Updating Cleverscope

1 Scope

This document shows how to update the **Cleverscope** application using the **Software Update** entry from the **Downloads** section on our website and how to update the firmware inside a *Cleverscope Acquisition Unit*.

2 Important – read before starting

The **ROM Loader** has changed. From now on please use **ONLY** ROM Loader **6.7** or later, as included with this update.

This **ROM Loader** uses one file, with a name format of cscope_fw 64xx 53xx.cmf,
to load each variety of *Cleverscope Acquisition Unit* (CS328 Classic, CS328A USB and Ethernet varieties). This single file contains all the information required for every hardware version.

Update to Calibration Table

We have updated the calibration tables for **Cleverscope** application versions 6442 and later.
If you have been using 6441 and earlier, you will need to do a *Once Yearly* calibration followed by *Standard* calibration. Instructions are in section 5.

Full Install

This document only covers the updater, which assumes you already have an install on your PC. See section 7 if you want to install for the first time.

If you have un-installed **Cleverscope** using the Windows un-install process, you will need to do a full install. The updater will not work. Do **not** do an un-install before using the update.

3 To update the Cleverscope Application

Download the Software Update from the **Downloads** section on our website, and extract the folder in the zip to your hard drive. Do not install out of the zip. See section 6 for more help on this process.

Please turn **off** the *Cleverscope Acquisition Unit* before doing the application update. This ensures the correct drivers are loaded.

Run setup.exe out of the folder. Accept the defaults. Click *Install*. The update should happen automatically. Please accept any security warnings.

If the website update description says you need the latest firmware, install the firmware as shown in section 4.
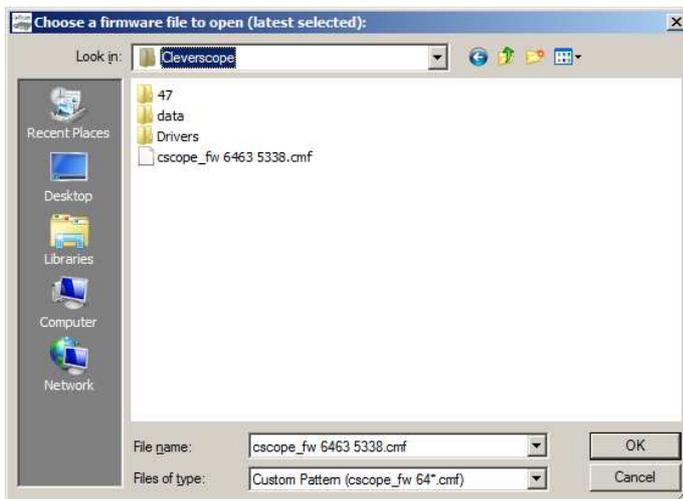
4 To update the Cleverscope Acquisition Unit firmware

Connect and power up your Cleverscope Acquisition Unit (CAU). You can use either an Ethernet or USB connection.
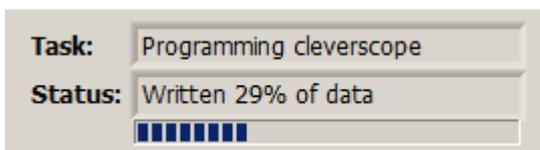
Please use ROM Loader 6.7 or later. You will find this in the start menu, or C:\Program Files (x86)\Cleverscope directory (for a 64 bit machine). Double click **Cleverscope Rom Loader.exe** to start.

