WORK INSTRUCTION
MicroCorr/TriCorr Touch: Upgrading the base station BSP to firmware version 1.13 or later

Product:	MicroCorr/TriCorr Touch
Date:	03/01/2012
Issue:	A

REVISION HISTORY

Issue	Date	Modification Summary
1	13/12/2011	Draft release to Sales for comments
A	03/01/2012	First release

APPROVALS

Drawn By.   David Thomas   Date.   03/01/2012

Checked By.   Date.

Approved By.   Date.

Scope

This document explains how to install SAM-BA, the BSP upgrade tool for use with the MicroCorr Touch and TriCorr Touch correlators, and supersedes document WI-068-0031. It also explains how to install or upgrade Touch base stations with BSP firmware version 1.13 or later.

This procedure only installs or upgrades the BSP on the base station. In addition to this process, it may be necessary to install or upgrade the application firmware.

Technical Requirements

This operation is intended to be performed by qualified technical staff. You may require administration access to your computer to install the necessary drivers. It is strongly recommended that the operation is performed by staff of HWM-Water Limited or their authorized distributors.

Installation of SAM-BA

SAM-BA must be installed on your PC before you can install the BSP firmware on the Touch. You need to obtain Atmel SAM Boot Assistant (SAM-BA), version 2.10 or later. You can obtain this from the following web site:

http://www.atmel.com/dyn/products/tools_card.asp?tool_id=3883

At the time of writing, version 2.11 was available for download.

You may be required to enter personal details and validate your email address to allow the download to proceed. This is beyond our control.

This application then needs to be installed by double-clicking on the downloaded file and following the prompts. Unless you have a good reason to change the installation location and the shortcut name, it is suggested that you do not modify the settings already provided. In the last window of the SAM-BA set up, you will be asked whether you wish to view the SAM-BA USB notice. Accept this offer.
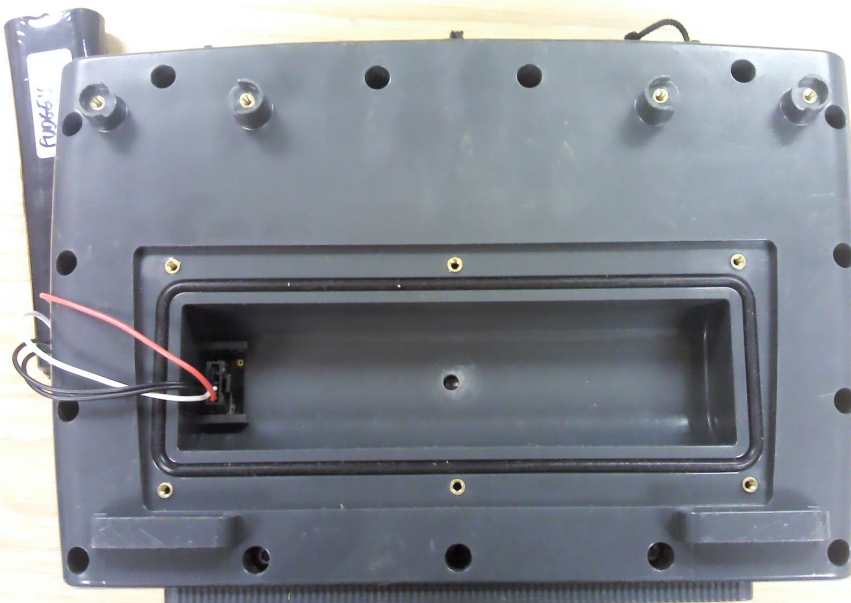
If you forget to view the SAM-BA USB notice, you may find it here:

file:///C:/Program%20Files/ATMEL%20Corporation/sam-ba_2.11/doc/usb_notice.html
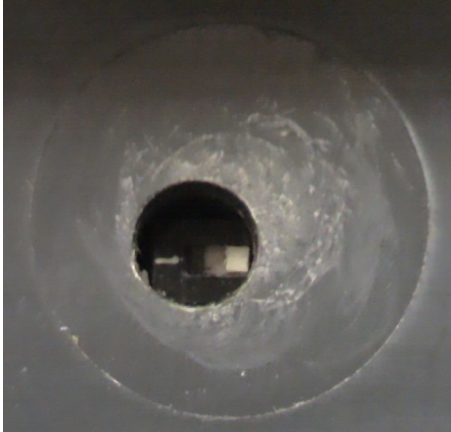
The location will differ if you changed the place at which the program was installed. If you are using a 64-bit operating system, you may find the ATMEL Corporation folder in a folder called Program Files (x86).

