GadgetPC Single Board Computer

System Restore Guide

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16301 Blue Ridge Road, Missouri City, Texas 77489 Telephone: 1-713-283-9970 Fax: 1-281-416-2806 E-mail: info@bipom.com Web: www.bipom.com

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1. Overview

Thank you for your purchase of the GadgetPC Single Board Computer.

GadgetPC is a powerful computer board that is capable of running high-level operating systems such as Linux.

This document is is for advanced users who want to learn about upgrading the boot loader, restoring GadgetPC to factory setup or to prepare GadgetPC for an Operating System such as Debian that is different than the standard ARM9 Linux.

Users who are planning to use GadgetPC in standard configuration (with ARM9 Linux & Linux Control Panel) can skip this document.

2. Software Setup

When GadgetPC is first powered, it goes through a boot sequence and executes various components in the following order:

ROM boot loader (built-in ROM) AT91BootStrap (DataFlash) U-boot (DataFlash) Linux kernel (uimage file under USB FAT root) RAMDISK (gpcfs.gz file under USB FAT root)

ROM boot loader is built into the AT91SAM9260 microcontroller and cannot be changed. As soon as the board is powered the ROM boot loader starts. It downloads and runs an application (AT91BootStrap) from external storage media (DataFlash) into internal SRAM. AT91BootStrap has been developed by BiPOM Electronics specifically for GadgetPC.

AT91BootStrap is responsible for initializing hardware such as DataFlash, SDRAM, digital outputs, and USART0 serial port.

AT91BootStrap downloads to SDRAM and passes control to U-Boot which is a powerful boot loader that resides also in DataFlash. U-Boot performs many low-level tasks such as detecting USB hardware, reading Linux image from external USB flash drive, uncompressing Linux image to SDRAM, and passing control to Linux image in SDRAM.

U-Boot is open source system that may be upgraded from time to time by BiPOM Electronics for additional functionality. U-Boot can be upgraded by the user as described in this document.

Linux kernel and RootFS (RAMDISK) are the two main and largest components of the operating system. These are also the easiest to upgrade since they reside on an external USB flash drive. Linux and RootFS (RAMDISK) upgrades are provided by BiPOM Electronics. However, users may also build their own Linux kernel, copy to USB flash Drive and boot from their own Linux kernel.

When Linux kernel is started, it will mount RAMDISK as RootFS.

Then Linux scripts will try to mount USB flash drive automatically.

If the USB flash drive is installed to any port, it will be detected and mounted to /mnt/usb. If the new disk drive is mounted, an external command file /mnt/usb/user.sh will be executed. This file can provide extra initialization of the system

- add new users;
- change passwords;
- insert drivers;
- run servers;
- etc.

For users wishing to use the GadgetPC hardware ("bare metal") outside of the Linux environment, there is also a section that describes how to build and download your C programs to GadgetPC.

2.1. Download and install AT91 In-system Programmer from

http://www.atmel.com/dyn/resources/prod_documents/Install%20AT91-ISP%20v1.12.exe

This installation includes SAM-BA V2.8 package. After installation, SAM-BA may ask you to reboot your computer. Please reboot if instructed to do so.

2.2. Download GadgetPC Support Package for SAM-BA 2.8 (<u>http://www.bipom.com/files/gadgetpc/gadgetpc samba2 8.zip</u>) from Software section under <u>http://www.bipom.com/products/us/2899678.html</u> and unzip to a temporary file on your computer.

Copy all the unzipped files and folders to C:\Program Files\ATMEL Corporation\AT91-ISP v1.12\SAM-BA v2.8\lib

Note: C:\Program Files\ATMEL Corporation\AT91-ISP v1.12\SAM-BA v2.8\lib\boards.tcl has to be replaced with BiPOM version of "boards.tcl" from the zip file.