If you are using Ethernet, and there are other Cleverscope's on your network, use the Choose USB/Ethernet button to choose the correct Cleverscope. If you have only one unit, you don't need to do anything.
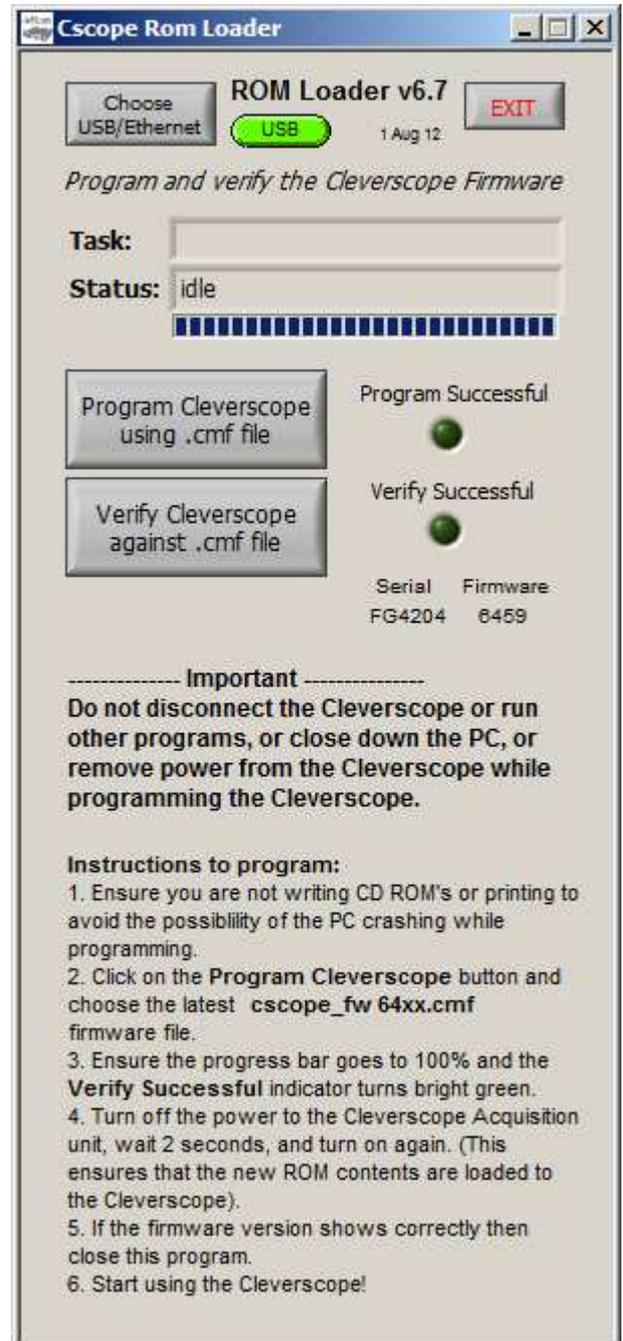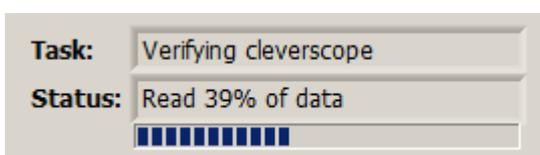
Click the [Program Cleverscope using .cmf file] button. This will bring up a file dialog for you to locate the correct .cmf file. The default is your program files directory, and the file will be automatically selected:
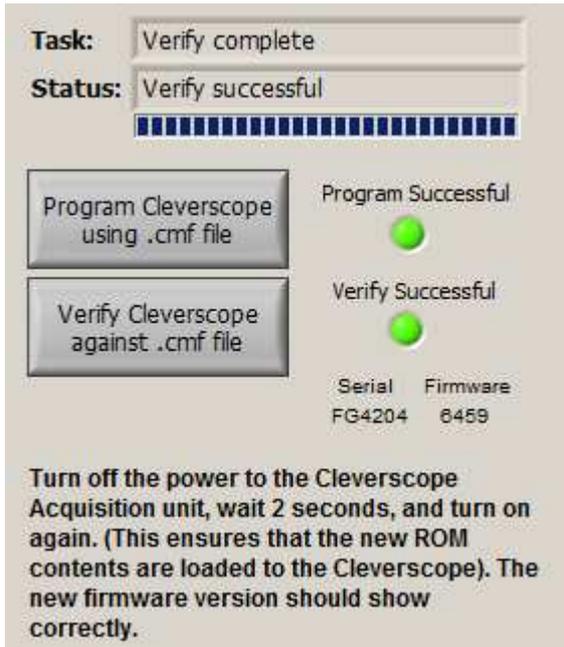
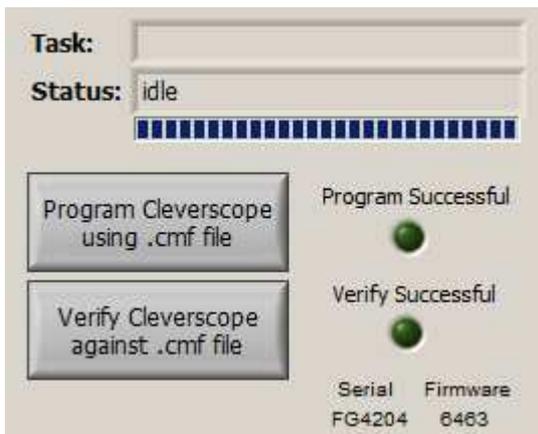Click OK to use this file. Rom Loader will now start programming the Cleverscope:

Task: Programming cleverscope
Status: Written 29% of data

Once programmed, the Cleverscope is verified:

Task: Verifying cleverscope
Status: Read 39% of data

Cscope Rom Loader

[Choose USB/Ethernet] **ROM Loader v6.7** [EXIT]
(USB) 1 Aug 12

Program and verify the Cleverscope Firmware

Task:

Status: idle

[Program Cleverscope using .cmf file]   Program Successful ●

[Verify Cleverscope against .cmf file]   Verify Successful ●

Serial   Firmware
FG4204   6459

-------------- Important ---------------
Do not disconnect the Cleverscope or run other programs, or close down the PC, or remove power from the Cleverscope while programming the Cleverscope.

Instructions to program:
1. Ensure you are not writing CD ROM's or printing to avoid the possiblility of the PC crashing while programming.
2. Click on the **Program Cleverscope** button and choose the latest cscope_fw 64xx.cmf firmware file.
3. Ensure the progress bar goes to 100% and the **Verify Successful** indicator turns bright green.
4. Turn off the power to the Cleverscope Acquisition unit, wait 2 seconds, and turn on again. (This ensures that the new ROM contents are loaded to the Cleverscope).
5. If the firmware version shows correctly then close this program.
6. Start using the Cleverscope!

Choose a firmware file to open (latest selected):

Look in: | Cleverscope |

47
data
Drivers
cscope_fw 6463 5338.cmf

File name: | cscope_fw 6463 5338.cmf | | OK |
Files of type: | Custom Pattern (cscope_fw 64*.cmf) | | Cancel |

After verification, you will see a message to turn the Cleverscope off, and then on again:

After you do that, the Rom Loader should automatically update the Firmware version to the one you just programmed.

