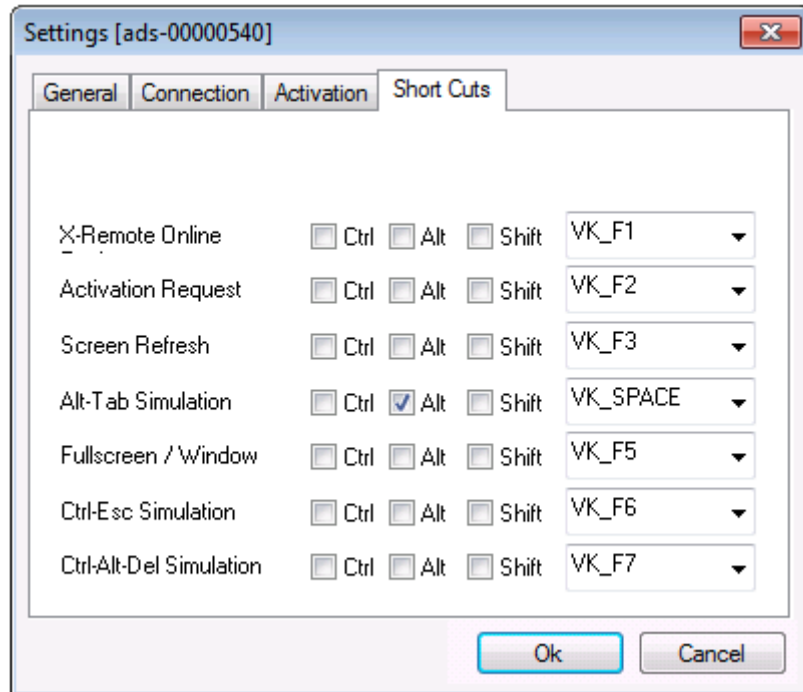
### "Activation Request Type"

Here, you can select the method for requesting the operating rights on the slave.

- If using a keyboard, the preferred **key combination** can be set on the "Short Cuts" tab.
- A **key switch** can be connected to one of the serial interfaces COM1 ... COM6.
- Alternatively, the operating rights can be requested by an **arbitrary keyboard, mouse or touch event**, e.g., by pressing any key on the keyboard.

## 6.6 Settings / Short Cuts

The "Short Cuts" tab defines various key combinations.



Changes to the configuration of the key combinations are not applied until after the slave is restarted.

### "X-Remote Online Tool"

Defines the manner in which an existing online connection can call up the "X-Remote Online Tool". By default, this occurs by pressing the **F1** function key.

Note: If master and slave run in parallel on one computer, actuation of the F1 key is only passed on to the master. In this case, configure a different key combination.

### "Activation Request"

Defines how the slave can request or return the operating rights. By default, this occurs by pressing the **F2** function key.

Note: If master and slave run in parallel on one computer, actuation of the F2 key is only passed on to the master. In this case, configure a different key combination.

**"Screen Refresh"**

Corresponds to the "View / Refresh" menu item.

**"Alt-Tab Simulation"**

Defines how the user can page through the open windows.

**"Fullscreen / Window"**

Defines how the user can toggle between the various display modes.

**"Ctrl-Esc Simulation"**

Defines how the user can open the Windows Start menu.