GadgetPC folder with its files has to be under C:\Program Files\ATMEL Corporation\AT91-ISP v1.12\SAM-BA v2.8\lib

Please see the screenshot below:



3. Hardware Setup.

This chapter explains in details how to enter the board into SAM-BA boot mode to access sub-systems of GadgetPC using SAM-BA utility from ATMEL (www.atmel.com)

GadgetPC features:

- Atmel AT91SAM9260 ARM9 microcontroller
- 32MB MT48LC16M16A2P-75:D SDRAM
- 8MB AT45DB642D DataFlash
- 4-port USB HUB (TUSB2046BIRHBR) that provides 4 USB 2.0 Full Speed (12 Mbits per second) host ports
- USB 2.0 Full Speed (12 Mbits per second) Device Port
- On-board 3.3 Volt and 1.8 Volt regulators.



More information on AT91SAM9260 and AT45DB642D-CNU can be obtained from <u>www.atmel.com</u>

More information on MT48LC16M16A2P-75:D TR can be obtained from <u>www.micron.com</u> More information on TUSB2046BIRHBR can be obtained from <u>www.ti.com</u>

3.1. Remove X2 jumper:



Note: X2 jumper enables / disables DataFlash interface. When X2 is open the ROM boot loader can't download and run At91BootStrap loader. ROM boot in case no valid program is detected in external DataFlash supports USB Device Port. So it is possible to change DataFlash content interacting with the board using SAM-BA utility.

3.2. Connect one end of the USB cable to GadgetPC Device port:



3.3. GadgetPC provides USART0 (default console) pins on an 8-pin single-row header that matches the corresponding 8 pins (from 1 to 8) of 12-pin header of RS232 to TTL Converter. It is necessary to connect the headers to each other using a flat cable. Install a J9 jumper to the RS232 to TTL Converter.



3.4. Connect one end of a serial cable to an available serial (COM) port on your PC.

3.5. Connect the other end of the serial cable to the "RS232 to TTL" converter.

3.6. Connect the other end of the USB cable to any USB HOST port of a PC. The board will be detected immediately:

😵 Safely Remove Hardware	<mark>^</mark> ×
Select the device you want to unplug or eject, and then click Stop. W Windows notifies you that it is safe to do so unplug the device from yo computer.	'hen ur
Hardware devices:	
USB Mass Storage Device atm6124.Sys ATMEL AT91xxxxx Test Board SAMSUNG HD5020	
atm6124.Sys ATMEL AT91xxxxx Test Board at Location 0	
Properties Stop	
Display device components	
lose	

Note: If you face any problems with this step please read "4. Known issues of USB driver"

3.7. If the board is detected, install the X2 jumper back to the board:



Note: Be very careful installing the jumper. The board is powered. If something gets wrong, the board can be permanently damaged.

The best thing is to use some switch instead of the jumper. So you can manipulate with X2 pins without any problems even if the board is powered.

Note. The board provides the X3 jumper as well. When the jumper is installed the DataFlash chip is write-protected.



4. Known issues of USB driver

If the board is detected you may skip this chapter.

If you face any problems with the board detection (3.6. step) please try to install the USB driver manually.

For example, on some Windows PC's, GadgetPC may be recognized as "GPS Camera" by Windows. This is probably because there are some GPS Cameras that are using the same ATMEL microcontroller as GadgetPC.

To resolve this try the following:

- select System under Windows Control Panel;

- select Device Manager under Hardware tab;

- expand the Ports devices by clicking on the + sign to the left of "Ports". You will see a view similar to the following:



Please note that GadgetPC appears as GPS Camera under Ports (COM&LPT).