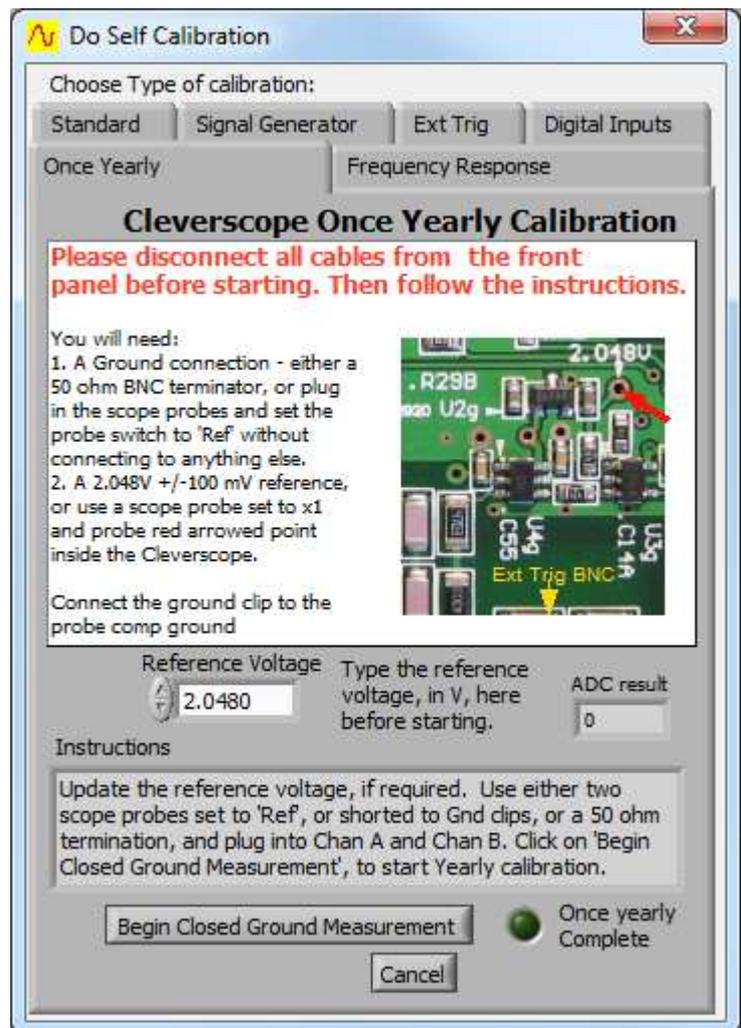**Well done**! You have now updated both the application, and the firmware.

If you firmware was version 4642 or earlier, we strongly suggest that you do a Yearly Calibrate, as shown in section 5.

5 Calibrating your Cleverscope

If you are upgrading from a version prior to 6442 to 6442 or later, you will need to do a one-time full calibration. The calibration table has changed, and the calibration procedure will update it.

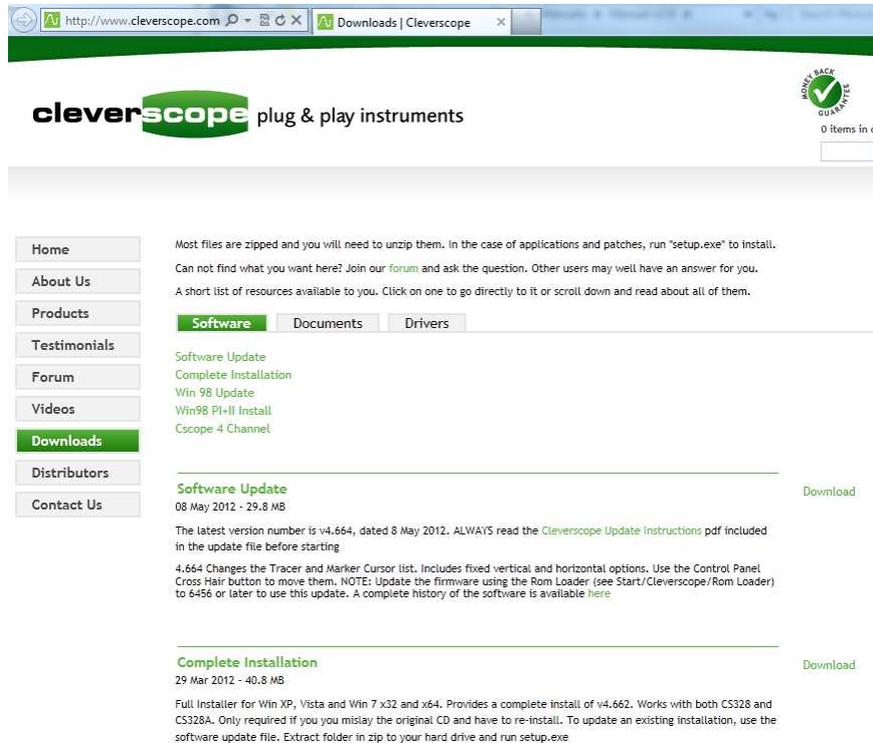To carry out the calibration follow these steps:

1. Use a Philips screwdriver to undo the two screws under the *Cleverscope Acquisition Unit*. Remove the lid, and power up. Leave it powered for 30 minutes to become temperature stable before calibrating at step 5 below.
2. Update your **Cleverscope** application to the latest.
3. Ensure your *Cleverscope Acquisition Unit* has the latest firmware in it.
4. Run the application, and use **Auto** to acquire. You should see a trace on the screen.
5. Choose the menu **Settings/Calibrate Cleverscope**.
6. Click the **Once Yearly** tab

    a. Take two Cleverscope scope probes and set the probe switches to *Ref*. This shorts the probe tip to ground. Connect one to Chan A and the other to Chan B. Do not connect the probe tip to anything else. Click **Begin Closed Ground Measurement**.

    b. When the button changes to **Begin Open Measurement**, remove the probes, and click **Begin Open Measurement**.

    c. When the button changes to **Begin Ref A Measurement**, set the probe switch to *1x*, plug one probe into Chan A, connect the ground clip to the front panel test pin with the earth symbol above it, pull off the grabber tip if fitted, and probe the via or component pointed at by the red arrow in the picture. Use firm pressure. It is about 40mm in from the front panel Ext Trig BNC. Click **Begin Ref A Measurement**.

    d. When the button changes to **Begin Ref B Measurement** move the probe to Chan B, and click **Begin Ref B Measurement**.

    e. When the button changes to **Finish** you have completed the *Once Yearly Calibration*.

7. Now carry out a standard calibration. Click the **Standard** tab. Remove the scope probe from the front panel. Click **Start Self Calibration**. Have a cup of coffee! When completed click **Finish**. Do an **Auto** to ensure correct operation. You may wish to carry out a Sig Gen calibration if you have one installed in your *Cleverscope Acquisition Unit*.
8. Replace the lid, being careful to correctly trap the front/rear labels in the groove by reverse turning 1/2 a turn, and do up the screws. You are done.

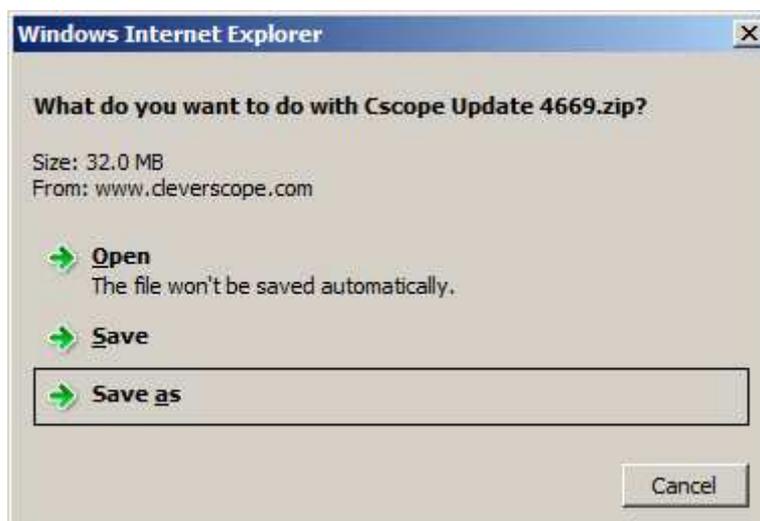# 6 How to download the Update from our website

You may download a copy of the latest Cleverscope application software from the **Downloads** page of the Cleverscope website at www.cleverscope.com. The following explanation is for **Windows 7**. The process will vary slightly for other operating systems.