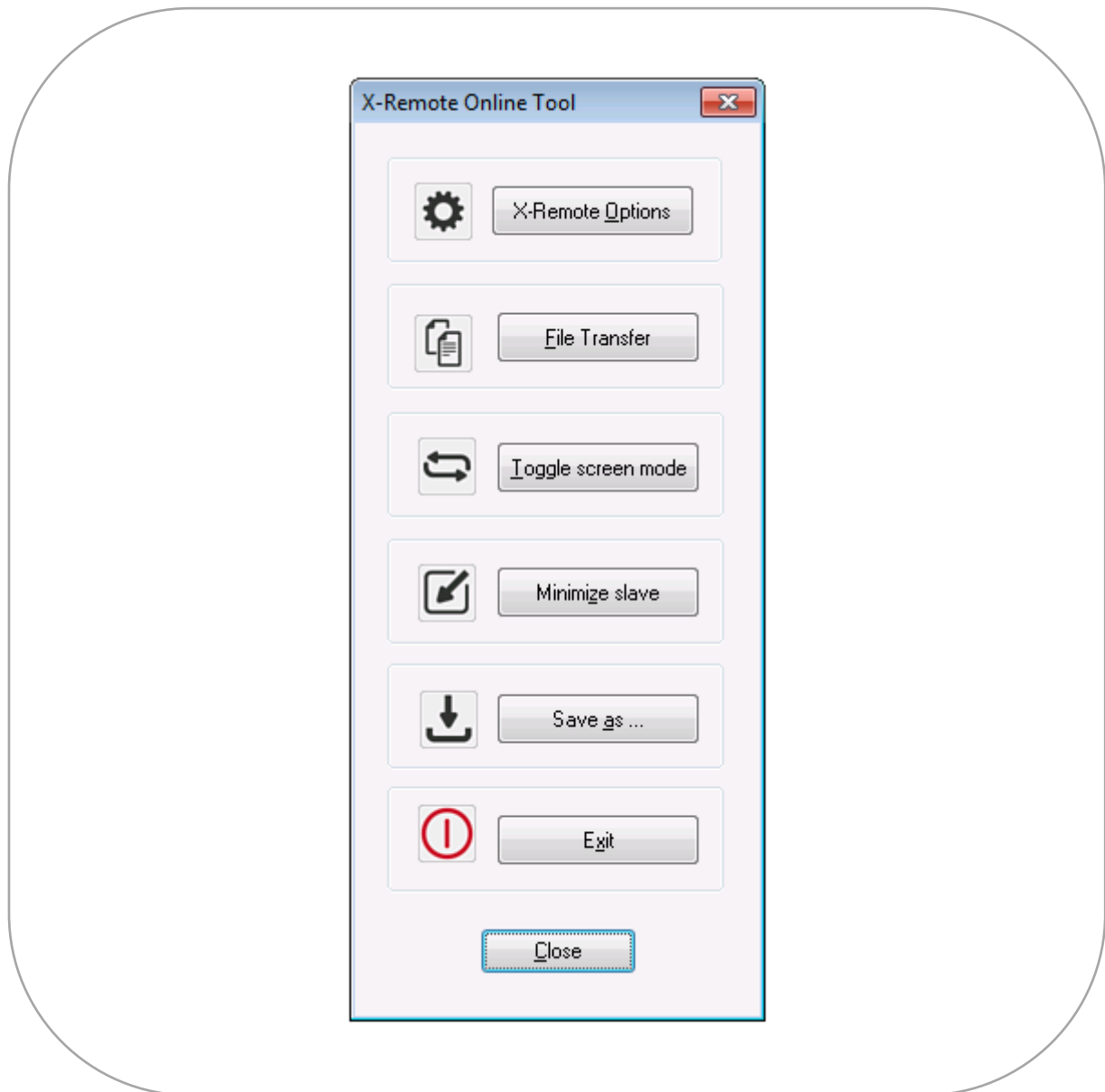
**"Ctrl-Alt-Del Simulation"**

Defines how the login/logout screen is accessed.

Note: This simulation is only supported if the master is running as a service. Beginning with Windows Vista, this simulation is no longer supported.

## 6.7 X-Remote Online Tool

For an existing online connection, the "X-Remote Online Tool" can be called up with the help of a key combination (by default: **F1**).



Note: If master and slave run in parallel on the same computer, **F1** only calls up the master by default. In this case, assign different key combinations for master and slave.

### "X-Remote Options"

Opens the main window of the slave.

### "File Transfer"

See section 7.

**"Toggle screen mode"**

Changes the screen mode (full screen with/without scroll bars, window with/without scroll bars).

This can also be performed by default with the **F5** function key.

**"Minimize slave"**

Minimises the slave window.

**"Save as ..."**

Allows the current connection to be saved with all connection parameters.

**"Exit"**

Closes the current connection.

