Aberlink3D install Guide

Aberlink3D Version 30.37

*This document is designed to be **a general overview** for installing and running Aberlink3D, for Engineers, Distributors and as a user guide during Technical Support. It is not designed for end users, and as such has certain key parts missing. Please ignore any sections that are not relevant.*

All folder listings are relative to the Aberlink3D CD (AB3D CD) unless otherwise stated.

*All manuals are shipped in .pdf format. If Adobe Acrobat Reader is installed on your computer they can be read and printed directly from the AB3D CD from the **\Manuals** folder. Adobe Acrobat Reader can be installed if required via the AB3D CD **\Utils***

*Further information, on specific topics, hardware, configuration etc can be found within the relevant **\Drivers and configs** folder.*

Aberlink3D Version 30.37 supports the following -

OS Platform:

       Microsoft Windows 7 Professional (32Bit and 64Bit)
       Microsoft Windows XP Professional SP2/SP3 (32Bit only)

       Note: Though Aberlink3D and Deva Drivers Rel6.2 are 64 bit compatible,
            it is dependant on other hardware drivers that may not be 64bit compatible.

       Currently Microsoft Windows 8 and 8.1 is not surported

Supported Hardware: - Includes but not limited to-

Counter cards:	Deva001 PCI, Deva001 PCIe, Deva004 PCI, Deva004 PCI Stepper, Leisai ENC 7431
USB Cameras:	Deva028, Some Direct Show Compatible devices – note: functionality depends on driver
USB Light Rings:	Deva022, Deva026
Arms:	Garda, Faro Arm USB, Faro Gage USB, Cimcore, Microscribe, 3D Creator, Romer USB, Romer RDS, Opti Probe, Kreon
Renishaw Probes:	MIP, PH50,MIH-S, PH9, PH10, TP2, MIH, MH8, MH20i, R1, RTP, TP8, FIXED, TP20MOD
Controllers:	Deva030, Renishaw UUC
Others:	Deva031, Microsoft compatible joystick, Edge Detection Box, Footswitch

Recommended Hardware: (as currently supplied by Aberlink)
       3.3 GHz - Dual-core i3
       4 GB Ram
       1TB Hard Drive
       1GB Graphics card (not chip set dependant)*
       * some problems have been detected with some onboard Intel chip sets when used with CAD

Includes:
       Configuring Windows 7
       Aberlink3D Installation procedure
       Configuring Aberlink 3D
       Deva Card Installation
       Setting Count Direction
       CAD Installation
       Networking Aberlink3D
       User Account Control (UAC) - Registry - Registry virtualisation – Win7
       Aberlink 3D Settings Editor (ASE.exe)
       Backing up Aberlink3D Settings and Driver configuration

Configuring Windows 7

Some power saving features built into Win7 can cause problems ie Win7 will put some USB devices to sleep but will be unable to wake them up again. Hybrid sleep can cause timing issues with Deva004 cards.

Essential:

Start-> control panel → User accounts → change user account control settings → never notify *
　　　　　　　　* see "User Account Control (UAC) - Registry - Registry virtualisation – Win7"

Start-> control panel: power options → show additional plans
Tick high performance → change plan settings

Turn off display → never
Put the computer to sleep → never

→ change advance power settings → sleep → allow hybrid sleep → never
(This option is only available if the Motherboard supports this option).

Recommended:

Explorer → organise → folder and search options → View
Select show hidden files, folders and drives
Uncheck hide extensions for know file types
Uncheck hide protected operating system files

 Your Keylok : Think of it as a gold watch

Aberlink has a policy of supplying free updates (where appropriate) for the Aberlink 3D software. Your proof of entitlement to use the software is the Keylok. Think of it as a gold watch. If it breaks or needs repairing – return it to us - we will fix it or replace it*,   But if you LOSE it, just like a gold watch you will have to buy a new one. In this case the cost of a replacement Keylok is the current full cost of the software.

   * there will be a fee to cover hardware and postage

Aberlink3D Installation procedure

Installation:

Win7: Run setup.exe
This will install Aberlink3D, Keylok Drivers and auxiliary files required it will not install other device drivers.