To correct this and make the GadgetPC appear as a USB device, make the following steps:

4.1. Right click on GPS Camera Detect... and this will bring up the menu:



4.2. Select Properties from the menu.

GPS Cam	era Detect (CC)M3) Prope	rties			?×
General	Port Settings D	river Details				
Į	GPS Camera De	tect (COM3)				
	Device type:	Ports (CO	M & LF	ΥT)		
	Manufacturer:	WinABM				
	Location:	Location () (USB	Device)		
Devic	e status					
This If you start	device is working u are having proble the troubleshooter	properly. ems with this c	levice,	click Trouble	eshoot to	
						~
			(<u>T</u> rouble	eshoot	
<u>D</u> evice	usage:					
Use th	is device (enable)					~
				OK		Cancel

4.3. Click on Driver tab and click the Driver Details button:

Driver File Det	ails 🛛 🛛 💽 🔀
🖉 GPS Ca	amera Detect (COM3)
<u>D</u> river files:	
	VS\system32\DRIVERS\usbser.sys
Provider:	Microsoft Corporation
File version:	5.1.2600.5512 (xpsp.080413-2108)
Copyright:	© Microsoft Corporation. All rights reserved.
Digital Signer:	Microsoft Windows Component Publisher
	ОК

usbser.sys is shown as the driver for GadgetPC. This is incorrect. We will correct this. Click OK.

4.4. Click the Update Driver button.

4.5. Select "No, not this time". Click Next:



4.6. Select "Install from a list or specific location (Advanced). Click Next:



4.7. Select "Don't search. I will choose the driver to install". Click Next.



4.8. You should now see the following view:

Hardware Update Wizard	
Select the device driver you want to ins	stall for this hardware.
Select the manufacturer and model of yo have a disk that contains the driver you the vertice of the driver you with the driver	ur hardware device and then click Next. If you want to install, click Have Disk.
Model	1
atm6124.Sys ATMEL AT91xxxxx Test Board	
This driver is not digitally signed! <u>Tell me why driver signing is important</u>	<u>H</u> ave Disk
	< <u>B</u> ack <u>N</u> ext > Cancel

Move your mouse over "atm6124.Sys ATMEL AT91xxxxx Test Board" and click to select. Then click Next.

4.9. You should see the proper driver software being installed as follows:

Hardware Up	odate Wizard
Please w a	it while the wizard installs the software
Ŷ	atm6124.Sys ATMEL AT91xxxxx Test Board
	Setting a system restore point and backing up old files in
	case your system needs to be restored in the ruture. < Back

4.10. When the installation is completed, you will see the following:



Click Finish.

4.11. Go back to Device Manager. You should now see that GadgetPC has moved from under "Ports" section to under "Universal Serial Bus Controllers" section. The name may still be "GPS Camera Detect". This is harmless. As long as it appears under "Universal Serial Bus Controllers", it will work.

Driver File Details	? 🗙
atm6124.Sys ATMEL AT91xxxxx Test Board	
Driver files:	
C:\WINDOWS\System32\Drivers\atm6124.sys	
C: \WINDOWS \system32\DRIVERS \kiritdev.sys	
Provider:	
File version:	
Copyright:	
Digital Signer:	
	ОК

Note: Now the USB driver is installed properly. Try to pass all steps of "Hardware Setup" to enter the board into SAM-BA boot mode.

5. Using GadgetPC without an operating system (SDRAM test)

If you plan to use GadgetPC with an operating system such as Linux only, you can skip this section.

Development software for GadgetPC includes ARM Development System and GNUARM C compiler. To download the developed firmware to GadgetPC, SAM-BA loader from ATMEL(www.atmel.com) is used.

Note: In order avoid any potential problems please install all software to their default locations.

5.1. Download and install the latest release of ARM development system based on Micro-IDE from

http://www.bipom.com/armdev.php

Micro-IDE is a Windows based Integrated Development Environment for micro-controller systems application development. Micro-IDE integrates essential components of software development including

- Multi File Editor with C/ASM language syntax coloring
- Integration with toolkits including command line compilers, assemblers and linkers
- Project Manager
- Tools: Terminal program, Calculator, ASCII Chart

5.2. Download and install GNUARM GCC Compiler from http://www.bipom.com/armdev.php

5.3. SDRAM Test

ARM development system provides SDRAM test. To run the test it is necessary to:

- Compile the existing example using ARM development system;
- Download the resulting GadgetPC_sdram.bin file to DataFlash;
- Connect the board output to Micro-IDE terminal.
- **5.3.1.** To compile the existing GadgetPC_sdram example please go to

C:\bipom\devtools\GCC\AT91SAM9\Examples\SDRAM\GadgetPC_SDRAM folder.