## 6.8 Save as ...

You can save the current settings as an .sco file. If saving while a connection is active ("X-Remote Online Tool" -> "Save as"), the connection parameters (master IP, screen mode, etc.) are also saved. In this case, you can start the specified connection with a double click or by loading with the "Load File" menu option.

## 6.9 Load File

As with the master, this option can be used to load saved .sco slave config files. An .sco file contains all setting information (language, TCP/IP ports, short cuts, etc.) as well as connection parameters (target master IP, screen mode, etc.)

These files can also be loaded with the "-configfile" command-line parameter.

Example: slave.exe -configfile my\_config.sco

## 6.10 Command line parameters

The following command line parameters can be used with the slave:

**-configfile:**

A connection can be established with the parameters stored in an sco file.

Example: Slave.exe -configfile:slave\_config\_file.sco

**-masterip:**

Example: Slave.exe -masterip:192.168.253.145

**-mastername:**

Example: Slave.exe -mastername:OPC8024

**-password:**

The connection password set on the master can be specified in the command line.

Example: Slave.exe -mastername:OPC8024 -password:secret

**-port2:**

If a master uses a different connection port (the second port in the settings), this port can be specified in the command line.

Example: Slave.exe -masterip:192.168.0.141 -port2:4998

**-silent:**

If the connection is closed, the slave ends automatically.

Example: Slave.exe -masterip:192.168.0.141 -silent

**-minimize:**

If the connection is closed, the slave is minimised on the task bar.

Example: Slave.exe -masterip:192.168.0.11 -minimize

**-reconnect:**

If the connection is terminated due to a network error, the "Reconnect" function is activated with this parameter. As a result, once the master can again be reached, the connection is restored. Example:

Slave.exe -masterip:192.168.0.141 -reconnect

**-screenmode:**

The screen display mode for the connection can be specified.

0: Full screen (default)

1: Window mode

2: Complete full screen of the master screen in window mode

3: Default window mode. Unlike 1), the entire screen area is used.

4: Window mode without title bar for the window.

Example: Slave.exe -masterip:192.168.253.141 -screenmode:0

**-left:**

The distance of the left edge of the window from the left edge of the screen. Is ignored for full screen.

Example: Slave.exe –masterip:192.168.253.141 –screenmode:2 –left:100

**-top:**

The upper distance of the window from the screen edge. Is ignored for full screen.

Example: Slave.exe –masterip:192.168.253.141 –screenmode:2 –left:100 –top:10

**-right:**

The distance of the right edge of the window from the left edge of the screen. Is ignored for full screen.

Example: Slave.exe –masterip:192.168.253.141 –screenmode:2 –left:100 –right:500

**-bottom:**

The lower distance of the window from the screen edge. Is ignored for full screen.

Example: Slave.exe –masterip:192.168.253.141 –screenmode:2 –top:10 –bottom:600

**-width:**

The width of the connection window. Is ignored for full screen.

Example: Slave.exe –mastername:OPC8024 –screenmode:2 –left:100 –top:10 –width:400

**-height:**

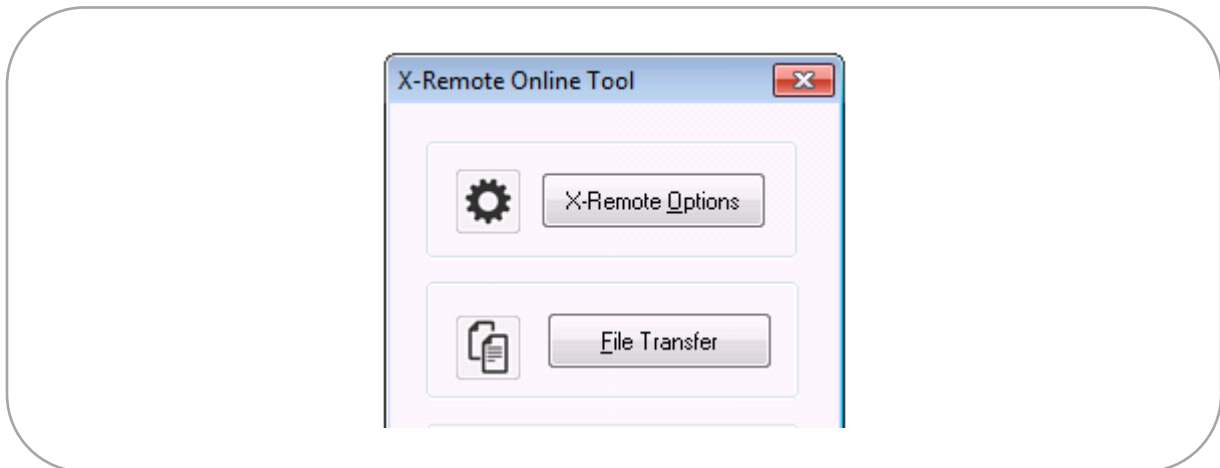
The height of the connection window. Is ignored for full screen.

