sc1000 Software Updates via Network

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The sc1000 Service Port

The sc1000 service port is used to update the sc1000 Display Module, the sc1000 Probe Module, the connected SC Sensors and also to operate the sc1000 System through the Embedded WEB Interface.

For direct connection between a PC/Laptop and the sc1000 Service port please use a cross over Ethernet cable (Cat5, LZX998). The sc1000 also can be connected to a LAN. In this case please get in contact with your IT department to check the need of a reserved IP address for the sc1000 in the LAN.

Functionality of the Embedded WEB Interface.

- View the actual measurement values from each connected sensor.
- Remote operation: The instrument can be operated in the same way like using the local user interface with the touch screen.
- Remote diagnosis: The instrument and all connected SC-sensors can be examined remotely, download of diagnostics file.
- Download of data log files and event log files: You can download the log files to your computer. The files are in <.csv> or <.txt> -format (both can also be packed <.zip>) and can be imported to Excel to create curves or to explore the data in detail.
- Software update: All components of the sc1000 controller system and all connected scsensors can be updated by uploading new software versions into the instruments.

How to get access to the sc1000 using the service port.

- Required hardware: PC/Laptop running Windows 7
- LZX998 Interface cable for sc1000 ("Ethernet cross overcable").
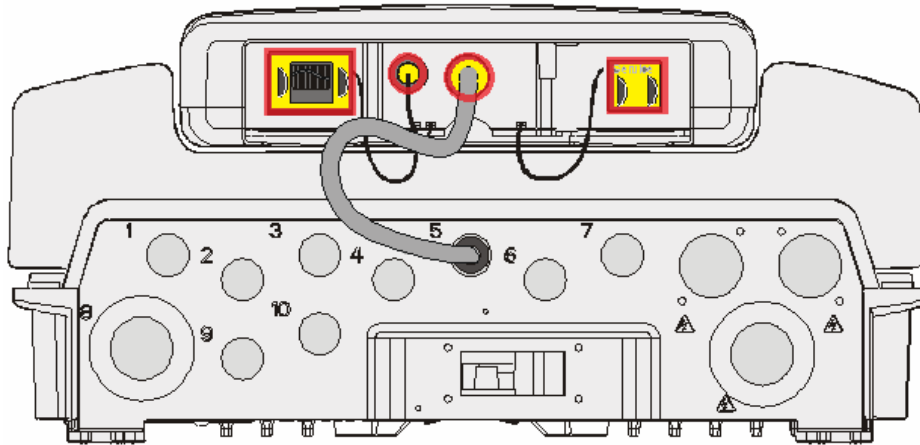
figure1: sc1000 connectors

Navigate to MENU → SC1000 SETUP → BROWSER ACCESS:

figure2: sc1000 network and browser settings

Make following settings:
- <LOGIN PASSWORD>   set password for browser and sc1000 software updates.
- <EXTERNAL SERVICE DIAL-UP>   enable browser access and updates.
- <DHCP>   should be OFF. Only set to ON, when sc1000 display and PC/Laptop are connected to a managed network infrastructure – ask IT manager before connecting an sc1000 display to a managed network.
- <IP ADDRESS>   the default IP-address is 192.168.154.30. An individual IP-address can be set if needed. This address must be remembered and later entered in Internet Explorer.
- <FTP ACCESS>   must be set to ON while new software is uploaded. For normal operation conditions (no software updates) this should be set to OFF.

Use a standard web browser like Internet Explorer. Use Windows-Explorer for uploading files.   Enter the IP-address of the displaymodule in the web browser.

How to set up your PC/laptop to connect to sc1000 via service port

Step 1: Look for a suitable network adapter

Note: You may need assistance from the IT department for the following steps. In some cases PC users cannot change network setting of their computers.

When you have just one network adapter (which is the normal case), use the "Alternate Configuration" option, that Windows offers. This is the recommended way when your computer is connected to another network (e.g. in your office) or when you use a docking station.

If you have a second network adapter (for example USB to Ethernet adapter) you can use this adapter.
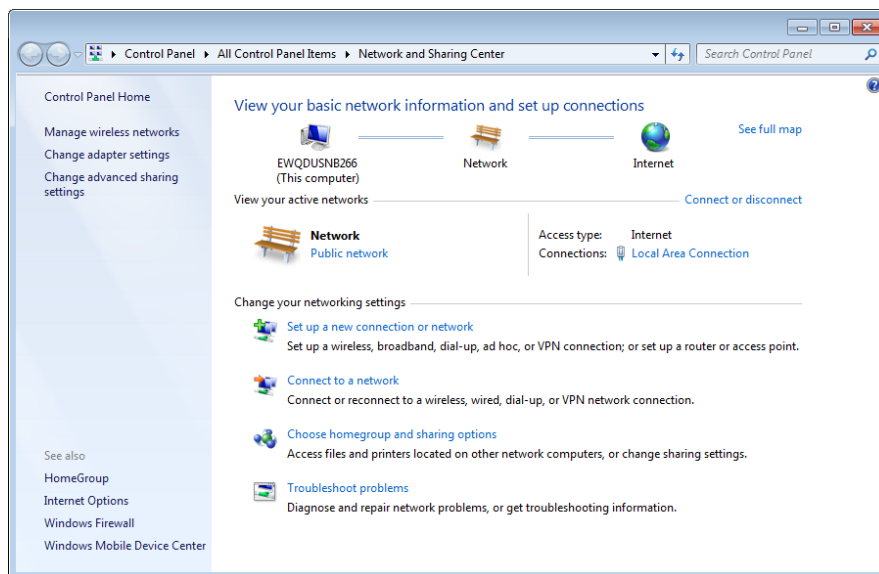
Using a network with the sc1000. Change the settings of the network card to 10MBit, Full duplex, (default is mostly 100MBit).
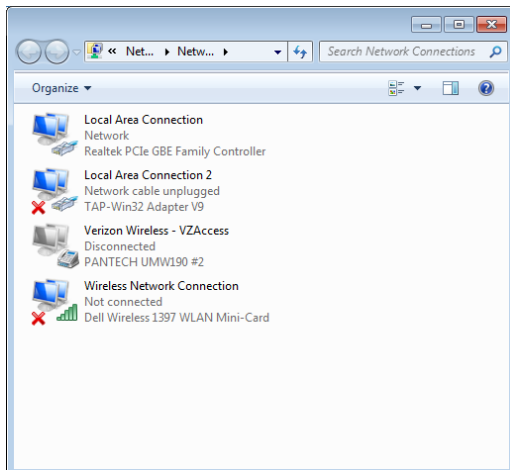Confirm the changes. The following screens show how to change.

