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
А	03/01/2012	First release

APPROVALS

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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.

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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	ng window:
	SAM-BA 2.11	
	Select the connection : \USBserial\COM4	
	Select your board : at91sam9263-ek 💌	
	JLink speed : default 🔍	
	Customize lowlevel	
	Connect Exit	

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:

💽 SAM-BA 2.11 - a	at91sam9263-ek					
File Script File Lin	k Help					
at91sam9263 Memory I	Display					
Start Address : 0x3000 Size in byte(s) : 0x100	000 Refresh	Display format	-bit C 16-bit 🖲	32-bit	ļir	Applet traces on DBGU
0x00300000	0xEA000020	OxFFFFFFFF	0x00000000	0x04000000		~
0x00300010	0x0030122C	0x00000000	0x00000000	0x00000020		
0x00300020	0x00000000	0x0000000	0x00000000	0x00000000		
0x00300030	0x00000000	0x0000000	0x00000000	0x00000000		
0x00300040	0x00000000	0x00000000	0x00000000	0x00000000		
0+00300050	0*0000000	0*0000000	0*0000000	0*0000000		× ×
Send File Name :				<u>≇</u>	Send File Receive File	
Receive File Name :				<u> </u>	Receive File	
Address : (Dx0 Size (For Receive File) :	0x1000 byte(s)		Compare sent file with m	emory
Scripts						
Enable Dataflash (SP	I0 CS0)		Execute			
oading history file	4 events added					~
SAM-BA console displ sam-ba_2.11) 5 % sam-ba_2.11) 5 %	ay active (Tcl8.5.9	/ Tk8.5.9)				
					\USBserial\COM4	Board : at91sam9263-ek 🗸

- 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.

Select Script F	File to execute	? 🔀
Look in:	: 🔁 Basestation Firmware 💽 🔇 🎓 📴	
My Recent Documents	BasestationEraseUpgrade.td BasestationUpgrade.td	
Desktop		
My Documents		
My Computer		
	File name: BasestationUpgrade.tcl	<u>O</u> pen
My Network	Files of type: Tcl Files (*tcl,*tk)	Cancel

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.

nele is all exa	imple of nov	SAM-DA	IOOKS WHEL	i ille upgrau	e is completed.	
💽 SAM-BA 2.11 -	at91sam9263-ek					
File Script File L	ink Help					
at91sam9263 Memor	y Display					
Start Address : 0x30	0000 Refresh	Display format			Apple	t traces on DBGU
Size in byte(s) : 0x10	0	C ascii C 8-	bit (° 16-bit (• 3	32-bit	Intos	Арріу
0x00300000	0xEA000020	OxFFFFFFFF	0x00000000	0x04000000		<u>^</u>
0x00300010	0x0030122C	0x0000000	0x0000000	0x00000020		
0x00300020	0x00000000	0x00000000	0x00000000	0x00000000		
0x00300030	0x00000000	0x00000000	0x00000000	0x0000000		
0x00300040	0x00000000	0x00000000	0x00000000	0x00000000		
0×00300050	0*0000000	0*0000000	0*0000000	0*0000000		>
Download / Upload	File			2	Send File	
Receive File Name :				~	Receive File	
Address :	0x0 Size	(For Receive File) : 0	0x1000 byte(s)		Compare sent file with memor	у
Scripts			_	-		
Enable Dataflash (S	PIO CSO)		Execute			
-I- Writina: 0)	(20000 bytes at 0x1	100000 (buffer ac	dr : 0x20003DA4)		
-I- 0x20000 b	ytes written by appl	let				
-I- Writing: 0)	20000 bytes at 0x1	.120000 (buffer ad	ddr : 0x20003DA4)		
-I- Writing: 0	CC4 bytes at 0x114	40000 (buffer addi	r:0x20003DA4)			
-I- 0xCC4 byte	es written by applet					
(sam-ba_2.11) 5 %						<u> </u>
					USBserial COM4 Boar	d : at91sam9263-ek 🗸 🗸

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.

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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:

ound New H	ardware Wizard
Please cho	ose your search and installation options.
⊙ Searc	h for the best driver in these locations
Use th paths	e check boxes below to limit or expand the default search, which includes local and removable media. The best driver found will be installed.
	Search removable media (floppy, CD-ROM)
	Include this location in the search:
	C:\CCStudio_v3.3\drivers\Win2000_XP Browse
O Don't	search. I will choose the driver to install.
Choos the dri	e this option to select the device driver from a list. Windows does not guarantee that ver you choose will be the best match for your hardware.
	< <u>B</u> ack <u>N</u> ext > Cancel

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.

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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.