WinXP: Needs the Aberlink 3D setup.exe and a manual install of the Dotnet Framework.
When the Aberlink3D setup runs it will look to see if the Dotnet framework is installed, if it is not it will look in the same folder as the setup.exe for the files it needs ie. Dotnetfx.exe and windowsinstallerxxxxxxx.exe. If these files are not found, Aberlink3D will install but it wont be able to communicate fully with various hardware. The Dotnet framework can be installed at a later date simply by running the Dotnetfx.exe

During the install most of the default settings will be correct. Please select the correct component as shown in the box opposite for your particular machine type. If not shown or unsure tick "**retrofit**". These options install particular files that are needed for particular systems/drivers, as well as the correct language file and reference picture. Setup.exe can be run at any time to select an alternative option.

If you choose an option that includes a Deva card ie Axiom too, Zenithtoo etc Aberlink3D will not run until the Deva drivers are installed.
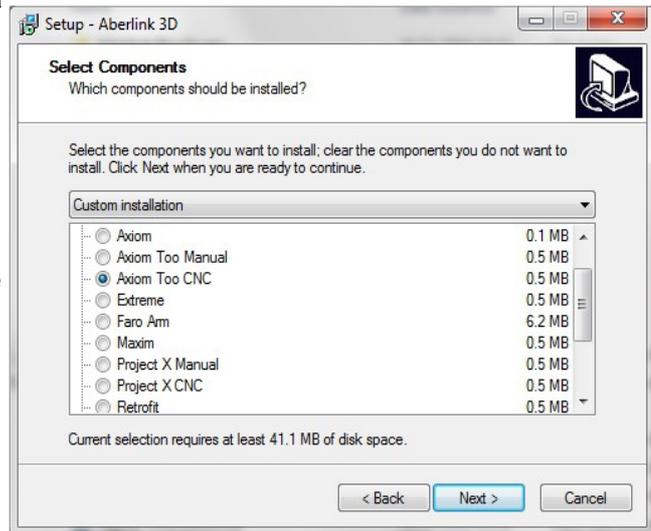
White keyloks can use any USB port, traditionally green Keyloks and Dongles have used the USB port below the Network port, as show left.

As of 8/9/2011 Aberlink now uses the white Fortress Keylok. This uses the standard built-in Win7 and WinXP, HID drivers, so no separate driver is required. Functionality is the same as the old green Keyloks.

Please note: Though no driver is required, the Keylok driver is installed by the Aberlink3D setup as it installs files required by Aberlink3D to access features of the Keylok correctly

Once installed via setup.exe, Aberlink3D includes most of the features available. ie CNC, vision etc. The CAD Module must be installed separately via *\CAD\Cad Install.exe.* Which options are available for use are controlled by the Keylok. (Please note: Additional hardware ie camera drivers, will require separate installation via manufacturers own drivers)

The serial number of the Keylok is written to C:/program files/aberlink 3D/ErrorMsg.txt when ever Aberlink3D starts as Keylok serial no xxxx

Configuring Aberlink 3D

Most of the settings within Aberlink 3D should only be changed by a competent Technician or under direct guidance from Aberlink.

The Machine Setup icon is the yellow circle, with blue square and red triangle

Click on Tech….enter Tech code of **(please contact Aberlink for correct codes)** a new panel will appear on the right with red tabs.

Due to the variations of systems that Aberlink 3D can be configured for, it is suggested that reference is made to the further examples for individual machine types in **\Drivers and configs**

Example basic 3D Manual Axiomtoo (Deva001 PCI card – using Deva004 drivers)

In Others - Software dimensions – 3D - ticked
In Others - SPC Option On - ticked
In Others - Referencing used - ticked
In Others - Probe default state on – ticked
In Others - Probe check enabled – ticked
In Others - Auto arm probe - ticked
In Scales - Deva1 :4Driver - ticked
In Reference Marks - Reference Marks Used - unticked

Example basic 3D CNC Axiomtoo   (Deva004 PCI card)

In Others - Software dimensions - 3D - ticked
In Others - SPC Option On - ticked
In Others - CNC Code On - ticked
In Others - Air used - ticked
In Others - IO Card Used - ticked
In Others - Referencing used - ticked
In Others - Probe default state on – ticked
In Others - Probe check enabled – ticked
In Others - Auto arm probe - ticked
In Scales – Deva004 - ticked
Axis Type X, Y and Z = DC Servo
In Reference Marks – Reference Marks Used - ticked

You will need to exit Aberlink 3D to save the changes.