5.3.2. Double-click GadgetPC_sdram.prj.

5.3.3. The Micro-IDE will be launched automatically

5.3.4. Press "Build All" icon button. It will compile the example building the GadgetPC_sdram.bin



Note: The compiled example can be downloaded from www.bipom.com/support/gadgetpc/GadgetPC_SDRAM.zip

5.3.5. Run **C:\Program Files\ATMEL Corporation\AT91-ISP v1.12\SAM-BA v2.8\SAM-BA.exe** Select "\usb\ARM0" and "GadgetPC" from pull-down lists and press "Connect"

💽 SAM-BA 2.8			X
Select the connection : Select your board :	\usb\ARM0 GadgetPC		• •
Connect		Exit	

Note: If you face problems with this step please pass through all steps of "Hardware Setup" again.

5.3.6. Select "DataFlash AT45DB/DCB"/"Enable Dataflash on CS1" and press "Execute" button

💽 SAM-BA 2.8 - Ga	dgetPC					
File Script File Li	ink Help					
AT91SAM9260 Memory	y Display					
Start Address : 0x2000 Size in byte(s) : 0x100	00 Refresh	Display format Cascii C 8-bi	t 🔿 16-bit 🖲 32-l	bit		
0x00200000	0xEA000014	OxEAFFFFFE	0xEA000061	OXEAFFFFFE		^
0x00200010	OXEAFFFFFE	OXEAFFFFFE	OXEAFFFFFE	OxE3A0D008		=
0x00200020	OxE58BD128	OxE59AD04C	OxE59CD004	OxE21DD001		
0x00200030	0x125EF004	OxE59AD03C	OxE21DDC40	OxO3A0D004		
0x00200040	0x0589D000	0x15998010	0x11CC80B2	0x13A0D001		
0v00200050	0v158CD004	0vF25FF004	0v09120F78	OVE8855031		×
DataFlash AT45DB/DC	B SRAM2 Nandi File	Flash(not supported)	SDRAM SRAM	<u>2</u>	Send File	
Receive File Name :		_		差	Receive File	
Address :	0x0 Size	(For Receive File) : C	x1000 byte(s)		Compare sent file with memory	
Scripts						
Enable Dataflash on I	CS1	Execute				
-I- *(pSDRAM+0x20)	= 0;					~
-I- 5. Write refresh ra -I- 6. A Normal Mode -I- *pSDRAM = 0; -I- End of Init_SDRAM (AT91-ISP v1.12) 1 %	te into SDRAMC re Command is provi I_48 -	efresh timer COUN ded, 3 clocks after	T register • tMRD is set			
					\usb\ARM0 Boa	rd : GadgetPC 🤜