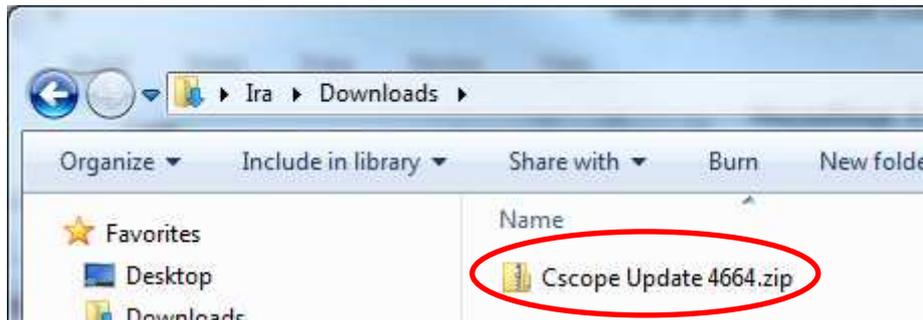Visit the www.cleverscope site, and then go to the **Downloads** page shown below.

If **Cleverscope** is already installed, click **Software Update** to download the latest update. Always use update if **Cleverscope** is already installed. This file is considerably smaller than a full install. Otherwise click **Complete Installation** to download the full installer.
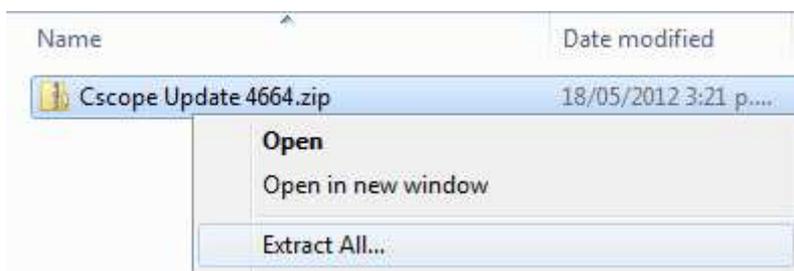
Choose the option of *Save as* rather than *Open*.

A zipped file will then be downloaded which must be saved. The filename will have the form *Cscope Update 46xx.zip* where *46xx* is the version number. In this example the zip file has been saved in the users **Downloads** folder.
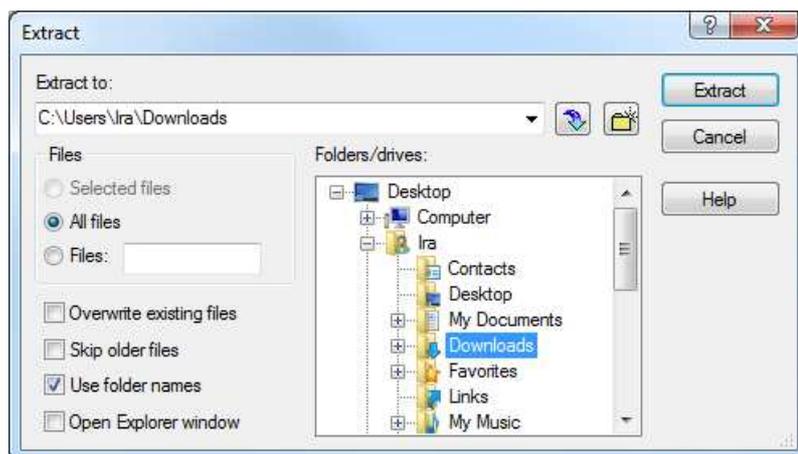

Right-click on the zip file and chooses **Extract All**.

Choose a suitable location to extract to and click **Extract**.

Note The zip file **must** be extracted because the installer (*Setup.exe*) will not run from inside the zip.

Alternatively, but not recommended, you can also use **WinZip** if you have it installed. Open the *Cscope Update 46xx.zip* file, and then click **Extract**. Make sure you check the **Use folder names** option, choose the folder to **Extract to** and click **Extract**:

Open the *Cscope Update 46xx* folder then run **Setup.exe**. The **Cleverscope Installer** window will open, and four or five choices are presented. Those choices that are already up-to-date will not be checked. However, you can still force an update if required by checking the option. If you are updating drivers, ensure the *Cleverscope Acquisition Unit* is turned **off**.