Please note: All the settings with Machine setup are saved in the registry. If there is a problem within Aberlink 3D ie one of the settings is incorrect. Re-installing Aberlink 3D will have no effect, as any registry settings that already exist are not over written.

Deva Card Installation

From Aberlink 20.76.6x for a standard install, (ie. if using Deva001 or Deva004 card) There is only one "universal" Deva Driver – ie Deva004 xx.xx.xx.xx Only the system.cfg and axis.cfg are changed depending on machine/card type. Example files for each machine type can be found in **\Drivers and configs**

During the first re-boot after the card has been installed windows will indicate that a new PCI device has been found and will start the standard driver installation procedure. If this does not occur it is possible to initiate this process manually via device manager. Right click on device - update driver software. Choose the "browse my computer for software driver" and then browse to the folder containing the correct Deva drivers

ie **\DevaCMMxxx\Devaxxx\xx\Drivers**

By default the Deva004 drivers installs dummy axis.cfg and system.cfg in the c:/windows folder, they will not be copied if the files already exist. You will need to copy/edit these files before the card will count or take points. Example files for each machine type can be found in **\Drivers and configs.**

All Deva Drivers must be initially installed via the standard windows installation procedure.

From Aberlink3D Version 30.34.xx the upgrade will no longer copy across updated Deva Drivers files

When running the Aberlin3D setup, if you choose an option that includes a Deva card ie Axiom too, Zenithtoo etc Aberlink3D will not run until the Deva drivers have been installed. It makes no difference if the Deva drivers are installed before or after installing Aberlink3D. If you have previously selected a non- deva install please remove cntrl32.dll, camlib.dll and lghtb32.dll from the Aberlink3D folder

All Deva drivers must be installed or updated from the windows "Device manager" ie via the standard "new hardware found" wizard or right click update driver software" options
  – Right click my Computer-> Manage-> Device manager

All Deva Drivers are now supplied as a complete package as supplied by Deva ie \DevaCMM x.x.x.

All Deva Drivers must come from the same release package ie if you update one driver you must update the others

Aberlink3D 30.34.xx when used with the DevaCMMRel62 Drivers is now 64Bit compatible

When updating drivers just point the wizard to the relevant folder ie Devaxxx making sure "include sub folders" is ticked

where:

DevaCMM - Deva001 or Deva004 Counter card
Deva022   - light ring
Deva026   - Light ring including I/O Interface
Deva028   - Deva USB Camera
Deva031   - Deva Joystick

In DevaCMMRel62 and above the Deva004 folder is now called DevaCMM

Setting Count Direction

Using an Axiomtoo as an example

To check count direction, please reference the machine as usual. ie top, right, back corner. If you move the probe in X (i.e. to the left) the X readout position should go approximately from – 0.000 to –640.00. The numbers don't really matter it is the sign that is important. If it goes from –0.000 to +640.00 then count direction is wrong and will need to be changed.

Do the same for Y (i.e. from the back to the front, should count minus), and Z (from the top to the bottom, should count minus)

Make a note of any axis that counts in positive direction.

If any axis is incorrect say for example Y then you will need to log on as administrator. Use my computer to browse to the windows or winnt (If using win2000) folder and open axis.cfg. It's a simple text file so can be opened with notepad.exe. The files is split into 3 sections , one for each axis. All you need to do is change the sign of the COUNT in the correct axis ie if under Y COUNT= 1000 (do not change number!)   change to COUNT=-1000, if its COUNT=-1000 remove the - sign so its COUNT=1000

For CNC machines Count and Maxvolt are linked together to maintain the polarity between count direction and tacho, so if you change one sign you will need to the sign of the other. If polarity is not maintained the axis will jump when the drives are engaged

Make sure that when you save the file it is saved as axis.cfg and not axis.cfg.txt

If you receive a message to say that the file is read only, right click on it and select properties and untick read-only.