Example: Slave.exe –mastername:itc8113 –screenmode:2 –left:10 –top:0 –width:400 –height:300

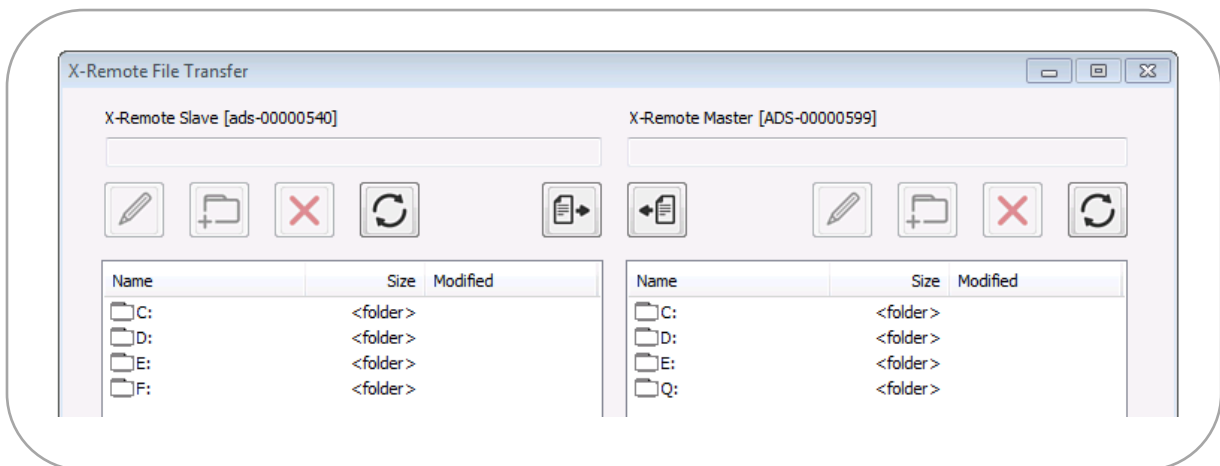
## 7 File transfer between master and slave

### 7.1 "File Transfer" window

For an existing online connection, you can call up the "X-Remote Online Tool" by default with the **F1** function key.



Use the "File Transfer" button to open the window by the same name:



With the help of this file manager, you can transfer files back and forth between master and slave, rename or delete files, create folders, etc.

### 7.2 Clipboard

Text and images can also be freely exchanged between master and slave via the Windows clipboard using copy & paste.