Step 2:Network settings for Windows PC/Laptop

Note:When your computer has just one network adapter, it is required to disconnect the PC/Laptop from network and to connect it with the sc1000 using a "crossover" Ethernet cable.
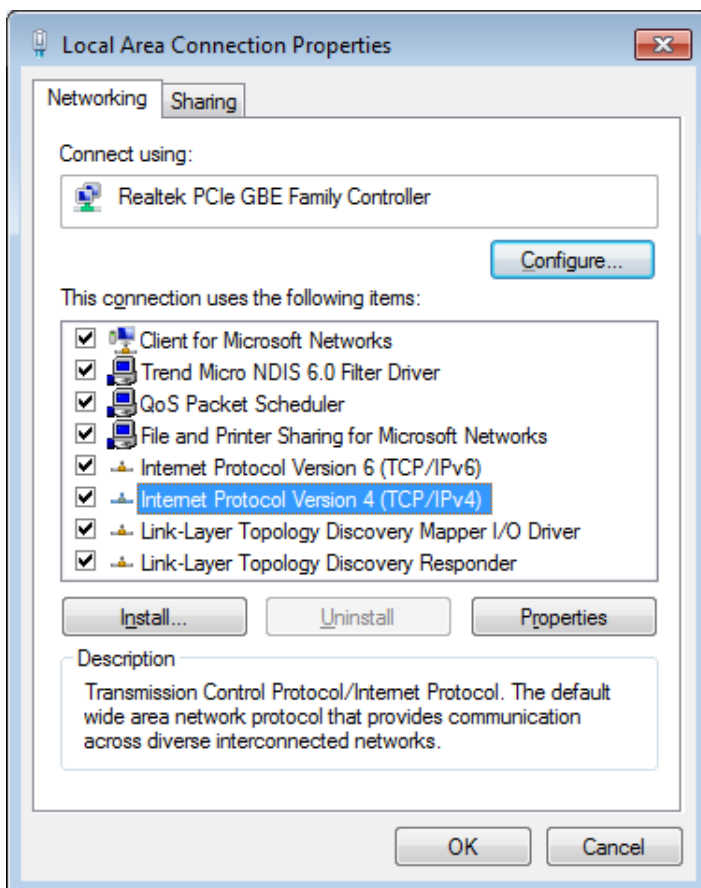
On your PC/Laptop navigate to "Network and Sharing Center", right click "Properties", and press "Change adapter settings":
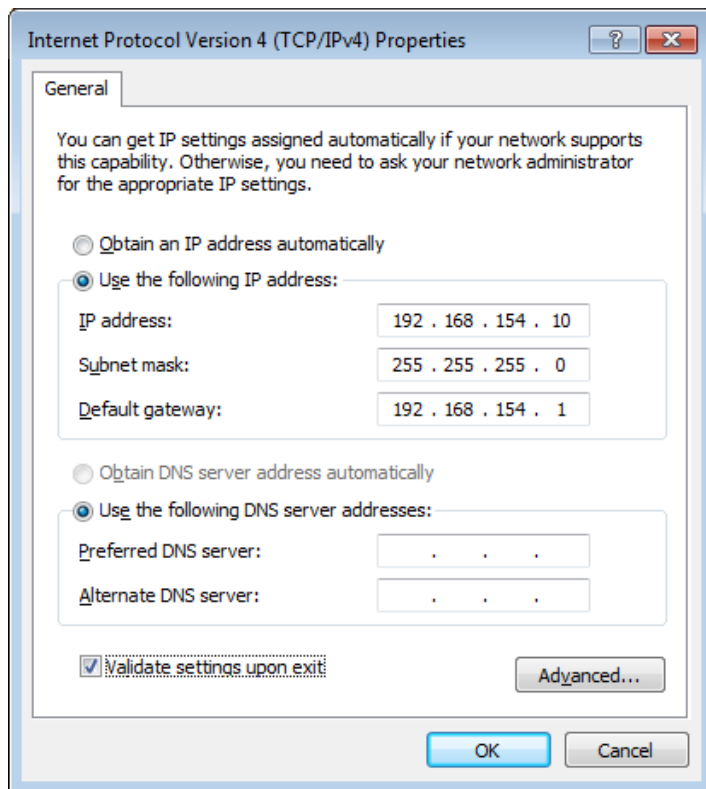
Select the network adapter to use for the connection to the sc1000 controller. Right click and select "Properties":
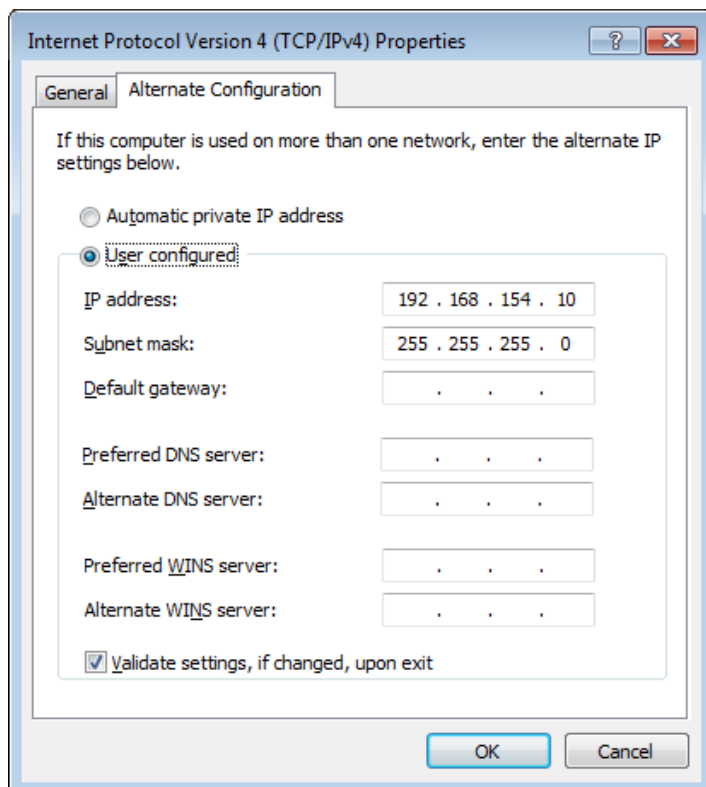