The USB driver must now be installed. This is accomplished as follows:

1. Power down the Touch.
2. Unscrew the battery cover screws.
3. Move the battery out of the way. You should see a hole through which you can access a small DIP switch in the middle of the compartment as follows:

A close-up showing the DIP switch in the ON position (the picture is oriented the same way as that above):
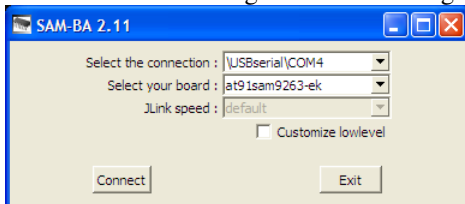

4. Switch the DIP switch OFF using a pointed tip instrument such as a pen. **NOTE: This switch is fragile. Use of sharp objects may cause damage. It is recommended that you press against the side of the switch, rather than the top of it, whilst switching it.**
5. Switch on the base station. The touch screen will turn white or grey.
6. Connect the base station to the PC via the USB lead.
7. Connect a charger to the base station if the battery is depleted.
8. The USB driver now needs to be installed by following the procedure in the SAM-BA USB notice. Note that the procedure varies from computer to computer, and may not be precisely as documented within the USB notice. The procedure one of the developers followed on a Windows XP machine with service pack 3 installed is shown in Appendix A.
9. It is now possible to follow the upgrade procedure from step 8. If for some reason you do not intend to follow the upgrade procedure at this time, you should now switch the DIP switch back ON, taking care not to damage it.

Note that the SAM-BA application only needs to be installed once on the PC, not every time that you need to upgrade a Touch. There is also no requirement to upgrade the SAM-BA application unless otherwise notified.

Note that the installation guide states that if you change the USB socket you use to connect to the device, the USB driver will need to be installed again. We therefore recommend that you always use one specific USB port for the purpose of upgrading the Touch BSP.

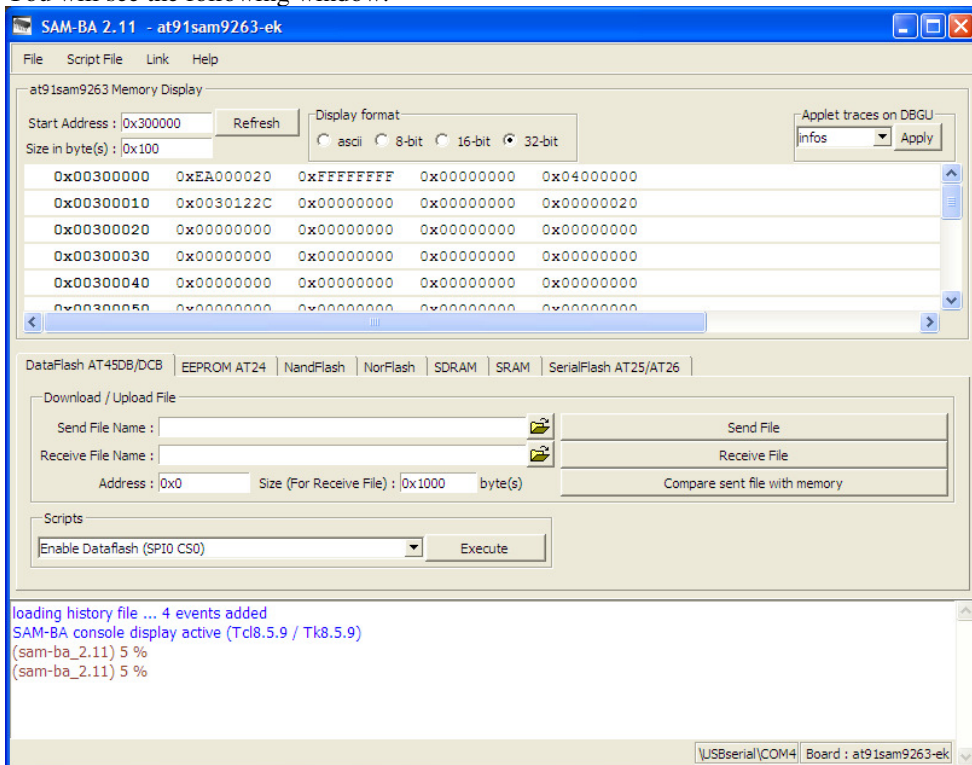**BSP Firmware Installation and Upgrade Procedure**