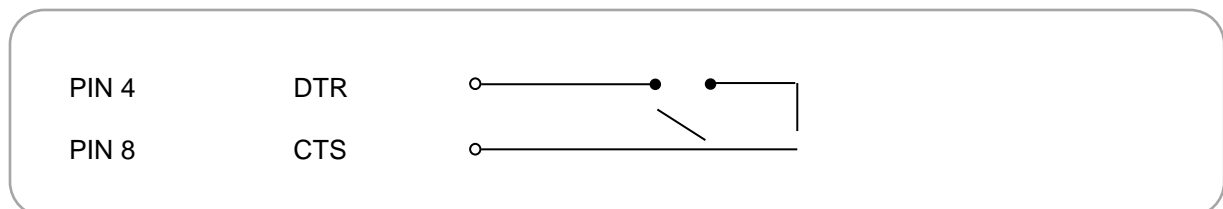
## 8 Appendix

### 8.1 System requirements

Operating system	Master	Slave
Microsoft Windows 7 Professional 32 / 64 bit	✓	✓
Microsoft Windows 7 Ultimate 32 / 64 bit	✓	✓
Microsoft Windows Embedded Standard 7 E 32 / 64 bit	✓	✓
Microsoft Windows Embedded Standard 7 P 32 / 64 bit	✓	✓
Microsoft Windows 2008 Server 32 / 64 bit	✓	✓
Microsoft Windows 2012 Server 32 / 64 bit	✓	✓
Microsoft Windows 8 32 / 64 bit	✓	✓
Microsoft Windows 8.1 32 / 64 bit	✓	✓
Microsoft Windows 10 32 / 64 bit	✓	✓
<b>Minimum hardware requirements</b>		
Colour depth in bits per pixel	16, 24, 32	16
RAM main storage	256 MB	256 MB
Hard drive memory requirement	6 MB	2 MB
CPU clock rate	> 500 MHz	> 200 MHz

### 8.2 Circuit diagram for key switch

Serial connection via 9-pin Sub-D connector:



## 8.3 Troubleshooting

- **Very slow transfer**

Possible cause:	Solution:
<ul style="list-style-type: none"> <li>• X-Remote screen driver is not properly installed</li> </ul>	<ul style="list-style-type: none"> <li>• Screen driver not started: reinstall the X-Remote master.</li> </ul>
<ul style="list-style-type: none"> <li>• Low network bandwidth</li> </ul>	<ul style="list-style-type: none"> <li>• 100 Mbit instead of 10 Mbit (see section 8.4.1)</li> <li>• Switch instead of hub</li> </ul>
<ul style="list-style-type: none"> <li>• Up to and including Windows 7: Colour depth set too high.</li> </ul>	<ul style="list-style-type: none"> <li>• Set a medium colour depth (16-bit) on both systems (master and slave) (see section 8.4.3).</li> </ul>

- **Screen content unsharp**

Possible cause:	Solution:
<ul style="list-style-type: none"> <li>• Different screen resolutions are set on master and slave. X-Remote automatically adjusts to these resolutions.</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust the screen resolution of master and slave (see section 8.4.2).</li> <li>• Change the display mode, see section 2.8.</li> </ul>

- **Slave does not connect to master**

Possible cause:	Solution:
<ul style="list-style-type: none"> <li>• There is no network connection.</li> </ul>	<ul style="list-style-type: none"> <li>• Check network cable.</li> <li>• Have master and slave ping one another.</li> </ul>
<ul style="list-style-type: none"> <li>• The X-Remote master was not started.</li> </ul>	<ul style="list-style-type: none"> <li>• Start X-Remote master. The master is automatically started if it is installed as a service or listed in Autostart.</li> </ul>
<ul style="list-style-type: none"> <li>• The demo period for the X-Remote master has expired.</li> </ul>	<ul style="list-style-type: none"> <li>• Register X-Remote.</li> </ul>

- **Slave unexpectedly ends the connection**

Possible cause:	Solution:
<ul style="list-style-type: none"> <li>• The network connection may have been lost (common error with WLAN).</li> </ul>	<ul style="list-style-type: none"> <li>• Check connection to the access point.</li> <li>• Observe max. wireless range.</li> <li>• Try increasing the network bandwidth.</li> <li>• Increase connection timeout (see section 6.2).</li> </ul>

- **Screen content is no longer transmitted**

Possible cause:	Solution:
<ul style="list-style-type: none"> <li>• The demo period for the master has expired. A dialogue box is displayed on the master.</li> </ul>	<ul style="list-style-type: none"> <li>• Register X-Remote.</li> </ul>