Select "Internet Protocol Version4 (TCP/IPv4)" and press "Properties" button:
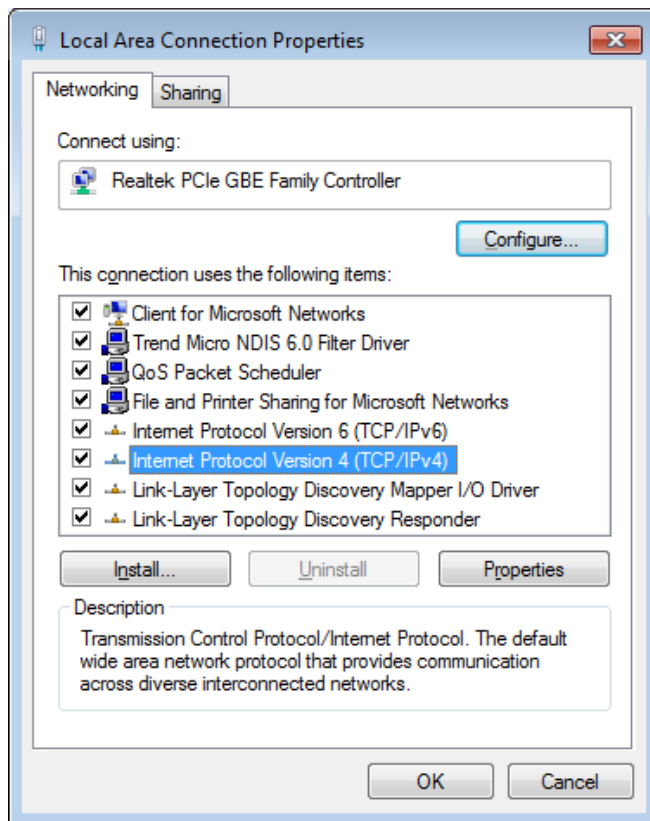
ALTERNATIVE A) When you have just one network adapter, which is not used or when a second network adapter is available select "General" and populate the settings from this screenshot:

Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically

● Use the following IP address:

IP address: 192 . 168 . 154 . 10

Subnet mask: 255 . 255 . 255 . 0

Default gateway: 192 . 168 . 154 . 1

○ Obtain DNS server address automatically

● Use the following DNS server addresses:

Preferred DNS server: .   .   .

Alternate DNS server: .   .   .

☑ Validate settings upon exit   Advanced...
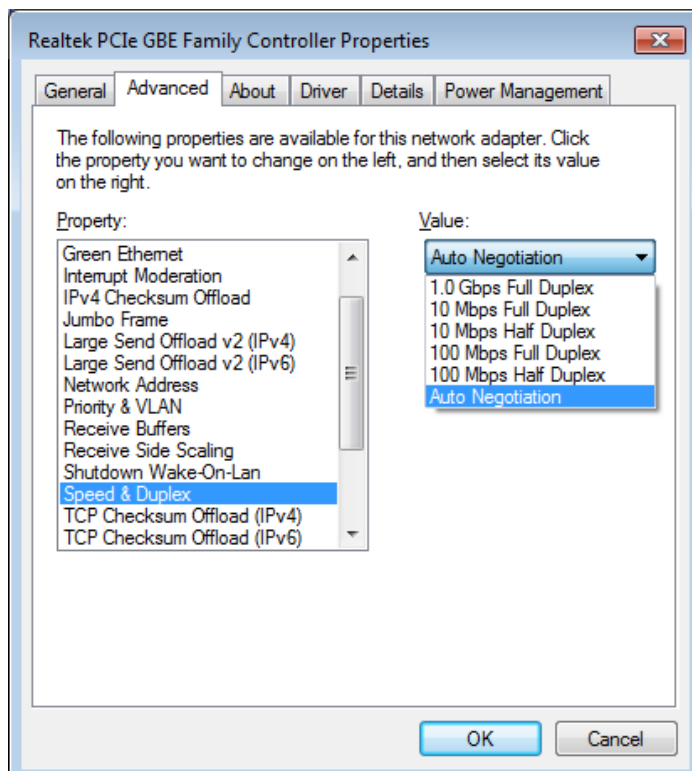
OK   Cancel

ALTERNATIVE B) When you have just one network adapter, which is normally connected to another network or when a docking station is used, select "Alternate Configuration" and populate the settings from this screenshot:

Internet Protocol Version 4 (TCP/IPv4) Properties

General | Alternate Configuration

If this computer is used on more than one network, enter the alternate IP settings below.

○ Automatic private IP address

● User configured

IP address: 192 . 168 . 154 . 10

Subnet mask: 255 . 255 . 255 . 0

Default gateway: .   .   .

Preferred DNS server: .   .   .

Alternate DNS server: .   .   .

Preferred WINS server: .   .   .

Alternate WINS server: .   .   .

☑ Validate settings, if changed, upon exit

OK   Cancel

Go back to "Local Area Connection Properties" and press "Configure" button:

Select "Advanced" tab and set "Speed & Duplex" to either "10 Mbps Half Duplex" (preferred, esp. for old computers) or to "Auto Negotiation":

Step 3: Check the connection to the sc1000service port

- Connect your computer/laptop to the service port on the sc1000 display module by using the interface cable for sc1000 (Ethernet cross over, LZX998).
- Start your web browser (Internet Explorer).
- Enter the following address (default address sc1000):
  192.168.154.30
- When the screen (see figure3) appears, the connection is successfully set up:

figure3: sc1000 loginscreen

- If the screen shown on figure3 does not appear, check the settings in "Step 2:Network settings for Windows PC/Laptop" or get help from your IT department.
- Enter the login password which is set in the sc1000 Menu:
  MENU → SC1000 SETUP → BROWSERACCESS →LOGIN PASSWORD>.
  Note1: If no password is entered, access is denied.
  Note2: The login password for the service personal is the same as the password for the SC100 with an additional 0 at the end (all in capital letters).
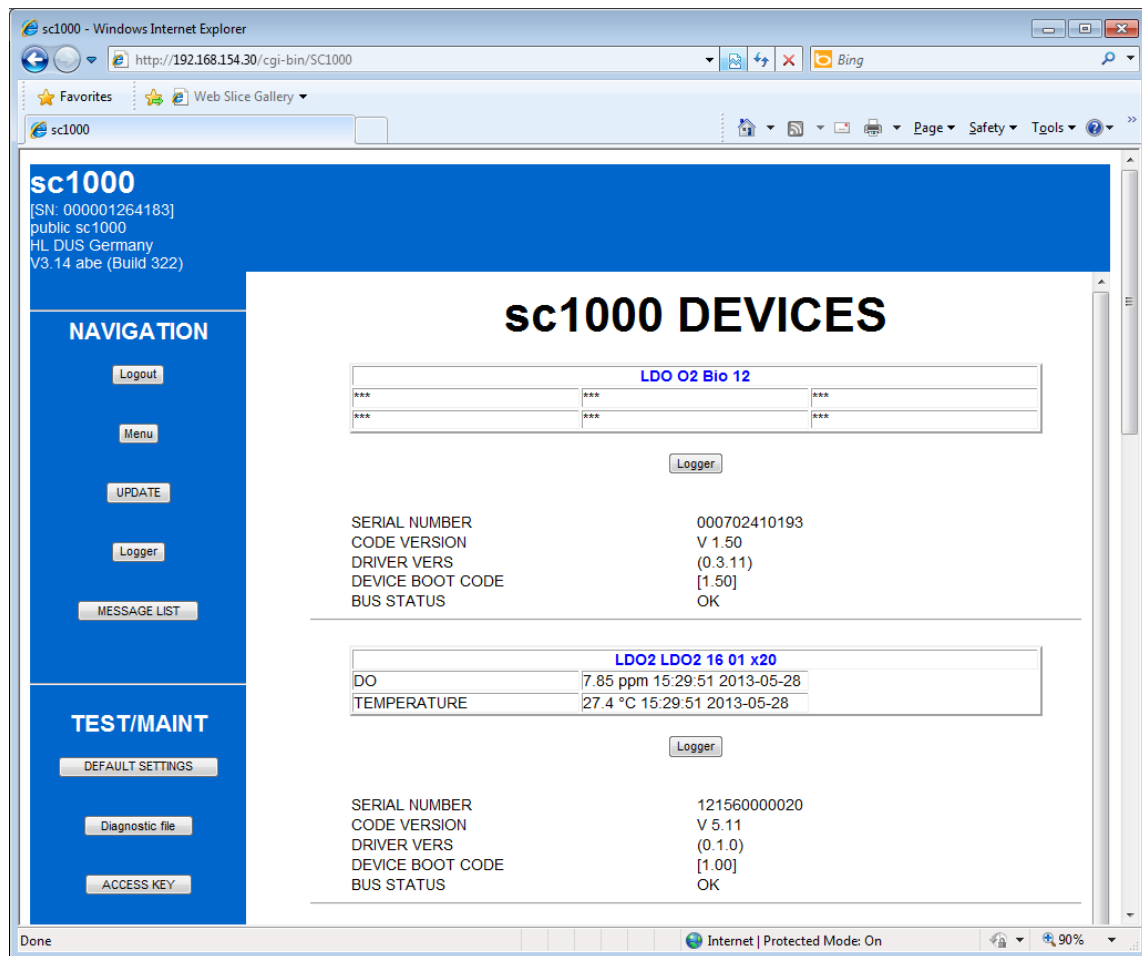
figure4: sc1000 HOME screen

- Now you can see the sc1000 HOME screen. From here you can view the measurement readings of the connected devices (figure4), navigate through the menu system ("Menu" button), and start sc1000 software update ("UPDATE" button).
- Before disconnecting please use the "LOGOUT" button to give the sc1000 the possibility to close this session, otherwise the access will be denied for 3 minutes.

Software Update of sc1000 Display module (LXV402)

!!! DO NOT SWITCH OFF sc1000 at any time during update. !!!

- Do all steps described in "Step 3: Check the connection to the sc1000service port" so that the sc1000 HOME screen is shown.
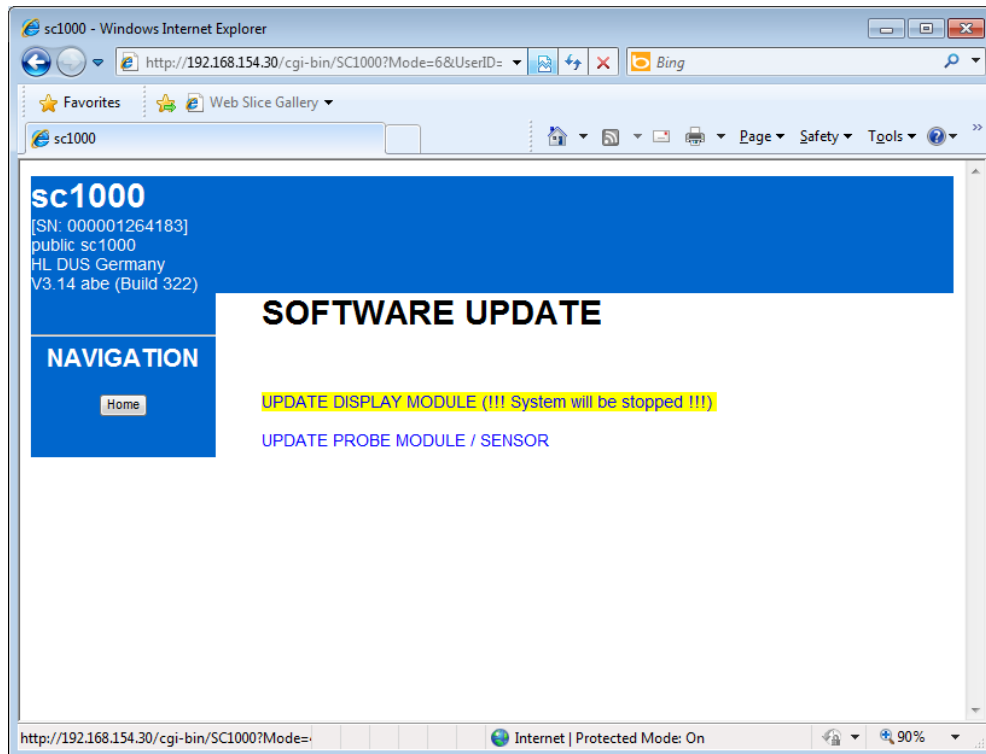- Press "UPDATE" button – you will get to the sc1000 Software Update screen:

figure5: sc1000 Software Update screen

- Press "UPDATE DISPLAY MODULE".
  Note1: This stops the normal operation of the sc1000 controller. From now only software updates for the sc1000 controller can be done until the device is repowered.
  Note2: The sc1000 must never be disconnected from power, while the update process is running!
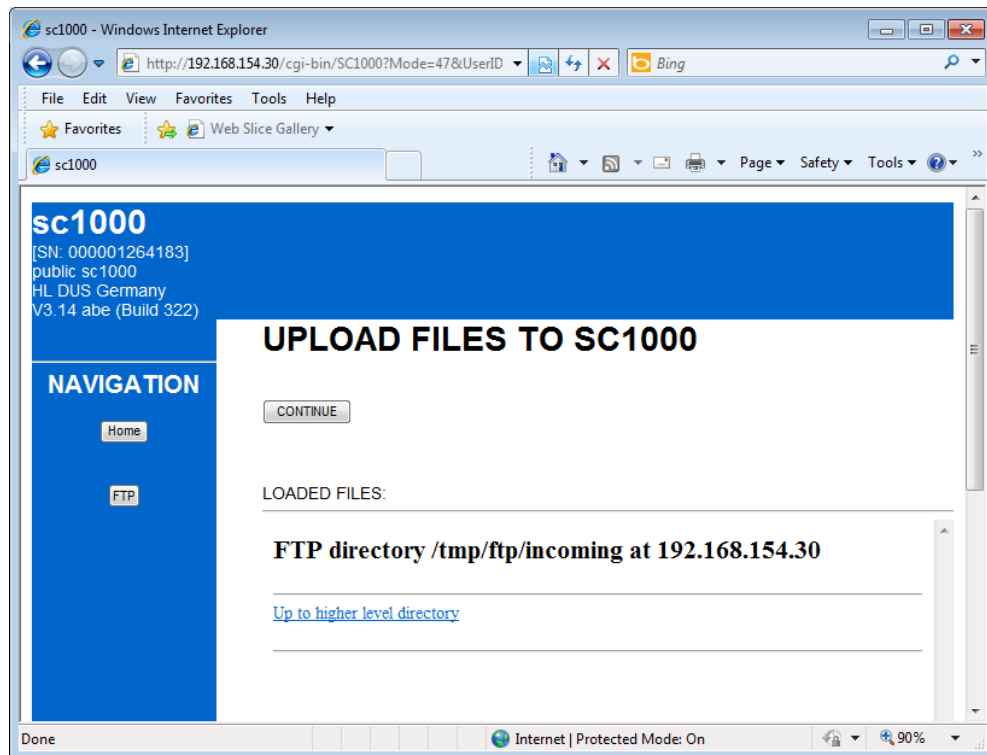
- The "UPLOAD FILES" screen is shown:

figure6: sc1000 "UPLOAD FILES" screen

- When the "UPLOAD FILES" screen is shown, press the "FTP" button to get to the FTP view of Internet Explorer.
  Note: Internet Explorer cannot do file uploads, which are required, when files are sent to the sc1000 controller. File Uploads must be done with WindowsExplorer.
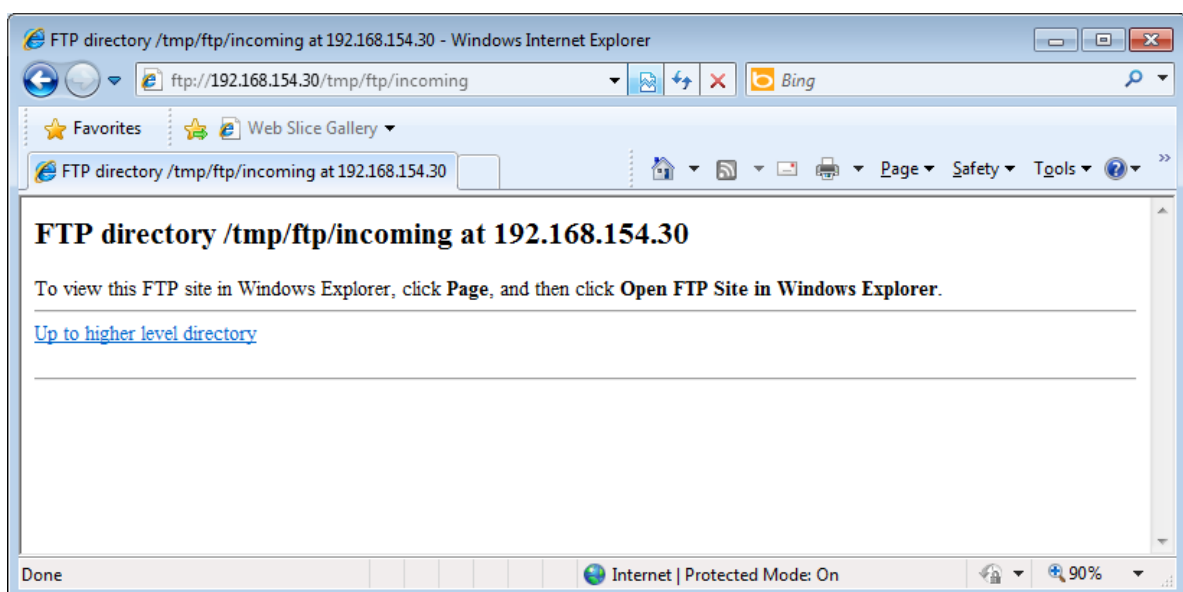

figure7: FTP site in Internet Explorer (uploads are not supported)