CAD Installation

To run CAD you need to have installed the CAD module
A CAD Dongle (usually Black, Blue or Purple) – supplied with the CAD Module
A CAD enabled KEYLOK (White or Green) – previously supplied with Aberlink3D software

Installation:
Installation of the CAD module is very straight forward.

Make sure Aberlink3D is not running
Make sure you have "full" Admin rights

Run CAD install.exe from either /CAD/ or /Aberlink 3D/CAD/ depending on medium (CD, ftp or Dongle)

Reboot PC

Installation will copy all the relevant files, and update the registry to enable CAD within the Aberlink3D menus

KEYLOK update:

Your Aberlink3D security Keylok (Green or white), will also need to be updated to allow the use of CAD

Please contact Aberlink with details of Keylok and CAD Dongle number -or-

If you have already supplied the Keylok number in your CAD order, then the update file will be on the CAD dongle as Keylokupdate xxxxx.exe where xxxx is the Keylok number.

If you have purchased Aberlink3D and the CAD module under the same order, your Keylok will already be enabled for CAD

There is no installation necessary, the exe file just needs to be run from where ever it is located locally.

Make sure Aberlink3D is not running

The update will only work on the Keylok as numbered. The update will only work ONCE.

Once successful updated, running the same file again will bring up an error.

The Keylok is time dependant, so it is very important that the correct date and time is set whenever the Keylok is used.

There is no need to reboot when updating the Keylok.

NOTE:

Please make sure all virus checkers/scanners are switch off when updating the KEYLOK.

Networking Aberlink3D

Can I network Aberlink3D?

The simple answer is yes you can network the controller.

Please note: Networking can not be supported by Aberlink.

Project X's are designed as completely standalone devices and as such are not recommended to be networked

Please remember that our machines are designed to run as single stand alone units. Though PC based the controllers are designed and configured for optimum use to run Aberlink3D.

Depending on how you define "network" you may find the following points useful-

Depending on the age of the machine, (from about 2009 onwards) the network adapter should be enabled and working. Older machines may need to have the NIC enabled in the BIOS, the relevant drivers installed via the Motherboard Driver CD supplied or need enabling in device manager.

As shipped some networking options and services are disabled: Automatic updates, Background Intelligent Transfer Service, Remote Desktop, Remote Registry, Security Centre, and Windows Firewall

It is recommended that all networked machines have adequate and appropriate security in regards to viruses, trojans and malware etc.

Some anti-virus software has reportedly caused file access problems if scanning at the same time as the machine is measuring.

If logged in as a new user to a domain, the current Aberlink3D settings may not be available due to a change of the registry location

Please also see "User Account Control (UAC) - Registry - Registry virtualisation – Win7"

If logged on via a domain, users will need read and write access to the registry, c:/windows/ (and sub folders) and c:/program files Aberlink3D/ on the local machine. For certain operations like resetting the Calibration data Full Local Administrator rights will be required.

To prevent possible corruption it is recommended that programs are not run directly from a remote location.

User Account Control (UAC) - Registry - Registry virtualisation – Win7

"Registry virtualization is an application compatibility technology that enables registry write operations that have global impact to be redirected to per-user locations. This redirection is transparent to applications reading from or writing to the registry. It is supported starting with Windows Vista. This form of virtualization is an interim application compatibility technology; Microsoft intends to remove it from future versions of the Windows operating system."   -

Microsoft

So what does this mean for an install of Aberlink3D?

On a single user, stand alone machine, very little, all registry operations are effectivly transparent to the user.

Glossing over some of the complexities and taking a simplistic view...

On a **Win7 32Bit System**, the registry settings are saved to
`HKEY_CURRENT_USER\Software\Classes\VirtualStore\MACHINE\SOFTWARE\Aberlink 3D`.
And is also mirrored to -
`HKEY_USERS\S-1-5-21-xxx\Software\Classes\VirtualStore\MACHINE \SOFTWARE\Wow6432Node\Aberlink 3D`.