Note   Ensure **Install Classic CS328 Driver** is checked if you have the *Classic CS328* (with a serial number less than 4000).

Ensure **Update Cleverscope Application Software** is checked and click **Install**. The installer will update the current copy of **Cleverscope** and any drivers selected. If required, please click **Continue Anyway** while installing the USB drivers. Trust any drivers. Once finished, click **Finished** to exit the installer.

This completes the application update process. This process does **not** update the firmware. See section 4 for updating firmware.

To use the *Cleverscope Acquisition Unit*, plug it in, and turn on the power. If the drivers were updated, the driver will be automatically loaded in **Windows Vista** or **Windows 7**. In **Windows XP** choose to update without connecting to the web, and take defaults from there on.

6.1 Using the Cleverscope application with a Classic CS320/8

If you are updating the **Cleverscope** application, and you plan to use the application with a *Classic CS320/8*, and you have not used the *Classic CS320/8* before, you will need to install the **Classic Cleverscope CS328 Driver** by checking the option. *Classic Cleverscopes* have a serial number of less than 4000.

6.2 Updating Cleverscope applications prior to 6430.

If your **Cleverscope** application had a version number prior to 6430, it may have been using the legacy *QuickUSB* driver (CS328A varieties only). This driver is no longer used. If the driver is not required by another application, an additional option will be displayed **Remove Legacy QuickUSB Driver**. If this option is selected, the *QuickUSB* driver will be removed. Make sure you **restart** the computer after the update is complete.

www.cleverscope.com

7   Install Cleverscope for the first time

If you are installing **Cleverscope** for the first time on a new PC, you can get the latest installation from the **Downloads** page of the website at www.cleverscope.com/resources/. Look for **Complete Installation**.

Note Cleverscope no longer supports Win98. If you need a Win98 version, please look at the **Downloads** page (www.cleverscope.com/resources/) for the last version available.

Please carry out the following steps:
1. Follow the instructions in section 6 **How to download the update from our Website**, only instead of downloading the *Software Update*, download the *Complete Installation*.
2. Connect up the *Cleverscope Acquisition Unit* - you'll need to plug in the power adaptor, and the USB cable to a spare port.
3. The PC should discover the USB connection and display *Cleverscope CS328A MSO* or similar. Just wait after this for Windows to load the driver request dialog (it might take some seconds as some installations go looking on the internet for a driver). Once the dialog comes up, choose to find the driver automatically. Windows will find the driver and install it. After some more work Windows should announce that the hardware is installed. For Windows Vista and above this process should happen automatically.
4. Startup **Cleverscope** (it will be in the **Start**, **All Programs**. You can drag it to the desktop if desired).
5. In the **Cleverscope Control Panel**, click **Auto**, and the graph should become live.
6. Now follow the section **Cleverscope Basics and Probe Compensation** of the manual to set up the probes. The manual will be in the **Start**, **All Programs**, **Cleverscope** or in the Cleverscope program files folder.

7.1   Update a first generation installation

If your application version number begins with 3.2 or 3.3, you have an old run time library. You will need to do a new install to obtain the new run time library.

Please carry out the following steps:
1. Rename the 'Cleverscope' program files folder to 'Clevesrcope_old'. Do **not** un-install the old application.
2. Carry out the steps in **7 Install Cleverscope for the first time** above.
3. Update the firmware in your *CAU* by following the steps in section 4.

If you are one of the very few customers with a *CAU* with a serial number beginning with 'A00' please contact Cleverscope at support@cleverscope.com before attempting an upgrade.

7.2   Using Windows 98SE, ME and NT

If you use Windows 98SE, ME or NT you will need to download the correct installation or update from the Cleverscope website. You can find these at www.cleverscope.com/resources/. These operating systems are no longer supported, and are only available for the *CS328 Classic*.