- To start Windows Explorer for the ftp upload,
  1) Press and release the "Alt"/"Page" key (left of <space> on your keyboard) – an extra menu line gets visible and here
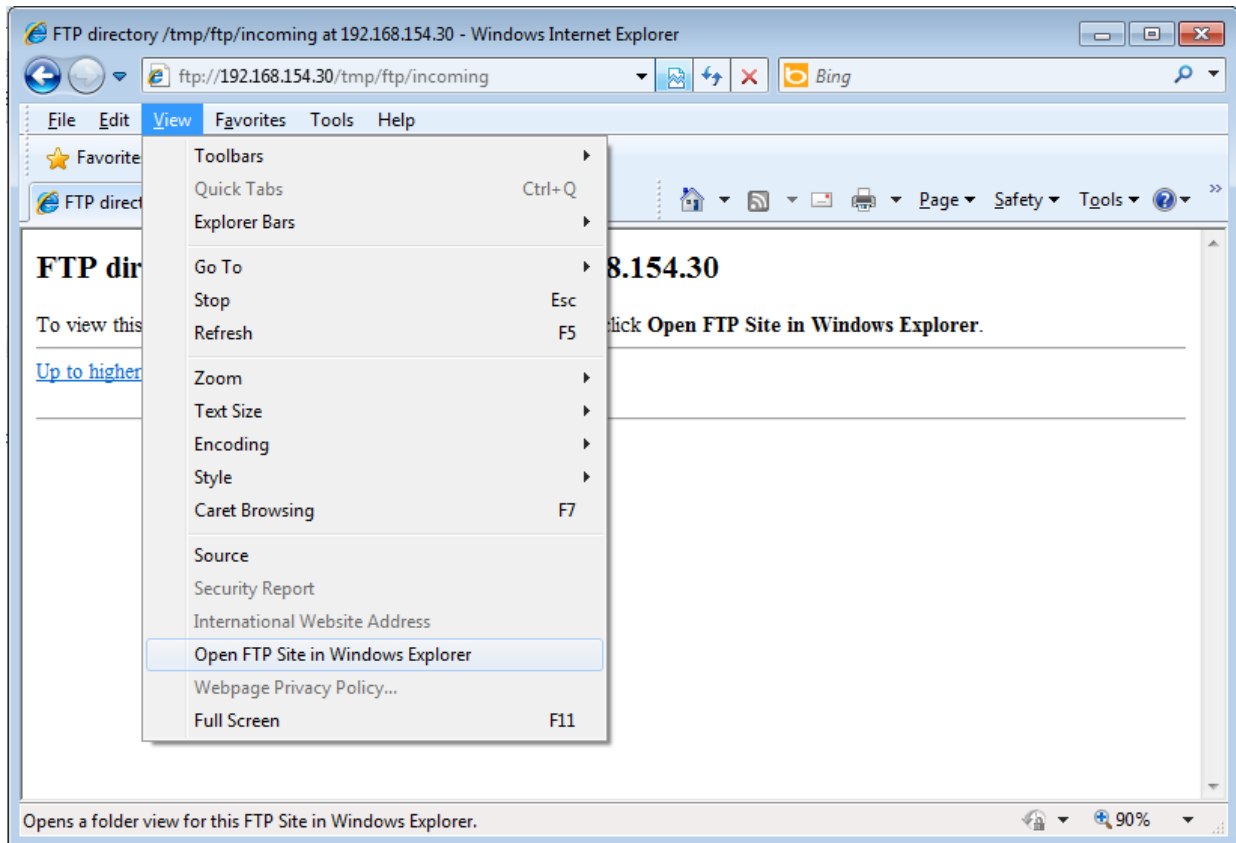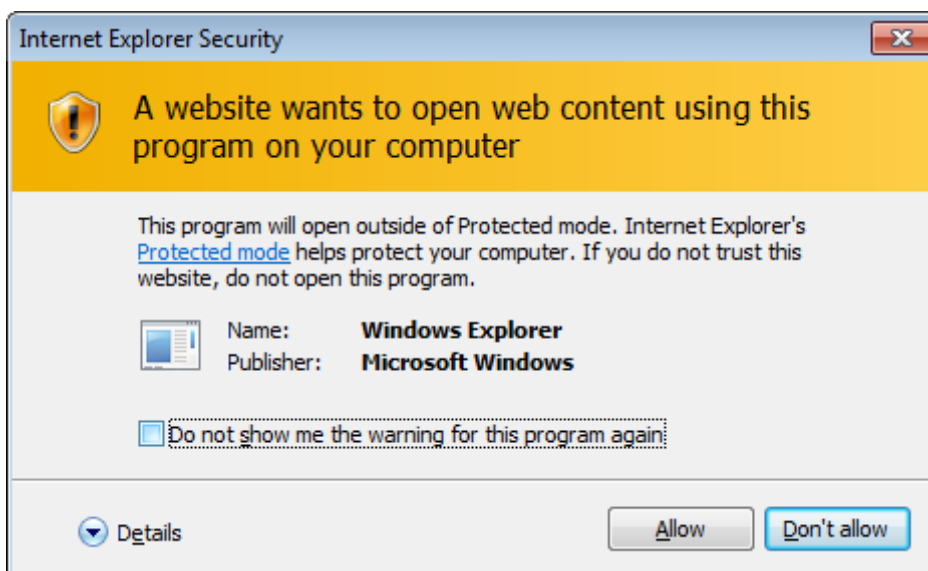 2) Select View →Open FTP Site in Windows Explorer

figure8: How to "Open FTP Site in Windows Explorer"

- A warning page is shown. Confirm with "Allow" button:

- An upload page for putting the Software Updates is shown (figure9).
- This is the Windows Explorer view of the upload site (uploads are supported).
- Note: It was observed, that this window is not shown/this option is not available, when Google Chrome has been installed on this PC/Laptop. If you have installed (and even later uninstalled) this software, please refer to "Appendix 1 Advanced: Handling of FTP uploads after installation of Google Chrome".
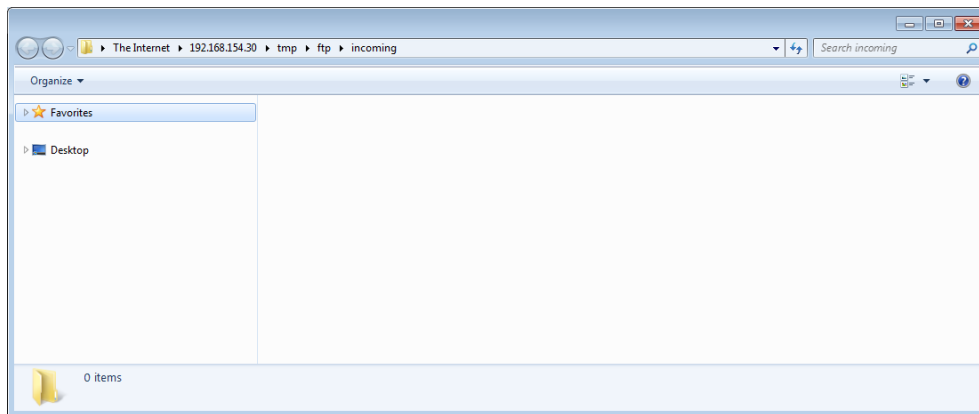

figure9: FTP upload page for Software Updates (Windows Explorer)