## 8.4 How-to tips

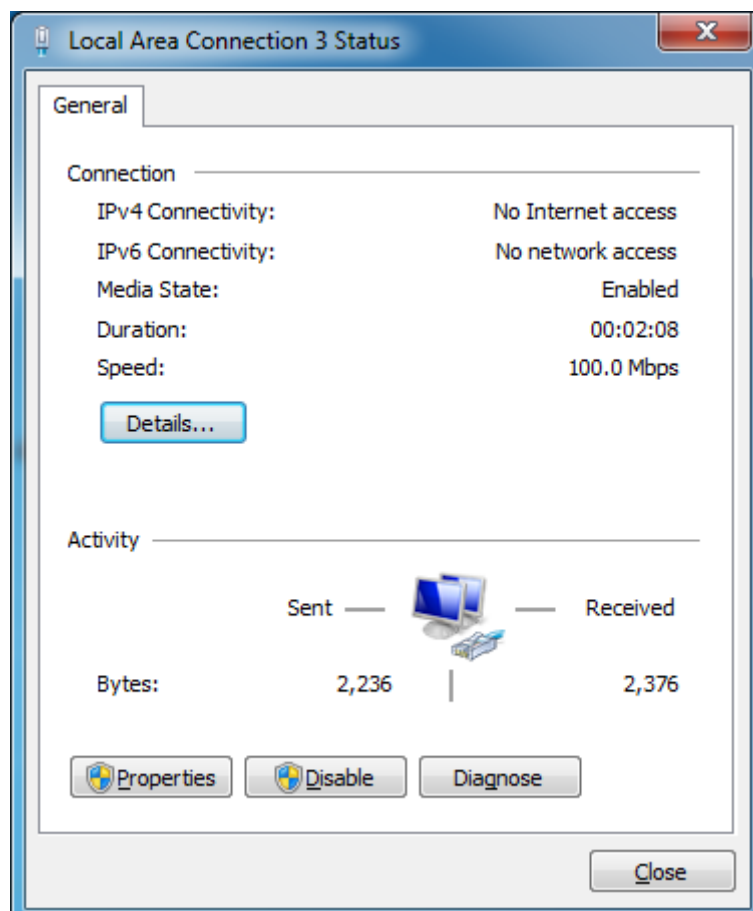
### 8.4.1 Checking the transmission bandwidth

The transmission bandwidth of the network adapter should be at least 100 Mbit/s.

- Check the bandwidth of your network adapter.

