# E-Stim Systems
# 2B Digital Link System



Manual Version 1.2
May 2011

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# Certificate of Conformity

## US Regulatory Wireless Notice

This device compiles with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
The FCC requires the user to be notified that any changes or modifications made to the device that are not expressly approved by E-Stim Systems Ltd may void the users authority to operate the equipment.

## European Union Notice

Products bearing the CE marking comply with the EMC Directive (89/336/EEC), and the Low voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European norms (in parentheses are the equivalent international standards and regulations.) EN 55022 (CISPR 22) – Electromagnetic Interference, EN 55024 (IEC61000-4-2,3,4,5,6,8,11) – Electromagnetic Immunity,  and EN 60950 (IEC 60950) – Product Safety.

This device may be used in all European Union Countries.

# Copyright Notice

# 2B Link

## Why Link?

All of our control units undergo constant testing and review and we are always looking to improve what we offer. In the past if we came up with an upgrade you would have to either send a unit back to us, or even buy a completely new unit, but with our PC uplink system you no longer have to do this, simply connect your 2B to your PC, download the latest update from out website and enjoy!!!

The link also gives you the opportunity to control and program your 2B direct from your PC, opening a whole new world of electro experiences via Commander™ (For more details on Commander™ visit http://www.e-stim.co.uk/commander/

## How it connects

The digital link is designed to connect to your PC via a spare USB port. Because of the technology we are using this USB cable appears to your computer as a serial port, this is why we refer to COM ports. Drivers are available for PC's running Windows based operating systems from XP upwards. Drivers are available for both Mac and Linux driven machines, but we don't yet have a UpLink program.

On the 2B end the link connects to the audio/link socket. Because of this it is not possible to use the external audio connection while the digital link is connected.

## How to connect

The connection to the 2B from your PC is a 4 stage process.

1. Install the USB drivers

2. Connect the USB cable & identify the COM port

3. Install the UpLink Software

4. Connect the 2B

5. Test & Download

# Install USB drivers

The USB driver allows your PC to talk to the electronics within the USB cable itself. Once the divers are installed you should not have to re-install them again.

Install USB drivers. These can be loaded from the CD or downloaded from http://www.e-stim.co.uk/link/index.php#drivers
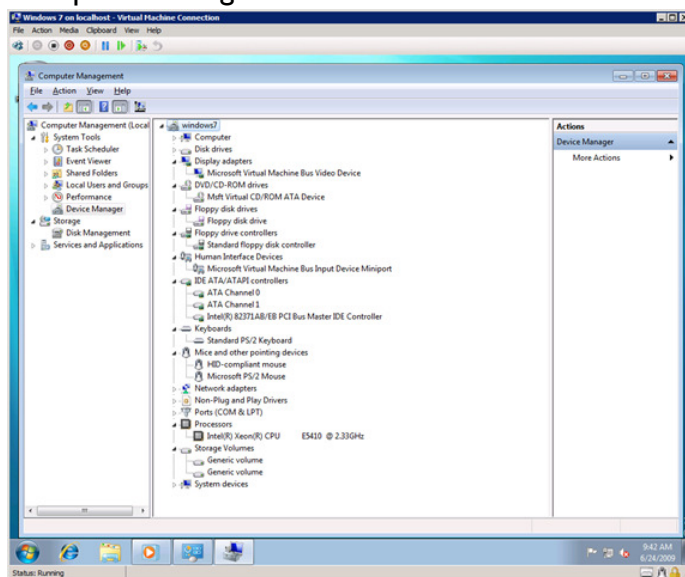
The drivers are available in both executable or zipped '.zip' formats. Modern windows computers can cope with both variations.

Simply right click on the file link, select 'save Target as' to save to a suitable place on your computer and then double click on the executable (.exe) file. The USB drivers should then install.

Now connect the PC Link cable to a spare USB port. You should see Windows recognise it and attempt to activate the drivers.

## Identifying the COM Port

Now you need to see what COM port your computer has allocated to the cable. To do this you need to look at the device manager. Click on the windows start button, and then right click on 'Computer' and then select 'Manage'. This should open the Computer manager.



In the left hand column select device manager. In the right hand column look for PORTS (COM & LPT) under this you should see 'USB Serial Port (Com x)' Where x is a number. Note this down.

## Advanced Options

You do not need to set any of the advanced options on the COM port (baud rate stop bits etc, as these are all controlled directly by the uplink program.

# Install UpLink

Install UpLink program from the CD. This is a standard windows install and should not offer you any problems. The software does require .NET to be installed, and will offer you the opportunity to download and install this from the internet. Once the program is installed it should run.

# Testing Communication

Connect the USB cable to the 2B and switch the 2B on. Ensure the other end of the USB cable is attached to your PC.