5.3.7. Please select "Send Boot File" and press "Execute". Then select *GadgetPC_sdram.bin* and press "Open"

SAM-BA 2.8 - Gadge	Onen					22	_ 🗆 🗙
File Script File Link	H						
AT91SAM9260 Memory Dis	Look ir Dlay	n: 🔁 GadgetPC_S	DRAM	×	G 💋 🖻 🛄		
Start Address : 0x200000		GadgetPC_sdr	ram.bin				
Size in byte(s) : 0x100	- Mu Becent						
0x00200000 0x	COC Documents						<u>^</u>
0x00200010 0x	EI 🔂						=
0x00200020 0x	ES Deskton						
0x00200030 0x	<12 D 000000						
0x00200040 0x	⁽⁰⁾						_
0v00200050 ∩1 <	1 My Documents						>
DataFlash AT 45DB/DCB	ep.						
- Download / Unload File -							
Send File Name :	My Computer						
Beceive File Name :	-						
Address : 0x0	- 🤤	File name:	GadgetPC_sdra	am.bin	~	Open	
Cariata	My Network	Files of type:	Bin Files (*.bin)		~	Cancel	
Scripts		Europe	1				
	<u> </u>	Execute)				
-I- 6. A Normal Mode Con -I- *pSDRAM = 0; -I- End of Init_SDRAM_48 (AT91-ISP v1.12) 3 % DA' (AT91-ISP v1.12) 3 %	nmand is provided, TAFLASH::SendBo	3 clocks after tMF otFileGUI	RD is set		Ň	ish\ABMΩ Board : (adnetPC
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SAM-BA 2.8 - Gadge	PC					1	
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SAM-BA 2.8 - Gadge File Script File Link AT91SAM9260 Memory Dis	t PC Help play						
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SAM-BA 2.8 - Gadge File Script File Link AT31SAM3260 Memory Dis Start Address : 0x200000 Size in byte(s) : 0x100 Start Address : 0x200000 0x00200000 Ox00200000 0x00200010 Ox00200020 Ox002000030 0x002000040 Ox00200040 Ox00200040 0x00200040 Ox00200040 Ox00200040 DataFlash AT45DB/DCB Download / Upload File Send File Name : Download / Upload File Send File Name : Address : 0x0 Scripts Send Boot File Send File -I- *pSDRAM = 0; -I- *pSDRAM = 0; Ox0 > 0 × 0 × 0 × 0 × 0 × 0 × 0 × 0 × 0 ×	IPC Help Play Refresh C CO000BCFF 0x KEAFFFFFE 0x KESBBD128 0x K125EF004 0x SRAM2 NandFlash SIze (For Image: Constraint of the second of t	hisplay format ascii 8-bit C EAFFFFFE 0x EAFFFFFE 0x ES9AD04C 0x ES9AD03C 0x ES9AD03C 0x (not supported) SDI Receive File) : 0x100 Execute	(16-bit (* 32-b) (EA000061) (EAFFFFFE (E59CD004 (*E21DDC40 (*11CC80B2 (*DB82(F79) RAM SRAM) (* RAM SRAM) (* 200 byte(s)	it 0xEAFFFFFE 0xE3A0D008 0xE21DD001 0x03A0D004 0x13A0D001 0xF8E5F331 0x it 0x <t< td=""><td>Send Fi Receive f</td><td>e file with memory</td><td></td></t<>	Send Fi Receive f	e file with memory	
SAM-BA 2.8 - Gadge File Script File Link AT31SAM3260 Memory Dis Start Address : 0x200000 Size in byte(s): 0x100 Start Address : 0x200000 0x00200000 Ox00200000 0x00200000 Ox00200000 Ox0000000 0x002000000 Ox00200000 Ox00200000 0x002000000 Ox00200000 Ox0000000 0x002000000 Ox00000000 Ox00000000 0x0002000000 Ox000000000 Ox000000000 0x0002000000 Ox000000000 Ox000000000000 0x0002000000 Ox0000000000 Ox00000000000 0x0002000000 Ox000000000000000 Ox000000000000000000000000000000000000	IPC Help Play Refresh C x00000BCFF 0x xES8BD128 0x x125EF004 0x x0589D000 0x SRAM2 NandFlash Size (For 1 Size (For 1	Visplay format ascii 8-bit C EAFFFFFE 0x EAFFFFFE 0x ES9AD04C 0x ES9AD03C 0x I15998010 0x I1598010 0x I1598000000000000000000000000000000000000	(16-bit • 32-b (EA000061 (EAFFFFFE (E59CD004 (E21DDC40 (11CC80B2 (F79 RAM SRAM) RAM SRAM) 20 byte(s)	k 0xEAFFFFFE 0xE3A0D008 0xE21DD001 0x03A0D004 0x13A0D001 0xF8E5F331	Send Fil Receive I Compare sent file t	e file with memory	
SAM-BA 2.8 - Gadge File Script File Link AT91SAM9260 Memory Dis Start Address : 0x200000 Size in byte(s) : 0x100 0x00200000 0: 0x00200000 0: 0x00200000 0: 0x00200000 0: 0x002000040 0: 0x00200040 0: 0x002000000000000000000000000000000000	IPC Help Play Refresh C x00000BCFF xEAFFFFFE 0x x1586D004 0x SRAM2 NandFlash Size (For TAFLASH :: SendBor >sssfully	Visplay format ascii C 8-bit C EAFFFFFE 0x EAFFFFFE 0x ES9AD04C 0x ES9AD03C 0x IS998010 0x (not supported) SDI Receive File): 0x100 Execute 0tFileGUI	16-bit • 32-b (EA000061 (EAFFFFFE (E59CD004 (E21DDC40 (11CC80B2 (E79 RAM SRAM) (200 D0 byte(s)	Image: constraint of the second se	Send Fil Receive I Compare sent file t	e iie with memory	
SAM-BA 2.8 - Gadge File Script File Link AT91SAM9260 Memory Dis Start Address : 0x200000 Start Address : 0x200000 0: 0x00200000 0: 0x00200000 0: 0x002000000 0: 0: 0: DataFlash AT45DB/DCB Download / Upload File Seripts Send File Name : [Address : 0: Scripts [Send Boot File 0: 1: File Size = 3:28 byte(0: -1	PC Help Play Refresh FC KOOOOBCFF Ox KEAFFFFFE Ox KES8BD128 Ox K125EF004 Ox K125EF004 Ox K158CD004 Ox SRAM2 NandFlash Size (For Size (For Size (For TAFLASH::SendBo) essfully	Visplay format Cascii C 8-bit C EAFFFFFE 0x EAFFFFFE 0x ES9AD04C 0x ES9AD03C 0x ES9AD03C 0x IS998010 0x IS980010 0x IS98000000000000000000000000000000000000	16-bit • 32-b (EA000061 (EAFFFFFE (ES9CD004 (21DDC40 (11CC80B2 (DB82(F79 RAM SRAM) 20 byte(s)	0xEAFFFFFE 0xE3A0D008 0xE21DD001 0x03A0D004 0x13A0D001 0xF8B5Fb31	Send Fil Receive I Compare sent file	e iile with memory	