1. Power down the Touch.
2. Unscrew the battery cover screws.
3. Move the battery out of the way. You should see a hole through which you can access a small DIP switch. See the section on SAM-BA installation for photographs.
4. Switch the DIP switch OFF using a pointed tip instrument such as a pen. **NOTE: This switch is fragile. Use of sharp objects may cause damage. It is recommended that you press against the side of the switch, rather than the top of it, whilst switching it.**
5. Switch on the base station. The touch screen will turn white or grey.
6. Connect the base station to the PC via the USB lead.
7. Connect a charger to the base station if the battery is depleted.
8. Make a folder on the root directory of the C: drive called BasestationFirmware.
9. Copy the files from within the ZIP archive into the new BasestationFirmware folder.
10. Start SAM-BA (on Windows XP, click Start -> All Programs -> ATMEL Corporation -> SAM-BA v2.11 -> SAM-BA v2.11; on Windows 7, click on the Start icon, search for SAM-BA, and start it).
11. You will see something like the following window:

Select the connection that includes USB or USBserial within the name if it is not already selected. (If there is no such connection, exit from SAM-BA and try going from step 11 again.)
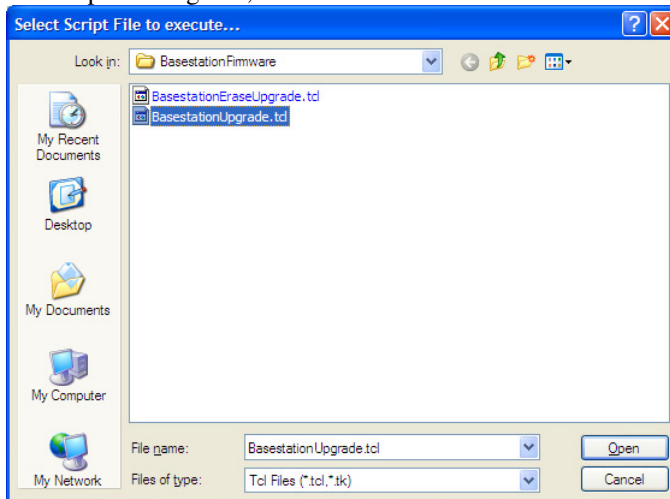
12. Click Connect. If all is OK, proceed to the next step. If you get an error, exit from SAM-BA and try going from step 10 again.
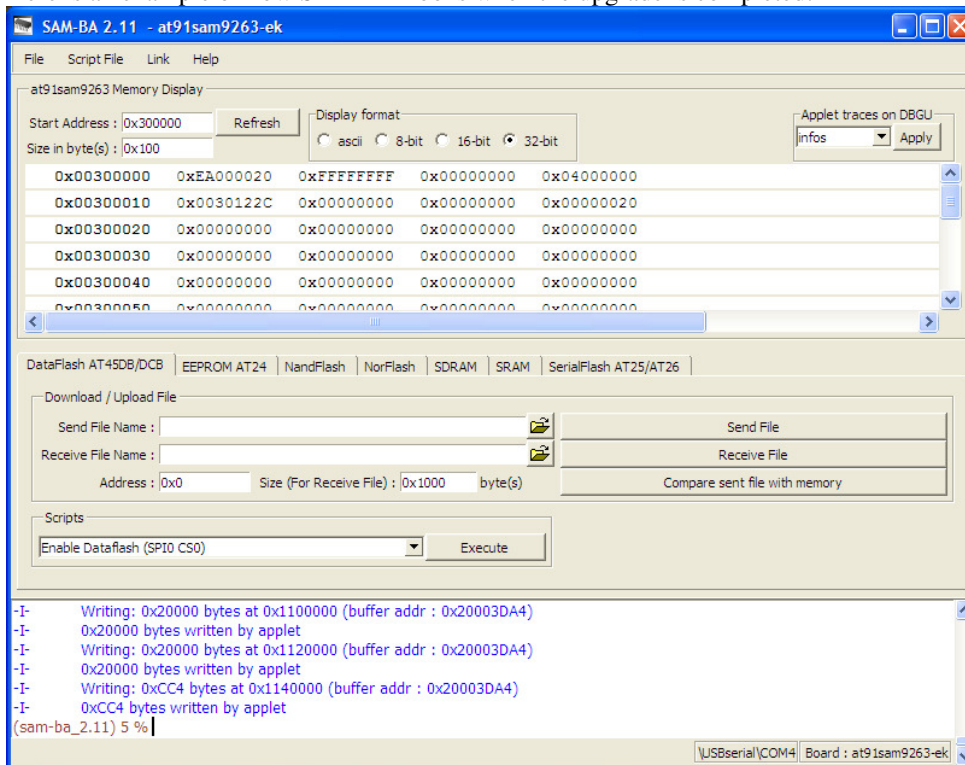
You will see the following window:

13. Switch the DIP switch ON, taking care not to damage it.
14. On the SAM-BA software menu bar, click Script File -> Execute Script File.

15. In the open dialog box, browse to c:\BasestationFirmware and select BasestationUpgrade.tcl.

IMPORTANT: Do not select BasestationEraseUpgrade.tcl unless you have been advised by HWM-Water technical staff to do so.

16. Click Open. The upgrade should begin.
17. Wait for the upgrade to complete. Assuming you are using SAM-BA version 2.11, the upgrade will be complete when "(sam-ba_2.11) 5 %" or similar text appears in the bottom window.
    Here is an example of how SAM-BA looks when the upgrade is completed:

Note: If SAM-BA appears to stop responding, wait five minutes before concluding that something has gone wrong with the upgrade. Usually, the upgrade is still proceeding, but SAM-BA has stopped updating the window.

18. Close the SAM-BA application.
19. If you connected a charger at step 8, disconnect it now.
20. Switch off the base station, remove the USB lead, and restart the base station. Re-connect the charger if desired.
21. Complete the Touch screen calibration if prompted.
22. Replace the battery and battery cover.
23. If you also wish to upgrade the application firmware, you can now do this by following work instruction document WI-068-0037.
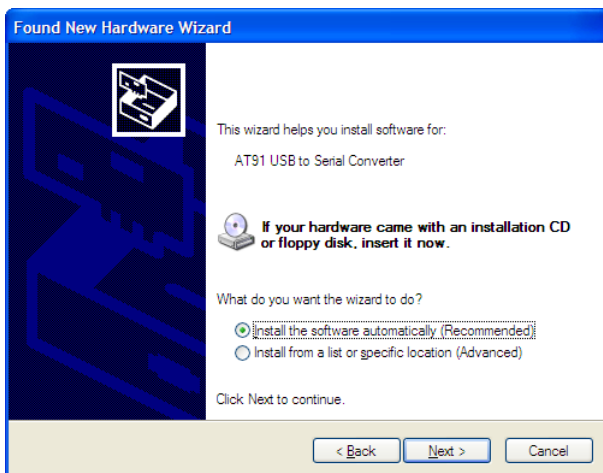
Appendix A – Installing the SAM-BA USB Device Driver on Windows XP SP3