Using the select button and adjust control on the 2B, switch to UpLink mode…

```
22   Uplink
Use   AJUST   contro
```

Use the adjust knob to select the Yes option, to confirm you wish to enter UpLink mode…

```
Prog   Update:Yes
A:OFF           B:OFF
```

You should now see the screen below. This indicates that your 2B is waiting for a connection and data from the PC…
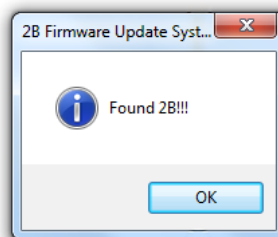
```
UpLinking...
```

Your 2B will stay in this mode until data transfer is complete, or you power cycle the 2B manually. It is only safe to power cycle your 2B if no data has been transferred.

On the PC select the com port identified you identified earlier.

Ensure the link speed is set to 57600. At the moment the 2B will only communicate at this speed.

Press the [Connect] button.

You should now see the update program looking for and detecting the 2B.
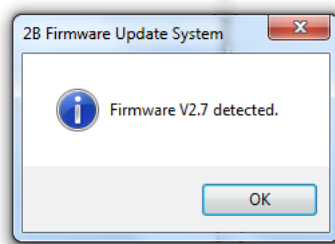


Once you have connected you should proceed with the next step, checking what version of software is installed on the 2B.

# Checking installed Version

Click the Version button.

You should see the program communicating with the 2B and reporting the version of the software currently loaded.
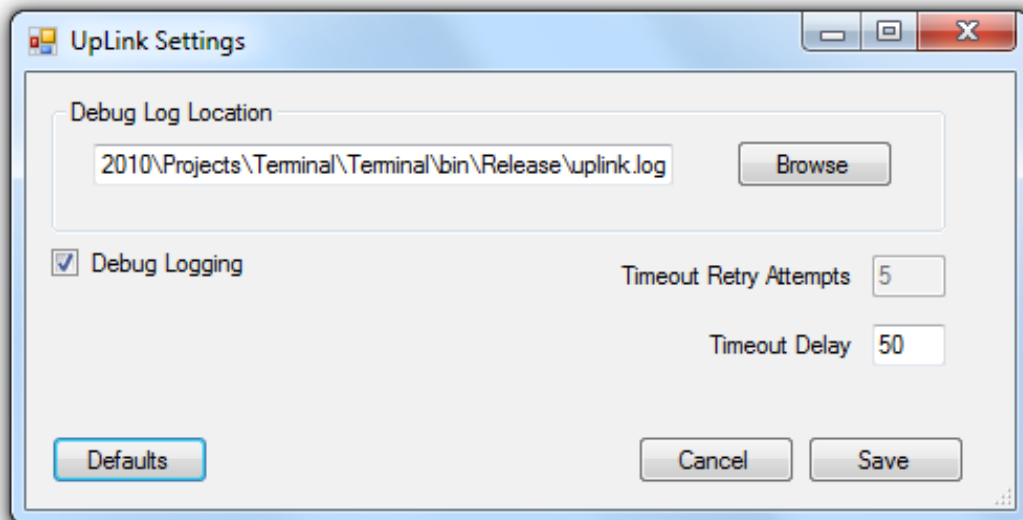


Click ok to exit.

Everything is now up and working. If you wish to update your 2B then continue to follow the instructions below. It is a good idea to check the version every time you connect in order to ensure all the communication system is working.
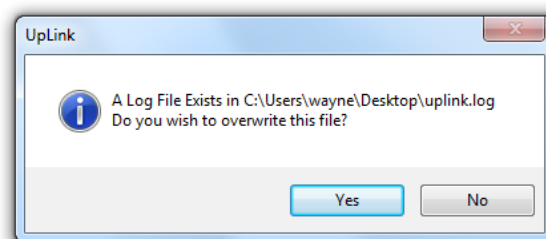
# Enabling the debug log system

In order to help us identity any problems that may occur during the download process you can log the details of the download to a text file for later analysis. By default this logging is enables, but can be switched on and off by selecting the option in File->Logging.

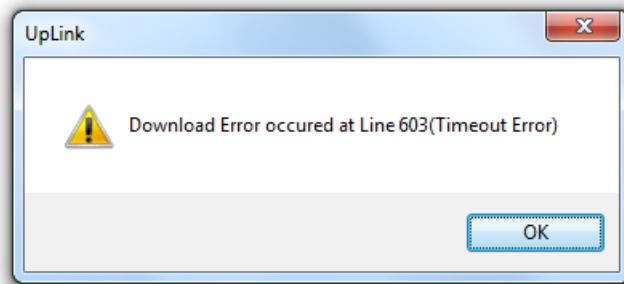It is also possible to change the location of the log file from the settings (File->Settings) Menu).