- Before loading software to the FTP site, select the window from "figure7: FTP site in Internet Explorer (uploads are not supported)".
- Here press the "Back" buttom (top left "←") to get back to (figure6: sc1000 "UPLOAD FILES" screen).
  Note: It is important to get to the "UPLOAD FILES" screen before files are loaded to the sc1000, because reading this site deletes all uploaded files.
- Then open another Windows Explorer at the location of the sc1000 Software Updates and upload files by "drag and drop" to the sc1000 controller:
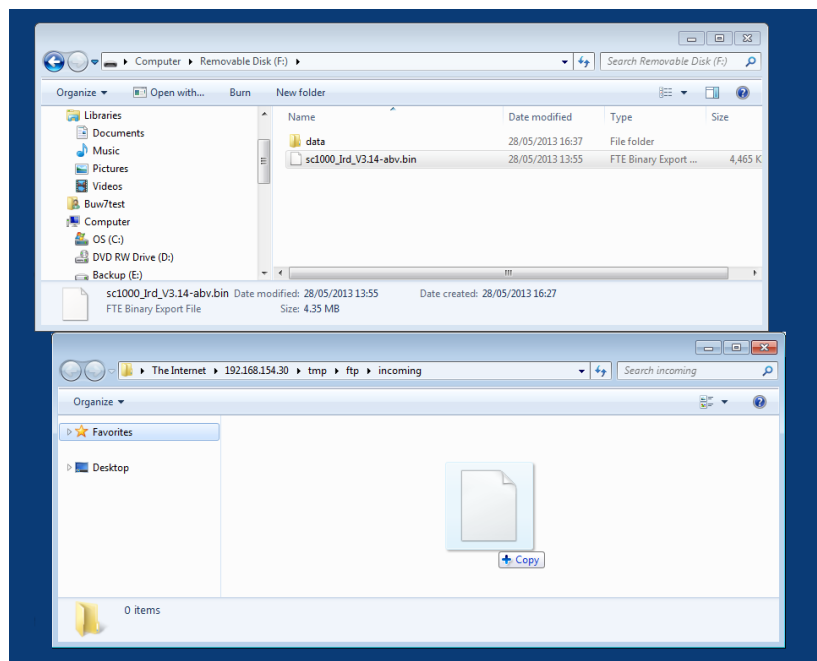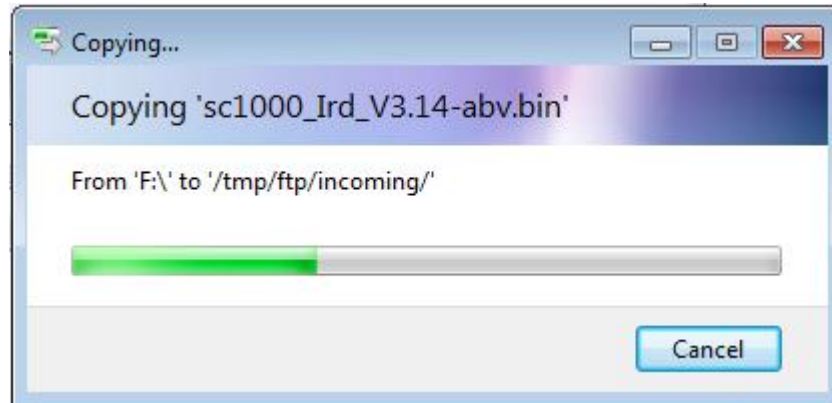

figure10: Uploading by "drag and drop"

Note: The IrdORG.bin and the KernORG.bin files should be upgraded at the same time. Failure to upgrade both files before cycling power will result in instrument damage.

- Wait until all files for the Software Update were transferred to the sc1000 controller.
- Note: Depending on network type and load this transfer can take up to 30 secs (Perhaps the Ethernet card is set to Auto instead of 10Mbit/Fullduplex).

- Press the "CONTINUE" button in the Internet Explorer window (figure6: sc1000 "UPLOAD FILES" screen).
- Check the Software Update files and press the "ARE YOU SURE ?"button.
- Note: Pressing the "ARE YOU SURE ?" button does actually start the update process. After starting the unit must not be removed from power supply, until updates are finished!
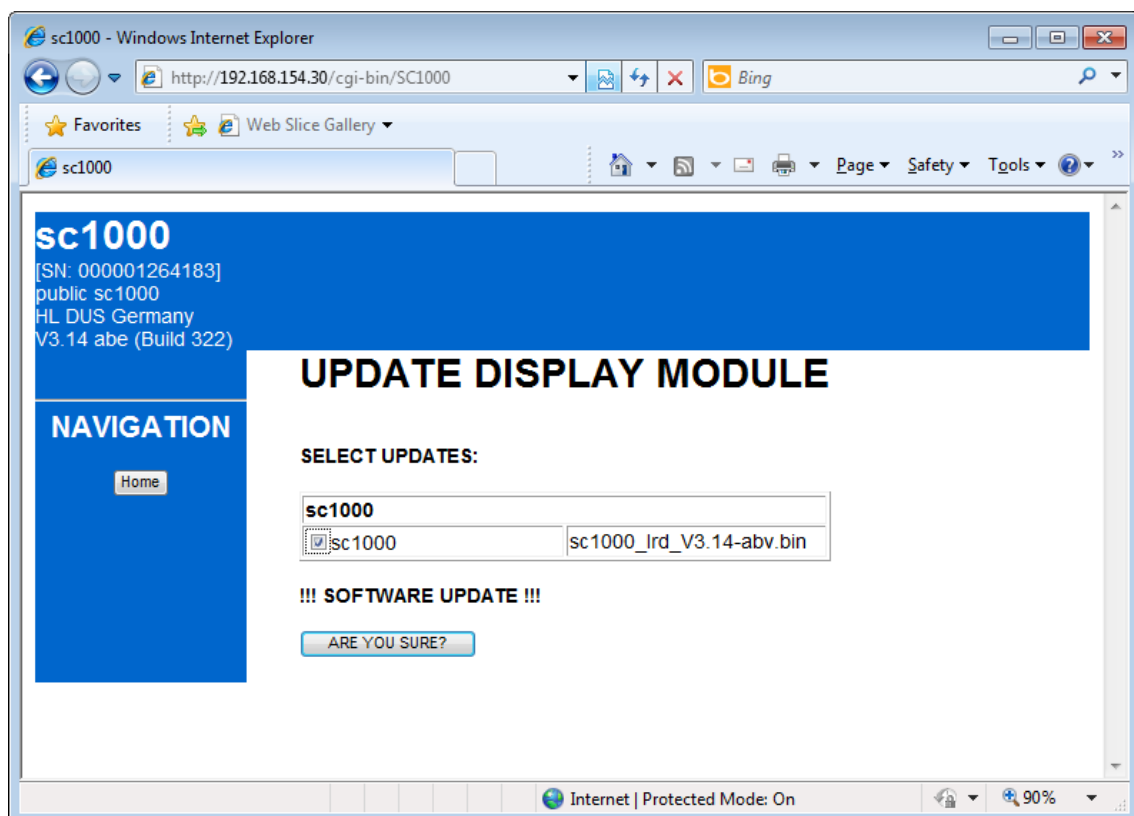
figure11: Sotware Update confirmation screen

- Wait until the update progress screen shows (figure12):