If the UAC is turned off , start-> control panel → User accounts → change user account control settings → never notify   just before or just after installation of Aberlink3D then the registry is saved to the previous "traditional" `HKEY_LOCAL_MACHINE\Software\Aberlink 3D` location.

For **Win7 64Bit System** the registry settings are saved to

`HKEY_CURRENT_USER\Software\Classes\VirtualStore\MACHINE\SOFTWARE\Wow6432Node\Aberlink 3D`.   and
`KEY_CLASSES_ROOT\Virtualstore\MACHINE\SOFTWARE\Wow6432Node\Aberlink3d`
Both being mirrored to -
`HKEY_USERS\S-1-5-21xxx\Software\Classes\VirtualStore\MACHINE\SOFTWARE\Wow6432Node\Aberlink 3D`.   and
`KEY_USERS\S-1-5-21-xxx-\VirtualStore\MACHINE\SOFTWARE\Wow6432Node\Aberlink 3D`.

where "S-1-5-21-xxxx" = security identifier (SID) of current user

With the UAC turned off its simply

`HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Aberlink 3D`.

There is current no option in windows to save the registry from one hive and save it in another. ie If you install and configure Aberlink3D and the settings are stored in the virtual registry, and then you turn off UAC, the old registry settings will be not be automatically transfered to the new location. You can get round this by turning UAC back on, rebooting and importing the registry using the Aberlink3D Settings Editor, saving the file. Turning UAC off, rebooting and then double clicking on the saved reg file to load it back into the registry

Aberlink 3D Settings Editor

Due to the complexities of UAC and Registry virtualisation, Aberlink has created a useful utility that will allow the user to easily, edit and back up the correct registry. From version 30.32 ASE.exe (Aberlink settings editor) is copied to c:/program files/Aberlink 3D/ASE.exe during setup.

 Note: The access code required is the same as the "tech code"
        Right click for options or press the alt key.

With the import utility - right click |Import settings You are able to import the old traditional reg files ie those supplied on the AB3D CD.

Backing up Aberlink3D Settings and Driver configuration

This document describes how to back up the Aberlink3D settings and driver configurations. A full install of Aberlink3D and the Deva drivers will be needed, prior to restoring the backup if making a clean install to restore the system to its original condition (ie at the time of the backup)

Back up these files NOW! Error map xxxx.map, Aberlink3D Registry, Axis.cfg, System.cfg

These files are particular to your machine, if they are lost then your machine could become totally unusable! They are very small and should all fit on a floppy or a small USB pendrive. Or even burn to CD

From *C:\Program files\Aberlink 3D*
Error map xxxx.map where xxxx is the serial number of the machine ie 4xxx, 8xxx etc
Other Error maps ie SLEC may be used, check in setup under errormap for file name details

The **Aberlink3D Registry** contains all the settings that are displayed within the Aberlink3D machine setup windows (both blue and red tabs) You must have administrator rights to access the registry

Win2000, WinXP

Click Start -> Run

Type 'regedit' and press return

From Aberlink 3D Version   20.75.15 - current version
Browse to HKEY_LOCAL_MACHINE\SOFTWARE\Aberlink 3D

Click the 'Registry' Menu on the Menu Bar at the top of the screen and select 'Export Registry File'. Browse to somewhere you can save the file. ie *C:\backup.* Make sure the 'Selected Branch' option is selected and then give it a meaningful filename ie AB3D and click the save button

Win7
Due to the complexities of UAC and Registry virtualisation it is recommended that the utility ASE.exe (Aberlink settings editor) is used to back up the Registry. The file is copied to c:/program files/Aberlink 3D/ASE.exe during setup.exe. Note: the access code required is the same as the "tech code" used within Aberlink3D

From *C:\Windows*
Axis.cfg
System.cfg

PUT THE FLOPPY OR PENDRIVE SOMEWHERE SAFE

we also suggest-

MAKE A COPY OF IT
PUT THE COPIED FILES SOMEWHERE SAFE
(but not in the same safe place as the first floppy/pendrive/CD)

For old installations prior to Aberlink 3D version 20.74.25
Browse to HKEY_CURRENT_USER\Software\VB and VBA Program Settings\Aberlink 3D
(On Win98 machines you must be logged in as your usual Aberlink3D user)