Close the SAM-BA window.

5.3.8. To connect the board output to Micro-IDE terminal please go to Tools->Options-Terminal of Micro-IDE.

Please configure the COM port to 115200 baud rate, 8 data bits, parity none, 1 stop bit. Press "Connect" icon button on Micro-IDE toolbar.

Disconnect and reconnect the USB cable to start the SDRAM test.

III Micro-IDE - [GadgetPC_sdram.c]	
Eile Edit <u>V</u> iew Build Project Debug <u>T</u> ools <u>W</u> indow <u>H</u> elp	_ 8 ×
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🖪 🗖 🗏 🖉 🔜 🗉 🗄 🗄 🕷 🕘 (分) (分) 👫 👹 🦫 🕷	
Workspace A A GadgetPC_sdram.c	Terminal
<pre>'GadgetPC_sdram.'Pro GadgetPC_sdram.c GadgetPC_sdram.h 'This module is presented here AT91SAM9260 program developme BiPOM Electronics provides th does not guarantee its functi Please e-mail any questions a Module: GadgetPC_sdram.c Revision: 1.01 Description: The example a Target proces This program is written usir ''''''''''''''''''''''''''''''''''''</pre>	Start GadgetPC SAM9260 SDRAM test TEST1 PASSED TEST2 PASSED TEST3 PASSED TEST5 PASSED TEST6 PASSED TEST6 PASSED Stop SDRAM test Start GadgetPC SAM9260 SDRAM test TEST1 PASSED TEST2
The signed char flag=0.	×
 Compiling C:\bipom\devtools\GCC\AT91SAM9\Examples\SDRAM\GadgetPC_SDRAM\GadgetPC_s Linking GadgetPC_sdram.out Generating 'GadgetPC_sdram.bin' 	dram.c
y Debug Find in Filer 1 Find in Filer 2 Londer	<u>></u>
Ready	Ln 25, Col 28 Connected NUM

Note: The board will not be detected as "ATMEL AT91xxxxx Test Board "anymore due to the new loaded SDRAM test firmware. It will always start with SDRAM test. In order to access the board using SAM-BA it is necessary to start from "Hardware Setup".