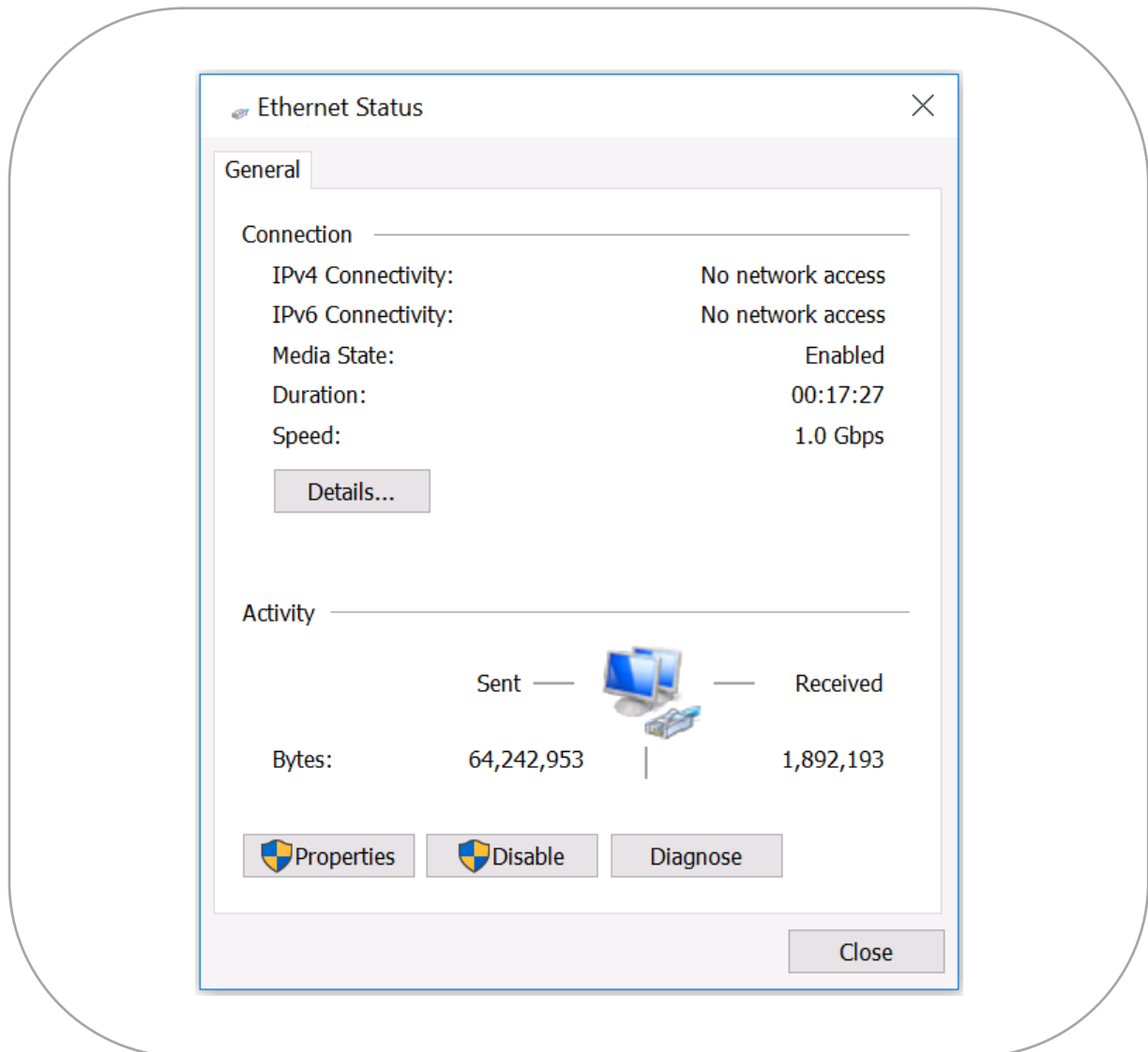
#### Example for Windows 7:

Start / Control Panel / Network and Sharing Center / <select network adapter>



**Example for Windows 10:**

Start / Settings / Network and Internet / Status / Change adapter options / <double click on the respective network adapter>

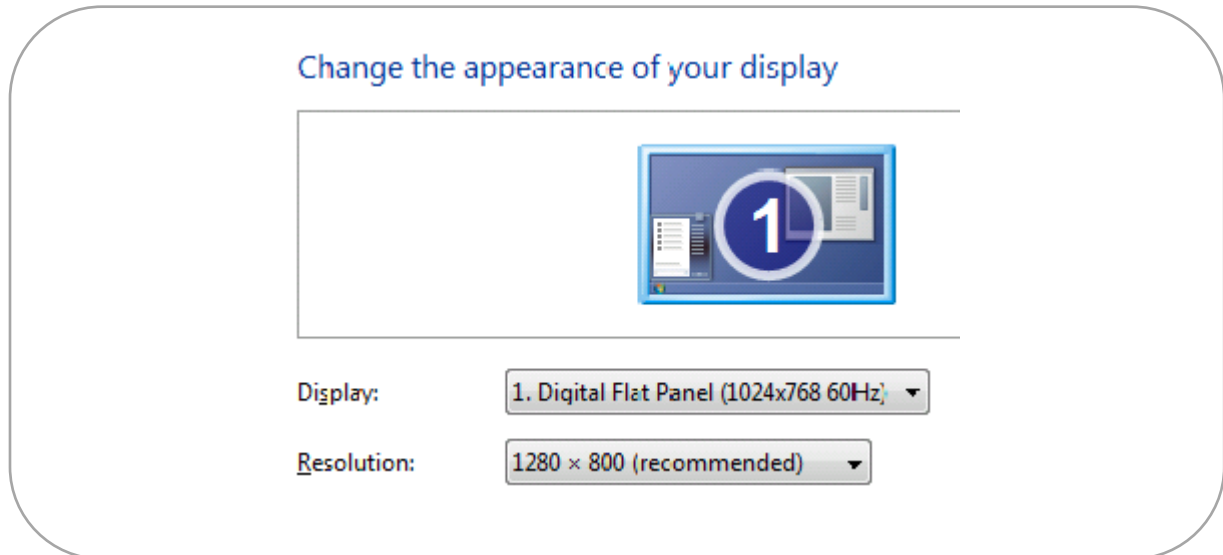


## 8.4.2 Setting the screen resolution

If necessary, adjust the screen resolutions of master and slave.