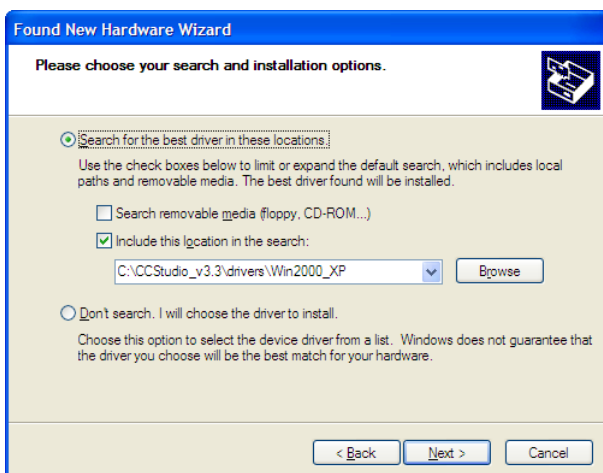When the Touch USB cable has been inserted after installing SAM-BA, the following window will appear:

Click on "No, not this time," and then click on Next.
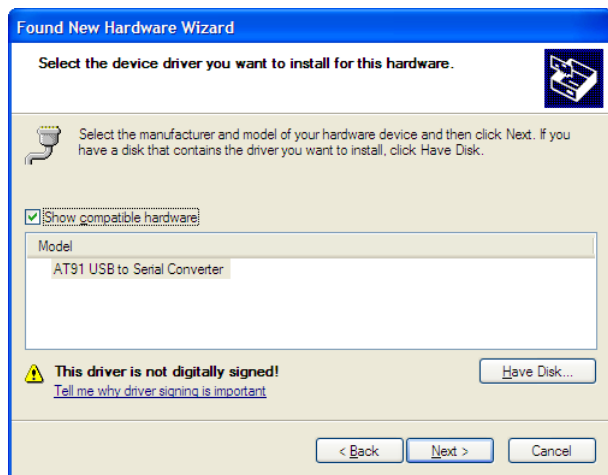
This window appears next:

Click on "Install from a list or specific location (Advanced)," then click on Next.

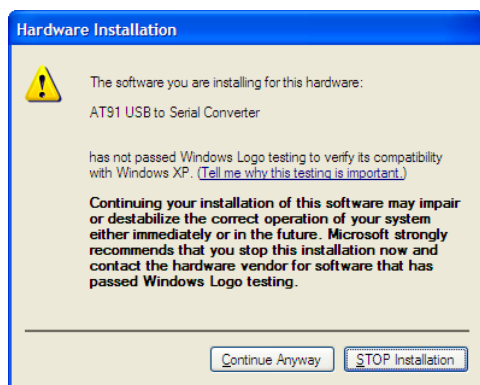The next window to appear is as follows:

Note that it will probably differ in some ways from the above. Click on "Don't search. I will choose the driver to install," then click on Next.
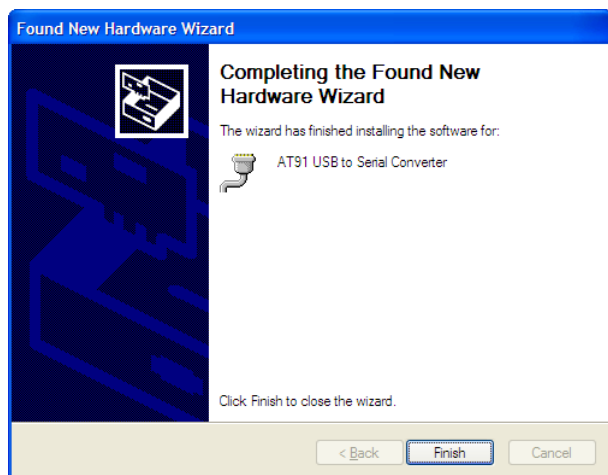
The following window will next appear:

Ignore the warning that the driver is not digitally signed. Make sure "AT91 USB to Serial Converter" is selected, then click on Next.

The following window will appear:

Click on Continue Anyway. After a short time, the following window will appear:

You can now click on Finish to complete installation of the USB driver.