On start up a check is made to see if this log file exits. If it does you many over write it, or append the latest log to the existing file.

## Timeout Errors

In the event that you are getting timeout errors during downloading, it is possible to adjust the timeout delay on the settings screen (File -> Settings) . Higher values give a slower response and may reduce errors caused by timeouts.
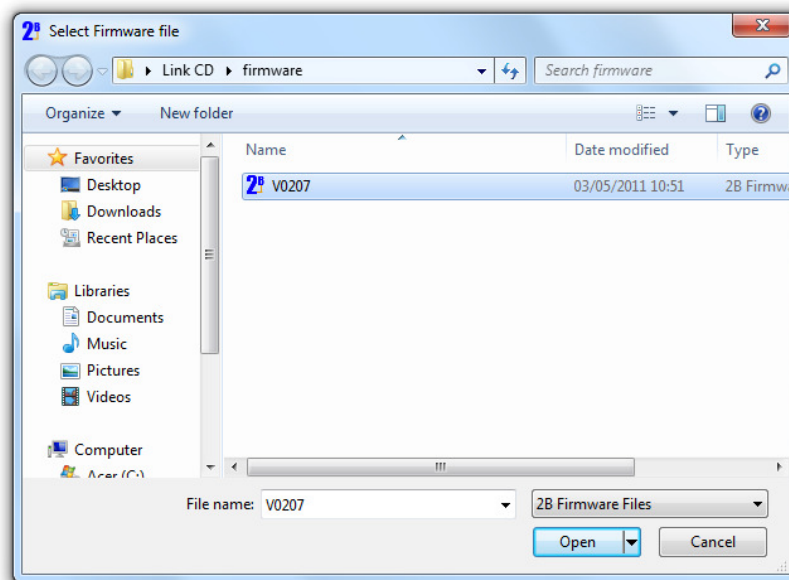


Other errors may occur depending on the quality of the link. If you get repeated Checksum Errors then there may be a problem with the onboard memory of the 2B.

# Downloading Updates

The firmware updates are available on our website. Simply visit www.e-stim.co.uk/link/index.php#firmware and then download the latest update you require. Save the file in a suitable location. You do not need to download all the updates, as some are published for development purposes. In addition the latest update will generally encompass any changes made by previous updates. Do not use any updates from any other sources apart from the official E-Stim website and the Uplink CD. Doing so will invalidate your lifetime guarantee, possibly destroy your control unit, and could cause personal injury.
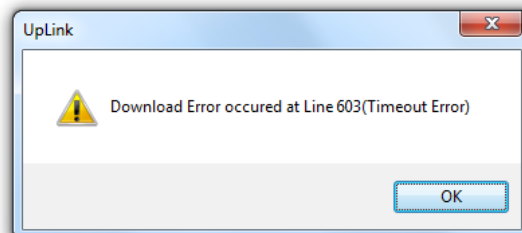
## How to load

Once you have connected the 2B, initialised the communication and checked the version , Click the load button. A file selection dialog box should open allowing you to select the file previously downloaded. All 2B firmware files have the extension .2bf



Once the file is loaded into the program UpLink will attempt to download the data onto the 2B. During this process you should see the green progress bar move, and the status bar change. DO NOT disconnect your 2B from your PC during this process.
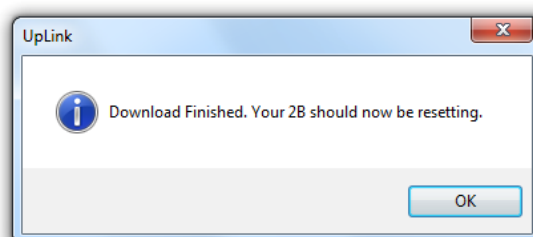
If an error occurs then it is possible to attempt the download process again until successful. The Uplink function on the 2B is active until the 2B is reset or switched off.



In the event an error occurs during download, simply reconnect the 2B via the connect button, recheck the version (If you get an incomplete version number don't worry simply try again) and then attempt the download again.

If you are getting successive timeout errors, then increasing the timeout delay (File->Settings) may eliminate these problems.

 **If you disconnect your 2B during the download phase you may corrupt the firmware, and be unable to download further updates. In this state your 2B would have to be returned to our workshop for replay and re-flashing.**

Once the firmware has downloaded correctly, your 2B will reset with the new firmware. Check the start up screen to ensure you have the new firmware showing.

# Problems

In the event of problems, you can try our support forum at http://www.e-stim.net or email us directly at info@e-stim.co.uk. We generally ask for a copy of the debug log.