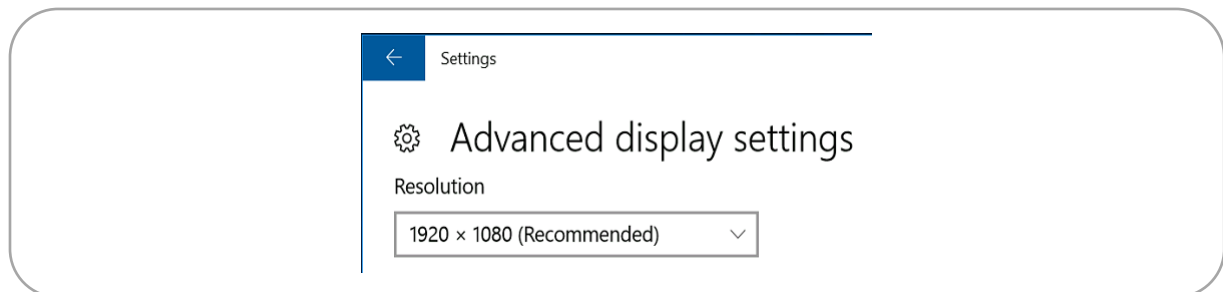
### Example for Windows 7

Start / Control Panel / Display / Change display settings



### Example for Windows 10

Start / Settings / System / Display / Advanced display settings



### 8.4.3 Setting medium colour depth

The data quantities and, thus, the transmission times for screen contents are also dependent on the set colour depth: the lower the colour depth, the faster the calculation and transfer. Often, a colour depth of 16-bit is a good compromise.

The colour depth can only be set in this form up to and including Windows 7.

#### **Example for Windows 7**

Start / Control Panel / Display / Change display settings / Advanced settings / Monitor

## 8.5 Default settings on delivery

<b>Master keyboard shortcuts</b>	
X-Remote Options	F1
Activation request	F2
<b>Slave keyboard shortcuts</b>	
X-Remote Online Tool	F1
Activation request	F2
Screen Refresh	F3
Alt-Tab Simulation	Alt - space key
Fullscreen / Window	F5
Ctrl-Esc Simulation	F6
Ctrl-Alt-Del Simulation	F7
<b>Master connection</b>	
Default Active Station	Slave
Master status	Master visible
Exit X-Remote master with password	Deactivated
<b>Master configuration</b>	
Connection password	<empty>
Language	English
TCP/IP ports	3997, 3998, 3999
<b>Master activation</b>	
Activation request type	Keyboard
<b>Screen master</b>	
Timeout interval	0 s
Process priority	Normal

## 9 Service & support

ADS-TEC and its partner companies offer you comprehensive maintenance and support services, ensuring quick and competent support should you have any questions or concerns with regard to ADS-TEC products and equipment.

Because ADS-TEC products are also used by partner companies, these devices may have customised configurations. Should any questions arise with regard to such specific configurations and software installations, please contact the system supplier in question as ads-tec will not be able to answer such questions.

ADS-TEC does not provide support services for any device that was not purchased directly from ADS-TEC. In this case, maintenance and support is provided by the partner company.

### ADS-TEC support

The ADS-TEC support team is available for inquiries from direct customers between 8:30am and 5:00pm, Monday to Friday. The support team can be reached via phone, fax or e-mail:

Phone: +49 7022 2522-202

Fax: +49 7022 2522-400

Email: [support@ads-tec.de](mailto:support@ads-tec.de)