Note: if you see the message box like "No loader ..." please uncheck all checkboxes under "Project Settings/General" of Micro-IDE

Micro-II	DE 🛛 🕅
♪	No loader has been selected for this project.Do you want to select a loader now ?
	<u>Yes</u> <u>N</u> o

6. U-Boot loader on GadgetPC

6.1. Download and install GadgetPC Linux release from Software section under <u>http://www.bipom.com/products/us/2899678.html</u>

The release provides all necessary components to configure and run Linux on GadgetPC:

- compressed Linux kernel (ulmage file);
- compressed RAMDISK image (gpcfs.gz)
- utilities;
- drivers;
- user.sh command file

6.2. In order to install U-Boot loader to GadgetPC it is necessary to download

C:\bipom\devtools\GadgetPC\loader\ GadgetPC_USB_loader.bin file to the board using SAM-BA utility.

GadgetPC_USB_loader.bin is a complete image of loader that includes:

- At91BootStrap loader;
- U-boot loader.

6.2.1. Execute all steps of "Hardware setup" to enter the board into SAM-BA boot mode.

6.2.2. Execute 5.3.5 and 5.3.6 steps to run SAM-BA utility to initialize DataFlash.

6.2.3. Please assign GadgetPC_USB_loader.bin to the "Send File Name Field", then press "Send File".

The "Please Wait..." message box will appear.

It will download the GadgetPC_USB_loader.bin file to the board in 17 seconds.

SAM-BA 2.8 - GadgetPC	
File Script File Link Help	
AT91SAM9260 Memory Display	
Start Address : 0x200000 Refresh Display format Size in byte(s) : 0x100 C ascii C 8-bit C 16-bit C 32-bit	
0x00200000 0x0000BCFF 0x00000000 0xEA000061 0xEAFFFFFE	^
0x00200010 OxFFFFFFFF OxFFFFFFFF OxFFFFFFFF OxFFFFFFFF	
0x00200020 OxFFFFFFFF OxFFFFFFFF OxFFFFFFFF OxFFFFFFFF	
0x00200030 OxFFFFFFFF OxFFFFFFFF OxFFFFFFFF OxFFFFFFFF	
0x00200040 OxFFFFFFFF OxFFFFFFFF OxFFFFFFFF OxFFFFFFFF	
NVNN9NNN5N NVFFFFFFF NVFFFFFFF NVFFFFFFF NVFFFFFFF	>
DataFilest Al 430670C6 SRAM2 NandHash(not supported) SDRAM SRAM Download / Upload File Send File Send File Send File Name : bipom/devtools/GadgetPC/loader/GadgetPC_USB_loader.bir Send File Receive File Name : Image: Send File Receive File Address : Dx0 Size (For Receive File) : Dx1000 Scripts Enable Dataflash on CS1 Execute	
-I- *pSDRAM = 0; -I- End of Init_SDRAM_48 (AT91-ISP v1.12) 1 % send_file {DataFlash AT45DB/DCB} "C:/bipom/devtools/GadgetPC/loader/GadgetPC_USB_loader.bin" 0x0 -I- Send File C:/bipom/devtools/GadgetPC/loader/GadgetPC_USB_loader.bin at address 0x0 -I- File size = 196608 byte(s) (AT91-ISP v1.12) 1 %	0
\usb\ARM0 Board : 0	GadgetPC 🤜

6.2.4. Click on "Compare sent file with memory"



6.3. Please read "Quick Start Guide" document to obtain information how to install Linux to GadgetPC. <u>http://www.bipom.com/web_documents/2899678.html</u>