  Update(s) complete.
  Please reboot now …

- The Software Update is finished. Repower the sc1000 display module.
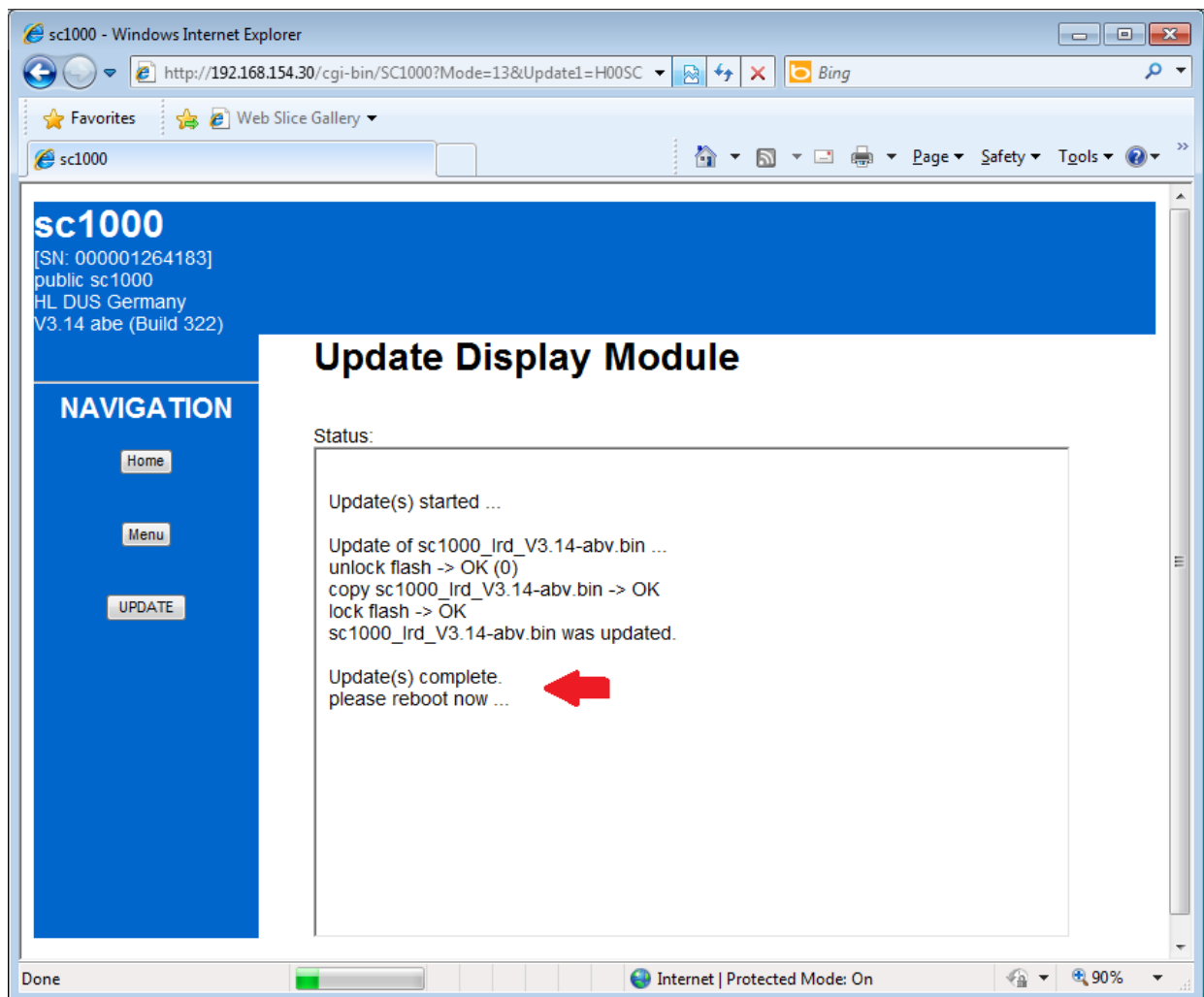- Note: Disconnecting the sc1000 controller during Software Updates will damage the unit!

figure12: progress log of Software Update

Appendix 1 Advanced: Handling of FTP uploads after installation of Google Chrome

Note: The content of this appendix is only for members of the IT department. Do not modify the settings of your PC/Laptop and ask your IT department for installation of software!

Background: Whenever <u>Google Chrome</u> was actually installed or even uninstalled, FTP uploadsdo not work in the way, which is described in this document. This comes from a modification in the "Computer\HKEY_CLASSES_ROOT\ftp" key in the Windows registry. This modification remains, even after Google Chrome has been uninstalled.

Currently two solutions of this problem were used:

Solution 1: Use Alternate program FTP uploads

Installation of another FTP client program, that does not rely on in the "Computer\HKEY_CLASSES_ROOT\ftp" key in the Windows registry. Here <u>FileZilla</u> was successfully used as an alternative.

Solution 2: Deinstallation of Google Chrome and restore initial setting to the Windows registry

After uninstalling Google Chrome restore the Windows registry to the settings of a new installed Windows system:

```
Windows Registry Editor Version 5.00

[HKEY_CLASSES_ROOT\ftp]
"Source Filter"="{E436EBB6-524F-11CE-9F53-0020AF0BA770}"
"ShellFolder"="{63da6ec0-2e98-11cf-8d82-444553540000}"
@="URL:File Transfer Protocol"
"AppUserModelID"="Microsoft.InternetExplorer.Default"
"EditFlags"=dword:00000002
"URL Protocol"=""
"FriendlyTypeName"="@C:\\Windows\\System32\\ieframe.dll,-905"

[HKEY_CLASSES_ROOT\ftp\DefaultIcon]
@="C:\\Windows\\System32\\url.dll,0"

[HKEY_CLASSES_ROOT\ftp\shell]

[HKEY_CLASSES_ROOT\ftp\shell\open]

[HKEY_CLASSES_ROOT\ftp\shell\open\command]
@="\"C:\\Program Files (x86)\\Internet Explorer\\iexplore.exe\" %1"

[HKEY_CLASSES_ROOT\ftp\shell\open\ddeexec]
@=hex(2):22,00,25,00,31,00,22,00,2c,00,2c,00,2d,00,31,00,2c,00,30,00,2c,00,2c,\
  00,2c,00,2c,00,00,00
"NoActivateHandler"=""

[HKEY_CLASSES_ROOT\ftp\shell\open\ddeexec\Application]
@="IExplore"

[HKEY_CLASSES_ROOT\ftp\shell\open\ddeexec\IfExec]
@="*"

[HKEY_CLASSES_ROOT\ftp\shell\open\ddeexec\Topic]
@="WWW_OpenURL"
```